
 Pennsylvania Public
 Utility Commission, et al.,
 v.
 Duquesne Light Company

Docket No.:
 R-2021-3024750

Evidentiary Hearing

Pages 125 - 219

Judge's Chamber
 Keystone Building
 400 North Street
 Harrisburg, PA
 Tuesday, August 17, 2021
 Commencing at 10:07 a.m.

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**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission,	:	
Office of Consumer Advocate, Office of Small	:	Docket No. R-2021-3024750
Business Advocate	:	C-2021-3025538
	:	C-2021-3025462
v.	:	C-2021-3026057
	:	
Duquesne Light Company	:	

**JOINT STIPULATION OF
DUQUESNE LIGHT COMPANY (Duquesne)**

AND

NATIONWIDE ENERGY PARTNERS, LLC (NEP)

Duquesne Light Company (Duquesne) and Nationwide Energy Partners, LLC (together, Stipulating Parties) by their respective counsel, hereby enter into a Joint Stipulation with regard to the captioned proceeding as follows:

- NEP withdraws and will not seek admission of NEP Cross Exhibits 15 and 16 into the record of the proceeding.
- Duquesne stipulates and agrees to the admission of NEP Cross Exhibits 13 and 14 into the record of the proceeding without objection.
- The Stipulating Parties waive all cross examination at the evidentiary hearings of Duquesne Witness Yvonne Phillips and NEP Witness Teresa Ringenbach with respect to all of their pre-served testimony.
- Duquesne stipulates and agrees to the admissibility into the record of the proceeding of NEP testimony and associated attachments, appendices, and/or exhibits (including Cross Exhibits) that were pre-served in this proceeding.
- NEP stipulates and agrees to the admissibility into the record of the proceeding of Duquesne Light testimony and associated attachments, appendices, and/or exhibits that were pre-served in this proceeding.

- NEP stipulates and agrees not to offer any oral rejoinder testimony to the Surrebuttal testimony of Duquesne Witness Yvonne Phillips at the evidentiary hearings.

WHEREFORE, the Stipulating Parties, by their respective counsel, jointly and respectfully request that the Honorable Deputy Chief Administrative Law Judge Joel H. Cheskis and the Honorable Administrative Law Judge John M. Coogan approve the terms of this Stipulation in their entirety pursuant to the terms and conditions contained herein.

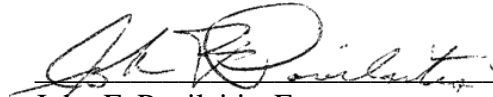
Respectfully Submitted,

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PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Direct Testimony

of

Christine Wilson

Bureau of Investigation and Enforcement

Concerning:

**I&E RECOMMENDED REVENUE REQUIREMENT, PENSION EXPENSE,
COVID-19 RELATED UNCOLLECTIBLE EXPENSE, OTHER COVID-19
RELATED COSTS NET OF SAVINGS, NEW BUSINESS STIMULUS RIDER,
CRISIS RECOVERY PROGRAM, RESIDENTIAL COVID-19 DEBT RELIEF
PROGRAM, RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER,
FEDERAL TAX ADJUSTMENT CLAUSE**

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christine Wilson, and my business address is Pennsylvania Public
4 Utility Commission, 400 North Street, Harrisburg, PA 17120.

5

6 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

7 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in
8 the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial
9 Analyst Supervisor.

10

11 **Q. SUMMARIZE YOUR EDUCATION AND EMPLOYMENT HISTORY?**

12 A. My education and employment history is attached as Appendix A.

13

14 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

15 A. I&E is responsible for representing the public interest in rate and other
16 proceedings before the Commission. I&E's analysis in this proceeding is based on
17 its responsibility to represent the public interest. This responsibility requires
18 balancing the interests of ratepayers, the regulated utility, and the regulated
19 community as a whole.

20

21 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

22 A. The purpose of my direct testimony is to address the base rate filing of Duquesne

1 Light Company (DLC or Company). I am presenting the I&E overall revenue
2 requirement recommendation and my recommendations related to the Company's
3 pension expense claim, COVID-19 related uncollectibles, the proposed
4 normalization of nonrecurring incremental COVID-19 related costs net of savings,
5 the New Business Stimulus Rider (Rider No. 25), the Crisis Recovery Program
6 (Rider No. 26), the Residential COVID-19 Debt Relief Program, marketing and
7 education costs associated with the Residential Subscription Rate Pilot Rider, and
8 the Federal Tax Adjustment Clause (Rider No. 4).

9
10 **Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?**

11 A. Yes. I&E Exhibit No. 1 contains schedules that support my direct testimony.

12
13 **I&E OPERATING AND MAINTENANCE EXPENSE ADJUSTMENTS**

14 **Q. PLEASE SUMMARIZE THE COMPANY'S REQUESTED REVENUE**
15 **INCREASE.**

16 A. The Company's base rate case was filed on April 16, 2021, with a requested
17 increase of \$85,759,000 to claimed present rate revenues of \$568,382,000
18 resulting in a total overall revenue requirement of \$654,141,000 for the Fully
19 Projected Future Test Year (FPFTY) ending December 31, 2022.¹

¹ DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-1, p. 1.

1 **Q. PLEASE SUMMARIZE YOUR RECOMMENDED ADJUSTMENTS.**

2 A. The following tables summarize my recommended numeric adjustments to the
3 Company's claims.

4

	<u>Company Claim</u>	<u>Recommended Allowance</u>	<u>I&E Adjustment</u>
O&M Expenses:			
COVID-19 Related Uncollectible Expense	\$2,094,000	\$1,752,837	(\$341,163)
COVID-19 Related Costs Net of Savings (excl. Uncollectible Exp.)	\$1,931,667	\$0	(\$1,931,667)
New Business Stimulus Rider	\$276,971	\$0	(\$276,971)
Crisis Recovery Program	\$422,800	\$0	(\$422,800)
Residential COVID-19 Debt Relief Program	\$1,167,000	\$0	<u>(\$1,167,000)</u>
Total O&M Expense Adjustments			<u>(\$4,139,601)</u>

5

6 **I&E OVERALL RECOMMENDED REVENUE REQUIREMENT**

7 **Q. WHAT IS I&E'S TOTAL RECOMMENDED REVENUE REQUIREMENT?**

8 A. I&E's total recommended revenue requirement for DLC is \$611,676,000. This
9 recommended revenue requirement represents an increase of \$34,843,000 to the
10 I&E-adjusted present rate revenues of \$576,833,000. This total recommended
11 allowance incorporates my adjustments made in this testimony and those made in
12 the testimony of I&E witnesses Christopher Keller (I&E Statement No. 2), Eryan
13 Sakaya (I&E Statement No. 3), and Joseph Kubas (I&E Statement No. 4).

1 A calculation of I&E’s recommended revenue requirement is shown below.

Duquesne Light Company R-2021-3024750 \$ in Thousands	TABLE I INCOME SUMMARY				
	12/31/22 Proforma	INVESTIGATION & ENFORCEMENT			
	Present Rates	Adjustments	Present Rates	Allowances	Proposed
	\$	\$	\$	\$	\$
Operating Revenue	568,382	8,451	576,833	34,843	611,676
Deductions:					
O&M Expenses	205,286	-9,932	195,354	453	195,807
Depreciation	181,309	0	181,309		181,309
Taxes, Other	41,102	492	41,594	2,029	43,623
Income Taxes:					
Current State	6,290	1,790	8,080	3,233	11,313
Current Federal	6,069	3,387	9,456	6,117	15,573
Deferred Taxes	6,400	0	6,400		6,400
ITC	0	0	0		0
Total Deductions	446,456	-4,263	442,193	11,832	454,025
Income Available	121,926	12,714	134,640	23,011	157,651
Measure of Value	2,276,464	-1,561	2,274,903	0	2,274,903
Rate of Return	5.36%		5.92%		6.93%

2

3

4 **PENSION EXPENSE**

5 **Q. WHAT IS PENSION EXPENSE?**

6 A. Pension expense represents the Company’s contributions to its defined benefit
 7 pension plan of which 50 percent is expensed and 50 percent is capitalized per
 8 methodology accepted by the parties in prior settlement agreements.²

² DLC Statement No. 2, p. 30.

1 **Q. WHAT IS THE COMPANY’S CLAIM FOR PENSION EXPENSE?**

2 A. The Company is claiming \$10 million in total pension expense of which \$5
3 million is capitalized and \$5 million is expensed.³

4
5 **Q. DO YOU ACCEPT THE COMPANY’S CLAIM?**

6 A. Yes. Although DLC witness Jaime Bachota indicated the Company is not required
7 to make any minimum pension plan contributions until 2025,⁴ the Company’s
8 future planned pension payments⁵ line up with the historic payments of \$10
9 million per year in 2018, 2019, and 2020.⁶ Therefore, I accept the Company’s \$10
10 million total claim.

11
12 **Q. DID THE COMPANY RAISE ANY OTHER POINTS RELATED TO**
13 **PENSION EXPENSE WITH WHICH YOU DISAGREE?**

14 A. Yes. The Company proposed the following language be included in the
15 Commission’s Final Order related to pension expense:⁷

16 Continuing in calendar year 2022, Duquesne Light will deposit
17 into its pension trust an amount equal to \$10,000,000 per year;
18 provided, however, that contribution(s) in any year in excess
19 of the foregoing may be used on a cumulative basis to satisfy
20 future contribution obligations. The provision provides for
21 recovery of the expense component of \$5,000,000 (50% of the
22 average cash contributions) of projected future pension
23 contributions. Additionally, Duquesne Light will be permitted

³ DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-9.

⁴ DLC Statement No. 2, p. 29.

⁵ DLC Statement No. 2, p. 29.

⁶ DLC Statement No. 2, p. 33.

⁷ DLC Statement No. 2, p. 35.

1 to include the other 50% of actual pension contributions from
2 January 1, 2007, forward, net of related accumulated deferred
3 income taxes, in rate base for rate making purposes. The rate
4 base adjustment for pensions shall be the amount necessary to
5 adjust the ASC 715 capitalized pension amounts to equal
6 accumulated capitalized pension contributions, net of
7 applicable deferred income taxes, from January 1, 2007
8 forward. The depreciation expense for book and ratemaking
9 purposes will be based on the ASC 715 capitalized amounts.
10 The adjusted amounts will be used for reporting rate base in
11 reports to the Commission.
12

13 **Q. DID THE COMPANY EXCLUDE ANY LANGUAGE FROM THE 2018**
14 **ORDER THAT SHOULD ALSO BE REFLECTED IN AN ORDER**
15 **RELATED TO THE PENSION CLAIM IN THE INSTANT PROCEEDING?**

16 A. Yes. In its suggestion, the Company disregarded the following language from the
17 2018 Commission Order:⁸

18 If Duquesne Light concludes that a contribution less than
19 \$10 million to the pension trust is appropriate, the
20 Company may reduce the pension contribution and will
21 record a regulatory liability on its books of account that is
22 equal to 50% of the reduction to the pension contribution
23 below the level of \$10 million. Any regulatory liability
24 recorded will be reduced to the extent of 50% of
25 contributions in excess of \$10 million in subsequent
26 years. If a regulatory liability remains at the time of the
27 Company's next rate proceeding, the regulatory liability
28 amount will be returned to ratepayers as directed in the
29 next base rate proceeding. Any amount recorded as a
30 regulatory liability shall not bear an interest obligation.
31 Duquesne Light shall provide a report and affidavit
32 attesting to the actual contributions to pension trusts
33 during each calendar year. The report and affidavit shall

⁸ PA Public Utility Commission v. Duquesne Light Company, Opinion and Order at Docket No. R-2018-3000124, Order Entered December 20, 2018, pp. 14-15.

1 be publicly filed with the Commission, with copies
2 provided to I&E, OCA and OSBA on or before January
3 31 of the following calendar year, with the first report and
4 affidavit due on or before January 31, 2020.
5

6 **Q. WHAT DO YOU RECOMMEND?**

7 A. I recommend, and the Company agrees,⁹ that the Commission also include the
8 disregarded language as stated above with modifications to fit the timeline of the
9 instant proceeding, directly following the language proposed by DLC witness
10 Bachota¹⁰ and restated above. This additional language is very important, because
11 at some point soon the Company will approach a fully funded status for its pension
12 fund. As the contributions are reduced, the Company should no longer be entitled
13 to retain excess monies collected from ratepayers.
14

15 **COVID-19 RELATED UNCOLLECTIBLE EXPENSE**

16 **Q. WHAT IS UNCOLLECTIBLE EXPENSE?**

17 A. Uncollectible accounts are specific receivables that are determined to be
18 uncollectible, in whole or in part, either because the debtors do not pay or because
19 the creditor finds it impracticable to enforce payment. Those accounts deemed
20 uncollectible are charged against income as uncollectible accounts expense
21 (referred to herein as uncollectible expense).

⁹ I&E Exhibit No. 1, Schedule 1.

¹⁰ DLC Statement No. 2, p. 35.

1 **Q. HOW DO UTILITIES GENERALLY RECOGNIZE UNCOLLECTIBLE**
2 **EXPENSE FOR RATEMAKING PURPOSES?**

3 A. Generally, for ratemaking purposes, utilities compute uncollectible expense on an
4 annual prospective basis. While the uncollectible expense is a prospective claim,
5 the proper calculation begins with a historic analysis of actual net write-offs to
6 gross revenues to develop a historic write-off ratio. Thus, net write-offs are gross
7 write-offs less recoveries of amounts previously written off. This ratio is applied
8 to projected revenues to determine the proper prospective allowance. Normally,
9 the historic analysis is based on several years of data.

10

11 **Q. WHAT CLAIM ARE YOU ADDRESSING HEREIN FOR**
12 **UNCOLLECTIBLE EXPENSE?**

13 A. I am addressing the COVID-19 related cost recovery associated with uncollectible
14 expense.

15

16 **Q. WHAT IS THE COMPANY'S CLAIM FOR COVID-19 RELATED**
17 **UNCOLLECTIBLE EXPENSE?**

18 A. The Company's total claim for COVID-19 cost recovery of deferred uncollectible
19 expense is \$6,281,000 which represents \$4,187,000 through December 31, 2020,
20 and \$2,094,000 through 2021.¹¹ This produces a three-year normalized amount of

¹¹ DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-12.

1 \$2,094,000 ($\$6,281,000 \div 3$ years). The Company is also proposing regulatory
2 asset treatment going forward for incremental uncollectible costs above what is
3 included in this proceeding to be recovered in the next base rate proceeding.¹²
4

5 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

6 A. The Company followed the Commission's guidance in the Commission's May 13,
7 2020 Secretarial Letter regarding *COVID-19 Cost Tracking and Creation of*
8 *Regulatory Asset, Docket No. M-2020-3019775* (May 13, 2020 Secretarial Letter),
9 taking the difference between the amount of uncollectible expense claimed in the
10 prior base rate case and the amount actually experienced at December 31, 2020,
11 and it took the difference between the amount included in base rates and the
12 projected amount through June 30, 2021, for that six-month period. The Company
13 included this amount in a regulatory asset and is requesting a three-year
14 normalization of the total based on the Company's expected rate case filing
15 interval of three years.¹³ Additionally, in support of continuing regulatory asset
16 treatment of recording new COVID-19 related incremental uncollectible expense
17 between this proceeding and the next base rate proceeding, the Company has
18 indicated that there is uncertainty as to whether customers will maintain payment
19 arrangements and that delinquency amounts and write-offs are continuing at
20 higher than historical rates.¹⁴

¹² DLC Statement No. 2, p. 24.

¹³ DLC Statement No. 2, pp. 23-24.

¹⁴ I&E Exhibit No. 1, Schedule 2.

1 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIM?**

2 A. No.

3

4 **Q. WHAT DO YOU RECOMMEND FOR COVID-19 RELATED**
5 **UNCOLLECTIBLE EXPENSE?**

6 A. I recommend an allowance of \$1,752,837 or a reduction of \$341,163 (\$2,094,000 -
7 \$1,752,837) to the Company’s claim. I also recommend that the Company
8 discontinue recording a regulatory asset for COVID-19 related incremental
9 uncollectible costs after the effective date of new rates for this proceeding. Upon
10 the effective date of new rates for this proceeding, the Company should have a
11 new uncollectible percentage built into the rate formula that accounts for changes
12 due to COVID-19.

13

14 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

15 A. My recommendation is based on a change to the Company’s claimed three-year
16 normalization of the COVID-19 uncollectible expense and instead to use a 43-
17 month amortization period (since regulatory assets are supposed to be amortized
18 and not normalized) in line with I&E witness Christopher Keller’s calculation of
19 the Company’s historic filing frequency.¹⁵

¹⁵ I&E Statement No. 2.

1 Furthermore, the continued tracking of incremental uncollectible costs
2 between what is granted for routine uncollectible expense in this proceeding and
3 amounts actually incurred should not be necessary since the Company has
4 multiple years of actual historic experience that could incorporate the higher
5 COVID-19 related year of 2020 upon which to base its current claim.

6
7 **Q. WHY DO YOU RECOMMEND AMORTIZATION TREATMENT AS**
8 **OPPOSED TO THE COMPANY’S REQUESTED NORMALIZATION FOR**
9 **THE COVID-19 RELATED REGULATORY ASSET FOR**
10 **UNCOLLECTIBLE EXPENSE?**

11 A. I recommend that the regulatory asset be more appropriately amortized (as
12 opposed to normalized for this COVID-19 related uncollectible expense balance)
13 over 43 months, which is in line with I&E witness Keller’s recommended
14 normalization period for rate case expense based on the Company’s recent historic
15 filing frequency. A 43-month amortization produces an allowance of \$1,752,837
16 (((\$6,281,000 ÷ 43 months) x 12 months).

17 The Commission granted utilities regulatory asset treatment of the COVID-
18 19 related uncollectible expense (which places the balance in a balance sheet
19 account to claim and begin recovery in a future rate case filing) and in doing so,
20 when a utility claims that regulatory asset for ratemaking purposes, it should be
21 amortized. Amortization allows for full recovery of the regulatory asset balance
22 no matter when a utility makes a subsequent base rate case filing. Amortization is

1 appropriate for periodic extinguishment of a regulatory asset (a balance sheet
2 account).

3
4 **Q. HAS THE COMPANY CLAIMED RECOVERY OF OTHER COVID-19**
5 **RELATED COSTS BEYOND UNCOLLECTIBLE EXPENSE?**

6 A. Yes. The Company has proposed recovery of other COVID-19 expenses unrelated
7 to uncollectibles that I will address in the next section of my testimony directly
8 below.

9
10 **COVID-19 RELATED COSTS NET OF SAVINGS (EXCLUDING THE COVID-19**
11 **UNCOLLECTIBLE EXPENSE DEFERRAL)**

12 **Q. WHAT IS INCLUDED IN COVID-19 RELATED COSTS NET OF SAVINGS**
13 **(EXCLUDING THE COVID-19 UNCOLLECTIBLE EXPENSE**
14 **DEFERRAL)?**

15 A. The Company has tracked and maintained records for other extraordinary,
16 nonrecurring incremental COVID-19 related costs net of savings (referred to
17 herein as other incremental COVID-19 related costs net of savings) that primarily
18 include waived late payment charges and reconnection fees, increased costs for
19 outside services and materials, and savings primarily associated with employee
20 training and other employee events.¹⁶

¹⁶ DLC Statement No. 2, p. 24.

1 **Q. WHAT IS THE COMPANY’S CLAIM FOR OTHER INCREMENTAL**
2 **COVID-19 RELATED COSTS NET OF SAVINGS?**

3 A. The Company claimed total other incremental COVID-19 related costs net of
4 savings of \$5,195,000 through December 31, 2020, and an additional \$600,000
5 through 2021 for a combined total of \$5,795,000 to be normalized over three years
6 which matches the Company’s requested rate case expense filing interval. This
7 produced a normalized claim of \$1,931,667 ($\$5,795,000 \div 3$ years).¹⁷

8
9 **Q. WHAT IS THE BASIS OF THE COMPANY’S CLAIM?**

10 A. As explained by DLC witness Bachota, in accordance with the Commission’s
11 May 13, 2020 Secretarial Letter, the Company has tracked and maintained records
12 for other incremental COVID-19 related costs and savings, proposing to normalize
13 those net costs over a period equal to the proposed rate case expense filing
14 frequency.¹⁸ Furthermore, the Company opines this claim is appropriate since
15 COVID-19 related costs and savings are continuing to be experienced related to
16 additional call center staffing expenses in collecting aged receivables.¹⁹

¹⁷ DLC Statement No. 10, pp. 44-45 and DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-12.

¹⁸ DLC Statement No. 2, pp. 24-25.

¹⁹ I&E Exhibit No. 1, Schedule 3, p. 1.

1 **Q. DID THE COMPANY PROPOSE ANY FUTURE BASE RATE CASE**
2 **CLAIMS WITH RESPECT TO OTHER INCREMENTAL COVID-19**
3 **RELATED COSTS NET OF SAVINGS?**

4 A. Yes. The Company has proposed to continue recording incremental costs above
5 what is included in this rate proceeding as a regulatory asset to be recovered in a
6 future proceeding.²⁰

7
8 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIM?**

9 A. No.

10

11 **Q. WHAT DO YOU RECOMMEND FOR OTHER INCREMENTAL**
12 **COVID-19 RELATED COSTS NET OF SAVINGS?**

13 A. I recommend disallowance of the Company’s \$1,931,667 claim in its entirety and
14 disallowance of the Company’s proposal to continue including the incremental
15 costs above what is included in this proceeding as a regulatory asset to be
16 recovered in a future rate proceeding.

17

18 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

19 A. The Commission allowed companies to *track* other incremental COVID-19 related
20 costs net of savings (beyond uncollectibles and directly related increases to

²⁰ DLC Statement No. 2, p. 25.

1 expenses) but has not issued guidance on whether or how companies may recover
2 these other incremental costs.

3 In the May 13, 2020 Secretarial Letter, the Commission stated that tracking
4 of these expenses was “to provide the Commission with information to understand
5 the extent of the COVID-19 pandemic’s impact on utilities’ finances.”²¹ The
6 Commission stated further, apart from the uncollectible expenses, “this Secretarial
7 Letter does not grant authorization for utilities to defer any other potential
8 COVID-19 related expenses.”²² Therefore, it is inappropriate for the Company to
9 defer and recover these expenses as a part of this or any future rate proceeding or
10 create a regulatory asset account for recovery of subsequent COVID-19 related
11 expenses net of savings.

12
13 **Q. PLEASE SUMMARIZE THE RELEVANT MAIN POINTS OF THE**
14 **MAY 13, 2020 SECRETARIAL LETTER.**

15 A. The Commission’s May 13, 2020 Secretarial letter directed utilities to do the
16 following: (1) track extraordinary, nonrecurring incremental COVID-19 related
17 expenses and maintain detailed accounting records of such expenses, however not
18 granting authorization to defer any potential COVID-19 related expenses other
19 than uncollectible expenses;²³ and (2) establish a regulatory asset for COVID-19

²¹ Docket No. M-2020-3019775, May 13, 2020 Secretarial Letter, p. 3.

²² Docket No. M-2020-3019775, May 13, 2020 Secretarial Letter, p. 2.

²³ The May 13, 2020 Secretarial Letter noted that governmental assistance that would offset expenses should also be tracked.

1 uncollectible expenses resulting from the Emergency Order, requiring detailed
2 records of the incremental extraordinary, nonrecurring expense incurred in
3 compliance with the Emergency Order to be reviewed in a future proceeding.²⁴
4

5 **Q. DOES THE MAY 13, 2020 SECRETARIAL LETTER SUPPORT THE**
6 **COMPANY’S CLAIM FOR LOST REVENUES?**

7 A. No. I am not aware that the Commission has ever instructed regulated utilities to
8 track lost revenues due to foregone late payments and reconnection fees, and it has
9 not approved establishing a regulatory asset for deferral of such lost revenues.
10

11 **Q. WERE THERE OTHER MORE RECENT ORDERS ISSUED THAT MAY**
12 **ALSO BE POTENTIALLY RELEVANT TO THE COMPANY’S REQUEST?**

13 A. Yes. In its Public Utility Service Termination Moratorium Order at Docket No.
14 M-2020-3019244 (Order Entered March 18, 2021), the Commission indicated on
15 page 6 that,

16 The Commission recognizes that compliance with the March
17 13 Emergency Order, the October 13 Order, and this Order,
18 may increase expenses for utilities. Consistent with our May
19 13, 2020 Secretarial Letter at Docket No. M-2020-3019775,
20 utilities shall continue tracking extraordinary, nonrecurring
21 incremental COVID-19 related expenses and shall maintain
22 detailed accounting records of such expenses. Additionally,
23 the Commission authorizes electric, natural gas, water,
24 wastewater, steam, and all rate base/rate of return
25 telecommunications utilities to create a regulatory asset for any

²⁴ The May 13, 2020 Secretarial Letter explained that tracking of COVID-19 related expenses other than uncollectible expense are described as being intended to provide the Commission with information to understand the extend of the COVID-19 pandemic’s impact on utilities’ finances.

1 incremental expenses incurred above those embedded in rates
2 resulting from the directives contained in this Order. To be
3 eligible for inclusion in a utility's COVID-19 designated
4 regulatory asset, the utility must maintain detailed records of
5 the incremental extraordinary, nonrecurring expenses incurred
6 as a result of compliance with the Commission's March 13
7 Emergency Order, the October 13 Order, and this Order.

8 It should be noted, I understand this Order to make eligible for recovery via
9 regulatory asset treatment the increased expenses related directly to any increased
10 costs associated with carrying out the instructions as they relate to the
11 requirements of the orders. However, the Company has not provided detailed
12 records or specification of which claimed expenses relate to directly carrying out
13 the requirements of the orders.

14
15 **Q. BRIEFLY SUMMARIZE THE MARCH 13, 2020 EMERGENCY ORDER**
16 **AND THE OCTOBER 13, 2020 ORDER AS MENTIONED IN THE**
17 **MARCH 18, 2021 ORDER CITED ABOVE.**

18 A. On March 13, 2020, Commission Chairman Gladys Brown Dutrieuille issued an
19 Emergency Order, *Public Utility Service Termination Moratorium Proclamation*
20 *of Disaster Emergency – COVID-19* at Docket No. M-2020-3019244, which was
21 ratified by the Commission on March 26, 2020, prohibiting regulated utilities from
22 terminating service during the pendency of the Governor's Executive Order
23 consistent with this Emergency Order.

24 The Commission entered an Order at Docket No. M-2020-3019244, *Public*
25 *Utility Service Termination Moratorium – Modification of March 13th Emergency*

1 *Order* (October 13, 2020 Commission Order), which lifted the absolute utility
2 service termination moratorium and allowed disconnections to commence
3 effective November 9, 2020 (p. 3). However, this Order implemented termination
4 protections for residential customers at or below 300% of the federal poverty
5 income guidelines, required payment arrangements of no less than 18 months for
6 small business customers, and required waiving of connection, reconnection,
7 deposit fees, and late payment charges (pp. 4-5). This Order also allowed for
8 tracking and recording as a regulatory asset the extraordinary, nonrecurring
9 incremental COVID-19 related expenses for any incremental expenses incurred
10 above those embedded in rates *resulting from the directives contained in this*
11 *Order* (emphasis added) (pp. 5-6).

12
13 **Q. IN YOUR OPINION DO THESE TWO ORDERS AND THE MARCH 18,**
14 **2021 ORDER RELATE DIRECTLY TO THE COMPANY’S CLAIM FOR**
15 **COVID-19 RELATED COSTS NET OF SAVINGS (EXCLUDING THE**
16 **COVID-19 UNCOLLECTIBLE EXPENSE DEFERRAL)?**

17 A. No. While the Commission has suggested that expenses incurred above those
18 embedded in base rates resulting from the directives contained in the order as
19 explained above would be acceptable for deferral treatment, the Company has not
20 specifically identified any amount(s) directly attributable to additional call center
21 staffing expenses in collecting aged receivables. Furthermore, the total amount
22 would likely be immaterial, given the overtime labor and fringes amount of

1 \$829,000 over a three-year recovery period would be approximately \$276,000
2 (\$829,000 ÷ 3 years as claimed) per year. This assumes that the total amount is
3 attributable to additional call center staffing which the Company has not disclosed.
4

5 **Q. DO YOU HAVE ANY ADDITIONAL COMMENTS ON THIS MATTER?**

6 A. Yes. In the Pennsylvania-American Water Company (PAWC) petition filing at
7 Docket No. P-2020-3022426, I recommended that the Commission issue statewide
8 direction on this topic for all regulated utilities rather than granting an individual
9 company special handling of related costs.²⁵ I similarly recommended in the
10 PAWC proceeding that the Commission provide such direction on a statewide
11 basis regarding whether historically incurred (or future) expenses or lost revenues
12 are granted approval for future recovery. A large portion of DLC's claim is related
13 to lost revenues in the form of waived late payment charges and reconnection fees,
14 and I believe it is inappropriate for ratepayers to be burdened to fund such lost
15 revenues. Regulated utilities should not be fully insulated from all costs
16 associated with the pandemic, particularly when the total amount of DLC's net
17 operating costs requested for deferral prior to normalization (\$5,795,000²⁶) is less
18 than 0.9% of the total claimed present rate revenues in this proceeding of
19 \$654,141,000.²⁷ Finally, it should be noted that DLC never sought or received

²⁵ I&E Statement No. 1-SR, p. 17 at Docket No. P-2020-3022426.

²⁶ DLC Exhibit 2 – Fully Projected Future Test Year, Exhibit D-12.

²⁷ DLC Exhibit 2 – Fully Projected Future Test Year, Exhibit D-1, p. 1.

1 special permission to defer for accounting purposes any other incremental
2 COVID-19 related costs.

3
4 **Q. IF THE COMMISSION DECIDES TO ALLOW RECOVERY OF SUCH**
5 **OTHER INCREMENTAL COVID-19 RELATED COSTS NET OF**
6 **SAVINGS, WHAT DO YOU RECOMMEND?**

7 A. While I disagree with recovery or separate handling via a regulatory asset of such
8 incremental costs in this regard, if the Commission decides to allow such recovery,
9 I strongly recommend that an end date in line with the effective date of new rates
10 in this proceeding be established for deferred treatment of any lost revenues or
11 changes to expenses attributable to the impacts of COVID-19 and that no future
12 deferrals be allowed. The Company has admitted that it has no plans to change its
13 late fees and reconnection fees that resumed on June 1, 2021.²⁸ The waived late
14 fees (\$2,573,000) and reconnection fees (\$432,000) in the Company's filing make
15 up the majority of the Company's deferral claim for other incremental costs net of
16 savings of the total, \$5,945,000 amount prior to amortization. Therefore, approval
17 of continued deferred treatment should be disallowed under any circumstances.

18 Finally, the Company has admitted that the occurrence of any future
19 incremental COVID-19 related costs net of savings is uncertain.²⁹ This lack of

²⁸ I&E Exhibit No. 1, Schedule 4.

²⁹ I&E Exhibit No. 1, Schedule 5.

1 certainty surrounding continuation of such expenses further supports my
2 recommendation.

3
4 **Q. DO YOU HAVE ANY RECOMMENDATIONS ABOUT THE TREATMENT**
5 **OF THE BALANCE IF THE COMMISSION DECIDES TO ALLOW**
6 **DEFERRAL OF OTHER INCREMENTAL COVID-19 RELATED COSTS**
7 **NET OF SAVINGS VIA A REGULATORY ASSET?**

8 A. If the Commission decides to allow any form of regulatory asset treatment, it
9 should require the Company to amortize, not normalize, a regulatory asset. When
10 a utility claims a regulatory asset for ratemaking purposes, it should be amortized.
11 Amortization allows for full recovery of the regulatory asset balance no matter
12 when a utility makes a subsequent base rate case filing. Amortization is
13 appropriate for periodic extinguishment of a regulatory asset (a balance sheet
14 account). Finally, if the Commission allows amortization, the frequency should
15 match the historic filing frequency of 43 months as detailed by I&E witness Keller
16 in his direct testimony.³⁰

³⁰ I&E Statement No. 2.

1 **NEW BUSINESS STIMULUS RIDER (RIDER NO. 25)**

2 **Q. WHAT IS THE PROPOSED NEW BUSINESS STIMULUS RIDER (RIDER**
3 **NO. 25)?**

4 A. The Company is proposing a New Business Stimulus Rider designed to assist new
5 customers who are billed with the following rate schedules: General Service
6 Small (GS), General Service Medium Heating (GMH), and General Service
7 Medium <25 kW and General Service Medium >25 kW (collectively GM).³¹ The
8 Company proposes that new GS, GM, and GMH customers applying for new
9 service in a vacant storefront would be eligible for a reduced distribution rate for
10 two years and would receive a 30% discount on the variable base distribution
11 charge portions of their bills.³² The Company has indicated that these costs would
12 be recovered via base rates and that the proposed rider (Rider No. 25) outlines the
13 availability, program terms, and program definitions.³³

14
15 **Q. WHAT IS THE COMPANY’S CLAIMED COST FOR THE PROGRAM?**

16 A. The Company has estimated it will provide \$275,971 in discounts to enrolled
17 customers³⁴ and \$1,000 in advertising costs proposed to be recovered in base rates
18 for a total claim of \$276,971.³⁵

³¹ DLC Statement No. 5, p. 7.

³² DLC Statement No. 5, pp. 7-8.

³³ I&E Exhibit No. 1, Schedules 6 and 7.

³⁴ DLC Statement No. 5, p. 11.

³⁵ I&E Exhibit No. 1, Schedule 6.

1 **Q. HOW WOULD THE PROPOSED COST BE RECOVERED?**

2 A. The Company proposes to recover the costs by passing them along to GS, GM,
3 and GMH customers, directly assigning the costs to all customers in the rate
4 classes eligible to participate in the program.³⁶

5
6 **Q. WHAT IS THE BASIS FOR THE COMPANY'S PROPOSAL?**

7 A. The Company hopes to support the rebuilding of small communities' business
8 districts and opines that this proposal is in line with the Commission's mission
9 which includes balancing the needs of consumers and utilities, furthering
10 economic development.³⁷ DLC witness Krysia Kubiak asserts that the program
11 would help small businesses when they need it the most (in the beginning), and
12 that it is a reasonable cost for existing ratepayers who would benefit by increased
13 foot traffic in the area.³⁸

14
15 **Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?**

16 A. No.

17
18 **Q. WHAT DO YOU RECOMMEND?**

19 A. I recommend disallowance of the program cost (\$276,971) in its entirety. I should
20 note, however, that the Company may still consider making charitable

³⁶ DLC Statement No. 5, p. 11.

³⁷ DLC Statement No. 5, p. 8.

³⁸ DLC Statement No. 5, pp. 11-12.

1 contributions to the local community that are funded by shareholders at its
2 discretion.

3
4 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

5 A. I am empathetic to the hardships many ratepayers are experiencing because of the
6 pandemic; however, there are two main reasons why I recommend disallowance of
7 the Company's proposed New Business Stimulus Rider.

8 First, more and more Pennsylvanians are becoming vaccinated, and the
9 economy is reopening as evidenced by Governor Wolf's easing of restrictions with
10 the goal of boosting the economy which took effect on May 31, 2021.³⁹ Given the
11 relaxing of restrictions, it is my understanding that more and more people are
12 ready to head back out in person to frequent local business establishments.

13 Opening any business entails risk, but it is my opinion that the surviving
14 neighboring small businesses should not be required to provide aid to new local
15 businesses. Just because many surviving businesses may be on time with their
16 utility bill payments does not ensure that some of them did not take drastic
17 measures by dipping into savings or retirement funds to pay them, or even
18 borrowing money from friends or family. Such aid as proposed by the Company
19 is very similar to a charitable contribution, and existing ratepayers should not be

³⁹ <https://www.media.pa.gov/pages/health-details.aspx?newsid=1437> (Accessed May 17, 2021).

1 forced to fund such a program when they have no say in what types of businesses
 2 receive the reduced rates or stimulus money.

3
 4 **Q. ARE THERE OTHER PROGRAMS WHERE AID IS AVAILABLE TO**
 5 **BUSINESSES AFFECTED BY THE PANDEMIC?**

6 A. Yes. Struggling businesses have access to numerous federal, state, and local
 7 programs providing aid to small and mediums sized businesses negatively
 8 impacted by the pandemic. The Company has a list of available programs on its
 9 website.⁴⁰ Additionally, an I&E analyst under my supervision has assembled a list
 10 of federal, state, and local programs shown below. This is not meant to be an all-
 11 encompassing list and I have not verified the availability of funding to actual small
 12 and medium sized businesses in DLC’s service territory or the potential expiration
 13 of each individual program, nevertheless, these programs exist.

Assistance Available to Small and Medium Sized Businesses in the Pittsburgh Area Since the Start of the Pandemic		
<u>Federal</u>	<u>Description</u>	<u>Source</u>
SBA Paycheck Protection Program (PPP)	U.S. Small Business Administration: PPP is a loan designed to provide a direct incentive for small businesses to keep their workers on payroll. Expired May 31, 2021.	Paycheck Protection Program
PPP Loan Forgiveness	U.S. Small Business Administration: Forgiveness for PPP loans based on preset criteria. Expires within 10 months after the last day of the covered period.	PPP Loan Forgiveness
COVID-19 Economic Injury Disaster Loan (EIDL)	U.S. Small Business Administration: EIDL is a loan that provides economic relief to small businesses and nonprofit organizations that are currently experiencing a temporary loss of revenue. Expires December 31, 2021.	COVID-19 Economic Injury Disaster Loan
Targeted (EIDL) Advance	U.S. Small Business Administration: Targeted EIDL Advance provides businesses in low-income communities with additional funds to ensure small business continuity, adaptation, and resiliency. Expires December 31, 2021.	COVID-19 Economic Injury Disaster Loan

14
 40 [COVID-19 Business Resources \(duquesnelight.com\)](https://duquesnelight.com) (Accessed June 2, 2021).

Supplemental Targeted Advance	U.S. Small Business Administration: Supplemental Targeted Advance provides the smallest and hardest hit eligible businesses with supplemental payment of \$5,000 that does not have to be repaid. Expires December 31, 2021.	COVID-19 Economic Injury Disaster Loan
Restaurant Revitalization Fund (RRF)	U.S. Small Business Administration: RRF provides emergency assistance for eligible restaurants, bars, and other qualifying businesses impacted by COVID-19. Expires upon fund exhaustion.	Restaurant Revitalization Fund
Shuttered Venue Operators Grant	U.S. Small Business Administration - Office of Disaster Assistance: This grant provides emergency assistance for eligible venues affected by COVID-19.	Shuttered Venue Operators Grant
SBA Debt Relief	U.S. Small Business Administration: SBA offers debt relief to existing SBA loan borrowers whose businesses have been impacted by COVID-19.	SBA Debt Relief
Express Bridge Loans	U.S. Small Business Administration: This pilot program allows SBA Express Lenders authority to deliver expedited SBA-guaranteed financing on an emergency basis for disaster-related purposes to eligible small businesses, while the small businesses apply for and await long-term financing.	Express Bridge Loan Pilot Program Guide
Employee Retention Tax Credit	Internal Revenue Service: The Employee Retention Credit is a refundable tax credit against certain employment taxes equal to 50% of the qualified wages an eligible employer pays to employees after March 12, 2020, and before January 1, 2021. Expires September 30, 2021.	Employee Retention Credit Internal Revenue Service
Families First Coronavirus Response Act (FFCRA)	Internal Revenue Service: FFCRA gives all American businesses with fewer than 500 employees funds to provide their employees with paid leave, either for the employee's own health needs or to care for family members. Expires September 30, 2021.	Coronavirus Tax Relief for Businesses and Tax-Exempt Entities Internal Revenue Service
Save Small Business Fund Grants	U.S. Chamber of Commerce Foundation: The Save Small Business Fund is a way for larger business and philanthropies to help the small business community suffering from the impacts of the COVID-19 pandemic. Expired April 16, 2020.	Save Small Business Fund
Community Advantage Recovery Loans	U.S. Small Business Administration: A loan program to assist small businesses in underserved markets. Program expires on September 30, 2022.	Pilot Loan Programs
State		
Utility 18-month payment arrangements	Pennsylvania Public Utility Commission: Utilities must offer an 18-month payment arrangement to small business customers. Expires December 31, 2021.	Resources & Assistance
Community Development Block Grant - Cares (CDBG-CV)	Pennsylvania Department of Community and Economic Development: Grants and technical assistance for any eligible community development activities for COVID-19 relief related activities that prevent, prepare for, and respond to the coronavirus. No apparent deadline.	Community Development Block Grant - Cares (CDBG-CV)
The Pennsylvania Industrial Development Authority (PIDA)	Pennsylvania Department of Community and Economic Development: The PIDA provides low-interest loans and lines of credit for eligible businesses that commit to creating and retaining full-time jobs and for the development of industrial parks and multi-tenant facilities. No apparent deadline.	Pennsylvania Industrial Development Authority (PIDA)
COVID-19 Relief Pennsylvania Statewide Small Business Assistance Program	Pennsylvania Department of Community and Economic Development: The COVID-19 Relief Pennsylvania Statewide Small Business Assistance program will provide grants ranging from \$5,000 to \$50,000 to small businesses that have been economically impacted by COVID-19. Ended December 31, 2020.	COVID-19 Relief Statewide Small Business Assistance
Pennsylvania COVID-19 Hospitality Industry Recovery Program (CHIRP)	Pennsylvania Department of Community and Economic Development: Grant funds provided to counties which contract one or more Certified Economic Development Organizations (CEDO) or Community Development Financial Institutions (CDFI) to allocate funding assistance to the hospitality industry businesses adversely affected by the COVID-19 pandemic. Expired February 11, 2021.	COVID-19 Hospitality Industry Recovery Program (CHIRP)
Southwest Partnerships for Regional Economic Performance (PREP)	Pennsylvania Department of Community and Economic Development: A network of business assistance partners designed to help companies start, grow, and prosper. No apparent deadline.	Local Business Assistance PREP
PEDA COVID-19 Restart Grant	Pennsylvania Energy Development Authority (PEDA): Provides financial assistance for the completion of eligible energy projects initiated but then disrupted due to the COVID 19 pandemic, including projects that were planned prior to COVID-19 but not yet started. Ongoing annual application openings.	PEDA

<u>Local & Other</u>		
Arts Equity Reimagined Fund	The Covid-19 Arts Working Group (CAWG): A group of 17 foundations and a private Pittsburgh-area donor which prioritizes funding to small-to-medium-sized arts organizations to address several critical issues created or exacerbated by the COVID-19 crisis. Multiple assistance programs with varying deadlines for application.	Arts Equity Reimagined Fund
PA 30-day Fund Grants	The Pennsylvania 30 Day Fund: The non-profit Pennsylvania 30 Day Fund provides forgivable loans for Pennsylvania-based small businesses. The forgivable loan is intended to provide immediate financial assistance to meet payroll requirements, preserve healthcare coverage for employees, and save jobs while they await recently approved federal funding. Expires December 31, 2023.	PA 30 Day Fund
Reinvestment Fund	The Reinvestment Fund: A network of Community Development Financial Institutions (CDFIs) providing grant access to Pennsylvania small businesses that were impacted by the business closure order due to the COVID-19 public health crisis. The original funds for the program have been allocated but may be available again in the future. No apparent deadline.	PA Coronavirus Small Business Assistance Program
Loans for COVID-19 Response Fund	Bridgeway Capital: Patient loans with deferred payments and loan modifications for small businesses and nonprofits in Western Pennsylvania. No apparent deadline.	COVID-19 Relief and Resources - Bridgeway Capital
Northside Community Development Fund	The Northside Community Development Fund: Helps Pittsburgh's Northside entrepreneurs and housing projects acquire the loans - and sometimes the leadership and support - needed to give a great idea or plan momentum. No apparent deadline.	Northside Community Development Fund
The Progress Fund	The Progress Fund: A CDFI focused on new or expanding tourism businesses in Pennsylvania, West Virginia, and Maryland. Also specified for many southwestern region counties by the COVID-19 Relief Pennsylvania Statewide Small Business Assistance Program. Expired May 6, 2021.	The Progress Fund
Minority Business Recovery & Growth Loan Fund	Urban Redevelopment Authority of Pittsburgh: Provides access to capital for existing minority-owned businesses inside the city of Pittsburgh that are recovering from COVID-19 or growing. No apparent deadline.	Minority Business Recovery and Growth Loan Fund
Allegheny County Covid-19 Loan Program	Urban Redevelopment Authority of Pittsburgh: Allegheny County is offering loans of up to \$100,000 for 36 months at 0% interest rate. Businesses anywhere in Allegheny County (including the City of Pittsburgh) are eligible, with preference given to women- and minority-owned businesses. No apparent deadline.	COVID-19 Business Resources URA
Coronavirus Financial Bridge Loan Program	The Hebrew Free Loan Association of Pittsburgh: Provides interest-free loans on a nonsectarian basis for up to \$5,000 to residents of Allegheny, Beaver, Butler, Westmoreland, Washington, and Armstrong counties who are facing financial challenges caused by the Coronavirus outbreak. These loans are intended to address, among other concerns, small business losses. No apparent deadline.	Hebrew Free Loan Association of Pittsburgh
Honeycomb Relief Loan Program	Honeycomb crowdfunding platform: Community-sourced loans for small businesses impacted by the coronavirus (COVID-19). No apparent deadline.	Small Business Relief Loan Program Honeycomb Credit
Kiva Pittsburgh	Riverside Center for Innovation: Kiva offers 0% interest loans of up to \$10,000 to small businesses in the United States. Riverside Center for Innovation partners with Kiva to help entrepreneurs in our region take advantage of this great opportunity. No apparent deadline.	Kiva Pittsburgh
Emergency Action Fund	The Pittsburgh Foundation: Awards operating grants on a rolling basis to emergency service providers and nonprofit organizations serving on the front lines of recovery. Expired May 8, 2020.	Emergency Action Fund Grant Guidelines The Pittsburgh Foundation
Facebook Small Business Grants Program	Facebook: Offered small businesses cash grants and ad credits to help during the outbreak of COVID-19. No longer accepting new applications.	Facebook Small Business Grants Program Facebook for Small Business Facebook for Business

1 **CRISIS RECOVERY PROGRAM (RIDER NO. 26)**

2 **Q. WHAT IS THE PROPOSED CRISIS RECOVERY PROGRAM (RIDER**
3 **NO. 26)?**

4 A. The Company is proposing a Crisis Recovery Program to assist existing GS, GM,
5 or GMH customers that did not have an overdue account balance on February 29,
6 2020, but that have since accumulated a balance. Company witness Kubiak states
7 that program participants will have existing delinquent account balances
8 temporarily frozen for six billing periods.⁴¹ She further explains that program
9 participants will have 25% of their frozen delinquent balances forgiven if they pay
10 their electric charges in full at the end of the six billing cycles, the Company will
11 not pursue termination on collection action on the frozen account balance until
12 after the due date of the sixth bill has passed, and that timely payment for each bill
13 rendered while the delinquent balance is frozen would not be required.⁴² She
14 further explains that at the end of the six-bill period, if the customer pays all of the
15 non-frozen electric charges, 25% of the frozen balance will be forgiven, and the
16 customer will receive an 18-month payment arrangement unless the customer
17 agrees to a shorter period. If the customer does not make the appropriate payment,
18 no balance amount would be forgiven, and they would have 18 months to pay the
19 entire delinquent balance along with paying each month's balance in full.⁴³

⁴¹ DLC Statement No. 5, p. 12.

⁴² DLC Statement No. 5, p. 13.

⁴³ DLC Statement No. 5, p. 13.

1 **Q. WHAT IS THE PROPOSED END DATE FOR THE PROGRAM?**

2 A. According to DLC witness Kubiak, the program is designed to be temporary, and
3 enrollment in the program would end on June 30, 2022.⁴⁴

4
5 **Q. WHAT IS THE COMPANY'S ESTIMATED COST FOR THE PROGRAM?**

6 A. The Company has estimated the write-off portion of the program to be \$403,800
7 and the advertising and surveying costs to be \$19,000 for a total of \$422,800 to be
8 recovered via base rates.⁴⁵

9
10 **Q. HOW WOULD THE PROPOSED COST BE RECOVERED?**

11 A. The Company proposes to recover the costs by incorporating them into the base
12 rates of GS, GM, and GMH customers, directly assigning the costs to rate classes
13 eligible to participate in the program.⁴⁶

14
15 **Q. WHAT IS THE BASIS FOR THE COMPANY'S PROPOSAL?**

16 A. DLC witness Kubiak states that many businesses are in danger of closing due to
17 financial pressures of the pandemic, that the program would give a break to those
18 customers, making it easier for them to recover, hoping it allows them to start the
19 post-pandemic with a clean slate.⁴⁷ She states that the program was viewed

⁴⁴ DLC Statement No. 5, p. 15.

⁴⁵ I&E Exhibit No. 1, Schedule 8.

⁴⁶ DLC Statement No. 5, p. 16.

⁴⁷ DLC Statement No. 5, p. 15.

1 favorably among many customers surveyed, indicating that 54% believed that the
2 25% reduction would provide much needed assistance to struggling businesses and
3 44% believed it would allow for faster recovery.⁴⁸ In short, the Company opines
4 that the program would help businesses avoid termination of service and
5 contribute to the recovery of hard-hit communities.⁴⁹

6
7 **Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?**

8 A. No. Again, though, I should note that the Company could consider making
9 charitable contributions to the local community that are funded by shareholders at
10 its discretion.

11
12 **Q. WHAT DO YOU RECOMMEND?**

13 A. I recommend disallowance of the program in its entirety.

14
15 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

16 A. I am empathetic to the hardships many ratepayers are experiencing because of the
17 pandemic; however, there are a couple reasons why I recommend disallowance of
18 the Company's proposed Crisis Recovery Program.

19 First, as also stated above, just because many surviving customers in these
20 rate classes who are current with their bills may pay on time does not ensure that

⁴⁸ DLC Statement No. 5, p. 16.

⁴⁹ I&E Exhibit No. 1, Schedule 9.

1 some of them did not take drastic measures by dipping into savings or retirement
2 funds to pay them, or even borrowing money from friends or family. Such aid as
3 proposed by the Company is very similar to a charitable contribution, and existing
4 ratepayers should not be forced to fund such a program when they have no say in
5 what types of businesses receive the crisis relief or stimulus money.

6 Secondly, the Commission has recently voted unanimously to require
7 public utilities to offer extended payment arrangements for a minimum length of
8 18 months to small business customers,⁵⁰ and the Company should follow the
9 requirements as detailed in the Commission's Order.

10
11 **Q. ARE THERE OTHER PROGRAMS WHERE AID IS AVAILABLE TO**
12 **BUSINESSES AFFECTED BY THE PANDEMIC?**

13 A. Yes. The Company has a list of available programs on its website.⁵¹ Additionally,
14 I have displayed tables above containing numerous federal, state, and local
15 programs that provide aid to small and mediums sized businesses negatively
16 impacted by the pandemic. Additionally, as mentioned above, DLC should follow
17 the Commission's instructions on the extension of payment arrangements.

⁵⁰ PA Public Utility Service Termination Moratorium Order at Docket No. M-2020-3019244, Order Entered March 18, 2021, p. 4.

⁵¹ [COVID-19 Business Resources \(duquesnelight.com\)](https://www.duquesnelight.com) (Accessed June 2, 2021).

1 **RESIDENTIAL COVID-19 DEBT RELIEF PROGRAM**

2 **Q. BRIEFLY EXPLAIN THE PROPOSED RESIDENTIAL COVID-19 DEBT**
3 **RELIEF PROGRAM.**

4 A. The Company is proposing a short-term program to be funded via base rates that
5 would provide targeted assistance to low to moderate income residential customers
6 with delinquencies because of the pandemic.⁵² The Company proposes a cap of
7 \$3 million to the program budget, and non-CAP customers earning 151%-300% of
8 the federal poverty level with a delinquent balance of at least \$100 would be
9 eligible for matching forgiveness up to \$300 and a payment arrangement up to 36
10 months on the remaining unpaid balance. The Company would also waive a
11 reconnection fee and restore service if 25% of the outstanding balance is paid.
12 The program start date is proposed as January 15, 2022, and it would remain open
13 until March 31, 2022, or earlier if/when all funds are exhausted.⁵³

14
15 **Q. IS THE COMPANY CLAIMING ANY OTHER COSTS ASSOCIATED**
16 **WITH THIS PROGRAM?**

17 A. Yes. The Company is claiming an additional \$500,000 in administrative costs for
18 technology development, resources to process applications and customer inquiries,
19 and marketing/promotional costs.⁵⁴

⁵² DLC Statement No. 7, p. 11.

⁵³ DLC Statement No. 7, p. 12.

⁵⁴ DLC Statement No. 7, p. 12.

1 **Q. HOW WOULD THE FUNDS BE RECOVERED?**

2 A. The Company has requested recovery of all \$3,500,000 in base rates via a three-
3 year normalization, in line with the period new rates are expected to be in effect,⁵⁵
4 resulting in a FPFTY claim on \$1,167,000.⁵⁶

5

6 **Q. WHAT IS THE BASIS FOR THE COMPANY’S CLAIM?**

7 A. The Company opines that the special payment arrangements required by the
8 Commission may not be enough for some customers to get back on their feet, and
9 the Company also was influenced by a statement made by Chairman Brown and
10 Vice Chairman Sweet in the Columbia Gas 2020 base rate case on February 18,
11 2021 (at Docket No. R-2020-3018835).⁵⁷ The Company asserts that recovery of
12 the claimed amounts via base rates is reasonable given the “relatively small dollar
13 amount,” and the three-year recovery period is in line with the Company’s claimed
14 rate case filing interval.⁵⁸

15

16 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIM?**

17 A. No. I recommend that the \$1,167,000 claim be disallowed in its entirety.

⁵⁵ I&E Exhibit No. 1, Schedule 10.

⁵⁶ DLC Statement No. 7, p. 13 and DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-16.

⁵⁷ I&E Exhibit No. 1, Schedule 11, p. 2.

⁵⁸ I&E Exhibit No. 1, Schedule 11, p. 3.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

2 A. I continue to emphasize that I am sympathetic to the hardships many ratepayers
3 are experiencing because of the pandemic; however, there are two main reasons
4 why I do not believe DLC should be granted \$3.5 million in base rates for a
5 residential COVID-19 debt relief program.

6 First, more and more Pennsylvanians are becoming vaccinated and the
7 economy is reopening as evidenced by Governor Wolf's easing of restrictions with
8 the goal of boosting the economy which took effect on May 31, 2021.⁵⁹ Although
9 Pennsylvania's current unemployment rate of 7.3% as of March 2021 is notably
10 higher than the pre-pandemic level of around 5.0%, it has fallen significantly from
11 the 16.2% unemployment rate at the height of the pandemic in April 2020.⁶⁰
12 Additionally, on May 14, 2021, the Pennsylvania Department of Labor & Industry
13 announced the Extended Benefits program was coming to an end due to the
14 declining unemployment rate.⁶¹

15 Secondly, in a motion in response to the lifting of the utility service
16 termination moratorium, Chairman Brown Dutrieuille issued a statement⁶²
17 detailing modifications to existing arrearage collection policies to be applied to all
18 utilities for both residential and small business customers. These modifications
19 offer flexible, generous, and reasonable repayment options for ratepayers which

⁵⁹ <https://www.media.pa.gov/pages/health-details.aspx?newsid=1437> (Accessed May 17, 2021).

⁶⁰ <https://data.bls.gov/timeseries/LASST420000000000003> (Accessed May 17, 2021).

⁶¹ <https://www.media.pa.gov/Pages/Labor-and-Industry-Details.aspx?newsid=575> (Accessed May 18, 2021).

⁶² Motion of Chairman Gladys Brown Dutrieuille, Docket No. M-2020-3019244, on March 11, 2021.

1 most significantly includes extended minimum repayment terms. It is the
2 Chairman's belief that it is time to return to the regular collections process, she
3 alludes to decreasing COVID-19 cases, deployment of vaccinations, improving
4 employment statistics, and federal government aid including various stimulus
5 payments. Subsequently, the Chairman's motion received unanimous support by
6 the remaining three Commissioners. Additionally, Commissioner Coleman
7 provided a statement in which he specifically affirmed his support of the
8 Chairman's motion.⁶³

9
10 **Q. IF THE COMMISSION DECIDES TO APPROVE THE RESIDENTIAL**
11 **COVID-19 RELIEF PROGRAM, WHAT DO YOU RECOMMEND?**

12 A. If the Commission decides to approve the residential COVID-19 relief program, I
13 recommend that it be approved as a below-the-line item, meaning the entire \$3.5
14 million cost should not be recovered from ratepayers. However, if the
15 Commission would determine the program should be approved and funded by
16 ratepayers via base rates, I recommend the cost be normalized over 43 months for
17 an allowance of \$976,744 $((\$3,500,000 \div 43 \text{ months}) \times 12 \text{ months})$ which is in
18 line with I&E witness Keller's calculated rate case expense filing frequency.⁶⁴

⁶³ Statement of Commissioner John F. Coleman, Jr., Docket No. M-2020-3019244, on March 11, 2021.

⁶⁴ I&E Statement No. 2.

1 **RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER**

2 **Q. WHAT IS THE RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER?**

3 A. The Company is proposing a pilot rider to test the feasibility of a Residential
4 Subscription tariff that would provide the option to select a specified level of grid
5 access for a set monthly charge for distribution service.⁶⁵ This claim is being
6 addressed by I&E witness Ethan Cline who is recommending disallowance of the
7 Company's proposal for reasons outlined in his testimony.⁶⁶

8
9 **Q. WHAT OTHER COSTS ASSOCIATED WITH THE RESIDENTIAL
10 SUBSCRIPTION RATE PILOT DOES THE COMPANY ANTICIPATE
11 AND HOW ARE THEY PROPOSED TO BE RECOVERED?**

12 A. The Company has identified \$67,000 in marketing and education costs which are
13 proposed to be recovered via base rates and normalized over a three-year period in
14 line with the Company's proposed rate case filing interval for rate case expense,
15 for an annual amount of \$22,300. However, the Company has not currently
16 reflected this amount in its filing and anticipates updating the claim in rebuttal
17 testimony.⁶⁷

⁶⁵ DLC Statement No. 17, p. 35.

⁶⁶ I&E Statement No. 5.

⁶⁷ I&E Exhibit No. 1, Schedule 12.

1 **Q. DO YOU AGREE WITH THE COMPANY’S PROPOSED CLAIM FOR**
2 **MARKETING AND EDUCATION COSTS ASSOCIATED WITH THE**
3 **RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER?**

4 A. No. Based on I&E witness Cline’s recommended rejection of the Pilot Rider, I
5 recommend disallowance of these associated costs. However, since no claim is
6 currently reflected in the revenue requirement, no adjustment is necessary in my
7 direct testimony.

8
9 **Q. IF THE COMMISSION DECIDES TO ALLOW THE PROPOSED**
10 **RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER, WHAT DO YOU**
11 **RECOMMEND?**

12 A. If the Commission decides to allow the Pilot Rider, I recommend the marketing
13 and education costs be normalized over a 43-month period in line with I&E
14 witness Keller’s recommended rate case expense normalization period.⁶⁸

15
16 **FEDERAL TAX ADJUSTMENT CLAUSE (RIDER NO. 4)**

17 **Q. WHAT IS THE PROPOSED FEDERAL TAX ADJUSTMENT CLAUSE**
18 **(FTAC)?**

19 A. The Company is proposing the addition of Rider No. 4 to its tariff to provide for

⁶⁸ I&E Statement No. 2.

1 adjustments to base rates for the effect of future increases or decreases to the
2 federal corporate income tax rate.⁶⁹

3
4 **Q. WHAT IS THE BASIS FOR THE COMPANY’S PROPOSED FTAC?**

5 A. Company witness Matthew Simpson opines that it is likely a tax rate increase is
6 coming because the Biden Administration has made statements about increasing
7 the federal corporate income tax rate from 21% to 28% to offset the cost of a
8 proposed infrastructure bill that is being drafted.⁷⁰ Company witness David
9 Ogden further asserts that such an increase in the tax rate would result in an
10 approximate 4.49% increase in distribution charges.⁷¹

11
12 **Q. DO YOU AGREE WITH ESTABLISHING THE PROPOSED FTAC (RIDER
13 NO. 4)?**

14 A. No. I recommend the Company’s proposed rider be disallowed.

15
16 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

17 A. The Company cannot say with any certainty if/when an increase to the federal
18 corporate income tax rate will take effect.⁷² Furthermore, since the Commission
19 and its advisory staff have very recently dealt with the reduction in the federal

⁶⁹ DLC Statement No. 12, pp. 14-15.

⁷⁰ DLC Statement No. 12, p. 15.

⁷¹ DLC Statement No. 16, p. 31.

⁷² I&E Exhibit No. 1, Schedule 13.

1 corporate income tax rate due to changes related to the Tax Cuts and Jobs Act
2 starting January 1, 2018, I believe the Commission will provide adequate and
3 timely guidance on a statewide basis to affected regulated utilities if such a change
4 in the tax rate takes effect. DLC should be required to await such guidance,
5 particularly since any changes to the federal income tax rates are merely
6 speculative at this time.

7
8 **Q. IN THE EVENT THAT THE COMMISSION DECIDES TO ALLOW THE**
9 **COMPANY TO ESTABLISH THE FTAC IN RIDER NO. 4, DO YOU HAVE**
10 **ANY RECOMMENDATIONS?**

11 A. Yes. I believe it would be critical not to allow rate adjustments via the proposed
12 surcharge mechanism for impacts associated with deferred federal income taxes
13 (i.e., excess accumulated deferred income taxes) and those changes should only be
14 allowed to occur in the Company's base rate case filed after any tax rate changes.
15 A rider such as the proposed FTAC should only be allowed for the *current* federal
16 income tax expense portion of the change (similar to how the changes associated
17 with the Tax Cuts and Jobs Act were handled by the Commission). Accumulated
18 deferred income taxes require more scrutiny of regulators and statutory parties due
19 to subjectivity in certain circumstances in determining the proper normalization
20 periods, particularly for tax differences associated with non-protected assets that
21 are not subject to the strict requirements of IRS normalization rules. However, I

1 strongly recommend that the Commission require the Company to await statewide
2 guidance if/when any potential future corporate income tax rate changes occur.

3

4 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

5 A. Yes.

Christine S. Wilson, CPA
Professional and Educational Background

Experience:

Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania

August 2013 to Present:

Fixed Utility Financial Analyst Supervisor, Bureau of Investigation and Enforcement
Responsible for supervising six fixed utility financial analysts in the analysis and preparation of written and oral testimony in base rate case proceedings, purchased gas cost proceedings, and other proceedings as required.

February 2008 to August 2013:

Fixed Utility Financial Analyst, Bureau of Investigation & Enforcement
Review of operating and maintenance expenses for regulated utilities as a part of the evaluation and recommendation process for utility base rate and purchased gas cost filings, preparing written testimony for cases, and testifying as an expert witness.

Prior Accounting Employment: Approximately fifteen years performing public, corporate, and nonprofit accounting, in addition to eight years of full-time administrative work.

Education/Certification:

Green Mountain College, Poultney, Vermont
Sustainable MBA Program, four credits earned, 2009-2010

Certified Public Accountant in Pennsylvania, since 2000

Pennsylvania State University, Middletown, Pennsylvania
Bachelor of Science, Professional Accountancy, 1995
(Graduated with distinction)

Utility-Related Trainings & Other Courses/Webinars:

NARUC Staff Subcommittee on Accounting & Finance, Spring 2021 webinar, April 6-8, 2021

NARUC Staff Subcommittee on Accounting & Finance, Fall 2020 webinar, October 21-22, 2020

S&P Global Essentials of Regulatory Finance, Georgetown University, Washington, DC,
October 15-16, 2019

Taxation of Business Entities I: Corporations by University of Illinois, coursera.com, completed
October 2019 (not for credit)

Federal Taxation II: Property Transactions of Business Owners and Shareholders by University
of Illinois, coursera.com, completed August 2019 (not for credit)

**Christine S. Wilson, CPA
Professional and Educational Background**

Utility-Related Trainings & Other Courses/Webinars (continued):

Federal Taxation I: Individuals, Employees, and Sole Proprietorships by University of Illinois, coursera.com, completed July 2019 (not for credit)

Positive Psychology Specialization by University of Pennsylvania, coursera.com, completed May 2019 (not for credit)

Institute of Public Utilities Advanced Regulatory Studies Program
Michigan State University, East Lansing, Michigan, October 1-5, 2018

Financial Markets (with Honors) by Yale University, coursera.com, completed November 2017 (not for credit)

PA Public Utility Commission Rate Case Training, March 5-6, 2010; October 4-5, 2012

Institute of Public Utilities Advanced Regulatory Studies Program
Michigan State University, East Lansing, Michigan, October 7-10, 2008

NARUC Utility Rate School (conducted by NARUC's Committee on Water and the Institute of Public Utilities, Michigan State University), San Diego, May 11-16, 2008

Testimony Submitted:

P-2020-3022426	PAWC Response to COVID-19 Emergency and Financial Impacts
R-2020-3019369	PAWC base rate case (Water)
R-2020-3019371	PAWC base rate case (Wastewater)
R-2018-3000164	PECO Energy Company – Electric Division
R-2017-2640058	UGI Utilities, Inc. – Electric Division
R-2014-2428745	Metropolitan Edison Company (Met-Ed)
R-2014-2428744	Pennsylvania Power Company (Penn Power)
R-2014-2428743	Pennsylvania Electric Company (Penelec)
R-2014-2428742	West Penn Power Company

Christine S. Wilson, CPA
Professional and Educational Background

Testimony Submitted (continued):

R-2014-2402324	Emporium Water Company
R-2014-2406274	Columbia Gas of Pennsylvania, Inc.
R-2013-2397353	Pike County Power & Light (Gas)
R-2013-2372129	Duquesne Light Company
R-2013-2360798	Columbia Water Company
R-2012-2336379	York Water Company
R-2012-2321748	Columbia Gas of Pennsylvania, Inc.
R-2012-2292082	Peoples Natural Gas Company, LLC (1307(f))
R-2012-2285985	Peoples Natural Gas Company, LLC
R-2011-2267958	Aqua Pennsylvania, Inc.
R-2010-2214415	UGI Central Penn Gas, Inc.
R-2010-2201702	Peoples Natural Gas Company, LLC
R-2010-2166214	PAWC Northeast Wastewater Operations
R-2010-2166212	PAWC Coatesville Wastewater Operations
R-2010-2166210	PAWC Claysville Wastewater Operations
R-2010-2166208	PAWC Clarion Wastewater Operations
R-2010-2161694	PPL Electric Utilities Corporation
R-2009-2132019	Aqua Pennsylvania, Inc.
R-2009-2117740	Penn Estates Utilities Inc. (Sewer)
R-2009-2117532	Penn Estates Utilities Inc. (Water)
M-2009-2123945	PPL Electric Utility Company (Smart Meter Plan)

Christine S. Wilson, CPA
Professional and Educational Background

Testimony Submitted (continued):

M-2009-2123944	PECO Energy Company (Smart Meter Plan)
M-2009-2093216	PPL Electric Utility Corporation (EE&C Plan)
M-2009-2093215	PECO Energy Company (EE&C Plan)
R-2008-2079675	UGI Central Penn Gas, Inc.
R-2008-2046518	Pike County Light & Power Company (Electric)
R-2008-2042293	Newtown Artesian Water Company
R-2008-2032689	PAWC Coatesville Wastewater Operations

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Exhibit to Accompany

the

Direct Testimony

of

Christine Wilson

Bureau of Investigation and Enforcement

Concerning:

**I&E RECOMMENDED REVENUE REQUIREMENT, PENSION EXPENSE,
COVID-19 RELATED UNCOLLECTIBLE EXPENSE, OTHER COVID-19
RELATED COSTS NET OF SAVINGS, NEW BUSINESS STIMULUS RIDER,
CRISIS RECOVERY PROGRAM, RESIDENTIAL COVID-19 DEBT RELIEF
PROGRAM, RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER,
FEDERAL TAX ADJUSTMENT CLAUSE**

Duquesne Light Company
Docket No. R-2021-3024750

Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Jaime Bachota

I&E-RE-45-D

45. Reference DLC Statement No. 2, p. 35 concerning proposed pension language for settlement, explain why it is appropriate to modify the proposed settlement term to delete the following language:

“If Duquesne Light concludes that a contribution less than \$10 million to the pension trust is appropriate, the Company may reduce the pension contribution and will record a regulatory liability on its books of account that is equal to 50% of the reduction to the pension contribution below the level of \$10 million. Any regulatory liability recorded will be reduced to the extent of 50% of contributions in excess of \$10 million in subsequent years. If a regulatory liability remains at the time of the Company’s next rate proceeding, the regulatory liability amount will be returned to ratepayers as directed in the next base rate proceeding. Any amount recorded as a regulatory liability shall not bear an interest obligation. Duquesne Light shall provide a report and affidavit attesting to the actual contributions to pension trusts during each calendar year. The report and affidavit shall be publicly filed with the Commission, with copies provided to I&E, OCA and OSBA on or before January 31 of the following calendar year, with the first report and affidavit due on or before January 31, 2020.”

Response:

The Company recommends keeping the language in the proposed settlement term as shown above and updating to include reporting annually. The Company’s intention was to keep the same arrangement regarding pension contributions as historical rate cases.

Interrogatories of the
Office of Consumer Advocate

Set VI

Witness: Jaime Bachota

OCA-VI-16

16. According to Ms. Bachota, the Company proposes to defer the uncollectible expense above the uncollectible expense that is allowed in the cost of service in this proceeding. Please explain the justification for continuing to defer any uncollectible expense that is higher than that allowed from this proceeding.

Response:

The Company continues to monitor its uncollectible levels on a monthly basis. The Company continues to see delinquency amounts that are higher than historical amounts and higher bad debt net write-offs than it has historically recorded. The Company continues to provide assistance to its delinquent customers through payment arrangements, however delinquency amounts per customer are higher than they have historically been and there is uncertainty as to whether customers will maintain their payment arrangements. Accordingly, the Company anticipates that uncollectibles attributable to the Commission's pandemic-related actions may continue to occur beyond the closure of the factual record in this proceeding. Due to the uncertainty around the pandemic, the Company is requesting that it be able to continue to assess its uncollectible levels and defer amounts that are above what is included in the proceeding which would be considered for recovery in its next rate proceeding.

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Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Robert O'Brien and Jaime Bachota

I&E-RE-42-D

42. Reference Duquesne Light Company (DLC) Statement No. 2, pp. 24-25, DLC Statement No. 10, pp. 44-45, and DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-12 concerning the claimed normalization of extraordinary, nonrecurring incremental COVID-19 related costs net of savings:

- A. Explain why it would be appropriate to continue recording incremental costs above what is included in this proceeding considering the Commission's recent rejection of the UGI Gas and Electric requests (at Docket Nos. R-2019-3015162 and P-2021-3023992) for COVID-19 relief programs and the recent lifting of the shutoff moratorium.
- B. Provide specific docket numbers/Commission documents where the Commission has allowed deferral and future recovery of any lost revenues.
- C. Provide specific docket numbers and Commission documents where the Commission has allowed deferral and future recovery of any expenses other than those related to uncollectibles.
- D. Explain why the Company is proposing recovery of six months of 2021 expenses.
- E. State the amount allocated/claimed in DLC's jurisdictional FPFTY revenue requirement (DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-1, p. 1) in this proceeding and explain how that was determined.

Response:

- A. The Company believes it to be appropriate to continue to track extraordinary, nonrecurring incremental COVID-19 related costs net of savings as it continues to have costs/savings that are specific to COVID-19 prior to the shutoff of the moratorium and additional call center staffing expenses in collecting aged receivables. The Company does not believe that the Commission rejected UGI Gas and Electric requests.

- B. The Company has tracked lost revenues in the form of late payment fees and reconnect fees as these were waived in accordance with Commission orders. The Company has not deferred any lost revenues to date.
- C. The Company has tracked extraordinary, nonrecurring incremental COVID-19 costs net of savings as referenced in the Commission's orders. The Company has not deferred any costs outside of uncollectibles.
- D. The Company is proposing to recover an additional six months of 2021 expenses as the Company continues to see extraordinary, nonrecurring incremental COVID-19 related costs and savings associated with turning collections back on, continued cleaning and sanitation costs, lost late payment charges and reconnect fees net of savings including parking and training costs.
- E. The Company is claiming normalized expenses of \$5,795,000 as shown at DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-12. Amounts were determined by the tracking of extraordinary, nonrecurring incremental COVID-19 related costs (inclusive of lost late payment charges and reconnect fees) through specific work order tracking and estimation of lost late payment charges and reconnect fees based upon historical actual amounts net of savings (tracking of actual savings of parking and training costs) for the year ended December 31, 2020 and through February 28, 2021 along with an estimate for the months of March 2021 – June 2021.

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Interrogatories of the
Office of Consumer Advocate

Set VI

Witness: Katherine Scholl

OCA-VI-17

17. Please explain what the Company's proposal is for late fees and reconnection fees after the rates from this proceeding goes into effect.

Response:

The Company has no plans to change its late fees and reconnection fees. These fees were waived from the onset of the pandemic through 5/31/2021 and resumed on June 1, 2021.

Interrogatories of the
Office of Consumer Advocate

Set VI

Witness: Jaime Bachota

OCA-VI-18

18. According to Ms. Bachota's testimony at page 25, lines 4 to 6, the Company proposes to continue to record incremental operating costs above what is included in rates from this proceeding as regulatory assets.

- a. Please identify the specific costs that will be subject to deferral.
- b. Please explain the justification for continuing to defer any of the costs that are in excess of the amount allowed in rates.

Response:

- a. Costs which would be subject for deferral include other extraordinary, nonrecurring incremental COVID-19 related costs, net of savings. Specifically, these costs include those described in Jaime A. Bachota's testimony (Statement No. 2) page 24, lines 15-17, which have continued to be incurred by the Company in 2021.
- b. The Company is uncertain as to whether these other extraordinary, nonrecurring incremental COVID-19 related costs, net of savings, will continue to be part of its expenses and potentially above what the Company assumed in its FTY or FPFTY. To the extent that these costs continue and are above what is included in this rate proceeding, the Company proposes to defer the costs utilizing the same methodology as it used to calculate the amount included in this rate proceeding and seek recovery in its future rate proceedings.

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Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Krysia Kubiak

I&E-RE-53-D

53. Reference the DLC Statement No. 5, pp. 7-11 concerning the proposed New Business Stimulus Rider (Rider No. 25):

- A. Explain why it is just and reasonable for existing ratepayers to fund a 30% discount on the variable based distribution portion of bills to new businesses in GS, GM, or GMH rate schedules over a two-year period.
- B. Explain how DLC determined that December 31, 2024 was the appropriate cutoff date for the proposed rider.
- C. Explain how promotion of the program and other administrative costs of the program are proposed to be funded.
- D. Provide a breakdown of all projected FPPTY program amounts (\$276,000 in discounts via GS, GM, and GMH customers), advertising amounts, and administrative costs and state how each cost will be recovered (e.g., via base rates, via the proposed Rider No. 25, or elaborate if some other way).

Response:

- A. As stated in the Statement No. 5, pg. 11, line 19, the average bill impact for the NBSR is minimal, and estimated to be \$0.28 per month. By way of further response, please see Statement No. 5, pp. 11-12.
- B. It is anticipated the impacts from the COVID-19 shut downs will be lessened greatly by 2024.
- C. The cost of promoting the program are captured in the response D, below (i.e. Advertising Costs). Any remaining administrative costs of the program will be funded through internal resources.
- D. Each of the costs will be recovered via base rates. See the embedded table below for the breakdown of all projected FPPTY program amounts by rate class.

New Business Stimulus Rider Costs			
	Estimated Discounts	Advertising Costs	Total FPFTY Program Cost
GS	\$63,870	\$200	\$64,070
GM	\$190,184	\$400	\$190,584
GMH	\$21,917	\$400	\$22,317
Total	\$275,971	\$1,000	\$276,971

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Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Krysia Kubiak and David B. Ogden

I&E-RE-54-D

54. Reference DLC Statement No. 5, p. 11, lines 15-17 concerning the proposed New Business Stimulus Rider, explain why the applicable amounts are reflected in each customer class's base rates when the monies are proposed to be collected via a rider.

Response:

The Company is not proposing to collect the costs associated with the New Business Stimulus program through an automatic adjustment clause and/or separate surcharge rider. As reflected within Exhibit No. DBO-2, proposed tariff page 141F, Rider No. 25 – New Business Stimulus Rider governs the availability, program terms, and program definitions of the proposed program.

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Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Krysia Kubiak

I&E-RE-56-D

56. Reference DLC Statement No. 5, pp. 13-16 concerning the Crisis Recovery Program:

- A. Explain why it is just and reasonable for other existing ratepayers to fund 25% forgiveness of frozen balances.
- B. Explain how DLC determined that June 30, 2022 was the appropriate cutoff date for the proposed rider.
- C. Explain how promotion of the program and other administrative costs of the program are proposed to be funded.
- D. Provide a breakdown of all projected FPFTY program amounts (\$400,000 in forgiveness via GS, GM, and GMH customers), advertising amounts, and administrative costs and state how each cost will be recovered (e.g., via base rates, via the proposed Rider No. 26, or elaborate if some other way).

Response:

- A. See Statement No. 5, p 15 lines 16-23 through p. 16 lines 1-9. By way of further response, the CRP is viewed favorably among the customers surveyed.
- B. See Statement No, 5, p. 17 lines 7-10.
- C. The cost of promoting and surveying the program are captured in the response D. below (i.e. Advertising & Survey Costs). Any remaining administrative costs of the program will be funded through internal resources.
- D. Each of the costs will be recovered via base rates. See the embedded table below for the breakdown of all projected FPFTY program amounts by rate class.

Covid Crisis Recovery Program			
	Estimated Forgiveness	Advertising & Survey Costs	Total FPFTY Program Costs
GS	\$44,007	\$8,322	\$52,329
GM	\$343,788	\$9,233	\$353,022
GMH	\$16,005	\$1,445	\$17,449
Total	\$403,800	\$19,000	\$422,800

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Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Krysia Kubiak

I&E-RE-47-D

47. Reference DLC Statement No. 5, p. 2 concerning the proposed New Business Stimulus Rider and the Crisis Recovery Program, explain why it is appropriate to implement these programs considering the Commission's recent decision not to extend the moratorium on utility shutoffs and to require more flexible payment arrangements at the March 11, 2021 Public Meeting (at Docket No. M-2020-3019244).

Response:

Duquesne Light supported the Commission's March 2021 order, and its removal of the blanket moratorium. The proposed New Business Stimulus Rider and Crisis Recovery Program are targeted programs that address only those accounts that are most impacted by the state's orders on shut-downs, and the industries that are struggling to return to full capacity.

These programs help businesses avoid termination of service, but also help to contribute to the economic vitality and recovery of our hard-hit communities. While the Commission's 18-month payment arrangement would assist some customers, the CRP provides additional assistance by freezing the delinquent balances for 6 months in order to give the business some time to return to normal operations.

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Set VII

Witness: Robert O'Brien

I&E-RE-57-D

57. Reference DLC Exhibit 2, Schedule D-13 concerning COVID-19 stimulus riders:

- A. Explain the reason why a three-year normalization is appropriate for the New Business Stimulus Program and the Crisis Recovery Program.
- B. Explain why an \$18,000 survey cost is just and reasonable for the Crisis Recovery Program.

Response:

- A. The three-year normalization allows for recovery of the costs during the period new rates are expected to be in effect from this rate case. See response to I&E-RE-56-D.
- B. The \$19,000 is a three-year cost for surveys. Advertising the program is appropriate to attract enrollees. Surveys are appropriate to obtain customer feedback regarding program administration and experience.

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Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Katherine Scholl and Robert O'Brien

I&E-RE-58-D

58. Reference DLC Statement No. 7, pp. 11-13 and DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-16 concerning the proposed Residential COVID-19 Debt Relief Program:

- A. Explain why it is appropriate to implement this program considering the Commission's recent decision not to extend the moratorium on utility shutoffs and to require more flexible payment arrangements at the March 11, 2021 Public Meeting (at Docket No. M-2020-3019244).
- B. Explain why a \$3 million program budget is just, reasonable, and appropriate.
- C. Explain the rationale for a program timespan of January 15, 2022 through March 31, 2022 (or when funding is exhausted).
- D. Explain how \$500,000 in administrative costs is fair given that it is in addition to a \$3 million budget.
- E. Explain why it is appropriate to include \$3.5 million in the revenue requirement (base rates) for this program.
- F. State the amount allocated/applied to DLC's revenue requirement in this proceeding in DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-1, p. 1 (i.e., 100% of the total \$3.5 million or some other percentage) and explain how that was determined.

Response:

- A. The company is keenly aware that the COVID-19 pandemic impacted customers across a wide set of demographics, causing many to fall behind in their payments and accumulate arrearages that put them at risk of termination of service.

As noted, the Commission requires utilities to offer more flexible payment arrangements in light of the pandemic, and the Company has seen an increase in the number of customers seeking a payment arrangement.

For some customers, however, these special payment arrangements may not be sufficient for them to get back on their feet. For example, some customers' payment arrangements may increase their monthly bill by \$50 or more per month for several years. Providing additional relief to these customers to cover said payments for a period of time will help to bridge outstanding financial difficulties.

Additionally, in deciding to offer the COVID-19 Debt Relief Program, the Company gave strong consideration to statement made by Chairman Gladys Brown Dutrieuille and Vice Chairman David Sweet in the Columbia Gas 2020 Rate Case on February 18, 2021 (Docket No. R-2020-3018835):

“Finally, while the Commission’s action today substantially reduces the impact of Columbia’s rate increase, we wish to express our disappointment that Columbia failed to propose any temporary pandemic relief within this proceeding. Such programs can be aimed to provide measured assistance to customers adversely affected by the COVID-19 pandemic. The Commission has approved programs for UGI Utilities, Pittsburgh Water and Sewer Authority, and Philadelphia Gas Works. We encourage Columbia, and other utilities, to continually consider these types of offerings in the near future.”

- B. The Company believes that the program budget is fair, just and reasonable as it benefits customers who have experienced a hardship but do not qualify for low-income programs such as the Customer Assistance Program (CAP). In comparison, the \$3 million budget equates to less than 10% of the annual Universal Services budget, while providing meaningful assistance to customers who earn just beyond the income levels for CAP but whose economic status was impacted negatively by the pandemic.
- C. In setting the program timespan at January 15, 2022 through March 31, 2022, the Company sought to:
- Begin the program after a final order is served on the rate case;
 - Encourage customers to pay and seek necessary help during the winter moratorium; and
 - Reach completion prior to the end of the winter moratorium.
- D. As a program similar to the COVID-19 Debt Relief program has not previously been developed and offered to customers, the Company must devote Information Technology (IT) resources to developing the program within the billing system. Additionally, the Company will need to have agents trained and available to receive and process applications. Advertising and

education will also be required. Given the magnitude of the effort, the Company believes \$500,000 is both fair and reasonable. Isolating the administrative budget from the relief budget will also allow more customers to be served by the program.

- E. It is appropriate to include \$3.5 million in the revenue requirement for this program because it is reasonable to provide additional support to residential customers ineligible for CAP who experienced adverse financial impacts during the COVID-19 pandemic. It is preferable to recover the costs of this program through base rates instead of a surcharge because the costs represent a one-time expense and constitute a relatively small dollar amount.
- F. As shown on DLC Exhibit 2, Schedule D-16, line 8, the \$1,167,000 is included in the FPFTY expense to be recovered in rates. The three-year period was selected to match the period that the Company believes the rates from this proceeding will be in effect.

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Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Jennifer Neiswonger and Robert O'Brien

I&E-RE-59-D

59. Reference DLC Statement No. 9, p. 11 and Exhibit JAN-4 concerning the proposed Residential Subscription Rate Pilot Rider:

- A. Explain how the \$67,000 in marketing and education costs are proposed to be recovered (i.e., through base rates, via the proposed rider itself, or in some other manner).
- B. If the marketing and education costs are proposed for recovery in base rates, state the claimed amount for the FPFTY in DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-1, p. 1.

Response:

The \$67,000 in marketing and education costs are proposed to be recovered through base rates. These costs are not currently included in our proposal, but we plan to include it in our update and rebuttal normalized over 3 years (\$22.3K each year) as part of the Company's total revenue requirement.

Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Matthew Simpson and David B. Ogden

I&E-RE-60-D

60. Reference DLC Statement No. 12, pp. 14-20 and DLC Statement No. 16, pp. 31-32 concerning the proposed Federal Tax Adjustment Charge and the proposed Rider No. 4 – Federal Tax Adjustment Clause:

- A. State whether the Company is fully certain that a corporate income tax rate change from 21% to 28% will become effective and explain why.
- B. State whether the Company believes the Commission will not address any future corporate income tax rate changes on a statewide basis in a timely manner.
- C. Explain why Duquesne should not await instructions from the Commission on how to handle changes associated with The American Jobs Plan or other potential related legislation (presuming a tax rate change even occurs).
- D. State whether the details included in The American Jobs Plan are subject to debate and change in the legislative process prior to any potential enactment of this or any other similar proposal.
- E. State whether the Commission's FTAC associated with the TCJA of 2018 allowed for rate adjustments via the surcharge mechanism for deferred federal income taxes.

Response:

- A. The Company is not fully certain that the corporate income tax rate will change. However, the rider will not produce a charge or a credit to the base rates unless and until the federal corporate tax rate is changed.
- B. The Company cannot predict the Commission's action that would address any future federal corporate income tax changes.

- C. There are several reasons why the Company is proposing the Federal Tax Adjustment Charge during this proceeding:
- (1) A federal rate change can have a significant impact on the Company's revenue requirement,
 - (2) It is currently difficult to adjust base rates to reflect such changes in a timely manner, and
 - (3) the time delay in adjusting base rates under current procedures can result in either significant refunds or significant retroactive recoveries after the effective date of the tax rate change

The Company's FTAC would allow rates to be adjusted expediently to reflect impacts of a federal corporate tax rate change. See Simpson direct testimony, St. No. 12, page 15, Q&A lines 4 and 5 and page 18, Q&A line 18 and 20.

- D. The American Jobs Plan is a comprehensive proposal issued by President Biden. Since the American Jobs Plan is not a legislative bill, it may be subject to debate and potential change in the legislative process prior to becoming law.
- E. The Company was not subject to the FTAC because it filed a base rate increase in 2018. The Parties to our 2018 rate case did raise the issue that the Company should not only be required to refund current and deferred income taxes collected in rates during 2018 at the higher tax rate, but should also refund excess deferred taxes for 2018. The rate case was settled and provided a tax refund for 2018 which exceeded the effects of the tax rate change on the 2018 current and deferred tax provisions.

**I&E Statement No. 1-R
Witness: Christine Wilson**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Rebuttal Testimony

of

Christine Wilson

Bureau of Investigation & Enforcement

Concerning:

**COVID-19 RELATED UNCOLLECTIBLE EXPENSE,
OTHER COVID-19 RELATED COSTS NET OF SAVINGS,
RESIDENTIAL COVID-19 DEBT RELIEF PROGRAM, AND
LOW-INCOME USAGE REDUCTION PROGRAM**

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1 **INTRODUCTION OF I&E WITNESS**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christine Wilson. My business address is Pennsylvania Public Utility
4 Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg, PA
5 17120.

6
7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the
9 Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst
10 Supervisor.

11
12 **Q. ARE YOU THE SAME CHRISTINE WILSON WHO IS RESPONSIBLE FOR**
13 **THE DIRECT TESTIMONY CONTAINED IN I&E STATEMENT NO. 1 AND**
14 **THE SCHEDULES IN I&E EXHIBIT NO. 1?**

15 A. Yes.

16
17 **Q. DOES YOUR REBUTTAL TESTIMONY INCLUDE AN ACCOMPANYING**
18 **EXHIBIT?**

19 A. No.

20
21 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

22 A. The purpose of my rebuttal testimony is to address the direct testimony of:

23 (1) Natural Resources Defense Council (NRDC) witness Amanda Levin (NRDC

1 Statement No. 1) concerning the Duquesne Light Company's (Company or
2 DLC) proposed recovery of incremental COVID-19 related costs, and the
3 Company's proposed residential COVID-19 debt relief program.

4 (2) Office of Consumer Advocate (OCA) witness Roger Colton (OCA Statement
5 No. 4) concerning the residential COVID-19 debt relief program.

6 (3) Coalition for Affordable Utility Services and Energy Efficient in Pennsylvania
7 (CAUSE-PA) witness Harry Geller (CAUSE-PA Statement No. 1) concerning
8 the residential COVID-19 debt relief program and his proposed increase to the
9 Company's low-income usage reduction program (LIURP, otherwise known
10 as DLC's Smart Comfort program) budget.

11 (4) Pennsylvania Weatherization Providers Task Force (PWPTF) witness Eugene
12 Brady (PWPTF Statement No. 1) concerning an increase to LIURP funding.

13
14 **RESPONSE TO NRDC WITNESS AMANDA LEVIN**

15 **Incremental COVID-19 Related Costs:**

16 **Q. SUMMARIZE THE SECTIONS OF NRDC WITNESS LEVIN'S DIRECT**
17 **TESTIMONY THAT YOU ARE ADDRESSING HEREIN.**

18 A. Ms. Levin suggests that the Company's proposed residential COVID-19 debt relief
19 program should be approved as it relates to the \$3 million debt forgiveness and that
20 the administrative cost of \$500,000 should be deferred and tracked for future rate
21 recovery due to the high percentage of administrative costs as compared to other
22 states' similar programs and as compared to the total budget. Additionally, she
23 recommends that the Company be required to continue waiving all late fees and

1 reconnection fees at least until the end of 2021, irrespective of a customer’s ability to
2 pay 25 percent of the outstanding balance.¹

3
4 **Q. PLEASE DISCUSS HOW MS. LEVIN’S DIRECT TESTIMONY**
5 **CHARACTERIZES THE REQUIREMENTS SURROUNDING COVID-19**
6 **RELATED INCREMENTAL COST RECOVERY?**

7 A. Ms. Levin properly states that the Commission has directed all regulated utilities to
8 “track extraordinary, nonrecurring incremental COVID-19 related expenses and to
9 maintain detailed accounting records of such expenses” and “create a regulatory asset
10 for any incremental uncollectible expenses incurred above those embedded in rates
11 since the issuance of the Emergency Order.”² She further states that the May 13,
12 2020 Secretarial Letter indicates the Commission will consider any request for
13 recovery of the incremental expenses made in future proceedings, such as the ongoing
14 proceeding.³ However, what she fails to mention is that the Commission in that same
15 letter states that, apart from uncollectibles, “this Secretarial Letter does not grant
16 authorization for utilities to defer any other potential COVID-19 related expenses.”⁴
17 Further, the May 13, 2020 Secretarial Letter stated that tracking of these incremental
18 expenses (other than uncollectibles) is intended “to provide the Commission with
19 information to understand the extent of the COVID-19 pandemic’s impact on utilities’

¹ NRDC Statement No. 1, p. 5.

² NRDC Statement No. 1, p. 12 and the Commission’s May 13, 2020 Secretarial Letter regarding *COVID-19 Cost Tracking and Creation of Regulatory Asset*, Docket No. M-2020-3019775 (May 13, 2020 Secretarial Letter).

³ NRDC Statement No. 1, pp. 12-13.

⁴ Docket No. M-2020-3019775, May 13, 2020 Secretarial Letter, p. 2. See also, I&E Statement No. 1, p. 15.

1 finances.”⁵ I disagree with Ms. Levin’s conclusion that the May 13, 2020 Secretarial
2 Letter “provides the right and opportunity to track and recover incremental costs, net
3 of savings, associated with COVID-19 as a regulatory asset in proceedings,”⁶ (outside
4 of uncollectibles-related expenses) unless and until such time as the Commission
5 explicitly indicates this.

6
7 **Q. DOES MS. LEVIN SUPPORT THE COMPANY’S RECOVERY OF**
8 **INCREMENTAL COVID-19 RELATED COSTS NET OF SAVINGS?**

9 A. Yes. Ms. Levin argues that she supports the recovery of prudent and reasonable costs
10 for uncollectibles *and* other extraordinary, nonrecurring incremental COVID-19
11 related costs net of savings, and she opines that the Company has received permission
12 from the Commission to record all such costs to regulatory asset accounts.⁷ However,
13 she recommends the following standards that should be met before recovery is
14 approved:⁸

- 15 • Any net costs recorded for recovery should take into account all related cost
16 reductions incurred due to the pandemic.
- 17 • Any approved recovery of incremental utility expenses should be linked in
18 some way to the provision of customer assistance, strengthened energy
19 efficiency programs, and/or debt relief.

⁵ Docket No. M-2020-3019775, May 13, 2020 Secretarial Letter, p. 3. See also, I&E Statement No. 1, p. 15.

⁶ NRDC Statement No. 1, p. 20.

⁷ NRDC Statement No. 1, p. 16.

⁸ NRDC Statement No. 1, pp. 16-17.

1 **Q. WHAT IS MS. LEVIN’S CONCLUSION IN THIS REGARD?**

2 A. She asserts that the Company’s proposal does not appear to consider all cost savings
3 that have been realized due to the pandemic when determining net incremental costs
4 to be recovered, such as a decrease in utilities expenses for which a precise dollar
5 amount is yet to be determined, and employee-related expenses.⁹ Finally, she states
6 the Commission should not approve DLC’s request for cost recovery as proposed
7 without further review of actual versus expected 2020 expenses, that further scrutiny
8 is warranted, and that a longer recovery period may be appropriate (such as six years,
9 or two expected rate case periods).¹⁰

10

11 **Q. DO YOU AGREE WITH MS. LEVIN THAT AFTER MORE SCRUTINY THE**
12 **COMMISSION SHOULD CONSIDER GRANTING APPROVAL OF THE**
13 **EXTRAORDINARY, NONRECURRING INCREMENTAL COVID-19**
14 **RELATED COSTS NET OF SAVINGS (OTHER THAN DEFERRED COVID-**
15 **19 RELATED UNCOLLECTIBLES)?**

16 A. No. I continue to recommend that recovery of these out-of-period costs be disallowed
17 in their entirety for the same reasons as explained in my direct testimony, and I
18 recommend disallowance of the Company’s proposal to continue including any such
19 costs in future rate proceedings.¹¹ It is my understanding that the only expenses for
20 which the Commission has granted regulatory asset treatment relate directly to

⁹ NRDC Statement No. 1, pp. 18-19.

¹⁰ NRDC Statement No. 1, pp. 20-21.

¹¹ I&E Statement No. 1, pp. 13-20.

1 uncollectibles (the difference between the amount reflected in present rates and those
2 amounts experienced during the pandemic). Additionally, I reiterate a point made in
3 my direct testimony,¹² that the total amount of DLC's net operating cost requested for
4 deferral prior to normalization (\$5,795,000¹³) is less than 0.9% of the total claimed
5 present rate revenues in this proceeding of \$654,141,000,¹⁴ and that the Company
6 should not be fully insulated from all costs associated with the pandemic.¹⁵

7
8 **Q. PLEASE RESTATE YOUR RECOMMENDATION AS IT RELATES TO**
9 **COVID-19 RELATED UNCOLLECTIBLES EXPENSE THAT YOU**
10 **ADDRESSED SEPARATELY IN DIRECT TESTIMONY.**

11 A. I continue to recommend an allowance of \$1,752,837 or a reduction of \$341,163
12 (\$2,094,000 - \$1,752,387) to the Company's claim based on a 43-month amortization
13 of the excess uncollectibles and that the Company be required to discontinue
14 recording a regulatory asset for COVID-19 related incremental uncollectible costs
15 after the effective date of new rates in this proceeding. This is because the Company
16 should have a new uncollectible percentage built into the rate formula in this
17 proceeding which accounts for changes due to COVID-19.¹⁶

¹² I&E Statement No. 1, p. 19.

¹³ DLC Exhibit 2 – Fully Projected Future Test Year, Exhibit D-12.

¹⁴ DLC Exhibit 2 – Fully Projected Future Test Year, Exhibit D-1, p. 1.

¹⁵ I&E Statement No. 1, p. 19.

¹⁶ I&E Statement No. 1, pp. 10-12.

1 **Recent Commission Order Related to COVID-19:**

2 **Q. HAS THERE BEEN ANY ADDITIONAL RELEVANT ACTION TAKEN BY**
3 **THE COMMISSION RECENTLY WITH REGARD TO TEMPORARY**
4 **POLICY ORDERS RELATED TO THE COVID-19 PANDEMIC?**

5 A. Yes. On July 15, 2021, the Commission issued a new Order related to the *Public*
6 *Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of*
7 *Regulatory Asset* at Docket No. M-2020-3019244 and M-2020-3019755 (Ordered
8 Entered July 15, 2021) (July 15, 2021 Order).

9
10 **Q. PLEASE SUMMARIZE THE JULY 15, 2021 ORDER.**

11 A. The July 15, 2021 Order discusses prior Orders related to the prohibition of service
12 terminations, reconnections, the later payment arrangement instructions, the
13 regulatory asset treatment for related expenses, and the tracking of extraordinary,
14 nonrecurring incremental COVID-19 related expenses.¹⁷ Subsequent to these prior
15 Commission Orders, the July 15, 2021 Order explains, the Pennsylvania Legislature
16 and the Governor took actions which caused the effectiveness of the Commission's
17 Orders to extend until September 30, 2021 unless terminated earlier by the
18 Commission.¹⁸ In this July 15, 2021 Order, the Commission allows utilities to
19 continue tracking extraordinary, nonrecurring incremental COVID-19 related

¹⁷ *Public Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset*, at Docket Nos. M-2020-3019244 and M-2020-3019775 (Order Entered July 15, 2021), p. 2.

¹⁸ *Public Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset*, at Docket Nos. M-2020-3019244 and M-2020-3019775 (Order Entered July 15, 2021), p. 3.

1 expenses and states that utilities¹⁹

2 ...are authorized to create a regulatory asset for any incremental
3 expenses incurred above those embedded in rates resulting from
4 the directives contained in this Order. To be eligible for inclusion
5 in a utility's COVID-19 designated regulatory asset, the utility
6 must maintain detailed records of the incremental extraordinary,
7 nonrecurring expenses incurred as a result of compliance with the
8 Commission's March 13 Emergency Order, the October 13
9 Order, the March 18, 2021, Order and this Order.
10

11 **Q. DO YOU BELIEVE THE JULY 15, 2021 ORDER INDICATES APPROVAL**
12 **FOR REGULATORY ASSET TREATMENT OF ALL CLAIMED COVID-19**
13 **RELATED EXPENSES IN THIS PROCEEDING?**

14 A. No. My understanding is that only increase in expenses (beyond those reflected in
15 base rates) directly tied to incremental uncollectibles and the related payment
16 arrangements should qualify for regulatory asset treatment. Furthermore, I stand by
17 my recommendations in direct testimony that the accumulation of COVID-19 related
18 uncollectible expense in a regulatory asset should cease upon the effective date of
19 new rates in this proceeding²⁰ and that the claim for COVID-19 related costs net of
20 savings (which excludes uncollectibles-related amounts) should be disallowed in its
21 entirety for the reasons explained in my direct testimony.²¹ In short, the issuance of
22 the July 15, 2021 Order does not change my recommendation.

¹⁹ *Public Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset*, at Docket Nos. M-2020-3019244 and M-2020-3019775 (Order Entered July 15, 2021), p. 4.

²⁰ I&E Statement No. 1, pp. 10-12.

²¹ I&E Statement No. 1, pp. 14-21.

1 **Residential COVID-19 Debt Relief Program:**

2 **Q. SUMMARIZE THE COMPANY’S PROPOSAL FOR A RESIDENTIAL**
3 **COVID-19 DEBT RELIEF PROGRAM.**

4 A. The Company’s \$3 million claim for a short-term program would provide targeted
5 assistance to low- and moderate-income customers with delinquencies due to the
6 pandemic. The program would offer relief to non-CAP customers earning between
7 151% and 300% of the federal poverty level (FPL) with delinquent balances of at
8 least \$100. Under the program, customers who make a payment would receive
9 matching forgiveness up to \$300 and a payment arrangement up to 36 months on the
10 remaining unpaid balance. The Company also proposes to waive reconnection fees
11 and restore service if 25% of the balance is paid. The Company is also asking for
12 \$500,000 in administrative expenses associated with this program.²²

13
14 **Q. SUMMARIZE MS. LEVIN’S RECOMMENDATIONS RELATED TO DLC’S**
15 **PROPOSED RESIDENTIAL COVID-19 DEBT RELIEF PROGRAM.**

16 A. Ms. Levin supports the program but offers a few recommendations that she argues
17 would enhance it.²³ However, she expresses concern about the high ratio of claimed
18 administrative costs (\$500,000, or 14% of the total \$3.5 million to be recovered).²⁴
19 Thus, she recommends the Commission allow the \$3 million program cost but have
20 the Company track and record actual administrative costs of the program for future

²² DLC Statement No. 7, pp. 11-12.

²³ NRDC Statement No. 1, p. 22.

²⁴ NRDC Statement No. 1, p. 23.

1 rate recovery as she opines the Company should be allowed to do for other
2 incremental COVID-19 related expenses.²⁵ She further recommends that the
3 Commission require DLC to report on program activities in quarterly reports and use
4 existing staff and resources where possible.²⁶

5 Additionally, she recommends that the Commission require the Company to
6 continue waiving all late fees and reconnection fees at least through the end of 2021,
7 regardless of whether a customer can pay 25% of the outstanding balance, and that
8 these fees should be tracked for future cost recovery.²⁷

9
10 **Q. WHAT IS THE BASIS FOR MS. LEVIN'S RECOMMENDATIONS?**

11 A. She opines that the benefits of the program are important and necessary to offer to
12 households affected financially by the pandemic that have earnings too high to qualify
13 for CAP, and she applauds the proposed availability of extended payment terms up to
14 36 months in line with the requirements set recently by the Commission.²⁸ She
15 further opines that continuing to waive late fees and reconnection fees is important to
16 minimize financial stress on already suffering customers.²⁹

²⁵ NRDC Statement No. 1, p. 24.

²⁶ NRDC Statement No. 1, pp. 24-26.

²⁷ NRDC Statement No. 1, p. 25.

²⁸ NRDC Statement No. 1, pp. 22-23.

²⁹ NRDC Statement No. 1, p. 25.

1 **Q. DO YOU AGREE WITH MS. LEVIN’S RECOMMENDATIONS RELATED**
2 **TO APPROVAL AND MODIFICATION TO THE COMPANY’S PROPOSED**
3 **RESIDENTIAL COVID-19 RELIEF PROGRAM?**

4 A. No. I recommend that the proposed residential COVID-19 relief program, even with
5 Ms. Levin’s recommended modifications, be disallowed for the same reasons
6 presented in my direct testimony.³⁰ It should also be noted that the unemployment
7 rate for Pennsylvania mentioned in my direct testimony of 7.3% as of March 31, 2021
8 is projected to fall even further to 6.9% as of May 2021 (preliminary unemployment
9 rate).³¹ I believe that the guidance issued recently by the Commission related to
10 utilities offering flexible extended payment arrangements³² should be adhered to, and
11 that if the Commission decides to alter its response to this matter it should be done on
12 a statewide basis and not solely in response to a single utility. In short, I recommend
13 that the residential COVID-19 relief program be disallowed.

14
15 **Q. DO YOU AGREE WITH MS. LEVIN’S RECOMMENDATION THAT THE**
16 **COMPANY BE REQUIRED TO CONTINUE TO WAIVE ALL LATE FEES**
17 **AND RECONNECTION FEES AT LEAST UNTIL THE END OF 2021,**
18 **IRRESPECTIVE OF A CUSTOMER’S ABILITY TO PAY 25 PERCENT OF**
19 **THE OUTSTANDING BALANCE?**³³

20 A. No. Since I disagree with this program in its entirety, I disagree with her

³⁰ I&E Statement No. 1, pp. 34-35.

³¹ <https://data.bls.gov/timeseries/LASST420000000000003> (accessed July 14, 2021).

³² Reference the Motion of Chairman Gladys Brown Dutrieuille and the Statement of Commissioner John F. Coleman, Jr. at Docket No. M-2020-3019244, on March 11, 2021.

³³ NRDC Statement No. 1, p. 5.

1 recommendation that the Company should waive all late fees and reconnection fees
2 due to the impacts of the pandemic until the end of 2021. Furthermore, it is my
3 understanding that the moratorium on shutoffs and late fees has ended, and the
4 Commission has required utilities to work with customers on extending payment
5 arrangements.³⁴

6
7 **RESPONSE TO OCA WITNESS ROGER COLTON**

8 **Q. SUMMARIZE THE POINTS MADE BY OCA WITNESS ROGER COLTON**
9 **THAT YOU ARE ADDRESSING HEREIN.**

10 A. Mr. Colton recommends approval of the Company's proposed residential COVID-19
11 debt relief program with modifications, such as eliminating the minimum income
12 eligibility, extending the program through December 31, 2022 (beyond the
13 Company's proposed end date of March 31, 2022 or until funding is exhausted),
14 modifying the cost-control mechanism of establishing a minimum arrearage level
15 required to participate by extending that principal to include an aging component, that
16 the \$500,000 administrative cost and the costs related to waiving of reconnection
17 charges and service restoration be in addition to the proposed \$3.0 million budget,
18 modifying/clarifying the dollar-for-dollar credit toward customer arrearages, and that
19 the \$3.0 million maximum budget be eliminated and that any amount exceeding \$3.0
20 million be recovered through the Universal Service Rider.³⁵

³⁴ I&E Statement No. 1, pp. 34-35.

³⁵ OCA Statement No. 4, pp. 22-23.

1 **Q. WHAT IS THE BASIS FOR MR COLTON’S RECOMMENDATIONS?**

2 A. Mr. Colton largely cites to Phase 3.1 of the United States Census Bureau’s Household
3 Pulse Survey³⁶ to explain the impacts of COVID-19 in Pennsylvania.³⁷ The data he
4 refers to encompasses the period after April 14, 2021 (primarily Week 30, May 12
5 through May 24, 2021, the most recent week of Phase 3.1), and generally measures
6 how households across the Commonwealth have been affected by the pandemic.
7 Ultimately, the conclusion of Mr. Colton’s analysis is that loss of employment due to
8 the pandemic continues and is not just a low-income issue but continues to hit low-
9 income households in a very significant manner.³⁸ He also presents arguments to
10 support the point that the economic crisis will not immediately fade when with the
11 resolution of the COVID-19 health crisis.³⁹ Thus, he concludes that the program
12 should be approved but with the modifications summarized above and explained in
13 more detail in his direct testimony.

14

15 **Q. DO YOU AGREE WITH MR. COLTON THAT THE RESIDENTIAL COVID-**
16 **19 RELIEF PROGRAM SHOULD BE APPROVED WITH**
17 **MODIFICATIONS?**

18 A. No. I recommend that the proposed residential COVID-19 relief program, even with
19 Mr. Colton’s recommended modifications, be disallowed for the same reasons
20 presented in my direct testimony.⁴⁰ As previously noted above, the preliminary

³⁶ <https://www.census.gov/programs-surveys/household-pulse-survey/data.html#phase3.1> (accessed July 9, 2021).

³⁷ OCA Statement No. 4, p. 8.

³⁸ OCA Statement No. 4, pp. 10-14.

³⁹ OCA Statement No. 4, pp. 14-21.

⁴⁰ I&E Statement No. 1, pp. 34-35.

1 unemployment rate for Pennsylvania mentioned in my direct testimony of 7.3% as of
2 March 31, 2021 is projected to fall even further to 6.9% as of May 2021.⁴¹ I believe
3 that the guidance issued recently by the Commission should be adhered to related to
4 utilities offering flexible extended payment arrangements,⁴² and that if the
5 Commission decides to alter its response to this matter it should be done on a
6 statewide basis and not solely in response to a single utility.

7
8 **Q. IF THE COMMISSION DECIDES TO APPROVE A RESIDENTIAL COVID-**
9 **19 RELIEF PROGRAM, WHAT WOULD YOU RECOMMEND?**

10 A. I want to reiterate that I recommend that the program be rejected in its entirety for the
11 reasons mentioned above and in my direct testimony. However, if the Commission
12 decides to approve such a program, I have the following responses to Mr. Colton's
13 and Ms. Levin's proposed changes:

14 (1) I would accept Mr. Colton's recommendation to eliminate the minimum
15 income eligibility and open the program up to all low-income households that
16 meet the qualifications.

17 (2) I would disagree with extending the program through December 31, 2022
18 (beyond the Company's proposed end date of March 31, 2022, or until funding
19 is exhausted) in light of the Commission's July 15, 2021 Order as discussed
20 above, and in support of the Company's original proposed end date of March
21 31, 2022 at the very latest.

⁴¹ <https://data.bls.gov/timeseries/LASST420000000000003> (accessed July 14, 2021).

⁴² Reference the Motion of Chairman Gladys Brown Dutrieuille and the Statement of Commissioner John F. Coleman, Jr. at Docket No. M-2020-3019244, on March 11, 2021.

- 1 (3) I would present no opinion on modifying the cost-control mechanism of
2 establishing a minimum arrearage level required to participate by extending
3 that principal to include an aging component.
- 4 (4) I would support NRDC witness Amanda Levin’s recommendation that the
5 \$500,000 administrative cost budget should not be approved in this proceeding
6 since it is high compared to the \$3 million overall budget for the program and
7 that the administrative expenses be tracked and recorded for future
8 consideration and potential approval in the next base rate proceeding, and I
9 further agree with Ms. Levin that DLC should be required to minimize the
10 amount not directly related to bill relief and forgiveness.⁴³
- 11 (5) I would accept that that the \$500,000 administrative cost (or a lessor amount
12 as discussed above) *but not the costs related to waiving of reconnection*
13 *charges and service restoration (if approved)* be in addition to the proposed
14 \$3.0 million budget.
- 15 (6) I would offer no opinion on Mr. Colton’s proposed modifications/clarification
16 to the dollar-for-dollar credit toward customer arrearages.
- 17 (7) I would strongly disagree with Mr. Colton’s recommendation that the \$3.0
18 million maximum budget be eliminated and that any amount exceeding \$3.0
19 million be recovered through the Universal Service Rider, because there needs
20 be a set limitation to the program.

⁴³ NRDC Statement No. 1, pp. 23-24.

1 **RESPONSE TO CAUSE-PA WITNESS HARRY GELLER**

2 **Q. SUMMARIZE THE POINTS MADE BY CAUSE-PA WITNESS HARRY**
3 **GELLER THAT YOU ARE ADDRESSING.**

4 A. Mr. Geller suggests that the Company should screen residential customers who apply
5 to the residential COVID-19 debt relief program⁴⁴ to determine whether they are
6 eligible for low-income assistance programs.⁴⁵ He also suggests the Company should
7 offer more flexible payment arrangements to customers who enroll in the residential
8 COVID-19 debt relief program in line with the Commission Order at Docket No. M-
9 2020-3019244 for the duration of the program.⁴⁶ Finally, I am addressing his
10 recommended increase to the Company’s LIURP budget.

11
12 **Residential COVID-19 Debt Relief Program:**

13 **Q. WHAT IS YOUR RESPONSE TO MR. GELLER’S SUGGESTION TO**
14 **SCREEN CUSTOMERS FOR ELIGIBILITY FOR LOW-INCOME**
15 **PROGRAMS WHEN APPLYING FOR THE PROPOSED COVID-19 DEBT**
16 **RELIEF PROGRAM?**

17 A. I agree that screening customers for eligibility for assistance programs is a good idea,
18 generally speaking, and empathize with the needs of low-income customers, however,
19 it should be noted that I continue to recommend disapproval of the residential

⁴⁴ This program would be available to non-CAP customers between 151% and 300% FPL with delinquent balances of at least \$100 and would offer forgiveness up to \$300 as well as a payment arrangement up to 36 months on the unpaid balance, per DLC Statement No. 7, p. 12.

⁴⁵ CAUSE-PA Statement No. 1, p. 52.

⁴⁶ CAUSE-PA Statement No. 1, pp. 32-33 and p. 53.

1 COVID-19 debt relief program for reasons explained in my direct testimony.⁴⁷

2 Therefore, I disagree with Mr. Geller's recommendation.

3
4 **Q. WHAT IS YOUR RESPONSE TO MR. GELLER'S POINT ABOUT MORE**
5 **FLEXIBLE PAYMENT ARRANGEMENTS IN LINE WITH THE**
6 **COMMISSION'S ORDER AT DOCKET NO. M-2020-3019244?**

7 A. I disagree that more flexible payment arrangements should be tied to approval of a
8 residential COVID-19 debt relief program; however, I fully support the Company
9 offering more flexible payment arrangements in line with the Commission's Order.
10 Furthermore, I believe the Company would benefit by complying with this request as
11 it would effectively reduce the impact of uncollectible accounts and aid customers in
12 need of added flexibility.

13
14 **LIURP Budget:**

15 **Q. SUMMARIZE THE COMPANY'S LIURP AND MR. GELLER'S**
16 **RECOMMENDED CHANGE TO THE PROGRAM.**

17 A. As explained in Mr. Geller's direct testimony, DLC's LIURP (the Smart Comfort
18 Program) targets residential customers with gross incomes of less than 150% of the
19 FPL and seniors whose gross household income is less than 200% FPL who have
20 baseload electric usage higher than 500 kWh per month and have been residing at
21 their current address for at least six months.⁴⁸ Usage reduction measures in the

⁴⁷ I&E Statement No. 1, pp. 33-35.

⁴⁸ CAUSE-PA Statement No. 1, p. 39. See also, DLC Statement No. 7, pp. 9-10.

1 program include appliance and lighting replacement and weatherization measures.⁴⁹

2 While the Company is not proposing a change to this program in this proceeding,⁵⁰

3 Mr. Geller recommends a \$1 million increase to the LIURP budget and that the

4 Commission require DLC to carryover any unspent LIURP funds from a prior

5 program year.⁵¹

6
7 **Q. WHAT IS THE BASIS FOR MR. GELLER'S RECOMMENDATION?**

8 A. Mr. Geller states that DLC serves only a small portion of eligible participants and has

9 significantly underspent its annual budget since 2019,⁵² indicating that the program is

10 not well known or is inaccessible.⁵³ He opines that the Company needs to make

11 changes to the program to ensure more customers can save on their bills via energy

12 efficiency measures. Additionally, he notes that DLC has a disproportionately

13 smaller budget compared to other electric distribution companies.

14
15 **Q. DO YOU AGREE WITH MR. GELLER'S RECOMMENDATION?**

16 A. No.

17
18 **Q. WHAT DO YOU RECOMMEND?**

19 A. I recommend that Mr. Geller's request be denied, and that the Company's budget

20 amount of \$3,053,500 as presented in the Company's most recent ongoing Universal

⁴⁹ CAUSE-PA Statement No. 1, p. 39. See also, DLC Statement No. 7, pp. 9-10.

⁵⁰ DLC Statement No. 7, p. 11.

⁵¹ CAUSE-PA Statement No. 1, p. 42.

⁵² CAUSE-PA Statement No. 1, p. 40.

⁵³ CAUSE-PA Statement No. 1, p. 41.

1 Service and Energy Conservation Plan (USECP) at Docket No. M-2019-3008227 be
2 allowed (pending any modification by the Commission in that ongoing proceeding).⁵⁴
3 Likewise, I recommend that any proposed changes in this proceeding regarding
4 carryover to future years be disallowed.

5
6 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

7 A. Mr. Geller has already shown that the Company has failed to spend its existing budget
8 amount of \$2,409,000 in 2018, 2019, and 2020. The projected budget amount for all
9 three years was \$2,409,000 while the “actual LIURP budget” (actual amounts) for
10 those same three years was \$2,341,637; \$622,772; and \$1,566,479, respectively.⁵⁵

11 While Mr. Geller suggests that critical changes must be made to the program to
12 increase participation, he does not mention any suggested methods for doing so.

13 Therefore, I recommend no increase to the LIURP budget in this proceeding and no
14 approval of carrying over unused balances.

15
16 **Q. ARE THERE ANY RECENT COMMISSION DECISIONS THAT SUPPORT
17 YOUR RECOMMENDATION?**

18 A. Yes. Most recently in the PECO Energy Company – Gas Division proceeding the
19 Commission did not consider CAUSE-PA’s proposals related to CAP and other
20 universal service program issues within the context of the base rate proceeding

⁵⁴ DLC Statement No. 7, p. 11 and Duquesne Light Company Universal Services and Energy Conservation Plan, Three-Year Plan, 2020-2022, Submitted February 28, 2019, at Docket No. M-2019-3008227.

⁵⁵ CAUSE-PA Statement No. 1, p. 40.

1 because they would be more properly considered in its USECP proceeding.⁵⁶ The
2 Commission referenced last year’s Columbia Gas proceeding⁵⁷ in which it concluded,
3 “that energy burdens should not be considered separately from other parts of the
4 Company’s CAP and universal service programs but should be considered as part of
5 the Company’s entire universal service plan, including the need for changes and
6 associated costs.”⁵⁸ It also should be noted that in last year’s Columbia Gas
7 proceeding the Commission rejected a similar proposal related to the Health and
8 Safety Pilot Program from CAUSE-PA and agreed with the Administrative Law
9 Judge’s recommended decision denying any change to the pilot program until its
10 effectiveness can be evaluated.⁵⁹

11
12 **RESPONSE TO PWPTF WITNESS EUGENE BRADY**

13 **Q. SUMMARIZE MR. BRADY’S DIRECT TESTIMONY CONCERNING DLC’S**
14 **LIURP BUDGET.**

15 **A.** Mr. Brady states that the Company estimates it would take more than eleven years at
16 the current funding level to serve all customers eligible for LIURP services. Thus, he
17 recommends an increase to the LIURP budget of \$689,500 beginning with the 2022
18 program year.⁶⁰

⁵⁶ *PA. PUC v. PECO Energy Company – Gas Division*, Docket No. R-2020-3018929, pp. 195-196 (Order Entered June 22, 2021).

⁵⁷ *PA. PUC v. Columbia Gas of Pennsylvania, Inc.*, Docket No. R-2020-3018835 (Order Entered February 19, 2021).

⁵⁸ *PA. PUC v. PECO Energy Company – Gas Division*, Docket No. R-2020-3018929, p. 195 (Order Entered June 22, 2021).

⁵⁹ *PA. PUC v. Columbia Gas of Pennsylvania, Inc.*, Docket No. R-2020-3018835, p. 174 (Order Entered February 19, 2021).

⁶⁰ WPTF Statement No. 1, p. 7.

1 **Q. WHAT IS THE BASIS FOR MR BRADY’S RECOMMENDATION?**

2 A. Mr. Brady calculates that at the \$3,053,500 budget amount proposed in the ongoing
3 USECP proceeding at Docket No. M-2019-3008229 the Company could service
4 3,100 homes at a cost of \$985 per LIURP customer. He recommends that the number
5 of customers served be increased by 700, which at the \$985 per customer amount,
6 produces a recommended increase of \$689,500.

7
8 **Q. DO YOU AGREE WITH MR. BRADY’S RECOMMENDATION?**

9 A. No. As stated above in response to CAUSE-PA witness Harry Geller’s recommended
10 \$1 million increase to the LIURP budget, I recommend that the budget amount of
11 \$3,053,500 as presented in the Company’s most recent Universal Service and Energy
12 Conservation Plan (USECP) at Docket No. M-2019-3008227 be allowed (pending
13 any modification by the Commission in that ongoing proceeding).⁶¹

14
15 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDED DISALLOWANCE OF**
16 **MR. BRADY’S PROPOSAL?**

17 A. While Mr. Brady’s recommendation is well-intentioned, it is inappropriate to consider
18 implementing this change in the instant proceeding. A recent increase to the LIURP
19 budget is reflected in the pending USECP proceeding before the Commission at
20 Docket No. M-2019-3008227. It would be inappropriate to increase the budget for
21 one of these programs in this instant proceeding without consideration to all other

⁶¹ DLC Statement No. 7, p. 11 and Duquesne Light Company Universal Services and Energy Conservation Plan, Three-Year Plan, 2020-2022, Submitted February 28, 2019, at Docket No. M-2019-3008227.

1 related programs.

2 Furthermore, Mr. Brady acknowledges the difficulty the Company has had
3 reaching eligible participants and suggests that new partnerships with agencies
4 providing services to lower-income people will be beneficial,⁶² and OCA witness
5 Colton shows that DLC has had difficulty reaching eligible participants for its CAP
6 program.⁶³ Until such time as the Company can show it is making strides in
7 addressing the outreach issue, it is not appropriate to increase the LIURP budget yet
8 again.

9
10 **Q. PLEASE REITERATE THE RECENT COMMISSION DECISIONS THAT**
11 **SUPPORT YOUR RECOMMENDATION.**

12 A. As stated above, in the recent PECO Energy Company – Gas Division proceeding the
13 Commission did not consider CAUSE-PA’s proposals relating to CAP and other
14 universal service program issues within the context of the base rate proceeding
15 because they would be more properly considered in its USECP proceeding.⁶⁴ The
16 Commission referenced last year’s Columbia Gas proceeding⁶⁵ in which it concluded,
17 “that energy burdens should not be considered separately from other parts of the
18 Company’s CAP and universal service programs but should be considered as part of
19 the Company’s entire universal service plan, including the need for changes and

⁶² PWPTF Statement No. 1, p. 8.

⁶³ OCA Statement No. 4, pp. 43-51.

⁶⁴ *PA. PUC v. PECO Energy Company – Gas Division*, Docket No. R-2020-3018929, pp. 195-196 (Order Entered June 22, 2021).

⁶⁵ *PA. PUC v. Columbia Gas of Pennsylvania, Inc.*, Docket No. R-2020-3018835 (Order Entered February 19, 2021).

1 associated costs.”⁶⁶ It should be noted that in last year’s Columbia Gas proceeding
2 the Commission rejected a similar proposal related to the Health and Safety Pilot
3 Program from CAUSE-PA.⁶⁷ In that proceeding the Commission agreed with the
4 Administrative Law Judge’s recommended decision denying any change to the pilot
5 program until its effectiveness can be evaluated.⁶⁸

6

7 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

8 A. Yes.

⁶⁶ *PA. PUC v. PECO Energy Company – Gas Division*, Docket No. R-2020-3018929, p. 195 (Order Entered June 22, 2021).

⁶⁷ *PA. PUC v. Columbia Gas of Pennsylvania, Inc.*, Docket No. R-2020-3018835, pp. 160-161 and 173-174 (Order Entered February 19, 2021).

⁶⁸ *PA. PUC v. Columbia Gas of Pennsylvania, Inc.*, Docket No. R-2020-3018835, p. 174 (Order Entered February 19, 2021).

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Surrebuttal Testimony

of

Christine Wilson

Bureau of Investigation and Enforcement

Concerning:

**I&E RECOMMENDED REVENUE REQUIREMENT, PENSION EXPENSE,
COVID-19 RELATED UNCOLLECTIBLE EXPENSE, OTHER COVID-19
RELATED COSTS NET OF SAVINGS, NEW BUSINESS STIMULUS RIDER,
CRISIS RECOVERY PROGRAM, RESIDENTIAL COVID-19 DEBT RELIEF
PROGRAM, RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER,
FEDERAL TAX ADJUSTMENT CLAUSE**

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christine Wilson, and my business address is Pennsylvania Public
4 Utility Commission, Commonwealth Keystone Building, 400 North Street,
5 Harrisburg, PA 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in
9 the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial
10 Analyst Supervisor.

11

12 **Q. ARE YOU THE SAME CHRISTINE WILSON WHO SUBMITTED I&E**
13 **STATEMENT NO. 1, I&E EXHIBIT NO. 1, AND I&E STATEMENT NO.**
14 **1-R?**

15 A. Yes.

16

17 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

18 A. The purpose of my surrebuttal testimony is to respond to the following witnesses'
19 rebuttal testimony in the base rate proceeding of Duquesne Light Company (DLC
20 or Company): Jaime Bachota (DLC Statement No. 2-R), Krysia Kubiak (DLC
21 Statement No. 5-R), Katherine Scholl (DLC Statement No. 7-R), Robert O'Brien
22 (DLC Statement No. 10-R), Matthew Simpson (DLC Statement No. 12-R), David

1 Ogden (DLC Statement No. 16-R), and Margot Everett (DLC Statement No.
2 17-R). I am also presenting the updated I&E overall revenue requirement
3 recommendation.

4
5 **Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN EXHIBIT?**

6 A. No.

7
8 **OPERATING AND MAINTENANCE EXPENSE ADJUSTMENTS**

9 **Q. PLEASE SUMMARIZE THE COMPANY'S UPDATED REQUESTED**
10 **INCREASE.**

11 A. The Company updated its requested revenue increase of \$85,760,000 to
12 \$85,528,000¹ for the Fully Projected Future Test Year (FPFTY) ending
13 December 31, 2022, in rebuttal testimony.

14
15 **Q. HAS THE COMPANY ACCEPTED ANY OF YOUR RECOMMENDED**
16 **ADJUSTMENTS?**

17 A. Yes. DLC witness Jaime Bachota agrees with my recommendation for pension
18 expense.²

¹ DLC Exhibit RLO-1-R.

² DLC Statement No. 2-R, p. 11.

1 **Q. PLEASE SUMMARIZE YOUR RECOMMENDED ADJUSTMENTS AS**
 2 **EXPLAINED HEREIN.**

3 A. The following table summarizes my recommended adjustments to the Company’s
 4 revenue requirement.

5

	Company Rebuttal Claim	Recommended Allowance	I&E Adjustment
O&M Expenses:			
COVID-19 Related Uncollectible Expense	\$2,094,000	\$1,752,837	(\$341,163)
COVID-19 Related Costs Net of Savings (excl. Uncollectible Exp.)	\$1,495,000	\$0	(\$1,495,000)
New Business Stimulus Rider	\$276,971	\$0	(\$276,971)
Crisis Recovery Program	\$422,800	\$0	(\$422,800)
Residential COVID-19 Debt Relief Program	\$1,167,000	\$0	(\$1,167,000)
Residential Subscription Rate Pilot Rider	\$22,300	\$0	<u>(\$22,300)</u>
Total O&M Expense Adjustments			<u>(\$3,725,234)</u>

6

7 **I&E OVERALL RECOMMENDED REVENUE REQUIREMENT**

8 **Q. WHAT IS I&E’S TOTAL UPDATED RECOMMENDED REVENUE**
 9 **REQUIREMENT?**

10 A. I&E’s total recommended revenue requirement for DLC is \$612,121,000. This
 11 recommended revenue requirement represents an increase of 35,288,000 to the
 12 I&E-adjusted present rate revenues of \$576,833,000. This total recommended
 13 allowance incorporates my adjustments made in this testimony and those made in

1 the testimony of I&E witnesses Christopher Keller (I&E Statement No. 2), and
 2 Esyan Sakaya (I&E Statement No. 3).

3 A calculation of I&E's recommended revenue requirement is shown below.

Duquesne Light Company R-2021-3024750 \$ in Thousands	TABLE I INCOME SUMMARY				
	12/31/22 Proforma	INVESTIGATION & ENFORCEMENT			
	Present Rates	Adjustments	Present Rates	Allowances	Proposed
	\$	\$	\$	\$	\$
Operating Revenue	568,382	8,451	576,833	35,288	612,121
Deductions:					
O&M Expenses	205,116	-9,359	195,757	459	196,216
Depreciation	181,309	0	181,309		181,309
Taxes, Other	41,102	492	41,594	2,055	43,649
Income Taxes:					
Current State	6,297	1,731	8,028	3,274	11,302
Current Federal	6,102	3,278	9,380	6,195	15,575
Deferred Taxes	6,400	0	6,400		6,400
ITC	0	0	0		0
Total Deductions	446,326	-3,858	442,468	11,983	454,451
Income Available	122,056	12,309	134,365	23,305	157,670
Measure of Value	2,276,040	-853	2,275,187	0	2,275,187
Rate of Return	5.36%		5.91%		6.93%

4
5
6 **JULY 15, 2021 COMMISSION ORDER RELATED TO THE COVID-19**

7 **PANDEMIC**

8 **Q. SUMMARIZE THE ACTION TAKEN BY THE COMMISSION**
 9 **RECENTLY WITH REGARD TO TEMPORARY POLICY ORDERS**
 10 **RELATED TO THE COVID-19 PANDEMIC.**

11 A. On July 15, 2021, after the preparation of my direct testimony in this proceeding,
 12 the Commission issued an Order related to the *Public Utility Service Termination*

1 *Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset at*
2 Docket Nos. M-2020-3019244 and M-2020-3019755 (Ordered Entered July 15,
3 2021) (July 15, 2021 Order).

4
5 **Q. PLEASE SUMMARIZE THE JULY 15, 2021 ORDER.**

6 A. The July 15, 2021 Order discusses prior Orders related to the prohibition of
7 service terminations, reconnections, the later payment arrangement instructions,
8 the regulatory asset treatment for related expenses, and the tracking of
9 extraordinary, nonrecurring incremental COVID-19 related expenses.³
10 Subsequent to these prior Commission Orders, the July 15, 2021 Order explains,
11 the Pennsylvania Legislature and the Governor took actions which caused the
12 effectiveness of the Commission's Orders to extend up until September 30, 2021
13 unless terminated earlier by the Commission.⁴

14 This July 15, 2021 Order is referenced periodically throughout this
15 surrebuttal testimony.

³ July 15, 2021 Order, p. 2.

⁴ July 15, 2021 Order, p. 3.

1 **COVID-19 RELATED UNCOLLECTIBLE EXPENSE**

2 **Summary of I&E Recommendation in Direct Testimony:**

3 **Q. SUMMARIZE YOUR RECOMMENDATION FOR COVID-19 RELATED**
4 **UNCOLLECTIBLE EXPENSE IN DIRECT TESTIMONY.**

5 A. I recommended an allowance of \$1,752,837 or a reduction of \$341,163
6 (\$2,094,000 - \$1,752,837) to the Company's claim. I also recommended that the
7 Company discontinue recording a regulatory asset for COVID-19 related
8 incremental uncollectible costs after the effective date of new rates for this
9 proceeding, because at that time, the Company should have a new uncollectible
10 percentage built into the rate formula that accounts for changes due to COVID-
11 19.⁵

12 This recommendation was based on a change to the Company's proposed
13 three-year *normalization* of the COVID-19 uncollectible expense and instead to
14 use the 43-month *amortization* period (since regulatory assets are supposed to be
15 amortized and not normalized) in line with I&E witness Christopher Keller's
16 calculation of the Company's historic filing frequency.⁶ Furthermore, I
17 recommended that continued future tracking of incremental uncollectible costs
18 between what is granted for routine uncollectible expense in this proceeding and
19 amounts actually incurred should not be necessary since the Company has
20 multiple years of actual historic experience that should incorporate the higher

⁵ I&E Statement No. 1, p. 10.

⁶ I&E Statement No. 1, p. 10 and I&E Statement No. 2.

1 COVID-19 related year of 2020 upon which to base its current claim.⁷

2
3 **Q. DID ANY WITNESSES RESPOND TO YOUR RECOMMENDATION?**

4 A. Yes. DLC witnesses Jaime Bachota and Robert O'Brien disagree with my
5 recommendation.

6
7 **DLC Witness Jaime Bachota's Response - COVID-19 Related Uncollectibles:**

8 **Q. SUMMARIZE MS. BACHOTA'S RESPONSE.**

9 A. Ms. Bachota disagrees with my recommended 43-month amortization period⁸ in
10 support of the three-year recommendation made by DLC witness Robert O'Brien.⁹
11 She disagrees with the premise that deferral of COVID-19 related uncollectibles
12 should discontinue upon the effective date of new rates in this proceeding because:
13 (1) the Company excluded the effect of COVID-19 when establishing its
14 uncollectible claim for the FPFTY by excluding 2020 from its historic calculation;
15 (2) the Company has entered into payment arrangements per the Commission's
16 COVID-19 related Orders and it is not certain what affect this will have on
17 uncollectibles; (3) she opines it is not known whether the Commission will issue
18 another termination moratorium;¹⁰ and (4) upon the effective date of new rates, the
19 continuing regulatory asset will be based upon the uncollectible expense

⁷ I&E Statement No. 1, pp. 10-11.

⁸ DLC Statement No. 2-R, p 17.

⁹ DLC Statement No. 10-R, pp. 33-38.

¹⁰ This point fails to acknowledge the July 15, 2021 Commission Order which makes such terminations less likely going forward. See also [Pennsylvania becomes 1st in nation to curb governor's emergency powers - MarketWatch](#) (Accessed July 31, 2021).

1 established in this proceeding. For these reasons, she opines it is appropriate to
2 continue deferral treatment of COVID-19 related uncollectibles however offers no
3 end date to when she believes the deferral should cease.¹¹

4
5 **Q. WHAT IS YOUR RESPONSE TO MS. BACHOTA'S ASSERTION THAT**
6 **THE COMPANY'S CLAIM FOR ROUTINE UNCOLLECTIBLES**
7 **EXCLUDES 2020 IN THE HISTORIC AVERAGE?**

8 A. The Company had an opportunity to recalculate its routine uncollectibles (in
9 response to my recommendation) incorporating 2020 into the historic average and
10 to my knowledge it did not. I continue to recommend that an end date is needed
11 for COVID-19 related uncollectibles deferral since an open-ended deferral is
12 inappropriate.

13 There needs to be a point in time when the impacts of COVID-19 become
14 incorporated into routine uncollectibles due to the ongoing nature of the pandemic
15 and the fact that seeing the real effect of COVID-19 in one place, the routine
16 uncollectibles, will demonstrate the impact of the pandemic more clearly and
17 directly. Therefore, I recommend that regulatory asset treatment should end upon
18 the effective date of new rates in this proceeding.

¹¹ DLC Statement No. 2-R, p. 18.

1 **Q. PLEASE RESPOND TO MS. BACHOTA’S ASSERTION THAT THE**
2 **IMPACT OF PAYMENT ARRANGEMENTS WITH CUSTOMERS IS**
3 **UNCLEAR AND IT IS NOT KNOWN WHETHER THE COMMISSION**
4 **WILL ISSUE ANOTHER TERMINATION MORATORIUM.**

5 A. The Company should not be basing its claim on assumptions. The Company had
6 an opportunity to develop a claim based on three years of known uncollectibles
7 experience. This is a more reliable method than basing a claim (for an unlimited
8 timeline) on uncertainties. The Company continues to have an opportunity to
9 update its uncollectibles claim in rejoinder testimony and accept my
10 recommendation, and in my opinion should do so. The COVID-19 related
11 uncollectibles regulatory asset deferral treatment should end upon the effective
12 date of new rates in this proceeding. If the Commission would ever require
13 another moratorium on utility shutoffs, it is reasonable to believe that it would also
14 provide additional guidance on any related steps to be taken for potential approval
15 of related increases in uncollectibles at that time.¹² Since this is all speculative at
16 this time, I recommend the Company’s request to continue deferral treatment
17 beyond the effective date of new rates in this proceeding be denied.

¹² Again, this is becoming less and less likely due to the issuance of the July 15, 2021 Order. See also [Pennsylvania becomes 1st in nation to curb governor’s emergency powers - MarketWatch](#) (Accessed July 31, 2021).

1 **DLC Witness Robert O'Brien's Response - COVID-19 Related Uncollectibles:**

2 **Q. SUMMARIZE MR. O'BRIEN'S RESPONSE TO YOUR**
3 **RECOMMENDATION.**

4 A. Mr. O'Brien disagrees with my recommended 43-month amortization period for
5 the same reason he disagrees with I&E witness Christopher Keller's 43-month
6 period for rate case expense normalization.¹³ However, he agrees with my
7 recommendation that the regulatory asset balance for COVID-19 related
8 uncollectible expense should be amortized as opposed to normalized.¹⁴

9
10 **Q. WHAT IS YOUR RESPONSE TO MR. O'BRIEN?**

11 A. I disagree with his assertion that a three-year recovery period is appropriate for
12 recovery of this expense for the reasons presented in I&E witness Christopher
13 Keller's rate case expense testimony.¹⁵ The recovery period for this expense
14 should match the rate case expense normalization period as approved by the
15 Commission in this proceeding.

¹³ DLC Statement No. 10-R, p. 50.

¹⁴ DLC Statement No. 10-R, p. 50.

¹⁵ I&E Statement No. 2 and I&E Statement No. 2-SR.

1 **July 15, 2021 Order:**

2 **Q. DOES THE JULY 15, 2021 ORDER INDICATE AN END DATE FOR THE**
3 **RECORDING OF A REGULATORY ASSET FOR COVID-19 RELATED**
4 **UNCOLLECTIBLES?**

5 A. Not specifically. The Order states that “all payment arrangements for residential
6 customers and small business customers established before September 30,
7 2021...shall continue for the duration of the arrangement...”,¹⁶ that “utilities shall
8 continue to provide the outstanding reports through the fourth quarter of 2021”¹⁷
9 and that “[a]ll Commission-approved COVID-19 customer protection plans
10 submitted by utilities before September 30, 2021 shall remain in full force and
11 effect according to their individual terms;”¹⁸ however, it is my understanding that
12 the Order does not directly designate an end date for any accumulation of
13 incremental uncollectibles or other related extraordinary expenses in a regulatory
14 asset.

15
16 **Q. DOES THE LACK OF AN END DATE IN THE JULY 15, 2021**
17 **COMMISSION ORDER NEGATE YOUR RECOMMENDATION?**

18 A. No. It is reasonable to believe that the Commission simply chose not to designate
19 an end date to regulatory asset treatment for uncollectibles since not all companies
20 file base rate cases on the same timeline. In my opinion each utility should cease

¹⁶ July 15, 2021 Order, p.3.

¹⁷ July 15, 2021 Order, p. 4.

¹⁸ July 15, 2021 Order, p. 4.

1 tracking COVID-19 uncollectibles upon filing a base rate case when those new
2 rates go into effect.

3
4 **Conclusion – COVID-19 Related Uncollectible Expense:**

5 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
6 **COVID-19 RELATED UNCOLLECTIBLES EXPENSE?**

7 A. No. I continue to support my recommendations made in direct testimony and as
8 summarized above for COVID-19 related uncollectibles expense, and neither the
9 Company's response nor the July 15, 2021 Order impact my recommendation.

10
11 **COVID-19 RELATED COSTS NET OF SAVINGS (EXCLUDING THE COVID-19**
12 **UNCOLLECTIBLE EXPENSE DEFERRAL)**

13 **Summary of I&E Recommendation in Direct Testimony:**

14 **Q. WHAT IS INCLUDED IN THE CLAIM FOR COVID-19 RELATED COSTS**
15 **NET OF SAVINGS (EXCLUDING UNCOLLECTIBLES).**

16 A. The Company has tracked and maintained records for what it claims as other
17 extraordinary, nonrecurring incremental COVID-19 related costs net of savings
18 (referred to herein as other incremental COVID-19 related costs net of savings)
19 consisting primarily of waived late payment charges and reconnection fees,
20 increased costs for outside services and materials, and savings primarily associated
21 with employee training and other employee events.¹⁹

¹⁹ DLC Statement No. 2, p. 24.

1 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
2 **CONCERNING OTHER INCREMENTAL COVID-19 RELATED COSTS**
3 **NET OF SAVINGS.**

4 A. I recommended disallowance of the Company’s \$1,931,667 claim in its entirety
5 and disallowance of the Company’s proposal to continue including the incremental
6 costs above what is included in this proceeding as a regulatory asset to be
7 recovered in a future rate proceeding.²⁰

8
9 **Q. SUMMARIZE YOUR RATIONALE FOR RECOMMENDING**
10 **DISALLOWANCE OF THIS REQUEST IN ITS ENTIRETY.**

11 A. I stated that the Commission has allowed companies to *track* other incremental
12 COVID-19 related costs net of savings (beyond uncollectibles and directly related
13 increases to expenses) but has not issued guidance on whether or how companies
14 may recover these other incremental costs.²¹ I also summarized points made in the
15 COVID-19 related Secretarial Letter and recent Orders as follows.

16 In the May 13, 2020 Secretarial Letter, the Commission stated that tracking
17 of these expenses was “to provide the Commission with information to understand
18 the extent of the COVID-19 pandemic’s impact on utilities’ finances.”²² The
19 Commission stated further, apart from the uncollectible expenses, “this Secretarial
20 Letter does not grant authorization for utilities to defer any other potential

²⁰ I&E Statement No. 1, p. 14.

²¹ I&E Statement No. 1, pp. 14-15.

²² Docket No. M-2020-3019775, May 13, 2020 Secretarial Letter, p. 3.

1 COVID-19 related expenses.”²³ Therefore, I asserted, it is inappropriate for the
2 Company to defer and recover these expenses as a part of this or any future rate
3 proceeding or create a regulatory asset account for recovery of subsequent
4 COVID-19 related expenses net of savings.²⁴

5
6 **Q. PLEASE CONTINUE.**

7 A. Furthermore, I indicated that the Commission’s May 13, 2020 Secretarial Letter
8 directed utilities to do the following: (1) track extraordinary, nonrecurring
9 incremental COVID-19 related expenses and maintain detailed accounting records
10 of such expenses, however not granting authorization to defer any potential
11 COVID-19 related expenses other than uncollectible expenses;²⁵ and (2) establish
12 a regulatory asset for COVID-19 uncollectible expenses resulting from the
13 Emergency Order, requiring detailed records of the incremental extraordinary,
14 nonrecurring expense incurred in compliance with the Emergency Order to be
15 reviewed in a future proceeding.²⁶ Also of importance to note, I indicated that I
16 am not aware that the Commission has ever instructed regulated utilities to track

²³ Docket No. M-2020-3019775, May 13, 2020 Secretarial Letter, p. 2.

²⁴ I&E Statement No. 1, p. 15.

²⁵ The May 13, 2020 Secretarial Letter noted that governmental assistance that would offset expenses should also be tracked.

²⁶ I&E Statement No. 1, pp. 15-16. Also, as indicated, the May 13, 2020 Secretarial Letter explained that tracking of COVID-19 related expenses other than uncollectible expense are described as being intended to provide the Commission with information to understand the extend of the COVID-19 pandemic’s impact on utilities’ finances.

1 lost revenues due to foregone late payments and reconnection fees, and it has not
2 approved establishing a regulatory asset for deferral of such lost revenues.²⁷

3 I stated that the Commission's March 18, 2021²⁸ Order made eligible for
4 recovery via regulatory asset treatment the increased expenses directly related to
5 any increased costs associated with carrying out the instructions as they relate to
6 the requirements of that Order (concerning collection processes related to lifting
7 the shutoff moratorium, payment arrangements for certain low-income customers,
8 and directly related reporting requirements), but that the Company has not
9 provided detailed records or specification of which claimed expenses relate
10 directly to carrying out the requirements of the Orders.²⁹ Those Orders are: the
11 March 13, 2020 Emergency Order (related to the moratorium on utility shutoffs),
12 the October 13, 2020 Order (which lifted the moratorium on shutoffs and required
13 protections for certain low-income customers), and the March 18, 2021 Order
14 (which, as also stated above, addressed collection processes related to lifting the
15 shutoff moratorium, payment arrangements for certain low-income customers, and
16 directly related reporting requirements).

17 To my knowledge, as indicated in my direct testimony, none of those
18 Orders referenced above granted utilities explicit permission to track and request
19 for future recovery other COVID-19 related expenses that are unrelated to

²⁷ I&E Statement No. 1, p. 16.

²⁸ *Public Utility Service Termination Moratorium* at Docket No. M-2020-3019244, Order Entered March 18, 2021.

²⁹ I&E Statement No. 1, pp. 16-19.

1 carrying out the specific instructions of the Commission, particularly when those
2 expenses do not rise to the level of being extraordinary.³⁰ Additionally, I noted
3 that DLC never sought or received special permission to defer for accounting
4 purposes any other incremental COVID-19 related costs.³¹

5
6 **Q. WHAT OTHER PENDING PROCEEDING DID YOU MENTION IN**
7 **DIRECT TESTIMONY THAT RELATES TO THIS MATTER?**

8 A. I mentioned the Pennsylvania-American Water Company (PAWC) petition filing at
9 Docket No. P-2020-3022426, wherein I recommended that the Commission issue
10 statewide direction on this topic for all regulated utilities rather than granting an
11 individual company special handling of related costs.³² I similarly recommended
12 in the PAWC proceeding that the Commission provide such direction on a
13 statewide basis regarding whether historically incurred (or future) expenses or lost
14 revenues are granted approval for future recovery.³³

15
16 **Q. WHAT POINT DID YOU MAKE WITH RESPECT TO LOST REVENUES?**

17 A. As stated in my direct testimony, a large portion of DLC's claim is for lost
18 revenues in the form of waived late payment charges and reconnection fees, and I
19 believe it is inappropriate for ratepayers to be burdened to fund such lost revenues

³⁰ I&E Statement No. 1, pp. 17-18.

³¹ I&E Statement No. 1, pp. 19-20.

³² I&E Statement No. 1, p. 19. See also I&E Statement No. 1-SR, p. 17 at Docket No. P-2020-3022426.

³³ I&E Statement No. 1, p. 19. See also I&E Statement No. 1-SR at Docket No. P-2020-3022426.

1 that are simply lost fees and not lost revenue for goods or services provided.

2 Regulated utilities should not be fully insulated from all costs associated with the
3 pandemic, particularly when the total amount of DLC's net operating costs
4 requested for deferral prior to normalization (\$5,795,000³⁴) is less than 0.9% of
5 the total claimed present rate revenues in this proceeding of \$654,141,000.³⁵

6
7 **Q. IF THE COMMISSION DECIDES TO ALLOW RECOVERY OF DLC'S**
8 **OTHER INCREMENTAL COVID-19 RELATED COSTS NET OF**
9 **SAVINGS, WHAT DID YOU RECOMMEND?**

10 A. While I disagreed with recovery or separate handling via a regulatory asset
11 treatment of such incremental costs, if the Commission decides to allow such
12 recovery, I recommended that an end date (the effective date of new rates in this
13 proceeding) be established for deferred treatment of any lost revenues or changes
14 to expenses attributable to the impacts of the COVID-19 pandemic and that no
15 future deferrals be allowed. The Company has admitted that it has no plans to
16 change its late fees and reconnection fees that resumed on June 1, 2021.³⁶ The
17 waived late fees (\$2,573,000) and reconnection fees (\$432,000) in the Company's
18 filing make up a large portion of the Company's deferral claim for other
19 incremental costs net of savings of the total amount, \$5,945,000, prior to

³⁴ DLC Exhibit 2 – Fully Projected Future Test Year, Exhibit D-12.

³⁵ I&E Statement No. 1, p. 19, and DLC Exhibit 2 – Fully Projected Future Test Year, Exhibit D-1, p. 1.

³⁶ I&E Exhibit No. 1, Schedule 4.

1 amortization. Therefore, approval of continued deferred treatment should be
2 disallowed under any circumstances.³⁷

3 Finally, I mentioned that the Company has admitted the occurrence of any
4 future incremental COVID-19 related costs net of savings is uncertain.³⁸ This lack
5 of certainty surrounding continuation of such expenses further supports my
6 recommendation.³⁹

7
8 **Q. DID YOU MAKE ANY RECOMMENDATIONS ABOUT THE**
9 **TREATMENT OF THE BALANCE IF THE COMMISSION DECIDES TO**
10 **ALLOW DEFERRAL OF OTHER INCREMENTAL COVID-19 RELATED**
11 **COSTS NET OF SAVINGS VIA A REGULATORY ASSET?**

12 A. I recommended that if the Commission decides to allow any form of regulatory
13 asset treatment, it should require the Company to amortize, not normalize, a
14 regulatory asset. When a utility claims a regulatory asset for ratemaking purposes,
15 it should be amortized. Amortization allows for full recovery of the regulatory
16 asset balance no matter when a utility makes a subsequent base rate case filing.
17 Amortization is appropriate for periodic extinguishment of a regulatory asset (a
18 balance sheet account). Finally, if the Commission allows amortization, the

³⁷ I&E Statement No. 1, p. 20.

³⁸ I&E Exhibit No. 1, Schedule 5.

³⁹ I&E Statement No. 1, pp. 20-21.

1 frequency should match the historic filing frequency of 43 months as detailed by
2 I&E witness Keller in his direct testimony.⁴⁰

3
4 **Relevant Commission Order Since Direct Testimony:**

5 **Q. WERE THERE ANY RELEVANT COMMISSION ORDERS ISSUED**
6 **SINCE YOU PREPARED YOUR DIRECT TESTIMONY?**

7 A. Yes. The Commission issued the July 15, 2021 Order which mentions the tracking
8 of COVID-19 related expenses.

9
10 **Q. WHAT DID THE COMMISSION STATE IN ITS JULY 15, 2021 ORDER**
11 **RELATED TO THE TRACKING OF COVID-19 RELATED EXPENSES?**

12 A. In this July 15, 2021 Order, the Commission allows utilities to continue tracking
13 extraordinary, nonrecurring incremental COVID-19 related expenses and states
14 that utilities⁴¹

15 ...are authorized to create a regulatory asset for any
16 incremental expenses incurred above those embedded in rates
17 resulting from the directives contained in this Order. To be
18 eligible for inclusion in a utility's COVID-19 designated
19 regulatory asset, the utility must maintain detailed records of
20 the incremental extraordinary, nonrecurring expenses incurred
21 *as a result of compliance with the Commission's March 13*
22 *Emergency Order, the October 13 Order, the March 18, 2021,*
23 *Order and this Order.* (Emphasis added.)

⁴⁰ I&E Statement No. 1, p. 21, and I&E Statement No. 2.

⁴¹ *Public Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset*, at Docket Nos. M-2020-3019244 and M-2020-3019775 (Order Entered July 15, 2021), p. 4.

1 **Q. DO YOU BELIEVE THE JULY 15, 2021 ORDER INDICATES EXPLICIT**
2 **APPROVAL FOR REGULATORY ASSET TREATMENT OF *ALL***
3 **CLAIMED COVID-19 RELATED EXPENSES IN THIS PROCEEDING?**

4 A. No. My understanding is that only increases in expenses (beyond those reflected
5 in base rates) tied to incremental uncollectibles and the related payment
6 arrangements should qualify for regulatory asset treatment. Furthermore, I stand
7 by my recommendations in direct testimony that the accumulation of COVID-19
8 related uncollectible expense in a regulatory asset should cease upon the effective
9 date of new rates in this proceeding⁴² and that the claim for COVID-19 related
10 costs net of savings (which excludes uncollectibles-related amounts) should be
11 disallowed in its entirety for the reasons explained in my direct testimony.⁴³

12 The total amount of COVID-19 related costs net of savings (excluding
13 uncollectibles) attributable to compliance with the Commission's March 13, 2020
14 Order, the October 13, 2020 Order, the March 18, 2021 Order, and the July 15,
15 2021 Order appear to be immaterial, are simply a loss of fees, and therefore do not
16 rise to the level of extraordinary expenses appropriate for regulatory asset and
17 deferral treatment.

⁴² I&E Statement No. 1, pp. 10-12.

⁴³ I&E Statement No. 1, pp. 14-21.

1 **Q. DID ANY WITNESSES RESPOND TO YOUR RECOMMENDATION?**

2 A. Yes. DLC witnesses Jaime Bachota and Robert O'Brien disagree with my
3 recommendation.

4

5 **DLC Witness Jaime Bachota's Response – COVID-19 Related Costs Net of**

6 **Savings (Excluding Uncollectibles):**

7 **Q. SUMMARIZE MS. BACHOTA'S RESPONSE TO YOUR**
8 **RECOMMENDATION.**

9 A. Ms. Bachota disagrees with my recommendation as follows. First, she disagrees
10 with my assertion that the Company did not seek or receive special permission to
11 defer for accounting purposes any other incremental COVID-19 related costs. It
12 appears that she believes since the Commission allowed *tracking* of all
13 extraordinary, nonrecurring COVID-19 related expenses, that it also gave
14 permission for all such expenses to be included in a regulatory asset for deferral
15 and future recovery.⁴⁴

16 Second, she disagrees with my assertion that the Company has not
17 specifically identified amounts directly attributable to the additional call center
18 staffing expenses in collecting aged receivables by asserting that the Company has
19 maintained detailed records for related costs.⁴⁵

⁴⁴ DLC Statement No. 2-R, pp. 20-21.

⁴⁵ DLC Statement No. 2-R, p. 21.

1 Finally, she disagrees that my opinion that the Commission has not
2 expressed permission for the deferral and retroactive recovery of forgone late
3 payments and reconnection fees, and in contrast, she states, “the Company
4 believes that forgone payment fees and reconnection fees represent the
5 reimbursement of costs associated with collection and reconnection activities.”⁴⁶
6

7 **Q. WHAT IS YOUR RESPONSE TO MS. BACHOTA’S REBUTTAL**
8 **TESTIMONY ON THIS TOPIC?**

9 A. As stated in my rebuttal testimony in this proceeding, I continue to recommend
10 that recovery of these out-of-period costs net of savings be disallowed in their
11 entirety for the same reasons as explained in my direct testimony, and I
12 recommend disallowance of the Company’s proposal to continue including any
13 such costs in future rate proceedings. It is my understanding that the only
14 expenses for which the Commission has granted regulatory asset treatment relate
15 directly to uncollectibles (the difference between the amount reflected in present
16 rates and those amounts experienced during the pandemic) and carrying out the
17 specific actions detailed in the Orders referenced above. Additionally, I reiterate a
18 point made in my direct testimony, that the total amount of DLC’s as-filed claimed
19 net operating cost requested for deferral prior to normalization (\$5,795,000) is less
20 than 0.9% of the total claimed present rate revenues in this proceeding of

⁴⁶ DLC Statement No. 2-R, p. 21.

1 \$654,141,000,⁴⁷ and that the Company should not be fully insulated from all costs
2 associated with the pandemic.⁴⁸

3 Finally, in response to Ms. Bachota’s assertion that I am improperly
4 narrowing the scope of what types of expenses should be allowed for recovery,⁴⁹ I
5 am not aware that the Commission granted explicit permission to retroactively
6 recovery every type of expense and fee merely labeled as COVID-19 related⁵⁰
7 particularly when the claim does not even rise to the level of a material dollar
8 amount as compared to the Company’s total revenues.⁵¹

9
10 **DLC Witness Robert O’Brien’s Response – COVID-19 Related Costs Net of**
11 **Savings (Excluding Uncollectibles):**

12 **Q. SUMMARIZE MR. O’BRIEN’S INITIAL RESPONSE TO YOUR**
13 **RECOMMENDATION.**

14 A. Mr. O’Brien reiterates the changes to the Company’s claim as discussed in Ms.
15 Bachota’s rebuttal testimony as summarized below (in the “Update to the
16 Company’s Claim” section), and he opines that my direct testimony does not

⁴⁷ DLC Exhibit 2 – Fully Projected Future Test Year, Exhibit D-1, p. 1.

⁴⁸ I&E Statement No. 1, pp. 10-12 and I&E Statement No. 1-R, pp. 5-6.

⁴⁹ DLC Statement No. 2-R, p.22.

⁵⁰ As stated in my direct testimony, “In the May 13, 2020 Secretarial Letter at Docket No. M-2020-3019775, the Commission stated that tracking of these expenses was “to provide the Commission with information to understand the extent of the COVID-19 pandemic’s impact on utilities’ finances.” The Commission stated further, apart from the uncollectible expenses, “this Secretarial Letter does not grant authorization for utilities to defer any other potential COVID-19 related expenses.” (I&E Statement No. 1, p. 15.)

⁵¹ I&E Statement No. 1-R, p. 6.

1 recommend disallowance of recovery of the claimed expenses but that it
2 recommends a disallowance *until the Commission approves* such recovery.⁵²

3
4 **Q. DO YOU AGREE THAT YOU ARE MERELY SUGGESTING THAT A**
5 **DELAY IN RECOVERY IS NECESSARY UNTIL THE COMMISSION**
6 **GRANTS ITS APPROVAL?**

7 A. No. My direct testimony clearly recommends disallowance of the Company's
8 claim in its entirety for the reasons stated therein and summarized above. I was
9 merely indicating that the Commission, to my knowledge, never granted a blanket
10 approval for all expenses and fees labeled COVID-19 related. There were finite
11 areas and requirements discussed in each Order, and only expenses *directly related*
12 *to carrying out the specific requirements in the COVID-19 related Orders* were
13 approved for deferral treatment.⁵³ Additionally, as mentioned in my rebuttal
14 testimony, the May 13, 2020 Secretarial Letter stated that tracking of incremental
15 expenses (other than uncollectibles) is intended "to provide the Commission with
16 information to understand the extent of the COVID-19 pandemic's impact on
17 utilities' finances."⁵⁴

⁵² DLC Statement No. 10-R, pp. 52-54.

⁵³ See also the Commission's May 13, 2020 Secretarial Letter regarding *COVID-19 Cost Tracking and Creation of Regulatory Asset*, Docket No. M-2020-3019775 (May 13, 2020 Secretarial Letter), p.2, which indicates that "this Secretarial Letter does not grant authorization for utilities to defer any other potential future COVID-19 related expenses."

⁵⁴ Docket No. M-2020-3019775, May 13, 2020 Secretarial Letter, p. 3, as quoted in I&E Statement No. 1-R, pp. 3-4.

1 **Q. MR. O'BRIEN ARGUES YOUR SUGGESTION THAT NOT ENOUGH**
2 **DETAILED RECORDS WERE PROVIDED TO SUPPORT SUCH A**
3 **CLAIM IS WITHOUT MERIT.⁵⁵ DO YOU AGREE?**

4 A. No. It appears the Company has included other items that, based on my
5 understanding, the Commission did not provide explicit permission to include in a
6 regulatory asset. The Company has not responded to this concern by breaking
7 down the claimed amounts by the required activities detailed in the COVID-19
8 related Orders. As explained in my direct testimony, the Commission has allowed
9 companies to *track* other incremental COVID-19 related costs net of savings
10 (beyond uncollectibles and directly related increases to expenses) but has not
11 explicitly stated that all such COVID-19 related expenses are recoverable in future
12 rates.⁵⁶ Given the burden already placed on ratepayers due to the COVID-19
13 pandemic, I reiterate that the Company should not be fully insulated from all costs
14 or lost fees associated with the pandemic.⁵⁷

⁵⁵ DLC Statement No. 10-R, p. 54.

⁵⁶ I&E Statement No. 1, pp. 14-15.

⁵⁷ I&E Statement No. 1, p. 19.

1 **Q. MR. O'BRIEN DISAGREES WITH YOUR ASSERTION THAT SINCE**
2 **THE PERCENTAGE OF COVID-19 RELATED EXPENSES TRACKED**
3 **BY THE COMPANY IS SMALL RELATIVE TO ITS OVERALL**
4 **REVENUES, THE CLAIM SHOULD NOT BE CONSIDERED**
5 **EXTRAORDINARY IN NATURE.⁵⁸ WHAT IS YOUR RESPONSE?**

6 A. I am recommending that recovery of the Company's claim be denied in part due to
7 the overall immaterial dollar amount of this out-of-period expense;⁵⁹ however, I
8 accept that COVID-19 related costs net of savings are real costs that have been
9 incurred. However, what he fails to emphasize is that they are *historically*
10 *incurred expenses* for which DLC is seeking retroactive recovery. That being the
11 case, it is unclear at what point the Company would no longer consider them
12 extraordinary.

13
14 **Q. MR. O'BRIEN EXPRESSES DISAGREEMENT WITH YOUR**
15 **STATEMENT THAT THE COMPANY DID NOT SEEK OR RECEIVE**
16 **SPECIAL PERMISSION TO DEFER FOR ACCOUNTING PURPOSES**
17 **ANY OTHER INCREMENTAL COVID-19 RELATED COSTS.⁶⁰ WHAT IS**
18 **YOUR RESPONSE?**

19 A. My understanding is that authorization was granted for expenses specifically
20 incurred for adhering to the Orders as they relate to uncollectibles and payment

⁵⁸ DLC Statement No. 10-R, p. 54.

⁵⁹ I&E Statement No. 1, p. 19.

⁶⁰ DLC Statement No. 10-R, p. 55.

1 arrangements. I did not see a "catch-all" suggestion in any Order or Commission
2 issued Secretarial Letter that anything labeled COVID-related should be properly
3 deferred via a regulatory asset and subsequently recovered. Furthermore, the
4 July 15, 2021 Commission Order at Docket No. M-2020-3019262 specifically
5 states that,

6 We noted that to be eligible for inclusion in a utility's COVID-
7 19 designated regulatory asset, the utility must maintain
8 detailed records of the incremental extraordinary, nonrecurring
9 expenses incurred *as a result of compliance with the*
10 *Commission's March 13 Emergency Order, the October 13*
11 *Order, and the March 18 Order.* (Emphasis added.)

12 This Order clearly indicates that incremental, extraordinary, non-recurring
13 expenses incurred *as a result of compliance with the requirements in this Order*
14 *and the other Orders* are considered appropriate for regulatory asset accounting
15 treatment. I interpret that to mean appropriately claimed expenses should relate
16 specifically to carrying out the duties and activities as outlined directly in those
17 Orders. Furthermore, I do not view *lost revenues* in the form of fees (such as late
18 payment charges and forgone reconnection fees) as expenses, and as mentioned in
19 my direct testimony, those amounts make up a large percentage of the Company's
20 claim.⁶¹

⁶¹ I&E Statement No. 1, p. 16 and DLC Exhibit RLO-5-R, Schedule D-12.

1 **Q. MR. O'BRIEN INDICATES THAT SINCE THE TEST YEARS IN THIS**
2 **PROCEEDING INCLUDE THE HTY 2020 AND FTY 2021 THAT THOSE**
3 **COSTS ARE CURRENTLY BEING REQUESTED FOR DEFERRAL AND**
4 **RECOVERY IN THE FPFTY. DO YOU AGREE THAT THIS IS**
5 **APPROPRIATE FOR RATEMAKING PURPOSES?**

6 A. No. When a company utilizes a FPFTY for ratemaking purposes, they are not
7 guaranteed full recovery of out-of-period expenses even when they are incurred in
8 the preceding two test years.

9
10 **Update to the Company's Claim – COVID-19 Related Costs Net of Savings**
11 **(Excluding Uncollectibles):**

12 **Q. DID THE COMPANY UPDATE ITS CLAIM IN REBUTTAL TESTIMONY**
13 **FOR COVID-19 RELATED COSTS NET OF SAVINGS (EXCLUDING**
14 **UNCOLLECTIBLES)?**

15 A. Yes. Ms. Bachota and Mr. O'Brien updated the Company's claim for COVID-19
16 related costs net of savings (excluding uncollectibles) to \$1,495,000.⁶²

17
18 **Q. WHAT IS THE BASIS FOR THE COMPANY'S UPDATED CLAIM?**

19 A. Ms. Bachota indicated the Company's original total claim was an estimated \$5.8
20 million for the period March 2020 through June 2021. However, it was
21 discovered that: (1) \$0.5 million in 2021 estimated outside services were included

⁶² DLC Exhibit RLO-5-R, Schedule D-12 $((\$3,690,000 + \$794,000) \div 3 \text{ years} = \$1,495,000)$.

1 in the 2020 amount that should be removed to avoid double-counting this expense;
2 (2) a true-up of expenses for the period January 1, 2021 through June 30, 2021
3 resulted in an increase of \$0.7 million; and (3) the Company admitted additional
4 savings of approximately \$1.5 million related to additional employee expenses.⁶³
5 Therefore, the Company proposes to reduce its original total claim by \$1.3
6 million, or \$0.4 million per year ($\$1.3 \text{ million} \div 3 \text{ years}$).⁶⁴ Thus, the Company is
7 reducing its original claim for COVID-19 related costs net of savings (excluding
8 uncollectibles) of \$1,931,667 ($(\$5,195,000 + \$600,000) \div 3 \text{ years}$)⁶⁵ by a net
9 change of \$400,000 ($(\$700,000 - \$500,000 - \$1,500,000) \div 3 \text{ years}$).

10 It should also be noted that since Ms. Bachota⁶⁶ and Robert O'Brien⁶⁷
11 disagree with Mr. Keller's 43-month recommended normalization period, the
12 Company continues to use a three-year period to calculate its claim.

13
14 **Q. DO YOU AGREE WITH THE COMPANY'S UPDATED CLAIM?**

15 A. No. For reasons discussed above and in my direct testimony, I continue to
16 recommend disallowance of the Company's claim for COVID-19 related costs net
17 of savings (excluding uncollectibles).

18 Since I&E witness Keller continues to recommend a 43-month
19 normalization period,⁶⁸ if the Commission decides to allow amortization of the

⁶³ DLC Statement No. 2-R, pp. 19-20.

⁶⁴ DLC Statement No. 2-R, p. 21.

⁶⁵ DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-12.

⁶⁶ DLC Statement No. 2-R, p. 4 and p. 21.

⁶⁷ DLC Statement No. 10-R, pp. 33-38.

⁶⁸ I&E Statement No. 2-SR.

1 COVID-19 related costs net of savings (excluding uncollectibles), my
2 recommendation is not changed, and under those circumstances I would
3 recommend that the Company amortize the approved total cost over a 43-month
4 period.

5
6 **Q. WHAT CONCESSION IS MS. BACHOTA WILLING TO MAKE WITH**
7 **RESPECT TO THIS CLAIM?**

8 A. Ms. Bachota agrees to discontinue accruing non-uncollectible incremental
9 expenses related to COVID-19 based on current conditions and the Commission's
10 July 15, 2021 Order. However, she indicated that the Company wants to reserve
11 the right to seek regulatory asset treatment in the event of future extraordinary,
12 nonrecurring events outside of the Company's control related to resurgent public
13 health emergencies.⁶⁹

14
15 **Q. WHAT IS YOUR RESPONSE TO MS. BACHOTA'S CONCESSION THAT**
16 **THE COMPANY WOULD AGREE TO DISCONTINUE ACCRUING A**
17 **REGULATORY ASSET FOR COVID-19 RELATED COSTS NET OF**
18 **SAVINGS (EXCLUDING UNCOLLECTIBLES) UPON THE EFFECTIVE**
19 **DATE OF NEW RATES IN THIS PROCEEDING?**

20 A. I disagree with recovery of any of these expenses for the reasons explain in detail
21 above and in my direct and rebuttal testimony. However, if the Commission

⁶⁹ DLC Statement No. 2-R, p. 18.

1 decides against my recommendation and allows recovery, I continue to
2 recommend that the deferral should discontinue upon the effective date of new
3 rates for this proceeding. I disagree with any open-ended possibility that the
4 Company may decide to resume deferrals, and it should be subject to the same
5 requirements of other regulated utilities if/when any future health emergency may
6 occur.

7
8 **NEW BUSINESS STIMULUS RIDER (RIDER NO. 25)**

9 **Q. SUMMARIZE THE COMPANY'S CLAIM FOR THE PROPOSED NEW**
10 **BUSINESS STIMULUS RIDER (RIDER NO. 25).**

11 A. In its filing, the Company proposed a New Business Stimulus Rider designed to
12 assist new customers who are billed with the following rate schedules: General
13 Service Small (GS), General Service Medium Heating (GMH), and General
14 Service Medium <25 kW and General Service Medium >25 kW (collectively
15 GM).⁷⁰ The Company proposes that new GS, GM, and GMH customers applying
16 for new service in a vacant storefront would be eligible for a reduced distribution
17 rate for two years and would receive a 30% discount on the variable base
18 distribution charge portions of their bills.⁷¹ These costs would be recovered via
19 base rates and the proposed rider (Rider No. 25) outlines the availability, program
20 terms, and program definitions.⁷²

⁷⁰ DLC Statement No. 5, p. 7.

⁷¹ DLC Statement No. 5, pp. 7-8.

⁷² I&E Exhibit No. 1, Schedules 6 and 7.

1 The Company estimated it would provide \$275,971 in discounts to enrolled
2 customers⁷³ and would incur \$1,000 in advertising costs proposed to be recovered
3 in base rates for a total claim of \$276,971.⁷⁴ DLC proposed to recover the costs
4 by passing them along to GS, GM, and GMH customers, directly assigning the
5 costs to all customers in the rate classes eligible to participate in the program.⁷⁵
6 This proposal was made in the hope of supporting the rebuilding of small
7 communities' business districts.⁷⁶

8
9 **Q. SUMMARIZE YOUR RECOMMENDATION FOR THIS PROGRAM AS**
10 **STATED IN YOUR DIRECT TESTIMONY.**

11 A. I recommended disallowance of the program cost (\$276,971) in its entirety and
12 noted that the Company may still consider making charitable contributions to the
13 local community that are funded by shareholders at its discretion.⁷⁷ There are two
14 main reasons why I disagreed with approval of the proposed New Business
15 Stimulus Rider. The first reason is mainly the distribution of vaccines and the
16 reopening of the economy.⁷⁸ The second reason is that just because many
17 surviving businesses may have been on time with their utility bill payments does
18 not ensure that some of them did not take drastic measures by dipping into savings
19 or retirement funds to pay their bills, or even borrowing money from friends or

⁷³ DLC Statement No. 5, p. 11.

⁷⁴ I&E Exhibit No. 1, Schedule 6.

⁷⁵ DLC Statement No. 5, p. 11.

⁷⁶ DLC Statement No. 5, p. 8.

⁷⁷ I&E Statement No. 1, pp. 23-24.

⁷⁸ I&E Statement No. 1, p. 24.

1 family. Such aid as proposed by the Company is very similar to a charitable
2 contribution, and existing ratepayers should not be forced to fund such a program
3 when they have no say in what types of businesses receive the reduced rates or
4 stimulus money.⁷⁹

5 Additionally, I highlighted a long list of federal, state, and local assistance
6 programs available to small and medium sized businesses since the start of the
7 pandemic.⁸⁰

8
9 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

10 A. Yes. DLC witness Krysia Kubiak disagrees with my recommendation.

11
12 **Q. PLEASE SUMMARIZE MS. KUBIAK'S RESPONSE.**

13 A. Ms. Kubiak asserts that I place an unreasonable amount of emphasis on the
14 increased vaccination rates and the rescission of COVID-19 related governmental
15 orders. She responds by mentioning vaccine hesitancy, labor market shortages,
16 pay pressure, uncertainty about possible future governmental restrictions, and
17 uncertainty about consumer behavior as it relates to in-person transactions.⁸¹

⁷⁹ I&E Statement No. 1, pp. 24-25.

⁸⁰ I&E Statement No. 1, pp. 25-27.

⁸¹ DLC Statement No. 5-R, p. 4.

1 **Q. DID YOU STATE THAT THE VACCINE HAD A LINEAR RELATIONSHIP**
2 **TO RETURNING TO “NORMAL BUSINESS ACTIVITY”?**

3 A. No. I appreciate Ms. Kubiak’s desire to help small and medium sized business
4 owners, but I do not believe it is appropriate for ratepayers to fund this endeavor,
5 particularly when those ratepayers responsible for funding this proposed new
6 business stimulus rider may also be suffering financial blows related to the
7 pandemic while yet still somehow paying their electric bills.

8
9 **Q. WERE YOU IGNORING THE COMMISSION’S MISSION, AS MS.**
10 **KUBIAK ASSERTS,⁸² WHEN YOU RECOMMENDED DISALLOWANCE**
11 **OF THE PROPOSED STIMULUS RIDER?**

12 A. No. I do not equate “further economic development” with taking money from
13 some potentially struggling customers in certain rate classes to give it to potential
14 new business customers in the same rate class. This is clearly more of a charitable
15 endeavor, and I do not believe that other ratepayers should fund this stimulus rider.
16 I appreciate that the Company is already involved in charitable activities, and I
17 respect that. However, I continue to disagree that other ratepayers should be
18 required to fund this proposed stimulus rider. The result would be neither just nor
19 reasonable.

⁸² DLC Statement No. 5-R, p. 5.

1 **Q. DOES MS. KUBIAK IMPLY THAT YOU ARE SUGGESTING DLC**
2 **PROVIDE CHARITABLE DONATIONS TO SPECIFIC ENTITIES?**

3 A. Yes. She is mischaracterizing my testimony by asserting that I am advocating
4 taking donations away from charitable organizations.⁸³ I never went into any
5 detail about how or what DLC might consider doing if shareholders desired to
6 fund any type of increased charitable activity.

7 Furthermore, it could be argued that the Company wants to force ratepayers
8 into making contributions directly to businesses designated as eligible. That could
9 divert ratepayers from other charitable giving. So, in a sense, her own words
10 could be used as an argument against her.

11
12 **Q. DOES MS. KUBIAK’S DISTINCTION BETWEEN THE COMPANY’S**
13 **PROPOSED STIMULUS RIDER AND THE LIST OF NON-COMPANY**
14 **ASSISTANCE PROGRAMS⁸⁴ SWAY YOU INTO SUPPORTING DLC’S**
15 **PROPOSAL?**

16 A. No. She underscores the severity of the ongoing struggles faced by business
17 owners. I respect Ms. Kubiak’s passion related to this topic, but I continue to
18 recommend that the program be denied in its entirety. I acknowledge that there is
19 the potential for ongoing economic impacts associated with the pandemic,
20 however, I don’t believe it is within the Company’s ability to hasten the recovery

⁸³ DLC Statement No. 5-R, pp. 5-6.

⁸⁴ DLC Statement No. 5-R, p. 6.

1 via such a program and it should not be the responsibility of neighboring
2 businesses to contribute toward new business startups.

3
4 **Q. PLEASE ADDRESS HER POINT ABOUT THE UNCERTAINTY OF**
5 **POTENTIAL FUTURE GOVERNMENTAL RESTRICTIONS.**

6 A. While I understand from various news sources that the Delta variant may cause the
7 federal government to return to a recommendation of mask wearing for both
8 vaccinated and unvaccinated individuals for areas with significant spread, there
9 has been no indication that Governor Wolf is considering or even able to force
10 business closures for any length of time.⁸⁵

11
12 **Q. DOES THE JULY 15, 2021 COMMISSION ORDER DIRECTLY OPPOSE A**
13 **COMPANY ESTABLISHING A PROGRAM SUCH AS THE NEW**
14 **BUSINESS STIMULUS RIDER?**

15 A. Not directly, since it does state that “all payment arrangements for residential
16 customers and small business customers established before September 30,
17 2021...shall continue for the duration of the arrangement...”,⁸⁶ and that “[a]ll
18 Commission-approved COVID-19 customer protection plans submitted by utilities
19 before September 30, 2021 shall remain in full force and effect according to their

⁸⁵ [Pennsylvania becomes 1st in nation to curb governor’s emergency powers - MarketWatch](#) (Accessed July 31, 2021).

⁸⁶ *Public Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset*, at Docket Nos. M-2020-3019244 and M-2020-3019775, p.3 (Order Entered July 15, 2021).

1 individual terms;”⁸⁷ However, this proposed new business stimulus rider goes
2 beyond any explicit direction outlined in recent orders and puts the cost of the
3 proposed stimulus on other ratepayers in the same rate classes many of whom may
4 still be experiencing their own stresses associated with the financial burden of the
5 pandemic.

6
7 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION?**

8 A. No. I continue to recommend disallowance of the program and instead that the
9 Company follow the requirements of the Commission related to the extension of
10 payment arrangements as detailed in the Commission’s March 18, 2021 Order and
11 the July 15, 2021 Order.

12
13 **Q. DO YOU HAVE ANY FINAL COMMENTS RELATED TO THE**
14 **PROPOSED NEW BUSINESS STIMULUS RIDER?**

15 A. Yes. It should be noted that the proposed new business stimulus rider is requested
16 via base rate recovery. This means that if the program ends earlier than the next
17 base rate case is filed, the Company will continue collecting money in rates for
18 this program until that next case is filed and new rates go into effect. Additionally,
19 if the Company has difficulty attracting qualified applicants to take advantage of
20 the program, ratepayers will fund it regardless.

⁸⁷ *Public Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset*, at Docket Nos. M-2020-3019244 and M-2020-3019775, p. 4 (Order Entered July 15, 2021).

1 **CRISIS RECOVERY PROGRAM (RIDER NO. 26)**

2 **Q. SUMMARIZE THE PROPOSED CRISIS RECOVERY PROGRAM (RIDER**
3 **NO. 26).**

4 A. The Company has proposed a Crisis Recovery Program to assist existing GS, GM,
5 or GMH customers that did not have an overdue account balance on February 29,
6 2020, but that have since accumulated a balance. Company witness Kubiak states
7 that program participants will have existing delinquent account balances
8 temporarily frozen for six billing periods.⁸⁸ She further explains that program
9 participants will have 25% of their frozen delinquent balances forgiven if they pay
10 their electric charges in full at the end of the six billing cycles, the Company will
11 not pursue termination or collection action on the frozen account balance until
12 after the due date of the sixth bill has passed, and that timely payment for each bill
13 rendered while the delinquent balance is frozen would not be required.⁸⁹ She
14 further explains that at the end of the six-bill period, if the customer pays all of the
15 non-frozen electric charges, 25% of the frozen balance will be forgiven, and the
16 customer will receive an 18-month payment arrangement unless the customer
17 agrees to a shorter period. If the customer does not make the appropriate payment,
18 no balance amount would be forgiven, and they would have 18 months to pay the
19 entire delinquent balance along with paying each month's balance in full.⁹⁰

⁸⁸ DLC Statement No. 5, p. 12.

⁸⁹ DLC Statement No. 5, p. 13.

⁹⁰ DLC Statement No. 5, p. 13.

1 **Q. WHAT IS THE PROPOSED END DATE AND ESTIMATED COST FOR**
2 **THE PROGRAM?**

3 A. According to DLC witness Kubiak, the program is designed to be temporary, and
4 enrollment in the program would end on June 30, 2022.⁹¹ The Company has
5 estimated the write-off portion of the program to be \$403,800 and the advertising
6 and surveying costs to be \$19,000 for a total of \$422,800 to be recovered via base
7 rates.⁹²

8
9 **Q. HOW WOULD THE PROPOSED COST BE RECOVERED?**

10 A. The Company proposes to recover the costs by incorporating them into the base
11 rates of GS, GM, and GMH customers, directly assigning the costs to rate classes
12 eligible to participate in the program.⁹³

13
14 **Q. SUMMARIZE YOUR RECOMMENDATION AS EXPLAINED IN DIRECT**
15 **TESTIMONY FOR THE PROPOSED CRISIS RECOVERY PROGRAM.**

16 A. I recommended disallowance of the program in its entirety. And again, I noted
17 that the Company could consider making charitable contributions to the local
18 community that are funded by shareholders at its discretion.⁹⁴

⁹¹ DLC Statement No. 5, p. 15.

⁹² I&E Exhibit No. 1, Schedule 8.

⁹³ DLC Statement No. 5, p. 16.

⁹⁴ I&E Statement No. 1, p. 30.

1 First, I stated that just because many surviving customers in these rate
2 classes who are current with their bills may pay on time does not ensure that some
3 of them did not take drastic measures by dipping into savings or retirement funds
4 to pay them, or even borrowing money from friends or family. Such aid as
5 proposed by the Company is very similar to a charitable contribution, and existing
6 ratepayers should not be forced to fund such a program when they have no say in
7 what types of businesses receive the crisis relief or stimulus money.⁹⁵ This would
8 be neither just nor reasonable.

9 Secondly, I noted that the Commission has recently voted unanimously to
10 require public utilities to offer extended payment arrangements for a minimum
11 length of 18 months to small business customers,⁹⁶ and the Company should
12 follow the requirements related to the extension of payment arrangements as
13 detailed in the Commission's Order.⁹⁷

14 Lastly, I mentioned the list of available programs on DLC's website and
15 referenced the list in my direct testimony of the numerous federal, state, and local
16 programs providing aid to small and medium sized business negatively impacted
17 by the pandemic.⁹⁸

⁹⁵ I&E Statement No. 1, pp. 30-31.

⁹⁶ PA Public Utility Service Termination Moratorium Order at Docket No. M-2020-3019244, Order Entered March 18, 2021, p. 4.

⁹⁷ I&E Statement No. 1, p. 31.

⁹⁸ I&E Statement No. 1, p. 31.

1 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

2 A. Yes. Company witness Krysia Kubiak disagrees with my recommendation.

3

4 **Q. PLEASE SUMMARIZE MS. KUBIAK'S RESPONSE.**

5 A. She disagrees with my assertion that the program is like a charitable contribution,

6 and she opines that it is more similar to a residential customer assistance

7 program.⁹⁹ She continues a similar theme by improperly asserting that I am a

8 proponent of taking charitable contributions away from nonprofit entities and

9 giving money instead to for-profit businesses.¹⁰⁰ She asserts that this program is

10 designed to assist businesses that are most severely impacted where existing relief

11 may be insufficient and she argues that my assertion about customers funding the

12 program not having “a say” in who would receive assistance is without merit.¹⁰¹

13

14 **Q. WHAT IS YOUR RESPONSE TO MS. KUBIAK'S ARGUMENTS?**

15 A. If this program is truly the equivalent of a residential customer assistance program

16 (CAP), this supports my argument that it is a form of charity, as CAP programs do

17 provide aid to the poorest residential customers. However, I disagree with her

18 mischaracterization of my testimony, because in no way am I suggesting that the

19 Company make specific charitable contributions to any particular entity, and I was

20 certainly not meaning to imply that *donations* should be made to for-profit

⁹⁹ DLC Statement No. 5-R, pp. 9-10.

¹⁰⁰ DLC Statement No. 5-R, p. 10.

¹⁰¹ DLC Statement No. 5-R, p. 11.

1 businesses. One could argue that is what the Company’s program is seeking to do;
2 that is, to provide assistance in the form of “donations” to businesses at the
3 expense of other business owners who may also be struggling due to financial
4 impacts of the pandemic. As stated above, it could be argued that the Company is
5 forcing ratepayers into making contributions directly to businesses designated as
6 eligible via the proposed program rules. Thus, Ms. Kubiak’s own words could be
7 used in support of my recommendation.
8

9 **Q. DOES THE JULY 15, 2021 COMMISSION ORDER OPPOSE THE**
10 **ESTABLISHING OF A PROGRAM SUCH AS THE CRISIS RECOVERY**
11 **PROGRAM?**

12 A. Not directly, since it does state that “all payment arrangements for residential
13 customers and small business customers established before September 30,
14 2021...shall continue for the duration of the arrangement...”,¹⁰² and that “[a]ll
15 Commission-approved COVID-19 customer protection plans submitted by utilities
16 before September 30, 2021 shall remain in full force and effect according to their
17 individual terms;”¹⁰³ However, this proposed crisis recovery program goes well
18 beyond any explicit direction outlined in recent COVID-19 related Orders and
19 puts the cost of the proposed stimulus on other ratepayers in the same rate classes

¹⁰² July 15, 2021 Order, p.3.

¹⁰³ July 15, 2-21 Order, p. 4.

1 many of whom likely continue to experience their own stresses associated with the
2 financial burden of the pandemic.

3
4 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION?**

5 A. No. I continue to recommend that the Company follow the requirements of the
6 Commission related to the extension of payment arrangements as detailed in the
7 Commission's March 18, 2021 Order and the July 15, 2021 Order. For the reasons
8 stated here and in my direct testimony, I recommend that the proposed crisis
9 recovery program be disallowed in its entirety.

10
11 **Q. DO YOU HAVE ANY FINAL COMMENTS ABOUT THE PROPOSED**
12 **CRISIS RECOVERY PROGRAM?**

13 A. Yes. It should be noted that the proposed crisis recovery program is requested via
14 base rate recovery. This means that if the program ends earlier than the next base
15 rate case is filed (as DLC proposes),¹⁰⁴ the Company will continue collecting
16 money in rates for this program until that next case is filed and new rates go into
17 effect. Additionally, if the Company has difficulty attracting qualified applicants
18 to take advantage of the program, ratepayers will fund it regardless.

¹⁰⁴ The Company proposes and end date of June 30, 2022, per DLC Statement No. 5, p. 15.

1 **RESIDENTIAL COVID-19 DEBT RELIEF PROGRAM**

2 **Q. BRIEFLY SUMMARIZE THE COMPANY’S PROPOSED RESIDENTIAL**
3 **COVID-19 DEBT RELIEF PROGRAM.**

4 A. In its filing, the Company proposed a short-term program to be funded via base
5 rates that would provide targeted assistance to low to moderate income residential
6 customers with delinquencies because of the pandemic.¹⁰⁵ The Company
7 proposed a cap of \$3 million to the program budget, and non-CAP customers
8 earning 151% - 300% of the federal poverty level with a delinquent balance of at
9 least \$100 would be eligible for matching forgiveness up to \$300 and a payment
10 arrangement up to 36 months on the remaining unpaid balance. The Company
11 would also waive a reconnection fee and restore service if 25% of the outstanding
12 balance is paid. The program start date is proposed as January 15, 2022, and it
13 would remain open until March 31, 2022, or earlier if/when all funds are
14 exhausted.¹⁰⁶

15 The Company also claimed an additional \$500,000 in administrative costs
16 for technology development, resources to process applications and customer
17 inquiries, and marketing/promotional costs.¹⁰⁷ DLC has requested recovery of all
18 \$3,500,000 in base rates via a three-year normalization, in line with the period new
19 rates are expected to be in effect,¹⁰⁸ resulting in a FPFTY claim on \$1,167,000.¹⁰⁹

¹⁰⁵ DLC Statement No. 7, p. 11.

¹⁰⁶ DLC Statement No. 7, p. 12.

¹⁰⁷ DLC Statement No. 7, p. 12.

¹⁰⁸ I&E Exhibit No. 1, Schedule 10.

¹⁰⁹ DLC Statement No. 7, p. 13 and DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-16.

1 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
2 **FOR THE RESIDENTIAL COVID-19 DEBT RELIEF PROGRAM.**

3 A. I recommended that the \$1,167,000 claim be disallowed in its entirety¹¹⁰ based on
4 two main reasons. The first reason relates to the reopening of the economy and
5 the decreased unemployment rate which has fallen significantly since the height of
6 the pandemic.¹¹¹ The second reason¹¹² relates to the Commission's motion in
7 response to the lifting of the utility service termination moratorium, where
8 Chairman Brown Dutrieuille issued a statement¹¹³ detailing modifications to
9 existing arrearage collection policies to be applied to all utilities for both
10 residential and small business customers. These modifications offer flexible,
11 generous, and reasonable repayment options for ratepayers which most
12 significantly includes extended minimum repayment terms. This turn of events
13 moved utilities toward the regular collections process. Subsequently, the
14 Chairman's motion received unanimous support by the remaining three
15 Commissioners. Additionally, Commissioner Coleman provided a statement in
16 which he specifically affirmed his support of the Chairman's motion.¹¹⁴

¹¹⁰ I&E Statement No. 1, p. 33.

¹¹¹ I&E Statement No. 1, p. 34.

¹¹² I&E Statement No. 1, pp. 34-35.

¹¹³ Motion of Chairman Gladys Brown Dutrieuille, Docket No. M-2020-3019244, on March 11, 2021.

¹¹⁴ Statement of Commissioner John F. Coleman, Jr., Docket No. M-2020-3019244, on March 11, 2021.

1 **Q. IF THE COMMISSION APPROVES DLC’S PROPOSED RESIDENTIAL**
2 **COVID-19 RELIEF PROGRAM, WHAT DID YOU RECOMMEND?**

3 A. If the Commission decides to approve the proposed residential COVID-19 relief
4 program, I recommended in direct testimony that it be approved as a below-the-
5 line item, meaning the entire \$3.5 million cost should not be recovered from
6 ratepayers.¹¹⁵ However, if the Commission would determine the program should
7 be approved and funded by ratepayers via base rates, I recommended the cost be
8 normalized over 43 months for an allowance of \$976,744 ($(\$3,500,000 \div 43$
9 months) x 12 months) which is in line with I&E witness Keller’s calculated rate
10 case expense filing frequency.¹¹⁶

11

12 **Q. DO YOU HAVE ANY CORRECTIONS TO YOUR PREVIOUS**
13 **RECOMMENDATION?**

14 A. Yes. I rescind the recommendation that, if the Commission decides to approve the
15 residential COVID-19 relief program, it be approved as a below-the-line item.¹¹⁷
16 What I am now recommending is that even if the Commission rejects the program,
17 the Company could still decide and have every right to fund such a program fully
18 via shareholder equity. That would be a decision DLC could make which would
19 not require a mandate or order by the Commission and would not place the burden
20 on ratepayers.

¹¹⁵ I&E Statement No. 1, p. 35.

¹¹⁶ I&E Statement No. 2.

¹¹⁷ I&E Statement No. 1, p. 35.

1 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

2 A. Yes. DLC witness Katherine Scholl disagrees with my recommended
3 disallowance of the proposed residential COVID-19 debt relief program.
4

5 **Q. PLEASE SUMMARIZE MS. SCHOLL’S RESPONSE TO YOUR**
6 **RECOMMENDATION.**

7 A. Ms. Scholl indicates that unemployment rates continue to be higher than pre-
8 pandemic levels, that delinquency levels for 2020 and 2021 are notably higher
9 than 2019, and that the unemployment percentage is not indicative of customer
10 need.¹¹⁸ Additionally, she disagrees with my assertion that shareholders should be
11 required to fund the program.¹¹⁹ She admits that the cost of proposed program is
12 “analogous to uncollectible expenses” which are recoverable from ratepayers, she
13 emphasizes that the Company is encouraging customers to apply for assistance
14 programs as appropriate and that the Company is utilizing traditional collection
15 methods.¹²⁰ Finally, she quotes a Wall Street Journal article that emphasizes
16 nationwide increases in recent COVID-19 cases without specifying the increases
17 related to DLC’s service territory.¹²¹ In short, she defends the program as “a
18 balanced approach to helping those in need while mitigating the burden on other
19 customers.”¹²²

¹¹⁸ DLC Statement No. 7-R, p. 5.

¹¹⁹ DLC Statement No. 7-R, p. 6.

¹²⁰ DLC Statement No. 7-R, pp. 6-7.

¹²¹ DLC Statement No. 7-R, p. 7.

¹²² DLC Statement No. 7-R, p. 8.

1 **Q. WHAT IS YOUR RESPONSE TO MS. SCHOLL’S ASSERTIONS?**

2 A. Unemployment rates are still higher than the 5.1% rate in March 2020,
3 nonetheless, they are continuing to decline with a preliminary June 2021 rate of
4 6.9%.¹²³ I do realize unemployment rates do not present the entire picture as some
5 argue that people are choosing to not return to work and many available jobs
6 remain unfilled. Nevertheless, the unemployment rate is still a valuable metric
7 that can be used to understand the bigger picture.

8 As stated above, I agree with Ms. Scholl that Company shareholders should
9 not be “required” to fund the program. If the Commission disallows it in rates,
10 though, DLC would have that option at its discretion. Finally, in response to Ms.
11 Scholl’s admission that the cost of the proposed program is “analogous to
12 uncollectible expenses” which are recoverable from ratepayers, it should be
13 pointed out that such a program may potentially divert efforts away from making
14 the payment arrangements the Commission is requiring¹²⁴ and shifting potential
15 uncollectibles to a different line item which will muddy the water in the future
16 when assessing how the pandemic has impacted the Company’s uncollectible rates
17 historically. Additionally, I am not convinced that an increase in COVID-19 cases
18 as reported today will have the exact same impacts as that same level of case

¹²³ [Bureau of Labor Statistics Data \(bls.gov\)](https://www.bls.gov) (Accessed July 28, 2021).

¹²⁴ Motion of Chairman Gladys Brown Dutrieuille, Docket No. M-2020-3019244, on March 11, 2021.

1 counts may have had in even the very recent past due to the changes in the
2 Governor's power to order business closures.¹²⁵

3
4 **Q. DID ANY WITNESS ADDRESS YOUR RECOMMENDATION RELATED**
5 **TO THE COMPANY'S PROPOSED NORMALIZATION PERIOD?**

6 A. Yes. DLC witness O'Brien disagrees with I&E witness Keller's recommendation
7 for a 43-month normalization period for rate case and therefore this expense as
8 well.¹²⁶

9
10 **Q. WHAT IS YOUR RESPONSE TO MR. O'BRIEN'S DISAGREEMENT**
11 **WITH A 43-MONTH NORMALIZATION PERIOD (IF THE**
12 **COMMISSION DECIDES TO APPROVE THE PROGRAM)?**

13 A. If the Commission approves the program, I continue to recommend a
14 normalization period of 43 months in line with I&E witness Keller's
15 recommended normalization period for rate case expense for the reasons presented
16 therein.¹²⁷

¹²⁵ [Pennsylvania becomes 1st in nation to curb governor's emergency powers - MarketWatch](#) (Accessed July 31, 2021).

¹²⁶ DLC Statement No. 10-R, pp. 33-38.

¹²⁷ I&E Statement No. 2 and I&E Statement No. 2-SR.

1 **Q. DOES THE JULY 15, 2021 COMMISSION ORDER OPPOSE THE**
2 **ESTABLISHING OF A PROGRAM SUCH AS THE RESIDENTIAL**
3 **COVID-19 DEBT RELIEF PROGRAM?**

4 A. Not directly, since it does state that “all payment arrangements for residential
5 customers and small business customers established before September 30,
6 2021...shall continue for the duration of the arrangement...”,¹²⁸ and that “[a]ll
7 Commission-approved COVID-19 customer protection plans submitted by utilities
8 before September 30, 2021 shall remain in full force and effect according to their
9 individual terms;”¹²⁹ However, this proposed residential COVID-19 debt relief
10 program goes well beyond any explicit direction outlined in recent orders and puts
11 the cost of the proposed stimulus on other ratepayers, many of whom likely
12 continue to experience their own financial stresses associated with the pandemic.

13
14 **Q. DOES MS. SCHOLL RAISE ANY POINTS OF CONCERN WHEN**
15 **ADDRESSING ANY OTHER WITNESS RELATED TO THE PROPOSED**
16 **RESIDENTIAL COVID-19 DEBT RELIEF PROGRAM?**

17 A. Yes. Ms. Scholl addresses NRDC witness Amanda Levin’s recommendation that
18 the Commission allow the \$3 million program cost but have the Company track
19 and record actual administrative costs for future rate recovery as she opines the
20 Company should be allowed to do for other incremental COVID-19 related

¹²⁸ July 15, 2021 Order, p.3.

¹²⁹ *Public Utility Service Termination Moratorium; COVID-19 Cost Tracking and Creation of Regulatory Asset*, at Docket Nos. M-2020-3019244 and M-2020-3019775, p. 4 (Order Entered July 15, 2021).

1 expenses.¹³⁰ Ms. Scholl does not oppose tracking administrative costs associated
2 with the program and creating a regulatory liability for unused portions of the
3 administrative costs to be refunded (if applicable) in a future proceeding.¹³¹
4

5 **Q. IF THE COMMISSION DECIDES TO GRANT APPROVAL OF THIS**
6 **PROGRAM, DO YOU AGREE THAT A REGULATORY LIABILITY**
7 **SHOULD BE ESTABLISHED FOR UNUSED PORTIONS OF**
8 **ADMINISTRATIVE COSTS TO BE REFUNDED TO RATEPAYERS IN A**
9 **FUTURE PROCEEDING?**

10 A. No. Regulatory liability treatment is not appropriate for routine, non-
11 extraordinary expenses. While the COVID-19 pandemic itself is extraordinary,
12 the additional expenses labeled as COVID-19 related costs net of savings
13 (excluding uncollectibles) and these administrative expenses do not rise to the
14 level of being extraordinary in nature and should not qualify for deferral and
15 regulatory liability treatment.
16

17 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION?**

18 A. No. Other than the correction as explained above (with respect to the program
19 being treated as a below-the-line item), I continue to recommend that the
20 Company follow the requirements of the Commission related to the extension of

¹³⁰ NRDC Statement No. 1, p. 24 and DLC Statement No. 7-R, p. 26.

¹³¹ DLC Statement No. 7-R, p. 26.

1 payment arrangements as detailed in the Commission’s March 18, 2021 Order and
2 the July 15, 2021 Order and that the residential COVID-19 debt relief program be
3 rejected in its entirety.

4
5 **Q. DO YOU HAVE ANY FINAL COMMENTS ABOUT THE PROPOSED**
6 **RESIDENTIAL COVID-19 DEBT RELIEF PROGRAM?**

7 A. Yes. It should be noted that the proposed residential COVID-19 debt relief
8 program is requested via base rate recovery. This means that if the program ends
9 earlier than the next base rate case is filed (as DLC proposes),¹³² the Company will
10 continue collecting money in rates for this program until the next case is filed and
11 new rates go into effect. Additionally, if the Company has difficulty attracting
12 qualified applicants to take advantage of the program, ratepayers will fund it
13 regardless.

14
15 **RESIDENTIAL SUBSCRIPTION RATE PILOT RIDER**

16 **Q. SUMMARIZE THE COMPANY’S PROPOSED RESIDENTIAL**
17 **SUBSCRIPTION RATE PILOT RIDER.**

18 A. In its filing, the Company proposed a pilot rider to test the feasibility of a
19 Residential Subscription tariff that would provide the option to select a specified
20 level of grid access for a set monthly charge for distribution service.¹³³ This claim

¹³² The proposed end date by the Company is March 31, 2022, per DLC Statement No. 7, p. 12.

¹³³ DLC Statement No. 17, p. 35.

1 was addressed by I&E witness Ethan Cline who recommended disallowance of the
2 Company's proposal for reasons outlined in his direct testimony.¹³⁴

3 The Company also identified \$67,000 in marketing and education costs
4 proposed to be recovered via base rates and normalized over a three-year period in
5 line with the Company's proposed rate case filing interval for rate case expense,
6 for an annual amount of \$22,300. However, the Company had not reflected this
7 amount in its filing and anticipated updating the claim in rebuttal testimony.¹³⁵

8
9 **Q. SUMMARIZE YOUR RECOMMENDATION RELATED TO THE**
10 **COMPANY'S PROPOSED CLAIM FOR MARKETING AND**
11 **EDUCATION COSTS ASSOCIATED WITH THE RESIDENTIAL**
12 **SUBSCRIPTION RATE PILOT RIDER.**

13 A. Based on I&E witness Cline's recommended rejection of the residential
14 subscription rate pilot rider, I recommended disallowance of these associated
15 costs. However, since no claim was reflected in the revenue requirement of the
16 Company's filing, no adjustment was necessary in my direct testimony.¹³⁶

17 I had also stated that if the Commission decides to allow the residential
18 subscription rate pilot rider, I recommended the marketing and education costs be

¹³⁴ I&E Statement No. 5, pp. 13-23.

¹³⁵ I&E Exhibit No. 1, Schedule 12.

¹³⁶ I&E Statement No. 1, pp. 36-37.

1 normalized over a 43-month period in line with I&E witness Keller's
2 recommended rate case expense normalization period.¹³⁷

3
4 **Q. DID THE COMPANY UPDATE ITS REVENUE REQUIREMENT TO**
5 **REFLECT THE \$22,300 CLAIM AS DISCUSSED ABOVE?**

6 A. Yes.¹³⁸

7
8 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

9 A. Yes. DLC witness Margot Everett disagrees with my recommendation and asserts
10 that the marketing costs “should be subject to recovery because they are associated
11 with testing a rate option that is critical to the evolution of rate design to support
12 customer needs.”¹³⁹ She also disagrees with my suggestion that the recovery
13 should be aligned with I&E witness Keller's recommended rate case expense
14 normalization because the pilot is for a specific duration and the marketing costs
15 will be incurred during that three-year period.¹⁴⁰ Additionally, she mentions that
16 DLC witness O'Brien disagrees with Mr. Keller's proposed rate case expense
17 normalization period.¹⁴¹

¹³⁷ I&E Statement No. 1, p. 37, and I&E Statement No. 2.

¹³⁸ DLC Exhibit RLO-2-R, p. 1.

¹³⁹ DLC Statement No. 17-R, p. 20.

¹⁴⁰ DLC Statement No. 17-R, p. 20.

¹⁴¹ DLC Statement No. 10-R.

1 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION?**

2 A. No. I continue to recommend disallowance of this \$22,300 expense based on I&E
3 witness Cline’s argument against this residential subscription rate pilot rider in his
4 direct and surrebuttal testimony.¹⁴² Now that the Company has incorporated the
5 expense claim into its revenue requirement,¹⁴³ I have added this \$22,300
6 adjustment to my list of O&M adjustments displayed above in this surrebuttal
7 testimony.

8 However, if the Commission decides to allow this pilot program, I continue
9 to recommend the total amount be normalized over a 43-month period in line with
10 I&E witness Keller’s rate case expense normalization period which is based on the
11 Company’s actual historic filing frequency.¹⁴⁴ This would minimize any over or
12 under recovery of this expense.

13

14 **FEDERAL TAX ADJUSTMENT CLAUSE (RIDER NO. 4)**

15 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
16 **FOR THE PROPOSED FEDERAL TAX ADJUSTMENT CLAUSE (FTAC).**

17 A. I recommended the Company’s proposed FTAC be disallowed based on the fact
18 that DLC cannot say with any certainty if/when an increase to the federal
19 corporate income tax rate would take effect.¹⁴⁵ Furthermore, since the

¹⁴² I&E Statement No. 5 and I&E Statement No. 5-SR.

¹⁴³ DLC Statement No. 10-R, p. 4 and DLC exhibit RLO-2-R, p. 1.

¹⁴⁴ I&E Statement No. 2 and I&E Statement No. 2-SR.

¹⁴⁵ I&E Exhibit No. 1, Schedule 13.

1 Commission and its advisory staff have very recently dealt with the reduction in
2 the federal corporate income tax rate due to changes related to the Tax Cuts and
3 Jobs Act starting January 1, 2018, I expressed belief that the Commission will
4 provide adequate and timely guidance on a statewide basis to affected regulated
5 utilities if such a change in the tax rate takes effect. DLC should be required to
6 await such guidance, particularly since any anticipated changes to the federal
7 income tax rates are merely speculative at this time.¹⁴⁶

8
9 **Q. IN THE EVENT THAT THE COMMISSION DECIDES TO ALLOW THE**
10 **COMPANY TO ESTABLISH THE FTAC IN RIDER NO. 4, WHAT WERE**
11 **YOUR RECOMMENDATIONS?**

12 A. I said it would be critical not to allow rate adjustments via the proposed surcharge
13 mechanism for impacts associated with deferred federal income taxes (i.e., excess
14 accumulated deferred income taxes) and those changes should only be allowed to
15 occur in the Company's base rate proceeding filed after any tax rate changes. I
16 explained that a rider such as the proposed FTAC should only be allowed for the
17 *current* federal income tax expense portion of the change (like how the changes
18 associated with the Tax Cuts and Jobs Act were handled by the Commission in
19 2018). This is because accumulated deferred income taxes require more scrutiny
20 of regulators and statutory parties due to subjectivity in determining the proper
21 normalization periods for non-protected assets that are not subject to the strict

¹⁴⁶ I&E Statement No. 1, p. 39.

1 requirements of IRS normalization rules. I, therefore, recommended that the
2 Commission require the Company to await statewide guidance if/when any
3 potential future federal income tax rate changes occur.¹⁴⁷
4

5 **Q. DID ANY WITNESSES RESPOND TO YOUR RECOMMENDATION?**

6 A. Yes. DLC witnesses Matthew Simpson and David Ogden disagree with my
7 recommended disallowance of the FTAC.
8

9 **DLC Witness Matthew Simpson's Response – FTAC:**

10 **Q. SUMMARIZE MR. SIMPSON'S POINTS MADE IN REBUTTAL**
11 **TESTIMONY.**

12 A. Mr. Simpson opines that a federal income tax rate change is not speculative
13 because President Biden and his Administration have repeatedly made references
14 to it as a part of the President's Build Back Better plan. He asserts that the timing
15 of an increase is uncertain but that a federal tax rate change is likely while his
16 party holds the majority in Congress. He references Mr. Ogden's points (detailed
17 below), and he mentions the State Tax Adjustment Surcharge (STAS) and
18 emphasizes that any state income tax changes are far less certain even though the
19 Company has use of the STAS mechanism. He states that an FTAC would have
20 no impact on customers if in fact the federal income tax rate does not change.¹⁴⁸

¹⁴⁷ I&E Statement No. 1, p. 39.

¹⁴⁸ DLC Statement No. 12-R, p. 3.

1 **Q. WHAT IS YOUR RESPONSE TO MR. SIMPSON’S POINTS DETAILED**
2 **ABOVE?**

3 A. References to desired federal income tax rate changes by President Biden and his
4 Administration do not ensure certainty of any future changes. Since the
5 Democratic majority in the U.S. House and Senate is held by a very slim margin¹⁴⁹
6 and not all Democrats are ensured to vote in line with their party,¹⁵⁰ I do not
7 believe a tax rate change can be viewed with any certainty and is simply
8 speculation. However, for the sake of argument, even if we assume a tax rate
9 change will pass in 2021 or 2022, I disagree with the assertion that DLC should
10 have an FTAC approved in this proceeding. Additionally, I disagree that the lack
11 of a tax rate change not impacting customers is a convincing argument in support
12 of the Company’s proposed FTAC.

13
14 **Q. SUMMARIZE THE ADDITIONAL POINTS MADE BY MR. SIMPSON IN**
15 **RESPONSE TO YOUR RECOMMENDATION.**

16 A. First, he expresses doubt that the Commission will move as swiftly when the
17 impact of a tax rate change negatively impacts regulated utilities as opposed to
18 ratepayers, which would be the case if the federal income tax rate would increase,

¹⁴⁹ In the 117th Congress, there are currently 211 Republicans and 220 Democrats in the U.S. House of Representatives per <https://pressgallery.house.gov/> (Accessed July 28, 2021), and the U.S. Senate has 50 Republicans, 48 Democrats and 2 Independents that caucus with the Democrats, with Vice President Kamala Harris as tie-breaking vote per <https://www.cop.senate.gov/history/partydiv.htm> (Accessed July 28, 2021).

¹⁵⁰ Additionally, 60 votes in the U.S. Senate are required to advance most legislation.

1 and he highlights the significant impact such a change would have on the
2 Company's revenue requirement.¹⁵¹

3 Second, if the Commission approves the Company's proposed FTAC, he
4 disagrees with my assertion that any accumulated excess deferred income tax
5 issues should not be addressed in an FTAC, because "[c]ontinuing to amortize
6 excess deferred taxes based on a revised and substantially reduced balance would
7 be inappropriate and potentially violate federal tax requirements that require the
8 return of deferred taxes using average rate assumption."¹⁵²

9 Finally, he points to I&E's comments in response to a Commission's query
10 on how it should address the federal income tax rate decrease for the Tax Cuts and
11 Jobs Act.¹⁵³

12
13 **Q. PLEASE RESPOND TO MR. SIMPSON'S FIRST POINT REGARDING**
14 **THE COMMISSION POTENTIALLY NOT TAKING TIMELY**
15 **STATEWIDE ACTION ON THIS ISSUE.**

16 **A.** I fully believe that the Commission would move swiftly in instructing utilities on a
17 statewide basis in this regard and I am surprised by Mr. Simpson's lack of
18 confidence in the Commission's ability to recognize that a major shortfall in
19 revenues due to a tax rate increase would potentially harm not only the Company
20 but its ratepayers as well. Therefore, I have full confidence that the Commission

¹⁵¹ DLC Statement No. 12-R, p. 3.

¹⁵² DLC Statement No. 12-R, p. 4.

¹⁵³ DLC Statement No. 12-R, p. 4, and DLC Exhibit MLS-1-R, pp. 7-8.

1 will address this matter timely *if* another federal income tax rate change is
2 ultimately enacted. Assuming the Commission acts timely with statewide
3 guidance, which I believe it would, the *current federal income tax expense* portion
4 would not have a long delay in being trued up, and this negates Mr. Simpson’s
5 argument that “it may be more difficult for customers to retroactively pay the
6 effect of increases in federal corporate taxes rates...”¹⁵⁴

7
8 **Q. PLEASE RESPOND TO MR. SIMPSON’S SECOND POINT**
9 **CONCERNING THE POTENTIAL VIOLATION OF FEDERAL INCOME**
10 **TAX REQUIREMENTS.**

11 A. His second point is negated by the Commission’s very own actions when issuing
12 guidance to utilities on how to address excess deferred income taxes for the Tax
13 Cuts and Jobs Act in 2018. It seems Mr. Simpson is implying that the
14 Commission advised all affected companies to violate federal tax requirements.
15 Additionally, accounting for ratemaking does not necessarily impact how the
16 Company complies with federal income tax requirements in its income tax filings.
17 Most companies have multiple sets of books, for example, for tax purposes,
18 ratemaking purposes, and potentially for Generally Accepted Accounting
19 Principles (GAAP) and International Financial Reporting Standards (IFRS)
20 depending on an individual company’s corporate structure.

¹⁵⁴ DLC Statement No. 12-R, p. 5.

1 **Q. PLEASE RESPOND TO MR. SIMPSON’S POINT ABOUT I&E**
2 **SUGGESTION IN ITS MARCH 2018 COMMENTS TO THE**
3 **COMMISSION ABOUT THE POTENTIAL HANDLING OF EXCESS**
4 **ACCUMULATED DEFERRED INCOME TAXES.**

5 A. I&E may have submitted comments on March 9, 2018, to the Commission
6 suggesting that its preferred method was for the excess deferred tax component to
7 flow through a newly established surcharge until each utility files a base rate
8 case;¹⁵⁵ however, I&E is not bound to this one recommendation it made over three
9 years ago on this topic prior to the issuance of the Commission’s requirements on
10 the matter. The Commission did not go along with that recommendation, and I&E
11 later realized the complexities involved in addressing the impact of federal income
12 tax rate changes on the rate base component. As stated in my direct testimony,
13 accumulated deferred income taxes require more scrutiny of regulators and
14 statutory parties due to subjectivity in certain circumstances in determining the
15 proper normalization periods, particularly for tax differences associated with non-
16 protected assets that are not subject to the strict requirements of IRS normalization
17 rules.¹⁵⁶ While I recommend that the Commission disallow the Company’s
18 request for an FTAC in this proceeding, if the Commission decides to allow it, I
19 continue to recommend that the accumulated deferred income treatment be

¹⁵⁵ DLC Exhibit MLS-1-R, p. 7.

¹⁵⁶ I&E Statement No. 1, p. 39.

1 addressed in base rate proceedings subsequent to any *potential* future federal
2 income tax rate changes.

3
4 **DLC Witness David Ogden’s Response – FTAC:**

5 **Q. SUMMARIZE MR. OGDEN’S RESPONSE TO YOUR**
6 **RECOMMENDATION.**

7 A. Mr. Ogden references “A Guide to Utility Ratemaking”¹⁵⁷ in support of the
8 Company’s claim for the FTAC and compares it to the STAS.¹⁵⁸ He opines the
9 FTAC is a good idea based on the estimated annual impact of income taxes being
10 significant and outside the Company’s control, it would fairly shares the risk of tax
11 rate changes between the utility and ratepayers (since both increases and decreases
12 to tax rates could be processed via this mechanism), he opines that it may reduce
13 the need for frequent general rate increases to account for tax rate changes, and
14 that the FTAC is proposed to be reconcilable and subject to Commission audit.¹⁵⁹

15
16 **Q. WHAT IS YOUR RESPONSE TO MR. OGDEN?**

17 A. While the publication “A Guide to Utility Ratemaking” can be read to generally
18 support certain types of automatic adjustment clauses, I continue to recommend
19 that the Commission disallow this request by DLC because the Company should

¹⁵⁷ https://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf, p. 89 (Accessed July 28, 2021).

¹⁵⁸ DLC Statement No. 16-R, p. 21.

¹⁵⁹ DLC Statement No. 16-R, p. 21.

1 await an actual federal income tax rate change by the U.S. government, and for the
2 Commission to address this topic on a statewide basis. As stated in my direct
3 testimony, I trust that the Commission would act in a timely manner, particularly
4 when it has recently addressed changes related to the Tax Cuts and Jobs Act in
5 2018. Furthermore, since any additional tax reform is merely speculative, I
6 recommend disallowance of the Company's request for a FTAC.

7
8 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION?**

9 A. No. I continue to recommend disallowance of the FTAC for the reasons explained
10 above and in my direct testimony.

11
12 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

13 A. Yes.

**I&E Statement No. 2
Witness: Christopher Keller**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket Nos. R-2021-3024750

Direct Testimony

of

Christopher Keller

Bureau of Investigation and Enforcement

Concerning:

Operating and Maintenance Expenses

Taxes Other Than Income

Cash Working Capital

Charging Infrastructure Portfolio

Customer Portfolio

Rate of Return

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christopher Keller. My business address is Pennsylvania Public
4 Utility Commission, Commonwealth Keystone Building, 400 North Street,
5 Harrisburg, PA 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in
9 the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial
10 Analyst.

11

12 **Q. SUMMARIZE YOUR EDUCATION AND EMPLOYMENT HISTORY.**

13 A. An outline of my education and employment history is attached as Appendix A.

14

15 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

16 A. I&E is responsible for protecting the public interest in proceedings before the
17 Commission. I&E's analysis in the proceedings is based on its responsibility to
18 represent the public interest. This responsibility requires the balancing of the
19 interests of the ratepayers, the regulated utility, and the regulated community as a
20 whole.

1 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

2 A. The purpose of my testimony is to review the base rate filing of Duquesne Light
3 Company (Duquesne, DLC, or Company), and make recommended adjustments to
4 Duquesne's proposed operating and maintenance (O&M) expenses for the fully
5 projected future test year (FPFTY) ending December 31, 2022 based on the
6 allocation factors from the Company's cost of service study (COSS) (DLC Exhibit
7 6-1). The allocation factors provide the breakdown for specific expenses between
8 distribution and non-distribution. I will also make recommendations regarding the
9 Company's rate of return, including capital structure, cost of long-term debt, the
10 cost of equity, and the overall fair rate of return for the FPFTY.

11

12 **Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?**

13 A. Yes. I&E Exhibit No. 2 contains schedules that support my direct testimony.

1 **Q. PLEASE SUMMARIZE YOUR RECOMMENDED O&M ADJUSTMENTS.**

2 A. The following table summarizes my recommended O&M adjustments.

3

	<u>Company Claim</u>	<u>I&E Adjustment</u>	<u>I&E Recommended Allowance</u>
O&M Expenses and Taxes:			
Rate Case Expense	\$813,000	(\$132,000)	\$681,000
Salaries and Wages Expense	\$77,393,000	(\$2,490,000)	\$74,903,000
Payroll Taxes	\$6,896,000	(\$222,000)	\$6,674,000
Incentive Compensation	\$8,765,000	(\$2,452,000)	\$6,313,000
Health Insurance Expense	\$6,708,000	(\$131,000)	\$6,577,000
401k Expense	\$5,243,000	(\$169,000)	\$5,074,000
Advertising Expense	\$1,254,000	(\$158,000)	\$1,096,000
Eligible Customer Solicitation	\$113,000	(\$18,000)	\$95,000
Fleet and Transit Charging Pilot – Maintenance and Warranty Expense	\$33,000	(\$5,000)	\$28,000
EV ChargeUp Pilot – L2 Rebates and EV Registration Incentives	\$91,000	<u>(\$15,000)</u>	\$76,000
Total O&M Expense and Tax Adjustments		<u>(\$5,792,000)</u>	
Rate Base Adjustments:			
Cash Working Capital	\$46,162,000	<u>(\$868,000)</u>	\$45,294,000
Total Rate Base Adjustments		<u>(\$868,000)</u>	

4

5 **Q. WHAT TEST YEARS HAS DUQUESNE USED IN THIS PROCEEDING?**

6 A. Duquesne used the twelve months ended December 31, 2020 as the historic test
7 year (HTY), the twelve months ending December 31, 2021 as the future test year
8 (FTY), and the twelve months ending December 31, 2022 as the FPPTY in this
9 proceeding.

1 **RATE CASE EXPENSE**

2 **Q. BRIEFLY DESCRIBE THE NATURE AND TYPES OF EXPENDITURES**
3 **TYPICALLY ALLOWED AS A PART OF A REGULATED UTILITY'S**
4 **OVERALL RATE CASE EXPENSE.**

5 A. The nature and types of individual expenditures that comprise a utility's allowable
6 claim for rate case expense are those directly incurred to compile, present, and
7 defend a utility's request for a base rate increase before the Commission. The
8 actual expenditures and estimated costs typically found in an allowable rate case
9 expense claim include legal fees for outside counsel, fees to outside consultants,
10 and the cost of printing, document assembly, and postage.

11
12 **Q. HOW HAS THE COMMISSION TRADITIONALLY TREATED RATE**
13 **CASE EXPENSE FOR RATEMAKING PURPOSES?**

14 A. The Commission has historically stated that it considers prudently incurred rate
15 case expense as an ongoing expense, occurring at irregular intervals, related to the
16 rendering of utility service. The Commission has also cited the importance of
17 considering the involved utility's history regarding the frequency of rate case
18 filings as an essential element to determine the normalized level of rate case
19 expense for ratemaking purposes.

1 **Q. HOW IS THE FREQUENCY OF RATE CASE FILINGS DETERMINED?**

2 A. The frequency is determined by calculating the average number of months
3 between the utility's previous rate case filings.
4

5 **Q. WHAT IS THE COMPANY'S CLAIM FOR RATE CASE EXPENSE?**

6 A. Duquesne's claim for rate case expense is \$813,000 (DLC Exhibit 2,
7 Schedule D-8).
8

9 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

10 A. Duquesne has estimated its total rate case expense amount to be \$2,440,000 and is
11 requesting a normalization period of three years (36 months) (DLC Exhibit 2,
12 Schedule D-8). This produces a normalized claim of \$813,000 ($\$2,440,000 \div 3$).
13 The Company states that it plans to file its next base rate case before the end of
14 April 2024 with a FPFTY ending December 31, 2025, which would be three years
15 after the effective dates of new rates in this proceeding (DLC Statement No. 10,
16 p. 39, lines 6-11).
17

18 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

19 A. No.

1 **Q. WHAT IS YOUR RECOMMENDATION FOR RATE CASE EXPENSE?**

2 A. I recommend that Duquesne's rate case expense be normalized over a period of 43
3 months resulting in an annual expense of \$681,000 [(\$2,440,000 ÷ 43 months) x
4 12 months], or a reduction of \$132,000 (\$813,000 - \$681,000) to the Company's
5 claim.

6
7 **Q. WHY DO YOU DISAGREE WITH THE CLAIMED THREE-YEAR
8 RECOVERY PERIOD?**

9 A. I disagree with the claimed three-year recovery period because it is not supported
10 by the Company's historic filing frequency. The proposed recovery period fails to
11 properly rely upon the Company's historic filing frequency and is speculative in
12 nature. As such, it should not be relied upon to determine the appropriate period
13 to apply the normalization treatment.

14
15 **Q. FURTHER EXPLAIN YOUR RECOMMENDED 43-MONTH
16 NORMALIZATION PERIOD FOR RATE CASE EXPENSE.**

17 A. In contrast to the Company's proposed three-year period, I recommend a 43-month
18 normalization period which is a reasonable interval given Duquesne's actual base
19 rate filing history. The Company's three most recent base rate case filing dates

1 and corresponding details for the current filing are as follows (I&E Exhibit No. 2,
2 Schedule 1):

3

Docket No.	Date Filed	Interval
R-2021-3024750	April 16, 2021	36 months
R-2018-3000124	March 28, 2018	56 months
R-2013-2372129	August 2, 2013	38 months
R-2010-2179522	June 1, 2010	

4 Using the Company's last three base rate case filing dates and the date of the
5 current filing, an average interval is computed to be 43 months ((36 mo. + 56 mo.
6 + 38 mo.) ÷ 3 intervals). Duquesne's requested 36-month recovery period is
7 unsupported by the Company's historic filing record. Thus, its proposed three-
8 year normalization period should be rejected as it would result in an unreasonable
9 and unsupported increase in rates.

10

11 **Q. HAVE OTHER UTILITIES BEEN GRANTED A NORMALIZATION**
12 **PERIOD BASED ON SPECULATION OF FUTURE FILINGS, AND IF SO,**
13 **WHAT WAS THE RESULT?**

14 A. Yes. In 2012, the Commission granted PPL Electric Utilities Corporation (PPL)
15 permission to normalize its rate case expense over a 24-month period based on
16 PPL's representations regarding its expected timing of future base rate case

1 filings.¹ That base rate case was filed on March 30, 2012; however, despite PPL's
2 representations, PPL did not file its next rate case until March 31, 2015, which was
3 36 months after the 2012 rate case filing. It should be noted that I&E's
4 recommended normalization period in the 2012 PPL proceeding was a 32-month
5 interval based on PPL's historic filing frequency.² The I&E recommendation in
6 that instance produced a much more accurate result than relying on PPL's stated
7 future intention to file a rate case.

8
9 **Q. ARE THERE ANY COMMISSION DECISIONS THAT SUPPORT YOUR**
10 **RECOMMENDATION FOR A RATE CASE FILING INTERVAL BASED**
11 **ON HISTORIC FILING FREQUENCY?**

12 A. Yes. In a base rate case filed by Emporium Water Company, the Commission
13 adopted the I&E recommended historic filing frequency finding in favor of I&E's
14 recommended five-year normalization period based on a historic average filing
15 frequency that was rounded down from 64 months.³ Additionally, in a more recent
16 decision for the City of DuBois, the Commission agreed with I&E's
17 recommendation to use a historic filing frequency finding in favor of I&E's

¹ *PA. PUC v. PPL Electric Utilities Corporation*, Docket No. R-2012-2290597, pp. 47-48 (Order Entered December 28, 2012).

² I&E Statement No. 2, pp. 13-14 at Docket No. R-2012-2290597.

³ *PA PUC v. Emporium Water Company*, Docket No. R-2014-2402324, p. 50 (Order Entered January 28, 2015).

1 recommended 64-month normalization period, which matched the actual historic
2 filing frequency.⁴

3 Finally, in the Columbia Gas 2020 base rate proceeding, the Commission
4 held that the normalization period should align with the historic data rather than
5 the Company's intent to file its next rate case.⁵ The Commission affirmed this
6 position a just few days ago in the PECO Gas Order, which granted I&E's
7 recommended five year normalization period rather than PECO's claim based on a
8 three year period because the Commission determined a normalization period
9 based on actual historic filing frequency is more reliable than future speculation.⁶

10
11 **SALARIES AND WAGES EXPENSE**

12 **Q. WHAT IS INCLUDED IN SALARIES AND WAGES EXPENSE?**

13 A. The salaries and wages claim includes amounts for regular wages and overtime
14 wages.

15
16 **Q. WHAT IS DUQUESNE'S CLAIM FOR SALARIES AND WAGES
17 EXPENSE?**

18 A. The Company's total FPFTY claim consists of union labor of \$48,400,000 and

⁴ *PA PUC v. City of DuBois - Bureau of Water*, Docket No. R-2016-2554150, pp. 65-66 (Order Entered March 28, 2017); *PA PUC v. City of DuBois - Bureau of Water*, Docket No. R-2016-2554150, p. 13 (Order Entered May 18, 2017).

⁵ *PA PUC v. Columbia Gas*, Docket No. R-2020-3018835, Opinion and Order, pp. 78-79 (Order Entered February 19, 2021).

⁶ *PA PUC v. PECO Energy Company- Gas Division*, Docket No. R-2020-3018929, Opinion and Order, pp. 117-119 (Order Entered June 22, 2021).

1 non-union labor of \$45,262,000 for a total salaries and wages expense claim of
2 \$93,662,000 (\$48,400,000 + \$45,262,000) (DLC Exhibit 2, Schedule D-7, p. 2).

3 The distribution claim is \$77,393,000 ($\$93,662,000 \times 0.8263$) based on the COSS
4 allocation factor of 0.8263 (DLC Exhibit 6-8A, p. 1).

5
6 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

7 A. Duquesne based its claim on budgeted salaries and wages for the FPFTY with
8 adjustments for anticipated wage increases (DLC Exhibit 2, Schedule D-7, p. 2).

9
10 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM FOR SALARIES
11 AND WAGES EXPENSE?**

12 A. No.

13
14 **Q. WHAT IS YOUR RECOMMENDATION FOR SALARIES AND WAGES
15 EXPENSE?**

16 A. I recommend an allowance of \$74,903,000 for salaries and wages expense, or a
17 reduction of \$2,490,000 ($\$77,393,000 - \$74,903,000$) to Duquesne's distribution
18 claim (I&E Exhibit No. 2, Schedule 2, p. 1).

19
20 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

21 A. My recommendation for salaries and wages expense is based on two adjustments.

22 First, my recommendation is based on the disallowance of the non-union salary

1 and wage increase effective January 1, 2023, as this increase is not effective until
2 after the end of the FPFTY. Second, my recommendation is based on applying a
3 vacancy adjustment as it is unreasonable to assume that the Company will
4 maintain 100% full staffing based on its own historic vacancy records. Since there
5 will always be search and placement time involved in filling vacancies, there will
6 always be a certain level of vacancies on a day-to-day operating basis that should
7 be reflected in the Duquesne's salaries and wages allowance. The removal of the
8 pay increase for non-union employees that occurs after the end of the FPFTY and
9 the adjustment for average historic vacancy levels is needed to reflect a more
10 accurate employee complement in the FPFTY. My recommendation more
11 accurately represents the salaries and wages level that will be in effect at the end
12 of the FPFTY.

13
14 **Q. EXPLAIN HOW YOU CALCULATED YOUR FIRST ADJUSTMENT.**

15 A. First, I removed the non-union salaries and wages increase effective January 1,
16 2023, of \$1,211,000 (DLC Exhibit No. 2, Schedule D-7, p. 2, col. 3, line 19),
17 which I multiplied by the COSS factor of 0.8263 (DLC Exhibit 6-8A, p. 1) for a
18 recommended downward adjustment to distribution salaries and wages of
19 \$1,001,000 ($\$1,211,000 \times 0.8263$).

20 This adjustment is reasonable because the selected test year is important to
21 appropriately project and recover prudent operating expenses. The Company
22 elected to use an FPFTY ending December 31, 2022; however, it is requesting to

1 recover this salary and wage increase that will not be effective until January 1,
2 2023. It is not reasonable to go beyond the FPFTY and reflect a salary and wage
3 increase on the first day rates become effective when the increase will not occur
4 until January 1, 2023.

5
6 **Q. EXPLAIN HOW YOU CALCULATED YOUR SECOND ADJUSTMENT.**

7 A. Next, I determined the average historic vacancy level, estimated an average salary
8 per employee for the FPFTY, and multiplied the average salary by the average
9 vacancy level to determine my recommended adjustment.

10
11 **Q. DID DUQUESNE TAKE VACANCIES INTO CONSIDERATION WHEN
12 DEVELOPING ITS CLAIM?**

13 A. Yes.

14
15 **Q. EXPLAIN HOW DUQUESNE INCORPORATED VACANCIES WHEN
16 CALCULATING ITS CLAIM FOR SALARIES AND WAGES EXPENSE.**

17 A. Duquesne states in direct testimony that a vacancy reserve of 100 was included
18 when calculating its FPFTY claim (DLC Statement No. 2, p. 12, lines 1-3).

19
20 **Q. WHAT IS THE BASIS FOR DUQUESNE'S 100-POSITION VACANCY
21 RESERVE?**

22 A. Duquesne states the Company incorporates a vacancy reserve of 100 positions in

1 its budget to prevent ongoing, normal transitional openings from inflating its
2 salary and wages expense (DLC Statement No. 2, p. 12, lines 1-6).

3
4 **Q. DO YOU AGREE WITH DUQUESNE’S VACANCY RESERVE OF 100**
5 **EMPLOYEES?**

6 A. No. Based on my analysis of historic vacancy levels, Duquesne did not factor in
7 enough vacancies when developing its claim.

8
9 **Q. WHAT LEVEL OF VACANCIES DO YOU RECOMMEND?**

10 A. I recommend a vacancy adjustment of 132 positions or an increase of 32 (132 –
11 100) positions from the Company’s vacancy reserve of 100 positions.

12
13 **Q. PLEASE EXPLAIN HOW YOU MADE YOUR SALARIES AND WAGES**
14 **VACANCY ADJUSTMENT.**

15 A. When I reviewed Duquesne’s monthly history of vacant positions from January
16 2018 to March 2021 as provided in response to I&E-RE-6-D (I&E Exhibit No. 2,
17 Schedule 3), I calculated an average monthly vacancy rate of 132 positions or 32
18 positions (132 – 100) more than the Company reflected when calculating its claim
19 (I&E Exhibit No. 2, Schedule 2, p. 2).

20 Next, I calculated an estimated FPFTY average salary per employee of
21 \$46,524 ($[\$77,393,000 - \$1,001,000] \div 1,642$) based on the Company’s FPFTY
22 claim for distribution salaries and wages expense of \$77,393,000 minus my

1 removal of the \$1,001,000 non-union pay increase effective January 1, 2023, as
2 discussed above, divided by the FPFTY employee count 1,642 (825 + 817).
3 Finally, I multiplied the additional 32 vacancies as discussed above by the average
4 salary of \$46,524 to arrive at my recommended reduction of \$1,489,000 ($\$46,524$
5 $\times 32$) to distribution salaries and wages expense (I&E Exhibit No. 2, Schedule 2,
6 p. 3).

7 Therefore, my downward adjustments related to the removal of distribution
8 salaries and wages for the non-union pay increase effective January 1, 2023 of
9 \$1,001,000 and distribution salaries and wages related to my vacancy adjustment
10 of \$1,489,000 result in a total downward recommended adjustment of \$2,490,000
11 ($\$1,001,000 + \$1,489,000$) or a recommended allowance for distribution salaries
12 and wages of \$74,903,000 ($\$77,393,000 - \$2,490,000$) (I&E Exhibit No. 2,
13 Schedule 2, p. 1).

14 15 **PAYROLL TAXES**

16 **Q. WHAT ARE PAYROLL TAXES?**

17 A. Payroll taxes represent taxes imposed on employers and employees that are
18 usually calculated as a percentage of the salaries paid to staff. Payroll taxes
19 generally fall into two categories: 1) deductions from an employee's wages, and 2)
20 taxes paid by the employer based on the employee's wages. Duquesne has made a
21 claim in this filing for its employer share of those payroll taxes.

1 **Q. WHAT IS THE COMPANY'S CLAIM FOR PAYROLL TAX EXPENSE?**

2 A. In its filing, Duquesne's claim for payroll tax expense is \$8,346,000 (DLC
3 Exhibit 2, Schedule D-20, column 5, lns. 4-6, 9). The distribution claim is
4 \$6,896,000 ($\$8,346,000 \times 0.8263$) based on the COSS allocation factor of 0.8263
5 (DLC Exhibit 6-8A, p. 1).

6
7 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

8 A. Duquesne's claim consists of Social Security and Medicare taxes (together FICA),
9 federal unemployment tax (FUTA), state unemployment tax (SUTA), and the City
10 of Pittsburgh payroll tax.

11

12 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

13 A. No.

14

15 **Q. WHAT IS YOUR RECOMMENDATION FOR PAYROLL TAXES?**

16 A. I recommend an allowance of \$6,674,000 for payroll taxes, or a reduction of
17 \$222,000 ($\$6,896,000 - \$6,674,000$) to the Company's distribution claim.

18

19 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

20 A. My recommended adjustment is based on recognition of the salaries and wages
21 reduction for my annualization and vacancy adjustments; and, on the percentage of
22 total payroll taxes to total payroll. My recommendation is calculated as follows:

1	FPFTY Distribution Payroll Tax Claim	\$6,896,000
2	FPFTY Total Distribution Payroll Claim	÷ <u>\$77,393,000</u>
3	% Payroll Taxes to Total Payroll Claim	8.9%
4	I&E Distribution Payroll Adjustment from Above	x <u>\$2,490,000</u>
5	I&E Payroll Tax – Distr. Recommended Adjustment	<u>\$222,000</u>

6

7 **INCENTIVE COMPENSATION**

8 **Q. WHAT INCENTIVE COMPENSATION?**

9 A. Incentive compensation is additional money or other rewards that are
10 supplementary to base pay.

11

12 **Q. WHAT IS THE COMPANY’S CLAIM FOR INCENTIVE**
13 **COMPENSATION?**

14 A. Duquesne’s claim for incentive compensation expense is \$10,607,000 (I&E
15 Exhibit No. 2, Schedule 4, p. 2, col. 10, line 5). The distribution claim is
16 \$8,765,000 (\$10,607,000 x 0.8263) based on the COSS allocation factor of 0.8263
17 (DLC Exhibit 6-8A, p. 1).

18

19 **Q. WHAT IS THE BASIS FOR THE COMPANY’S CLAIM?**

20 A. Duquesne’s claim consists of incentive compensation for non-union employees
21 based on various financial, safety, and qualitative goals (I&E Exhibit No. 2,

1 Schedule 5, p. 4) where a portion of the claim is based on pay increases (I&E
2 Exhibit No. 2, Schedule 6).

3
4 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

5 A. No.

6
7 **Q. WHAT IS YOUR RECOMMENDATION FOR INCENTIVE
8 COMPENSATION?**

9 A. I recommend an allowance of \$6,313,000 for incentive compensation, or a
10 reduction of \$2,452,000 (\$8,765,000 - \$6,313,000) to the Company's distribution
11 claim.

12
13 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

14 A. My recommendation is based on a three-year historic average of incentive
15 compensation. In response to I&E-RE-8-D, Duquesne provided incentive
16 compensation by year from 2018 through FPFTY 2022 (I&E Exhibit No. 2,
17 Schedule 5, p. 4). Based on this information, the Company experienced its highest
18 level of incentive compensation over the past three years in the HTY which is
19 more than 12% greater than the prior year ($[\$10,458,000 - \$9,284,000] \div$
20 $\$9,284,000$) and which was used to determine its FPFTY claim. The FPFTY
21 amount is not realistic in that not all goals will be met or exceeded each year. This
22 is evident in that Duquesne has indicated that goals were not reached for at least

1 two key performance indicators (KPIs) resulting in no payout in 2018 and 2019,
2 and one KPI was not met in the HTY (I&E Exhibit No. 2, Schedule 5, p. 4).

3 Additionally, Duquesne's response to I&E-RE-8-D (I&E Exhibit No. 2,
4 Schedule 5) suggests that all incentive compensation goals will be met or
5 exceeded in the FPFTY despite the lack of certainty surrounding this point.
6 Duquesne unrealistically bases its 2021 and 2022 projections on assumed wage
7 increases applied to actual spending for incentive compensation in 2020. A
8 review of Duquesne's budgeted and actual incentive compensation for the past
9 three years shows that Duquesne was under budget in 2018, 2019, and 2020. (I&E
10 Exhibit No. 2, Schedule 7). Therefore, it is more reasonable to rely on historical
11 data for a just and reasonable estimate, particularly when there is no guaranteed
12 full payout in any given year and as a result the amount can fluctuate from year to
13 year.

14
15 **Q. PLEASE EXPLAIN HOW YOU CALCULATED YOUR**
16 **RECOMMENDATION.**

17 A. First, I calculated a three-year average for total incentive compensation expense
18 resulting in a total recommended allowance of \$7,640,000 ($[\$7,004,000 +$
19 $\$8,206,000 + \$7,711,000] \div 3$), or a reduction to the Company's total incentive
20 compensation expense claim of \$2,967,000 ($\$10,607,000 - \$7,640,000$).

21 To determine the amount attributable to distribution, I multiplied my total
22 recommended allowance for incentive compensation expense by the COSS

1 allocation factor of 0.8263 (DLC Exhibit 6-8A, p. 1) for a recommended
2 allowance of \$6,313,000 ($\$7,640,000 \times 0.8263$) to distribution incentive
3 compensation expense or a reduction of \$2,452,000 ($\$8,765,000 - \$6,313,000$) to
4 the Company's distribution claim.

5
6 **HEALTH INSURANCE EXPENSE**

7 **Q. WHAT IS HEALTH INSURANCE EXPENSE?**

8 A. Health insurance expense represents healthcare cost claims for its employees, stop
9 loss insurance, health savings account contributions, and related fees (I&E Exhibit
10 No. 2, Schedule 8).

11
12 **Q. WHAT IS THE COMPANY'S CLAIM FOR HEALTH INSURANCE**
13 **EXPENSE?**

14 A. Duquesne's claim for health insurance expense is \$8,118,000 (I&E Exhibit No. 2,
15 Schedule 9). The distribution claim is \$6,708,000 ($\$8,118,000 \times 0.8263$) based on
16 the COSS allocation factor of 0.8263 (DLC Exhibit 6-8A, p. 1).

17
18 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

19 A. Duquesne based its claim on prior year's claim costs with adjustments from the
20 anticipated changes in the number of eligible employees, contribution levels, and
21 increases based on the healthcare industry outlook (DLC Statement No. 2,
22 p. 28).

1 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIM?**

2 A. No.

3

4 **Q. WHAT IS YOUR RECOMMENDATION FOR HEALTH INSURANCE**
5 **EXPENSE?**

6 A. I recommend an allowance of \$6,577,000 for health insurance expense, or a
7 reduction of \$131,000 (\$6,708,000 - \$6,577,000) to Duquesne’s distribution claim.

8

9 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

10 A. My recommendation is based on recognition of the salaries and wages adjustment
11 explained above which is calculated as follows:

12	FPFTY Distribution Health Ins. Expense Claim	\$6,708,000
13	FPFTY Employee Count	÷ <u>1,642</u>
14	Average Health Insurance Expense per Employee	\$4,085
15	Average Vacancies from Salaries and Wages	x <u>32</u>
16	I&E Distr. Health Ins. Exp – Total Recommended Adj.	<u>\$131,000</u>

17

18 **401k EXPENSE**

19 **Q. WHAT IS 401k EXPENSE?**

20 A. 401k expense represents Duquesne’s retirement plan for employees hired after
21 June 1, 2007 for non-union employees and October 1, 2010 for union employees
22 (DLC Statement No. 2, p. 31).

1 **Q. WHAT IS THE COMPANY’S CLAIM FOR 401k EXPENSE?**

2 A. Duquesne’s claim for 401k expense is \$6,345,000 (I&E Exhibit No. 2,
3 Schedule 9). The distribution claim is \$5,243,000 ($\$6,345,000 \times 0.8263$) based on
4 the COSS allocation factor of 0.8263 (DLC Exhibit 6-8A, p. 1).

5
6 **Q. WHAT IS THE BASIS FOR THE COMPANY’S CLAIM?**

7 A. Duquesne based its claim on historical contributions, expected participated levels,
8 expected wage increases, and potential changes to the 401k plan (I&E Exhibit
9 No. 2, Schedule 10).

10
11 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIM?**

12 A. No.

13
14 **Q. WHAT IS YOUR RECOMMENDATION FOR 401k EXPENSE?**

15 A. I recommend an allowance of \$5,074,000 for 401k expense, or a reduction of
16 \$169,000 ($\$5,243,000 - \$5,074,000$) to Duquesne’s distribution claim.

17
18 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

19 A. My recommendation is based on recognition of the salaries and wages adjustment
20 explained above. It is calculated as follows:

21	FPFTY Distribution 401k Expense Claim	\$5,243,000
22	FPFTY Total Distribution Payroll Claim	÷ <u>\$77,393,000</u>

1	% 401k Expenses to Total Payroll Claim	6.8%
2	I&E Distribution Payroll Adjustment from Above	x <u>\$2,490,000</u>
3	I&E Distr. 401k Exp – Total Recommended Adj.	<u>\$169,000</u>

4

5 **ADVERTISING EXPENSE**

6 **Q. WHAT IS INCLUDED IN ADVERTISING EXPENSE?**

7 A. Advertising expense includes sponsorship and customer engagement, social
8 media/public relations, and professional services which includes community and
9 employee engagement (I&E Exhibit No. 2, Schedule 11, p. 2).

10

11 **Q. WHAT IS THE COMPANY’S CLAIM FOR ADVERTISING EXPENSE?**

12 A. Duquesne’s advertising expense claim is \$1,254,000 for distribution (I&E Exhibit
13 No. 2, Schedule 11, p. 2).

14

15 **Q. DO YOU AGREE WITH THE COMPANY’S CLAIM?**

16 A. No.

17

18 **Q. WHAT IS YOUR RECOMMENDATION FOR ADVERTISING EXPENSE?**

19 A. I recommend an allowance of \$1,096,000 for advertising expense, or a reduction
20 of \$158,000 (\$1,254,000 - \$1,096,000) to Duquesne’s distribution claim.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

2 A. My recommendation is based on the removal of advertising related to the
3 Pittsburgh Home and Garden Show Sponsorship (I&E Exhibit No. 2, Schedule 12,
4 p. 1), as this is not an operational cost necessary to provide safe and reliable
5 electric service to ratepayers. Furthermore, ratepayers should not be required to
6 finance Duquesne’s decision to pay for such promotional advertising.

7 The Company asserts that this specific advertising is used to engage with
8 customers and stakeholders regarding education on various topics (I&E Exhibit
9 No. 2, Schedule 12, p. 1). However, it appears that most of this cost is for
10 sponsorship of the event. On the Pittsburgh Home and Garden Show’s website,
11 <https://www.pghhome.com>, Duquesne is only one of the two main sponsors on the
12 homepage. Furthermore, the cost of a booth at the Pittsburgh Home and Garden
13 Show in April 2021 was only \$2,075 (I&E Exhibit No. 2, Schedule 13) which is
14 significantly less than the \$160,000 claim for “educating” customers and
15 stakeholders. Therefore, I recommend a total allowance of \$1,096,000 or a
16 reduction of \$158,000 (\$1,254,000 - \$1,096,000) to remove Duquesne’s
17 sponsorship at the Pittsburgh Home and Garden Show as it is not necessary to
18 provide safe and reliable service to ratepayers.

19

20 **ELIGIBLE CUSTOMER SOLICITATIONS**

21 **Q. WHAT ARE ELIGIBLE CUSTOMER LISTING SOLICITATIONS?**

22 A. The Company is required every three years to send a solicitation to each customer

1 with instructions for how to decline inclusion in a list of eligible customers whose
2 information may be provided to a competitive energy supplier, and the Company
3 opines this requirement allows it to seek recovery of these costs in its next base rate
4 case.⁷ The Company included this amount in a regulatory asset and is requesting a
5 three-year normalization of the total based on the Company's expected rate case
6 filing interval of three years (DLC Statement No. 2, p. 26).

7
8 **Q. WHAT IS THE COMPANY'S CLAIM FOR ELIGIBLE CUSTOMER**
9 **LISTING SOLICITATIONS?**

10 A. The Company is claiming a normalized amount of \$113,000.

11
12 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

13 A. The Company's total claim for cost recovery of deferred eligible customer listing
14 solicitations is \$339,000 (I&E Exhibit No. 2, Schedule 14, p. 2). This produces a
15 three-year normalized amount of \$113,000 ($\$339,000 \div 3$ years). The Company
16 included this amount as a regulatory asset due to the Commission requiring such
17 notices and is requesting a three-year normalization of the total based on its
18 expected rate case filing interval of three years.

⁷ *Interim Guidelines for Eligible Customers Lists*; Docket No. M-2010-2183412 (Order Entered October 23, 2014).

1 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

2 A. No.

3

4 **Q. WHAT DO YOU RECOMMEND FOR ELIGIBLE CUSTOMER LISTING**
5 **SOLICITATIONS?**

6 A. I recommend an allowance of \$95,000 or a reduction of \$18,000 (\$113,000 -
7 \$95,000) to the Company's claim. I also recommend that the regulatory asset for
8 eligible customer listing solicitations be disallowed and that normalization of this
9 routine business expense be required.

10

11 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

12 A. My recommendation is based on a change to the Company's claimed three-year
13 normalization of the eligible customer listing solicitation and instead to use a 43-
14 month normalization period in line with my calculation of the Company's historic
15 filing frequency.

16

17 **Q. WHY DO YOU RECOMMEND DISALLOWANCE OF THE COMPANY'S**
18 **REQUESTED REGULATORY ASSET TREATMENT FOR THIS**
19 **EXPENSE?**

20 A. Mailing of eligible customer solicitations produces a routine business expense, not
21 an extraordinary expense that would qualify for deferral. The Commission's
22 requiring routine periodic mailing of such notices should not imply approval of

1 deferral treatment for ratemaking purposes. Normalization treatment of this
2 routine operating expense is more appropriate and in line with the handling of rate
3 case expense for ratemaking. It would be inappropriate for the Company to
4 receive guaranteed retroactive recovery of every single dollar that it spends to mail
5 such notices to customers and such treatment fails to encourage any potential
6 future cost saving measures.

7
8 **CHARGING INFRASTRUCTURE PORTFOLIO**

9 **Q. SUMMARIZE THE COMPANY'S CHARGING INFRASTRUCTURE**
10 **PORTFOLIO PROPOSAL.**

11 A. The Company proposes to design a Charging Infrastructure Portfolio which
12 includes a Public, Workplace, and Multi-Unit Dwelling (MUD) Make-Ready Pilot,
13 Fleet and Transit Charging Pilot, and a Home Charging Pilot (DLC Statement
14 No. 8, pp. 16-17).

15
16 **Q. WHY IS THE COMPANY PROPOSING THE CHARGING**
17 **INFRASTRUCTURE PORTFOLIO?**

18 A. Duquesne claims the purpose of the Charging Infrastructure Portfolio is to address
19 a market need, improve distribution utilization, ensure installations are done safely
20 and economically, and to expand access to the environmental and public health
21 benefits of electric vehicles (EVs) (DLC Statement No. 8, pp. 18-19).

1 **Q. WHICH PORTION OF THE COMPANY’S CHARGING**
2 **INFRASTRUCTURE PORTFOLIO ARE YOU ADDRESSING IN THIS**
3 **TESTIMONY?**

4 A. I will address the expense portion of Duquesne’s Charging Infrastructure
5 Portfolio. I&E witness Ethan Cline addresses the capitalized portion of the
6 Charging Infrastructure Portfolio (I&E Statement No. 3). My discussion of each
7 pilot program is discussed in detail below.

8
9 **Make-Ready Pilot**

10 **Q. SUMMARIZE THE COMPANY’S MAKE-READY PILOT PROPOSAL.**

11 A. The Company proposes to design a Public, Workplace, and Multi-Unit Dwelling
12 Make-Ready Pilot (Make Ready Pilot) in order to address the charging
13 infrastructure gap in its service territory. Under the Make-Ready Pilot, Duquesne
14 will provide all necessary supply infrastructure, including service connections and
15 EV make-ready behind the meter for approximately 30 Level 2 (L2) charging
16 stations and 4 direct current (DC) fast charging stations annually in public,
17 workplace, and multi-unit dwellings (MUD) settings. The customers will be
18 responsible for the procurement, installation, ownership, and maintenance of the
19 charging stations (DLC Statement No. 8, pp. 21-22).

20
21 **Q. WHY IS THE COMPANY PROPOSING THE MAKE READY PILOT?**

22 A. Duquesne claims the purpose of the Make-Ready Pilot is based on the need for

1 more charging infrastructure in its service territory based on feedback from
2 residential customers and EV growth projections. The Company states that the
3 Pittsburgh region will need a substantial increase in public, workplace, and MUD
4 charging stations based on research conducted in its service territory (DLC
5 Statement No. 8, pp. 22-23).

6
7 **Q. WHAT IS THE COMPANY'S CLAIM FOR THE MAKE-READY PILOT?**

8 A. Duquesne's claim for the Make-Ready Pilot is \$1,047,000 (rounded) which can be
9 further broken down between the expensed portion of \$147,000 and a capitalized
10 portion of \$900,000. The total expense portion claimed by the Company in the
11 FPFTY consists of \$30,000 for program management, \$113,000 for disadvantaged
12 community support, and \$5,000 for advertising and collateral (DLC Statement No.
13 8, p. 33).

14
15 **Q. DO YOU ACCEPT THE PREMISE OF THE COMPANY'S OVERALL
16 PROPOSAL FOR THE MAKE-READY PILOT?**

17 A. Yes.

18
19 **Q. DO YOU HAVE ANY RECOMMENDATIONS FOR THE COMPANY'S
20 PROPOSED MAKE-READY PILOT?**

21 A. Yes. I recommend the Company provide a report in its next base rate proceeding.
22 The report should include the total number of L2 and DCFC stations installed as

1 well as the number of L2 charging stations in Environmental Justice (EJ) areas
2 broken down by year under the Make-Ready Pilot. The report should also provide
3 the number and dollar amount of charging station rebates for charging stations in
4 EJ areas and a breakdown of governmental grants received under the Make-Ready
5 Pilot by year. Finally, the report should include an evaluation of customer
6 participation and feedback, public access to charging stations, charging station
7 usage, and identification of charging station revenues received by the Company
8 from charging station owners.

9
10 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO REQUIRE**
11 **REPORTING ON THE MAKE-READY PILOT IN THE NEXT BASE**
12 **RATE PROCEEDING?**

13 A. The purpose of the report is to evaluate the progress of the Make-Ready Pilot and
14 to assist in determining if any adjustments are needed or if the Make-Ready Pilot
15 should be discontinued.

16
17 **Fleet and Transit Charging Pilot**

18 **Q. SUMMARIZE THE COMPANY'S FLEET AND TRANSIT CHARGING**
19 **PILOT PROPOSAL.**

20 A. The Company proposes to design a Fleet and Transit Charging Pilot to address the
21 charging infrastructure for fleet customers, including the Port Authority of
22 Allegheny County (Port Authority). Under the Fleet and Transit Charging Pilot,

1 Duquesne will install, own, operate, and maintain the electric facilities up to the
2 customer service point as well as install, own, and maintain the make-ready
3 infrastructure from the service point to the station stub. For the charging stations,
4 customers will have the option to install, own, and maintain the charging stations
5 on their own or have Duquesne install, own, and maintain the charging stations for
6 a monthly fee. The Company projects to add seven customers annually, not
7 including the Port Authority, and will be limited to twelve new customers
8 annually. The Company will target 25% of annual projects and conduct outreach
9 to EJ areas to participate in the Fleet and Transit Charging Pilot. The Company
10 also states that it will install, own, and maintain six DC Fast Charging stations at
11 the Port Authority's East Liberty Garage to power six 40-foot electric buses the
12 Port Authority will receive in 2021 (DLC Statement No. 8, pp. 33-42).

13
14 **Q. WHY IS THE COMPANY PROPOSING THE FLEET AND TRANSIT**
15 **CHARGING PILOT?**

16 A. Duquesne claims the purpose of the Fleet and Transit Charging Pilot is to help
17 customers overcome barriers to fleet electrification by bridging the deployment
18 gap, to align with Pennsylvania's emissions goals, and to promotes various health
19 benefits with fleet and transit electrification (DLC Statement No. 8, pp. 34-35).

1 **Q. WHAT IS THE COMPANY'S CLAIM FOR THE FLEET AND TRANSIT**
2 **CHARGING PILOT?**

3 A. Duquesne's claim for the Fleet and Transit Charging Pilot is \$2,014,000 (rounded)
4 which can be broken down between the non-transit pilot costs of \$930,000 and
5 transit pilot costs of \$1,084,000. This amount includes an expense and capitalized
6 portion for both the non-transit and transit pilot costs (DLC Statement No. 8, pp.
7 42-43).

8 The non-transit pilot consists of an expense portion of \$201,000 (rounded)
9 and a capitalized portion of \$730,000 (\$199,000 + \$269,000 + \$138,000 +
10 \$124,000) (rounded). The total FPFTY expense portion claimed by the Company
11 consists of \$102,000 for maintenance and warranty expenses, \$5,000 for shipping
12 expenses, \$91,000 for program management and administration expenses, \$1,000
13 for marketing, advertising, and education expenses, and \$2,000 for sales tax (DLC
14 Statement No. 8, p. 33).

15 The transit pilot consists of an expense portion of \$100,000 (rounded) for
16 maintenance and warranty expenses which is to be normalized over a three-year
17 period for \$33,000 annually and a capitalized portion of \$984,000 (\$300,000 +
18 \$510,000 + \$174,000) (rounded) (DLC Statement No. 8, p. 34).

19
20 **Q. DO YOU ACCEPT THE PREMISE OF THE COMPANY'S OVERALL**
21 **PROPOSAL FOR THE FLEET AND TRANSIT CHARGING PILOT?**

22 A. Yes.

1 **Q. WHAT IS YOUR RECOMMENDATION FOR THE EXPENSE PORTION**
2 **OF THE FLEET AND TRANSIT CHARGING PILOT?**

3 A. I recommend that Duquesne's maintenance and warranty expenses of \$100,000
4 (rounded) related to the transit pilot costs be normalized over a period 43 months
5 resulting in an annual expense of \$28,000 [$(\$100,000 \div 43 \text{ months}) \times 12 \text{ months}$],
6 or a reduction of \$5,000 ($\$33,000 - \$28,000$) to the Company's claim which is
7 consistent with my calculated rate case expense filing frequency.

8
9 **Q. DO YOU HAVE ANY OTHER RECOMMENDATIONS FOR THE**
10 **COMPANY'S PROPOSED FLEET AND TRANSIT CHARGING PILOT?**

11 A. Yes. I recommend the Company provide a report in its next base rate proceeding.
12 The report should include documentation that the six DCFC stations have been
13 installed at the Port Authority's East Liberty Garage, the total number of L2 and
14 DCFC stations installed for all other customers participating in the Fleet and
15 Transit Charging Pilot, and the number of projects in EJ areas by year. The report
16 should also include an evaluation of customer participation and feedback, charging
17 station usage, and identification of charging station revenues received by the
18 Company from charging station owners.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO PROVIDE**
2 **A REPORT ON THE FLEET AND TRANSIT CHARGING PILOT IN THE**
3 **NEXT BASE RATE PROCEEDING?**

4 A. The purpose of the report is to evaluate the progress of the Fleet and Transit
5 Charging Pilot, to assist in determining if any adjustments are needed, or to
6 determine whether the Fleet and Transit Charging Pilot should be discontinued.

7

8 **Home Charging Pilot**

9 **Q. SUMMARIZE THE COMPANY’S HOME CHARGING PILOT**
10 **PROPOSAL.**

11 A. The Company proposes to design a Home Charging Pilot Make Ready Pilot as an
12 option for residential customers to install L2 charging stations in residential
13 customers’ homes. Under the Home Charging Pilot, Duquesne will install, own,
14 and maintain L2 charging stations for residential customers where the Company
15 will pay up to \$500 for residential customers’ standard installation costs for a
16 standard charging station and up to \$2,000 for low-income customers. For the
17 charging stations, customers will be charged a monthly fee for costs related to
18 program management, IT, operations, engineering, and marketing and education.
19 The Company estimates that 125 residential customers will participate in the
20 Home Charging Pilot annually (DLC Statement No. 8, pp. 45-53).

1 **Q. WHY IS THE COMPANY PROPOSING THE HOME CHARGING PILOT?**

2 A. Duquesne claims the purpose of the Home Charging Pilot is to benefit customers
3 and assist in EV adoption (DLC Statement No. 8, p. 45).

4

5 **Q. WHAT IS THE COMPANY'S CLAIM FOR THE HOME CHARGING
6 PILOT?**

7 A. Duquesne's claim for the Home Charging Pilot is \$504,000 (rounded) which can
8 be further broken down between the expensed portion of \$152,000 (rounded) and
9 a capitalized portion of \$352,000 (rounded). The total expense portion claimed by
10 the Company in the FPFTY consists of \$106,000 (rounded) for program
11 management, \$8,000 for data management, \$4,000 for charging station
12 maintenance, \$14,000 for marketing, advertising, and education, \$20,000 for low-
13 income assistance, and \$1,000 for sales tax (DLC Statement No. 8, p. 52).

14

15 **Q. WHICH PORTION OF THE COMPANY'S CLAIM ARE YOU
16 ADDRESSING IN THIS TESTIMONY?**

17 A. I address the expense portion of Duquesne's Home Charging Pilot. I&E witness
18 Ethan Cline addresses the capitalized portion of the Home Charging Pilot (I&E
19 Statement No. 3).

1 **Q. DO YOU ACCEPT THE PREMISE OF THE COMPANY’S OVERALL**
2 **PROPOSAL FOR THE HOME CHARGING PILOT?**

3 A. Yes. While I question how many low-income ratepayers can afford and/or will
4 purchase EVs, I am willing to accept this as a pilot program.

5
6 **Q. DO YOU HAVE ANY RECOMMENDATIONS FOR THE COMPANY’S**
7 **PROPOSED HOME CHARGING PILOT?**

8 A. Yes. I recommend the Company provide a report in its next base rate proceeding.
9 The report should include the total number of L2 stations installed as well as the
10 number of L2 charging stations installed for low-income customers broken down
11 by year under the Home Charging Pilot. The report should also provide the
12 amount the Company paid for standard installation costs broken down by
13 residential customers and low-income customers. Finally, the report should
14 include an evaluation of customer participation, feedback, and charging station
15 usage, and identify the charging station revenues received by the Company from
16 charging station owners.

17
18 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO PROVIDE**
19 **A REPORT ON THE HOME CHARGING PILOT IN THE NEXT BASE**
20 **RATE PROCEEDING?**

21 A. The purpose of the report is to evaluate the progress of the Home Charging Pilot,

1 to assist in determining if any adjustments are needed, or to determine whether the
2 Home Charging Pilot should be discontinued.

3
4 **CUSTOMER PORTFOLIO**

5 **Q. SUMMARIZE THE COMPANY'S CUSTOMER PORTFOLIO PROPOSAL.**

6 A. The Company proposes to design a Customer Portfolio which includes Awareness,
7 Education, and Engagement; Fleet Electrification Advisory Service; and a
8 Registration Incentive (DLC Statement No. 8, p. 53). My discussion of each
9 component is discussed in detail below.

10
11 **Awareness, Education, and Engagement Proposal**

12 **Q. SUMMARIZE THE COMPANY'S AEE PROPOSAL.**

13 A. The Company proposes to design an Awareness, Education, and Engagement
14 (AEE) proposal to educate customers about transportation electrification services.
15 The Company states that this will be done through program-specific outreach via
16 the Company's website, web tools, community-based events, technical assistance,
17 and internal knowledge building. Finally, Duquesne states it will also provide
18 education regarding EVs specifically towards low-income customers (DLC
19 Statement No. 8, pp. 54-56). Duquesne claims the purpose of the AEE proposal is
20 to fill the information gap in the Company's service territory around EVs and
21 charging stations and to educate customers about the Company's electrification
22 programs (DLC Statement No. 8, p. 54).

1 **Q. WHAT IS THE COMPANY’S CLAIM FOR THE AEE PROPOSAL?**

2 A. Duquesne’s claim for the AEE proposal is \$392,000 (rounded) which consists of
3 \$187,000 for tools and software, \$95,000 for advertising and market research,
4 \$85,000 for events, and \$25,000 for sponsorship and training (rounded) (DLC
5 Statement No. 8, p. 57).

6
7 **Q. DO YOU ACCEPT THE COMPANY’S OVERALL AEE PROPOSAL?**

8 A. Yes.

9
10 **Q. DO YOU HAVE ANY RECOMMENDATIONS FOR THE COMPANY’S**
11 **AEE PROPOSAL?**

12 A. Yes. I recommend the Company be required to provide a report in its next base
13 rate proceeding that will provide a breakdown of the programs undertaken by the
14 Company, the specific channels used to educate customers about EVs, charging
15 stations, and the Company’s transportation electrification program, as well as the
16 programs geared specifically towards low-income customers by year. Finally, the
17 report will include an evaluation of customer participation and feedback.

18
19 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO REQUIRE**
20 **REPORTING ON THE AEE PROPOSAL IN THE NEXT BASE RATE**
21 **PROCEEDING?**

22 A. The purpose of such future reporting is to evaluate the progress of the AEE

1 Proposal, to assist in determining if any adjustments are needed, or to determine
2 whether the AEE Proposal should be discontinued.

3
4 **Fleet Electrification Advisory Service Proposal**

5 **Q. SUMMARIZE THE COMPANY’S FLEET ELECTRIFICATION**
6 **ADVISORY SERVICE PROPOSAL.**

7 A. The Company proposes to design a Fleet Electrification Advisory Service to assist
8 fleet customers such as municipal governments, school districts, non-profits, and
9 private sector commercial customers in developing fleet electrification plans. The
10 Company states that this will be done through collecting and analyzing customer
11 fleet data and provide electrification plans to participating customers which would
12 be used to implement these plans as part of the Fleet Charging Pilot. The
13 Company estimates that a total of 36 customers and at least two non-profit entities
14 serving EJ Areas will participate in the Fleet Electrification Advisory Service
15 annually over a three-year period (DLC Statement No. 8, pp. 57-60).

16
17 **Q. WHY IS THE COMPANY PROPOSING THE FLEET ELECTRIFICATION**
18 **PROPOSAL?**

19 A. Duquesne claims the purpose of the Fleet Electrification Proposal is to use the
20 Company’s expertise to help fleet customers overcome the challenges of fleet
21 electrification (DLC Statement No. 8, p. 58).

1 **Q. WHAT IS THE COMPANY'S CLAIM FOR THE FLEET**
2 **ELECTRIFICATION ADVISORY SERVICE PROPOSAL?**

3 A. Duquesne's claim for the Fleet Electrification Advisory proposal is \$292,000
4 (rounded) which consists of \$194,000 for customer assessments, \$41,000 for
5 program management, \$50,000 for fleet identification, \$2,500 for marketing,
6 advertising, and education expenses, and \$5,000 for IT expenses (DLC Statement
7 No. 8, p. 33).

8
9 **Q. DO YOU ACCEPT THE PREMISE OF THE COMPANY'S OVERALL**
10 **FLEET ELECTRIFICATION ADVISORY SERVICE PROPOSAL?**

11 A. Yes.

12

13 **Q. DO YOU HAVE ANY RECOMMENDATIONS FOR THE COMPANY'S**
14 **FLEET ELECTRIFICATION ADVISORY SERVICE PROPOSAL?**

15 A. Yes. I recommend the Company be required to provide a report in its next base
16 rate proceeding. The report will provide the total number of customers that
17 participated in the Fleet Electrification Advisory Service program and the number
18 of non-profit organizations that serve EJ Areas that participate in the Fleet and
19 Advisory Service program by year. Finally, the report will include an evaluation
20 of customer participation and feedback.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO REQUIRE**
2 **REPORTING ON THE AEE PROPOSAL IN THE NEXT BASE RATE**
3 **PROCEEDING?**

4 A. The purpose of such future reporting is to evaluate the progress of the proposed
5 Fleet Electrification Advisory Service, to assist in determining if any adjustments
6 are needed, or to determine whether the proposed Fleet Electrification Advisory
7 Service should be discontinued.

8

9 **Registration Incentive**

10 **Q. SUMMARIZE THE COMPANY’S REGISTRATION INCENTIVE**
11 **PROPOSAL.**

12 A. The Company proposes to offer a one-time incentive of \$50 in the form of a pre-
13 paid debit card to customers who register their EV with the Company. This is a
14 change from the current registration incentive which offered \$60 in the form of a
15 bill credit. The Company estimates that an average of 3,977 will participate
16 annually over the next three years (DLC Statement No. 8, p. 61).

17

18 **Q. WHY IS THE COMPANY PROPOSING THE REGISTRATION**
19 **INCENTIVE?**

20 A. Duquesne claims the purpose of the registration incentive proposal is to provide
21 the Company with information regarding the location and usage patterns of

1 customers with EVs and to assist with future distribution system planning (DLC
2 Statement No. 8, p. 61).

3

4 **Q. WHAT IS THE COMPANY’S CLAIM FOR THE PROPOSED**
5 **REGISTRATION INCENTIVE?**

6 A. Duquesne’s claim for the registration incentive proposal is \$68,000 (rounded)
7 which consists of \$48,000 for incentives, \$13,000 for program and administration
8 incentives, and \$7,000 for advertising and collateral (DLC Statement No. 8, p. 63).

9

10 **Q. DO YOU ACCEPT THE PREMISE OF THE COMPANY’S OVERALL**
11 **PROPOSAL FOR THE REGISTRATION INCENTIVE?**

12 A. Yes.

13

14 **Q. DO YOU HAVE ANY RECOMMENDATIONS FOR THE COMPANY’S**
15 **PROPOSED REGISTRATION INCENTIVE?**

16 A. Yes. I recommend the Company be required to provide a report in its next base
17 rate proceeding showing the number of customers that participated in the
18 registration incentive by year as well as an evaluation of customer participation
19 and feedback.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO REQUIRE**
2 **REPORTING ON THE PROPOSED REGISTRATIONS INCENTIVE IN**
3 **THE NEXT BASE RATE PROCEEDING?**

4 A. The purpose of such future reporting is to evaluate the progress of the proposed
5 Registrations Incentive and to assist in determining if any adjustments are needed
6 or if the program should be discontinued.

7

8 **EV CHARGEUP PILOT – L2 REBATES AND EV REGISTRATIONS INCENTIVES**

9 **Q. SUMMARIZE THE TERMS AGREED TO IN THE 2018 BASE RATE**
10 **CASE REGARDING THE COMPANY’S EV CHARGEUP PILOT**
11 **PROGRAM THAT YOU WILL BE ADDRESSING.**

12 A. As part of the 2018 base rate case settlement, it was agreed that the Company
13 would invest up to \$650,000 for rebates for L2 charging stations where the
14 recovery of these expenses would be deferred until the Company’s next base rate
15 case. Additionally, the Company received \$70,000 per year in base rates for EV
16 registrations incentives with any unused portion being addressed in the next base
17 rate case.⁸

⁸ Docket No. R-2018-3000124, Settlement Agreement, paragraph 45.

1 **Q. HOW MUCH DID THE COMPANY SPEND FOR L2 REBATES?**

2 A. Duquesne incurred \$414,000 (rounded) in total L2 rebate expenses (DLC
3 Statement No. 8, p. 64).

4
5 **Q. DID THE COMPANY SPEND THE \$70,000 PER YEAR FOR EV
6 REGRISTATION INCENTIVES?**

7 A. No. Duquesne states there were unused EV registration incentives of \$49,000 and
8 \$52,000 (rounded) for 2019 and 2020, respectively. The Company also estimates
9 that the unused EV registration incentives for 2021 to be \$40,000 (rounded) for
10 total unused EV registration incentives of \$140,000 (\$49,000 + \$52,000 +
11 \$40,000) (rounded) (DLC Statement No. 8, pp. 64-65).

12
13 **Q. HOW DOES DUQUESNE PROPOSE TO RECOVER THE L2 REBATES
14 AND UNUSED EV REGISTRATION INCENTIVES FROM THE EV
15 CHARGEUP PILOT?**

16 A. The Company proposes to net the L2 rebates of \$414,000 (rounded) and unused
17 EV registration incentives of \$140,000 (rounded) for a total expense amount of
18 \$274,000 (\$414,000 - \$140,000) (rounded). The Company included this amount
19 as a regulatory asset and is requesting a normalization period of three years which
20 is consistent with the Company's three-year normalization period for rate case
21 expense (DLC Statement No. 8, p. 65). This produces a normalized claim of
22 \$91,000 ($\$274,000 \div 3$).

1 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM FOR THE L2**
2 **REBATES AND UNUSED EV REGISTRATION INCENTIVES?**

3 A. No.

4

5 **Q. WHAT IS YOUR RECOMMENDATION FOR THE L2 REBATES AND**
6 **UNUSED EV REGISTRATION INCENTIVES?**

7 A. I recommend an allowance of \$274,000 be amortized over a period 43 months
8 resulting in an annual expense of \$76,000 [$(\$274,000 \div 43 \text{ months}) \times 12 \text{ months}$],
9 or a reduction of \$15,000 ($\$91,000 - \$76,000$) to the Company's claim which is
10 consistent with my calculated rate case expense filing frequency.

11

12 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

13 A. My recommendation is based on a change to the Company's claimed three-year
14 normalization of the L2 rebates and unused EV registration incentives and instead
15 to use a 43-month amortization period (since regulatory assets are supposed to be
16 amortized and not normalized) in line with my calculation of the Company's
17 historic filing frequency.

18

19 **Q. WHY DO YOU RECOMMEND AMORTIZATION TREATMENT AS**
20 **OPPOSED TO THE COMPANY'S REQUESTED NORMALIZATION FOR**
21 **THE L2 REBATES AND UNUSED EV REGISTRATION INCENTIVES?**

22 A. I recommend that the regulatory asset be more appropriately amortized (as

1 opposed to normalized for the L2 rebates and unused EV registration incentives)
2 over 43 months, which is in line with my recommended normalization period for
3 rate case expense based on the Company's recent historic filing frequency. A 43-
4 month amortization produces an allowance of \$95,000 ($(\$339,000 \div 43 \text{ months}) \times$
5 12 months). The amortization of the regulatory asset for the L2 rebates and
6 unused EV registration incentives allows for full recovery of the regulatory asset
7 balance no matter when a utility makes a subsequent base rate case filing.
8 Amortization is appropriate for the extinguishing over time of a regulatory asset (a
9 balance sheet account).

11 **CASH WORKING CAPITAL**

12 **Q. WHAT IS A CASH WORKING CAPITAL (CWC) ALLOWANCE FOR** 13 **RATEMAKING PURPOSES?**

14 A. CWC includes the amount of funds necessary to operate a utility during the
15 interim between the rendition of service, including the payment of related
16 expenses, and the utility's receipt of revenue in payment of services rendered.

18 **Q. HOW DOES THE COMPANY CALCULATE ITS CWC CLAIM?**

19 A. Duquesne calculates its CWC by using a lead/lag study. A lead/lag study measures
20 the differences in time between: (1) the time services are rendered until payment
21 of those services is received; and (2) the time between the point when a utility has
22 incurred an expense and the actual payment of the expense. Stated another way,

1 the lead/lag study measures how many days exist on average between the midpoint
2 of the service period and the date the payment is made.

3
4 **Q. WHAT IS DUQUESNE'S CLAIM FOR CWC?**

5 A. Duquesne's total claim for CWC is \$68,330,000, and its distribution claim is
6 \$46,162,000 (DLC Exhibit 2, Schedule D-1, p. 3, ln. 4).

7
8 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

9 A. Duquesne's claim is based on a historic test year lead/lag study, applying total
10 revenues and total expenses for the FPFTY ending December 31, 2022, and
11 allocating 67.56% ($\$46,162,000 \div \$68,330,000$) of CWC to distribution.

12
13 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

14 A. No.

15
16 **Q. WHAT DO YOU RECOMMEND?**

17 A. I recommend a total allowance of \$67,042,000 or a decrease of \$1,288,000
18 ($\$68,330,000 - \$67,042,000$) to the Company's total claim (I&E Exhibit No. 2,
19 Schedule 15, p. 1). This results in a recommended distribution allowance of
20 \$45,294,000 for CWC, or a reduction of \$868,000 ($\$46,162,000 - \$45,294,000$) to
21 the Company's distribution claim based on the based on the COSS allocation
22 factor of 0.6756 ($\$46,162,000 \div \$68,330,000$).

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

2 A. My recommendation is based the removal of prepayments from the calculation of
3 CWC related to Other Expenses and for adjustments to O&M expenses as
4 discussed in I&E witness Christine Wilson’s direct testimony (I&E Statement No.
5 1) and in my testimony.

6

7 **Q. IS YOUR RECOMMENDED CWC ALLOWANCE A FINAL**
8 **RECOMMENDATION?**

9 A. No. All adjustments to Duquesne’s claims for revenues, expenses, taxes, and rate
10 base must be continually brought together in the Administrative Law Judge’s
11 Recommended Decision and again in the Commission’s Final Order. This
12 process, known as iteration, effectively prevents the determination of a precise
13 calculation until all adjustments have been made to the Company’s claim.

14

15 **Q. PLEASE EXPLAIN THE RATIONALE FOR YOUR**
16 **RECOMMENDATION TO REMOVE PREPAYMENTS FROM OTHER**
17 **EXPENSES IN CALCULATING CWC.**

18 A. The Company’s claim for CWC includes a FPFTY expense amount for Other
19 Expenses of \$129,340,000 and \$18,620,000 for prepayments (DLC Exhibit No. 2,
20 Schedule C-4, p. 2, col. 2, line 6 and col. 5, line 12). However, in response to
21 OCA-VIII-3, the Company states prepayments were not removed from calculating
22 CWC for Other Expenses despite prepayments already being included as a

1 separate line item in calculating CWC (I&E Exhibit No. 2, Schedule 16). By not
2 removing prepayments from the Other Expenses calculation for CWC, the
3 Company is double counting prepayments in calculating CWC. Therefore, I
4 recommend prepayments of \$18,260,000 included in Other Expenses be removed
5 from the Company's claim for CWC. My adjustment for Prepayments of
6 \$18,260,000 results in a decrease of \$819,874,000 to the Other Expense Lag Days
7 calculation.

8
9 **Q. WHAT O&M ADJUSTMENTS DID YOU INCORPORATE WHEN**
10 **DETERMINING A RECOMMENDED CWC ALLOWANCE?**

11 A. All O&M adjustments that are cash-based expense claims should be included
12 when determining the Company's CWC requirement. Therefore, I have included
13 cash-based O&M recommendations when computing the overall recommended
14 CWC allowance.

15
16 **Q. SUMMARIZE WHERE EACH OF THE RECOMMENDED O&M**
17 **EXPENSE ADJUSTMENTS ARE REFLECTED IN THE CWC**
18 **COMPUTATIONS.**

19 A. Payroll - Expense Lag Days:

20 I recommended a reduction to total salaries and wages expense of \$3,013,000
21 which is reflected as a reduction of \$37,354,000 to the Payroll Expense Lag Days
22 calculation (I&E Exhibit No. 2, Schedule 15, p. 1). I determined the total

1 reduction to salaries and wages expense by dividing my recommended reduction
2 to distribution salaries and wages expense of \$2,490,000 by the COSS allocation
3 factor of 0.8263 (DLC Exhibit 6-8A, p. 1) for a total salaries and wages expense
4 adjustment of \$3,013,000 ($\$2,490,000 \times 0.8263$).

5
6 Other Expenses – Expense Lag Days:

7 The following recommended adjustments (I&E Statement No. 1, p. 3 and I&E
8 Statement No. 2, p. 3) are reflected in the Other Expenses, Expense Lag Days
9 calculation: rate case expense adjustment of \$132,000, payroll taxes adjustment of
10 \$269,000, incentive compensation adjustment of \$2,967,000, health insurance
11 expense adjustment of \$159,000, 401k expense adjustment of \$205,000,
12 advertising expense adjustment of \$158,000, Fleet and Transit Charging Pilot –
13 Maintenance and Warranty expense adjustment of \$5,000, Eligible Customer
14 Solicitation adjustment of \$18,000, EV ChargeUp pilot expense adjustment of
15 \$15,000, COVID-19 related uncollectible expense adjustment of \$341,000,
16 COVID-19 related costs net of savings (excluding uncollectible expense)
17 adjustment of \$1,932,000, New Business Stimulus Rider adjustment of \$277,000,
18 Crisis Recovery Program adjustment of \$423,000, Residential COVID-19 Debt
19 Relief Program adjustment of \$1,167,000, and prepayments of \$18,260,000 as
20 discussed above which is reflected as a total decrease of \$362,253,000 to the Other
21 Expense Lag Days calculation. My calculation to determine the total adjustment
22 for the Other Expenses can be located at I&E Exhibit No. 2, Schedule 15, p. 2.

1 **RATE OF RETURN BACKGROUND**

2 **Q. WHAT IS THE GENERAL DEFINITION OF RATE OF RETURN IN THE**
3 **CONTEXT OF A RATE CASE?**

4 A. Rate of return is one of the components of the revenue requirement formula. Rate
5 of return is the amount of revenue an investment generates in the form of net
6 income and is usually expressed as a percentage of the amount of capital invested
7 over a given period of time.

8
9 **Q. WHAT IS THE REVENUE REQUIREMENT FORMULA?**

10 A. The revenue requirement formula used in base rate cases is as follows:

11
$$RR = E + D + T + (RB \times ROR)$$

12 Where:

13 RR = Revenue Requirement

14 E = Operating Expenses

15 D = Depreciation Expense

16 T = Taxes

17 RB = Rate Base

18 ROR = Overall Rate of Return

19 In the above formula, the rate of return is expressed as a percentage. The
20 calculation of that percentage is independent of the determination of the
21 appropriate rate base value for ratemaking purposes. As such, the appropriate total

1 dollar return is dependent upon the proper computation of the rate of return and
2 the proper valuation of the Company's rate base.

3
4 **Q. WHAT CONSTITUTES A FAIR AND REASONABLE OVERALL RATE OF**
5 **RETURN?**

6 A. A fair and reasonable overall rate of return is one that will allow the utility an
7 opportunity to recover those costs prudently incurred by all classes of capital used
8 to finance the rate base during the prospective period in which its rates will be in
9 effect.

10 *The Bluefield Water Works & Improvements Co. v. Public Service Comm. of*
11 *West Virginia*, 262 U.S. 679, 692-93 (1923), and the *FPC v. Hope Natural Gas*
12 *Co.*, 320 U.S. 591, 603 (1944) cases set forth the principles that are generally
13 accepted by regulators throughout the country as the appropriate criteria for
14 measuring a fair rate of return:

- 15 1. A utility is entitled to a return similar to that being earned by other
16 enterprises with corresponding risks and uncertainties, but not as high as
17 those earned by highly profitable or speculative ventures.
- 18 2. A utility is entitled to a return level reasonably sufficient to assure financial
19 soundness.
- 20 3. A utility is entitled to a return sufficient to maintain and support its credit
21 and raise necessary capital.

1 4. A fair return can change (increase or decrease) along with economic
2 conditions and capital markets.

3
4 **Q. EXPLAIN HOW THE OVERALL RATE OF RETURN IS**
5 **TRADITIONALLY CALCULATED IN BASE RATE PROCEEDINGS.**

6 A. In base rate proceedings, the overall rate of return is traditionally calculated using
7 the weighted average cost of capital method. To calculate the weighted average
8 cost of capital, a company's capital structure must first be determined by
9 comparing the percentage of each capitalization component, which has financed
10 rate base, to total capital. Next, the effective cost rate of each capital structure
11 component must be determined. The historical component of the cost rate of debt
12 can be computed accurately, and any future debt issuances are based on estimates.
13 The cost rate of common equity is not fixed and is more difficult to measure.
14 Because of this difficulty, a proxy group is used as discussed later in this
15 testimony. Next, each capital structure component percentage is multiplied by its
16 corresponding effective cost rate to determine the weighted capital component cost
17 rate. The I&E table in the "*I&E Position*" section below demonstrates the
18 interaction of each capital structure component and its corresponding effective
19 cost rate. Finally, the sum of the weighted cost rates produces the overall rate of
20 return. This overall rate of return is multiplied by the rate base to determine the
21 return portion of a company's revenue requirement.

1 **COMPANY’S RATE OF RETURN CLAIM**

2 **Q. WHO IS THE COMPANY’S RATE OF RETURN WITNESS?**

3 A. Duquesne witness Paul R. Moul is the primary witness addressing rate of return
4 (DLC Statement No. 13). Mr. Moul provided analysis for the claimed capital
5 structures, long-term debt, and cost of common equity for Duquesne.
6

7 **Q. PLEASE SUMMARIZE THE COMPANY’S RATE OF RETURN CLAIM.**

8 A. Mr. Moul recommends the following rate of return for the Company based on its
9 FPFTY ending December 31, 2022 (DLC Exhibit PRM-1, Schedule 1, p. 1):
10

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	46.65%	4.29%	2.00%
Common Equity	<u>53.35%</u>	10.95%	<u>5.84%</u>
Total	<u>100.00%</u>		<u>7.84%</u>

11

12 **I&E POSITION**

13 **Q. PLEASE SUMMARIZE YOUR RATE OF RETURN**

14 **RECOMMENDATION.**

15 A. I recommend the following rate of return for the Company (I&E Exhibit No. 2,
16 Schedule 17):
17

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	46.65%	4.29%	2.00%
Common Equity	<u>53.35%</u>	9.24%	<u>4.93%</u>
Total	<u>100.00%</u>		<u>6.93%</u>

1 **PROXY GROUP**

2 **Q. WHAT IS A PROXY GROUP AS USED IN BASE RATE CASES?**

3 A. A proxy group is a set of companies that have similar traits of risk in comparison
4 to the subject utility. This group of companies acts as a benchmark for
5 determining the subject utility's rate of return in a base rate case.

6
7 **Q. WHAT ARE THE REASONS FOR USING A PROXY GROUP?**

8 A. A proxy group's cost of equity is used as a benchmark to satisfy the long-
9 established guideline of utility regulation that seeks to provide the subject utility
10 with the opportunity to earn a return similar to that of enterprises with
11 corresponding risks and uncertainties.

12 A proxy group is typically utilized since the use of data exclusively from
13 one company may be less reliable. The lower reliability occurs because the data
14 for one company may be subject to events that can cause short-term anomalies in
15 the marketplace. The rate of return on common equity for a single company could
16 become distorted in these circumstances and would therefore not be representative
17 of similarly situated companies. Therefore, a proxy group has the effect of
18 smoothing out potential anomalies associated with a single company.

19
20 **Q. WHAT CRITERIA DID YOU USE IN SELECTING YOUR ELECTRIC**
21 **INDUSTRY PROXY GROUP?**

22 A. The criteria for my proxy group was designed to select companies that are

1 representative of Duquesne. I applied the following criteria to Value Line's East,
2 Central, and West Electric Utility groups:

- 3 1. Fifty percent or more of the company's revenues must be generated from
4 the regulated electric utility industry;
- 5 2. The company's stock must be publicly traded;
- 6 3. Investment information for the company must be available from more than
7 one source, which includes Value Line;
- 8 4. The company must not be currently involved in an announced merger or the
9 target of an acquisition;
- 10 5. The company must have four consecutive years of historic earnings data;
11 and
- 12 6. The company must be operating in a state that has a deregulated electric
13 utility market.

14
15 **Q. WHAT CRITERIA DID MR. MOUL USE IN SELECTING HIS ELECTRIC**
16 **PROXY GROUP COMPANIES?**

17 A. Mr. Moul determined his proxy group of eleven electric companies by using the
18 following criteria (DLC Statement No. 13, p. 10, lines 11-16):

- 19 1. Have publicly traded common stock;
- 20 2. Are contained in The Value Line Investment Survey and are classified in
21 the Electric Utility East group;
- 22 3. Are not currently the target of an announced merger or acquisition;

- 1 4. Are not engaged in the construction of a nuclear generating plant; and
2 5. Have not recently reduced its common dividend.

3

4 **Q. WHAT PROXY GROUP DID YOU USE IN YOUR ANALYSIS?**

- 5 A. I include the following fifteen companies in my proxy group (I&E Exhibit No. 2,
6 Schedule 18):

7

Ameren Corp.	AEE
American Electric Power Company Inc.	AEP
CMS Energy Corp.	CMS
Consolidated Edison Inc.	ED
Dominion Energy	D
Duke Energy Corp New	DUK
Entergy Corp.	ETR
Eversource Energy	ES
FirstEnergy Corp.	FE
IDACORP Inc.	IDA
NorthWestern Corporation	NWE
Portland General Electric Company	POR
PPL Corporation	PPL
Public Service Enterprise Group Inc.	PEG
Xcel Energy Inc.	XEL

1 **Q. WHAT PROXY GROUP DID MR. MOUL USE IN HIS ANALYSIS?**

2 A. Mr. Moul utilizes the following eleven companies in his Electric Group (DLC
3 Exhibit PRM-1, Schedule 3, p. 2):

4

Avangrid, Inc.	AGR
Consolidated Edison Inc.	ED
Duke Energy Corp.	DUK
Eversource Energy	ES
Exelon Corp.	EXC
FirstEnergy Corp.	FE
MGE Energy	MGEE
NextEra Energy	NEE
Otter Tail Corp.	OTTR
PPL Corporation	PPL
Public Serv. Enterprise	PEG

5

6 **Q. DO YOU AGREE WITH MR. MOUL'S ELECTRIC PROXY GROUP?**

7 A. Not entirely. While we do have six companies that match, I use nine companies
8 that Mr. Moul does not, and he uses five companies that I do not.

9

10 **Q. PLEASE LIST THE FIVE COMPANIES MR. MOUL HAS INCLUDED**
11 **THAT YOU DO NOT AND EXPLAIN WHY YOU HAVE EXCLUDED**
12 **THEM FROM YOUR PROXY GROUP.**

13 A. The five companies in question and the reasons for my exclusion are as follows:

14 (1) Exelon Corp., which violates my first criterion that dictates 50% or more of a
15 company's revenue must be generated from regulated electric utility operations;

16 (2) Avangrid, Inc., which violates my fourth criterion as the Company is currently

1 in the process of acquiring PNM Resources, Inc. The deal includes acquiring the
2 whole company and is valued at over \$8 billion; and (3) MGE Energy, (4) NextEra
3 Energy, and (5) Otter Tail Corp., which do not meet my sixth criterion that a
4 company must operate in a state that has a deregulated electric utility market.

5
6 **Q. PLEASE LIST THE NINE COMPANIES YOU INCLUDE THAT MR.**
7 **MOUL DOES NOT AND EXPLAIN WHY HE HAS EXCLUDED THEM**
8 **FROM HIS ELECTRIC GROUP.**

9 A. The nine companies in question and the reasons for Mr. Moul's exclusion are as
10 follows: (1-8) Ameren Corp., American Electric Power Company Inc., CMS
11 Energy Corp., Entergy Corp., IDACORP Inc., NorthWestern Corp., Portland
12 General Electric Company, and Xcel Energy Inc. all violate his second criterion
13 that a company must be classified in the Electric Utility *East* group in The Value
14 Line Investment Survey. These companies are all part of either the *Central* or
15 *West* Electric Utility groups which I allow to expand the number of companies in
16 my proxy group; and (9) Dominion Energy, which violates his fifth criterion that a
17 company has not recently reduced its common dividend.

18
19 **CAPITAL STRUCTURE**

20 **Q. WHAT IS A CAPITAL STRUCTURE?**

21 A. A capital structure represents how a firm has financed its rate base with different

1 sources of funds. The primary funding sources are long-term debt and common
2 equity. A capital structure may also include preferred stock and/or short-term debt.

3
4 **Q. WHAT IS THE COMPANY’S CLAIMED CAPITAL STRUCTURE?**

5 A. The Company’s claimed capital structure is summarized in the table below (DLC
6 Statement No. 13, p. 19, lines 16-17 and DLC Exhibit PRM-1, Schedule 1, p. 1):

7

Type of Capital	Ratio
Long-Term Debt	46.65%
Common Equity	53.35%
Total	100.00%

8
9 **Q. WHAT IS THE BASIS FOR THE COMPANY’S CLAIMED CAPITAL**
10 **STRUCTURE?**

11 A. Mr. Moul states that Duquesne raises its own long-term debt directly in the capital
12 markets and that the capital structure for Duquesne should be used in determining
13 the rate of return (DLC Statement No. 13, p. 17, lines 3-10).

14
15 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY’S**
16 **CAPITAL STRUCTURE?**

17 A. I recommend using the Company’s claimed capital structure as presented in the
18 table above.

1 **Q. WHAT IS THE BASIS FOR YOUR CAPITAL STRUCTURE**
2 **RECOMMENDATION?**

3 A. I recommend using the Company's claimed capital structure as it falls within the
4 range of my proxy group's 2020 capital structures, which is the most recent
5 information available at the time of my analysis. The 2020 range consists of long-
6 term debt ratios ranging from 43.86% to 75.58% and equity ratios ranging from
7 24.42% to 56.14%, with a five-year average of 56.33% for long-term debt and
8 43.52% for common equity (I&E Exhibit No. 2, Schedule 18). Although the
9 Company's capital structure is certainly more equity heavy than the proxy group
10 average, I am not recommending that it be adjusted given that it falls within the
11 proxy group range.

12
13 **COST OF LONG-TERM DEBT**

14 **Q. WHAT IS THE COMPANY'S CLAIMED COST RATE OF LONG-TERM**
15 **DEBT?**

16 A. The Company's claimed long-term debt cost rate is 4.29% for the FPFTY (DLC
17 Statement No. 13, p. 21, lines 1-2).

18
19 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY'S**
20 **COST RATE OF LONG-TERM DEBT?**

21 A. I recommend using the Company's long-term debt cost rate of 4.29%.

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO USE THE**
2 **COMPANY’S COST RATE OF LONG-TERM DEBT?**

3 A. The Company’s cost rate of long-term debt is reasonable, as it is representative of
4 the industry. It falls within my proxy group’s implied long-term debt cost range of
5 3.57% to 4.95% and is near the average implied long-term debt cost of 4.28%
6 (I&E Exhibit No. 2, Schedule 19). Additionally, the Company’s forecasted cost of
7 long-term debt is trending downward from the HTY through the FPPTY (DLC
8 Exhibit PRM-1, Schedule 6). This downward trend is beneficial to ratepayers;
9 therefore, I recommend the claimed cost rate of long-term debt be used.

10

11 **COST OF COMMON EQUITY**

12 **Common Methods**

13 **Q. WHAT METHODS ARE COMMONLY PRESENTED BY UTILITIES IN**
14 **DETERMINING THE COST OF COMMON EQUITY?**

15 A. Four methods commonly presented to estimate the cost of common equity are the
16 Discounted Cash Flow (DCF), the Capital Asset Pricing Model (CAPM), the Risk
17 Premium (RP) Method, and the Comparable Earnings (CE) Method.

18

19 **Q. WHAT IS THE THEORETICAL BASIS FOR THE DCF METHOD?**

20 A. The DCF method is the “dividend discount model” of financial theory, which
21 maintains that the value (price) of any security or commodity is the discounted
22 present value of all future cash flows. The DCF method assumes that investors

1 evaluate stocks in the classical economic framework, which maintains that the
2 value of a financial asset is determined by its earning power, or its ability to
3 generate future cash flows.

4
5 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CAPM?**

6 A. The CAPM describes the relationship of a stock's investment risk and its market
7 rate of return. It identifies the rate of return investors expect so that it is
8 comparable with returns of other stocks of similar risk. This method hypothesizes
9 that the investor-required return on a company's stock is equal to the return on a
10 "risk free" asset plus an equity premium reflecting the company's investment risk.
11 In the CAPM, two types of risk are associated with a stock: (1) firm-specific risk
12 (unsystematic risk); and (2) market risk (systematic risk), which is measured by a
13 firm's beta. The CAPM allows for investors to receive a return only for bearing
14 systematic risk. Unsystematic risk is assumed to be diversified away, and
15 therefore, does not earn a return.

16
17 **Q. WHAT IS THE THEORETICAL BASIS FOR THE RP METHOD?**

18 A. The theoretical basis for the RP method is a simplified version of the CAPM. The
19 RP method's theory is that common stock is riskier than debt and, thus, investors
20 require a higher expected return on stocks than bonds. In the RP approach, the
21 cost of equity is made up of the cost of debt and a risk premium. While the CAPM
22 uses the market risk premium, it also directly measures the systematic risk of a

1 company group through the use of beta. The RP method does not measure the
2 specific risk of a company.

3

4 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CE METHOD?**

5 A. The CE method utilizes the concept of “opportunity cost.” This means that
6 investors will likely dedicate their capital to the investment offering the highest
7 return with similar risk to alternative investments. Unlike the DCF, CAPM, and
8 the RP methods, the CE method is not market-based and relies upon historic
9 accounting data. The most problematic issue with the CE method is determining
10 what constitutes comparable companies.

11

12 **Q. WHAT METHOD DO YOU RECOMMEND USING TO DETERMINE AN**
13 **APPROPRIATE COST OF COMMON EQUITY FOR DUQUESNE?**

14 A. I recommend using the DCF method as the primary method to determine the cost
15 of common equity. I also recommend using the results of the CAPM as a
16 comparison to the DCF results. My recommendation is consistent with the

1 methodology historically used by the Commission in base rate proceedings, even
2 as recently as 2017, 2018, 2020, and 2021.⁹

3
4 **Q. PLEASE EXPLAIN WHY YOU CHOSE TO USE THE DCF AND CAPM IN**
5 **YOUR ANALYSIS.**

6 A. I have used the DCF as the primary method for a several reasons. First, the DCF
7 is appealing to investors as it is based upon the concept that the receipt of
8 dividends in addition to expected appreciation is the total return requirement
9 determined by the market.¹⁰ Second, the use of a growth rate and expected
10 dividend yield are also strengths of the DCF, as this recognizes the time value of
11 money and is forward-looking. Third, the use of the utility's own stock prices, or
12 in this case, the proxy group's stock prices and growth rates directly in the
13 calculation also causes the DCF to be industry and company specific. Finally, the
14 DCF method is the superior method for determining the rate of return for the
15 current economic market because it measures the cost of equity directly.

⁹ *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company*; Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA*; Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.*; Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131. *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

¹⁰ David C. Parcell, “The Cost of Capital – A Practitioner’s Guide,” 2010 Edition, p. 151.

1 I have included a CAPM analysis as a comparison because the CAPM and
2 the DCF include inputs that allow the results to be specific to the utility industry,
3 although the CAPM is far less responsive to changes in the industry than the DCF.
4 The CAPM is based on the performance of U.S. Treasury bonds and the
5 performance of the market as measured through the S&P 500 and is company-
6 specific only through the use of beta. Beta reflects a stock's volatility relative to
7 the overall market, thereby incorporating an industry-specific aspect to the CAPM,
8 but only as a measure of how reactive the industry is compared to the market as a
9 whole. Although changes in the utility industry are more likely to be accurately
10 reflected in the DCF, which uses the companies' actual prices, dividends, and
11 growth rates, I have included the results of my CAPM analysis because changes in
12 the market, whether as a whole or specific to the utility industry, affect the
13 outcome of each method in different ways. Although I have chosen to use the
14 CAPM as a secondary method, it does have several disadvantages and should not
15 be used as a primary method.

16
17 **Q. EXPLAIN THE DISADVANTAGES OF THE CAPM.**

18 A. The CAPM, and the RP method by virtue of its similarities to the CAPM, give
19 results that indicate to an investor what the equity cost rate should be if current
20 economic and regulatory conditions are the same as those present during the
21 historical period in which the risk premiums were determined. This is because
22 beta, which is the only company-specific variable in the CAPM model, measures

1 the *historical* volatility of a stock compared to the *historical* overall market return.
2 Reliance on historical values is especially problematic now given the recent
3 impact of the coronavirus on economic conditions. Although the CAPM and RP
4 results can be useful to investors in making rational buy and sell decisions within
5 their portfolios, the DCF method is the superior method for determining the rate of
6 return for the current economic market and measuring the cost of equity directly.
7 The CAPM and the RP methods are less reliable indicators because they measure
8 the cost of equity indirectly and risk premiums vary depending on the debt and
9 equity being compared. Also, regulators can never be certain that economic and
10 regulatory conditions underlying the historical period during which the risk
11 premiums were calculated are the same today or will be the same in the future.

12
13 **Q. IS THERE ANY ACADEMIC EVIDENCE THAT QUESTIONS THE**
14 **CREDIBILITY OF THE CAPM MODEL?**

15 A. Yes. An article, “Market Place; A Study Shakes Confidence in the Volatile-Stock
16 Theory,” which appeared in the *New York Times* on February 18, 1992,
17 summarized a CAPM study conducted by professors Eugene F. Fama and
18 Kenneth R. French.¹¹ Their study examined the importance of beta, CAPM’s risk
19 factor, in explaining returns on common stock. In CAPM theory a stock with a
20 higher beta should have a higher expected return. However, they found that the

¹¹ Berg, Eric N. “Market Place; A Study Shakes Confidence in the Volatile-Stock Theory” *The New York Times*, 18 Feb 1992: *nytimes.com* Web. 23 Mar 2016.

1 model did not do well in predicting actual returns and suggested the use of more
2 elaborate multi-factor models.

3 A more recent article, “The Capital Asset Pricing Model: Theory and
4 Evidence,” which appeared in the *Journal of Economic Perspectives*, states that
5 “the attraction of the CAPM is that it offers powerful and intuitively pleasing
6 predictions about how to measure risk and the relation between expected return
7 and risk. Unfortunately, the empirical record of the model is poor - poor enough
8 to invalidate the way it is used in applications.”¹² As a result, I conclude that the
9 CAPM’s relevance to the investment decision making process does not carry over
10 into the regulatory rate setting process.

11
12 **Q. PLEASE EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE RP**
13 **METHOD FROM YOUR ANALYSIS.**

14 A. The RP method is excluded because it is a simplified version of the CAPM and is
15 subject to the same faults listed above. Additionally, unlike the CAPM, the RP
16 method does not recognize company-specific risk through beta.

17
18 **Q. EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE CE METHOD**
19 **IN YOUR ANALYSIS.**

20 A. The CE method is excluded because the choice of which companies are

¹² Fama, Eugene F. and French, Kenneth R., “The Capital Asset Pricing Model: Theory and Evidence.” *Journal of Economic Perspectives* (2004): Volume 18, Number 3, pp. 25-46.

1 comparable is highly subjective, and it is debatable whether historic accounting
2 values are representative of the future. Moreover, its historical usage in this
3 regulatory forum has been minimal.

4
5 **SUMMARY OF THE COMPANY'S RESULTS**

6 **Q. WHAT ARE THE RESULTS OF THE COMPANY'S COST OF EQUITY**
7 **ANALYSES?**

8 A. Mr. Moul used the DCF, CAPM, RP, and CE methods in analyzing the Company's
9 cost of equity. He has made several adjustments to his results, which include
10 consideration for size, various claimed risk factors, and leverage. Ultimately, Mr.
11 Moul opined that a cost of equity of 10.95% is warranted for the Company to
12 attract and retain the capital needed to maintain its high levels of capital
13 expenditures (DLC Statement No. 13, p. 5, line 6 through p. 6, line 18 and DLC
14 Exhibit PRM-1, Schedule 1, p. 2).

15
16 **I&E RECOMMENDATION**

17 **Q. WHAT IS YOUR RECOMMENDED COST OF COMMON EQUITY FOR**
18 **DUQUESNE?**

19 A. Based upon my analysis, I recommend a cost of common equity of 9.24% (I&E
20 Exhibit No. 2, Schedule 17).

1 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

2 A. My recommendation is based on the use of the DCF method. As explained above,
3 I used my CAPM result only to present to the Commission a comparison to my
4 DCF results. My DCF analysis uses a spot dividend yield, a 52-week dividend
5 yield, and earnings growth forecasts.

6

7 **Discounted Cash Flow**

8 **Q. PLEASE EXPLAIN YOUR DCF ANALYSIS.**

9 A. My analysis employs the constant growth DCF model as portrayed in the
10 following formula:

11
$$K = D_1/P_0 + g$$

12 Where:

13 K = Cost of equity

14 D₁ = Dividend expected during the year

15 P₀ = Current price of the stock

16 g = Expected growth rate

17 When a forecast of D₁ is not available, D₀ (the current dividend) must be adjusted
18 by one half of the expected growth rate to account for changes in the dividend paid
19 in period one. As forecasts for each company in my proxy group were available
20 from Value Line, no dividends were adjusted for the purpose of my analysis.

1 **Q. PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELDS**
2 **USED IN YOUR DCF ANALYSIS.**

3 A. A representative dividend yield must be calculated over a time frame that avoids
4 the problems of both short-term anomalies and stale data series. For my DCF
5 analysis, the dividend yield calculation places equal emphasis on the most recent
6 spot and the 52-week average dividend yields. The following table summarizes
7 my dividend yield computations for the proxy group (I&E Exhibit No. 2,
8 Schedule 20):

Fifteen-Company Proxy Group	Dividend Yield
Spot	3.66%
52-week average	3.90%
Average	3.78%

10

11 **Q. WHAT INFORMATION DID YOU RELY UPON TO DETERMINE YOUR**
12 **EXPECTED GROWTH RATE?**

13 A. I have used five-year projected growth rate estimates from Value Line, Yahoo!
14 Finance, Zacks, and Morningstar.

15

16 **Q. WHAT WERE THE RESULTS OF YOUR FORECASTED EARNINGS**
17 **GROWTH RATES?**

18 A. The expected average growth rates for the fifteen-company proxy group ranged

1 from -16.20% to 12.00% with an overall average of 4.83%. To determine the
2 growth estimate, I subsequently eliminated all negative projected growth rates and
3 determined a new adjusted average of 5.46% (I&E Exhibit No. 2, Schedule 21).

4
5 **Q. EXPLAIN WHY YOU ELIMINATED ALL OF THE NEGATIVE GROWTH**
6 **RATE PROJECTIONS.**

7 A. While I believe that the use of a proxy group largely smooths out various
8 anomalies, I feel that some of the growth projections were largely inconsistent and
9 would have an unnecessary and unwarranted negative impact on my DCF analysis,
10 which would adversely affect my recommendation for the Company's cost of
11 common equity.

12
13 **Q. WHAT IS THE RESULT OF YOUR DCF ANALYSIS BASED ON YOUR**
14 **RECOMMENDED DIVIDEND YIELD AND GROWTH RATE?**

15 A. The results of my DCF analysis are calculated as follows (I&E Exhibit No. 2,
16 Schedule 22):

17

$$\begin{array}{rccccccc} K & = & D_1/P_0 & + & g & & \\ 9.24\% & = & 3.78\% & + & 5.46\% & & \end{array}$$

1 **Capital Asset Pricing Model**

2 **Q. PLEASE EXPLAIN YOUR CAPM ANALYSIS.**

3 A. My analysis employs the traditional CAPM as portrayed in the following formula:

4 $K = R_f + \beta(R_m - R_f)$

5 Where:

6 K = Cost of equity

7 R_f = Risk-free rate of return

8 R_m = Expected rate of return on the overall stock market

9 β = Beta measures the systematic risk of an asset

10

11 **Q. WHAT IS BETA AS EMPLOYED IN YOUR CAPM ANALYSIS?**

12 A. Beta is a measure of the systematic risk of a stock in relation to the rest of the
13 stock market. A stock's beta is estimated by calculating the linear regression of a
14 stock's return against the return on the overall stock market. The beta of a stock
15 with a price pattern identical to that of the overall stock market will equal one. A
16 stock with a price movement that is greater than the overall stock market will have
17 a beta that is greater than one and would be described as having more investment
18 risk than the market. Conversely, a stock with a price movement that is less than
19 the overall stock market will have a beta of less than one and would be described
20 as having less investment risk than the market.

1 **Q. HOW DID YOU DETERMINE YOUR BETA FOR YOUR CAPM**
2 **ANALYSIS?**

3 A. In estimating an equity cost rate for my proxy group of fifteen electric companies,
4 I used the average of the betas for the companies as provided in the Value Line
5 Investment Survey. The average beta for my proxy group is 0.86 (I&E Exhibit
6 No. 2, Schedule 23).

7

8 **Q. WHAT RISK-FREE RATE OF RETURN HAVE YOU USED FOR YOUR**
9 **FORECASTED CAPM ANALYSIS?**

10 A. I used the risk-free rate of return (R_f) from the projected yield on 10-year Treasury
11 Notes. While the yield on the short-term T-Bill is a more theoretically correct
12 parameter to represent a risk-free rate of return, it can be extremely volatile. The
13 volatility of short-term T-Bills is directly influenced by Federal Reserve policy. At
14 the other extreme, the 30-year Treasury Bond exhibits more stability but is not
15 risk-free. Long-term Treasury Bonds have substantial maturity risk associated
16 with market risk and the risk of unexpected inflation. Long-term treasuries
17 normally offer higher yields to compensate investors for these risks. As a result, I
18 used the yield on the 10-year Treasury Note because it mitigates the shortcomings
19 of the other two alternatives. Additionally, the Commission has recently
20 recognized the 10-year Treasury Note as the superior measure of the risk-free rate

1 of return.¹³ The forecasted yield on the 10-year Treasury Note, as can be seen in
2 Blue Chip Financial Forecasts, is expected to be between 1.80% and 2.10% from
3 the third quarter of 2021 through the third quarter of 2022, and it is forecasted to
4 be 2.90% from 2023-2027. For my forecasted CAPM analysis, I used 2.12%,
5 which is the average of all the yield forecasts I observed (I&E Exhibit No. 2,
6 Schedule 24).

7
8 **Q. HOW DID YOU DETERMINE THE RETURN ON THE OVERALL**
9 **STOCK MARKET IN YOUR FORECASTED CAPM ANALYSIS?**

10 A. To arrive at a representative expected return on the overall stock market, I
11 observed Value Line's 1700 stocks and the S&P 500. Value Line expects its
12 universe of 1700 stocks to have an average yearly return of 8.48% over the next
13 three to five years based on a forecasted dividend yield of 1.70% and a yearly
14 index appreciation of 30%. The S&P 500 index is expected to have an average
15 yearly return of 14.87% over the next five years based upon Barron's forecasted
16 dividend yield of 1.47% and Morningstar's average expected increase in the S&P
17 500 index of 13.40% (I&E Exhibit No. 2, Schedule 25).

¹³ *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 99.

1 **Q. WHAT IS THE EXPECTED RETURN ON THE OVERALL STOCK**
2 **MARKET BASED ON YOUR FORECASTED ANALYSIS?**

3 A. The expected return on the overall market is 11.68% for my forecasted analysis
4 (I&E Exhibit No. 2, Schedule 25).

5
6 **Q. WHAT IS THE COST OF EQUITY RESULT FROM YOUR CAPM**
7 **ANALYSIS?**

8 A. The result of my analysis is as follows (I&E Exhibit No. 2, Schedule 26):

9
$$K = R_f + \beta(R_m - R_f)$$

10
$$10.37\% = 2.12\% + 0.86(11.68\% - 2.12\%)$$

11

12 **CRITIQUE OF MR. MOUL'S PROPOSED COST OF EQUITY**

13 **Q. DO YOU AGREE WITH MR. MOUL'S PROPOSED COST OF EQUITY?**

14 A. No. I disagree with Mr. Moul's proposed cost of equity analysis for several
15 reasons. First, I disagree with the weights given to the results of Mr. Moul's
16 CAPM, RP, and CE analyses in his recommendation. Second, I disagree with
17 certain aspects of Mr. Moul's discussion of Duquesne's risk. Third, I disagree
18 with his application of the DCF including the forecasted growth rate and leverage
19 adjustment he uses. Finally, I disagree with his inclusion of a size adjustment, his
20 reliance on the 30-year Treasury Bond for his risk-free rate, and the use of a
21 double-adjusted beta in his CAPM analysis.

1 **Weights Given to the CAPM, RP, and CE Methods**

2 **Q. DO YOU AGREE WITH MR. MOUL'S RELIANCE ON THE CAPM AND**
3 **RP MODELS?**

4 A. No. While I am not opposed to providing the Commission the results of the
5 CAPM for a point of comparison to the results of the DCF calculation, I am
6 opposed to giving the CAPM and RP considerable weight. For the reasons
7 discussed above, including my reference to recent Commission orders, it is not
8 appropriate to give the CAPM and RP models similar weight to the DCF as Mr.
9 Moul has done in creating his recommended cost of equity range (DLC Statement
10 No. 13, p. 5, line 14). As discussed above, the CAPM measures the cost of equity
11 indirectly and can be manipulated by the time period chosen. Since the RP is a
12 simplified version of the CAPM, it suffers these same flaws.

13
14 **Q. DO YOU AGREE WITH MR. MOUL'S USE OF THE CE METHOD?**

15 A. No. The companies in Mr. Moul's analysis are not utilities, and therefore, they are
16 too dissimilar to be used in a CE analysis. The companies in Mr. Moul's CE
17 proxy group are simply not comparable to electric utilities in terms of their
18 business risk or financial risk profile. Electric utilities are monopolies, which are
19 subject to very little competition, if any. Due to this minimal competition, utilities
20 in general have very low business risk and can maintain higher financial risk
21 profiles by employing more leverage. Conversely, since the companies in Mr.
22 Moul's CE proxy group operate in an unregulated competitive environment with a

1 higher level of business risk, they must maintain lower financial risk profiles by
2 employing a smaller amount of leverage. Furthermore, in his CE analysis, Mr.
3 Moul stated, “I used 20% as the point where those returns could be viewed as
4 highly profitable and should be excluded from the Comparable Earnings
5 approach” (DLC Statement No. 13, p. 48, lines 2-4). It is my opinion the arbitrary
6 use of 20% is unjustified as I am unaware of any electric utility company that has
7 been awarded or regularly earns a 20% return.

8
9 **Risk Analysis**

10 **Q. SUMMARIZE MR. MOUL’S CLAIMS REGARDING RISK FACTORS**
11 **THE COMPANY FACES.**

12 A. Mr. Moul describes the Company’s claimed risk factors in two different sub-
13 sections. In the first section, labeled “Electric Utility Risk Factors,” he describes
14 the *qualitative* risk factors. In this section, Mr. Moul discusses the potential for
15 bypass and the cost of aging infrastructure (DLC Statement No. 13, p. 6, line 19
16 through p. 9, line 17). In the second section of his risk analysis, labeled
17 “Fundamental Risk Analysis,” he describes the *quantitative* risk factors. In this
18 section, Mr. Moul discusses the Company’s credit quality, as well as many
19 different financial metrics including size, market ratios, common equity ratio,
20 return on book equity, operating ratios, interest coverage, quality of earnings,
21 internally generated funds, and betas (DLC Statement No. 13, p. 9, line 18 through
22 p. 17, line 1).

1 **Q. WHAT HAS MR. MOUL CLAIMED REGARDING THE POTENTIAL**
2 **RISK OF BYPASS?**

3 A. Mr. Moul opines that electric utilities face declines in revenue due to technological
4 advances in micro-turbines, potential commercialization of battery systems,
5 development of wind and solar power, and the creation of micro-grids (DLC
6 Statement No. 13, p. 7, lines 9-21).

7

8 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL'S CLAIMED RISK OF**
9 **BYPASS FOR DUQUESNE?**

10 A. Duquesne faces no more risk than any other company in Mr. Moul's proxy group
11 as they are all susceptible to bypass for the reasons stated above.

12

13 **Q. WHAT CLAIM HAS MR. MOUL MADE REGARDING THE COMPANY'S**
14 **RISK OF EXPOSURE IN REPLACING AGING INFRASTRUCTURE?**

15 A. Mr. Moul claims that the Company incurs additional risk because required capital
16 expenditures to replace aging infrastructure do not increase the Company's
17 revenues (DLC Statement No. 13, p. 7, line 22 through p. 8, line 3). The Company
18 anticipates total capital expenditures over the next five years will equal 52.4% of
19 the net utility plant in service at December 31, 2020 (DLC Statement No. 13, p. 9,
20 lines 5-10).

1 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL’S CLAIM REGARDING**
2 **THE COMPANY’S RISK CAUSED BY THE REPLACEMENT OF AGING**
3 **INFRASTRUCTURE?**

4 A. Every electric utility faces the same issues of upgrading or replacing its
5 infrastructure. As costs for replacing infrastructure increase, Duquesne, as well as
6 any other jurisdictional utility company, has the option to file a base rate case at
7 any time to address revenue inadequacy due to increasing costs, infrastructure
8 replacement or otherwise. Base rate cases allow a utility to recover its costs and
9 provide it the *opportunity* to earn a reasonable return on capital investments.
10 Additionally, the Commission offers risk reducing mechanisms such as the
11 Distribution System Improvement Charge (DSIC) and the FPFTY to help reduce
12 any regulatory lag in recovery of infrastructure investment or other unforeseen
13 expenditures, but it should be mentioned that the DSIC and the use of a FPFTY
14 were not designed to eliminate the need for periodic base rate case filings.

15
16 **Q. WHAT HAS MR. MOUL CLAIMED REGARDING QUANTITATIVE RISK**
17 **FACTORS IN THE SECTION LABELED “FUNDAMENTAL RISK**
18 **ANALYSIS?”**

19 A. Mr. Moul states that it is necessary to establish a company’s relative risk position
20 within its industry through an analysis of quantitative and qualitative factors. Mr.
21 Moul uses various financial metrics to compare Duquesne to the S&P Public

1 Utilities Index and his Electric Group (DLC Statement No. 13, p. 9, line 21
2 through p. 10, line 5).

3
4 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL’S “FUNDAMENTAL RISK
5 ANALYSIS?”**

6 A. One of the points he discusses, size risk, is discussed and disputed elsewhere in
7 my direct testimony, so this section will concentrate on his other areas in this
8 topic. Throughout his “fundamental risk analysis,” Mr. Moul makes several
9 statements to indicate that the Company has no more of a risk than any other
10 company in his Electric Group. First, regarding operating ratios, Mr. Moul states,
11 “The five-year average operating ratios were 72.3% for Duquesne, 77.7% for the
12 Electric Group, and 78.8% for the S&P Public Utilities. The operating risk for
13 Duquesne Light is below that for to the Electric Group and the S&P Public
14 Utilities thus indicating lower risk.” (DLC Statement No. 13, p. 14, lines 13-16).
15 Second, concerning coverage, he states, “The five-year average interest coverage
16 (excluding Allowance for Funds Used During Construction (“AFUDC”)) was 4.92
17 times for Duquesne Light, 3.81 times for the Electric Group, and 3.22 times for the
18 S&P Public Utilities. The higher interest coverage for Duquesne Light can be
19 traced to its lower proportion of debt in its capital structure.” (DLC Statement No.
20 13, p. 14, line 21 through p. 15, line 4). Third, concerning internally generated
21 funds, he states, “Historically, the five-year average percentage of IGF to capital
22 expenditures was 80.0% for Duquesne Light, 77.7% for the Electric Group and

1 74.1% for the S&P Utilities. The IGF percentages were fairly similar for
2 Duquesne Light, the Electric Group, and the S&P Public Utilities, albeit the
3 Company's ratio was higher." (DLC Statement No. 13, p. 15, lines 14-18).
4 Finally, concerning betas, he states, "A comparison of market risk is shown by the
5 Value Line beta of .88 as the average for the Electric Group and .91 as the average
6 for the S&P Public Utilities. The systematic risk was slightly lower for the
7 Electric Group as compared to the S&P Public Utilities." (DLC Statement No. 13,
8 p. 16, lines 3-7).

9 While some measures Mr. Moul discusses may imply a higher risk profile
10 for the Company, he provides other more convincing measures that illustrate the
11 Company has similar, if not lower risk than the Electric Group. Overall,
12 throughout his own analysis and testimony, Mr. Moul shows that Duquesne has
13 very similar risk to that of the Electric Group; therefore, I do not believe any type
14 of adjustment to the cost of equity in consideration of risk is necessary.

15 16 **Cost of Equity Analysis**

17 Inflated Growth Rates Used in DCF Analysis

18 **Q. WHAT GROWTH RATE HAS MR. MOUL USED IN HIS DCF ANALYSIS?**

19 A. Mr. Moul uses a growth rate of 5.15% (DLC Statement No. 13, p. 35, line 7).
20

21 **Q. WHAT IS THE BASIS FOR MR. MOUL'S GROWTH RATE?**

22 A. Mr. Moul states, "Schedule 9 shows the prospective five-year earnings per share

1 growth rates projected for the Electric Group by IBES/First Call (4.94%), Zacks
2 (4.35%), and Value Line (5.18%).” (DLC Statement No. 13, p. 29, lines 1-3).

3 Although the average of his sources for the growth rate is 4.82% ($[4.94\% + 4.35\%$
4 $+ 5.18\%] \div 3$), Mr. Moul uses a 5.15% growth rate which is within the array of
5 analysts’ forecasts, and which he opines is a reasonable estimate of investor-
6 expected growth for the Electric Group. He states that his selection is reasonable
7 citing the expected continuation of accelerated electric utility infrastructure
8 spending (DLC Statement No. 13, p. 30, lines 5-8).

9
10 **Q. DO YOU AGREE WITH MR. MOUL’S GROWTH RATE ANALYSIS?**

11 A. No. Contrary to Mr. Moul’s belief that DCF growth rates *should not be*
12 established by mathematical formulation, I feel that any alternative would be
13 subjective and introduce additional and unnecessary bias and should be avoided
14 when possible. While I do agree with Mr. Moul’s removal of negative growth
15 rates as discussed in my own DCF analysis, the use of a higher growth rate than
16 the average of his proxy group ignores the fact that analysts making earnings per
17 share growth forecasts would already be aware of the economic conditions and the
18 state of the electric utility industry. The reasons Mr. Moul gives for choosing
19 5.15% are factors that are already included in the earnings per share growth
20 forecasts; thus, choosing a growth rate higher than the average of his proxy group
21 would account for the same factors twice.

1 **Q. DO YOU HAVE ANY ADDITIONAL COMMENTS REGARDING THE**
2 **RESULTS OF MR. MOUL’S PROJECTED GROWTH RATES?**

3 A. Yes. While the five-year projected growth rates can be used in analyses, one must
4 be aware that analysts’ estimates may be biased. This bias has been observed in
5 literature. An article written by Professors Ciciretti, Dwyer, and Hasan in 2009
6 observed strong support of earnings forecasts being higher than actual earnings.¹⁴
7 In spring of 2010, McKinsey On Finance presented an article reporting that after a
8 decade of stricter regulation analysts’ forecasts are still overly optimistic.¹⁵

9 Analysts’ estimates are an attempt to forecast future cash flows and thus
10 expected earnings growth. However, it should be kept in mind that prudent
11 judgment must be exercised as to the sustainability of forecasted growth rates with
12 respect to the base earnings. If the base year earnings are abnormally high, the
13 growth rates from which they are calculated will be biased downward. Similarly,
14 if the base year earnings are abnormally low, the growth rates from which they are
15 calculated will be biased upward. As a result, it is typically necessary to employ a
16 methodology to smooth out the abnormally high or low base year earnings.

¹⁴ Ciciretti, Rocco; Dwyer, Gerald R; and Iftekhan Hasan. “Investment Analysts’ Forecasts of Earnings” Federal Reserve Bank of St. Louis Review, September/October 2009, 91 (5, part 2) pp. 545-67.

¹⁵ Goedhart, Marc J; Raj, Rishi; and Abhishek Saxena. “Equity analyst: Still too bullish” McKinsey On Finance Number 35 Spring 2010, pp. 14-17.

1 Leverage Adjustment Applied to DCF Analysis

2 **Q. HAS MR. MOUL MADE ANY ADDITIONAL ADJUSTMENTS TO THE**
3 **RESULT OF HIS DCF ANALYSIS?**

4 A. Yes. Mr. Moul proposes a 146-basis point “leverage” adjustment to the results of
5 his DCF analysis to account for applying a market-determined cost of equity to a
6 book value capital structure (DLC Statement No. 13, p. 34, lines 16-20).

7
8 **Q. WHAT IS FINANCIAL LEVERAGE?**

9 A. Financial leverage is the use of debt capital to supplement equity capital. A firm
10 with significantly more debt than equity is viewed as highly leveraged.

11
12 **Q. WHAT IS A MARKET-TO-BOOK (M/B) RATIO?**

13 A. A market-to-book ratio is used to evaluate a public firm’s equity value by
14 comparing the market value and book value of a company’s equity. One way of
15 doing this is to divide the current price per share of stock by the book value per
16 share. A M/B result of above one (1) is desired.

17
18 **Q. HAS MR. MOUL PROPOSED TO ADJUST THE RESULT OF HIS DCF**
19 **ANALYSIS TO RECOGNIZE HOW THE COMPANY IS LEVERAGED?**

20 A. No. Mr. Moul has not proposed to change the capital structure of the utility (a
21 leverage adjustment), nor has he proposed to apply the market-to-book ratio to the
22 DCF model (a market-to-book adjustment). Instead, Mr. Moul proposes to make

1 an adjustment to account for applying the market value cost rate of equity to the
2 book value of the utility's equity. I am not aware of any term in academic
3 journals, textbooks, or other literature that describes this type of adjustment.
4

5 **Q. WHAT IS THE BASIS FOR MR. MOUL'S PROPOSED LEVERAGE**
6 **ADJUSTMENT?**

7 A. Mr. Moul states that to make the DCF results relevant to a book value capital
8 structure, the market-derived cost of equity needs to be adjusted to take into
9 consideration the difference in financial risk (DLC Statement No. 13, p. 31, lines
10 3-6). Mr. Moul opines this is because market valuations of equity are based on
11 market value capital structures, which in general have more equity, less debt, and,
12 therefore, less risk than book value capital structures (DLC Statement No. 13, p.
13 30, line 18 through p. 31, line 2).
14

15 **Q. HOW HAS MR. MOUL ATTEMPTED TO JUSTIFY THE LEVERAGE**
16 **ADJUSTMENT USED IN HIS ANALYSIS?**

17 A. Mr. Moul simply states:

18 I know of no means to mathematically solve for the 1.46%
19 leverage adjustment by expressing it in the terms of any
20 particular relationship of market price to book value. The
21 1.46% adjustment is merely a convenient way to compare the
22 10.52% return computed using the Modigliani & Miller
23 formulas to the 9.06% return generated by the DCF model
24 based on a market value capital structure.¹⁶

¹⁶ DLC Statement No. 13, p. 34, lines 9-14.

1 **Q. BASED ON THE COMPANY’S FILED RATE BASE AND CLAIMED**
2 **CAPITAL STRUCTURE, WHAT IS THE VALUE OF AN ADDITIONAL 146**
3 **BASIS POINTS TO THE COST OF EQUITY?**

4 A. The example below illustrates the impact of 146 additional basis points to the
5 Company’s cost of equity:

6

<u>Duquesne Light Company</u>	
Claimed Equity Percentage of Capital Structure	53.35%
Additional Basis Points to Calculated Cost of Equity	146
Total Distribution Rate Base*	<u>\$2,276,464,000</u>
Impact Prior to Gross Revenue Conversion Factor (0.5335 x 0.0146 x \$2,276,464,000)	\$17,731,606
Gross Revenue Conversation Factor**	<u>1.516558</u>
Total Impact (1.516558 x \$23,354,674)	<u>\$26,891,009</u>

* (DLC Exhibit 2, Schedule D-1, p. 2)

** (DLC Exhibit No. 2, Schedule D-22, p. 4)

7 In this example, an addition of 146 basis points to the cost of equity would force
8 ratepayers to fund an unwarranted additional amount of \$26,891,009.

1 **Q. DO YOU AGREE WITH MR. MOUL'S "LEVERAGE ADJUSTMENT"**
2 **JUSTIFICATION?**

3 A. No. Mr. Moul's adjustment is inappropriate for a couple of reasons, including the
4 characterization of financial risk and Commission precedent.

5
6 **Q. EXPLAIN HOW RATING AGENCIES ASSESS FINANCIAL RISK.**

7 A. Rating agencies assess financial risk based upon a company's booked debt
8 obligations and the ability of its cash flow to cover the interest payments on those
9 obligations. The agencies use a company's financial statements for their analysis,
10 not market capital structure. The income statement reflects the financial risk of a
11 company because it represents the performance of the company over a certain
12 period of time. A change in the market value of the stock is not reflected in the
13 income statement nor is a change in market value capital structure reflected in the
14 book value capital structure unless treasury stock is purchased. It is a company's
15 financial statements that affect the market value of the stock, and therefore, the
16 financial statements and the book value capital structure that is relied upon in an
17 analysis such as that done by rating agencies.

18
19 **Q. HAS THE COMMISSION RECENTLY REJECTED THE USE OF A**
20 **LEVERAGE ADJUSTMENT?**

21 A. Yes. The following four cases are the most recent instances where the
22 Commission has rejected the use of a "leverage adjustment."

1 First, in *Pennsylvania Public Utility Commission v. Aqua Pennsylvania,*
2 *Inc.*, at Docket No. R-00072711 (Order Entered July 31, 2008), p. 38, the
3 Commission rejected the ALJ’s recommendation for a leverage adjustment stating,
4 “[t]he fact that we have granted leverage adjustments in the past does not mean
5 that such adjustments are indicated in all cases.”

6 Second, in *Pennsylvania Public Utility Commission, et al v. City of*
7 *Lancaster – Bureau of Water*, at Docket No. R-2010-2179103 (Order Entered
8 July 14, 2011), p. 79, the Commission agreed with the I&E position and stated,
9 “any adjustment to the results of the market based DCF are unnecessary and will
10 harm ratepayers. Consistent with our determination in *Aqua 2008* there is no need
11 to add a leverage adjustment.”

12 Third, in *Pennsylvania Public Utility Commission, et al v. UGI Utilities,*
13 *Inc. – Electric Division*, at Docket No. R-2017-2640058 (Order Entered October
14 25, 2018), pp. 93-94, the Commission agreed with the I&E position and stated,
15 “we conclude that an artificial adjustment in this proceeding is unnecessary and
16 contrary to the public interest. Accordingly, we decline to include a leverage
17 adjustment in our calculation of the DCF cost of equity.”

18 Fourth, in *Pennsylvania Public Utility Commission, et. al v. Columbia Gas*
19 *of Pennsylvania, Inc.*, at Docket R-2020-3018835 (Order Entered February 19,
20 2021), pp. 137-141, the Commission adopted the ALJ’s recommendation to use
21 I&E’s DCF methodology, which excludes the use of a leverage adjustment.

1 Finally, in the most recent case of *Pennsylvania Public Utility Commission,*
2 *et. al v. PECO Energy Company – Gas Division,* at Docket R-2020-3018929
3 (Order Entered June 22, 2021), p. 173, the Commission adopted the ALJ’s
4 recommendation to use I&E’s DCF methodology, which excludes the use of a
5 leverage adjustment.

6
7 **Q. SUMMARIZE YOUR RECOMMENDATION REGARDING THE**
8 **PROPOSED LEVERAGE ADJUSTMENT.**

9 A. I recommend that Mr. Moul’s proposed 146-basis point leverage adjustment be
10 rejected because true financial risk is a function of the amount of interest expense,
11 and capital structure information provided to investors through Value Line is that
12 of book values, not market values. This demonstrates that investors base their
13 decisions on book value debt and equity ratios for the regulated utilities, and
14 therefore, no adjustment is needed. Mr. Moul’s proposed adjustments serve only
15 to manipulate the DCF’s market-based methodology.

16
17 **Q. DO YOU HAVE ANY FURTHER COMMENTS REGARDING MR.**
18 **MOUL’S DCF CALCULATION?**

19 A. Yes. While I am not directly disputing Mr. Moul’s adjusted dividend yields, it is
20 important to recognize, that as cited above, the Commission has recently agreed
21 with I&E’s DCF methodology which includes the appropriate calculation of
22 dividend yields. Although it is acceptable to adjust historical dividend yields as

1 Mr. Moul has done, it is preferable to use forecasted dividends to calculate the
2 dividend yields when available, such as the ones Value Line offers and I have
3 employed.

4
5 **Q. WHAT WOULD MR. MOUL'S DCF BE WITHOUT ANY ADJUSTMENTS?**

6 A. Without Mr. Moul's use of inflated growth rates and a leverage adjustment, his
7 DCF would consist of a dividend yield of 3.91% and an average growth rate of
8 4.82%, which results in an 8.73% cost of equity which is well below Mr. Moul's
9 claimed cost of equity of 10.95% and much closer to my recommended cost of
10 equity of 9.24%.

11
12 Inflated Betas Used in CAPM Analysis

13 **Q. HOW HAS MR. MOUL INFLATED THE BETAS EMPLOYED IN HIS**
14 **CAPM ANALYSIS?**

15 A. Mr. Moul uses the same logic for inflating his CAPM betas from 0.88 to 1.08 that
16 he uses to enhance his DCF returns, through a financial risk or "leverage"
17 adjustment (DLC Statement No. 13, p. 41). Such enhancements are unwarranted
18 for beta in a CAPM analysis for the same reasons that enhancements are
19 unwarranted for DCF results.

20
21 **Q. DO YOU AGREE WITH MR. MOUL'S USE OF ADJUSTED BETAS?**

22 A. No. Such enhancements are unwarranted for beta in a CAPM analysis for the

1 same reasons that the “leverage” adjustment is unwarranted for DCF results. Also,
2 if the unadjusted *Value Line* betas do not reflect an accurate investment risk as Mr.
3 Moul contends, the question naturally arises as to why *Value Line* does not publish
4 betas that are adjusted for leverage. Until this type of adjustment is demonstrated
5 in the academic literature to be valid, such leverage adjusted betas in a CAPM
6 model should be rejected. Furthermore, the Commission found no basis to add
7 leverage adjusted betas in the recently litigated UGI Electric base rate case.¹⁷

8 Finally, as described in my CAPM analysis above, a stock with a price
9 movement that is greater than the overall stock market will have a beta that is
10 greater than one and would be described as having more investment risk than the
11 market. Due to being regulated and the monopolistic nature of utilities, rarely do
12 they have a beta greater than one. Therefore, to apply an adjusted beta of 1.08, in
13 this case, to the entire industry or electric proxy group is irrational.

14
15 Size Adjustment Applied to CAPM Analysis

16 **Q. WHAT SIZE ADJUSTMENT HAS MR. MOUL PROPOSED?**

17 A. Mr. Moul added 102 basis points to his CAPM indicated cost of common equity
18 because he opines that as the size of a firm decreases, its risk and required return
19 increases (DLC Statement No. 13, p. 43, line 23 through p. 44, line 1). Mr. Moul
20 relies upon technical literature including Morningstar’s Stocks, Bonds, Bills, and

¹⁷ *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018). See generally *Disposition of Capital Asset Pricing Model (CAPM)*, p. 100.

1 Inflation Yearbook, a Fama and French study entitled “The Cross-Section of
2 Expected Stock Returns,” and an article published in Public Utilities Fortnightly
3 entitled “Equity and the Small-Stock Effect” (DLC Statement No. 13, p. 44, lines
4 1-10).

5
6 **Q. DO YOU AGREE WITH MR. MOUL’S SIZE ADJUSTMENT?**

7 A. No. Mr. Moul’s proposed size adjustment is unnecessary because the technical
8 literature he cites supporting investment adjustments related to the size of a
9 company is not specific to the utility industry; therefore, it has no relevance in this
10 proceeding.

11
12 **Q. IS THERE ACADEMIC EVIDENCE THAT SUPPORTS YOUR**
13 **CONCLUSION THAT THE SIZE ADJUSTMENT FOR RISK IS NOT**
14 **APPLICABLE TO UTILITY COMPANIES?**

15 A. Yes. In the article “Utility Stocks and the Size Effect: An Empirical Analysis,” Dr.
16 Annie Wong concludes:

17 The objective of this study is to examine if the size effect exists
18 in the utility industry. After controlling for equity values, there
19 is some weak evidence that firm size is a missing factor from
20 the CAPM for the industrial but not for utility stocks. This
21 implies that although the size phenomenon has been strongly
22 documented for the industriales, the findings suggest that there
23 is no need to adjust for the firm size in utility rate regulation.¹⁸

¹⁸ Dr. Annie Wong, “Utility Stocks and the Size Effect: An Empirical Analysis,” *Journal of Midwest Finance Association* 1993, pp. 95-101.

1 Duquesne has presented no evidence to support application of a non-utility
2 study regarding a size adjustment for risk to a utility setting. Absent any credible
3 article to refute Dr. Wong’s findings, Mr. Moul’s size adjustment to his CAPM
4 results should be rejected. Additionally, and more importantly, the Commission
5 has recently rejected the application of a size adjustment to the CAPM cost of
6 equity calculation.¹⁹

7
8 **Q. WHAT WOULD MR. MOUL’S CAPM RESULT BE WITHOUT THE SIZE**
9 **ADJUSTMENT AND INFLATED BETAS?**

10 A. Mr. Moul’s CAPM result would be 9.77% without his size adjustment and inflated
11 betas which is well below my CAPM analysis result of 10.37%. The calculation is
12 repeated below without Mr. Moul’s adjustments:

13 Rf + β * (Rm-Rf) + size = K
14 2.10% + 0.88 * 8.72% + 0.00% = 9.77%

15
16 **OVERALL RATE OF RETURN RECOMMENDATION**

17 **Q. WHAT IS THE COMPANY’S PROPOSED OVERALL RATE OF**
18 **RETURN?**

19 A. The Company’s proposed overall rate of return is 7.84% (DLC Statement No. 13,
20 p. 2, line 4).

¹⁹ Pa. PUC v. UGI Utilities, Inc. – Electric Division; Docket No. R-2017-2640058 (Order Entered October 25, 2018). See generally Disposition of Capital Asset Pricing Model (CAPM), p. 100.

1 **Q. WHAT IS I&E'S RECOMMENDED OVERALL RATE OF RETURN?**

2 A. I recommend an overall rate of return for the Company of 6.93% (I&E Exhibit
3 No. 2, Schedule 17).

4

5 **Q. DO YOU HAVE ANY FINAL COMMENTS REGARDING THE**
6 **COMPANY'S PROPOSED COST OF EQUITY AND OVERALL RATE OF**
7 **RETURN?**

8 A. Yes. I believe my recommended, market determined cost of equity is fair,
9 particularly considering the financial impacts COVID-19 has had on utilities,
10 ratepayers, and the economy as a whole. While investors typically view utilities as
11 safe investments due to the regulation which all but guarantees covering the costs
12 of doing business and the steady and secure revenues due to having a captive
13 customer base, high profits are not and should not be guaranteed, especially in a
14 volatile economic environment. It is important to recognize, that any investment
15 comes with some level of risk. Therefore, I believe it is unreasonable for
16 Duquesne's investors to be entirely insulated from the impacts of COVID-19
17 while putting the entire burden on ratepayers. While many ratepayers are feeling
18 financial pressure from the pandemic, the Company is asking for a return on
19 equity well above the industry norm. When I reviewed past rate cases from 2017
20 through 2020 posted by S&P Global, I was unable to identify any natural gas or
21 electric distribution utility that was authorized a return on equity equal to or
22 greater than what Duquesne is requesting in this proceeding. Additionally, as

1 explained above, the *Hope* and *Bluefield* cases set forth the principle that a fair
2 return can change (increase or decrease) along with economic conditions and
3 capital markets. Therefore, as unfortunate as this situation is for all involved, I
4 believe it is necessary and fair that both the investors and the ratepayers share in
5 the economic burdens created by the pandemic.

6

7 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

8 A. Yes.

Professional and Educational Experience
Christopher Keller

Professional Experience

January 2014 to Present
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania
Bureau of Investigation & Enforcement

September 2008 to January 2014
Insurance Company Financial Analyst
Pennsylvania Insurance Department, Harrisburg, Pennsylvania
Bureau of Licensing & Financial Analysis

Education and Training

FAI Utility Finance and Accounting for Financial Professionals, Boston, MA
May 21-23, 2014

York College of Pennsylvania, York, Pennsylvania
Master of Business Administration, Finance Concentration, 2008
Bachelor of Science, Accounting, 2006

Testimony Submitted

I have testified and/or submitted testimony in the following proceedings:

- Docket No. R-2021-3024296 – Columbia Gas of Pennsylvania, Inc. (ROR) (proceeding ongoing)
- Docket No. R-2020-3018929 – PECO Energy Company – Gas Division (ROR)
- Docket No. P-2020-3020914 – Twin Lakes Utilities, Inc. (529 Proceeding) (proceeding ongoing)
- Docket No. R-2020-3018835 – Columbia Gas of Pennsylvania, Inc. (ROR)
- Docket No. R-2020-3019680 – UGI Utilities, Inc. (1307(f))
- Docket No. P-2020-3019356 – PPL Electric Utilities Corporation (DSP)
- Docket No. R-2019-3015162 – UGI Utilities, Inc. – Gas Division (ROR)
- Docket No. R-2019-3010955 – City of Lancaster – Sewer Fund (O&M)
- Docket No. R-2019-3009647 – UGI Utilities, Inc. – Gas Division (1307(f))
- Docket No. R-2018-3006818 – Peoples Natural Gas Company LLC (O&M)
- Docket No. R-2018-3000124 – Duquesne Light Company (O&M)
- Docket No. R-2018-3001631 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2018-3001632 – UGI Penn Natural Gas, Inc. (1307(f))
- Docket No. R-2018-3001633 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2018-2645938 – Philadelphia Gas Works (1307(f))

**Professional and Educational Experience
Christopher Keller**

Testimony Submitted (Continued)

I have testified and/or submitted testimony in the following proceedings:

- Docket No. P-2017-2637855 – Metropolitan Edison Company (DSP)
- Docket No. P-2017-2637857 – Pennsylvania Electric Company (DSP)
- Docket No. P-2017-2637858 – Pennsylvania Power Company (DSP)
- Docket No. P-2017-2637866 – West Penn Power Company (DSP)
- Docket No. R-2017-2602627 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2017-2602638 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2017-2586783 – Philadelphia Gas Works (O&M)
- Docket No. R-2017-2587526 – Philadelphia Gas Works (1307(f))
- Docket No. I-2016-2526085 – Delaware Sewer Company (529 Proceeding)
- Docket No. R-2016-2531550 – Citizens’ Electric Company (O&M)
- Docket No. R-2016-2531551 – Wellsboro Electric Company (O&M)
- Docket No. R-2016-2537349 – Metropolitan Edison Company (CWC and CAP)
- Docket No. R-2016-2537352 – Pennsylvania Electric Company (CWC and CAP)
- Docket No. R-2016-2537355 – Pennsylvania Power Company (CWC and CAP)
- Docket No. R-2016-2537359 – West Penn Power Company (CWC and CAP)
- Docket No. R-2016-2543311 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2015-2518438 – UGI Utilities, Inc. – Gas Division (CWC and USP)
- Docket No. P-2015-2511333 – Metropolitan Edison Company (DSP)
- Docket No. P-2015-2511351 – Pennsylvania Electric Company (DSP)
- Docket No. P-2015-2511355 – Pennsylvania Power Company (DSP)
- Docket No. P-2015-2511356 – West Penn Power Company (DSP)
- Docket No. R-2015-2468056 – Columbia Gas of Pennsylvania, Inc. (O&M)
- Docket No. P-2014-2404341 – Delaware Sewer Company (529 Investigation)
- Docket No. R-2014-2452705 – Delaware Sewer Company (O&M)
- Docket No. R-2014-2428304 – Borough of Hanover – Water (O&M)
- Docket No. R-2014-2419774 – Wellsboro Electric Company (Customer Choice Support Charge)
- Docket No. R-2014-2420279 – UGI Central Penn Gas, Inc. (1307(f))

Assisted with the Following Cases

- Docket No. R-2017-2631441 – Reynolds Water Company (ROR)
- Docket No. R-2016-2580030 – UGI Penn Natural Gas, Inc. (ROR)
- Docket No. R-2014-2462723 – United Water Pennsylvania (CWC)
- Docket No. R-2014-2428742 – West Penn Power Company (CWC)
- Docket No. R-2014-2428743 – Pennsylvania Electric Company (CWC)

Professional and Educational Experience
Christopher Keller

Assisted with the Following Cases (Continued)

- Docket No. R-2014-2428744 – Pennsylvania Power Company (CWC)
- Docket No. R-2014-2428745 – Metropolitan Edison Company (CWC)
- Docket No. R-2013-2397353 – Pike County Light & Power Company (Gas) (O&M)
- Docket No. R-2013-2397237 – Pike County Light & Power Company (Electric) (O&M)

I&E Exhibit No. 2
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket Nos. R-2021-3024750

Exhibit to Accompany

the

Direct Testimony

of

Christopher Keller

Bureau of Investigation and Enforcement

Concerning:

Operating and Maintenance Expenses

Taxes Other Than Income

Cash Working Capital

Charging Infrastructure Portfolio

Customer Portfolio

Rate of Return

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-18-D

18. Reference DLC Exhibit 2, Schedule D-8 concerning rate case expense. Provide the following information for the last three base rate cases filed with the Commission:

- A. Docket number, date of filing, and method of resolution (i.e., settlement or litigation).
- B. Requested rate case expense and the actual rate case expense incurred for each case listed in response to Part A above.

Response:

Docket Number	Date of Filing	Method of Resolution	Requested Rate Case Expense (thousands)	Actual Rate Case Expense (thousands)
R-2010-2179522	06/01/2010	Settlement	\$4,000	\$1,398
R-2013-2372129	08/02/2013	Partial Settlement	\$2,200	\$1,868
R-2018-3000124	03/28/2018	Settlement	\$1,972	\$2,094

Duquesne Light Company
Distribution Salaries and Wages Expense Adjustment
For the Twelve Months Ending December 31, 2022

1	Total Salaries and Wages Expense Claim in Filing	\$93,662,000	(a)
	Allocation of Salaries and Wages to Distribution per Cost of Service		
2	Study	<u>82.63%</u>	(b)
	Total Distribution Salary and Wages Expense Claim as of December		
3	31, 2022 (Line 1 x Line 2)		\$77,393,000
	I&E Recommended Adjustment to Distribution Salaries and Wages		
4	Increase in FPFTY	(1,001,000)	(c)
	I&E Recommended Distribution Salaries and Wages Expense Vacancy		
5	Adjustment	<u>(1,489,000)</u>	(d)
	Total I&E Recommended Adjustments to Distribution Salaries and		
6	Wages Expense (Line 4 + Line 5)		<u>(2,490,000)</u>
	I&E Recommended Allowance for Distribution Salaries and Wages		
7	Expense (Line 3 + Line 6)		<u><u>\$74,903,000</u></u>

(a) Ref: DLC Exhibit 2, Schedule D-7, Page 2, Column 6, Line 19

(b) Ref: DLC Exhibit 6-8A, Page 1, Line 26

(c) Ref: I&E Statement No. 2, p. 11

(d) Ref: I&E Exhibit No. 2, Schedule 2, p. 3

Duquesne Light Company
Salaries and Wages Vacancy Adjustment
For the Twelve Months Ending December 31, 2022

Month	Non-Union	Union	Total
Jan-18	33	69	102
Feb-18	32	82	114
Mar-18	29	92	121
Apr-18	57	100	157
May-18	42	102	144
Jun-18	31	104	135
Jul-18	26	106	132
Sep-18	18	106	124
Oct-18	12	88	100
Nov-18	4	90	94
Dec-18	2	95	97
Jan-19	57	48	105
Feb-19	66	50	116
Mar-19	69	54	123
Apr-19	70	60	130
May-19	59	67	126
Jun-19	50	70	120
Jul-19	42	74	116
Sep-19	43	93	136
Oct-19	41	81	122
Nov-19	43	75	118
Dec-19	38	74	112
Jan-20	60	84	144
Feb-20	61	98	159
Mar-20	62	96	158
Apr-20	66	98	164
May-20	56	103	159
Jun-20	55	103	158
Jul-20	53	105	158
Sep-20	49	90	139
Oct-20	46	86	132
Nov-20	45	94	139
Dec-20	46	96	142
Jan-21	71	73	144
Feb-21	71	82	153
Mar-21	73	86	159
36-Month Average	47	85	132
Less: 100 Vacancies Accounted for by DLC			100
Vacancy Adjustment			<u>32</u>

Duquesne Light Company
Salaries and Wages Expense Adjustment
For the Twelve Months Ending December 31, 2022

I&E Exhibit No. 2 Schedule 2 Page 3 of 3
--

1	Total Distribution Salary and Wages Expense as of December 31, 2022	\$ 77,393,000	(a)
2	I&E Adjustment for Total Distribuion Salary and Wage Expense Increase in FPFTY	<u>\$ (1,001,000)</u>	(b)
3	I&E Recommendation for Total Distribution Salary and Wages Expense Prior to Vacancy Adjustment (Line 1 + Line 2)	\$ 76,392,000	
4	Total Employees as of December 31, 2022	1,642	(c)
5	Average Total Distribution Salary and Wages per Employee as of December 31, 2022 (Line 4 / Line 3)	\$46,524	
6	39 Month Average of Vacancies	<u>32</u>	(d)
7	Total Salary and Wages Distribution Vacancy Expense Adjustment (Line 5 x Line 6)	<u><u>(\$1,489,000)</u></u>	

- (a) Ref: I&E Exhibit No. 2, Schedule 2, p. 1
- (b) Ref: I&E Statement No. 2, p. 11
- (c) Ref: I&E Exhibit No. 2, Schedule 3
- (d) Ref: I&E Exhibit No. 2, Schedule 2, p. 2

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-6-D

6. Reference DLC Exhibit 1, DFR-II-D-10 concerning salaries and wages. Provide the following:

- A. Employee counts, total and broken down by union and non-union categories for the following years: 2018, 2019, HTY 2020, 2021 YTD actual, FTY 2021 claim, and the claimed number for FPFTY 2022.
- B. Number of employee positions that have been eliminated by month broken down by union and non-union since the commencement of the HTY and that are expected to be eliminated during the FTY and the FPFTY.
- C. Number of vacant positions by month for the following years: 2018, 2019, and HTY 2020, and 2021 YTD broken down by union and non-union.

Response:

- A. Employee counts in totality and broken down by union and non-union for the period end requested is as follows:

	Non-Union	Union	Total
2018	701	839	1,540
2019	743	832	1,575
2020	763	821	1,584
2021 (YTD)	766	811	1,577
2021 (FTY)	819	833	1,652
2022 (FPFTY)	825	817	1,642

B. See attached for number of employee positions eliminated by month broken down by union and non-union below.

		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTAL:
2020	Union	0	0	0	0	0	0	0	0	0	0	0	0	0
	Non-Union	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	Union	20	0	0	0	0	0	0	0	0	0	0	0	20
	Non-Union	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	20	0	0	0	0	0	0	0	0	0	0	0	20
2022	Union	16	0	0	0	0	0	0	0	0	0	0	0	16
	Non-Union	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	16	0	0	0	0	0	0	0	0	0	0	0	16

C. Vacant positions by month broken down by union and non-union for the period ends requested are as follows:

	Vacant Positions			Vacancy Reserve			Total		
	Non-Union	Union	Total	Non-Union	Union	Total	Non-Union	Union	Total
Jan-18	33	69	102	(28)	(42)	(70)	5	27	32
Feb-18	32	82	114	(28)	(42)	(70)	4	40	44
Mar-18	29	92	121	(28)	(42)	(70)	1	50	51
Apr-18	57	100	157	(28)	(42)	(70)	29	58	87
May-18	42	102	144	(28)	(42)	(70)	14	60	74
Jun-18	31	104	135	(28)	(42)	(70)	3	62	65
Jul-18	26	106	132	(28)	(42)	(70)	(2)	64	62
Sep-18	18	106	124	(28)	(42)	(70)	(10)	64	54
Oct-18	12	88	100	(28)	(42)	(70)	(16)	46	30
Nov-18	4	90	94	(28)	(42)	(70)	(24)	48	24
Dec-18	2	95	97	(28)	(42)	(70)	(26)	53	27
Jan-19	57	48	105	(40)	(60)	(100)	17	(12)	5
Feb-19	66	50	116	(40)	(60)	(100)	26	(10)	16
Mar-19	69	54	123	(40)	(60)	(100)	29	(6)	23
Apr-19	70	60	130	(40)	(60)	(100)	30	0	30
May-19	59	67	126	(40)	(60)	(100)	19	7	26
Jun-19	50	70	120	(40)	(60)	(100)	10	10	20
Jul-19	42	74	116	(40)	(60)	(100)	2	14	16
Sep-19	43	93	136	(40)	(60)	(100)	3	33	36
Oct-19	41	81	122	(40)	(60)	(100)	1	21	22
Nov-19	43	75	118	(40)	(60)	(100)	3	15	18
Dec-19	38	74	112	(40)	(60)	(100)	(2)	14	12
Jan-20	60	84	144	(51)	(49)	(100)	9	35	44
Feb-20	61	98	159	(51)	(49)	(100)	10	49	59
Mar-20	62	96	158	(51)	(49)	(100)	11	47	58
Apr-20	66	98	164	(51)	(49)	(100)	15	49	64
May-20	56	103	159	(51)	(49)	(100)	5	54	59
Jun-20	55	103	158	(51)	(49)	(100)	4	54	58
Jul-20	53	105	158	(51)	(49)	(100)	2	56	58
Sep-20	49	90	139	(51)	(49)	(100)	(2)	41	39
Oct-20	46	86	132	(51)	(49)	(100)	(5)	37	32
Nov-20	45	94	139	(51)	(49)	(100)	(6)	45	39
Dec-20	46	96	142	(51)	(49)	(100)	(5)	47	42
Jan-21	71	73	144	(36)	(64)	(100)	35	9	44
Feb-21	71	82	153	(36)	(64)	(100)	35	18	53
Mar-21	73	86	159	(36)	(64)	(100)	37	22	59

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Robert O'Brien

I&E-RE-1-D

1. Reference Duquesne Light Company (DLC) Exhibit 2 through Exhibit 4. Provide all schedules in live Microsoft Excel format with all formulas intact.

Response:

Please see attached files, I&E-RE-1-D Attachments 1, 2, and 3, for the electronic versions of DLC Exhibits 2, 3 and 4 except for Schedules D-5D.

Please see response to I&E-RS-1-D for the electronic versions of Schedules D-5D for each of DLC Exhibits 2, 3 and 4.

Additionally, please see I&E-RE-1-D - Attachment 4, comprising electronic versions of Exhibits RLO-1, RLO-2, and RLO-3, which were inadvertently omitted from the Company's initial filing. Note that there is no Exhibit RLO-4; the corresponding reference at Statement No. 10, p. 35, line 8 is a typographical error. The Company will address in rebuttal to the extent necessary.

Duquesne Light Company
Operating Expense
By Cost Element

EXHIBIT
Witness:
Page 1

RLO-1
O'Brien
of 1

Budget FTY (12/31/21) & FPFTY (12/31/22)

[1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

Line #	Acct #	Account Description	2016 Actual	2017 Actual	2018 Actual	2019 Actual	HTY 2020 Actual	FTY 2021 Projected	FPFTY 12/31/22 Pro Forma	Removal of Surcharge Expenses	Remove Below-the-Line Expenses	FPFTY 12/31/22 Forecast
1	10	STRAIGHT-TIME LABOR	55,668	55,489	57,715	62,275	65,146	87,613	90,205	(501)	(185)	89,519
2	11	OVERTIME LABOR	6,334	6,317	8,302	8,085	9,530	5,880	5,936	-	-	5,936
3	12	PAID FOR TIME NOT WORKED	9,844	8,611	9,548	10,443	13,672	(3,531)	(3,982)	-	-	(3,982)
4	-	Total S&W to Expense	71,846	70,417	75,565	80,803	88,348	89,962	92,159	(501)	(185)	91,473
5	15	INCENTIVE COMPENSATION -	5,140	7,615	7,004	8,206	7,711	10,406	10,652	(18)	(27)	10,607
6	50	MISC EMPLOYEE BENEFITS	10,570	11,735	10,990	9,671	11,156	13,452	15,375	-	-	15,375
7	60	PENSION COSTS	18,600	18,606	18,596	5,000	5,000	3,374	6,004	-	-	6,004
8	-	Subtotal Labor and Fringes	106,156	108,373	112,155	103,680	112,215	117,194	124,190	(519)	(212)	123,459
9	14	BUILDING RENTS	3,273	3,385	3,661	3,560	3,718	3,774	3,759	-	-	3,759
10	20	STORES ISSUES AND RETURNS	2,281	2,144	2,247	1,948	3,120	-	-	-	-	-
11	23	MATERIALS PURCHASED	2,669	2,352	2,060	2,177	543	4,549	4,495	(19)	-	4,476
12	-	Subtotal Materials	4,950	4,496	4,307	4,125	3,663	4,549	4,495	(19)	-	4,476
13	24	UTILITIES	1,906	1,837	2,101	1,931	1,532	2,025	2,000	-	-	2,000
14	30	TRANSPORTATION/WORK EQUIPMENT	2,822	2,559	2,515	2,787	2,881	2,534	2,459	-	-	2,459
15	40	PHONE SRVCS (LOCAL,LD,TOLLFREE	2,136	1,826	1,888	1,503	1,412	1,401	1,404	-	-	1,404
16	42	OTHER LEASES	-	7	106	(1)	216	-	-	-	-	-
17	43	SOFTWARE LEASES	1,317	3,409	5,478	6,987	7,442	7,684	7,615	-	-	7,615
18	44	INSURANCE	5,520	5,344	5,655	5,796	5,604	6,394	6,676	-	-	6,676
19	45	MOBILE PHONE / PAGER COSTS	1,527	1,561	1,466	1,520	1,628	1,412	1,422	-	-	1,422
20	47	CLEARING ALLOCATIONS	-	-	-	57	-	-	-	-	-	-
21	49	REGULATORY ASSESSMENTS & FEES	2,782	2,950	2,851	2,760	3,106	3,037	3,037	-	-	3,037
22	23	EMPLOYEE EXPENSES	2,113	1,826	2,298	3,118	1,590	3,326	3,461	(10)	(94)	3,357
23	-	-	-	-	-	-	-	-	-	-	-	-
24	52	COMMUNITY RELATIONS	-	-	-	-	2,926	2,806	2,891	-	(2,891)	-
25	53	SURCHARGE REVENUE OFFSETS	57,804	55,948	58,580	52,598	58,143	32,090	33,551	(28,631)	-	4,920
26	54	POLE ATTACHMENT FEES	1,760	1,749	1,770	1,761	1,746	1,760	1,760	-	-	1,760
27	55	FIBER LEASE & SONET NETWORK	3,154	3,134	3,545	3,589	3,941	4,097	4,167	-	-	4,167
28	56	DATACOM SERVICE FEE	1,918	1,917	1,917	1,117	-	-	-	-	-	-
29	57	OUTSIDE ENGINEERING SERVICES	334	309	383	38	162	275	275	-	-	275
30	58	HARDWARE/SOFTWARE MAINTENANCE	7,100	7,706	9,487	11,765	11,937	13,033	12,471	-	-	12,471
31	59	PROFESSIONAL SERVICES	68,617	65,393	71,260	72,765	71,268	67,765	64,923	(18,840)	(529)	45,554
32	-	-	-	-	-	-	-	-	-	-	-	-
33	61	TRANSMISS LINE/MICROWAVE RENT	2,943	3,212	(1,627)	(3,080)	2,512	-	-	-	-	-
34	65	UNCOLLECTIBLE ACCOUNTS	15,746	10,598	14,449	17,479	17,479	13,936	14,419	(6,964)	-	7,455
35	66	DEFERRED COSTS	(47,086)	(50,952)	(55,416)	(55,803)	(60,369)	(34,753)	(28,903)	26,384	-	(2,519)
36	67	CUSTOMER REIMBURSEMENTS	(851)	(1,429)	(990)	(787)	(1,020)	(687)	(692)	-	-	(692)
37	70	SS & UNEMPLOYMENT	-	-	9	2	9	-	-	-	-	-
38	71	TEMPORARY LABOR	16	46	(20)	107	162	-	-	-	-	-
39	72	MAILING COSTS	7	10	4	24	3,458	2,807	2,666	-	-	2,666
40	75	MEMBERSHIP DUES	587	759	961	991	1,301	1,463	1,487	(134)	(15)	1,326
41	76	BUSINESS MEALS	157	107	93	171	148	248	249	(5)	-	229
42	82	OVERHEAD	-	-	-	-	-	-	-	-	-	-
43	80	ALLOCATION CONSTRUCT INDIRECT	(2,919)	(2,706)	(2,699)	(3,416)	(4,071)	(4,183)	(4,267)	-	-	(4,267)
44	88	SUBSIDIARY REIMBURSEMENTS	-	-	-	-	-	-	-	-	-	-
45	90	AFUDC	-	-	-	-	-	-	-	-	-	-
46	91	AFUDC	-	-	-	-	-	-	-	-	-	-
47	98	BALANCES TRANSFERRED FORWARD	-	-	32	-	(37)	-	-	-	-	-
48	99	MISCELLANEOUS	1,394	1,905	(4,555)	1,203	2,421	(4,631)	(3,708)	(44)	-	(3,752)
49	-	Subtotal Expenses	245,183	235,279	241,632	232,842	257,108	249,356	261,807	(28,631)	(3,919)	229,257

Duquesne Light Company
Operating Expense
By Cost Element
Actual 2016 to 2020
Projected and Pro Forma FTY Ended 12-31-21

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Line #	Acct #	Account Description	[1] 2016 Actual	[2] 2017 Actual	[3] 2018 Actual	[4] 2019 Actual	[5] HTY 2020 Actual	[6] FTY 2021 Forecast	[7] FTY 2021 Forecast	[8] Removal of Surcharge Expenses	[9] Remove Below-the-Line Expenses	[10] FTY 2021 Budget
1	10	STRAIGHT-TIME LABOR	55,668	55,489	57,715	62,275	65,146	88,130	88,130	(488)	(133)	87,509
2	11	OVERTIME LABOR	6,334	6,317	8,302	8,085	9,530	5,880	5,880			5,880
3	12	PAID FOR TIME NOT WORKED	9,844	8,611	9,548	10,443	13,672	(3,531)	(3,531)			(3,531)
4	-	Total S&W to Expense	71,846	70,417	75,565	80,803	88,348	90,479	90,479	(488)	(133)	89,858
5	15	INCENTIVE COMPENSATION -	5,140	7,615	7,004	8,206	7,711	10,424	10,424	(17)	(27)	10,380
6	50	MISC EMPLOYEE BENEFITS	10,570	11,735	10,990	9,671	11,156	13,781	13,781			13,781
7	60	PENSION COSTS	18,600	18,606	18,596	5,000	5,000	3,374	3,374			3,374
8		Subtotal Labor and Fringes	106,156	108,373	112,155	103,680	112,215	118,058	118,058	(505)	(160)	117,393
9	14	BUILDING RENTS	3,273	3,385	3,661	3,560	3,718	3,774	3,774	-	-	3,774
10	20	STORES ISSUES AND RETURNS	2,281	2,144	2,247	1,948	3,120	-	-	(23)	-	-
11	23	MATERIALS PURCHASED	2,669	2,352	2,060	2,177	543	4,549	4,549	(23)	-	4,526
12		Subtotal Materials	4,950	4,496	4,307	4,125	3,663	4,549	4,549	(23)	-	4,526
13	24	UTILITIES	1,906	1,837	2,101	1,931	1,532	2,025	2,025			2,025
14	30	TRANSPORTATION/WORK EQUIPMENT	2,822	2,559	2,787	2,787	2,881	2,534	2,534			2,534
15	40	PHONE SRVCS (LOCAL, LD, TOLLFREE	2,136	1,826	1,888	1,503	1,412	1,401	1,401			1,401
16	42	OTHER LEASES	-	7	106	(1)	216	-	-			-
17	43	SOFTWARE LEASES	1,317	3,409	5,478	6,987	7,442	7,684	7,684			7,684
18	44	INSURANCE	5,520	5,344	5,655	5,796	5,604	6,394	6,394			6,394
19	45	MOBILE PHONE / PAGER COSTS	1,527	1,561	1,466	1,520	1,628	1,412	1,412			1,412
20	47	CLEARING ALLOCATIONS	-	-	57	57	-	-	-			-
21	49	REGULATORY ASSESSMENTS & FEES	2,782	2,950	2,851	2,760	3,106	3,037	3,037	(12)	(91)	3,037
22	51	EMPLOYEE EXPENSES	2,113	1,826	2,298	3,118	1,590	3,333	3,333			3,330
23	-		-	-	-	-	-	-	-			-
24	52	COMMUNITY RELATIONS	-	-	-	-	2,926	2,806	2,806		(2,806)	-
25	53	SURCHARGE REVENUE OFFSETS	57,804	55,948	58,580	52,598	58,143	32,090	32,090	(27,190)		4,900
26	54	POLE ATTACHMENT FEES	1,760	1,749	1,770	1,761	1,746	1,760	1,760			1,760
27	55	FIBER LEASE & SONET NETWORK	3,154	3,134	3,545	3,589	3,941	4,097	4,097			4,097
28	56	DATACOM SERVICE FEE	1,918	1,917	1,917	117	-	-	-			-
29	57	OUTSIDE ENGINEERING SERVICES	334	309	383	38	162	275	275			275
30	58	HARDWARE/SOFTWARE MAINTENANCE	7,100	7,706	9,487	11,765	11,937	13,033	13,033			13,033
31	59	PROFESSIONAL SERVICES	68,617	65,393	71,260	72,765	71,268	70,465	70,465	(19,170)	(583)	50,712
32	-		-	-	-	-	-	-	-			-
33	61	TRANSMISSION LINE/MICROWAVE RENT	2,943	3,212	(1,627)	(3,080)	2,512	-	-			-
34	65	UNCOLLECTIBLE ACCOUNTS	15,746	10,598	14,449	12,942	17,479	13,936	13,936	(6,827)		7,109
35	66	DEFERRED COSTS	(47,086)	(50,952)	(55,416)	(55,803)	(60,369)	(37,570)	(37,570)	26,569		(11,001)
36	67	CUSTOMER REIMBURSEMENTS	(851)	(1,429)	(990)	(787)	(1,020)	(687)	(687)			(687)
37	70	SS & UNEMPLOYMENT	-	9	9	2	9	-	-			-
38	71	TEMPORARY LABOR	16	46	(20)	107	162	-	-			-
39	72	MAILING COSTS	7	10	4	24	3,458	2,807	2,807			2,807
40	75	MEMBERSHIP DUES	587	759	961	991	1,301	1,463	1,463	(27)	(134)	1,302
41	76	BUSINESS MEALS	157	107	93	171	148	248	248	(5)	(15)	228
42	82	OVERHEAD	-	-	-	-	-	-	-			-
43	80	ALLOCATION CONSTRUCT INDIRECT	(2,919)	(2,706)	(2,699)	(3,416)	(4,071)	(4,183)	(4,183)			(4,183)
44	88	SUBSIDIARY REIMBURSEMENTS	-	-	-	-	-	-	-			-
45	90	AFUDC	-	-	-	-	-	-	-			-
46	91	AFUDC	-	-	-	-	32	-	-			-
47	98	BALANCES TRANSFERRED FORWARD	-	-	-	32	(37)	-	-			-
48	99	MISCELLANEOUS	1,394	1,905	(4,555)	1,203	2,421	(4,631)	(4,631)	(44)		(4,675)
49		Subtotal Expenses	245,183	235,279	241,632	232,842	257,108	250,110	250,110	(27,190)	(3,833)	219,087

Duquesne Light Company
Operating Expense
By Cost Element
Actual 2016 to 2020
Budget HTY Ended December 31, 2020

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[1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

Line #	Acct #	Account Description	2016 Actual	2017 Actual	2018 Actual	2019 Actual	HTY Ended 12/31/20	HTY Ended 12/31/20	HTY Ended 12/31/20	Removal of Surcharge Expenses	Below-the-Line Expenses Removed	Ended 12/31/20	Sum [7] to [9]
1	10	STRAIGHT-TIME LABOR	55,668	55,489	57,715	62,275	65,146	65,146	(406)	(186)		64,554	
2	11	OVERTIME LABOR	6,334	6,317	8,302	8,085	9,530	9,530				9,528	
3	12	PAID FOR TIME NOT WORKED	9,844	8,611	9,548	10,443	13,672	13,672	(65)	(21)		13,586	
4		Total S&W to Expense	71,846	70,417	75,565	80,803	88,348	88,348	(471)	(209)		87,668	
5	15	INCENTIVE COMPENSATION -	5,140	7,615	7,004	8,206	7,711	7,711	(16)	(8)		7,687	
6	50	MISC EMPLOYEE BENEFITS	10,570	11,735	10,990	9,671	11,156	11,156		(16)		11,140	
7	60	PENSION COSTS	18,600	18,606	18,596	5,000	5,000	5,000		(12)		4,988	
8		Subtotal Labor and Fringes	106,156	108,373	112,155	103,680	112,215	112,215	(487)	(245)		111,483	
9	14	BUILDING RENTS	3,273	3,385	3,661	3,560	3,718	3,718	-	-		3,718	
10	20	STORES ISSUES AND RETURNS	2,281	2,144	2,247	1,948	3,120	3,120	-	-		3,120	
11	23	MATERIALS PURCHASED	2,669	2,060	2,060	2,177	543	543	-	-		543	
12		Subtotal Materials	4,950	4,496	4,307	4,125	3,663	3,663	-	-		3,663	
13	24	UTILITIES	1,906	1,837	2,101	1,931	1,532	1,532				1,532	
14	30	TRANSPORTATION/WORK EQUIPMENT	2,822	2,559	2,515	2,787	2,881	2,881				2,881	
15	40	PHONE SRVCS (LOCAL LD, TOLL FREE)	2,136	1,826	1,888	1,503	1,412	1,412				1,412	
16	42	OTHER LEASES	-	7	106	(1)	216	216				216	
17	43	SOFTWARE LEASES	1,317	3,409	5,478	6,987	7,442	7,442				7,442	
18	44	INSURANCE	5,520	5,344	5,655	5,796	5,604	5,604				5,604	
19	45	MOBILE PHONE / PAGER COSTS	1,527	1,561	1,466	1,520	1,628	1,628				1,628	
20	47	CLEARING ALLOCATIONS	-	-	57	57	-	-				-	
21	49	REGULATORY ASSESSMENTS & FEES	2,782	2,950	2,851	2,760	3,106	3,106	(164)	(30)		2,912	
22	51	EMPLOYEE EXPENSES	2,113	1,826	2,298	3,118	1,590	1,590	(4)	(10)		1,576	
23			-	-	-	-	-	-				-	
24	52	COMMUNITY RELATIONS	-	-	-	-	2,926	2,926		(2,921)		5	
25	53	SURCHARGE REVENUE OFFSETS	57,804	55,948	58,580	52,598	58,143	58,143	(53,240)			4,903	
26	54	POLE ATTACHMENT FEES	1,760	1,749	1,770	1,761	1,746	1,746				1,746	
27	55	FIBER LEASE & SONET NETWORK	3,154	3,134	3,545	3,589	3,941	3,941				3,941	
28	56	DATACOM SERVICE FEE	1,918	1,917	1,917	117	-	-				-	
29	57	OUTSIDE ENGINEERING SERVICES	334	309	383	38	162	162				162	
30	58	HARDWARE/SOFTWARE MAINTENANCE	7,100	7,706	9,487	11,765	11,937	11,937				11,937	
31	59	PROFESSIONAL SERVICES	68,617	65,393	71,260	72,765	71,268	71,268	(23,627)	(150)		47,491	
32			-	-	-	-	-	-				-	
33	61	TRANSMISSION LINE/MICROWAVE RENT	2,943	3,212	(1,627)	(3,080)	2,512	2,512				2,512	
34	65	UNCOLLECTIBLE ACCOUNTS	15,746	10,598	14,449	12,942	17,479	17,479	(7,008)			10,471	
35	66	DEFERRED COSTS	(47,086)	(50,952)	(55,416)	(55,803)	(60,369)	(60,369)	54,027			(6,342)	
36	67	CUSTOMER REIMBURSEMENTS	(851)	(1,429)	(990)	(787)	(1,020)	(1,020)				(1,020)	
37	70	SS & UNEMPLOYMENT	-	9	9	2	9	9				9	
38	71	TEMPORARY LABOR	16	46	(20)	107	162	162				162	
39	72	MAILING COSTS	7	10	4	24	3,458	3,458	(11)	(1)		3,446	
40	75	MEMBERSHIP DUES	587	759	961	991	1,301	1,301	(45)	(17)		1,239	
41	76	BUSINESS MEALS	157	107	93	171	148	148				143	
42	82	OVERHEAD	-	-	-	-	-	-				-	
43	80	ALLOCATION CONSTRUCT INDIRECT	(2,919)	(2,706)	(2,699)	(3,416)	(4,071)	(4,071)	(15)	(15)		(4,071)	
44	88	SUBSIDIARY REIMBURSEMENTS	-	-	-	-	-	-				-	
45	90	AFUDC	-	-	-	-	-	-				-	
46	91	AFUDC	-	-	-	-	-	-				-	
47	98	BALANCES TRANSFERRED FORWARD	-	-	-	32	(37)	(37)				(37)	
48	99	MISCELLANEOUS	1,394	1,905	(4,555)	1,203	2,421	2,421				(2,407)	
49		Subtotal Expenses	245,183	235,279	241,632	232,842	257,108	257,108	(30,559)	(5,795)		220,754	

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-8-D

8. Reference DLC Exhibit RLO-1 concerning incentive compensation:

- A. Provide a copy of all Company profit sharing, incentive compensation, and bonus pay plans.
- B. Include each plan's criteria for participant eligibility and each plan's established criteria/goals that are to be met for payout.
- C. For each of the compensation plans, identify all accounts to which the costs are recorded.
- D. Identify the amounts expensed and the amounts capitalized by year for 2018, 2019, HTY 2020, 2021 YTD, FTY 2021 claim, and FPFTY 2022 claim for each type of compensation (broken down by union and non-union).
- E. Breakdown of incentive compensation by financial results, safety results, and qualitative results by year for: 2018, 2019, HTY 2020, 2021 YTD, 2021 FTY claim, and FPFTY 2022 claim for each type of compensation and (broken down by union and non-union).
- F. For Parts C, D, and E, if incentive compensation is not directly incurred by the Company, provide a detailed explanation and supporting documentation, including but not limited to calculations used to determine incentive compensation allocated to the Company for all time periods above.
- G. Provide the yearly budgeted and actual amounts for incentive compensation by year for 2018, 2019, and 2020.
- H. State whether the Company is making a claim for capitalized incentive compensation in its revenue requirement.

Response:

- A. The Company notes that this response including I&E-RE-8-D - Attachment 1 and I&E-RE-8-D - Attachment 2 are HIGHLY CONFIDENTIAL and will be provided to the statutory parties consistent with the Stipulated Protective Agreement.

Please see attached, HIGHLY CONFIDENTIAL - I&E-RE-8-D - Attachment 1, for a copy of the Company's short term incentive plan, maintained as HIGHLY CONFIDENTIAL.

Please see attached, HIGHLY CONFIDENTIAL - I&E-RE-8-D - Attachment 2, for a copy of the Company's long term incentive plan, maintained as HIGHLY CONFIDENTIAL.

- B. Please see HIGHLY CONFIDENTIAL - I&E-RE-8-D - Attachment 1 and HIGHLY CONFIDENTIAL - I&E-RE-8-D - Attachment 2 for a description of each plan's criteria for eligibility and goals to be met for payout.
- C. The Company does not prepare its budget by specific FERC account. The Company's budgeting process is described within the direct testimony of Jaime Bachota (page 10, lines 17-23 and page 11, lines 1-9).

...the Company "typically prepare the budget for Duquesne Light by cost element detail as this level of detail enhances the review by our cost center managers and assists them in estimating their expenses for budgeting purposes. To satisfy the requirements for this rate filing, our cost element budget was allocated to FERC accounts. Certain cost element budget amounts could be specifically assigned to certain FERC accounts as they are easily identifiable to those accounts. For other cost element budget amounts, an allocation to FERC accounts was performed based on the same percentage to the total as the actual costs for fiscal year 2020 operating and maintenance expenditures, which were reported by both cost element and FERC account. Once this allocation was performed, the results were reviewed to ensure they appeared reasonable and adjustments were made as necessary to reflect expected variances."

This process is more fully described in the testimony of Mr. Robert O'Brien (DLC Statement No. 10, pages 4-5, 8, 33-35) which states as follows:

"the base data for the FPFTY in DLC Exhibit 2 were derived, for the most part, from Duquesne Light's capital and operating forecasts for the twelve months ended December 31, 2022; the corresponding data for the FTY in DLC Exhibit 3 were taken from Duquesne Light's budgets, books and records for the year ended December 31, 2021; and finally, the data for the HTY in DLC Exhibit 4 from the actual data for the year ended December 31, 2020."

"The pro forma FPFTY expenses were calculated using Duquesne Light's forecast for the twelve months ended December 31, 2022 as a starting point. Those expenses, which were prepared based on business activities and related cost elements such as payroll, employee benefits, etc.,

were distributed to FERC accounts using the distribution of expenses actually experienced by the Company during the year ended December 31, 2020. Adjustments were then made to the forecast data including annualization and normalization adjustments in accordance with established Commission ratemaking practices. These adjustments are summarized on DLC Exhibit 2, Schedule D-3 pages 1 and 2 and are described in connection with the specific schedules included in DLC Exhibit 2. Each pro forma adjustment was then included in the appropriate FERC account(s).”

“The recorded FERC balances for the 12 months ended December 31, 2020 were analyzed to develop a chart showing charges for each cost element within each FERC account. After this process was completed, I then distributed the forecasted FPFTY charges by cost elements to the FERC accounts using the ratios experienced in 2020. For example, I determined how much of the payroll cost center expense in 2020 was charged to each FERC account in 2020 and then distributed the FPFTY forecasted payroll to FERC accounts based on those ratios. This process was used for each cost element category to transform the total FPFTY expense by cost element forecast to a FERC account-based forecast.”

“Exhibit RLO-1 to my testimony shows expenses by Cost Element for the years 2016 through the FPFTY. The total expenses for the FPFTY are shown in column 7 in the amount of \$261.807 million on line 49. From this total amount, the expenses recovered by surcharge (column 8) in the amount of \$28.631 million; the expenses charged below-the-line (column 9) in the amount of \$3.919 million are removed leaving a net expense for the FPFTY of \$229.257 million as shown on line 49 in column 10. The amount of each Cost Element is distributed to FERC accounts and therefore, the amount in column 10, after the removal of the expenses recovered through surcharges and the expenses charged below-the-line, is included in the FPFTY expenses. A similar procedure was used for the FTY and HTY as reflected on Exhibits RLO-3 and RLO-4 to my testimony which will be described later in my testimony.”

The allocation of FPFTY projected costs to FERC accounts is used solely to conduct the separation and class cost of service studies. Incentive costs are budgeted in Cost Element 15 of the DLC Exhibit RLO-1.

D. The Company provides incentive compensation to its non-union employees only. See below for a breakout of the amounts expensed and the amounts capitalized by year.

Amounts in 000's

	2018	2019	2020	2021 March YTD	2021	2022
STIP Expense	\$4,887	\$3,779	\$5,484	\$1,734	\$6,249	\$6,462
STIP Capital	1,587	2,053	2,747	615	2,950	3,025
LTIP Expense	2,134	3,452	2,227	1,044	4,175	4,190
	\$8,607	\$9,284	\$10,458	\$3,394	\$13,373	\$13,677

E. As stated above, the Company provides incentive compensation to its non-union employees only. See below for a breakdown of incentive compensation by financial results, safety results, and qualitative results by year.

	2018	2019	2020	2021 March YTD	2021	2022
EBTIDA	2,680,063	2,007,225	1,816,430	892,698	2,428,232	2,504,839
KPI Total	739,662	No Payout	1,024,088	246,373	1,839,635	1,897,329
SAIDI (2018-2019)	No Payout	No Payout	n/a	n/a	n/a	n/a
Safety LTA (2018-2019)	No Payout	No Payout	n/a	n/a	n/a	n/a
Customer Satisfaction (2018-2019)	369,831	No Payout	n/a	n/a	n/a	n/a
PMVA's (2018)	369,831	n/a	n/a	n/a	n/a	n/a
Safety Index	n/a	n/a	413,543	130,203	919,818	948,664
CSAT	n/a	n/a	610,545	192,229	459,909	474,332
CAIDI	n/a	n/a	No Payout	No Payout	459,909	474,332
Individual	3,634,776	4,415,957	4,622,684	1,210,702	4,930,309	5,084,477
Total per HR	7,054,502	6,423,182	7,463,202	2,349,773	9,198,176	9,486,644
Total STIP:	6,473,237	5,832,347	8,231,033	2,349,773	9,198,176	9,486,644
Total LTIP:	2,134,164	3,451,514	2,226,779	1,043,790	4,175,157	4,190,000
TOTAL CE 15 (Cap/Expense):	8,607,401	9,283,861	10,457,812	3,393,563	13,373,333	13,676,644

No Payout - Indicates that the Company did not achieve the target for payout

N/A - Indicates that the respective KPI was not a target under the respective STIP plan

The entire amount of LTIP incentive compensation is based upon financial results.

F. All incentive compensation is incurred by the Company, as such this is not applicable.

G. Please see I&E-RE-30-D – Attachment 1, I&E-RE-30-D – Attachment 2 and I&E-RE-30-D – Attachment 3 for the budgeted and actual amounts for incentive compensation.

H. The Company is making a claim for capitalized incentive compensation in its revenue requirement.

Interrogatories of the
Office of Consumer Advocate

Set VI

Witness: Jaime Bachota

OCA-VI-70

70. Please provide a detailed breakdown of the incentive compensation in the HTY, FTY and FPFTY, and explain the increases in this expense from the HTY to the FTY and FPFTY.

Response:

Please refer to I&E-RE-8-D for a detailed breakdown of the incentive compensation in the HTY, FTY and FPFTY.

The base HTY, FTY and FPFTY cost element 15 amounts and year over year increases per Exhibit RLO-1 are as follows:

Amounts in 000's

	<u>2020</u>	<u>2021</u>	<u>2022</u>
CE 15 - Incentive Compensation	7,711	10,424	10,652
<i>Year over year increase</i>		35.2%	2.2%

From the HTY to the FTY, cost element 15 expenses are expected to increase approximately 35%. This increase is driven by a number of factors. First of all, given turnover in executive management, a number of new executives were hired in 2020 and were not eligible for the Company's Long Term Incentive Program ('LTIP'). Accordingly, the Company's LTIP expenses was lower in 2020. In addition, during 2020, as illustrated by IE-RE-8-D, the Company did not achieve all of its performance metrics in 2020, therefore reducing the Company's incentive expenses. These expenses described above are budgeted for in 2021, thus increasing the FTY amount.

From the FTY to the FPFTY the increase is primarily driven by employee salary increases.

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-30-D

30. Reference DLC Exhibit 2, Schedule B-4 concerning operating and maintenance expenses, provide a schedule in similar detailed format (showing all account number level detail) comparing yearly budget to actual numbers for:

- A. 2018;
- B. 2019;
- C. 2020; and
- D. Explain any budget variances of 10% or more.

Response:

The Company does not prepare its budget by specific FERC account. The allocation of FPFTY projected costs to FERC accounts is used solely to conduct the separation and class cost of service studies. The Company's budgeting process is described within the direct testimony of Jaime Bachota (page 10, lines 17-23 and page 11, lines 1-9) and Robert L. O'Brien (pages 4-5, 8, 33-35). See also I&E-RE-8-D.

Please find schedule showing 2018, 2019 and 2020 cost element comparison of yearly budget to actual numbers at "I&E-RE-30-D – Attachment 1", "I&E-RE-30-D – Attachment 2" and "I&E-RE-30-D – Attachment 3", respectively. The Company has provided explanations for any budget variances of 10% or more within each respective attachment.

2018 Actual vs. Budget
 Amounts in 000's

I&E-RE-30-D - Attachment 1

COST ELEMENT	COST ELEMENT DESCRIPTION	ACTUAL	BUDGET	FAV / (UNFAV) \$ VARIANCE	% Variance	COMMENTS
10	STRAIGHT-TIME LABOR	\$ 57,715	\$ 70,575	\$ 12,860	18.2%	The Company budgets all of employees salaries in cost element 10. When an employee takes vacation / sick leave, their actual charges are recorded to cost element 12. The combination of these two cost elements, results in a 1.0% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
11	OVERTIME LABOR	8,302	5,310	(2,992)	-56.3%	Variance is attributable to higher than anticipated storm activity and the use of overtime to cover vacant roles.
12	PAID FOR TIME NOT WORKED	9,548	(2,623)	(12,171)	464.0%	The Company budgets all of employees salaries in cost element 10. When an employee takes vacation / sick leave, their actual charges are recorded to cost element 12. The combination of these two cost elements, results in a 1.0% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
14	BUILDING RENTS	3,661	3,728	67	1.8%	As the variance is less than 10% threshold, no explanation required.
15	INCENTIVE COMPENSATION	7,004	7,782	778	10.0%	The Company's Incentive Plan was adjusted to reflect actual results in which the Company did not achieve payout for the SAIDI and LTA metrics.
20	STORES ISSUES AND RETURNS	2,247	-	(2,247)	-100.0%	The Company budgets all materials in cost element 23 but actual charges are recorded in cost elements 20 and 23. When materials are taken from inventory (vs buying directly), the Company charges cost element 20. The combination of these two cost elements, results in a 9.1% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
23	MATERIALS PURCHASED	2,060	4,738	2,678	56.5%	The Company budgets all materials in cost element 23 but actual charges are recorded in cost elements 20 and 23. When materials are taken from inventory (vs buying directly), the Company charges cost element 20. The combination of these two cost elements, results in a 9.1% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
24	UTILITIES	2,101	2,004	(98)	-4.9%	As the variance is less than 10% threshold, no explanation required.
30	TRANSPORTATION/WORK EQUIPMENT	2,515	2,612	96	3.7%	As the variance is less than 10% threshold, no explanation required.
40	TELEPHONE CHARGES	1,888	1,883	(5)	-0.2%	As the variance is less than 10% threshold, no explanation required.
42	OTHER LEASES	106	-	(106)	-100.0%	The variance is a result of bucket truck rentals needed to inspect conductors.
43	SOFTWARE LEASES	5,478	5,281	(197)	-3.7%	As the variance is less than 10% threshold, no explanation required.
44	INSURANCE	5,655	5,837	182	3.1%	As the variance is less than 10% threshold, no explanation required.
45	MOBILE PHONE / PAGER COSTS	1,466	1,568	102	6.5%	As the variance is less than 10% threshold, no explanation required.
49	REGULATORY ASSESSMENT & FEES	2,851	3,037	185	6.1%	As the variance is less than 10% threshold, no explanation required.
50	MISCELLANEOUS EMPLOYEE BENEFITS	10,990	13,702	2,712	19.8%	Variance related to lower than budgeted medical claims experienced by the Company in 2018 as well as favorable capital/expense splits versus budget.
51	EMPLOYEE EXPENSES	2,298	2,324	26	1.1%	As the variance is less than 10% threshold, no explanation required.
53	SURCHARGE REVENUE OFFSET	58,580	34,277	(24,303)	-70.9%	Cost elements 53 and 66 are used solely to make surcharge costs and revenues earnings neutral. In 2018, Energy Efficiency and Universal Services were higher than budgeted.
54	POLE ATTACHMENT FEES	1,770	1,760	(10)	-0.6%	As the variance is less than 10% threshold, no explanation required.
55	FIBER LEASE & SONET NETWORK - DQE COMM	3,545	4,033	488	12.1%	Lower than budgeted expenses driven by slower than forecasted completion of the SCADA project.
56	DATA COM SERVICE FEES	1,917	1,918	0	0.0%	As the variance is less than 10% threshold, no explanation required.
57	OUTSIDE ENGINEERING SERVICES	383	419	36	8.6%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a -11.2% variance vs. budget. The unfavorability is driven by a combination of items, the largest being change management costs associated with key capital information technology projects implemented in 2018.
58	HARDWARE/SOFTWARE MAINTENANCE	9,487	8,871	(617)	-7.0%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a -11.2% variance vs. budget. The unfavorability is driven by a combination of items, the largest being change management costs associated with key capital information technology projects implemented in 2018.
59	PROFESSIONAL SERVICES	71,260	63,681	(7,579)	-11.9%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a -11.2% variance vs. budget. The unfavorability is driven by a combination of items, the largest being change management costs associated with key capital information technology projects implemented in 2018.
60	PENSION COSTS	18,596	18,600	4	0.0%	As the variance is less than 10% threshold, no explanation required.
61	TRANS LINE & MICRO RENTS	(1,627)	-	1,627	-100.0%	The Company does not budget for costs associated with PJM assessed ancillary service charges.
65	UNCOLLECTIBLE ACCOUNTS	14,449	12,236	(2,212)	-18.1%	The increase in bad debt expense is due to increased participation and related expense in the Company's Universal Services Rider.
66	DEFERRED COST	(55,416)	(31,120)	24,296	-78.1%	Cost elements 53 and 66 are used solely to make surcharge costs and revenues earnings neutral. In 2018, Energy Efficiency and Universal Services were higher than budgeted.
67	CUSTOMER REIMBURSEMENTS	(990)	(917)	73	-8.0%	As the variance is less than 10% threshold, no explanation required.
70	SOC SEC & UNEMPLOYMENT TAXES	9	-	(9)	-100.0%	imm
71	TEMPORARY LABOR	(20)	-	20	-100.0%	Variance is the result of temporary positions utilized in the Customer Service department during 2020 related to special projects and timing of vacancies.
72	MAILING COSTS	4	14	9	67.4%	The variance is a result of decreased mailings.
75	MEMBERSHIP DUES	961	877	(84)	-9.6%	As the variance is less than 10% threshold, no explanation required.
76	BUSINESS MEALS	93	365	272	74.5%	The Company was favorable to budget due to decreased meal spend.
88	SUBSIDIARY REIMBURSEMENTS	(2,699)	(2,330)	369	-15.8%	The variance is primarily attributable to increased allocation of time to unregulated businesses driven by special projects.
99	MISCELLANEOUS	(4,555)	-	4,555	-100.0%	The Company does not budget for miscellaneous expenses. The Company records accounting adjustments in cost element 99. Credit in 2018 primarily relates to the deferral of cloud accounting costs in adherence with settlement agreement.
	TOTAL	241,634	240,438	(1,196)	-0.5%	

COST ELEMENT	COST ELEMENT DESCRIPTION	ACTUAL	BUDGET	FAV / (UNFAV) \$ VARIANCE	% Variance	COMMENTS
10	STRAIGHT-TIME LABOR	\$ 62,496	\$ 76,679	\$ 14,183	18.5%	The Company budgets all of employees salaries in cost element 10. When an employee takes vacation / sick leave, their actual charges are recorded to cost element 12. The combination of these two cost elements, results in a -0.5% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
11	OVERTIME LABOR	8,155	5,264	(2,891)	-54.9%	Variance is attributable to higher than anticipated storm activity, blue sky restoration efforts, and the use of overtime to cover vacant roles.
12	PAID FOR TIME NOT WORKED	10,512	(4,053)	(14,564)	359.4%	The Company budgets all of employees salaries in cost element 10. When an employee takes vacation / sick leave, their actual charges are recorded to cost element 12. The combination of these two cost elements, results in a -0.5% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
14	BUILDING RENTS	3,870	3,758	(112)	-3.0%	As the variance is less than 10% threshold, no explanation required.
15	INCENTIVE COMPENSATION	7,222	8,463	1,240	14.7%	The Company's incentive plans were adjusted to reflect actual results. During 2019, the Company was not paid out for any of the KPI's on which performance was based (SAIDI, Customer Satisfaction or LTA).
20	STORES ISSUES AND RETURNS	1,634	-	(1,634)	-100.0%	The Company budgets all materials in cost element 23 but actual charges are recorded in cost elements 20 and 23. When materials are taken from inventory (vs buying directly), the Company charges cost element 20. The net favorability of these two cost elements is due to higher use of capital materials than historical.
23	MATERIALS PURCHASED	2,294	4,775	2,481	52.0%	The Company budgets all materials in cost element 23 but actual charges are recorded in cost elements 20 and 23. When materials are taken from inventory (vs buying directly), the Company charges cost element 20. The net favorability of these two cost elements is due to higher use of capital materials than historical.
24	UTILITIES	2,053	1,966	(88)	-4.5%	As the variance is less than 10% threshold, no explanation required.
30	TRANSPORTATION/WORK EQUIPMENT	2,801	2,600	(201)	-7.7%	As the variance is less than 10% threshold, no explanation required.
40	TELEPHONE CHARGES	1,667	1,688	21	1.2%	As the variance is less than 10% threshold, no explanation required.
42	OTHER LEASES	(1)	-	1	-100.0%	Credit balance driven by a true up of prior year accruals.
43	SOFTWARE LEASES	6,498	5,596	(902)	-16.1%	Variance is the result of increases to software leases during the year for upgrades to the Company's technology.
44	INSURANCE	5,735	5,952	217	3.6%	As the variance is less than 10% threshold, no explanation required.
45	MOBILE PHONE / PAGER COSTS	1,708	1,299	(409)	-31.4%	The unfavorability is driven by the timing and delays in the shut down of prior metering communication devices once AMI was fully implemented.
49	REGULATORY ASSESSMENT & FEES	2,760	3,037	277	9.1%	As the variance is less than 10% threshold, no explanation required.
50	MISCELLANEOUS EMPLOYEE BENEFITS	9,497	11,167	1,670	15.0%	Variance is related to lower than budgeted medical claims experienced by the Company in 2019
51	EMPLOYEE EXPENSES	2,942	3,293	351	10.7%	The Company was favorable to budget due to trainings and conferences associated with the SCADA system.
53	SURCHARGE REVENUE OFFSET	52,598	48,929	(3,669)	-7.5%	As the variance is less than 10% threshold, no explanation required.
54	POLE ATTACHMENT FEES	1,761	1,760	(1)	0.0%	As the variance is less than 10% threshold, no explanation required.
55	FIBER LEASE & SONET NETWORK - DQE COMM	3,941	3,631	(310)	-8.5%	As the variance is less than 10% threshold, no explanation required.
56	DATA COM SERVICE FEES	117	958	841	87.7%	Variance is driven by reduced usage of the Datacom network driven by the implementation of the AMI system.
57	OUTSIDE ENGINEERING SERVICES	38	355	317	89.4%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a 11.6% variance vs. budget. The favorability is driven by a combination of items, the largest being ADMS underspend associated with a delay in timing of the electrical model, delayed tower inspections and decreased utilization of outside legal counsel.
58	HARDWARE/SOFTWARE MAINTENANCE	11,450	12,278	828	6.7%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a 11.6% variance vs. budget. The favorability is driven by a combination of items, the largest being ADMS underspend associated with a delay in timing of the electrical model, delayed tower inspections and decreased utilization of outside legal counsel.
59	PROFESSIONAL SERVICES	74,281	84,400	10,118	12.0%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a 11.6% variance vs. budget. The favorability is driven by a combination of items, the largest being ADMS underspend associated with a delay in timing of the electrical model, delayed tower inspections and decreased utilization of outside legal counsel.
60	PENSION COSTS	5,000	5,000	0	0.0%	As the variance is less than 10% threshold, no explanation required.
61	TRANS LINE & MICRO RENTS	(3,080)	-	3,080	-100.0%	The Company does not budget for costs associated with PJM assessed ancillary service charges.
65	UNCOLLECTIBLE ACCOUNTS	10,504	11,236	732	6.5%	As the variance is less than 10% threshold, no explanation required.
66	DEFERRED COST	(55,980)	(56,464)	(484)	0.9%	As the variance is less than 10% threshold, no explanation required.
67	CUSTOMER REIMBURSEMENTS	(812)	(2,330)	(1,518)	65.2%	Variance is related to a decrease in assumed Third Party Attachment reimbursements tied to the delay in the completion of the electrical model.
71	TEMPORARY LABOR	82	-	(82)	-100.0%	Variance is the result of temporary positions utilized in the Finance and Communications departments related to special projects and timing of vacancies.
72	MAILING COSTS	24	16	(8)	-52.0%	The variance is a result of increased mailings.
75	MEMBERSHIP DUES	1,013	1,103	89	8.1%	As the variance is less than 10% threshold, no explanation required.
76	BUSINESS MEALS	179	220	42	18.8%	The Company was favorable to budget due to decreased meal spend primarily due to decreased trainings..
88	SUBSIDIARY REIMBURSEMENTS	(3,416)	(2,191)	1,226	-56.0%	The variance is primarily attributable to increased allocation of outside costs and internal time to unregulated businesses driven by special projects.
99	MISCELLANEOUS	1,202	-	(1,202)	-100.0%	Variance driven by various adjustments to the legal reserve, cash, accounts receivable, etc.
	TOTAL	230,745	240,386	9,641	4.0%	

2020 Actual vs. Budget
Amounts in 000's

I&E-RE-30-D - Attachment 3

COST ELEMENT	COST ELEMENT DESCRIPTION	ACTUAL	BUDGET	FAV / (UNFAV) \$ VARIANCE	% Variance	COMMENTS
10	STRAIGHT-TIME LABOR	\$ 64,960	\$ 83,059	\$ 18,099	21.8%	The Company budgets all of employees salaries in cost element 10. When an employee takes vacation / sick leave, their actual charges are recorded to cost element 12. The combination of these two cost elements, results in a 0.5% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
11	OVERTIME LABOR	9,528	5,347	(4,182)	-78.2%	Variance is attributable to increased overtime needed in Operations to cover vacant shifts as well as overtime due to COVID-19 driven by increased travel time to job site and social distancing/employee redundancy measures.
12	PAID FOR TIME NOT WORKED	13,651	(4,079)	(17,730)	434.7%	The Company budgets all of employees salaries in cost element 10. When an employee takes vacation / sick leave, their actual charges are recorded to cost element 12. The combination of these two cost elements, results in a 0.5% variance vs budget. As the total variance in these combined cost elements is less than the 10% threshold, no explanation required.
14	BUILDING RENTS	3,698	3,881	183	-4.7%	As the variance is less than 10% threshold, no explanation required.
15	INCENTIVE COMPENSATION	7,702	8,736	1,034	11.8%	The Company's 2020 incentive expense was lower than budget due to the Company not achieving its EBITDA and safety index target for the year.
20	STORES ISSUES AND RETURNS	3,070	-	(3,070)	-100.0%	The Company budgets all materials in cost element 23 but actual charges are recorded in cost elements 20 and 23. When materials are taken from inventory (vs buying directly), the Company charges cost element 20. The net favorability of these two cost elements is due to lower usage of expense materials than historically utilized.
23	MATERIALS PURCHASED	413	4,248	3,836	90.3%	The Company budgets all materials in cost element 23 but actual charges are recorded in cost elements 20 and 23. When materials are taken from inventory (vs buying directly), the Company charges cost element 20. The net favorability of these two cost elements is due to lower usage of expense materials than historically utilized.
24	UTILITIES	1,531	2,050	518	25.3%	The Company's utilities were favorable to budget due to office based employees working from home the majority of the year driven by the COVID-19 pandemic.
25	PURCHASED POWER RECEIPTS	0	-	(0)	0.0%	As the variance is less than 10% threshold, no explanation required.
30	TRANSPORTATION/WORK EQUIPMENT	2,838	2,654	(184)	-6.9%	As the variance is less than 10% threshold, no explanation required.
40	TELEPHONE CHARGES	1,412	1,263	(149)	-11.8%	Variance driven by higher call center costs and additional expenses related to the COVID-19 pandemic which allowed the Company to transition to a work from home model.
42	OTHER LEASES	215	-	(215)	-100.0%	The Company was unfavorable to budget due to trailer and generator rentals needed to adhere to COVID-19 social distancing guidelines.
43	SOFTWARE LEASES	7,504	6,780	(724)	-10.7%	Variance is the result of increases to numerous software leases during the year for upgrades to the Company's technology.
44	INSURANCE	5,604	6,122	517	8.5%	As the variance is less than 10% threshold, no explanation required.
45	MOBILE PHONE / PAGER COSTS	1,644	1,266	(378)	-29.9%	Variance is driven by unplanned upgrades to SCADA devices, which were performed 'over the air', which is slightly more expensive than other options. as a result of unplanned upgrades.
47	CLEARING ALLOCATIONS	0	-	(0)	0.0%	As the variance is less than 10% threshold, no explanation required.
49	REGULATORY ASSESSMENT & FEES	3,076	2,899	(178)	-6.1%	As the variance is less than 10% threshold, no explanation required.
50	MISCELLANEOUS EMPLOYEE BENEFITS	10,863	13,098	2,235	17.1%	Variance is related to lower than budgeted medical claims experienced by the Company in 2020 as well as pharmacy credits received as the Company transitioned to a sole prescription provider.
51	EMPLOYEE EXPENSES	1,576	3,036	1,460	48.1%	The Company was favorable to budget due to COVID-19 restrictions, office based employees working from home and the inability to attend trainings and conferences due to the pandemic.
53	SURCHARGE REVENUE OFFSET	58,071	55,398	(2,673)	-4.8%	As the variance is less than 10% threshold, no explanation required.
54	POLE ATTACHMENT FEES	1,746	1,760	14	0.8%	As the variance is less than 10% threshold, no explanation required.
55	FIBER LEASE & SONET NETWORK - DQE COMM	3,941	4,063	122	3.0%	As the variance is less than 10% threshold, no explanation required.
57	OUTSIDE ENGINEERING SERVICES	161	235	74	31.6%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a 3.8% variance vs. budget. As the variance is less than 10% threshold, no explanation required.
58	HARDWARE/SOFTWARE MAINTENANCE	11,845	12,269	425	3.5%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a 3.8% variance vs. budget. As the variance is less than 10% threshold, no explanation required.
59	PROFESSIONAL SERVICES	69,570	72,200	2,630	3.6%	Cost elements 57, 58 and 59 represent total outside services incurred by the Company in any given year. The Company analyzes these cost elements together when reviewing results. The combination of these cost elements results in a 3.8% variance vs. budget. As the variance is less than 10% threshold, no explanation required.
60	PENSION COSTS	4,988	5,000	12	0.2%	As the variance is less than 10% threshold, no explanation required.
61	TRANS LINE & MICRO RENTS	2,512	-	(2,512)	-100.0%	The Company does not budget for costs associated with PJM assessed ancillary service charges.
65	UNCOLLECTIBLE ACCOUNTS	17,479	13,702	(3,777)	-27.6%	The Company's unfavorable bad debt expense is a result of increases in delinquencies as customers struggled to pay their bills as a result of the COVID-19 pandemic.
66	DEFERRED COST	(59,995)	(57,467)	2,528	-4.4%	As the variance is less than 10% threshold, no explanation required.
67	CUSTOMER REIMBURSEMENTS	(1,007)	(682)	325	-47.6%	Variance is related to an increase in damage claims.
71	TEMPORARY LABOR	152	-	(152)	-100.0%	Variance is the result of temporary positions utilized in the Operations for ADMS and in the Finance and Customer Service departments during 2020 related to special projects and timing of vacancies.
72	MAILING COSTS	3,456	2,967	(489)	-16.5%	The variance is a result of mailing costs budgeted in professional services expenses and also unfavorability due to mailings regarding the COVID-19 pandemic.
75	MEMBERSHIP DUES	1,284	1,128	(156)	-13.8%	Variance is due to additional memberships that were not budgeted for the Innovation and Business Development teams.
76	BUSINESS MEALS	143	232	89	38.2%	The Company was favorable to budget due to COVID-19 restrictions and office based employees working from home.
80	ALLOCATION CONSTRCTN INDIRECTS	(0)	-	0	0.0%	As the variance is less than 10% threshold, no explanation required.
88	SUBSIDIARY REIMBURSEMENTS	(4,071)	(3,933)	139	-3.5%	As the variance is less than 10% threshold, no explanation required.
90	AFUDC	0	-	(0)	0.0%	As the variance is less than 10% threshold, no explanation required.
91	AFUDC EQUITY	0	-	(0)	0.0%	As the variance is less than 10% threshold, no explanation required.
	TOTAL	249,559	247,231	(2,328)	-0.9%	

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-14-D

14. Reference the DLC Statement No. 2, pp. 27-28, regarding health insurance. Provide the following:

- A. Provide a detailed breakdown of health insurance costs by category by year for 2018, 2019, HTY 2020, FTY 2021 claim, and FPFTY 2022 claim.
- B. Breakdown of the number of employees participating in the Company's health insurance plan by union and non-union and by category of operating expense for the years 2018, 2019, HTY 2020, FTY 2021 claim, and FPFTY 2022 claim.
- C. Total amount of wages attributable to employees participating in the Company's health insurance plan broken down by union and non-union and by category of operating expense, by year for 2018, 2019, HTY 2020, FTY 2021 claim, and FPFTY 2022 claim.
- D. In determining the FTY and FPFTY claims for health insurance, provide the following information relied upon by DLC concerning:
 - 1. Changes in employee contribution levels.
 - 2. Changes in the number of eligible employees.
- E. State whether the costs associated with DLC's stop loss coverage is included in the health insurance costs provided in response to Part A.
- F. If the response to Part E is no, identify the account name(s) where DLC's stop loss coverage in Part E is reflected in DLC Exhibit 6-1.
- G. Provide a copy of all stop loss insurance policies for DLC's health insurance plan.
- H. Provide yearly costs associated with DLC's stop loss insurance for its health insurance plan for 2018, 2019, HTY 2020, FTY 2021, and FPFTY 2022.
- I. In response to Part E, provide supporting documentation for DLC's estimate for stop loss insurance for the FTY and FPFTY.

J. State the designated level(s) the stop loss insurance for DLC's health insurance plan covers.

K. State the amount by which DLC has exceeded any of the designated level(s) in its stop loss insurance policy for 2018, 2019, and HTY 2020.

Response:

The Company does not prepare its budget by specific FERC account. The Company's budgeting process is described within the direct testimony of Jaime Bachota (page 10, lines 17-23 and page 11, lines 1-9) and Robert L. O'Brien (pages 4-5, 8, 33-35). See also I&E-RE-8-D.

A. A detailed breakdown of the health insurance costs by category by year is provided below:

Amounts in 000's					
	2018	2019	2020	2021 FTY	2022 FPFTY
Total					
Claims	15,545	16,174	15,333	17,574	18,720
Stop Loss Premium	801	796	911	909	927
Stop Loss Payments Rec'd	(150)	(595)	(509)	(300)	(300)
Employee Contributions	(2,953)	(3,165)	(3,006)	(3,664)	(3,894)
Health Savings Acct Contributions	279	303	552	600	606
Fees/Other	1,029	1,535	744	909	964
Total	14,551	15,048	14,025	16,028	17,022

B. A detailed breakdown of the number of employees participating in the Company's health insurance plan is below:

Participants	2018	2019	2020	2021 FTY	2022 FPFTY
Union	744	729	722	713	720
Non-Union	621	663	709	700	707
Total	1,365	1,392	1,431	1,414	1,428

C. A detailed breakdown of the total amount of wages attributable to employees participating in the Company's health insurance plan is below:

Amounts in 000's					
Wages	2018	2019	2020	2021 FTY	2022 FPFTY
Union	84,837	82,376	91,970	See Note	See Note
Non-Union	66,707	70,182	75,519	See Note	See Note
Total	151,544	152,558	167,489	-	-

The Company does not budget its health insurance costs utilizing wages for enrolled employees and as such is unable to provide amounts for the FTY 2021 claim and FPFTY 2022 claim. Please refer to the direct testimony of Jaime Bachota (page 19, lines 21 – 23 and page 20, lines 1 – 5 and page 28, lines 4-8)

“...common benefit programs are provided to employees of Duquesne Light and its affiliates. Therefore, the initial step is determining the total cost expected to be incurred. The Human Resources department reviews each of the health coverage plan costs for the current year and then the budget is developed taking into consideration the present number of eligible employees, projected changes in the numbers of eligible employees, anticipated changes in employee contribution levels and estimated cost increases...”

“... Duquesne Light is self-insured for its employee medical coverage, which is under national Preferred Provider Organizations (“PPO”) arrangements. The budget estimates are developed based on the previous year’s claim costs with adjustments for anticipated changes in the number of eligible employees, employee contribution levels and cost increases based on healthcare industry outlook...”

D. To budget for the FTY and FPFTY health insurance costs:

1. The Company assumes that changes to employee contribution levels are in line with industry medical cost trends as provided by Willis Towers Watson (“WTW”), the Company’s third party benefits advisor. On an annual basis WTW performs an industry benchmarking review which projects the medical cost inflation utilized within the budget.
2. The Company assumes changes in the number of eligible employees based on a comparison of the current active vs budgeted headcount throughout the budgeting process.

E. The costs associated with DLC’s stop loss coverage are included in the health insurance costs as represented above.

F. Not applicable per the answer to part E.

G. Please refer to the attachments for a copy of the 2018 – 2021 stop loss insurance policies for the Company. The stop loss insurance is renewed annually during the third quarter with the assistance of our third party benefits advisor after reviewing medical trends, premium costs and the availability of coverage. As such, the FPFTY policy is not up for renewal until Q3 2021 and costs have been estimated based on the historical premiums paid, number of eligible employees and expected inflation.

- I&E-RE-14-D – Attachment 1 – 2018 Stop Loss Policy
- I&E-RE-14-D – Attachment 2 – 2019 Stop Loss Policy
- I&E-RE-14-D - Attachment 3 – 2020 Stop Loss Policy
- I&E-RE-14-D – Attachment 4 – 2021 Stop Loss Policy

- H. Refer to part A, 'Stop Loss Premium' for the yearly costs associated with DLC's stop loss insurance.
- I. The stop loss projections for the FTY and FPFTY in part A were arrived at by multiplying our anticipated active participating employee levels by projected premium costs. Premium costs were estimated based on input and guidance from our third party benefits advisor.
- J. Please refer to the attached files as referenced in part G for a detail of the designated level(s) the stop loss insurance plan covers.
- K. Refer to part A, 'Stop Loss Payments Rec'd' for the yearly amounts by which the Company has exceeded the designated levels.

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-9-D

9. Reference DLC Statement No. 2, p. 27, lines 10-23 and DLC Exhibit RLO-1 concerning employee benefits. Provide a breakdown of employee benefits expensed and capitalized by year for 2018, 2019, 2020, 2021 YTD, 2021 FTY claim, and FPFTY 2022 claim for each type of benefit and (broken down by union and non-union).

Response:

Please see the detailed breakdown of employee benefits expensed and capitalized by year below.

Amounts in 000's

<u>Expense</u>	2018	2019	2020	2021 FTY	2022 FPFTY	2021 Mar YTD
Medical	6,197	6,636	5,657	7,402	8,118	2,242
OPEB	1,309	(617)	(617)	(617)	(299)	(154)
401k	2,504	2,859	4,878	5,802	6,345	1,398
Wellness/Other	154	449	259	664	670	133
Pension	18,600	5,000	5,000	3,374	6,004	841
Workers Comp	823	170	687	530	541	133
Total	29,587	14,497	15,863	17,155	21,379	4,592
Capital	2018	2019	2020	2021 FTY	2022 FPFTY	2021 Mar YTD
Medical	8,354	8,412	8,368	8,625	8,903	2,139
OPEB	150	150	150	207	207	52
401k	2,813	2,928	4,996	5,996	6,578	1,499
Wellness/Other	576	436	570	505	512	83
Pension	11,364	7,891	10,029	6,814	2,321	1,567
Workers Comp	682	111	769	569	580	137
Total	23,938	19,928	24,882	22,716	19,101	5,476
Total	2018	2019	2020	2021 FTY	2022 FPFTY	2021 Mar YTD
Medical	14,551	15,048	14,025	16,028	17,022	4,381
OPEB	1,459	(467)	(467)	(410)	(92)	(103)
401k	5,317	5,787	9,873	11,798	12,923	2,897
Wellness/Other	730	886	829	1,168	1,182	216
Pension	29,964	12,891	15,029	10,188	8,325	2,408
Workers Comp	1,504	280	1,456	1,099	1,121	269
Total	53,525	34,425	40,745	39,871	40,480	10,068

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-13-D

13. Reference the DLC Statement No. 2, pp. 28-35, regarding pensions. Provide the following:

- A. Breakdown of the number of employees participating in the Company's 401K plan by union and non-union and by category of operating expense for the years 2018, 2019, HTY 2020, the FTY 2021 claim, and FPFTY 2022 claim.
- B. Total amount of wages attributable to employees participating in the Company's 401K broken down by union and non-union and by category of operating expense, by year for 2018, 2019, HTY 2020, FTY 2021 claim, and FPFTY 2022 claim.
- C. State whether the Company is making a claim for capitalized 401K payments in rate base.

Response:

The Company does not prepare its budget by specific FERC account. The Company's budgeting process is described within the direct testimony of Jaime Bachota (page 10, lines 17-23 and page 11, lines 1-9) and Robert L. O'Brien (pages 4-5, 8, 33-35). See also I&E-RE-8-D.

The allocation of FPFTY projected costs to FERC accounts is used solely to conduct the separation and class cost of service studies. These costs associated with the 401(k) plan are recorded in cost element 50. See breakout of costs at I&E-RE-9-D.

- A. A breakdown of the number of employees participating in the Company's 401(k) plan by union and non-union is presented below:

<u>Participants</u>	2018	2019	2020	2021 FTY	2022 FPFTY
Union	847	807	809	860	879
Non-Union	733	758	756	784	805
	1,580	1,565	1,565	1,644	1,684

*-The amounts represented in 2018-2020 represent the total number of employees that participated in the plan throughout the year. As such, if an employee left the Company and the position was backfilled within the same year, both the employee and his / her backfill would each be counted as a participant.

B. The total amount of wages attributable to employees participating in the Company’s 401(k) by union and non-union is presented below:

Amounts in 000's

<u>Wages</u>	2018	2019	2020	2021 FTY	2022 FPFTY
Union	\$89,408	\$86,488	\$96,086	\$70,753	\$72,876
Non-Union	72,580	75,858	81,635	81,370	83,811
	<u>\$161,988</u>	<u>\$162,346</u>	<u>\$177,721</u>	<u>\$152,123</u>	<u>\$156,687</u>

*-The amounts represented in 2018-2020 represent the total wages earned by participating employees throughout the year. These amounts include incentive and overtime pay, which are not included in the Company’s matching calculation for 401(k) purposes. To budget 401(k) the Company performs a top down and bottoms up approach utilizing only wages the Company will match. To perform the top down approach, the Company reviews total historical contributions, expected participation levels, expected wage increases and potential changes to the plan to determine an appropriate cost for the budgeted years. In addition, the Company performs a bottom up approach by obtaining a listing of current and expected employees participating in the plan as well as their associated wages during the budgeted years and calculating an expected 401(k) cost. These two methods are compared and brought into alignment to determine the appropriate budgeted 401(k) cost.

C. Yes, Duquesne Light Company is making a claim for capitalized 401K payments in rate base.

Bureau of Investigation and Enforcement
Data Requests

Set II

Witness: Jaime Bachota

I&E-RE-28-D

28. Reference DLC Statement Exhibit No. 1, Attachment II-D-7d and Exhibit 6-1, concerning advertising expenses. Provide the following:
- A. State whether DLC is making a claim in its FPFTY revenue requirement for advertising expense.
 - B. If the response to Part A is yes, identify the individual line items and amounts in DLC's filing where advertising expenses are located in DLC Exhibit 6-1.
 - C. If the response to Part A is yes, provide a detailed breakdown of all advertising expenses making up the FPFTY claim.
 - D. Provide a detailed description of each type of advertisements included in response to Part C.
 - E. Provide a copy or link of all advertisements in response to Part D.
 - F. Provide a detailed explanation how each of the advertisements in Part D are necessary for the provision of safe and reliable service to existing ratepayers.

Response:

- A. Duquesne Light is making a claim for advertising expense in its FPFTY revenue requirement.
- B. Advertising expenses are included in various line items within Exhibit 6-1 as a result of the Company's budgeting process, as detailed the direct testimony of Jaime Bachota (Statement No. 2), page 10, lines 17-23 and page 11, lines 1-9, and the direct testimony of Mr. Robert O'Brien (DLC Statement No. 10). See I&E-RE-08-D. The Company's claim for advertising expense in the amount of \$1,254,352 is included in cost element 59.

C. Below a detailed breakdown of all advertising expenses making up the FPFTY claim:

Amounts in 000's

Sponsorship and Customer Engagement	252
<ul style="list-style-type: none"> • Home and Garden Show • Earth Day • Energy Week • Diversity, Equity and Inclusion Initiatives • Dollar Energy Warmathon 	
Social Media/Public Relations	783
<ul style="list-style-type: none"> • Social Media Management Platform • Media and advertisement for customer education and engagement 	
Professional Services: Community and Employee Engagement	219
<ul style="list-style-type: none"> • Sustainability/ESG Report • Employee Giving Platform • Graphic Designer • Media monitoring 	
Total	\$1,254

D. Below is a description of the advertising by category.

Sponsorship and Customer Engagement

Customer engagement and sponsorship will include a robust media mix regarding the Company’s responsibility to deliver safe, affordable and reliable service to its customers and community. Since creative and media plan for 2022 has not yet been developed, the advertisement itself is not available to provide.

However, among other things, the campaigns will showcase how the Company is investing in updating existing and installing new infrastructure across the service territory, encourage energy efficiency and the efficient use of the grid, and promote diversity, equity and inclusion in order to attract and retain a highly qualified diverse workforce. The Company will continue to promote and advertise its Electrical Distribution Technology (EDT) program. The EDT program is a joint partnership with Community College of Allegheny County that provides training for the basic skills, knowledge and abilities that students would use as skilled craft workers in the field. The Company partners with educational institutions, local leaders, and community partners to attract individuals from various backgrounds to the EDT program in order to have a workforce that is not only reflective of, but also represents the diverse population of the Pittsburgh region. Additionally, the Company strives to develop a pipeline of skills

through support and partnership of schools and training facilities of STEM programs that creates robust job opportunities for students.

Duquesne Light will also partner with the Pittsburgh Pirates and Pittsburgh Penguins. The Sponsorship will focus on sustainability, diversity, equity and inclusion, and customer education. Diversity will position DLC in a manner that activates the community to organically identify the organization as a good corporate citizen and a great place to work by maximizing diversity recruitment activity. The Penguins' sponsorship will extend to a two year commitment.

Additionally, Duquesne Light intends to continue its presence at the Pittsburgh Home & Garden Show. As the largest Home & Garden Show in the country, the Company utilizes this event to engage directly with a wide range of customers and stakeholders, educating them on various topics including vegetation management, electrical safety, and company operations as well as emerging innovations, such as electric vehicles.

As a founding member of the Dollar Energy Fund, the Company's continued support of the Warmathon enables it to raise dollars for the Hardship Fund. The fund benefits low income customers and helps them to pay their bills during the winter months.

Finally, the Company intends to continue its Here to Help Campaign. This campaign will communicate to customers various payment options such as: Allegheny/Beaver County Emergency Rental Assistance Program; Customer Assistance Program; LIHEAP Grants; Dollar Energy Fund to assist those customers in need. Information about the Here to Help campaign can be found at <https://www.duquesnelight.com/HereToHelp>.

The Company also reserves a small budget for other costs associated with engaging and interacting with our customers.

Social Media / Public Relations

The Company uses its Facebook, Twitter, Instagram, and LinkedIn accounts as a means of two-way communication with customers about news, projects, products and services and much more. These channels also are a way for customers to raise customer service concerns, which are then taken off-line and managed by a customer service representative. To track and manage customer and news media engagement, the Company uses 24/7/365 media answering service, traditional and social media monitoring. For reference, here are the Company social media accounts:

- <https://www.facebook.com/DuquesneLight/>
- <https://twitter.com/duquesnelight>

The Company also maintains a productive and active relationship with local news media and keeps them apprised of Company news. Recent news can be found here:

- <https://www.duquesnelight.com/company/about/newsroom>

Professional Services: Community and Employee Engagement

The Company plans to develop an external annual sustainability report that covers our company-wide sustainability strategy and performance. The first report will be published in 2022. Sustainability is increasingly important to our customers, region and the investment community. As such, in addition to reporting on our efforts, the Company will be investing in a sustainable tree to replace the Tree of Lights for future holiday seasons. This will help preserve the grounds of Fort Duquesne. More information can be found here; <https://newsroom.duquesnelight.com/duquesne-light-company-lights-iconic-tree-of-lights-for-final-time>

The Company has also invested in a new employee giving platform. The employee volunteerism and giving campaign is another way in which we are able to lend support to our communities. The Company matches the contributions made by employees with shareholder dollars. Employees are able to track and report on our volunteer initiatives more effectively through the CyberGrants platform. It also provides more opportunities for employees to record their volunteer time whether it be personal (not on company time) or company sponsored (generally during company time). <https://newsroom.duquesnelight.com/when-our-communities-are-strong-we-are-strong>

- E. Please see subpart D above, including links where available.
- F. Each of the advertisements in Part D are just, reasonable and prudent. Each advertisement will provide important information to the public regarding safety, rate changes, means of reducing usage or bills, load management or energy conservation; provide a direct benefit to ratepayers; and/or promote community service or economic development.

Bureau of Investigation and Enforcement
Interrogatories

Set VIII

Witness: Jaime Bachota

I&E-RE-68-D

68. Reference DLC's response to I&E-RE-28-D concerning Advertising Expenses. Provide a detailed breakdown of Sponsorship and Customer Engagement Advertising by amount for the following types of advertising making up the FPPTY claim of \$252,000:

- A. Home and Garden Show;
- B. Earth Day;
- C. Energy Week;
- D. Diversity, Equity, and Inclusion Initiatives; and
- E. Dollar Energy Warmathon.

Response:

- A. Home and Garden Show - \$160,000
The Company has title sponsorship of Home & Garden Show where it will share energy efficiency resources with customers and demonstrate its investment in electric vehicle education and infrastructure throughout the Pittsburgh region. Guests will learn more about DLC's Home Energy Center tools and offerings such as the energy-efficient product marketplace, appliance recycling program and online electric use monitoring system, all of which empower customers to make small changes to help them save on their monthly energy bills. Additionally, guests will get to experience the benefits of driving electric with electric vehicle education. Ultimately, this event provides important information to the public regarding safety, rate changes, means of reducing usage or bills, load management, or energy conservation.

B. Earth Day - \$50,000

The Company is partnering with Pittsburgh Earth Day, a company whose mission is to educate and promote action around issues of sustainability, environmentalism, and conservation. This partnership will include virtual and on-site events to educate the local community on eco-friendly alternatives such as:

- a. National Drive Electric Week where there will be a video highlighting destination charging stations throughout the region
- b. VEGED Cooking Show
- c. Go Green in Market Square
- d. Earth to Table
- e. Ecolution eco-Fashion Show
- f. ECO Film Festival

C. Energy Week - \$6,500

The Company partners with Carnegie Mellon University (CMU) for a three-day symposium discussing energy research, trends, and innovative techniques from multiple sectors to ultimately shape the future of the Pittsburgh region. Focus areas of the panels include:

- a. Cybersecurity, AI, & Energy: Evolving Critical Infrastructure While Ensuring a Secure Energy Grid
- b. E-Mobility: Infrastructure, Electrification, and Energy
- c. Siting Grid-Scale Solar: Identifying and Implementing Best Practices for Pennsylvania

D. Diversity, Equity, and Inclusion Initiatives - \$10,500

The Company is partnering with RealTimes media to strengthen its diversity recruitment strategies that ultimately activates the community to organically identify the organization as a good corporate citizen and a great place to work. Included in this initiative are:

- a. Diversity, Equity, and Inclusion Summit – a multi-session conference with D&I champions discussing lessons, advice, and key steps they are taking to power more inclusive practices
- b. Virtual Job Fair – using local and national databases to cultivate a large pool of talented professionals, job seekers, and recent college graduates of color
- c. Social – imagery-driven social media campaign to celebrate Black talent across Facebook, Instagram, and Twitter, encouraging people to submit photos of themselves at work

E. Dollar Energy Warmathon - \$25,500

As a founding member of the Dollar Energy fund (the Fund), the Company continues to support the Warmathon to raise dollars for the Hardship Fund. Last year, the Company partnered with iHeart Media, CBS Radio Pittsburgh- KDKA, and the Pittsburgh Post-Gazette to communicate to the local community about donating to the Dollar Energy Fund.

- a. 94.5 3WS Winter Warmup Request-A-Thon
- b. Partnering with iHeart Media where listeners who make a donation to the Fund can hear their requested song on the air.
- c. Cool Down for Warmth
- d. Partnering with Pittsburgh Post-Gazette and iHeart Media where an ice house was constructed to build awareness of the families that will go without heat in the winter. Willing participants will spend 30 minutes in the ice house as they work toward their fundraising goal.
- e. KDKA 1020 AM Warmathon
- f. Partnering with CBS Radio Pittsburgh – KDKA where listeners are encouraged to make a donation to the Fund through a traditional radiothon format.

Reserve your space now:

Call us first. You can select and hold your 2021 Show location by phone...

412-231-8400

I&E Exhibit No. 2
Schedule 13
Page 1 of 1



Booth Space Application/Contract Pittsburgh Home & Garden Show

APPLICANT INFORMATION

Date: _____

Company Name: _____

Company Address: _____

City: _____ State: _____ Zip Code: _____

Applicant's Name: _____

Applicant's Title: _____

Phone: _____ Fax: _____

Email: _____ Website: _____

We Propose to Exhibit the Following Products or Services:

BOOTH CHARGES

One Booth:	\$2075.00
2-4 Booths:	\$2050.00 each
5-8 Booths:	\$2025.00 each
9 or more:	\$2000.00 each

Booths are standard 10 feet by 10 feet unless noted otherwise on floorplan.

Payment for one-half total booth cost must accompany this application. Remainder must be paid in full before March 1, 2021 or Exhibitor forfeits all rights to booth space and deposits. Exhibit space payment is non-refundable

Phone # for Customers:

PA State Sales Tax #: _____

LOCATION SELECTION

Our 2021 Exhibit: Booth Dimensions: _____ Total Square Feet: _____

Our Preferred Location:

First Choice: _____ Second Choice: _____ Third Choice: _____

PAYMENT

Total Booth Cost: _____

50% Deposit Enclosed:

Balance Due by March 1, 2021: _____

Make Checks Payable & Mail to:
Pittsburgh Home & Garden Show
857 Western Avenue
Pittsburgh, PA 15233

ACCEPTANCE

Applicant's Signature: _____

Applicant's Title: _____ Date: _____

Accepting for Show Management: _____

Booth reservations are subject to final acceptance of this Application by Show Management, and receipt of 50% booth deposit with Application.

It is agreed that the Terms of Contract (see reverse side of this contract) are a part hereof and that both applicant and Show Management intend to be bound hereby. This agreement shall be a binding and enforceable contract between the parties upon acceptance and formal signature by Show Management.

Bureau of Investigation and Enforcement
Data Requests

Set VII

Witness: Robert O'Brien and Jaime Bachota

I&E-RE-43-D

43. Reference DLC Statement No. 2, pp. 25-26 concerning the proposed three-year normalization of \$0.3 million in Eligible Customer Listing solicitations:

- A. Explain why a three-year normalization as opposed to amortization of this regulatory asset is appropriate.
- B. Explain how the three-year period was determined.
- C. Provide specific details on the normalization periods/dollar amounts and the associated docket numbers for the prior instances.
- D. State the specific page number of Robert O'Brien's testimony (Statement No. 10) where the three-year normalization is discussed for Eligible Customer Listing solicitations.
- E. State the amount allocated/claimed in DLC's jurisdictional FPFTY revenue requirement (DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-1, p. 1) in this proceeding and explain how that was determined.

Response:

- A. The Company's testimony should have been to amortize the deferred amounts over a three-year period since the Eligible Customer Listing solicitations ("ECL") expense is to recover a specific cost amount and not to establish a normalized expense level.
- B. The three-year period reflects the triennial solicitation period included in the Commission's Order issued October 23, 2014 at Docket No. M-2010-2183412 and also the period the Company estimates the rates from this proceeding will be in effect.
- C. The expenditures for the 2015 ECL of \$253,299 should have been included in the revenue requirement requested in Docket No. R-2018-3000124 but were not due to an oversight in that filing. There were no ECL related expenses included in prior rate cases since the Commission's Order was issued in 2014.
- D. Mr. O'Brien's testimony does not address the amortization of the ECL expenditures.

E. Due to an oversight, the amortization of the expenditures for the ECL was not included in the Company's as filed revenue requirement shown in DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-1, p. 1.

The Company will include an annual amortization expense amount of \$112,960 as an addition to its FPFTY expenses shown on DLC Exhibit 2, Schedule D-1, P. 1. The \$112,960 is the annual amortization of the total expenditures of \$338,881 which include the expenditures for the ELC in:

2018	\$205,080
2021	<u>133,801</u>
TOTAL	\$338,881

Amortization Period 3 years

Annual Amortization \$112,960

-- I&E Modified --

Duquesne Light Company
Before The Pennsylvania Public Utility Commission
FULLY PROJECTED FUTURE TEST YEAR ENDED DECEMBER 31, 2022
(\$ in Thousands)

Schedule C-4
Witness: O'Brien
Page 2 of 10

Summary of Working Capital

Line #	Description	Reference	Test Year Expenses	Number of (Lead) / Lag Days	Number of (Lead) / Lag Dollars	Totals
		[1]	[2]	[3]	[4]	[5]
					[2] * [3]	
<u>WORKING CAPITAL REQUIREMENT</u>						
1	REVENUE LAG DAYS	Sch C-4, P 3				57.36
2	EXPENSE LAG DAYS					
3	Payroll	Sch C-4, P 5	\$ 90,649 (a)	12.46	\$ 1,129,251	
4	Pension Expense	Sch D-7	5,000	(108.00)	(540,000)	
5	Power Purchased for Resale		-	33.88	-	
6	Other Expenses	L 23 - L 3 to L 5	103,012 (b)	44.90	4,625,239	
7	Total	Sum (L 3 to L 6)	<u>\$ 198,661</u>		<u>\$ 5,214,490</u>	
8	O & M Expense Lag Days	L7, C 4 / C 2				26.25
9	Net (Lead) Lag Days	L 1 - L 8				31.11
10	Operating Expenses Per Day	L 7, C 2 / 365				\$ 544
11	Working Capital for O & M Expense	L 9 * L 10				\$ 16,925
12	Average Prepayments	Sch C-4, P 10				18,260
13	Tax Expense	Sch C-4, P 7				23,632
14	Interest Payments	Sch C-4, P 8				(5,571)
15	Total Working Capital Requirement	Sum (L 11 to L 14)				53,246
<u>WORKING CAPITAL FOR POWER PURCHASED</u>						
			Expense	Lead (Lag) Days	Exp Per Day	
16	Power Purchased for Resale		<u>\$ 214,471</u>			
17	Lead (Lag) Days	57.36 - 33.88		<u>23.48</u>	<u>\$ 587.59</u>	
18	WC for Power Purchased	[3] * [4]				13,797
19	Net WC for Rate Base	L 15 + L 18				<u>\$ 67,042</u>
<u>EXPENSE RECONCILIATION</u>						
20	Pro Forma O & M Expense		\$ 455,804			
	Less:					
21	Power Purchased for Resale		214,471			
22	Uncollectible Expense - Present Rates		12,215			
23	Uncollectible Expense-on Rev Increase		1,003			
24	Other		113			
25	Sub-Total	Sum (L 21 to L 24)	<u>227,802</u>			
26	Pro Forma Cash O&M Expense	L 20 - L25	<u>\$ 228,002</u>			
(a)	Ref: I&E Statement No. 2, p. 48					
(b)	Ref: I&E Exhibit No. 2, Schedule 15, p. 2					

Ref: I&E Statement No. 1, p. 3 and I&E Statement No. 2, p. 3

Duquesne Light Company
Cash Working Capital Other Expense Adjustment
For the Twelve Months Ended December 31, 2022

	(1) I&E Recommended Distribution Adjustment	(2) COSS Allocation Factor	(3) Total Recommended Adjustment (1) / (2)
1 Rate Case Expense	(132,000)	1.0000	(\$132,000)
2 Payroll Taxes	(222,000)	0.8263	(\$269,000)
3 Incentive Compensation	(2,452,000)	0.8263	(\$2,967,000)
4 Health Insurance Expense	(131,000)	0.8263	(\$159,000)
5 401k Expense	(169,000)	0.8263	(\$205,000)
6 Advertising Expense	(158,000)	1.0000	(\$158,000)
7 Fleet and Transit Charging Pilot - Maintenance and Warranty Exp	(5,000)	1.0000	(\$5,000)
8 Eligible Customer Solicitation	(18,000)	1.0000	(\$18,000)
9 EV ChargeUp Pilot	(15,000)	1.0000	(\$15,000)
10 COVID-19 Related Uncollectible Expense	(341,000)	1.0000	(\$341,000)
11 COVID-19 Related Costs Net of Savings (excl. Uncollectible Exp.)	(1,932,000)	1.0000	(\$1,932,000)
12 New Business Stimulus Rider	(277,000)	1.0000	(\$277,000)
13 Crisis Recovery Program	(423,000)	1.0000	(\$423,000)
14 Residential COVID-19 Debt Relief Program	(1,167,000)	1.0000	(\$1,167,000)
15 Prepayments	(18,260,000)	1.0000	(\$18,260,000)
16 Total	<u>(25,702,000)</u>		<u>(\$26,328,000)</u>

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Consumer Advocate

Set VIII

Witness: Robert O'Brien

OCA-VIII-3

3. Please show how the annual expenses related to the prepayments presented on Schedule C-4, FPFTY, Page 10 were removed from the O&M expenses, on Schedule C-4, FPFTY, Page 2, to which the 44.90 lag days were applied.

Response:

The prepayments were not removed.

I&E			
Summary of Cost of Capital			
Type of Capital	Ratio	Cost Rate	Weighted Cost
<hr/>			
Duquesne Light Company			
Long-Term Debt	46.65%	4.29%	2.00%
Common Equity	53.35%	9.24%	4.93%
Total	<hr/> 100.00%		<hr/> <hr/> 6.93%

	2020		
	Interest Charges	Long-Term Debt	Debt Cost
Ameren Corp	\$ 435.00	\$11,078.00	3.93%
American Electric Power Company Inc.	\$1,231.70	\$29,855.80	4.13%
CMS Energy Corp	\$ 563.00	\$13,715.00	4.10%
Consolidated Edison Inc.	\$1,033.00	\$21,146.00	4.89%
Dominion Energy	\$1,480.00	\$34,473.00	4.29%
Duke Energy Corp New	\$2,274.00	\$56,965.00	3.99%
Entergy Corp.	\$ 837.98	\$21,429.54	3.91%
Eversource Energy	\$ 562.15	\$15,726.09	3.57%
FirstEnergy Corp.	\$1,065.00	\$22,394.00	4.76%
IDACORP Inc.	\$ 99.00	\$ 2,000.41	4.95%
NorthWestern Corporation	\$ 99.72	\$ 2,330.03	4.28%
Portland General Electric Company	\$ 144.00	\$ 3,051.00	4.72%
PPL Corporation	\$1,001.00	\$21,623.00	4.63%
Public Service Enterprise Group Inc.	\$ 600.00	\$14,748.00	4.07%
Xcel Energy Inc.	\$ 840.00	\$21,062.00	3.99%
	Range:	Low High	3.57% 4.95%
		Average	4.28%

Source: Compustat
 April 2021

Accessed on June 7, 2021

Dividend Yields of the Proxy Group

Company Symbol	Ameren Corp	American Electric Power Company Inc.	CMS Energy Corp	Consolidated Edison Inc.	Dominion Energy
	AEE	AEP	CMS	ED	D
Div	2.34	3.17	1.86	3.20	2.66
52-wk low	67.14	74.80	53.19	65.56	67.85
52-wk high	86.90	94.21	67.98	83.92	87.29
Spot Price	86.13	86.03	62.62	77.24	76.52
Spot Div Yield	2.72%	3.68%	2.97%	4.14%	3.48%
52-wk Div Yield	3.04%	3.75%	3.07%	4.28%	3.43%
Average	2.88%	3.72%	3.02%	4.21%	3.45%

Company Symbol	Duke Energy Corp	Entergy Corp.	Eversource Energy	FirstEnergy Corp.	IDACORP Inc.
	DUK	ETR	ES	FE	IDA
Div	3.98	4.08	2.56	1.60	3.09
52-wk low	77.58	85.78	76.64	22.85	78.91
52-wk high	108.00	113.36	96.66	44.10	104.96
Spot Price	101.48	105.92	82.04	38.33	98.54
Spot Div Yield	3.92%	3.85%	3.12%	4.17%	3.14%
52-wk Div Yield	4.29%	4.10%	2.95%	4.78%	3.36%
Average	4.11%	3.97%	3.04%	4.48%	3.25%

Company Symbol	NorthWestern Corporation	Portland General Electric Company	PPL Corporation	Public Service Enterprise Group Inc.	Xcel Energy Inc.
	NWE	POR	PPL	PEG	XEL
Div	2.56	1.80	1.66	2.12	1.94
52-wk low	47.43	31.96	24.20	46.70	57.23
52-wk high	70.80	51.60	30.81	64.30	76.44
Spot Price	63.64	48.95	28.99	60.76	70.08
Spot Div Yield	4.02%	3.68%	5.73%	3.49%	2.77%
52-wk Div Yield	4.33%	4.31%	6.04%	3.82%	2.90%
Average	4.18%	3.99%	5.88%	3.65%	2.84%

	Average
Spot Div Yield	3.66%
52-wk Div Yield	3.90%
Average	3.78%

Source: Barrons Value Line June 7, 2021
April 23, 2021 / May 14, 2021 / June 11, 2021

Five-Year Growth Estimate Forecast for the Proxy Group (Actual)

Company	Symbol	Yahoo	Zacks	Morningstar Source	Value Line	Average
Ameren Corp	AEE	7.70%	7.30%	7.40%	6.50%	7.23%
American Electric Power Company Inc.	AEP	6.20%	5.90%	5.80%	6.50%	6.10%
CMS Energy Corp	CMS	7.25%	6.60%	7.00%	7.50%	7.09%
Consolidated Edison Inc.	ED	2.95%	2.00%	2.90%	4.00%	2.96%
Dominion Energy	D	6.78%	6.70%	3.00%	12.00%	7.12%
Duke Energy Corp	DUK	5.00%	5.20%	3.90%	7.00%	5.28%
Entergy Corp.	ETR	5.80%	5.10%	3.60%	3.00%	4.38%
Eversource Energy	ES	6.81%	6.50%	9.30%	5.50%	7.03%
FirstEnergy Corp.	FE	-1.84%	NA	3.80%	11.50%	4.49%
IDACORP Inc.	IDA	3.20%	3.90%	NA	4.00%	3.70%
NorthWestern Corporation	NWE	4.46%	4.90%	NA	3.00%	4.12%
Portland General Electric Company	POR	7.10%	8.60%	3.90%	8.50%	7.03%
PPL Corporation	PPL	-16.20%	NA	2.60%	3.00%	-3.53%
Public Service Enterprise Group Inc.	PEG	2.05%	2.90%	4.90%	3.50%	3.34%
Xcel Energy Inc.	XEL	6.20%	6.10%	6.20%	6.00%	6.13%
Average:						<u>4.83%</u>

Source:
Internet

June 7, 2021

Five-Year Growth Estimate Forecast for the Proxy Group (Actual)

Company	Symbol	Yahoo	Zacks	Morningstar Source	Value Line	Average
Ameren Corp	AEE	7.70%	7.30%	7.40%	6.50%	7.23%
American Electric Power Company Inc.	AEP	6.20%	5.90%	5.80%	6.50%	6.10%
CMS Energy Corp	CMS	7.25%	6.60%	7.00%	7.50%	7.09%
Consolidated Edison Inc.	ED	2.95%	2.00%	2.90%	4.00%	2.96%
Dominion Energy	D	6.78%	6.70%	3.00%	12.00%	7.12%
Duke Energy Corp	DUK	5.00%	5.20%	3.90%	7.00%	5.28%
Entergy Corp.	ETR	5.80%	5.10%	3.60%	3.00%	4.38%
Eversource Energy	ES	6.81%	6.50%	9.30%	5.50%	7.03%
FirstEnergy Corp.	FE	X	NA	3.80%	11.50%	7.65%
IDACORP Inc.	IDA	3.20%	3.90%	NA	4.00%	3.70%
NorthWestern Corporation	NWE	4.46%	4.90%	NA	3.00%	4.12%
Portland General Electric Company	POR	7.10%	8.60%	3.90%	8.50%	7.03%
PPL Corporation	PPL	X	NA	2.60%	3.00%	2.80%
Public Service Enterprise Group Inc.	PEG	2.05%	2.90%	4.90%	3.50%	3.34%
Xcel Energy Inc.	XEL	6.20%	6.10%	6.20%	6.00%	6.13%
Average:						<u>5.46%</u>

Source:
Internet

June 7, 2021

Expected Market Cost Rate of Equity
Using Data for the Proxy Group of Electric Companies
5-Year Forecasted Growth Rates

<u>Time Period</u>	<u>Adjusted Dividend Yield</u> (1)	<u>Growth Rate</u> (2)	<u>Expected Return on Equity</u> (3=1+2)
(1) 52-Week Average Ending: June 7, 2021	3.90%	5.46%	9.36%
(2) Spot Price Ending: June 7, 2021	<u>3.66%</u>	<u>5.46%</u>	<u>9.12%</u>
(3) Average:	<u><u>3.78%</u></u>	<u><u>5.46%</u></u>	<u><u>9.24%</u></u>

Sources: Value Line April 23, 2021 / May 14, 2021 / June 11, 2021
Barrons June 7, 2021

<u>Company</u>	<u>Beta</u>
Ameren Corp	0.80
American Electric Power Company Inc.	0.75
CMS Energy Corp	0.80
Consolidated Edison Inc.	0.75
Dominion Energy	0.85
Duke Energy Corp	0.85
Entergy Corp.	0.95
Eversource Energy	0.90
FirstEnergy Corp.	0.85
IDACORP Inc.	0.80
NorthWestern Corporation	0.95
Portland General Electric Company	0.90
PPL Corporation	1.10
Public Service Enterprise Group Inc.	0.90
Xcel Energy Inc.	0.80
Average beta for CAPM	<u>0.86</u>

Source:

Value Line

April 23, 2021 / May 14, 2021 / June 11, 2021

<u>Risk-Free Rate</u> <u>10-Year Treasury Note</u>	<u>Yield</u>
3Q 2021	1.80
4Q 2021	1.90
1Q 2022	2.00
2Q 2022	2.00
3Q 2022	2.10
2023-2027	2.90
Average	<u><u>2.12</u></u>

Source:
Blue Chip

June 1, 2021

Required Rate of Return on Market as a Whole Forecasted

	<u>Dividend</u> <u>Yield</u>	+	<u>Growth</u> <u>Rate</u>	=	<u>Expected</u> <u>Market</u> <u>Return</u>
Value Line Estimate	1.70%		6.78%	(a)	8.48%
S&P 500	1.47%	(b)	13.40%		14.87%
Average Expected Market Return				=	11.68%

(a) $((1+30\%)^{25}) - 1$ Value Line forecast for the 3 to 5 year index appreciation is 30%

(b) S&P 500 multiplied by half the growth rate

Sources:

Value Line	6/4/2021
S&P 500 Dividend Yield (Barrons)	6/7/2021
S&P 500 Growth Rate (Yahoo!)	6/7/2021

CAPM with forecasted return

Re Required return on individual equity security
Rf Risk-free rate
Rm Required return on the market as a whole
Be Beta on individual equity security

$$Re = Rf + Be(Rm - Rf)$$

$$Rf = 2.12$$

$$Rm = 11.68$$

$$Be = 0.86$$

$$Re = \underline{\underline{10.37}}$$

Sources: Value Line April 23, 2021 / May 14, 2021 / June 11, 2021
Blue Chip June 1, 2021

**I&E Statement No. 2-R
Witness: Christopher Keller**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Rebuttal Testimony

of

Christopher Keller

Bureau of Investigation & Enforcement

Concerning:

Charging Infrastructure Portfolio

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INTRODUCTION 1

CHARGING INFRASTRUCTURE PORTFOLIO.....2

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christopher Keller. My business address is Pennsylvania Public
4 Utility Commission, Commonwealth Keystone Building, 400 North Street,
5 Harrisburg, PA 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in
9 the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial
10 Analyst.

11

12 **Q. ARE YOU THE SAME CHRISTOPHER KELLER WHO SUBMITTED**
13 **THE DIRECT TESTIMONY CONTAINED IN I&E STATEMENT NO. 2**
14 **AND I&E EXHIBIT NO. 2?**

15 A. Yes.

16

17 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

18 A. The purpose of my rebuttal testimony is to respond to the direct testimony of the
19 Natural Resources Defense Council (NRDC) witness Kathleen Harris where she
20 recommends that the Public, Workplace, and Multi-Unit Dwelling Make Ready
21 Pilot not be a pilot program and that there should be additional funding for

1 medium and heavy-duty vehicle electrification in the Company’s proposed Fleet
2 and Transit Charging Pilot (NRDC Statement No. 2).

3
4 **Q. DOES YOUR REBUTTAL TESTIMONY INCLUDE AN EXHIBIT?**

5 A. No. However, I will make references to my direct testimony (I&E Statement
6 No. 2).

7
8 **CHARGING INFRASTRUCTURE PORTFOLIO**

9 **Q. SUMMARIZE NRDC WITNESS HARRIS’ RECOMMENDATION IN**
10 **DIRECT TESTIMONY FOR THE CHARGING INFRASTRUCTURE**
11 **PORTFOLIO.**

12 A. In direct testimony, NRDC witness Kathleen Harris supports the Company’s
13 Charging Infrastructure Portfolio proposal but with modifications. First, Ms.
14 Harris recommends that the Public, Workplace, and Multi-Unit Dwelling Make-
15 Ready Pilot (Make Ready Pilot) not be a pilot program. Ms. Harris opines that
16 utility-side make-ready infrastructure should be considered a core utility function
17 and should be a part of standard utility distribution planning and be treated as such
18 by the Commission (NRDC Statement No. 2, p. 19).

19 Second, Ms. Harris recommends an increase the amount of funds to support
20 medium and heavy-duty (M&HD) vehicle electrification in the Company’s
21 proposed Fleet and Transit Charging Pilot. Ms. Harris opines that the Company’s
22 proposal will only support a number of fleets and vehicles in the Company’s

1 service territory and increasing the funding for M&HD vehicles and fleets will
2 improve health and air quality in communities that are overburdened with
3 transportation pollution (NRDC Statement No. 2, pp. 22-24).

4
5 **Q. DO YOU AGREE WITH MS. HARRIS' RECOMMENDATION FOR**
6 **THE MAKE-READY PILOT TO MOVE BEYOND THE PILOT STAGE?**

7 A. No. As I stated in my direct testimony, the Make-Ready pilot needs to be on a
8 pilot basis in order to be evaluated and determine if any adjustments are needed or
9 if the Make-Ready Pilot should be discontinued (I&E Statement No. 2, pp. 28-29).

10
11 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION?**

12 A. No. I continue to recommend the Company provide a report in its next base rate
13 proceeding. The report should include the total number of L2 and DCFC stations
14 installed as well as the number of L2 charging stations in Environmental Justice
15 (EJ) areas broken down by year under the Make-Ready Pilot. The report should
16 also provide the number and dollar amount of charging station rebates for charging
17 stations in EJ areas and a breakdown of governmental grants received under the
18 Make-Ready Pilot by year. Finally, the report should include an evaluation of
19 customer participation and feedback, public access to charging stations, charging
20 station usage, and identification of charging station revenues received by the
21 Company from charging station owners. The report is needed in order to evaluate
22 the progress of the Make-Ready Pilot and to assist in determining if any

1 adjustments are needed or if the Make-Ready Pilot should be discontinued (I&E
2 Statement No. 2, pp. 28-29).

3
4 **Q. DO YOU AGREE WITH MS. HARRIS' RECOMMENDATION TO**
5 **INCREASE FUNDING TO SUPPORT M&HD VEHICLE**
6 **ELECTRIFICATION IN THE COMPANY'S PROPOSED FLEET AND**
7 **TRANSIT CHARGING PILOT?**

8 A. No. I disagree with Ms. Harris for two reasons. First, Ms. Harris fails to provide a
9 specific dollar amount of the increase in funding for MH&D vehicle
10 electrification. Second, providing additional funding is unreasonable given the
11 unknown results of the Fleet and Transit Charging Pilot which is why I
12 recommended in my direct testimony that the Fleet and Transit Charging Pilot
13 needs to be done on a pilot basis in order to be evaluated and determine if any
14 adjustments are needed or if the Fleet and Transit Charging Pilot should be
15 discontinued (I&E Statement No. 2, pp. 32-33).

16
17 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION?**

18 A. No. I continue to recommend the Company provide a report in its next base rate
19 proceeding. The report should include documentation that the six DCFC stations
20 have been installed at the Port Authority's East Liberty Garage, the total number
21 of L2 and DCFC stations installed for all other customers participating in the Fleet
22 and Transit Charging Pilot, and the number of projects in EJ areas by year. The

1 report should also include an evaluation of customer participation and feedback,
2 charging station usage, and identification of charging station revenues received by
3 the Company from charging station owners. The report is needed in order to
4 evaluate the progress of the Fleet and Transit Charging Pilot, to assist in
5 determining if any adjustments are needed, or to determine whether the Fleet and
6 Transit Charging Pilot should be discontinued (I&E Statement No. 2, pp. 32-33).

7
8 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

9 A. Yes.

**I&E Statement No. 2-SR
Witness: Christopher Keller**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket Nos. R-2021-3024750

Surrebuttal Testimony

of

Christopher Keller

Bureau of Investigation and Enforcement

Concerning:

Operating and Maintenance Expenses

Taxes Other Than Income

Cash Working Capital

Charging Infrastructure Portfolio

Customer Portfolio

Rate of Return

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christopher Keller. My business address is Pennsylvania Public
4 Utility Commission, Commonwealth Keystone Building, 400 North Street,
5 Harrisburg, PA 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in
9 the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial
10 Analyst.

11

12 **Q. ARE YOU THE SAME CHRISTOPHER KELLER WHO SUBMITTED**
13 **THE DIRECT TESTIMONY CONTAINED IN I&E STATEMENT NO. 2**
14 **AND I&E EXHIBIT NO. 2?**

15 A. Yes.

16

17 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

18 A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of
19 Duquesne Light Company (Duquesne, DLC, or Company) witnesses Jaime A.
20 Bachota (DLC Statement No. 2-R), Sarah J. Olexsak (DLC Statement No. 8-R),
21 Robert L. O'Brien (DLC Statement No. 10-R), and Paul R. Moul (DLC Statement
22 No. 13-R).

1 **Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN EXHIBIT?**

2 A. Yes. I&E Exhibit No. 2-SR contains schedules that support my surrebuttal
3 testimony. In this surrebuttal testimony, I will also make references to my direct
4 testimony and its accompanying exhibit (I&E Statement No. 2 and I&E Exhibit
5 No. 2).

6
7 **Q. PLEASE SUMMARIZE YOUR ADJUSTMENTS AS CONTAINED IN**
8 **THIS SURREBUTTAL TESTIMONY.**

9 A. The following table summarizes my recommended adjustments to the Company's
10 updated position as claimed in DLC Exhibit RLO-2-R, Schedule D-1.

	Company Claim in <u>Rebuttal</u>	I&E Updated <u>Adjustment</u>	I&E Updated Recommended <u>Allowance</u>
O&M Expenses and Taxes:			
Rate Case Expense	\$813,000	(\$132,000)	\$681,000
Salaries and Wages Expense	\$77,393,000	(\$2,490,000)	\$74,903,000
Payroll Taxes	\$6,896,000	(\$222,000)	\$6,674,000
Incentive Compensation	\$8,765,000	(\$2,452,000)	\$6,313,000
Health Insurance Expense	\$6,708,000	(\$131,000)	\$6,577,000
401k Expense	\$5,243,000	(\$169,000)	\$5,074,000
Eligible Customer Solicitation	\$113,000	(\$18,000)	\$95,000
Fleet and Transit Charging Pilot – Maintenance and Warranty Expense	\$33,000	(\$5,000)	\$28,000
EV ChargeUp Pilot – L2 Rebates and EV Registration Incentives	\$91,000	(\$15,000)	\$76,000
Total O&M Expense and Tax Adjustments		<u>(\$5,634,000)</u>	
Rate Base Adjustments:			
Cash Working Capital	\$46,384,000	(\$853,000)	\$45,531,000
Total Rate Base Adjustments		<u>(\$853,000)</u>	

11

1 **OPERATING AND MAINTENANCE EXPENSE RECOMMENDATIONS**

2 **RATE CASE EXPENSE**

3 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
4 **FOR RATE CASE EXPENSE.**

5 A. In direct testimony, I recommended rate case expense be normalized over a period
6 of 43 months resulting in an annual expense of \$681,000 [$(\$2,440,000 \div 43$
7 months) x 12 months], or a reduction of \$132,000 ($\$813,000 - \$681,000$) to the
8 Company's claim. I disagreed with the Company's claimed three-year
9 normalization period which was not supported by its historic filing frequency, was
10 speculative in nature, and the Commission has agreed with I&E that the
11 normalization period be based on actual historic filing frequency rather than future
12 speculation (I&E Statement No. 2, pp. 4-9).

13 Using the Company's last three base rate case filing dates and the date of
14 the current filing, an average interval is computed to be 43 months ($(36 \text{ mo.} + 56$
15 $\text{mo.} + 38 \text{ mo.}) \div 3$ intervals). Duquesne's requested 36-month recovery period is
16 unsupported by the Company's historic filing record. Thus, its proposed three-
17 year normalization period should be rejected as it would result in an unreasonable
18 and unsupported increase in rates.

19
20 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
21 **RATE CASE EXPENSE?**

22 A. Yes. Company witnesses Jaime A. Bachota and Robert L. O'Brien disagree with

1 my rate case expense recommendation. Ms. Bachota simply expresses
2 disagreement with my recommendation that rate case expense be normalized over
3 a 43-month period (DLC Statement No. 2-R, p. 4). Mr. O'Brien also expresses
4 disagreement with my recommendation and opines that Duquesne's claimed 36-
5 month (three-year) normalization period is based on forecasted capital
6 expenditures and other operating elements with the use of the year-end rate case
7 and annualization adjustments. Mr. O'Brien also states that there was a delay in
8 filing the 2018 base rate case due to waiting for the completion of the ongoing
9 smart meter recovery program and the initiation of a revenue stream provided by
10 the Distribution System Improvement Charge (DSIC). He further asserts that the
11 current base rate case was filed within the 36-month projection made by the
12 Company. Finally, Mr. O'Brien states that the Company's claim is based on
13 forecasted capital expenditures which are expected to increase and the Company's
14 intention to file in three years should be considered when establishing a
15 normalization period (DLC Statement No. 10-R, pp. 33-38).

16 .
17 **Q. DO YOU AGREE WITH MR. O'BRIEN'S ASSERTIONS?**

18 A. No. As stated in my direct testimony, the Commission has cited the importance of
19 considering the involved utility's history regarding the frequency of rate case
20 filings as an essential element to determine the normalized level of rate case
21 expense for ratemaking purposes (I&E Statement No. 2, p. 4). Additionally, as
22 stated in my direct testimony, the PPL Electric Utilities Corporation base rate case

1 is an example of how stated future intentions to file a rate case are less reliable
2 than historic filing frequency when predicting a future filing (I&E Statement
3 No. 2, pp. 7-8). Finally, the Commission has recently agreed with I&E's
4 recommendations based on historic filing frequency in base rate cases for
5 Emporium Water Company, City of DuBois, Columbia Gas, and PECO Gas (I&E
6 Statement No. 2, pp. 8-9).

7
8 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
9 **RATE CASE EXPENSE?**

10 A. No. I continue to recommend that rate case expense be normalized over 43
11 months as the Company's historic filing frequency does not support the
12 Company's claimed three-year normalization period (I&E Statement No. 2, pp. 4-
13 9).

14
15 **SALARIES AND WAGES EXPENSE**

16 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
17 **FOR SALARIES AND WAGES EXPENSE.**

18 A. In direct testimony, I recommended an allowance of \$74,903,000 for salaries and
19 wages expense, or a reduction of \$2,490,000 (\$77,393,000 - \$74,903,000) to
20 Duquesne's distribution claim. My recommendation was based on disallowance
21 of the pay increase for non-union employees that occurs after the end of the
22 FPFTY and an adjustment for average historic vacancy levels in order to reflect a

1 more accurate employee complement in the FPFTY (I&E Statement No. 2, pp. 9-
2 14).

3
4 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
5 **SALARIES AND WAGES EXPENSE?**

6 A. Yes. Company witnesses Jaime A. Bachota and Robert L. O'Brien disagree with
7 my salaries and wages expense recommendation.

8
9 **Q. SUMMARIZE MS. BACHOTA'S RESPONSE.**

10 A. Ms. Bachota disagrees with my recommendation to remove the annualization of
11 pay increases for non-union employees that occurs after the end of the FPFTY and
12 she opines that I recommended that all annualization adjustments should be
13 removed in the FPFTY. She also disagrees with my vacancy level adjustment and
14 states that the years used to calculate my vacancy adjustment were during the
15 COVID-19 pandemic which impacted the Company's operations starting in March
16 2020. Ms. Bachota further states that in 2020, the Company did not hire as many
17 employees in order to generate funding for the Company's infrastructure
18 investment program. Ms. Bachota references the Company's 2018 base rate case
19 at Docket No. R-2018-3000124, and states that by the end of the FPFTY, the
20 Company exceeded its projected headcount. Ms. Bachota states that the Company
21 was awarded 21 positions for students as part of its Electrical Distribution
22 Technology program with 14 being hired since the end of the HTY and the

1 remaining 7 expected to be hired by August 2021. Finally, Ms. Bachota states that
2 at the current rate, the Company is expected to reach its projected headcount by
3 the end of the FTY and the FPFTY (DLC Statement No. 2-R, pp. 4-6).

4
5 **Q. DID YOU RECOMMEND THAT ALL ANNUALIZATION ADJUSTMENTS**
6 **SHOULD BE REMOVED FROM THE FPFTY?**

7 A. No. My recommendation in direct testimony was based on the disallowance of the
8 pay increase for non-union employees as it occurs after the end of the FPFTY
9 (I&E Statement No. 2, pp. 10-11). I did not recommend disallowance of the
10 annualization adjustment related to the pay increase for union employees that
11 occurs on October 1, 2022.

12
13 **Q. WHAT IS YOUR RESPONSE TO MS. BACHOTA'S ASSERTION THAT**
14 **THE COVID-19 PANDEMIC RESULTED IN REDUCED HIRINGS?**

15 A. My average vacancy level was calculated using the period January 2018 to March
16 2021 (I&E Exhibit No. 2, Schedule 4); therefore, my recommendation smooths out
17 historic abnormalities due to short-range changes in hiring practices.

18
19 **Q. DO YOU ACCEPT MS. BACHOTA'S ARGUMENT THAT THE**
20 **COMPANY MAY REACH ITS EXPECTED HEADCOUNT BY THE END**
21 **OF THE FTY AND FPFTY?**

22 A. No. Even if Ms. Bachota is correct, this does not address the issue of an ongoing

1 employee turnover that the Company has not effectively refuted. It is important to
2 note that there will always be a certain level of normal vacancies due to
3 retirements, resignations, transfers, layoffs, etc., on a day-to-day operating basis,
4 which are unpredictable, and there will always be search and placement time
5 involved in filling normal vacancies as well as newly added positions. Such
6 vacancies will yield an annual savings in payroll costs which needs to be reflected
7 for ratemaking to eliminate an unreasonable impact on rates. Additionally, the
8 Company may continue to face challenges to fill all budgeted new positions in the
9 FTY and FPFTY during the ongoing COVID-19 pandemic.

10
11 **Q. DO YOU HAVE ANY CHANGES TO YOUR ANNUALIZATION**
12 **ADJUSTMENT OR VACANCY ADJUSTMENT RECOMMENDATIONS**
13 **IN RESPONSE TO MS. BACHOTA'S REBUTTAL TESTIMONY?**

14 A. No.

15
16 **Q. SUMMARIZE MR. O'BRIEN'S RESPONSE IN REBUTTAL TESTIMONY.**

17 A. Mr. O'Brien disagrees with my recommendation to remove the pay increase for
18 non-union employees that occurs after the end of the FPFTY. He opines that the
19 purpose of the FPFTY year-end rate base, reasonable pro forma adjustments, and
20 annualization adjustments which reflect known and measurable changes are
21 designed to give the utility an opportunity to earn the rate of return used to set the

1 rates during the period those rates are in effect (DLC Statement No. 10-R, p. 41,
2 lns. 10-17).

3
4 **Q. DO YOU AGREE WITH MR. O'BRIEN'S POSITION REGARDING**
5 **ANNUALIZATION OF PAY INCREASES?**

6 A. No. As I stated in my direct testimony, my recommendation more accurately
7 represents the salaries and wages level that will be in effect at the end of the
8 FPFTY and the annualization of salaries and wages for the non-union increase that
9 is effective on January 1, 2023 should be removed. This increase will not be
10 incurred during the Company's FPFTY ending December 31, 2022 and it is
11 therefore also outside of the scope of Mr. O'Brien's year-end rate base position as
12 well. Disallowing post-FPFTY pay increases is important because it allows for
13 proper matching of rate base, revenues, and expenses as of the end of the FPFTY.

14
15 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
16 **PAYROLL EXPENSE?**

17 A. No. I continue to recommend an allowance of \$74,903,000 for salaries and wages
18 expense, or a reduction of \$2,490,000 (\$77,393,000 - \$74,903,000) to Duquesne's
19 distribution claim based on disallowance of the pay increase for non-union
20 employees that occurs after the end of the FPFTY and an adjustment for average
21 historic vacancy levels in order to reflect a more accurate employee complement
22 in the FPFTY (I&E Statement No. 2, pp. 9-14).

1 **PAYROLL TAXES**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
3 **FOR PAYROLL TAXES.**

4 A. I recommended an allowance of \$6,674,000 for payroll taxes, or a reduction of
5 \$222,000 (\$6,896,000 - \$6,674,000) to the Company’s distribution claim. My
6 recommendation was based on recognition of the salaries and wages reduction for
7 my annualization and vacancy adjustments; and, on the percentage of total payroll
8 taxes to total payroll (I&E Statement No. 2, pp. 14-16).

9
10 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
11 **PAYROLL TAXES?**

12 A. Yes. Company witnesses Jaime A. Bachota and Robert L. O’Brien disagree with
13 my payroll taxes recommendation. In their responses, Ms. Bachota and Mr.
14 O’Brien disagree with my recommended adjustment to payroll taxes for the same
15 reasons that they disagree with my payroll expense recommendation (DLC
16 Statement No. 2-R, p. 7 and DLC Statement No. 10-R, p. 47).

17
18 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
19 **PAYROLL TAXES?**

20 A. No. I continue to recommend an allowance of \$6,674,000 for payroll taxes, or a
21 reduction of \$222,000 (\$6,896,000 - \$6,674,000) to Duquesne’s distribution claim
22 based on recognition of the salaries and wages reduction for my annualization and

1 vacancy adjustments, and on the percentage of total payroll taxes to total payroll.
2 (I&E Statement No. 2, pp. 14-16).

3
4 **INCENTIVE COMPENSATION**

5 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
6 **FOR INCENTIVE COMPENSATION.**

7 A. In direct testimony, I recommended an allowance of \$6,313,000 for incentive
8 compensation, or a reduction of \$2,452,000 (\$8,765,000 - \$6,313,000) to the
9 Company's distribution claim. My recommendation was based on a three-year
10 historic average of incentive compensation as the Company's claim is not realistic
11 in that not all goals will be met or exceeded each year and Duquesne's budgeted
12 and actual incentive compensation for the past three years showed that Duquesne
13 was actually under budget in 2018, 2019, and 2020 (I&E Statement No. 2, pp. 16-
14 19).

15
16 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
17 **INCENTIVE COMPENSATION?**

18 A. Yes. Company witness Jaime A. Bachota disagrees with my incentive
19 compensation recommendation. Ms. Bachota states that my use of a three-year
20 historical average for the amount to be paid in the FPFTY is inaccurate because
21 the amount for incentive compensation is based on a variety of factors. Ms.
22 Bachota further states that the Short-Term Incentive Plan (STIP) is based on a

1 percentage of salary for eligible employees and that the Company adjusted its
2 STIP to emphasize individual employee performance. Ms. Bachota continues that
3 the number of employees has increased from 701 in 2018 to 763 in 2020 for non-
4 union employees eligible for the STIP (DLC Statement No. 2-R, pp. 8-9).

5 Ms. Bachota states that the amount used for the Long-Term Incentive Plan
6 (LTIP) is in accordance with generally accepted account principles (GAAP) where
7 the Company is to expense multiyear incentive compensation plans over the plan
8 period, which for the Company is over a three-year period. Ms. Bachota states
9 that during the years I used to calculate my three-year average, the Company was
10 missing key positions and would understate incentive compensation. Finally, Ms.
11 Bachota states that the STIP is budgeted at 90% of the target amount and the LTIP
12 is budgeted at 100% of the target amount and that both of these plans allow
13 eligible employees to earn above the target amount (DLC Statement No. 2-R, p.
14 9).

15
16 **Q. DO YOU AGREE WITH MS. BACHOTA'S RESPONSE THAT THE STIP**
17 **CLAIM BY THE COMPANY IS ACCURATE?**

18 A. No. As I stated in my direct testimony, it is unreasonable to assume that all goals
19 will be met or exceeded each year (I&E Statement No. 2, p. 17, lns. 20-21). This
20 is evident in that Duquesne has indicated that goals were not reached for two key
21 performance indicators (KPIs) resulting in no payout in 2018 and 2019, and goals
22 were not reached for one KPI in the HTY (I&E Exhibit No. 2, Schedule 5, p. 4).

1 Additionally, Duquesne’s budgeted and actual incentive compensation for the past
2 three years demonstrate that the Company was actually under budget in 2018,
3 2019, and 2020 (I&E Exhibit No. 2, Schedule 7). Therefore, the Company’s
4 results over the past three years for its STIP demonstrate that it is not realistic that
5 all goals will be met each year and the Company’s claim should be adjusted to
6 reject DLC’s unsupported assumption that all goals will be met.

7
8 **Q. DO YOU AGREE WITH MS. BACHOTA’S RESPONSE THAT THE LTIP**
9 **CLAIM BY THE COMPANY IS ACCURATE?**

10 A. No. First, while GAAP may require the Company to expense multiyear incentive
11 compensation plans over the plan period, this is not true for ratemaking purposes.
12 Additionally, as I discussed earlier in my testimony regarding salaries and wages
13 expense, there will always be a certain level of normal vacancies on a day-to-day
14 operating basis, regardless of position, which are unpredictable and there will
15 always be search and placement time involved in filling normal vacancies as well
16 as newly added positions. Such vacancies will yield an annual savings in
17 incentive compensation which needs to be reflected for ratemaking to eliminate an
18 unreasonable impact on rates.

19
20 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
21 **INCENTIVE COMPENSATION?**

22 A. No. I continue to recommend an allowance of \$6,313,000 for incentive

1 compensation, or a reduction of \$2,452,000 (\$8,765,000 - \$6,313,000) to the
2 Company's distribution claim based on a three-year historic average of incentive
3 compensation. The Company's claim amount is not realistic in that not all goals
4 will be met or exceeded each year and Duquesne's budgeted and actual incentive
5 compensation for the past three years showed that Duquesne was actually under
6 budget in 2018, 2019 and 2020 (I&E Statement No. 2, pp. 16-19).

7
8 **HEALTH INSURANCE EXPENSE**

9 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
10 **FOR HEALTH INSURANCE EXPENSE.**

11 A. In direct testimony, I recommended an allowance of \$6,577,000 for health
12 insurance expense, or a reduction of \$131,000 (\$6,708,000 - \$6,577,000) to
13 Duquesne's distribution claim. My recommendation was based on recognition of
14 my salaries and wages adjustment (I&E Statement No. 2, pp. 19-20).

15
16 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
17 **HEALTH INSURANCE EXPENSE?**

18 A. Yes. Company witness Bachota disagrees with my recommended adjustment to
19 health insurance expense for the same reasons that she disagrees with my payroll
20 expense recommendation (DLC Statement No. 2-R, p. 7).

1 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
2 **HEALTH INSURANCE EXPENSE?**

3 A. No. I continue to recommend an allowance of \$6,577,000 for health insurance
4 expense, or a reduction of \$131,000 (\$6,708,000 - \$6,577,000) to Duquesne's
5 distribution claim based on recognition of my salaries and wages adjustment (I&E
6 Statement No. 2, pp. 19-20).

7

8 **401k EXPENSE**

9 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
10 **FOR 401k EXPENSE.**

11 A. In direct testimony, I recommended an allowance of \$5,074,000 for 401k expense,
12 or a reduction of \$169,000 (\$5,243,000 - \$5,074,000) to Duquesne's distribution
13 claim. My recommendation was based on recognition of my salaries and wages
14 adjustment (I&E Statement No. 2, pp. 20-22).

15

16 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
17 **401k EXPENSE?**

18 A. Yes. Company witnesses Jaime A. Bachota and Robert L. O'Brien disagree with
19 my 401k expense recommendation.

20

21 **Q. SUMMARIZE MS. BACHOTA'S RESPONSE.**

22 A. Ms. Bachota disagrees with my recommended adjustment to 401k expense for the

1 same reasons that she disagrees with my payroll expense recommendation (DLC
2 Statement No. 2-R, p. 7).

3
4 **Q. WHAT IS YOUR RESPONSE TO MS. BACHOTA'S ASSERTION?**

5 A. I disagree with her argument against my payroll expense recommendation as
6 explained above and I similarly disagree with her response concerning 401k
7 expense.

8
9 **Q. SUMMARIZE MR. O'BRIEN'S RESPONSE TO YOUR
10 RECOMMENDATION.**

11 A. Mr. O'Brien also disagrees with my recommended adjustment. and opines that the
12 payroll annualization adjustment is a pro forma adjustment that should not be
13 included in the adjustment for 401k expense. He asserts that it has no impact on
14 401k expense as there was not a pro forma adjustment made to 401k expense
15 (DLC Statement No. 10-R, p. 24).

16
17 **Q. DO YOU ACCEPT MR. O'BRIEN'S ASSERTION THAT THE PAYROLL
18 ANNUALIZATION ADJUSTMENT SHOULD NOT BE INCLUDED IN
19 YOUR 401k ADJUSTMENT?**

20 A. No. In determining its budget for 401k expense, one of the factors is the salary
21 and wage increases. In response to I&E-RE-10-D (I&E Exhibit No. 2, Schedule
22 10, p. 2) the Company stated, "To budget 401(k) the Company performs a top

1 down and bottom up approach utilizing only wages the Company will match. To
2 perform the top down approach, the Company reviews total historical
3 contributions, expected participation levels, *expected wage increases* [emphasis
4 added] and potential changes to the plan to determine an appropriate cost for the
5 budgeted years.”

6 According to the Company’s rate filing, DLC expects increases in salary
7 and wages for union employees effective October 1, 2021 and January 1, 2023 for
8 non-union employees (DLC Exhibit No. 2, Schedule D-7, p. 2). Therefore, it is
9 reasonable to include my annualization adjustment in determining my
10 recommendation for 401k expense as it is consistent with the Company’s
11 methodology in determining 401k expense.

12
13 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
14 **401k EXPENSE?**

15 A. No. I continue to recommend an allowance of \$5,074,000 for 401k expense, or a
16 reduction of \$169,000 (\$5,243,000 - \$5,074,000) to Duquesne’s distribution claim.
17 My recommendation was based on recognition of my salaries and wages
18 adjustments (I&E Statement No. 2, pp. 20-22).

1 **ADVERTISING EXPENSE**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
3 **FOR ADVERTISING EXPENSE.**

4 A. In direct testimony, I recommended an allowance of \$1,096,000 for advertising
5 expense, or a reduction of \$158,000 (\$1,254,000 - \$1,096,000) to Duquesne's
6 distribution claim. My recommendation was based on the removal of advertising
7 related to the Pittsburgh Home and Garden Show Sponsorship, as this is not an
8 operational cost necessary to provide safe and reliable electric service to
9 ratepayers, and ratepayers should not be required to finance Duquesne's decision
10 to pay for such promotional advertising (I&E Statement No. 2, pp. 22-23).

11
12 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
13 **ADVERTISING EXPENSE?**

14 A. Yes. Company witness Jaime A. Bachota accepts my recommendation for
15 advertising expense. Ms. Bachota states that although the Company disagrees that
16 the sponsorship costs related to Pittsburgh Home and Garden Show should not be
17 recovered from ratepayers, the Company accepts my adjustment of \$158,000 for
18 ratemaking purposes (DLC Statement No. 2-R, p. 16).

1 **ELIGIBLE CUSTOMER SOLICITATIONS**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
3 **FOR ELIGIBLE CUSTOMER SOLICITATIONS.**

4 A. In direct testimony, I recommended an allowance of \$95,000 or a reduction of
5 \$18,000 (\$113,000 - \$95,000) to the Company’s claim based on a 43-month
6 normalization period which is in line with my calculation of DLC’s historic filing
7 frequency instead of the claimed three-year amortization of the eligible customer
8 listing solicitation as this a routine operating expense where normalization is more
9 appropriate and in line with the handling of rate case expense for ratemaking. I
10 also recommended that the regulatory asset for eligible customer listing
11 solicitations be disallowed, and that normalization of this routine business expense
12 be required. It would be inappropriate for the Company to receive guaranteed
13 retroactive recovery of every single dollar that it spends to mail such notices to
14 customers and such treatment fails to encourage any potential future cost saving
15 measures (I&E Statement No. 2, pp. 23-26).

16
17 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
18 **ELIGIBLE CUSTOMER SOLICITATIONS?**

19 A. Yes. Company witnesses Jaime A. Bachota and Robert L. O’Brien disagree with
20 my recommendation. Ms. Bachota simply expresses disagreement with my
21 recommendation that eligible customer solicitations be normalized over a 43-
22 month period (DLC Statement No. 2-R, p. 16). Mr. O’Brien states the costs

1 associated with the eligible customer solicitations were not included in the
2 Company's initial filing and is therefore increasing its FPFTY expense by
3 \$339,000 to be amortized over three years for a claim amount of \$113,000
4 ($\$339,000 \div 3$) (DLC Statement No. 10-R, p. 4-5). Mr. O'Brien states that if the
5 Company's post filing addition is not accepted that my adjustment should be
6 rejected (DLC Statement No. 10-R, p. 25).

7
8 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
9 **ELIGIBLE CUSTOMER SOLICITATION?**

10 A. Generally, no, with one qualification. I continue to recommend an allowance of
11 \$95,000 or a reduction of \$18,000 ($\$113,000 - \$95,000$) to the Company's claim
12 based on 43-month normalization period which is in line with my calculation of
13 the Company's historic filing frequency instead of the Company's claimed three-
14 year amortization of the eligible customer listing solicitation for the reasons stated
15 above, and I continue to recommend that the regulatory asset for eligible customer
16 listing solicitations be disallowed, and that normalization of this routine business
17 expense be required as discussed above. However, if the additional expense
18 related to the eligible customer solicitation is not accepted by the Commission,
19 this adjustment would not be applicable.

1 **CHARGING INFRASTRUCTURE PORTFOLIO**

2 **Make-Ready Pilot**

3 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
4 **FOR THE COMPANY’S PROPOSED MAKE-READY PILOT.**

5 A. In direct testimony, I recommended the Company provide a report in its next base
6 rate proceeding. I also recommended that the report should include the total
7 number of L2 and DCFC stations installed as well as the number of L2 charging
8 stations in Environmental Justice (EJ) areas broken down by year under the Make-
9 Ready Pilot. The report should also provide the number and dollar amount of
10 charging station rebates for charging stations in EJ areas and a breakdown of
11 governmental grants received under the Make-Ready Pilot by year. Finally, the
12 report should include an evaluation of customer participation and feedback, public
13 access to charging stations, charging station usage, and identification of charging
14 station revenues received by the Company from charging station owners. My
15 recommendation is based on being able to evaluate the progress of the Make-
16 Ready Pilot and to assist in determining if any adjustments are needed or if the
17 Make-Ready Pilot should be discontinued (I&E Statement No. 2, pp. 22-23).

18

19 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
20 **THE PROPOSED MAKE-READY PILOT?**

21 A. Yes. Company witness Sarah J. Oleksak addresses my recommendation for the
22 Company’s proposed Make-Ready Pilot. Ms. Oleksak states that the Company

1 agrees with my recommendation for the Company to provide a report in its next
2 base rate proceeding, however, she states that the Company does not have the
3 ability to request a customers' receipt of government grants and that while a
4 customer can voluntarily provide this information, it would not be practical to
5 require this information from customers (DLC Statement No. 8-R, p. 31).

6
7 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
8 **THE COMPANY'S PROPOSED MAKE-READY PILOT?**

9 A. Yes. While I continue to recommend the Company provide a report in its next
10 base rate proceeding, I am withdrawing my recommendation that DLC provide a
11 breakdown of governmental grants received under the Make-Ready Pilot after
12 carefully considering the information presented by the Company in rebuttal
13 testimony.

14
15 **Fleet and Transit Charging Pilot**

16 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
17 **FOR THE COMPANY'S PROPOSED FLEET AND TRANSIT CHARGING**
18 **PILOT.**

19 A. In direct testimony, I recommended that Duquesne's maintenance and warranty
20 expenses of \$100,000 (rounded) related to the transit pilot costs be normalized
21 over a period 43 months resulting in an annual expense of \$28,000 [(\$100,000 ÷
22 43 months) x 12 months], or a reduction of \$5,000 (\$33,000 - \$28,000) to the

1 Company's claim which is consistent with my calculated rate case expense filing
2 frequency. I also recommended that the Company provide a report in its next base
3 rate proceeding to assist in determining if any adjustments are needed, or to
4 determine whether the Fleet and Transit Charging Pilot should be discontinued. I
5 recommended that the report should include documentation that the six DCFC
6 stations have been installed at the Port Authority's East Liberty Garage, that the
7 total number of L2 and DCFC stations have been installed for all other customers
8 participating in the Fleet and Transit Charging Pilot, and to reflect the number of
9 projects in EJ areas by year. I also recommended that the report should include an
10 evaluation of customer participation and feedback, charging station usage, and
11 identification of charging station revenues received by the Company from
12 charging station owners (I&E Statement No. 2, pp. 22-23).

13
14 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
15 **THE PROPOSED FLEET AND TRANSIT CHARGING PILOT?**

16 A. Yes. Company witness Sarah J. Oleksak addresses my recommendation for the
17 Company's proposed Fleet and Transit Charging Pilot. Ms. Oleksak states that the
18 Company agrees with my recommendation but notes that DLC may own the
19 charging stations and will report the charging station revenues received by the
20 Company (DLC Statement No. 8-R, p. 32).

1 **Home Charging Pilot**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
3 **FOR THE COMPANY’S PROPOSED HOME CHARGING PILOT.**

4 A. In direct testimony, I recommended that the Company provide a report in its next
5 base rate proceeding in order to assist in determining if any adjustments are
6 needed, or to determine whether the Home Charging Pilot should be discontinued.
7 I recommended that the report should include the total number of L2 stations
8 installed as well as the number of L2 charging stations installed for low-income
9 customers broken down by year under the Home Charging Pilot. I also
10 recommended that the report should provide the amount the Company paid for
11 standard installation costs broken down by residential customers and low-income
12 customers, the report should include an evaluation of customer participation,
13 feedback, and charging station usage, and it should identify the charging station
14 revenues received by the Company from charging station owners (I&E Statement
15 No. 2, pp. 33-36).

16
17 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
18 **THE PROPOSED HOME CHARGING PILOT?**

19 A. Yes. Company witness Sarah J. Oleksak addresses my recommendation for the
20 Company’s proposed Home Charging Pilot. Ms. Oleksak states that the Company
21 agrees with my recommendation but notes that the Company may own the

1 charging stations and DLC will report the charging station revenues received by
2 the Company (DLC Statement No. 8-R, p. 33).

3
4 **CUSTOMER PORTFOLIO**

5 **Awareness, Education, and Engagement (AAE) Proposal**

6 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
7 **FOR THE COMPANY’S AEE PROPOSAL.**

8 A. In direct testimony, I recommended that the Company provide a report in its next
9 base rate proceeding in order to assist in determining if any adjustments are
10 needed, or to determine whether the AEE proposal should be discontinued. I
11 recommended that the report provide a breakdown of the programs undertaken by
12 the Company, the specific channels used to educate customers about EVs,
13 charging stations, and the Company’s transportation electrification program, as
14 well as the programs geared specifically towards low-income customers by year.
15 Finally, I recommended that the report include an evaluation of customer
16 participation and feedback (I&E Statement No. 2, pp. 36-38).

17
18 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
19 **THE AEE PROPOSAL?**

20 A. Yes. Company witness Sarah J. Oleksak states that the Company agrees with my
21 recommendation (DLC Statement No. 8-R, p. 33).

1 **Fleet Electrification Advisory Proposal**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
3 **FOR THE COMPANY’S FLEET ELECTRIFICATION ADVISORY**
4 **SERVICE PROPOSAL.**

5 A. In direct testimony, I recommended that the Company provide a report in its next
6 base rate proceeding in order to assist in determining if any adjustments are
7 needed, or to determine whether the Fleet Electrification Advisory Service should
8 be discontinued. I recommended that the report provide the total number of
9 customers that participated in the Fleet Electrification Advisory Service program
10 and the number of non-profit organizations that serve EJ areas that participate in
11 the Fleet and Advisory Service program by year. Finally, I recommended that the
12 report include an evaluation of customer participation and feedback (I&E
13 Statement No. 2, pp. 38-40).

14
15 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
16 **THE FLEET ELECTRIFICATION ADVISORY SERVICE PROPOSAL?**

17 A. Yes. Company witness Sarah J. Olexsak states that the Company agrees with my
18 recommendation (DLC Statement No. 8-R, p. 34).

1 **Registration Incentive**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
3 **FOR THE COMPANY’S REGISTRATION INCENTIVE PROPOSAL.**

4 A. In direct testimony, I recommended the Company be required to provide a report
5 in its next base rate proceeding showing the number of customers that participated
6 in the registration incentive by year as well as an evaluation of customer
7 participation and feedback in order to evaluate the progress of the proposed
8 registration incentive and to assist in determining if any adjustments are needed or
9 if the program should be discontinued (I&E Statement No. 2, pp. 38-40).

10
11 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION FOR**
12 **THE REGISTRATION INCENTIVE PROPOSAL?**

13 A. Yes. Company witness Sarah J. Oleksak states that the Company agrees with my
14 recommendation (DLC Statement No. 8-R, p. 34).

15
16 **EV CHARGUP PILOT – L2 REBATES AND EV REGRISTRATION INCENTIVE**

17 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
18 **FOR THE COMPANY’S EV CHARGEUP PILOT PROGRAM – L2**
19 **REBATES AND EV REGISTRATION INCENTIVE.**

20 A. In direct testimony, I recommended that an allowance of \$274,000 be amortized
21 over a period of 43 months resulting in an annual expense of \$76,000 [(\$274,000 ÷
22 43 months) x 12 months], or a reduction of \$15,000 (\$91,000 - \$76,000) to the

1 Company's claim which is consistent with my calculated rate case expense filing
2 frequency. My recommendation was based on a change to the Company's claimed
3 three-year normalization of the L2 rebates and unused EV registration incentives
4 and instead to use a 43-month amortization period (since regulatory assets are
5 supposed to be amortized and not normalized) in line with my calculation of the
6 Company's historic filing frequency (I&E Statement No. 2, pp. 42-45).

7
8 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION FOR**
9 **THE EV CHARGEUP PILOT PROGRAM – L2 REBATES AND EV**
10 **REGISTRATION INCENTIVE?**

11 A. No.

12
13 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
14 **THE EV CHARGEUP PILOT PROGRAM – L2 REBATES AND EV**
15 **REGISTRATION INCENTIVE?**

16 A. No. I continue to recommend that an allowance of \$274,000 be amortized over a
17 period of 43 months resulting in an annual expense of \$76,000 [$(\$274,000 \div 43$
18 months) x 12 months], or a reduction of \$15,000 ($\$91,000 - \$76,000$) to the
19 Company's claim for the reasons stated in my direct testimony.

1 **CASH WORKING CAPITAL**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
3 **FOR CASH WORKING CAPITAL.**

4 A. In direct testimony, I recommended a total allowance of \$67,042,000 or a decrease
5 of \$1,288,000 (\$68,330,000 - \$67,042,000) to the Company's total claim (I&E
6 Exhibit No. 2, Schedule 15, p. 1). This resulted in a recommended distribution
7 allowance of \$45,294,000 for CWC, or a reduction of \$868,000 (\$46,162,000 -
8 \$45,294,000) to the Company's distribution claim based on the COSS allocation
9 factor of 0.6756 ($\$46,162,000 \div \$68,330,000$). My recommendation was based on
10 the removal of prepayments from the calculation of CWC related to Other
11 Expenses and for adjustments to O&M expenses as discussed in I&E witness
12 Christine Wilson's direct testimony (I&E Statement No. 1) and in my direct
13 testimony (I&E Statement No. 2, pp. 45-49).

14

15 **Q. DID THE COMPANY RESPOND TO YOUR CWC RECOMMENDATION?**

16 A. Yes. Company witness Robert L. O'Brien disagrees with my O&M adjustments
17 but agrees with how I made my CWC adjustments to account for them (DLC
18 Statement No. 9-R, p. 42). However, he asserts that I did not perform any studies
19 to determine if some or any of the prepaid expenses should be removed and if
20 some of the prepaid expenses should be removed, it should not be allocated 100%
21 to distribution (DLC Statement No. 10-R, pp. 60-63).

1 **Q. WHAT IS YOUR RESPONSE TO MR. O'BRIEN'S REBUTTAL**
2 **TESTIMONY REGARDING CWC?**

3 A. As explained in my direct testimony, the Company states prepayments were not
4 removed from calculating CWC for Other Expenses despite prepayments already
5 being included as a separate line item in calculating CWC (I&E Exhibit No. 2,
6 Schedule 16). By not removing prepayments from the Other Expenses calculation
7 for CWC, the Company is double counting prepayments in calculating CWC (I&E
8 Statement No. 2, pp. 47-48). Additionally, Mr. O'Brien is correct in that 100% of
9 prepayments should not be allocated to distribution. However, in the absence of
10 an allocation factor for prepayments, I am updating my recommendation to apply
11 an allocation factor 0.6791 ($\$46,384,000 \div \$68,307,000$), which is the allocation
12 factor used by the Company for its updated CWC claim to distribution customers
13 (DLC Exhibit RLO-5-R, Schedule D-1, p. 3, line 4).

14
15 **Q. DID THE COMPANY PROVIDE AN UPDATED CWC CLAIM?**

16 A. Yes. The Company's total updated claim for CWC is \$68,307,000, and its
17 updated distribution claim is \$46,384,000 (DLC Exhibit RLO-2-R, Schedule D-1,
18 p. 3).

19
20 **Q. DO YOU HAVE AN UPDATE TO YOUR CWC RECOMMENDATION FOR**
21 **THE I&E RECOMMENDED ADJUSTMENTS TO O&M EXPENSES?**

22 A. Yes. As stated in direct testimony, all O&M expense adjustments that are cash-

1 based expense claims are included when determining the Company's overall CWC
2 requirement. Therefore, I have included cash-based O&M recommendations when
3 computing the overall recommended CWC allowance.
4

5 **Q. SUMMARIZE WHERE EACH OF THE RECOMMENDED O&M**
6 **EXPENSE ADJUSTMENTS ARE REFLECTED IN THE CWC**
7 **COMPUTATIONS.**

8 A. **Payroll - Expense Lag Days:**

9 I recommended a reduction to total salaries and wages expense of \$3,013,000
10 which is reflected as a reduction of \$37,534,000 to the Payroll Expense Lag Days
11 calculation (I&E Exhibit No. 2-SR, Schedule 1, p. 1). I determined the total
12 reduction to salaries and wages expense by dividing my recommended reduction
13 to distribution salaries and wages expense of \$2,490,000 by the COSS allocation
14 factor of 0.8263 (DLC Exhibit 6-8A, p. 1) for a total salaries and wages expense
15 adjustment of \$3,013,000 ($\$2,490,000 \times 0.8263$).
16

17 **Other Expenses – Expense Lag Days:**

18 The following recommended adjustments (I&E Statement No. 1-SR and I&E
19 Statement No. 2-SR) are reflected in the Other Expenses, Expense Lag Days
20 calculation: rate case expense adjustment of \$132,000, payroll taxes adjustment of
21 \$269,000, incentive compensation adjustment of \$2,967,000, health insurance
22 expense adjustment of \$159,000, 401k expense adjustment of \$205,000, Fleet and

1 Transit Charging Pilot – Maintenance and Warranty expense adjustment of \$5,000,
2 Eligible Customer Solicitation adjustment of \$18,000, EV ChargeUp pilot expense
3 adjustment of \$15,000, COVID-19 related uncollectible expense adjustment of
4 \$341,000, COVID-19 related costs net of savings (excluding uncollectible
5 expense) adjustment of \$1,495,000, New Business Stimulus Rider adjustment of
6 \$277,000, Crisis Recovery Program adjustment of \$423,000, Residential COVID-
7 19 Debt Relief Program adjustment of \$1,167,000, Residential Subscription Rate
8 Pilot Rider adjustment of \$22,000 and prepayments of \$18,260,000 as discussed
9 above which is reflected as a total decrease of \$1,156,398,000 to the Other
10 Expense Lag Days calculation. My calculation to determine the total adjustment
11 for the Other Expenses is shown on I&E Exhibit No. 2-SR, Schedule 1, p. 2.

12
13 **Summary of I&E-Updated Recommended CWC Allowance:**

14 **Q. BASED ON THE ABOVE TESTIMONY, WHAT IS YOUR UPDATED**
15 **RECOMMENDED ALLOWANCE FOR CWC?**

16 A. Based on reflecting all of I&E's recommended adjustments as discussed above,
17 my updated recommendation for CWC is a total allowance of \$67,051,000 or a
18 decrease of \$1,256,000 (\$68,307,000 - \$67,051,000) to the Company's updated
19 total claim (I&E Exhibit No. 2-SR, Schedule 1, p. 1). To determine the amount
20 attributed to distribution, I divided the Company's revised distribution claim for
21 CWC of \$46,384,000 by the Company's revised total claim for CWC to produce
22 an allocation factor for distribution of 0.6791 ($\$46,384,000 \div 68,307,000$).

1 This results in a recommended adjustment of \$853,000 (\$1,256,000 x
2 0.6791) to the Company's revised distribution claim for CWC, or a revised
3 recommendation of \$45,531,000 (\$46,384,000 - \$853,000).

4
5 **Q. IS YOUR UPDATED RECOMMENDATION FOR CWC A FINAL**
6 **RECOMMENDED ALLOWANCE?**

7 A. No. As stated in my direct testimony, all adjustments to the Company's claims
8 must be continually brought together in the Administrative Law Judge's
9 Recommended Decision and again in the Commission's Final Order. This process,
10 known as iteration, effectively prevents the determination of a precise calculation
11 until all adjustments have been made to the Company's claims.

12
13 **RATE OF RETURN RECOMMENDATION**

14 **SUMMARY OF MR. MOUL'S REBUTTAL TESTIMONY**

15 **Q. SUMMARIZE MR. MOUL'S RESPONSE IN REBUTTAL TESTIMONY TO**
16 **YOUR RATE OF RETURN RECOMMENDATIONS.**

17 A. Mr. Moul disputes my recommendations regarding an appropriate proxy group, the
18 use of methods other than the Discounted Cash Flow (DCF), the DCF growth rate,
19 disallowance of his leverage adjustment to the DCF, the Capital Asset Pricing
20 Model (CAPM) risk-free rate, rejection of his leverage adjusted betas,
21 disallowance of his size adjustment, and my disagreement with his use of the Risk
22 Premium (RP) and Comparable Earnings (CE) methods.

1 **PROXY GROUP**

2 **Q. SUMMARIZE MR. MOUL’S RESPONSE REGARDING YOUR PROXY**
3 **GROUP.**

4 A. Mr. Moul states that regulated revenues for each of the companies in his proxy
5 group are 51% or higher and therefore should be included in my proxy group. Mr.
6 Moul disagrees with my exclusion of Exelon Corp. from his proxy group as he
7 argues that more than 50% of revenues are generated from regulated electric utility
8 operations. Finally, Mr. Moul disagrees with my exclusion of Avangrid, Inc. by
9 opining that the company should not be removed because he asserts only the target
10 company should be excluded from a barometer group in most merger and
11 acquisition situations. (DLC Statement No. 13-R, pp. 9-12).

12
13 **Q. OUT OF THE FIVE COMPANIES THAT MR. MOUL USES IN HIS**
14 **PROXY GROUP THAT YOU DO NOT USE, WHICH WERE EXCLUDED**
15 **FOR FAILING TO MEET THE CRITERION THAT 50% OR MORE**
16 **REVENUES MUST BE GENERATED FROM THE ELECTRIC UTILITY**
17 **INDUSTRY?**

18 A. As stated in my direct testimony, only Exelon Corp. was excluded for not meeting
19 my criterion that 50% or more revenues must be generated from regulated electric
20 utility operations (I&E Statement No. 2, pp. 57-58). Mr. Moul disagrees with my
21 removal of Exelon Corp. based on the information he used to develop his proxy
22 group. I used S&P Global Market Intelligence segment analysis while Mr. Moul

1 used the SEC Form 10-K to perform his analysis. As a result, there was a
2 difference on which companies will be added or removed from each of our proxy
3 groups based on the different type of information used. There were other
4 companies that did not meet this requirement as well; however, they were
5 previously eliminated for not meeting one of the other criteria.

6
7 **Q. OUT OF THE FOUR REMAINING COMPANIES THAT MR. MOUL USES**
8 **IN HIS PROXY GROUP THAT YOU DO NOT USE, WHICH WERE**
9 **EXCLUDED FOR FAILING TO MEET THE CRITERION THAT THE**
10 **COMPANY MUST OPERATE IN A STATE THAT HAS DEREGULATED**
11 **ELECTRIC UTILITY MARKET?**

12 A. As stated in my direct testimony, MGE Energy, NextEra Energy, and Otter Tail
13 Corp. were excluded for not meeting my criterion that the company must operate
14 in a state that has a deregulated electric utility market (I&E Statement No. 2, pp.
15 57-58).

16
17 **Q. EXPLAIN WHY THE REMAINING COMPANY THAT MR. MOUL USES**
18 **WAS EXCLUDED FROM YOUR PROXY GROUP.**

19 A. Although Mr. Moul is correct that Avangrid, Inc. is the acquiring company in the
20 PNM Resources transaction, I excluded Avangrid, Inc. because the deal, which is
21 worth over \$8 billion, is so large that it will likely have a material impact on the
22 Company's financial situation. Additionally, as stated above, NextEra Energy was

1 eliminated because it does not operate in a state that has a deregulated utility
2 market.

3
4 **Q. DO YOU HAVE ANY CHANGES TO YOUR PROXY GROUP?**

5 A. No. For the reasons discussed above and in my direct testimony, I continue to
6 believe that the percentage of revenues along with my other criteria are
7 appropriate for determining a proxy group of companies similar to Duquesne.
8 Additionally, some of our differences are due to the type of information used or on
9 the timing of certain events such as merger and acquisition activity where
10 companies can be added or removed from each of our proxy groups.

11
12 **DISCOUNTED CASH FLOW**

13 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING YOUR DCF**
14 **ANALYSIS.**

15 A. Mr. Moul agrees that the results of a DCF analysis should be given weight but
16 disagrees with my approach. Mr. Moul also disagrees with my results based on
17 the outcomes of certain individual companies and my recommendation to reject
18 his leverage adjustment (DLC Statement No. 13-R, pp. 15-18).

1 **Exclusive Use of the DCF**

2 **Q. SUMMARIZE MR. MOUL’S RESPONSE REGARDING YOUR USE OF**
3 **THE DCF.**

4 A. Mr. Moul explains that the use of more than one method provides a superior
5 foundation for the cost of equity determination. He claims that the use of more
6 than one method will capture the multiplicity of factors that motivate investors
7 (DLC Statement No. 13-R, pp. 15-16).

8
9 **Q. WERE ANY METHODS OTHER THAN THE DCF EMPLOYED IN YOUR**
10 **ANALYSIS?**

11 A. Yes. Although my recommendation was based on the results of my DCF analysis,
12 I also employed the CAPM as a comparison. The result of my DCF analysis is
13 9.19% while the result of my CAPM analysis is 9.48%, both of which are
14 significantly lower than the Company’s claim of 10.95%. For the reasons
15 discussed in my direct testimony, the DCF method is the most reliable (I&E
16 Statement No. 2, pp. 16-17). I have considered the fact that no method can
17 perfectly predict the return on equity, which is why I also use the CAPM as a
18 comparison to the DCF. Although no one method can capture every factor that
19 influences an investor, including the results of methods less reliable than the DCF
20 does not make the end result more reliable or more accurate. As a result, I stand
21 by my method of using the DCF with a CAPM comparison, which is consistent

1 with the methodology historically used by the Commission in base rate
2 proceedings, even as recently as 2017, 2018, 2020, and 2021.¹

3
4 **DSIC Rate**

5 **Q. SHOULD THE COMMISSION CONSIDER THE AUTHORIZED DSIC**
6 **RATE ESTABLISHED IN THE QUARTERLY EARNINGS SUMMARY**
7 **REPORTS AS AN APPROPRIATE MEASURE TO DETERMINE A**
8 **MINIMUM COST OF EQUITY IN THIS PROCEEDING AS MR. MOUL**
9 **OPINES?²**

10 **A.** No. It is my understanding that the Commission’s authorized return on equity for
11 DSIC purposes is set higher than the Commission staff-calculated return on equity
12 as an incentive for companies to invest in improving or replace deteriorating
13 infrastructure while reducing regulatory lag. Furthermore, DSIC spending
14 requires preapproval of eligible plant via a Long-Term Infrastructure Improvement
15 Plan so there is little question as to the prudence of those expenditures. It is
16 important to note that the DSIC rate is a cut-off rate above which utilities are

¹ *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company*; Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA*; Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.*; Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131. *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

² DLC Statement No. 13-R, pp. 5-6.

1 ineligible to utilize the DSIC, which more establishes this rate as a marker for
2 establishing overearning, not a rate designating the appropriate return that a utility
3 should receive.

4
5 **Evaluating the DCF Based on Individual Results**

6 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING THE RESULTS**
7 **OF YOUR DCF.**

8 A. Mr. Moul argues that when some results are unreasonable on their face, the
9 application or the reliability of that method must be questioned. He points to the
10 results of three of my proxy group companies and claims that they fall into that
11 category. Mr. Moul attempts to support his argument by pointing out that I
12 removed from my analysis the growth rates of two companies (DLC Statement
13 No. 13-R, pp. 17-18).

14
15 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL'S ATTEMPT TO**
16 **DISAGGREGATE YOUR RESULTS?**

17 A. Generally, to remove individual companies or data points based solely on the
18 results creates a bias and can be described as tampering with market-based results.
19 I chose criteria for my proxy group with the intention of creating a group that is
20 comparable to Duquesne, and then calculated a DCF from the companies that fit
21 my criteria.

1 Admittedly, I have removed the negative projected growth rates for
 2 FirstEnergy Corp. and PPL Corporation from my overall projected growth rate
 3 average. This increased the growth rate used in my DCF analysis from 4.83% to
 4 5.46%. I removed these growth rates based on my professional judgement. While
 5 I understand the purpose of a proxy group is to smooth out abnormalities, I believe
 6 it is reasonable to expect a utility to have positive growth in order to continually
 7 provide adequate, efficient, safe, and reliable service.

8 Additionally, Mr. Moul points to the results of three individual companies,
 9 which are different from the other two discussed above, that he claims, “fail the
 10 reasonableness test” (DLC Statement No. 13-R, p. 17, line 15 through p. 18, line
 11 7). The remaining individual results which Mr. Moul takes no issue with are as
 12 follows:

<u>Company</u>	<u>Dividend Yield</u>	+	<u>Growth Rate</u>	=	<u>Total</u>
Ameren Corp	2.88%	+	7.23%	=	10.10%
American Electric Power Company Inc.	3.72%	+	6.10%	=	9.82%
CMS Energy Corp	3.02%	+	7.09%	=	10.11%
Dominion Energy	3.45%	+	7.12%	=	10.57%
Duke Energy Corp	4.11%	+	5.28%	=	9.38%
Entergy Corp.	3.97%	+	4.38%	=	8.35%
Eversource Energy	3.04%	+	7.03%	=	10.06%
NorthWestern Corporation	4.18%	+	4.12%	=	8.30%
Portland General Electric Company	3.99%	+	7.03%	=	11.02%
Xcel Energy Inc.	2.84%	+	6.13%	=	8.96%
<u>Average</u>					<u>9.67%</u>

13

1 As shown above, the results are much closer to my 9.24% return on equity
2 recommendation compared to Mr. Moul's recommended return on equity of
3 10.95%. Regardless, Mr. Moul only questions results that he deems to be too low
4 and ignores results that could be perceived as too high.

5
6 **Growth Rates**

7 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING YOUR GROWTH**
8 **RATES.**

9 A. Mr. Moul again, as discussed in greater detail above, points to the fact that I
10 excluded from my average the negative growth projections of two different
11 companies. He suggests that I should have gone farther by removing three
12 companies that have a spread between the cost of equity and cost of debt of less
13 than 6.75% based on his cost of debt of 3.21% resulting in a cost of equity of at
14 least 9.96% (6.75% + 3.21%). After removing Consolidated Edison Inc.,
15 IDACORP Inc., and Public Service Enterprise Group Inc., he recalculates my DCF
16 rate to be 9.79%, which of course produces a higher DCF result (DLC Statement
17 No. 13-R, pp. 18-21).

18
19 **Q. DO YOU AGREE WITH MR. MOUL'S REMOVAL OF THE THREE**
20 **COMPANIES WITH DCF RESULTS THAT HAVE A SPREAD BETWEEN**
21 **THE COST OF EQUITY AND COST OF DEBT OF LESS THAN 6.75%?**

22 A. No. Mr. Moul removes these companies from DCF results simply because he

1 feels the results are too low. Unlike my decision to remove the companies with
2 negative growth forecasts, there is no objective rationale for removing these
3 companies other than to inflate the DCF results.
4

5 **Leverage Adjustment**

6 **Q. SUMMARIZE MR. MOUL’S RESPONSE REGARDING HIS**
7 **RECOMMENDED LEVERAGE ADJUSTMENT.**

8 A. First, Mr. Moul clarifies that his “leverage adjustment” is not a traditional
9 “market-to-book” ratio adjustment. Next, he states that credit rating agencies do
10 not measure the market-required cost of equity for a company, nor are they
11 concerned with how it is applied in the rate-setting context. Instead, credit rating
12 agencies are only concerned with the interests of lenders and the timely payment
13 of interest and principal by utilities. Mr. Moul then questions my references to
14 prior Commission Orders. Finally, Mr. Moul disagrees with my assertion that
15 investors base their decisions on book value capitalization (DLC Statement No.
16 13-R, pp. 21-24).
17

18 **Q. HAVE YOU CLAIMED THAT MR. MOUL’S ADJUSTMENT IS A**
19 **MARKET-TO-BOOK RATIO ADJUSTMENT?**

20 A. No. As I stated in my direct testimony, Mr. Moul does not propose to change the
21 capital structure of the utility (a leverage adjustment), nor does he propose to

1 apply the market-to-book ratio to the DCF model (a market-to-book adjustment)
2 (I&E Statement No. 2, pp. 84-85).

3
4 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL'S REBUTTAL TESTIMONY**
5 **CONCERNING CREDIT RATING AGENCIES?**

6 A. Mr. Moul has supported the I&E argument that his proposed leverage adjustment
7 is not needed by stating that the credit rating agencies are only concerned with the
8 timely payment of interest and principal by utilities (DLC Statement No. 13-R, p.
9 21). Mr. Moul's stated need for the leverage adjustment is based on his assertion
10 that the difference between the book value capital structure and his market value
11 capital structure causes a financial risk difference (DLC Statement No. 13, pp. 30-
12 31).

13 Financial risk does relate to the capital structure of a company, but it is
14 created by the financing decisions (the use of debt or equity) and the amount of
15 leverage or debt a company chooses to finance its assets. Financial risk and the
16 book value capital structure of a company are represented in the income statement,
17 part of what is evaluated by rating agencies. Mr. Moul agrees with me that credit
18 rating agencies use a company's financial statements in their analysis to assess
19 financial risk and determine creditworthiness (DLC Statement No. 13-R, p. 21).

1 **Q. SUMMARIZE MR. MOUL’S RESPONSE TO YOUR REFERENCING**
2 **PRIOR COMMISSION ORDERS.**

3 A. Mr. Moul refers to the discussion in my direct testimony where I point to five
4 recent cases (Aqua Pennsylvania, Inc., City of Lancaster – Bureau of Water, UGI
5 Utilities, Inc. – Electric Division, Columbia’s Gas of Pennsylvania, Inc, and PECO
6 Energy Company – Gas Division) where the Commission has rejected a “leverage
7 adjustment.” He claims that the adjustment proposed in the City of Lancaster case
8 was much different than what he is proposing in this proceeding. Additionally,
9 Mr. Moul explains that even though the Commission declined to make a “leverage
10 adjustment” in the Aqua Pennsylvania case, it does not invalidate its use. Further,
11 Mr. Moul states, “Notably, the Commission did not repudiate the leverage
12 adjustment in the Aqua case, but instead arrived at an 11.00% return on equity for
13 Aqua by including a separate return increment for management performance.”
14 Further, Mr. Moul states that the Commission granted basis points for management
15 performance in the UGI Electric case to arrive at the return on equity of 9.85%.
16 Additionally, Mr. Moul states that in the 2020 Columbia Gas case the Company
17 accepted I&E’s DCF return without regard to the leverage adjustment or
18 management performance. Finally, Mr. Moul states that in PECO Gas case the
19 Commission observed that the rate of return granted was sufficient and no
20 additional basis points were necessary for management performance (DLC
21 Statement No. 13-R, p. 22).

1 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL REGARDING THE**
2 **REFERENCED PRIOR COMMISSION ORDERS IN YOUR DIRECT**
3 **TESTIMONY?**

4 A. In this proceeding, Mr. Moul is recommending a 146-basis point “leverage
5 adjustment.” To be clear, the Commission did in fact refuse to accept the leverage
6 adjustment in the Aqua case by stating “...we reject the ALJ’s recommendation to
7 allow a 65 basis point leverage adjustment.”³ The management performance
8 points awarded to Aqua were case-specific and in no way related to the proposed
9 leverage adjustment. Regarding the City of Lancaster case, the Commission did
10 not reject the leverage adjustment based on the manner in which it was calculated,
11 but rather, the Commission stated, “...the ALJ’s recommendation is in error as any
12 adjustment to the results of the market based DCF as we have previously adopted
13 are unnecessary and will harm ratepayers.”⁴ Regarding the UGI Electric case, the
14 Commission concluded that, “...an artificial adjustment in this proceeding is
15 unnecessary and contrary to the public interest. Accordingly, we decline to
16 include a leverage adjustment in our calculation of the DCF cost of equity.”⁵
17 Regarding the most recent Columbia Gas case, the Commission stated, “... we
18 have adopted the ALJ’s recommendation to use I&E’s DCF methodology utilizing
19 I&E’s dividend yield of 3.34% and growth rate of 6.52%. As noted above, the

³ *Pa. PUC v. Aqua Pennsylvania, Inc.*; Docket No. R-00072711, pp. 38-39 (Order entered July 31, 2008).

⁴ *Pa. PUC v. City of Lancaster – Bureau of Water*; Docket No. R-2010-2179103, p. 79 (Order entered July 14, 2011).

⁵ *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058, pp. 93-94 (Order entered October 25, 2018).

1 ALJ did not specify a recommended cost of equity for Columbia in her
2 Recommended Decision. However, we note that I&E’s methodology results in an
3 ROE of 9.86%.”⁶ The ALJ’s Recommended Decision stated the following:

4 The ALJ agrees with BIE’s reasoning that Columbia Gas’
5 calculated return on equity was flawed for five reasons: (1) the
6 weights given to the results of the Company’s CAPM, RP, and
7 CE analyses; (2) certain aspects of Columbia’s discussion of
8 risk; (3) Columbia Gas’ application of the DCF including the
9 forecasted growth rate and leverage adjustment used; (4)
10 Columbia’s inclusion of a size adjustment, reliance on the 30-
11 year Treasury Bond for the risk- free rate, and the use of a
12 double-adjusted *beta* in the CAPM analysis; and (5) the
13 Company’s request for an additional 20 basis points for “strong
14 management performance” is unjustified.⁷
15

16 While the Company accepted I&E’s DCF return without regard to the leverage
17 adjustment or management performance in the last base rate case, in the
18 Recommended Decision, the ALJ clearly rejected the Company’s proposed
19 leverage adjustment and the Commission agreed with the ALJ’s Recommended
20 Decision, which rejected the Company’s proposed leverage adjustment. Finally, in
21 the PECO Energy – Gas Division case, the Commission stated, “... we have
22 adopted the ALJ’s recommendation to use I&E’s DCF methodology and to use
23 I&E’s CAPM calculation as a check on the reasonableness of the DCF determined
24 cost of equity. Therefore, we shall adopt the ALJ’s recommended 10.24% cost of
25 equity. In our view, this is an appropriate cost of equity for PECO given the

⁶ *Pa. PUC v. Columbia Gas of Pennsylvania; Inc.* Docket No. R-2020-3018835, p. 137 (Order entered February 19, 2021).

⁷ *Pa. PUC v. Columbia Gas of Pennsylvania; Inc.* Docket No. R-2020-3018835. Recommended Decision, pp. 184-185.

1 record developed in this proceeding.”⁸ In the Recommended Decision, the ALJ
2 agreed with I&E’s recommended cost of equity which did not include a leverage
3 adjustment.⁹
4

5 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL’S ASSERTION THAT**
6 **INVESTORS DO NOT BASE THEIR DECISIONS ON BOOK VALUE, BUT**
7 **RATHER THE RETURN THEY WILL EARN ON THE DOLLARS THEY**
8 **INVEST?**

9 A. Mr. Moul’s assertion that an investor is concerned with the return earned on
10 dollars invested and not “some accounting value of little relevance to them,” (DLC
11 Statement No. 13-R, p. 23) is unsupported. Clearly an investor takes financial risk
12 into consideration when determining a required return. In addition, the market
13 capitalization information included in Value Line’s reports and discussed by Mr.
14 Moul is not the same as market value capital structure (DLC Statement No. 13-R,
15 p. 23). Market capitalization refers to the number of shares outstanding multiplied
16 by the current price. A market value capital structure refers to the ratio of market
17 debt to market equity, which is not included in Value Line’s reports. Therefore,
18 Mr. Moul’s contention that Value Line includes market capitalization data does not
19 offer any support for his leverage adjustment.

⁸ *Pa. PUC v. PECO Energy Company – Gas Division*. Docket No. R-2020-3018929, p. 171 (Order entered June 22, 2021).

⁹ *Pa. PUC v. PECO Energy Company – Gas Division*. Docket No. R-2020-3018929. Recommended Decision, p. 215.

1 **Q. HAS MR. MOUL’S RESPONSE CONCERNING HIS PROPOSED**
2 **LEVERAGE ADJUSTMENT CAUSED YOU TO CHANGE YOUR**
3 **RECOMMENDATION?**

4 A. No. For the reasons discussed above, I continue to recommend that Mr. Moul’s
5 leverage adjustment be rejected.

6

7 **CAPITAL ASSET PRICING MODEL**

8 **Q. SUMMARIZE MR. MOUL’S RESPONSE REGARDING YOUR**
9 **APPLICATION OF THE CAPM.**

10 A. Mr. Moul opines that my CAPM analysis understates the cost of equity for several
11 reasons, including my use of the yield on 10-year Treasury Notes for my risk-free
12 rate, failure to use leverage adjusted betas, and rejection of his size adjustment
13 (DLC Statement No. 13-R, p. 24). Each of these topics are discussed in more
14 detail below.

15

16 **Risk-Free Rate**

17 **Q. SUMMARIZE MR. MOUL’S RESPONSE REGARDING YOUR USE OF**
18 **THE YIELD ON THE 10-YEAR U.S. TREASURY NOTE.**

19 A. Mr. Moul claims that his use of the yield on a 30-year U.S. Treasury Bond is more
20 appropriate than my use of the yield on a 10-year Treasury Note because a longer-
21 term bond is less susceptible to Federal policy actions (DLC Statement No. 13-R,
22 pp. 24-25).

1 **Q. DO YOU AGREE WITH MR. MOUL THAT USING THE YIELD OF A 30-**
2 **YEAR U.S. TREASURY BOND IS MORE APPROPRIATE DUE TO A**
3 **LONGER-TERM BOND BEING LESS SUSCEPTIBLE TO FEDERAL**
4 **POLICY ACTIONS?**

5 A. No. As stated in my direct testimony, I chose the 10-year Treasury Note which
6 balances the shortcomings of the short-term T-Bill and the 30-year Treasury Bond.
7 Although long-term Treasury Bonds have less risk of being influenced by federal
8 policies, they have substantial maturity risk associated with the market risk. In
9 addition, long-term Treasury Bonds bear the risk of unexpected inflation. As such,
10 my choice of a 10-year Treasury Note is more appropriate (I&E Statement No. 2,
11 pp. 73-74). Furthermore, as also pointed out in my direct testimony, the
12 Commission has recently agreed with I&E and recognized the 10-year Treasury
13 Note as the superior measure of the risk-free rate of return.¹⁰

14
15 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING YOUR RISK-**
16 **FREE RATE USED IN THE CAPM FORMULA.**

17 A. Mr. Moul opines that I have incorrectly given weight to the yield on the 10-year
18 Treasury Note for the third and fourth quarters of 2021 and the first, second, and
19 third quarters of 2022 as I do for the entire five-year period encompassing 2023 to
20 2027. Then, Mr. Moul incorrectly recalculates the risk-free rate by averaging the

¹⁰ *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 p. 99 (Order entered October 25, 2018).

1 10-year treasury yield forecasts by year from 2021 through 2026 to inflate my
2 calculated risk-free rate of 2.12% to 2.50% (DLC Statement No. 13-R, pp. 25-26).

3
4 **Q. DO YOU AGREE WITH MR. MOUL'S ANALYSIS OF YOUR RISK-FREE**
5 **RATE?**

6 A. No. Mr. Moul's new calculation proposes to give equal weight to each separate
7 year from 2023 to 2027. The flaw with this approach is that the further out into
8 the future one forecasts, the less reliable and more speculative the estimates
9 become; therefore, to give the less reliable estimates equal weight would not be
10 prudent. It is more appropriate to weight the quarters and years as I have done in
11 my direct testimony (I&E Exhibit No. 2, Schedule No. 24). My calculation
12 provides a more accurate estimation of the risk-free rate during the Fully Projected
13 Future Test Year, as the further out one forecasts, the less reliable the information
14 becomes.

15
16 **Leveraged Betas**

17 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING THE USE OF**
18 **LEVERAGE-ADJUSTED BETAS.**

19 A. Mr. Moul simply mentions my "failure to use leverage adjusted betas..." (DLC
20 Statement No. 13-R, p. 24). He does not offer an explanation beyond what he
21 argued in his direct testimony.

1 **Q. IS THE USE OF LEVERAGE-ADJUSTED BETAS IN CAPM ANALYSES**
2 **APPROPRIATE?**

3 A. No. As stated in my direct testimony, Mr. Moul's adjustment only serves to inflate
4 the result of his CAPM analysis. Enhancements such as leverage adjusted betas
5 are unwarranted in CAPM analyses for the same reasons that enhancements are
6 unwarranted for DCF results. Until this type of adjustment is demonstrated in
7 academic literature to be valid, such leverage-adjusted betas in a CAPM should be
8 rejected (I&E Statement No. 2, pp. 90-91).

9

10 **Size Adjustment**

11 **Q. SUMMARIZE YOUR DIRECT TESTIMONY REGARDING A SIZE**
12 **ADJUSTMENT.**

13 A. In direct testimony, I stated that Mr. Moul's 102 basis point CAPM size
14 adjustment is unnecessary because none of the technical literature he cited in his
15 direct testimony supporting investment adjustments related to the size of a
16 company is specific to the utility industry. In addition, I presented an article by
17 Dr. Annie Wong that demonstrated there is no need to make an adjustment for the
18 size of a company in utility rate regulation (I&E Statement No. 2, pp. 91-93).

19

20 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING A SIZE**
21 **ADJUSTMENT.**

22 A. Mr. Moul states that enormous changes have occurred in the industry since the

1 article reference in direct testimony, “Utility Stocks and the Size Effect: An
2 Empirical Analysis,” by Dr. Annie Wong was published. He also references the
3 Fama/French study, “The Cross-Section of Expected Stock Returns,” to illustrate
4 that his size adjustment is a separate factor from beta which helps explain
5 systematic risk and returns. Mr. Moul also states that the technical literature he
6 relied upon utilized market-wide evidence which included public utilities (DLC
7 Statement No. 13-R, pp. 26-28).

8
9 **Q. DO THE FAMA/FRENCH STUDY AND THE IBBOTSON STUDY REFUTE**
10 **DR. WONG’S ARTICLE?**

11 A. No. As stated in my direct testimony, Dr. Wong’s article presents evidence that
12 although a size effect may exist for industrial stocks, it does not exist for utility
13 stocks. As the Fama/French study is not specific to utility stocks, and although the
14 Ibbotson study included public utilities, this does not adequately demonstrate that
15 a size effect exists in the utility industry. In addition, the size effect that exists for
16 industrial stocks varies to such an extent that it is difficult to predict. The
17 difficulty in predicting the effect of size is demonstrated in the variance from year
18 to year of the measurement of difference between the annual returns on the large
19 and small-capitalization stocks of the NYSE/AMEX/NASDAQ in the Ibbotson
20 *Stocks, Bonds, Bills & Inflation: 2015 Yearbook* as referenced in Mr. Moul’s direct
21 testimony. As stated on page 100 of the SBBI Yearbook,

1 While the largest stocks actually declined in 2001, the smallest
2 stocks rose more than 30%. A more extreme case occurred in
3 the depression-recovery year of 1933, when the difference
4 between the first and 10th decile returns was far more
5 substantial. The divergence in the performance of small- and
6 large- cap stocks is evident. In 30 of the 89 years since 1926,
7 the difference between the total returns of the largest stocks
8 (decile 1) and the smallest stocks (decile 10) has been greater
9 than 25 percentage points.

10 Page 109 states,

11 In four of the last 10 years, large-capitalization stocks (deciles
12 1-2 of NYSE/AMEX/NASDAQ) have outperformed small-
13 capitalization stocks (deciles 9-10). This has led some market
14 observers to speculate that there is no size premium. But
15 statistical evidence suggests that periods of underperformance
16 should be expected.

17
18 Page 112 states,

19 Because investors cannot predict when small-cap returns will
20 be higher than large-cap returns, it has been argued that they
21 do not expect higher rates of return for small stocks.
22

23 **Q. DOES THE TIME WHICH HAS ELAPSED SINCE AN ARTICLE WAS**
24 **WRITTEN NECESSARILY INVALIDATE ITS RESULTS?**

25 A. No. Although Mr. Moul states that enormous changes have occurred in the
26 industry since the 1960s, he presents no evidence that these “changes” have
27 caused the need for a size adjustment. To the contrary, Dr. Wong’s study
28 demonstrated that one does *not* need to be made in the regulated utility industry.
29 As stated in my direct testimony, absent any credible article to refute Dr. Wong’s
30 findings, Mr. Moul’s size adjustment to his CAPM results should be rejected.

1 **Q. WHAT IS YOUR RECOMMENDATION REGARDING MR. MOUL'S SIZE**
2 **ADJUSTMENT?**

3 A. I continue to recommend that his use of the 1.02% size adjustment be disallowed
4 in calculating the CAPM.

5
6 **Q. MR. MOUL HAS RECALCULATED YOUR CAPM RESULTS. DO YOU**
7 **AGREE WITH HIS RECALCULATION?**

8 A. No. Mr. Moul's recalculation is incorrect for a couple of reasons. He used an
9 inaccurate risk-free rate and an unnecessary size adjustment, as stated in both my
10 direct testimony and above. Because of these factors, a recalculation of my
11 CAPM results is imprudent and any recalculation provided by Mr. Moul of my
12 CAPM results is unreliable and unnecessary.

13

14 **RISK PREMIUM**

15 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING THE RP**
16 **METHOD.**

17 A. Mr. Moul opines that the RP approach should be given serious consideration
18 because it is straight-forward, understandable, and uses a company's own
19 borrowing rate. He claims it provides a direct and complete reflection of a utility's
20 risk and return. Mr. Moul also states that I make an unfounded assertion that the
21 RP method does not measure the current cost of equity as directly as the DCF
22 (DLC Statement No. 13-R, pp. 29-30).

1 **Q. DO YOU AGREE WITH MR. MOUL THAT THE RP METHOD**
2 **PROVIDES A DIRECT AND COMPLETE REFLECTION OF A UTILITY'S**
3 **RISK AND RETURN?**

4 A. No. The RP method produces an indirect measure when compared to the DCF
5 method.

6
7 **Q. PLEASE COMMENT ON THE INDIRECT MEASURE OF THE RP**
8 **METHOD VERSUS THE MORE DIRECT MEASURE OF THE DCF**
9 **METHOD.**

10 A. Mr. Moul claims my statement that the RP method does not measure the current
11 cost of equity as directly as the DCF is without foundation. In my direct
12 testimony, I have clearly illustrated how the two measures are different (I&E
13 Statement No. 2, pp. 61-68). The main reason is that the RP method determines
14 the rate of return on common equity indirectly by observing the cost of debt and
15 adding to it an equity risk premium. The DCF measures equity more directly
16 through the stock information (using equity information), whereas the RP method
17 measures equity indirectly using debt information.

18

19 **COMPARABLE EARNINGS**

20 **Q. SUMMARIZE MR. MOUL'S RESPONSE REGARDING THE CE**
21 **METHOD.**

22 A. Mr. Moul claims that using the CE method satisfies the comparability standard

1 established in the *Hope* case (DLC Statement No. 13-R, p. 31). Additionally, he
2 states, "...the financial community has expressed the view that the regulatory
3 process must consider the returns that are being achieved in the non-regulated
4 sector to ensure that regulated companies can compete effectively in the capital
5 markets" (DLC Statement No. 13-R, p. 31).

6
7 **Q. DO YOU AGREE THAT COMPANIES USED BY MR. MOUL IN HIS CE**
8 **METHOD ARE COMPARABLE TO DUQUESNE?**

9 A. No. As stated in my direct testimony, the companies in Mr. Moul's analysis are
10 not utilities, and therefore, are too disparate to use in a CE analysis (I&E
11 Statement No. 2, pp. 76-77). For example, the criteria Mr. Moul uses to choose
12 the companies in his CE group results in the selection of companies such as Dolby
13 Laboratories Inc., Graphic Packaging, Intuit Inc., VeriSign Inc., and Yum Brands
14 Inc. All these companies operate in industries very different from a utility
15 company and operate under varying degrees of regulation. Also, most, if not all,
16 of the companies Mr. Moul uses in his analysis are not monopolies in the sense
17 that utilities are. This means that they have significantly more competition and
18 would require a higher return for the added risk. Further, the CE method should
19 be excluded because it is entirely subjective as to which companies are
20 comparable and it is debatable whether historic accounting returns are
21 representative of the future.

1 **OVERALL RATE OF RETURN**

2 **Q. HAS YOUR OVERALL RATE OF RETURN RECOMMENDATION**
3 **CHANGED FROM YOUR DIRECT TESTIMONY?**

4 A. No. I continue to support each recommendation made in I&E Statement No. 2.

5

6 **Q. WHAT IS YOUR OVERALL RATE OF RETURN RECOMMENDATION?**

7 A. I recommend the following rate of return for Duquesne:

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	46.65%	4.29%	2.00%
Common Equity	53.35%	9.24%	4.93%
Total	100.00%		6.93%

8

9

10 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

11 A. Yes.

**I&E Exhibit No. 2-SR
Witness: Christopher Keller**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket Nos. R-2021-3024750

Exhibit to Accompany

the

Surrebuttal Testimony

of

Christopher Keller

Bureau of Investigation and Enforcement

Concerning:

Operating and Maintenance Expenses

Taxes Other Than Income

Cash Working Capital

Charging Infrastructure Portfolio

Customer Portfolio

Rate of Return

-- I&E Modified --

Duquesne Light Company
Before The Pennsylvania Public Utility Commission
FULLY PROJECTED FUTURE TEST YEAR ENDED DECEMBER 31, 2022
 (\$ in Thousands)

Schedule C-4
Witness: O'Brien
 Page 2 of 10

Summary of Working Capital

Line #	Description	[1] Reference	[2] Test Year Expenses	[3] Number of (Lead) / Lag Days	[4] Number of (Lead) / Lag Dollars [2] * [3]	[5] Totals
<u>WORKING CAPITAL REQUIREMENT</u>						
1	REVENUE LAG DAYS	Sch C-4, P 3				57.36
2	EXPENSE LAG DAYS					
3	Payroll	Sch C-4, P 5	\$ 90,649 (a)	12.46	\$ 1,129,251	
4	Pension Expense	Sch D-7	5,000	(108.00)	(540,000)	
5	Power Purchased for Resale		-	33.88	-	
6	Other Expenses	L 23 - L 3 to L 5	103,308 (b)	44.90	4,638,529	
7	Total	Sum (L 3 to L 6)	<u>\$ 198,957</u>		<u>\$ 5,227,780</u>	
8	O & M Expense Lag Days	L7, C 4 / C 2				26.28
9	Net (Lead) Lag Days	L 1 - L 8				31.08
10	Operating Expenses Per Day	L 7, C 2 / 365				\$ 545
11	Working Capital for O & M Expense	L 9 * L 10				\$ 16,941
12	Average Prepayments	Sch C-4, P 10				18,260
13	Tax Expense	Sch C-4, P 7				23,624
14	Interest Payments	Sch C-4, P 8				(5,570)
15	Total Working Capital Requirement	Sum (L 11 to L 14)				53,255
<u>WORKING CAPITAL FOR POWER PURCHASED</u>						
			Expense	Lead (Lag) Days	Exp Per Day	
16	Power Purchased for Resale		<u>\$ 214,471</u>			
17	Lead (Lag) Days	57.36 - 33.88		<u>23.48</u>	<u>\$ 587.59</u>	
18	WC for Power Purchased	[3] * [4]				13,797
19	Net WC for Rate Base	L 15 + L 18				<u>\$ 67,051</u>
<u>EXPENSE RECONCILIATION</u>						
20	Pro Forma O & M Expense		\$ 455,521			
	Less:					
21	Power Purchased for Resale		214,471			
22	Uncollectible Expense - Present Rates		12,215			
23	Uncollectible Expense-on Rev Increase		998			
24	Other		112			
25	Sub-Total	Sum (L 21 to L 24)	<u>227,796</u>			
26	Pro Forma Cash O&M Expense	L 20 - L25	<u>\$ 227,725</u>			

(a) Ref: I&E Statement No. 2-SR, p. 12
 (b) Ref: I&E Exhibit No. 2-SR, Schedule 1, p. 2

Ref: I&E Statement No. 1-SR and I&E Statement No. 2-SR

Duquesne Light Company
Cash Working Capital Other Expense Adjustment
For the Twelve Months Ended December 31, 2022

	(1) I&E Recommended Distribution Adjustment	(2) COSS Allocation Factor	(3) Total Recommended Adjustment (1) / (2)
1 Rate Case Expense	(132,000)	1.0000	(\$132,000)
2 Payroll Taxes	(222,000)	0.8263	(\$269,000)
3 Incentive Compensation	(2,452,000)	0.8263	(\$2,967,000)
4 Health Insurance Expense	(131,000)	0.8263	(\$159,000)
5 401k Expense	(169,000)	0.8263	(\$205,000)
Fleet and Transit Charging Pilot -			
6 Maintenance and Warranty Exp	(5,000)	1.0000	(\$5,000)
7 Eligible Customer Solicitation	(18,000)	1.0000	(\$18,000)
8 EV ChargeUp Pilot	(15,000)	1.0000	(\$15,000)
9 COVID-19 Related Uncollectible Expense	(341,000)	1.0000	(\$341,000)
COVID-19 Related Costs Net of Savings (excl.			
10 Uncollectible Exp.)	(1,495,000)	1.0000	(\$1,495,000)
11 New Business Stimulus Rider	(277,000)	1.0000	(\$277,000)
12 Crisis Recovery Program	(423,000)	1.0000	(\$423,000)
13 Residential COVID-19 Debt Relief Program	(1,167,000)	1.0000	(\$1,167,000)
14 Residential Subscription Rate Pilot Rider	(22,000)	1.0000	(\$22,000)
15 Prepayments	(12,400,366)	0.6791	(\$18,260,000)
16 Total	<u>(19,269,366)</u>		<u>(\$25,755,000)</u>

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket Nos. R-2021-3024750

Direct Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:

Present Rate Revenue
Projected Revenue Loss
Revenue Allocation
Customer Cost Analysis
Customer Charge / Rate Design
Scale Back of Rates.

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SCALE BACK OF RATES..... 14

1 **INTRODUCTION**

2 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS**
3 **ADDRESS?**

4 A. My name is Esyan A. Sakaya. My business address is Pennsylvania Public Utility
5 Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg,
6 Pennsylvania 17120.

7
8 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

9 A. I am employed by the Pennsylvania Public Utility Commission (“Commission”) in
10 the Bureau of Investigation and Enforcement (“I&E”) as a Fixed Utility Valuation
11 Engineer.

12
13 **Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL**
14 **BACKGROUND?**

15 A. My education and professional background are set forth in Appendix A, which is
16 attached.

17
18 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

19 A. I&E is responsible for protecting the public interest in proceedings before the
20 Commission. The I&E analysis in the proceeding is based on its responsibility to
21 represent the public interest. This responsibility requires the balancing of the

1 interests of ratepayers, the regulated utility, and the regulated community as a
2 whole.

3
4 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

5 A. My testimony relates to Duquesne Light Company's ("DLC" or "Company")
6 requested \$115.0 million overall revenue increase. My testimony will address
7 issues related to the present and proposed revenue, customer cost analysis, rate
8 design, and the scale back of rates.

9
10 **Q. DOES YOUR DIRECT TESTIMONY INCLUDE AN EXHIBIT?**

11 A. Yes. I&E Exhibit No. 3 contains schedules relating to my testimony.
12

13 **TEST YEAR**

14 **Q. WHAT IS A TEST YEAR AND HOW IS IT USED BY A COMPANY IN A**
15 **RATE PROCEEDING?**

16 A. A test year is the twelve-month period over which a utility's costs and revenues
17 are measured as the basis for setting prospective base rates. In order to meet its
18 burden of proof, a utility has the option of selecting to use a historic test year
19 ("HTY"), a future test year ("FTY"), or a Fully Projected Future Test Year
20 ("FPFTY"). An HTY is a twelve-month period selected by a company that
21 represents the most recent full year of actual data. An FTY begins the day after
22 the HTY ends and is determined using a combination of actual data and a

1 projection of annualized and normalized estimates of future revenues and expenses
2 and a corresponding measure of value at the end of that period. The FPFTY is
3 defined as the twelve-month period that begins with the first month that the new
4 rates will be placed into effect, after the application of the full suspension period
5 permitted under Section 1308(d). The FPFTY is a shift from the fundamental
6 ratemaking principle that a public utility should only be permitted to include
7 projects in rate base and earn a reasonable return on its investments after they
8 become “used and useful” for the utility’s public service.
9

10 **Q. WHAT TEST YEARS HAS THE COMPANY USED IN THIS**
11 **PROCEEDING?**

12 A. DLC has selected the year ended December 31, 2020 as the HTY, the year ending
13 December 31, 2021 as the FTY, and the year ending December 31, 2022 as the
14 FPFTY (DLC St. No. 3, pp. 3-4).
15

16 **Q. WHAT TEST YEAR HAS THE COMPANY BASED ITS REVENUE**
17 **REQUIREMENT ON IN THIS PROCEEDING?**

18 A. DLC has elected to base its requested revenue requirement on the FPFTY ending
19 December 31, 2022 (DLC St. No. 10, pp. 6-10).

1 **PRESENT RATE REVENUE**

2 **Q. WHAT IS THE COMPANY’S CLAIMED PRESENT RATE REVENUE IN**
3 **THE FPFTY?**

4 A. The Company’s claimed total operating revenues under pro forma present rates in
5 the FPFTY ending December 31, 2022 is \$959,165,000 (DLC Exhibit 2, Book 5,
6 Schedule D-5, col. 9, line 27). Included in the total operating revenues is a pro
7 forma adjusted distribution revenue at present rates of negative \$40,074,000 as
8 shown on DLC Exhibit 2, Book 5, Schedule D-5, col. 8, line 27.

9

10 **Q. HOW DOES THE COMPANY DETERMINE ITS CLAIMED PRESENT**
11 **RATE REVENUE IN THE FPFTY?**

12 A. Revenues at present rates were developed by adjusting the budgeted revenues for
13 DLC’s operations for the FPFTY to: (1) reflect revenue recovered through DSIC
14 and State Tax Adjustment surcharges in base rates (DLC St. No. 10, p. 29-30); (2)
15 adjust for revenue lost from energy efficiency and conservation activities for the
16 years of 2023 to 2025 (DLC St. No. 10, p. 30); (3) adjust for variable revenue
17 levels for 2023 to 2025 by customer category (DLC St. No. 10, p. 30); and (4)
18 annualize revenues for the projected number of customers at the end of the FPFTY
19 (DLC St. No. 10, p. 31-32).

1 **Q. WHAT DO YOU RECOMMEND REGARDING THE COMPANY'S**
2 **PRESENT RATE DISTRIBUTION REVENUE IN THE FPFTY?**

3 A. I recommend that the Company's present rate distribution revenue be increased by
4 \$8,451,000 from \$959,165,000 to \$967,616,000 to remove the projected revenue
5 loss described below.

6

7 **PROJECTED REVENUE LOSS**

8 **Q. IS THE COMPANY PROJECTING A LOSS IN REVENUE IN THIS**
9 **PROCEEDING?**

10 A. Yes. On DLC Exhibit No. 2, Book 5, Schedule D-5, column 4, line 1 and DLC
11 Exhibit No. 3, Book 6, Schedule D-5, column 4, line 1, the Company is projecting
12 a \$8,451,000 loss in revenue in the FPFTY.

13

14 **Q. WHAT IS THE BASIS FOR THE COMPANY'S PROJECTED \$8,451,000**
15 **LOSS IN REVENUE?**

16 A. In the Company's filing, DLC stated that the \$8,451,000 decline in revenue by
17 class was determined using the 2023-2025 forecasts (DLC Exhibit No. 2, Book 5,
18 Exhibit D-5B, column 6, line 23). The \$8,451,000 revenue loss was calculated by
19 taking the three-year average of projected revenue losses in the years ending 2023,
20 2024, and 2025, which are beyond the Company established FPFTY of 2022. This
21 three-year average adjustment was applied to the FPFTY as shown in DLC Exhibit
22 No. 2, Book 5, Schedule D-5, column 4, line 1.

1 **Q DO YOU AGREE WITH THE COMPANY’S \$8,451,000 REVENUE LOSS**
2 **ADJUSTMENT?**

3 A. No. I recommend that the \$8,451,000 revenue loss adjustment projected for the
4 years 2023 through 2025 be rejected.

5
6 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDED ADJUSTMENT?**

7 A. To establish reasonable rates, it is critical not to over-project or under-project the
8 number of customers or usage volumes as these components are critical to
9 determine the appropriate customer charges and usage rates. Specifically,
10 distribution rates are determined by multiplying the approved customer charges by
11 the number of bills (based upon the projected number of customers) to arrive at the
12 customer charge revenue. Next, any remaining revenue desired to be recovered
13 from that class is determined by dividing the remaining revenue into the projected
14 usage volumes to arrive at the usage rates.

15 The selected test year is important to appropriately project customer count
16 and usage. As described above, the Company elected to use an FPFTY ending
17 December 31, 2022; however, it is requesting to recover \$8,451,000 of losses that
18 are projected to occur in 2023, 2024 and 2025, which is beyond the end of test
19 year. Rates will become effective December 28, 2021; therefore, if the Company
20 is permitted to include four years of sales declines in the first month rates become
21 effective, the Company will over-collect revenue until the end of 2025, or for
22 approximately four years. It is not reasonable to go beyond the FPFTY and reflect

1 revenue decline that may occur for up to three years in the future on the first day
2 rates become effective.

3
4 **CUSTOMER COST ANALYSIS**

5 **Q. WHAT IS A CUSTOMER COST ANALYSIS AND HOW IS IT USED?**

6 A. A customer cost analysis is part of a cost-of-service study that includes only direct
7 and some indirect customer costs. It is used to determine the appropriate customer
8 charges for the various classes.

9
10 **Q. WHAT ARE DIRECT AND INDIRECT CUSTOMER COSTS?**

11 A. A direct customer cost is an expense or plant item that changes every time the
12 Company adds new customers or when customers leave the system. They are
13 direct costs the Company must have in place to serve its customers every month.
14 Indirect costs are costs that do not change with the addition or subtraction of
15 customers but could be considered customer related.

16
17 **Q. DID THE COMPANY PREPARE A CUSTOMER COST ANALYSIS TO
18 SUPPORT ITS PROPOSAL TO INCREASE THE CUSTOMER
19 CHARGES?**

20 A. Yes. The Company provided schedules showing a summary of its claimed total
21 customer costs by class (DLC Book 10, Exhibit 6-4). The Company provided a
22 breakdown of the costs by class in DLC Book 10, Exhibits 6-4A through 6-4F.

1 **Q. WHAT ARE THE TOTAL CUSTOMER COSTS PER MONTH AS**
2 **DETERMINED BY THE COMPANY?**

3 A. The Company has determined that the monthly customer cost for the Residential
4 class is \$18.32 per month, \$16.60 per month for the GS class, \$37.46 per month
5 for the GM<25 class, \$120.81 per month for the GM>25 class, \$51.36 per month
6 for the GMH class, and \$263.56 per month for the Rate L class (DLC Book 10,
7 Exhibits 6-4A through 6-4F, line 31).

8
9 **Q. ARE YOU SUBMITTING A CUSTOMER COST ANALYSIS IN THIS**
10 **CASE TO SUPPORT DIFFERENT CUSTOMER CHARGES?**

11 A. Not in this case. While I do not agree with all the customer cost components
12 claimed by the Company. I believe the changes I would propose would not result
13 in customer costs that differed materially than those proposed by the Company.

14
15 **CUSTOMER CHARGES**

16 **Q. WHAT RESIDENTIAL MONTHLY CUSTOMER CHARGE IS THE**
17 **COMPANY REQUESTING?**

18 A. The Company is requesting that the current Residential and Residential Heating
19 customer charge of \$12.50 per month be increased to \$16.25 per month (DLC
20 Book 9, Exhibit DBO-3, p. 8). The \$16.25 per month customer charge proposed
21 by the Company is less than the \$18.32 per month customer cost determined by
22 the Company.

1 **Q. WHAT GENERAL SERVICE MONTHLY CUSTOMER CHARGE IS THE**
2 **COMPANY REQUESTING?**

3 A. The Company is requesting that the current General Service customer charge of
4 \$12.50 per month be increased to \$16.25 per month (DLC Book 9, Exhibit DBO-
5 3, p. 9). The \$16.25 per month customer charge proposed by the Company is less
6 than the \$16.60 per month customer cost determined by the Company.

7

8 **Q. WHAT GENRAL SERVICE DEMAND (GM <25 KW) MONTHLY**
9 **CUSTOMER CHARGE IS THE COMPANY REQUESTING?**

10 A. The Company is requesting that the current GM<25 kW customer charge of
11 \$54.50 per month be increased to \$63.00 per month (DLC Book 9, Exhibit DBO-
12 3, p. 10). Comparing the \$63.00 per month customer charge proposed by the
13 Company to the \$37.46 per month cost described indicates that the \$63.00 per
14 month GM<25kW customer charge is not supported by the Company's customer
15 cost analysis.

16

17 **Q. WHAT GENERAL SERVICE DEMAND (GM >25 KW) MONTHLY**
18 **CUSTOMER CHARGE IS THE COMPANY REQUESTING?**

19 A. The Company is requesting that the current GM>25 kW customer charge of
20 \$65.54 per month customer charge be increased to \$76.00 per month (DLC Book
21 9, Exhibit DBO-3, p. 9). Comparing the \$76.00 per month customer charge to the

1 \$120.81 per month cost described indicates that the \$76.00 per month GM>25kW
2 customer charge is supported by the Company's customer cost analysis.

3
4 **Q. WHAT GMH MONTHLY CUSTOMER CHARGE IS THE COMPANY**
5 **REQUESTING?**

6 A. The Company is requesting that the current GMH customer charge of \$54.50 per
7 month be increased to \$63.00 per month (DLC Book 9, Exhibit DBO-3, p. 10).
8 Comparing the \$63.00 per month customer charge to the \$51.36 per month cost
9 described indicates that the \$63.00 per month GMH customer charge is not
10 supported by the Company's customer cost analysis.

11
12 **Q. WHAT DO YOU RECOMMEND CONCERNING THE RESIDENTIAL,**
13 **GENERAL SERVICE, AND GM <25 KW MONTHLY CUSTOMER**
14 **CHARGES THE COMPANY IS PROPOSING?**

15 A. I recommend that the Residential, General Service and GM <25kW monthly
16 customer charges be included in any scale back as described below.

17
18 **Q. WHAT DO YOU RECOMMEND CONCERNING THE GM >25 KW AND**
19 **GMH MONTHLY CUSTOMER CHARGES THE COMPANY IS**
20 **PROPOSING?**

21 A. I recommend that the GM >25kW and the GMH monthly customer charges not be
22 increased.

1 **Q. WHY DO YOU RECOMMEND THAT THE GM >25 KW AND GMH**
2 **MONTHLY CUSTOMER CHARGE NOT BE INCREASED?**

3 A. As described above, the current and proposed GM>25 kW and GMH customer
4 charges exceed the monthly customer cost determined by the Company.

5

	Monthly Customer Cost	Current Monthly Customer Charge	Proposed Monthly Customer Charge
GM >25 KW	\$37.46	\$54.50	\$63.00
GMH	\$51.36	\$54.50	\$63.00

6 Given that the current monthly customer charge is higher than the monthly
7 customer cost, there is no justification to further increase either of these customer
8 charges as proposed by the Company.

9

10 **FORFEITED DISCOUNTS**

11 **Q. WHAT IS THE PRESENT ELECTRIC REVENUE FOR THE FPPTY IN**
12 **THIS PRECEEDING?**

13 A. DLC is proposing present operating revenue of approximately \$939.6 million in
14 the FPPTY (DLC Exhibit 2, Book 5, Sch D-5, column 9, line 5).

1 **Q. DO YOU HAVE ANY ADJUSTMENTS TO OTHER OPERATING**
2 **REVENUE?**

3 A. Yes. I have an adjustment to the Company's FPFTY late payment revenue
4 otherwise known as forfeited discounts under proposed rates.

5
6 **Q. WHAT ARE FORFEITED DISCOUNTS?**

7 A. A public utility can assess a separate charge to customers who do not pay their bill
8 on time. Forfeited discounts revenue refers to the revenue received by the utility
9 as a result of this charge.

10
11 **Q. HOW MUCH FORFEITED DISCOUNT REVENUE DID THE COMPANY**
12 **PROJECT?**

13 A. DLC projects \$3,916,000 in forfeited discount revenue under present rates in the
14 FPFTY ending December 31, 2022 (DLC Exhibit 2, Book 5, Sch D-5, column 9,
15 line 10).

16
17 **Q. WHAT LEVEL OF FORFEITED DISCOUNTS IS THE COMPANY**
18 **PROJECTING UNDER PROPOSED RATES FOR THE FPFTY ENDING**
19 **DECEMBER 31, 2022?**

20 A. DLC is projecting the approximately the same \$3,916,000 of forfeited discounts
21 under proposed rates for the FPFTY ending December 31, 2022 (DLC Exhibit 2,
22 Book 5, Sch D-5D, col. C, line 21).

1 **Q. WHAT DO YOU RECOMMEND CONCERNING FORFEITED**
2 **DISCOUNTS UNDER PROPOSED RATES?**

3 A. I recommend that forfeited discounts be increased by \$357,672 under proposed
4 rates.

5
6 **Q. HOW DID YOU DETERMINE THE \$357,672 INCREASE TO FORFEITED**
7 **DISCOUNT REVENUE UNDER PROPOSED RATES?**

8 A. I began with the \$3,916,000 of forfeited discount revenue under present rates and
9 divided it by the \$939,600,000 of electric revenue at present rates to arrive at
10 0.417%. Then I multiplied the 0.417% times the proposed increase of
11 \$85,722,613 to arrive at the approximately \$357,672. I show the \$357,672 on I&E
12 Exhibit No. 3, Sch. 1, column C, line 22 and include it in the scale back
13 recommendation described below.

14
15 **Q. WHY DO YOU BELIEVE THE COMPANY WILL RECEIVE MORE**
16 **REVENUE FROM FORFEITED DISCOUNTS UNDER PROPOSED**
17 **RATES FOR THE FPFTY?**

18 A. I believe it is reasonable to expect that forfeited discounts revenues will increase
19 when a utility's base rates are increased as a result of a base rate proceeding.
20 Since forfeited discounts are generally a percentage of a customer's bill,
21 increasing revenue through a rate increase will cause revenues from forfeited
22 discounts to increase over time. Therefore, I recommend that DLC's forfeited

1 discount claim in the FPFTY be increased by the same percent increase as the
2 overall base rate increase granted by the Commission.

3
4 **SCALE BACK OF RATES**

5 **Q. WHAT IS THE RATE OF RETURN AND RELATIVE RATE OF RETURN**
6 **AND WHY ARE THEY IMPORTANT?**

7 A. The rate of return for each class can be determined in a cost of service study by
8 dividing the net income of each class into the rate base for each class to arrive at
9 the rate of return for each class, expressed as a percentage. The relative rate of
10 return is the rate or return divided by the overall rate of return expressed in a
11 number. If the relative rate of return is greater than 1.0, the revenue received from
12 this class is greater than the cost of providing service to that class. If the relative
13 rate of return is less than 1.0, the revenue received from this class is less than the
14 cost of providing service to that class.

15
16 **Q. WHAT DO YOU RECOMMEND IF THE COMMISSION GRANTS AN**
17 **INCREASE LESS THAN FULL \$115.0 MILLION INCREASE?**

18 A. If the Commission grants less than the Company's full requested increase, I
19 recommend the scale back shown on I&E Exhibit No. 3, Sch. 1 that provides two
20 steps shown in columns D and F.

1 **Q. WHAT FIRST STEP DO YOU RECOMMEND IF THE COMMISSION**
2 **GRANTS AN INCREASE LESS THAN FULL \$115.0 MILLION**
3 **INCREASE?**

4 A. If the Commission grants an increase between \$115.0 million and \$99.0 million, I
5 recommend that the Commission follow the scale-back plan that I prepared as
6 shown on I&E Exhibit No. 3, Sch. 1, column D up to a scale back of \$16.0
7 million. This column shows the reduction to the various classes and different
8 scale-back levels. Any scale back less than \$16.0 million should be interpolated
9 between the original requested amounts by class and the amounts shown under
10 I&E Exhibit No. 3, Sch. 1. Column E.

11
12 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDED SCALE BACK**
13 **METHODOLOGY?**

14 A. Under the \$16 million scale back level described above, the relative rate of return
15 for the three Residential classes, the GS class, the GM<25kW class, GL and L
16 classes are all 1.01 (I&E Exhibit No. 3, Sch. 2, lines 16-17).

17
18 **Q. WHY DID YOU NOT GRANT A SCALE BACK FOR THE GM>25KW,**
19 **GMH>25KW, GLH, AND UMS CLASSES AT THIS LEVEL OF**
20 **REVENUE?**

21 A. Each of the relative rates of return for these classes are below 1.0 at this level of
22 revenue (I&E Exhibit No. 3, Sch. 2, lines 16-17). As described above, this

1 indicates that the revenue received from these classes is less than the cost of
2 providing service to each class. Therefore, there is no justification for reducing
3 the rates in these classes at this level of revenue.

4
5 **Q. WHY DID YOU REMOVE THE INCREASE FOR THE SE, SM, SH AND**
6 **PAL CLASSES AT THIS LEVEL OF REVENUE?**

7 A. Each of the relative rates of return for these classes are above 1.0 under proposed
8 rates (I&E Exhibit No. 3, Sch. 2, lines 16). As described above, this indicates that
9 the revenue received from these classes is more than the cost of providing service
10 to each class. Therefore, there is no justification for increasing the rates in these
11 classes at this level of revenue.

12
13 **Q. WHAT SECOND STEP DO YOU RECOMMEND IF THE COMMISSION**
14 **GRANTS AN INCREASE LESS THAN \$99.0 MILLION?**

15 A. If the Commission grants less than a \$99.0 million dollar increase, I recommend
16 that the Commission follow the scale-back plan that I prepared as shown on I&E
17 Exhibit No. 3, Sch. 1, column F up to a scale back of another \$29.0 million
18 beyond the first \$16.0 million scale back for a total scale back of \$45.0 million.
19 This column shows the reduction to the various classes and different scale-back
20 levels. Any scale back between \$16.0 million and the \$45.0 million total scale
21 back should be interpolated between the original requested amounts by class and
22 the amounts shown under I&E Exhibit No. 3, column E and G.

1 **Q. WHAT IS THE SECOND SCALE BACK STEP BASED UPON?**

2 A. The second step of my scale back methodology is also based first upon the results
3 of Company's cost of service study which show the rate of return and relative rate
4 of return under proposed rates. For example, under the \$45.0 million scale back
5 level described above, the relative rate of return for the three Residential classes,
6 the GS class, the GL, and L classes are all 0.97 (I&E Exhibit No. 3, Sch. 3, lines
7 16-17).

8
9 **Q. WHY DID YOU NOT GRANT A SCALE BACK FOR THE GM>25KW,
10 AND GLH CLASSES AT THIS LEVEL OF REVENUE?**

11 A. Each of the relative rates of return for these classes are below 1.0 at this level of
12 revenue (I&E Exhibit No. 3, Sch. 3, line 16). As described above, this indicates
13 that the revenue received from these classes is less than the cost of providing
14 service to each class. Therefore, there is no justification for reducing the rates in
15 these classes at this level of revenue.

16
17 **Q. SHOULD THE RESIDENTIAL CUSTOMER CHARGE BE SCALED
18 BACK?**

19 A. Yes. I believe the Residential customer charge should be included in any scale
20 back allocated to the Residential class. As shown on DLC Book 9, Exhibit DBO-
21 3, p. 8, the Residential customer charge increase is \$3.75 (\$16.25 - \$12.50) per
22 month. This equates to an increase of 30.0% or almost twice the system average

1 increase of 15.4% (Book 3, DLC Attachment DFR-IV-A, line 19, col. J, p. 3).

2 Such a large percentage increase relative to the overall increase justifies reducing
3 the Residential customer charge if rates are scaled back to reduce the impact of the
4 overall increase on low usage customers.

5
6 **Q. HOW SHOULD THE RESIDENTIAL CUSTOMER CHARGE BE SCALED**
7 **BACK?**

8 A. I recommend that the Residential customer charge be scaled back proportionally to
9 the percentage increase granted to the Residential class. For example, if the
10 Commission reduces the increase to the Residential class by 50%, then the
11 proposed Residential customer charge should be scaled back \$1.88 per month to
12 \$14.37 per month, or half of the \$3.75 monthly increase requested by the
13 Company ($\$3.75/2 = \1.88).

14
15 **Q. WHY DO YOU RECOMMEND A PROPORTIONAL SCALEBACK FOR**
16 **THE RESIDENTIAL CUSTOMER CHARGE?**

17 A. This recommendation satisfies the concept of gradualism by reducing the
18 percentage increase to the customer charge. Although the proposed customer
19 charge is less than the customer cost, failure to include the customer charge in any
20 scale back would cause the increase to the customer charge to violate the
21 principles of gradualism when compared to the system average increase.

1 **Q. WHAT IS GRADUALISM?**

2 A. Gradualism is a well-established ratemaking concept that seeks to limit the
3 immediate increases customers receive when rates are increased and implement
4 significant rate changes on a more gradual basis over time.

5

6 **Q. DID THE COMPANY PROPOSE AN INCREASE TO ANY OTHER**
7 **CUSTOMER CHARGES THAT YOU RECOMMEND BE REDUCED?**

8 A. Yes. The Company proposed to increase the GS, non-demand commercial customer
9 charge \$3.75 per month from \$12.50 per month to \$16.25 per month, the same as the
10 Residential rate classes (DLC St. No. 16, p. 14). Therefore, for the same reasons
11 described above, I am recommending the customer charge for the GS, non-
12 demand customers be scaled back by the same method I recommend for the
13 Residential classes.

14

15 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

16 A. Yes.

Esyan A. Sakaya

THE PENNSYLVANIA PUBLIC UTILITY COMMISSION
400 North Street
HARRISBURG, PA 17120

Education:

National Association of Regulatory Utility Commissioners, Clearwater, FL
Utility Rate School; Utility Rate Making Basics, October 2019

Society of Depreciation Professionals, Philadelphia, PA
Introduction to Depreciation; Depreciation Fundamentals, September 2019

Temple University, Philadelphia, PA
Bachelor of Science; Major in Engineering Technology, 2015

Community College of Philadelphia, Philadelphia, PA
Associate of Applied Science; Major in Construction Management Technology, 2011

Island School of Building Arts, Gabriola Island, BC-Canada
Certificate Graduate: Heavy Timber Construction Aug 2002-Nov 2002

Solar Energy International, Carbondale, CO
Certificate Graduate: Basic and Advanced Photovoltaic Design, April 2002-May 2002

Experience:

12/2018-Present

Pennsylvania Public Utility Commission-Harrisburg, PA

Fixed Utility Valuation Engineer- Assist in engineering related studies related to valuation, depreciation, cost of service, quality of service as they apply to regulated utilities. Contribute in evaluating, contrasting and conducting performance analyses in distinctive sections of valuation engineering and rate structure involving valuation concepts, original cost, rate base, fixed capital costs, inventory processing, excess capacity, cost of service, and rate design. Provide expert testimony in rate related utility cases.

4/2018-12/2018

Pennsylvania Department of Transportation-Harrisburg, PA

Photogrammetry Technician I- Created three-dimensional mapping layouts of natural and man-made features from stereoscopic images on a computer workstation. Assisted in the field placement of ground based surveyed control-points prior to aerial photography acquisition. Provided field support in the use of laser scans for comprehensive digital surveying data. Operated global positioning satellite surveying equipment to obtain accurate geodetic coordinates of pre-established benchmarks.

8/2017-4/2018

Pennoni and Associates. Consulting Engineers-King of Prussia, PA

Construction Inspector-Provided quality assurance in the onsite material testing of concrete, soils, and asphalt. Read and interpreted construction drawings and specifications of materials and components. Completed daily reports regarding project progress to engineers, project managers/superintendents, contractors and clients.

TESTIMONY SUBMITTED:

I have assisted and/or submitted testimony in the following proceedings:

- | <u>NO.</u> | <u>Case</u> |
|------------|---|
| 1. | UGI Gas Utilities - Gas Division, Docket Number: R-2018-3006814 |
| 2. | Newtown Artesian Water Company, Docket Number: R-2018-3006904 |
| 3. | Pittsburgh Wastewater, Docket Number: M-2018-2640803 |
| 4. | PAWC Purchase of Steelton, Docket Number: A-2019-3006814 |
| 5. | Philadelphia Gas Works, Docket Number: R-2019-3009016 - 3007636 |
| 6. | Community Utilities Water, Docket Number: R-2019-3008947 |
| 7. | Aqua Purchase of Cheltenham, Docket Number: A-2019-3008491 |
| 8. | UGI NORTH, Docket Number: R-2019-3009647 |
| 9. | UGI CENTRAL, Docket Number: R-2019-3009647 |
| 10. | UGI SOUTH, Docket Number: R-2019-3009647 |
| 11. | Twin Lakes Utilities, Docket Number: R-2019-3010958 |
| 12. | Penn Power Company, Docket: P-2019-3012628 |
| 13. | UGI Gas Utilities, Docket Number: R-2019-3015162 |
| 14. | National Fuel and Gas Distribution, Docket Number: R-2020-3015251 |

15. Columbia Gas of Pennsylvania, Docket: R-2020-3018993 -3018835
16. Duquesne Light Company, Docket Number: P-2020-301995
17. PA American Water Company, Docket R-2020-3019369 – 310937
18. Bethlehem Water Company, Docket R-2020-3020256
19. Audubon Water Company, Docket: R-2020-3020919
20. Twin Lakes Utilities, Docket: P-2020-3020914
21. Community Utilities-Water, Docket: R-2021-3025206
22. Community Utilities-Wastewater, Docket: R-2021-3025207
23. PECO Energy-Electric Division, Docket: R-2021-3024601

I&E Exhibit No. 3
Witness: Esyan A. Sakaya

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket Nos. R-2021-3024750

Exhibit to Accompany

The

Direct Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:

Present Rate Revenue
Proposed Rate Revenue
Revenue Allocation
Cost of Service Study
Customer Cost Analysis
Customer Charge / Rate Design
Scale Back of Rates.

I&E Exhibit No. 3
Schedule 2

Duquesne Light Company
Class Cost of Service Study
Fully Projected Future Test Year
\$16,000,000 SCALE BACK

Line	Account	Balance	RS	RH	RA	GS	GM<25	GM>25	GMH<25	GMH>25	GL	GLH	L	HVPS	AL+SE	SM+SH+PAL	UMS	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	
1	Rate Base	\$2,276,463	\$1,037,952	\$111,433	\$14,157	\$41,591	\$132,929	\$356,346	\$15,391	\$33,545	\$341,788	\$51,978	\$104,990	\$34	\$5,855	\$22,850	\$5,624	0
2	Present Rate Revenue	\$568,383	\$302,360	\$29,362	\$3,346	\$11,965	\$33,959	\$71,587	\$3,693	\$6,084	\$66,275	\$7,402	\$19,306	\$325	\$1,530	\$10,036	\$1,153	0
3	Revenue increase (decrease)	\$69,839	\$34,117	\$6,316	\$728	\$1,121	\$1,629	\$12,011	\$0	\$1,311	\$7,327	\$1,620	\$3,408	\$0	\$0	\$0	\$251	0
4	Proposed Revenue	\$638,222	\$336,477	\$35,678	\$4,074	\$13,086	\$35,588	\$83,598	\$3,693	\$7,395	\$73,602	\$9,022	\$22,714	\$325	\$1,530	\$10,036	\$1,404	0
5	Operating expenses	\$190,164	\$104,073	\$12,179	\$1,225	\$3,723	\$9,785	\$24,349	\$1,134	\$2,250	\$19,013	\$2,598	\$6,086	\$7	\$339	\$3,088	\$315	0
6	Uncollectibles expense	\$15,122	\$11,940	\$2,064	\$63	\$234	\$217	\$453	\$34	\$58	\$35	\$1	\$0	\$0	\$0	\$14	\$9	0
7	Depreciation expense	\$181,309	\$100,070	\$9,790	\$1,268	\$4,396	\$10,893	\$22,200	\$1,271	\$2,080	\$18,110	\$2,646	\$5,458	\$6	\$307	\$2,219	\$595	0
8	Regulatory expense	\$926	\$483	\$53	\$6	\$19	\$51	\$124	\$6	\$12	\$107	\$16	\$33	\$0	\$2	\$12	\$2	0
9	General tax / Other	\$8,178	\$4,287	\$502	\$51	\$155	\$438	\$1,120	\$51	\$104	\$887	\$125	\$280	\$0	\$16	\$150	\$12	0
10	GRT	\$37,918	\$19,849	\$2,182	\$245	\$776	\$2,109	\$5,070	\$246	\$475	\$4,349	\$636	\$1,343	\$1	\$75	\$471	\$91	0
11		\$433,616	\$240,702	\$26,770	\$2,858	\$9,303	\$23,493	\$53,316	\$2,742	\$4,979	\$42,501	\$6,022	\$13,200	\$14	\$739	\$5,954	\$1,024	0
12	Pre-tax income	\$204,606	\$95,776	\$8,908	\$1,216	\$3,783	\$12,095	\$30,282	\$1,489	\$2,416	\$31,101	\$3,000	\$9,514	\$311	\$791	\$4,082	\$380	538
13	Income taxes	\$38,883	\$18,153	\$1,688	\$230	\$717	\$2,293	\$5,740	\$282	\$458	\$5,895	\$569	\$1,803	\$59	\$150	\$774	\$72	0
14	Net income	\$165,723	\$77,622	\$7,219	\$985	\$3,066	\$9,803	\$24,542	\$1,207	\$1,958	\$25,206	\$2,431	\$7,711	\$252	\$641	\$3,308	\$308	538
15	Return on Rate Base	7.28%	7.48%	6.48%	6.96%	7.37%	7.37%	6.89%	7.84%	5.84%	7.37%	4.68%	7.34%	7.4205%	10.95%	14.48%	5.48%	538
16	Proposed Relative ROR	1.00	1.03	0.89	0.96	1.01	1.01	0.95	1.08	0.80	1.01	0.64	1.01	101.93	1.50	1.99	0.75	0.75
17	Combined Proposed ROR																	

18	Increase (decrease) %	12.29%	11.28%	21.51%	21.74%	9.37%	4.80%	16.78%	0.00%	21.55%	11.06%	21.89%	17.65%	0.00%	0.00%	0.00%	21.77%	0.00%
19	Uncollectible Percentage		3.5484%	5.7851%	1.5466%	1.7910%	0.6100%	0.5419%	0.9121%	0.7843%	0.0471%	0.0111%	0.0000%	0.0000%	0.0000%	0.1421%	0.6410%	0.0000%

**I&E Statement No. 3-SR
Witness: Esyan A. Sakaya**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Surrebuttal Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

-

Concerning:

**Present Rate Revenue
Projected Revenue Loss
Revenue Allocation
Customer Cost Analysis
Customer Charge / Rate Design
Scale Back of Rates**

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1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Eryan A. Sakaya. My business address is Pennsylvania Public Utility
4 Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg,
5 Pennsylvania 17120.

6

7 **Q. ARE YOU THE SAME ERYAN A. SAKAYA WHO SUBMITTED I&E**
8 **STATEMENT NO. 3 AND I&E EXHIBIT NO. 3 ON JUNE 30, 2021 IN THIS**
9 **PROCEEDING?**

10 A. Yes, I am.

11

12 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

13 A. The purpose of my surrebuttal testimony is to revise some of the exhibits and my
14 recommendations concerning present revenue, proposed revenue, customer
15 charges, rate design, and the scale back of rates described in DLC's rebuttal
16 testimony of the following witnesses:

- 17
- DLC witness Robert L O'Brien, (DLC Statement No. 10-R);

18

 - DLC witness Howard S. Gorman, (DLC Statement No. 15-R); and

19

 - DLC witness David B. Ogden (DLC Statement No. 16-R).

1 **TEST YEAR**

2 **Q. WHAT IS A TEST YEAR AND HOW IS IT USED BY A COMPANY IN A**
3 **RATE PROCEEDING?**

4 A. A test year is the twelve-month period over which a utility’s costs and revenues
5 are measured as the basis for setting prospective base rates. In order to meet its
6 burden of proof, a utility has the option of selecting to use a historic test year
7 (“HTY”), a future test year (“FTY”), or a Fully Projected Future Test Year
8 (“FPFTY”). An HTY is a twelve-month period selected by a company that
9 represents the most recent full year of actual data. An FTY begins the day after
10 the HTY ends and is determined using a combination of actual data and a
11 projection of annualized and normalized estimates of future revenues and expenses
12 and a corresponding measure of value at the end of that period. The FPFTY is
13 defined as the twelve-month period that begins with the first month that the new
14 rates will be placed into effect, after the application of the full suspension period
15 permitted under Section 1308(d). The FPFTY is a shift from the fundamental
16 ratemaking principle that a public utility should only be permitted to include
17 projects in rate base and earn a reasonable return on its investments after they
18 become “used and useful” for the utility’s public service.

19
20 **Q. WHAT TEST YEAR HAS THE COMPANY BASED ITS REVENUE**
21 **REQUIREMENT ON IN THIS PROCEEDING?**

22 A. DLC has elected to base its requested revenue requirement on the FPFTY ending

1 December 31, 2022 (DLC St. No. 10, pp. 6-10).

2
3 **PRESENT RATE REVENUE**

4 **Q. WHAT PRESENT RATE REVENUE DID THE COMPANY DETERMINE**
5 **IN ITS DIRECT AND REBUTTAL EXHIBITS FOR THE FPFTY?**

6 A. In DLC's direct and rebuttal exhibits, present rate revenues were calculated to be
7 \$959,165,000 (DLC Exhibit 2 Book 5, Sch. D-5, Col. 9, line 25, and DLC Exhibit
8 RLO-5-R, Sch. D-5, Col. 9, line 25).

9
10 **PROJECTED ACT 129 REVENUE LOSS**

11 **Q. DID YOU ADDRESS THE COMPANY'S PRESENT RATE REVENUE IN**
12 **YOUR DIRECT TESTIMONY?**

13 A. Yes. I recommended that the Company's present rate distribution revenue be
14 increased by \$8,451,000 from \$959,165,000 to \$967,616,000 to add back the
15 \$8,451,000 revenue loss projected by the Company as the result of Act 129 usage
16 reductions (I&E Statement No. 3, pp. 4-5).

17
18 **Q. WHAT WAS THE BASIS FOR YOUR RECOMMENDATION TO ADD**
19 **BACK APPROXIMATELY \$8.451 MILLION TO THE COMPANY'S**
20 **PRESENT RATE REVENUE?**

21 A. In the Company's filing, DLC stated that the \$8,451,000 decline in revenue by
22 class was determined using the 2023-2025 forecasts (DLC Exhibit No. 2, Book 5,

1 Exhibit D-5B, column 6, line 23 and DLC Exhibit RLO-5-R, Sch. D-5B). The
2 \$8,451,000 revenue loss was calculated by taking the three-year average of
3 projected revenue losses in the years ending 2023, 2024, and 2025, which are
4 beyond the Company's FPFTY ending December 31, 2022. This three-year
5 average adjustment was applied to the FPFTY as shown in DLC Exhibit No. 2,
6 Book 5, Schedule D-5, column 4, line 1. My recommendation is appropriate
7 because it adds back the projected revenue loss that is outside the FPFTY.
8

9 **Q. DID THE COMPANY AGREE WITH YOUR RECOMMENDATION?**

10 A. No. The Company believes that it is proper to include projected usage declines up
11 to three years beyond the end of the FPFTY. First, the Company claims that it has
12 been permitted to recover declining revenue in past rate cases. Second, the
13 Company claims that it will not over-collect revenue in 2022 since the revenue
14 loss is based upon the average revenue loss for the three years that rates will be in
15 effect. Third, the Company appears to rely on its belief that rates will not be reset
16 until possibly 2025. (DLC St. No. 10-R, p. 32).
17

18 **Q. DOES THE COMPANY'S CLAIM THAT IT WAS PERMITTED TO**
19 **RECOVER LOST REVENUE IN THE PAST SUPPORT ITS ATTEMPT**
20 **TO PROJECT REVENUE LOSS BEYOND THE FPFTY?**

21 A. No. The Company failed to cite any specific analysis or prior Orders where the
22 Commission approved any revenue loss beyond the end of the FPFTY. The claim

1 by the Company that it may have recovered some of the revenue decline from Act
2 129 or any other reason in the past, does not support extending the time period to
3 calculate revenue loss up to four years beyond the end of the FPFTY.
4

5 **Q. IS THE COMPANY’S CLAIM THAT IT WILL NOT OVERCOLLECT**
6 **REVENUE IF THE PROJECTED REVENUE LOSS BEYOND THE END**
7 **OF THE FPFTY VALID BECAUSE IT IS BASED UPON THE AVERAGE**
8 **DECLINE DURING THE TIME RATES WILL BE IN EFFECT?**

9 A. No. The Company’s argument is without merit. As described in my direct
10 testimony, rates should be established on billing determinates in the FPFTY. It is
11 not appropriate to extend any usage or revenue decline beyond the end of the
12 FPFTY to capture a future decline, averaged or not averaged, in rates that go into
13 effect on the first day of the FPFTY. Therefore, the Company’s claim is not made
14 valid by reflecting the amount of revenue loss over the 3-year time-period rates are
15 most likely to be in effect as the Company first collects the revenues associated
16 with the post-FPFTY declines in the FPFTY.
17

18 **Q. IS THE COMPANY’S PROJECTED REVENUE LOSS BEYOND THE END**
19 **OF THE FPFTY VALID BECAUSE IT DOES NOT PLAN TO FILE**
20 **ANOTHER BASE RATE CASE UNTIL 2025?**

21 A. No. The filing of future base rate cases is up to the Company and does not impact
22 this rate case. In this base rate case the Company has selected December 31, 2022

1 as the FPPTY; therefore, it is not valid to establish rates in 2022 that utilize
2 projected losses in 2023, 2024 and 2025.

3
4 **RESIDENTIAL CUSTOMER CHARGES**

5 **Q. WHAT RESIDENTIAL MONTHLY CUSTOMER CHARGES DID THE**
6 **COMPANY REQUEST?**

7 A. The Company requested that the current Residential and Residential Heating
8 customer charge of \$12.50 per month be increased to \$16.25 per month (DLC
9 Book 9, Exhibit DBO-3, p. 8). The \$16.25 per month customer charge being
10 proposed by the Company is less than the \$18.32 per month customer cost analysis
11 determined by the Company.

12
13 **Q. WHAT DID YOU RECOMMEND CONCERNING THE RESIDENTIAL**
14 **CUSTOMER CHARGE?**

15 A. I recommended that the residential customer charge be included in any scale back
16 of rates (I&E St. No. 3, p. 17-18).

17
18 **OTHER CLASS CUSTOMER CHARGES**

19 **Q. WHAT DID YOU RECOMMEND CONCERNING THE GM<25KW AND**
20 **GMH CUSTOMER CHARGES?**

21 A. I recommended that the GM<25kW and GMH customer charges not be increased
22 to \$63.00 per month. I made this recommendation based upon the Company's

1 customer cost analysis which shows the Company incurs \$37.46 per month in
2 GM<25kW customer costs and \$51.36 per month in GMH customer costs (I&E St.
3 No. 3, pp. 9-11).

4
5 **Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION**
6 **CONCERNING THE GM<25KW AND GMH CUSTOMER CHARGE IN**
7 **REBUTTAL TESTIMONY?**

8 A. Yes. The Company explained that these charges include 5kWof demand which
9 according to the Company's cost of service study result in a monthly charge that is
10 less than the customer costs and value of the 5kW of demand (DLC St. No. 16-R,
11 pp 15-17).

12
13 **Q. DO YOU ACCEPT THE COMPANY'S EXPLANATION AND WISH TO**
14 **CHANGE YOUR RECOMMENDATION CONCERNING THE GM<25KW**
15 **AND GMH CUSTOMER CHARGES?**

16 A. Yes. Based upon the Company's explanation concerning the inclusion of 5kW of
17 demand, I wish to revise my recommendation and now recommend that the
18 GM<25kW and GMH customer charges be permitted to be increased to \$63.00 per
19 month.

1 **Q. WHAT DID YOU RECOMMEND CONCERNING THE GM>25KW**
2 **CUSTOMER CHARGE?**

3 A. I recommended that the GM>25kW and GMH customer charge not be increased to
4 \$63.00 per month (I&E St. No. 3, p. 9).

5
6 **Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION**
7 **CONCERNING THE GM>25KW AND GMH CUSTOMER CHARGE?**

8 A. Yes. The Company believes that I inadvertently recommended that the GM>25
9 kW customer charge not be increased (DLC St. No. 16-R, pp. 15-67).

10

11 **Q. DO YOU WISH TO REVISE YOUR RECOMMENDATION**
12 **CONCERNING THE GM>25KW CUSTOMER CHARGE?**

13 A. Yes. I wish to revise my recommendation and now recommend that the
14 GM>25kW customer charge be permitted to be increased to \$76.00 per month. I
15 make this recommendation because the \$76.00 per month GM>25kW customer
16 charge is supported by the Company's customer cost analysis that shows it incurs
17 \$120.81 per month in customer costs for the GM>25kW class.

1 **FORFEITED DISCOUNTS**

2 **Q. WHAT DID YOU RECOMMEND CONCERNING THE LEVEL OF**
3 **FORFEITED DISCOUNTS UNDER PROPOSED RATES?**

4 A. In my direct testimony and exhibit, I recommended forfeited discounts be
5 increased by \$357,672 under proposed rates (I&E St. No. 3, p. 13 and I&E Ex. No.
6 3, Sch. 1, column C, line 22).

7
8 **Q. WHY DID YOU RECOMMEND THAT FORFEITED DISCOUNT**
9 **REVENUE INCREASE UNDER PROPOSED RATES?**

10 A. I believe it is reasonable to expect that forfeited discount revenue will increase at
11 the same time a utility's base rates are increased as a result of a rate case filing.
12 Since forfeited discounts are generally a percentage of a customer's bill,
13 increasing revenue through a rate increase over time will cause revenues from
14 forfeited discounts to also increase. Therefore, I recommend that DLC's forfeited
15 discount claim in the FPFTY be increased by the same percent increase as the
16 overall base rate increase granted by the Commission (I&E St. No. 3, pp. 11-14).

17
18 **Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION THAT**
19 **FORFEITED DISCOUNT REVENUE INCREASE UNDER PROPOSED**
20 **RATES?**

21 A. No. Therefore, I reiterate my recommendation that DLC's forfeited discount

1 revenue be increased by the same percent increase as the overall base rate increase
2 granted by the Commission.

3
4 **SCALE BACK OF RATES**

5 **Q. WHAT DID YOU RECOMMEND IF THE COMMISSION GRANTS AN**
6 **INCREASE LESS THAN FULL APPROXIMATELY \$86 MILLION**
7 **INCREASE?**

8 A. If the Commission grants less than the Company's full requested increase, I
9 recommended the scale back shown on I&E Exhibit No. 3, Sch. 1 that provides
10 two steps shown in columns D and F. The jurisdictional distribution rate increase
11 was \$85,772,613.

12
13 **Q. DID THE COMPANY REVISE THE INCREASE BY CLASS IN**
14 **REBUTTAL TESTIMONY?**

15 A. Yes. The Company provided a revised jurisdictional distribution rate increase by
16 class on Table DBO-1-R in DLC Statement No. 16-R. The Company claims this
17 was done so that the revenue received from each class is closer to the cost of
18 providing service to that class. I summarized the original increase by class, the
19 change proposed by the Company and the revised jurisdictional distribution rate
20 increase by class proposed by the Company on I&E Ex. No. 3-SR, Sch. 1,
21 columns A-E.

1 **Q. DO THESE COMPANY REVISIONS CAUSE YOU TO REVISE YOUR**
2 **SCALE BACK RECOMMENDATION?**

3 A. Yes. While the Company's revised revenue increase by class does a better job of
4 moving the revenue received from that class towards the cost of providing service
5 to that class, I continue to believe a targeted scale back is needed so that the
6 relative rate of return for each class moves to or towards one. Therefore, I
7 recalculated the scale back that should apply to each class based upon the revised
8 Company increase by class (I&E Ex. No. 3-SR, Sch. 1, columns F-J). I utilized
9 the same methodology described in my direct testimony where the relative rates of
10 return move to or towards one at the two steps of the scale back. The relative rate
11 of returns by class at the \$16 million scale back level are shown on I&E Ex. No. 3-
12 SR, Sch. 2, line 16. The relative rate of returns by class at the \$45 million scale
13 back level are shown on I&E Ex. No. 3-SR, Sch. 3, line 16.

14
15 **Q. DID THE COMPANY ADDRESS YOUR SCALE BACK**
16 **RECOMMENDATION?**

17 A. Yes. The Company states that the I&E proposal should be applied and based upon
18 the revised revenue increase by class shown on DBO-1R. However, the Company
19 proposes that any increase by class be limited to 1.5X the system average increase
20 (DLC St. No. 16-R, pp. 7-9).

1 **Q. DO YOU AGREE THAT THE INCREASE TO ANY CLASS SHOULD BE**
2 **LIMITED TO 1.5 TIMES THE SYSTEM AVERAGE INCREASE?**

3 A. No. As shown on I&E Ex. No. 3-SR, Sch. 1, many of the classes should not be
4 scaled back, or the scale back would result in an increase more than 1.5X the
5 system average in order to move the relative rate of return under proposed rates to
6 or towards 1.0 (I&E Ex. No. 3-SR, Sch. 2 and 3). For those classes that I
7 recommend not be scaled back, I believe that if the original percentage increase
8 for a specific class was reasonable in the original filing, the same increase will be
9 reasonable under scaled back rates.

10

11 **Q. DID YOU ALSO RECOMMEND THAT THE RESIDENTIAL CUSTOMER**
12 **CHARGE BE SCALED BACK?**

13 A. Yes. I recommended that the Residential customer charge be included in any scale
14 back allocated to the Residential class. As shown on DLC Book 9, Exhibit DBO-
15 3, p. 8, the Residential customer charge increase is \$3.75 (\$16.25 - \$12.50) per
16 month. This equates to an increase of 30.0% or almost twice the system average
17 increase of 15.4% (Book 3, DLC Attachment DFR-IV-A, line 19, col. J, p. 3).
18 Such a large percentage increase relative to the overall increase justifies reducing
19 the Residential customer charge if rates are scaled back to reduce the impact of the
20 overall increase on low usage customers.

1 **Q. WHY DO YOU RECOMMEND A PROPORTIONAL SCALE BACK FOR**
2 **THE RESIDENTIAL CUSTOMER CHARGE?**

3 A. As described in my direct testimony, this recommendation satisfies the concept of
4 gradualism by reducing the percentage increase to the customer charge. Although
5 the proposed customer charge is less than the customer cost, failure to include the
6 customer charge in any scale back would cause the increase to the customer
7 charge to violate the principles of gradualism when compared to the system
8 average increase.

9

10 **Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO**
11 **SCALE BACK THE RESIDENTIAL CUSTOMER CHARGE?**

12 A. Not directly. However, the Company did state that the customer charge proposed
13 by the Company should be approved (DLC St. 16-R, p. 15).

14

15 **Q. DID THE COMPANY PROVIDE A REASON FOR NOT INCLUDING THE**
16 **RESIDENTIAL CUSTOMER CHARGE IN ANY SCALE BACK OF**
17 **RATES?**

18 A. No. Therefore, my recommendation to scale back the residential customer charge
19 should be approved.

20

21 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

22 A. Yes.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Exhibit to Accompany

The

Surrebuttal Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:

Present Rate Revenue
Projected Revenue Loss
Revenue Allocation
Customer Cost Analysis
Customer Charge / Rate Design
Scale Back of Rates

Duquesne Light Company
Fully Projected Future Test Year at Proposed Distribution Rates
12 Month Period Ended April 30, 2022 Assuming No Customer Shopping (i.e. 100% Default Service Load)
R-2021-3024750

Line No.	Rate Class	Proposed Distribution Revenue Change	Company Rebuttal Adjustment	Company Statement 16-R Page 3	First \$16 M Scale Back	\$16 Million Reduction Distribution Revenue Change	Next \$29 M Scale Back	\$45 Million Reduction Distribution Revenue Change	Distribution Percent Change	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
1	RS	\$41,912,590	-\$1,022,590	\$40,890,000	-\$7,893,000	\$32,997,000	-\$15,874,398	\$17,122,602	6.1%	
2	RH	\$6,315,560	-\$139,560	\$6,176,000	\$0	\$6,176,000	-\$383,458	\$5,792,542	22.1%	
3	RA	\$727,549	-\$16,549	\$711,000	\$0	\$711,000	-\$132,000	\$579,000	18.8%	
4	GS	\$1,658,461	-\$137,461	\$1,521,000	-\$442,000	\$1,079,000	-\$574,400	\$504,600	4.5%	
5	GM<25	\$5,222,026	-\$239,026	\$4,983,000	-\$3,492,000	\$1,491,000	-\$1,491,000	\$0	0.0%	
6	GM>25	\$12,010,880	\$1,055,120	\$13,066,000	\$0	\$13,066,000	-\$3,800,000	\$9,266,000	14.0%	
7	GMIH<25	\$582,719	-\$27,719	\$555,000	-\$555,000	\$0	\$0	\$0	0.0%	
8	GMIH>25	\$1,311,166	-\$11,166	\$1,300,000	\$0	\$1,300,000	\$0	\$1,300,000	22.1%	
9	GL	\$10,151,448	-\$223,448	\$9,928,000	-\$2,964,557	\$6,963,443	-\$4,624,316	\$2,339,127	3.7%	
10	GLH	\$1,619,992	\$56,008	\$1,676,000	\$0	\$1,676,000	\$0	\$1,676,000	22.7%	
11	L	\$3,407,821	\$481,179	\$3,889,000	\$0	\$3,889,000	-\$2,000,000	\$1,889,000	10.3%	
12	HVPS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%	
13	AL	\$59	-\$59	\$0	\$0	\$0	\$0	\$0	0.0%	
14	SE	\$79,910	-\$3,910	\$76,000	-\$76,000	\$0	\$0	\$0	0.0%	
15	SM	\$484,806	\$26,194	\$511,000	-\$511,000	\$0	\$0	\$0	0.0%	
16	SH	\$8,434	-\$8,434	\$0	\$0	\$0	\$0	\$0	0.0%	
17	UMS	\$251,065	-\$5,065	\$246,000	\$0	\$246,000	\$0	\$246,000	23.2%	
18	PAL	\$28,126	-\$28,126	\$0	\$0	\$0	\$0	\$0	0.0%	
19	Total	\$85,772,613	-\$244,613	\$85,528,000	-\$15,933,557	\$69,594,443	-\$28,879,572	\$40,714,871	7.7%	
20	<u>Other Electric Revenue:</u>									
21	Late Payment/ Returned	0.417%								
22	Check Charges (Acct. 450)	\$357,672			-\$66,443	\$291,229	-\$120,428	\$170,801	4.4%	
23	Total Dist. and LP Revenue	\$86,130,285			-\$16,000,000	\$69,885,672	-\$29,000,000	\$40,885,672	7.7%	

**I&E Statement No. 4
Witness: Joseph Kubas**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Direct Testimony

of

Joseph Kubas

Bureau of Investigation and Enforcement

Concerning:

**Test Year
Rate Base
Accrued Depreciation
FTY and FPFTY Reporting**

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1 **INTRODUCTION**

2 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS**
3 **ADDRESS?**

4 A. My name is Joseph Kubas. My business address is 400 North Street, Harrisburg,
5 PA 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (“Commission”) in
9 the Bureau of Investigation and Enforcement (“I&E”) as a Fixed Utility Valuation
10 Engineer Supervisor.

11

12 **Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL**
13 **BACKGROUND?**

14 A. My education and professional background are set forth in Appendix A, which is
15 attached.

16

17 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

18 A. I&E is responsible for protecting the public interest in proceedings before the
19 Commission. The I&E analysis in the proceeding is based on its responsibility to
20 represent the public interest. This responsibility requires the balancing of the
21 interests of ratepayers, the regulated utility, and the regulated community as a
22 whole.

1 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

2 A. My direct testimony relates to Duquesne Light Company's ("DLC" or
3 "Company") requested base rate increase of approximately \$115 million.

4

5 **Q. DOES YOUR DIRECT TESTIMONY INCLUDE AN EXHIBIT?**

6 A. Yes. I&E Exhibit No. 4 contains schedules relating to my testimony.

7

8 **TEST YEAR**

9 **Q. WHAT IS A TEST YEAR AND HOW IS IT USED BY A COMPANY IN A**
10 **RATE PROCEEDING?**

11 A. A test year is the twelve-month period over which a utility's costs and revenues
12 are measured as the basis for setting prospective base rates. In order to meet its
13 burden of proof, a utility has the option of selecting to use a historic test year
14 ("HTY"), a future test year ("FTY"), or a fully projected future test year
15 ("FPFTY"). An HTY is a twelve-month period selected by a company that
16 represents a recent full year of actual data. An FTY begins the day after the HTY
17 ends and is determined using a combination of actual data and a projection of
18 annualized and normalized estimates of future revenues and expenses and a
19 corresponding rate base at the end of that period. The FPFTY is defined as the
20 twelve-month period that begins with the first month that the new rates will be
21 placed into effect, after the application of the full suspension period permitted
22 under Section 1308(d). By using an FTY or an FPFTY, a utility makes a projected

1 annualized and normalized estimate of future revenues and expenses and a
2 corresponding measure of value at the end of the period.

3
4 **Q. WHAT TEST YEARS HAS THE COMPANY USED IN THIS**
5 **PROCEEDING?**

6 A. The Company used the twelve-month period ending December 31, 2020 as the
7 HTY, the twelve-month period ending December 31, 2021 as the FTY, and the
8 twelve-month period ending December 31, 2022 as the FPFTY.

9
10 **RATE BASE**

11 **Q. WHAT IS RATE BASE?**

12 A. Rate base is the depreciated original cost of a utility's investment in plant a utility
13 has in place to serve customers plus other additions and deductions that the
14 Commission determines to be necessary in order to keep the utility operating and
15 providing safe and reliable service to its customers.

16
17 **Q. HOW IS RATE BASE USED WITHIN THE RATEMAKING FORMULA?**

18 A. Rate base is one part of the financial equation used by the Commission to
19 determine the appropriate revenue that a utility is granted in a rate proceeding.
20 The revenue determination allows the utility to meet its expense obligations and
21 gives it the opportunity to earn the rate of return established by the Commission in

1 a rate proceeding. The equation used to determine the proper revenue requirement
2 level is:

$$\begin{aligned} 3 \quad & \text{Revenue Requirement} = (\text{Rate Base} \times \text{Rate of Return}) + \text{Operating} \\ 4 \quad & \text{Expenses} + \text{Depreciation Expenses} + \text{Taxes.} \end{aligned}$$

5
6 **Q. HOW IS THE DEPRECIATED ORIGINAL COST OF PLANT-IN-**
7 **SERVICE AT THE END OF THE TEST YEAR DETERMINED?**

8 A. The depreciated original cost is equal to the original cost of the plant-in-service
9 that is used and useful in the provision of utility service to the customers less the
10 depreciation reserve as adjusted by other items such as salvage value and removal
11 costs. By using a FPFTY, the depreciated original cost of the plant in service is
12 computed by taking a “snapshot” look at the depreciated original cost value of
13 used and useful utility plant estimated to be in service at the end of the FPFTY.

14
15 **Q. WHAT OTHER ADDITIONS AND DEDUCTIONS TO THE**
16 **DEPRECIATED ORIGINAL COST OF UTILITY PLANT ARE**
17 **ALLOWED?**

18 A. Some of the additions to the depreciated original cost of a company’s investment
19 in utility include materials and supplies, prepayments, and cash working capital.
20 Some of the deductions include deferred income taxes and customer deposits.
21 Some additions are applicable to a specific utility or utility type.

1 **Q. WHAT WAS THE COMPANY'S JURISDICTIONAL ORIGINAL COST,**
2 **ACCUMULATED PROVISION FOR DEPRECIATION AND NET**
3 **ELECTRICAL PLANT IN SERVICE REFLECTED IN RATE BASE IN**
4 **THE FPFTY?**

5 A. The Company is claiming \$4,088,758,000 of original cost plant, \$1,425,949,000
6 of accumulated provision for depreciation (accrued depreciation) and
7 \$2,662,809,000 of net electric plant in service (DLC FPFTY Sch D-1, lines 1-3).

8
9 **Q. WHAT ADDITIONS AND DEDUCTIONS DID THE COMPANY**
10 **PROPOSE TO THE DEPRECIATED ORIGINAL COST?**

11 A. The following additions and deductions to the jurisdictional rate base are shown
12 on DLC FPFTY Sch D-1, column 2.

- 13 1. Cash Working Capital;
- 14 2. Materials and Supplies;
- 15 3. Excess Pension Capitalized.

16 The deductions to the depreciated original cost are:

- 17 1. Customer Deposits;
- 18 2. Accumulated Deferred Income Taxes.

19
20 **Q. WHAT RATE BASE DID THE COMPANY CLAIM FOR THE FPFTY?**

21 A. The Company is claiming total jurisdictional rate base of \$2,267,464,000 (DLC
22 FPFTY Sch D-1, line 12).

1 **ACCRUED DEPRECIATION**

2 **Q. WHAT IS ACCRUED DEPRECIATION?**

3 A. A utility's accrued depreciation is the aggregate of all the annual depreciation
4 expenses over the years plus provisions for salvage and cost of removal related to
5 the plant in service. As described above, the accrued depreciation is subtracted
6 from the original cost of plant in service to determine net electric plant in service
7 and total rate base.

8
9 **Q. WHAT IS DLC'S ACCRUED DEPRECIATION FOR THE FPFTY?**

10 A. The Company's jurisdictional accrued depreciation for the FPFTY is
11 \$1,425,949,000 (I&E Ex. No. 4, Schedule 1, line 2, Column D).

12
13 **Q. DID THE COMPANY PROVIDE A RESPONSE TO DISCOVERY THAT**
14 **IDENTIFIED A CORRECTION TO THE ACCRUED DEPRECIATION?**

15 A. Yes. The Company's response to OCA-VI-9, describes a \$693,000 increase in
16 accrued depreciation related to cloud-based software (I&E Ex. No. 4, Sch. 2). The
17 \$693,000 increase in accrued depreciation decreases rate base by \$693,000 (I&E
18 Ex. No. 4, Sch. 1, column D, line 10).

19
20 **Q. WHAT RATE BASE DO YOU RECOMMEND AS A RESULT OF THIS**
21 **ADJUSTMENT TO ACCRUED DEPRECIATION?**

22 A. I recommend a rate base of \$2,275,773,000 (I&E Ex. No. 4, Sch. 1, column E, line 10).

1 **FTY AND FPFTY REPORTING**

2 **Q. WHAT AMOUNT OF PLANT ADDITIONS, RETIREMENTS, PLANT**
3 **RECLASSIFICATIONS, AND ADJUSTMENTS IS THE COMPANY**
4 **PROJECTING FOR THE FTY ENDING DECEMBER 31, 2021?**

5 A. The Company is claiming \$319,812,000 of plant additions, \$101,139,000 of
6 retirements and \$83,629,000 of plant reclassification in the FTY (DLC Book 6,
7 Schedule C-2 p. 3).

8
9 **Q. WHAT AMOUNT OF PLANT ADDITIONS AND RETIREMENTS IS THE**
10 **COMPANY PROJECTING FOR THE FPFTY ENDING DECEMBER 31,**
11 **2022?**

12 A. The Company is claiming \$301,794,000 of plant additions and \$81,019,000 of
13 retirements in the FPFTY (DLC Book 5, Schedule C-2 p. 3).

14
15 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING PLANT**
16 **ADDITIONS THAT DLC PROJECTS TO BE IN SERVICE DURING THE**
17 **FTY ENDING DECEMBER 31, 2021 AND THE FPFTY ENDING**
18 **DECEMBER 31, 2022?**

19 A. Yes. I recommend that the Company provide the Commission’s Bureaus of
20 Technical Utility Services and Investigation and Enforcement with an update to
21 DLC Exhibit No. 2, Book 6, Schedule C-2, pages 1- 4 no later than April 1, 2022,
22 which should include actual plant additions, retirements, and reclassifications by

1 month from January 1, 2021 through December 31, 2021. I also recommend that
2 the Company an update to DLC Exhibit No. 2, Book 5, Schedule C-2, pages 1- 4
3 no later than April 1, 2023, which should include actual plant additions,
4 retirements, and reclassifications by month from January 1, 2022 through
5 December 31, 2022.

6
7 **Q. WHY DO YOU RECOMMEND THAT DLC PROVIDE THESE UPDATES?**

8 A. I&E believes that there is value in determining how closely DLC's projected
9 investments in future facility comport with the actual investments that are made by
10 the end of the FTY and FPFTY. By establishing rates in this case through the use
11 of the FPFTY, the Company is requesting ratepayers pre-pay a return on the
12 Company's projected investment in future facilities that are not in place and
13 providing service at the time the new rates take effect and are not subject to any
14 guarantee of being completed and placed into service. While the FPFTY provides
15 for such projections, there should be some timely verification of the projections,
16 retirements, adjustments, and reclassifications. Determining the correlation
17 between DLC's projected plant additions and actual plant additions will help
18 inform the Commission and the parties in DLC's future rate cases.

19
20 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

21 A. Yes.

JOSEPH KUBAS

***PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH KEYSTONE BUILDING
400 NORTH STREET
HARRISBURG, PA 17120***

Education: Bachelor of Science in Civil Engineering Technology, 1985, University of Pittsburgh at Johnstown, Johnstown, PA.

Continuing

Education: Legal Principles and Practices of Surveying at the University of Maryland. Economics, Accounting, 33 Credit hours of accounting at the Howard County Community College and the University of Pittsburgh at Johnstown. Managing Multiple Priorities at the Pennsylvania State University. Various PA-PUC and Utility Company Seminars.

Professional: Engineer In Training, 1985,

Exams: Uniform Certified Public Accounting Exam, 1993.

Rate School: Cost of Service - Rate Structure & Rate Design instructor at Commission's Rate School - September 2010, 2012 and 2014.

Title: **FIXED UTILITY VALUATION ENGINEER SUPERVISOR**

December 2011 - Present
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Duties: Duties include the areas of Engineering, Revenue and Rate Structure for all fixed utility types. During the course of formal and informal investigations personnel under my direction are responsible for reviewing and presenting recommendations regarding tariff rate schedules, tariff rules and regulations, measures of value claims, revenue annualizations, depreciation claims, fuel purchasing practices and economic analyses. The types of dockets reviewed by the Bureau of I&E include: applications, formal complaints, investigations, petitions and rate investigations. The Engineering Section is also responsible for reviewing all pertinent supporting information such as cost of service studies, bill frequency analyses, proofs of revenue, depreciation studies, water quality test results

and formal complaints. Duties also include reviewing default service petitions by electric distribution companies and Act 129 Filings by the seven major electric Utilities, including energy efficiency and conservation plans and Smart Meter Plans.

Title: RATE CASE REVIEW SPECIALIST

December 2009 - December 2011

Pennsylvania Public Utility Commission

Bureau of Investigation and Enforcement and Office of Trial Staff

Duties: These duties include the determination of the reasonableness of claims and proposals in the areas of plant in service, rate base, depreciation expense, cost of service, quality of service, revenues, acquisitions, purchase gas expense, rate structure, and tariff proposal submitted by Water, Sewer, Telephone, Gas and Steam Heat utilities to justify utility service rates, or alternative forms of regulation. Research, analyze, and review rate case filings, tariff filings, acquisitions and investigations. Participate in on-site inspections of utility properties to determine the used and usefulness of the plant-in service and make recommendations. Prepare interrogatories in the areas of rate base, depreciation expense, purchase gas expense, amortizations, rate structure, revenue and quality of service in order to obtain additional information regarding a utility's filing. Analyze present revenue, proposed revenue, rate structure and tariff issues. Recommend adjustments to rate base, depreciation expense, revenue, rate structure and other issues concerning fixed utilities. Prepare testimony and exhibits for the purpose of establishing the I&E position in formal and informal proceedings before the Commission. Provide assistance and input to I&E employees concerning engineering and rate structure issues including input for briefs and exceptions. Participate in Commission consultative report proceedings and collaboratives undertaken by the Commission.

Title: FIXED UTILITY VALUATION ENGINEER III

December 1999 - December 2009

Pennsylvania Public Utility Commission

Office of Trial Staff

Duties: These duties include the determination of the reasonableness of claims and proposals in the areas of plant in service, rate base, depreciation expense, cost of service, quality of service, revenues, acquisitions, purchase gas expense, rate structure, and tariff proposal submitted by Water, Sewer, Telephone, Gas and Steam Heat utilities to justify utility service rates, or alternative forms of regulation. Research, analyze, and review rate case

filings, tariff filings, acquisitions and investigations. Participate in on-site inspections of utility properties to determine the used and usefulness of the plant-in service and make recommendations. Prepare interrogatories in the areas of rate base, depreciation expense, purchase gas expense, amortizations, rate structure, revenue and quality of service in order to obtain additional information regarding a utility's filing. Analyze present revenue, proposed revenue, rate structure and tariff issues. Recommend adjustments to rate base, depreciation expense, revenue, rate structure and other issues concerning fixed utilities. Prepare testimony and exhibits for the purpose of establishing the OTS position in formal and informal proceedings before the Commission. Provide assistance and input to OTS employees concerning engineering and rate structure issues including input for briefs and exceptions. Participate in Commission consultative report proceedings and collaboratives undertaken by the Commission.

Title: **FIXED UTILITY VALUATION ENGINEER II**
April 1996 - December 1999
Pennsylvania Public Utility Commission
Office of Trial Staff and Bureau of Fixed Utility Services

Duties: Perform the duties of a Fixed Utility Valuation Engineer II in the Office of Trail Staff (OTS) and Bureau of Fixed Utility Services.

Title: **FIXED UTILITY VALUATION ENGINEER TRAINEE, I & II**
May 1993 - March 1996
Pennsylvania Public Utility Commission
Office of Trial Staff
Telecommunications and Water Division

Duties: Perform the duties of a Fixed Utility Valuation Engineer II in the Rate Structure/Engineering Section of the Telecommunications and Water Division of the Office of Trial Staff (OTS).

Title: **CIVIL ENGINEER**
May 1985 - January 1991
Clark Finefrock & Sackett Inc.
7135 Minstrel Way
Columbia, MD 21045

Duties: Engineering, Surveying, Computer, and Field Inspection work related to land development projects in Maryland.

Testimony Before the Pennsylvania Public Utility Commission

1.	National Utilities Inc. (Water)	R-00953416
2.	Consumer Pennsylvania Water Company - Roaring Creek Division	R-00973869
3.	Philadelphia Suburban Water Company	R-00973952
4.	Bell Atlantic - Pennsylvania Inc.	P-00971307
5.	City of Bethlehem- Bureau of Water	R-00984375
6.	Pennsylvania Telephone Association - Chapter 30 Plan	P-00981425
7.	GTE North Inc. Telephone Chapter 30 Plan	P-00981449
8.	Pennsylvania American Water Co.	R-00994638
9.	Philadelphia Suburban Water Co.	R-00994868
10.	PG Energy (Gas)	R-00005119
11.	Pennsylvania American Water - Coatesville Acquisition	A-212285-F0071
12.	T. W Phillips Gas and Oil Company	R-00005459
13.	Verizon North - Chapter 30 Plan	P-00001854
14.	Philadelphia Gas Works	R-00006042
15.	PFG Gas Inc. & Penn Fuels Gas Co.	R-00013679
16.	Pennsylvania American Water Co.	R-00016339
17.	Philadelphia Suburban Water Co.	R-00016750
18.	Philadelphia Gas Works	R-00017034
19.	PFG Gas Inc. & Penn Fuels Gas Co	R-00027389
20.	Verizon - Pennsylvania, Inc.	P-00021973
21.	Verizon - Pennsylvania, Inc.	P-00937105-F0002
22.	Pennsylvania American Water Co.	R-00027982
23.	Dominion Peoples 1307(f)	R-00038170
24.	Verizon PA / Verizon North	C-20027195
25.	National Fuel Gas Distribution, Inc.	R-00038168
26.	Aqua Pennsylvania Inc.	R-00038805
27.	Dominion Peoples 1307 (f)	R-00049153
28.	PPL Electric Utilities	R-00049255
29.	National Fuel Gas Distribution, Inc.	R-00049656
30.	City of Lancaster - Sewer	R-00049862
31.	Dominion Peoples 1307(f)	R-00050267
32.	Verizon PA / Verizon North	C-20027195
33.	PPL Gas Utilities Inc. 1307(f)	R-00050540
34.	United Telephone	A-313200-F0007
35.	Aqua Pa	R-00051030
36.	T.W. Phillips 1307(f)	R-00051134

37.	City of Dubois	R-00050671
38.	T.W. Phillips	R-00051178
39.	The Peoples Natural Gas Co. 1307(f)	R-00061301
40.	Meted/Penelec	R-00061366 and R-00061367
41.	The York Water Company	R-00061322
42.	PPL Gas Utilities Corporation	R-00061398
43.	National Fuel Gas Distribution, Inc.	R-00061493
44.	Pennsylvania American Water Co.	P-00062241
45.	Philadelphia Gas Works	R-00061931
46.	PPL Electric	R-00072155
47.	Pennsylvania-American Water Co.	R-00072229
48.	Valley Energy	R-00072349
49.	City of Bethlehem	R-00072492
50.	Aqua Pennsylvania, Inc.	R-00072711
51.	T.W. Phillips 1307(f)	R-2008-2013026
52.	Columbia Gas	R-2008-2011621
53.	The Peoples Natural Gas Co. 1307(f)	R-2008-2022206
54.	PECO Energy	P-2008-2032333
55.	NRG Energy Center Harrisburg	R-2008-2028395
56.	PAWC - Coatesville Wastewater	R-2008-2032689
57.	York Water	R-2008-2023067
58.	Pike County Power and Light (Gas)	R-2008-2046520
59.	Columbia Water	R-2008-2045157
60.	T. W. Phillips Gas (1307-f)	R-2008-2075250
61.	The Peoples Natural Gas Co. (1307-f)	R-2009-2088069
62.	UGI Utilities Inc. (1307-f)	R-2009-2105911
63.	PAWC Water	R-2009-2097323
64.	UGI Utilities Inc.	R-2009-2105911
65.	Penn Estates Water	R-2009-2117532
66.	Penn Estates Sewer	R-2009-2117740
67.	AT&T Communications	C-2009-2098380
68.	Aqua Pennsylvania Inc.	R-2009-2132019
69.	T.W. Phillips Gas (1307-f)	R-2009-2145441
70.	PGW Gas	R-2009-2139884
71.	City of Bethlehem - Remand	R-00072492
72.	Dominion Peoples (1307-f)	R-2010-2155608
73.	PECO Energy - Gas Division	R-2010-2161592
74.	UGI Penn National Gas	R-2010-2172928
75.	PAWC Coatesville Operations	R-2010-2166212
76.	PAWC Northeast Operations	R-2010-2166214
77.	Duquesne Light	R-2010-2179522
78.	Peoples Natural Gas Company	R-2010-2201702

79.	T.W. Phillips - Steel River Application	A-2010-2210326
80.	Peoples Natural Gas 1307(f)	R-2011-2228694
81.	UGI Penn Natural Gas 1307(f)	R-2011-2238943
82.	Pennsylvania American Water	R-2011-2232243
83.	Aqua Pennsylvania, Inc.	R-2011-2267958
84.	Borough of Quakertown	R-2011-2251181
85.	Peoples Natural Gas Company	R-2012-2285985
86.	Columbia Gas of Pennsylvania	R-2012-2321748
87.	UGI Utilities Inc.	R-2015-2518438
88.	Aqua Wastewater	A-2017-2605434
89.	Pennsylvania American Water	R-2017-2595853
90.	UGI Electric	R-2017-2640058
91.	PECO Electric	R-2018-3000164
92.	York Water Company	R-2018-3000019
93.	UGI Gas	P-2018-3006814
94.	Penn Power DSIC	P-2019-3012628
95.	UGI Gas	R-2019-3015162

**I&E Exhibit No. 4
Witness: Joseph Kubas**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

**Exhibits to Accompany the
Direct Testimony**

of

Joseph Kubas

Bureau of Investigation and Enforcement

Concerning:

**Test Year
Rate Base
Accrued Depreciation
FTY and FPFTY Reporting**

DUQUESENE LIGHT
R-2021-3024750
Summary of Rate Base Adjustments
(\$1,000)

		Company	I&E		
		Original Cost	FTY	FPFTY	Rate Base
Line No.	Description	Proposed 12/31/2022	Rate Base Adjustment	Rate Base Adjustment	Recommended 12/21/2022
	(A)	(B)	(C)	(D)	(E)
1	Total Plant	\$4,088,759	\$0	\$0	\$4,088,759
2	Accrued Depreciation	-\$1,425,949	\$0	-\$693	-\$1,426,642
3	Net Utility Plant In Service	\$2,662,810	\$0	-\$693	\$2,662,117
	<i>Add:</i>				
4	Cash Working Capital	\$46,162	\$0	\$0	\$46,162
5	Materials And Supplies	\$26,057	\$0	\$0	\$26,057
6	Exceeds Pension Capitalized	\$74,408	\$0	\$0	\$74,408
	<i>Deduct:</i>				
7	Customer Deposits	-\$11,163	\$0	\$0	-\$11,163
8	Accumulated Deferred Income Taxes	-\$521,809	\$0	\$0	-\$521,809
9	Sub-Total	-\$386,345	\$0	\$0	-\$386,345
10	Total Rate Base	\$2,276,465	\$0	-\$693	\$2,275,773

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Consumer Advocate

Set VI

Witness: Robert O'Brien & Jaime Bachota

OCA-VI-9

9. Reference DLC Exhibit 2 – Fully Projected Future Test Year, Book 5, Schedule D-11. Please explain why the “Expenditures”, “Closed to Plant” and “Total Plant” amounts differ and explain what each of those columns represent.

Response:

The amounts for the “Expenditures” in column [1] represent the years that expenditures were made. The amounts for “Closed to Plant” in column [2] represent the years that the plant represented by the Expenditures was placed in service. The amounts for “Total Plant” in column [3] show the total for the amounts Closed to Plant at the end of each year shown on the schedule.

Please note that DLC Exhibit 2, Schedule D-11 has been updated, as shown on OCA-VI-9 Attachment 1, to reflect corrections for the amortization expense shown in column [4], the accumulated amortization in column [5] and the net plant in column [6]. These changes will be reflected in the Company’s updated rebuttal testimony. These changes result in an increase in accumulated amortization of \$693,000 ($\$7,705,000 - \$7,012,000 = \$693,000$) and a decrease in rate base of \$693,000, as shown on OCA-VI-9, Attachment 1, column [8] line 9.

**I&E Statement No. 4-SR
Witness: Joseph Kubas**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Surrebuttal Testimony

of

Joseph Kubas

Bureau of Investigation and Enforcement

Concerning:

**Test Year
Rate Base
Accrued Depreciation
FTY and FPFTY Reporting**

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INTRODUCTION 1

RATE BASE..... 1

ACCRUED DEPRECIATION 3

FTY AND FPFTY REPORTING 4

1 **INTRODUCTION**

2 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS**
3 **ADDRESS?**

4 A. My name is Joseph Kubas. My business address is 400 North Street, Harrisburg,
5 PA 17120.

6

7 **Q. ARE YOU THE SAME JOSEPH KUBAS WHO SUBMITTED DIRECT**
8 **TESTIMONY ON JUNE 30, 2021?**

9 A. Yes. I submitted direct testimony on June 30, 2021.

10

11 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

12 A. My surrebuttal testimony will address Duquesne Light Company's (DLC or
13 Company) accrued depreciation contained in the Company's rate base, which was
14 addressed by DLC witness Robert L. Obrien as DLC St. No. 10-R. I will also
15 address the reporting requirements I recommended in my direct testimony.

16

17 **Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN EXHIBIT?**

18 A. No.

19

20 **RATE BASE**

21 **Q. WHAT IS RATE BASE?**

22 A. Rate base is the depreciated original cost of a utility's investment in plant a utility

1 has in place to serve customers plus other additions and deductions that the
2 Commission determines to be necessary in order to keep the utility operating and
3 providing safe and reliable service to its customers.
4

5 **Q. WHAT WAS THE COMPANY'S JURISDICTIONAL ORIGINAL COST,**
6 **ACCUMULATED PROVISION FOR DEPRECIATION AND NET**
7 **ELECTRICAL PLANT IN SERVICE REFLECTED IN RATE BASE IN**
8 **THE FPFTY?**

9 A. The Company originally claimed \$4,088,758,000 of original cost plant,
10 \$1,425,949,000 of accumulated provision for depreciation (accrued depreciation)
11 and \$2,662,809,000 of net electric plant in service (DLC FPFTY Sch D-1, lines 1-
12 3).
13

14 **Q. WHAT RATE BASE DID THE COMPANY CLAIM FOR THE FPFTY?**

15 A. The Company claimed total jurisdictional rate base of \$2,267,464,000 (DLC
16 FPFTY Sch D-1, line 12).
17

18 **Q. DID THE COMPANY UPDATE ITS RATE BASE IN REBUTTAL**
19 **TESTIMONY?**

20 A. Yes. The Company updated its claimed total jurisdictional rate base to
21 \$2,276,040,000 in rebuttal testimony (DLC Ex. RLO-1-R, line 9).

1 **ACCRUED DEPRECIATION**

2 **Q. WHAT IS ACCRUED DEPRECIATION?**

3 A. A utility's accrued depreciation is the aggregate of all the annual depreciation
4 expenses over the years plus provisions for salvage and cost of removal related to
5 the plant in service. As described above, the accrued depreciation is subtracted
6 from the original cost of plant in service to determine net electric plant in service
7 and total rate base.

8
9 **Q. WHAT IS DLC'S ACCRUED DEPRECIATION FOR THE FPFTY?**

10 A. The Company's jurisdictional accrued depreciation for the FPFTY claim was
11 \$1,425,949,000 (I&E Ex. No. 4, Schedule 1, line 2, Column D).

12
13 **Q. WHAT CHANGE TO THE COMPANY'S ACCRUED DEPRECIATION
14 DID YOU RECOMMEND IN DIRECT TESTIMONY?**

15 A. I recommended that the accrued depreciation be increased by \$693,000 (I&E Ex.
16 No. 4, Sch. 2). This recommendation was based upon the Company's response to
17 OCA-IV-9 (I&E St. No. 4, p. 6).

18
19 **Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO
20 INCREASE ACCRUED DEPRECIATION BY \$693,000?**

21 A. Yes. The Company agreed with my recommendation, but then recommended that
22 only the jurisdictional portion of the \$693,000, or approximately \$532,000

1 (\$693,000 X 0.76793) be reflected in the jurisdictional rate base (DLC St. No. 10-
2 R, p. 22 and DLC RLO-3-R, lines 6-9).

3
4 **Q. DOES REFLECTING A \$532,000 INCREASE IN JURISDICTIONAL**
5 **ACCRUED DEPRECIATION SATISFY YOUR CONCERN?**

6 A. Yes. The \$532,000 increase in jurisdictional accrued depreciation calculated by
7 the Company is acceptable.

8
9 **FTY AND FPFTY REPORTING**

10 **Q. WHAT AMOUNT OF PLANT ADDITIONS, RETIREMENTS, PLANT**
11 **RECLASSIFICATIONS, AND ADJUSTMENTS DID THE COMPANY**
12 **PROJECT FOR THE FTY ENDING DECEMBER 31, 2021?**

13 A. The Company claimed \$319,812,000 of plant additions, \$101,139,000 of
14 retirements and \$83,629,000 of plant reclassification in the FTY (DLC Book 6,
15 Schedule C-2 p. 3).

16
17 **Q. WHAT AMOUNT OF PLANT ADDITIONS AND RETIREMENTS DID**
18 **THE COMPANY PROJECT FOR THE FPFTY ENDING DECEMBER 31,**
19 **2022?**

20 A. The Company claimed \$301,794,000 of plant additions and \$81,019,000 of
21 retirements in the FPFTY (DLC Book 5, Schedule C-2 p. 3).

1 **Q. DID YOU RECOMMEND THE COMPANY PROVIDE A SCHEDULE**
2 **SHOWING ACTUAL PLANT ADDITIONS THAT DLC PROJECTS TO BE**
3 **IN SERVICE DURING THE FTY ENDING DECEMBER 31, 2021 AND**
4 **THE FPFTY ENDING DECEMBER 31, 2022?**

5 A. Yes. I recommended that the Company provide the Commission's Bureaus of
6 Technical Utility Services and Investigation and Enforcement with an update to
7 DLC Exhibit No. 2, Book 6, Schedule C-2, pages 1- 4 no later than April 1, 2022,
8 which shall include actual plant additions, retirements, and reclassifications by
9 month from January 1, 2021 through December 31, 2021. I also recommended that
10 the Company provide an update to DLC Exhibit No. 2, Book 5, Schedule C-2,
11 pages 1- 4 no later than April 1, 2023, which shall include actual plant additions,
12 retirements, and reclassifications by month from January 1, 2022 through
13 December 31, 2022.

14

15 **Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION?**

16 A. No. Therefore, my recommendation should be approved.

17

18 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

19 A. Yes.

**I&E Statement No. 5
Witness: Ethan H. Cline**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Direct Testimony

of

Ethan H. Cline

Bureau of Investigation and Enforcement

Concerning:

**Transportation Electrification Programs
New Community Development Rider
Subscription Rate Pilot for Residential Customers**

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SUBSCRIPTION RATE PILOT FOR RESIDENTIAL CUSTOMERS (RIDER No. 7)..... 13

1 **INTRODUCTION**

2 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

3 A. My name is Ethan H. Cline. My business address is Pennsylvania Public Utility
4 Commission, 400 North Street, Harrisburg, PA 17120.

5
6 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

7 A. I am employed by the Pennsylvania Public Utility Commission in the Bureau of
8 Investigation and Enforcement (“I&E”) as a Fixed Utility Valuation Engineer.

9
10 **Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?**

11 A. My education and professional background are set forth in Appendix A, which is
12 attached.

13
14 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

15 A. I&E is responsible for protecting the public interest in proceedings before the
16 Commission. The I&E analysis in the proceeding is based on its responsibility to
17 represent the public interest. This responsibility requires the balancing of the interests
18 of ratepayers, the regulated utility, and the regulated community as a whole.

19
20 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

21 A. My direct testimony relates to Duquesne Light Company’s (“Duquesne” or
22 “Company”) requested base rate revenue increase of \$115.0 million. My testimony
23 specifically addresses the issues of the proposed Transportation Electrification

1 Programs, New Community Development Rider, and Subscription Rate Pilot for
2 residential customers.

3

4 **Q. DOES YOUR DIRECT TESTIMONY INCLUDE AN ATTACHED EXHIBIT?**

5 A. No.

6

7 **TRANSPORTATION ELECTRIFICATION PROGRAMS**

8 **Q. WHAT IS DUQUESNE PROPOSING REGARDING TRANSPORTATION**
9 **ELECTRIFICATION PROGRAMS?**

10 A. Duquesne witness Oleksak, at Duquesne Statement No. 8, pp. 4-5, described the
11 Transportation Electrification Programs (“TE Programs”) as consisting of two
12 “portfolios,” the Charging Infrastructure Portfolio and Customer Portfolio, each
13 containing several components with associated costs. The TE Programs also include
14 the Company’s proposed Rider No. 23 – Home Charging Pilot and Rider No. 24 –
15 Fleet Charging Pilot. The total proposed cost of the TE program for 2022 is
16 \$4,317,180.

17

18 **Q. WHY IS DUQUESNE PROPOSING THE TE PROGRAMS?**

19 A. On pages 3-4 of Duquesne Statement No. 8, witness Oleksa pointed to three
20 objectives of the TE programs:

21 1) Maximize the benefits of transportation electrification for customers and
22 communities by evaluating the impacts EVs have on the electric grid, informing the
23 Company’s distribution planning, and advancing [the Company’s] ability to serve
24 [the Company’s] customers’ evolving needs.

- 1 2) Service as a trusted advisor to customers to help them transition to an electrified
2 transportation environment; and
3 3) Leverage learnings from the EV ChargeUp Pilot and the Company's unique
4 position to mitigate market obstacles through new products and services.
5

6 **Q. BRIEFLY SUMMARIZE THE CHARGING INFRASTRUCTURE**
7 **PORTFOLIO OF THE OVERALL TE PROGRAMS.**

- 8 A. As described in Table 1 on page 5 of Duquesne Statement No. 8, the Charging
9 Infrastructure Portfolio includes a budgeted claim of \$1,047,940 for make-ready
10 investments to support Level 2 and DC fast charging stations at public, workplace,
11 and multi-unit dwelling locations, a budgeted claim of \$2,013,730 for an optional
12 fleet and public transit make-ready and charging station program, and a budgeted
13 claim of \$503,650 for an optional turnkey service for residential customers to install
14 Level 2 charging stations at their home.
15

16 **Q. BRIEFLY SUMMARIZE THE CUSTOMER PORTFOLIO OF THE**
17 **OVERALL TE PROGRAMS.**

- 18 A. As described in Table 1 on page 5 of Duquesne Statement No. 8, the Customer
19 Portfolio includes a budgeted claim of \$392,460 for awareness, education, and
20 engagement, a budgeted claim of \$292,400 for a fleet electrification advisory service,
21 and a budgeted claim of \$68,000 for a one-time \$50 registration incentive for
22 customers who own or lease an electric vehicle.
23

24 **Q. DOES DUQUESNE HAVE ANY EXISTING TE INITIATIVES?**

- 25 A. Yes. The Company has implemented a Level 2 charging station evaluation, a Direct

1 Current Fast Charging (“DCFC”) station evaluation, an electric vehicle registration
2 incentive, and education and outreach activity as part of its EV ChargeUp pilot that
3 was part of the approved settlement in the Company’s 2018 base rate case (Duquesne
4 St. No 8, p. 15).

5
6 **Q. THE 2018 BASE RATE CASE SETTLEMENT REQUIRED THE COMPANY**
7 **TO COLLECT SPECIFIC DATA REGARDING CHARGING**
8 **INFRASTRUCTURE AND USAGE. DID THE COMPANY PRESENT THAT**
9 **DATA IN THE CURRENT PROCEEDING?**

10 A. Yes. The Company provided, as Duquesne Exhibits SO-1, SO-2, and SO-3, annual
11 reports detailing certain charging station cost and usage information and an overall
12 report that was required in the settlement of the 2018 base rate case (Duquesne St.
13 No. 8, pp. 15-16).

14
15 **Q. ARE YOU RECOMMENDING THAT THE TE PROGRAMS BE**
16 **APPROVED?**

17 A. Yes, with a minor modification to the home charging pilot. Duquesne’s TE Programs
18 are a reasonable step forwards in the process of understanding the demand for and
19 effect of transportation electrification within Duquesne’s service territory.

20
21 **Q. WHAT MODIFICATION DO YOU PROPOSE TO THE HOME CHARGING**
22 **PILOT?**

23 A. I recommend that the home charging pilot be modified such that all installed charging

1 stations are transferred to the owners at the end of the pilot period with no further cost
2 recovery from ratepayers for the transferred hardware. I agree that the Company's
3 proposed pilot for 125 customers is a fair way for the Company to evaluate the impact
4 of these chargers and that it is reasonable to ensure that these chargers are maintained
5 and operate correctly for the duration of the pilot; however, I do not believe that the
6 Company should continue to offer installation, ownership, or maintenance of EV
7 home charging stations beyond the limited scope of this home charging pilot.

8
9 **Q. DO YOU HAVE ANY OTHER RECOMMENDATIONS REGARDING THE**
10 **COMPANY'S PROPOSED TE PROGRAMS?**

11 A. Yes. Although I recommend that the TE Programs be approved, I recommend that
12 specific reporting requirements be required to so that the Company and parties can
13 evaluate whether the objectives of the TE Programs are being met. First, I
14 recommend that the Company continue to provide an annual update on the status of
15 the TE Programs and EV Charge-Up Pilot as the Company agreed to in the settlement
16 of its 2018 base rate case. Second, I recommend the Company provide, in its next
17 base rate case, a summary showing the cost of the corresponding plant, operating
18 expenses, revenues, and the progress that has made toward meeting the stated goals.
19 The update should include any other related information relevant to the TE Programs
20 including customer reaction and participation that is available.

1 **COMMUNITY DEVELOPMENT RIDER (RIDER No. 19)**

2 **Q. WHAT IS THE COMMUNITY DEVELOPMENT RIDER THAT THE**
3 **COMPANY IS PROPOSING?**

4 A. The Community Development Rider, or Rider No. 19, (“CD Rider”) is a proposed
5 declining discount applied to distribution service demand changes of any General
6 Services tariff, excluding the summer months of June through September, over a five-
7 year period (Duquesne St. No. 17, p. 25).

8
9 **Q. WHAT IS THE GOAL OF THE PROPOSED CD RIDER?**

10 A. The Company is proposing the CD Rider in order to provide an incentive to attract
11 non-residential new businesses, businesses considering a substantial expansion of
12 existing operations and businesses that shuttered during the pandemic and are
13 considering re-opening in the Company’s service territory. (Duquesne St. No. 17, p.
14 25).

15
16 **Q. HOW DOES THE COMPANY PROPOSE TO IMPLEMENT THE CD**
17 **RIDER?**

18 A. The Company proposes to reduce demand charges for qualified customers in rate
19 classes GM<25, GM>25, GL, and L in those months where the customer is unlikely
20 to experience peak usage, or months excluding June through September (Duquesne
21 St. No. 17, pp. 26-27).

1 **Q. WHY IS THE COMPANY PROPOSING TO EXCLUDE JUNE THROUGH**
2 **SEPTEMBER FROM THE DISCOUNT?**

3 A. Duquesne witness Everett discussed on page 26 of Duquesne Statement No. 17 that
4 excluding the months June through September from the proposed discount to
5 selectively target customers that have loads that are less likely to impact the
6 Company's system peak.

7
8 **Q. HOW DOES THE COMPANY PROPOSE TO RECOVER THE COSTS OF**
9 **THE CD RIDER?**

10 A. The Company claimed on page 29 of Duquesne Statement No. 17 that "because a
11 customer must bring additional load to qualify for this rate, the customer is covering
12 variable costs of the new load and paying towards the fixed costs, lowering the
13 burden of recovering fixed costs from all other customers."

14
15 **Q. DID THE COMPANY PROVIDE AN ANALYSIS OF HOW THE CD RIDER**
16 **PROPOSAL CONFORMS WITH THE COMMISSION'S POLICY**
17 **STATEMENT REGARDING ALTERNATIVE RATEMAKING?**

18 A. Yes. On pages 29-34 Duquesne Statement No. 17, the Company provides responses
19 to the fourteen factors identified in the Commission's Policy Statement on Alternative
20 Distribution Ratemaking Mechanisms, 52 Pa. Code §§ 69.3301 and 69.3302, with
21 regards to the CD Rider.

1 **Q. DO YOU RECOMMEND THAT THE CD RIDER BE APPROVED?**

2 A. No.

3

4 **Q. WHY DO YOU RECOMMEND THAT THE CD RIDER NOT BE**
5 **APPROVED?**

6 A. I recommend that the CD Rider not be approved for several reasons. First, the
7 proposed CD Rider will result in discriminatory rates. Second, expecting other
8 businesses to provide aid to new or returning businesses simply because they were on
9 time with their electric bills and managed to keep their businesses open through the
10 pandemic is not fair, just, or reasonable. Third, small and medium businesses already
11 have access to various sources of aid. Fourth, the proposed revenue from new
12 customers is not reflected in the current base rate case. Fifth, despite the Company's
13 claim, providing a tariff rate discount would eventually require other customers to
14 make up lost revenues to pay for fixed costs these customers are not paying.

15

16 **Q. HOW DOES THE PROPOSED CD RIDER RESULT IN RATES THAT ARE**
17 **DISCRIMINATORY?**

18 A. The proposed CD Rider will result in rates that are discriminatory because, once
19 implemented, two similar customers under the same rate class will be charged
20 different rates. As the topic of discriminatory rates is a legal issue, I have been
21 advised by counsel that it will be discussed more fully in I&E's legal briefs.

1 **Q. WHY IS THE PROPOSED CD RIDER NOT FAIR TO OTHER SMALL AND**
2 **MEDIUM BUSINESSES?**

3 A. The COVID-19 pandemic resulted in economic hardships for Pennsylvania’s citizens
4 and businesses. Simply because a business was able to continue to operate, and thus
5 be ineligible for the CD Rider, does not mean that those businesses did not feel the
6 negative effects of the pandemic. It is possible those small and medium businesses
7 only stayed open because they cut costs by laying off employees or supplemented
8 their lost revenue with retirement funds or possibly went into debt. Additionally,
9 while I understand the theory behind the Company’s decision to target the customers
10 that do not produce any additional peak loads, this decision provides an unfair
11 competitive advantage against prospective and existing peak load businesses.
12 Therefore, while the discounted rates would be beneficial to the Company and a very
13 select section of small and medium businesses, it is unfair to the existing small and
14 medium businesses who either are required to pay full cost of service rates, are
15 ineligible for the discount, or are competing with the businesses who are receiving
16 discounted rates.

17
18 **Q. ARE THERE ANY RESOURCES AVAILABLE TO THE SMALL AND**
19 **MEDIUM BUSINESSES OF THE PITTSBURGH AREA THAT WERE**
20 **AFFECTED BY THE COVID-19 PANDEMIC?**

21 A. Yes. I&E witness Wilson, on pages 25-27 of I&E Statement No. 1, provided an
22 extensive list of federal, state, and local resources available to assist struggling

1 businesses in Duquesne's service territory. Therefore, the partial discount proposed
2 by the Company in the CD Rider is unnecessary.

3
4 **Q. DID THE COMPANY REFLECT ANY ADDITIONAL REVENUE FROM**
5 **PROJECTED NEW CUSTOMERS ACQUIRED THROUGH THE CD RIDER**
6 **IN ITS PROOF OF REVENUE?**

7 A. No. It does not appear as though the Company projected any additional revenue from
8 new customers acquired through the CD Rider in its proof of revenue. This lack of
9 revenue demonstrates that existing customers receive no benefit whatsoever as part of
10 the current base rate case if customers are added, while the new customers gain the
11 benefit of discounted rates and the Company gains the benefit of additional revenue
12 above what was projected in the current base rate proceeding.

13
14 **Q. DID THE COMPANY CITE THE COMMISSION'S POLICY STATEMENT**
15 **REGARDING ALTERNATIVE RATEMAKING TO SUPPORT THE CD**
16 **RIDER?**

17 A. Yes, the Company believes its proposal complies with Item 1 of the Commission's
18 policy statement regarding alternative ratemaking which asks a utility to describe how
19 the proposed ratemaking mechanism and rate design align revenues with cost
20 causation principles as to both fixed and variable costs. Ms. Everett's response on
21 page 29 of Duquesne Statement No. 17 suggests that, because the proposed CD Rider
22 is a discount to cost of service rates, the additional load brought by the customer

1 covers the variable costs of the new load and pays toward the fixed costs, lowering
2 the burden of recovering fixed costs from all other customers.

3
4 **Q. DO YOU AGREE WITH THE COMPANY'S REASONING REGARDING**
5 **THE RECOVERY OF VARIABLE COSTS AND THE CONTRIBUTION TO**
6 **THE RECOVERY OF FIXED COSTS BY NEW CD RIDER CUSTOMERS?**

7 A. No. While I agree that, in the short term, adding one customer at incremental cost
8 does not generally add to the fixed costs of the system, this is not the case in the long
9 term as the Company will add plant as it adds customers, and the Company has added
10 plant as it added customers. For example, since Duquesne first began operations as a
11 utility more than 135 years ago (Duquesne St. No. 1, p. 4), each new customer was
12 theoretically added at incremental cost. The flaw in the Company's reasoning is that
13 the proposal to charge some customers only incremental costs is that utility rates are
14 not set at incremental costs, but rather rates are based on all of the utility's costs. The
15 incremental cost of adding one customer is highly variable, depending on each
16 customer's connection requirements for that customer. Rates are instead set based on
17 a socialized total cost basis. Otherwise, each customer would have to have an
18 individual rate based on the cost to serve their individual location. Therefore,
19 charging a discounted rate to certain customers leaves a portion of costs unrecovered
20 that must then be recovered from the rest of the customer base and, thus, does not
21 align revenues with cost causation principles as to both fixed and variable costs.

1 **Q. DOES LIMITING THE DISCOUNT AND PHASING IT OUT FOR**
2 **INDIVIDUAL CUSTOMERS OVER FIVE YEARS ALLEVIATE YOUR**
3 **CONCERNS?**

4 A. No. Although I appreciate the Company's attempt to limit and phase out the discount,
5 the fact remains that the revenue shortfall from granting certain customer discounts
6 will be recovered from other customers in the next base rate case. Even if the
7 program ends in that case, there will be up to five years of discounts remaining where
8 the other customers will be asked to pay for the fixed costs not recovered by discount
9 customers.

10

11 **Q. DOES THE REFERENCE TO THE STATEMENTS OF POLICY IN THE**
12 **ALTERNATIVE RATE MAKING DOCKET NO. M-2015-2518883 NEGATE**
13 **THE OBLIGATION OF A COMPANY TO CHARGE RATES THAT ARE**
14 **JUST, REASONABLE, AND IN THE PUBLIC INTEREST?**

15 A. No. The Statements of Policy as outlined by the Commission in the alternative rate
16 making Docket No. M-2015-2518883 does not negate the obligation of a Company to
17 charge rates that are not discriminatory, but instead are just, reasonable, and in the
18 public interest. As I have demonstrated above, the proposed CD Rider does not result
19 in rates that are just, reasonable, and in the public interest.

1 **SUBSCRIPTION RATE PILOT FOR RESIDENTIAL CUSTOMERS (RIDER No. 7)**

2 **Q. WHAT IS THE COMPANY’S PROPOSED SUBSCRIPTION RATE PILOT**
3 **FOR RESIDENTIAL CUSTOMERS?**

4 A. Duquesne’s proposed Subscription Rate Pilot for residential customers, or Rider No.
5 7, (“Subscription Pilot”), as described on page 35 of Duquesne Statement No. 17 is a
6 pilot rate that offers customers the option to select a specified level of grid access in
7 1kW increments based on the customers estimated maximum demand levels over a
8 year for a set monthly charge.

9
10 **Q. WHY DOES THE COMPANY CLAIM THE SUBSCRIPTION PILOT IS**
11 **NEEDED?**

12 A. The Company claims that a subscription rate is a better rate design than traditional
13 volumetric, usage, or demand rates to reflect the costs of energy related service to
14 small general service and residential customers. Further, the Company claims that a
15 subscription rate is better because “the utility must install distribution capacity to
16 meet the customer’s demands on their system regardless of the amount of energy the
17 customer consumes.” (Duquesne St. No. 17, pp. 35-36).

18
19 **Q. DID THE COMPANY ADDRESS THE POTENTIAL FOR THE**
20 **SUBSCRIPTION RIDER TO BE AN IMPEDIMENT TO CONSERVATION**
21 **EFFORTS?**

22 A. Yes. The Company claimed on pages 37-38 of Duquesne Statement No. 17 that
23 subscription rates can encourage peak shifting, which would align with conservation

1 programs that have the same goal. Ms. Everett provided the example of a
2 requirement for a customer to install a smart thermostat to qualify for the subscription
3 rate but noted that the Company is not including this requirement in their rate.
4

5 **Q. PLEASE SUMMARIZE HOW THE PROPOSED SUBSCRIPTION RATE IS**
6 **STRUCTURED.**

7 A. Per the Company's discussion on p. 38 of Duquesne Statement No. 17, the structure
8 of the proposed subscription plan includes a minimum subscription fee and a
9 subscription unit charge per 1 kW. The Company is also proposing an overage fee for
10 any usage that exceeds the chosen bandwidth by 0.5 kW of two times the subscription
11 unit charge multiplied by the overage amount less the allowed 0.5 kW.
12

13 **Q. WHAT CUSTOMER PROTECTIONS DOES THE COMPANY CLAIM ARE**
14 **INCLUDED IN THE SUBSCRIPTION PILOT?**

15 A. Duquesne witness Everett indicated on pages 46-47 of Duquesne Statement No. 17
16 three aspects of the proposed subscription pilot that she claims will protect
17 participating customers. The first is that customers will be contacted by the Company
18 in the event of the customer exceeding their subscription level to inform the customer
19 of options for adjusting the subscription level. The second is the ability for customers
20 to cancel their subscription at any time without penalty. The third is that they can
21 request a refund of the difference between what their bill would have been had they
22 remained on the standard Rate RS and the subscription rate. Ms. Everett also noted
23 that the customer can only receive a refund if they choose to leave the pilot and a

1 customer would only receive a refund for “the shorter of the number of months since
2 enrollment or the last three months of the customer’s bill.” (Duquesne St. No. 17, pp.
3 41-42).

4
5 **Q. DID THE COMPANY PROVIDE AN ANALYSIS OF HOW THE**
6 **SUBSCRIPTION PILOT CONFORMS WITH THE COMMISSION’S POLICY**
7 **STATEMENT REGARDING ALTERNATIVE RATEMAKING?**

8 A. Yes. The Company’s response to the 14 items detailed in the Commission’s policy
9 statement regarding alternative ratemaking is included on pages 49-54 of Duquesne
10 Statement No. 17.

11
12 **Q. DO YOU WISH TO ADDRESS ANY OF THE COMPANY’S RESPONSES TO**
13 **THE 14 ITEMS?**

14 A. Yes. I would like to address the Company’s respond to Items 6, 7, 9, 12, and 13.

15
16 **Q. HOW DID THE COMPANY RESPOND TO ITEM 6, REQUESTING THE**
17 **COMPANY DISCUSS HOW THE RATEMAKING MECHANISM AND RATE**
18 **DESIGN IMPACT CUSTOMER INCENTIVES TO EMPLOY EFFICIENCY**
19 **MEASURES AND DISTRIBUTED ENERGY RESOURCES?**

20 A. Witness Everett indicated that the Company cannot directly estimate the impact of the
21 subscription rate on energy efficiency, but still pointed to the link between the
22 customer’s demand level and the selected rate as incentive to reduce peak usage
23 (Duquesne St. No. 17, p. 51).

1 **Q. DO YOU AGREE THAT THE SUBSCRIPTION RATE DESIGN PROVIDES**
2 **INCENTIVE TO EMPLOY EFFICENCY MEASURES AND DISTRIBUTED**
3 **ENERGY RESOURCES?**

4 A. For certain customers, yes. However, no incentive exists for customers that
5 consistently have a demand that is within the first 0.5 kW over their subscription goal
6 to employ any additional efficiency measures or distributed energy resources as these
7 would be additional costs that would have zero effect on their monthly bill.
8 Additionally, customers could actually have a disincentive to reduce their demand
9 below their selected subscription level as the Company has provided no bill
10 reconciliation for customers whose demand is below their selected subscription level.
11 As an example, a customer who has selected a subscription level of 3 kW, who uses
12 3.48 kW per month has no incentive to reduce their demand level since reducing their
13 usage would have no impact on their bill. Further, this same customer actually has a
14 disincentive to reduce their usage through energy efficiency investments because they
15 would have to reduce their demand level below 2.5 kW to be able to consider moving
16 to the lower cost 2 kW subscription level to save electric costs and the energy
17 efficiency investments to yield that large of an impact would likely not be cost-
18 effective for the customer.

1 **Q. HOW DID THE COMPANY RESPOND TO ITEM 7, REQUESTING THE**
2 **COMPANY DISCUSS HOW THE RATEMAKING MECHANISM AND RATE**
3 **DESIGN IMPACTS LOW-INCOME CUSTOMERS AND SUPPORTS**
4 **CONSUMER ASSISTANCE PROGRAMS?**

5 A. Witness Everett first indicated that customers enrolled in the Company’s Customer
6 Assistance Program or Rider 21 are not eligible for the subscription pilot. She then
7 compared the subscription pilot with budget billing and claimed that the lack of true-
8 up in the subscription pilot and the ability for a customer to choose to manage to a
9 lower level of usage than in the past as additional benefits that the subscription pilot
10 adds to the budget billing plan. (Duquesne St. No. 17, p. 52).

11
12 **Q. DO YOU AGREE THAT THE SUBSCRIPTION RATE DESIGN HAS A**
13 **POSITIVE IMPACT ON LOW-INCOME CUSTOMERS AND SUPPORTS**
14 **CONSUMER ASSISTANCE PROGRAMS?**

15 A. Not at all. First, the program appears to be designed to exclude low-income
16 customers as they are forced to choose between bill assistance and enrollment in the
17 subscription plan. Second, I do not agree that the lack of true-up and the ability to
18 choose to manage a lower level of usage actually are benefits over the budget billing
19 plan already offered by the Company.

20
21 **Q. WHY IS THE LACK OF TRUE-UP IN THE SUBSCRIPTION PLAN NOT A**
22 **BENEFIT OVER THE COMPANY’S BUDGET BILLING PROGRAM?**

23 A. Unlike the subscription plan, the true-up in budget billing works equally in favor of

1 the Company and the customer by allowing for both an extra payment for excess
2 usage but also a refund or credit for decreased usage. The lack of credit for decreased
3 usage in the subscription plan makes the budget billing plan a vastly better option for
4 customers despite the budget billing being based on past usage levels.

5
6 **Q. WHY IS THE ABILITY FOR A CUSTOMER TO CHOOSE TO MANAGE A**
7 **LOWER LEVEL OF USAGE NOT AN ADDITIONAL BENEFIT OF THE**
8 **SUBSCRIPTION PLAN OVER THE BUDGET BILLING OPTION?**

9 A. As I discussed above, unless a subscription pilot customer is able to reduce their
10 usage to a point that is 0.5 kW less than their selected usage level, which a low-
11 income customer may not be able to afford to do, then it is not possible to select a
12 lower level of usage in the subscription plan. Conversely, even though a budget
13 billing customer cannot choose a lower level of usage, if that customer is able to
14 consistently lower their usage, then they will be provided a refund at the time of their
15 true-up. Therefore, the budget billing option is a better overall choice for customers,
16 particularly low-income customers, than the proposed subscription pilot.

17
18 **Q. HOW DID THE COMPANY RESPOND TO ITEM 9, REQUESTING THE**
19 **COMPANY DISCUSS HOW WEATHER IMPACTS UTILITY REVENUE**
20 **UNDER THE RATEMAKING MECHANISM AND RATE DESIGN?**

21 A. On pages 52-53 of Duquesne Statement No. 17, witness Everett indicated that,
22 because customers pay the same amount each month unless the customer exceeds the
23 subscription level, the impacts of weather on utility revenue may be mitigated.

1 **Q. PLEASE DISCUSS THE POSSIBLE EFFECTS OF WEATHER ON THE**
2 **COMPANY'S SUBSCRIPTION PILOT?**

3 A. In general, under the subscription pilot, weather would likely only have a neutral or
4 positive effect on the Company's revenue. However, it should be noted that, based on
5 the overage rules established by the Company, extreme weather could only have a
6 negative effect on the enrolled customers. As an example, suppose a heating
7 customer who elected a subscription demand level of 3 kW was able to maintain a
8 usage level of 3.4 kW through most of the year, but due to an excessively cold
9 February and excessively hot June and August increased their demand in each of
10 those months to 3.6 kW. Under the overage rules proposed by the Company, that
11 customer would first have to pay the overage fee, but then would be approached by
12 the Company and either have to increase their subscription level to 4 kW, which
13 would not be reasonable, or leave the program. This result does not appear to be just
14 or reasonable from the customer's perspective.

15
16 **Q. HOW DID THE COMPANY RESPOND TO ITEM 13, REQUESTING THE**
17 **COMPANY DISCUSS WHETHER THE RATEMAKING MECHANISM AND**
18 **RATE DESIGN ARE UNDERSTANDABLE?**

19 A. Witness Everett pointed to the knowledge that most customers already possess
20 regarding subscription services such as Netflix, Amazon, and cell phone plans.
21 (Duquesne St. No. 17, p. 54).

1 **Q. PLEASE RESPOND TO THE COMPANY’S CLAIMS REGARDING THE**
2 **ABILITY OF CUSTOMERS TO UNDERSTAND THE SUBSCRIPTION**
3 **PILOT.**

4 A. I disagree with witness Everett that the familiarity of customers with subscription
5 service pricing options leads to an understanding of the Company’s subscription plan.
6 The more important factor for customers to truly understand and be able to make the
7 best use of the subscription plan is the difference between usage and demand. As Ms.
8 Everett stated on page 49 of Duquesne Statement No. 17 that “[d]emand charges for
9 residential customers are, historically, uncommon because of the complexity and
10 potential bill volatility that can result.” Therefore, it is not reasonable to assume that
11 customers would understand the difference between lowering usage by not running an
12 air conditioning unit at night versus not running a dishwasher or washer/dryer during
13 peak usage hours.

14
15 **Q. OVERALL, DOES THE PROPOSED SUBSCRIPTION RATE PROVIDE A**
16 **GUARANTEED BENEFIT FOR THE COMPANY?**

17 A. Absolutely. The proposed subscription rate provides the Company a guaranteed
18 revenue stream with no risk of revenue lost from a decrease in usage. On top of that,
19 it still provides additional revenue for increases in usage.

20
21 **Q. DOES THE PROPOSED SUBSCRIPTION RATE PROVIDE A BENEFIT FOR**
22 **RESIDENTIAL CUSTOMERS?**

23 A. The only minimal benefit for residential customers is a predictable bill, unless their

1 usage increases more than 0.5kW above the selected usage level for which the
2 customer is charged an overage fee, as described above.

3

4 **Q. WHAT DO YOU RECOMMEND REGARDING THE COMPANY'S**
5 **PROPOSED SUBSCRIPTION RATE?**

6 A. For the reasons I discussed above, I recommend the proposed subscription rate be
7 denied.

8

9 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

10 A. Yes.

ETHAN H. CLINE

PROFESSIONAL EXPERIENCE AND EDUCATION

EXPERIENCE:

03/2009 - Present

Bureau of Investigation and Enforcement, Pennsylvania Public Utility Commission - Harrisburg, Pennsylvania

Fixed Utility Valuation Engineer – Assists in the performance of studies and analyses of the engineering-related areas including valuation, depreciation, cost of service, quality and reliability of service as they apply to fixed utilities. Assists in reviewing, comparing and performing analyses in specific areas of valuation engineering and rate structure including valuation concepts, original cost, rate base, fixed capital costs, inventory processing, excess capacity, cost of service, and rate design.

06/2008 – 09/2008

Akens Engineering, Inc. - Shiremanstown, Pennsylvania

Civil Engineer – Responsible, primarily, for assisting engineers and surveyors in the planning and design of residential development projects

10/2007 – 05/2008

J. Michael Brill and Associates - Mechanicsburg, Pennsylvania

Design Technician – Responsible, primarily, for assisting engineers in the permit application process for commercial development projects.

01/2006 – 10/2007

CABE Associates, Inc. - Dover, Delaware

Civil Engineer – Responsible, primarily, for assisting engineers in performing technical reviews of the sewer and sanitary sewer systems of Sussex County, Delaware residential development projects.

EDUCATION:

Pennsylvania State University, State College, Pennsylvania
Bachelor of Science; Major in Civil Engineering, 2005

- Attended NARUC Rate School, Clearwater, FL
- Attended Society of Depreciation Professionals Annual Conference and Training

TESTIMONY SUBMITTED:

I have testified and/or submitted testimony in the following proceedings:

1. Clean Treatment Sewage Company, Docket No. R-2009-2121928
2. Pennsylvania Utility Company – Water Division, Docket No. R-2009-2103937
3. Pennsylvania Utility Company – Sewer Division, Docket No. R-2009-2103980
4. UGI Central Penn Gas, Inc., 1307(f) proceeding, Docket No. R-2010-2172922
5. PAWC Clarion Wastewater Operations, Docket No. R-2010-2166208
6. PAWC Claysville Wastewater Operations, Docket No. R-2010-2166210
7. Citizens' Electric Company of Lewisburg, Pa, Docket No. R-2010-2172665
8. City of Lancaster – Bureau of Water, Docket No. R-2010-2179103
9. Peoples Natural Gas Company LLC, Docket No. R-2010-2201702
10. UGI Central Penn Gas, Inc., Docket No. R-2010-2214415
11. Pennsylvania-American Water Company, Docket No. R-2011-2232243
12. Pentex Pipeline Company, Docket No. A-2011-2230314
13. Peregrine Keystone Gas Pipeline, LLC, Docket No. A-2010-2200201
14. Philadelphia Gas Works 1307(f), Docket No. R-2012-2286447
15. Peoples Natural Gas Company LLC, Docket No. R-2012-2285985
16. Equitable Gas Company, Docket Nos. R-2012-2312577, G-2012-2312597
17. City of Lancaster – Sewer Fund, Docket No. R-2012-2310366
18. Peoples TWP, LLC 1307(f), Docket No. R-2013-2341604
19. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2013-2361763
20. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2013-2361764
21. Joint Application, Docket Nos. A-2013-2353647, A-2013-2353649, A-2013-2353651
22. City of Dubois – Bureau of Water, Docket No. R-2013-2350509
23. The Columbia Water Company, Docket No. R-2013-2360798
24. Pennsylvania American Water Company, Docket No. R-2013-2355276
25. Generic Investigation Regarding Gas-on-Gas Competition,
Docket Nos. P-2011-227868, I-2012-2320323
26. Philadelphia Gas Works 1307(f), Docket No. R-2014-2404355
27. Pike County Light and Power Company (Gas), Docket No. R-2013-2397353
28. Pike County Light and Power Company (Electric), Docket No. R-2013-2397237
29. Peoples Natural Gas Company LLC 1307(f), Docket No. R-2014-2403939
30. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2014-2420273
31. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2014-2420276
32. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2014-2420279
33. Emporium Water Company, Docket No. R-2014-2402324
34. Borough of Hanover – Hanover Municipal Water, Docket No. R-2014-2428304
35. Philadelphia Gas Works 1307(f), Docket No. R-2015-2465656
36. Peoples Natural Gas Company LLC 1307(f), Docket No. R-2015-2465172
37. Peoples Natural Gas Company – Equitable Division 1307(f),
Docket No. R-2015-2465181
38. PPL Electric Utilities Corporation, Docket No. R-2015-2469275
39. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2015-2480934

40. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2015-2480937
41. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2015-2480950
42. UGI Utilities, Inc. – Gas Division, Docket No. R-2015-2518438
43. Joint Application of Pennsylvania American Water, et al., Docket No. A-2016-2537209
44. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2016-2543309
45. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2016-2543311
46. City of Dubois – Company, Docket No. R-2016-2554150
47. UGI Penn Natural Gas, Inc., Docket No. R-2016-2580030
48. UGI Central Penn Gas, Inc. 1307(f), Docket No. R-2017-2602627
49. UGI Penn Natural Gas, Inc. 1307(f), Docket No. R-2017-2602633
50. UGI Utilities, Inc. – Gas Division 1307(f), Docket No. R-2017-2602638
51. Application of Pennsylvania American Water Company Acquisition of the Municipal Authority of the City of McKeesport, Docket No. A-2017-2606103
52. Pennsylvania American Water Company, Docket No. R-2017-2595853
53. Pennsylvania American Water Company Lead Line Petition, Docket No. P-2017-2606100
54. UGI Utilities, Inc. – Electric Division, Docket No. R-2017-2640058
55. Peoples Natural Gas Company, LLC – Peoples and Equitable Division 1307(f), Docket Nos. R-2018-2645278 & R-2018-3000236
56. Peoples Gas Company, LLC 1307(f), Docket No. R-2018-2645296
57. Columbia Gas of Pennsylvania, Inc., Docket No. R-2018-2647577
58. Duquesne Light Company, Docket No. R-2018-3000124
59. Suez Water Pennsylvania, Inc., Docket No. R-2018-3000834
60. Application of Pennsylvania American Water Company Acquisition of the Municipal Authority of the Township of Sadsbury, Docket No. A-2018-3002437
61. The York Water Company, Docket No. R-2018-3000006
62. Application of SUEZ Water Pennsylvania, Inc. Acquisition of the Water and Wastewater Assets of Mahoning Township, Docket Nos. A-2018-3003517 and A-2018-3003519
63. Pittsburgh Water and Sewer Authority, Docket Nos. R-2018-3002645 and R-2018-3002647
64. Joint Application of Aqua America, Inc. et al., Acquisition of Peoples Natural Gas Company LLC, et al., Docket Nos. A-2018-3006061, A-2018-3006062, and A-2018-3006063
65. Implementation of Chapter 32 of the Public Utility Code Regarding Pittsburgh Water and Sewer Authority, Docket Nos. M-2018-2640802 and M-2018-2640803
66. Philadelphia Gas Works 1307(f), Docket No. R-2019-3007636
67. People Natural Gas Company, LLC, Docket No. R-2018-3006818
68. Application of Pennsylvania American Water Company Acquisition of the Steelton Borough Authority, Docket No. A-2019-3006880
69. Application of Aqua America, Inc. et al., Acquisition of the Wastewater System Assets of the Township of Cheltenham, Docket No. A-2019-3006880
70. Philadelphia Gas Works, Docket No. R-2019-3009016
71. Wellsboro Electric Company, Docket No. R-2019-3008208
72. Valley Energy, Inc., Docket No. R-2019-3008209

73. Citizens' Electric Company of Lewisburg, Pa, Docket Non. R-2019-3008212
74. Application of Aqua America, Inc. et al., Acquisition of the Wastewater System Assets of the East Norriton Township, Docket No. A-2019-3009052
75. Peoples Natural Gas Company, LLC 1307(f), Docket No. R-2020-3017850
76. Peoples Gas Company, LLC 1307(f), Docket No. R-2020-3017846
77. Philadelphia Gas Works, Docket No. R-2020-3017206
78. Pittsburgh Water and Sewer Authority, Docket Nos. R-2020-3017951 et al.
79. Columbia Gas of Pennsylvania, Docket No. R-2020-3018835
80. Pennsylvania America Water Company, Docket Nos. R-2020-3019369 and R-2020-3019371
81. PECO Energy Company – Gas Division, Docket No. R-2020-3019829
82. PGW 1307(f), Docket No. R-2021-3023970
83. Peoples Natural Gas Company, LLC 1307(f), Docket No. R-2021-3023965
84. Peoples Gas Company, LLC 1307(f), Docket No. R-2021-3023967
85. UGI Utilities, Inc. – Electric Division, Docket No. R-2021-3023618
86. Columbia Gas of Pennsylvania, Inc., Docket No. R-2021-3024926

**I&E Statement No. 5-R
Witness: Ethan H. Cline**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Rebuttal Testimony

of

Ethan H. Cline

Bureau of Investigation and Enforcement

Concerning:

Transportation Electrification Programs

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TRANSPORTATION ELECTRIFICATION PROGRAMS 1

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

3 A. My name is Ethan H. Cline. My business address is Pennsylvania Public Utility
4 Commission, 400 North Street, Harrisburg, PA 17120.

5

6 **Q. ARE YOU THE SAME ETHAN H. CLINE WHO SUBMITTED I&E**
7 **STATEMENT NO. 5 ON JUNE 30, 2021?**

8 A. Yes.

9

10 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

11 A. The purpose of my rebuttal testimony is to present a response to the direct
12 testimony of Natural Resources Defense Council's ("NRDC") witness Kathleen
13 Harris regarding the topic of the Transportation Electrification Programs.

14

15 **Q. DOES YOUR REBUTTAL TESTIMONY INCLUDE AN ATTACHED**
16 **EXHIBIT?**

17 A. No.

18

19 **TRANSPORTATION ELECTRIFICATION PROGRAMS**

20 **Q. WHAT IS DUQUESNE PROPOSING REGARDING TRANSPORTATION**
21 **ELECTRIFICATION PROGRAMS?**

22 A. Duquesne witness Oleksak, at Duquesne Statement No. 8, pp. 4-5, described the

1 Transportation Electrification Programs (“TE Programs”) as consisting of two
2 “portfolios,” the Charging Infrastructure Portfolio and Customer Portfolio, each
3 containing several components with associated costs. The TE Programs also
4 include the Company’s proposed Rider No. 23 – Home Charging Pilot and Rider
5 No. 24 – Fleet Charging Pilot. The total proposed cost of the TE program for
6 2022 is \$4,317,180.

7
8 **Q. DID YOU RECOMMEND THAT THE TE PROGRAMS BE APPROVED?**

9 A. Yes, with a minor modification to the home charging pilot. Specifically, I
10 recommended that the home charging pilot be modified such that all installed
11 charging stations are transferred to the owners at the end of the pilot period with
12 no further cost recovery from ratepayers for the transferred hardware. (I&E St.
13 No. 5, pp. 4-5). I also recommended approval because the program is a pilot
14 program in which the benefits can be determined, the program can be evaluated
15 and possibly ended if not feasible.

16
17 **Q. DID YOU HAVE ANY OTHER RECOMMENDATIONS REGARDING**
18 **THE COMPANY’S PROPOSED TE PROGRAMS?**

19 A. Yes. Although I recommended that the TE Programs be approved, I further
20 recommended that specific reporting requirements be required so that the
21 Company and parties can evaluate whether the objectives of the TE Programs are
22 being met. First, I recommended that the Company continue to provide an annual

1 update on the status of the TE Programs and EV Charge-Up Pilot as the Company
2 agreed to in the settlement of its 2018 base rate case. I also recommended the
3 Company provide, in its next base rate case, a summary showing the cost of the
4 corresponding plant, operating expenses, revenues, and the progress that has made
5 toward meeting the stated goals. The update should include any other related
6 information relevant to the TE Programs including customer reaction and
7 participation that is available. (I&E St. No. 5, p. 5).

8
9 **Q. WHAT RECOMMENDATION FROM NRDC WITNESS HARRIS WOULD**
10 **YOU LIKE TO ADDRESS?**

11 A. I would like to address the recommendation of NRDC witness Harris that the
12 Company's make-ready proposals should be considered as a core utility function
13 and categorized as miniature versions of what utilities should be doing on a large
14 scale, rather than as "pilots" in the conventional sense of the term (NRDC St. No.
15 1, p. 19).

16
17 **Q. DO YOU AGREE WITH NRDC WITNESS HARRIS RECOMMENDATION**
18 **THAT THE COMPANY'S PROPOSALS SHOULD NOT BE**
19 **CATEGORIZED AS A PILOT?**

20 A. No. While the make-ready infrastructure installed by the Company up to the
21 meter would be considered a core-utility function, Duquesne's proposed pilot
22 includes providing charging station infrastructure to 125 new residential

1 participants each year (Duquesne St. No. 8, p. 17). This charging station
2 infrastructure, which would be located on the customer side of the meter, is not
3 and should not be considered a core-utility function.
4

5 **Q. DOES BEING A PILOT PROGRAM ENABLE THE COMPANY TO**
6 **INVEST IN A LIMITED AMOUNT OF NON-TRADITIONAL PLANT?**

7 A. Yes. Since, it is a pilot program, the Commission should allow the Company to
8 provide non-traditional, non-core utility infrastructure as part of its program.

9 Therefore, the Company's proposed ChargeUp Pilot should remain as a pilot
10 program so the Company, parties, and Commission can continue to evaluate the
11 benefits of the program and whether the objectives of the program are being met.
12

13 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

14 A. Yes.

**I&E Statement No. 5-SR
Witness: Ethan H. Cline**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

Surrebuttal Testimony

of

Ethan H. Cline

Bureau of Investigation and Enforcement

Concerning:

**Transportation Electrification Programs
New Community Development Rider
Subscription Rate Pilot for Residential Customers**

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SUBSCRIPTION RATE PILOT FOR RESIDENTIAL CUSTOMERS
(RIDER NO. 7) 13

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

3 A. My name is Ethan H. Cline. My business address is Pennsylvania Public Utility
4 Commission, 400 North Street, Harrisburg, PA 17120.

5

6 **Q. ARE YOU THE SAME ETHAN H. CLINE WHO SUBMITTED I&E**
7 **STATEMENT NO. 5 ON JUNE 30, 2021 AND I&E STATEMENT NO. 5-R**
8 **ON JULY 26, 2021?**

9 A. Yes.

10

11 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

12 A. The purpose of my surrebuttal testimony is to present a response to the rebuttal
13 testimonies of Duquesne Light Company (“Duquesne” or “Company”) witnesses
14 Krysia Kubiak (Duquesne Statement No. 5-R), Sarah J. Oleksak (Duquesne
15 Statement No. 8-R), Jennifer Neiswonger (Duquesne Statement No. 9-R), and
16 Margot C. Everett (Duquesne Statement No. 17-R) and ChargePoint, Inc.
17 (“ChargePoint”) witness Matthew Deal (ChargePoint Statement No. 1-R). My
18 surrebuttal testimony will address the Transportation Electrification Programs,
19 Community Development Rider, and Subscription Rate Pilot for Residential
20 Customers.

1 **Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN ATTACHED**
2 **EXHIBIT?**

3 A. No.

4

5 **TRANSPORTATION ELECTRIFICATION PROGRAMS**

6 **Q. WHAT IS DUQUESNE PROPOSING REGARDING TRANSPORTATION**
7 **ELECTRIFICATION PROGRAMS?**

8 A. Duquesne witness Oleksak, at Duquesne Statement No. 8, pp. 4-5, described the
9 Transportation Electrification Programs (“TE Programs”) as consisting of two
10 “portfolios,” the Charging Infrastructure Portfolio and Customer Portfolio, each
11 containing several components with associated costs. The TE Programs also
12 include the Company’s proposed Rider No. 23 – Home Charging Pilot and Rider
13 No. 24 – Fleet Charging Pilot. The total proposed cost of the TE program for
14 2022 is \$4,317,180.

15

16 **Q. DID YOU RECOMMEND THAT THE TE PROGRAMS BE APPROVED?**

17 A. Yes. I recommended that the TE Programs be approved with a minor modification
18 to the home charging pilot (I&E St. No. 5, p. 4).

19

20 **Q. WHAT MODIFICATION DID YOU PROPOSE TO THE HOME**
21 **CHARGING PILOT?**

22 A. I recommended that the home charging pilot be modified such that all installed

1 charging stations are transferred to the owners at the end of the pilot period with
2 no further cost recovery from ratepayers for the transferred hardware (I&E St. No.
3 5, pp. 4-5).

4
5 **Q. DID ANY PARTY AGREE WITH YOUR RECOMMENDATION**
6 **REGARDING THE TRANSFER OF OWNERSHIP OF CHARGING**
7 **STATIONS?**

8 A. Yes. Duquesne witness Oleksak (Duquesne Statement No. 8-R, pp. 30, 50-51)
9 and ChargePoint witness Deal (ChargePoint Statement No. 1-R, p. 5) agreed with
10 my recommendation.

11
12 **Q. DID YOU MAKE ANY OTHER RECOMMENDATIONS REGARDING**
13 **THE COMPANY'S PROPOSED TE PROGRAMS?**

14 A. Yes. Although I recommend that the TE Programs be approved, I recommended
15 that specific reporting requirements be required to so that the Company and parties
16 can evaluate whether the objectives of the TE Programs are being met. First, I
17 recommended that the Company continue to provide an annual update on the
18 status of the TE Programs and EV Charge-Up Pilot as the Company agreed to in
19 the settlement of its 2018 base rate case. Second, I recommended the Company
20 provide, in its next base rate case, a summary showing the cost of the
21 corresponding plant, operating expenses, revenues, and the progress that has made
22 toward meeting the stated goals. The update should include any other related

1 information relevant to the TE Programs including customer reaction and
2 participation that is available. (I&E St. No. 5, p. 5).

3
4 **Q. DID THE COMPANY AGREE WITH YOUR RECOMMENDATION**
5 **REGARDING ADDITIONAL REPORTING REQUIREMENTS?**

6 A. No. The Company opposed my recommendation regarding reporting
7 requirements, stating that since the EV ChargeUp pilot has concluded, the only
8 metric from my recommended list that is likely to change is avoided emissions
9 (Duquesne St. No. 8-R, pp. 27-28).

10
11 **Q. DO YOU WISH TO CHANGE YOUR RECOMMENDATION**
12 **REGARDING ADDITIONAL REPORTING REQUIREMENTS?**

13 A. Yes. Based on the Company's testimony, I would like to withdraw my
14 recommendation that the reporting requirements, discussed above, be required.
15 Instead, I would like the Company to be prepared to provide information regarding
16 changes in any of the metrics through the discovery process in its future base rate
17 proceedings.

18
19 **COMMUNITY DEVELOPMENT RIDER (RIDER NO. 19)**

20 **Q. WHAT IS THE COMMUNITY DEVELOPMENT RIDER THAT THE**
21 **COMPANY IS PROPOSING?**

22 A. The Community Development Rider, or Rider No. 19, ("CD Rider") is a proposed

1 declining discount applied to distribution service demand charges of any General
2 Services tariff, excluding the summer months of June through September, over a
3 five-year period (Duquesne St. No. 17, p. 25).

4
5 **Q. DID YOU RECOMMEND THAT THE CD RIDER BE DENIED?**

6 A. Yes. I recommended that the CD Rider be denied for several reasons. First, the
7 proposed CD Rider will result in discriminatory rates. Second, expecting other
8 businesses to provide aid to new or returning businesses simply because they were
9 on time with their electric bills and managed to keep their businesses open through
10 the pandemic is not fair, just, or reasonable. Third, small and medium businesses
11 already have access to various sources of aid. Fourth, the proposed revenue from
12 new customers is not reflected in the current base rate case. Fifth, despite the
13 Company's claim, providing a tariff rate discount would eventually require other
14 customers to make up lost revenues to pay for fixed costs these customers are not
15 paying (I&E St. No. 5, p. 8).

16
17 **Q. DID THE COMPANY RESPOND TO YOUR RECOMMENDATION?**

18 A. Yes. Duquesne witness Everett, on pages 2-7 of Duquesne Statement No. 17-R,
19 provided a discussion for why the Company disagreed with each of the reasons I
20 provided in recommending disallowance of the CD Rider proposal, as listed
21 above.

1 **Q. WHY DOES THE COMPANY BELIEVE THAT THE CD RIDER WOULD**
2 **NOT PRODUCE RATES THAT ARE DISCRIMINATORY?**

3 A. Witness Everett noted that “a rate is discriminatory if it is unreasonable” and also
4 provided reference to other gas and electric utilities in Pennsylvania, specifically
5 referencing PECO Energy Company’s (“PECO”) Electric Service Tariff as an
6 example, that offer discounts through Economic Development Riders (Duquesne
7 St. No. 17-R, p. 2).

8
9 **Q. PLEASE RESPOND TO WITNESS EVERETT’S STATEMENT**
10 **REGARDING DISCRIMINATORY RATES.**

11 A. As I stated on page 8 of I&E Statement No. 5, the topic of discriminatory rates is a
12 legal issue and I have been advised by counsel that it will be discussed more fully
13 in I&E’s legal briefs.

14
15 **Q. DO YOU AGREE THAT THE ECONOMIC DEVELOPMENT RIDER**
16 **INCLUDED IN THE PECO ELECTRIC SERVICE TARIFF IS**
17 **COMPARABLE TO THE PROPOSED CD RIDER?**

18 A. No. PECO’s existing Economic Development Rider (“ED Rider”) is not
19 comparable to Duquesne’s proposed CD Rider because part II.A.1 of the
20 Availability/Applicability rules in PECO’s ED Rider includes the requirement for
21 customers to establish a competitive alternative to service from PECO (PECO
22 Energy Company Tariff Electric Pa. P.U.C. No. 6, Original Page 82). This

1 requirement, which is not included in DLC's CD Rider, makes PECO's ED Rider
2 more similar to the existing flex rate programs used by certain natural gas
3 distribution companies.
4

5 **Q. HOW DID WITNESS EVERETT RESPOND TO YOUR STATEMENT ON**
6 **I&E STATEMENT NO. 5, P. 8 THAT "EXPECTING OTHER BUSINESSES**
7 **TO PROVIDE AID TO NEW OR RETURNING BUSINESSES SIMPLY**
8 **BECAUSE THEY WERE ON TIME WITH THEIR ELECTRIC BILLS**
9 **AND MANAGED TO KEEP THEIR BUSINESSES OPEN THROUGH THE**
10 **PANDEMIC IS NOT FAIR, JUST, OR REASONABLE"?**

11 A. Witness Everett disagreed with my statement by claiming the CD Rider will not
12 result in customers paying for the discount, stating that "but for the customer
13 brining additional load to the Company's service territory, the revenue needed to
14 recover existing costs would be collected exclusively from existing customers."
15 (Duquesne St. No. 17-R, pp. 4-5).
16

17 **Q. HOW DID WITNESS EVERETTE ADDRESS THE FACT THAT ADDING**
18 **ADDITIONAL CUSTOMERS INCREASES COSTS IN THE LONG**
19 **TERM?**

20 A. Witness Everett admits that other customers will not pay for the discount because
21 the rate recovers marginal costs related to the additional customer load because
22 she agreed that the addition of customer load creates increased long-term costs as

1 the Company will add plant as it adds customers (Duquesne Statement No. 17-R,
2 pp. 5-6).

3
4 **Q. HOW DOES ADDING ONE CUSTOMER IMPACT COSTS THE**
5 **COMPANY INCURS AND ULTIMATLEY RECOVERS?**

6 A. As I will discuss further below, I agree that between rate cases the addition of one
7 customer at incremental cost and receiving revenue from that customer is
8 beneficial in between rate cases. However, when the Company files its next base
9 rate case, rates will be based upon fully allocated costs, as they are in the present
10 proceeding, and at that point the discounted customers will be paying less than
11 tariffed rates. This will require other customers to subsidize those customers that
12 are not paying full tariff rates.

13
14 **Q. HOW DID WITNESS EVERETT RESPOND TO YOUR CONCERN THAT**
15 **THE CD RIDER CREATES AN UNFAIR COMPETITIVE ADVANTAGE**
16 **AGAINST PEAK LOAD BUSINESSES?**

17 A. Witness Everett disagreed with my concern and pointed to the provision that the
18 CD Rider only applies to a customer's peak in non-summer months, and not all
19 months. Ms. Everett further indicated that only participating customers with peak
20 winter loads would benefit over similar customers with winter peaks for a short
21 period of time. (PECO St. No. 17-R, p. 21).

1 **Q. DO YOU AGREE THAT ONLY PARTICIPATING CUSTOMERS WITH**
2 **PEAK WINTER LOADS WOULD BENEFIT OVER SIMILAR**
3 **CUSTOMERS WITH WINTER PEAKS FOR A SHORT PERIOD OF**
4 **TIME?**

5 A. No. Any customer that is granted the ability to pay less than the tariff rates that
6 customer should pay automatically has a competitive advantage over a customer
7 that does pay tariff rates. The competitive advantage is not limited to winter peak
8 customers as suggested by witness Everett.

9
10 **Q. DID WITNESS EVERETT AGREE WITH YOUR STATEMENT THAT**
11 **THE ADDITION OF CUSTOMER LOAD CREATES INCREASED LONG-**
12 **TERM COSTS AS THE COMPANY WILL ADD PLANT AS IT ADDS**
13 **CUSTOMERS?**

14 A. Yes, though witness Everett attempted to claim that this is not a reason to reject
15 the CD Rider because the discount applies only until January 2027. She further
16 stated that “additional costs to ‘added plant’ (assumed to be distribution plant) are
17 still covered despite the discount” (Duquesne St. No. 17-R, pp. 5-6).

1 **Q. HOW DOES THE FACT THAT THE CD RIDER DISCOUNT APPLIES**
2 **ONLY UNTIL JANUARY 2027 IMPACT THE RECOVERY OF THE**
3 **REVENUE SHORTFALL AS A RESULT OF NOT CHARGING CERTAIN**
4 **CUSTOMERS FULL TARIFF RATES?**

5 A. When the Company files its next base rate case, rates will be based upon fully
6 allocated costs rather than incremental cost to serve the new customers. Duquesne
7 witness Robert L. O'Brien has indicated that the Company will file a base rate
8 case in three years, which would be April 2024, well before the January 2027 date
9 this rider expires (DLC St. No. 10-R, p. 34). In that case, the revenue shortfall
10 from the discounted rates will be spread across the other customers who pay full
11 tariff rates. As such, it will be unreasonable for certain customers to be billed
12 based on incremental costs while the rest of the customers are billed based on fully
13 allocated costs.

14
15 **Q. PLEASE RESPOND TO WITNESS EVERETT'S STATEMENT THAT**
16 **"THERE ARE NO 'LOST REVENUES' BECAUSE THE REVENUES**
17 **WOULD NOT EXIST EXCEPT FOR THE FACT THAT THE**
18 **CUSTOMERS BRINGS ADDITIONAL REVENUES FROM THEIR**
19 **ADDED LOAD." (DUQUESNE ST. NO. 17-R, P. 6).**

20 A. It is true that 'lost revenues' would not exist until the Company's next base rate
21 case because revenues from prospective customers have not been reflected in the
22 present base rate proceeding. However, because those prospective revenues have

1 not been projected in the present base rate proceeding, only the Company's
2 shareholders will receive the incremental revenue from the added customers, and
3 as described above, tariff rate customers will be disadvantaged.

4
5 **Q. IS WITNESS EVERETT'S CORRECT THAT YOU SLIGHTLY**
6 **MISCONSTRUED THE CD RIDER PROGRAM STRUCTURES ON**
7 **PAGES 6-7 OF DUQUESNE STATEMENT NO. 17-R.**

8 A. Yes. Based on the Company's direct testimony, I was under the impression that
9 January 2027 would be the deadline of when customers can begin the discount
10 process at the maximum discount percentage. However, based upon witness
11 Everett's testimony on pages 6-7 of Duquesne Statement No. 17-R, it has been
12 made clear that, under the Company's proposal, all discounts will end on January
13 2027 regardless of when customers entered into the CD Rider program.

14
15 **Q. DOES THIS CLARIFICATION CAUSE YOU TO CHANGE YOUR**
16 **POSITION ON THE CD RIDER?**

17 A. No. Even with this clarification, the possibility remains that full-tariff customers
18 will be asked to pay for the fixed costs not recovered from discount customers.
19 This improper recovery is not consistent with sound ratemaking.

20 As an example, if the Company were to file a base rate case with a fully
21 projected future test year ending December 31, 2025, rates would go into effect on
22 January 1, 2025. Assume certain customers receiving a 10% discount on their

1 rates. Those discounted rates would be in effect, meaning full-tariff customers
2 would be responsible for recovering those 10% of rates until the Company's next
3 base rate case despite the fact that the discount would be reduced to 5% on
4 January 1, 2026 and 0% on January 1, 2027. This discrepancy will allow the
5 Company to increase revenue outside the FPFTY, which favors the Company's
6 shareholders and is not just, reasonable, or fair.

7
8 **Q. WHY DOES WITNESS EVERETT CLAIM THAT POTENTIAL AID FOR**
9 **SMALL AND MEDIUM BUSINESSES FROM OTHER SOURCES IS NOT**
10 **A REASON TO REJECT THE CD RIDER?**

11 A. Witness Everett states that new customers are taking on responsibility for paying
12 for fixed costs and reducing the overall average rate for existing and fixed costs in
13 the long run. She also points to the program supporting relief efforts with the
14 benefit of creating long term benefits to the Company's customers. (Duquesne St,
15 No. 17-R, p. 7).

16
17 **Q. DO YOU AGREE?**

18 A. No. As I established above, in the immediate future after the current base rate
19 case, the Company's customers will not see any benefit from additional revenues.
20 Additionally, after the next base rate, the Company's full-tariff customers will be
21 required to pay for recovery of any revenues that are not recovered from those
22 customers not paying full tariff rates. With the various sources of aid available to

1 small and medium businesses, it is not necessary to provide a discount in order to
2 draw new businesses into the Company's service territory, at which point the
3 Company's existing customers would receive the same long-term benefits without
4 the need to increase full-tariff rates to account for lost revenues, as I described
5 above.

6
7 **Q. DO YOU WISH TO CHANGE YOUR RECOMMENDATION?**

8 A. No. The Company has not provided sufficient evidence to prove that the proposed
9 CD Rider is not discriminatory or that it is fair, just, and reasonable.

10
11 **SUBSCRIPTION RATE PILOT FOR RESIDENTIAL CUSTOMERS (RIDER NO. 7)**

12 **Q. WHAT IS THE COMPANY'S PROPOSED SUBSCRIPTION RATE PILOT**
13 **FOR RESIDENTIAL CUSTOMERS?**

14 A. Duquesne's proposed Subscription Rate Pilot for residential customers, or Rider
15 No. 7, ("Subscription Pilot"), as described on page 35 of Duquesne Statement No.
16 17 is a pilot rate that offers customers the option to select a specified level of grid
17 access in 1kW increments based on the customers estimated maximum demand
18 levels over a year for a set monthly charge.

19
20 **Q. WHAT DID YOU RECOMMEND REGARDING THE COMPANY'S**
21 **PROPOSED SUBSCRIPTION RATE?**

22 A. I recommended the proposed subscription rate be denied.

1 **Q. DID THE COMPANY AGREE WITH YOUR RECOMMENDATION?**

2 A. No. The Company did not agree with my recommendation for various reasons. I
3 will respond to claims made by the Company concerning the goals of the program,
4 impact on low-income customers, the guaranteed revenue the Company will
5 receive, budget billing, possible higher bills, allegation of no benefit to customers,
6 negative impact of weather on the program, the understandability of the program,
7 and customer behavior.

8

9 **Q. HOW DID THE COMPANY RESPOND TO YOUR ASSERTION THAT**
10 **THE LACK OF A RECONCILIATION FOR CUSTOMERS WHOSE**
11 **DEMAND IS BELOW THEIR SUBSCRIPTION LEVEL REMOVES ANY**
12 **INCENTIVE FOR REDUCING DEMAND?**

13 A. Witness Everett described the three design goals of the residential subscription
14 rate on page 10 of Duquesne Statement No. 17: 1) provide an incentive for a
15 customer to reduce their peak use to meet a targeted subscription level; 2) create
16 an option for customers to even out their bills over the year; 3) create a more cost-
17 reflective rate that links customer use to the distribution costs to serve a customer.
18 She further stated that customers have the ability to choose a lower subscription
19 than their previous year's consumption would indicate.

1 **Q. DID THE COMPANY’S RESPONSE ADDRESS YOUR CONCERNS**
2 **REGARDING THE INCENTIVE FOR REDUCING DEMAND CREATED**
3 **BY THE SUBSCRIPTION PILOT?**

4 A. No. Witness Everett’s testimony merely stated the goals of the subscription rate
5 pilot program but provided no further support to suggest whether the proposed rate
6 will actually attain those goals. Furthermore, while a customer may have the
7 ability to change its subscription level, unless that customer is able to reduce their
8 usage to a point that is 0.5 kW less than their selected usage level then there is no
9 reason to change their subscription levels. As I stated on page 16 of I&E
10 Statement No. 5, a customer who has selected a subscription level of 3 kW, who
11 uses 3.48 kW per month has no incentive to reduce their demand level since
12 reducing their usage would have no impact on their bill. That customer would
13 need to reduce its demand by 1 kW to justify moving to a lower subscription level
14 which may not be possible or cost effective.

15
16 **Q. DID WITNESS EVERETT’S REBUTTAL TESTIMONY ACTUALLY**
17 **RESPOND TO YOUR TESTIMONY REGARDING LOW-INCOME**
18 **CUSTOMERS?**

19 A. No. On pages 10-11 of Duquesne Statement No. 17-R, witness Everett suggested
20 that I claimed that the subscription pilot excludes low-income customers and then
21 indicated that the program only excludes customers enrolled in the customer
22 assistance program (“CAP”), not all low-income customers. Witness Everett’s

1 testimony misconstrues my discussion of the effects of the subscription pilot on
2 low-income customers.

3
4 **Q. HOW DID MS. EVERETT MINSCONSTRUE YOUR TESTIMONY?**

5 A. On page 17 of I&E Statement No. 5, I specifically discussed how the subscription
6 pilot impacts low-income customers and supports consumer assistance programs,
7 which is Item 7 of the 14 items detailed in the Commission's policy statement
8 regarding alternative ratemaking. Specifically, I stated that low-income customers
9 appear to be excluded because they are forced to choose between bill assistance
10 and enrollment in the subscription plan. The exclusion of CAP customers
11 inherently does not support consumer assistance programs.

12
13 **Q. DID YOU CLAIM THAT SUBSCRIPTION PLAN ONLY FAVORS THE**
14 **COMPANY IF THE CUSTOMER CONSUMES LESS THAN THEIR**
15 **SUBSCRIPTION LEVEL IN ANY MONTH, AS STATED BY WITNESS**
16 **EVERETT ON PAGE 10 OF DUQUESNE STATEMENT NO. 17?**

17 A. No. The claim that witness Everett attributed to me does not appear anywhere in
18 my direct testimony. I did state, on page 20 of I&E Statement No. 5, that the
19 subscription rate provides the Company a guaranteed revenue stream with no risk
20 of revenue lost from a decrease in usage, but still provides additional revenue for
21 increases in usage. I further stated on pages 20-21 of I&E Statement No. 5 that the
22 only minimal benefit for residential customers is a predictable bill, unless their

1 usage increases more than 0.5 kW above the selected usage level for which the
2 customer is charged an overage fee.

3
4 **Q. DID WITNESS EVERETT IDENTIFY THE ASSUMED AVERAGE**
5 **SUBSCRIPTION LEVEL FOR MOST CUSTOMERS ON RATE CLASS**
6 **RS?**

7 A. Yes. Witness Everett stated that the average subscription level for most customers
8 on RS would be “approximately 3 kW.” She further stated that “[f]or a customer
9 to experience a distribution bill increase, their non-coincident peak load would
10 have to increase 17% over the previous year’s peak.” (Duquesne St. No. 17-R, p.
11 11).

12
13 **Q. DO YOU BELIEVE THAT THE COMPANY’S ANALYSIS IS**
14 **REASONABLE?**

15 A. No. Witness Everett’s claim that a customer’s non-coincident peak load would
16 have to increase 17% over the previous year’s peak is based on the 3 kW
17 subscription level. However, witness Everett’s statement that the average
18 subscription level for most RS rate class customers would be “approximately 3
19 kW” where “approximately” implies a certain level of rounding. This is important
20 because the customers’ variance away from the 3 kW has a large impact on how
21 easy it will be for the 0.5 kW overage level to be reached. As an example, a
22 customer with a peak of 3.25 kW could still be included in the “approximately 3

1 kW” subscription level, but the non-coincident increase needed for that customer’s
2 rates to increase is much less than the 17% implied by witness Everett’s testimony.
3 It is more helpful to consider the potential usage characteristics of those customers
4 whose peak loads do not fall exactly on the 1 kW intervals.

5
6 **Q. DID YOU STATE THAT THE PROPOSED SUBSCRIPTION RATE PLAN**
7 **IS INFERIOR TO THE COMPANY’S EXISTING BUDGET BILLING**
8 **PLAN?**

9 A. Yes. On pages 17-18 of I&E Statement No. 5, I stated that the proposed
10 subscription rate plan is inferior to the Company’s existing budget billing plan.
11 Specifically, I referenced the lack of credit for decreased usage in the subscription
12 plan that is available through the true-up process in budget billing makes budget
13 billing a better option. Unless a subscription pilot customer is able to reduce their
14 usage to a point that is 0.5 kW less than their selected usage level, which a low-
15 income customer may not be able to afford to do, then it is not possible to select a
16 lower level of usage in the subscription plan whereas a consistent lower usage
17 level in the budget billing plan, regardless of the amount, will be rewarded with a
18 refund at the time of their true-up.

1 **Q. HOW DID THE COMPANY RESPOND TO YOUR TESTIMONY**
2 **REGARDING THE COMPARISON OF BUDGET BILLING TO THE**
3 **SUBSCRIPTION RATE PLAN INCLUDING THE IMPACT TO LOW-**
4 **INCOME CUSTOMERS?**

5 A. First, witness Everett addressed my concerns regarding the ability of low-income
6 customers to afford options to reduce their load by stating that the rate is optional,
7 and they do not have to enroll in the program. Second, witness Everett claimed
8 that low-income customers have the same issue today, but budget billing
9 customers could experience even higher bills on volumetric rates because the
10 inefficiency of a customer's home could increase costs in all months, not just the
11 month during which the NCP occurs. Finally, witness Everett points to the
12 residential subscription plan being a pilot program and is being offered because
13 the Company wants to understand the benefits of this rate option and that rejecting
14 the pilot because there may be some customers who don't benefit is not a reason to
15 reject exploration of this alternative rate options. (Duquesne St. No. 17-R, pp. 11-
16 12).

1 **Q. PLEASE RESPOND TO WITNESS EVERETT’S ARGUMENT THAT**
2 **LOW-INCOME CUSTOMERS WHO CAN’T AFFORD OPTIONS TO**
3 **LOWER THEIR LOAD IN ORDER TO BE ELIGIBLE FOR A LOWER**
4 **SUBSCRIPTION LEVEL AND RATE CAN OPT TO NOT PARTICIPATE**
5 **IN THE SUBSCRIPTION PILOT.**

6 A. The fact that customers participating in the CAP program are not eligible for the
7 subscription program and witness Everett’s solution for low-income customers
8 who may not be able to afford load-reducing options is to exclude them from the
9 rate is in direct contradiction of witness Everett’s position that the subscription
10 plan does not exclude low-income customers, as discussed above.

11

12 **Q. DO YOU AGREE THAT BUDGET BILLING CUSTOMERS COULD**
13 **EXPERIENCE HIGHER BILLS ON VOLUMETRIC RATES BECAUSE**
14 **THE INEFFICIENCY OF A CUSTOMER’S HOME COULD INCREASE**
15 **COSTS?**

16 A. Yes. However, as I stated on page 18 of I&E Statement No. 3, even though a
17 budget billing customer cannot choose a lower level of usage, if that customer is
18 able to consistently lower their usage, then they will be provided a refund at the
19 time of their true-up. The refund is not available in the subscription rate plan.
20 This means that customers have more incentive to lower their usage in the budget
21 billing plan option rather than the subscription option as the refund provides
22 incentive to conserve in and of itself, but also provides additional funds for

1 customers to invest in conservation options. I maintain my position that the
2 budget billing option is superior to the proposed subscription rate plan.

3
4 **Q. PLEASE RESPOND TO WITNESS EVERETT’S POSITION ON PAGE 12**
5 **OF DUQUESNE STATEMENT NO. 17-R THAT “SIMPLY REJECTING**
6 **THE PILOT BECAUSE THERE MAY BE SOME CUSTOMERS WHO**
7 **DON’T BENEFIT IS NOT A REASON TO REJECT EXPLORATION OF**
8 **POTENTIALLY VIABLE RATE OPTIONS.”**

9 A. Witness Everett’s suggestion that I am recommending the Commission reject the
10 subscription rate pilot because there may be some customers who don’t benefit is
11 incorrect. Rather, I am recommending the Commission reject it for other reasons.
12 As I established in my direct testimony, the proposed subscription rate plan
13 provides much more benefit to the Company than it does to customers, regardless
14 of customer interest. This one-sided benefit to the Company proves that the
15 proposed subscription rate plan is not necessary and would not result in rates that
16 are just, reasonable, and in the public interest. It is for that reason that I
17 recommend the subscription rate plan be denied.

1 **Q. HOW DID WITNESS EVERETT RESPOND TO YOUR TESTIMONY**
2 **REGARDING THE POTENTIAL NEGATIVE IMPACT OF EXTREME**
3 **WEATHER EVENTS AS DISCUSSED ON I&E STATEMENT NO. 5,**
4 **PAGE 21?**

5 A. Witness Everett agreed with my testimony that extreme weather events have the
6 potential to have a negative impact on customers using the subscription rate plan.
7 However, she then indicated that the risk that customers could experience
8 additional costs from extreme weather exists for nearly all rate options.
9 Additionally, witness Everett pointed to the option in the pilot for a customer that
10 experiences a higher bill on the subscription rate than what they would have faced
11 on the standard rate to revert back to the general rate and be reimbursed for the
12 cost difference. (Duquesne St. No. 17-R, p. 12).

13
14 **Q. DO YOU AGREE THAT THE RISK FOR ADDITIONAL COSTS FROM**
15 **EXTREME WEATHER EXISTS FOR NEARLY ALL RATE OPTIONS?**

16 A. Yes. However, as described below, that does not justify this subscription plan.

17
18 **Q. IS THE BILL PROTECTION OFFERED TO CUSTOMERS OF A**
19 **REFUND AND TO EXIT THE PROGRAM REASONABLE?**

20 A. No. Extreme weather events and the resulting effects on customer bills is
21 something that a customer cannot control. Forcing a customer to exit the program
22 in order to receive a refund to standard rate levels for an event outside of the

1 customer's control is an extra step and is not a reasonable or a well-considered
2 provision.

3
4 **Q. HOW DID THE COMPANY RESPOND TO YOUR CONCERN ON PAGE**
5 **20 OF I&E STATEMENT NO 5 REGARDING WHETHER OR NOT THE**
6 **SUBSCRIPTION RATE PLAN IS UNDERSTANDABLE TO CUSTOMERS.**

7 A. Witness Everett claimed that the Company believes that the subscription rate will
8 be easy for participating customers to understand and be well accepted by
9 customers (Duquesne St. No 17-R, pp. 12-13). However, contrary to this claim,
10 Duquesne witness Neiswonger proposed to delay implementation of the pilot to
11 June 1, 2022 and listed several educational materials, including but not limited to
12 emails and videos, that the Company is providing customers to help customers
13 understand the difference between usage and demand (Duquesne St. No. 9-R, p.
14 5).

15
16 **Q. DO YOU OPPOSE THE EDUCATION MATERIALS OR EXTRA TIME**
17 **BEING PROPOSED BY THE COMPANY?**

18 A. No. I appreciate the effort and resources the Company is proposing to put into
19 customer education, if the subscription rate is approved by the Commission.
20 However, the extra time and resources needed to facilitate the required education
21 does not lend itself to an easily understandable program and corresponding rate
22 structure.

1 **Q. PLEASE RESPOND TO WITNESS EVERETT’S STATEMENT ON PAGES**
2 **12-13 OF DUQUESNE STATEMENT NO. 17-R THAT “THE PURPOSE OF**
3 **THE PILOT IS TO TEST THE ACCEPTANCE OF THIS RATE AND**
4 **UNDERSTAND THE IMPLICATIONS OF CHANGES IN CUSTOMER**
5 **BEHAVIOR ON THE RATE (AS WELL AS OPERATIONAL ISSUES).”**

6 A. It is important that customers fully understand everything included in their bills,
7 which includes the rate structure itself. Creating and allowing customers to enter
8 into a rate program that they may not fully understand just to see what happens, as
9 the Company is suggesting, whether introduced as a pilot or not, is not reasonable
10 or in the public interest.

11
12 **Q. PLEASE ADDRESS WITNESS EVERETT’S STATEMENT THAT**
13 **CREATING REVENUE STABILITY IS NOT BAD FOR CUSTOMERS**
14 **BECAUSE CREATING REVENUE STABILITY FOR THE COMPANY**
15 **MEANS BILL STABILITY FOR CUSTOMERS AS WELL (DUQUESNE**
16 **ST. NO. 17-R, P. 13).**

17 A. First, I did not claim that revenue stability is bad for customers. In fact, I stated on
18 pages 20-21 of I&E Statement No. 5 that the only minimal benefit for residential
19 customers is a predictable bill. Because revenue stability generally benefits
20 utilities, programs such as this must strike a balance between revenue stability for
21 the utility versus rate affordability and conservation concerns. As I have
22 established in my direct testimony and above, the proposed subscription rate plan

1 leans too far towards rate stability and too far away from rate affordability and
2 conservation concerns to be considered just or reasonable.

3

4 **Q. DO YOU WISH TO CHANGE YOUR RECOMMENDATION?**

5 A. No. For the reasons described above, I continue to recommend the Commission
6 deny the proposed residential subscription rate pilot.

7

8 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

9 A. Yes.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)
)
v.) **Docket No. R-2021-3024750**
)
Duquesne Light Company)

**DIRECT TESTIMONY
OF
LAFAYETTE K. MORGAN, JR.**

**ON BEHALF OF THE
OFFICE OF CONSUMER ADVOCATE**

June 30, 2021

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1 **INTRODUCTION**

2 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3 A. My name is Lafayette K. Morgan, Jr. My business address is 10480 Little Patuxent
4 Parkway, Suite 300, Columbia, Maryland, 21044. I am a Public Utilities Consultant
5 working with Exeter Associates, Inc. (Exeter). Exeter is a consulting firm specializing
6 in issues pertaining to public utilities.

7 Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
8 QUALIFICATIONS.

9 A. I received a Master of Business Administration degree from The George Washington
10 University. The major area of concentration for this degree was Finance. I received a
11 Bachelor of Business Administration degree with concentration in Accounting from
12 North Carolina Central University. I was previously a CPA licensed in the state of
13 North Carolina, however, in 2009, I elected to place my license in an inactive status as
14 I focused on start-up activities for other business interests.

15 Q. WOULD YOU PLEASE DESCRIBE YOUR PROFESSIONAL
16 EXPERIENCE?

17 A. From May 1984 until June 1990, I was employed by the North Carolina Utilities
18 Commission - Public Staff in Raleigh, North Carolina. I was responsible for analyzing
19 testimony, exhibits, and other data presented by parties before the North Carolina
20 Utilities Commission. I had the additional responsibility of performing the
21 examination of books and records of utilities involved in rate proceedings and
22 summarizing the results into testimony and exhibits for presentation before that
23 Commission. I was also involved in numerous special projects, including participating

1 in compliance and prudence audits of a major utility and conducting research on several
2 issues affecting natural gas and electric utilities.

3 From June 1990 until July 1993, I was employed by Potomac Electric Power
4 Company (Pepco) in Washington, D.C. At Pepco, I was involved in the preparation of
5 the cost of service, rate base and ratemaking adjustments supporting the company's
6 requests for revenue increases in the State of Maryland and the District of Columbia.

7 From July 1993 through 2010, I was employed by Exeter. as a Senior
8 Regulatory Analyst. During that period, I was involved in the analysis of the operations
9 of public utilities, with emphasis on utility rate regulation. I reviewed and analyzed
10 utility rate filings, focusing primarily on revenue requirements determination. This
11 work involved natural gas, water, electric, and telephone companies.

12 In 2010, I left Exeter to focus on start-up activities for other ongoing business
13 interests. In late 2014, I returned to Exeter continuing to work in a similar capacity as
14 prior to my hiatus.

15 Q. HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY
16 PROCEEDINGS ON UTILITY RATES?

17 A. Yes. I have previously presented testimony and affidavits on numerous occasions
18 before the Pennsylvania Public Utility Commission, the North Carolina Utilities
19 Commission, the Virginia Corporation Commission, the Louisiana Public Service
20 Commission, the Georgia Public Service Commission, the Maine Public Utilities
21 Commission, the Kentucky Public Service Commission, the Public Utilities
22 Commission of Rhode Island, the Vermont Public Service Board, the Illinois
23 Commerce Commission, the West Virginia Public Service Commission, the Maryland
24 Public Service Commission, the Corporation Commission of Oklahoma, Kansas

1 Corporation Commission, the Philadelphia Water, Sewer and Storm Water Rate Board,
2 the Colorado Public Utilities Commission, the Public Service Commission of South
3 Carolina, and the Federal Energy Regulatory Commission (FERC). My resume is
4 attached hereto as Appendix A.

5 Q. ON WHOSE BEHALF ARE YOU APPEARING?

6 A. I am presenting testimony on behalf of the Office of Consumer Advocate (OCA).

7 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS
8 PROCEEDING?

9 A. Exeter has been retained by the OCA to assist in the evaluation of the general rate filing
10 submitted by Duquesne Light Company (Duquesne or the Company). I have been asked
11 by the OCA to present my findings with respect to Duquesne's revenue requirement
12 and its proposed rate increase. I calculate the Company's rate base, pro forma operating
13 income under present rates, and overall revenue deficiency based upon my
14 recommended adjustments to the Company's claims. My findings are based upon
15 incorporating the recommendations and findings of other OCA witnesses who are also
16 presenting testimony in this proceeding.

17 Q. PLEASE IDENTIFY THE OCA'S OTHER EXPERT WITNESSES WHO
18 ARE PRESENTING TESTIMONY IN THIS PROCEEDING.

19 A. In addition to my testimony, there are five witnesses presenting testimony on behalf of
20 the OCA. Mr. David Garrett provides testimony on the appropriate Rate of Return and
21 Cost of Capital issues. Mr. Glenn Watkins is the OCA's witness who provides
22 testimony on Class Cost of Service and Rate Design. Mr. Roger Colton is the OCA's
23 witness providing testimony on Universal Service, Low-Income and Duquesne's
24 Response to the COVID-19 Economic Crisis. Mr. Ron Nelson provides the OCA's

1 testimony on Transportation Electrification Programs, and Mr. Noah Eastman is the
2 OCA's witness providing testimony on the Economic Effects of the COVID-19
3 Pandemic on Ratepayers.

4 Q. IN CONNECTION WITH THIS CASE, HAVE YOU PERFORMED AN
5 EXAMINATION AND REVIEW OF THE COMPANY'S TESTIMONY
6 AND EXHIBITS?

7 A. Yes. I have reviewed Duquesne's testimony, exhibits and its rate filing. I have also
8 reviewed the Company's responses to the OCA, the Bureau of Investigation &
9 Enforcement (I&E) and the Office of Small Business Advocate's (OSBA)
10 interrogatories.

11 Q. WHAT TIME PERIOD HAVE YOU USED IN MAKING YOUR
12 DETERMINATION OF DUQUESNE'S REVENUE REQUIREMENTS?

13 A. I used the Fully Projected Future Test Year (FPFTY) ending December 31, 2022, as
14 filed by Duquesne, as the basis for determining its rate year revenue requirements.

15 Q. HAVE YOU PREPARED SCHEDULES TO ACCOMPANY YOUR
16 TESTIMONY?

17 A. Yes. I have prepared Schedules LKM-1 through LKM-15. Schedule LKM-1 provides
18 a summary of revenues and expenses under present and proposed rates. Schedule
19 LKM-2 summarizes my adjustments to Duquesne's FPFTY rate base. Schedule LKM-
20 3 provides a summary of my adjustments to the FPFTY revenues and expenses and the
21 resulting operating income. The various adjustments that I am recommending to
22 Duquesne's claimed rate base, revenues and operating expenses are presented on
23 Schedules LKM-4 through LKM-15.

24 Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

1 A. First, I provide a summary of the Company’s filing and my findings and
2 recommendations. Then, I document and explain each of the adjustments I made to
3 Duquesne’s rate base and operating income to arrive at the rate year revenue
4 requirement shown on Schedule LKM-1. Next, I address Duquesne’s request for
5 authorization to accrue Allowance for Funds Used During Construction (AFUDC) on
6 Plant Held for Future Use. Finally, I address the Company’s proposal to create the
7 Federal Tax Adjustment Clause (“FTAC”), or Rider No. 4, to its tariff. The proposed
8 clause would adjust base rates for changes in federal corporate income tax rates. My
9 discussion of these adjustments is organized into sections corresponding to the issue
10 being addressed. These sections are set forth in the Table of Contents for this
11 testimony.

12 **SUMMARY AND RECOMMENDATIONS**

13 Q. PLEASE SUMMARIZE THE RATE RELIEF REQUESTED BY
14 DUQUESNE IN ITS FILING.

15 A. On April 16, 2021, Duquesne filed a base rate case with the Pennsylvania Public Utility
16 Commission (the Commission) to increase base distribution revenue annually by
17 approximately \$115.0 million. However, the rates resulting from the requested increase
18 will reflect a net increase of \$85.8 million because approximately \$29.2 million of the
19 Company’s revenue requirement is currently collected through the DSIC and State Tax
20 Adjustment surcharges. According to Duquesne, if the Commission approves its
21 request as submitted, the total bill (which includes distribution, surcharges,
22 transmission, and generation rates) for a residential customer using 600 kilowatt-hours
23 (“kWh”) per month and taking default power service from the Company would increase
24 from \$100.12 per month to \$107.85 per month or by 7.72 percent.

1 Duquesne indicates that the reasons for its request for rate relief is that the costs
2 related to investment in facilities, investment in information technology, and operation
3 & maintenance expenses have increased significantly since its last distribution rate
4 increase (Docket No. R-2018-3000124) in December 2018. In addition, the Company
5 is also claiming that it is experiencing a significant decline in customer sales. Hence,
6 the Company believes that current rates do not provide a reasonable opportunity for it
7 to earn a fair rate of return on its investment.

8 Q. PLEASE SUMMARIZE YOUR FINDINGS AND
9 RECOMMENDATIONS.

10 A. As shown on Schedule LKM-1, I have determined that the Company's revenue should
11 be reduced by \$2,754,000 for the FPFTY ending December 31, 2022. This represents
12 a decrease of \$91,254,000 from Duquesne's requested net increase of \$85,800,000.
13 This is the amount by which revenues exceed those required to generate an overall rate
14 of return of 6.40 percent after accounting for the OCA's adjustments to Duquesne's
15 claimed rate base and operating income. The overall return of 6.40 percent, which
16 reflects a return on equity of 8.50 percent, represents OCA witness Garrett's findings
17 regarding the Company's overall rate of return. In comparison, the Company is seeking
18 an overall return of 7.84 percent and a return on equity of 10.95 percent.

19 Additionally, I am recommending that the Commission not authorize
20 Duquesne to accrue AFUDC on Plant Held for Future Use. I am also recommending
21 that the Company-proposed FTAC not be allowed.

1 **OCA ADJUSTMENTS TO DUQUESNE’S TEST YEAR**

2 **Cloud-Based Software Implementation Costs**

3 Q. PLEASE EXPLAIN THE COMPANY’S ADJUSTMENT RELATED TO
4 CLOUD-BASED SOFTWARE IMPLEMENTATION COSTS.

5 A. Company witness Jaime A. Bachota explains in her testimony that in Duquesne’s last
6 rate case (Docket No. R-2018-3000124), the Company was authorized to capitalize
7 the development costs for cloud-based information systems. On page 16 of the
8 Commission’s Order in that Docket the Commission stated:

9 41. Commencing with implementations subsequent to
10 May 1, 2015, the Company shall be permitted to capitalize the
11 development costs for cloud-based information systems. The
12 Company will record the costs related to the development of cloud-
13 based information systems as a regulatory asset at the time such costs
14 are incurred. The Company shall begin amortization of the costs
15 after the systems are placed in service. Amortization of the
16 regulatory asset will be included in the Company’s depreciation
17 claim and the unamortized balance in the regulatory asset account
18 will be included in rate base in the Company’s current and future
19 base rate proceedings. Nothing in this provision shall preclude a
20 challenge to the prudence or reasonableness of specific cloud-based
21 expenditures in a future base rate proceeding.
22

23 42. In each base rate case in which the Company proposes
24 to recover costs of cloud-based information systems that were
25 recorded in the regulatory asset, pursuant to paragraph 41 as a capital
26 cost for ratemaking purposes, the Company will provide a listing of
27 the cloud-based computing costs by year, as well as the expected
28 useful life of each item. This requirement applies to the costs of
29 cloud-based information systems recorded in the regulatory asset that
30 were not capitalized for Generally Accepted Accounting Principles
31 (“GAAP”) purposes.

32 Accordingly, Ms. Bachota states: “\$3.1 million of implementation costs associated
33 with cloud-based service arrangements from January 1, 2021 through December 31,

1 2022 have and will be recorded as operating expenses for GAAP purposes”.¹ She
2 goes on to explain that consistent with the Commission’s authorization, Duquesne
3 witness Robert O’Brien made the adjustment to include the Cloud-based software
4 costs in rate base.

5 In the adjustment proposed by Mr. O’Brien, he includes \$12.553 million in
6 rate base as plant in service, \$7.705 million as accumulated amortization and \$2.511
7 million in operating expenses to recognize amortization expense related to the
8 \$12.553 million that he included in rate base. In the response to OCA-VI-9, the
9 Company revised its calculation of the accumulated amortization from \$7.012 million
10 to \$7.705 million.

11 In the response to OCA-VI-6, the Company stated as follows:

12 Yes, the Company has adopted the FERC’s Accounting for
13 Implementation Costs Incurred in a Cloud Computing Arrangement
14 that is a Service Contract as Ordered in FERC Docket No. AI20-1-
15 000.

16 a. The FERC directive was adopted at December 31, 2019. Since
17 adoption, for FERC Reporting, cloud computing cost assets are
18 included in Utility Plant as opposed to a regulatory asset and
19 amortization costs are included in depreciation. There have been no
20 changes to the asset value of cloud computing costs or the useful life
21 since adoption.

22 b. The costs subject to the FERC’s accounting directive in Docket
23 No. AI20-1-000 are the same as the costs recorded as a regulatory
24 asset pursuant to the Commission’s Order in the last rate case
25 (Docket No. R-2018-3000124).

26 Q. DO YOU HAVE CONCERNS ABOUT THE COMPANY’S INCLUSION
27 OF CLOUD-BASED IMPLEMENTATION COSTS IN THIS
28 PROCEEDING?

¹ Direct Testimony of Jaime A. Bachota at page 4, lines 14 – 16.

1 A. Yes. The Company's explanation of how the cloud-based implementation costs are
2 included in the cost of service is problematic for three reasons.

3 First, according to Ms. Bachota's testimony, these costs are recorded as
4 operating expenses. However, in Mr. O'Brien's adjustment, no reduction was made to
5 operating expense to remove costs that were recorded as operating expenses. In the
6 response to OCA-VI-4, out of the \$3.1 million that Ms. Bachota had indicated the
7 Company recorded in operating expenses, \$1.9 million was to be incurred during the
8 FPFTY. Mr. O'Brien's adjustment does not remove this amount from operating
9 expenses, even though Ms. Bachota states that such costs were included in operating
10 expenses.

11 Second, if the Company adopted the FERC's accounting directive in Docket
12 No. AI20-1-000 in December 2019, and those costs are the same as the costs to be
13 recorded as a regulatory asset pursuant to this Commission's (the Pennsylvania Public
14 Utility Commission) Order in the last rate case (Docket No. R-2018-3000124), as stated
15 in the response to OCA-VI-6, then the adjustment to include the cloud-computing
16 implementation cost in rate base would not be necessary because the Company would
17 have been following an accounting directive that accomplishes the same result.

18 Third, as a result of the two problems I identified above, it is reasonable to
19 conclude that either rate base has been overstated by Mr. O'Brien's adjustment to
20 include the cloud-based implementation costs (because the FERC's accounting
21 directive had been adopted), or operating expenses are overstated because Mr. O'Brien
22 did not remove FPFTY cloud-based implementation costs that were included as
23 operating expenses (per Ms. Bachota testimony) when he included those costs in rate
24 base. Additionally, if the amortization of the cloud-based implementation costs were

1 included in depreciation expense as stated in the response to OCA-VI-6, then the
2 adjustment made by Mr. O'Brien to include \$2.511 million in operating expenses to
3 recognize the amortization of the cloud-based implementation costs would be
4 duplicative.

5 Q. HOW HAVE YOU RESOLVED THIS ISSUE?

6 A. To limit the possibility of a double recovery of these costs, I am recommending an
7 adjustment to reverse the adjustments proposed by Mr. O'Brien to include cloud-based
8 implementation costs in the cost of service since it is unclear how these costs are
9 accounted for. I believe this adjustment is reasonable until the Company can provide
10 clarity on this issue.

11 On Schedule LKM-4, I present my adjustment which removes \$12,553,000
12 from Miscellaneous Intangible plant and \$7,012,000 from Accumulated depreciation.
13 On that same schedule, I also present my adjustment that reduces operating expenses
14 by \$2,511,000 to remove Mr. O'Brien's adjustment to include amortization of the
15 Cloud Expenditures.

16 **Capitalized Pension Adjustment**

17 Q. WHAT IS THE CAPITALIZED PENSION ASSET CLAIMED BY THE
18 COMPANY IN RATE BASE?

19 A. The Capitalized Pension Adjustment is the Company's proposed adjustment to rate
20 base to include its calculation of the amount needed to adjust the pension costs
21 capitalized for financial reporting purposes to equal its calculation of the accumulated
22 capitalized pension contributions. In the 2018 Settlement in Docket No. R-2018-
23 3000124, the following stipulation was included:²

² A similar stipulation was included in previous settlements.

1 37. Commencing with calendar year 2019, Duquesne Light
2 will deposit into its pension trusts an amount equal to \$10 million per
3 year; provided, however, that contribution(s) in any year in excess of
4 the foregoing may be used on a cumulative basis to satisfy future
5 contribution obligations under this Settlement. The Settlement
6 provides for recovery of the expense component of \$5 million (50%
7 of the average cash contributions) of projected future pension
8 contributions. Additionally, Duquesne Light will be permitted to
9 include the other 50% of actual pension contributions from January
10 1, 2007, forward, net of related accumulated deferred income taxes,
11 in rate base for rate making purposes. The rate base adjustment for
12 pensions shall be the amount necessary to adjust the Accounting
13 Standards Codification (“ASC”) 715 capitalized pension amounts to
14 equal accumulated capitalized pension contributions, net of
15 applicable deferred income taxes, from January 1, 2007 forward.
16 The depreciation expense for book and ratemaking purposes will be
17 based on the ASC 715 capitalized amounts. The adjusted amounts
18 will be used for reporting rate base in reports to the Commission. If
19 Duquesne Light concludes that a contribution less than \$10 million
20 to the pension trust is appropriate, the Company may reduce the
21 pension contribution and will record a regulatory liability on its
22 books of account that is equal to 50% of the reduction to the pension
23 contribution below the level of \$10 million. Any regulatory liability
24 recorded will be reduced to the extent of 50% of contributions in
25 excess of \$10 million in subsequent years. If a regulatory liability
26 remains at the time of the Company’s next rate proceeding, the
27 regulatory liability amount will be returned to ratepayers as directed
28 in the next base rate proceeding. Any amount recorded as a
29 regulatory liability shall not bear an interest obligation. Duquesne
30 Light shall provide a report and affidavit attesting to the actual
31 contributions to pension trusts during each calendar year. The report
32 and affidavit shall be publicly filed with the Commission, with copies
33 provided to I&E, OCA and OSBA on or before January 31 of the
34 following calendar year, with the first report and affidavit due on or
35 before January 31, 2020.

36 Q. FROM YOUR PERSPECTIVE, WHAT IS THE CAPITALIZED PENSION
37 ADJUSTMENT?

38 A. Consistent with the quote presented on page 26, lines 17 to 20 of Mr. O’Brien’s
39 testimony (which was excerpted from the stipulation quoted above), the capitalized
40 pension adjustment represents the cumulative portion of the contribution to the

1 pension plan trust fund that exceeds the pension costs that are recognized for financial
2 reporting purposes pursuant to the Financial Accounting Standards Board (FASB)
3 Accounting Standards Codification 715-30 (ASC 715).³ For ratemaking purposes,
4 the Company has separated the contribution amount as 50 percent capitalized and 50
5 percent expensed.

6 Q. HOW ARE PENSION COSTS RECORDED ON THE COMPANY'S
7 BOOKS?

8 A. The costs determined pursuant to ASC 715, are based upon an actuarial process that
9 considers the expected increase in pension liability due to active participants, interest
10 costs, the return on plan assets and amortization of prior service costs, etc. Once the
11 ASC 715 costs are determined, the costs are broken down into the expense and capital
12 components. These are the amounts that are actually recorded in the Company's
13 books and records for financial reporting purposes.

14 Q. HOW ARE PENSION COSTS DETERMINED FOR RATEMAKING
15 PURPOSES?

16 A. For ratemaking purposes, pension costs are determined based upon contributions to
17 the pension plan. Duquesne explains that its pension contribution is determined based
18 upon the Pension Protection Act of 2006 or the amount needed to fulfill its regulatory
19 commitment. According to Duquesne, based upon the Pension Protection Act of
20 2006, it is not required to make any minimum pension plan contributions until 2025.
21 Hence, any contribution it includes for ratemaking purposes is voluntary.

22 It is important to emphasize that any amount recorded as a contribution and
23 treated as an expense for ratemaking purposes is not recorded for financial reporting

³ Previously Statement of Financial Accounting Standards No. 87 (SFAS 87).

1 purposes as an expense or capital expenditure. The amount treated as an expense (or
2 capital) amount for ratemaking purposes is a *pro forma* adjustment for determining
3 rates. The extent to which the contribution to the pension plan is reflected on the
4 Company's books would show cash going out and a reduction to the pension liability.

5 Q. WHY IS THE COMPANY SEEKING TO INCLUDE THE PENSION
6 CONTRIBUTIONS IN RATE BASE?

7 A. According to the Company, the difference in cost determination for financial
8 purposes and the determination of the contribution amount is why it is requesting that
9 the Commission authorize the Company to continue to record annually the difference
10 between the pension reimbursement received in rates and the ASC 715 pension
11 expense as either a regulatory asset or liability.

12 Q. IS COMMISSION AUTHORIZATION NECESSARY TO ACCOUNT FOR
13 THE DIFFERENCE BETWEEN THE COST DETERMINATION FOR
14 FINANCIAL PURPOSES AND THE DETERMINATION OF THE
15 CONTRIBUTION FOR FUNDING THE PENSION PLAN?

16 A. No. Normal accounting convention allows the Company to use either a deferred debit
17 or deferred credit account to record these differences. The use of these accounts does
18 not require Commission authority.

19 Q. WHAT IS THE FUNDING STATUS OF THE PENSION PLAN?

20 A. The Company's funding status as of December 31, 2020 was a deficit of \$69.5
21 million.

22 Q. WHAT IS YOUR INTERPRETATION OF THE DEFICIT FUNDING
23 STATUS OF THE PENSION PLAN?

1 A. The deficit funding means the pension plan is underfunded. In layman’s terms, the
2 Company has not contributed amounts sufficient to meet the plan’s obligations. This
3 underfunding is presented on the Company’s balance sheet in Account No. 253, Other
4 Deferred Debits.

5 Q. IS THE CAPITALIZED PENSION CONTRIBUTION REFLECTED IN
6 ANY ACCOUNT ON THE COMPANY’S BALANCE SHEET?

7 A. No. Unlike the deficit funding of the plan that is recorded in Account No. 253, the
8 Company has been unable to clearly identify an account on its balance sheet in which
9 the capitalized pension contributions are recorded. In a data request to the Company, I
10 asked the Company to identify the account in which the capitalized pension
11 contributions was recorded.⁴ Rather than provide a direct response, I was referred to
12 the response to I&E-RE-12-D. In that data request, the Company stated: “The
13 difference is included in the pension trust account.” However, when I asked the
14 Company to show the plant accounts in which the capitalized pension asset was
15 recorded, I was referred to a summary of employee benefits expensed and
16 capitalized.⁵ This is surprising because the contribution amount is not used to record
17 pension costs for financial purposes, as acknowledged by Ms. Bachota on page 34,
18 lines 9 through 18 of her testimony.

19 Q. IF THE CAPITALIZED PENSION CONTRIBUTIONS ARE RECORDED
20 IN THE PENSION PLAN TRUST ACCOUNT AS INDICATED BY
21 DUQUESNE, WOULD THEY BE ELIGIBLE FOR INCLUSION IN RATE
22 BASE?

⁴ OCA-VI-31.

⁵ OCA-VI-33.

1 A. No. The Company has demonstrated that the pension plan fund is in a deficit position,
2 which means that any contribution to the plan has been exceeded by the plan
3 obligation. In other words, the deficit position of the pension fund is a net amount.
4 So, it would be inappropriate to single out the contributions for inclusion in rate base.

5 Q. HAS DUQUESNE PROVIDED ANY DOCUMENTATION TO
6 SUBSTANTIATE ITS CLAIM?

7 A. The only document I have seen to substantiate the Company's claim is Schedule C-8
8 of the Company's filing. Schedule C-8 is a schedule that tracks the difference
9 between the financial reporting amounts for the capitalized pension and the amount
10 considered to be the capitalized pensions based on contributions to the plan. Even if
11 these amounts were recorded on the Company's books, it would be held in a deferred
12 debit account, a non-plant account, because they represent a temporary difference in
13 the amount recorded per books and the amount contributed. As such, they would not
14 be eligible for inclusion in rate base as I explain below.

15 Q. HAS THE COMMISSION EVER DELIBERATED ON THIS ISSUE AND
16 RULED IN A DUQUESNE RATE CASE?

17 A. No. The Duquesne rate cases where this issue was raised by the Company, were
18 settled. To the extent that there is any previous language that imply these costs were
19 included in rate base, such language emerged from a settlement between the parties.

20 Q. DO YOU AGREE THAT IT IS APPROPRIATE AND NECESSARY TO
21 INCLUDE THE CAPITALIZED PENSION CONTRIBUTIONS IN ITS
22 RATE BASE?

23 A. No. As I indicated above these amounts would not be plant investments, instead they
24 would be considered a deferred debit or a regulatory asset. Under past Commission

1 ruling, no return is allowed to be earned on non-plant assets such as deferred assets or
2 current assets. Deferred assets such as the pension asset are expenses or costs that
3 have not yet been recovered in rates, but eventually will be recovered. The
4 Commission's policy is that expenses are to be recovered on a dollar-for-dollar basis
5 without a carrying cost or return. Hence, the attempt by the Company to include the
6 pension asset in rate base is an attempt to earn a return on expenses and would violate
7 Commission policy.

8 Q. HAS THE COMMISSION RULED ON THIS ISSUE RECENTLY?

9 A. Yes. In the most recent PECO Gas rate case (Docket No. R-2020-3018929), both the
10 OCA and I&E opposed a similar adjustment proposed by PECO. In the
11 Commission's ruling denying inclusion of the Pension Asset in rate base, it
12 stated:

13 Upon consideration of the Company's position and the arguments
14 posed by I&E and the OCA in opposition to allowing the Company
15 to include the Pension Asset in rate base, we agree with I&E and the
16 OCA that the Company's pension expense is appropriately
17 calculated and capitalized pursuant to ASC 715. Like the ALJ, we
18 are not persuaded that inclusion of the Company's Pension Asset in
19 rate base is a reasonable and necessary means of recovery of PECO's
20 pension expense. Like the ALJ, we are not persuaded that inclusion
21 of the Company's Pension Asset in rate base is a reasonable and
22 necessary means of recovery of PECO's pension expense. As
23 illustrated by I&E and the OCA, Pension Assets and accrued pension
24 liabilities calculated under GAAP rules and ASC 715 fluctuate over
25 time and are intended to equal employer's contributions over the life
26 of the pension.⁶

27 Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING?

28 A. Consistent with the Commission's Order in Docket No. R-2020-3018929, I am
29 recommending an adjustment to remove the Company's Capitalized Pension

⁶ Docket No. R-2020-3018929, Commission Order at page 65.

1 Adjustment from Rate Base. Therefore, on Schedule LKM-5, I have decreased
2 rate base by \$74,408,000.

3 **Projected Revenue Loss**

4 Q. PLEASE EXPLAIN THE COMPANY'S ADJUSTMENT TO
5 REFLECT PROJECTED REVENUE LOSS.

6 A. Duquesne is recommending an adjustment to decrease revenues to reflect a decrease
7 in sales that the Company expects to experience after the end of the FPFTY related to
8 the reductions in load from energy efficiency and conservation activities of the
9 Company and its customers for the years 2023 to 2025. The Company calculated the
10 variable revenue levels for 2022 to 2025 and has reduced the FPFTY annual revenues
11 to reflect what it projects to be the average of the annual losses during that period.

12 Q. IS THE COMPANY'S ADJUSTMENT REASONABLE OR
13 APPROPRIATE?

14 A. No. This adjustment is neither reasonable nor appropriate as it will violate the FPFTY
15 concept. As I understand it, the use of a fully projected future test year or rate year is
16 intended to allow rates to be set to reflect the costs and revenues that will be incurred
17 during the first year the rates will be in effect. In this adjustment, Duquesne is
18 attempting to adjust its revenues to reflect what it perceives revenues to be as far into
19 the future as 2025 when, instead, the FPFTY ends on December 31, 2022. Therefore,
20 I recommend that the Commission not allow this adjustment in this proceeding.

21 Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING?

22 A. On Schedule LKM-7, I am recommending an adjustment that reverses the Company's
23 revenue loss claim. As a result, my adjustment increases operating revenues by \$8.5
24 million.

1 **Eligible Customer Listing Deferred Costs**

2 Q. PLEASE EXPLAIN THE COMPANY'S PROPOSAL FOR ELIGIBLE
3 CUSTOMER LISTING DEFERRED COSTS.

4 A. According to Duquesne, in Docket No. M-2010-2183412, the Commission granted
5 the Company authority to recover the costs associated with its required triennial
6 eligible customer listing solicitations through its next base rate case proceeding.
7 Duquesne claims that as of December 31, 2020, the Company maintains a regulatory
8 asset of approximately \$300,000, associated with the Company's 2018 triennial
9 solicitation, for which it is seeking recovery. However, in the response to I&E-RE-
10 43-D (E), the Company provided the following response:
11

E. Due to an oversight, the amortization of the expenditures for the ECL was not included in the Company's as filed revenue requirement shown in DLC Exhibit 2 – Fully Projected Future Test Year, Schedule D-1, p. 1.

The Company will include an annual amortization expense amount of \$112,960 as an addition to its FPFTY expenses shown on DLC Exhibit 2, Schedule D-1, P. 1. The \$112,960 is the annual amortization of the total expenditures of \$338,881 which include the expenditures for the ELC in:

2018	\$205,080
2021	<u>133,801</u>
TOTAL	\$338,881
Amortization Period	<u>3</u> years
Annual Amortization	\$112,960

12
13 Q. DO YOU BELIEVE THE COMPANY IS ENTITLED TO RECOVER THE
14 ELIGIBLE CUSTOMER LISTING DEFERRED COSTS?

15 A. No, not entirely. The Order in Docket No. M-2010-2183412 does not grant the
16 Company authority to defer the 2018 costs as a regulatory asset. The Order in that docket
17 states:

18 We believe all customers, shopping and non-shopping, benefit from
19 the ability to provide their information (or deny if they choose to do

1 so) to those EGSs licensed by the Commission in order to receive
2 competitive electric generation products. Accordingly, we will
3 decline the request of OCA, PULP, OSBA and PCADV to direct the
4 EDCs to recover from the EGSs their costs for the triennial
5 solicitation. Instead, we will allow the EDCs to seek recovery of
6 their costs in their next base rate case.

7 As can be seen from the language in the Order, there is no explicit authority to defer
8 costs as a regulatory asset. Since costs that are recorded in a regulatory asset grants
9 the Company the ability to recover those costs in the future, the language to defer the
10 costs and establish the regulatory asset should be clear and unambiguous because of
11 the far-reaching consequence. Moreover, the issue being addressed by the
12 Commission is whether ECL costs should be recovered from the EGSs or through the
13 cost of service, and the Commission's decision was effectively to establish policy for
14 recovery of those costs from the EGSs. Therefore, it is my opinion that the 2018 costs
15 of \$205,080 are not eligible for recovery. With regard to the 2021 costs, and 2021 is
16 the current year, I believe those costs are eligible for recovery in this proceeding
17 consistent with the Order in Docket No. M-2010-2183412.

18 Q. PLEASE SUMMARIZE YOUR POSITION ON THE ECL COST
19 RECOVERY.

20 A. Based upon the discussion above, I believe the 2018 ECL costs are not eligible for
21 recovery. However, I will accept the Company's proposal to recover the 2021 costs of
22 \$133,801 over a 3-year period. Since, as stated by the Company in the response to
23 I&E-RE-43-D (E), the ECL was not included in the Company's as filed revenue
24 requirement due to an oversight, the amortization of the expenditures has not been
25 included in the operating expenses. Therefore, on Schedule LKM-7, my adjustment
26 increases operating expenses by \$44,600 to recognize one-third of \$133,801 in
27 operating expenses.

1 **Payroll Expense**

2 Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING TO PAYROLL
3 EXPENSE?

4 A. I am recommending two adjustments to payroll expense. The first adjustment removes
5 post-FPPTY costs from the cost of service. The second adjustment removes vacant
6 positions from the payroll expense.

7 Q. PLEASE EXPLAIN YOUR FIRST ADJUSTMENT TO PAYROLL
8 EXPENSE.

9 A. The Company adjusted the budgeted FPPTY payroll expense to reflect payroll
10 increases to be granted in October 2022 for union employees and January 2023 for non-
11 union employees. For the union employees, since the wage increase will be granted in
12 October 2022, the Company annualized the increase to reflect the nine months (January
13 -September 2023) that were not reflected in the FPPTY budget to include a full 12
14 months of the pay increase. For the non-union employees, the Company annualized the
15 payroll expense to reflect the twelve months (January – December 2023) that were not
16 reflected in the FPPTY budget.

17 I am recommending an adjustment that removes the annualization adjustments
18 from the cost of service. These costs are post-test year costs and are not eligible for
19 recovery in this proceeding.

20 Q. WHY DO YOU CLAIM THESE COSTS ARE NOT ELIGIBLE FOR
21 RECOVERY IN THIS PROCEEDING?

22 A. As I have explained above, the use of a fully projected future test year or rate year is
23 intended to allow rates to be set to reflect the costs and revenues that will be incurred
24 during the first year the rates will be in effect. The Company's wage increase

1 adjustment attempts to include cost increases that will occur after the end of the test
2 year. As a result, inclusion of these costs will violate the FPPTY concept. In the
3 adjustment, as presented by the Company, the non-union salary increase clearly goes
4 into effect after the end of the FPPTY, so I believe exclusion of those costs should not
5 be disputed. Similarly, the Company is attempting to capture union cost increases that
6 will be experienced during 2023. Again, this is clearly after the FPPTY.

7 Q. PLEASE EXPLAIN YOUR SECOND ADJUSTMENT TO PAYROLL
8 EXPENSE.

9 A. The Company explains that in its calculation of the FPPTY payroll expense, it
10 annualized the payroll to reflect the number of employees during the FPPTY, reduced
11 by a vacancy factor. Based on an analysis provided in the response to I&E-RE-6, the
12 Company provided a comparison of the actual number of monthly vacancies compared
13 to the vacancy factor for the period January 2018 through March 2021. The actual
14 number of vacancies exceed the number of vacancies reflected in the vacancy factor in
15 every month. Therefore, the second part of my payroll adjustment reduces the
16 Company's payroll expense claim to reflect actual average vacancies during the
17 historical test year (HTY). This adjustment is necessary because limiting the number
18 of vacancies in the annualized payroll would overstate the number of employees and
19 the annualized payroll expense.

20 Based on the foregoing, I am adjusting payroll expense to reflect a decrease of
21 \$4,878,000 on Schedule LKM-9. On this schedule, I present the corresponding
22 adjustment to reduce 401-K expense by \$244,000 and payroll taxes by \$373,000 since
23 those costs are projected as a percentage of payroll.

1 **Incentive Compensation**

2 Q. WHAT ADJUSTMENT HAVE YOU MADE TO INCENTIVE
3 COMPENSATION EXPENSE?

4 A. As part of Duquesne's overall compensation, the Company offers a Short-term
5 Incentive plan (STIP) and a Long-term Incentive Plan (LTIP). The objective of the
6 incentive plans is to provide employees with incentives related to the performance of
7 the Company and to motivate them to maximize their efforts on the Company's behalf.
8 The two incentive compensation plans have several measures that are evaluated before
9 payouts are made under the plans. The STIP metrics include: Earnings, key
10 performance indices such as Safety and Customer Satisfaction; and individual
11 performance. However, the LTIP is based entirely on earnings. The adjustment I am
12 recommending is to remove the portion of the incentive plan costs that are associated
13 with earnings goals or increasing earnings. These types of goals are targeted towards
14 increasing shareholder value or benefitting shareholders. Therefore, these costs are not
15 properly recoverable from ratepayers for several reasons. First, if the financial targets
16 are set properly, achieving the necessary performance should be self-supporting. This
17 means that the measures that achieve additional cost savings, increase revenue, or
18 otherwise improve financial results should generate the necessary income to cover the
19 incentive plan payments. Second, these payments are not targeted to ratepayer benefits
20 such as meeting quality of service, operational efficiency, or conservation goals.
21 Finally, the incentive to improve financial performance is not necessarily consistent
22 with the interests of Duquesne's ratepayers, but, instead, is more aligned with
23 shareholders' interests. Shareholder value has a correlation to earnings, so when
24 improved earnings are reported, shareholder value improves but rates do not go down.

1 Thus, the beneficiaries of the improved earnings are the shareholders. Therefore, it is
2 appropriate for shareholders, not ratepayers, to bear these costs.

3 Q. WHAT IS THE EFFECT OF YOUR ADJUSTMENT TO ELIMINATE
4 INCENTIVE COMPENSATION PAYMENTS?

5 A. As shown on Schedule LKM-10, my adjustment reduces the FPFTY O&M expenses
6 by \$6,695,000. This amount is calculated by removing the earnings portion of the STIP
7 amount and all the LTIP amount for the FPFTY.

8 **Postretirement Benefits Expense**

9 Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE POSTRETIREMENT
10 BENEFIT EXPENSE.

11 A. In Ms. Bachota’s testimony, she explains that the postretirement benefits expense (or
12 OPEB expense) was derived from the 2-year average OPEB expense. As explained in
13 the response to OCA-VI-43, the Company states that it “utilized the HTY (\$500k) and
14 FTY (\$400k) ASC 715 expense to determine its average regulatory commitment of
15 \$450k for ratemaking calculations.” However, in the response to I&E-RE-9-D, it shows
16 an OPEB expense of negative \$299,000, or a credit amount of \$299,000.

17 The amounts presented in OCA-VI-43 and I&E-9-D are different. And, based
18 upon the data I have reviewed, the FPFTY amount presented in I&E-9-D appears to be
19 the amount included in the cost of service, but does not represent the average of the 2
20 prior years. Therefore, on Schedule LKM-11, I present my adjustment to reflect the
21 average of the two most recent historical years. This adjustment results in a decrease in
22 OPEB expense of \$318,000.

23 **COVID-Related Regulatory Asset**

24 Q. WHAT IS THE COVID-RELATED REGULATORY ASSET?

1 A. In response to Governor Wolf’s declaration of a state of emergency throughout the
 2 Commonwealth as a result of the COVID-19 pandemic, the Commission issued two
 3 directives. One, was in Docket No. M-2020-3019244 where the Commission declared
 4 a moratorium on the termination of utility services. The other directive was the
 5 Commission’s Secretarial Letter dated May 13, 2020, that directed public utilities to
 6 account for prudently incurred incremental extraordinary, nonrecurring expenses
 7 related to COVID-19, and indicated that utilities were authorized to create regulatory
 8 assets for incremental COVID-related expenses. It also directed utilities to track any
 9 incremental uncollectibles resulting from the COVID-19 Pandemic that is not currently
 10 embedded in existing base rates. The COVID-related regulatory asset that the
 11 Company is now seeking to recover is both the accumulation of costs and uncollectibles
 12 pursuant to the Commission’s directives.

13 Q. PLEASE SUMMARIZE THE COMPONENTS OF THE COMPANY’S
 14 COVID-RELATED REGULATORY ASSET.

15 A. Duquesne’s claim for the COVID-related regulatory asset includes:

Incremental Operating Expenses per Duquesne	
Overtime Labor & Fringes	\$ 829
Outside Services	1,415
Materials	374
Transportation	209
Other Expenditures	113
Late Payment Charges Waived	2,573
Reconnect Fees Waived	432
Savings from Operation Expense	(750)
Total Additional Costs	<u>\$ 5,195</u>

16
 17 Q. PLEASE EXPLAIN DUQUESNE’S ADJUSTMENT RELATED TO THE
 18 UNCOLLECTIBLE PORTION OF THE COVID-RELATED
 19 REGULATORY ASSET.

1 A. Company witness Bachota explained that the Company has experienced increased
2 levels of customer delinquencies in the year ended December 31, 2020 and continuing
3 into 2021. These delinquent amounts have resulted in an increase of \$4,186,575, which
4 was recorded as a regulatory asset as of December 31, 2020.

5 To recover the amount included in the regulatory asset account, the Company
6 is proposing to recover the amount in the regulatory asset account over a three-year
7 period. The Company also proposes to continue to record incremental uncollectible
8 costs above what is included in this rate proceeding as a regulatory asset to be recovered
9 in future rate proceedings.

10 Q. WHAT ARE YOU RECOMMENDING FOR THE UNCOLLECTIBLE
11 PORTION OF THE COVID-RELATED REGULATORY ASSET.

12 A. The adjustment I am recommending is to use a five-year period to normalize the
13 uncollectible claim related to the COVID-related Regulatory Asset. This results in an
14 adjustment that decreases the Company's claim by \$878,000. This adjustment is
15 presented on Schedule LKM-12.

16 Q. PLEASE EXPLAIN THE REASON FOR USING A FIVE-YEAR PERIOD
17 FOR YOUR ADJUSTMENT?

18 A. The reason I have used the 5-year period, is that the 3-year period, proposed by the
19 Company, defeats the spirit of fairness and compromise which I believe was present in
20 the Commission's directives. After recognizing the disruption in people's lives, health,
21 and employment status, an effort was made to prevent additional disruption by turning
22 off an essential service such as utility service. As a matter of fairness, utilities were
23 provided a means by which they could recover incremental costs related to the
24 pandemic. This is an option that not many businesses have. However, the company's

1 attempt to seek a rapid recovery of those costs by increasing rates, ignores the spirit of
2 fairness and the fact that many of its customers have not recovered from the disruption
3 caused by the pandemic.

4 Q. SHOULD THE COMPANY BE PERMITTED TO CONTINUE TRACKING
5 INCREMENTAL UNCOLLECTIBLE EXPENSE AFTER THE
6 CONCLUSION OF THIS RATE CASE?

7 A. No. In response to the Commission's Directives, the Company discontinued
8 terminations for non-payment and eliminated late payment charges. The charging of
9 these fees resumed on June 1, 2021, and the Company states it has no plans to change
10 its late fees and reconnection fees. One of the purposes for these fees is to encourage
11 compliance.

12 Additionally, the Company's request for higher rates, indicates that it believes
13 its customer base can absorb higher utility costs. Therefore, the Commission does not
14 need to provide an additional layer of protection for the Company.

15 Q. DO YOU AGREE WITH THE RECOVERY OF THE OTHER COMPONENTS
16 OF THE COMPANY'S REGULATORY ASSET RELATED TO THE COVID-
17 19 PANDEMIC?

18 A. No. I do not. First, I believe the savings identified by the Company are understated.
19 The Company identified only \$750,000 in savings. However, I have identified an
20 additional \$2,480,000 in savings. Below is a chart that summarizes the total savings
21 as I have calculated them.

COVID Operating Expense Savings	
Savings Identified by the Company	
Employee Training	\$ 634
Parking Expense	116
Company Identified Savings	<u>750</u>
Additional Savings	
Medical Claims ^{1/}	979
Additional Employee Related Expense ^{2/}	1,102
Decrease in Utilities ^{3/}	<u>399</u>
Total Additional Costs	<u>\$ 3,230</u>
^{1/} I&E-RE-70-D	
^{2/} I&E-RE-63(D)-D (\$1,763 - \$634)	
^{3/} I&E-RE-61-D	

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9 Q.

WHAT IS YOUR RECOMMENDATION WITH RESPECT TO FUTURE DEFERRALS TO THE COVID-RELATED REGULATORY ASSET?

10

11 A.

I recommend that the Commission direct the Company to cease the deferral of costs into the COVID-related regulatory asset account effective September 1, 2021.

12

13 **Electric Vehicle Program Costs**

14 Q.

PLEASE EXPLAIN YOUR ADJUSTMENT TO THE ELECTRIC VEHICLE PROGRAM COSTS.

15

1 A. OCA witness Nelson has reviewed the Company's Electric Vehicle cost program.
2 Based upon his recommendation, I have removed the cost of the program from the
3 cost of service. The reason for the adjustment is presented in Mr. Nelson's testimony.
4 The adjustment is reflected in Schedule LKM-13.

5 **Interest Synchronization**

6 Q. PLEASE EXPLAIN YOUR INTEREST SYNCHRONIZATION
7 ADJUSTMENT.

8 A. To determine the tax deductible interest for ratemaking, I have multiplied the OCA's
9 recommended rate base by the weighted cost of debt included in the capital structure
10 recommended by OCA witness Garrett. This procedure synchronizes the interest
11 deduction for tax purposes with the interest component of the return on rate base to be
12 recovered from ratepayers. As shown at the bottom of Schedule LKM-14, this
13 adjustment increases the interest deduction by \$1,629,000 compared to the interest
14 deduction recognized by Duquesne. This decreases state and federal income taxes by
15 \$156,000 and \$308,000, respectively.

16 **OTHER DUQUESNE PROPOSALS**

17 **AFUDC on Land Held for Future Use**

18 Q. PLEASE EXPLAIN DUQUESNE'S REQUEST FOR AUTHORIZATION TO
19 ACCRUE ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION
20 ON LAND HELD FOR FUTURE USE.

21 A. Duquesne's request to accrue Allowance for Funds Used During Construction
22 ("AFUDC") is based on the notion that it frequently acquires land or land rights for a
23 construction site before construction begins, but that larger projects often have
24 relatively long lead times from commencement to completion. Consequently,

1 Duquesne believe it is appropriate to allow the Company to accrue AFUDC on land
2 acquired to provide future service and add such amount to rate base when the project
3 is used to provide service to customers. Duquesne discloses that land held for future
4 use has not been included in rate base in this proceeding because such land is not
5 currently providing service to customers. Hence, the Company acknowledges that it is
6 inappropriate to earn a return on assets that are not used and useful in the provision of
7 utility service.

8 Q. IS THE COMPANY'S REQUEST TO ACCRUE AFUDC ON LAND HELD
9 FOR FUTURE USE REASONABLE?

10 A. No. It is not, and I recommend that the Commission not allow the Company to accrue
11 AFUDC on land held for future use.

12 Q. WHY DO YOU DISAGREE WITH THE COMPANY'S REQUEST?

13 A. Land held for future use is typically recorded in FERC Account No. 105, Electric
14 Plant Held for Future Use. Plant held for future use is typically not eligible for
15 AFUDC accrual because the plant is not actively undergoing construction. Therefore,
16 Duquesne is seeking an exception to the normal accounting for land held for future
17 use. There are concerns about this request. First, there is no specific reason for
18 seeking this exception other than the Company would like to earn a return on the
19 property while it is held for future use because lead time for construction could be
20 long. Second, the request appears to be very broad and general, so that any property
21 purchased could begin accruing AFUDC if this exception is approved. Third, this
22 would open the way for potential misstatement of earnings. In this regard, the concern
23 is two-fold. AFUDC accrued on plant held for future use flows to the utility's
24 earnings. In other words, utilities will see an increase in their earnings because of the

1 accrual of AFUDC. Another aspect of this is that plant that is placed in service will be
2 higher as a result of the AFUDC that is accumulated and compounded over time. This
3 would be a bad deal for ratepayers, but a good deal for the utilities because the
4 increase in earnings will help their stock prices and the higher plant values will result
5 in higher rates.

6 The current prohibition against accruing AFUDC on plant held for future use
7 is good public policy because it reduces the incentive for a utility to manipulate
8 earnings simply by buying land and holding it in future use property. It also reduces
9 the incentive to speculate when considering the purchase of property.

10 draft I recommend that the Commission deny this request.

11 **Federal Tax Adjustment Charge**

12 Q. PLEASE EXPLAIN DUQUESNE'S FEDERAL TAX ADJUSTMENT
13 CHARGE PROPOSAL.

14 A. Duquesne is proposing to include the Federal Tax Adjustment Clause ("FTAC")
15 Rider to its tariffs to provide for adjustments to base rates to reflect the effects of
16 future increases or decreases in the federal income tax rate. The Company's request
17 for the FTAC is based on the premise that an increase in the federal income tax rate
18 from 21 percent to 28 percent is imminent. Therefore, Duquesne believes that the
19 FTAC is needed because such a change in the tax rate will have a dramatic effect on
20 the Company's revenue requirement. The Company also states that the FTAC is
21 needed because of the difficulty in adjusting rates and that a delay in adjusting rates
22 can lead to significant tax refunds or recoveries.

23 Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?

1 A. No. The Company's proposal is premature and is not necessary. An underlying theme
2 of the Company's proposal is a need to have an accelerated process. In the testimony
3 of Company witness Ogden, he states:

4 The FTAC supports customer rate stability by reducing regulatory
5 lag between a change in federal tax rates and the corresponding
6 adjustment in distribution rates. Absent the FTAC, a change in
7 federal tax rates could cause the Company to over- or under-collect
8 until its distribution rates are reset. The longer these over- or under-
9 collections accumulate, the more rate disruption they will produce
10 when ultimate refunded or recouped from customers. The FTAC
11 mitigates the accumulation of over- or under-collections by adjusting
12 the Company's distribution rates in tandem with federal corporate
13 income tax rates.

14 Also, Company witness Simpson states:

15 Second, it is currently difficult to adjust base rates to reflect such
16 changes in a timely manner. Third, the time delay in adjusting base
17 rates under current procedures can result in either significant
18 refunds or significant retroactive recoveries after the effective date
19 of the tax rate change.

20 Such a view of the timing of the process of implementing new tax rates, implies that
21 the Company believes that the time it took for the Commission to implement the Tax
22 Change and Jobs Act of 2017, TCJA, was too slow. However, Mr. Simpson also
23 stated:

24 The Commission set temporary rates for other companies and
25 implemented surcredits on July 1, 2018 to begin the flow through of
26 the tax rate decrease and required those companies to record
27 regulatory liabilities for the first half of 2018.

28 It is important to note that the TCJA was signed into law in mid December 2017. In
29 my view the justification for the FTAC as a means of expediting the process is
30 unfounded.

1 Another reason why I disagree with the Company is that, even if there is
2 likely to be a bill to change tax rates, it is unknown what other provisions may be
3 contained in the bill. For example, the TCJA included provisions affecting the tax
4 treatment of net operating loss carrybacks and caps, limited the net interest deduction
5 and included some restrictions on accelerated depreciation. Ultimately, the additional
6 provisions must be given consideration before changes in rates are allowed.
7 Therefore, such changes should be addressed by the Commission on a generic basis
8 for all the public utilities it regulates rather than on a piecemeal basis as proposed by
9 Duquesne.

10 Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

11 A. Yes, it does.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)
)
v.)
)
Duquesne Light Company)
)

Docket No. R-2021-3024750

Appendix A

LAFAYETTE K. MORGAN, JR.

Mr. Morgan is an independent regulatory consultant focusing in the area of the analysis of the operations of public utilities with particular emphasis on rate regulation. He has reviewed and analyzed utility rate filings, focusing primarily on revenue requirements determination, accounting and regulatory policy and cost recovery mechanisms. This work has included natural gas, water, electric, and telephone utilities.

Education and Qualifications

B.B.A. (Accounting) – North Carolina Central University, 1983

M.B.A. (Finance) – The George Washington University, 1993

C.P.A. – Licensed in the State of North Carolina (Inactive status)

Previous Employment

1993-2010 Senior Regulatory Analyst
Exeter Associates, Inc.
Columbia, MD

1990-1993 Senior Financial Analyst
Potomac Electric Power Company
Washington, D.C.

1984-1990 Staff Accountant
North Carolina Utilities Commission – Public Staff
Raleigh, NC

Professional Experience

As a Staff Accountant with the North Carolina Utilities Commission – Public Staff, Mr. Morgan was responsible for analyzing testimony, exhibits, and other data presented by parties before the Commission. In addition, he performed examinations of the books and records of utilities involved in rate proceedings and summarized the results into testimony and exhibits for presentation before the Commission. Mr. Morgan also participated in several policy proceedings and audits involving regulated utilities.

As a Senior Financial Analyst with Potomac Electric Power Company, Mr. Morgan was a lead analyst and was involved in the preparation of the cost of service, rate base, and ratemaking adjustments supporting the Company's request for revenue increases in its retail jurisdictions.

As a Senior Regulatory Analyst with Exeter Associates, Inc., Mr. Morgan has been involved in the analysis of the operations of public utilities with particular emphasis on rate regulation. He has reviewed and analyzed utility rate filings, focusing primarily on revenue requirements determination, accounting and regulatory policy and cost recovery mechanisms. This work included natural gas, water, electric, and telephone utilities.

Expert Testimony
of Lafayette K. Morgan, Jr.

Kings Grant Water Company (North Carolina Utilities Commission, Docket No. W-250, Sub 5), 1984. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Northwood Water Company (North Carolina Utilities Commission, Docket No. W-690, Sub 1), 1985. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Emerald Village Water System (North Carolina Utilities Commission, Docket No. W-184, Sub 3), 1985. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

General Telephone Company of the South (North Carolina Utilities Commission, Docket No. P-19, Sub 207), July 1986. Presented testimony on the level of cash working capital allowance on behalf of the North Carolina Utilities Commission – Public Staff.

Heins Telephone Company (North Carolina Utilities Commission, Docket No. P-26, Sub 93), November 1986. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Carolina Power and Light Company (North Carolina Utilities Commission, Docket No. E-2, Sub 537), March 1988. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Public Service Company of North Carolina, Inc. (North Carolina Utilities Commission, Docket No. G-5, Sub 246), August 1989. Presented testimony on rate base, cash working capital allowance, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Conestoga Telephone and Telegraph Company (Pennsylvania Public Utility Commission, Docket No. I-00920015), September 1993. Presented testimony on cost of service on behalf of the Pennsylvania Office of Consumer Advocate.

Louisiana Power and Light Company (Louisiana Public Service Commission, Docket No. U-20925), February 1995. Presented testimony on rate base and working capital issues on behalf of the Louisiana Public Service Commission Staff.

South Central Bell Telephone Company – Louisiana (Louisiana Public Service Commission, Docket No. U-17949, Subdocket E), June 1995. Presented testimony on rate base and working capital issues on behalf of the Louisiana Public Service Commission Staff.

Expert Testimony
of Lafayette K. Morgan, Jr.

Apollo Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00953378), August 1995. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Carnegie Natural Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00953379), August 1995. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Tennessee Gas Pipeline Company (Federal Energy Regulatory Commission, Docket No. RP95-112), September 1995. Presented testimony rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Virginia-American Water Company (Virginia State Corporation Commission, Case No. PUE-950003), March 1996. Presented testimony on rate base and cost of service issues on behalf of the City of Alexandria.

GTE North, Inc. Interconnection Arbitration (Pennsylvania Public Utility Commission, Docket No. A-310125F0002), September 1996. Presented testimony on the determination of the appropriate resale discount on behalf of the Pennsylvania Office of Consumer Advocate.

United Cities Gas Company (Georgia Public Service Commission, Docket No. 6691-U), October 1996. Presented testimony on rate base and cost of service issues on behalf of the Office of Governor, Consumer Utility Counsel Division.

GTE North, Inc. (Pennsylvania Public Utility Commission, Docket Nos. R-00963666 and R-00963666C001), February 1997. Presented testimony on the determination of the appropriate resale discount on behalf of the Pennsylvania Office of Consumer Advocate.

Consumers Maine Water Company (Maine Public Utilities Commission, Docket No. 96-739), May 1997. Presented testimony on rate base, cost of service, and rate of return issues on behalf of the Maine Office of the Public Advocate.

Pennsylvania-American Water Company (Pennsylvania Public Utility Commission, Docket No. R-00973944), July 1997. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Pennsylvania-American Water Company – Wastewater Operations (Pennsylvania Public Utility Commission, Docket No. R-00973973), July 1997. Presented testimony on rate base, cost of service, depreciation, and rate design issues on behalf of the Pennsylvania Office of Consumer Advocate.

Expert Testimony
of Lafayette K. Morgan, Jr.

Jackson Purchase Electric Cooperative Corporation (Kentucky Public Service Commission, Case No. 97-224), December 1997. Presented testimony on rate base and cost of service issues on behalf of the Kentucky Office of the Attorney General.

Henderson Union Electric Cooperative Corporation (Kentucky Public Service Commission, Case No. 97-220), January 1998. Presented testimony on the return of patronage capital on behalf of the Kentucky Office of the Attorney General.

Green River Electric Corporation (Kentucky Public Service Commission, Case No. 97-219), January 1998. Presented testimony on the return of patronage capital on behalf of the Kentucky Office of the Attorney General.

Western Kentucky Gas Company (Kentucky Public Service Commission, Case No. 99-070), November 1999. Presented testimony on rate base and cost of service issues on behalf of the Kentucky Office of the Attorney General.

American Broadband, Inc. (Rhode Island Public Utilities Commission, Docket No. 2000-C-3), June 2000. Presented report and testimony on the Company's financing plan on behalf of the Rhode Island Division of Public Utilities and Carriers.

PPL Utilities (Pennsylvania Public Utility Commission, Docket No. R-00005277), October 2000. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

T.W. Phillips Oil and Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00005459), October 2000. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Pike County Light & Power Company (Pennsylvania Public Utility Commission, Docket No. P-00011872), May 2001. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Vermont Gas Systems, Inc. (Vermont Public Service Board, Docket No. 6495), June 2001. Presented testimony on rate base and cost of service issues on behalf of the Vermont Public Service Department.

Community Service Telephone Company (Maine Public Utilities Commission, Docket No. 2001-249), July 2001. Presented joint testimony on rate base and cost of service issues on behalf of the Maine Office of the Public Advocate.

Expert Testimony
of Lafayette K. Morgan, Jr.

West Virginia-American Water Company (Public Service Commission of West Virginia, Docket No. 01-0326-W-42-T), August 2001. Presented testimony on rate base and cost of service issues on behalf of the Consumer Advocate Division.

Philadelphia Suburban Water Company (Pennsylvania Public Utility Commission, Docket No. R-00016750) February 2002. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Illinois-American Water Company (Illinois Commerce Commission, Docket No. 02-0690) January 2003. Presented testimony on cost of service issues on behalf of Citizens Utility Board.

Pennsylvania-American Water Company (Pennsylvania Public Utility Commission, Docket No. R-00027983), February 2003. Presented testimony addressing surcharge mechanism to recover security costs on behalf of the Pennsylvania Office of Consumer Advocate.

FairPoint New England Telephone Companies (Maine Public Utilities Commission, Docket Nos. 2002-747, 2003-34, 2003-35, 2003-36, and 2003-37), June 2003. Presented testimony on rate base and cost of service issues on behalf of the Maine Office of the Consumer Advocate.

Pennsylvania-American Water Company (Pennsylvania Public Utility Commission, Docket No. R-00038304), August 2003. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

PPL Electric Utilities Corporation (Pennsylvania Public Utility Commission, Docket No. R-00049255), June 2004. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Entergy Louisiana, Inc. (Louisiana Public Service Commission, Docket No. U-20925 RRF 2004), August 2004. Presented testimony on rate base and cost of service issues on behalf of the Louisiana Public Service Commission Staff.

Vectren Energy Delivery of Indiana (Indiana Utility Regulatory Commission, Cause No. 42598), September 2004. Presented testimony on O&M expense issues on behalf of the Indiana Office of Utility Consumer Counselor.

National Fuel Gas Distribution Corporation (Pennsylvania Public Utility Commission, Docket No. R-00049656), December 2004. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Expert Testimony
of Lafayette K. Morgan, Jr.

Block Island Power Company (Rhode Island Public Utilities Commission, Docket No. 3655), April 2005. Presented testimony on cash working capital on behalf of the Rhode Island Division of Public Utilities & Carriers.

Verizon New England, Inc. (Maine Public Utilities Commission, Docket No. 2005-155), September 2005. Presented joint testimony with Thomas S. Catlin on rate base and cost of service issues on behalf of the Maine Office of the Public Advocate.

T.W. Phillips Oil and Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00051178), May 2006. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Duquesne Light Company (Pennsylvania Public Utility Commission, Docket No. R-00061346), July 2006. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

National Fuel Gas Distribution Company (Pennsylvania Public Utility Commission, Docket No. R-00061493), September 2006. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Southern Indiana Gas & Electric Co. (Indiana Utility Regulatory Commission, Cause No. 43112), January 2007. Presented testimony on rate base and cost of service issues on behalf of the Indiana Office of Utility Consumer Counsel.

PPL Electric Utilities (Pennsylvania Public Utility Commission, Docket No. R-00072155), July 2007. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Aqua Pennsylvania, Inc. (Pennsylvania Public Utility Commission, Docket No. R-00072711), February 2008. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Equitable Gas Company (Pennsylvania Public Utility Commission, Docket No. R-2008-2029325), October 2008. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

The Narragansett Bay Commission (Rhode Island Public Utilities Commission, Docket No. 4026), April 2009. Presented testimony on rate base and cost of service issues on behalf of the Rhode Island Division of Public Utilities and Carriers.

Expert Testimony
of Lafayette K. Morgan, Jr.

Maryland-American Water Company (Maryland Public Service Commission, Case No. 9187), July 2009. Presented testimony on rate base and cost of service issues on behalf of the Maryland Office of People's Counsel.

Monongahela Power Company & The Potomac Edison Company, both d/b/a Allegheny Power Company (West Virginia Public Service Commission, Case No. 09-1352-E-42T), February 2010. Presented testimony on rate base and cost of service issues on behalf of the West Virginia Consumer Advocate Division.

PPL Electric Utilities (Pennsylvania Public Utility Commission, Docket No. R-2010-2161694), June 2010. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Pawtucket Water Supply Board (Rhode Island Public Utilities Commission, Docket No. 4550), June 2015. Presented testimony on revenue requirements issues on behalf of the Rhode Island Division of Public Utilities and Carriers.

Columbia Gas of Pennsylvania (Pennsylvania Public Utility Commission, Docket No. R-2015-2468056), June 2015. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Indianapolis Power and Light Company (Indiana Utility Regulatory Commission, Cause No. 44576/44602), July 2015. Presented testimony on revenue requirements issues on behalf of the Indiana Office of Utility Consumer Counselor.

Public Service Company of Oklahoma (Corporation Commission of Oklahoma, Cause No. PUD 201500208), October 2015. Presented testimony on revenue requirements and environmental compliance rider issues on behalf of the United States Department of Defense and the Federal Executive Agencies.

Northern Indiana Public Service Company (Indiana Utility Regulatory Commission, Cause No. 44688), January 2016. Presented testimony on the company's electric division operating revenues, operating expenses and income taxes issues on behalf of the Indiana Office of Utility Consumer Counselor.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, FY2017-2018 Rate Proceeding), March 2016. Presented testimony on revenue requirements issues on behalf of the Public Advocate.

Columbia Gas of Maryland (Public Service Commission of Maryland, Case No. 9417), June 2016. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Expert Testimony
of Lafayette K. Morgan, Jr.

Chesapeake Utilities Corporation (Delaware Public Service Commission, PSC Docket No. 15-1734), August 2016. Presented testimony on rate base and cost of service issues on behalf of the Staff of the Delaware Public Service Commission.

Kent County Water Authority (Public Service Commission of Rhode Island, Docket No. 4611), September 2016. Presented testimony on rate base and cost of service issues on behalf of the Division of Public Utilities and Carriers.

Northern Utilities, Inc. (Maine Public Utilities Commission, Docket No. 2017-00065), August 2017. Assisted the Maine Office of Public Advocate (OPA) with Northern Utilities application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements, the utility's request to renew and modify its alternative rate plan, and its Targeted Infrastructure Replacement Adjustment.

Indiana Michigan Power Company (Indiana Utility Regulatory Commission, Cause No. 44967), November 2017. Presented testimony on rate base, operating revenues and operating expenses issues on behalf of the Indiana Office of Utility Consumer Counselor.

Emera Maine (Maine Public Utilities Commission, Docket No. 2017-00198), December 2017. Assisted the Maine Office of Public Advocate (OPA) with Emera Maine's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

UGI-Electric (Pennsylvania Public Utility Commission, Docket No. R-2017-2640058), April 2018. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Electric's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, FY2019-2020 Rate Proceeding), April 2018. Presented testimony on revenue requirements and the Department's three-year rate plan issues on behalf of the Public Advocate.

Westar Energy, Inc. (Westar Energy) and Kansas Gas and Electric Company (KGE), (Kansas State Corporation Commission, Docket No. 18-WSEE-328-RTS), May 2018. Presented testimony on revenue requirements on behalf on behalf of the Federal Executive Agencies.

Expert Testimony
of Lafayette K. Morgan, Jr.

Duquesne Light Company (Pennsylvania Public Utility Commission, Docket No. R-2018-3000124), June 2018. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Electric's application for an increase in rates. Presented testimony, on behalf of the OCA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Bangor Natural Gas Company (Maine Public Utilities Commission, Docket No. 2018-00007), June 2018. Assisted the Maine Office of Public Advocate (OPA) Presented testimony, on behalf of the OPA, on the changes brought about by the Tax Change and Jobs Act of 2017.

SUEZ Water Pennsylvania, Inc. (Pennsylvania Public Utility Commission, R-2018-3000834), July 2018. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with SUEZ Water's application for an increase in rates. Presented testimony, on behalf of the OCA, on accounting issues including Rate Base, Operating Income, Inclusion of Costs Related to Expansion Territories and the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Woonsocket Water Division (Public Service Commission of Rhode Island, Docket No. 4879), January 2019. Presented testimony on cost of service issues on behalf of the Division of Public Utilities and Carriers.

Central Maine Power Company (Maine Public Utilities Commission, Docket No. 2018-00194), January 2019. Assisted the Maine Office of Public Advocate (OPA) with Central Maine Power's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Newport Water Department (Public Service Commission of Rhode Island, Docket No. 4933), July 2019. Presented testimony on cost of service issues on behalf of the Division of Public Utilities and Carriers.

UGI-Gas (Pennsylvania Public Utility Commission, Docket No. R-2018-3006814), April 2019. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Columbia Gas of Maryland (Public Service Commission of Maryland, Case No. 9609), August 2019. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Expert Testimony
of Lafayette K. Morgan, Jr.

Public Service Company of Colorado (Colorado Public Utility Commission, Proceeding No. 19AL-0268E), September 2019. Mr. Morgan provided testimony, on behalf of the Department of Energy and the Federal Executive Agencies, on accounting issues including test year revenue requirements, Rate Base and Net Operating Income.

Northern Utilities, Inc. (Maine Public Utilities Commission, Docket No. 2019-00092), September 2019. Assisted the Maine Office of Public Advocate (OPA) with Northern Utilities application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements and the utility's request to institute a Capital Investment Recovery Mechanism.

Citizens' Electric Company of Lewisburg (Pennsylvania Public Utility Commission, Docket No. R-2019-3008212), October 2019. Provided testimony on Plant in Service, Construction Work in Progress, Materials and Supplies, Customer Deposits, Depreciation Expense, Growth Factor, and The Tax Cuts and Jobs Act. Mr. Morgan provided testimony, on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Valley Energy, Inc. (Pennsylvania Public Utility Commission, Docket No. R-2019-3008209), October 2019. Provided testimony on Plant in Service, Construction Work in Progress, Materials and Supplies, Customer Deposits, Depreciation Expense, Growth Factor, and The Tax Cuts and Jobs Act. Mr. Morgan provided testimony, on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Wellsboro Electric Company (Pennsylvania Public Utility Commission, Docket No. R-2019-3008208), October 2019. Provided testimony on Plant in Service, Construction Work in Progress, Materials and Supplies, Customer Deposits, Depreciation Expense, Growth Factor, and The Tax Cuts and Jobs Act. Mr. Morgan provided testimony, on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Blue Granite Water Company (Public Service Commission of South Carolina, (Docket No. 2019-290-WS), January 2020. Assisted the South Carolina Department of Consumer Affairs. Presented testimony on accounting policy issues including test year revenue requirements.

UGI-Gas (Pennsylvania Public Utility Commission, Docket No. R-2019-3015162), May 2020. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Columbia Gas of Maryland (Public Service Commission of Maryland, Case No. 9644), July 2020. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Expert Testimony
of Lafayette K. Morgan, Jr.

PECO Energy Company - Gas Division (Pennsylvania Public Utility Commission, Docket No. R-2020-3018929), December 2020. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with PECO-Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, Fiscal Years 2022 - 2023 Rates Proceeding), March 2021. Presented testimony on revenue requirements and the Department's three-year rate plan issues on behalf of the Public Advocate.

Versant Maine (Maine Public Utilities Commission, Docket No. 2020-00316), April 2021. Assisted the Maine Office of Public Advocate (OPA) with Emera Maine's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements.

Maine Water Company (Maine Public Utilities Commission, Docket No. 2021-00053), April 2021. Assisted the Maine Office of Public Advocate (OPA) with Maine Water Company's Request for Approval of Rate Increase and Rate Smoothing Mechanism Pertaining to The Maine Water Company Biddeford & Saco Division. Mr. Morgan provided testimony, on the authorization of the Rate Smoothing Mechanism.

UGI-Electric (Pennsylvania Public Utility Commission, Docket No. R-2021-3023618), May 2021. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Electric's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Bangor Natural Gas Company (Maine Public Utilities Commission, Docket No. 2021-00024), June 2021. Assisted the Maine Office of Public Advocate (OPA) with Bangor Natural Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements.

Philadelphia Gas Works (Philadelphia Gas Commission, Fiscal Years 2021 - 2022 Operating Budget Proceeding), June 2021. Presented testimony on the reasonableness of the Fiscal Year 2022 Operating Budget on behalf of the Public Advocate.

Expert Testimony
of Lafayette K. Morgan, Jr.

Special Projects

Developed a Uniform System of Accounts and Financial Data Collection Template for five countries participating in the National Association of Regulatory Utility Commissioners (NARUC)/East Africa Regional Energy Regulatory Partnership. Also conducted training seminars and participated as a panel member addressing issues in the utility industry from the perspective of the regulator. This work was conducted by NARUC) and the United States Agency for International Development (USAID).

Other Projects

Texas Gas Transmission Corporation (Federal Energy Regulatory Commission, Docket No. RP93-106). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Natural Gas Pipeline Company of America (Federal Energy Regulatory Commission, Docket No. RP93-36). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Texas Gas Transmission Company (Federal Energy Regulatory Commission, Docket No. RP94-423). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Lafourche Telephone Company (Louisiana Public Service Commission, Docket No. U-21181). Analysis and investigation of earnings and appropriate rate of return on behalf of the Louisiana Public Service Commission Staff.

Natural Gas Pipeline Company of America (Federal Energy Regulatory Commission, Docket No. RP95-326). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Pymatuning Independent Telephone Company (Pennsylvania Public Utility Commission, Docket No. R-00953502). Technical analysis and development of settlement position in the Company's rate case on behalf of the Pennsylvania Office of Consumer Advocate.

Illinois Bell Telephone Company (Illinois Commerce Commission, Docket No. 96-0172). Technical analysis of the Company's annual rate filing pursuant to its Price Cap Plan on behalf of Citizens Utility Board.

Illinois Bell Telephone Company (Illinois Commerce Commission, Docket No. 97-0157).
Technical analysis of the Company's annual rate filing pursuant to its Price Cap Plan on behalf of Citizens Utility Board.

TDS Telecom (Pennsylvania Public Utility Commission, Docket Nos. R-00973892 and R-00973893). Technical analysis regarding rate base, cost of service, rate design, and rate of return, and assistance in settlement negotiations in the Company's rate case and alternative regulatory filing on behalf of the Pennsylvania Office of Consumer Advocate.

Appalachian Power Company (Virginia State Corporation Commission, Case No. PUE 960301).
Technical analysis regarding rate base and cost of service and assistance in settlement negotiations in the Company's rate case and alternative regulatory filing on behalf of the Virginia Office of the Attorney General.

Central Maine Power Company (Maine Public Utilities Commission, Docket No. 97-580).
Technical analysis regarding attrition and accounting issues in the Company's Transmission and Distribution unbundling proceeding on behalf of the Maine Public Utilities Commission Staff.

Illinois Bell Telephone Company (Illinois Commerce Commission, Docket No. 98-0259).
Technical Analysis of the Company's annual rate filing pursuant to its Price Cap Plan on behalf of Citizens Utility Board.

Maine Public Service Company (Maine Public Utilities Commission, Docket No. 98-577).
Technical analysis regarding attrition and accounting issues in the Company's Transmission and Distribution unbundling proceeding on behalf of the Maine Public Utilities Commission Staff.

Bangor Hydro-Electric Company (Maine Public Utilities Commission, Docket No. 97-596).
Technical analysis regarding attrition and accounting issues in the Company's Transmission and Distribution unbundling proceeding on behalf of the Maine Public Utilities Commission Staff.

TDS Telecom (Maine Public Utilities Commission, Docket Nos. 98-894, 98-895, 98-904, 98-906, 98-911, and 98-912). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

Mid-Maine Telecom (Maine Public Utilities Commission, Docket No. 2000-810). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

Unitel, Inc. (Maine Public Utilities Commission, Docket No. 2000-813). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

Hydraulics International, Inc. (Armed Services Board of Contract Appeals, ASBCA No. 51285). Technical analysis and support relating to the Economic Adjustment Clause claim on behalf of the Air Force Materiel Command.

Tidewater Telecom and Lincolnville Telephone Company (Maine Public Utilities Commission, Docket Nos. 2002-100 and 2002-99). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

TDS Telecom (Vermont Public Service Board, Docket No. 6576). Technical analysis regarding rate base, cost of service, and depreciation expense on behalf of the Vermont Department of Public Service.

CenterPoint Energy-Entex (Louisiana Public Service Commission, Docket No. U-26720, Subdocket A). Technical analysis regarding rate base and cost of service on behalf of the Louisiana Public Service Commission Staff.

CenterPoint Energy-Arkla (Louisiana Public Service Commission, Docket No. U-27676). Technical analysis regarding rate base and cost of service on behalf of the Louisiana Public Service Commission Staff.

Provided technical analysis and support on behalf of the Louisiana Public Service Commission Staff relating to CLECO Power LLC Rate Stabilization Plan.

Provided technical analysis and support on behalf of the Louisiana Public Service Commission Staff relating to CLECO Power LLC post-Katrina power purchases.

Provided technical analysis and support on behalf of the Louisiana Public Service Commission Staff relating to Entergy Louisiana LLC recovery of storm damage costs.

Westar Energy, Inc. (Westar Energy) and Kansas Gas and Electric Company (KGE), (Kansas State Corporation Commission, Docket No. 17-WSEE-147-RTS). Technical analysis regarding rate base and cost of service on behalf of the Federal Executive Agencies.

Westar Energy, Inc. (Westar Energy) and Kansas Gas and Electric Company (KGE), (Kansas State Corporation Commission, Docket No. 17-WSEE-147-RTS). Technical analysis regarding rate base and cost of service on behalf of the Federal Executive Agencies.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)	
)	
v.)	Docket No. R-2021-3024750
)	
Duquesne Light Company)	

**SCHEDULES ACCOMPANYING THE
DIRECT TESTIMONY
OF
LAFAYETTE K. MORGAN, JR.**

**ON BEHALF OF THE
OFFICE OF CONSUMER ADVOCATE**

June 30, 2021

Duquesne Light Company

Summary of Operating Income
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Company Amounts at Present Rates	OCA Adjustment s	Amounts After OCA Adjustment s	Pro Forma Change in Revenues	Amounts After Change in Revenues
	<u>Operating Revenues</u>					
1	Total Sales Revenues	\$ 550,379	\$ 8,451	\$ 558,830	\$ -	\$ 558,830
2	Other Revenues - Off System Sales	-	-	-	-	-
3	Other Operating Revenues	18,003	-	18,003	-	18,003
4	Revenue Increase	-	-	-	(2,754)	(2,754)
5	Total Operating Revenues	<u>\$ 568,382</u>	<u>\$ 8,451</u>	<u>\$ 576,833</u>	<u>\$ (2,754)</u>	<u>\$ 574,079</u>
6						
7	<u>Operating Revenue Deductions</u>					
8	Operating & Maintenance Expenses	\$ 205,286	\$ (16,212)	\$ 189,074	\$ (36)	\$ 189,038
9	Depreciation & Amortization Expense	181,309	(2,808)	178,502	-	178,502
10	Taxes Other Than Income Taxes	41,102	(373)	40,729	(164)	40,565
11	Total Operating Revenue Deductions	<u>\$ 427,697</u>	<u>\$ (19,393)</u>	<u>\$ 408,304</u>	<u>\$ (200)</u>	<u>\$ 408,104</u>
12						
13	Operating Income Before Income Taxes	140,685	27,844	168,529	(2,554)	165,975
14						
15	Federal Income Tax	12,470	4,954	17,424	(483)	\$ 16,941
16	State Income Tax	<u>6,290</u>	<u>2,620</u>	<u>8,910</u>	<u>(255)</u>	<u>8,655</u>
17						
18	Net Operating Income	<u>\$ 121,925</u>	<u>\$ 20,270</u>	<u>\$ 142,195</u>	<u>\$ (1,816)</u>	<u>\$ 140,379</u>
19						
20	Rate Base	<u>\$2,276,464</u>		<u>\$2,193,417</u>		<u>\$2,193,417</u>
21						
22	Return On Rate Base	<u>5.36%</u>		<u>6.48%</u>		<u>6.40%</u>

Duquesne Light Company

Summary of Revenue Increase at OCA Rate of Return
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount	Source
1	Adjusted Rate Base	\$2,193,417	Schedule LKM-2, Page 2
2	Required Rate of Return	<u>6.400%</u>	Per OCA Witness Garrett
3			
4	Net Operating Income Required	\$ 140,379	
5	Net Operating Income at Present Rates	<u>142,195</u>	Schedule LKM-1, Page 1
6			
7	Income Deficiency/(Surplus)	\$ (1,816)	
8	Revenue Multiplier	<u>1.516558</u>	
9			
10	Required Change in Company Revenue	<u>\$ (2,754)</u>	
11			
12	Proposed Revenue Change	\$ (2,754)	
13	Less: Uncollectibles	1.3000% <u>(36)</u>	
14	Revenues After Uncollectibles	(2,718)	
15	Gross Receipts Tax	5.9000% (160)	
16	PUC/OCA& OSBA	0.1461% <u>(4)</u>	
17	Income Before State Taxes	\$ (2,554)	
18	State Income Tax Effect Tax Rate	9.9900%	
19	Less: State Income Tax	<u>(255)</u>	
20			
21	Income Before Federal Taxes	\$ (2,299)	
22	Federal Income Tax	21.0000% <u>(483)</u>	
23			
24	Net Income Surplus/(Deficiency)	<u>\$ (1,816)</u>	

Duquesne Light Company

Summary of Rate Base
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount per Company Filing	OCA Rate Base Adjustments	Amount After OCA Adjustments
1	Utility Plant	\$ 4,088,758	\$ (15,518)	\$ 4,073,240
2	Accumulated Depreciation	<u>(1,425,949)</u>	<u>7,309</u>	<u>(1,418,641)</u>
3	Net Plant in Service	2,662,809	(8,210)	2,654,600
4				
5	Working Capital	46,162	(430)	45,732
6	Materials & Supplies	26,057	-	26,057
7	Excess Pension Capitalized	74,408	(74,408)	-
8	Accumulated Deferred Income Taxes	(521,809)	-	(521,809)
9	Customer Deposits	<u>(11,163)</u>	<u>-</u>	<u>(11,163)</u>
10				
11	Total Rate Base	<u>\$ 2,276,464</u>	<u>\$ (83,047)</u>	<u>\$ 2,193,417</u>

Duquesne Light Company

Summary of Rate Base Adjustments
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Source</u>	<u>Amount</u>
1	Rate Base per Company Filing	Schedule LKM-2, Page 1	<u>\$ 2,276,464</u>
2			
3			
4	<u>OCA Adjustments:</u>		
5	Reverse Duquesne Cloud-Based Software	Schedule LKM -4	\$ (5,541)
6	Remove Pension Asset From Rate Base	Schedule LKM -5	(74,408)
7	Cash Working Capital	Schedule LKM -6	(430)
8	Remove EV Program Costs	Schedule LKM -13	<u>(2,669)</u>
9			
10	Total Ratemaking Adjustments		<u>\$ (83,047)</u>
11			
12	Adjusted Rate Base per OCA		<u><u>\$ 2,193,417</u></u>

Duquesne Light Company

Summary of Adjustments to Income Before Income Taxes
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount	Source
1	Operating Income per Company	<u>\$ 121,925</u>	Schedule LKM-1
2			
3	<u>OCA Adjustments:</u>		
4	Reverse Company's Revenue Loss Adjustment	\$ 6,010	Schedule LKM-7
5	Reflect Eligible Customer Listing Costs	(32)	Schedule LKM-8
6	Normalize Salaries and Wages Increase	3,907	Schedule LKM-9
7	Remove Incentive Compensation Related to Earnings	4,761	Schedule LKM-10
8	Reflect Average Postretirement Benefit Expense	226	Schedule LKM-11
9	Reverse Cloud-Based Software Costs Adjustment	1,785	Schedule LKM-4
10	Revise Normalization of COVID-Pandemic Costs	1,969	Schedule LKM-12
11	Adjustment to Remove EV Program Costs	1,173	Schedule LKM-13
12	Interest Synchronization	<u>471</u>	Schedule LKM-14
13	Total OCA Adjustments	20,270	
14			
15	Total OCA Adjustments	<u>\$ 142,195</u>	

Duquesne Light Company

Summary of Adjustments to Income Before Income Taxes
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	State Income Taxes	Federal Income Taxes	Income Before Income Taxes
1	Amount per Company	\$ 568,382	\$ 205,286	\$ 181,309	\$ 41,102	\$ 6,290	\$ 12,470	\$ 121,925
2								
3	<u>OCA Adjustments:</u>							
4	Reverse Company's Revenue Loss Adjustment	\$ 8,451	\$ -	\$ -	\$ -	\$ 844	\$ 1,597	\$ 6,010
5	Reflect Eligible Customer Listing Costs	-	45	-	-	(4)	(9)	(32)
6	Normalize Salaries and Wages Increase	-	(5,122)	-	(373)	549	1,039	3,907
7	Remove Incentive Compensation Related to Earnings	-	(6,695)	-	-	669	1,265	4,761
8	Reflect Average Postretirement Benefit Expense	-	(318)	-	-	32	60	226
9	Reverse Cloud-Based Software Costs Adjustment	-	-	(2,511)	-	251	475	1,785
10	Revise Normalization of COVID-Pandemic Costs	-	(2,769)	-	-	277	523	1,969
11	Adjustment to Remove EV Program Costs	-	(1,353)	(297)	-	165	312	1,173
12	Interest Synchronization	-	-	-	-	(163)	(308)	471
13								
14	Total OCA Adjustments	\$ 8,451	\$ (16,212)	\$ (2,808)	\$ (373)	\$ 2,620	\$ 4,954	\$ 20,270
15								
16	Total Adjusted Income	\$ 576,833	\$ 189,074	\$ 178,502	\$ 40,729	\$ 8,910	\$ 17,424	\$ 142,195

Duquesne Light Company

Adjustment to Reverse Duquesne Cloud-Based Software Costs Adjustment
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Adjustment to Plant in Service	\$ (12,553)
2		
3	Adjustment to Accumulated Amortization	<u>7,012</u>
4		
5	Net Adjustment to Rate Base	<u>\$ (5,541)</u>
6		
7	Adjustment to Annual Amortization Expense	<u>\$ (2,511)</u>

Notes:

^{1/} DLC Exhibit 2, Book 5, Schedule D-11.

Duquesne Light Company

Adjustment to Remove Pension Asset From Rate Base
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Duquesne Revenue Loss Adjustment	<u>\$ 74,408</u>
2		
3	Adjustment to Operating Revenues	<u><u>\$(74,408)</u></u>

Notes:

^{1/} DLC Exhibit 2, Book 5, Schedule D-1.

Duquesne Light Company

Adjustment to Cash Working Capital
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No	Description	Amount
1	Operation & Maintenance Expenses	\$ 16,580
2	Supply Expense	13,797
3	Tax Expense	23,632
4	Interest Payments	(4,368)
5	Average Prepayments	<u>18,260</u>
6		
7	Total Cash Working Capital Requirements per OPA	\$ 67,900
8	Total Cash Working Capital Requirements per Company	<u>68,330</u>
9		
10	Adjustment to Cash Working Capital	<u>\$ (430)</u>

Duquesne Light Company

Calculation of Interest Expense Component for Working Capital
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Number of Days	Number of Days	Total
1	Measures of Value at December 31, 2019			\$ 2,193,417
2	Long-term Debt Ratio			50.00%
3	Embedded Cost of Long-term Debt			4.29%
4				
5	Pro forma Interest Expense			<u>\$ 47,049</u>
6				
7	Daily Amount	365		\$ 129
8				
9	Days to mid-point of interest payments		91.25	
10	Less: Revenue Lag Days		<u>57.36</u>	
11				
12	Interest Payment lag days			<u>(33.89)</u>
13				
14	Total Interest for Working Capital			<u>\$ (4,368)</u>

Duquesne Light Company

Adjustment to Reverse Company's Revenue Loss Adjustment
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Duquesne Revenue Loss Adjustment	<u>\$ (8,451)</u>
2		
3	Adjustment to Operating Revenues	<u><u>\$ 8,451</u></u>

Notes:

^{1/} DLC Exhibit 2, Book 5, Schedule D-5-B.

Duquesne Light Company

Adjustment to Reflect Eligible Customer Listing Costs
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	ECL Triennial Solicitation Costs	\$ 134
2		
3	Normalization Period	<u>3</u>
4		
5	Adjustment to O&M Expense	<u><u>\$ 45</u></u>

Notes:

^{1/} Company Response to I&E-RE-43-D.

Duquesne Light Company

Adjustment to Normalize Salaries and Wages Increase
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount	
1	Post-FPPTY Costs Related to the 10/01/2022 Wage Rate Increase	\$ 978	
2	Post-FPPTY Costs Related to the 01/01/2023 Wage Rate Increase	<u>1,211</u>	
3			
4	Adjustment to O&M Expense		\$ (2,189)
5			
6	Total Annualized O&M Payroll Expense	\$ 91,473	^{1/}
7	Total Number of Employees	<u>1,642</u>	^{2/}
8			
9	Average O&M Payroll per Employee	\$ 56	
10			
11	Total Number of Employees in FPPTY Payroll	1,642	
12	Average Actual HTY Number of Vacancy	<u>48</u>	^{2/}
13	FPPTY Number of Employees less Vacancy	<u>1,594</u>	
14			
15	Revised FPPTY O&M Payroll Expense	88,784	<u>(2,689)</u>
16			
17	Total Adjustment to O&M Payroll		<u>\$ (4,878)</u>
18			
19	Adjustment to 401-K Expense		<u>\$ (244)</u>
20			
21	Adjustment to Payroll Taxes		<u>\$ (373)</u>

Notes:

^{1/} DLC Schedule D-7.

^{2/} Response to I&E-RE-6.

Duquesne Light Company

Adjustment to Remove Incentive Compensation Related to Earnings Goals
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Short-Term Incentive Plan Earnings Based Payout	\$ 2,505
2		
3	Long-Term Incentive Plan Earnings Based Payout	<u>4,190</u>
4		
5	Adjustment to O&M Expense	<u><u>\$ (6,695)</u></u>

Notes:

^{1/} Company Response to I&E-RE-8-D, page 4.

Duquesne Light Company

Adjustment to Reflect Average Postretirement Benefit Expense
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Short-Term Incentive Plan Earnings Based Payout	\$ (617)
2		
3	Long-Term Incentive Plan Earnings Based Payout	<u>(299)</u>
4		
5	Adjustment to O&M Expense	<u><u>\$ (318)</u></u>

Notes:

^{1/} Company Response to I&E-RE-8-D, page 4.

Duquesne Light Company

Adjustment to Revise Normalization of COVID-Pandemic Costs
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount
1	Estimated 2020 Under-Recovery of Uncollectibles	\$ 4,187
2	Estimated 2021 Under-Recovery of Uncollectibles	2,094
3		
4	Estimated Under-Recovery Uncollectibles due to COVID Pandemic	6,281
5		
6	Under-Recovery of Operating Expense	-
7		
8	COVID Pandemic Related Cost to be Recovered	\$ 6,281
9	Normalization Period (Years)	5
10		
11	Annual Recovery of COVID Pandemic Related Costs	\$ 1,256
12	Annual Recovery of COVID Pandemic Related Costs per Co.	4,025
13		
14	Adjustment to O&M Expense	\$ (2,769)

Notes:

^{1/} DLC Schedule D-12.

Duquesne Light Company

Adjustment to Remove EV Program Costs
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Capital Additions Related to EV Program	\$ (2,965)
2		
3	Adjustment to EV Accumulated Amortization	<u>\$ 297</u>
4		
5	Net Adjustment to Rate Base	<u>\$ (2,669)</u>
6		
7	EV Program Operating Expenses	<u>\$ (1,353)</u>
8		
9	EV Depreciation Expense	<u>\$ (297)</u>

Notes:

^{1/} Response to I&E-40-D.

Duquesne Light Company

Interest Synchronization Adjustment
For the Test Year Ending December 31, 2022

Line No.	Description	Amount
1	Company Rate Base	\$ 2,193,417 ^{1/}
2	Weighted Cost of Debt	2.150%
3		
4	Adjusted Interest Deduction	\$ 47,158
5	Interest Deduction Per Company	45,529 ^{2/}
6		
7	Adjustment to Synchronize Interest Expense	\$ 1,629
8	Effective State Income Tax Rate	9.99%
9		
10	Adjustment to State Income Taxes	\$ (163)
11		
12	Federal Income Tax Base	\$ 1,466
13	Federal Income Tax Rate	21.00%
14		
15	Adjustment to Federal Income Taxes	\$ (308)

Notes:

^{1/} Schedule LKM-2, Page 1.

^{2/} Schedule D-22

Duquesne Light Company

Calculation of Rate of Return
For the Test Year Ending December 31, 2022

<u>Line No.</u>	<u>Description</u>	<u>Capitalization Ratio</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
1	Long-Term Debt	50.00%	4.29%	2.15%
2	Short-Term Debt	0.00%	0.00%	0.00%
3	Total Debt	<u>50.00%</u>		<u>2.15%</u>
4	Preferred Stock	0.00%	0.00%	0.00%
5	Common Equity	<u>50.00%</u>	<u>8.50%</u>	<u>4.25%</u>
6				
7	Total	<u><u>100.00%</u></u>		<u><u>6.40%</u></u>

Source:
OCA Witness Garrett

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, Lafayette K. Morgan, hereby state that the facts above set forth in my Direct Testimony, OCA Statement 1, are true and correct and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 30, 2021
*311971

Signature: 
Lafayette K. Morgan

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission

v.

Duquesne Light Company

Docket No. R-2021-3024750

DIRECT TESTIMONY

OF

DAVID J. GARRETT

ON BEHALF OF

THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

June 30, 2021

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Appendix A:	Discounted Cash Flow Model Theory
Appendix B:	Capital Asset Pricing Model Theory

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Exhibit DJG-2	Proxy Group Summary
Exhibit DJG-3	DCF Stock and Index Prices
Exhibit DJG-4	DCF Dividend Yields
Exhibit DJG-5	DCF Terminal Growth Rate Determinants
Exhibit DJG-6	DCF Final Results
Exhibit DJG-7	CAPM Risk-Free Rate
Exhibit DJG-8	CAPM Beta Results
Exhibit DJG-9	CAPM Implied Equity Risk Premium Calculation
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Exhibit DJG-11	CAPM Final Results
Exhibit DJG-12	Cost of Equity Summary
Exhibit DJG-13	Market Cost of Equity
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Exhibit DJG-17	Competitive Industry Debt Ratios
Exhibit DJG-18	Weighted Average Rate of Return Proposal

I. INTRODUCTION

1 **Q. Please state your name and business address.**

2 A. My name is David J. Garrett. My business address is 101 Park Avenue, Suite 1125,
3 Oklahoma Company, Oklahoma 73102.

4 **Q. By whom are you employed and in what capacity?**

5 A. I am the managing member of Resolve Utility Consulting, LLC. I am an independent
6 consultant specializing in public utility regulation.

7 **Q. Please summarize your educational background and professional experience.**

8 A. I received a B.B.A. degree with a major in Finance, an M.B.A. degree, and a J.D. degree
9 from the University of Oklahoma. I worked in private legal practice for several years
10 before working as assistant general counsel at the Oklahoma Corporation Commission in
11 2011. At the Oklahoma Corporation Commission, I worked in the Office of General
12 Counsel in regulatory proceedings. In 2012, I worked for the Public Utility Division as a
13 regulatory analyst providing testimony in regulatory proceedings. After leaving the
14 Oklahoma Corporation Commission I formed Resolve Utility Consulting PLLC, where I
15 have represented numerous consumer groups and state agencies in utility regulatory
16 proceedings, primarily in the areas of cost of capital and depreciation. I am a Certified
17 Depreciation Professional with the Society of Depreciation Professionals. I am also a
18 Certified Rate of Return Analyst with the Society of Utility and Regulatory Financial

1 Analysts. A more complete description of my qualifications and regulatory experience is
2 included in my curriculum vitae.¹

3 **Q. On whose behalf are you testifying in this proceeding?**

4 A. I am testifying on behalf of the Pennsylvania Office of Consumer Advocate ("OCA").

5 **Q. Describe the purpose and scope of your testimony in this proceeding.**

6 A. The primary purpose of my testimony is to provide my opinion on the estimated cost of
7 capital and awarded rate of return recommendation for Duquesne Light Company ("DLC"
8 or the "Company"). I am responding to the direct testimony of Company witness Paul R.
9 Moul.

10 **Q. Please describe the organization of your testimony.**

11 A. In the executive summary below, I provide an overview of cost of capital issues, my
12 recommendations, and my response to the Company's testimony on these issues. In the
13 sections that follow, I discuss the legal standards governing the awarded return issue, as
14 well as the general concepts involved in estimating the cost of equity. I provide detailed
15 analysis of the Discounted Cash Flow ("DCF") Model, the Capital Asset Pricing Model
16 ("CAPM"), including my results for these models and my responses to Mr. Moul's results.
17 I also address capital structure, which is a key component to the cost of capital.

I. EXECUTIVE SUMMARY

18 **Q. Please summarize your recommendation to the Commission.**

19 A. My testimony can be distilled to the following recommendations:

¹ Exhibit DJG-1.

- 1 • The Commission should reject the Company’s proposed return on equity
2 (“ROE”) of 10.95% as excessive and unsupported. An objective cost of
3 equity analysis shows that DLC’s cost of equity is about 7.2%.
- 4 • The legal standards governing this issue do not mandate that the awarded
5 ROE equate to the result of a particular financial model, but rather that it be
6 reasonable under the circumstances. We must evaluate this case under the
7 unique circumstances imposed by an unprecedented pandemic, which has
8 had a significant negative impact on the economy of the Commonwealth
9 and the Company’s customers. In my opinion, it is never appropriate to use
10 an awarded ROE significantly above a regulated utility’s cost of equity;
11 however, that concept is even more important under these unique
12 circumstances. Accordingly, I recommend the Commission award DLC an
13 authorized ROE of 8.5%. Although 8.5% is still clearly above DLC’s
14 market-based cost of equity estimate, it represents a gradual yet meaningful
15 move towards market-based cost of equity.
- 16 • I recommend the Commission reject DLC’s proposed capital structure
17 consisting of 46.65% debt and 53.35% equity. This equity-rich capital
18 structure has the effect of increasing capital costs above a reasonable level.
19 An objective mathematical analysis of DLC’s optimal capital structure
20 indicates a debt ratio as high as 55%. Likewise, the average debt ratio of
21 the proxy group is 52%. Thus, DLC’s proposed debt ratio is far too low to
22 be considered reasonable. I recommend an imputed capital structure
23 consisting of 50% debt and 50% equity. My adjustments to the Company’s
24 proposed ROE and capital structure equate to an overall weighted average
25 rate of return of 6.40%.

26 My proposed adjustments are illustrated in the table below.²

² See also Exhibit DJG-18.

**Figure 1:
OCA Weighted Average Rate of Return Proposal**

Capital Component	Proposed Ratio	Cost Rate	Weighted Cost
Long Term Debt	50.0%	4.29%	2.15%
Common Equity	50.0%	8.50%	4.25%
Total	100.0%		6.40%

1 The details supporting my proposed adjustments are discussed further in my testimony.

2 **Q. Are you recommending any adjustments to DLC’s proposed cost of debt?**

3 A. No.

A. Overview and Background

4 **Q. Please explain the concept and significance of the Cost of Capital.**

5 A. The term cost of capital, or Weighted Average Cost of Capital (WACC),³ refers to the
6 weighted average cost of the components within a company’s capital structure, including
7 the costs of both debt and equity. The three primary components of a company’s WACC
8 include the following:

- 9 1. Cost of Debt
- 10 2. Cost of Equity
- 11 3. Capital Structure

12 Determining the cost of debt is relatively straight-forward. Interest payments on bonds are
13 contractual, embedded costs that are generally calculated by dividing total interest

³ The terms cost of capital and WACC are synonymous and used interchangeably throughout this testimony.

1 payments by the book value of outstanding debt. Determining the cost of equity, on the
2 other hand, is more complex. Unlike the known, contractual, and embedded cost of debt,
3 there is not any explicitly quantifiable “cost” of equity. Instead, the cost of equity must be
4 estimated through various financial models. Cost of capital is expressed as a weighted
5 average because it is based upon a company’s relative levels of debt and equity, as defined
6 by the particular capital structure of that company. The basic WACC equation used in
7 regulatory proceedings is presented as follows:

**Equation 1:
Weighted Average Cost of Capital**

$$WACC = \left(\frac{D}{D + E} \right) C_D + \left(\frac{E}{D + E} \right) C_E$$

8
where: *WACC* = *weighted average cost of capital*
 D = *book value of debt*
 C_D = *embedded cost of debt capital*
 E = *book value of equity*
 C_E = *market-based cost of equity capital*

9 Companies in the competitive market often use their WACC as the discount rate to
10 determine the value of capital projects, so it is important that this figure be estimated
11 accurately.

12 **Q. How do experts and regulators typically assess the ROEs awarded to utilities and the**
13 **corresponding opportunity for shareholders?**

14 A. Investors, company managers, and academics around the world have used models, such as
15 the CAPM and DCF to closely estimate cost of equity for many years, and weigh the results
16 achieved against the results from proxy groups. Each of these concepts will be discussed
17 in more detail later in my testimony.

B. Recommendation

1 **Q. Please summarize your ROE recommendation to the Pennsylvania Public Utility**
2 **Commission (Commission).**

3 A. Pursuant to the legal and technical standards guiding this issue, the awarded ROE should
4 be based on, or reflective of, the utility's cost of equity. DLC's estimated cost of equity is
5 about 7.2%, when using reasonable inputs. However, legal standards do not mandate the
6 awarded ROE be set exactly equal to the cost of equity. Rather, in *Federal Power*
7 *Commission v. Hope Natural Gas Co.*, the U.S. Supreme Court found that, although the
8 awarded return should be based on a utility's cost of capital, the "end result" should be just
9 and reasonable.⁴ Therefore, I recommend the Commission award DLC an ROE of 8.5%.
10 In my opinion, an awarded ROE that is set too far above a regulated utility's cost of equity
11 (which in this case is only about 7.2%) it runs the risk of being at odds with the standards
12 set forth in *Hope* and *Bluefield*. This axiom is heightened under the unique circumstances
13 created by an unprecedented pandemic. In other words, setting the awarded ROE far above
14 the cost of equity results in an excess transfer of wealth from customers to the utility, which
15 is never appropriate. However, it is even more inappropriate given the additional economic
16 hardships the pandemic has imposed on customers.⁵

⁴ See *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). Here, the Court states that it is not mandating the various permissible ways in which the rate of return may be determined, but instead indicates that the end result should be just and reasonable. This is sometimes called the "end result" doctrine.

⁵ See the direct testimony of OCA witnesses Noah Eastman and Roger Colton for further discussion about the effects of the COVID-19 pandemic on the Company's application in this case.

1 **Q. If 8.5% exceeds DLC’s actual cost of equity and still, in your opinion, results in an**
2 **excessive wealth transfer from shareholders to ratepayers, how can it still be**
3 **considered a just and reasonable result?**

4 A. The ratemaking concept of “gradualism,” though usually applied from ratepayers’
5 standpoint to minimize rate shock, could also be applied illustratively to shareholders. An
6 awarded return as low as 7.2% in any current rate proceeding would represent a stark and
7 substantial movement away from the “status quo,” which I prove later in the testimony,
8 involves awarded ROEs that clearly exceed market-based cost of equity for utilities.
9 However, while generally reducing awarded ROEs for utilities would move awarded
10 returns closer to market-based costs and reduce the excess transfer of wealth from
11 ratepayers to shareholders, I believe it is advisable to do so gradually. One of the primary
12 reasons DLC’s actual cost of equity is so low is because DLC is a low-risk investment. In
13 general, utility stocks are low-risk investments because movements in their stock prices are
14 not volatile. If the Commission were to make a significant, sudden change in the awarded
15 ROE anticipated by regulatory stakeholders, it could have the undesirable effect of notably
16 increasing the Company’s risk profile, which could be in contravention to the *Hope* Court’s
17 “end result” doctrine. An awarded ROE of 8.5% represents a good balance between the
18 Supreme Court’s indications that awarded ROEs should be based on cost, while also
19 recognizing that the end result must be just and reasonable under the circumstances. An
20 awarded ROE of 8.5% represents a relatively gradual, yet decisive move toward DLC’s
21 market-based cost of equity, while still providing DLC’s shareholders with the opportunity
22 to earn a return that is more than 100 basis points above DLC’s market-based cost of equity
23 (8.5% vs. 7.2%).

1 **Q. Please summarize your recommendation regarding capital structure.**

2 A. The Company proposes an equity-rich capital structure consisting of 53.35% common
3 equity and only 46.65% debt.⁶ Unlike competitive companies, which have a natural
4 financial incentive to issue sufficient amounts of debt to maximize profits, regulated
5 utilities do not have the same incentive to issue sufficient amounts of debt. However, even
6 Mr. Moul's own utility proxy group reported a debt ratio of 52%, which is substantially
7 higher than the debt ratio proposed by DLC.⁷ In addition, an objective, mathematical
8 analysis of DLC's optimal capital structure (i.e., one that might exist in a competitive
9 environment), indicates a debt ratio as high as 55%.⁸ Although there is strong evidence to
10 support an imputed debt ratio of 52% or 55% for DLC, I recommend the Commission
11 impute a debt ratio of 50% in the interest of a more gradual approach.

C. Response to the Company's Testimony

12 **Q. Please provide an overview of the problems you have identified with the Company's**
13 **testimony regarding cost of equity, capital structure, and the resulting awarded ROE.**

14 A. Mr. Moul proposes a return on equity of 10.95%.⁹ Mr. Moul's recommendation is based
15 on the CAPM, DCF Model, and other risk premium models. A summary of Mr. Moul's
16 positions are shown in the figure below.¹⁰

⁶ Direct Testimony of Paul R. Moul, p. 2.

⁷ Exhibit DJG-16.

⁸ Exhibit DJG-15.

⁹ Direct Testimony of Paul R. Moul, p. 1, lines 17-18.

¹⁰ See also Direct Testimony of Paul R. Moul, Exhibit PRM-1, Sch. 1, p. 1.

**Figure 2:
DLC Weighted Average Rate of Return Proposal**

Capital Component	Proposed Ratio	Cost Rate	Weighted Cost
Long Term Debt	46.65%	4.29%	2.00%
Common Equity	53.35%	10.95%	5.84%
Total	100.0%		7.84%

1 However, several of his key assumptions and inputs to these models violate fundamental,
2 widely accepted tenets in finance and valuation. I find several aspects of Mr. Moul’s
3 approach and resulting recommendations to be problematic, including the growth rates
4 used in his DCF models and his inflated estimate for the equity risk premium (“ERP”) used
5 in his CAPM analysis. In addition, Mr. Moul’s own risk premium model overestimates
6 the market risk premium. Finally, Mr. Moul inappropriately adds premium to his cost of
7 equity estimate for management performance, which further inflates a figure that is already
8 overestimated.

9 Regarding capital structure, Mr. Moul adopts the Company’s FPFTY capital
10 structure ratios of 46.65% long-term debt and 53.35% common equity.¹¹ As discussed in
11 my testimony, the Company does not have a financial incentive to operate with sufficient
12 amounts of debt in its capital structure, and the evidence shows that DLC’s proposed debt
13 ratio is too low.

¹¹ Direct Testimony of Paul R. Moul, p. 19, lines 16-17.

II. LEGAL STANDARDS AND THE AWARDED RETURN

1 **Q. Discuss the legal standards governing the awarded rate of return on capital**
2 **investments for regulated utilities.**

3 A. In *Wilcox v. Consolidated Gas Co. of New York*, the U.S. Supreme Court first addressed
4 the meaning of a fair rate of return for public utilities.¹² The Court found that “the amount
5 of risk in the business is a most important factor” in determining the appropriate allowed
6 rate of return.¹³ As referenced earlier, in two subsequent landmark cases, the Court set
7 forth the standards by which public utilities are allowed to earn a return on capital
8 investments. First, in *Bluefield Water Works & Improvement Co. v. Public Service*
9 *Commission of West Virginia*, the Court held:

10 A public utility is entitled to such rates as will permit it to earn a return on
11 the value of the property which it employs for the convenience of the public.
12 . . . but it has no constitutional right to profits such as are realized or
13 anticipated in highly profitable enterprises or speculative ventures. The
14 return should be reasonably sufficient to assure confidence in the financial
15 soundness of the utility and should be adequate, under efficient and
16 economical management, to maintain and support its credit and enable it to
17 raise the money necessary for the proper discharge of its public duties.¹⁴

18 Then, in *Federal Power Commission v. Hope Natural Gas Company*, the Court expanded
19 on the guidelines set forth in *Bluefield* and stated:

¹² *Wilcox v. Consolidated Gas Co. of New York*, 212 U.S. 19 (1909).

¹³ *Id.* at 48.

¹⁴ *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, 692–93 (1923).

1 From the investor or company point of view it is important that there be
2 enough revenue not only for operating expenses but also for the capital costs
3 of the business. These include service on the debt and dividends on the
4 stock. By that standard the return to the equity owner should be
5 commensurate with returns on investments in other enterprises having
6 corresponding risks. That return, moreover, should be sufficient to assure
7 confidence in the financial integrity of the enterprise, so as to maintain its
8 credit and to attract capital.¹⁵

9 The cost of capital models I have employed in this case are designed to be in accordance
10 with the foregoing legal standards.

11 **Q. Is it important that the awarded rate of return be based on the Company's actual cost**
12 **of capital?**

13 A. Yes. The U.S. Supreme Court in *Hope* makes it clear that the allowed return should be
14 based on the actual cost of capital. Moreover, the awarded return must also be fair, just,
15 and reasonable under the circumstances of each case. Among the circumstances that must
16 be considered in each case are the broad economic and financial impacts to the cost of
17 equity and awarded return caused by market forces and other factors. In this case, the
18 COVID-19 pandemic has created a substantial economic hardship to customers, as further
19 discussed in the direct testimony of OCA witnesses Noah Eastman and Roger Colton. As
20 a starting point, however, scholars agree that the actual cost of capital must be considered:

¹⁵ *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944) (emphasis added) (internal citations omitted).

1 Since by definition the cost of capital of a regulated firm represents
2 precisely the expected return that investors could anticipate from other
3 investments while bearing no more or less risk, and since investors will not
4 provide capital unless the investment is expected to yield its opportunity
5 cost of capital, the correspondence of the definition of the cost of capital
6 with the court's definition of legally required earnings appears clear.¹⁶

7 The models I have employed in this case closely estimate the Company's true cost of
8 equity. If the Commission sets the awarded return based on my lower and more reasonable
9 rate of return, it will better comply with the U.S. Supreme Court's standards, allow the
10 Company to maintain its financial integrity, and achieve reasonable returns for its
11 investors. On the other hand, if the Commission sets the allowed rate of return much higher
12 than the true cost of capital, as requested by DLC, it will result in an inappropriate transfer
13 of wealth from ratepayers to shareholders.¹⁷

14 **Q. What does this legal standard mean for determining the awarded return and the cost**
15 **of capital?**

16 A. The awarded return and the cost of capital are different but related concepts. On the one
17 hand, the legal and technical standards encompassing this issue require that the awarded
18 return reflect the true cost of capital. Yet on the other hand, the two concepts differ in that
19 the legal standards do not mandate that awarded returns exactly match the cost of capital.
20 Instead, awarded returns are set through the regulatory process and may be influenced by
21 various factors other than objective market drivers. By contrast, the cost of capital should
22 be evaluated objectively and be closely tied to economic realities, such as stock prices,

¹⁶ A Lawrence Kolbe, James A. Read, Jr. & George R. Hall, *The Cost of Capital: Estimating the Rate of Return for Public Utilities* 21 (The MIT Press 1984).

¹⁷ Roger A. Morin, *New Regulatory Finance* 23–24 (Public Utilities Reports, Inc. 2006) (1994) (“[I]f the allowed rate of return is greater than the cost of capital, capital investments are undertaken and investors’ opportunity costs are more than achieved. Any excess earnings over and above those required to service debt capital accrue to the equity holders, and the stock price increases. In this case, the wealth transfer occurs from ratepayers to shareholders.”).

1 dividends, growth rates, and, most importantly, risk. The cost of capital can be estimated
2 by financial models used by firms, investors, and academics around the world for decades.
3 The problem is, with respect to regulated utilities, there has been a trend in which awarded
4 returns fail to closely track with market-based cost of capital, as further discussed below.
5 To the extent this occurs, the results are detrimental to ratepayers and the state's economy.

6 **Q. Describe the economic impact that occurs when the awarded return strays too far**
7 **from the U.S. Supreme Court's time-honored cost of equity standards.**

8 A. When the awarded ROE is set far above the cost of equity, it runs the risk of violating the
9 U.S. Supreme Court's standards. This has the effect of diverting dollars from ratepayers
10 for their internal or business uses that would otherwise support the local or state economy
11 to the utility's shareholders at large. Moreover, establishing an awarded return that far
12 exceeds true cost of capital effectively prevents the awarded returns from changing along
13 with economic conditions. This is especially true given the fact that regulators tend to be
14 influenced by the awarded returns in other jurisdictions, regardless of the various unknown
15 factors influencing those awarded returns. If regulators rely too heavily on the awarded
16 returns from other jurisdictions, they can create a cycle over time that bears little relation
17 to the market-based cost of equity. In fact, this is exactly what we have observed since
18 1990. This is yet another reason why it is crucial for regulators to put more emphasis on
19 the target utility's actual cost of equity than on the awarded returns from other jurisdictions.
20 Awarded returns may be influenced by settlements and other political factors not based on
21 true market conditions. In contrast, the true cost of equity as estimated through objective
22 models is not influenced by these factors but is instead driven by market-based factors.

1 **Q. Can you illustrate and provide a comparison of the relationship between awarded**
2 **utility returns and market cost of equity since 1990?**

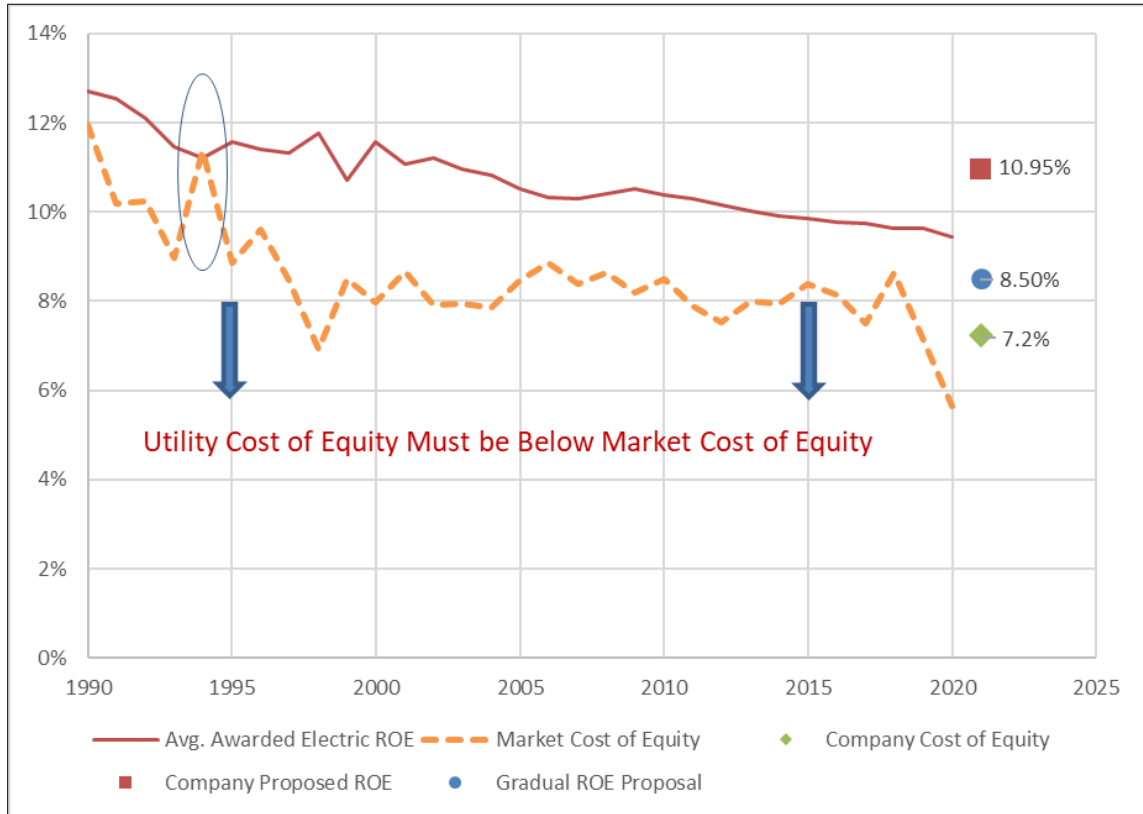
3 A. Yes. As shown in the figure below, awarded returns for electric and gas utilities have been
4 above the average required market return since 1990.¹⁸ Because utility stocks are
5 consistently far less risky than the average stock in the marketplace, the cost of equity for
6 utility companies is less than the market cost of equity.

7 To illustrate this fact, the graph in the figure below shows three trend lines. The
8 top two line are the average annual awarded returns since 1990 for U.S. regulated electric
9 and gas utilities. The bottom line is the required market return over the same period. As
10 discussed in more detail later in my testimony, the required market return is essentially the
11 return that investors would require if they invested in the entire market and, as such, the
12 required market return is essentially the cost of equity of the entire market. Since it is
13 undisputed that utility stocks are less risky than the average stock in the market, then the
14 utilities' cost of equity must be less than the market cost of equity.¹⁹ Thus, awarded returns
15 (the solid line) should generally be below the market cost of equity (the dotted line), since
16 awarded returns are supposed to be based on true cost of equity.

¹⁸ Exhibit DJG-14.

¹⁹ This fact can be objectively measured through a term called "beta," as discussed later in the testimony. Utility betas are less than one, which means utility stocks are less risky than the "average" stock in the market.

**Figure 3:
Awarded ROEs vs. Market Cost of Equity**



1 Notwithstanding the data in this graph, awarded ROEs have been consistently above the
 2 market cost of equity for many years. Also as shown in this graph, since 1990, there was
 3 only one year in which the average awarded ROE was below the market cost of equity. In
 4 1994, regulators awarded ROEs that were the closest to utilities' market-based cost of
 5 equity. In my opinion, when awarded ROEs for utilities are below the market cost of
 6 equity, regulators more closely conform to the standards set forth by *Hope* and *Bluefield*
 7 and minimize the excess wealth transfer from ratepayers to shareholders.

1 **Q. Have other analysts commented on this national phenomenon of awarded ROEs**
2 **exceeding market-based cost equity for utilities?**

3 A. Yes. In his article published in Public Utilities Fortnightly in 2016, Steve Huntoon
4 observed that even though utility stocks are less risky than the stocks of competitive
5 industries, utility stocks have nonetheless outperformed the broader market.²⁰ Specifically,
6 Mr. Huntoon notes the following three points which lead to a problematic conclusion:

7 1. Jack Bogle, the founder of Vanguard Group and a Wall Street
8 legend, provides rigorous analysis that the long-term total return for
9 the broader market will be around 7 percent going forward. Another
10 Wall Street legend, Professor Burton Malkiel, corroborates that 7
11 percent in the latest edition of his seminal work, A Random Walk
12 Down Wall Street.

13 2. Institutions like pension funds are validating the first point by piling
14 on risky investments to try and get to a 7.5 percent total return, as
15 reported by the Wall Street Journal.

16 3. Utilities are being granted returns on equity around 10 percent.²¹

17 Other scholars have also observed that awarded ROEs have not appropriately
18 tracked with declining interest rates over the years, and that excessive awarded ROEs have
19 negative economic impacts. In a white paper issued in 2017, Charles S. Griffey stated:

²⁰ Steve Huntoon, “Nice Work If you can Get It,” Public Utilities Fortnightly (Aug. 2016).

²¹ *Id.*

1 The “risk premium” being granted to utility shareholders is now higher than
2 it has ever been over the last 35 years. Excessive utility ROEs are
3 detrimental to utility customers and the economy as a whole. From a societal
4 standpoint, granting ROEs that are higher than necessary to attract
5 investment creates an inefficient allocation of capital, diverting available
6 funds away from more efficient investments. From the utility customer
7 perspective, if a utility’s awarded and/or achieved ROE is higher than
8 necessary to attract capital, customers pay higher rates without receiving
9 any corresponding benefit.²²

10 It is interesting that both Mr. Huntoon and Mr. Griffey use the word “sticky” in their articles
11 to describe the fact that awarded ROEs have declined at a much slower rate than interest
12 rates and other economic factors resulting in a decline in capital costs and expected returns
13 on the market. It is not hard to see why this phenomenon of “sticky” ROEs has occurred.
14 Because awarded ROEs are often based primarily on a comparison with other awarded
15 ROEs around the country, the average awarded returns effectively fail to adapt to true
16 market conditions, and regulators seem reluctant to deviate from the average. Once utilities
17 and regulatory commissions become accustomed to awarding rates of return higher than
18 market conditions actually require, this trend becomes difficult to reverse. The fact is,
19 utility stocks are less risky than the average stock in the market, and thus, awarded ROEs
20 should be less than the expected return on the market. However, that is rarely the case.
21 My proposal assists the Commission in “see[ing] the gap between allowed returns and cost
22 of capital,”²³ and reconciling this issue in an equitable manner.

²² Charles S. Griffey, “When ‘What Goes Up’ Does Not Come Down: Recent Trends in Utility Returns,” White Paper (February 2017).

²³ Leonard Hyman & William Tilles, “Don’t Cry for Utility Shareholders, America,” Public Utilities Fortnightly (October 2016).

1 **Q. Summarize the legal standards governing the awarded ROE issue.**

2 A. The Commission should strive to move the awarded return to a level more closely aligned
3 with the Company's actual, market-derived cost of capital while keeping in mind the
4 following two legal principles outlined below.

5 **1. Risk is the most important factor when determining the awarded return. The**
6 **awarded return should be commensurate with those returns on investments of**
7 **corresponding risk.**

8 The legal standards articulated in *Hope* and *Bluefield* demonstrate that the U.S. Supreme
9 Court understands one of the most basic, fundamental concepts in financial theory: the
10 more (or less) risk an investor assumes, the more (or less) return the investor requires.
11 Since utility stocks are low risk, the return required by equity investors should be relatively
12 low. I have used financial models to closely estimate the Company's cost of equity, and
13 these financial models account for risk. The cost of equity models confirm the industry
14 experiences relatively low levels of risk by producing relatively low cost of equity results.
15 In turn, the awarded ROE in this case should reflect DLC's relatively low market risk.

16 **2. The awarded return should be sufficient to assure financial soundness and**
17 **integrity under efficient management.**

18 Because awarded returns in the regulatory environment have not closely tracked market-
19 based trends and commensurate risk, utility companies have been able to remain more than
20 financially sound, perhaps despite management inefficiencies. In fact, the transfer of
21 wealth from ratepayers to shareholders has been so far removed from actual cost-based
22 drivers that a utility could remain financially sound even under relatively inefficient
23 management. Therefore, regulatory commissions should strive to set utilities' returns
24 based on actual market conditions to promote prudent and efficient management and
25 minimize economic waste.

III. GENERAL CONCEPTS AND METHODOLOGY

1 **Q. Discuss your approach to estimating the cost of equity in this case.**

2 A. While a competitive firm must estimate its own cost of capital to assess the profitability of
3 competing capital projects, regulators determine a utility's cost of capital to establish a fair
4 rate of return. The legal standards set forth above do not include specific guidelines
5 regarding the models that must be used to estimate the cost of equity for utilities. Over the
6 years, however, regulatory commissions have consistently relied on several models. The
7 models I have employed in this case have been the two most widely used and accepted in
8 regulatory proceedings for many years. The specific inputs and calculations for these
9 models are described in more detail below.

10 **Q. Please explain why you used multiple models to estimate the cost of equity.**

11 A. These models attempt to measure the return on equity required by investors by estimating
12 several different inputs. It is preferable to use multiple models because the results of any
13 one model may contain a degree of imprecision, especially depending on the reliability of
14 the inputs used at the time of conducting the model. By using multiple models, the analyst
15 can compare the results of the models and look for outlying results and inconsistencies.
16 Likewise, if multiple models produce a similar result, it may indicate a narrower range for
17 the cost of equity estimate.

18 **Q. Please discuss the benefits of choosing a proxy group of companies in conducting cost**
19 **of capital analyses.**

20 A. The cost of equity models in this case can be used to estimate the cost of capital of any
21 individual, publicly traded company. There are advantages, however, to conducting cost
22 of capital analysis on a proxy group of companies that are comparable to the target

1 company. First, it is better to assess the financial soundness of a utility by comparing it to
2 a group of other financially sound utilities. Second, using a proxy group provides more
3 reliability and confidence in the overall results because there is a larger sample size.
4 Finally, the use of a proxy group is often a pure necessity when the target company is a
5 subsidiary that is not publicly traded. This is because the financial models used to estimate
6 the cost of equity require information from publicly traded firms, such as stock prices and
7 dividends.

8 **Q. Describe the proxy group you selected in this case.**

9 A. In this case, I chose to use the same proxy group used by Mr. Moul. There could be
10 reasonable arguments made for the inclusion or exclusion of a particular company in a
11 proxy group; however, the cost of equity results are influenced far more by the underlying
12 assumptions and inputs to the various financial models than the composition of the proxy
13 group.²⁴ By using the same proxy group, we can remove a relatively insignificant variable
14 from the equation and focus on the primary factors driving DLC's cost of equity estimate.

IV. RISK AND RETURN CONCEPTS

15 **Q. Discuss the general relationship between risk and return.**

16 A. Risk is among the most important factors for the Commission to consider when
17 determining the allowed return. Thus, it is necessary to understand the relationship
18 between risk and return. There is a direct relationship between risk and return: the more
19 (or less) risk an investor assumes, the larger (or smaller) return the investor will demand.

²⁴ Exhibit DJG-2.

1 There are two primary types of risk: firm-specific risk and market risk. Firm-specific risk
2 affects individual companies, while market risk affects all companies in the market to
3 varying degrees.

4 **Q. Discuss the differences between firm-specific risk and market risk.**

5 A. Firm-specific risk affects individual companies, rather than the entire market. For example,
6 a competitive firm might overestimate customer demand for a new product, resulting in
7 reduced sales revenue. This is an example of a firm-specific risk called “project risk.”²⁵
8 There are several other types of firm-specific risks, including: (1) “financial risk” – the risk
9 that equity investors of leveraged firms face as residual claimants on earnings; (2) “default
10 risk” – the risk that a firm will default on its debt securities; and (3) “business risk” – which
11 encompasses all other operating and managerial factors that may result in investors
12 realizing less than their expected return in that particular company. While firm-specific
13 risk affects individual companies, market risk affects all companies in the market to
14 varying degrees. Examples of market risk include interest rate risk, inflation risk, and the
15 risk of major socio-economic events. When there are changes in these risk factors, they
16 affect all firms in the market to some extent.²⁶

17 Analysis of the U.S. market in 2001 provides a good example for contrasting firm-
18 specific risk and market risk. During that year, Enron Corp.’s stock fell from \$80 per share
19 to its low when the company filed bankruptcy at the end of the year. If an investor’s
20 portfolio had held only Enron stock at the beginning of 2001, this irrational investor would

²⁵ Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 62–63 (3rd ed., John Wiley & Sons, Inc. 2012).

²⁶ See Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 149 (9th ed., McGraw-Hill/Irwin 2013).

1 have lost the entire investment by the end of the year due to assuming the full exposure of
2 Enron's firm-specific risk (in that case, imprudent management). On the other hand, a
3 rational, diversified investor who invested the same amount of capital in a portfolio holding
4 every stock in the S&P 500 would have had a much different result that year. The rational
5 investor would have been relatively unaffected by the fall of Enron because his or her
6 portfolio included about 499 other stocks. Each of those stocks, however, would have been
7 affected by various market risk factors that occurred that year. Thus, the rational investor
8 would have incurred a relatively minor loss due to market risk factors, while the irrational
9 investor would have lost everything due to firm-specific risk factors.

10 **Q. Can equity investors reasonably minimize firm-specific risk?**

11 A. Yes. A fundamental concept in finance is that firm-specific risk can be eliminated through
12 diversification.²⁷ If someone irrationally invested all his or her funds in one firm, he or she
13 would be exposed to all the firm-specific risk and the market risk inherent in that single
14 firm. Rational investors, however, are risk-averse and seek to eliminate risk they can
15 control. Investors can eliminate firm-specific risk by adding more stocks to their portfolio
16 through a process called "diversification." There are two reasons why diversification
17 eliminates firm-specific risk.

18 First, each stock in a diversified portfolio represents a much smaller percentage of
19 the overall portfolio than it would in a portfolio of just one or a few stocks. Thus, any firm-

²⁷ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 179–80 (3rd ed., South Western Cengage Learning 2010).

1 specific action that changes the stock price of one stock in the diversified portfolio will
2 have only a small impact on the entire portfolio.²⁸

3 The second reason why diversification eliminates firm-specific risk is that the
4 effects of firm-specific actions on stock prices can be either positive or negative for each
5 stock. Thus in large, diversified portfolios, the net effect of these positive and negative
6 firm-specific risk factors will be essentially zero and will not affect the value of the overall
7 portfolio.²⁹ Firm-specific risk is also called “diversifiable risk” because it can be easily
8 eliminated through diversification.

9 **Q. Is it well-known and accepted that, because firm-specific risk can be easily eliminated**
10 **through diversification, the market does not reward such risk through higher**
11 **returns?**

12 A. Yes. Because investors eliminate firm-specific risk through diversification, they know they
13 cannot expect a higher return for assuming the firm-specific risk in any one company.
14 Thus, the risks associated with an individual firm’s operations are not rewarded by the
15 market. In fact, firm-specific risk is also called “unrewarded” risk for this reason. Market
16 risk, on the other hand, cannot be eliminated through diversification. Because market risk
17 cannot be eliminated through diversification, investors expect a return for assuming this
18 type of risk. Market risk is also called “systematic risk.” Scholars recognize the fact that
19 market risk, or systematic risk, is the only type of risk for which investors expect a return
20 for bearing:

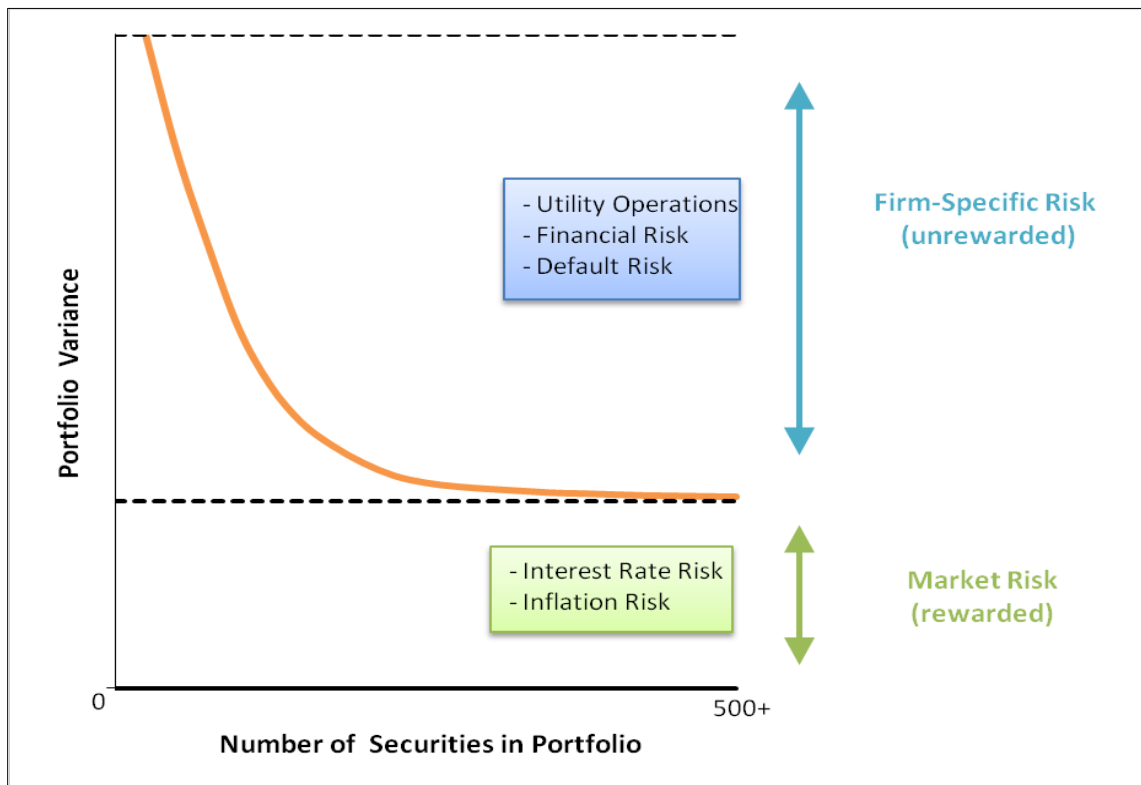
²⁸ See Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 64 (3rd ed., John Wiley & Sons, Inc. 2012).

²⁹ See Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 64 (3rd ed., John Wiley & Sons, Inc. 2012).

1 If investors can cheaply eliminate some risks through diversification, then
2 we should not expect a security to earn higher returns for risks that can be
3 eliminated through diversification. Investors can expect compensation only
4 for bearing systematic risk (i.e., risk that cannot be diversified away).³⁰

5
6 These important concepts are illustrated in the figure below. Some form of this figure is
7 found in many financial textbooks.

**Figure 4:
Effects of Portfolio Diversification**



8 This figure shows that as stocks are added to a portfolio, the amount of firm-specific risk
9 is reduced until it is essentially eliminated. No matter how many stocks are added,
10 however, there remains a certain level of fixed market risk. The level of market risk will

³⁰ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180 (3rd ed., South Western Cengage Learning 2010) (emphasis added).

1 vary from firm to firm. Market risk is the only type of risk that is rewarded by the market
2 and is thus the primary type of risk the Commission should consider when determining the
3 allowed return.

4 **Q. Describe how market risk is measured.**

5 A. Investors who want to eliminate firm-specific risk must hold a fully diversified portfolio.
6 To determine the amount of risk that a single stock adds to the overall market portfolio,
7 investors measure the covariance between a single stock and the market portfolio. The
8 result of this calculation is called “beta.”³¹ Beta represents the sensitivity of a given
9 security to the market as a whole. The market portfolio of all stocks has a beta equal to
10 one. Stocks with betas greater than 1.0 are relatively more sensitive to market risk than the
11 average stock. For example, if the market increases (or decreases) by 1.0%, a stock with a
12 beta of 1.5 will, on average, increase (or decrease) by 1.5%. In contrast, stocks with betas
13 of less than 1.0 are less sensitive to market risk, such that if the market increases (or
14 decreases) by 1.0%, a stock with a beta of 0.5 will, on average, only increase (or decrease)
15 by 0.5%. Thus, stocks with low betas are relatively insulated from market conditions. The
16 beta term is used in the CAPM to estimate the cost of equity, which is discussed in more
17 detail later.³²

³¹ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180–81 (3rd ed., South Western Cengage Learning 2010).

³² Though it will be discussed in more detail later, Exhibit DJG-8 shows that the average beta of the proxy group was less than 1.0. This confirms the well-known concept that utilities are relatively low-risk firms.

1 **Q. Are public utilities characterized as defensive firms that have low betas, have low**
2 **market risk, and are relatively insulated from overall market conditions?**

3 A. Yes. Although market risk affects all firms in the market, it affects different firms to
4 varying degrees. Firms with high betas are affected more than firms with low betas, which
5 is why firms with high betas are riskier. Stocks with betas greater than one are generally
6 known as “cyclical stocks.” Firms in cyclical industries are sensitive to recurring patterns
7 of recession and recovery known as the “business cycle.”³³ Thus, cyclical firms are
8 exposed to a greater level of market risk. Securities with betas less than one, on the other
9 hand, are known as “defensive stocks.” Companies in defensive industries, such as public
10 utility companies, “will have low betas and performance that is comparatively unaffected
11 by overall market conditions.”³⁴ In fact, financial textbooks often use utility companies as
12 prime examples of low-risk, defensive firms.³⁵ The figure below compares the betas of
13 several industries and illustrates that the utility industry is one of the least risky industries
14 in the U.S. market.³⁶

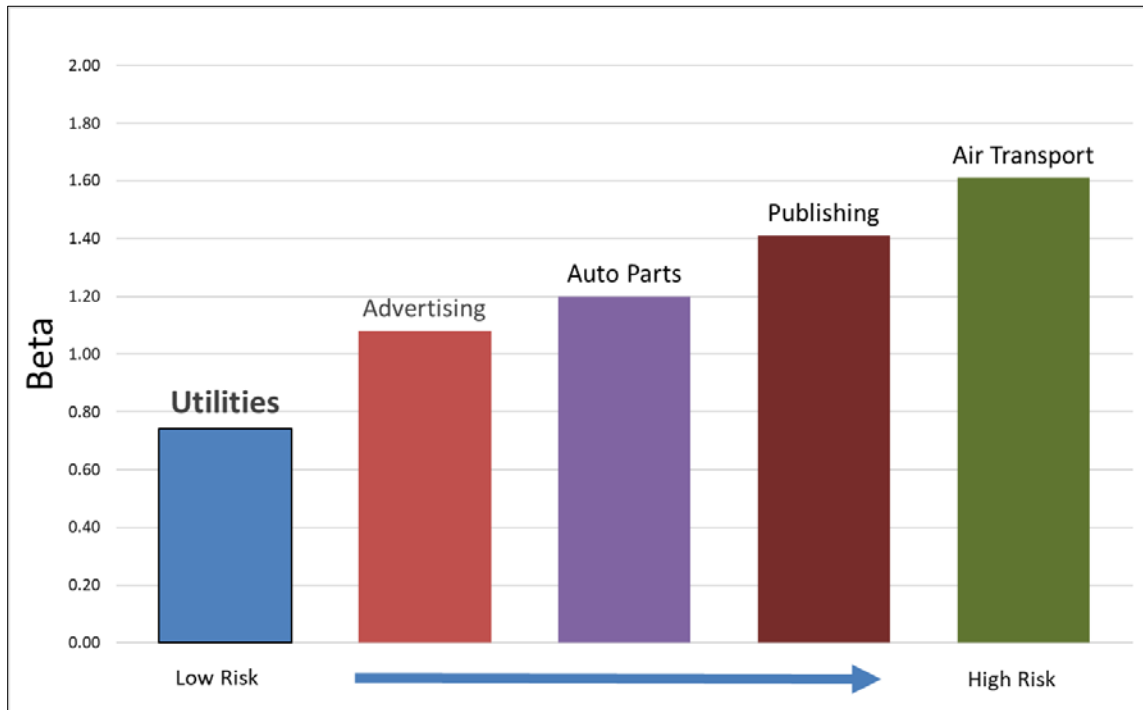
³³ See Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 382 (9th ed., McGraw-Hill/Irwin 2013).

³⁴ Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 383 (9th ed., McGraw-Hill/Irwin 2013).

³⁵ See e.g., Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 382 (9th ed., McGraw-Hill/Irwin 2013); see also Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 196 (3rd ed., John Wiley & Sons, Inc. 2012).

³⁶ See Betas by Sector (US) at <http://pages.stern.nyu.edu/~adamodar/>. The exact beta calculations are not as important as illustrating the well-known fact that utilities are low-risk companies. The fact that the utility industry is one of the lowest risk industries in the country should not change from year to year.

**Figure 5:
Beta by Industry**



1 The fact that utilities are defensive firms that are exposed to little market risk is
2 beneficial to society. When the business cycle enters a recession, consumers can be assured
3 that their utility companies will be able to maintain normal business operations and provide
4 safe and reliable service under prudent management. Likewise, utility investors can be
5 confident that utility stock prices will not fluctuate widely. So, while it is preferable for
6 utilities to be defensive firms that experience little market risk and relatively insulated from
7 market conditions, this should also be appropriately reflected in DLC’s awarded return.

V. DCF ANALYSIS

8 **Q. Describe the DCF Model.**

9 A. The DCF Model is based on a fundamental financial model called the “dividend discount
10 model,” which maintains that the value of a security is equal to the present value of the

1 future cash flows it generates. Cash flows from common stock are paid to investors in the
2 form of dividends. There are several variations of the DCF Model. These versions, along
3 with other formulas and theories related to the DCF Model are discussed in more detail in
4 Appendix A. For this case, I chose to use the Quarterly Approximation DCF Model
5 because it accounts for the quarterly growth of dividends (as opposed to annual growth). I
6 also used this variation of the DCF Model in the interest of reasonableness, as it produces
7 the highest cost of equity estimates compared with the other DCF Model variations.

8 **Q. Describe the inputs to the DCF Model.**

9 A. There are three primary inputs in the DCF Model: (1) stock price; (2) dividend; and (3) the
10 long-term growth rate. The stock prices and dividends are known inputs based on recorded
11 data, while the growth rate projection must be estimated. The formula is presented as
12 follows:

**Equation 2:
Quarterly Approximation Discounted Cash Flow Model**

$$K = \left[\frac{d_0(1+g)^{1/4}}{P_0} + (1+g)^{1/4} \right]^4 - 1$$

13
14
15
where: K = *discount rate / required return*
 d_0 = *current quarterly dividend per share*
 P_0 = *stock price*
 g = *expected growth rate of future dividends*

I discuss each of these inputs separately below.

1 **A. Stock Price**

2 **Q. How did you determine the stock price input of the DCF Model?**

3 A. For the stock price (P_0), I used a 30-day average of stock prices for each company in the
4 proxy group.³⁷ Analysts sometimes rely on average stock prices for longer periods (e.g.,
5 60, 90, or 180 days). According to the efficient market hypothesis, however, markets
6 reflect all relevant information available at a particular time, and prices adjust
7 instantaneously to the arrival of new information.³⁸ Past stock prices, in essence, reflect
8 outdated information. The DCF Model used in utility rate cases is a derivation of the
9 dividend discount model, which is used to determine the current value of an asset. Thus,
10 according to the dividend discount model and the efficient market hypothesis, the value for
11 the “ P_0 ” term in the DCF Model should technically be the current stock price, rather than
12 an average.

13 **Q. Why did you use a 30-day average for the current stock price input?**

14 A. Using a short-term average of stock prices for the current stock price input adheres to
15 market efficiency principles while avoiding any irregularities that may arise from using a
16 single current stock price. In the context of a utility rate proceeding there is a significant
17 length of time from when an application is filed, and testimony is due. Choosing a current
18 stock price for one particular day could raise a separate issue concerning which day was
19 chosen to be used in the analysis. In addition, a single stock price on a particular day may
20 be unusually high or low. It is arguably ill-advised to use a single stock price in a model

³⁷ Exhibit DJG-3.

³⁸ See Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, Vol. 25, No. 2 The Journal of Finance 383 (1970).

1 that is ultimately used to set rates for several years, especially if a stock is experiencing
2 some volatility. Thus, it is preferable to use a short-term average of stock prices, which
3 represents a good balance between adhering to well-established principles of market
4 efficiency while avoiding any unnecessary contentions that may arise from using a single
5 stock price on a given day. The stock prices I used in my DCF analysis are based on 30-
6 day averages of adjusted closing stock prices for each company in the proxy group.³⁹

7 **B. Dividend**

8 **Q. Describe how you determined the dividend input of the DCF Model.**

9 A. The dividend term in the Quarterly Approximation DCF Model is the current quarterly
10 dividend per share (d_0). I obtained the most recent quarterly dividend paid for each proxy
11 company.⁴⁰ The Quarterly Approximation DCF Model assumes that the company
12 increases its dividend payments each quarter. Thus, the model assumes that each quarterly
13 dividend is greater than the previous one by $(1 + g)^{0.25}$. This expression could be described
14 as the dividend quarterly growth rate, where the term “g” is the growth rate and the
15 exponential term “0.25” signifies one quarter of the year.

16 **Q. Does the Quarterly Approximation DCF Model result in the highest cost of equity in 17 this case relative to other DCF Models, all else held constant?**

18 A. Yes. The Quarterly Approximation DCF Model I employed in this case results in a higher
19 DCF cost of equity estimate than the annual or semi-annual DCF Models due to the

³⁹ Exhibit DJG-3. Adjusted closing prices, rather than actual closing prices, are ideal for analyzing historical stock prices. The adjusted price provides an accurate representation of the firm’s equity value beyond the mere market price because it accounts for stock splits and dividends.

⁴⁰ Exhibit DJG-4. Nasdaq Dividend History, <http://www.nasdaq.com/quotes/dividend-history.aspx>.

1 quarterly compounding of dividends inherent in the model. In essence, the Quarterly
2 Approximation DCF Model I used results in the highest cost of equity estimate, all else
3 held constant.

4 **Q. Are the stock price and dividend inputs for each proxy company a significant issue in**
5 **this case?**

6 A. No. Although my stock price and dividend inputs are more recent than those used by Mr.
7 Moul, there is not a statistically significant difference between them because utility stock
8 prices and dividends are generally quite stable. This is another reason that cost of capital
9 models such as the CAPM and the DCF Model are well-suited to be used for utilities. The
10 differences between my DCF Model and Mr. Moul's DCF Model are primarily driven by
11 differences in our growth rate estimates, which are further discussed below.

12 **C. Growth Rate**

13 **Q. Summarize the growth rate input in the DCF Model.**

14 A. The most critical input in the DCF Model is the growth rate. Unlike the stock price and
15 dividend inputs, the growth rate input (g) must be estimated. As a result, the growth rate
16 is often the most contentious DCF input in utility rate cases. The DCF model used in this
17 case is based on the constant growth valuation model. Under this model, a stock is valued
18 by the present value of its future cash flows in the form of dividends. Before future cash
19 flows are discounted by the cost of equity, however, they must be "grown" into the future
20 by a long-term growth rate. As stated above, one of the inherent assumptions of this model
21 is that these cash flows in the form of dividends grow at a constant rate forever. Thus, the
22 growth rate term in the constant growth DCF model is often called the "constant," "stable,"
23 or "terminal" growth rate. For young, high-growth firms, estimating the growth rate to be

1 used in the model can be especially difficult, and may require the use of multi-stage growth
2 models. For mature, low-growth firms such as utilities, however, estimating the terminal
3 growth rate is more transparent. The growth term of the DCF Model is one of the most
4 important, yet apparently most misunderstood, aspects of cost of equity estimations in
5 utility regulatory proceedings. Therefore, I have devoted a more detailed explanation of
6 this issue in the following sections, which are organized as follows:

- 7 (1) The Various Determinants of Growth
- 8 (2) Reasonable Estimates for Long-Term Growth
- 9 (3) Quantitative vs. Qualitative Determinants of Utility Growth:
10 Circular References, “Flatworm” Growth, and the Problem with
11 Analysts’ Growth Rates
- 12 (4) Growth Rate Recommendation

13 **1. The Various Determinants of Growth**

14 **Q. Describe the various determinants of growth.**

15 A. Although the DCF Model directly considers the growth of dividends, there are a variety of
16 growth determinants that should be considered when estimating growth rates. It should be
17 noted that these various growth determinants are used primarily to determine the short-
18 term growth rates in multi-stage DCF models. For utility companies, it is necessary to
19 focus primarily on long-term growth rates, which are discussed in the following section.
20 That is not to say that these growth determinants cannot be considered when estimating
21 long-term growth; however, as discussed below, long-term growth must be constrained
22 much more than short-term growth, especially for young firms with high growth
23 opportunities. Additionally, I briefly discuss these growth determinants here because it
24 may reveal some of the source of confusion in this area.

1 A. Historical Growth

2 Looking at a firm’s actual historical experience may theoretically provide a good
3 starting point for estimating short-term growth. However, past growth is not always a good
4 indicator of future growth. Some metrics that might be considered here are a historical
5 growth in revenues, operating income, and net income. Since dividends are paid from
6 earnings, estimating historical earnings growth may provide an indication of future
7 earnings and dividend growth. In general, however, revenue growth tends to be more
8 consistent and predictable than earnings growth because it is less likely to be influenced by
9 accounting adjustments.⁴¹

10 B. Analyst Growth Rates

11 Analyst growth rates refer to short-term projections of earnings growth published
12 by institutional research analysts such as Value Line and Bloomberg. A more detailed
13 discussion of analyst growth rates, including the problems with using them in the DCF
14 Model to estimate utility cost of equity, is provided in a later section.

15 C. Fundamental Determinants of Growth

16 Fundamental growth determinants refer to firm-specific financial metrics that
17 arguably provide better indications of near-term sustainable growth. One such metric for
18 fundamental growth considers the return on equity and the retention ratio. The idea behind

⁴¹ See Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 279 (3rd ed., John Wiley & Sons, Inc. 2012).

1 this metric is that firms with high ROEs and retention ratios should have greater
2 opportunities for growth.⁴²

3 **Q. Did you use any of these growth determinants in your DCF Model?**

4 A. No. Primarily, these growth determinants discussed above would provide better
5 indications of short- to mid-term growth for firms with average to high growth
6 opportunities. Utilities, however, are mature, low-growth firms. While it may not be
7 unreasonable on its face to use any of these growth determinants for the growth input in
8 the DCF Model, we must keep in mind that the stable growth DCF Model considers only
9 long-term growth rates, which are constrained by certain economic factors, as discussed
10 further below.

11 **2. Reasonable Estimates for Long-Term Growth**

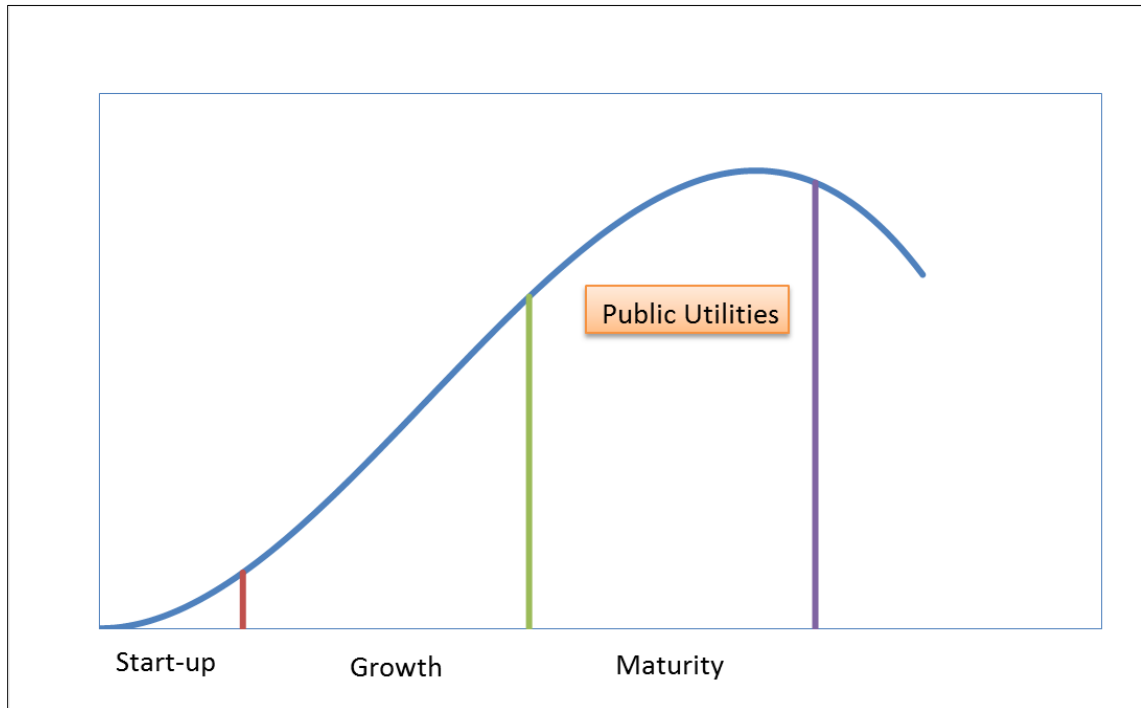
12 **Q. Describe what is meant by long-term growth.**

13 A. In order to make the DCF Model a viable, practical model, an infinite stream of future cash
14 flows must be estimated and then discounted back to the present. Otherwise, each annual
15 cash flow would have to be estimated separately. Some analysts use “multi-stage” DCF
16 Models to estimate the value of high-growth firms through two or more stages of growth,
17 with the final stage of growth being constant. However, it is not necessary to use multi-
18 stage DCF Models to analyze the cost of equity of regulated utility companies. This is
19 because regulated utilities are already in their “terminal,” low growth stage. Unlike most
20 competitive firms, the growth of regulated utilities is constrained by physical service

⁴² Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 279 (3rd ed., John Wiley & Sons, Inc. 2012).

1 territories and limited primarily by ratepayer and load growth within those territories. The
2 figure below illustrates the well-known business/industry life-cycle pattern.

**Figure 6:
Industry Life Cycle**



3 In an industry's early stages, there are ample opportunities for growth and profitable
4 reinvestment. In the maturity stage however, growth opportunities diminish, and firms
5 choose to pay out a larger portion of their earnings in the form of dividends instead of
6 reinvesting them in operations to pursue further growth opportunities. Once a firm is in
7 the maturity stage, it is not necessary to consider higher short-term growth metrics in multi-
8 stage DCF Models; rather, it is sufficient to analyze the cost of equity using a stable growth
9 DCF Model with one terminal, long-term growth rate.

1 **Q. Is it true that the terminal growth rate cannot exceed the growth rate of the economy,**
2 **especially for a regulated utility company?**

3 A. Yes. A fundamental concept in finance is that no firm can grow forever at a rate higher
4 than the growth rate of the economy in which it operates.⁴³ Thus, the terminal growth rate
5 used in the DCF Model should not exceed the aggregate economic growth rate. This is
6 especially true when the DCF Model is conducted on public utilities because these firms
7 have defined service territories. As stated by Dr. Damodaran: “[i]f a firm is a purely
8 domestic company, either because of internal constraints . . . or external constraints (such
9 as those imposed by a government), the growth rate in the domestic economy will be the
10 limiting value.”⁴⁴

11 In fact, it is reasonable to assume that a regulated utility would grow at a rate that
12 is less than the U.S. economic growth rate. Unlike competitive firms, which might increase
13 their growth by launching a new product line, franchising, or expanding into new and
14 developing markets, utility operating companies with defined service territories cannot do
15 any of these things to grow. Gross Domestic Product (“GDP”) is one of the most widely
16 used measures of economic production and is used to measure aggregate economic growth.
17 According to the Congressional Budget Office’s Budget Outlook, the long-term forecast
18 for nominal U.S. GDP growth is about 4%, which includes an inflation rate of 2%.⁴⁵ For
19 mature companies in mature industries, such as utility companies, the terminal growth rate

⁴³ See Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 306 (3rd ed., John Wiley & Sons, Inc. 2012).

⁴⁴ Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 306 (3rd ed., John Wiley & Sons, Inc. 2012).

⁴⁵ Congressional Budget Office Long-Term Budget Outlook, <https://www.cbo.gov/publication/56977> (last accessed June 22, 2021).

1 will likely fall between the expected rate of inflation and the expected rate of nominal GDP
2 growth. Thus, DLC's terminal growth rate is between 2% and 4%.

3 **Q. Is it reasonable to assume that the terminal growth rate will not exceed the risk-free**
4 **rate?**

5 A. Yes. In the long term, the risk-free rate will converge on the growth rate of the economy.
6 For this reason, financial analysts sometimes use the risk-free rate for the terminal growth
7 rate value in the DCF model.⁴⁶ I discuss the risk-free rate in further detail later in this
8 testimony.

9 **Q. Please summarize the various long-term growth rate estimates that can be used as the**
10 **terminal growth rate in the DCF Model.**

11 A. The reasonable long-term growth rate determinants are summarized as follows:

- 12 1. Nominal GDP Growth
- 13 2. Real GDP Growth
- 14 3. Inflation
- 15 4. Current Risk-Free Rate

16 Any of the foregoing growth determinants could provide a basis for a reasonable input for
17 the terminal growth rate in the DCF Model for a utility company, including DLC. In
18 general, we should expect that utilities will, at the very least, grow at the rate of projected
19 inflation. However, the long-term growth rate of any U.S. company, especially utilities,
20 will be constrained by nominal U.S. GDP growth.

⁴⁶ Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 307 (3rd ed., John Wiley & Sons, Inc. 2012).

1 **3. Qualitative Growth: The Problem with Analysts' Growth Rates**

2 **Q. Describe the differences between “quantitative” and “qualitative” growth**
3 **determinants.**

4 A. Assessing “quantitative” growth simply involves mathematically calculating a historic
5 metric for growth (such as revenues or earnings) or calculating various fundamental growth
6 determinants using certain figures from a firm’s financial statements (such as ROE and the
7 retention ratio). However, any thorough assessment of company growth should be based
8 upon a “qualitative” analysis. Such an analysis would consider specific strategies that
9 company management will implement to achieve real sustainable growth in earnings.
10 Therefore, it is important to begin the analysis of DLC’s growth rate with this simple,
11 qualitative question: how is this regulated utility going to achieve a real sustained growth
12 in earnings? If this question were asked of a competitive firm, there could be several
13 answers depending on the type of business model, such as launching a new product line,
14 franchising, rebranding to target a new demographic, or expanding into a developing
15 market. Regulated utilities, however, cannot engage in these potential growth
16 opportunities.

17 **Q. Why is it especially important to emphasize real, qualitative growth determinants**
18 **when analyzing whether a growth rate is fair for a regulated utility?**

19 A. While qualitative growth analysis is important regardless of the entity being analyzed, it is
20 especially important in the context of utility ratemaking. This is because the rate base rate
21 of return model inherently possesses two factors that can contribute to distorted views of
22 utility growth when considered exclusively from a quantitative perspective. These two
23 factors are: (1) rate base and (2) the awarded ROE. I will discuss each factor further below.
24 It is important to keep in mind that the ultimate objective of this analysis is to provide a

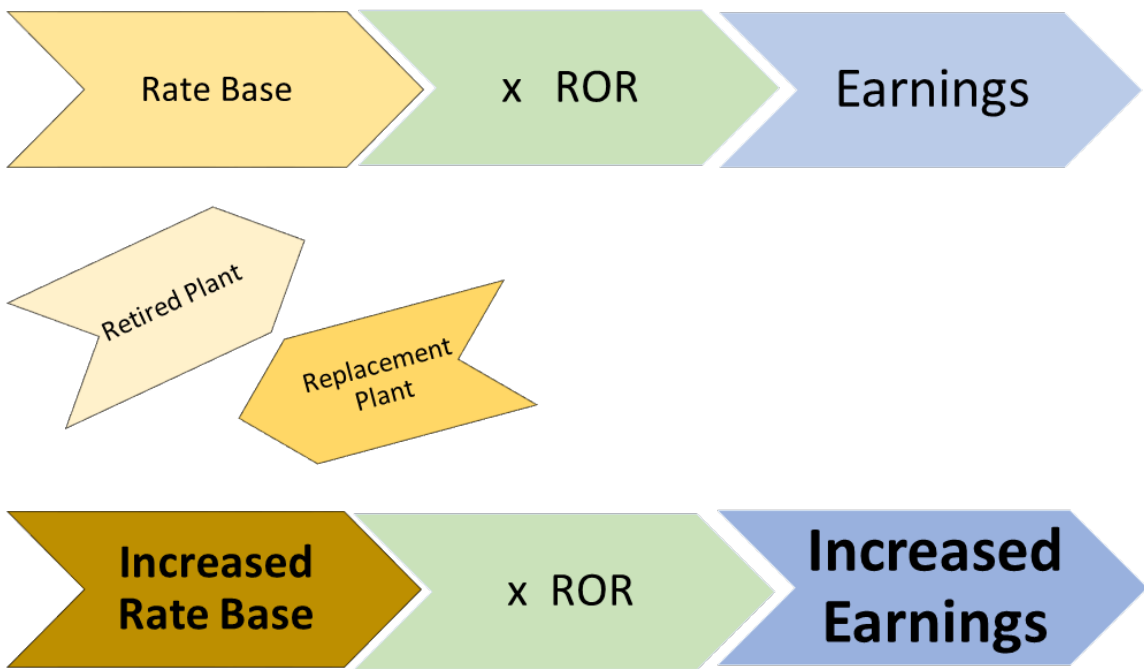
1 foundation upon which to base the fair rate of return for the utility. Thus, we should strive
2 to ensure that each individual component of the financial models used to estimate the cost
3 of equity are also fair. If we consider only quantitative growth determinants, it may lead
4 to projected growth rates that are overstated and ultimately unfair, because they result in
5 inflated cost of equity estimates.

6 **Q. How does rate base relate to growth determinants for utilities?**

7 A. Under the rate base rate of return model, a utility's rate base is multiplied by its awarded
8 rate of return to produce the required level of operating income. Therefore, increases to
9 rate base generally result in increased earnings. Thus, utilities have a natural financial
10 incentive to increase rate base. In short, utilities have a financial incentive to increase rate
11 base regardless of whether such increases are driven by a corresponding increase in
12 demand. A good, relevant example of this is seen in the early retirement of old, but
13 otherwise functional coal plants in response to environmental regulations and replacing
14 them with new generation assets. Under these circumstances, utilities have been able to
15 increase their rate bases by a far greater extent than what any concurrent increase in demand
16 would have required. In other words, utilities grew their earnings by simply retiring old
17 assets and replacing them with new assets. This is not "real" or "sustainable" growth. If
18 the tail of a flatworm is removed and regenerated, it does not mean the flatworm actually
19 grew. Likewise, if a competitive, unregulated firm announced plans to close production
20 plants and replace them with new plants, it would not be considered a real determinant of
21 growth unless analysts believed this decision would directly result in increased market
22 share for the company and a real opportunity for sustained increases in revenues and
23 earnings. In the case of utilities, the mere replacement of "old plant" with "new plant"

1 does not increase market share, attract new ratepayers, create franchising opportunities, or
2 allow utilities to penetrate developing markets, but may result in short-term, quantitative
3 earnings growth. However, this “flatworm growth” in earnings was merely the quantitative
4 byproduct of the rate base rate of return model, and not an indication of real or qualitative
5 growth and, therefore, using that data alone to estimate a growth rate is not fair. The
6 following diagram in the figure below illustrates this concept.

**Figure 7:
Analysts’ Earnings Growth Projections: The “Flatworm Growth” Problem**

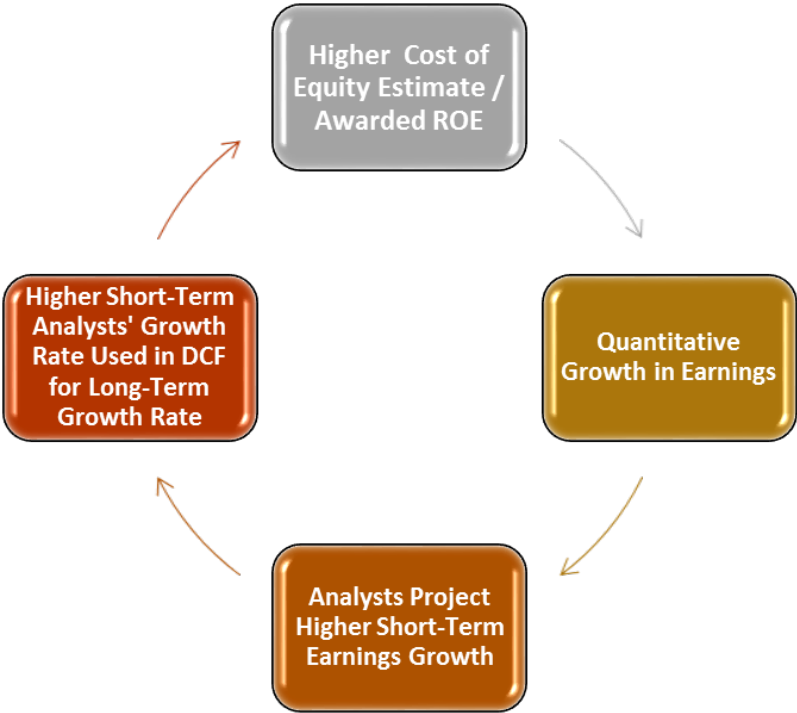


7 Of course, utilities might sometimes add “new plant” to meet a modest growth in ratepayer
8 demand. However, as the foregoing discussion demonstrates, it would be more appropriate
9 to consider load growth projections and other qualitative indicators, rather than mere
10 increases to rate base or earnings, to attain a fair assessment of growth.

1 **Q. Please discuss the other way in which analysts' earnings growth projections do not**
2 **provide indications of real, qualitative growth for regulated utilities.**

3 A. If we give undue weight to analysts' projections for utilities' earnings growth, it will not
4 provide an accurate reflection of real, qualitative growth because a utility's earnings are
5 heavily influenced by the ultimate figure that all this analysis is supposed to help us
6 estimate: the awarded return on equity. This creates a circular reference problem or
7 feedback loop. In other words, if a regulator awards an ROE that is above market-based
8 cost of capital (which is often the case, as discussed above), this could lead to higher short-
9 term growth rate projections from analysts. If these same inflated, short-term growth rate
10 estimates are used in the DCF Model (as they often are by utility witnesses), it could lead
11 to higher awarded ROEs; and the cycle continues, as illustrated in the figure below.

**Figure 8:
Analysts' Earnings Growth Projections: The "Circular Reference" Problem**



1 Therefore, it is not advisable to simply consider the quantitative growth projections
2 published by analysts, as this practice will not necessarily provide fair indications of real,
3 sustainable utility growth.

4 **Q. Are there any other problems with relying on analysts' growth projections?**

5 A. Yes. While the foregoing discussion shows two reasons why we cannot rely on analysts'
6 growth rate projections to provide fair, qualitative indicators of utility growth in a stable
7 growth DCF Model, the third reason is perhaps the most obvious and undisputable.
8 Various institutional analysts—such as Zacks, Value Line, and Bloomberg—publish
9 estimated projections of earnings growth for utilities. These estimates are short-term
10 growth rate projections, ranging from 3 to 10 years. However, many utility ROE analysts
11 inappropriately insert these short-term growth projections into the DCF Model as if they
12 were *long-term* growth rate projections. For example, assume that an analyst at Bloomberg
13 estimates that a utility's earnings will grow by 7% per year over the next 3 years. This
14 analyst may have based this short-term forecast on a utility's plans to replace depreciated
15 rate base (*i.e.*, "flatworm" growth) or on an anticipated awarded return that is above
16 market-based cost of equity (*i.e.*, the "circular reference" problem). When a utility witness
17 uses this figure in a DCF Model, however, it is the witness, not the Bloomberg analyst, that
18 is testifying to the regulator that the utility's earnings will qualitatively grow by 7% per
19 year over the long-term, which is an unrealistic assumption and a fundamentally different
20 conclusion than that of the Bloomberg analyst.

1 **4. Long-Term Growth Rate Recommendation**

2 **Q. Describe the growth rate input used in your DCF Model.**

3 A. I considered various qualitative determinants of growth for DLC, along with the maximum
4 allowed growth rate under basic principles of finance and economics. The following chart
5 in the figure below shows three of the long-term growth determinants discussed in this
6 section.⁴⁷

**Figure 9:
Terminal Growth Rate Determinants**

Terminal Growth Determinants	Rate
Nominal GDP	3.8%
Real GDP	1.8%
Inflation	2.0%
Risk Free Rate	2.3%
Highest	3.8%

7 For the long-term growth rate in my DCF model, I selected the maximum, reasonable long-
8 term growth rate of 3.8%, which means my model assumes that DLC’s qualitative growth
9 in earnings will qualitatively match the nominal growth rate of the entire U.S. economy
10 over the long run – a charitable assumption.

⁴⁷ Exhibit DJG-5.

1 **Q. Is your growth rate input especially reasonable in light of DLC’s company-specific,**
2 **qualitative growth rate indicators?**

3 A. Yes. As discussed above, from a qualitative perspective, utilities in general do not
4 experience any significant growth. This is because they are primarily limited to the
5 population and demand growth within their defined and limited service territories. Not
6 surprisingly, DLC’s own qualitative growth estimates for total customers and total load are
7 very low (in fact, negative), as shown in the table below.⁴⁸

**Figure 10:
Terminal Growth Rate Determinants**

Company-Specific Growth Factors	Rate
Total Load (2021 - 2025)	-1.2%
Total Customers (2021 - 2025)	-0.1%
Average	-0.7%

8 Thus, by imputing a long term growth rate of 3.8% for DLC, I have essentially assumed a
9 growth rate more than five times greater than DLC’s own qualitative growth indicators.
10 Consequently, my DCF cost of equity estimate is not underestimated.

11 **Q. Please describe the final results of your DCF Model.**

12 A. I used the Quarterly Approximation DCF Model discussed above to estimate DLC’s cost
13 of equity capital. I obtained an average of reported dividends and stock prices from the
14 proxy group, and I used a reasonable terminal growth rate estimate for DLC. My DCF
15 Model cost of equity estimate for DLC is 7.3%.⁴⁹ This result is not surprising given

⁴⁸ Exhibit DJG-5; *see also* response to OCA-III-7.

⁴⁹ Exhibit DJG-6.

1 reasonable estimates for the current expected return on the market portfolio (discussed later
2 in my testimony) and the fact that each company in the proxy group is less risky than the
3 average company in the market portfolio.

4 **D. Response to Mr. Moul's DCF Model**

5 **Q. Mr. Moul's DCF Model yielded a notably higher result. Did you find any problems**
6 **with his analysis?**

7 A. Yes. Mr. Moul's DCF Model produced cost of equity result of 10.52%, which includes a
8 leverage adjustment of 1.46%.⁵⁰ As mentioned earlier, the results of Mr. Moul's DCF
9 Model are overstated primarily because of a fundamental error regarding his growth rate
10 inputs. In addition, Mr. Moul's decision to add a leverage adjustment to his DCF result is
11 inappropriate.

12 **Q. Are you proposing any adjustments to Mr. Moul's dividend yields?**

13 A. No. Again, the primary contentious issues regarding Mr. Moul's DCF Model are his
14 estimates for the long-term growth rate and his leverage adjustment.

15 **Q. Describe the problems with Mr. Moul's assumed long-term growth input.**

16 A. Mr. Moul assumes an average projected growth rate of 5.15% in his DCF Model.⁵¹ In
17 arriving at this growth rate input, Mr. Moul considered growth rates as high as 10.5% for
18 the proxy group,⁵² which is more than double the long-term nominal U.S. GDP growth.
19 This means Mr. Moul's growth rate assumption violates the basic principle that no
20 company can grow at a greater rate than the economy in which it operates over the long-

⁵⁰ Direct Testimony of Paul R. Moul, Exhibit PRM-1, Sch. 1, p. 2.

⁵¹ Direct testimony of Paul R. Moul, Exhibit PRM-1, Sch. 1, p. 2.

⁵² Direct testimony of Paul R. Moul, Exhibit PRM-1, Sch. 9.

1 term, especially a regulated utility company with a defined service territory. Furthermore,
2 Mr. Moul relies on short-term, quantitative growth estimates published by analysts to
3 support his assumptions. Mr. Moul acknowledges that his growth rate projections cover
4 only a five-year period.⁵³ This period of time is not sufficient for a long-term estimate. As
5 discussed above, these analysts' estimates are inappropriate to use in the DCF Model as
6 long-term growth rates because they are estimates for short-term growth. For example,
7 Mr. Moul assumes a long-term growth rate estimate of 10.5% for NextEra Energy (among
8 other estimates), as reported by Value Line Investment Survey.⁵⁴ This means that an
9 analyst at Value Line apparently thinks that NextEra's dividends will quantitatively
10 increase by 10.5% each year over the next several years (*i.e.*, the short-term). However, it
11 is Mr. Moul, not the commercial analyst, who is suggesting to the Commission that
12 NextEra's dividends will increase by 10.5% (more than double U.S. GDP growth) each
13 year, every year, for many decades into the future (*i.e.*, long-term growth).⁵⁵ Again, Mr.
14 Moul is extrapolating the analyst's conclusions well beyond what the analyst actually said.
15 Furthermore, this assumption is simply not realistic, and it contradicts fundamental
16 concepts of long-term growth. Many of Mr. Moul's other short-term growth rate estimates
17 also exceed projected U.S. GDP growth.

⁵³ Direct testimony of Paul R. Moul, p. 27, lines 18-21.

⁵⁴ Direct testimony of Paul R. Moul, Exhibit PRM-1, Sch. 9.

⁵⁵ Technically, the constant growth rate in the DCF Model grows dividends each year to infinity. Yet even if we assumed that the growth rate applied to only a few decades, the annual growth rate would still be too high to be considered realistic.

1 **Q. Please describe Mr. Moul’s leverage adjustment.**

2 A. According to Mr. Moul, a leverage adjustment is necessary when “the DCF return applies
3 to a capital structure used for ratemaking that is computed with book-value weighting
4 rather than market-value weighting.”⁵⁶

5 **Q. Have you ever seen or heard of a witness apply a leverage adjustment like the one Mr.
6 Moul is proposing?**

7 A. No. I have testified in numerous proceedings on the issue of cost of capital and other
8 regulatory issues and have reviewed extensive amounts of testimony from many witnesses
9 on cost of capital issues. Yet I cannot recall a witness applying a “leverage adjustment” in
10 the way Mr. Moul is proposing in this case (except for Mr. Moul’s proposed leverage
11 adjustments in other cases).

12 **Q. Do you agree with Mr. Moul’s leverage adjustment?**

13 A. No. I disagree with Mr. Moul’s leverage adjustment for several reasons. First, the DCF
14 cost of equity result of 10.52% due to Mr. Moul’s leverage adjustment is so unrealistically
15 high on its face that the adjustment should be completely disregarded for that reason alone.
16 As discussed later in my testimony, there are very reliable and reasonable ways to estimate
17 a market-based “ceiling” above which the cost of equity of a low-risk utility company such
18 as DLC cannot be. Several key market metrics show that this ceiling is likely no higher
19 than 8.0%.⁵⁷ Even Mr. Moul’s base DCF Model result of 9.06% far exceeds this market
20 “ceiling.” Any type of premium or adjustment that has an increasing effect on a figure that
21 is clearly overestimated should be disregarded.

⁵⁶ Direct testimony of Paul R. Moul, p. 33, lines 12-16.

⁵⁷ See Exhibit DJG-13.

1 Second, while Mr. Moul is generally correct that increasing a firm's leverage can
2 have an increasing effect on its cost of equity, this impact has already been accounted for
3 in the cost of equity models we use. Both the DCF Model and CAPM (discussed in more
4 detail below) have been used by the financial community for decades to estimate cost of
5 equity. In simply looking at these highly-regarded models, we see there is no separate
6 input or assumption to account for the marginal effects of leverage. This is because this
7 type of financial risk is already accounted for in the models (i.e., no separate adjustment is
8 necessary). Perhaps this is yet another reason why I have never seen this type of adjustment
9 proposed by an ROE witness. In the CAPM, the betas we use as part of the formula are
10 already "levered," meaning that a company's leverage is already accounted for in its overall
11 risk profile. However, Mr. Moul still "releveraged" the Value Line betas as part of his
12 leverage adjustment.⁵⁸ This approach is incorrect. Moreover, Mr. Moul's estimate of
13 DLC's unlevered betas is unreasonably high. Mr. Moul estimates an "unlevered" (i.e.,
14 100% equity) cost of equity 7.31%,⁵⁹ but a more reasonable calculation shows an unlevered
15 cost of equity of only 5.15%.⁶⁰ Regardless, it is not necessary to "relever" Value Line
16 betas from their starting point (i.e., without unlevering them first) to use in the CAPM.
17 However, I performed a similar unlevering / relevering of DLC's estimated beta as part of
18 my capital structure discussed later in my testimony. When using reasonable inputs to the
19 model, I arrive at a cost of equity estimate of only 7.01% when using a relevered beta at a

⁵⁸ Direct testimony of Paul R. Moul, pp. 41-42.

⁵⁹ Direct testimony of Paul R. Moul, p. 32, line 5.

⁶⁰ See Exhibit DJG-15.

1 debt ratio of 45% (which is reflective of DLC’s actual debt ratio),⁶¹ which is much less
2 than Mr. Moul’s 10.52% cost of equity estimate. The evidence presented here clearly
3 demonstrates that Mr. Moul’s base DCF Model results are overstated; any premium or
4 adjustment that increases a result that is already overestimated should be disregarded.

VI. CAPM ANALYSIS

5 Q. Describe the CAPM.

6 A. The CAPM is a market-based model founded on the principle that investors expect higher
7 returns for incurring additional risk.⁶² The CAPM estimates this expected return. The
8 various assumptions, theories, and equations involved in the CAPM are discussed further
9 in Appendix B. Using the CAPM to estimate the cost of equity of a regulated utility is
10 consistent with the legal standards governing the fair rate of return. The U.S. Supreme
11 Court has recognized that “the amount of risk in the business is a most important factor”
12 in determining the allowed rate of return,⁶³ and that “the return to the equity owner should
13 be commensurate with returns on investments in other enterprises having corresponding
14 risks.”⁶⁴ The CAPM is a useful model because it directly considers the amount of risk
15 inherent in a business. It is arguably the strongest of the models usually presented in rate
16 cases because, unlike the DCF Model, the CAPM directly measures the most important
17 component of a fair rate of return analysis – risk.

⁶¹ *See id.*

⁶² William F. Sharpe, *A Simplified Model for Portfolio Analysis* 277–93 (Management Science IX 1963).

⁶³ *Wilcox*, 212 U.S. at 48.

⁶⁴ *Hope Natural Gas Co.*, 320 U.S. at 603.

1 **Q. Describe the inputs for the CAPM.**

2 A. The basic CAPM equation requires only three inputs to estimate the cost of equity: (1) the
3 risk-free rate; (2) the beta coefficient; and (3) the equity risk premium. Here is the CAPM
4 formula:

**Equation 3:
Basic CAPM**

5 **Cost of Equity = Risk-free Rate + (Beta × Equity Risk Premium)**

6 Each input is discussed separately below.

7 **A. The Risk-Free Rate**

8 **Q. Explain the risk-free rate.**

9 A. The first term in the CAPM is the risk-free rate (R_F). The risk-free rate is simply the level
10 of return investors can achieve without assuming any risk. The risk-free rate represents the
11 bare minimum return that any investor would require on a risky asset. Even though no
12 investment is technically void of risk, investors often use U.S. Treasury securities to
13 represent the risk-free rate because they accept that those securities essentially contain no
14 default risk. The Treasury issues securities with different maturities, including short-term
15 Treasury Bills, intermediate-term Treasury Notes, and long-term Treasury Bonds.

16 **Q. Is it preferable to use the yield on long-term Treasury bonds for the risk-free rate in**
17 **the CAPM?**

18 A. Yes. In valuing an asset, investors estimate cash flows over long periods of time. Common
19 stock is viewed as a long-term investment, and the cash flows from dividends are assumed
20 to last indefinitely. Thus, short-term Treasury Bill yields are rarely used in the CAPM to
21 represent the risk-free rate. Short-term rates are subject to greater volatility and thus can
22 lead to unreliable estimates. Instead, long-term Treasury bonds are usually used to

1 represent the risk-free rate in the CAPM. I considered a 30-day average of daily Treasury
2 yield curve rates on 30-year Treasury Bonds in my risk-free rate estimate, which resulted
3 in a risk-free rate of 2.3%.⁶⁵

4 **B. The Beta Coefficient**

5 **Q. How is the beta coefficient used in this model?**

6 A. As discussed above, beta represents the sensitivity of a given security to movements in the
7 overall market. The CAPM states that in efficient capital markets, the expected risk
8 premium on each investment is proportional to its beta. Recall that a security with a beta
9 greater (or less) than one is more (or less) risky than the market portfolio. An index such
10 as the S&P 500 Index is used as a proxy for the market portfolio. The historical betas for
11 publicly traded firms are published by various institutional analysts. Beta may also be
12 calculated through a linear regression analysis, which provides additional statistical
13 information about the relationship between a single stock and the market portfolio. As
14 discussed above, beta also represents the sensitivity of a given security to the market as a
15 whole. The market portfolio of all stocks has a beta equal to one. Stocks with betas greater
16 than 1.0 are relatively more sensitive to market risk than the average stock. For example,
17 if the market increases (or decreases) by 1.0%, a stock with a beta of 1.5 will, on average,
18 increase (or decrease) by 1.5%. In contrast, stocks with betas of less than 1.0 are less
19 sensitive to market risk. For example, if the market increases (or decreases) by 1.0%, a
20 stock with a beta of 0.5 will, on average, only increase (or decrease) by 0.5%.

⁶⁵ Exhibit DJG-7.

1 **Q. Describe the source for the betas you used in your CAPM analysis.**

2 A. I used betas recently published by Value Line Investment Survey. The average beta for
3 the proxy group is less than 1.0. Thus, we have an objective measure to prove the well-
4 known concept that utility stocks are generally less risky than the average stock in the
5 market. While there is evidence suggesting that betas published by sources such as Value
6 Line may actually overestimate the risk of utilities (and thus overestimate the CAPM), I
7 used the betas published by Value Line to be conservative.⁶⁶

8 **C. The Equity Risk Premium**

9 **Q. Describe the Equity Risk Premium (ERP).**

10 A. The final term of the CAPM is the ERP, which is the required return on the market portfolio
11 less the risk-free rate ($R_M - R_F$). In other words, the ERP is the level of return investors
12 expect above the risk-free rate in exchange for investing in risky securities. Many experts
13 would agree that “the single most important variable for making investment decisions is
14 the equity risk premium.”⁶⁷ Likewise, the ERP is arguably the single most important factor
15 in estimating the cost of capital in this matter. There are three basic methods that can be
16 used to estimate the ERP: (1) calculating a historical average; (2) taking a survey of experts;
17 and (3) calculating the implied ERP. I will discuss each method in turn, noting advantages
18 and disadvantages of these methods.

⁶⁶ Exhibit DJG-8; *see also* Appendix B for a more detailed discussion of raw beta calculations and adjustments.

⁶⁷ Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 4 (Princeton University Press 2002).

1. Historical Average

1 **Q. Describe the historical ERP.**

2 A. The historical ERP may be calculated by simply taking the difference between returns on
3 stocks and returns on government bonds over a certain period of time. Many practitioners
4 rely on the historical ERP as an estimate for the forward-looking ERP because it is easy to
5 obtain. However, there are disadvantages to relying on the historical ERP.

6 **Q. What are the limitations of relying solely on a historical average to estimate the**
7 **current or forward-looking ERP?**

8 A. Many investors use the historic ERP because it is convenient and easy to calculate. What
9 matters in the CAPM model, however, is not the actual risk premium from the past, but
10 rather the current and forward-looking risk premium.⁶⁸ Some investors may think that a
11 historic ERP provides some indication of the prospective risk premium; however, there is
12 empirical evidence to suggest the prospective, forward-looking ERP is actually lower than
13 the historical ERP. In a landmark publication on risk premiums around the world, *Triumph*
14 *of the Optimists*, the authors suggest through extensive empirical research that the
15 prospective ERP is lower than the historical ERP.⁶⁹ This is due in large part to what is
16 known as “survivorship bias” or “success bias” – a tendency for failed companies to be
17 excluded from historical indices.⁷⁰ From their extensive analysis, the authors make the
18 following conclusion regarding the prospective ERP: “[t]he result is a forward-looking,

⁶⁸ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 330 (3rd ed., South Western Cengage Learning 2010).

⁶⁹ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 194 (3rd ed., South Western Cengage Learning 2010).

⁷⁰ Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 34 (Princeton University Press 2002).

1 geometric mean risk premium for the United States . . . of around 2½ to 4 percent and an
2 arithmetic mean risk premium . . . that falls within a range from a little below 4 to a little
3 above 5 percent.”⁷¹ Indeed, these results are lower than many reported historical risk
4 premiums. Other noted experts agree:

5 The historical risk premium obtained by looking at U.S. data is biased
6 upwards because of survivor bias. . . . The true premium, it is argued, is
7 much lower. This view is backed up by a study of large equity markets over
8 the twentieth century (*Triumph of the Optimists*), which concluded that the
9 historical risk premium is closer to 4%.⁷²

10 Regardless of the variations in historic ERP estimates, many scholars and practitioners
11 agree that simply relying on a historic ERP to estimate the risk premium going forward is
12 not ideal. Fortunately, “a naïve reliance on long-run historical averages is not the only
13 approach for estimating the expected risk premium.”⁷³

14 **Q. Did you rely on the historical ERP as part of your CAPM analysis in this case?**

15 A. No. Due to the limitations of this approach, I relied on the ERP reported in expert surveys
16 and the implied ERP method discussed below.

2. Expert Surveys

17 **Q. Describe the expert survey approach to estimating the ERP.**

18 A. As its name implies, the expert survey approach to estimating the ERP involves conducting
19 a survey of experts including professors, analysts, chief financial officers, and other
20 executives around the country and asking them what they think the ERP is. The IESE

⁷¹ Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 194 (Princeton University Press 2002).

⁷² Aswath Damodaran, *Equity Risk Premiums: Determinants, Estimation and Implications – The 2015 Edition* 17 (New York University 2015).

⁷³ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 330 (3rd ed., South Western Cengage Learning 2010).

1 Business School conducts such a survey each year. Their 2021 expert survey reported an
2 average ERP of 5.6%.⁷⁴

3 **3. Implied ERP**

3 **Q. Describe the implied ERP approach.**

4 A. The third method of estimating the ERP is arguably the best. The implied ERP relies on
5 the stable growth model proposed by Gordon, often called the “Gordon Growth Model,”
6 which is a basic stock valuation model widely used in finance for many years.⁷⁵ This model
7 is a mathematical derivation of the DCF Model. In fact, the underlying concept in both
8 models is the same: the current value of an asset is equal to the present value of its future
9 cash flows. Instead of using this model to determine the discount rate of one company, we
10 can use it to determine the discount rate for the entire market by substituting the inputs of
11 the model. Specifically, instead of using the current stock price (P_0), we will use the
12 current value of the S&P 500 (V_{500}). Similarly, instead of using the dividends of a single
13 firm, we will consider the dividends paid by the entire market. Additionally, we should
14 consider potential dividends. In other words, stock buybacks should be considered in
15 addition to paid dividends, as stock buybacks represent another way for the firm to transfer
16 free cash flow to shareholders. Focusing on dividends alone without considering stock
17 buybacks could understate the cash flow component of the model, and ultimately

⁷⁴ Pablo Fernandez, Pablo Linares & Isabel F. Acin, *Market Risk Premium used in 171 Countries in 2016: A Survey with 6,932 Answers*, at 3 (IESE Business School 2015), copy available at <http://www.valumonics.com/wp-content/uploads/2017/06/Discount-rate-Pablo-Fern%C3%A1ndez.pdf>. IESE Business School is the graduate business school of the University of Navarra. IESE offers Master of Business Administration (MBA), Executive MBA and Executive Education programs. IESE is consistently ranked among the leading business schools in the world.

⁷⁵ Myron J. Gordon and Eli Shapiro, *Capital Equipment Analysis: The Required Rate of Profit* 102–10 (Management Science Vol. 3, No. 1 Oct. 1956).

1 understate the implied ERP. The market dividend yield plus the market buyback yield
 2 gives us the gross cash yield to use as our cash flow in the numerator of the discount model.
 3 This gross cash yield is increased each year over the next five years by the growth rate.
 4 These cash flows must be discounted to determine their present value. The discount rate
 5 in each denominator is the risk-free rate (R_F) plus the discount rate (K). The following
 6 formula shows how the implied return is calculated. Since the current value of the S&P is
 7 known, we can solve for K : the implied market return.⁷⁶

**Equation 4:
 Implied Market Return**

$$V_{500} = \frac{CY_1(1+g)^1}{(1+R_F+K)^1} + \frac{CY_2(1+g)^2}{(1+R_F+K)^2} + \dots + \frac{CY_5(1+g)^5 + TV}{(1+R_F+K)^5}$$

where: V_{500} = current value of index (S&P 500)
 CY_{1-5} = average cash yield over last five years (includes dividends and buybacks)
 g = compound growth rate in earnings over last five years
 R_F = risk-free rate
 K = implied market return (this is what we are solving for)
 TV = terminal value = $CY_5 (1+R_F) / K$

9 The discount rate is called the “implied” return here because it is based on the current value
 10 of the index as well as the value of free cash flow to investors projected over the next five
 11 years. Thus, based on these inputs, the market is “implying” the expected return; or in
 12 other words, based on the current value of all stocks (the index price), and the projected
 13 value of future cash flows, the market is telling us the return expected by investors for
 14 investing in the market portfolio. After solving for the implied market return (K), we
 15 simply subtract the risk-free rate from it to arrive at the implied ERP.

⁷⁶ See Exhibit DJG-9 for detailed calculation.

**Equation 5:
Implied Equity Risk Premium**

1 *Implied Expected Market Return – R_F = Implied ERP*

2 **Q. Discuss the results of your implied ERP calculation.**

3 A. After collecting data for the index value, operating earnings, dividends, and buybacks for
4 the S&P 500 over the past six years, I calculated the dividend yield, buyback yield, and
5 gross cash yield for each year. I also calculated the compound annual growth rate (g) from
6 operating earnings. I used these inputs, along with the risk-free rate and current value of
7 the index to calculate a current expected return on the entire market of 7.2%. I subtracted
8 the risk-free rate to arrive at the implied equity risk premium of 4.9%.⁷⁷ Dr. Damodaran,
9 one of the world’s leading experts on the ERP, promotes the implied ERP method discussed
10 above. He calculates monthly and annual implied ERPs with this method and publishes
11 his results. Dr. Damodaran’s average ERP estimate for June 2021 using several implied
12 ERP variations was 4.5%.⁷⁸

13 **Q. What are the results of your final ERP estimate?**

14 A. For the final ERP estimate I used in my CAPM analysis, I considered the results of the
15 ERP surveys along with the implied ERP calculations and the ERP reported by Duff &
16 Phelps.⁷⁹ The results are presented in the following figure:

⁷⁷ Exhibit DJG-9.

⁷⁸ Aswath Damodaran, *Implied Equity Risk Premium Update*, DAMODARAN ONLINE
<http://pages.stern.nyu.edu/~adamodar/>.

⁷⁹ Exhibit DJG-10.

**Figure 11:
Equity Risk Premium Results**

IESE Business School Survey	5.6%
Duff & Phelps Report	5.5%
Damodaran (average)	4.5%
Damodaran (COVID Adjusted)	4.2%
Garrett	4.9%
Average	4.9%
Highest	5.6%

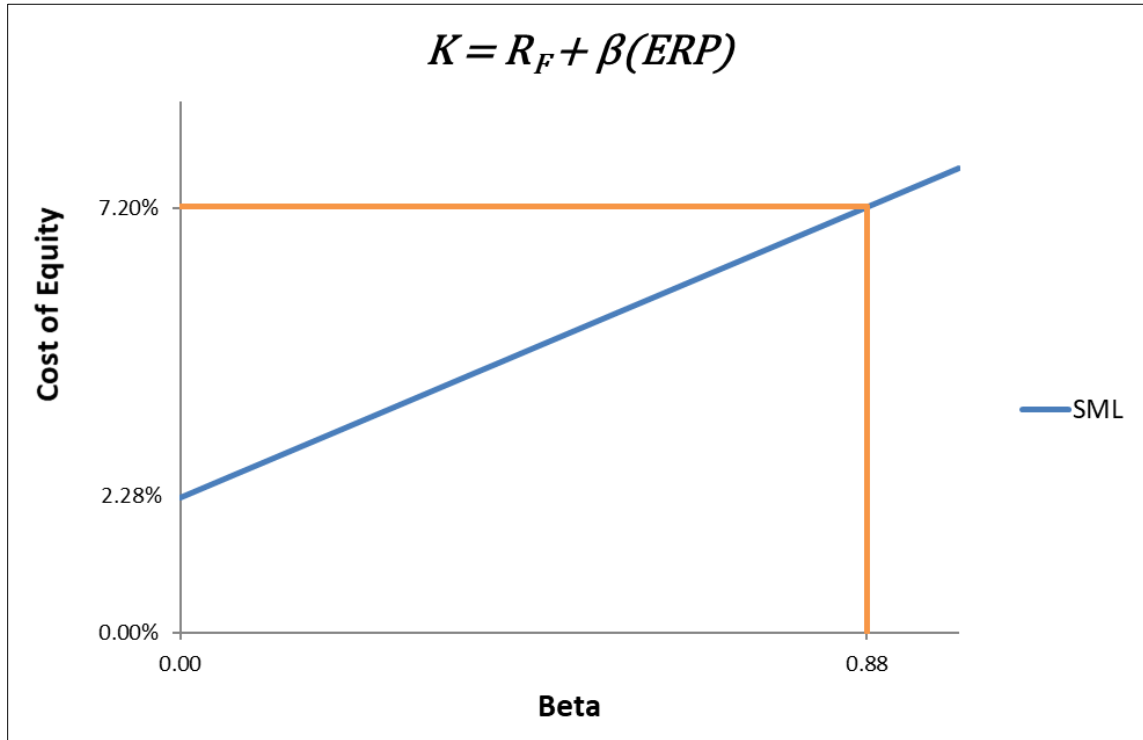
1 While it would be arguably reasonable to select any one of these ERP estimates to use in
2 the CAPM, to be conservative, I selected the highest ERP estimate of 5.6% to use in my
3 CAPM analysis. All else held constant, a higher ERP used in the CAPM will result in a
4 higher cost of equity estimate.

5 **Q. Please explain the final results of your CAPM analysis.**

6 A. Using the inputs for the risk-free rate, beta coefficient, and ERP discussed above, I estimate
7 that DLC's CAPM cost of equity is 7.2%.⁸⁰ The CAPM may be displayed graphically
8 through what is known as the Security Market Line ("SML"). The following figure shows
9 the expected return (cost of equity) on the y-axis, and the average beta for the proxy group
10 on the x-axis. The SML intercepts the y-axis at the level of the risk-free rate. The slope
11 of the SML is the equity risk premium.

⁸⁰ Exhibit DJG-11.

**Figure 12:
CAPM Graph**



1 The SML provides the rate of return that will compensate investors for the beta risk of that
2 investment. Thus, at an average beta of 0.88 for the proxy group, the estimated CAPM
3 cost of equity for DLC is 7.2%.

4 **D. Response to Mr. Moul's CAPM Analysis**

5 **Q. Mr. Moul's CAPM analysis yields notably higher results. Did you find specific**
6 **problems with Mr. Moul's CAPM assumptions and inputs?**

7 A. Yes, I did. Mr. Moul's estimates a CAPM cost of equity of 12.54%,⁸¹ which is
8 considerably higher than my estimate. The primary problems with Mr. Moul's CAPM cost

⁸¹ Direct Testimony of Paul R. Moul, Exhibit PRM-1, Sch. 1.

1 of equity result stem primarily from his beta, EPR input, and size premium, as further
2 discussed below.

1. Beta

3 **Q. Describe Mr. Moul's beta input to the CAPM.**

4 A. Mr. Moul used a beta of 1.08 in his CAPM.⁸² This beta is much higher than the average
5 beta reported by Mr. Moul's proxy group, which is only 0.88.⁸³ The difference between a
6 beta of 0.88 and 1.08 is significant, especially considering the fact that the beta of the entire
7 market is 1.0. The betas reported by Value Line show that the proxy group is less risky
8 than the market average, while the inflated beta derived by Mr. Moul would indicate the
9 proxy group of utilities is riskier than the market average.

10 **Q. Do you recall ever seeing a cost of capital witness use an average beta of greater than**
11 **1.0 to estimate the cost of equity for a utility company?**

12 A. No. Again, I have reviewed dozens of cost of capital testimonies dating back many years,
13 and I cannot recall ever seeing a witness use a beta of greater than 1.0 as the beta in their
14 CAPM (except for Mr. Moul in other cases). Very rarely, an individual utility company
15 might show a Value Line beta of greater than 1.0, but I have never seen the average beta
16 of the utility proxy group (i.e., the beta an analyst essentially uses in the CAPM) be greater
17 than one.

⁸² Direct Testimony of Paul R. Moul, Exhibit PRM-1, Sch. 1, p. 2.

⁸³ Direct Testimony of Paul R. Moul, Exhibit PRM-1, Sch. 10.

1 **Q. Do you agree with Mr. Moul's beta input?**

2 A. No. By using a beta of greater than one, Mr. Moul is implying that DLC is riskier than the
3 average company in the U.S. market. Such a proposition contradicts any objective or
4 intuitive understanding of a regulated utility's position and operations in the U.S. market.
5 In fact, it is more accurate to say that DLC, and its utility peers, are among the least risky
6 companies in the world. DLC is a regulated monopoly with a captive customer base who
7 provides an essential product with a relatively inelastic demand – operating under a
8 regulatory framework that would essentially prevent it from experiencing financial failure.
9 Competitive firms in the market do not enjoy the same risk-mitigating framework and
10 protections. I have also discussed my disagreement with Mr. Moul's beta input from a
11 technical perspective when I addressed his leverage adjustment above. In short, it is
12 inappropriate to use Value Line betas as a starting point and increasing them to account for
13 leverage. If Value Line betas are unlevered and then relevered, and reasonable inputs are
14 used in the CAPM (including the ERP discussed below), then a more accurate estimate of
15 DLC's cost of equity would be 7.01% (using a relevered beta at a debt ratio of 45% – which
16 is reflective of DLC's actual debt ratio).⁸⁴ This result is much lower than Mr. Moul's
17 12.54% cost of equity estimate. The Commission should reject Mr. Moul's CAPM results
18 for his beta input alone. However, his estimate for the ERP is also unreasonably high, as
19 further discussed below.

⁸⁴ See Exhibit DJG-15.

2. Equity Risk Premium

1 **Q. Did Mr. Moul rely on a reasonable measure for the ERP?**

2 A. No, he did not. Mr. Moul used an input of 8.72% for the ERP, which is not realistic.⁸⁵ The
3 ERP is one of three inputs in the CAPM equation, and it is one of the most important factors
4 for estimating the cost of equity in this case. As discussed above, I used three widely
5 accepted methods for estimating the ERP, including consulting expert surveys, calculating
6 the implied ERP based on aggregate market data, and considering the ERPs published by
7 reputable analysts. The highest ERP found from my research and analysis is only 5.6%.

8 **Q. Please discuss and illustrate how Mr. Moul's ERP compares with other estimates for**
9 **the ERP.**

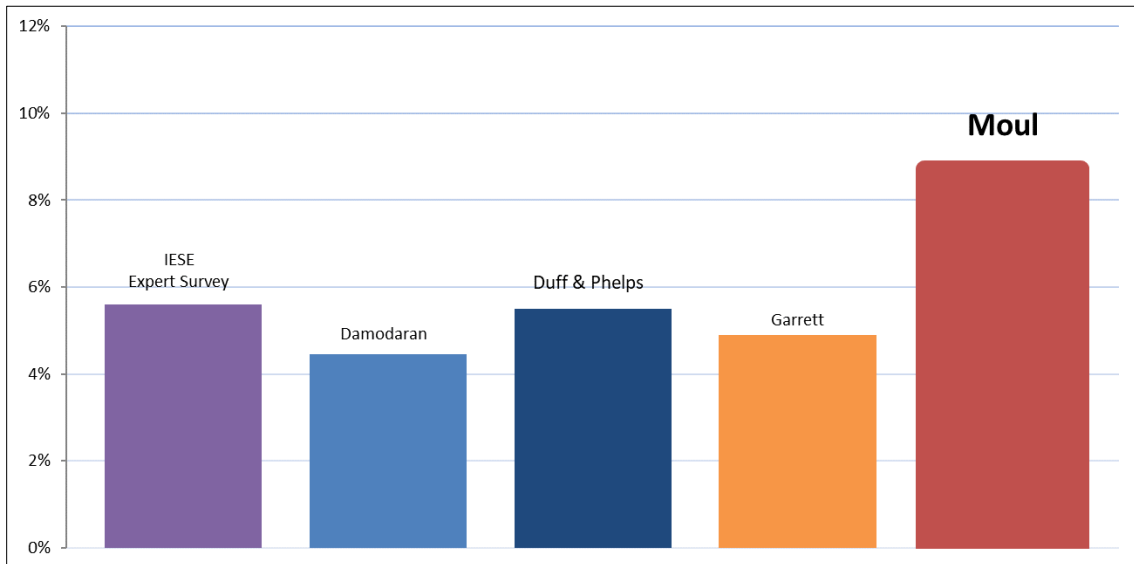
10 A. The 2020 IESE Business School expert survey reports an average ERP of 5.6%. Similarly,
11 Duff & Phelps recently estimated an ERP of 5.5%. Dr. Damodaran, one of the leading
12 experts on the ERP, recently estimated an ERP of only 4.5%.⁸⁶ The chart in the following
13 figure illustrates that Mr. Moul's ERP estimate is far out of line with other reasonable,
14 objective estimates for the ERP.⁸⁷

⁸⁵ Direct Testimony of Paul R. Moul, p. 43, lines 18-19.

⁸⁶ Aswath Damodaran, *Implied Equity Risk Premium Update*, DAMODARAN ONLINE, <http://pages.stern.nyu.edu/~adamodar/>. Dr. Damodaran estimates several ERPs using various assumptions.

⁸⁷ The ERP estimated by Dr. Damodaran is the highest of several ERP estimates under slightly differing assumptions.

**Figure 13:
Equity Risk Premium Comparison**



1 When compared with other independent sources for the ERP, as well as my estimate, Mr.
2 Moul’s ERP estimate is clearly not within the range of reasonableness. As a result, his
3 CAPM cost of equity estimate is overstated.

3. Size Premium

4 **Q. Describe Mr. Moul’s size premium adjustment to his CAPM.**

5 A. Mr. Moul adds 1.02% to his CAPM on the basis that DLC is “relatively smaller” than the
6 proxy group.⁸⁸ According to Mr. Moul, “[a]s the size of a firm decreases, its risk and
7 required return increases.”⁸⁹

⁸⁸ Direct Testimony of Paul R. Moul, p. 44, lines 10-13.

⁸⁹ Id. at p. 43, line 23 – p. 44, line 1.

1 **Q. Do you agree with Mr. Moul’s size premium?**

2 A. No. The “size effect” phenomenon arose from a 1981 study conducted by Banz, which
3 found that “in the 1936 – 1975 period, the common stock of small firms had, on average,
4 higher risk-adjusted returns than the common stock of large firms.”⁹⁰ According to
5 Ibbotson, Banz’s size effect study was “[o]ne of the most remarkable discoveries of modern
6 finance.”⁹¹ Perhaps there was some merit to this idea at the time, but the size effect
7 phenomenon was short lived. Banz’s 1981 publication generated much interest in the size
8 effect and spurred the launch of significant new small cap investment funds. However,
9 this “honeymoon period lasted for approximately two years. . . .”⁹² After 1983, U.S. small-
10 cap stocks actually underperformed relative to large cap stocks. In other words, the size
11 effect essentially reversed. In *Triumph of the Optimists*, the authors conducted an extensive
12 empirical study of the size effect phenomenon around the world. They found that after the
13 size effect phenomenon was discovered in 1981, it disappeared within a few years:

14 It is clear . . . that there was a global reversal of the size effect in virtually
15 every country, with the size premium not just disappearing but going into
16 reverse. Researchers around the world universally fell victim to Murphy’s
17 Law, with the very effect they were documenting – and inventing
18 explanations for – promptly reversing itself shortly after their studies were
19 published.⁹³

20 In other words, the authors assert that the very discovery of the size effect phenomenon
21 likely caused its own demise. The authors ultimately concluded that it is “inappropriate to

⁹⁰ Rolf W. Banz, *The Relationship Between Return and Market Value of Common Stocks* 3-18 (Journal of Financial Economics 9 (1981)).

⁹¹ 2015 Ibbotson Stocks, Bonds, Bills, and Inflation Classic Yearbook 99 (Morningstar 2015).

⁹² Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 131 (Princeton University Press 2002).

⁹³ *Id.* at 133.

1 use the term ‘size effect’ to imply that we should automatically expect there to be a small-
2 cap premium,” yet, this is exactly what utility witnesses often do in attempting to
3 artificially inflate the cost of equity with a size premium. Other prominent sources have
4 agreed that the size premium is a dead phenomenon. According to Ibbotson:

5 The unpredictability of small-cap returns has given rise to another argument
6 against the existence of a size premium: that markets have changed so that
7 the size premium no longer exists. As evidence, one might observe the last
8 20 years of market data to see that the performance of large-cap stocks was
9 basically equal to that of small cap stocks. In fact, large-cap stocks have
10 outperformed small-cap stocks in five of the last 10 years.⁹⁴

11 In addition to the studies discussed above, other scholars have concluded similar results.

12 According to Kalesnik and Beck:

13 Today, more than 30 years after the initial publication of Banz’s paper, the
14 empirical evidence is extremely weak even before adjusting for possible
15 biases. . . . The U.S. long-term size premium is driven by the extreme
16 outliers, which occurred three-quarters of a century ago. . . . Finally,
17 adjusting for biases . . . makes the size premium vanish. If the size premium
18 were discovered today, rather than in the 1980s, it would be challenging to
19 even publish a paper documenting that small stocks outperform large
20 ones.⁹⁵

21 For all of these reasons, the Commission should reject the arbitrary size premium proposed
22 by the Company.

⁹⁴ 2015 Ibbotson Stocks, Bonds, Bills, and Inflation Classic Yearbook 112 (Morningstar 2015).

⁹⁵ Vitali Kalesnik and Noah Beck, *Busting the Myth About Size* (Research Affiliates 2014), available at https://www.researchaffiliates.com/Our%20Ideas/Insights/Fundamentals/Pages/284_Busting_the_Myth_About_Size.aspx (emphasis added).

VII. OTHER COST OF EQUITY ISSUES

1 **Q. Are there any other issues raised in the Company’s testimony to which you would like**
2 **to respond?**

3 A. Yes. In his testimony, Mr. Moul suggests that certain firm-specific risks and other factors
4 should have an increasing effect on the cost of equity, apparently beyond that which is
5 indicated by the CAPM and DCF Model. Mr. Moul also relies on comparable and expected
6 earnings to support his cost of equity estimate.

7 **A. Firm-Specific Business Risks**

8 **Q. Describe Mr. Moul’s testimony regarding business risks.**

9 A. In his Direct Testimony, Mr. Moul suggests that the Company is exposed to additional
10 risks beyond those inherent in the proxy group, such as the Company’s construction
11 program.⁹⁶

12 **Q. Do you agree with Mr. Moul that these firm-specific risk factors should influence**
13 **DLC’s cost of equity or awarded ROE?**

14 A. No. All companies face business risks, including the other utilities in the proxy group;
15 business risks are not unique to DLC. As discussed above, it is a well-known concept in
16 finance that firm-specific risks are unrewarded by the market. This is largely because firm-
17 specific risk can be eliminated through portfolio diversification. Scholars widely recognize
18 the fact that market risk, or “systematic risk,” is the only type of risk for which investors
19 expect a return for bearing.⁹⁷

⁹⁶ See Direct testimony of Paul R. Moul, pp. 8-9.

⁹⁷ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180 (3rd ed., South Western Cengage Learning 2010).

1 Unlike interest rate risk, inflation risk, and other market risks that affect all
2 companies in the stock market, the risk factors discussed by Mr. Moul are merely business
3 risks specific to DLC. Investors do not require an additional term for these firm-specific
4 business risks. Another way to consider this issue is to look at the CAPM and DCF Model.
5 Did the creators of these highly regarded cost of equity models, which have been relied
6 upon for decades by companies and investors to make crucial business decisions, simply
7 neglect to add an input for business risks? Of course not. The DCF Model considers stock
8 price, dividends, and a long-term growth rate. The CAPM considers the risk-free rate, beta,
9 and the equity risk premium. Neither model includes an input for business risks due to the
10 well-known truth that investors do not expect a return for such risks. Therefore, the
11 Company's firm-specific business risks, while perhaps relevant to other issues in the rate
12 case, have no meaningful effect on the cost of equity estimate. Rather, it is market risk that
13 is rewarded by the market, and this concept is thoroughly addressed in my CAPM analysis
14 discussed above. Thus, the Commission should reject any additional premium Mr. Moul
15 has added to an already overstated cost of equity estimate to account for any firm-specific
16 risks. This concept was also discussed and illustrated above in my testimony.⁹⁸

⁹⁸ See Section IV above.

1 **B. Comparable Earnings**

2 **Q. Please summarize Mr. Moul’s comparable earnings approach.**

3 A. Mr. Moul also analyzed the returns realized by non-regulated companies as an indication
4 of DLC’s cost of equity.⁹⁹ The results of his comparable earnings approach indicate a cost
5 of equity for DLC of 12.6%.¹⁰⁰

6 **Q. Do you agree with Mr. Moul’s analyses?**

7 A. No. There are two notable problems with Mr. Moul’s comparable earnings approach: (1)
8 earned returns do not indicate the cost of equity; and (2) there is no marginal value in
9 analyzing competitive firms beyond those of the utility proxy group in terms of assessing
10 a comparable risk profile. First, the earned return of any company should have a
11 meaningful effect on its cost of equity. Conceptually, “earned” returns and “expected”
12 returns are different from each other. For example, we might conduct a cost of equity
13 analysis on Walmart’s stock and determine that, based on the risk inherent in that
14 investment, we should “expect” a 10% return on our investment (i.e., the cost of equity
15 from Walmart’s perspective). Suppose that Walmart, however, has a bad year and only
16 “earned” a 5% ROE. This does not mean that going forward we will now “expect” a return
17 of only 5% on our equity investment in Walmart. Likewise, the same would be true if
18 Walmart had a good year and earned a 20% return. In finance, the “expected” return on
19 equity as investor (which is synonymous with the “cost” of equity from the company’s
20 perspective) is simply based on the risk inherent in that investment, and is not directly

⁹⁹ Direct testimony of Paul R. Moul, pp. 45-48.

¹⁰⁰ *Id.* at p. 48, lines 8-9.

1 influenced by the company's actual, earned return for any given period of time. Thus, Mr.
2 Moul's analysis of earned returns does not add any value for assessing the cost of equity
3 for DLC beyond the results of the CAPM and DCF Model.

4 The second problem with Mr. Moul's comparable earnings approach is that it uses
5 the earned returns of non-regulated, non-utility companies as an indication of DLC's cost
6 of equity. Despite the title of Mr. Moul's model, competitive, non-utility companies are
7 decisively *incomparable* to DLC. Primarily, the risk profiles of competitive firms will tend
8 to be higher than those of low-risk utilities; thus, their cost of equity estimates will
9 generally be higher. Not surprisingly, the results of Mr. Moul's "comparable" earnings
10 approach are higher than those produced by the models he conducted on the utility proxy
11 group.¹⁰¹ There is simply no marginal value added to the process of estimating utility cost
12 of equity by using non-utility, non-regulated firms in a proxy group that should contain
13 firms with relatively similar risk profiles to the regulated utility being analyzed. Moreover,
14 the results of Mr. Moul's comparable earnings approach is *more than 500 basis points*
15 above a reasonable estimate for DLC's market-based cost of equity. In addition, Mr.
16 Moul's results are more than 450 basis points above the current "*ceiling*" for utility cost of
17 equity, which is discussed further below.

¹⁰¹ Direct Testimony of Paul R. Moul, Exhibit PRM-1, Sch. 1, p. 2.

1 **C. Management Performance Premium**

2 **Q. Please summarize Mr. Moul’s position regarding managerial performance and its**
3 **impact on the Company’s awarded ROE.**

4 A. Mr. Moul claims that the “Company’s superior performance . . . should be recognized by
5 the Commission in its determination of the Company’s rate of return.”¹⁰² However, Mr.
6 Moul does not specifically quantify an amount that should be added to the awarded ROE.

7 **Q. Do you agree with Mr. Moul that the Commission should consider managerial**
8 **performance in its determination of a fair ROE?**

9 A. No. I strongly disagree with Mr. Moul that the Commission should consider managerial
10 performance when determining a fair rate of return, for several reasons. First, such a
11 premium is completely unrelated to DLC’s cost of equity and market risk. In financial
12 textbooks, treatises, and other authoritative literature, I have not seen anyone suggest that
13 this type of premium should be added to a cost of equity estimate. The awarded ROE
14 should be based on the utility’s cost of equity. Second, ratepayers should not be obligated
15 to fund an additional wealth transfer to shareholders for Company management doing its
16 job, particularly through the rate of return. Finally, OCA witness Roger Colton’s testimony
17 presents evidence that the Company’s performance is not “superior” as concluded by Mr.
18 Moul. To be clear, even if the Commission were to agree that managerial performance is
19 exemplary, it should still not consider that finding in determining a fair awarded ROE.

¹⁰² Direct Testimony of Paul R. Moul, p. 1, line 21 – p. 2, line 2.

VIII. COST OF EQUITY SUMMARY

1 **Q. Please summarize the results of the CAPM and DCF Model discussed above.**

2 A. The following figure shows the cost of equity results from each model I employed in this
3 case.¹⁰³

**Figure 14:
Cost of Equity Summary**

Model	Cost of Equity
Discounted Cash Flow Model	7.3%
Capital Asset Pricing Model	7.2%
Average	7.2%

4 The average cost of equity resulting from my DCF Model and the CAPM is 7.2%.

5 **Q. Is there a market indicator that you can use to test the reasonableness of your cost of**
6 **equity estimate?**

7 A. Yes, there is. The CAPM is a risk premium model based on the fact that all investors will
8 require, at a minimum, a return equal to the risk-free rate when investing in equity
9 securities, plus a premium, much like the ERP, on top of the risk-free rate to compensate
10 them for the risk they have assumed. This could also be called the market cost of equity.
11 It is undisputed that the cost of equity of utility stocks must be less than the total market
12 cost of equity, again, because utility stocks are less risky than the average stock in the

¹⁰³ Exhibit DJG-12.

1 market. Therefore, the market cost of equity gives us a “ceiling” below which DLC’s
2 actual cost of equity must lie.

3 **Q. Describe how you estimated the market cost of equity.**

4 A. In estimating the market cost of equity, I relied on the same methods discussed above to
5 estimate the ERP: (1) consulting expert surveys; and (2) calculating the implied ERP. The
6 results of my market cost of equity analysis are presented in the following figure:¹⁰⁴

**Figure 15:
Market Cost of Equity Summary**

Source	Estimate
IESE Survey	7.9%
Damodaran	6.7%
Garrett	7.2%
Highest	7.9%

7 As shown in this figure, the highest market cost of equity from these sources is only
8 7.9%. Therefore, it is not surprising that the CAPM and DCF Model indicate a cost of
9 equity for DLC of only 7.2%. In other words, any cost of equity estimates for DLC, or any
10 regulated utility, that is above the market cost of equity should be viewed as unreasonably
11 high. By contrast, Mr. Moul suggests a cost of equity for DLC in this case that is more
12 than 300 basis points above the market cost of equity, which is simply unrealistic and
13 excessive (7.9% vs. 10.95%).

¹⁰⁴ See also Exhibit DJG-13.

1 **Q. Do you have any other remarks about the cost of equity summary?**

2 A. Yes. I would note that it is quite remarkable that the two cost of equity models in this case,
3 the CAPM and DCF Model, produced nearly identical results. It is especially noteworthy
4 considering the very different inputs used for each model. Again, the DCF Model
5 considers stock prices, dividends, and a long-term growth rate. On the other hand, the
6 CAPM considers the risk-free rate, beta, and the equity risk premium. The inputs to each
7 model are very different, and yet the cost of equity estimates produced by each model are
8 nearly identical.

9 **Q. Is it your understanding that the Commission has indicated a preference for the DCF**
10 **Model?**

11 A. Yes. It is my understanding that in prior cases, the Commission has indicated a preference
12 for the results of the DCF Model to estimate cost of equity, while using the CAPM results
13 as an alternative to verify the reasonableness of the results. As discussed above, when
14 reasonable inputs are used in both models (as applied to the proxy group in this case under
15 current market conditions), the results of the models are essentially the same. Again, the
16 results of the DCF Model indicate a cost of equity for DLC of 7.3%¹⁰⁵ Similarly, the results
17 of the CAPM indicate a cost of equity of 7.2%.¹⁰⁶

¹⁰⁵ Exhibit DJG-6.

¹⁰⁶ *Id.*

IX. CAPITAL STRUCTURE

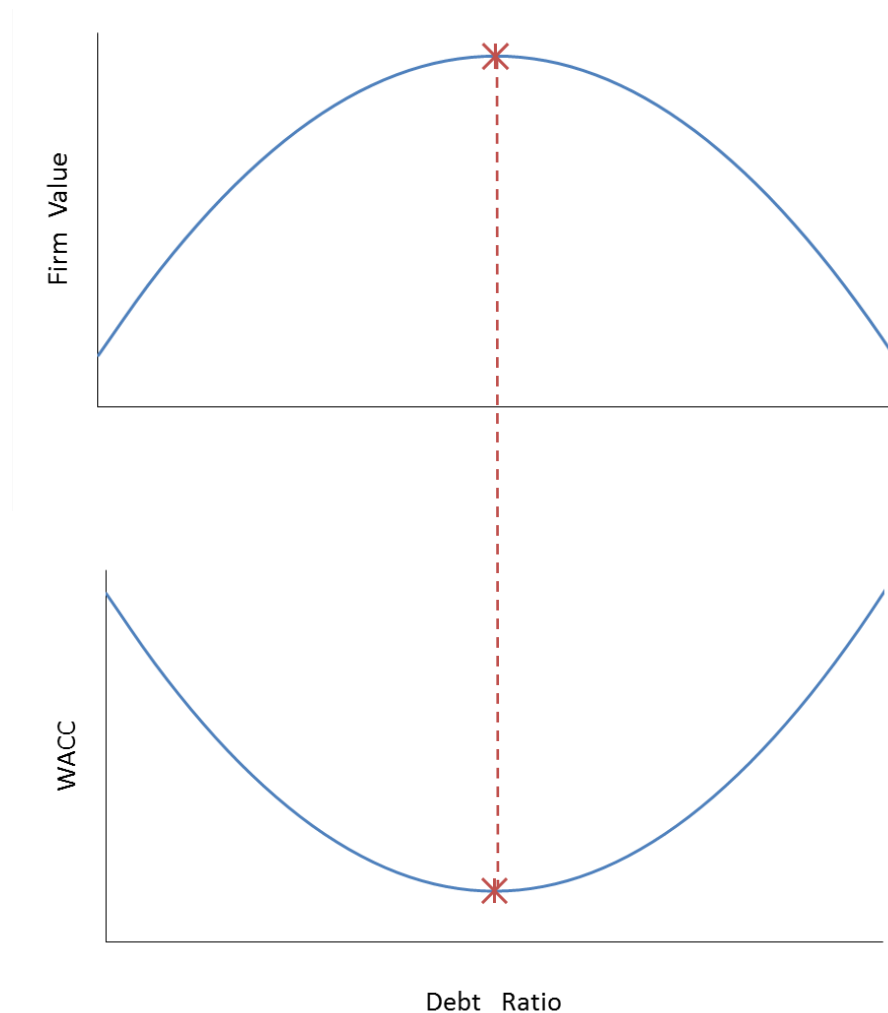
1 **Q. Describe in general the concept of a company's capital structure.**

2 A. "Capital structure" refers to the way a company finances its overall operations through
3 external financing. The primary sources of long-term, external financing are debt capital
4 and equity capital. Debt capital usually comes in the form of contractual bond issues that
5 require the firm to make payments, while equity capital represents an ownership interest in
6 the form of stock. Because a firm cannot pay dividends on common stock until it satisfies
7 its debt obligations to bondholders, stockholders are referred to as "residual claimants."
8 The fact that stockholders have a lower priority to claims on company assets increases their
9 risk and the required return relative to bondholders. Thus, equity capital has a higher cost
10 than debt capital. Firms can reduce their WACC by recapitalizing and increasing their debt
11 financing. In addition, because interest expense is deductible, increasing debt also adds
12 value to the firm by reducing the firm's tax obligation.

13 **Q. Is it true that, by increasing debt, competitive firms can add value and reduce their**
14 **WACC?**

15 A. Yes, it is. A competitive firm can add value by increasing debt. After a certain point,
16 however, the marginal cost of additional debt outweighs its marginal benefit. This is
17 because the more debt the firm uses, the higher interest expense it must pay, and the
18 likelihood of loss increases. This also increases the risk of non-recovery for both
19 bondholders and shareholders, causing both groups of investors to demand a greater return
20 on their investment. Thus, if debt financing is too high, the firm's WACC will increase
21 instead of decrease. The following figure illustrates these concepts.

**Figure 16:
Optimal Debt Ratio**



1 As shown in this figure, a competitive firm's value is maximized when the WACC is
2 minimized. In both graphs, the debt ratio is shown on the x-axis. By increasing its debt
3 ratio, a competitive firm can minimize its WACC and maximize its value. At a certain
4 point, however, the benefits of increasing debt do not outweigh the costs of the additional

1 risks to both bondholders and shareholders, as each type of investor will demand higher
2 returns for the additional risk they have assumed.¹⁰⁷

3 **Q. Does the rate base rate of return model effectively incentivize utilities to operate at**
4 **the optimal capital structure?**

5 A. No. While it is true that competitive firms maximize their value by minimizing their
6 WACC, this is not the case for regulated utilities. Under the rate base rate of return model,
7 a higher WACC results in higher rates, all else held constant. The basic revenue
8 requirement equation is as follows:

**Equation 6:
Revenue Requirement for Regulated Utilities**

$$RR = O + d + T + r(A - D)$$

where: RR = revenue requirement
 O = operating expenses
 d = depreciation expense
 T = corporate tax
 r = **weighted average cost of capital (WACC)**
 A = plant investments
 D = accumulated depreciation

10 As shown in this equation, utilities can increase their revenue requirement by increasing
11 their WACC, not by minimizing it. Thus, because there is no incentive for a regulated
12 utility to minimize its WACC, a commission standing in the place of competition must
13 ensure that the regulated utility is operating at the lowest reasonable WACC.

¹⁰⁷ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 440-41 (3rd ed., South Western Cengage Learning 2010).

1 **Q. Can utilities generally afford to have higher debt levels than other industries?**

2 A. Yes. Because regulated utilities have large amounts of fixed assets, stable earnings, and
3 low risk relative to other industries, they can afford to have relatively higher debt ratios (or
4 “leverage”). As aptly stated by Dr. Damodaran:

5 Since financial leverage multiplies the underlying business risk, it stands to
6 reason that firms that have high business risk should be reluctant to take on
7 financial leverage. It also stands to reason that firms that operate in stable
8 businesses should be much more willing to take on financial leverage.
9 Utilities, for instance, have historically had high debt ratios but have not
10 had high betas, mostly because their underlying businesses have been stable
11 and fairly predictable.¹⁰⁸

12 Note that the author explicitly contrasts utilities with firms that have high underlying
13 business risk. Because utilities have low levels of risk and operate a stable business, they
14 should generally operate with relatively high levels of debt to achieve their optimal capital
15 structure.

16 **Q. Are the capital structures of the proxy group a source that can be used to assess a**
17 **prudent capital structure?**

18 A. Yes. However, while the capital structures of the proxy group might provide some
19 indication of an appropriate capital structure for the utility being studied, it is preferable to
20 also consider additional types of analyses. The average debt ratios of a utility proxy group
21 will likely be lower than what would be observed in a pure competitive environment. As
22 I explain above, this is because utilities do not have a financial incentive to operate at the
23 optimal capital structure.

¹⁰⁸ Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 196 (3rd ed., John Wiley & Sons, Inc. 2012).

1 **Q. How can utility regulatory commissions help overcome the fact that utilities do not**
2 **have a natural financial incentive to minimize their cost of capital?**

3 A. While under the rate base rate of return model utilities do not have a natural financial
4 incentive to minimize their cost of capital, competitive firms, in contrast, can and do
5 maximize their value by minimizing their cost of capital. Competitive firms minimize their
6 cost of capital by including a sufficient amount of debt in their capital structures. They do
7 not do this because it is required by a regulatory body, but rather because their shareholders
8 demand it in order to maximize value. The Commission can provide this incentive to DLC
9 by acting as a surrogate for competition and setting rates consistent with a capital structure
10 that is similar to what would be appropriate in a competitive, as opposed to a regulated,
11 environment.

12 **Q. Please describe the analyses you conducted to assess a reasonable regulatory capital**
13 **structure for DLC.**

14 A. I conducted several types of analyses of DLC's optimal capital structure for ratemaking
15 purposes. First, I performed a quantitative analysis that considers DLC's WACC at various
16 debt ratios to see which debt ratio indicates a minimized WACC. Second, I considered the
17 debt ratios of the proxy group. Finally, I also looked at the debt ratios reported from
18 thousands of other firms across the country to compare DLC's proposed debt ratio to the
19 observed debt ratios in other industries. These approaches are discussed in more detail
20 below.

1 **Q. Describe an objective approach to estimating a company's optimal capital structure.**

2 A. My analysis of the optimal capital structure includes objective methods to measure the
3 effects of increasing debt on both the cost of debt and cost of equity. I will discuss the
4 effects of increasing the debt ratio on each type of security separately.

Cost of Debt

5 As discussed above, increasing the debt ratio will increase the cost of debt. To objectively
6 measure how much the cost of debt increases, I considered the spreads above the risk-free
7 rate for various levels of bond ratings and interest coverage ratios. The following table
8 shows increasing interest rates for debt based on different bond rating levels.

**Figure 17:
Bond Rating Spreads**

Ratings Table			
Coverage	Bond		Interest
Ratio	Rating	Spread	Rate
8.5 - 10.00	Aaa/AAA	0.69%	2.99%
6.5 - 8.49	Aa2/AA	0.85%	3.15%
5.5 - 6.49	A1/A+	1.07%	3.37%
4.25 - 5.49	A2/A	1.18%	3.48%
3.0 - 4.24	A3/A-	1.33%	3.63%
2.5 - 2.99	Baa2/BBB	1.71%	4.01%
2.25 - 2.49	Ba1/BB+	2.31%	4.61%
2.0 - 2.24	Ba2/BB	2.77%	5.07%
1.75 - 1.99	B1/B+	4.05%	6.35%
1.5 - 1.74	B2/B	4.86%	7.16%
1.25 - 1.49	B3/B-	5.94%	8.24%
0.8 - 1.24	Caa/CCC	9.46%	11.76%

1 As shown in this table, the spreads over the risk-free rate gradually increase as bond ratings
2 fall.¹⁰⁹ The spread is added to the risk-free rate to obtain the interest rates shown in the far-
3 right column. This concept is somewhat comparable to the interest rate a mortgage lender
4 would charge a borrower. The mortgage lender's advertised rate is usually the lowest rate,
5 or the "prime" rate, which is available to borrowers with stellar credit scores. As credit
6 scores decrease, however, the offered interest rate will increase. The bond ratings in this
7 figure are based on various levels of interest coverage ratios shown in the far-left column.
8 The interest coverage ratio, as its name implies, is a metric used by financial analysts to
9 gauge a firm's ability to pay its interest expense from its available earnings before interest
10 and taxes (EBIT). (Likewise, the mortgage lender would consider the borrower's personal
11 income-debt ratio). The formula for the interest coverage ratio is as follows:

**Equation 7:
Interest Coverage Ratio**

$$\frac{\textit{Earnings before Interest and Taxes}}{\textit{Interest Expense}}$$

12 As the debt ratio rises, the interest coverage ratio falls, the bond ratings increase, and the
13 cost of debt increases. Now that we have an objective way of measuring how increasing
14 the debt ratio affects the cost of debt, we need to measure how increasing the debt ratio
15 affects the cost of equity.

¹⁰⁹ The link between interest coverage ratios and ratings was developed by looking at all rated companies in the U.S. The default spreads are obtained from traded bonds. The spreads are added to the risk-free rate to obtain the interest rates in the table. Aswath Damodaran, *Ratings, Interest Coverage Ratios and Default Spread*, N.Y. UNIV. (Jan. 2019) http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ratings.htm.

Cost of Equity

1 As with the cost of debt, increasing the debt ratio also increases the cost of equity. To
2 objectively measure how much the cost of equity increases, I first calculated the
3 Company's unlevered beta. The unlevered beta is determined by the assets owned by the
4 firm and removes the effects of financial leverage. As leverage increases, equity investors
5 bear increasing amounts of risk, leading to higher betas. Before the effects of financial
6 leverage can be accounted for, however, the effects of leverage must first be removed,
7 which is accomplished through the unlevered beta equation:¹¹⁰

Equation 8: Unlevered Beta

$$\beta_U = \frac{\beta_L}{\left[1 + (1 - T_c) \left(\frac{D}{E}\right)\right]}$$

where: β_U = unlevered beta (or "asset" beta)
 β_L = average levered beta of proxy group
 T_c = corporate tax rate
 D = book value of debt
 E = book value of equity

8 Using this equation, the beta for the firm can be unlevered, and then "relevered" based on
9 various debt ratios (by rearranging this equation to solve for β_L). So, by using the Bond
10 Rating Spreads table and the unlevered beta equation, the costs of both debt and equity can
11 be increased in correspondence with increasing the debt ratio, until the ideal capital
12 structure is found: where the weighted average cost of capital is minimized.

¹¹⁰ Garrett, Exh. DJG-11 (Aswath Damodaran, INVESTMENT VALUATION: TOOLS AND TECHNIQUES FOR DETERMINING THE VALUE OF ANY ASSET (John Wiley & Sons, Inc. 3d. ed. 2012)).

1 **Q. Describe the results of your optimal capital structure analysis.**

2 A. I analyzed the Company's optimal capital structure based on the approach discussed above.
3 The following table presents different levels of DLC's weighted average cost of capital
4 (WACC) based on increasing debt ratios.¹¹¹

**Figure 18:
DLC's WACC at Various Debt Ratios**

Debt Ratio	Levered Beta	Cost of Equity	Proposed ROE	Coverage Ratio	After-tax Debt Cost	Optimal WACC	WACC at 8.5% ROE
0%	0.513	5.15%	8.50%	∞	2.35%	5.15%	8.50%
20%	0.615	5.72%	8.50%	10.68	2.35%	5.04%	7.27%
30%	0.687	6.12%	8.50%	7.12	2.47%	5.03%	6.69%
40%	0.784	6.66%	8.50%	5.34	2.73%	5.09%	6.19%
45%	0.845	7.01%	8.50%	4.75	2.73%	5.08%	5.91%
50%	0.919	7.42%	8.50%	4.27	2.73%	5.08%	5.62%
55%	1.009	7.93%	8.50%	3.88	2.85%	5.13%	5.39%
60%	1.122	8.56%	8.50%	3.56	2.85%	5.13%	5.11%

5 In the figure above, the column on the far left shows increasing levels of debt ratios. At a
6 debt ratio of 0%, the utility's beta is completely unlevered. As the debt ratio in the far-left
7 column increases, both the cost of equity and the cost of debt increase; however, the
8 weighted average cost of capital generally decreases to a certain point. This table indicates
9 that at my recommended 8.5% ROE, the Company's overall weighted average cost of
10 capital would be minimized at a debt ratio of about 55%.¹¹² This model is not intended to
11 produce an exact mathematical calculation of DLC's most appropriate debt ratio (where
12 WACC is minimized), but rather provides another objective indication that DLC's

¹¹¹ Exhibit DJG-15.

¹¹² In the table, the WACC is further minimized at a debt ratio of 60%. While debt ratios this high are not uncommon in other industries, and may arguably be appropriate for some regulated utilities, in this particular model, a debt ratio of 60% corresponds with a credit rating that is below investment grade.

1 proposed debt ratio is far too low to be considered reasonable. This conclusion is further
2 solidified by looking at the other two approaches for estimating DLC's appropriate capital
3 structures – the proxy group and competitive industry comparisons – which are further
4 discussed below.

5 **Q. Please describe the debt ratios of the proxy group.**

6 A. Again, Mr. Moul and I used the same proxy group of utilities for our cost of capital
7 analyses. The proxy group of utilities reported an average debt ratio of 52%, which is
8 considerably higher than DLC's proposed debt ratio.¹¹³

9 **Q. Did you also look at other competitive firms around the country to compare their debt**
10 **ratios?**

11 A. Yes. In fact, there are currently more than 3,000 firms in various industries across the
12 country with debt ratios of 50% or greater, with an average debt ratio of 64 percent.¹¹⁴ The
13 following figure shows a sample of these industries, with debt ratios of at least 57%.

¹¹³ Exhibit DJG-16.

¹¹⁴ Exhibit DJG-17.

**Figure 19:
Industries with Debt Ratios of 57% or Greater**

Industry	# Firms	Debt Ratio
Financial Svcs. (Non-bank & Insurance)	235	95%
Retail (Building Supply)	15	88%
Hospitals/Healthcare Facilities	32	84%
Air Transport	17	84%
Advertising	61	81%
Hotel/Gaming	66	77%
Brokerage & Investment Banking	39	77%
Auto & Truck	19	75%
Retail (Automotive)	30	74%
Food Wholesalers	18	74%
Retail (Special Lines)	85	72%
Recreation	69	71%
Bank (Money Center)	7	68%
Retail (Grocery and Food)	14	68%
Transportation	21	68%
Computers/Peripherals	52	68%
Packaging & Container	26	67%
Broadcasting	29	65%
Rubber& Tires	3	64%
Beverage (Soft)	41	64%
Chemical (Basic)	48	62%
Oil/Gas Distribution	57	62%
Cable TV	13	61%
R.E.I.T.	238	61%
Apparel	51	61%
Trucking	35	61%
Computer Services	116	61%
Retail (Distributors)	85	60%
Telecom (Wireless)	16	60%
Power	55	60%
Farming/Agriculture	32	59%
Business & Consumer Services	169	59%
Aerospace/Defense	72	59%
Utility (Water)	17	59%
Telecom. Services	58	59%
Retail (Online)	75	58%
Software (Internet)	36	57%
Household Products	140	57%
Construction Supplies	46	57%
Total / Average	2,238	67%

1 Many of the industries shown here, like public utilities, are generally well-established
2 industries with large amounts of capital assets. The shareholders of these industries demand
3 higher debt ratios in order to maximize their profits. There are several notable industries
4 that are relatively comparable to public utilities in some respects. For example, the
5 Wireless Telecom, Water Utility, Power, and Cable T.V. industries have average debt
6 ratios of about 60%. These debt ratios, as well as the average debt ratio of the utility proxy
7 group, are notably higher than DLC's proposed debt ratio of only 46.65%.

8 **Q. What is your recommendation regarding the Company's capital structure?**

9 A. The objective analysis above, as well as the proxy group analysis, strongly indicates that
10 DLC's proposed debt ratio is too low to be considered fair for ratemaking. An
11 insufficiently low debt ratio causes the weighted average cost of capital to be unreasonably
12 high. The table below compares the various debt ratios discussed in my testimony, and it
13 highlights the unreasonableness of DLC's proposed debt ratio.

**Figure 20:
Debt Ratio Comparison**

Source	Debt Ratio
Cable TV	61%
Telecom (Wireless)	60%
Power	60%
Utility (Water)	59%
Optimal Capital Structure Analysis	55%
Proxy Group of Utilities	52%
Garrett Proposal	50%
Company's Proposal	47%

1 Based on my findings, I recommend the Commission impute a capital structure for
 2 ratemaking purposes consisting of 50% debt and 50% equity. Although my findings
 3 indicate DLC’s debt ratio should arguably be higher than 50%, I am recommending a 50%
 4 debt ratio in the interest of reasonableness and gradualism.

5 **Q. If the Commission were to adopt DLC’s proposed debt ratio, would that decision**
 6 **further reduce DLC’s low-risk profile?**

7 A. Yes. As illustrated in the optimal capital structure table above, increasing the debt ratio to
 8 an optimal level effectively minimizes the weighted average cost of capital. However, if
 9 DLC’s authorized ROE is higher than its cost of equity, it will increase the WACC beyond
 10 its lowest optimal level. Thus, if the Commission were to approve DLC’s low debt ratio,
 11 it should also strongly consider a meaningful reduction in its authorized ROE.

12

1 **Q. Does this conclude your testimony?**

2 A. Yes. To the extent I have not addressed an issue or proposal raised by the Company in this
3 proceeding, it should not be construed that I agree with the same.

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APPENDIX A:

DISCOUNTED CASH FLOW MODEL THEORY

The Discounted Cash Flow (“DCF”) Model is based on a fundamental financial model called the “dividend discount model,” which maintains that the value of a security is equal to the present value of the future cash flows it generates. Cash flows from common stock are paid to investors in the form of dividends. There are several variations of the DCF Model. In its most general form, the DCF Model is expressed as follows:¹¹⁵

**Equation 9:
General Discounted Cash Flow Model**

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_n}{(1+k)^n}$$

where:

P_0	=	current stock price
$D_1 \dots D_n$	=	expected future dividends
k	=	discount rate / required return

The General DCF Model would require an estimation of an infinite stream of dividends. Because this would be impractical, analysts use more feasible variations of the General DCF Model, which are discussed further below.

The DCF Models rely on the following four assumptions:¹¹⁶

1. Investors evaluate common stocks in the classical valuation framework; that is, they trade securities rationally at prices reflecting their perceptions of value;
2. Investors discount the expected cash flows at the same rate (K) in every future period;

¹¹⁵ See Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 410 (9th ed., McGraw-Hill/Irwin 2013).

¹¹⁶ See Roger A. Morin, *New Regulatory Finance* 252 (Public Utilities Reports, Inc. 2006) (1994).

3. The K obtained from the DCF equation corresponds to that specific stream of future cash flows alone; and
4. Dividends, rather than earnings, constitute the source of value.

The General DCF can be rearranged to make it more practical for estimating the cost of equity. Regulators typically rely on some variation of the Constant Growth DCF Model, which is expressed as follows:

**Equation 10:
Constant Growth Discounted Cash Flow Model**

$$K = \frac{D_1}{P_0} + g$$

where:

K	=	<i>discount rate / required return on equity</i>
D_1	=	<i>expected dividend per share one year from now</i>
P_0	=	<i>current stock price</i>
g	=	<i>expected growth rate of future dividends</i>

Unlike the General DCF Model, the Constant Growth DCF Model solves for the required return (K) directly. In addition, by assuming that dividends grow at a constant rate, the dividend stream from the General DCF Model may be substituted with a term representing the expected constant growth rate of future dividends (g). The Constant Growth DCF Model may be considered in two parts. The first part is the dividend yield (D_1/P_0), and the second part is the growth rate (g). In other words, the required return in the DCF Model is equivalent to the dividend yield plus the growth rate.

In addition to the four assumptions listed above, the Constant Growth DCF Model relies on the following four additional assumptions:¹¹⁷

¹¹⁷ See Roger A. Morin, *New Regulatory Finance* 254–56 (Public Utilities Reports, Inc. 2006) (1994).

1. The discount rate (K) must exceed the growth rate (g);
2. The dividend growth rate (g) is constant in every year to infinity;
3. Investors require the same return (K) in every year; and
4. There is no external financing; that is, growth is provided only by the retention of earnings.

Because the growth rate in this model is assumed to be constant, it is important not to use growth rates that are unreasonably high. In fact, the constant growth rate estimate for a regulated utility with a defined service territory should not exceed the growth rate for the economy in which it operates.

The basic form of the Constant Growth DCF Model described above is sometimes referred to as the “Annual” DCF Model. This is because the model assumes an annual dividend payment to be paid at the end of every year, as well as an increase in dividends once each year. In reality, however, most utilities pay dividends on a quarterly basis. The Constant Growth DCF equation may be modified to reflect the assumption that investors receive successive quarterly dividends and reinvest them throughout the year at the discount rate. This variation is called the Quarterly Approximation DCF Model.¹¹⁸

**Equation 11:
Quarterly Approximation Discounted Cash Flow Model**

$$K = \left[\frac{d_0(1+g)^{1/4}}{P_0} + (1+g)^{1/4} \right]^4 - 1$$

where: K = discount rate / required return
 d_0 = current quarterly dividend per share
 P_0 = stock price
 g = expected growth rate of future dividends

¹¹⁸ See Roger A. Morin, *New Regulatory Finance* 348 (Public Utilities Reports, Inc. 2006) (1994).

The Quarterly Approximation DCF Model assumes that dividends are paid quarterly, and that each dividend is constant for four consecutive quarters. All else held constant, this model results in the highest cost of equity estimate for the utility in comparison to other DCF Models because it accounts for the quarterly compounding of dividends. There are several other variations of the Constant Growth (or Annual) DCF Model, including a Semi-Annual DCF Model, which is used by the Federal Energy Regulatory Commission (“FERC”). These models, along with the Quarterly Approximation DCF Model, have been accepted in regulatory proceedings as useful tools for estimating the cost of equity.

APPENDIX B:
CAPITAL ASSET PRICING MODEL THEORY

The Capital Asset Pricing Model (“CAPM”) is a market-based model founded on the principle that investors demand higher returns for incurring additional risk.¹¹⁹ The CAPM estimates this required return. The CAPM relies on the following assumptions:

1. Investors are rational, risk-adverse, and strive to maximize profit and terminal wealth;
2. Investors make choices based on risk and return. Return is measured by the mean returns expected from a portfolio of assets; risk is measured by the variance of these portfolio returns;
3. Investors have homogenous expectations of risk and return;
4. Investors have identical time horizons;
5. Information is freely and simultaneously available to investors;
6. There is a risk-free asset, and investors can borrow and lend unlimited amounts at the risk-free rate;
7. There are no taxes, transaction costs, restrictions on selling short, or other market imperfections; and
8. Total asset quality is fixed, and all assets are marketable and divisible.¹²⁰

While some of these assumptions may appear to be restrictive, they do not outweigh the inherent value of the model. The CAPM has been widely used by firms, analysts, and regulators for decades to estimate the cost of equity capital.

The basic CAPM equation is expressed as follows:

¹¹⁹ William F. Sharpe, *A Simplified Model for Portfolio Analysis* 277-93 (Management Science IX 1963).

¹²⁰ *Id.*

**Equation 12:
Capital Asset Pricing Model**

$$K = R_F + \beta_i(R_M - R_F)$$

where: K = required return
 R_F = risk-free rate
 β = beta coefficient of asset i
 R_M = required return on the overall market

There are essentially three terms within the CAPM equation that are required to calculate the required return (K): (1) the risk-free rate (R_F); (2) the beta coefficient (β); and (3) the equity risk premium ($R_M - R_F$), which is the required return on the overall market less the risk-free rate.

Raw Beta Calculations and Adjustments.

A stock's beta equals the covariance of the asset's returns with the returns on a market portfolio, divided by the portfolio's variance, as expressed in the following formula:¹²¹

**Equation 13:
Beta**

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2}$$

where: β_i = beta of asset i
 σ_{im} = covariance of asset i returns with market portfolio returns
 σ_m^2 = variance of market portfolio

Betas that are published by various research firms are typically calculated through a regression analysis that considers the movements in price of an individual stock and movements in the price of the overall market portfolio. The betas produced by this regression analysis are considered “raw” betas. There is empirical evidence that raw betas should be adjusted to account

¹²¹ See John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180–81 (3rd ed., South Western Cengage Learning 2010).

for beta's natural tendency to revert to an underlying mean.¹²² Some analysts use an adjustment method proposed by Blume, which adjusts raw betas toward the market mean of one.¹²³ While the Blume adjustment method is popular due to its simplicity, it is arguably arbitrary, and some would say not useful at all. According to Dr. Damodaran: "While we agree with the notion that betas move toward 1.0 over time, the [Blume adjustment] strikes us as arbitrary and not particularly useful."¹²⁴ The Blume adjustment method is especially arbitrary when applied to industries with consistently low betas, such as the utility industry. For industries with consistently low betas, it is better to employ an adjustment method that adjusts raw betas toward an industry average, rather than the market average. Vasicek proposed such a method, which is preferable to the Blume adjustment method because it allows raw betas to be adjusted toward an industry average, and also accounts for the statistical accuracy of the raw beta calculation.¹²⁵ In other words, "[t]he Vasicek adjustment seeks to overcome one weakness of the Blume model by not applying the same adjustment to every security; rather, a security-specific adjustment is made depending on the statistical quality of the regression."¹²⁶ The Vasicek beta adjustment equation is expressed as follows:

¹²² See Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 84–92 (Financial Management Autumn 1990).

¹²³ See Marshall Blume, *On the Assessment of Risk*, Vol. 26, No. 1 *The Journal of Finance* 1 (1971).

¹²⁴ See Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 187 (3rd ed., John Wiley & Sons, Inc. 2012).

¹²⁵ Oldrich A. Vasicek, *A Note on Using Cross-Sectional Information in Bayesian Estimation of Security Betas* 1233–1239 (*Journal of Finance*, Vol. 28, No. 5, December 1973).

¹²⁶ 2012 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook 77–78 (Morningstar 2012).

**Equation 14:
Vasicek Beta Adjustment**

$$\beta_{i1} = \frac{\sigma_{\beta_{i0}}^2}{\sigma_{\beta_0}^2 + \sigma_{\beta_{i0}}^2} \beta_0 + \frac{\sigma_{\beta_0}^2}{\sigma_{\beta_0}^2 + \sigma_{\beta_{i0}}^2} \beta_{i0}$$

where:

β_{i1}	=	<i>Vasicek adjusted beta for security i</i>
β_{i0}	=	<i>historical beta for security i</i>
β_0	=	<i>beta of industry or proxy group</i>
$\sigma_{\beta_0}^2$	=	<i>variance of betas in the industry or proxy group</i>
$\sigma_{\beta_{i0}}^2$	=	<i>square of standard error of the historical beta for security i</i>

The Vasicek beta adjustment is an improvement on the Blume model because the Vasicek model does not apply the same adjustment to every security. A higher standard error produced by the regression analysis indicates a lower statistical significance of the beta estimate. Thus, a beta with a high standard error should receive a greater adjustment than a beta with a low standard error. As stated in Ibbotson:

While the Vasicek formula looks intimidating, it is really quite simple. The adjusted beta for a company is a weighted average of the company's historical beta and the beta of the market, industry, or peer group. How much weight is given to the company and historical beta depends on the statistical significance of the company beta statistic. If a company beta has a low standard error, then it will have a higher weighting in the Vasicek formula. If a company beta has a high standard error, then it will have lower weighting in the Vasicek formula. An advantage of this adjustment methodology is that it does not force an adjustment to the market as a whole. Instead, the adjustment can be toward an industry or some other peer group. This is most useful in looking at companies in industries that on average have high or low betas.¹²⁷

Thus, the Vasicek adjustment method is statistically more accurate and is the preferred method to use when analyzing companies in an industry that has inherently low betas, such as the utility industry. The Vasicek method was also confirmed by Gombola, who conducted a study

¹²⁷ 2012 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook 78 (Morningstar 2012).

specifically related to utility companies. Gombola concluded that “[t]he strong evidence of autoregressive tendencies in utility betas lends support to the application of adjustment procedures such as the . . . adjustment procedure presented by Vasicek.”¹²⁸ Gombola also concluded that adjusting raw betas toward the market mean of 1.0 is too high, and that “[i]nstead, they should be adjusted toward a value that is less than one.”¹²⁹ In conducting the Vasicek adjustment on betas in previous cases, it reveals that utility betas are even lower than those published by Value Line.¹³⁰ Gombola’s findings are particularly important here, because his study was conducted specifically on utility companies. This evidence indicates that using Value Line’s betas in a CAPM cost of equity estimate for a utility company may lead to overestimated results. Regardless, adjusting betas to a level that is higher than Value Line’s betas is not reasonable, and it would produce CAPM cost of equity results that are too high.

¹²⁸ Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 92 (Financial Management Autumn 1990) (emphasis added).

¹²⁹ Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 91–92 (Financial Management Autumn 1990) (emphasis added).

¹³⁰ See e.g. Responsive Testimony of David J. Garrett, filed March 21, 2016 in Cause No. PUD 201500273 before the Corporation Commission of Oklahoma (OG&E’s 2015 rate case), at pp. 56–59.

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EDUCATION

University of Oklahoma Master of Business Administration Areas of Concentration: Finance, Energy	Norman, OK 2014
University of Oklahoma College of Law Juris Doctor Member, American Indian Law Review	Norman, OK 2007
University of Oklahoma Bachelor of Business Administration Major: Finance	Norman, OK 2003

PROFESSIONAL DESIGNATIONS

Society of Depreciation Professionals
Certified Depreciation Professional (CDP)

Society of Utility and Regulatory Financial Analysts
Certified Rate of Return Analyst (CRRA)

The Mediation Institute
Certified Civil / Commercial & Employment Mediator

WORK EXPERIENCE

Resolve Utility Consulting PLLC <u>Managing Member</u> Provide expert analysis and testimony specializing in depreciation and cost of capital issues for clients in utility regulatory proceedings.	Oklahoma City, OK 2016 – Present
Oklahoma Corporation Commission <u>Public Utility Regulatory Analyst</u> <u>Assistant General Counsel</u> Represented commission staff in utility regulatory proceedings and provided legal opinions to commissioners. Provided expert analysis and testimony in depreciation, cost of capital, incentive compensation, payroll and other issues.	Oklahoma City, OK 2012 – 2016 2011 – 2012

Perebus Counsel, PLLC

Managing Member

Represented clients in the areas of family law, estate planning, debt negotiations, business organization, and utility regulation.

Oklahoma City, OK
2009 – 2011

Moricoli & Schovanec, P.C.

Associate Attorney

Represented clients in the areas of contracts, oil and gas, business structures and estate administration.

Oklahoma City, OK
2007 – 2009

TEACHING EXPERIENCE

University of Oklahoma

Adjunct Instructor – “Conflict Resolution”

Adjunct Instructor – “Ethics in Leadership”

Norman, OK
2014 – Present

Rose State College

Adjunct Instructor – “Legal Research”

Adjunct Instructor – “Oil & Gas Law”

Midwest City, OK
2013 – 2015

PUBLICATIONS

American Indian Law Review

“Vine of the Dead: Reviving Equal Protection Rites for Religious Drug Use”
(31 Am. Indian L. Rev. 143)

Norman, OK
2006

VOLUNTEER EXPERIENCE

Calm Waters

Board Member

Participate in management of operations, attend meetings, review performance, compensation, and financial records. Assist in fundraising events.

Oklahoma City, OK
2015 – 2018

Group Facilitator & Fundraiser

Facilitate group meetings designed to help children and families cope with divorce and tragic events. Assist in fundraising events.

2014 – 2018

St. Jude Children’s Research Hospital

Oklahoma Fundraising Committee

Raised money for charity by organizing local fundraising events.

Oklahoma City, OK
2008 – 2010

PROFESSIONAL ASSOCIATIONS

Oklahoma Bar Association	2007 – Present
Society of Depreciation Professionals <u>Board Member – President</u> Participate in management of operations, attend meetings, review performance, organize presentation agenda.	2014 – Present 2017
Society of Utility Regulatory Financial Analysts	2014 – Present

SELECTED CONTINUING PROFESSIONAL EDUCATION

Society of Depreciation Professionals “Life and Net Salvage Analysis” Extensive instruction on utility depreciation, including actuarial and simulation life analysis modes, gross salvage, cost of removal, life cycle analysis, and technology forecasting.	Austin, TX 2015
Society of Depreciation Professionals “Introduction to Depreciation” and “Extended Training” Extensive instruction on utility depreciation, including average lives and net salvage.	New Orleans, LA 2014
Society of Utility and Regulatory Financial Analysts 46th Financial Forum. “The Regulatory Compact: Is it Still Relevant?” Forum discussions on current issues.	Indianapolis, IN 2014
New Mexico State University, Center for Public Utilities Current Issues 2012, “The Santa Fe Conference” Forum discussions on various current issues in utility regulation.	Santa Fe, NM 2012
Michigan State University, Institute of Public Utilities “39th Eastern NARUC Utility Rate School” One-week, hands-on training emphasizing the fundamentals of the utility ratemaking process.	Clearwater, FL 2011
New Mexico State University, Center for Public Utilities “The Basics: Practical Regulatory Training for the Changing Electric Industries” One-week, hands-on training designed to provide a solid foundation in core areas of utility ratemaking.	Albuquerque, NM 2010
The Mediation Institute “Civil / Commercial & Employment Mediation Training” Extensive instruction and mock mediations designed to build foundations in conducting mediations in civil matters.	Oklahoma City, OK 2009

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Indiana Utility Regulatory Commission	Southern Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45447	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 51415	Depreciation rates, service lives, net salvage	Cities Advocating Reasonable Deregulation
New Mexico Public Regulatory Commission	Avangrid, Inc., Avangrid Networks, Inc., NM Green Holdings, Inc., PNM, and PNM Resources	20-00222-UT	Ring fencing and capital structure	The Albuquerque Bernalillo County Water Utility Authority
Indiana Utility Regulatory Commission	Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45468	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of Nevada	Nevada Power Company and Sierra Pacific Power Company, d/b/a NV Energy	20-07023	Construction work in progress	MGM Resorts International, Caesars Enterprise Services, LLC, and the Southern Nevada Water Authority
Massachusetts Department of Public Utilities	Boston Gas Company, d/b/a National Grid	D.P.U. 20-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Public Service Commission of the State of Montana	ABACO Energy Services, LLC	D2020.07.082	Cost of capital and authorized rate of return	Montana Consumer Counsel
Maryland Public Service Commission	Washington Gas Light Company	9651	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Florida Public Service Commission	Utilities, Inc. of Florida	20200139-WS	Cost of capital and authorized rate of return	Florida Office of Public Counsel
New Mexico Public Regulatory Commission	El Paso Electric Company	20-00104-UT	Cost of capital, depreciation rates, net salvage	City of Las Cruces and Doña Ana County
Public Utilities Commission of Nevada	Nevada Power Company	20-06003	Cost of capital, awarded rate of return, capital structure, earnings sharing	MGM Resorts International, Caesars Enterprise Services, LLC, Wynn Las Vegas, LLC, Smart Energy Alliance, and Circus Circus Las Vegas, LLC
Wyoming Public Service Commission	Rocky Mountain Power	20000-578-ER-20	Cost of capital and authorized rate of return	Wyoming Industrial Energy Consumers
Florida Public Service Commission	Peoples Gas System	20200051-GU 20200166-GU	Cost of capital, depreciation rates, net salvage	Florida Office of Public Counsel
Wyoming Public Service Commission	Rocky Mountain Power	20000-539-EA-18	Depreciation rates, service lives, net salvage	Wyoming Industrial Energy Consumers

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Public Service Commission of South Carolina	Dominion Energy South Carolina	2020-125-E	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Pennsylvania Public Utility Commission	The City of Bethlehem	2020-3020256	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Railroad Commission of Texas	Texas Gas Services Company	GUD 10928	Depreciation rates, service lives, net salvage	Gulf Coast Service Area Steering Committee
Public Utilities Commission of the State of California	Southern California Edison	A.19-08-013	Depreciation rates, service lives, net salvage	The Utility Reform Network
Massachusetts Department of Public Utilities	NSTAR Gas Company	D.P.U. 19-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Georgia Public Service Commission	Liberty Utilities (Peach State Natural Gas)	42959	Depreciation rates, service lives, net salvage	Public Interest Advocacy Staff
Florida Public Service Commission	Florida Public Utilities Company	20190155-El 20190156-El 20190174-El	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Illinois Commerce Commission	Commonwealth Edison Company	20-0393	Depreciation rates, service lives, net salvage	The Office of the Illinois Attorney General
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 49831	Depreciation rates, service lives, net salvage	Alliance of Xcel Municipalities
Public Service Commission of South Carolina	Blue Granite Water Company	2019-290-WS	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Railroad Commission of Texas	CenterPoint Energy Resources	GUD 10920	Depreciation rates and grouping procedure	Alliance of CenterPoint Municipalities
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater	A-2019-3009052	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
New Mexico Public Regulation Commission	Southwestern Public Service Company	19-00170-UT	Cost of capital and authorized rate of return	The New Mexico Large Customer Group; Occidental Permian
Indiana Utility Regulatory Commission	Duke Energy Indiana	45253	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Maryland Public Service Commission	Columbia Gas of Maryland	9609	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Washington Utilities & Transportation Commission	Avista Corporation	UE-190334	Cost of capital, awarded rate of return, capital structure	Washington Office of Attorney General
Indiana Utility Regulatory Commission	Indiana Michigan Power Company	45235	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of the State of California	Pacific Gas & Electric Company	18-12-009	Depreciation rates, service lives, net salvage	The Utility Reform Network
Oklahoma Corporation Commission	The Empire District Electric Company	PUD 201800133	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Arkansas Public Service Commission	Southwestern Electric Power Company	19-008-U	Cost of capital, depreciation rates, net salvage	Western Arkansas Large Energy Consumers
Public Utility Commission of Texas	CenterPoint Energy Houston Electric	PUC 49421	Depreciation rates, service lives, net salvage	Texas Coast Utilities Coalition
Massachusetts Department of Public Utilities	Massachusetts Electric Company and Nantucket Electric Company	D.P.U. 18-150	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201800140	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2018.9.60	Depreciation rates, service lives, net salvage	Montana Consumer Counsel and Denbury Onshore
Indiana Utility Regulatory Commission	Northern Indiana Public Service Company	45159	Depreciation rates, grouping procedure, demolition costs	Indiana Office of Utility Consumer Counselor
Public Service Commission of the State of Montana	NorthWestern Energy	D2018.2.12	Depreciation rates, service lives, net salvage	Montana Consumer Counsel
Oklahoma Corporation Commission	Public Service Company of Oklahoma	PUD 201800097	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Wal-Mart
Nevada Public Utilities Commission	Southwest Gas Corporation	18-05031	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Public Utility Commission of Texas	Texas-New Mexico Power Company	PUC 48401	Depreciation rates, service lives, net salvage	Alliance of Texas-New Mexico Power Municipalities
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201700496	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Maryland Public Service Commission	Washington Gas Light Company	9481	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Indiana Utility Regulatory Commission	Citizens Energy Group	45039	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Entergy Texas, Inc.	PUC 48371	Depreciation rates, decommissioning costs	Texas Municipal Group
Washington Utilities & Transportation Commission	Avista Corporation	UE-180167	Depreciation rates, service lives, net salvage	Washington Office of Attorney General
New Mexico Public Regulation Commission	Southwestern Public Service Company	17-00255-UT	Cost of capital and authorized rate of return	HollyFrontier Navajo Refining; Occidental Permian
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 47527	Depreciation rates, plant service lives	Alliance of Xcel Municipalities
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2017.9.79	Depreciation rates, service lives, net salvage	Montana Consumer Counsel
Florida Public Service Commission	Florida City Gas	20170179-GU	Cost of capital, depreciation rates	Florida Office of Public Counsel
Washington Utilities & Transportation Commission	Avista Corporation	UE-170485	Cost of capital and authorized rate of return	Washington Office of Attorney General
Wyoming Public Service Commission	Powder River Energy Corporation	10014-182-CA-17	Credit analysis, cost of capital	Private customer
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201700151	Depreciation, terminal salvage, risk analysis	Oklahoma Industrial Energy Consumers
Public Utility Commission of Texas	Oncor Electric Delivery Company	PUC 46957	Depreciation rates, simulated analysis	Alliance of Oncor Cities

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Nevada Public Utilities Commission	Nevada Power Company	17-06004	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection
Public Utility Commission of Texas	El Paso Electric Company	PUC 46831	Depreciation rates, interim retirements	City of El Paso
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-24	Accelerated depreciation of North Valmy plant	Micron Technology, Inc.
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-23	Depreciation rates, service lives, net salvage	Micron Technology, Inc.
Public Utility Commission of Texas	Southwestern Electric Power Company	PUC 46449	Depreciation rates, decommissioning costs	Cities Advocating Reasonable Deregulation
Massachusetts Department of Public Utilities	Eversource Energy	D.P.U. 17-05	Cost of capital, capital structure, and rate of return	Sunrun Inc.; Energy Freedom Coalition of America
Railroad Commission of Texas	Atmos Pipeline - Texas	GUD 10580	Depreciation rates, grouping procedure	City of Dallas
Public Utility Commission of Texas	Sharyland Utility Company	PUC 45414	Depreciation rates, simulated analysis	City of Mission
Oklahoma Corporation Commission	Empire District Electric Company	PUD 201600468	Cost of capital, depreciation rates	Oklahoma Industrial Energy Consumers
Railroad Commission of Texas	CenterPoint Energy Texas Gas	GUD 10567	Depreciation rates, simulated plant analysis	Texas Coast Utilities Coalition
Arkansas Public Service Commission	Oklahoma Gas & Electric Company	160-159-GU	Cost of capital, depreciation rates, terminal salvage	Arkansas River Valley Energy Consumers; Wal-Mart
Florida Public Service Commission	Peoples Gas	160-159-GU	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Arizona Corporation Commission	Arizona Public Service Company	E-01345A-16-0036	Cost of capital, depreciation rates, terminal salvage	Energy Freedom Coalition of America
Nevada Public Utilities Commission	Sierra Pacific Power Company	16-06008	Depreciation rates, net salvage, theoretical reserve	Northern Nevada Utility Customers

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Oklahoma Corporation Commission	Oklahoma Gas & Electric Co.	PUD 201500273	Cost of capital, depreciation rates, terminal salvage	Public Utility Division
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201500208	Cost of capital, depreciation rates, terminal salvage	Public Utility Division
Oklahoma Corporation Commission	Oklahoma Natural Gas Company	PUD 201500213	Cost of capital, depreciation rates, net salvage	Public Utility Division

Proxy Group Summary

Exhibit DJG-2

Company	Ticker	Market Cap. (\$ millions)	Market Category	Value Line Safety Rank	Financial Strength
AVANGRID, Inc	AGR	16,000	Large Cap	2	B++
Consolidated Edison Inc	ED	27,000	Large Cap	1	A+
Duke Energy Corporation	DUK	77,000	Large Cap	2	A
Eversource Energy	ES	30,000	Large Cap	1	A
Exelon Corp	EXC	44,000	Large Cap	3	B+
FirstEnergy Corp	FE	21,000	Large Cap	3	B+
MGE Energy	MGEE	2,700	Mid Cap	1	A+
NextEra Energy Inc	NEE	150,000	Large Cap	1	A+
Otter Tail Corp	OTTR	2,000	Mid Cap	2	A
PPL Corp	PPL	22,000	Large Cap	2	B++
Public Service Enterprise Group Inc	PEG	32,000	Large Cap	1	A++

Value Line Investment Survey

DCF Stock and Index Prices

Exhibit DJG-3

Ticker	^GSPC	AGR	ED	DUK	ES	EXC	FE	MGEE	NEE	OTTR	PPL	PEG
30-day Average	4192	52.51	77.52	101.62	82.72	45.41	37.93	74.96	72.97	48.37	28.80	61.65
Standard Deviation	45.2	1.49	0.78	1.07	1.19	1.00	0.54	1.08	0.85	0.87	0.27	0.61
05/06/21	4202	50.53	77.09	99.58	83.73	44.08	37.42	73.84	73.62	48.17	28.43	62.05
05/07/21	4233	50.54	77.32	99.90	83.47	44.28	37.52	74.42	74.14	48.54	28.83	62.62
05/10/21	4188	51.20	79.06	102.75	84.84	44.12	37.65	74.12	74.41	48.17	29.06	62.75
05/11/21	4152	50.97	78.56	102.64	83.42	44.05	37.20	73.42	73.68	48.04	28.92	61.73
05/12/21	4063	49.89	77.13	100.25	82.09	42.73	36.44	71.95	71.16	46.68	28.19	60.19
05/13/21	4113	51.29	78.50	103.00	84.10	44.41	37.48	74.61	72.25	48.24	28.62	61.63
05/14/21	4174	51.56	78.19	103.06	84.51	45.09	37.61	74.53	72.74	48.34	28.84	62.00
05/17/21	4163	51.10	77.96	102.45	83.46	45.09	37.71	74.16	71.52	47.80	28.74	61.77
05/18/21	4128	51.10	77.74	102.49	83.67	45.65	37.67	74.22	71.91	47.46	28.91	61.59
05/19/21	4116	51.44	77.98	101.16	83.25	45.54	37.40	74.37	72.28	47.23	28.95	61.46
05/20/21	4159	51.86	78.42	102.27	83.76	45.74	37.69	74.54	73.90	47.32	28.92	62.06
05/21/21	4156	52.36	78.96	102.86	84.09	45.84	38.01	75.10	74.05	47.61	29.08	62.50
05/24/21	4197	52.49	78.38	102.31	83.30	46.03	37.92	75.32	73.64	47.81	29.03	62.93
05/25/21	4188	51.76	77.81	101.31	82.33	44.91	37.62	73.74	72.98	46.97	28.69	61.67
05/26/21	4196	52.16	78.00	101.11	81.50	45.17	37.58	74.51	73.08	47.65	28.73	61.78
05/27/21	4201	52.10	76.87	100.01	81.15	44.60	37.87	74.61	72.62	47.81	28.63	61.51
05/28/21	4204	52.24	77.24	100.22	81.19	45.12	37.91	75.02	72.83	47.97	28.69	61.60
06/01/21	4202	51.97	76.43	100.08	79.91	45.14	38.02	74.81	72.12	48.28	28.58	61.51
06/02/21	4208	52.70	76.79	100.68	80.74	45.20	38.14	75.12	72.71	48.30	28.53	61.16
06/03/21	4193	53.32	77.26	101.67	82.20	45.77	38.47	75.78	72.37	49.05	28.60	61.20
06/04/21	4230	53.35	77.24	101.48	82.04	45.60	38.33	75.46	72.34	48.71	28.57	60.76
06/07/21	4227	53.77	77.31	101.86	82.11	45.86	38.57	75.61	72.47	48.89	28.66	60.87
06/08/21	4227	53.59	76.29	100.59	81.15	45.75	38.27	75.53	72.14	49.22	28.49	61.01
06/09/21	4220	54.52	76.88	101.39	82.56	46.36	38.49	75.50	72.45	49.62	28.99	61.13
06/10/21	4239	55.01	77.04	101.71	83.12	46.71	38.63	75.50	73.51	49.42	29.08	61.63
06/11/21	4247	54.99	77.23	101.93	82.81	46.91	38.76	76.73	73.49	49.79	29.33	61.80
06/14/21	4255	55.23	77.75	102.53	82.55	47.11	38.79	76.10	73.31	49.55	29.26	61.84
06/15/21	4247	55.09	77.75	103.22	83.77	47.11	38.88	76.99	73.43	49.79	29.30	62.35
06/16/21	4224	53.78	76.22	101.81	81.97	46.20	38.15	76.65	73.30	49.25	28.68	61.23
06/17/21	4222	53.27	76.28	102.42	82.69	46.00	37.72	76.51	74.58	49.28	28.60	61.20

All prices are adjusted closing prices reported by Yahoo! Finance, <http://finance.yahoo.com>

DCF Dividend Yields

Exhibit DJG-4

		[1]	[2]	[3]
Company	Ticker	Dividend	Stock Price	Dividend Yield
AVANGRID, Inc	AGR	0.440	52.51	0.84%
Consolidated Edison Inc	ED	0.775	77.52	1.00%
Duke Energy Corporation	DUK	0.965	101.62	0.95%
Eversource Energy	ES	0.603	82.72	0.73%
Exelon Corp	EXC	0.383	45.41	0.84%
FirstEnergy Corp	FE	0.390	37.93	1.03%
MGE Energy	MGEE	0.370	74.96	0.49%
NextEra Energy Inc	NEE	0.385	72.97	0.53%
Otter Tail Corp	OTTR	0.390	48.37	0.81%
PPL Corp	PPL	0.415	28.80	1.44%
Public Service Enterprise Group Inc	PEG	0.510	61.65	0.83%
Average		\$0.51	\$62.22	0.86%

[1] 2021 Q2 reported quarterly dividends per share. Nasdaq.com

[2] Average stock price from Exhibit DJG-3

[3] = [1] / [2] (quarterly dividend yield)

DCF Terminal Growth Rate Determinants

Exhibit DJG-5

Terminal Growth Determinants	Rate	
Nominal GDP	3.8%	[1]
Real GDP	1.8%	[2]
Inflation	2.0%	[3]
Risk Free Rate	2.3%	[4]
Highest	3.8%	

[1],[2] [3] CBO, The 2021 Long-Term Budget Outlook, p. 34

[4] From Exhibit DJG-7

Company-Specific Growth Factors	Rate	
Total Load (2021 - 2025)	-1.2%	[5]
Total Customers (2021 - 2025)	-0.1%	[6]
Average	-0.7%	

[5], [6] see response to OCA-III-7

DCF Final Results

Exhibit DJG-6

[1]	[2]	[3]	[4]
Dividend (d_0)	Stock Price (P_0)	Growth Rate (g)	DCF Result
\$0.51	\$62.22	3.80%	7.3%

[1] Average proxy dividend from Exhibit DJG-4

[2] Average proxy stock price from Exhibit DJG-3

[3] Highest growth determinant from Exhibit DJG-5

[4] Quarterly DCF Approximation = $[d_0(1 + g)^{0.25}/P_0 + (1 + g)^{0.25}]^4 - 1$

CAPM Risk-Free Rate

Exhibit DJG-7

Date	Rate
05/06/21	2.24%
05/07/21	2.28%
05/10/21	2.32%
05/11/21	2.35%
05/12/21	2.40%
05/13/21	2.39%
05/14/21	2.35%
05/17/21	2.36%
05/18/21	2.37%
05/19/21	2.38%
05/20/21	2.34%
05/21/21	2.33%
05/24/21	2.31%
05/25/21	2.26%
05/26/21	2.27%
05/27/21	2.29%
05/28/21	2.26%
06/01/21	2.30%
06/02/21	2.28%
06/03/21	2.30%
06/04/21	2.24%
06/07/21	2.25%
06/08/21	2.21%
06/09/21	2.17%
06/10/21	2.15%
06/11/21	2.15%
06/14/21	2.19%
06/15/21	2.20%
06/16/21	2.20%
06/17/21	2.11%
Average	2.28%

*Daily Treasury Yield Curve Rates on 30-year T-bonds, <http://www.treasury.gov/resources-center/data-chart-center/interest-rates/>

CAPM Beta Coefficient

Exhibit DJG-8

Company	Ticker	Beta
AVANGRID, Inc	AGR	0.85
Consolidated Edison Inc	ED	0.75
Duke Energy Corporation	DUK	0.85
Eversource Energy	ES	0.90
Exelon Corp	EXC	0.95
FirstEnergy Corp	FE	0.85
MGE Energy	MGEE	0.75
NextEra Energy Inc	NEE	0.90
Otter Tail Corp	OTTR	0.90
PPL Corp	PPL	1.10
Public Service Enterprise Group Inc	PEG	0.90
Average		0.88

Betas from Value Line Investment Survey

CAPM Implied Equity Risk Premium Estimate

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Year	Market Value	Operating Earnings	Dividends	Buybacks	Earnings Yield	Dividend Yield	Buyback Yield	Gross Cash Yield
2015	17,900	885	382	572	4.95%	2.14%	3.20%	5.33%
2016	19,268	920	397	536	4.77%	2.06%	2.78%	4.85%
2017	22,821	1,066	420	519	4.67%	1.84%	2.28%	4.12%
2018	21,027	1,282	456	806	6.10%	2.17%	3.84%	6.01%
2019	26,760	1,305	485	729	4.88%	1.81%	2.72%	4.54%
2020	31,659	1,019	480	520	3.22%	1.52%	1.64%	3.16%
Cash Yield	4.67%	[9]						
Growth Rate	2.85%	[10]						
Risk-free Rate	2.28%	[11]						
Current Index Value	4,192	[12]						

	[13]	[14]	[15]	[16]	[17]
Year	1	2	3	4	5
Expected Dividends	201	207	213	219	225
Expected Terminal Value					4702
Present Value	188	180	173	166	3485
Intrinsic Index Value	4192	[18]			
Required Return on Market	7.2%	[19]			
Implied Equity Risk Premium	4.9%	[20]			

[1-4] S&P Quarterly Press Releases, data found at <https://us.spindices.com/indices/equity/sp-500>, Q4 2018

[1] Market value of S&P 500

[5] = [2] / [1]

[6] = [3] / [1]

[7] = [4] / [1]

[8] = [6] + [7]

[9] = Average of [8]

[10] = Compound annual growth rate of [2] = (end value / beginning value)^{1/n} - 1

[11] Risk-free rate from DJG-1-7

[12] 30-day average of closing index prices from DJG-1-3 (^GSPC column)

[13-16] Expected dividends = [9]*[12]*(1+[10])ⁿ; Present value = expected dividend / (1+[11]+[19])ⁿ

[17] Expected terminal value = expected dividend * (1+[11]) / [19]; Present value = (expected dividend + expected terminal value) / (1+[11]+[19])ⁿ

[18] = Sum([13-17]) present values.

[19] = [20] + [11]

[20] Internal rate of return calculation setting [18] equal to [12] and solving for the discount rate

CAPM Equity Risk Premium Results

Exhibit DJG-10

IESE Business School Survey	5.6%	[1]
Duff & Phelps Report	5.5%	[2]
Damodaran (average)	4.5%	[3]
Damodaran (COVID Adjusted)	4.2%	[4]
Garrett	<u>4.9%</u>	[5]
Average	4.9%	
Highest	5.6%	

CAPM Final Result

Exhibit DJG-11

[1]	[2]	[3]	[4]
Risk-Free Rate	Proxy Beta	Risk Premium	CAPM Result
2.28%	0.882	5.6%	7.2%

[1] From DJG-7, risk-free rate exhibit

[2] From DJG-8, beta exhibit (avg. beta of proxy group)

[3] From DJG-10, equity risk premium exhibit

[6] = [1] + [2] * [3]

Cost of Equity Summary

Exhibit DJG-12

Model	Cost of Equity
Discounted Cash Flow Model	7.3%
Capital Asset Pricing Model	7.2%
Average	7.2%

Market Cost of Equity

Exhibit DJG-13

<u>Source</u>	<u>Estimate</u>	
IESE Survey	7.9%	[1]
Damodaran	6.7%	[2]
<u>Garrett</u>	<u>7.2%</u>	[3]
Highest	7.9%	

[1], [2], [3] ERPs from DJG-10 + riskfree rate from DJG-7

Market Cost of Equity vs. Awarded Returns

Attachment DJG-14

Year	[1]		[2]		[3]		[4]	[5]	[6]	[7]
	Electric Utilities		Gas Utilities		Total Utilities		S&P 500	T-Bond	Risk	Market
	ROE	#	ROE	#	ROE	#	Returns	Rate	Premium	COE
1990	12.70%	38	12.68%	33	12.69%	71	-3.06%	8.07%	3.89%	11.96%
1991	12.54%	42	12.45%	31	12.50%	73	30.23%	6.70%	3.48%	10.18%
1992	12.09%	45	12.02%	28	12.06%	73	7.49%	6.68%	3.55%	10.23%
1993	11.46%	28	11.37%	40	11.41%	68	9.97%	5.79%	3.17%	8.96%
1994	11.21%	28	11.24%	24	11.22%	52	1.33%	7.82%	3.55%	11.37%
1995	11.58%	28	11.44%	13	11.54%	41	37.20%	5.57%	3.29%	8.86%
1996	11.40%	18	11.12%	17	11.26%	35	22.68%	6.41%	3.20%	9.61%
1997	11.33%	10	11.30%	12	11.31%	22	33.10%	5.74%	2.73%	8.47%
1998	11.77%	10	11.51%	10	11.64%	20	28.34%	4.65%	2.26%	6.91%
1999	10.72%	6	10.74%	6	10.73%	12	20.89%	6.44%	2.05%	8.49%
2000	11.58%	9	11.34%	13	11.44%	22	-9.03%	5.11%	2.87%	7.98%
2001	11.07%	15	10.96%	5	11.04%	20	-11.85%	5.05%	3.62%	8.67%
2002	11.21%	14	11.17%	19	11.19%	33	-21.97%	3.81%	4.10%	7.91%
2003	10.96%	20	10.99%	25	10.98%	45	28.36%	4.25%	3.69%	7.94%
2004	10.81%	21	10.63%	22	10.72%	43	10.74%	4.22%	3.65%	7.87%
2005	10.51%	24	10.41%	26	10.46%	50	4.83%	4.39%	4.08%	8.47%
2006	10.32%	26	10.40%	15	10.35%	41	15.61%	4.70%	4.16%	8.86%
2007	10.30%	38	10.22%	35	10.26%	73	5.48%	4.02%	4.37%	8.39%
2008	10.41%	37	10.39%	32	10.40%	69	-36.55%	2.21%	6.43%	8.64%
2009	10.52%	40	10.22%	30	10.39%	70	25.94%	3.84%	4.36%	8.20%
2010	10.37%	61	10.15%	39	10.28%	100	14.82%	3.29%	5.20%	8.49%
2011	10.29%	42	9.92%	16	10.19%	58	2.10%	1.88%	6.01%	7.89%
2012	10.17%	58	9.94%	35	10.08%	93	15.89%	1.76%	5.78%	7.54%
2013	10.03%	49	9.68%	21	9.93%	70	32.15%	3.04%	4.96%	8.00%
2014	9.91%	38	9.78%	26	9.86%	64	13.52%	2.17%	5.78%	7.95%
2015	9.85%	30	9.60%	16	9.76%	46	1.38%	2.27%	6.12%	8.39%
2016	9.77%	42	9.54%	26	9.68%	68	11.77%	2.45%	5.69%	8.14%
2017	9.74%	53	9.72%	24	9.73%	77	21.61%	2.41%	5.08%	7.49%
2018	9.64%	37	9.62%	26	9.63%	63	-4.23%	2.68%	5.96%	8.64%
2019	9.64%	67					31.22%	1.92%	5.20%	7.12%
2020	9.43%	43					18.01%	0.93%	4.72%	5.65%

[1], [2], [3] Average annual authorized ROE for electric and gas utilities, RRA Regulatory Focus: Major Rate Case Decisions

[3] = [1] + [2]

[4], [5], [6] Annual S&P 500 return, 10-year T-bond Rate, and equity risk premium published by NYU Stern School of Business

[7] = [5] + [6] ; Market cost of equity represents the required return for investing in all stocks in the market for a given year

Optimal Capital Structure Analysis

Exhibit DJG-15

Inputs			[14]	[15]	[16]	[17]																																																								
Operating Income	260,700	[1]	<table border="1"> <thead> <tr> <th colspan="4">Ratings Table</th> </tr> <tr> <th>Coverage Ratio</th> <th>Bond Rating</th> <th>Spread</th> <th>Interest Rate</th> </tr> </thead> <tbody> <tr> <td>8.5 - 10.00</td> <td>Aaa/AAA</td> <td>0.69%</td> <td>2.97%</td> </tr> <tr> <td>6.5 - 8.49</td> <td>Aa2/AA</td> <td>0.85%</td> <td>3.13%</td> </tr> <tr> <td>5.5 - 6.49</td> <td>A1/A+</td> <td>1.07%</td> <td>3.35%</td> </tr> <tr> <td>4.25 - 5.49</td> <td>A2/A</td> <td>1.18%</td> <td>3.46%</td> </tr> <tr> <td>3.0 - 4.24</td> <td>A3/A-</td> <td>1.33%</td> <td>3.61%</td> </tr> <tr> <td>2.5 - 2.99</td> <td>Baa2/BBB</td> <td>1.71%</td> <td>3.99%</td> </tr> <tr> <td>2.25 - 2.49</td> <td>Ba1/BB+</td> <td>2.31%</td> <td>4.59%</td> </tr> <tr> <td>2.0 - 2.24</td> <td>Ba2/BB</td> <td>2.77%</td> <td>5.05%</td> </tr> <tr> <td>1.75 - 1.99</td> <td>B1/B+</td> <td>4.05%</td> <td>6.33%</td> </tr> <tr> <td>1.5 - 1.74</td> <td>B2/B</td> <td>4.86%</td> <td>7.14%</td> </tr> <tr> <td>1.25 - 1.49</td> <td>B3/B-</td> <td>5.94%</td> <td>8.22%</td> </tr> <tr> <td>0.8 - 1.24</td> <td>Caa/CCC</td> <td>9.46%</td> <td>11.74%</td> </tr> </tbody> </table>				Ratings Table				Coverage Ratio	Bond Rating	Spread	Interest Rate	8.5 - 10.00	Aaa/AAA	0.69%	2.97%	6.5 - 8.49	Aa2/AA	0.85%	3.13%	5.5 - 6.49	A1/A+	1.07%	3.35%	4.25 - 5.49	A2/A	1.18%	3.46%	3.0 - 4.24	A3/A-	1.33%	3.61%	2.5 - 2.99	Baa2/BBB	1.71%	3.99%	2.25 - 2.49	Ba1/BB+	2.31%	4.59%	2.0 - 2.24	Ba2/BB	2.77%	5.05%	1.75 - 1.99	B1/B+	4.05%	6.33%	1.5 - 1.74	B2/B	4.86%	7.14%	1.25 - 1.49	B3/B-	5.94%	8.22%	0.8 - 1.24	Caa/CCC	9.46%	11.74%
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Interest Expense	58,100	[2]																																																												
Book Debt	1,370,100	[3]																																																												
Book Equity	1,507,900	[4]																																																												
Debt / Capital	47.61%	[5]																																																												
Debt / Equity	91%	[6]																																																												
Debt Cost	4.24%	[7]																																																												
Tax Rate	21%	[8]																																																												
Unlevered Beta	0.51	[9]																																																												
Risk-free Rate	2.28%	[10]																																																												
Equity Risk Premium	5.6%	[11]																																																												
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[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Optimal Capital Structure Calculation											
Debt Ratio	D/E Ratio	Levered Beta	Cost of Equity	Proposed ROE	Debt Level	Interest Expense	Coverage Ratio	Pre-tax Debt Cost	After-tax Debt Cost	Optimal WACC	WACC at 8.5% ROE
0%	0%	0.513	5.15%	8.50%	0	0	∞	2.97%	2.35%	5.15%	8.50%
20%	25%	0.615	5.72%	8.50%	575,600	24,405	10.68	2.97%	2.35%	5.04%	7.27%
30%	43%	0.687	6.12%	8.50%	863,400	36,608	7.12	3.13%	2.47%	5.03%	6.69%
40%	67%	0.784	6.66%	8.50%	1,151,200	48,811	5.34	3.46%	2.73%	5.09%	6.19%
45%	82%	0.845	7.01%	8.50%	1,295,100	54,912	4.75	3.46%	2.73%	5.08%	5.91%
50%	100%	0.919	7.42%	8.50%	1,439,000	61,014	4.27	3.46%	2.73%	5.08%	5.62%
55%	122%	1.009	7.93%	8.50%	1,582,900	67,115	3.88	3.61%	2.85%	5.13%	5.39%
60%	150%	1.122	8.56%	8.50%	1,726,800	73,216	3.56	3.61%	2.85%	5.13%	5.11%

[1], [2] See response to OCA-III-11(a)(b) (000's)
 [3], [4] See response to OCA-III-11(c)(d) (000's)
 [5] = [3] / ([3] + [4])
 [6] = [3] / [4]
 [7] See response to OCA-III(e)
 [8] Corporate tax rate
 [9] Average beta / (1+(1 - [8])*[6])
 [10] From DJG risk-free rate exhibit
 [11] From DJG equity risk premium exhibit

[12] = [1] / [2]
 [13] Company bond rating
 [14] Ranges of coverage ratios
 [15] Moody's / S&P bond ratings
 [16] NYU spread over risk-free rate
 [17] = [16] + [10] = est. debt cost
 [18] = debt / total capital
 [19] = [18] / (1 - [8])
 [20] = [9] * (1 + (1 - [8]) * [6])

[21] = [10] + [20] * [11]
 [22] Recommended awarded ROE
 [23] = [18] * ([3] + [4]); (000's)
 [24] = [22] * [7]; (000's)
 [25] = [1] / [23]
 [26] Debt cost given coverage ratio per Ratings Table
 [27] = [25] * (1 - [8])
 [28] = ([18] * [26]) + ((1 - [18]) * [21])
 [29] = ([18] * [26]) + ((1 - [18]) * [22])

Proxy Company Debt Ratios

Exhibit DJG-16

Company	Ticker	Debt Ratio
AVANGRID, Inc	AGR	41%
Consolidated Edison Inc	ED	52%
Duke Energy Corporation	DUK	54%
Eversource Energy	ES	52%
Exelon Corp	EXC	52%
FirstEnergy Corp	FE	75%
MGE Energy	MGEE	36%
NextEra Energy Inc	NEE	54%
Otter Tail Corp	OTTR	42%
PPL Corp	PPL	62%
Public Service Enterprise Group Inc	PEG	48%
Average		52%

Debt ratios from Value Line Investment Survey

Competitive Industry Debt Ratios

Exhibit DJG-17

Industry	# Firms	Debt Ratio
Financial Svcs. (Non-bank & Insurance)	235	95%
Retail (Building Supply)	15	88%
Hospitals/Healthcare Facilities	32	84%
Air Transport	17	84%
Advertising	61	81%
Hotel/Gaming	66	77%
Brokerage & Investment Banking	39	77%
Auto & Truck	19	75%
Retail (Automotive)	30	74%
Food Wholesalers	18	74%
Retail (Special Lines)	85	72%
Recreation	69	71%
Bank (Money Center)	7	68%
Retail (Grocery and Food)	14	68%
Transportation	21	68%
Computers/Peripherals	52	68%
Packaging & Container	26	67%
Broadcasting	29	65%
Rubber& Tires	3	64%
Beverage (Soft)	41	64%
Chemical (Basic)	48	62%
Oil/Gas Distribution	57	62%
Cable TV	13	61%
R.E.I.T.	238	61%
Apparel	51	61%
Trucking	35	61%
Computer Services	116	61%
Retail (Distributors)	85	60%
Telecom (Wireless)	16	60%
Power	55	60%
Farming/Agriculture	32	59%
Business & Consumer Services	169	59%
Aerospace/Defense	72	59%
Utility (Water)	17	59%
Telecom. Services	58	59%
Retail (Online)	75	58%
Software (Internet)	36	57%
Household Products	140	57%
Construction Supplies	46	57%
Real Estate (Operations & Services)	61	56%
Building Materials	42	56%
Transportation (Railroads)	6	56%
Coal & Related Energy	29	56%
Chemical (Diversified)	5	56%
Office Equipment & Services	22	55%
Environmental & Waste Services	86	54%
Auto Parts	52	53%
Drugs (Biotechnology)	547	52%
Real Estate (Development)	25	52%
Publishing & Newspapers	29	52%
Green & Renewable Energy	25	52%
Retail (General)	17	52%
Shoe	11	50%
Total / Average	3,195	64%

Weighted Average Rate of Return Proposal

Exhibit DJG-18

<u>Capital Component</u>	<u>Proposed Ratio</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
Long Term Debt	50.0%	4.29%	2.15%
Common Equity	<u>50.0%</u>	8.50%	<u>4.25%</u>
Total	100.0%		6.40%

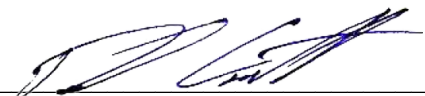
BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, David J. Garrett, hereby state that the facts set forth in my Direct Testimony, OCA Statement 2, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 30, 2021
*311968

Signature: 
David J. Garrett

Consultant Address: Resolve Utility Consulting, PLLC
101 Park Avenue
Suite 1125
Oklahoma City, OK 73102

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Pennsylvania Public Utility Commission)
v.) Docket No. R-2021-3024750
Duquesne Light Company)**

**DIRECT TESTIMONY AND EXHIBITS
OF
GLENN A. WATKINS
ON BEHALF OF THE
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE**

JUNE 30, 2021

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1 **I. INTRODUCTION**

2

3 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A. My name is Glenn A. Watkins. My business address is 6377 Mattawan Trail,
5 Mechanicsville, Virginia 23116.

6

7 **Q. WHAT IS YOUR PROFESSIONAL AND EDUCATIONAL BACKGROUND?**

8 A. I am President and Senior Economist of Technical Associates, Inc., which is
9 an economics and financial consulting firm with offices in the Richmond, Virginia
10 area. Except for a six-month period during 1987 in which I was employed by Old
11 Dominion Electric Cooperative, as its forecasting and rate economist, I have been
12 employed by Technical Associates continuously since 1980.

13 During my career at Technical Associates, I have conducted marginal and
14 embedded cost of service, rate design, cost of capital, revenue requirement, and load
15 forecasting studies involving numerous electric, gas, water/wastewater, and telephone
16 utilities, and have provided expert testimony in Alabama, Arizona, Delaware,
17 Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts,
18 Michigan, Montana, Nevada, New Jersey, North Carolina, Ohio, Pennsylvania,
19 Vermont, Virginia, South Carolina, Washington, and West Virginia. A more
20 complete description of my education and experience is provided in my Schedule
21 GAW-1.

22

23 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

24 A. Technical Associates, Inc. has been retained by the Pennsylvania Office of
25 Consumer Advocate (“OCA”) to evaluate the reasonableness of Duquesne Light
26 Company’s (“Duquesne” or “Company”) class cost of service study, proposed class
27 revenue allocations and residential rate design. The purpose of my direct testimony is
28 to provide comments regarding the Company’s proposals and to present my findings
29 and recommendations based on the studies I have undertaken in this case.

30

1 **Q. HAVE YOU TESTIFIED BEFORE THIS COMMISSION ON THESE ISSUES**
2 **IN THE PAST?**

3 A. Yes. In addition to testifying on behalf of OCA in Duquesne’s last two
4 general rate cases (Docket Nos. R-2013-2372129 and R-2018-3000124), I have
5 provided testimony before this Commission on numerous occasions concerning cost
6 allocations, rate design, cost of capital and revenue requirements involving electric
7 distribution, natural gas distribution, and water utility general rate cases.

8
9 **II. CLASS COST OF SERVICE**

10
11 **A. Concepts and Methods**

12
13 **Q. PLEASE BRIEFLY EXPLAIN THE CONCEPT OF A CLASS COST OF**
14 **SERVICE STUDY (“CCOSS”) AND ITS PURPOSE IN A RATE**
15 **PROCEEDING.**

16 A. Generally, there are two types of cost of service studies used in public utility
17 ratemaking: marginal cost studies and embedded, or fully allocated, cost studies.
18 Consistent with the practices of this Commission, Duquesne has utilized a traditional
19 embedded cost of service study for purposes of establishing the overall revenue
20 requirement in this case, as well as for class cost of service purposes.

21 Embedded class cost of service studies are also referred to as fully allocated
22 cost studies because the majority of a public utility’s plant investment and expense is
23 incurred to serve all customers in a joint manner. Accordingly, most costs cannot be
24 specifically attributed to a particular customer or group of customers. To the extent
25 that certain costs can be specifically attributed to a particular customer or group of
26 customers, these costs are directly assigned in the CCOSS. The costs are jointly
27 incurred to serve all or most customers; therefore, they must be allocated across
28 specific customers or customer rate classes.

29 It is generally accepted that to the extent possible, joint costs should be
30 allocated to customer classes based on the concept of cost causation. That is, costs
31 are allocated to customer classes based on analyses that measure the causes of the

1 incurrence of costs to the utility. Although the cost analyst strives to abide by this
2 concept to the greatest extent practical, some categories of costs, such as corporate
3 overhead costs, cannot be attributed to specific exogenous measures or factors, and
4 must be subjectively assigned or allocated to customer rate classes. With regard to
5 those costs in which cost causation can be attributed, there is often disagreement
6 among cost of service experts on what is an appropriate cost causation measure or
7 factor; e.g., peak demand, energy usage, number of customers, etc.

8
9 **Q. IN YOUR OPINION, HOW SHOULD THE RESULTS OF A CCROSS BE**
10 **UTILIZED IN THE RATEMAKING PROCESS?**

11 A. Although there are certain principles used by all cost of service analysts, there
12 are often significant disagreements on the specific factors that drive individual costs.
13 These disagreements can and do arise as a result of the quality of data and level of
14 detail available from financial records. There are also fundamental differences in
15 opinions regarding the cost causation factors that should be considered to properly
16 allocate costs to rate schedules or customer classes. Furthermore, and as mentioned
17 previously, cost causation factors cannot be realistically ascribed to some costs such
18 that subjective decisions are required.

19 In these regards, two different cost studies conducted for the same utility and
20 time period can, and often do, yield different results. As such, regulators should
21 consider CCROSS only as a guide, with the results being used as one of many tools to
22 assign class revenue responsibility. Given the subjectivity, and imprecise nature of
23 every cost allocation study, other factors that should be considered and utilized
24 include: gradualism; equity and fairness; existing price differential across rates and
25 classes; conservation; and perhaps, economic development as well as risk
26 differentials.

27
28 **Q. HAVE THE HIGHER COURTS OPINED ON THE USEFULNESS OF COST**
29 **ALLOCATIONS FOR PURPOSES OF ESTABLISHING REVENUE**
30 **RESPONSIBILITY AND RATES?**

1 A. Yes. In an important regulatory case involving Colorado Interstate Gas
2 Company and the Federal Power Commission (predecessor to FERC), the United
3 States Supreme Court stated:

4 But where, as here, several classes of services have a common
5 use of the same property, difficulties of separation are obvious.
6 Allocation of costs is not a matter for the slide-rule. It involves
7 judgment on a myriad of facts. It has no claim to an exact
8 science.¹
9

10 **Q. DOES YOUR OPINION, AND THE FINDINGS OF THE U.S. SUPREME**
11 **COURT, IMPLY THAT COST ALLOCATIONS SHOULD PLAY NO ROLE**
12 **IN THE RATEMAKING PROCESS?**

13 A. Not at all. It simply means that regulators should consider the fact that cost
14 allocation results are not surgically precise and that alternative, yet equally
15 defensible, approaches may produce significantly different results. In this regard,
16 when all cost allocation approaches consistently show that certain classes are over or
17 under contributing to costs and/or profits, there is a strong rationale for assigning
18 smaller or greater percentage rate increases to these classes. On the other hand, if
19 one set of cost allocation approaches show dramatically different results than another
20 approach, caution should be exercised in assigning disproportionately larger or
21 smaller percentage increases to the classes in question.
22

23 **Q. PLEASE EXPLAIN THE BASIC CONCEPTS OF COST ALLOCATION FOR**
24 **PUBLIC UTILITIES AND ELECTRIC DISTRIBUTION COMPANIES**
25 **(“EDCs”).**

26 A. As I mentioned earlier, the majority of an EDC’s plant investment serves
27 customers in a joint manner. In this regard, the EDC’s infrastructure is a system
28 benefiting all customers. If all customers were the same size and had identical usage
29 characteristics, cost allocation would be simple (even unnecessary). However, in
30 reality, a utility’s customer base is not so simple. Customers (or customer groups)
31 tend to vary greatly in the amount of service required throughout the year such that

¹ Colorado Interstate Gas Co. v. Federal Power Commission, 324 U.S. 581, 589, 65 S. Ct. 829, 833 (1945).

1 there are small usage and large usage customers. Therefore, differences in usage
2 should be considered. Because different groups of customers also utilize the system
3 at varying degrees during the year, consideration should also be given to the demands
4 placed on the system during peak usage periods.
5

6 **Q. WITH REGARD TO UTILITIES GENERALLY, AND EDC'S**
7 **SPECIFICALLY, ARE THERE A COMMON SET OF EXTERNAL**
8 **FACTORS, OR DRIVERS, USED IN VIRTUALLY EVERY CCROSS?**

9 A. Yes. Virtually every utility cost allocation study rests on the analysts'
10 selection of three primary external (exogenous) allocation factors: number of
11 customers; peak load (demand); and annual energy usage.² From these three
12 exogenous factors, a host of internally generated allocation factors are developed
13 based on previously allocated plant and expenses. In this regard, it is important to
14 understand that the relative relationship across classes between these external
15 allocators can be dramatically different.
16

17 **Q. WITH RESPECT TO DUQUESNE, WHAT ARE THE RELATIVE CLASS**
18 **RELATIONSHIPS OF THESE THREE PRIMARY ALLOCATION**
19 **FACTORS?**

20 A. The following table shows the relative amounts (percentages) of the three
21 primary external allocation factors using the Company's class definitions:
22
23
24
25
26
27
28
29

² It should be noted that "weighted" customer counts are often used for certain plant and expense accounts.

TABLE 1

Class	Rate	Allocation Factor		
		Customers	Annual KWH	Peak Demand (Non-Coincident)
Residential	RS	82.07%	28.50%	37.87%
	RH	6.60%	3.31%	5.04%
	RA	0.98%	0.50%	0.61%
	TOTAL RESID.	89.66%	32.30%	43.52%
Sm. Gen. Svc.	GS	4.12%	0.83%	0.81%
	TOTAL SM. GS	4.12%	0.83%	0.81%
Med. Gen. Svc.	GM<25 KW	3.34%	5.08%	5.01%
	GM>25 KW	1.12%	17.51%	16.30%
	GMH<25 KW	0.41%	0.48%	0.54%
	GMH>25 KW	0.11%	1.50%	1.48%
	TOTAL MED. GS	4.99%	24.58%	23.34%
Lg. Gen. Svc.	GL	0.12%	21.23%	16.32%
	GLH	0.01%	2.61%	2.19%
	L	0.00%	7.78%	5.49%
	HVPS	0.00%	10.06%	7.65%
	TOTAL LG. GS	0.13%	41.67%	31.66%
Lighting/Unmetered	SE	0.00%	0.20%	0.30%
	SL	0.16%	0.24%	0.26%
	UMS	0.93%	0.18%	0.10%
	TOTAL LIGHTING	1.09%	0.62%	0.67%
TOTAL		100.00%	100.00%	100.00%

As can be seen above, there is a vast difference in the relativities of these external allocation factors, such that the selection of a particular allocator will significantly affect the assignment of costs across the classes.

Q. WITH REGARD TO EDCs, IS THERE ANY ASPECT OF CLASS COST ALLOCATIONS THAT TENDS TO OVERSHADOW OTHER ISSUES OR IS OFTEN CONTROVERSIAL?

A. Yes. For virtually every EDC, the largest rate base items (accounts) include distribution poles, conductors (overhead and underground), and line transformers. Furthermore, several other rate base and operating income accounts are typically allocated to classes based on the previous assignment of these distribution plant

1 accounts. As such, the methods and approaches used to allocate distribution poles,
2 conductors, and transformers to classes are usually by far the most important (in
3 terms of class rate of return [“ROR”] results) and tend to be the most controversial
4 for electric distribution utilities.

5
6 **Q. HAVE YOU REVIEWED THE COMPANY’S CCOSS FOR**
7 **MATHEMATICAL ACCURACY?**

8 A. Yes. It is my standard practice to replicate another expert’s CCOSS for
9 mathematical accuracy using my own computerized model. In other words, as a first
10 step, I utilize all of the methods and procedures used by another analyst within my
11 own computerized model. In this case, I evaluated the mathematical accuracy of
12 Company witness Howard Gorman’s model and determined that Mr. Gorman’s
13 model is mathematically correct (i.e., the sum of the classes always equal the total
14 system costs by account and for each allocator). However, I was not able to exactly
15 replicate his results.

16 My replication of Mr. Gorman’s study produced slightly different class
17 allocations for items such as General Plant, Intangible Plant, and Administrative &
18 General expenses. I was able to trace this difference back to a slight difference in
19 labor allocators as labor is the general basis for allocating the accounts did not
20 exactly match. Although I have not been able to exactly replicate or understand our
21 slight differences in labor allocators, I cannot say that Mr. Gorman’s calculations are
22 incorrect. With this being said, my overall replication results are very similar to
23 those obtained by Mr. Gorman. Therefore, so as to avoid any quibbling over very
24 slight differences, I have utilized Mr. Gorman’s computer model in performing
25 alternative analyses that will be discussed later in my testimony.

26
27 **B. Classification and Allocation of Distribution Plant**

28
29 **Q. HOW DID THE COMPANY ASSIGN DISTRIBUTION COSTS TO**
30 **INDIVIDUAL CUSTOMER CLASSES?**

1 A. Company witness Howard Gorman classified and allocated distribution plant
2 and expenses partially on the basis of number of customers and partially on the basis
3 of class non-coincident peak (“NCP) demand.³ With respect to the Company’s total
4 distribution system, Mr. Gorman sub-functionalized these facilities between primary
5 (high) voltage and secondary (low) voltage systems. Furthermore, Mr. Gorman has
6 separated Duquesne’s underground facilities into three subcategories: Downtown
7 Network; Radial; and Underground Residential Development (“URD”).

8 The Downtown Network relates to downtown Pittsburgh and serves only
9 commercial/small industrial customers such that the Residential class is not assigned
10 any Downtown Network costs. Similarly, the costs associated with URD are all
11 assigned to Residential customers. In this regard, the remaining underground
12 distribution plant and related costs are referred to as Underground Radial wherein the
13 costs are assigned to all customer classes.

14
15 **Q. PLEASE EXPLAIN THE TERM “CLASSIFICATION OF DISTRIBUTION**
16 **PLANT.”**

17 A. In the broadest sense, an embedded CCOSS is undertaken using a three-tiered
18 approach. First, costs are functionalized as production, transmission, distribution,
19 general, and/or customer. These functionalized costs are then classified as energy,
20 demand, or customer-related. Finally, classified costs are then allocated to individual
21 classes. With respect to the classification of distribution plant, these facilities and
22 equipment are traditionally classified as demand-related, customer-related, or both
23 demand and customer-related. Under such a bifurcated classification, a percentage of
24 distribution plant investment (cost) is allocated to classes based on customer counts
25 and the remaining costs are allocated based on some measure of demand. This
26 bifurcation is largely a result of assumed differences in customer densities throughout

³ Class NCP demand reflects the highest demand (KW) imposed by each class at any point in time during a given year and are not necessarily coincident with the system peak demand. NCP demands differ from Coincident Peak (“CP”) demands in that the latter (CP) definition measures each class’ load at the time of the system peak; i.e., class loads are coincident with each other. Because distribution loads tend to be more localized than generation or transmission loads, class NCP demands are generally considered to be better allocator of distribution cost responsibility than coincident peak demands.

1 a utility's service area such that electric utility distribution plant sometimes is
2 classified as partially demand-related and partially customer-related.

3
4 **Q. WHY IS THE ISSUE OF CLASSIFICATION OF DISTRIBUTION PLANT**
5 **IMPORTANT IN THIS CASE?**

6 A. The classification of distribution plant is the single most important factor
7 affecting class rates of return for EDCs. To illustrate the importance of this issue,
8 consider the Residential class: whereas this class accounts for only about 32% of
9 energy usage and 44% of peak demand, it contains about 90% of the Company's total
10 number of customers. Therefore, given the level of investment associated with
11 distribution plant, wide variations in class rates of return usually result from different
12 customer/demand classifications.

13
14 **Q. WHY IS ELECTRIC DISTRIBUTION PLANT SOMETIMES CLASSIFIED**
15 **AS PARTIALLY CUSTOMER-RELATED AND PARTIALLY DEMAND-**
16 **RELATED?**

17 A. Even though investments are made in distribution plant and equipment to
18 meet the energy needs of its customers at their required power levels, there may be
19 considerable differences in both customer densities and the mix of customers
20 throughout a utility's service area. As a hypothetical, suppose a utility serves both an
21 urban area and a rural area. In this situation, many customers' electrical needs are
22 served with relatively few miles of conductors, few poles, etc. in the urban area,
23 while many more miles of conductors, more poles, etc. are required to serve the
24 requirements of relatively few customers in the rural area. If the distribution of
25 classes of customers (class customer mix) is relatively similar in both the rural and
26 urban areas, there is no need to consider customer counts (number of customers)
27 within the allocation process, because all classes use the utility's joint distribution
28 facilities proportionately across the service area. However, if the customer mix is
29 such that Commercial and Industrial customers are predominately clustered in the
30 urban area, while the rural portion of the service territory consists almost entirely of
31 Residential customers, it may be unreasonable to allocate the total Company's

investment based only on demand; i.e., a large investment in many miles of line is required to serve predominately Residential customers in the rural area while the Commercial and Industrial electrical needs are met with much fewer miles of lines in the urban area. Under this circumstance, an allocation of costs based on a weighting of customers and demand can be considered equitable and appropriate.

Q. PLEASE PROVIDE AN EXAMPLE THAT ILLUSTRATES THE CONCEPTS OF DENSITY AND CLASS CUSTOMER MIX AS THEY RELATE TO COST ALLOCATIONS.

A. As a starting point, it is important to understand absolute and relative class relationships of an electric utility’s number of customers, energy requirements, and maximum loads (demands). In terms of simple customer counts, the number of Residential accounts make up the overwhelming majority of any retail electric utility’s number of customers. However, because Residential customers tend to be small volume users compared to Commercial and Industrial customers, the Residential class is responsible for a significantly smaller percentage of total KWH energy supplied or peak loads on the system.

While Table 1 above shows the relative class differences between number of customers, energy usage, and peak demands, Table 2 below illustrates the absolute size differences between Duquesne’s different types of customers:

TABLE 2

Category	Average Annual KWH Per Customer (KWH)	Average Peak Load Per Customer (KW)
Residential	7,188	2.44
Small General Service	4,029	1.00
Medium General Service	98,361	23.57
Large General Service	5,884,173	1,127.63

In order to understand the concepts of density and class customer mix, consider examples of two electric distribution utilities each of which are comprised of only

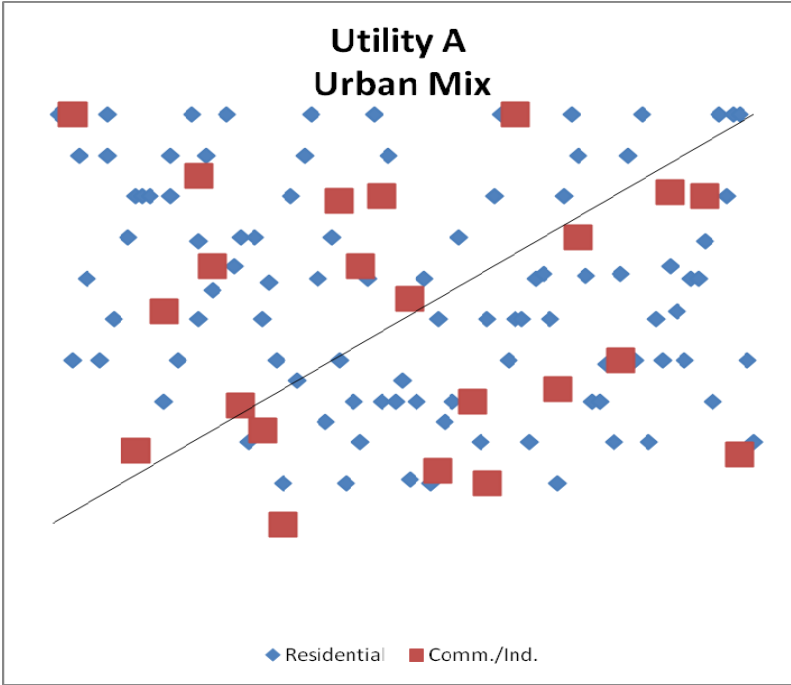
two distribution lines: one line serving a densely populated area (urban) and another line serving a sparsely populated area (rural). Furthermore, for simplicity and explanatory purposes, assume there are only two classes of customers for each utility: Residential and Commercial/Industrial with the following characteristics:

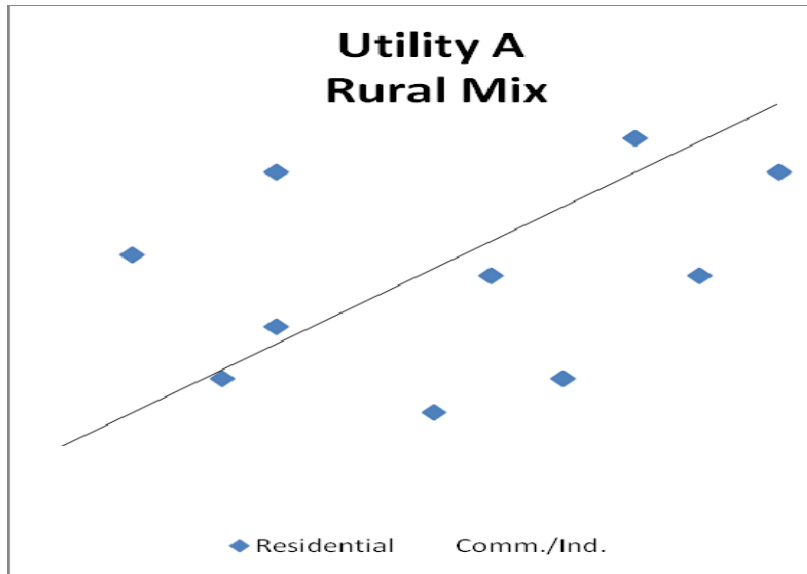
TABLE 3

Class	Absolute			Relative	
	Number of Customers	Peak Load	Peak Load Per Customer	Number of Customers	Peak Load
Residential	110	550	5	83%	33%
Comm./Ind.	22	1,100	50	17%	67%
Total	132	1,650	--	100%	100%

Utility A:

For Utility A, assume all Commercial/Industrial customers are located on the urban (densely populated) distribution line such that the rural line only serves Residential customers as shown graphically below:





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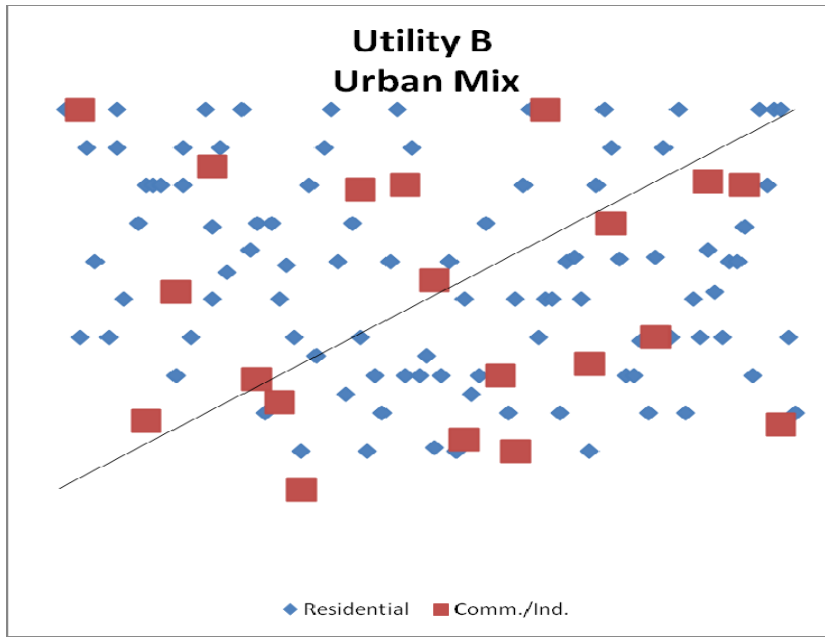
Because the urban line is much shorter in total distance and serves the majority of customers (and loads) and because many more miles of line are required to serve relatively few Residential only customers in rural areas, it would be unfair, and inconsistent with cost causation, to allocate total system line costs only on utilization (KW) because Commercial/Industrial customers arguably do not cause costs to be incurred for the rural portion of the system. As such, some weighting of relative number of customers and utilization is appropriate to allocate total system line costs.

Utility B:

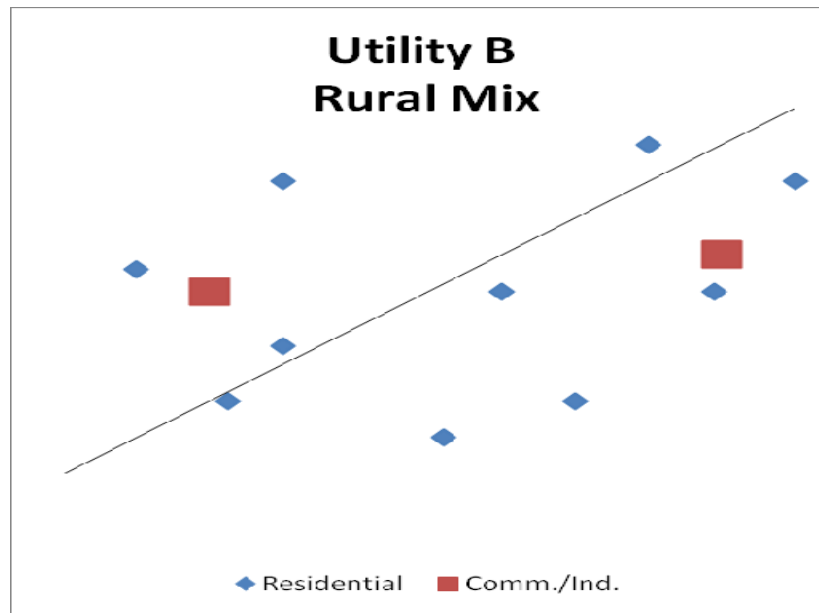
For Utility B, assume that the relative mix of customers is evenly distributed between the urban and rural lines. In other words, this utility’s configuration of customers is as follows:

TABLE 4

Class	Number of Customers			
	Urban Line		Rural Line	
	Amount	Percent	Amount	Percent
Residential	100	83%	10	83%
Comm./Ind.	20	17%	2	17%
Total	120	100%	12	100%



1
2



3
4

5 As can be seen in the above table and charts, the relative imposition of costs across
6 the two classes for Utility B is the same for the urban and rural lines. That is, while
7 there are more absolute Residential customers than Commercial/Industrial on both
8 the urban and rural lines, the proportion (mix) of customers is the same. As such, an
9 allocation of total system lines costs based on utilization (maximum loads) is
10 appropriate such that no consideration of customer counts is needed or desired.

1 **Q. DOES THE CLASSIFICATION OF DISTRIBUTION PLANT INVESTMENT**
2 **AS PARTIALLY CUSTOMER-RELATED AND PARTIALLY DEMAND-**
3 **RELATED REFLECT ANY RELATIVE COST (PER MILE) DIFFERENCES**
4 **BETWEEN URBAN AND RURAL AREAS?**

5 A. No. It is generally more expensive to install a mile of distribution circuit in an
6 urban area than in a rural area. However, although this cost difference may be
7 substantial, this cost difference is usually ignored due to record keeping limitations,
8 in that all costs are simply assumed to be uniform (averaged) across the rural and
9 urban portions of a service area.

10

11 **Q. DO YOUR EXAMPLES DISCUSSED ABOVE IMPLY THAT IT COSTS**
12 **MORE TO SERVE RURAL CUSTOMERS THAN URBAN CUSTOMERS**
13 **AND THAT PERHAPS A UTILITY'S RURAL CUSTOMERS SHOULD PAY**
14 **MORE PER UNIT THAN URBAN CUSTOMERS?**

15 A. While it is possible that it technically costs more to serve a rural customer
16 versus an urban customer, regulatory policy in the United States has universally been
17 not to price discriminate based on customer densities, urban versus rural, or other
18 geographic differences. Rather, regulatory policy has been such that classes of
19 customers with similar usage and/or load characteristics are established for pricing
20 purposes. In fact, during my 40 years practicing utility costing and pricing across the
21 Country, I have not seen a fixed utility rate structure that discriminates based on
22 customer densities or other geographic characteristic.

23

24 **Q. IS THERE ACADEMIC SUPPORT FOR YOUR EXPLANATION AND**
25 **CONCEPTS REGARDING CUSTOMER DENSITIES AND CLASS**
26 **CUSTOMER MIXES?**

27 A. Yes. In the well known and often referenced treatise Principles of Public
28 Utility Rates, Professor James Bonbright states that there:

29 is the very weak correlation between the area (or the mileage) of a
30 distribution system and the number of customers served by this
31 system. For it makes no allowance for the density factor (customers
32 per linear mile or per square mile). Our casual empiricism is

1 supported by a more systematic regression analysis in (Lessels, 1980)
2 where no statistical association was found between distribution costs
3 and number of customers. Thus, if the company's entire service area
4 stays fixed, an increase in number of customers does not necessarily
5 betoken any increase whatever in the costs of a minimum-sized
6 distribution system.⁴
7

8 **Q. BEFORE WE CONTINUE, IS DUQUESNE'S DISTRIBUTION SYSTEM**
9 **COMPRISED OF VARIOUS SUB-SYSTEMS?**

10 A. Yes. As is the case with virtually every electric utility, Duquesne's overall
11 distribution system is comprised of a primary voltage system and a secondary voltage
12 system. The primary system operates at higher voltage levels than the secondary
13 system and generally consists of plant and equipment between the substations and
14 transformers. The lower voltage secondary system can be thought of as operating
15 downstream from the primary system and delivers electricity to small end-users.
16 Moreover, it should be noted that in recent years, electric utilities have been
17 reconfiguring their distribution systems with more and more primary high voltage
18 distribution lines and equipment and less secondary voltage distribution lines and
19 equipment. This industry-wide change has come about as a result of increased cost
20 efficiencies associated with conductors as well as technological advances in
21 transformation efficiencies; i.e., utilities have found that it is becoming more and
22 more efficient to energize a higher percentage of their systems at higher voltage
23 levels (primary). In many regards, an EDC's primary voltage system can be thought
24 of in the same manner as traditional transmission lines for cost causation and cost
25 allocation purposes in that these primary lines carry large loads to the various load
26 centers, which are then transformed to lower voltages within the load centers.
27

28 **Q. BRIEFLY DESCRIBE THE TYPES OF INVESTMENT (EQUIPMENT)**
29 **UTILIZED IN DUQUESNE'S DISTRIBUTION SYSTEM.**

30 A. For accounting purposes, Duquesne's distribution plant is grouped into
31 various accounts. These accounts include: Land and Land Rights (Account 360);

⁴ Bonbright, Principles of Public Utility Rates, Second Edition, page 491.

1 Structures and Improvements (Account 361); Station Equipment (Account 362);
2 Poles, Towers and Fixtures (Account 364); Overhead Conductors (Account 365);
3 Underground Conduit (Account 366); Underground Conductors (Account 367); Line
4 Transformers (Account 368); Meters (Account 370); Area Lighting (Account 371)
5 and Street Lighting (Account 373).
6

7 **Q. DID DUQUESNE CLASSIFY DISTRIBUTION PLANT AS PARTIALLY**
8 **CUSTOMER-RELATED IN THIS CASE?**

9 A. Yes. Structures, Improvements and Station Equipment are associated with
10 substations and are classified as 100% demand-related. Because Meters and Services
11 are required to connect each customer, these accounts are typically classified as
12 customer-related. The majority of the Company's plant investment relates to Poles,
13 Conductors, Conduit, and Transformers. These plant accounts are each sub-
14 functionalized between primary and secondary systems, wherein all primary voltage
15 plant items are classified as totally demand-related, while the secondary voltage plant
16 items are classified as partially customer-related and partially demand-related.
17

18 **Q. WHAT RELATIVE CUSTOMER/DEMAND PERCENTAGES DID**
19 **DUQUESNE USE TO CLASSIFY SECONDARY PLANT FOR PURPOSES OF**
20 **THIS CASE?**

21 A. The following are Mr. Gorman's customer/demand percentages used for each
22 secondary distribution plant account:
23
24
25
26
27
28
29

TABLE 5
Duquesne Classification of Secondary Distribution Plant ⁵

Account	(\$000)		
	(1) Total Gross Plant	(2) Percent Customer	(3) Customer Allocation (1) x (2)
<u>Overhead Service:</u>			
364 & 365 Poles & Overhead Conductors	\$255,429	94.93%	\$242,468
368 Overhead Transformers	\$269,079	89.42%	\$240,611
Total Secondary Overhead	\$524,508	92.10%	\$483,079
<u>Underground Service (Radial):</u>			
366 & 367 UG Radial Conduit & Conductors	\$52,014	28.60%	\$14,784
368 UG Radial Transformers	\$95,034	14.11%	\$13,410
Total Secondary Underground Radial	\$147,048	19.17%	\$28,194
Total Secondary Allocated to All Classes	\$671,556	76.13%	\$511,273

As can be seen above, Duquesne's classification of jointly-used distribution plant allocates 76.13% of secondary plant on a customer count basis. In other words, about three-fourths of Duquesne's investment in joint secondary distribution plant is allocated to classes based on customer counts regardless of size, utilization, or demands placed upon the Duquesne system. The implications of Mr. Gorman's classification of secondary distribution plant are that for about 76% of the Company's investment in these facilities, a small apartment dwelling residential customer is assigned the same level of secondary distribution investment and expenses as a Large Commercial customer and that only about 25% of Mr. Gorman's allocation of secondary distribution costs recognizes differences in customer load requirements; i.e., size of customer.

Q. HAVE YOU CONDUCTED ANALYSES TO DETERMINE IF A CLASSIFICATION OF DISTRIBUTION PLANT AS PARTIALLY CUSTOMER-RELATED IS APPROPRIATE FOR DUQUESNE?

A. Yes, I have.

⁵ Excludes Underground Downtown Network costs assigned only to commercial/industrial classes and excludes Underground Residential Development assigned only to Residential customers.

1 **Q. PLEASE EXPLAIN.**

2 A. Mr. Gorman has made an *a priori* assumption that it is appropriate to allocate
3 a portion of its secondary voltage distribution plant based on customer counts and a
4 portion based on demand levels. As indicated earlier, the only reason why it may be
5 appropriate to allocate a portion of distribution plant expenses based on number of
6 customers, rather than utilization, is due to the possibility that the mix of customer
7 classes varies significantly across the urban and suburban portions of a service
8 territory. In this regard, I evaluated this assumption by conducting an analysis of the
9 distribution, or mix, of Duquesne's customer classes across its service area.

10 Specifically, in the discovery process, Duquesne provided a detailed data base
11 of the number of customers by rate schedule for each postal zip-code within the
12 Company's service area.⁶ I then evaluated the mix of customers by rate class for
13 each postal zip-code within Duquesne's service area. In this regard, given the urban
14 and suburban nature of Duquesne's entire service area, the geographical area of
15 postal zip codes tends to be small compared to zip codes in more rural areas.

16 In order to evaluate whether any differences exist in the distribution of
17 customers across the Company's service area, I calculated the number of total
18 Duquesne customers per square mile for each non-Post Office Box ("P.O. Box") zip-
19 code to serve as a measure of density for these relatively small geographic areas. I
20 was then able to readily compare Duquesne's mix of customers by rate class
21 throughout its entire service area and delineate between less densely customer
22 populated areas to very highly dense areas. As a further refinement, I also evaluated
23 the distribution of customers on a stratified basis. That is, for each rate class I
24 separated small geographical areas (zip codes) into four separate strata (lowest to
25 highest customer densities). I then examined each stratum (by rate class) to
26 determine if any significant differences in customer mix occur within each stratum.

27 This analysis of the distribution of the various customer classes by density
28 provided a basis to determine whether: (a) utilization alone (demand) is an
29 appropriate (and fair) method to allocate distribution costs; or (b) whether a

⁶ See Duquesne response to OCA Data Request I-10.

1 weighting of customers and utilization (demand) is appropriate in order to reasonably
2 reflect the imposition or causation of costs.

3 If there is any basis for a customer classification of distribution plant, this
4 analysis should show a negative correlation between the Residential customer mix
5 (Residential percentage of total customers) and density across Duquesne's service
6 area. In other words, the percentage of Residential customers (by zip-code) should
7 decline as customer density per square mile increases from the most sparsely
8 populated areas in the suburbs to the most densely populated urban areas within
9 Duquesne's service territory.⁷ Similarly, if Duquesne's *a priori* assumption is
10 correct, we should see a distinct positive correlation between non-Residential
11 customer mixes and customer densities by zip-code. A summary of the approach and
12 data utilized for this analysis are provided in my Schedule GAW-2. Page 1 provides
13 the results for the primary voltage system while page 2 provides the results for the
14 secondary voltage system.

15
16 **Q. WHAT ARE YOUR FINDINGS AS A RESULT OF THIS ANALYSIS?**

17 A. Duquesne's primary and secondary voltage customers are dispersed in an
18 extremely proportional manner throughout its service area. That is, there are no
19 distinct differences in the mix of primary or secondary customers (by class) across the
20 suburban and urban portions of Duquesne's service area. The relationship of
21 Residential customers relative to non-Residential customers is constant throughout
22 Duquesne's service area. While the suburban areas of Duquesne's service area are
23 comprised mainly of Residential customers, this relationship also remains true for the
24 denser population areas of Duquesne's territory as well. More importantly, in the less
25 dense portions of Duquesne's service territory (suburban areas), Duquesne serves a
26 proportionate number of GS, GM, and GLH, and L (non-Residential) customers.
27 Therefore, the hypothesis that several miles of distribution facilities required to serve
28 relatively few Residential customers in the suburban areas and much fewer miles of
29 distribution facilities to serve predominately secondary voltage Commercial and
30 Industrial customers in the urban areas, is clearly rejected. In other words,

⁷ In this context, "population" refers to number of Duquesne customers and not number of people.

1 Duquesne's primary and secondary voltage customers are evenly distributed across its
2 entire service area such that a bias will be created if distribution facilities are
3 allocated in whole, or in part, based on customer counts.

4 In summary, while I agree with Mr. Gorman's primary voltage classification
5 as 100% demand-related, I disagree with his customer/demand splits for the
6 secondary voltage system. This is because each customer class is represented in a
7 proportional manner in both suburban and urban areas within Duquesne's service
8 area. As a result, it cannot be said that the less populated portions of Duquesne's
9 service area (which require significant investment to serve relatively few customers)
10 are dedicated to any one class of customers. Duquesne's secondary voltage
11 distribution plant and expenses should be assigned to classes based only on utilization
12 and any consideration of customer counts is improper for the allocation of distribution
13 plant. As such, this study indicates that Duquesne's secondary voltage distribution
14 plant should be classified as 100% demand-related.

15
16 **Q. DOES THE NARUC ELECTRIC COST ALLOCATION MANUAL INDICATE**
17 **IF AN *A PRIORI* ASSUMPTION IS APPROPRIATE REGARDING**
18 **WHETHER DISTRIBUTION COSTS MUST BE CLASSIFIED AS**
19 **PARTIALLY CUSTOMER-RELATED AND PARTIALLY DEMAND-**
20 **RELATED?**

21 A. No. In fact, the NARUC Manual (published in 1992) states the following:

22 To ensure that costs are properly allocated, the analyst must first
23 classify each account as demand-related, customer-related, or a
24 combination of both. The classification depends upon the analyst's
25 evaluation of how the costs in these accounts were incurred. In
26 making this determination, supporting data may be more important
27 than theoretical considerations.

28
29 Allocating costs to the appropriate groups in a cost study requires a
30 special analysis of the nature of distribution plant and expenses. (page
31 89)
32
33

1 **Q. HAS NARUC PROVIDED MORE RECENT GUIDANCE CONCERNING**
2 **THE CLASSIFICATION OF DISTRIBUTION PLANT THAN WHAT WAS**
3 **PUBLISHED IN THE 1992 NARUC ELECTRIC COST ALLOCATION**
4 **MANUAL?**

5 A. Yes. The 1992 NARUC Manual was written in an era when all retail utility
6 services were bundled (generation, transmission and distribution). Subsequent to the
7 unbundling of retail rates in the mid to late 1990's by several state jurisdictions,
8 NARUC commissioned a study to examine the costing and pricing of electric
9 distribution service in further detail. In December 2000, NARUC published a report
10 entitled: Charging For Distribution Services: Issues in Rate Design. As part of the
11 Executive Summary this report states:

12 The usefulness of cost analyses of the distribution system in designing
13 rate structures and setting rate levels depends in large measure upon
14 the manner in which the studies are undertaken. Cost studies (both
15 marginal and embedded) are intended, among other things, to
16 determine the nature and causes of costs, so that they can then be
17 reformulated into rates that cost-causers can pay. Such studies must of
18 necessity rely on a host of simplifying assumptions in order to produce
19 workable results; this is especially true of embedded cost studies.
20 Moreover, it is often the case that many of the costs (e.g.,
21 administrative and general) that distribution rates recover are not
22 caused by provision of distribution service, but are assigned to it
23 arbitrarily. Too great dependence on cost studies is to be captured by
24 their underlying assumptions and methodological flaws. Utilities and
25 commissions should be cautious before adopting a particular method
26 on the basis of what may be a superficial appeal. More important,
27 however, is the concern that a costing method, once adopted, becomes
28 the predominant and unchallenged determinant of rate design. (page
29 67)

30
31 With specific regard to classification and allocation of certain distribution plant
32 (poles, wires and transformers), Chapter IV of this report is devoted to the costing of
33 distribution services. With respect to embedded cost analyses this updated NARUC
34 report states:

35 There are a number of methods for differentiating between the
36 customer and demand components of embedded distribution plant.
37 The most common method used is the basic customer method, which
38 classifies all poles, wires, and transformers as demand-related and
39 meters, meter-reading, and billing as customer-related. This general

1 approach is used in more than thirty states. A variation is to treat
2 poles, wires, and transformers as energy-related driven by kilowatt-
3 hour sales but, though it has obvious appeal, only a small number of
4 jurisdictions have gone this route.
5

6 Two other approaches sometimes used are the minimum size and zero-
7 intercept methods. The minimum size method operates, as its name
8 implies, on the assumption that there is a minimum-size distribution
9 system capable of serving customers minimum requirements. The
10 costs of this hypothetical system are, so the argument goes, driven not
11 by customer demand but rather by numbers of customers, and
12 therefore they are considered customer costs. The demand-related cost
13 portion then is the difference between total distribution investment and
14 the customer-related costs. The zero-intercept approach is a variation
15 on the minimum size. Here the idea is to identify that portion of plant
16 that is necessary to give customers access but which is incapable of
17 serving any level of demand. The logic is that the costs of this system,
18 because it can serve no demand and thus is not demand-related, are
19 necessarily customer-related. However, the distinction between
20 customer and demand costs is not always clear, insofar as the number
21 of customers on a system (or particular area of a system) will have
22 impacts on the total demand on the system, to the extent that their
23 demand is coincident with the relevant peak (system, areal, substation,
24 etc.).
25

26 Any approach to classifying costs has virtues and vices. The first
27 potential pitfall lies in the assumptions, explicit and implicit, that a
28 method is built upon. In the basic customer method, it is the *a priori*
29 classification of expenditures (which may or may not be reasonable).
30 In the case of the minimum-size and zero-intercept methods, the
31 threshold assumption is that there is some portion of the system whose
32 costs are unrelated to demand (or to energy for that matter). From one
33 perspective, this notion has a certain intuitive appeal these are the
34 lowest costs that must be incurred before any or some minimal amount
35 of power can be delivered but from another viewpoint it seems absurd,
36 since in the absence of any demand no such system would be built at
37 all. Moreover, firms in competitive markets do not indeed, cannot
38 price their products according to such methods: they recover their
39 costs through the sale of goods and services, not merely by charging
40 for the ability to consume, or access. (pages 29 & 30)
41

42 In summary, when all of the facts and guidelines are known, it is clear to me
43 that: (a) data and analysis specific to each utility is more appropriate and preferred
44 over an *a priori* assumption that distribution plant must be partially customer-related;

1 and, (b) many (if not most) state regulatory commissions endorse a method in which
2 all distribution plant from substations through line transformers is classified and
3 allocated based solely on demand. A copy of the entire Chapter (IV) from the 2000
4 NARUC Publication discussing costing studies is provided in my Schedule GAW-3.
5

6 **Q. BASED ON YOUR OWN EXPERIENCE, ARE THERE STATE**
7 **COMMISSIONS THAT APPROVE, OR ENDORSE, CLASS COST OF**
8 **SERVICE STUDIES IN WHICH ALL DISTRIBUTION PLANT**
9 **(EXCLUDING SERVICES AND METERS) IS CLASSIFIED AS 100%**
10 **DEMAND-RELATED?**

11 A. Yes. As a matter of Commission rule, the Washington Utilities and
12 Transportation Commission requires electric utilities to classify distribution plant as
13 100% demand-related. The regulated electric utilities in Washington are Puget Sound
14 Energy, PacifiCorp, and Avista Utilities, Corp.

15 In Maryland, the State PSC has for many years approved class cost of service
16 studies that classify distribution plant as 100% demand-related for the two major
17 IOU's that serve major metropolitan areas: PEPCO (Washington D.C. Metro Area)
18 and Baltimore Gas & Electric.

19 In Delaware, the Commission has approved cost of service studies involving
20 Delmarva Power & Light for many years in which distribution plant is classified as
21 100% demand-related.

22 In Washington D. C., the Commission has consistently approved cost of
23 service studies involving PEPCO for many years in which distribution plant is
24 classified as 100% demand-related.
25

26 **Q. ARE THE APPROVED PROCEDURES FOR THE UTILITIES YOU**
27 **IDENTIFIED ABOVE PARTICULARLY RELEVANT AS IT RELATES TO**
28 **DUQUESNE?**

29 A. Yes. Puget Sound Energy serves the greater Seattle area, PEPCO serves the
30 greater Washington, D.C. area (in Maryland and District of Columbia), and Baltimore
31 Gas & Electric serves the Baltimore area. These utilities are similar to Duquesne in

1 that they are largely urban/suburban in nature wherein there is little to no rural service
 2 area that requires a significant level of distribution poles and conductors to serve
 3 relatively few customers.

4
 5 **Q. HAVE YOU CALCULATED DUQUESNE’S CLASS RATES OF RETURN**
 6 **USING THE CLASSIFICATION OF MOST DISTRIBUTION PLANT**
 7 **ACCOUNTS AS 100% DEMAND-RELATED?**

8 A. Yes. I have conducted a CCROSS to reflect the allocation of distribution plant
 9 (but for Services and Meters) based on NCP demand.⁸ The following table provides a
 10 comparison of class rates of return (“ROR”) under Mr. Gorman’s study to my study
 11 (utilizing 100% secondary demand classification). The details of my 100% demand
 12 study are provided in my Schedule GAW-4.

13
 14 **TABLE 6**
 15 **Comparison of RORs at Current Rates**
 16 **Gorman Classification vs. 100% Demand**
 17 **Classification Of Distribution Plant**

Class	Gorman Classification	100% Demand
RS	5.40%	8.62%
RH	2.53%	3.46%
RA	3.34%	5.28%
GS	5.73%	12.07%
GM<25 KW	6.90%	5.96%
GM>25 KW	4.68%	2.23%
GMH<25 KW	5.52%	5.29%
GMH>25 KW	3.19%	1.25%
GL	6.16%	3.24%
GLH	2.65%	0.35%
L	5.23%	2.75%
HVPS	738.73%	744.95%
SE	11.50%	6.96%
SL	15.00%	14.36%
UMS	2.37%	13.66%
TOTAL	5.36%	5.36%

28

⁸ I have accepted Mr. Gorman’s classification of Underground Residential Development (“URD”) plant since these costs are entirely assigned to the Residential class. I was unable to change Mr. Gorman’s classification of secondary URD plant using his model. However, this does not affect other non-Residential class rates of return.

1 As can be seen in Table 6 above, significantly different class RORs are achieved
2 when Duquesne's distribution costs are allocated based entirely on demand. In
3 particular, we see that the Residential (RS) and General Service (GS) RORs increase
4 substantially from 5.40% to 8.62% and 5.73% to 12.07%, respectively. Conversely,
5 the Medium and Large Commercial/Industrial classes' (GM>25 KW, GMH>25 KW,
6 GL, GLH and L) RORs tend to be considerably lower than those portrayed by Mr.
7 Gorman in his CCOSS.

8
9 **Q. BEFORE WE CONTINUE, CAN YOU EXPLAIN THE EXCEPTIONALLY**
10 **HIGH ROR FOR THE HVPS CLASS?**

11 A. Yes. Rate HVPS is for very high voltage customers that take service at the
12 sub-transmission level or above (greater than 69 kV). Therefore, these customers do
13 not rely on the Company's distribution plant. As a result, the HVPS class is only
14 allocated about \$34,000 in rate base and about \$7,000 of O&M expenses. At the
15 same time, this rate schedule contributes almost \$324,000 in distribution rate revenue.

16
17 **Q. ALTHOUGH YOUR DENSITY STUDY INDICATES THAT THERE IS NO**
18 **NEED TO CLASSIFY AND ALLOCATE DUQUESNE'S SECONDARY**
19 **DISTRIBUTION PLANT PARTIALLY ON THE BASIS OF CUSTOMERS**
20 **AND PARTIALLY ON THE BASIS OF DEMAND, IF SUCH A**
21 **CLASSIFICATION WERE APPROPRIATE, HOW DOES ONE DETERMINE**
22 **THE PERCENTAGES OF PLANT THAT SHOULD BE CLASSIFIED AS**
23 **DEMAND-RELATED AND HOW MUCH AS CUSTOMER-RELATED?**

24 A. Once the decision is made that distribution plant should be allocated
25 considering both demand and number of customers, there are two generally accepted
26 methods for determining the portions or percentages that should be allocated on each
27 basis. These two methods are known as the minimum-size and zero-intercept
28 approaches. Under both methods, a study is conducted for each plant account within
29 the distribution system. That is, each plant account is studied and assigned its own
30 customer and demand components.

1 The minimum-size method rests on the premise that the minimum, or smallest
2 size, installed equipment makes up the distribution network to connect customers to
3 the distribution system, and that all larger sizes of equipment serve peak demands. In
4 practice, the cost per unit of the smallest sized installed equipment is often
5 determined as a surrogate for the cost per foot of equipment just large enough to
6 connect customers and meet only minimal or no load. This minimum cost per unit is
7 then multiplied by the total number units in the system to arrive at a total customer
8 amount. The total customer amount is then divided by the total cost for the account
9 to determine the customer percentage. Obviously, one minus the customer
10 percentage equals the demand percentage.

11 The zero-intercept method is similar to the minimum-size method, except for
12 the determination of the minimum cost per unit. The zero-intercept method
13 recognizes that even the smallest installed piece of equipment has a demand
14 component, because it too is installed to meet the peak load placed on that equipment.
15 The zero-intercept method attempts to arrive at the "theoretical" cost of a piece of
16 plant or equipment capable of carrying zero load. This is accomplished using
17 statistical regression techniques, whereby the per unit costs of various sizes of
18 equipment are determined, and a best fitting equation is developed through statistical
19 analysis. The point at which the fitted line intersects the cost axis at zero size is
20 called the zero-intercept. The zero-intercept cost then serves as the minimum, or zero
21 size, cost per unit.

22
23 **Q. DO BOTH OF THESE METHODS HAVE INHERENT WEAKNESSES?**

24 A. Yes. The minimum-size approach clearly overstates the “customer”
25 component of distribution facilities because even the smallest size of equipment in
26 place is installed to meet the maximum loads based on design criteria. For example,
27 the smallest conductors that an EDC (including Duquesne) typically installs is 1/0
28 Aluminum wire. This size of conductor is fairly large and has a significant ampacity

1 rating (load carrying capability) and can serve numerous homes and/or businesses.⁹
2 Therefore, it can be seen that the actual “minimum” installed size of equipment is not
3 a reasonable surrogate for comparison unless adjustments are made to recognize the
4 load carrying capability of this “minimum” size equipment.

5 While the zero-intercept method does not suffer from the load carrying
6 capability bias of the minimum-size method, this approach relies upon statistical
7 regression analyses and is subject to significant limitations due to data accuracy,
8 record keeping availability, quality of data, and judgment of the analyst.

9
10 **Q. HOW APPROPRIATE IS EITHER METHOD FROM A DESIGN OR**
11 **OPERATIONAL PERSPECTIVE?**

12 A. First and foremost, the classification of distribution plant as partially
13 customer-related and partially demand-related results from the view that the
14 allocation of these plant items based solely on demands would not be equitable to
15 some classes. When classifying individual accounts within distribution plant,
16 analysts sometimes ignore how a distribution system is designed and constructed.

17 There are several factors the analyst should keep in mind when classifying
18 distribution plant. First, much of an electric utility’s primary distribution system is
19 interconnected to prevent outages. That is, a large percentage of the system is
20 interconnected so that when a circuit (line) is interrupted, the flow of electricity can
21 be diverted to other facilities in order to prevent a black out of the entire system
22 downstream from the break in the circuit. As a result, facilities (conductors, switches,
23 etc.) are sized to meet not only the loads normally placed on a particular segment, but
24 are also capable of carrying additional load in the case of emergencies and
25 interruptions from other line segments. Second, there are often alternatives across
26 plant and equipment. Third, is the fact that purchasing economies are usually present.
27 For example, there are dozens of various types of Overhead Conductors
28 manufactured. However, due to purchasing economies, a utility may only purchase a
29 few different sizes of conductor. This may result in some “over capacity,” yet the

⁹ According to Mr. Gorman’s workpapers, a minimum size 1/0 Al Triplex has an ampacity rating of 200
amps with a corresponding capacity of about 96 KW. This level of capacity is enough to serve the diversified
peak demands of approximately 50 residential customers.

1 total installed cost is less than if every segment of the system is optimally designed.
2 Fourth, most components of the distribution system are somewhat oversized for other
3 reasons such as safety, reliability, and growth uncertainty.

4 Although these factors are reflective of how distribution systems are actually
5 designed and installed, neither the minimum-size nor the zero-intercept method
6 accounts for these factors. In fact, the presence of these factors can seriously skew
7 the results of either method. If the weakness is not captured or recognized,
8 inequitable class allocations may result.

9
10 **Q. WHICH METHOD DID MR. GORMAN USE TO CLASSIFY SECONDARY**
11 **DISTRIBUTION PLANT?**

12 A. Mr. Gorman utilized the minimum-size approach.

13
14 **Q. BEFORE WE DISCUSS THE SPECIFIC PROCEDURES AND**
15 **CALCULATIONS USED BY MR. GORMAN TO CLASSIFY SECONDARY**
16 **DISTRIBUTION PLANT, IS THERE AN OVERARCHING SHORTCOMING**
17 **IN HIS STUDIES THAT CREATE A DISTINCT BIAS AGAINST**
18 **RESIDENTIAL AND SMALL VOLUME USER CLASSES?**

19 A. Yes. As a general matter, Mr. Gorman's minimum-size classification studies
20 do not recognize the load (KW) that is actually available and carried by the
21 predominant minimum-size equipment on Duquesne's system. This lack of
22 recognition of the load carrying capability of the minimum size equipment installed
23 on Duquesne's system is most important from a conceptual and practical standpoint.
24 The concept of the minimum system is that the cost of the "minimum size" plant is
25 required to simply connect customers to the distribution system; i.e., the customer
26 component. The remaining cost (above the minimum system cost) represents the
27 additional cost of plant investment required to meet distribution system load; i.e., the
28 demand component. From a practical standpoint, if the minimum system cost is
29 overstated by not reflecting the load carrying capability of the "minimum size" plant,
30 the customer component is then overstated, which results in a significant bias to small
31 volume rate classes, particularly the residential class.

1 While Mr. Gorman made no attempt to adjust his minimum-size classification
2 study for Poles, Overhead Conductors or Underground Conductors/Conduit, he did
3 make a minor adjustment relating to Line Transformers.
4

5 **Q. HAS THIS COMMISSION PROVIDED CONCEPTUAL GUIDANCE AS TO**
6 **HOW ANY CLASSIFICATION OF DISTRIBUTION PLANT SHOULD BE**
7 **PERFORMED?**

8 A. Yes. In its Order concerning Duquesne’s 1985 rate case, the Commission
9 recognized the inherent problems associated with the minimum-size approach and
10 provided guidance as to the conceptual bases for classifying distribution plant as
11 partially customer-related and partially demand-related. In this Order, the
12 Commission stated:

13 The customer component of distribution plant is a theoretical
14 minimum size system that is required to serve a customer with an
15 infinitely small load and represents the costs of just being a customer.
16 This system can be represented as a wet thread supported by long tooth
17 picks to serve a Christmas tree light. Pa. P.U.C. v. Duquesne Light
18 Co., 59 Pa PUC 67, 160 (1985).
19
20

21 **Q. DOES THE NARUC ELECTRIC UTILITY COST ALLOCATION MANUAL**
22 **ALSO PROVIDE GUIDANCE AS TO THE APPROPRIATE APPROACH TO**
23 **THE CLASSIFICATION OF DISTRIBUTION PLANT BETWEEN**
24 **CUSTOMER-RELATED AND DEMAND-RELATED COMPONENTS?**

25 A. Yes. The NARUC Electric Utility Cost Allocation Manual also recognizes
26 the load carrying capability of the minimum-size equipment installed in a distribution
27 system as follows:

28 When using this [minimum-size] distribution method, the analyst must
29 be aware that the minimum-size distribution equipment has a certain
30 load-carrying capability, which then can be viewed as a demand-
31 related cost (page 95).
32
33
34

1 **Q. NOTWITHSTANDING YOUR ANALYSIS AND CONCLUSIONS THAT**
2 **DUQUESNE'S SECONDARY DISTRIBUTION SYSTEM SHOULD BE**
3 **CLASSIFIED ENTIRELY ON DEMAND WITH NO ENERGY COMPONENT,**
4 **HAVE YOU EVALUATED MR. GORMAN'S OVERALL CLASSIFICATION**
5 **CONCLUSIONS TO DETERMINE IF THEY ARE REASONABLE?**

6 A. Yes. As noted in my Table 5, Mr. Gorman has classified and allocated
7 secondary Accounts 364 and 365 (Poles & Overhead Conductors) as 94.93%
8 customer-related and has classified and allocated secondary Overhead Line
9 Transformers (Account 368) as 89.42% customer-related. As such, Mr. Gorman's
10 recommendation is that almost all of the costs related to Duquesne's secondary
11 overhead system (92.10%) are incurred simply to connect customers with only a
12 miniscule portion incurred to serve the loads placed on this secondary system. On its
13 face, such a finding defies common sense and logic in that it is well known that
14 Duquesne's secondary system distributes a significant amount of power in order to
15 meet customers' demands.

16 In investigating Mr. Gorman's analysis, he assumed that 95% of the
17 Company's secondary overhead conductors are comprised of 1/0 Aluminum Triplex
18 cable wherein this serves as Mr. Gorman's "minimum size."¹⁰ Then, Mr. Gorman
19 assumed that the remaining 5% of the secondary overhead system is comprised of 1/0
20 Aluminum conductor (single wire conductor).¹¹ As such, Mr. Gorman has assumed
21 that the entire Duquesne secondary overhead system is comprised of 1/0 aluminum
22 conductors (either cable or bare wire conductors). While there may be minimal
23 ampacity differences between 1/0 cabling and circuits comprised of bare wire
24 conductors, for all intents and purposes, the load carrying capability of these two
25 types of circuits are about the same. The only difference in Mr. Gorman's analysis is
26 that the circuit cost of bare wire conductor is somewhat more per foot than that of
27 triplex cable (on a circuit basis). If one were to accept Mr. Gorman's hypothesis that
28 a 1/0 conductor represents the minimum size conductor simply to connect customers,

¹⁰ Per Mr. Gorman's Exhibit 6-9C, page 1.

¹¹ Triplex cable has three conductors encapsulated within a cover. Single wire conductor requires three separate conductors to form a circuit (technically, only two wires are required but current practices generally include three wires).

1 with no load carrying capability, one must then maintain that virtually all of
2 Duquesne's secondary overhead system is simply installed to connect customers and
3 not meet customers' demand. Indeed, this is what Mr. Gorman recommends; i.e.,
4 almost 95% of the overhead system is installed simply to connect customers and not
5 meet the load requirements of these customers. Clearly, Mr. Gorman's approach does
6 not reflect reality in that the "minimum size" actually installed is sufficient to meet
7 the peak load requirements of the customers within each secondary distribution
8 circuit.

9
10 **Q. BASED ON YOUR EVALUATION OF MR. GORMAN'S CCROSS AND THE**
11 **IMPACTS THAT HIS CLASSIFICATION OF SECONDARY DISTRIBUTION**
12 **PLANT HAS ON CLASS RATES OF RETURN, WHAT IS YOUR**
13 **RECOMMENDATION CONCERNING CLASS COST ALLOCATIONS IN**
14 **THIS CASE?**

15 A. Although my studies based on data specific to Duquesne clearly indicate that
16 secondary distribution plant should be classified as 100% demand-related, if the
17 Commission agrees with an *a priori* assumption that there must be at least some
18 customer/demand split for secondary distribution plant, I recommend the Commission
19 rely on the average of Mr. Gorman's heavily customer weighted classification and my
20 100% demand weighted classification of secondary distribution plant.

21
22 **Q. PLEASE PROVIDE A COMPARISON OF CLASS RORs AT CURRENT**
23 **RATES UNDER THE THREE METHODS DISCUSSED IN YOUR**
24 **TESTIMONY.**

25 A. The following tables provide a comparison of class RORs and relative RORs
26 at current rates under: (a) Mr. Gorman's approach; (b) my 100% demand approach;
27 and, (c) the average of both approaches:
28
29
30
31

TABLE 7
Comparison of RORs at Current Rates

Class	Gorman Classification	100% Demand	Average ¹²
RS	5.40%	8.62%	6.84%
RH	2.53%	3.46%	2.98%
RA	3.34%	5.28%	4.23%
GS	5.73%	12.07%	8.33%
GM<25 KW	6.90%	5.96%	6.42%
GM>25 KW	4.68%	2.23%	3.33%
GMH<25 KW	5.52%	5.29%	5.41%
GMH>25 KW	3.19%	1.25%	2.13%
GL	6.16%	3.24%	4.53%
GLH	2.65%	0.35%	1.36%
L	5.23%	2.75%	3.87%
HVPS	738.73%	744.95%	741.82%
SE	11.50%	6.96%	8.94%
SL	15.00%	14.36%	14.68%
UMS	2.37%	13.66%	6.14%
TOTAL	5.36%	5.36%	5.36%

TABLE 8
Comparison of Relative RORs at Current Rates

Class	Gorman Classification	100% Demand	Average
RS	101%	161%	128%
RH	47%	65%	56%
RA	62%	99%	79%
GS	107%	225%	156%
GM<25 KW	129%	111%	120%
GM>25 KW	87%	42%	62%
GMH<25 KW	103%	99%	101%
GMH>25 KW	59%	23%	40%
GL	115%	60%	85%
GLH	50%	7%	25%
L	98%	51%	72%
HVPS	13782%	13898%	13850%
SE	215%	130%	167%
SL	280%	268%	274%
UMS	44%	255%	115%
TOTAL	100%	100%	100%

¹² Calculated as average net income divided by average rate base.

1 **III. CLASS REVENUE ALLOCATIONS**

2
3 **Q. HOW DOES DUQUESNE PROPOSE TO ALLOCATE ITS REQUESTED**
4 **INCREASE TO INDIVIDUAL RATE CLASSES?**

5 A. Company witness David Ogden states that his objectives were to move rate
6 classes' revenues closer to cost of service as calculated by witness Gorman and at the
7 same time, recognize gradualism such that class increases were limited to no more
8 than 150% of the overall system average increase. The following table shows
9 Duquesne's proposed increases to distribution revenues by rate class:

10
11 **TABLE 9**
12 **Duquesne Proposed Class Revenue Allocations¹³**
13 **(\$000)**

Rate Schedule	Current Distribution Revenue	\$ Increase	Percent of System Average	Percent Increase
RS	\$292,161	\$41,912	92.1%	14.35%
RH	\$28,036	\$6,316	144.6%	22.53%
RA	\$3,230	\$728	144.6%	22.53%
GS	\$11,675	\$1,658	91.2%	14.21%
GM<25	\$33,160	\$5,222	101.1%	15.75%
GM>25	\$69,472	\$12,010	110.9%	17.29%
GMH<25	\$3,602	\$567	101.1%	15.75%
GMH>25	\$5,890	\$1,327	144.6%	22.53%
GL	\$64,408	\$10,143	101.1%	15.75%
GLH	\$7,192	\$1,620	144.6%	22.53%
L	\$18,667	\$3,407	117.1%	18.25%
HVPS	\$324	\$0	0.0%	0.00%
SE	\$1,492	\$78	33.6%	5.24%
SL	\$9,959	\$522	33.6%	5.24%
UMS	\$1,115	\$251	144.6%	22.53%
Total Distrib. Rate Rev.	\$550,379	\$85,760	100.0%	15.58%

13 ¹³ Per Gorman Exhibit 6-10.

1 **Q. DO YOU AGREE WITH MR. OGDEN’S PROPOSED CLASS REVENUE**
2 **ALLOCATION?**

3 A. No. Mr. Ogden’s class revenue allocation proposal is predicated upon Mr.
4 Gorman’s CCOSS as a foundation for his proposed class revenue increases. As I
5 have explained and shown earlier in my testimony, Mr. Gorman’s CCOSS overstates
6 the cost responsibility assigned to the Residential class.

7
8 **Q. HAVE YOU DEVELOPED A MORE APPROPRIATE CLASS REVENUE**
9 **ALLOCATION USING DUQUESNE’S OVERALL INCREASE AS AN**
10 **EXAMPLE?**

11 A. Yes. Building upon the discussion above, I have developed a revenue
12 allocation that relies on reasonable CCOSS results as a primary guide, but also
13 recognizes gradualism, and is fair to all classes. In these regards, while my study that
14 classifies secondary distribution plant as 100% demand-related better reflect cost
15 causation, I recognized that cost allocation studies are not surgically precise.
16 Therefore, in developing my recommended class revenue allocation, I used the
17 average of Mr. Gorman’s and my study as a guide in evaluating class revenue
18 responsibility. I then used the same maximum 150% of the system average
19 percentage increase constraint as employed by Mr. Ogden. Finally, and as noted
20 earlier, no rate schedule receives a rate decrease. With this method, I recommend the
21 following rate schedule increases utilizing the Company’s overall requested increase:

22
23
24
25
26
27
28
29
30
31

TABLE 10
OCA Recommended Class Revenue Allocation @ Duquesne Proposed Overall Increase
(\$000)

Rate Schedule	Average Relative ROR	Current Distribution Revenue	OCA Proposed		
			\$ Increase	Percent of System Average	Percent Increase
RS	128%	\$292,161	\$38,906 ¹⁴	85.5%	13.32%
RH	56%	\$28,036	\$6,553	150.0%	23.37%
RA	79%	\$3,230	\$629	125.0%	19.48%
GS	156%	\$11,675	\$910	50.0%	7.79%
GM<25	120%	\$33,160	\$4,392	85.0%	13.24%
GM>25	62%	\$69,472	\$13,531	125.0%	19.48%
GMH<25	101%	\$3,602	\$561	100.0%	15.58%
GMH>25	40%	\$5,890	\$1,377	150.0%	23.37%
GL	85%	\$64,408	\$12,545	125.0%	19.48%
GLH	25%	\$7,192	\$1,681	150.0%	23.37%
L	72%	\$18,667	\$3,636	125.0%	19.48%
HVPS	13850%	\$324	\$0	0.0%	0.00%
SE	167%	\$1,492	\$116	50.0%	7.79%
SL	274%	\$9,959	\$776	50.0%	7.79%
UMS	115%	\$1,115	\$148	85.0%	13.24%
Total Distrib. Rate Rev.	100%	\$550,379	\$85,760	100.0%	15.58%

As can be seen in the table above, those classes with relative RORs below the system average ROR were increased at higher percentages than the overall percentage increase, classes whose relative RORs were approximately equal to the system average ROR receive the system average percentage increase, and classes whose relative RORs were above the system average ROR were increased at lower percentages than the overall percentage increase. Finally, because the HVPS class's ROR is exceptionally high, this rate schedule receives no increase in rates.

Q. DOES YOUR RECOMMENDED CLASS REVENUE ALLOCATION MOVE ALL CLASSES CLOSER TO COST OF SERVICE RATE PARITY?

¹⁴ Calculated as the residual remaining increase.

1 A. Yes. As shown in the table below, all class's RORs move closer to cost of
 2 service (utilizing the average cost of service results discussed earlier).

3
 4 TABLE 11
 Movement to Cost of Service
 5 OCA Revenue Allocation

Rate Schedule	At Current Rates	OCA Proposed Rev. Allocation
RS	128%	121%
RH	56%	93%
RA	79%	97%
GS	156%	124%
GM<25	120%	108%
GM>25	62%	73%
GMH<25	101%	100%
GMH>25	40%	62%
GL	85%	86%
GLH	25%	44%
L	72%	76%
HVPS	13850%	8878%
SE	167%	124%
SL	274%	208%
UMS	115%	107%
Total Distrib. Rate Rev.	100%	100%

21
 22 The details supporting the movement to full cost of service are provided in my
 23 Schedule GAW-5.

24
 25 **Q. PLEASE PROVIDE A COMPARISON OF YOUR CLASS REVENUE**
 26 **ALLOCATION TO THAT PROPOSED BY DUQUESNE.**

27 A. A comparison of Duquesne's and my recommended class revenue increase are
 28 presented in the table below:
 29
 30
 31

TABLE 12
Comparison of OCA and Duquesne Proposed Increases
(\$000)

Rate Schedule	OCA Proposed		Duquesne Proposed	
	\$ Increase	Percent Increase	\$ Increase	Percent Increase
RS	\$38,906	13.32%	\$41,912	14.35%
RH	\$6,553	23.37%	\$6,316	22.53%
RA	\$629	19.48%	\$728	22.53%
GS	\$910	7.79%	\$1,658	14.21%
GM<25	\$4,392	13.24%	\$5,222	15.75%
GM>25	\$13,531	19.48%	\$12,010	17.29%
GMH<25	\$561	15.58%	\$567	15.75%
GMH>25	\$1,377	23.37%	\$1,327	22.53%
GL	\$12,545	19.48%	\$10,143	15.75%
GLH	\$1,681	23.37%	\$1,620	22.53%
L	\$3,636	19.48%	\$3,407	18.25%
HVPS	\$0	0.00%	\$0	0.00%
SE	\$116	7.79%	\$78	5.24%
SL	\$776	7.79%	\$522	5.24%
UMS	\$148	13.24%	\$251	22.53%
Total Distrib. Rate Rev.	\$85,760	15.58%	\$85,760	15.58%

Q. IF THE COMMISSION AUTHORIZES AN OVERALL INCREASE LESS THAN THAT REQUESTED BY DUQUESNE, HOW SHOULD YOUR RECOMMENDED CLASS REVENUE ALLOCATION BE SCALED-BACK?

A. I recommend that my proposed class revenue allocation be scaled-back proportionately across all classes, such that the class with no change in revenues (HVPS) will sustain no change in rates and each class with a recommended increase will be scaled-back proportionately.

IV. RESIDENTIAL RATE DESIGN

Q. PLEASE EXPLAIN DUQUESNE'S CURRENT AND PROPOSED RESIDENTIAL DISTRIBUTION RATES AND RATE STRUCTURES.

1 A. Currently, Duquesne has three different Residential distribution rates:
 2 Residential Service (RS); Residential Heating (RH); and, Residential Add-On Heat
 3 Pump (RA). All three rate schedules have a fixed monthly customer charge along
 4 with flat volumetric (KWH) energy charges. However, the Residential Heating rates
 5 (RH and RA), have a seasonally differentiated energy charge such that the Winter
 6 energy charge is priced lower than the Summer energy charge.

7 In this case, Duquesne proposes to maintain the same basic rate structure for
 8 all three Residential distribution rates. Specifically, the following is a summary of
 9 Duquesne’s current and proposed Residential distribution rates:

10
 11 TABLE 13

	<u>Current</u>	<u>Duquesne Proposed</u>	<u>Percent Change</u>
<u>Rate RS:</u>			
Customer Charge	\$12.50	\$16.25	30.0%
Energy Charge/KWH (All Months)	\$0.060233	\$0.070564	17.2%
<u>Rate RH:</u>			
Customer Charge	\$12.50	\$16.25	30.0%
Summer Energy Charge/KWH	\$0.060233	\$0.070564	17.2%
Winter Energy Charge/KWH	\$0.045677	\$0.063410	38.8%
<u>Rate RA:</u>			
Customer Charge	\$12.50	\$16.25	30.0%
Summer Energy Charge/KWH	\$0.060233	\$0.070564	17.2%
Winter Energy Charge/KWH	\$0.016394	\$0.027631	68.5%

23
 24 As indicated above, Duquesne proposes to increase its base rate fixed monthly
 25 customer charge by 30.0%.

26
 27 **Q. DOES THE COMPANY PROVIDE ANY SUPPORT FOR ITS 30%**
 28 **INCREASE TO ITS BASE RATE RESIDENTIAL CUSTOMER CHARGE**
 29 **FROM \$12.50 TO \$16.25?**

1 A. Yes. Company Witness Gorman indicates that his proposed increase to the
2 Residential fixed monthly customer charge is supported by his customer cost analysis
3 of \$18.32 presented in his Exhibit 6-4A.
4

5 **Q. DO YOU AGREE WITH MR. GORMAN'S CALCULATION OF A**
6 **RESIDENTIAL CUSTOMER COST OF \$18.32?**

7 A. No. A careful examination of Mr. Gorman's "customer costs" shown in his
8 Exhibit 6-4A reveals that his calculation of \$18.32 includes a multitude of
9 inappropriate overhead costs including the following allocations:

10 **Overhead Costs Included in Gorman Residential Customer Cost Analysis**

11 Rate Base:

12	Cash Working Capital	\$2.973 million
13	Materials & Supplies	\$1.347 million
14	Capitalized Pensions	\$3.847 million
15	ADIT of General Plant	-\$1.220 million
16		
17		

18 Depreciation Expense:

19	"Other" Intangible Amortization	\$28.139 million
20	General Plant	\$5.531 million
21		

22 O&M Expenses:

23	Customer Assistance	\$0.135 million
24	Outside Services – Cust. Care	\$1.655 million
25	A&G Salaries	\$15.155 million
26	Employee Benefits	\$2.195 million
27	Maint. of General Plant	\$2.501 million
28		
29		

30 **Q. IN YOUR OPINION, WHAT SHOULD BE EVALUATED IN DETERMINING**
31 **FIXED MONTHLY CUSTOMER CHARGES?**

32 A. In my opinion, only those direct costs required to connect and maintain a
33 customer's account should be included in evaluating monthly customer charges.
34 These include the capital costs for meters and services and the O&M costs associated
35 with operating and maintaining meters and services, meter reading, and customer
36 records expenses. In this regard, overhead costs such as those included by Mr.

1 Gorman and outlined above are not included in the evaluation of customers for
2 determining reasonable fixed monthly customer charges.

3
4 **Q. IS THERE ACADEMIC SUPPORT FOR YOUR OPINION THAT FIXED**
5 **MONTHLY CUSTOMER CHARGES SHOULD ONLY REFLECT THE**
6 **DIRECT COSTS REQUIRED TO CONNECT AND MAINTAIN A**
7 **CUSTOMER’S ACCOUNT?**

8 A. Yes. In his well-known treatise Principles of Public Utility Rates, Professor
9 James C. Bonbright states:

10 But fully-distributed cost analysts dare not avail themselves of this
11 solution, since they are the prisoners of their own assumption that
12 “the sum of the parts equals the whole.” They are therefore under
13 impelling pressure to fudge their cost apportionments by using the
14 category of customers costs as a dumping ground for costs that they
15 cannot plausibly impute to any of their other cost categories. (Second
16 Edition, page 492)

17
18 **Q. HAVE YOU CONDUCTED AN ANALYSIS OF THOSE COSTS THAT MORE**
19 **REASONABLY SHOULD BE CONSIDERED IN DEVELOPING FAIR AND**
20 **REASONABLE RESIDENTIAL CUSTOMER CHARGES?**

21 A. Yes. Although I have a conceptual disagreement that so-called “customer”
22 costs should include any overhead costs, I have reflected several of the overhead costs
23 included in Mr. Gorman’s analysis and excluded those that are clearly not related to
24 number of customers. Specifically, my analysis is identical to Mr. Gorman’s
25 customer cost study except that I have excluded the following costs:

1 **Overhead Costs Excluded in OCA Residential Customer Cost Analysis**

2 Rate Base:

3	Cash Working Capital	\$2.973 million
4	Materials & Supplies	\$1.347 million
5	ADIT of General Plant	-\$1.220 million

6
7 Depreciation Expense:

8	“Other” Intangible Amortization	\$28.139 million
9	General Plant	\$5.531 million

10
11 O&M Expenses:

12	Outside Services – Cust. Care	\$1.655 million
13	A&G Salaries	\$15.155 million
14	Maint. of General Plant	\$2.501 million

15
16
17 To be clear, I have included the following overhead costs in my customer cost
18 analysis:

19
20 **Overhead Costs Included in OCA Residential Customer Cost Analysis**

21 Rate Base:

22	Capitalized Pensions	\$3.847 million
----	----------------------	-----------------

23
24 O&M Expenses:

25	Customer Assistance	\$0.135 million
26	Employee Benefits	\$2.195 million

27
28 **Q. WHAT ARE THE RESULTS OF THE RESIDENTIAL CUSTOMER COST**
29 **ANALYSIS YOU CONDUCTED FOR THIS CASE?**

30 A. My Schedule GAW-6 provides the details of my Residential Rate RS
31 customer cost analysis, which is conducted using both the Company’s requested
32 10.95% ROE as well as a placeholder ROE of 9.50%. As indicated in this Schedule,
33 my analysis produces a Residential customer cost range of \$8.56 to \$8.82 per month.

34
35 **Q. WHAT IS YOUR RECOMMENDATION CONCERNING DUQUESNE’S**
36 **RESIDENTIAL CUSTOMER CHARGES?**

37 A. Although my customer cost analysis (that includes a provision for overhead)
38 indicates that a customer charge of no more than about \$8.82 is warranted, I

1 recommend that the current Residential customer charge of \$12.50 be maintained.
2 This maintaining of the current customer charge will promote rate continuity as well
3 as promoting conservation as any increase authorized in this case will be collected
4 from the Residential energy charges thereby, sending a more appropriate price signal
5 for customers to conserve and use energy more efficiently. Furthermore, by
6 maintaining the current customer charge of \$12.50, this leaves at least \$3.68 for the
7 recovery of additional overhead costs.
8

9 **V. UNIVERSAL SERVICE PROGRAM (“USP”)**

10
11 **Q. HAVE YOU QUANTIFIED THE IMPACT ON INDIVIDUAL RATE**
12 **SCHEDULES UNDER OCA WITNESS COLTON’S RECOMMENDATIONS**
13 **CONCERNING USP?**

14 A. Yes. OCA requested that I conduct an analysis of the impacts on individual
15 rate schedules resulting from Mr. Colton’s recommended treatment of low income
16 issues. Under current and Duquesne proposed rates, the USP Rider 5 collects
17 \$39,703,615 in revenue. Currently, this Rider is collected only from the Residential
18 class (Rates RS, RH and RA). Mr. Colton recommends that this Rider be collected
19 from all ratepayers based on distribution revenues. In these regards, I have calculated
20 the impacts on individual rate schedules based on the Company’s proposed
21 distribution revenues. The results of my analysis are provided in my Schedule GAW-
22 7.
23

24 **Q. DOES THIS COMPLETE YOUR TESTIMONY?**

25 A. Yes.

BACKGROUND & EXPERIENCE PROFILE

GLENN A. WATKINSPRESIDENT/SENIOR ECONOMIST
TECHNICAL ASSOCIATES, INC.**EDUCATION**

1982 - 1988	M.B.A., Virginia Commonwealth University, Richmond, Virginia
1980 - 1982	B.S., Economics; Virginia Commonwealth University
1976 - 1980	A.A., Economics; Richard Bland College of The College of William and Mary, Petersburg, Virginia

POSITIONS

Jan. 2017-Present	President/Senior Economist, Technical Associates, Inc.
Mar. 1993-Dec. 2016	Vice President/Senior Economist, Technical Associates, Inc. (Mar. 1993-June 1995 Traded as C. W. Amos of Virginia)
Apr. 1990-Mar. 1993	Principal/Senior Economist, Technical Associates, Inc.
Aug. 1987-Apr. 1990	Staff Economist, Technical Associates, Inc., Richmond, Virginia
Feb. 1987-Aug. 1987	Economist, Old Dominion Electric Cooperative, Richmond, Virginia
May 1984-Jan. 1987	Staff Economist, Technical Associates, Inc.
May 1982-May 1984	Economic Analyst, Technical Associates, Inc.
Sep. 1980-May 1982	Research Assistant, Technical Associates, Inc.

EXPERIENCE**I. Public Utility Regulation**

- A. Costing Studies -- Conducted, and presented as expert testimony, numerous embedded and marginal cost of service studies. Cost studies have been conducted for electric, gas, telecommunications, water, and wastewater utilities. Analyses and issues have included the evaluation and development of alternative cost allocation methods with particular emphasis on ratemaking implications of distribution plant classification and capacity cost allocation methodologies. Distribution plant classifications have been conducted using the minimum system and zero-intercept methods. Capacity cost allocations have been evaluated using virtually every recognized method of allocating demand related costs (e.g., single and multiple coincident peaks, non-coincident peaks, probability of loss of load, average and excess, and peak and average).

Embedded and marginal cost studies have been analyzed with respect to the seasonal and diurnal distribution of system energy and demand costs, as well as cost effective approaches to incorporating energy and demand losses for rate design purposes. Economic dispatch models have been evaluated to determine long range capacity requirements as well as system marginal energy costs for ratemaking purposes.

- B. Rate Design Studies -- Analyzed, designed and provided expert testimony relating to rate structures for all retail rate classes, employing embedded and marginal cost studies. These rate structures have included flat rates, declining block rates, inverted block rates, hours use of demand blocking, lighting rates, and interruptible rates. Economic development and special industrial rates have been developed in recognition of the competitive environment for specific customers. Assessed alternative time differentiated rates with diurnal and seasonal pricing structures. Applied Ramsey (Inverse Elasticity) Pricing to marginal costs in order to adjust for embedded revenue requirement constraints.

GLENN A. WATKINS

- C. Forecasting and System Profile Studies -- Development of long range energy (Kwh or Mcf) and demand forecasts for rural electric cooperatives and investor owned utilities. Analysis of electric plant operating characteristics for the determination of the most efficient dispatch of generating units on a system-wide basis. Factors analyzed include system load requirements, unit generating capacities, planned and unplanned outages, marginal energy costs, long term purchased capacity and energy costs, and short term power interchange agreements.
- D. Cost of Capital Studies -- Analyzed and provided expert testimony on the costs of capital and proper capital structures for ratemaking purposes, for electric, gas, telephone, water, and wastewater utilities. Costs of capital have been applied to both actual and hypothetical capital structures. Cost of equity studies have employed comparable earnings, DCF, and CAPM analyses. Econometric analyses of adjustments required to electric utilities cost of equity due to the reduced risks of completing and placing new nuclear generating units into service.
- E. Accounting Studies -- Performed and provided expert testimony for numerous accounting studies relating to revenue requirements and cost of service. Assignments have included original cost studies, cost of reproduction new studies, depreciation studies, lead-lag studies, Weather normalization studies, merger and acquisition issues and other rate base and operating income adjustments.

II. Transportation Regulation

- A. Oil and Products Pipelines -- Conducted cost of service studies utilizing embedded costs, I.C.C. Valuation, and trended original cost. Development of computer models for cost of service studies utilizing the "Williams" (FERC 154-B) methodology. Performed alternative tariff designs, and dismantlement and restoration studies.
- B. Railroads -- Analyses of costing studies using both embedded and marginal cost methodologies. Analyses of market dominance and cross-subsidization, including the implementation of differential pricing and inverse elasticity for various railroad commodities. Analyses of capital and operation costs required to operate "stand alone" railroads. Conducted cost of capital and revenue adequacy studies of railroads.

III. Insurance Studies

Conducted and presented expert testimony relating to market structure, performance, and profitability by line and sub-line of business within specific geographic areas, e.g. by state. These studies have included the determination of rates of return on Statutory Surplus and GAAP Equity by line - by state using the NAIC methodology, and comparison of individual insurance company performance vis a vis industry Country-Wide performance.

Conducted and presented expert testimony relating to rate regulation of workers' compensation, automobile, and professional malpractice insurance. These studies have included the determination of a proper profit and contingency factor utilizing an internal rate of return methodology, the development of a fair investment income rate, capital structure, cost of capital.

Other insurance studies have included testimony before the Virginia Legislature regarding proper regulatory structure of Credit Life and P&C insurance; the effects on competition and prices resulting from proposed insurance company mergers, maximum and minimum expense multiplier limits, determination of specific class code rate increase limits (swing limits); and investigation of the reasonableness of NCCI's administrative assigned risk plan and pool expenses.

GLENN A. WATKINS

IV. Anti-Trust and Commercial Business Damage Litigation

Analyses of alleged claims of attempts to monopolize, predatory pricing, unfair trade practices and economic losses. Assignments have involved definitions of relevant market areas (geographic and product) and performance of that market, the pricing and cost allocation practices of manufacturers, and the economic performance of manufacturers' distributors.

Performed and provided expert testimony relating to market impacts involving automobile and truck dealerships, incremental profitability, the present value of damages, diminution in value of business, market and dealer performance, future sales potential, optimal inventory levels, fair allocation of products, financial performance; and business valuations.

MEMBERSHIPS AND CERTIFICATIONS

Member, Association of Energy Engineers (1998)
Certified Rate of Return Analyst, Society of Utility and Regulatory Financial Analysts (1992)
Member, American Water Works Association
National Association of Business Economists
Richmond Association of Business Economists
National Economics Honor Society

DUQUESNE LIGHT COMPANY
Summary of Primary Distribution System
Customer Density Analysis

Primary Class	Strata	Customers per Sq. Mile (Density)	Count of Zip Codes	Percent of Primary & Secondary Customers Across Classes 1/	Number	Stratification Within Each Class
Residential 2/						
	Strata 1	0.2 Min to 160 Max	27	90.25%	21,805	4.0%
	Strata 2	205 Min to 761 Max	26	91.03%	157,924	29.1%
	Strata 3	787 Min to 2076 Max	26	91.63%	155,126	28.6%
	Strata 4	2078 Min to 8979 Max	26	90.95%	207,623	38.3%
	Total		105	91.14%	542,478	100.0%
Small Medium 3/						
	Strata 1	0.2 Min to 160 Max	27	9.60%	2,319	4.5%
	Strata 2	205 Min to 761 Max	26	8.81%	15,281	29.4%
	Strata 3	787 Min to 2076 Max	26	8.27%	13,999	27.0%
	Strata 4	2078 Min to 8979 Max	26	8.90%	20,317	39.1%
	Total		105	8.72%	51,916	100.0%
Large 4/						
	Strata 1	0.2 Min to 160 Max	27	0.16%	38	4.5%
	Strata 2	205 Min to 761 Max	26	0.17%	290	34.4%
	Strata 3	787 Min to 2076 Max	26	0.10%	165	19.6%
	Strata 4	2078 Min to 8979 Max	26	0.15%	350	41.5%
	Total		105	0.14%	843	100.0%

1/ Excludes Lighting.

2/ Includes Rate Schedules RS, RA, and RH.

3/ Includes Rate Schedules GS, GM < 25, and GM > 25.

4/ Includes Rate Schedules GL, GLH and L.

Source: Calculated per response to OCA-I-10.

DUQUESNE LIGHT COMPANY
Summary of Secondary Distribution System
Customer Density Analysis

Secondary Class	Strata	Customers per Sq. Mile (Density)	Count of Zip Codes	Percent of Secondary Customers Across Classes 1/	Number	Stratification Within Each Class
Residential 2/						
	Strata 1	0.2 Min to 160 Max	27	90.32%	21,805	4.0%
	Strata 2	205 Min to 761 Max	26	91.06%	157,924	29.1%
	Strata 3	787 Min to 2076 Max	26	91.66%	155,126	28.6%
	Strata 4	2078 Min to 8979 Max	26	90.98%	207,623	38.3%
	Total		105	91.17%	542,478	100.0%
Small Medium 3/						
	Strata 1	0.2 Min to 160 Max	27	9.56%	2,307	4.4%
	Strata 2	205 Min to 761 Max	26	8.80%	15,268	29.4%
	Strata 3	787 Min to 2076 Max	26	8.26%	13,976	27.0%
	Strata 4	2078 Min to 8979 Max	26	8.90%	20,301	39.2%
	Total		105	8.71%	51,852	100.0%
Large 4/						
	Strata 1	0.2 Min to 160 Max	27	0.12%	29	4.1%
	Strata 2	205 Min to 761 Max	26	0.14%	242	34.4%
	Strata 3	787 Min to 2076 Max	26	0.08%	138	19.6%
	Strata 4	2078 Min to 8979 Max	26	0.13%	295	41.9%
	Total		105	0.12%	704	100.0%

1/ Excludes Lighting.

2/ Includes Rate Schedules RS, RA, and RH (secondary customers only).

3/ Includes Rate Schedules GS, GM < 25, and GM > 25 (secondary customers only).

4/ Includes Rate Schedules GL and GLH (secondary customers only).

Source: Calculated per response to OCA-I-10.

CHARGING FOR DISTRIBUTION UTILITY
SERVICES:
ISSUES IN RATE DESIGN

December 2000

Frederick Weston

with assistance from:

Cheryl Harrington

David Moskovitz

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IV. THE COSTS OF DISTRIBUTION SERVICES

A first question to be answered when designing rates is what does it cost to provide the service? What are the causes and magnitudes of the relevant costs? It is helpful to observe that the costs recovered by distribution-level rates have historically extended far beyond the distribution system. Are there other costs, not directly related to distribution services, that distribution rates are expected to recover? What follow here are an overview of utility costing methodologies and a discussion of some practical considerations to keep in mind when determining rate structures.

A. Utility Plant Costing Methods

Utilities and regulatory commissions use a variety of methods for determining and allocating cost responsibility among customers and customer classes. There are two general types of cost study, embedded and marginal. Embedded, or fully distributed, seeks to identify and assign the historical, or accounting, costs that make up a utility's revenue requirement. Marginal, as the name connotes, aims at determining the change in total costs imposed on the system by a change in output (whether measured by kilowatt-hour, kilowatt, customer, customer group, or other relevant cost driver). Each commission around the country uses these studies in its own way to inform the rate design process; in the end, most commissions rely on embedded cost studies for ultimate allocations and price levels, constrained as they are by a legal requirement to set rates that offer the prudent utility a reasonable opportunity to earn a fair rate of return on its assets used in service to public.³³ The allocations, however, are often structured to reflect at least relative differences in the marginal costs of providing a company's various services.

1. Cost Causation

There is broad agreement in the literature that distribution investment is causally related to peak demand. Numbers of customers on the system and energy needs are also seen to drive costs, but there is less of a consensus on these points or on their implications for rate design. In addition, not all jurisdictions employ the same methods for analyzing the various cost components, and there is of course a wide range of views on their nature—marginal, embedded, fixed, variable, joint, common,³⁴ etc.—and thus on how they should be recovered in rates.

33. NARUC, p. 32.

34. The costs of multiple products or services supplied by the same plant or process are either common or joint. Common are those that generally do not vary with changes in output. The classic example is the president's desk, which is needed to run the firm as a whole but is incremental to the provision of no particular good or service. Another example is that of an airline flight, the majority of whose costs are incurred in a single lump and do not vary with the number of passengers carried. Put another way, common costs are those for which the unit of production (the single flight), which is the basis of cost incurrence, is larger than the unit of sale (a

(continued...)

Numbers of customers, usage, and demand, however, are only part of the story. Other factors also play an important role: geography (particularly population density), system design (*e.g.*, aerial versus underground lines), and the utility's business practices (for example, the extent of expenditures on billing, answering customers' questions/complaints, etc.). The implications of such factors on rate design is unclear, however: one can charge for services on the basis of numbers of customers, usage, and demand, but not on the basis of other such factors.³⁵

2. Embedded Costs

a. Cost Classification: Customers, Demand, and Energy

Traditionally, customer costs are those that are seen to vary with the number of customers on the system: service drops (the line from the distribution radial to the home or business), meters, and billing and collection. Some utilities and jurisdictions also include some portion of the primary and secondary distribution plant (poles, wires, and transformers) in these costs, on the ground that they also are driven more by numbers of customers than by demand or energy. Similar reasoning leads to the designation of the costs of customer service and customer premises equipment as customer-related. But, since the system and its components are sized to serve a maximum level of anticipated demand, the notion that there are any customer costs (aside from perhaps metering and billing) that are not more properly categorized as demand can be challenged (see Subsections 3 and 4, below).

Utilities classify significant portions of their embedded distribution investment as demand-related, reasoning that it is designed and installed to serve a customer or group of customers according to their contribution to some peak load (system, substation, etc.). Substations are a typical example of such costs, but so too may be a significant portion of the wires and related facilities, since they are sized, at least in part, to serve a peak demand.

There are a number of methods for differentiating between the customer and demand components of embedded distribution plant. The most common method used is the basic customer method, which classifies all poles, wires, and transformers as demand-related and meters, meter-reading, and billing as customer-related. This general approach is used in more than thirty states. A

34. (...continued)

single ticket to a single passenger). Kahn, Vol. I, p. 77. If services produced in common can be produced in varying proportions, it may then be possible to identify separate marginal production costs for each.

Products that are produced in fixed proportions (*e.g.*, cotton fiber and cottonseed oil, beef and hides, mutton and wool) are characterized by joint costs. For that aspect of their production process that is joint, the products have no separately identifiable marginal costs. *Id.*, p. 79. See also Bonbright, pp. 355-360.

35. These other cost factors can have huge effects on prices. Three distribution utilities in the American south, owned by the same holding company and using the same costing methodology, recently proposed new metering, customer service rates, and delivery rates. The rates, designed as a combination of monthly per-customer and per-kW of peak demand charges, vary from company to company by ratios ranging from 1.25 to 1.9.

variation is to treat poles, wires, and transformers as energy-related driven by kilowatt-hour sales but, though it has obvious appeal, only a small number of jurisdictions have gone this route.

Two other approaches sometimes used are the minimum size and zero-intercept methods. The minimum size method operates, as its name implies, on the assumption that there is a minimum-size distribution system capable of serving customers minimum requirements. The costs of this hypothetical system are, so the argument goes, driven not by customer demand but rather by numbers of customers, and therefore they are considered customer costs. The demand-related cost portion then is the difference between total distribution investment and the customer-related costs. The zero-intercept approach is a variation on the minimum size. Here the idea is to identify that portion of plant that is necessary to give customers access but which is incapable of serving any level of demand. The logic is that the costs of this system, because it can serve no demand and thus is not demand-related, are necessarily customer-related.³⁶ However, the distinction between customer and demand costs is not always clear, insofar as the number of customers on a system (or particular area of a system) will have impacts on the total demand on the system, to the extent that their demand is coincident with the relevant peak (system, areal, substation, etc.).

Any approach to classifying costs has virtues and vices. The first potential pitfall lies in the assumptions, explicit and implicit, that a method is built upon. In the basic customer method, it is the *a priori* classification of expenditures (which may or may not be reasonable). In the case of the minimum-size and zero-intercept methods, the threshold assumption is that there is some portion of the system whose costs are unrelated to demand (or to energy for that matter). From one perspective, this notion has a certain intuitive appeal these are the lowest costs that must be incurred before any or some minimal amount of power can be delivered but from another viewpoint it seems absurd, since in the absence of any demand no such system would be built at all. Moreover, firms in competitive markets do not indeed, can not price their products according to such methods: they recover their costs through the sale of goods and services, not merely by charging for the ability to consume, or access.

Other assumptions are of a more technical nature. What constitutes the minimum system? What are the proper types of equipment to be modeled? What cost data are applicable (historical, current installations, etc.)? Doesn't the minimum system in fact include demand costs, since such a system can serve some amount of demand? The zero-intercept method attempts to model a system that has no demand-serving capability whatsoever, but what remains is not necessarily a system whose costs are driven any more by the number of customers than it is by geographical considerations, whose causative properties are neither squarely demand- nor customer-related. Does use of an abstract minimum system place a disproportionate share of the cost burden on

36. It is called zero-intercept because it relates installed cost to current carrying capacity or demand rating, creat[ing] a curve for various sizes of the equipment involved, using regression techniques, and extend[ing] the curve to a no-load intercept. NARUC, p. 92.

certain customers or classes, in certain cases even resulting in double-counting? The answers chosen to these and other questions will have impacts upon the respective assignments (by type and customer class) of costs.³⁷

Historically, the investment decisions of system planners in vertically-integrated utilities were constrained by the least total cost objective: simply, that they would make that combination of investments that were expected, given their assessments of risk, to meet expected demand for service over some reasonable planning horizon. Given the inability to store electricity and the typical obligation to serve all customers *on demand*, a utility was required to have sufficient capacity available to meet peak demand. And, if its only obligation were to meet peak demand, then it would install only the most inexpensive capacity. However, it had also to serve energy needs at other times, and it is a general characteristic of electric generation technology that as capacity costs decrease variable operating costs increase. There is, therefore, a trade-off between capacity and energy costs that system planners considered when building (or purchasing) new capacity, if they hoped to minimize total costs. Put another way, significant portions of generating capacity were purchased not to meet demand, but to serve energy, when the fuel cost savings that the more expensive generation would produce were greater than the additional costs of that capacity. These incremental capacity costs were therefore correctly viewed as energy costs.

A similar kind of analysis can inform the design of distribution systems, as it also does transmission. The question is whether there is some amount of capacity in excess of the minimum needed to meet peak demand that can cost-effectively be installed. The additional capacity larger substations, conductors, transformers will reduce energy losses; if the cost of energy saved is greater than that of the additional capacity, then the investment will be cost-effective and should be made.³⁸ For the purposes of cost analysis and rate design, these kinds of distribution investments are rightly treated as energy-related.³⁹

b. Cost Allocation

As a general matter, distribution facilities are designed and operated to serve localized area loads. Substations are designed to meet the maximum expected load of the distribution feeders radiating from them. The feeders are designed to meet at least the maximum expected loads at the primary

37. Sterzinger, George, The Customer Charge and Problems of Double Allocation of Costs, *Public Utilities Fortnightly*, July 2, 1981, p. 31; see also Bonbright, p. 347-348.

38. Losses vary with the square of the load. We note also that there is some minimum amount of losses that cannot be avoided, and that conductors must be sized such that the losses can be absorbed while still meeting peak load. To this degree, losses impose a capacity, rather than energy, cost.

39. An unhappy consequence of separating distribution and transmission planning from that of generation in restructured markets is the potential loss of this capacity-versus-energy consideration when making new investment. Certainly, without some sort of regulatory or legislative requirement, wires-only companies have no generation cost-savings motive to guide their planning decisions.

and secondary service levels. (As noted above, some investment in distribution capacity may be seen as reducing energy losses rather than serving peak demand.) For costing purposes it is the relevant subsystems (substation, feeder, etc.?) peak that matters, but these peaks may or may not be coincident with each other or with the overall systems peak. There can be significant variation among them. Consequently, one practice is to allocate the costs of substations and primary feeders (which usually enjoy relatively high load factors) to customer class non-coincident peaks and to allocate secondary feeders and line transformers (with lower load factors) to the individual customer's maximum demand.⁴⁰ In addition, costs are allocated according to voltage level; customers taking service at higher levels are typically not assigned any of the costs of the lower-voltage systems that do not serve them. Costs are then allocated among customer rate groups (or classes) which requires, among other things, information and judgments about coincidence of demand when customers of different classes share facilities, as is often the case.

3. Marginal Costs

For the reasons stated earlier, it is the long-run marginal cost that is most relevant to designing rates. It can be described as the cost of that lumpy, geographically dispersed set of investments that a utility must make if demand continues to grow after the distribution system has initially been built out.

a. Demand and Energy

As already noted, the drivers of distribution costs are typically seen to be peak demand (itself driven by both customer demand and numbers of customers) and energy needs.⁴¹ For the purposes of marginal cost analysis, it is also necessary to identify investments that are not made to serve incremental demands, but are made for some other purpose—reliability, replacement of existing systems, etc. The costs of these investments are generally not included in marginal cost calculations, although, in certain cases, there may be legitimate arguments to the contrary.⁴²

40. Class non-coincident peak may not be the best measure of cost causation, since much of the system serves a variety of customer classes. Chernick, Paul, *From Here to Efficiency: Securing Demand-Management Resources*, Vol. 5, 1993, p. 81. Ideally, the object is to design rates that reflect the costs of customers' contributions to the relevant peak.

41. It is worth noting that, in the short run, distribution costs vary more closely with numbers of customers than with load (except in capacity-constrained areas). For rate design, with its focus on the long run, this fact need not be a distraction. It does, however, have implications for setting revenue requirements. We address this question in Chapter V, below.

42. For instance, at the time that an investment to replace existing facilities (whose loads, let us say, are not expected to change over some extended period) is being contemplated, there are costs that can potentially be avoided. In the extreme, replacement would be unnecessary if all customers served by the facility were to decide to go off-grid. Other, more likely alternatives involve combinations of end-use efficiency, distributed generation, and smaller, more efficient distribution technologies. On these bases, the marginal or, more reasonably, the larger
(continued...)

Many of the same cost classification and assignment questions that pervade embedded cost analyses also recur in marginal cost studies, although their answers have different analytical effects. Whereas an embedded cost study strives to identify and assign total historical costs to classes of service (on the basis of any of a number of principles, including cost causation and fairness), a marginal cost analysis aims to determine the cost consequences of changes in output and thus the value of resources that must be used to serve incremental demand. Therefore, costs that are unaffected by changes in output (which describes all common and many joint costs) are excluded from the costs under examination.⁴³

The study period for a marginal cost analysis is forward-looking and should be of sufficient duration to assure that all incremental demand is related to the investments forecast to serve that demand: a mismatch of timing and investment could result in significantly over- or understated costs. Those incremental costs are then discounted to their present value and annualized over the planning horizon. This has the effect of smoothing out the lumpiness of investment in relation to changes in demand.⁴⁴ This analysis relates changes in total costs to changes in demand (aggregating demand increases caused by the addition of customers with those caused by increases in demand per customer).⁴⁵ Since new customers create additional demand, this approach is not unreasonable.

Even so, some jurisdictions consider certain costs customer-related and treat them separately for the purpose of marginal cost analysis. Customer premises equipment that which is dedicated specifically to individual customers and unrelated to variations in demand (meters and perhaps service drops) are probably the only distribution costs that can be directly assigned to customers (except in the cases of customers who have additional facilities transformers, wires, even

42. (...continued)

incremental costs of distribution can be calculated. If replacement of the particular component of the system is forecast for some time in the future, then its expected future costs would need to be discounted appropriately to yield a present-value incremental cost.

43. Because marginal cost is defined as the change in total cost arising from a change in output, all costs are, strictly speaking, included in the analysis. It just happens that most are netted out, to reveal those that are caused by the change in output. As a practical matter, however, an analyst may simply identify the costs that vary with output and exclude the rest. It is this second approach, however, that raises debates about the nature of costs and whether they should be included in the analysis. Are they joint or common? Do they vary with demand, energy, customers, or not at all? Resolving the issues usually requires large doses of judgment.

44. An alternative approach is to calculate the cost (savings) of advancing (deferring) by one year the planned stream of investments to meet the increment (decrement) in demand. This approach yields a cost that is equal to the value of the marginal investments for one year (which is the same as the economic carrying charge on those investments). This method is often used, for example, to determine an annual cost per kW of generating capacity.

45. For sizing much of the distribution system, demand is the critical factor. One customer contributing six kilowatts to peak demand has the same impact as two each contributing three kilowatts.

substations, dedicated solely to their needs).⁴⁶ Some jurisdictions also consider other facilities (line transformers, secondary level conductors) in some measure customer-related, but, to the extent that they are jointly-used to serve more than one customer, it may be difficult to establish that the addition or loss of any one customer will affect the costs of those facilities.⁴⁷ In any event, if some costs are deemed marginal customer costs (which means that they are avoidable only at the time of hook-up), it by no means follows that they should be recovered in recurring monthly fixed fees (see Section V.A.5., below).

Other approaches sometimes used to resolve the cost-causation question are the minimum system and zero intercept methods. Here, instead of using embedded cost data, the distribution system is modeled to determine the cost (in current dollars) of a hypothetical system that could serve all customers minimum demand or (in the case of zero-intercept) that could provide voltage but not power.⁴⁸ This cost would be deemed customer-related and separated from the total incremental cost previously determined, to identify the demand (or, more properly, the demand- and energy-related) portion. For the reasons stated earlier, we challenge the wisdom of these approaches.⁴⁹

Other methodological difficulties may also arise. By definition, joint and common costs are not marginal, but occasionally they creep into the analysis, when, for example, they make use of what are in effect *average*, not *marginal*, investments and expenditures.⁵⁰ And, as with embedded costs, marginal costs are typically broken out by customer class. Here, again, the analysis requires

46. After the meter, the customer service drop is typically seen as the least demand-related component of the system: it is sized to exceed any realistic maximum demand that the consumer might impose and it will last a very long time. However, although it is true that no investment would be made unless a customer were present, it is also true that the amount of the initial investment increases as the customer's forecasted load increases. Thus, customer investments can be seen as demand-related, as can investments farther up the system transformers, wires, and substations whose sizing depends on expected peak demand. Bouford, James D., Standardized Component Method for the Determination of Marginal and Avoided Demand Cost at the Distribution Level, Central Maine Power Company, (unpublished and undated), pp. 3-4.

47. NARUC, p. 136.

48. A handbook published by the National Economic Research Associates (NERA), which is often cited in support of the minimum system distribution cost classification, states that only the labor costs necessary to put together a minimum system and no conductor and transformer costs are customer-related. NERA, How To Quantify Marginal Costs: Topic 4, (prepared for the Electric Utility Rate Design Study, March 10, 1977), pp. 76.

49. California, for instance, has rejected the minimum system approach to marginal costs, favoring instead a method which uses the weighted average of the costs of continuing to serve existing customers and the costs of initiating service to new customers.

50. See, e.g., NARUC, p. 127, which notes that, because calculating marginal distribution and customer costs can be difficult, it is still common for analysts to use some variation of a projected embedded methodology for these elements, rather than a strictly marginal approach. This tack is justified by the sweeping assumption that projected embedded distribution costs are a reasonable approximation of marginal costs. The assumption is, however, contestable. FERC accounting requirements, which form the basis of most embedded cost analyses, include in distribution certain, and often substantial, administrative and general (A&G) costs (Accounts 920 to 935). A&G is not caused by the provision of distribution service.

reasonable assessments of the coincidence of demand, when customers of different classes share facilities.

Another dimension of cost, and perhaps most revealing, is the geographic. There are several aspects to it. First are the topographical and meteorological characteristics of the area over which the distribution system is laid. Elevations, plant life, weather, soil conditions, and so on all have effects on costs. So too demography, which is captured partly by demand and numbers of customers, but also affecting costs is the density of customers in an area (sometimes expressed as customers per mile). These influences combine in assorted ways, with themselves but also with changes in load and rates of investment, to produce variations in costs from one area of the distribution system to another. It is not unusual to see marginal distribution costs varying greatly from one place to another, even when the distances between the different areas is comparatively short. Table 1 describes the significant variations in costs for incremental distribution investments in a large mid-western utility.

	Average System Marginal Costs per kW	Area Specific High-Low Marginal Costs per kW	Annual Cost @ 15% Capital Cost Recovery Factor	Average Marginal Costs per kWh @ 20% Load Factor ⁵¹	High Marginal Costs per kWh @ 20% Load Factor
Transmission	\$230	NA	\$34	\$0.02	\$0.04
Distribution Lines	\$960	\$1,575 - 0	\$140	\$0.08	\$0.135
Distribution Transformers	\$60	\$300 - 0	\$9	\$0.0015	\$0.025
Total	\$1,250	\$1,875 - 0	\$183	\$.1015	\$0.20

Table 1

Differentiating marginal costs along these lines will tell a utility where investment (whether in new facilities, end-use efficiency, or distributed generation) is needed and what the minimum value of that investment is. Whether for rate-making purposes this information is useful should distribution rates be geographically deaveraged? is a tougher question. We take it up in Chapter V, below.

51. This is estimated load factor for the incremental distribution investment alone, not for the entire distribution system altogether. Incremental investment to meet peak needs typically manifests low load factors; 20% is a conservatively high estimate.

4. Key Concern in Determining Costs: Follow the Money

The occasionally technical and arcane matters taken up in embedded and marginal cost studies are, of course, important, but it is perhaps more important to bear in mind that, in rate design cases, what is fundamentally at issue is who should bear what revenue responsibilities. In the interplay between cost allocation and rate structures, the debate over money is played out. First is the question of what costs will be categorized as *distribution*, as opposed to transmission or generation in the case of vertically integrated utilities, or perhaps competitive services in other instances. This is no small matter, since significant portions of a firm's joint and common costs (typically, administrative and general) are often attributed to the distribution business, even though there is no causal relationship between them. Then there is the designation of a cost as either *customer* or *demand*, which will affect both how costs are divvied up among classes and who within each class will pay them (*i.e.*, both inter- and intra-class allocations). While there is a touch of cynicism in the observation that there is no shortage of academic arguments to justify particular outcomes, it is nevertheless largely true. Always be aware of the revenue effects of a particular rate structure. Who benefits, who loses? Fixed prices, because they recover revenues by customer rather than by usage, invariably shift a larger proportion of the system's costs to the lower-volume consumers (residential and small business). The positions that interested parties take with respect to rate design should, in part, be considered in light of their impacts on class revenue burdens and on the profitability of the utility. Here the admonition to be practical cannot be stressed enough. Seemingly small changes in a rate design can have very significant consequences for different customers.⁵²

52. Consider the following example (the hypothetical rates cover distribution services only). A residential customer using 500 kWh per month and paying \$0.05 per delivered kWh and a monthly customer charge of \$5.00 sees a monthly bill of \$30. If rates were revised so that residential customers paid a fixed charge of \$20 per month plus \$0.02 cents per kWh, a customer using 500 kWh would receive the same total bill of \$30. For this customer, the rateredesign is revenue neutral. However, for a customer using 300 kWh/month, the monthly bill under the original rate structure is \$20 and, under the new rates, is \$26—a 30% increase, even though there is no change in usage. For a customer using 700 kWh/month, the original bill is \$40 and the revised bill is \$34, a 15% reduction.

Consider a gain the customer using 500 kWh/month. If, under the original rate structure, she reduced her electricity use to 300 kWh per month (whether by load reduction, demand-side management, the installation of a rooftop solar electric system, or some combination of these options), she would reduce her bill by \$10. However, under the revised rate structure, she would only reduce her bill by \$4.

Whether the impacts of a rate design change are immediate and substantial depends, of course, on a variety of factors. The extent to which class cost allocations are altered will determine whether particular customers' total bills (all else being equal) will go up or down. Even those changes that are meant to be class revenue-neutral will affect individual customer bills: as already noted, shifts from usage-based to fixed charges recover disproportionately higher revenues from low-volume users and then, more subtly, there are the effects (both positive and negative) on bills and revenues that flow from demand responses to the changes in rate structure.

5. Usage Sensitivity: What s Avoidable?

a. Peak Demand and Sizing the Wires

Distribution investment is made to serve an expected level of demand over a period of time, often determined by the useful life of the equipment. To the extent that, once a network (or component of it) is built, there is excess capacity in it, the marginal cost of using that excess capacity will be quite low (possibly very close to zero, insofar as there is little in the way of variable cost). It is this phenomenon that the short-run marginal cost of delivering a kilowatt-hour is zero that underlies the argument that there should be no per-kilowatt-hour charge for doing so.

As peak load grows, it will press up against the capacity limits of the system. At the time of constraint, the marginal cost of delivering a kilowatt-hour is, in fact, significantly greater than zero: at a minimum it is the cost of the additional investment needed to carry that marginal kilowatt-hour to end-users.⁵³ At that point, presumably, the new investment is made, and it is sized to minimize the total costs of delivery over the long term and thus, as before, there is suddenly excess capacity causing once again the marginal cost to fall to almost zero.

This non-linearity of investment with demand is a characteristic of much of the distribution system, the closer one gets to the end-user. To the extent that there are not an infinite number of equipment sizes to enable precise matching of investment and demand, excess capacity is almost necessarily built into the system, from substation facilities to feeders, transformers, customer service drops. But this has less to do with the finitude of equipment options than it does with the least total cost planning objective (optimizing total construction and operations costs over the investment horizon). The analytical key is to view the system over a time period long enough to smooth out the lumpiness of investment in relation to changes in demand.⁵⁴

What emerges from such analysis is the recognition that there are costs associated with load growth, savings generated by reductions in load growth, and savings flowing from reductions in existing load. These values, not necessarily equal to each other, reflect in part the fungibility of significant portions of the system (*e.g.*, substations and feeders). Capacity unused, or freed up, by one customer can be used by others.⁵⁵

Sometimes cited as an interesting and somewhat anomalous characteristic of some distribution investment, specifically that closest to customers (such as the service drop) is its manifestation of positive marginal costs with load growth but seemingly zero marginal (or avoided) costs with load reductions. This is because, so the argument goes, load reduction makes no capacity available for

53. And it may indeed be greater, if the value to consumers of that marginal delivery is greater than the cost of the additional investment. See Appendix A.

54. The justification for analyzing costs over the long run, and for setting prices on that basis, is discussed in Appendix A.

55. Chernick, Vol. 5, p. 68.

alternative uses, that did not already exist. This not so, however, because the inability to re-use capacity does not mean that there is no value to not using it. At the very least, future replacement costs can be deferred and the equipment installed on replacement can be down-sized, thereby reducing costs for all users.⁵⁶

The differences in costs and savings associated with load growth, reduced growth rates, and reductions in existing load may leave some room for debate about their implications for rate design; but, given the declining-cost nature of the distribution system, these differences will probably have less of an impact than will the need to recover an embedded revenue requirement. The critical point here is that distribution costs vary primarily with load over the longer term.

b. Energy: The Costs of Throughput

As discussed earlier, to the extent that distribution investments are made to offset energy needs, there are necessarily costs associated with avoiding those investments. Losses, heat build-up, frequency of overloads, etc., are aspects of energy use that affect distribution investment and operations; thus there are marginal energy costs in distribution. Whether avoiding those costs make alternatives to distribution cost-effective is an empirical question. But, for purposes of rate design, it is sufficient to say that these marginal costs should be understood and appropriately reflected in rates. They are unquestionably volumetric in nature.

B. Conclusion: The Costs of Distribution Services

Cost studies are intended to provide useful information about the causes and magnitudes of costs, to inform a rate design process that is guided by the general principle that those who cause a cost should pay that cost. However, the usual drivers ascribed to distribution costs (both embedded and marginal) describe only part of the story, and the force-fitting of square costs into round drivers can lead to rate designs that will not best promote long-run dynamic efficiency. This is especially true of embedded cost studies, in which a central objective is to assign or allocate costs to particular services or classes of customers, even though many of those costs cannot be assigned unequivocally according to the principle of causation. By their very nature, many utility costs are joint or common to two or more services; consequently there can be no unshakeable assertion that any one service in fact caused a cost and, therefore, that a particular rate element should recover it. And marginal cost studies often suffer from this deficiency as well. This means that regulators should be very careful before relying upon what are essentially (though not necessarily

⁵⁶ *Id.*, pp. 68-71. Also affected is the magnitude and cost of over-sizing equipment in order to serve forecast demand. See also NERA, pp. 17-18.

unreasonable) arbitrary cost assignments for the purposes of designing rates.⁵⁷ Too great a dependence on cost studies is to be captured by their underlying assumptions and methodological flaws. Utilities and commissions should be cautious before adopting a particular method on the basis of what may be a superficial appeal. More important, however, is the concern that a costing method, once adopted, becomes the predominant and unchallenged determinant of rate design.

Marginal cost analysis demonstrates that distribution costs vary with load in the long run. This has important implications for rate design. Embedded cost analysis, though it relies on *a priori* assumptions about causes (and allocations therefore) of historical costs, is useful in rate design at least insofar as it informs the process of reconciling marginal cost-based rates with revenue requirements.⁵⁸ We recognize that there are honest disagreements over approaches to both kinds of analysis.⁵⁹ But what is important here is for regulators to be aware of the fundamental relationships between costs and demand for electric service, in order to devise rates that best serve the objectives they seek.

57. To ensure that [embedded distribution plant] costs are properly allocated, the analyst must first classify each account as demand-related, customer-related, or a combination of both. The classification depends upon the analyst's evaluation of how the costs in these accounts were incurred. NARUC, p. 89. Interestingly, the manual, in a table on page 34, acknowledges that there is an energy-related component to embedded distribution costs, but is otherwise silent on the question.

58. Bonbright, pp. 366-367. Bonbright expresses some skepticism as to the usefulness of most embedded cost studies for rate design, on the ground that they often ignore the relationship between cost causation and apportionment. One may suspect that the choice of [allocation] formula depends, not on principles of cost imputation but rather on types of apportionment which tend to justify whatever rate structure is advocated for non-cost reasons. *Id.*, p. 368.

59. See, e.g., Chernick, Vol. 5, pp. 58-83, and NARUC, pp. 86-104 and 137-146.

Duquesne Light Company
Class Cost of Service Study
Secondary Distribution Plant at 100% Demand Classification

Account	No.	Balance	RS	RH	RA	GS	GM<25	GM>25	GMH<25	GMH>25
I. ELECTRIC PLANT IN SERVICE										
INTANGIBLE PLANT										
Organization / Franchise	301 / 302	82	31	4	0	1	5	16	1	1
SW- Plant/ OM	303P	0	0	0	0	0	0	0	0	0
SW- Customer-related	303C	219,001	179,742	14,462	2,145	9,036	7,322	2,454	908	232
SW- Labor-related	303L	0	0	0	0	0	0	0	0	0
SW- AMI	303AMI	62,331	41,055	3,289	488	2,128	8,408	4,862	967	427
Software- RB / CIP/Cyber	303F	88,984	30,092	3,863	451	953	5,435	17,920	593	1,642
Intangible Plant		370,398	250,920	21,618	3,085	12,119	21,170	25,253	2,469	2,303
C. TRANSMISSION PLANT										
Transmission Plant	361	0	0	0	0	0	0	0	0	0
Transmission Plant	350-359	0	0	0	0	0	0	0	0	0
D. DISTRIBUTION PLANT										
Land and Land Rights	360	23,190	9,519	1,268	152	202	1,260	4,097	137	373
Structures and Improvements	361	71,327	29,280	3,900	469	623	3,876	12,603	421	1,146
Direct Assignment	361	0	0	0	0	0	0	0	0	0
Station Equipment	362	523,748	214,998	28,638	3,441	4,573	28,459	92,540	3,091	8,414
Station Equipment- Network	362	13,188	0	0	0	24	364	2,075	55	268
Poles, Towers and Fixtures	364	624,016	264,739	35,263	4,237	5,601	34,581	111,313	3,736	10,020
OH Conductors and Devices	365	629,457	267,047	35,571	4,274	5,650	34,883	112,284	3,768	10,108
UG Conduits- Radial	366	157,950	3,175	423	51	2,687	16,587	53,391	1,792	4,806
UG Conduits- Network	366	30,713	0	0	0	55	847	4,832	129	623
UG Conduits- URD	366	30,713	26,934	3,365	414	0	0	0	0	0
UG Conductors- Radial	367	331,382	6,660	887	107	5,637	34,800	112,016	3,759	10,083
UG Conductors- Network	367	64,435	0	0	0	116	1,777	10,138	270	1,308
UG Conductors- URD	367	64,435	56,506	7,061	868	0	0	0	0	0
Line Transformers- OH	368	300,124	13,084	7,252	209	277	20,218	104,131	2,022	9,459
Line Transformers- Radial	368	95,034	0	0	0	1,392	10,612	35,032	1,142	3,153
Line Transformers- Network	368	44,726	0	0	0	80	1,234	7,037	187	908
Line Transformers- URD	368	50,903	46,236	4,087	580	0	0	0	0	0
Services	369	114,962	94,584	7,610	1,129	4,828	4,446	1,490	552	141
Meters	370	151,169	92,079	7,376	1,094	4,773	16,665	22,109	1,916	1,942
Street Lighting	373	44,730	0	0	0	0	0	0	0	0
ARO- Dist Plant	ARO	0	0	0	0	0	0	0	0	0
Distribution Plant	360-373	3,366,202	1,124,839	142,701	17,024	36,518	210,610	685,086	22,975	62,751

Duquesne Light Company
Class Cost of Service Study
Secondary Distribution Plant at 100% Demand Classification

Account	No.	Balance	GL	GLH	L	HVPS	SE	SL	UMS
I. ELECTRIC PLANT IN SERVICE									
INTANGIBLE PLANT									
Organization / Franchise	301 / 302	82	15	2	5	0	0	1	0
SW- Plant/ OM	303P	0	0	0	0	0	0	0	0
SW- Customer-related	303C	219,001	267	32	7	3	0	349	2,040
SW- Labor-related	303L	0	0	0	0	0	0	0	0
SW- AMI	303AMI	62,331	597	71	32	7	0	0	0
Software- RB / CIP/Cyber	303F	88,984	17,919	2,741	5,418	1	321	1,545	88
Intangible Plant		370,398	18,798	2,847	5,462	11	321	1,896	2,129
C. TRANSMISSION PLANT									
Transmission Plant	361	0	0	0	0	0	0	0	0
Transmission Plant	350-359	0	0	0	0	0	0	0	0
D. DISTRIBUTION PLANT									
Land and Land Rights	360	23,190	4,080	551	1,381	0	77	67	25
Structures and Improvements	361	71,327	12,551	1,695	4,247	0	235	205	78
Direct Assignment	361	0	0	0	0	0	0	0	0
Station Equipment	362	523,748	92,158	12,448	31,184	0	1,729	1,503	573
Station Equipment- Network	362	13,188	6,765	2,713	921	0	0	0	4
Poles, Towers and Fixtures	364	624,016	103,216	11,731	34,899	0	2,129	1,851	700
OH Conductors and Devices	365	629,457	104,116	11,834	35,203	0	2,148	1,867	706
UG Conduits- Radial	366	157,950	49,878	5,660	17,256	0	1,021	888	336
UG Conduits- Network	366	30,713	15,754	6,319	2,145	0	0	0	9
UG Conduits- URD	366	30,713	0	0	0	0	0	0	0
UG Conductors- Radial	367	331,382	104,645	11,875	36,204	0	2,143	1,863	705
UG Conductors- Network	367	64,435	33,052	13,257	4,500	0	0	0	19
UG Conductors- URD	367	64,435	0	0	0	0	0	0	0
Line Transformers- OH	368	300,124	100,078	13,742	26,459	0	2,029	1,128	35
Line Transformers- Radial	368	95,034	30,572	3,522	8,232	0	672	570	136
Line Transformers- Network	368	44,726	22,942	9,202	3,124	0	0	0	13
Line Transformers- URD	368	50,903	0	0	0	0	0	0	0
Services	369	114,962	162	19	0	0	0	0	0
Meters	370	151,169	2,715	323	146	31	0	0	0
Street Lighting	373	44,730	0	0	0	0	0	44,730	0
ARO- Dist Plant	ARO	0	0	0	0	0	0	0	0
Distribution Plant	360-373	3,366,202	682,682	104,892	205,900	31	12,183	54,671	3,338

Duquesne Light Company
Class Cost of Service Study
Secondary Distribution Plant at 100% Demand Classification

Account	No.	Balance	RS	RH	RA	GS	GM<25	GM>25	GMH<25	GMH>25
E. GENERAL PLANT										
General Plant	390	351,077	175,464	21,854	2,092	5,717	19,087	52,334	2,170	4,794
General Plant-EV	390EV	1,081	310	38	4	30	97	264	11	24
General Plant	389-399	<u>352,158</u>	<u>175,774</u>	<u>21,893</u>	<u>2,096</u>	<u>5,747</u>	<u>19,185</u>	<u>52,598</u>	<u>2,181</u>	<u>4,818</u>
TOTAL UTILITY PLANT		<u>4,088,758</u>	<u>1,551,533</u>	<u>186,212</u>	<u>22,205</u>	<u>54,384</u>	<u>250,964</u>	<u>762,937</u>	<u>27,625</u>	<u>69,873</u>
II. DEPRECIATION RESERVE										
Intangible Plant	108.3	239,596	162,310	13,984	1,995	7,839	13,694	16,335	1,597	1,490
Transmission Plant	108.3	0	0	0	0	0	0	0	0	0
Structures and Improvements	108.5	43,772	17,968	2,393	288	382	2,378	7,734	258	703
Direct Assignment	108.5	0	0	0	0	0	0	0	0	0
Station Equipment	108.5	189,703	77,873	10,373	1,246	1,656	10,308	33,518	1,119	3,047
Poles, Towers and Fixtures	108.5	192,716	81,760	10,890	1,308	1,730	10,680	34,377	1,154	3,095
OH Conductors and Devices	108.5	184,533	78,288	10,428	1,253	1,656	10,226	32,917	1,105	2,963
UG Conduits	108.5	53,228	7,305	919	113	665	4,230	14,127	466	1,317
UG Conductors	108.5	136,278	18,703	2,353	289	1,703	10,830	36,169	1,193	3,373
Line Transformers	108.5	140,769	17,014	3,252	226	502	9,197	41,933	961	3,878
Services	108.5	28,630	23,555	1,895	281	1,202	1,107	371	137	35
Meters	108.5	42,906	26,135	2,094	311	1,355	4,730	6,275	544	551
Street Lighting	108.5	25,853	0	0	0	0	0	0	0	0
EV Assets	108EV	143	62	8	1	3	10	26	1	2
General	108.6	147,822	73,880	9,202	881	2,407	8,037	22,035	914	2,019
Depreciation Reserve	108	<u>1,425,949</u>	<u>584,853</u>	<u>67,791</u>	<u>8,192</u>	<u>21,101</u>	<u>85,428</u>	<u>245,818</u>	<u>9,449</u>	<u>22,474</u>
III. OTHER RATE BASE ITEMS										
Cash Working Capital	131	46,162	24,338	3,121	275	762	2,347	6,329	269	583
Cash Working Capital- Supp	131	0	0	0	0	0	0	0	0	0
Materials & Supplies		26,057	9,664	1,192	137	328	1,645	5,028	181	460
Capitalized Pension		74,408	27,596	3,404	391	937	4,696	14,358	517	1,314
Customer Deposits		(11,163)	(6,640)	(831)	(58)	(658)	(1,099)	(1,208)	(102)	(110)
ADIT-EV		(53)	(15)	(2)	(0)	(1)	(5)	(13)	(1)	(1)
ADIT- Transmission	154	0	0	0	0	0	0	0	0	0
ADIT- Distribution	154	(501,864)	(169,718)	(21,788)	(2,545)	(5,377)	(30,653)	(101,069)	(3,344)	(9,262)
ADIT- General	182	(19,893)	(9,942)	(1,238)	(119)	(324)	(1,082)	(2,965)	(123)	(272)
Other Rate Base	131-283	<u>(386,345)</u>	<u>(124,717)</u>	<u>(16,142)</u>	<u>(1,919)</u>	<u>(4,334)</u>	<u>(24,150)</u>	<u>(79,541)</u>	<u>(2,602)</u>	<u>(7,287)</u>
TOTAL RATE BASE		<u>2,276,464</u>	<u>841,963</u>	<u>102,279</u>	<u>12,094</u>	<u>28,948</u>	<u>141,387</u>	<u>437,577</u>	<u>15,573</u>	<u>40,112</u>

Duquesne Light Company
Class Cost of Service Study
Secondary Distribution Plant at 100% Demand Classification

Account	No.	Balance	GL	GLH	L	HVPS	SE	SL	UMS
E. GENERAL PLANT									
General Plant	390	351,077	41,284	5,721	12,851	15	748	6,704	241
General Plant-EV	390EV	1,081	208	29	65	0	0	0	0
General Plant	389-399	352,158	41,493	5,750	12,916	15	748	6,704	241
TOTAL UTILITY PLANT		4,088,758	742,973	113,489	224,277	56	13,252	63,271	5,708
II. DEPRECIATION RESERVE									
Intangible Plant	108.3	239,596	12,160	1,841	3,533	7	208	1,226	1,377
Transmission Plant	108.3	0	0	0	0	0	0	0	0
Structures and Improvements	108.5	43,772	7,702	1,040	2,606	0	145	126	48
Direct Assignment	108.5	0	0	0	0	0	0	0	0
Station Equipment	108.5	189,703	33,380	4,509	11,295	0	626	545	207
Poles, Towers and Fixtures	108.5	192,716	31,876	3,623	10,778	0	658	572	216
OH Conductors and Devices	108.5	184,533	30,523	3,469	10,320	0	630	547	207
UG Conduits	108.5	53,228	15,925	2,906	4,707	0	248	215	84
UG Conductors	108.5	136,278	40,771	7,441	12,052	0	634	552	214
Line Transformers	108.5	140,769	44,054	7,591	10,846	0	775	487	53
Services	108.5	28,630	40	5	0	0	0	0	0
Meters	108.5	42,906	770	92	41	9	0	0	0
Street Lighting	108.5	25,853	0	0	0	0	0	25,853	0
EV Assets	108EV	143	21	3	6	0	0	0	0
General	108.6	147,822	17,383	2,409	5,411	6	315	2,823	101
Depreciation Reserve	108	1,425,949	234,605	34,930	71,597	22	4,238	32,945	2,507
III. OTHER RATE BASE ITEMS									
Cash Working Capital	131	46,162	5,034	690	1,572	2	92	707	43
Cash Working Capital- Supp	131	0	0	0	0	0	0	0	0
Materials & Supplies		26,057	4,756	726	1,431	1	84	401	23
Capitalized Pension		74,408	13,581	2,072	4,086	2	241	1,145	67
Customer Deposits		(11,163)	(457)	0	0	0	(0)	(0)	0
ADIT-EV		(53)	(10)	(1)	(3)	0	0	0	0
ADIT- Transmission	154	0	0	0	0	0	0	0	0
ADIT- Distribution	154	(501,864)	(101,064)	(15,461)	(30,556)	(4)	(1,810)	(8,715)	(499)
ADIT- General	182	(19,893)	(2,339)	(324)	(728)	(1)	(42)	(380)	(14)
Other Rate Base	131-283	(386,345)	(80,499)	(12,298)	(24,199)	(1)	(1,435)	(6,842)	(379)
TOTAL RATE BASE		2,276,464	427,869	66,261	128,482	34	7,580	23,484	2,821

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Account	No.	Balance	RS	RH	RA	GS	GM<25	GM>25	GMH<25	GMH>25
I. OPERATING AND MAINTENANCE EXPENSES										
B. TRANSMISSION EXPENSE										
POLR Expense		0	0	0	0	0	0	0	0	0
Transmission Expense		0	0	0	0	0	0	0	0	0
Transmission Expense		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
C. DISTRIBUTION EXPENSE										
Ops Supv & Engineering	580	9,222	4,389	551	54	140	505	1,432	57	131
Load Dispatching	581	1,050	431	57	7	9	57	186	6	17
Station Expenses	582	352	144	19	2	3	19	62	2	6
OH Line Expenses	583	544	231	31	4	5	30	97	3	9
UG Line Expenses	584	607	83	10	1	8	48	161	5	15
Meter Expenses	586	4,051	2,048	164	24	106	445	983	51	86
Customer Installation Expenses	587	2	2	0	0	0	0	0	0	0
Misc. Distribution Expenses	588	10,295	3,482	447	52	110	629	2,073	69	190
Rents	589	0	0	0	0	0	0	0	0	0
Maint Supv & Engineering	590	(190)	(70)	(9)	(1)	(2)	(11)	(36)	(1)	(3)
Maint of Structures	591	99	41	5	1	1	5	17	1	2
Maint of Station Equip	592	2,659	1,092	145	17	23	145	470	16	43
Maint of OH Lines	593	23,720	10,063	1,340	161	213	1,315	4,231	142	381
Maint of UG Lines	594	2,242	308	39	5	28	178	595	20	55
Maint of Line Transformers	595	29	4	1	0	0	2	9	0	1
Maint of Lighting	596	555	0	0	0	0	0	0	0	0
Maint of Meters	597	391	198	16	2	10	43	95	5	8
Maint of Misc. Plant	599	74	25	3	0	1	5	15	0	1
Oper. & Maint. Exp.	500-599	<u>55,702</u>	<u>22,470</u>	<u>2,820</u>	<u>331</u>	<u>655</u>	<u>3,414</u>	<u>10,392</u>	<u>376</u>	<u>942</u>
		55,702	22,470	2,820	331	655	3,414	10,392	376	942
D. CUSTOMER ACCOUNTS AND SERVICE										
Supervision	901	13,049	10,554	1,367	86	353	306	281	42	34
Meter Reading Exp	902	335	276	22	3	14	13	4	1	0
Customer Records & Coll	903	1,216	984	127	8	33	28	26	4	3
Uncollectible Accounts	904	14,309	11,324	1,913	58	226	221	420	36	54
COVID Uncol, LPC	904	2,951	2,335	395	12	47	46	87	7	11
Customer Accts. Exp.	901-905	<u>31,860</u>	<u>25,472</u>	<u>3,824</u>	<u>167</u>	<u>673</u>	<u>614</u>	<u>819</u>	<u>91</u>	<u>102</u>
Customer Assistance	908	165	135	11	2	7	6	2	1	0
COVID Relief	908CV	1,453	1,117	90	13	37	93	88	8	7
Customer Service Exp.	908-916	<u>1,618</u>	<u>1,252</u>	<u>101</u>	<u>15</u>	<u>44</u>	<u>98</u>	<u>90</u>	<u>9</u>	<u>7</u>
Customer Accts. & Serv. Exp.	901-919	<u>33,478</u>	<u>26,724</u>	<u>3,924</u>	<u>182</u>	<u>717</u>	<u>712</u>	<u>909</u>	<u>100</u>	<u>109</u>

Duquesne Light Company
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Secondary Distribution Plant at 100% Demand Classification

Account	No.	Balance	GL	GLH	L	HVPS	SE	SL	UMS
I. OPERATING AND MAINTENANCE EXPENSES									
B. TRANSMISSION EXPENSE									
POLR Expense		0	0	0	0	0	0	0	0
Transmission Expense		0	0	0	0	0	0	0	0
Transmission Expense		0	0	0	0	0	0	0	0
C. DISTRIBUTION EXPENSE									
Ops Supv & Engineering	580	9,222	1,186	165	370	0	22	213	7
Load Dispatching	581	1,050	185	25	63	0	3	3	1
Station Expenses	582	352	62	8	21	0	1	1	0
OH Line Expenses	583	544	90	10	30	0	2	2	1
UG Line Expenses	584	607	182	33	54	0	3	2	1
Meter Expenses	586	4,051	121	14	6	1	0	0	0
Customer Installation Expenses	587	2	0	0	0	0	0	0	0
Misc. Distribution Expenses	588	10,295	2,073	317	627	0	37	179	10
Rents	589	0	0	0	0	0	0	0	0
Maint Supv & Engineering	590	(190)	(35)	(5)	(11)	(0)	(1)	(5)	(0)
Maint of Structures	591	99	17	2	6	0	0	0	0
Maint of Station Equip	592	2,659	468	63	158	0	9	8	3
Maint of OH Lines	593	23,720	3,923	446	1,327	0	81	70	27
Maint of UG Lines	594	2,242	671	122	198	0	10	9	4
Maint of Line Transformers	595	29	9	2	2	0	0	0	0
Maint of Lighting	596	555	0	0	0	0	0	555	0
Maint of Meters	597	391	12	1	1	0	0	0	0
Maint of Misc. Plant	599	74	15	2	5	0	0	1	0
Oper. & Maint. Exp.	500-599	55,702	8,978	1,207	2,856	2	168	1,039	53
		55,702	8,978	1,207	2,856	2	168	1,039	53
D. CUSTOMER ACCOUNTS AND SERVICE									
Supervision	901	13,049	24	1	0	0	0	0	0
Meter Reading Exp	902	335	1	0	0	0	0	0	0
Customer Records & Coll	903	1,216	2	0	0	0	0	0	0
Uncollectible Accounts	904	14,309	33	1	0	0	0	14	9
COVID Uncol, LPC	904	2,951	7	0	0	0	0	3	2
Customer Accts. Exp.	901-905	31,860	67	3	0	0	0	17	10
Customer Assistance	908	165	0	0	0	0	0	0	2
COVID Relief	908CV	1,453	0	0	0	0	0	0	0
Customer Service Exp.	908-916	1,618	0	0	0	0	0	0	2
Customer Accts. & Serv. Exp.	901-919	33,478	67	3	0	0	0	17	12

Duquesne Light Company
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Account	No.	Balance	RS	RH	RA	GS	GM<25	GM>25	GMH<25	GMH>25
E. ADMINISTRATIVE AND GENERAL										
Admin & Gen Salaries	920	52,775	26,376	3,285	315	859	2,869	7,867	326	721
Office Supp & Exp- Bill Print	921Bill	2,928	2,403	193	29	121	98	33	12	3
Office Supp & Exp- Other	921	4,559	2,279	284	27	74	248	680	28	62
Outside Services- Cust Care	923CC	2,017	1,655	133	20	83	67	23	8	2
Outside Services- HR	923M	1,620	809	101	10	26	88	241	10	22
Outside Services- Other	923	21,867	10,929	1,361	130	356	1,189	3,260	135	299
Property Insurance	924	5,138	1,905	235	27	65	324	991	36	91
Injuries & Damages	925	190	95	12	1	3	10	28	1	3
Empl Pensions & Benefits	926	4,132	2,065	257	25	67	225	616	26	56
Regulatory Commission	928	813	432	41	5	17	49	103	5	9
A&G-EV	930EV	350	133	16	2	8	27	72	3	7
Marketing, Communications	930	34	28	2	0	1	1	0	0	0
Misc. General Plant	930	6,146	3,071	383	37	100	334	916	38	84
General Plant Rent	931	3,243	1,621	202	19	53	176	483	20	44
Misc Genl Plant- Metering	935M	833	507	41	6	26	92	122	11	11
Misc Genl Plant- Other	935P	9,461	4,729	589	56	154	514	1,410	58	129
Admin & Genl. Exp.	920-932	116,105	59,038	7,136	708	2,015	6,312	16,846	718	1,542
Total Operating Expenses		205,286	108,232	13,880	1,221	3,388	10,438	28,146	1,194	2,593
II. DEPRECIATION EXPENSE										
Intangible- Other	403	13,930	8,116	845	89	346	1,063	1,929	123	174
Intangible- Customers	403	34,285	28,139	2,264	336	1,415	1,146	384	142	36
Intangible- AMI	403	9,758	6,427	515	76	333	1,316	761	151	67
Transmission Plant	403	0	0	0	0	0	0	0	0	0
Structures and Improvements	403	1,593	654	87	10	14	87	281	9	26
Direct assignment	403	0	0	0	0	0	0	0	0	0
Station Equipment	403	11,383	4,673	622	75	99	619	2,011	67	183
Poles, Towers and Fixtures	403	13,229	5,612	748	90	119	733	2,360	79	212
OH Conductors and Devices	403	16,681	7,077	943	113	150	924	2,976	100	268
UG Conduits	403	3,071	421	53	7	38	244	815	27	76
UG Conductors	403	12,519	1,718	216	27	156	995	3,323	110	310
Line Transformers	403	16,932	2,047	391	27	60	1,106	5,044	116	466
Services	403	2,403	1,977	159	24	101	93	31	12	3
Meters	403	10,613	6,464	518	77	335	1,170	1,552	135	136
Street Lighting	403	1,279	0	0	0	0	0	0	0	0
General / Common Plant	364	20,926	10,459	1,303	125	341	1,138	3,119	129	286

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Account	No.	Balance	GL	GLH	L	HVPS	SE	SL	UMS
E. ADMINISTRATIVE AND GENERAL									
Admin & Gen Salaries	920	52,775	6,206	860	1,932	2	112	1,008	36
Office Supp & Exp- Bill Print	921Bill	2,928	4	0	0	0	0	5	27
Office Supp & Exp- Other	921	4,559	536	74	167	0	10	87	3
Outside Services- Cust Care	923CC	2,017	2	0	0	0	0	3	19
Outside Services- HR	923M	1,620	190	26	59	0	3	31	1
Outside Services- Other	923	21,867	2,571	356	800	1	47	418	15
Property Insurance	924	5,138	938	143	282	0	17	79	5
Injuries & Damages	925	190	22	3	7	0	0	4	0
Empl Pensions & Benefits	926	4,132	486	67	151	0	9	79	3
Regulatory Commission	928	813	95	11	28	0	2	15	2
A&G-EV	930EV	350	57	8	18	0	0	0	0
Marketing, Communications	930	34	0	0	0	0	0	0	0
Misc. General Plant	930	6,146	723	100	225	0	13	117	4
General Plant Rent	931	3,243	381	53	119	0	7	62	2
Misc Genl Plant- Metering	935M	833	15	2	1	0	0	0	0
Misc Genl Plant- Other	935P	9,461	1,113	154	346	0	20	181	6
Admin & Genl. Exp.	920-932	116,105	13,340	1,859	4,135	5	240	2,088	124
Total Operating Expenses		205,286	22,385	3,069	6,991	7	409	3,144	189
II. DEPRECIATION EXPENSE									
Intangible- Other	403	13,930	832	122	214	2	12	58	4
Intangible- Customers	403	34,285	42	5	1	1	0	55	319
Intangible- AMI	403	9,758	93	11	5	1	0	0	0
Transmission Plant	403	0	0	0	0	0	0	0	0
Structures and Improvements	403	1,593	280	38	95	0	5	5	2
Direct assignment	403	0	0	0	0	0	0	0	0
Station Equipment	403	11,383	2,003	271	678	0	38	33	12
Poles, Towers and Fixtures	403	13,229	2,188	249	740	0	45	39	15
OH Conductors and Devices	403	16,681	2,759	314	933	0	57	49	19
UG Conduits	403	3,071	919	168	272	0	14	12	5
UG Conductors	403	12,519	3,745	684	1,107	0	58	51	20
Line Transformers	403	16,932	5,299	913	1,305	0	93	59	6
Services	403	2,403	3	0	0	0	0	0	0
Meters	403	10,613	191	23	10	2	0	0	0
Street Lighting	403	1,279	0	0	0	0	0	1,279	0
General / Common Plant	364	20,926	2,461	341	766	1	45	400	14

**Duquesne Light Company
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Account	No.	Balance	RS	RH	RA	GS	GM<25	GM>25	GMH<25	GMH>25
Depr / Amort-EV	403EV	143	62	8	1	3	10	26	1	2
Amort Exp- Reg Assets- Tran		0	0	0	0	0	0	0	0	0
Amort Exp- Reg Assets- Dist		12,564	4,249	545	64	135	767	2,530	84	232
Depreciation Expense	403	181,309	88,095	9,217	1,140	3,645	11,412	27,143	1,284	2,478
III. TAXES and OTHER										
A. GENERAL TAXES										
Payroll related	408	6,897	3,447	429	41	112	375	1,028	43	94
PURTA, Real estate	408.16	1,281	475	59	7	16	81	247	9	23
Capital stock		0	0	0	0	0	0	0	0	0
Other	408	0	0	0	0	0	0	0	0	0
General Taxes		8,177	3,922	488	48	128	456	1,275	52	117
B. GROSS RECEIPTS TAX										
Gross Receipts tax		32,924	17,477	1,677	193	698	1,984	4,156	215	352
Gross Receipts Tax		32,924	17,477	1,677	193	698	1,984	4,156	215	352
B. FEDERAL / STATE INCOME TAXES										
State Income Tax Expense		6,290	3,744	182	33	180	435	503	43	26
Federal Income Tax Expense		12,470	7,424	362	65	357	862	998	84	51
Income Taxes	409-411	18,759	11,168	544	98	538	1,296	1,501	127	77
Total Taxes	408-411	59,861	32,567	2,709	339	1,364	3,736	6,932	394	546
TOTAL EXPENSES		446,456	228,894	25,806	2,700	8,398	25,586	62,221	2,872	5,617
IV. OPERATING REVENUES at Present Rates										
Distribution Revenue		550,379	292,161	28,036	3,230	11,675	33,160	69,472	3,602	5,890
Transmission Revenue		0	0	0	0	0	0	0	0	0
POLR Revenue		0	0	0	0	0	0	0	0	0
Forfeited Discounts		3,916	3,099	524	16	62	61	115	10	15
Misc Service Revenue		2,299	1,220	117	13	49	139	290	15	25
Rent For Electric Property		11,788	5,001	666	80	106	653	2,103	71	189
Other Electric Revenues		0	0	0	0	0	0	0	0	0
Operating Revenues		568,382	301,481	29,343	3,339	11,891	34,012	71,980	3,697	6,118
TOTAL EXPENSES		446,456	228,894	25,806	2,700	8,398	25,586	62,221	2,872	5,617
V. NET INCOME at Present Rates		121,926	72,587	3,536	639	3,494	8,427	9,759	825	501

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Account	No.	Balance	GL	GLH	L	HVPS	SE	SL	UMS
Depr / Amort-EV	403EV	143	21	3	6	0	0	0	0
Amort Exp- Reg Assets- Tran		0	0	0	0	0	0	0	0
Amort Exp- Reg Assets- Dist		12,564	2,530	387	765	0	45	218	12
Depreciation Expense	403	181,309	23,367	3,527	6,897	6	413	2,257	428
III. TAXES and OTHER									
A. GENERAL TAXES									
Payroll related	408	6,897	811	112	252	0	15	132	5
PURTA, Real estate	408.16	1,281	234	36	70	0	4	20	1
Capital stock		0	0	0	0	0	0	0	0
Other	408	0	0	0	0	0	0	0	0
General Taxes		8,177	1,045	148	323	0	19	151	6
B. GROSS RECEIPTS TAX									
Gross Receipts tax		32,924	3,853	430	1,117	19	89	596	67
Gross Receipts Tax		32,924	3,853	430	1,117	19	89	596	67
B. FEDERAL / STATE INCOME TAXES									
State Income Tax Expense		6,290	715	12	182	13	27	174	20
Federal Income Tax Expense		12,470	1,417	24	361	26	54	345	39
Income Taxes	409-411	18,759	2,132	36	544	39	81	519	59
Total Taxes	408-411	59,861	7,029	614	1,983	59	189	1,266	132
TOTAL EXPENSES		446,456	52,781	7,210	15,871	72	1,011	6,667	749
IV. OPERATING REVENUES at Present Rates									
Distribution Revenue		550,379	64,408	7,192	18,667	324	1,492	9,959	1,115
Transmission Revenue		0	0	0	0	0	0	0	0
POLR Revenue		0	0	0	0	0	0	0	0
Forfeited Discounts		3,916	9	0	0	0	0	4	2
Misc Service Revenue		2,299	269	30	78	1	6	42	5
Rent For Electric Property		11,788	1,950	222	659	0	40	35	13
Other Electric Revenues		0	0	0	0	0	0	0	0
Operating Revenues		568,382	66,635	7,443	19,404	325	1,538	10,040	1,135
TOTAL EXPENSES		446,456	52,781	7,210	15,871	72	1,011	6,667	749
V. NET INCOME at Present Rates		121,926	13,854	234	3,533	253	527	3,373	385

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Account	No.	Balance	RS	RH	RA	GS	GM<25	GM>25	GMH<25	GMH>25
SUMMARY REPORT										
OPERATING REVENUES										
Utility Revenues	440-446	554,295	295,260	28,560	3,246	11,737	33,220	69,587	3,611	5,904
Other Operating Revenues	450-456	14,087	6,221	783	94	155	792	2,393	86	214
Total Operating Revenues		568,382	301,481	29,343	3,339	11,891	34,012	71,980	3,697	6,118
OPERATING EXPENSES										
Distribution / Transmission	580-599	55,702	22,470	2,820	331	655	3,414	10,392	376	942
Customer Acctg & Service	901-919	33,478	26,724	3,924	182	717	712	909	100	109
Admin & General	920-932	116,105	59,038	7,136	708	2,015	6,312	16,846	718	1,542
Total Operating Expenses		205,286	108,232	13,880	1,221	3,388	10,438	28,146	1,194	2,593
Depreciation Expense	403	181,309	88,095	9,217	1,140	3,645	11,412	27,143	1,284	2,478
Taxes Other Than Income Tax /	408	41,102	21,399	2,165	241	827	2,439	5,431	267	469
INCOME BEFORE INCOME T		140,685	83,755	4,080	737	4,031	9,723	11,260	951	578
Income Taxes	409-411	18,759	11,168	544	98	538	1,296	1,501	127	77
NET INCOME		121,926	72,587	3,536	639	3,494	8,427	9,759	825	501
RATE BASE		2,276,464	841,963	102,279	12,094	28,948	141,387	437,577	15,573	40,112
Return on Rate Base		5.36%	8.62%	3.46%	5.28%	12.07%	5.96%	2.23%	5.29%	1.25%

Duquesne Light Company
Class Cost of Service Study
Secondary Distribution Plant at 100% Demand Classification

Account	No.	Balance	GL	GLH	L	HVPS	SE	SL	UMS
SUMMARY REPORT									
OPERATING REVENUES									
Utility Revenues	440-446	554,295	64,417	7,192	18,667	324	1,492	9,963	1,117
Other Operating Revenues	450-456	14,087	2,219	252	737	1	46	77	18
Total Operating Revenues		568,382	66,635	7,443	19,404	325	1,538	10,040	1,135
OPERATING EXPENSES									
Distribution / Transmission	580-599	55,702	8,978	1,207	2,856	2	168	1,039	53
Customer Acctg & Service	901-919	33,478	67	3	0	0	0	17	12
Admin & General	920-932	116,105	13,340	1,859	4,135	5	240	2,088	124
Total Operating Expenses		205,286	22,385	3,069	6,991	7	409	3,144	189
Depreciation Expense	403	181,309	23,367	3,527	6,897	6	413	2,257	428
Taxes Other Than Income Tax /	408	41,102	4,898	578	1,439	20	108	747	73
INCOME BEFORE INCOME T		140,685	15,986	269	4,077	292	609	3,892	445
Income Taxes	409-411	18,759	2,132	36	544	39	81	519	59
NET INCOME		121,926	13,854	234	3,533	253	527	3,373	385
RATE BASE		2,276,464	427,869	66,261	128,482	34	7,580	23,484	2,821
Return on Rate Base		5.36%	3.24%	0.35%	2.75%	744.95%	6.96%	14.36%	13.66%

DUQUESNE LIGHT COMPANY
OCA Class Revenue Distribution
(\$000)

Rate Schedule	Average Relative ROR	Current Distribution Revenue	Duquesne Proposed			OCA Proposed		
			\$ Increase	Percent of System Average	Percent Increase	\$ Increase	Percent of System Average	Percent Increase
RS	128%	\$292,161	\$41,912	92.1%	14.35%	\$38,906	85.5%	13.32%
RH	56%	\$28,036	\$6,316	144.6%	22.53%	\$6,553	150.0%	23.37%
RA	79%	\$3,230	\$728	144.6%	22.53%	\$629	125.0%	19.48%
GS	156%	\$11,675	\$1,658	91.2%	14.21%	\$910	50.0%	7.79%
GM<25	120%	\$33,160	\$5,222	101.1%	15.75%	\$4,392	85.0%	13.24%
GM>25	62%	\$69,472	\$12,010	110.9%	17.29%	\$13,531	125.0%	19.48%
GMH<25	101%	\$3,602	\$567	101.1%	15.75%	\$561	100.0%	15.58%
GMH>25	40%	\$5,890	\$1,327	144.6%	22.53%	\$1,377	150.0%	23.37%
GL	85%	\$64,408	\$10,143	101.1%	15.75%	\$12,545	125.0%	19.48%
GLH	25%	\$7,192	\$1,620	144.6%	22.53%	\$1,681	150.0%	23.37%
L	72%	\$18,667	\$3,407	117.1%	18.25%	\$3,636	125.0%	19.48%
HVPS	13850%	\$324	\$0	0.0%	0.00%	\$0	0.0%	0.00%
SE	167%	\$1,492	\$78	33.6%	5.24%	\$116	50.0%	7.79%
SL	274%	\$9,959	\$522	33.6%	5.24%	\$776	50.0%	7.79%
UMS	115%	\$1,115	\$251	144.6%	22.53%	\$148	85.0%	13.24%
Total Distribution Rate Revenue		\$550,379	\$85,760	100.0%	15.58%	\$85,760	100.0%	15.58%
Other Revenue		\$18,003						
Total		\$568,382	\$85,760		15.09%	\$85,760		15.09%

DUQUESNE LIGHT COMPANY
Residential Customer Cost Analysis

	<u>Gorman</u>	<u>OCA</u>	<u>Difference</u>	
<u>Plant In Service:</u>				
Meters	\$92,079	\$92,079		
Services	\$94,584	\$94,584		
AMI	\$41,367	\$41,367		
Total	\$228,030	\$228,030		
<u>Accum. Depreciation:</u>				
Meters	(\$26,135)	(\$26,135)		
Services	(\$23,555)	(\$23,555)		
AMI	(\$6,427)	(\$6,427)		
Total	(\$56,117)	(\$56,117)		
Net Plant	\$171,913	\$171,913		
<u>ADIT:</u>				
Meters	(\$11,889)	(\$11,889)		
Services	(\$12,805)	(\$12,805)		
Total ADIT	(\$24,694)	(\$24,694)		
<u>Other Rate Base:</u>				
Cash Working Capital	\$2,973	\$0	(\$2,973)	
Materials & Supplies	\$1,347	\$0	(\$1,347)	
Capitalized Pension	\$3,847	\$3,847		
Customer Deposits	(\$758)	(\$758)		
ADIT-EV	(\$2)	(\$2)		
ADIT- General	(\$1,220)	\$0	\$1,220	
Total Other Rate base	\$6,187	\$3,087	(\$3,100)	
Total Rate Base	\$153,406	\$150,306	(\$3,100)	
<u>Depreciation/Amort. Expense:</u>				
Services	\$1,977	\$1,977		
Meters	\$6,464	\$6,464		
Depr. General Plant	\$5,531	\$0	(\$5,531)	
AMI Amortization	\$6,427	\$6,427		
Other Intangible Amortization	\$28,139	\$0	(\$28,139)	
Total Depreciation/Amort.	\$48,538	\$14,868	(\$33,670)	
<u>O&M Expenses:</u>				
Meter Operating	\$2,048	\$2,048		
Meter maintenance	\$198	\$198		
Customer records- Supervision	\$10,554	\$10,554		
Meter reading expenses	\$276	\$276		
Customer records and collection	\$984	\$984		
Customer assistance	\$135	\$135		
Office Supplies & Exp - Bill Print	\$2,403	\$2,403		
Outside Services - Cust. Care	\$1,655	\$0	(\$1,655)	
Maint. general plant- Meters	\$507	\$507		
A&G Expenses	49.18%			
A&G Salaries	\$15,155	\$0	(\$15,155)	
Employee Benefits	\$2,915	\$2,915		
Maint. General Plant	\$2,501	\$0	(\$2,501)	
Total O&M Expenses	\$39,330	\$20,020	(\$19,310)	
<u>Return & Taxes:</u>				
Return on Rate Base	7.84%	\$12,027	\$11,784	(\$243)
Income Taxes	23.38%	\$2,812	\$2,756	(\$57)
Gross Receipts Tax	6.17%	\$6,340	\$3,051	(\$3,289)
Revenue Requirement		\$109,048	\$52,479	(\$56,570)
Annual Bills		5,952,211	5,952,211	
Customer Costs per Month @ 10.95% ROE		\$18.32	\$8.82	(\$9.50)
Customer Costs per Month @ 9.50% ROE			\$8.56	(\$9.76)

Duquesne Light Company
OCA Proposed Universal Service Program Revenue Collection

Rate Class	Current USP Collection				USP Collected on KWH				OCA Recommendation USP Collected on Distribution Revenue			
	USP				USP				USP			
	Current USP Revenue 1/	USP Rate per KWH 2/	Revenue Per Avg. Bill 3/	% of Total Bill 4/	USP Collected on KWH 5/	USP Rate per KWH 5/	Revenue Per Avg. Bill	% of Total Bill	USP Collected on Dist Rev 6/	USP Rate Per kwh	Revenue Per Avg. Bill	% of Total Bill
RS	\$35,192,039	\$0.010242	\$5.91	5.88%	\$11,313,804	\$0.00329	\$1.90	1.89%	\$20,901,752	\$0.00608	\$3.51	3.49%
RH	\$3,864,002	\$0.009692	\$8.07	6.49%	\$1,312,745	\$0.00329	\$2.74	2.21%	\$2,098,779	\$0.00526	\$4.38	3.53%
RA	\$647,574	\$0.010782	\$9.12	7.85%	\$197,762	\$0.00329	\$2.78	2.40%	\$246,571	\$0.00411	\$3.47	2.99%
GS	\$0	-	-	-	\$330,824	\$0.00329	\$1.11	1.66%	\$820,978	\$0.00817	\$2.74	4.11%
GM<25	\$0	-	-	-	\$2,015,384	\$0.00329	\$8.31	2.45%	\$2,390,614	\$0.00391	\$9.86	2.91%
GM>25	\$0	-	-	-	\$6,953,953	\$0.00329	\$85.57	3.11%	\$5,018,174	\$0.00238	\$61.75	2.25%
GMH<25	\$0	-	-	-	\$191,801	\$0.00329	\$6.38	2.40%	\$256,909	\$0.00441	\$8.54	3.22%
GMH>25	\$0	-	-	-	\$596,250	\$0.00329	\$77.45	3.08%	\$461,896	\$0.00255	\$60.00	2.38%
GL	\$0	-	-	-	\$8,427,735	\$0.00329	\$953.69	3.42%	\$4,687,216	\$0.00183	\$530.41	1.90%
GLH	\$0	-	-	-	\$1,035,656	\$0.00329	\$980.11	3.39%	\$578,607	\$0.00184	\$547.58	1.89%
L	\$0	-	-	-	\$3,088,224	\$0.00329	\$12,835.51	3.62%	\$1,394,589	\$0.00149	\$5,796.30	1.64%
HVPS	\$0	-	-	-	\$3,994,544	\$0.00329	\$36,986.52	5.07%	\$19,948	\$0.00002	\$184.70	0.03%
AL	\$0	-	-	-	\$361	\$0.00329	\$10.03	6.10%	\$72	\$0.00065	\$2.00	1.21%
SE	\$0	-	-	-	\$80,974	\$0.00329	\$6,747.79	3.39%	\$96,833	\$0.00394	\$8,069.42	4.05%
SM	\$0	-	-	-	\$82,334	\$0.00329	\$39.43	0.76%	\$610,462	\$0.02441	\$292.37	5.67%
SH	\$0	-	-	-	\$2,855	\$0.00329	\$18.30	1.86%	\$7,595	\$0.00876	\$48.68	4.96%
UMS	\$0	-	-	-	\$69,566	\$0.00329	\$1.03	2.57%	\$84,015	\$0.00398	\$1.24	3.11%
PAL	\$0	-	-	-	\$8,844	\$0.00329	\$0.95	1.60%	\$28,606	\$0.01065	\$3.08	5.17%
Total	\$39,703,615				\$39,703,615				\$39,703,615			

1/ Per Company Exhibit 4, Schedule D-5D, page 1.

2/ Calculated as USP revenue divided by distribution KWH sales (per Schedule D-5D, page 1).

3/ Calculated as USP revenue divided by number of bills (per Schedule D-5D, page 1).

4/ Calculated as USP revenue divided by total Duquesne proposed revenue (dist. + trans. + gen. without shopping) per Schedule D-5D, page 6.

5/ Total USP revenue allocated on KWH sales.

6/ Total USP revenue allocated on Duquesne proposed distribution revenue.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

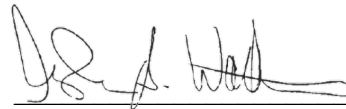
Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, Glenn A. Watkins, hereby state that the facts set forth in my Direct Testimony, OCA Statement 3, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 30, 2021
*311970

Signature:



Glenn A. Watkins

Consultant Address: Technical Associates, Inc.
6377 Mattawan Trail
P.O. Box 1690
Mechanicsville, VA 23116

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission

v.

Duquesne Light Company

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Docket No. R-2021-3024750

Direct Testimony of
Roger D. Colton

On Behalf of:
Office of Consumer Advocate
Statement No. 4

June 30, 2021

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1 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

2 A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

3

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?**

5 A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General
6 Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to
7 a variety of federal and state agencies, consumer organizations and public utilities on rate
8 and customer service issues involving water/sewer, natural gas and electric utilities.

9

10 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

11 A. I am testifying on behalf of the Office of Consumer Advocate.

12

13 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.**

14 A. I work primarily on low-income utility issues. This involves regulatory work on rate and
15 customer service issues, as well as research into low-income usage, payment patterns,
16 and affordability programs. At present, I am working on various projects in the states of
17 Rhode Island, New York, Maryland, Pennsylvania, Tennessee, Kentucky, Ohio,
18 Michigan, and Missouri. My clients include state agencies (e.g., Pennsylvania Office of
19 Consumer Advocate, Maryland Office of People's Counsel, Illinois Office of Attorney
20 General), federal agencies (e.g., the U.S. Department of Health and Human Services),
21 community-based organizations (e.g., National Immigration Law Center, Natural
22 Resources Defense Council, Advocacy Centre Tenants Ontario), and private utilities
23 (e.g., Unitil Corporation d/b/a Fitchburg Gas and Electric Company, Entergy Services,

1 Xcel Energy d/b/a Public Service of Colorado). In addition to state-specific and utility-
2 specific work, I engage in national work throughout the United States. For example, in
3 2011, I worked with the U.S. Department of Health and Human Services (the federal
4 LIHEAP office) to advance the review and utilization of the Home Energy Insecurity
5 Scale as an outcomes measurement tool for the federal Low-Income Home Energy
6 Assistance Program (“LIHEAP”). In 2019, I completed a study of water affordability in
7 twelve U.S. cities for the London-based newspaper, The Guardian. In 2020, I represented
8 a coalition of national consumer groups in presenting comments to the Environmental
9 Protection Agency (EPA) regarding the EPA’s framework for assessing municipal
10 financial capacity. A brief description of my professional background is provided in
11 Appendix A.

12
13 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

14 A. After receiving my undergraduate degree in 1975 (Iowa State University), I obtained
15 further training in both law and economics. I received my law degree in 1981 (University
16 of Florida). I received my Master’s Degree (regulatory economics) from the MacGregor
17 School in 1993.

18
19 **Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY**
20 **ISSUES?**

21 A. Yes. I have published three books and more than 80 articles in scholarly and trade
22 journals, primarily on low-income utility and housing issues. I have published an equal
23 number of technical reports for various clients on energy, water, telecommunications and

1 other associated low-income utility issues. A list of my publications is included in
2 Appendix A.

3
4 **Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR OTHER UTILITY**
5 **COMMISSIONS?**

6 A. Yes. I have testified before the Pennsylvania Public Utility Commission (“PUC” or
7 “Commission”) on numerous occasions regarding utility issues affecting low-income
8 customers and customer service. I have also testified in regulatory proceedings in more
9 than 35 states and various Canadian provinces on a wide range of utility issues. A list of
10 the proceedings in which I have testified is listed in Appendix A.

11
12 **Q. PLEASE EXPLAIN THE PURPOSE OF YOUR DIRECT TESTIMONY.**

13 A. The purpose of my Direct Testimony is as follows.

- 14 ➤ First, I examine the Duquesne Light proposal by which to respond to the
15 ongoing economic crisis associated with the COVID-19 pandemic.
16
17 ➤ Second, I examine the reasonableness of DLC’s proposal to increase its
18 residential customer charge. This examination is necessary only if DLC’s
19 request for increased rates is granted.
20
21 ➤ Third, I examine the reasonableness of DLC’s CAP outreach directed toward
22 its low-income customers.
23
24 ➤ Fourth, I examine the allocation of DLC’s universal service costs amongst
25 customer classes.
26
27 ➤ Fifth, I examine certain cost-recovery issues presented by DLC’s universal
28 service rider.
29

1 ➤ Sixth, I examine changes that Duquesne proposes to make to its tariff
2 regarding the payment of residential cash security deposits.

3
4 ➤ Finally, I review the “customer satisfaction” levels that can be derived from
5 PUC documents.
6
7

8 **Summary of Recommendations**

9 **Q. PLEASE PROVIDE A SUMMARY OF THE RECOMMENDATIONS YOU**
10 **MAKE IN YOUR DIRECT TESTIMONY.**

11 A. Based on the data and analysis presented throughout my Direct Testimony, I recommend
12 as follows:

13 ➤ I recommend approval of the proposed Duquesne Light debt relief program,
14 with a set of modifications. My recommended modification include:

- 15
16 ○ that, while Duquesne should maintain its program eligibility limitation
17 to reach “non-CAP customers,” the Company should eliminate its
18 minimum income eligibility of 150% of Poverty Level. As I explain
19 in detail in my testimony below, being a “non-CAP customer” and
20 being income-eligible for CAP are not synonymous. Duquesne’s CAP
21 serves only a fraction of its estimated low-income customer base.
22 Those customers who have a qualifying arrearage should be allowed to
23 participate in the proposed Debt Relief Program.
24
25 ○ that, while Duquesne should be commended for extending its proposed
26 Debt Relief Program into 2022, the end-date of the program should be
27 extended until December 31, 2022 unless it is extended further upon
28 petition of one of the parties to this proceeding.
29
30 ○ that, while Duquesne’s cost-control mechanism of establishing a
31 minimum arrearage level required to participate be adopted in
32 principle, that principle be extended to include an aging component as
33 well. I recommend that the limitation proposed by Duquesne be
34 expanded to require an arrearage of \$100 and 60-days past due.
35

1 ○ that an ambiguity in the Duquesne testimony presenting the proposed
2 Debt Relief Program be resolved. The Company proposes to allow
3 \$500,000 in administrative costs and to also waive the reconnection
4 charge and restore service if 25% of any outstanding balance is paid.
5 Duquesne was not clear, however, whether it intended these dollars to
6 be in addition to the \$3.0 million Debt Relief budget or to be taken out
7 of its proposed \$3.0 million budget. I recommend that the proposed
8 \$3.0 million be reserved exclusively for the Company’s proposed
9 matching credits.

10
11 ○ that the ambiguity in the Duquesne testimony presenting the proposed
12 Debt Relief Program be resolved by construing DLC testimony to
13 mean that for each payment made toward the payment plan of up to 36
14 months, a program participant will receive a corresponding dollar-for-
15 dollar matching credit toward the customer’s arrearage. There is no
16 requirement that a payment be either “full” or “timely.” A partial
17 payment would earn a credit equal to the dollar value of the partial
18 payment. Matching credits are posted at the time a payment is made.
19 A customer need not earn the entire credit before receiving any of the
20 credit. Finally, there is no limit on what resources are used to make
21 the payment. As required by federal law, for example, a LIHEAP
22 payment is “counted” to the same degree as a payment made out of
23 customer resources.

24
25 ○ that the position taken by DLC witness Scholl, setting forth a budget
26 restriction be eliminated (“Total forgiveness will not exceed the total
27 program budget of \$3 million.” DLC St. 7, at 12). The program, as so
28 limited, is not possible to work so as to allow everyone who would
29 qualify to obtain grants. In lieu of this process, I recommend that the
30 program budget be established at \$3 million. However, program
31 enrollment will remain open until DLC determines that it is likely that
32 *actual arrearage credits* (not merely budgeted credits) are projected to
33 exceed \$3 million. To the extent, if at all, that actual program
34 expenditures on matching arrearage credits over the 36-month period
35 exceed \$3 million, Duquesne should be allowed to reconcile those
36 expenditures and collect the excess through the Universal Service
37 Rider.

38
39 ➤ I recommend that the residential customer charge recommended by OCA
40 witness Glenn Watkins be adopted.

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- I recommend Duquesne Light be directed to submit a detailed three-year outreach plan to the Bureau of Consumer Services. This outreach plan should include specific quantitative outcome goals regarding (1) the expansion of the identification of Confirmed Low-Income customers; (2) the expansion of CAP enrollment; and (3) the expansion of CAP enrollment by customers with income at or below 50% of Poverty. The outreach plan should include specifically identified activities directed toward reaching customers with income at or below 50% of Poverty. The outreach plan should include a detailed description of community-based organizations with whom Duquesne will work, including but not limited to, grassroots community-based organizations, food banks, schools, Head Start and other preschool programs. Duquesne Light should be directed to provide regular reports to the Bureau of Consumer Services on its performance with respect to the measureable goals established in the Plan.
 - I recommend that the Duquesne universal service costs be allocated among all customer classes. The specific allocation is set forth in the Direct Testimony of OCA witness Glenn Watkins.
 - I recommend the trigger for the bad debt offset included in Duquesne’s Universal Service Rider (Rider No. 5) be set at 35,000.
 - I recommend that the relevant language of Rule 5 be modified to state: “When the Company determines a deposit is required for new service or for reconnection of service as described in Rule No. 40, such deposit shall be payable within a reasonable time period after commencing or reconnecting electric service, not to be fewer than four (4) twenty-five percent (25%) installments with the first installment billed no less than 30 days after the reconnection of service in the event of a reconnection.”

32

Part 1. Ongoing COVID-19 Economic Crisis.

33 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**

34 **TESTIMONY.**

35 A. In this section of my testimony, I document the ongoing economic emergency facing

36 residential customers as caused by the past and ongoing impacts of the COVID-19

1 pandemic. I review the Duquesne Light “residential debt relief program” that it proposes
2 to adopt in response to that crisis.

3
4 **Q. PLEASE EXPLAIN THE COVID-19 RESIDENTIAL DEBT RELIEF PROGRAM**
5 **AS PROPOSED BY DUQUESNE LIGHT.**

6 A. Duquesne proposes to adopt a debt relief program for “non-CAP customers” earning
7 from 150% to 300% of poverty level with a delinquent balance of at least \$100. Under
8 the program, customers making a payment will receive matching forgiveness of up to
9 \$300 and a payment arrangement of up to 36 months on the remaining balance. Grants
10 will be awarded on a first-come, first-served basis. Duquesne proposes to cap the total
11 program budget at \$3.0 million. The Company proposes to allow \$500,000 in
12 administrative costs. The Company will also waive the reconnection charge and restore
13 service if 25% of any outstanding balance is paid. The Company finally proposes to
14 operate the program beginning January 15, 2022 and to leave the program open until
15 March 31, 2022 or until funding is exhausted, whichever comes first. (DLC St. 7, at 12).

16
17 **Q. PLEASE SUMMARIZE YOUR RESPONSE TO THE PROPOSED DUQUESNE**
18 **LIGHT DEBT RELIEF PROGRAM.**

19 A. Overall, I recommend approval of the proposed Duquesne Light debt relief program, with
20 a set of modifications. In my testimony below, I first provide an evidentiary basis for
21 approving the program. This section also provides the factual basis for my recommended
22 modifications. I next explain the specific modifications I recommend.

1 **A. The Ongoing Need for the Proposed DLC Debt Relief Program.**

2 **Q. PLEASE EXPLAIN THE DATA UPON WHICH YOU BASE YOUR DISCUSSION**
3 **OF COVID-19 IMPACTS IN PENNSYLVANIA.**

4 A. I base my discussion of Pennsylvania below largely on the Census Bureau’s Phase 3
5 PULSE Survey. According to the Census Bureau, “[t]he Household Pulse Survey is
6 designed to deploy quickly and efficiently, collecting data to measure household
7 experiences during the coronavirus pandemic.” Data collection for Phase 3 of the
8 Household Pulse Survey ran from October 28, 2020 – March 29, 2021 and is now closed.
9 Data collection for the next Phase of the survey (Phase 3.1) began on April 14, 2021.

10
11 **Q. IS THE DATA FROM THE PULSE SURVEY THAT YOU EXAMINE SPECIFIC**
12 **TO THE DUQUESNE LIGHT SERVICE TERRITORY?**

13 A. No. While the Census releases data on various metropolitan areas, including
14 Philadelphia, it does not release data on geographic areas that could be aggregated into
15 the Duquesne Light service territory. Accordingly, I examine state-specific data for
16 Pennsylvania as a whole. The data I examine is primarily from Week 30 (May 12
17 through May 24, 2021) (the most recent week of Phase 3.1).¹

18
19 **Q. WHAT DO YOU CONCLUDE ABOUT PENNSYLVANIA EMPLOYMENT**
20 **INCOME AS IT IS RELATED TO COVID-19?**

21 A. The Census PULSE Survey documents that a large number of Pennsylvania residents
22 report having lost employment income even in the “past four weeks” (i.e., at the time of

¹ All PULSE Survey data cited in my testimony can be accessed at:<https://www.census.gov/programs-surveys/household-pulse-survey/data.html#phase3.1> (last accessed June 2, 2021).

1 the survey). Table 1 shows that as recently as Week 30 of the PULSE Survey (May 12
 2 through May 24, 2021), more than 1.6 million Pennsylvania residents (16.5%) reported
 3 losing employment income in the past four weeks. The Table shows further that,
 4 substantially more than 1.2 million Pennsylvania residents *expect* to lose employment
 5 income “in the next 4 weeks.” More than one-in-six Pennsylvania residents, in other
 6 words, have lost income and an additional one-in-twelve expect to lose income in the
 7 next four weeks.

Table 1. Experienced and Expected Loss of Employment Income (Pennsylvania) (PULSE Survey) (Week 30)				
Experienced Loss of Employment Income in Last Four Weeks				
		Yes	No	% Yes
Total	9,760,505	1,606,120	8,090,145	16.5%
Expected Loss of Employment Income in next 4 weeks				
		Yes	No	% Yes
Total	9,760,505	1,247,222	8,432,238	12.8%

8
 9 On a percentage basis, this loss of employment income was over-represented in the lower
 10 income brackets in Pennsylvania. Table 2 shows the proportionate representation of
 11 Pennsylvania residents who have experienced a loss of income in the last four weeks. By
 12 “proportionate representation,” I mean that I first compare the percentage of total
 13 population in each income range. I then compare the percentage of population in each
 14 income range reporting a loss of employment income. Those income ranges which are
 15 over-represented in the income ranges having lost employment income are highlighted in
 16 yellow. With the exception of residents with income between \$35,000 and \$49,999, the
 17 income range that disproportionately experienced a loss of employment income were

1 those incomes less than \$75,000. Persons in the income range of \$25,000 to \$34,999
 2 were the most over-represented in that population having experienced a loss of
 3 employment income. This further supports the conclusion that the economic crisis
 4 associated with COVID-19 is not simply a “low-income” issue, but instead reaches
 5 beyond those households with income at or below 150% of Poverty Level. Of
 6 Pennsylvania residents who have experienced a loss of employment income in the last
 7 four weeks, nearly 15% fell in that income range even though that income range
 8 represented only 8% of the total population reporting data.

Table 2. Loss of Employment Income by Household Income (in the last four weeks)
 (Income Range as Percent of Total) (PULSE Survey)
 (yellow shade: income ranges disproportionately represented in loss of employment income)

	Week 30	
	Total	Yes
<\$25,000	9.3%	11.9%
\$25,000 - \$34,999	8.3%	14.1%
\$35,000 - \$49,999	6.9%	6.9%
\$50,000 - \$74,999	13.3%	15.3%
\$75,000 - \$99,999	9.3%	7.0%
\$100,000 - \$149,999	11.1%	5.8%
\$150,000 - \$199,999	3.6%	2.2%
\$200,000 and above	4.6%	0.5%
Sum of those reporting	100%	100%

9

10 Based on this data, it is necessary to conclude that Duquesne’s proposal to offer a debt
 11 relief program for customers with income up to 300% of Poverty Level is a reasonable
 12 proposal. The need for debt relief offered by Duquesne is not limited to customers who
 13 are “low-income” (i.e., income at or below 150% of Poverty). While the loss of

1 employment income certainly disproportionately affected the lowest income households,
2 that loss of employment income was not *exclusively* a low-income phenomenon.

3
4 **Q. HOW HAS COVID-19 AFFECTED THE ABILITY OF PENNSYLVANIA**
5 **RESIDENTS TO PAY THEIR USUAL HOUSEHOLD EXPENSES?**

6 A. Pennsylvania residents have continuing difficulties in paying for their basic living
7 expenses under COVID-19. The Census PULSE survey reports on the “difficulty paying
8 for usual household expenses during the coronavirus pandemic.” The Table below
9 presents the data for Pennsylvania. As this Table shows, the economic conditions for
10 Pennsylvania residents are still dire. In Week 30 of the PULSE Survey, 993,000
11 Pennsylvania residents had a “very difficult” time in paying for usual household expenses
12 in the past seven days. Moreover, the combined total of people reporting that they found
13 it either “very difficult” or “somewhat difficult” to pay for usual household expenses in
14 Week 30 was 24.6%, nearly one-in-four of all Pennsylvania residents.

15
16 In contrast, the percentage of Pennsylvania residents reporting that they found it “not at
17 all difficult” to pay for their usual household expenses in the past seven days during the
18 coronavirus pandemic still remained at just over 50% of the total population reporting.
19 Only half of all Pennsylvania residents, in other words, found it “not at all” difficult to
20 pay their usual household expenses, even at the end of May 2021.

Table 3. Difficulty in Paying for Usual Household Expenses in Past 7 Days
 During the Coronavirus Pandemic (PULSE Survey)
 (Pennsylvania) (Total = 9,760,505)²

Week 30 (in millions)			
Not at All	A Little	Somewhat	Very
4.790	2.054	1,248	0.993
52.7%	22.6%	13.7%	10.9%

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As with the data on the loss of employment income, the data on difficulties in paying for usual household expenses during the coronavirus pandemic shows a marked difference based on income levels. The data is set forth in the Table immediately below. Not surprisingly, the biggest reduction in the percentage of households having a “very difficult” time in paying for usual household expenses occurs in the income groups with the largest percentage of population having such difficulties in the first instance. Within the population of households with income less than \$25,000, more than one-in-four (28.6%) of households report having a “very difficult” time in paying their bills.

The “very difficult” data, however, does not tell the entire story. Nearly three-fifths of the population with income less than \$25,000 report having a “very difficult” or a “somewhat difficult” time (27.9% + 28.6% = 56.6%) in paying for usual household expenses in the past seven days. Problems in the next two income ranges also remain very prevalent. Nearly half (47.1%) of households with income between \$25,000 and \$34,999 (26.6% + 20.5%) have a “somewhat” or “very” difficult times paying their usual household expenses. 30.7% in the income range of \$35,000 to \$49,999) report having a

² Percentage is of those reporting.

1 “somewhat difficult” or “very difficult” time in paying usual household expenses in the
 2 past seven days as of Week 30. Even in the income range as high as \$50,000 to \$74,999,
 3 nearly one-in-five (19.7%) Pennsylvania residents report having either a “somewhat
 4 difficult” or a “very difficult” time paying for their usual household expenses.
 5

**Table 4. Difficulty in Paying for Usual Household Expenses in Past 7 Days
 During the Coronavirus Pandemic by Annual Income (PULSE Survey) (Week 30)
 (Pennsylvania) (Total = 9,760,505)³**

		Week 30			
		Not at All	A Little	Somewhat	Very
<\$25,000	907,637	19.7%	23.8%	27.9%	28.6%
\$25-\$34,999	813,121	26.5%	26.3%	26.6%	20.5%
\$35 - \$49,999	678,228	45.2%	24.2%	13.6%	17.1%
\$50 - \$74,999	1,294,422	56.6%	23.7%	9.9%	9.8%
\$75 - \$99,999	905,899	60.5%	14.0%	18.8%	6.7%
\$100 - \$149,999	1,081,575	74.5%	16.5%	3.7%	5.3%
\$150 - \$199,999	354,392	83.7%	13.1%	3.2%	0.0%
\$200,000+	449,135	89.1%	9.9%	0.5%	0.5%

6
 7 The data above demonstrates the reasonableness of Duquesne’s proposal to offer debt
 8 relief. It is not merely bills on a going-forward basis that are in danger of nonpayment
 9 due to the economic crisis associated with the COVID-19 pandemic. It is the fact that
 10 households continue to have difficulties in paying usual household expenses. However,
 11 the data further demonstrates that while the economic crisis associated with COVID-19
 12 reaches into more moderate income levels, the economic crisis nonetheless is still

³ Percentage is of those reporting.

1 disproportionate falling on the lowest income households. Finally, the data above
2 demonstrates that even as the public vaccination against the coronavirus becomes more
3 widespread, the economic crisis caused by the COVID-19 pandemic continues to hit
4 Pennsylvania residents, including Duquesne Light customers, hard. The economic
5 impacts will result in a long-term economic disruption for customers of Duquesne Light.
6

7 **Q. WHAT IS THE FIRST LONG-TERM ECONOMIC IMPACT OF COVID-19?**

8 A. The resolution of the COVID-19 health crisis will not end the economic crisis facing low-
9 income customers. One analysis by the Center on Poverty and Social Policy at Columbia
10 University projects the longer-term effects of the COVID-19 economic crisis.⁴ The
11 Columbia University research center forecasted poverty rates under three alternative
12 unemployment scenarios: 10 percent; 20 percent, and 30 percent. The Center assumed
13 that such high levels of unemployment lasted for two different scenarios: (1) one quarter,
14 and (2) one year. The Center uses the “Supplemental Poverty Measure” (SPM), which
15 differs somewhat from the Federal Poverty Level.⁵

⁴ Parolin and Wimer (April 16, 2020). Forecasting Estimates of Poverty During the COVID-19 Crisis: Poverty Rates in the United States Could Reach Highest Levels in Over 50 Year, available at <https://www.povertycenter.columbia.edu/news-internal/coronavirus-forecasting-poverty-estimates>, (last accessed April 21, 2021).

⁵ In simplified terms, the Census Bureau explains that the Supplemental Poverty Measure, “takes into account family resources and expenses not included in the official measure as well as geographic variation. First, it adds the value of in-kind benefits that are available to buy basic goods to cash income. In-kind benefits include nutritional assistance, subsidized housing and home energy assistance. Then it subtracts necessary expenses for critical goods and services not included in the thresholds from resources. Necessary expenses that are subtracted include income taxes, Social Security payroll taxes, child care and other work-related expenses, child support payments to another household, and contributions toward the cost of medical care and health insurance premiums.” What is the Supplemental Poverty Measure and How Does it Differ from the Official Measure, available at, https://www.census.gov/newsroom/blogs/random-samplings/2018/09/what_is_the_suppleme.html (last accessed April 21, 2021).

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The Center began with a projected SPM of 12.4% in February 2020, the lowest recorded poverty rate since 2001. Its projected poverty rates after the onset of the COVID-19 pandemic, however:

point to higher poverty rates today. If unemployment rates rise to 10 percent, comparable to the unemployment rate during the peak of the Great Recession, we project that poverty rates would rise to 15 percent. This is approximately the same rate of poverty observed in 2010. (note omitted). If unemployment rates rise to 20 percent, we project a poverty rate of 16.9 percent—the highest rate of poverty since 1967, the first year for which reliable estimates of poverty are available. Finally, if annual unemployment rates rise to 30 percent, we project a poverty rate of 18.9 percent. This would mark the highest rate of poverty over the past 50 years.⁶

Two observations are appropriate. On the one hand, unemployment in Pennsylvania did not reach the 20% or 30% levels represented by the two upper ranges in this analysis. Accordingly, the 20% and 30% unemployment scenarios are set aside for this discussion. Even with this lowest scenario, the Center stated: “under an optimistic scenario, in which employment rates return to pre-crisis levels during the summer of 2020, annual SPM poverty rates are still projected to reach levels comparable to the Great Recession.”⁷ On the other hand, employment rates, as we now know, did *not* return to the pre-crisis levels in the summer of 2020.

This increase in Poverty is important for purposes of this proceeding because it is not likely to be resolved in the short-term. The long-term danger arises because when people

⁶ Id., at 4 - 5.

⁷ Forecasting Estimates of Poverty, supra note 4, at 9.

1 lose their jobs, the long-lasting effects are not just on their income. Unemployment has a
2 negative effect on workers' skills and education, even on their health—people who are
3 unemployed become sicker. Human capital, the skills of the overall workforce, decays
4 over time because of the loss of jobs. Moreover, with the COVID-19 pandemic, it is
5 generally recognized that many of the jobs that have been lost will never come back.
6 One recent research paper from the Becker Freidman Institute for Economics at the
7 University of Chicago estimates that between 32% and 42% of COVID-19 induced
8 layoffs will be permanent.⁸

9
10 **Q. IS THERE A SECOND ECONOMIC IMPACT THAT SHOULD BE**
11 **CONSIDERED IN THIS PROCEEDING?**

12 A. Yes. Nearly 40% of U.S. households, including nearly all low-wage workers, fall into a
13 category referred to as “liquid asset poor.” “Liquid asset poor” is a term-of-art that refers
14 to households who lack sufficient liquid assets to replace income in order to subsist at the
15 Poverty Level for three months in the absence of income. According to a Pew Research
16 Center report, “only about one-in-four (23%) [lower income adults] say they have rainy
17 day funds set aside that would cover their expenses for three months in case of an
18 emergency such as job loss, sickness or an economic downturn, compared with 48% of
19 middle-income and 75% of upper-income adults.”⁹

20

⁸ Davis et al. (June 2020). COVID-19 is also a Reallocation Shock, available at: https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202059.pdf (last accessed April 21, 2021).

⁹ Parker, Horowitz and Brown (April, 2020). About Half of Lower-Income Americans Report Household Job or Wage Loss Due to COVID-19, Pew Research Center: Washington D.C. Available at <https://www.pewsocialtrends.org/2020/04/21/about-half-of-lower-income-americans-report-household-job-or-wage-loss-due-to-covid-19/> (last accessed April 21, 2021).

1 As the COVID-19 economic crisis moves into a more prolonged period, the impact of the
2 lack of savings will become increasingly pronounced, with low-income customers, in
3 particular, unable to draw on resources to pay day-to-day bills. A Pew Research Center
4 study published in late September reported that half of all adults who said they had lost a
5 job due to the coronavirus were still unemployed “roughly six months since the
6 coronavirus outbreak sent shockwaves through the U.S. economy.”¹⁰ Moreover,
7 according to Pew, even those who did not lose their job, but who nonetheless lost income,
8 were still in bad economic shape. Pew reported:

9 Of those who say they personally lost a job, half say they are still
10 unemployed, a third have returned to their old job and 15% are in a different
11 job than before. Lower-income adults who were laid off due to the
12 coronavirus are less likely to be working now than middle- and upper-income
13 adults who lost their jobs (43% vs. 58%). Adults ages 18 to 29 are less likely
14 than those 30 to 64 to have returned to their previous job.

15
16 Even if they didn’t lose a job, many workers have had to reduce their hours
17 or take a pay cut due to the economic fallout from the pandemic. About a
18 third of all adults (32%) say this has happened to them or someone in their
19 household, with 21% saying this happened to them personally. Most workers
20 who’ve experienced this (60%) are earning less now than they were before
21 the coronavirus outbreak, while 34% say they are earning the same now as
22 they were before the outbreak and only 6% say they are earning more.¹¹

23
24 Pew continues, however, to note that “lower-income adults who lost their jobs because of
25 the coronavirus outbreak are more likely than those with middle or upper incomes to
26 remain unemployed. Some 56% of workers with lower incomes who lost their job

¹⁰ Kim Parker, Rachel Minkin and Jesse Bennett (September 24, 2020). Economic Fallout from COVID-19 Continues to Hit Lower-Income Americans the Hardest, at 1, Pew Research Center (Washington D.C.). (hereafter COVID-19 Economic Fallout), <https://www.pewsocialtrends.org/2020/09/24/economic-fallout-from-covid-19-continues-to-hit-lower-income-americans-the-hardest/> (last accessed April 21, 2021).

¹¹ Id., at 5, 7, 8.

1 because of the coronavirus outbreak say they are currently unemployed, compared with
2 42% of middle- and upper-income adults.”¹²

3
4 This long-term job loss is significant because one of the long-term economic implications
5 of the job loss and other loss of income is just now becoming more evident. Economic
6 difficulties, particularly for lower-income households, will prevail for an extended period
7 of time not only because these households have been forced to use their emergency
8 savings, but also because they have been forced to incur substantial debt during the
9 COVID-19 pandemic to date. According to Pew:

10 Those affected by coronavirus related job loss or pay cuts are much more
11 likely than those who have not experienced these setbacks to have drawn on
12 additional resources. Fully 46% of adults who say they or someone in their
13 household have either been laid off or taken a pay cut as a result of the
14 coronavirus outbreak say they have used money from a savings or retirement
15 account to pay their bills, compared with 17% of those who have not
16 experienced these setbacks.¹³

17
18 As the COVID-19 economic crisis continues, these households are now running out of
19 savings to draw down. A Bankrate survey found that “of households with income below
20 \$50,000, about 44% say their savings has dropped, compared with 27% of those earning
21 above that amount. . .” Bankrate reported that 27% of Americans say that they now have
22 emergency savings that would last less than three months; 20% say their emergency

¹² Id., at 7 – 8.

¹³ Covid-19 Economic Fallout, supra note 10, at 12.

1 savings would last from three to five months; and 25% say their emergency savings
2 would last six months.¹⁴

3
4 **Q. WHAT DO YOU KNOW ABOUT PENNSYLVANIA IN PARTICULAR?**

5 A. The problems posed by consumers being forced to use credit and/or savings to pay
6 household bills during the pandemic can be seen from data specific to Pennsylvania. And
7 they continue through today. According to the Census Bureau’s PULSE Survey:

8 ➤ In Week 18 of the PULSE Survey, households using such resources had
9 substantially greater difficulties in meeting their household needs. While 22.8%
10 of Pennsylvania residents using credit cards or loans, and 32.2% drawing down
11 savings (or selling assets), found it “very difficult” to pay “usual household
12 expenses,” only 5.6% using their usual pre-pandemic income sources did so.
13 While 24.1% (money from savings or selling assets) to 22.4% (credit cards or
14 loans) of Pennsylvania residents found it “somewhat difficult” to pay their “usual
15 household expenses,” only roughly one-half that number (13.9%) using their
16 normal pre-pandemic incomes sources did so. In total, nearly half of
17 Pennsylvania residents who have been forced to use credit cards or loans (22.4%
18 + 22.8% = 45.2%), and more than half forced to draw down savings or sell assets
19 (24.1% + 32.2% = 56.3%), found it either “somewhat” or “very” difficult to pay
20 their usual household expenses during the pandemic (Week 18). In contrast, only
21 24.1% (credit cards or loans) to 14.7% using savings or selling assets found it
22 “not at all difficult” to pay their usual household expenses, compared to 57.0% of
23 those who can use their normal pre-pandemic income sources.

24
25 ➤ By Week 27, conditions had improved, but remained severe for Pennsylvania
26 residents. The Census PULSE Survey reports that while 15.8% of residents
27 relying on credit cards or loans, and 11.0% drawing down savings or selling
28 assets had a “very difficult” time paying for usual household expenses, only 4.3%
29 of residents using their regular pre-pandemic income sources did. Similarly,
30 while 41.6% of residents using credit cards or loans (25.8% + 15.8%), and 44.1%
31 (33.1% + 11.0%) reported having either a “somewhat difficult” or ‘very difficult’

¹⁴ Survey: Nearly 3 times as many Americans say they have less emergency savings versus more since pandemic, available at <https://www.bankrate.com/banking/savings/emergency-savings-survey-2020/> (last accessed April 21, 2021).

1 time paying their usual household expenses, “only” 19.5% of persons using their
2 usual pre-pandemic source of income did. In the most recent week of the Census
3 PULSE Survey, in other words, nearly one-in-five Pennsylvania residents relying
4 on their regular pre-pandemic source of income were having difficulties paying
5 their bills.
6

7 Not all of the data showed improvement in the economic crisis facing Pennsylvania
8 residents. The percentage of Pennsylvania residents having either a “somewhat difficult”
9 or “very” difficult time in paying their usual household expenses ticked upwards in Week
10 27 (relative to Week 22) for both persons relying on their regular pre-pandemic source of
11 income (17.5% in Week 22; 18.5% in Week 27) and persons forced to rely on credit
12 cards or loans (37.7% in Week 22; 41.6% in Week 27).
13

14 Moreover, even though the *number* of persons being forced to rely on credit cards or
15 loans to pay usual household expenses dropped noticeably in Pennsylvania from Week 18
16 to Week 22 (a drop of 511,921 persons, from 2,503,191 in Week 18 to 1,991,270 in
17 Week 22), that decline did not continue through Week 27. Only 28,796 fewer persons
18 relied on credit cards or loans to pay usual household expenses in Week 27 (relative to
19 Week 22) (1,991,270 in Week 22 vis a vis 1,962,474 in Week 27), even as a higher
20 percentage of these persons reported having a somewhat difficult or very difficult time
21 paying their usual household expenses (37.7% in Week 22 versus 41.6% in Week 27).

Table 5. Difficulty paying for usual household expenses during the coronavirus pandemic (Pennsylvania) (PULSE Survey)					
Used in last seven days to meet spending needs	Total # Reporting	Not at all difficult	A little difficult	Somewhat difficult	Very difficult
PULSE Survey: Week 18:					
Regular income sources like those used before the pandemic	6,560,156	57.0%	23.5%	13.9%	5.6%
Credit cards or loans	2,503,191	24.1%	30.7%	22.4%	22.8%
Money from savings or selling assets	2,400,637	14.7%	29.0%	24.1%	32.2%
Borrowing from friends or family	987,231	1.4%	5.3%	15.8%	77.5%
Money saved from deferred or forgiven payments (to meet spending needs)	470,061	6.6%	14.1%	17.0%	62.2%
PULSE Survey: Week 22:					
Regular income sources like those used before the pandemic	6,035,061	54.4%	28.1%	12.6%	4.9%
Credit cards or loans	1,991,270	25.4%	36.8%	23.9%	13.8%
Money from savings or selling assets	1,865,258	20.6%	26.6%	26.4%	26.4%
Borrowing from friends or family	614,567	1.7%	6.6%	25.0%	66.7%
Money saved from deferred or forgiven payments (to meet spending needs)	256,368	9.7%	46.7%	28.4%	15.2%
PULSE Survey: Week 27					
Regular income sources like those used before the pandemic	6,444,148	58.9%	22.6%	14.2%	4.3%
Credit cards or loans	1,962,474	29.6%	28.8%	25.8%	15.8%
Money from savings or selling assets	1,557,580	18.7%	37.1%	33.1%	11.0%
Borrowing from friends or family	628,977	0.7%	27.4%	33.7%	38.2%
Money saved from deferred or forgiven payments (to meet spending needs)	276,096	21.3%	39.4%	24.7%	14.6%

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The data above demonstrates the reasonableness of Duquesne’s proposal to offer a debt relief program that reaches into at least the moderate term. The economic crisis associated with the COVID-19 pandemic is not likely to resolve itself in 2021. DLC’s longer-term vision of the need for its debt relief program is well-grounded in fact.

1 **Q. WHAT DO YOU RECOMMEND?**

2 A. I recommend that the Company’s proposal, as modified by the recommendations I offer
3 below, should be approved.
4

5 **B. Recommended Modifications.**

6 **Q. PLEASE EXPLAIN YOUR RECOMMENDED MODIFICATIONS TO THE DLC**
7 **RESIDENTIAL DEBT RELIEF PROGRAM.**

8 A. While I recommend approval of the Duquesne residential Debt Relief Program, I further
9 recommend the modifications set forth below. These modifications are supported by, and
10 grounded in the data I set forth above.

11 ➤ I recommend approval of the proposed Duquesne Light debt relief program,
12 with a set of modifications. My recommended modification include:

- 13
- 14 ○ that, while Duquesne should maintain its program eligibility limitation
15 to reach “non-CAP customers,” the Company should eliminate its
16 minimum income eligibility of 150% of Poverty Level. As I explain
17 in detail in my testimony below, being a “non-CAP customer” and
18 being income-eligible for CAP are not synonymous. Duquesne’s CAP
19 serves only a fraction of its estimated low-income customer base.
20 Those customers who have a qualifying arrearage should be allowed to
21 participate in the proposed Debt Relief Program.
22
 - 23 ○ that, while Duquesne should be commended for extending its proposed
24 Debt Relief Program into 2022, the end-date of the program should be
25 extended until December 31, 2022 unless it is extended further upon
26 petition of one of the parties to this proceeding.
27
 - 28 ○ that, while Duquesne’s cost-control mechanism of establishing a
29 minimum arrearage level required to participate be adopted in
30 principle, that principle be extended to include an aging component as
31 well. I recommend that the limitation proposed by Duquesne be
32 expanded to require an arrearage of \$100 and 60-days past due.
33

- 1 ○ that an ambiguity in the Duquesne testimony presenting the proposed
2 Debt Relief Program be resolved. The Company proposes to allow
3 \$500,000 in administrative costs and to also waive the reconnection
4 charge and restore service if 25% of any outstanding balance is paid.
5 Duquesne was not clear, however, whether it intended these dollars to
6 be in addition to the \$3.0 million Debt Relief budget or to be taken out
7 of its proposed \$3.0 million budget. I recommend that the proposed
8 \$3.0 million be reserved exclusively for the Company’s proposed
9 matching credits.
10
- 11 ○ that the ambiguity in the Duquesne testimony presenting the proposed
12 Debt Relief Program be resolved by construing DLC testimony to
13 mean that for each payment made toward the payment plan of up to 36
14 months, a program participant will receive a corresponding dollar-for-
15 dollar matching credit toward the customer’s arrearage. There is no
16 requirement that a payment be either “full” or “timely.” A partial
17 payment would earn a credit equal to the dollar value of the partial
18 payment. Matching credits are posted at the time a payment is made.
19 A customer need not earn the entire credit before receiving any of the
20 credit. Finally, there is no limit on what resources are used to make
21 the payment. As required by federal law, for example, a LIHEAP
22 payment is “counted” to the same degree as a payment made out of
23 customer resources.
24
- 25 ○ that the position taken by DLC witness Scholl, setting forth a budget
26 restriction be eliminated (“Total forgiveness will not exceed the total
27 program budget of \$3 million.” DLC St. 7, at 12). The program, as so
28 limited, is not possible to work so as to allow everyone who would
29 qualify to obtain grants. In lieu of this process, I recommend that the
30 program budget be established at \$3 million. However, program
31 enrollment will remain open until DLC determines that it is likely that
32 actual arrearage credits (not merely budgeted credits) are projected to
33 exceed \$3 million. To the extent, if at all, that actual program
34 expenditures on matching arrearage credits over the 36-month period
35 exceed \$3 million, Duquesne should be allowed to reconcile those
36 expenditures and collect the excess through the Universal Service
37 Rider.
38
39

- 1 ➤ I recommend that the residential customer charge recommended by OCA
2 witness Glenn Watkins be adopted.
3
- 4 ➤ I recommend Duquesne Light be directed to submit a detailed three-year
5 outreach plan to the Bureau of Consumer Services. This outreach plan should
6 include specific quantitative outcome goals regarding (1) the expansion of the
7 identification of Confirmed Low-Income customers; (2) the expansion of CAP
8 enrollment; and (3) the expansion of CAP enrollment by customers with
9 income at or below 50% of Poverty. The outreach plan should include
10 specifically identified activities directed toward reaching customers with
11 income at or below 50% of Poverty. The outreach plan should include a
12 detailed description of community-based organizations with whom Duquesne
13 will work, including but not limited to, grassroots community-based
14 organizations, food banks, schools, Head Start and other preschool programs.
15 Duquesne Light should be directed to provide regular reports to the Bureau of
16 Consumer Services on its performance with respect to the measureable goals
17 established in the Plan.
18
- 19 ➤ I recommend that the Duquesne universal service costs be allocated among all
20 customer classes. The specific allocation is set forth in the Direct Testimony
21 of OCA witness Glenn Watkins.
22
- 23 ➤ I recommend the trigger for the bad debt offset included in Duquesne’s
24 Universal Service Rider (Rider No. 5) be set at 35,000.
25

26 **Part 2. Proposed Increase in Residential Customer Charge.**
27

28 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
29 **TESTIMONY.**

30 A. In this section of my Direct Testimony, I assess the disproportionately adverse impacts
31 that the Company’s proposed increase in its residential customer charge will have on
32 low-income customers. Duquesne proposes to increase its fixed monthly customer
33 charge from \$12.50 to \$16.25 per month (DLC St. 16, at 12), an increase of \$45 per year
34 ($\$16.25 - \$12.50 = \$3.75/\text{month} \times 12 \text{ months} = \45). The size of the residential customer
35 charge is important to all residential customers because it is an “unavoidable” fixed

1 monthly charge. The increased customer charge, however, has a particularly adverse
2 impact on low-income customers.

3
4 **A. Harms to Low-Income Customers.**

5 **Q. WHY DOES THE DUQUESNE CAP NOT PROTECT LOW-INCOME**
6 **CUSTOMERS FROM THE HARMS OF THE INCREASED CUSTOMER**
7 **CHARGE?**

8 A. It is not reasonable to expect DLC to know who all of its low-income customers are. Unless
9 the customer has occasion to have contact with the Company, in circumstances where the
10 customer's income would be an input into decision-making, DLC would not identify
11 someone as being "low-income." Accordingly, DLC has confirmed the low-income status
12 of only some of its customer base. According to DLC, in the most recent month for which
13 it had data, the Company had confirmed the low-income status of 42,346. (OCA-II-5,
14 combining non-CAP Confirmed Low-Income [7,547) plus CAP [34,799]). This is a
15 decrease from the average number of Confirmed Low-Income customers Duquesne had
16 identified in 2017 – 2019. According to the Bureau of Consumer Services' annual Report
17 on Universal Service Programs and Collections Performance (2019) (hereafter BCS Report),
18 Duquesne had: (1) 48,500 Confirmed Low-Income customers in 2017; (2) 49,346
19 Confirmed Low-Income Customers in 2018; and (3) 48,373 Confirmed Low-Income
20 customers in 2019. (BCS Report, at 6).

21
22 Given that the number of Confirmed Low-Income (CLI) customers Duquesne has identified
23 has substantially decreased by 12% ($[48,373 - 42,346] / 48,346 = 0.125$) just since 2019, it

1 is increasingly difficult for low-income customers to be protected from the harms of an
2 increased customer charge.

3
4 In its most recent annual Report, BCS estimated that Duquesne had a total low-income
5 population of 103,720. (BCS Report, at 6). DLC has, in other words, confirmed the low-
6 income status of only 40% of its estimated low-income population base ($42,346 / 103,720 =$
7 0.408).

8
9 **Q. AMONGST THOSE CONFIRMED LOW-INCOME CUSTOMERS, PLEASE**
10 **EXPLAIN WHY THE DLC CUSTOMER ASSISTANCE PROGRAM (CAP)**
11 **WILL NOT ADDRESS THE INCREASED UNAFFORDABILITY ATTRIBUTED**
12 **TO THE INCREASED CUSTOMER CHARGE?**

13 A. DLC'S CAP reaches a very small proportion of its confirmed low-income customer base.
14 According to DLC, the Company's data indicates a CAP participation of 34,799. (OCA-
15 II-005). DLC further reports that it has 542,703 total residential customers. (OCA-II-
16 005). Using this data, I find that DLC has enrolled 6.4% of its residential customers in
17 CAP.

18
19 Moreover, BCS reports, however, that DLC has an estimated 103,720 low-income
20 customers on its system. CAP, therefore, serves less than 34% (i.e., fewer than one-of-
21 three) of DLC's estimated low-income population. ($34,799 / 103,720 = 0.336$).

22
23 **Q. WHAT DO YOU CONCLUDE?**

1 A. I conclude that DLC’s CAP program protects a very small percentage of its low-income
2 customer base from the harms of an increased customer charge. Duquesne Light has
3 confirmed the low-income status of a relatively small percentage of its estimated low-
4 income population. Out of those Confirmed Low-Income customers, the Company has
5 enrolled a relatively small percentage in CAP. Out of those CAP participants, very few
6 are enrolled in a CAP program component that would protect the customer against bill
7 increases. As can be seen, it would be an error to assert that low-income customers will
8 see no adverse impact from the increased fixed customer charge because they are
9 protected by the Duquesne Light CAP program.

10

11 **Q. IS THERE ANOTHER SHORTCOMING IN ANY ARGUMENT THAT THE**
12 **DUQUESNE LIGHT CAP PROTECTS THE COMPANY’S LOW-INCOME**
13 **CUSTOMERS FROM AN INCREASE IN THE RESIDENTIAL CUSTOMER**
14 **CHARGE?**

15 A. Yes. In addition to the under-enrollment of Duquesne’s CAP program, even within its
16 CAP population, a substantial number of CAP participants are removed from CAP due to
17 the failure to recertify. The problem is even more substantial than it might first appear.
18 Not all CAP participants are required to recertify every year. In Duquesne’s most recent
19 evaluation of its universal service program (OCA-II-17), the failure to recertify was
20 identified as a problem. According to the Duquesne Evaluation (page 39), a higher
21 percentage of CAP participants failed to recertify (34%) than those who did recertify and
22 found it “very easy” (32%) or “somewhat easy” (28%) to do so.

23

1 The problem continues through today. From January 2019 through May 2021, 9,074
2 low-income customers exited the Duquesne Light CAP. Fewer than 5% (4.6%) of those
3 exits were due to a customer being found to be over-income. In contrast, more than 77%
4 (6,989 of 9,074) were removed due to a failure to reverify their income. This huge
5 percentage removed due to a failure to recertify during this time period is more
6 remarkable because, due to COVID-19, from April 2020 through July 2020, Duquesne
7 removed no-one from CAP due to a failure to recertify. (OCA-II-15). During the
8 corresponding period in 2019, Duquesne had removed 736 CAP participants due to a
9 failure to recertify. (OCA-II-15).

10
11 For a utility that has a current CAP participation of less than 35,000 customers, to lose
12 nearly 7,000 participants in one 17-month period due to a failure to recertify, when not
13 everyone is required to recertify every year, and when recertifications were halted
14 completely for four months (April – July), should present concerns to the Commission
15 and to the utility. For purposes here, however, in assessing whether CAP protects the
16 Company’s low-income population from the harms of Duquesne’s proposed substantial
17 increase in its residential customer charge, the Commission should recognize that
18 Duquesne has lost nearly more than one-in-five of its CAP population (6,989 of 3,799)
19 over a relatively brief period of time due to reasons having nothing to do with the
20 ongoing income eligibility of CAP participants.

21
22 In addition, to taking this into account with respect to the Company’s proposed increase
23 in its residential customer charge, the Commission should direct Duquesne Light to

1 develop remedies for its exits relating to failure to recertify. The Company should be
2 specifically directed to develop measurable metrics by which to measure the success of
3 its CAP income recertification process and to report back to the Commission on the
4 Company's performance relative to those metrics. In addition, the Company should be
5 directed to report to the Bureau of Consumer Services the affirmative steps it will take to
6 reduce the percentage of exits attributable to a failure to recertify.

7
8 **Q. WHY IS IT SIGNIFICANT THAT DLC UNDER-ENROLLS ITS CONFIRMED**
9 **LOW-INCOME CUSTOMER POPULATION INTO ITS CAP PROGRAM?**

10 A. The under-enrollment of the DLC confirmed low-income population into CAP is significant
11 because the Company's confirmed low-income population has substantially greater payment
12 difficulties than does the residential population as a whole. Table 6 sets forth the data from
13 the BCS annual report on universal service programs and collections performance.

	Residential	Confirmed Low-Income
2014	\$562.94	\$810.84
2015	\$371.28	\$672.74
2016	\$298.51	\$817.16
2017	\$457.80	\$1,014.66
2018	\$438.03	\$1,013.54
2019	\$383.34	\$839.50

14
¹⁵ BCS (annual). Universal Service Programs and Collections Performance. available at:
http://www.puc.state.pa.us/filing_resources/universal_service_reports.aspx (last accessed May 29, 2021).

1 Table 6 shows that the confirmed low-income customers of DLC are substantially more
2 seriously in arrears than are residential customers generally. Indeed, the difference is even
3 greater than shown. The “Residential” class has, as one sub-component, the “Confirmed
4 Low-Income” customers. The higher numbers for the Confirmed Low-Income customers, in
5 other words, will pull the Residential customer numbers upwards. If the comparison was
6 between customers who are Confirmed Low-Income versus those who are *not* Confirmed
7 Low-Income, the differences would be even greater.

8
9 Table 7 below shows the ratio of the payment difficulties of Confirmed Low-Income
10 customers to Residential customers generally as presented in the annual BCS report. The
11 average arrears for Confirmed Low-Income customers was from 44% to 174% higher than
12 the average arrears for Residential customers for DLC. As can be seen, when Confirmed
13 Low-Income customers are in arrears they are also deeper in arrears than residential
14 customers overall.

DLC	Average Arrears of Accounts in Arrears (Confirmed Low-Income / Residential)
2014	144%
2015	181%
2016	274%
2017	222%
2018	231%
2019	219%

15

1 **Q. HOW DOES THIS RELATE TO THE PROPOSAL TO INCREASE THE**
2 **COMPANY'S FIXED MONTHLY RESIDENTIAL CUSTOMER CHARGE?**

3 A. This data relates to the Company's fixed monthly residential customer charge because DLC
4 is now proposing to increase the level of the fixed monthly customer charge that cannot be
5 controlled by reducing consumption. An increase in the fixed customer charge of \$3.75 per
6 month represents an increase in the fixed customer charge of \$45.00 per year ($\$3.75/\text{month}$
7 $\times 12 \text{ months} = \45.00). Given the Company's estimated number of low-income customers
8 (103,720), this would be an increase in unavoidable annual customer charges of \$4.667
9 million ($103,720 \times \$45.00 = \$4,667,400$) to Duquesne's low-income population.

10

11 **Q. CAN YOU PUT THAT CUSTOMER CHARGE INCREASE INTO SOME**
12 **CONTEXT?**

13 A. To put this number into context, in calendar year 2018, DLC customers received \$2.67
14 million in LIHEAP cash grants, while in 2019, they received \$2.60 million in LIHEAP cash
15 grants. (OCA-05-009); in 2020, Duquesne customers have received \$2.22 million in
16 LIHEAP cash grants. Just the increase in the fixed customer charge, standing alone, (not the
17 total fixed charge, simply the increase in the fixed charge), in other words, would represent
18 more than two times the total LIHEAP cash grants received by Duquesne customers in
19 2020, and nearly 200% (179%) of the total LIHEAP cash grants received Duquesne
20 customers in 2020. Moreover, the amount of funding that Duquesne customers have been
21 receiving in LIHEAP cash grants has been declining. From 2018 through 2020, the amount
22 of LIHEAP cash assistance received by Duquesne Light customers has declined by nearly
23 20%. (OCA-II-9).

Calendar Year	Heating	Non-Heating	Total
2018	\$916,560	\$1,752,011	\$2,668,571
2019	\$1,197,392	\$1,403,301	\$2,600,693
2020	\$917,893	\$1,303,079	\$2,220,972

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Q. PLEASE SUMMARIZE HOW THE INCREASED CUSTOMER CHARGE WILL HARM LOW-INCOME CUSTOMERS.

A. Without limitation, I conclude that the DLC proposal to increase its customer charge will harm low-income customers in each of the following ways (with each bullet below incorporating every other bullet):

- It will increase both the breadth and depth of arrears, each of which imposes additional utility costs on low-income households along with the social consequences appurtenant thereto.
- It will increase the incidence of service disconnections for nonpayment, along with the increased utility costs on low-income households in addition to social consequences appurtenant thereto.
- It will increase in the incidence of the threat of service disconnections for nonpayment, along with the increased utility costs and social consequences appurtenant thereto.
- It will dilute the efficacy of federal fuel assistance (i.e., LIHEAP) benefits, along with the increased utility costs on low-income households, in addition to the social consequences appurtenant thereto.
- It will increase Home Energy Insecurity, along with the resulting utility costs on low-income households, in addition to the social consequences appurtenant thereto.¹⁷

¹⁶ While Duquesne was asked to provide data on a program year basis, it instead provided data by month starting in January 2018 and ending in May 2021. Accordingly, calendar year data is presented in this Table. (OCA-II-09).

- 1
- 2 ➤ A reduction in the ability of low-income households to respond to inability-to-pay
- 3 by reducing usage, and to reduce the consequences of inability-to-pay, along with
- 4 the resulting utility costs on low-income households, in addition to the social
- 5 consequences appurtenant thereto.
- 6

7 **B. Low-Incomes and Duquesne Light Residential Usage.**

8 **Q. HAVE YOU HAD OCCASION TO EXAMINE COMPANY-SPECIFIC DATA ON**

9 **THE DISTRIBUTION OF USAGE?**

10 A. Yes. I conclude that low-income customers, both disproportionately, and on average, are

11 also low-use customers. In making this observation, I note the obvious: that my

12 statement is *not* that *all* low-income customers are also low-use. My statement is that

13 low-income customers are disproportionately low-use. The proposed increase in the

14 fixed monthly residential customer charge imposes a disproportionate increase in bills to

15 these low-income, low-use customers.

16

17 **Q. PLEASE EXPLAIN THE BASIS FOR YOUR CONCLUSION THAT LOW-**

18 **INCOME CUSTOMERS ARE DISPROPORTIONATELY LOW-USE**

19 **CUSTOMERS.**

20 A. While low-income households tend to have less efficient energy consumption than do

21 residential customers generally on a per square foot of housing basis, because they live in

22 much smaller housing units, they tend also to have lower overall electricity consumption.

23 The most recent data published by the U.S. Department of Energy (DOE) in its 2015

¹⁷ See, Colton Direct, at 16-18, 35, 43, 59. See also, Colton, Measuring the Outcomes of Home Energy Assistance Programs through a Home Energy Insecurity Scale, which, by this reference thereto, is incorporated herein as if fully set forth, available at http://fsconline.com/05_FSCLibrary/lib2.html (last accessed July 14, 2020).

1 Residential Energy Consumption Survey (RECS), as presented in Table 9, shows the
2 following for total electricity usage in the Northeast (RECS, Table CE2.2).¹⁸

2015 Annual Household Income	mmBtu	kWh
Less than \$20,000	19.8	5,796
\$20,000 to \$39,999	24.1	7,057
\$40,000 to \$59,000	26.3	7,704
\$60,000 to \$79,999	31.5	9,227
\$80,000 to \$99,999	30.5	8,935
\$100,000 to \$119,999	37.1	10,882
\$120,000 - \$139,999	31.5	9,242
\$140,000 or more	38.4	11,257

3
4 It does not matter which specific end-use is being examined. At lower income levels,
5 electricity usage is noticeably lower. The average household data by end-use, in million
6 BTU, for Northeast households using the end-use (2015 RECS, Table CE4.7) is
7 presented immediately below.

¹⁸ The 2015 RECS data referenced in Table 9 and Table 10 can be accessed at:
<https://www.eia.gov/consumption/residential/data/2015/> (last accessed May 28, 2021).

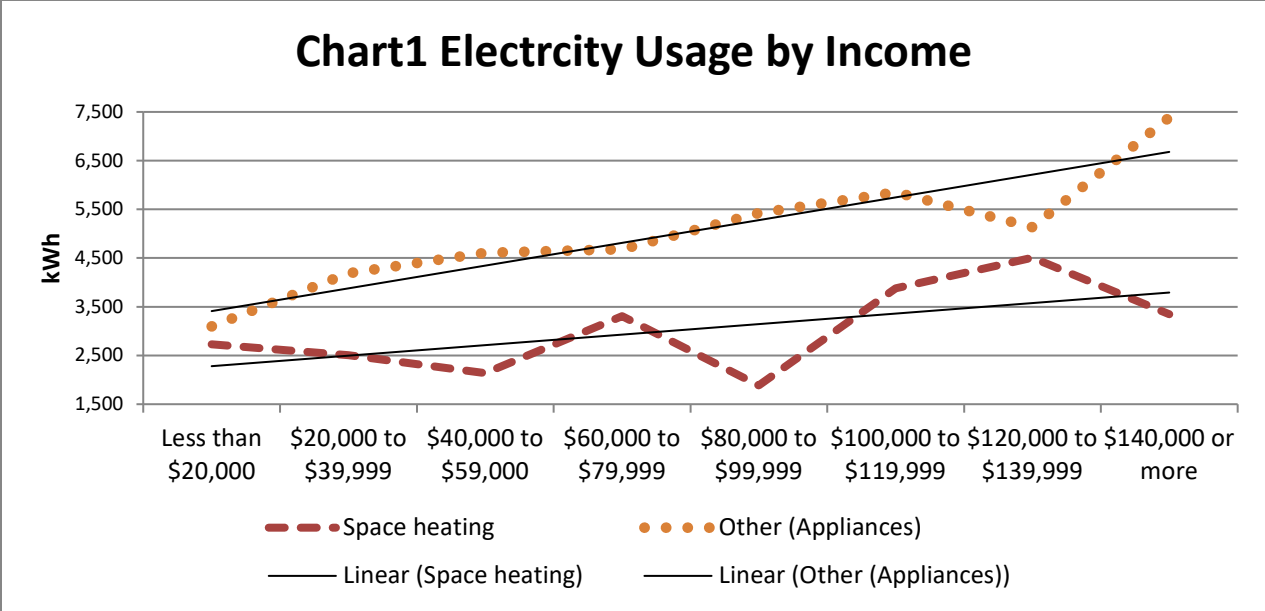
Table 10. Electricity Consumption by End-Use and Income (kWh) (Northeast)
 (2015 Residential Energy Consumption Survey) (Table CE4.7)

2015 Annual Household Income	Total	Space heating	Water heating	Air conditioning	Refrigerators	Other
Less than \$20,000	5,796	2,728	2,902	658	514	3,097
\$20,000 to \$39,999	7,057	2,506	2,592	873	625	4,186
\$40,000 to \$59,000	7,704	2,136	3,322	876	692	4,611
\$60,000 to \$79,999	9,227	3,305	3,528	880	680	4,679
\$80,000 to \$99,999	8,935	1,886	2,763	1,052	857	5,420
\$100,000 to \$119,999	10,882	3,876	2,822	1,113	808	5,850
\$120,000 to \$139,999	9,242	4,507	3,231	1,408	698	5,132
\$140,000 or more	11,257	3,347	3,277	1,598	898	7,387

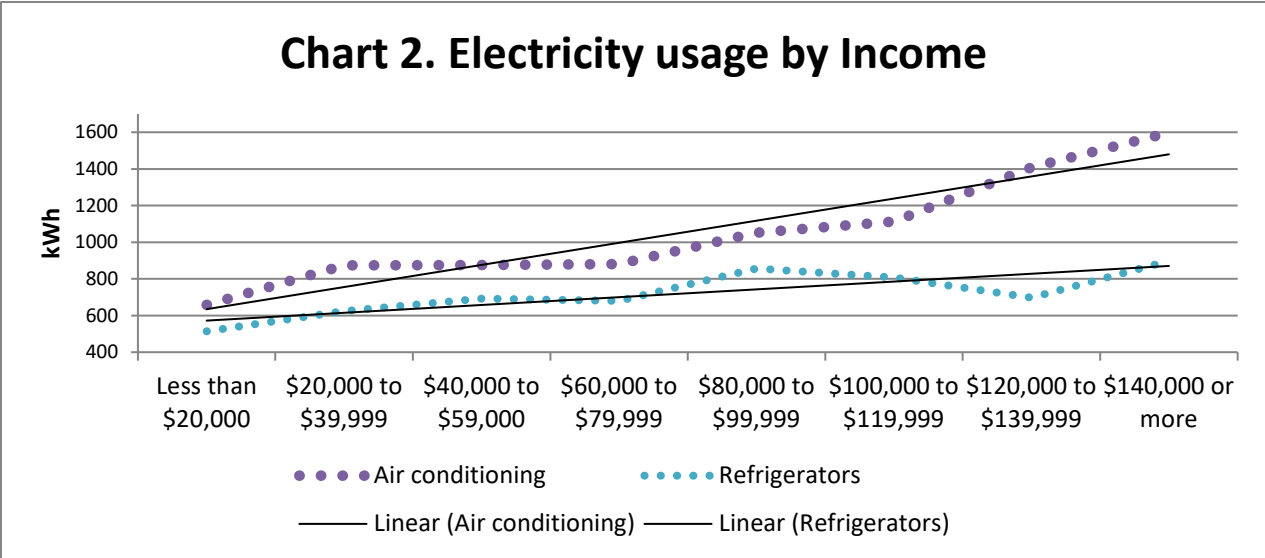
1

2 **Q. IS THERE ANOTHER WAY TO VIEW THIS DATA?**

3 A. Yes. Charts 1 and 2 present the identical information below, except in graph form. In
 4 addition to the kWh usage at each income level in these Charts, the Chart presents a trend
 5 line for each end use. The trend line for each end use clearly indicates that as income
 6 increases, so, too, does electricity usage increase. Chart 1 presents the data for space
 7 heating and “other” (which includes appliances). Chart 2 presents the data for air
 8 conditioning and refrigerators.



1



2

3 **Q. IS IT YOUR CONCLUSION THAT ELECTRICITY FOR LOW-INCOME**
 4 **CUSTOMERS OF DUQUESNE LIGHT IS LOWER BECAUSE DUQUESNE IS**
 5 **PART OF THE NORTHEAST OF WHICH THE DUQUESNE SERVICE**
 6 **TERRITORY IS A PART?**

7 **A.** No. My conclusion is that the EIA data indicates that it is reasonable to expect low-
 8 income customers to disproportionately have lower electricity consumption than would
 9 higher income customers. In total, and for each end use, this observation is found to be

1 accurate. However, the RECS data goes further than that. The RECS data associates
2 lower usage with various housing unit characteristics and various household
3 characteristics. It is possible to determine whether these factors which explain the
4 presence of low-use are also associated with low-income status in the Duquesne Light
5 service territory.

6
7 **Q. DOES THE DEPARTMENT OF ENERGY PROVIDE DATA THAT HELPS TO**
8 **EXPLAIN WHY LOW-INCOME CUSTOMERS TEND ALSO TO BE LOW USE**
9 **CUSTOMERS?**

10 A. Yes. The RECS data clearly shows that electricity consumption increases as the size of
11 the housing unit increases. The related housing characteristics support this conclusion.
12 Residents of single family housing units have greater consumption than residents of
13 multi-family housing. Renters have lower consumption than do homeowners. And
14 occupants of homes with more rooms have higher electricity consumption than occupants
15 of dwellings with fewer rooms.

16
17 It is *not* my testimony, in other words, that because low-income customers in the
18 Northeast have lower electricity consumption, low-income customers in Pennsylvania
19 also do (since Duquesne Light of Pennsylvania is part of the Northeast). My analysis
20 identifies what factors tend to result in lower electricity consumption as supported by the
21 RECS data. I then review the extent to which those factors are, in fact, associated with
22 low-income status in the Duquesne Light service territory.

23

1 **Q. PLEASE EXPLAIN YOUR CONCLUSION THAT DUQUESNE LIGHT**
2 **CUSTOMERS ARE DISPROPORTIONATELY LOW-USE CUSTOMERS.**

3 A. In the Duquesne Light service territory, there is a relationship between the presence of
4 low-income households and the housing attributes which the Department of Energy
5 (DOE) has identified, through its Residential Energy Consumption Survey (RECS), as
6 being associated with lower electricity consumption.

7
8 **Q. WHAT IS THE RELATIONSHIP BETWEEN THE SIZE OF A HOUSING UNIT**
9 **AND ELECTRICITY CONSUMPTION?**

10 A. The RECS reports that smaller housing units tend to use less electricity than do larger
11 housing units. The DOE data is set forth in Table 11 below. As can be seen, as housing
12 units get bigger (in terms of square footage of space), electricity usage becomes greater
13 as well.

Housing Unit Characteristics and Electricity Usage Indicators	Per Household (million Btu)	Per Household (kWh)
Total Square Footage		
Fewer than 1000	16.3	4,775
1,000 to 1,499	22.3	6,542
1,500 to 1,999	30.7	8,987
2,000 to 2,499	31.2	9,155
2,500 to 2,999	31.9	9,356
3,000 or more	40.4	11,843

14

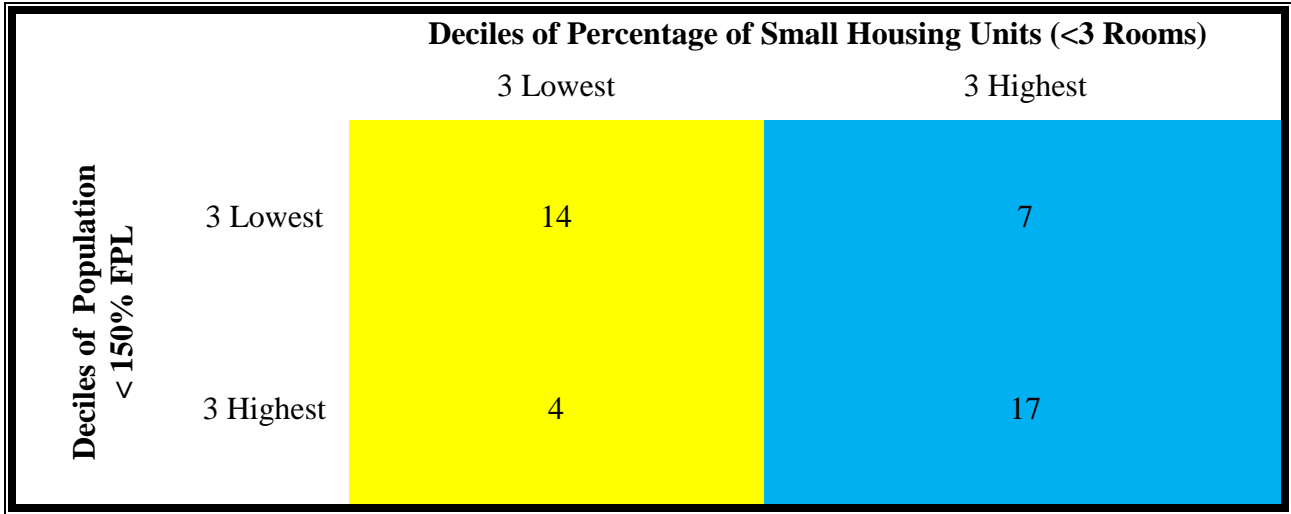
1 Housing units with fewer than 1,000 square feet have electricity usage (in physical units
2 of energy) of 4,775 kWh. In contrast, housing units with 3,000 or more square feet have
3 electricity usage of 11,843 kWh. Housing units with between 2,000 and 3,000 square
4 feet are in between (9,155 to 9,356 kWh).

5
6 **Q. IS THERE A RELATIONSHIP BETWEEN LOW-INCOME STATUS AND**
7 **HOUSING UNIT SIZE IN THE DUQUESNE LIGHT SERVICE TERRITORY?**

8 A. Yes. The Census Bureau does not directly report data on the size of housing units (in
9 square feet). However, conclusions can be drawn about the size of a housing unit by
10 looking at the number of rooms in the unit, as well as by looking at the number of
11 bedrooms in a housing unit. A housing unit with more rooms is more likely to be
12 “larger” while a housing unit with fewer rooms will be “smaller.” Similarly, a housing
13 unit with more bedrooms will be larger while a housing unit with fewer bedrooms will be
14 smaller. The data is set forth in the Figures below.

15
16 As the Figure immediately below shows, while 17 zip codes within the three highest
17 deciles of low-income penetration also fall within the three highest deciles of penetrations
18 of smaller housing units (i.e., fewer than three rooms), only 7 zip codes within the three
19 deciles with the smallest percentages of low-income households (Deciles 1 – 3) fall
20 within the three deciles with the highest penetration of smaller housing units (Deciles 8 –
21 10) (blue-shaded cells). Similarly, while 14 of the zip codes with the lowest penetration
22 of small housing units also fall within the deciles with the lowest penetration of low-
23 income population, only four (4) fall within the three deciles with the highest percent of
24 low-income and lowest percent of small housing units.

1



2 Figure 1. Population Below 150% FPL vs. Housing Units with <3 Rooms

3

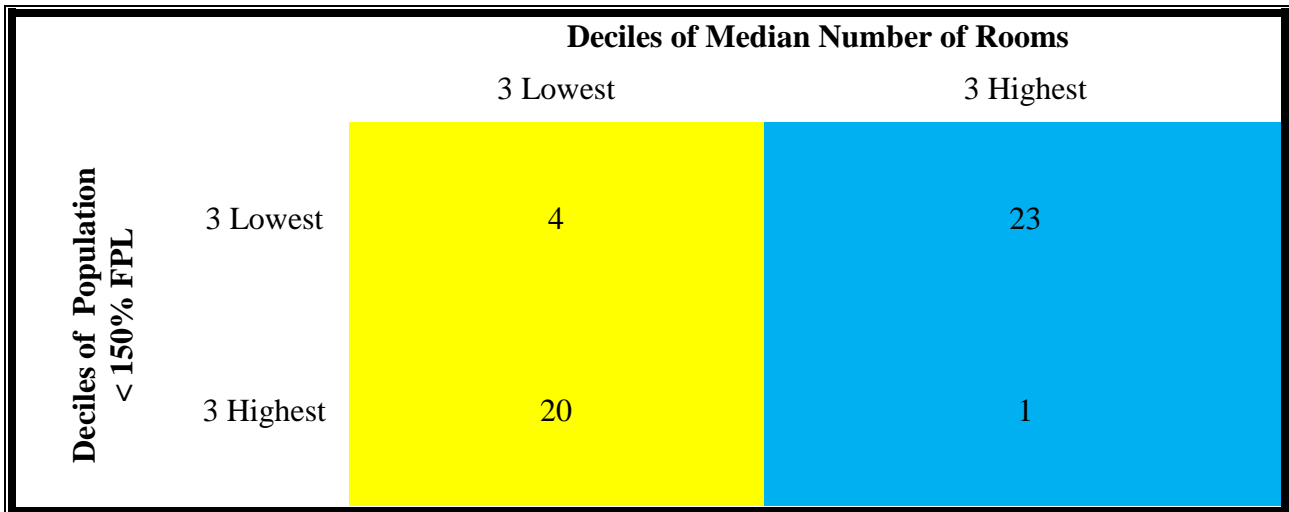
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Even more compelling is the observation that while four (4) zip codes with low penetrations of low-income population fall within the three lowest deciles of the smallest numbers of median rooms, 20 zip codes with high percentages of low-income population fall within the three deciles with the lowest percentage of small housing units.

8

Conversely, while 23 zip codes with the smallest percentage of low-income population fall in the three deciles with the largest median number of rooms, only one (1) zip code with a high percentage of low-income population also has large housing sizes. Clearly, as the percentage of lower-income households increases in the Duquesne Light service territory, so, too, does the percentage of smaller housing units increase.

12



1 Figure 2. Population Below 150% FPL vs. Median Number of Rooms

2

3 **Q. HAS DLC UNDERTAKEN ANY STUDY OF GAS USAGE BY HOUSING TYPE?**

4 A. No DLC has undertaken no study of electricity usage by housing type. (OCVA-II-49).

5

6 **Q. WHAT DO YOU CONCLUDE?**

7 A. Based on the data and discussion presented above, I conclude that low-income
 8 households in the Duquesne Light service territory are disproportionately and on average
 9 likely to live in homes that consume lower levels of electricity. As a result, the Duquesne
 10 Light proposal to substantially increase its fixed monthly customer charge will
 11 disproportionately impose adverse impacts on low-income customers.

12

13 Ultimately, based on this discussion, along with my initial discussion of the adverse
 14 impacts that will accrue to low-income customers of Duquesne Light, I recommend that
 15 the residential customer charge recommended by OCA witness Glenn Watkins be
 16 adopted.

17

1 **Part 3. Addressing Low-Income Needs.**

2 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
3 **TESTIMONY.**

4 A. In this section of my testimony, I consider the extent to which Duquesne Light is
5 adequately addressing the affordability needs of the Company's low-income customers.

6
7 **Q. PLEASE EXPLAIN WHY IT IS APPROPRIATE TO CONSIDER THE**
8 **EFFECTIVENESS OF DUQUESNE'S LOW-INCOME OUTREACH IN THIS**
9 **PROCEEDING.**

10 A. In its statewide proceeding to consider energy affordability to low-income customers, the
11 Pennsylvania PUC found that utility outreach to low-income customers had substantial
12 shortcomings. The PUC found, amongst other things:

13 While there is no specific regulatory mandate that each utility must enroll a
14 certain percentage of low-income households in CAP, the near uniform
15 disparity between the total number of potential income-qualified households
16 and those actually receiving assistance calls into question the overall
17 adequacy of consumer education and outreach.

18
19 (Final Order, *supra*, at 7). The Commission found further:

20
21 This fact pattern does not convince us that needs are being met, but rather it
22 illuminates the need for increased awareness. We have noted in various
23 USECP proceedings the necessity for utilities to develop more robust efforts
24 to reach customers, particularly the very marginal, for enrollment in universal
25 service programs.”

26
27 (Id.) The Commission has, in other words, specifically found that the existing
28 performance of other utilities “calls into question the adequacy” of outreach; that existing
29 performance “does not convince us that needs are being met”; and that existing

1 performance demonstrates “the necessity for utilities to develop more robust efforts to
2 reach customers.” It is thus appropriate for the Commission to consider how Duquesne
3 has responded to those findings. It is not merely CAP outreach that is at issue here; it is
4 also outreach to identify Confirmed Low-Income customers as well. The Commission’s
5 customer service protections specifically directed to low-income customers cannot be
6 fully implemented unless Duquesne does an adequate job of identifying who its low-
7 income customers are.

8
9 In reviewing data on the outreach to low-income customers, it is not merely the activities
10 that Duquesne identifies that it is pursuing that should be the subject of review. It is the
11 *results* of those activities. The PUC has previously said (with respect to Columbia Gas)
12 that a utility should be prepared to “address these additional outreach efforts *and*
13 *corresponding results*. . .” (emphasis added).

14
15 **A. Effective CAP Outreach.**

16 **Q. HAVE YOU HAD OCCASION TO REVIEW DATA TO INDICATE THE**
17 **EXTENT TO WHICH DUQUESNE LIGHT IS PROVIDING ADEQUATE CAP**
18 **OUTREACH TO ITS LOW-INCOME CUSTOMERS?**

19 A. Yes. The CAP participation rate I use in performing my review is 34,799, the number of
20 CAP participants reported by Duquesne Light in response to discovery. (OCA-II-5).

21
22 First, after matching Duquesne Light CAP participation rates for zip codes with Census
23 data, I compared the number of households receiving either Food Stamps (SNAP) or

1 Cash Public Assistance to the number of customers enrolled in CAP. If Duquesne Light
2 enrolled each household who is currently enrolled in Food Stamps/Cash Public
3 Assistance into CAP, the Company would have an additional 53,298 CAP participants.
4

5 It is not merely the total that indicates the problem, however. A problem with targeted
6 outreach is seen when one reviews individual zip codes. A sample of such zip codes is
7 presented in Table 12 below; these Zip Codes include all Zip Codes that have three (3) or
8 fewer CAP participants (OCA-II-5). As can be seen, in the Zip Codes in this Table,
9 while there are nearly 5,500 (5,488) households who have applied for and been found
10 eligible for Food Stamps and/or Cash Assistance,¹⁹ Duquesne has enrolled only 14
11 customers in CAP.²⁰ In the six Zip Codes in this table which have zero (0) CAP
12 participants, there are 3,137 households who have enrolled in Food Stamps and/or Cash
13 Assistance. In the six (6) additional Zip Codes in which Duquesne has enrolled one (1)
14 CAP participant (per Zip Code), there are 1,237 Food Stamp/Public Assistance recipients.
15 Overall, in 73 of the 107 Duquesne Light Zip Codes, there are more Food Stamp/PA
16 recipients than there are CAP participants. In 60 of the 107 Duquesne Zip Codes, there
17 are more than 100 Public Assistance/Food Stamp more recipients than CAP recipients
18 (representing more than 52,000 households). In 35 of the 107 Zip Codes, there are more
19 than 500 more Public Assistance/Food Stamp recipients than CAP recipients
20 (representing more than 46,300 households).

¹⁹ Both such programs have maximum income eligibility lower than the maximum income eligibility for CAP.

²⁰ It is not possible to determine the extent to which, if at all, the CAP enrollment and the Food Stamp/PA enrollment overlap.

Table 12. Number of Duquesne CAP Participants vs. Number of Food Stamp and/or Cash Public Assistance Participants (by selected Zip Codes)		
Zip Code	Food Stamp/PA Recipients	CAP Participants
15140	566	0
15075	29	3
15006	0	1
15084	900	2
15062	763	0
16115	163	1
15021	383	1
15076	62	0
16063	185	3
15037	343	1
15135	215	1
15642	1308	0
16059	133	1
15668	155	0
15090	283	0
Total	5,488	14

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Similar results can be seen if one examines households receiving Supplemental Security Income (SSI). In Duquesne’s Zip Codes, there are nearly 3,290 more households receiving Supplemental Security Income (SSI) than there are CAP recipients. For example, in the 15 Zip Codes identified in Table 13 below, while there are 2,887 SSI recipients, there are 14 CAP participants. In the four (4) Zip Codes with more than 200 SSI recipients each (15140, 15062, 15084, 15642), while there are 1,882 SSI recipients, there are two (2) CAP participants.

Table 13. Number of Duquesne CAP Participants vs. Number of SSI Recipients

Zip Code	(by selected Zip Codes)	
	SSI Recipients	CAP Participants
15140	227	0
15075	0	3
15006	0	1
15084	642	2
15062	294	0
16115	86	1
15021	181	1
15076	26	0
16063	94	3
15037	171	1
15135	97	1
15642	659	0
16059	134	1
15668	158	0
15090	118	0
Total	2,887	14

1

2 **Q. HAS THE COMMISSION EVER RECOMMENDED SPECIFIC COMMUNITY**
 3 **PARTNERS THAT A UTILITY SHOULD WORK WITH IN THE PURSUIT OF**
 4 **LOW-INCOME OUTREACH?**

5 A. Yes. The Commission’s Order in the recent Columbia Gas rate case, previously cited,
 6 stated in relevant part: “For example, besides the community-based organizations
 7 Columbia already is working with, are there other local organizations it can partner with,

1 such as food banks, schools, Head Start or other preschool programs to implement more
2 fully its outreach strategies.” (Docket No. R-2020-3018835, Opinion and Order, at 173).

3
4 I acknowledge that Duquesne does have an Income Eligible Advisory Group that has
5 community partners. That group meets several times a year to discuss on-going universal
6 service issues. This advisory group, however, does not have the grassroots, boots-on-the-
7 ground reach into particular communities to provide the type of outreach necessary to
8 address the problems I have identified.

9
10 Other than this Advisory Group, Duquesne has undertaken no identifiable efforts to work
11 with specifically identified community-based organizations to provide low-income
12 outreach. When asked to “provide a list of ‘community partners’ used to target low-
13 income,” Duquesne could not do so. (OCA-II-25). Moreover, when asked to “provide a
14 schedule of all community outreach events scheduled in December 2019 and later
15 targeting low-income customers with outreach for CAP, indicating. . .(c) the location of
16 the event. . . [and] (e) the name of each community partner co-sponsoring (co-hosting)
17 the event,” Duquesne could not do so. (OCA-II-28). While Duquesne could identify the
18 number of Company-generated e-mails and outbound telephone calls it says were
19 designed to provide outreach (OCA-II-24, OCA-II-26) , when asked to do so, it did not
20 provide the name of even one community organization with whom it worked to expand
21 its low-income outreach.

1 **Q. PLEASE COMMENT ON THE COMMISSION’S LIST OF POTENTIAL**
2 **COMMUNITY-BASED PARTNERS.**

3 A. The language I cited above observes, quite correctly, that “there other local organizations
4 [the utility] can partner with, such as food banks, schools, Head Start or other preschool
5 programs to implement more fully its outreach strategies.”

6
7 Let me consider the use of local school districts in the Duquesne Light service territory as
8 a partner through which to promote the Company’s universal service programs.

9 Households whose children qualify for Free School Meals (income at or below 130% of
10 Poverty) would income-qualify for CAP. Households whose children qualify for
11 reduced-cost School Meals (households with income above 130% but less than 180% of
12 Poverty) would qualify for winter shutoff protections; some of these children who qualify
13 for reduced-cost School Meals would qualify for CAP. The Table below examines the
14 prevalence of families with children having income below Federal Poverty Level in the
15 Duquesne service territory.

Table 14. Number of Duquesne CAP Participants vs. Number of SSI Recipients
(by selected Zip Codes)

Zip Code	Families with Children with Income <FPL	CAP Participants
15140	107	0
15075	29	3
15006	0	1
15084	152	2
15062	219	0
16115	8	1
15021	122	1
15076	0	0
16063	142	3
15037	37	1
15135	66	1
15642	334	0
16059	19	1
15668	85	0
15090	137	0
Total	1,457	14

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The data above is significant in that the Census Data for Duquesne’s Zip Codes reports that there are 19,864 families in the Company’s service territory that have income at or below the Federal Poverty Level. Within the Zip Codes with three or fewer CAP participants, there are 1,437 such families (with children and income below Poverty). Counting only families with income below Poverty, of course, understates the number of potential CAP participants, given that CAP eligibility is set at 150% of Poverty.

1 Using potential partnerships with school districts to reach this population, as suggested
2 by the Commission, is compelling because the federal free and reduced School Meals
3 program (free school breakfasts, free school lunches) are administered by local school
4 districts. I matched the places that Duquesne Light lists in its tariff to the local school
5 districts serving those communities. I identified all school districts which are served, in
6 whole or part, by Duquesne Light.²¹ Then for February 2020 (the month before the
7 COVID-19 pandemic hit), I examined the percentage of school enrollment that was
8 eligible for either the free or reduced school meals program. Of the 58 school districts I
9 reviewed, I found 23 of which had more than 50% of their school enrollment who
10 qualified for either the free school meal program (income at or below 130% of Poverty)
11 or the reduced-cost school meal program (income above 130% of Poverty but at or below
12 180% of Poverty). Indeed, 18 of the school districts I reviewed had more than 75% of
13 their students who qualified for the free or reduced school meals program. Despite the
14 PUC's suggestion that schools could be an important partner for Duquesne Light in its
15 outreach strategies, however, the Company does not use school districts to engage in
16 universal service outreach.

17
18 A second reasonable community-based partner suggested by the Commission involves
19 community food banks. Duquesne does not list any community food banks as partners,
20 even though Pennsylvania has an organization (Feeding Pennsylvania) which has nine
21 member Food Banks serving 2,700 local partners agencies (such as community and
22 church food pantries, soup kitchens, and emergency shelters) serving all 67 Pennsylvania

²¹ Obviously, school district boundaries and the boundaries of the Duquesne Light service territory are not necessarily coterminous.

1 counties. By itself, the Feeding Pennsylvania organization serves two million persons
2 annually throughout Pennsylvania.

3
4 **B. Reaching the Population Below 50% of Poverty.**

5 **Q. HAVE YOU HAD OCCASION TO EXAMINE WHETHER DUQUESNE LIGHT**
6 **APPROPRIATELY TARGETS ITS LOWEST INCOME CUSTOMERS FOR CAP**
7 **OUTREACH?**

8 A. Yes. The Table below shows the data. In 2018, while 20.9% of all CAP participants had
9 income between 0% and 50% of Poverty, 48.9% of CAP participants had income
10 between 51% and 100% of Poverty. In addition 30.2% of all DLC CAP participants had
11 income between 101% and 150% of Poverty. (OCA-II-5).

	CAP Participation (#s)			CAP Participation (%)		
	0 – 50%	51 – 100%	101 – 150%	0 – 50%	51 – 100%	101 – 150%
CAP participants	7,275	17,001	10,523	20.9%	48.9%	30.2%

12
13 This data shows that DLC has a substantial under-representation of customers in the
14 lowest and highest income brackets, while having a substantial over-representation of
15 customers in the middle income bracket. According to the 2019 Census, for the zip codes
16 which DLC identified as comprising its service territory, the disaggregation of population
17 by Poverty Level within the DLC service territory was:

- 18 ➤ 28.6% of the population with income less than 150% of Poverty had income
19 less than 50% of Poverty;

- 1 ➤ 34.1% of the population with income less than 150% of Poverty had income
- 2 between 50% and 100% of Poverty; and
- 3 ➤ 37.3% of the population with income less than 150% of Poverty had income
- 4 between 100% and 150% of Poverty.

5 The under-representation of the lowest income range (i.e., below 50% of Poverty) is of
6 particular concern. According to Duquesne, the average monthly income for CAP
7 participants with income below 50% of Poverty has ranged from \$550 to \$598 in 2018
8 through 2020; the income ticked up to \$699 in 2021. (OCA-II-44). Because of their low-
9 income, these customers are most likely to have electric bills that represent a high
10 percentage of income (i.e., what is known as a “bill burden” or bill as a percentage of
11 income). They are, accordingly, more likely to have the payment troubles that I have
12 identified above. These high burdens are the problem addressed by enrollment in CAP.
13 The customers in this lowest income range, however, are not enrolling in the Company’s
14 CAP in a percentage which reflects their percentage in the total population.

15

16 **Q. HAS THE COMMISSION PREVIOUSLY IDENTIFIED THIS UNDER-**
17 **ENROLLMENT OF HOUSEHOLDS WITH INCOME AT OR BELOW 50% OF**
18 **POVERTY AS A PROBLEM THAT UTILITIES SHOULD ADDRESS?**

19 A. Yes. In its Final Order adopting the Revised CAP Policy Statement in 2019, the PUC
20 stated quite explicitly that:

21 While utilities have flexibility as to the contents of their plans, the plans
22 should reflect focused consumer education and outreach efforts, tailored to
23 the demographics of their individual service territories, spanning the duration
24 of the universal service plan period. *In particular, these plans should identify*
25 *efforts to educate and enroll eligible and interested customers at or below*
26 *50% of the FPIG.*

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Final Order, at 79, Docket M M-2019-3012599 (emphasis added).

Q. HOW HAS DUQUESNE RESPONDED TO THIS COMMISSION ORDER REGARDING THE NEED TO ENGAGE IN TARGETING CUSTOMERS WITH INCOME AT OR BELOW 50% OF POVERTY LEVEL?

A. Duquesne Light has made no specific efforts to comply with the PUC directive that utilities “in particular” should “identify efforts to educate and enroll eligible and interested customers at or below 50% of the FPIG.” In discovery, OCA asked Duquesne to “provide a detailed explanation of how Duquesne has identified customers having income at or below 50% of Federal Poverty Level for purposes of receiving outreach targeted to customers with income at or below 50% of Poverty Level. If groups of customers rather than specific individual customers have been targeted for outreach directed to customers with income at or below 50% of Poverty, please provide an explanation of how and why such groups of customers were targeted.”

Duquesne responded: “The Company’s outreach campaigns and events target all low income (up to 150% of the Federal Poverty Level (FPL)) customers. No events or targeted messaging campaigns have targeted only those customers below 50% FPL.” (OCA-II-27).

Moreover, OCA asked Duquesne to provide “all metrics adopted by Duquesne through which Duquesne measures the outcomes of its. . .(d) Outreach to reach customers with

1 annual income at or below 50% of Poverty Level.” (OCA-II-31). Having engaged in no
2 targeted outreach as was provided for in the Commission Order, Duquesne had no
3 metrics by which to measure whether it was successfully reaching that population.
4

5 **Q. HOW MIGHT DUQUESNE LIGHT TARGET OUTREACH TO ITS LOWEST**
6 **INCOME CUSTOMERS?**

7 A. Duquesne Light could reasonably target outreach to the geographic areas which have the
8 largest percentage of population with income at or below 50% of Poverty. Of the 107
9 Duquesne Light Zip Codes for which I have Census data, for example, if Duquesne
10 targeted outreach to the 20 with the highest number of people having income less than
11 50% of Poverty, it would reach 54% of the total population with income that low. If it
12 targeted only the 10 zip codes with the largest population with income below 50 of
13 Poverty, it would reach more than one-third (35.9%) of the population with the lowest
14 income.
15

16 Duquesne Light could reasonably target outreach to the geographic areas which have the
17 largest populations of customers with income sources associated with the lowest levels of
18 income. Consider, for example, Supplemental Security Income (SSI). In 2020, the
19 maximum SSI benefit was \$783, or 74% of the Federal Poverty Level. The average SSI
20 benefit, however, was only \$446. If one compares the 25 Duquesne Light Zip Codes
21 with the highest numbers of SSI recipients to the 25 Zip Codes with the highest
22 percentage of population with income less than 50% of Poverty, there is an overlap of 20

1 (i.e., only five zip codes have large numbers of SSI recipients but do not also have the
2 highest percentage of population with income below 50% of Poverty).

3
4 Duquesne Light could reasonably target outreach to geographic areas which have the
5 largest populations receiving Food Stamps or Public Assistance. If one compares the 25
6 Zip Codes with the largest Food Stamp/Public Assistance populations, there is an overlap
7 of 20 with the Zip Codes with the higher percentage of population with income less than
8 50% of Poverty (i.e., only five zip codes have large numbers of Food Stamp/Public
9 Assistance recipients but do not also have the highest percentage of population with
10 income below 50% of Poverty).

11
12 Indeed, as Table 16 below shows, 18 Duquesne Light Zip Codes fall in the top 25 of all
13 three of these low-income metrics. These 18 Zip Codes, in other words, fall into the 25
14 Zip Codes with the largest number of SSI recipients, and the largest number of Public
15 Assistance/Food Stamp recipients, and the largest number of persons with income at or
16 below 50% of Poverty.

17
18 In comparison, when I compared the CAP participation rates (i.e., CAP participants as
19 percentage of residential customers) by Zip Code to the 25 Zip Codes with the largest
20 percentage of population with annual income at or below 50% of Poverty Level, I found
21 an overlap of only 16 Zip Codes. In sum, the comparisons are as follows:

25 Zip Codes with Highest Pct of <50% FPL Population	ALSO with 25 Highest No. SSI Recipients	ALSO with 25 Highest No. FS/PA Recipients	In Highest 25 of All 3 (<50 FPL, SSI, FS/PA)	25 with Highest Pct <50% FPL ALSO with 25 Highest No. CAP Participants
25	20	20	18	16

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In a different way, Duquesne Light could target outreach to geographic areas which have the lowest average First Quintile (Q1) incomes.²² If Duquesne Light examined the 25 Zip Codes with the lowest average first quintile income, it would find that:

- The average annual Q1 income was between \$2,400 and \$7,000 in of those Zip Codes;
- The average annual Q1 income was more than \$7,000 and less than \$9,000 in nine more of those Zip Codes; and
- The average annual Q1 income was more than \$9,000 and roughly \$11,000 in ten of those Zip Codes.

In only one of the 25 Zip Codes with the lowest average Q1 income was the average Q1 income greater than \$11,000 (\$11,044).

Q. WHAT DO YOU RECOMMEND?

A. I recommend Duquesne Light be directed to submit a detailed three-year outreach plan to the Bureau of Consumer Services. This outreach plan should include specific quantitative outcome goals regarding (1) the expansion of the identification of Confirmed Low-Income customers; (2) the expansion of CAP enrollment; and (3) the expansion of

²² The Census Bureau rank-orders all households in a geographic area by household income, from lowest to highest. The Census Bureau then divides this ordering into five equal parts, each part which is called a “quintile.” The “First Quintile” (often called the “lowest Quintile”) is, therefore, that one-fifth of the population with the lowest incomes.

1 CAP enrollment by customers with income at or below 50% of Poverty. The outreach
2 plan should include specifically identified activities directed toward reaching customers
3 with income at or below 50% of Poverty. The outreach plan should include a detailed
4 description of community-based organizations with whom Duquesne will work, including
5 but not limited to, grassroots community-based organizations, food banks, schools, Head
6 Start and other preschool programs. Duquesne Light should be directed to provide
7 regular reports to the Bureau of Consumer Services on its performance with respect to the
8 measureable goals established in the Plan.

9
10 **Part 4. Allocation of Universal Service Costs.**

11 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
12 **TESTIMONY.**

13 A. In this section of my testimony, I recommend that the Duquesne universal service costs
14 be allocated among all customer classes. Arguments that non-residential customers do
15 not contribute to the need for universal service programs, nor do they benefit from such
16 programs, are demonstrably in error. Moreover, as the testimony of OCA witness Glenn
17 Watkins demonstrates, allocating costs over all customers classes does not impose a bill
18 that would burden the competitiveness of business, small or large.

19
20 **Q. DID DUQUESNE ADDRESS THE ALLOCATION OF UNIVERSAL SERVICE**
21 **COSTS IN ITS FILING?**

22 A. Yes. Duquesne witness Katherine Scholl recommended that universal service costs be
23 allocated exclusively to the residential class. (Duquesne St. 7, at 11). Witness Scholl

1 argues that “The Company’s allocation of universal service cost to residential customers
2 is consistent with Commission precedent and principles of cost allocation. The Company
3 is not proposing changes to its cost recovery mechanism in this proceeding.” (Id.)
4

5 **Q. IS THERE RECENT BINDING PRECEDENT REGARDING THE**
6 **ALLOCATION OF UNIVERSAL SERVICE COSTS?**

7 A. No. In reaching this conclusion, I note that the PUC rejected an OCA proposal to
8 allocate universal service costs to all customer classes in a recent Columbia Gas decision.
9 (Opinion and Order, *Pa. P.U.C. v. Columbia Gas of Pa., Inc.*, Docket No. R-2020-
10 3018835 (Order entered Feb. 19, 2021), pp. 258-261). The PUC explicitly stated in that
11 Order that its decision was limited to the facts presented in that proceeding. (Id., at 261).
12 For example, the Commission observed that OCA did “not propose a specific recovery
13 rate design method.” (Id.) That decision, in other words, is not precedential, and
14 certainly not controlling, of this proceeding. The Joint Statement of Chairman Gladys
15 Brown Dutrieuille and Vice Chairman David Sweet further indicated that the Columbia
16 Gas decision was limited to the facts of that case. In the recent PECO Gas rate case
17 decision (Docket No. R-2020-3018929), the PUC reached a similar decision. (Opinion
18 and Order, at 265, June 22, 2021). Similarly, a Joint Statement of Chairman Gladys
19 Brown Dutrieuille and Vice Chairman David Sweet was issued noting that its decision
20 was limited to the facts of the PECO Gas case.
21

1 **Q. GIVEN THOSE DECISIONS REGARDING COLUMBIA GAS AND PECO GAS,**
2 **WHY SHOULD THE COMMISSION CONSIDER THE ALLOCATION OF**
3 **UNIVERSAL SERVICE COSTS IN THIS PROCEEDING?**

4 A. In this proceeding, the OCA offers the evidence that the Commission found lacking in the
5 *Columbia Gas* and *PECO Gas* decisions. Given this additional evidence, the
6 Commission can turn back to its reasoning in its 2019 Final Order in the PUC’s generic
7 investigation into energy affordability in Pennsylvania (Docket M-2019-3012599).²³ In
8 that Final Order, the Commission explicitly acknowledged that, historically, it allocated
9 universal service costs exclusively to residential customers, but then stated that “our
10 review of Pennsylvania’s current universal service model in the *Review and Energy*
11 *Affordability* proceedings has provided reasons to reconsider this position. (Final Order,
12 at 92). The Commission observed that “[t]he current cost-recovery method for universal
13 services, including CAP costs, is putting a significant burden on residential customer
14 bills. . .” (Id.). The Commission’s decision to substantially reduce the definition of an
15 “affordable” burden will create even more universal service costs and increase that
16 “significant burden” even more. According to the Commission:

17 Given the significant past increase in EDC universal service spending – and
18 the anticipated increases in both EDC and NGDC universal spending through
19 2021 – the Commission is concerned that recovering CAP costs (as well as
20 other universal service costs) from only residential ratepayers will continue to
21 make electric and/or natural gas bills increasingly unaffordable for non-CAP
22 customers, especially those with incomes between 151-200% of the FPIG.
23

²³ http://www.puc.pa.gov/about_puc/consolidated_case_view.aspx?Docket=M-2019-3012599 (November 5, 2019)
(last accessed June 8, 2021).

1 (Id., at 95). I agree with these observations. There is a substantial population of
2 Duquesne customers who have difficulties in paying their utility bills without being
3 sufficiently “low-income” to qualify for CAP. The current CAP costs could prove to be a
4 problem for these customers, and those costs will increase in the future, both for the
5 reasons identified in the Commission’s Final Order (pages 94 – 95) and for the reason
6 that the Commission has reduced the percentage of income payments to be charged to
7 CAP customers.

8
9 As I will establish below, the Commission reached an appropriate conclusion when it
10 stated in its Final Order that “[t]he Commission agrees that poverty, poor housing stock,
11 and other factors that contribute to households struggling to afford utility service are not
12 just “residential class” problems. Further, helping low-income families maintain utility
13 service and remain in their homes is also a benefit to the economic climate of a
14 community.” (Id., at 96).

15
16 The Commission stated in its Final Order that “the Commission finds it appropriate to
17 consider recovery of the costs of CAP costs from all ratepayer classes. Utilities and
18 stakeholders are advised to be prepared to address CAP cost recovery in utility-specific
19 rate cases consistent with the understanding that the Commission will no longer routinely
20 exempt non-residential classes from universal service obligations. . .” (Id., at 99, notes
21 omitted).²⁴ The discussion below is consistent with this Commission guidance.

²⁴ The Commission observed that it was not making “a final precedential decision regarding cost recovery in this docket. We are merely providing that the recovery of CAP costs in particular can be fully explored in utility rate cases henceforth. “ (Id., at note 150), available at <https://dis.puc.state.oh.us/TiffToPDF/A1001001A20L16B43141G05297.pdf> (last accessed June 23, 2021).

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Q. WHAT IS DIFFERENT IN THIS PROCEEDING FROM THE COLUMBIA GAS AND PECO GAS PROCEEDINGS?

A. Responding to the evidentiary basis the Commission found lacking in *Columbia* and *PECO Gas*, OCA presents a substantively expanded evidentiary basis in this proceeding in support of the allocation of universal service costs over all customer classes. In addition to evidence demonstrating that such allocation is not “caused” exclusively by the residential class, and that Duquesne’s universal service programs actually benefit the businesses served by Duquesne, OCA witness Glenn Watkins presents a specific cost allocation. Mr. Watkins’ testimony demonstrates that the allocation of universal service costs will have a de minimis impact on non-residential classes. The allocation of universal service costs, as proposed in this proceeding, accordingly, will have no adverse impact on businesses served by Duquesne Light.

A. Multi-Class Allocation Will Not Harm Businesses.

Q. HAVE YOU CONSIDERED THE IMPACT OF UNIVERSAL SERVICE COST ALLOCATION ON BUSINESS?

A. Yes. My review examined the states of Maine, Maryland, New Hampshire, New Jersey, Ohio, Illinois, Colorado and Nevada. My review found that all eight states who have PIPP-based programs allocate the cost responsibility for their programs over all customer classes.

1 **Q. DOES YOUR RECOMMENDATION, AS SET FORTH IN THE DIRECT**
2 **TESTIMONY OF OCA WITNESS GLENN WATKINS, ADDRESS THE**
3 **COMPETITIVENESS OF PENNSYLVANIA BUSINESSES IN PARTICULAR IN**
4 **ANY OTHER FASHION?**

5 A. Yes. The specific universal service cost allocation set forth in the testimony of myself
6 and Mr. Watkins provides reduced cost responsibility as compared to the multi-class cost
7 allocation approved in other states. In the states which have universal service programs
8 designed most closely to Pennsylvania's, electric universal service costs are collected on
9 a uniform kWh basis amongst all customer classes. In Ohio, for example, in the most
10 recent Public Utilities Commission of Ohio order establishing the level of the PIP Rider
11 for each Ohio utility, each of the seven electric utilities have a uniform kWh charge over
12 all customer classes.²⁵

13
14 Similarly, the New Jersey Board of Public Utilities (BPU) allocates the costs of that
15 state's Universal Service Fund (USF) over all customer classes. Unlike Ohio, New
16 Jersey establishes a uniform rate (per kWh, per CCF) for the entire state. However, like

²⁵ In the Matter of the Application of the Ohio Development Services Agency for an Order Approving Adjustments to the Universal Service Fund Rider of Jurisdictional Ohio Electric Distribution Utilities, Docket No. 20-1103-EL-USF, entered December 16, 2020 (for each utility, a different rate is applied to usage exceeding 833,000 kWh per month). Available at <http://dis.puc.state.oh.us/CaseRecord.aspx?CaseNo=20-1103> (last accessed June 23, 2021).

1 Ohio, New Jersey also establishes a uniform rate irrespective of customer class.²⁶ In New
2 Jersey, this process has been in use for at least 17 years.²⁷

3
4 The OCA has protected the competitiveness of Pennsylvania business by proposing a cost
5 allocation method specific to Pennsylvania. Unlike the multi-class cost-allocations in
6 other states with universal service programs similar to Pennsylvania's, the OCA
7 methodology provide for a non-uniform cost amongst the customer classes, with
8 businesses paying lower rates than they would if a uniform charge were employed. The
9 difference in results resulting from OCA's proposal to use a lower rate is presented in
10 more detail in the testimony of Glenn Watkins.²⁸

11
12
13 **Q. IN ADDITION TO THE LACK OF INFORMATION SHOWING AN ADVERSE**
14 **IMPACT ON BUSINESS, IS THERE INFORMATION AFFIRMATIVELY**
15 **DEMONSTRATING THE LACK OF ANY ADVERSE IMPACT?**

16 A. Yes. The Table below shows the difference between the 2019 Quarter 4 and the 2020
17 Quarter 3 Gross Domestic Product by state for the nine states having universal service

²⁶ In the Matter of the 2020/2021 Annual Compliance Filings for the Universal Service Fund ("USF") Program Factor within the Societal Benefits Charge Rate, Docket EO20060392, Order Approving Interim USF Rates and Lifeline Rates, September 30, 2020. Available at <https://www.nj.gov/bpu/pdf/boardorders/2020/20200923/2O%20-%20ORDER%20USF%20Lifeline%20Rate.pdf> (last accessed June 23, 2021).

²⁷ Id.

²⁸ See OCA St. 3 at Sch. GAW-7.

1 programs such as the Pennsylvania CAP.²⁹ In this Table, only Pennsylvania allocates
 2 universal service costs exclusively to the residential class. As can be seen in this Table,
 3 whatever drives economic performance in a state, it is not the allocation of utility
 4 universal service costs amongst customer classes. Even during the COVID-19 pandemic,
 5 Pennsylvania had the second largest decline in Gross Domestic Product from the Fourth
 6 Quarter of 2019 through the Third Quarter of 2020. Ohio and New Jersey, which have
 7 universal service programs most like Pennsylvania, and which each allocate the costs of
 8 those programs over all customer classes, both had better economic performance than did
 9 Pennsylvania (which did not allocate universal costs to other than residential customers).

Nevada	-4.3%
Pennsylvania	-4.2%
Maine	-4.2%
New Jersey	-3.9%
Ohio	-3.5%
New Hampshire	-3.4%
Illinois	-3.0%
Maryland	-2.6%
Colorado	-2.0%

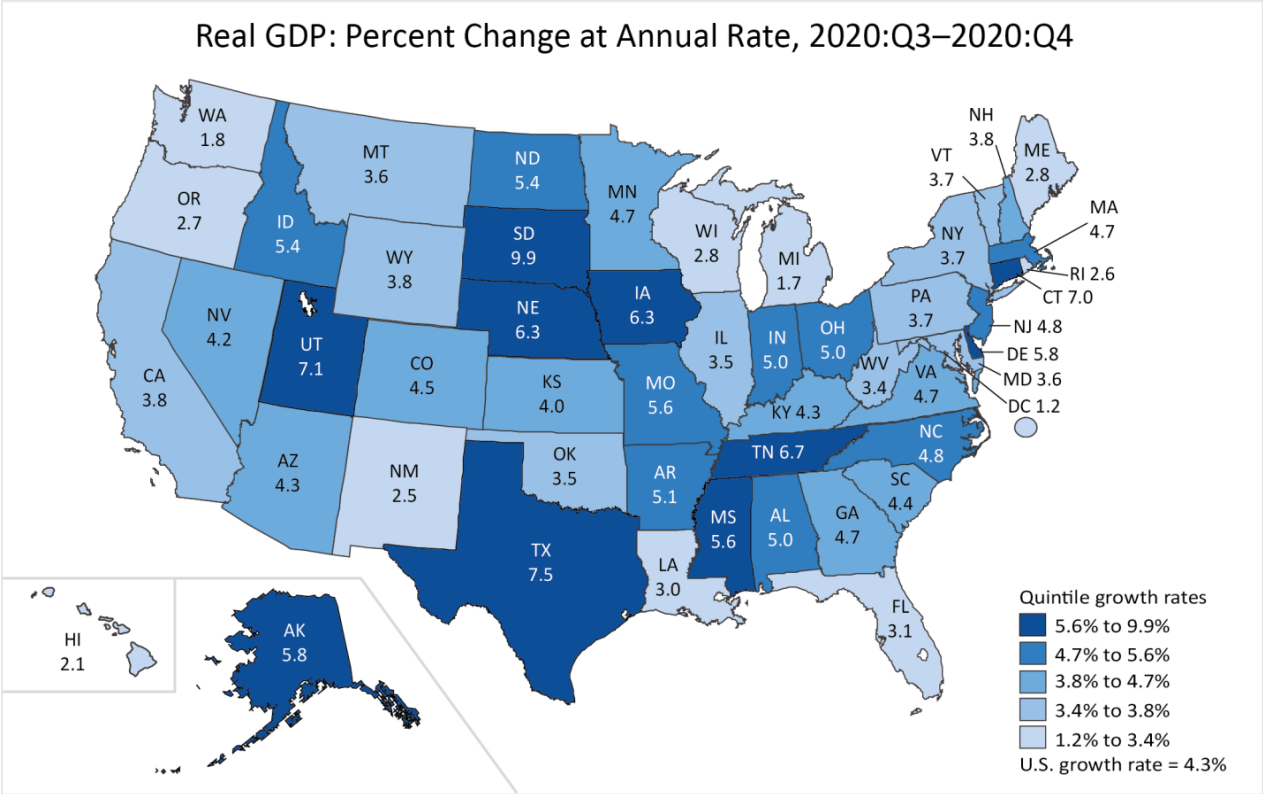
10
 11 As can be seen in the Table above, the allocation of universal service costs is not a factor
 12 that affects economic performance in a state. States that allocate universal service costs

²⁹ Ettinger and Henssley (January 13, 2021). COVID-19 Economic Crisis by State, Table A3, available at https://public.tableau.com/views/GreatRecessionandCOVIDRecessionGDPChange/Dashboard1?:language=en&:display_count=y&:origin=viz_share_link&:showVizHome=no (last accessed June 9, 2021).

1 over all customer classes have businesses that perform better than the Pennsylvania, the
2 only state that does not make that multi-class allocation.

3
4 **Q. IS THERE ADDITIONAL DATA BEYOND THE IMPACTS YOU CONSIDER**
5 **ABOVE?**

6 A. Yes. The U.S. Bureau of Economic Analysis tracks the GDP by states on a quarterly
7 basis (reporting annual data each quarter). The Figure below presents the GDP change
8 from the Third Quarter of 2020 to the Fourth Quarter of 2020.



9 U.S. Bureau of Economic Analysis

10 Again, it is possible to compare the states which allocate universal service costs to all
11 customer classes to Pennsylvania. The two most comparable programs, Ohio and New
12 Jersey, both have better economic performance than does the Pennsylvania. Colorado,
13 New Hampshire, and Nevada, which allocate universal service costs over all customer

1 classes, also have better economic performance than does Pennsylvania. Maryland and
2 Illinois have economic performance nearly identical to Pennsylvania. The decision of
3 state utility regulators to share costs amongst all customer classes is not the factor that
4 drives economic performance.

5
6 **Q. WHY IS IT LIKELY THAT ALLOCATING UNIVERSAL SERVICE COSTS**
7 **OVER ALL CUSTOMER CLASSES IS GOOD FOR THE ECONOMY?**

8 A. The fact that states which allocate universal service costs over all customer classes also
9 have strong economies is not surprising. A percentage of income program (such as those
10 that exist in states such as New Hampshire, New Jersey, Ohio, Colorado and Nevada, all
11 of which have strong economies) is a program that supports employment. In this fashion,
12 the program is like the Federal Supplemental Nutrition Assistance Program (SNAP)
13 (previously known as Food Stamps). With Food Stamps, as the Center on Budget and
14 Policy Priorities (CBPP) notes, “SNAP benefits are. . .designed to support work. The
15 SNAP benefit formula targets benefits based on a household’s income and expenses,
16 phases out benefits slowly as earnings rise, and includes a 20 percent deduction for
17 earned income to reflect the cost of work-related expenses and encourage work.”³⁰

18
19 Similar conclusions could be reached regarding CAP. As households improve their
20 working situation, and increase wages, their CAP benefits phase out. Given that CAP

³⁰ Jennings and Palacios (2017). SNAP Helps Millions of Low-Wage Workers, Crucial Financial Support Assists Workers in Jobs with Low Wages, Volatile Income, and Few Benefits, Center on Budget an Policy Priorities: Washington D.C., available at <https://www.cbpp.org/research/food-assistance/snap-helps-millions-of-low-wage-workers> (last accessed June 8, 2021).

1 benefits are based on a percentage of income, a participant with a \$20,000 income would
2 receive fewer benefits than a participant with a \$10,000 income (all other things equal).

3
4 **Q. WHAT DO YOU CONCLUDE?**

5 A. The allocation of universal service costs over all customer classes, including small
6 business and industry, is not merely common throughout the United States, it is the norm
7 throughout the country. In those states which allocate universal service costs over all
8 customer classes, no harm has arisen to business. The available data not only fails to
9 support the conclusion that harms to business will arise, the available data specifically
10 demonstrates the contrary conclusion. Finally, the cost allocation proposal advanced by
11 OCA in this proceeding incorporates design elements specific to Pennsylvania to mitigate
12 any competitive impacts on Pennsylvania businesses.

13
14 **B. The Commission-Identified Factors.**

15 **Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

16 A. In its 2019 Final Order quoted above, the Pennsylvania PUC identified several factors
17 that “contribute to households struggling to afford utility service” and indicated that such
18 factors “are not just residential class problems.” Amongst those factors which the PUC
19 identified were “poverty, poor housing stock, and other factors.” Having addressed the
20 impact on business above, in this section of my testimony, I address those specifically-
21 identified factors more generally.

1 **Q. HOW DO YOU RESPOND TO THE FACTORS SPECIFICALLY DISCUSSED IN**
2 **THE PUC REVISED CAP POLICY STATEMENT REGARDING THE**
3 **ALLOCATION OF UNIVERSAL SERVICE COSTS?**

4 A. For all the reasons set forth below, I agree that the PUC was correct when it found in its
5 2019 final Order quoted above that:

- 6 ➤ poverty is “not just [a] residential class problem.”
7
- 8 ➤ several factors “contribute to households struggling to afford utility service” and that,
9 amongst those factors are “poverty, poor housing stock, and other factors.”
10
- 11 ➤ Poverty is a broad-based social problem not associated with any particular customer
12 class, including specifically not being associated with the residential class
13 exclusively.
14
- 15 ➤ “helping low-income families maintain utility service and remain in their homes is
16 also a benefit to the economic climate of a community.”
17
- 18 ➤ “clearly, there is a persuasive argument to be made that home heating and energy
19 assistance for low-income households serves a public good whose responsibility is
20 not merely other residential ratepayers.”
21
- 22 ➤ “while there are strong arguments to be made that non-residential classes do benefit
23 from universal services, there are also strong arguments to be made in favor of multi-
24 class allocation even if one discounts any non-residential benefits.”
25
- 26 ➤ “in approving PGW’s practice of recovering such costs across all ratepayer classes,
27 we noted that ‘all firm customers, including commercial and industrial customers,
28 benefit indirectly from PGW’s extensive low-income assistance programs.’” (internal
29 note omitted).
30

31 My testimony below provides a factual basis for reaching the same conclusions in this
32 proceeding that have been previously reached by the Commission.
33

1 **Q. PLEASE RESPOND TO THE PUC’S FINDING THAT THE ALLOCATION OF**
2 **UNIVERSAL SERVICE COSTS WILL AFFECT THE POPULATION OF**
3 **CUSTOMERS WHOSE INCOMES ARE ABOVE CAP ELIGIBILITY BUT**
4 **BELOW THAT LEVEL TO SUSTAIN A HOUSEHOLD.**

5 A. Yes. In its 2019 Final Order, the Commission discussed the impact of allocating
6 universal service costs exclusively to the residential class on customers with income from
7 150% to 200% of Poverty. According to the Commission:

8 Given the significant past increase in EDC universal service spending – and
9 the anticipated increases in both EDC and NGDC universal spending through
10 2021 – the Commission is concerned that recovering CAP costs (as well as
11 other universal service costs) from only residential ratepayers will continue to
12 make electric and/or natural gas bills increasingly unaffordable for non-CAP
13 customers, *especially those with incomes between 151-200% of the FPIG.*
14

15 (Final Order, at 95). (emphasis added). Given this expressed concern by the PUC, I
16 examine the impacts on this specific population. In my discussion below, I examine
17 customers who have income above the maximum income-eligibility established by the
18 PUC for CAP (150% of Poverty), but whose income is sufficiently low that they can
19 reasonably be expected to face difficulties paying their utility bills. I define this
20 population of customers with income above the maximum CAP eligibility but below an
21 income level sufficient to sustain payments to include households who have income
22 higher than 150% of Poverty, but lower than 200% of Poverty. In total, 7.6% of
23 Duquesne’s customers are estimated to live with income of greater than 150% of Poverty,
24 but less than 200%.

25
26 **Q. IN THERE A SECOND POPULATION TO BE CONCERNED ABOUT?**

1 A. Yes. For purposes of the PUC’s consideration of whether to allocate universal service
2 costs over all customer classes, it is also important to remember that nearly 70,000
3 customers with income at or below 150% of Poverty (n=68,921) (103,720 estimated low-
4 income –34,799 CAP participants) do not participate in CAP notwithstanding their low-
5 income status.

6
7 In addition, 41,298 more customers live with incomes that are above the income-
8 eligibility maximum of 150% of Poverty, but less than 200% of Poverty (542,703 total
9 customers x 7.6% with income between 150% and 200% of Poverty). Allocating
10 universal service costs over all customer classes would help improve the affordability of
11 CPA bills to these more than 110,000 residential customers (68,921 + 41,298 = 110,219)
12 who are reasonably viewed as income-challenged but not participating in, or not eligible
13 for, Duquesne’s universal service programs.

14

15 **C. Poverty is Not Just a Residential Class Problem.**

16 **Q. PLEASE ADDRESS THE STATEMENT BY THE PUC THAT POVERTY IS**
17 **“NOT JUST [A] RESIDENTIAL CLASS PROBLEM.”**

18 A. I agree with the PUC’s observation that poverty is “not just [a] residential class problem.”
19 In reaching this conclusion, I examine broad economic factors throughout the Duquesne
20 service territory, not exclusively associated with the residential class, which contribute to
21 the inability-to-pay of Duquesne low-income customers.

22

1 **Q. DO LOW WAGES AFFECT THE PARTICIPATION OF CUSTOMERS IN THE**
2 **UNIVERSAL SERVICE PROGRAMS OF DUQUESNE?**

3 A. Yes. According to Duquesne, wage-earners represent a substantial proportion of CAP
4 participants at all poverty levels. The Table immediately below sets forth Duquesne's
5 data. (OCA-II-43). Nearly one-in-five CAP participants for the years 2018 through 2020
6 received wage or salary income. The percentage declined substantially in 2021 (though
7 2021 is reporting only partial year data.

	2018	2019	2020	2021
0 – 50% FPL	7,327	7,233	6,903	7,282
Wage-Salary	1,032	988	956	506
No Wage-Salary	1,462	1,354	1,277	812
Public Assistance	692	705	376	131
Other	4,141	4,186	4,294	5,833
50 – 100% FPL	17,769	17,779	16,477	17,017
Wage-Salary	2,828	2,769	2,544	1,057
No Wage-Salary	426	374	161	56
Public Assistance	42	42	23	3
Other	14,473	14,594	13,749	15,901
100 – 150% FPL	11,021	10,878	10,281	10,533
Wage-Salary	2,628	2,572	2,223	754
No Wage-Salary	97	111	64	29
Public Assistance	7	7	2	0
Other	8,289	8,188	7,992	9,750
Total	36,117	35,890	33,661	34,832
Wage-Salary	6,488	6,329	5,723	2,317
No Wage-Salary	1,985	1,839	1,502	897
Public Assistance	741	754	401	134
Other	26,903	26,968	26,035	31,484

1

2

This data represents somewhat of a decline from the most recent evaluation of

3

Duquesne’s universal service program. That Evaluation reports that 38% of the

4

respondents surveyed reported employment income. (OCA-II-17, at 37). The difference,

5

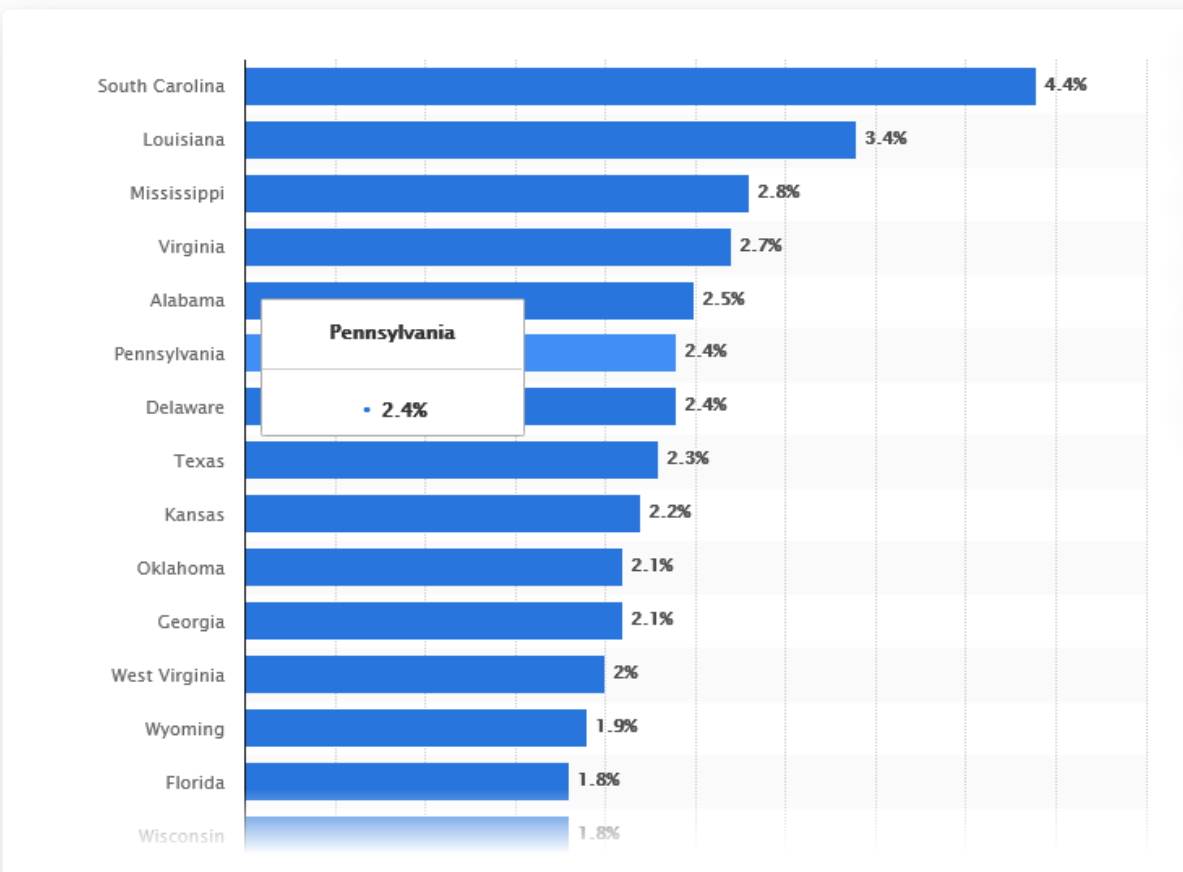
however, may be that the Evaluation reported the percentage of CAP participants with

1 any employment income, while the discovery reports CAP participants with wage-salary
2 income.

3
4 **Q. DO YOU HAVE AN OVER-ARCHING REASON TO CONCLUDE THAT IT IS**
5 **NOT THE RESIDENTIAL CLASS THAT IS THE EXCLUSIVE “CAUSE” OF**
6 **THE NEED TO INCUR UNIVERSAL SERVICE COSTS?**

7 A. Yes. The need for utilities to incur universal service costs is largely caused by the receipt
8 of low wages in Pennsylvania. The Figure below shows that Pennsylvania had the sixth
9 (6th) largest rate of employees receiving wages at or below the minimum wage in the
10 nation in 2020 (published February 2021).³¹ As a result of these low wages, as described
11 above, these low wage workers experience adverse impacts such as inability-to-pay
12 utility bills, the stress accompanying the difficulties paying normal household expenses,
13 and the health impacts associated with that stress.

³¹Available at <https://www.statista.com/statistics/635009/us-minimum-wage-workers-by-state/> (last accessed June 11, 2021).



1

2 Figure 3. Share of Workers Paid Hourly Rates with Earnings at or Below the Minimum Wage in
 3 the United States, by State.

4

5 **Q. HAVE YOU HAD OCCASION TO EXAMINE THE VARIOUS UNDERLYING**
 6 **ECONOMIES WITHIN THE DUQUESNE SERVICE TERRITORY IN**
 7 **PARTICULAR?**

8 A. Yes. It is important to recognize that the employment and wage data I discuss below
 9 predates the COVID-19 health pandemic. I find that low wages are prevalent throughout
 10 the Duquesne service territory. Based on this local wage data,³² I find that the inability-
 11 to-pay issues addressed by the universal service programs of Duquesne are not “caused”

³² The reporting areas are defined by the U.S. Bureau of Labor Statistics (available at <https://www.bls.gov/oes/current/oesrcma.htm#P> (last accessed June 23, 2021)).

1 by the residential customer class. They are instead broader societal issues that can be
2 attributed to every customer class.

3
4 **Q. UPON WHAT DO YOU BASE YOUR CONCLUSION THAT THESE LOW**
5 **WAGES ARE PREVALENT THROUGHOUT THE DUQUESNE SERVICE**
6 **TERRITORY?**

7 A. The purpose of the discussion above is not to identify the particular communities as
8 having particular problems, but rather to identify these communities as illustrative of the
9 social issues underlying a universal service program. The Table below shows the data for
10 the Pittsburgh metropolitan area.³³ As is evident, low-wage jobs are prevalent throughout
11 the Pittsburgh metropolitan area.

	\$10.00 or less	>\$10.00 - \$11.00	>\$11.00 - \$12.00
Pittsburgh	6,780	55,480	18,840

12 The Table shows that thousands of workers in these areas served by Duquesne work for
13 wages that would place them well below annual income that would qualify them for
14 CAP.
15

16
17 **Q. WHY DID YOU SELECT \$12.00 AS THE TOP OF THE RANGE OF WORKER**
18 **WAGES THAT YOU EXAMINED?**

³³ According to the Bureau of Labor Statistics, this metropolitan area encompasses Philadelphia, Delaware, Bucks, Montgomery, and Chester Counties.

³⁴ Occupations and Wages, MSA, May 2020, available at <https://www.bls.gov/oes/tables.htm> (last accessed June 11, 2021).

1 A. The most recent non-COVID-19 affected data reported by the Bureau of Labor Statistics
 2 for employee wages is for May 2020. Accordingly, I took the 2020 Federal Poverty
 3 Guidelines and, for each household size (up to 3 persons), converted those guidelines into
 4 an hourly wage. I performed this conversion at 150% of Poverty, which is the
 5 Commission’s definition of low-income. The Table below sets out the results for
 6 households with one to three persons in the household. The Table shows that the Poverty
 7 Wage (at 150% of Poverty) is somewhat over \$12.00 per hour for a 2-person household.
 8 The Poverty wage is somewhat above \$15.00 per hour for a 3-person household. It is
 9 clear that my use of \$12.00 as the top code for my inquiry is a conservative measure of
 10 workers who are working at Poverty wages (defining a “Poverty wage” as the wage at
 11 150% of Poverty).

Table 20. 150% of Poverty Level as an Hourly Wage				
	100% FPL	150% FPL	No. Annual Hours	Hourly Wage
1	\$12,490	\$18,735	2080	\$9.01
2	\$16,910	\$25,365	2080	\$12.19
3	\$21,330	\$31,995	2080	\$15.38

12

13 **Q. WHAT DO YOU CONCLUDE BASED ON THIS DATA?**

14 A. I conclude that the Pennsylvania PUC was correct when it observed in its 2019 Final
 15 Order that Poverty is a broad-based social problem not associated with any particular
 16 customer class, including specifically not being associated with the residential class
 17 exclusively. I find that a substantial number of wage-earning customers participate in
 18 Duquesne’s universal service programs. I find further that one reason that these
 19 customers income-qualify for Duquesne’s universal service programs is because a

1 substantial number of people throughout the Duquesne service territory are working at
2 Poverty wages.

3
4 **Q. HAVE OTHER RESEARCHERS FOUND A CAUSAL RELATIONSHIP**
5 **BETWEEN THE NEED FOR ECONOMIC ASSISTANCE AND THE ACTIONS**
6 **OF LARGE AND SMALL BUSINESSES?**

7 A. Yes. Work by the Urban Institute, one of the nation’s primary research institutions,
8 reaches similar conclusions. According to the Urban Institute:

9 data show that most people applying for assistance are low-wage workers
10 who turn to assistance programs either when they are between jobs or to
11 supplement wages while working. Understanding the nature of low-wage
12 jobs, the reasons workers lose or leave work, and workers’ strategies for
13 getting by on low and fluctuating incomes is important for understanding
14 how these factors shape worker’s outcomes. . . The public debate around
15 public assistance programs often focuses on how to move people off
16 assistance programs and into work, but this ignores evidence that *most people*
17 *applying for assistance are workers who turn to such programs to*
18 *supplement income from wages.*³⁵

19
20 (emphasis added). Similarly, the Economic Policy Institute (EPI) reports that:

21 [G]iven rising costs of necessities such as child care, housing, and health
22 care, many families’ ability to achieve a modest but adequate standard of
23 living requires resources earned on the job *and* assistance from government
24 programs. (internal citation omitted).

25
26 However, *for many workers in certain sectors, wages are so low that even*
27 *those who work full time must rely heavily on government assistance to make*

³⁵ Coffey, Hahn and Park (2019). The Intersection of Low-Wage Work and Public Assistance, The Urban Institute: Washington D.C., available at https://www.urban.org/sites/default/files/publication/100628/the_intersection_of_low-wage_work_and_public_assistance.pdf (last accessed June 8, 2021)

1 *ends meet*. This suggests that *low pay by many employers*. . .is placing
2 unwarranted demands on public resources.³⁶

3
4 (emphasis added). As this research finds, the cause of the public expenditures –
5 Pennsylvania’s Universal Service Program in the case at hand—is not the individual
6 receiving the benefits. It is “caused,” at least in part, by the economic entities providing
7 the low wages which require a public subsidy.

8
9 Allocating the costs of such programs to all customer classes, as every other state other
10 than Pennsylvania does, helps reduce what, in effect, is a wage subsidy paid by
11 residential utility customers to these non-residential customers. It results in the
12 inescapable conclusion that Universal Service Costs are not “caused” by the residential
13 class any more than they are caused by the broader social and economic forces in play
14 yielding low wages that cannot sustain a household. Low-wages have long been found to
15 be not sustainable without the provision of the additional public resources provided to
16 support the employee receiving such low wages. In the circumstances now facing the
17 Pennsylvania PUC, the “public resources” that are required to survive are not only
18 government-funded social assistance programs, but are additionally ratepayer-funded
19 Universal Service Programs.

³⁶ Cooper (2016). Balancing paychecks and public assistance: How higher wages would strengthen what government can do, Economic Policy institute: Washington D.C. , available at <https://www.epi.org/publication/wages-and-transfers/> (last accessed June 8, 2021);

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D. How Universal Service Benefits Business.

Q. OUTSIDE OF THE LACK OF HARM TO BUSINESS, HAVE YOU HAD OCCASION TO CONSIDER HOW PROVIDING UNIVERSAL SERVICE BENEFITS BUSINESS?

A. Yes. Any increase in electricity costs from payment of universal service costs would be offset by increases in employee productivity. Poverty produces ill-prepared workers whose lives are easily disrupted by small catastrophes. If the car breaks down, if a child gets sick, it suddenly becomes impossible to be a reliable worker. Poverty also generates poor health among workers, making them less reliable still and raising the cost of employing them. Paying a small increase in costs to help generate these offsetting benefits is a reasonable investment for a business to make.

In addition to generating economic development impacts on their own accord, programs such as Pennsylvania’s CAP help contribute to the overall competitiveness of the Pennsylvania economy. This conclusion is not disputed by researchers that consider the impacts of assistance programs on private employers. One comprehensive study published in 2004 concluded:

Why the under-use of public benefits is a problem. When most people hear about the idea of marketing public benefits through employers, their initial reaction is “why would a company want to get involved with a social service program?”

In fact, employers have good reason to be concerned that large numbers of working people with low family incomes do not take advantage of the public benefits intended to help them and their families achieve economic

1 sufficiency--benefits that also help employers by contributing to the
2 economic stability of their workforces. These public benefits bolster the
3 ability of low-income workers to meet their basic needs, in effect providing a
4 wage supplement to employers.³⁷
5

6 Note that these conclusions are made by business stakeholders: the U.S. Chamber of
7 Commerce and the National Association of Manufacturers.
8

9 **Q. HAS THE CONCLUSION THAT ADDRESSING UNIVERSAL SERVICE**
10 **PROBLEMS BEEN REACHED THROUGH PENNSYLVANIA-SPECIFIC**
11 **RESEARCH?**

12 A. Yes. Addressing the problems of poverty is a critical element to restoring the
13 competitiveness of Pennsylvania businesses. In its report *Back to Prosperity: A*
14 *Competitive Agenda for Renewing Pennsylvania*,³⁸ the Brookings Institute Center on
15 Urban and Metropolitan Policy consistently noted the need to address the factors
16 contributing to the decline of communities, large and small, in the state. According to the
17 report, funded by the Heinz Endowment and the William Penn Foundation, neighborhood
18 decline “has become a contagious self-sustaining process in parts of older urban
19 Pennsylvania.” Such decline, the report found, triggers a slide in property values, brings
20 negative perceptions, and erodes public health and safety, all of which impede the

³⁷ Scott (2004). “Private Employers and Public Benefits,” Workforce Innovation Networks (WINS): Boston (MA) and Washington D.C. WINS is a collaboration of Jobs for the Future, the Center for Workforce Preparation of the U.S. Chamber of Commerce, and the Center for Workforce Success, The Manufacturing Institute of the National Association of Manufacturers. Available at: <https://www.jff.org/resources/private-employers-and-public-benefits/> (last accessed June 9, 2021).

³⁸ Available at: <https://www.brookings.edu/research/back-to-prosperity-a-competitive-agenda-for-renewing-pennsylvania/> (last accessed June 9, 2021).

1 competitiveness of the state’s business and industry. According to this analysis of the
2 competitiveness of Pennsylvania business, and how to “restore prosperity,” “the widening
3 social and economic gap between Pennsylvania’s older communities and their suburbs
4 has negative implications for the overall health of its regions.”

5
6 **Q. WILL PROGRAMS SUCH AS CAP HELP ADDRESS THESE PROBLEMS?**

7 A. Programs such as CAP, while not a complete solution standing by themselves, are one
8 *part* of the solution. In addition to addressing utility payment problems, home energy
9 affordability programs can help address trends toward housing abandonment, reductions
10 in educational attainment,³⁹ and adverse health outcomes for payment-troubled utility
11 customers.⁴⁰

12
13 **Q. HAVE YOU HAD OCCASION TO REVIEW RESEARCH ON THE**
14 **RELATIONSHIP BETWEEN INABILITY-TO-PAY AND THE MITIGATION OF**
15 **ANY INCREASE IN UTILITY COSTS TO BUSINESS THAT MIGHT ARISE AS**
16 **A RESULT OF THE ASSOCIATED UNIVERSAL SERVICE PROGRAMS?**

³⁹ Colton (1996). "The Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility And Childhood Education in Missouri," 2 Journal on Children and Poverty 23. Available at: <https://www.tandfonline.com/doi/abs/10.1080/10796129608414757> (last accessed June 9, 2021).

⁴⁰ See generally, Apprise, Inc. (2018). National Energy Assistance Survey: Final Report, National Energy Assistance Directors’ Association: Washington D.C. Available at: <http://www.appriseinc.org/resource-library/selected-reports/energy-survey-research-and-policy-analysis/> (last accessed June 9, 2021).

1 A. Yes. A 2014 study by the Consumer Financial Protection Bureau⁴¹ (CFPB) reports that
2 “even when the economy was booming, financial stress was sapping the productivity and
3 hurting the health of millions of American workers.”⁴² According to the CFPB:

4 Multiple surveys offer ample evidence of the impact of financial stress at
5 work. For example, in 2012, roughly one in five employees admitted they had
6 skipped work in the past year to deal with a financial problem. Among
7 workers now in their 30’s and 40’s – a critical cohort of the American
8 workforce - stress levels are even higher. Many Generation X workers (29%)
9 say their personal finances distract them at work, and a majority (53%) find it
10 stressful to deal with their personal finances. This is a particularly salient
11 finding given that Gen Xers – those born between 1964 and 1980 – are
12 beginning to enter their peak-earning years. If they are financially stressed
13 now, Gen Xers may have more difficulty than other generations finding
14 security in the future. Across workers of all generations, 24% admit their
15 personal finances have been a distraction at work. And, of those workers who
16 are concerned about their finances, 39% spend at least three hours each week
17 either thinking about or dealing with financial problems at work.⁴³

18
19 According to the CFPB:

20
21 It’s not just employees who want help managing financial stress at work.
22 Managers confront this stress every day. In a recent survey, 61% of human
23 resources professionals say financial stress is having some impact on

⁴¹ CFPB (August 2014). Financial wellness at work: A review of promising practices and policies.
<https://www.consumerfinance.gov/data-research/research-reports/financial-wellness-at-work/> (last accessed June 9, 2021).

⁴² Financial wellness at work, at 6, citing E. Thomas Garman et al., Financial Stress Among American Workers: Final report: 30 Million Workers in America –One in Four—Are Seriously Financially Distressed and Dissatisfied Causing Negative Impacts on Individuals, Families, and Employers, 17 2005).

⁴³ Id., citing MetLife, Inc., 10th Annual Study of Employee Benefits Trends: Seeing Opportunity in Shifting Tides 51 (2012), available at [http://www.winonaagency.com/img/~www.winonaagency.com/10th annual met life study of benefits trends.pdf](http://www.winonaagency.com/img/~www.winonaagency.com/10th%20annual%20met%20life%20study%20of%20benefits%20trends.pdf) (last accessed June 9, 2021). (“22% of employees admit that they have taken unexpected time off in the past 12 months to deal with a financial issue and/or spent more time than they think they should at work on personal financial issues . . .”). 15% of Gen Y respondents, 10% of Gen X respondents, 5% of Younger Boomer respondents, and 1% of Older Boomer respondents admitted to the same; PricewaterhouseCoopers, LLC, Employee Financial Wellness Survey 10,11 (2014), available at http://www.pwc.com/en_US/us/private-company-services/publications/assets/pwc-employee-financial-wellness-survey-2014-results.pdf (last accessed June 9, 2021).

1 employee work performance. Twenty-two percent say worries over personal
2 finances have a “large impact” on employee engagement.⁴⁴
3

4 **Q. HOW SUBSTANTIAL ARE THE EMPLOYER COSTS THAT UNIVERSAL**
5 **SERVICE PROGRAMS HELP THOSE EMPLOYERS TO AVOID?**

6 A. The costs to employers can be substantial, and engaging in activities to reduce these costs
7 can be helpful to employers. One white paper presented “an overview of the research
8 literature related to financial stress, how it can affect employee productivity, and real
9 world data regarding the estimated costs to businesses when financially stressed
10 employees are left to struggle on their own.”⁴⁵
11

12 Indeed, an increase in health care costs is one of the most cited costs imposed on
13 employers due to financial stress. As CFPB reported:

14 there is reason to consider whether financial stress may also raise employer
15 health care costs, specifically, the documented link between psychological
16 stress and physical health and well-being. . . researchers have attempted to
17 quantify the overall cost to employers from all forms of stress, and they have
18 found those costs are not trivial. . . researchers at Ohio State surveyed 9,200
19 people between 2005 and 2011 to learn more about their stress levels. The
20 findings of the Consumer Finance Monthly surveys indicate one in five
21 people report debt stress has had a high negative impact on their health.
22 Judging from the available survey evidence, a large share of the American
23 population reports they suffer from chronic financial stress, and they blame
24 that stress for hurting their health.
25

⁴⁴ Id., citing Society for Human Resource Management, SHRM Research Spotlight: Financial Education Initiatives in the Workplace 2 (2012), available at https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/Financial_Education_Flier_FINAL.pdf (last accessed June 9, 2021).

⁴⁵ Brown and Menard (June 2017). Improving Employees’ Financial Wellness: Why it Matters and What Employers Can Do About It.” https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3011461 (last accessed June 9, 2021).

1 A recent report in Health Affairs analyzed the health risks and medical
2 expenses of more than 92,000 employees over a three-year period. Those
3 reporting high stress were \$413 more costly per year on average than workers
4 who were not at risk from stress. By comparison, smoking – a common
5 health risk targeted by corporate wellness programs – was found to raise
6 health care costs by \$587 dollars on average. Since financial problems are an
7 important stress factor, it appears employers may be paying a high cost for
8 employee financial stress, but they do not recognize it because a large portion
9 of that expense shows up indirectly as a health care expense.⁴⁶

10
11 Moreover, financial stress adversely affects employers both through absenteeism and
12 presenteeism.⁴⁷ According to Menard:

13
14 Academic researchers have studied the costs of absenteeism, presenteeism,
15 and employee turnover specifically associated with employee financial stress,
16 and have estimated these costs based on real world data. Absenteeism from
17 work resulting from worrying about personal finances and employee turnover
18 in particular represents a problem that has been well documented in the
19 literature, and higher levels of financial stress are associated with higher
20 levels of absenteeism, particularly among blue-collar workers. A recent
21 survey of over 5,000 US workers by the company Willis Towers Watson
22 found that employees who are worried about their finances are absent on
23 average for 3.5 days annually.⁴⁸

⁴⁶ CFPB Financial Wellness at Work, *supra*, citing, Dunn & Mirzaie, Working Paper, Determinants of Consumer Debt Stress: Differences by Debt Type and Gender (2012), available at <http://www.chrr.org/content/surveys/cfm/doc/DSI-Working-Paper-07-19-12.pdf> (last accessed June 9, 2021); Goetzl, et al., Ten Modifiable Health Risk Factors Are Linked To More Than One-Fifth Of Employer-Employee Health Care Spending, 31 *Health Affairs* 2474 (2012).; Ron Z. Goetzl, et al., The relationship between modifiable health risks and health care expenditures, 40 *J. Occup. Environ. Med.* 843 (1998) (showing an analysis of the multi-employer HERO health risk and cost database). https://journals.lww.com/joem/Abstract/1998/10000/The_Relationship_Between_Modifiable_Health_Risks.3.aspx (last accessed June 9, 2021). <https://www.healthaffairs.org/doi/pdf/10.1377/hlthaff.2011.0819> (last accessed June 9, 2021); Health Poll, AP-AOL/ABT SRBI (2008), http://surveys.associatedpress.com/data/SRBI/AP-AOL%20Health%20Poll%20Topline%20040808_FINAL_debt%20stress.pdf (last accessed June 9, 2021).

⁴⁷ “Presenteeism” has long been recognized in both the industry and academic literature. See, e.g., Hemp (October 2004). Presenteeism: At Work but Out of It, *Harvard Business Review* <https://hbr.org/2004/10/presenteeism-at-work-but-out-of-it> (last accessed June 9, 2021).

⁴⁸ Menard, *supra*, at 6 (internal notes omitted).

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According to Menard, “financially troubled employees bring [their] concerns to work.”

Dr. Menard reports:

The previously mentioned Mercer survey found that 16% of employees reported spending more than 20 working hours each month worrying about money. The average across those surveyed was 13 hours per month. For an individual employee, that is equal to 7.8% of their annual work time spent being distracted as a result of their financial situation. Other estimates are even higher. Garman and colleagues peg financial presenteeism and absenteeism costs at 15-20% of total compensation paid to all employees in the businesses studied. . .The Mercer survey also found that 22 percent of employees report missing at least one day of work to handle financial problems, and a full 20 percent have had to resign from jobs due to financial stress.⁴⁹

The fact that employee financial problems affect the employer is recognized widely within industry circles.⁵⁰

Q. IN ADDITION TO REDUCING THE COSTS OF REDUCED PRODUCTIVITY ATTRIBUTABLE TO EMPLOYEE STRESS (“PRESENTEEISM”), DOES A REDUCTION IN EMPLOYEE STRESS THROUGH UNIVERSAL SERVICE PROGRAMS GENERATE OTHER FINANCIAL BENEFITS TO THE BUSINESS COMMUNITY SERVED BY THE COMPANY?

A. Yes. Affordable home energy can be analogized to child care because of the direct benefits that have has been found to arise for business. The Committee on Economic Development has quantified the beneficial impacts to business from reducing the causes

⁴⁹ Menard, supra, at 7 (internal notes omitted).

⁵⁰ Bonner (Nov./Dec. 2016). The Impact of Financial Stress on Your Employees, Plans and Trusts, Vol. 34:6: 18-24. <https://www.ifebp.org/inforequest/ifebp/0200354.pdf> (last accessed June 9, 2021).

1 of employee absenteeism and employee turnover associated with unaffordable child care.

2 According to CED:⁵¹

3 Many businesses also find that helping parents meet their child care needs
4 can potentially reduce absenteeism and employee turnover. The 1990
5 *National Child Care Survey* (NCCS) found that 15 percent of the mothers in
6 its sample who worked outside the home reported losing some time from
7 work (including arriving late, leaving early, or having to take a full day off)
8 during the previous month because of a failure in their regular child care
9 arrangement. Studies have found that employee turnover produces disruption
10 and inefficiency in the work environment and that the cost of replacing
11 employees is high. For example, Merck & Co., Inc. found that it costs. . .
12 about 75 percent of salary to replace a clerical or technical employee. It also
13 found that it may take considerable time to fill a vacant position and an
14 average of 12.5 months for a new employee to become adjusted to the job.⁵²

15
16 Other people have found comparable costs associated with turnover. For example, the
17 Society for Human Resource Management (SHRM), who I have previously referenced,
18 estimates the average replacement cost of a salaried employee to be six to nine months'
19 salary.⁵³ Factors that must be considered include the cost of hiring (advertising,
20 interviewing, screening, hiring); “on-boarding” (training, management time); lost
21 productivity; lost engagement (employees faced with high turnover disengage); customer

⁵¹ CED is a national business-academic partnership. One objective of CED is “to unite business judgment and experience with scholarship in analyzing the issues and develop recommendations to resolve the economic problems that constantly arise in a dynamic and democratic society.” Objectives of the Committee for Economic Development. The Research and Policy Committee of the CED is directed under the organization’s bylaws to “initiate studies into the principles of business policy and of public policy which will foster the full contribution by industry and commerce to the attainment and maintenance” of the objectives of the organization.

⁵² Research and Policy Committee (1993). *Why Child Care Matters: Preparing Young Children for a More Productive America*, A Statement by the Research and Policy Committee of the Committee for Economic Development, at 1, Committee for Economic Development: New York: NY. Available at: https://www.ced.org/pdf/Why_Child_Care_Matters_1993.pdf (last accessed June 9, 2021).

⁵³ USI Insurance (April 2019). *The Cost of Employee Turnover* (available at <https://mnwi.usi.com/Resources/Resource-Library/Resource-Library-Article/ArtMID/666/ArticleID/782/Cost-of-employee-turnover>, last accessed June 8, 2021).

1 service errors; and training (as much as 10 – 20% of an employee’s salary). This doesn’t
2 even include the indirect costs of needing to “cover” the time of the lost employee
3 pending a new hire. These high costs are not associated exclusively with higher cost
4 employees. It has been suggested that the replacement cost of an employee who is paid
5 \$8 an hour can range upwards of \$4,000.⁵⁴ There can be little question but that the
6 relatively minor investment in employee retention through the allocation of universal
7 service costs over all customer classes results in a quick, and generous, payback to
8 Pennsylvania businesses.

9
10 **Q. DOES THIS REASONING APPLY TO PENNSYLVANIA AND TO DUQUESNE**
11 **LIGHT?**

12 A. Yes. There is a direct relationship between the offer of a universal service program such
13 as CAP and economic benefits to local commercial and industrial customers. For
14 example:

- 15 ➤ Turnover costs business money. We know that unaffordable home energy bills lead to
16 the frequent mobility of households.⁵⁵
- 17
- 18 ➤ Time missed due to family care provision costs business money. We know that
19 unaffordable home energy leads to more frequent childhood illnesses.⁵⁶
- 20

⁵⁴ Paiement (2009). It will \$4,000 to replace just one \$8 per hour, full-time employee (available at https://charityvillage.com/it_will_cost_you_4_000_to_replace_just_one_8_per_hour_full_time_employee/, last accessed June 8, 2021).

⁵⁵ Colton. “A Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility, and Childhood Education in Missouri,” 2 Journal of Children and Poverty 23 (1996). Available at: <https://www.tandfonline.com/doi/abs/10.1080/10796129608414757> (last accessed June 9, 2021).

⁵⁶ Bhattacharya et al. (June 2002). Heat or Eat? Cold Weather Shocks and Nutrition in Poor American Families, National Bureau of Economic Research: Cambridge (MA). Available at: <https://ajph.aphapublications.org/doi/10.2105/AJPH.93.7.1149> (last accessed June 9, 2021).

1 ➤ Time missed due to lack of employee productivity and employee illness costs
2 business money. We know that the inability to stay warm due to unaffordable home
3 energy bills leads to increased illnesses, including pneumonia, influenza, and other
4 infectious diseases.⁵⁷
5

6 In sum, increasing employee productivity directly contributes to the increased
7 profitability of firms. With low-wage employees, in particular, unaffordable home energy
8 directly contributes to lowered productivity. Increased personal illness, increased
9 employee turnover, and increased family care responsibilities are but three of the factors
10 contributing to lower employee productivity. The provision of affordable energy through
11 universal service programs such as CAP positively affects each of these productivity
12 factors.

13
14 **Q. DO UNIVERSAL SERVICE COSTS BENEFIT LOCAL BUSINESSES IN**
15 **ANY OTHER FASHION?**

16 A. Yes. Offering affordable rates to low-income customers can be expected to have long-term
17 positive impacts for businesses who comprise the local economy. The provision of a strong
18 social safety-net so that individuals and households do not face the deprivation of basic
19 household necessities is a strong and growing factor in businesses making locational
20 decisions. These locational factors are particularly important for high technology firms,
21 which represent a particularly strong future growth potential for the economy. Research for
22 Ontario’s Ministry of Enterprise, Opportunity and Innovation, in collaboration with the
23 Institute for Competitiveness and Prosperity, reports that sound economic development

⁵⁷ Apprise, Inc. (December 2018). 2018 National Energy Assistance Survey: Final Report, National Energy Assistance Directors’ Association (NEADA): Washington D.C. Available at: <http://www.appriseinc.org/wp-content/uploads/2019/02/NEADA-2018-LIHEAP-Survey.pdf> (last accessed June 9, 2021).

1 policy includes ensuring that “the right social investments are made to ensure social
2 harmony.”⁵⁸

3
4 The observation here is being increasingly recognized as relevant to various services. “It
5 should be noted that businesses focus on quality of life considerations when making
6 location decisions because they are relevant for attracting a high quality workforce.”⁵⁹

7 Quality of life has been deemed particularly influential for companies involved in
8 research and development and high technology, and in enterprises employing highly
9 skilled workers in information or knowledge-based services and production. Evidence of
10 this observation is a study conducted by Love and Crompton in which they surveyed 174
11 decision makers of businesses that had initiated, expanded or relocated to Colorado. “In
12 the previous five years. . .quality of life was considered the second most important factor
13 for prompting the business move and not selecting a specific community, as well as the
14 third most important factor in the final selection of a specific community.”⁶⁰ The

⁵⁸ Gertler (2002). *Competing on Creativity: Placing Ontario’s Cities in North American Context*, report produced for the Ontario Ministry of Enterprise, Opportunity and Innovation and the Institute for Competitiveness and Prosperity (available at http://webarchive.urban.org/UploadedPDF/410889_Competing_on_Creativity.pdf, last accessed June 8, 2021). In this sense, affordable home energy can be viewed in the same way that health and education are viewed. “There are numerous empirical studies that demonstrate the links between education, health and competitiveness. In particular, both health and education are correlated with superior economic outcomes such as higher productivity, higher per capita incomes, and faster growth.” Burstein (2004). *Developing the Business Case for Multiculturalism*, at 8, Multiculturalism and Human Rights Branch, Department of Canadian Heritage (available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.132.7196&rep=rep1&type=pdf>, last accessed June 8, 2021). .

⁵⁹ Taylor, *et al.* (2006). *A Cost-Benefit Analysis of Universally-Accessible Pre-Kindergarten Education in Texas*, Bush School of Government and Public Service, Texas A&M University: College Station (TX) (available at <https://oaktrust.library.tamu.edu/handle/1969.1/97006>, last accessed June 8, 2021).

⁶⁰ *Id.* (citations omitted).

1 connection between assuring access to basic household necessities and maintaining the
2 competitiveness of the local economy has been recognized.⁶¹

4 E. Summary and Recommendation.

5 Q. WHAT DO YOU CONCLUDE?

6 A. Based on the data and discussion above, I find that programs such as the Pennsylvania
7 universal service programs, directed toward preserving basic home energy service and
8 relieving financial stress about a household's capacity to meet its fundamental household
9 needs on a month-to-month basis, address a societal-wide problem that is not limited to
10 the residential customer class. The problems that are related to unaffordable home
11 energy are not "caused" by the residential class. Nor does the Duquesne Light universal
12 service program deliver benefits that are limited to the residential class.

13
14 Accordingly, the costs of those programs should be allocated and spread over all of
15 Duquesne Light's customer classes. No reason exists for the residential class to be
16 charged with paying the entire cost of programs that have the effect of improving
17 business profitability by reducing business costs, including reducing absenteeism and
18 turnover, and increasing employee productivity.

19
⁶¹ Improving the Competitiveness and Standard of Living of Canadians: Common Position of Provincial and Territorial Finance Ministers (December 1999); *see also*, Human Resources and Skills Development Canada, Social and Economic Impact of Labor Standards (March 2008, available at <https://www.fin.gov.on.ca/en/publications/1999/99compe.html>, last accessed June 8, 2021; Pindus, *et al.* (2007). Place Matters: Employers, Low-Income Workers and Regional Economic Development, The Urban Institute: Washington D.C. ("racial inclusion and income equality can enhance regional economic growth") (citations omitted) (available at <https://www.urban.org/sites/default/files/publication/46666/411534-place-matters.pdf>), last accessed June 8, 2021).

1 **Q. WHAT DO YOU RECOMMEND?**

2 A. I recommend that universal service charges be allocated between customer classes on a
3 competitively neutral basis. The allocation of universal costs among customer classes
4 should be based on the percentage of revenue provided by each customer class at base
5 rates. The specific allocation based on test year data is presented in the Direct Testimony
6 of Glenn Watkins.

7

8 **Part 5. CAP Cost Recovery.**

9 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
10 **TESTIMONY.**

11 A. In this section of my testimony, I discuss the offset included in the Duquesne Light tariff
12 designed to prevent the duplicate recovery of bad debt expense through the Universal
13 Service Rider (Rider No. 5). Duquesne does not propose to modify its 10.43% offset. I
14 accept the continuation of that 10.43% as reasonable.

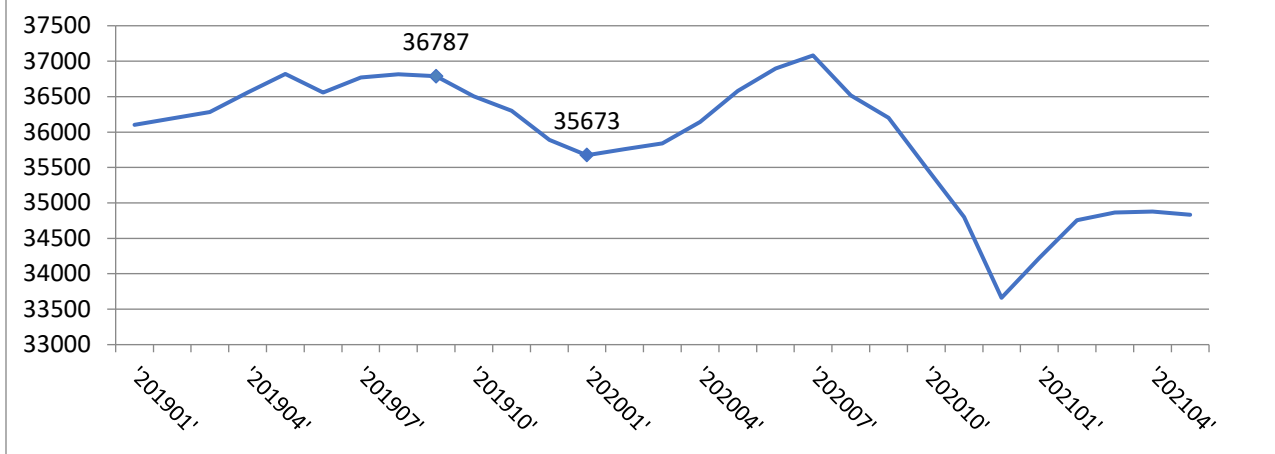
15

16 Duquesne does propose to modify the level of CAP participation at which the offset will
17 begin to be applied. Duquesne witness Scholl proposes to reduce the trigger level from
18 39,088 to 35,853. (DLC St. 7, at 7).

19

20 I agree that the CAP participation level which will trigger the application of the CAP
21 offset should be reduced from its current level of 39,088. The CAP participation level
22 identified by Duquesne when OCA requested that level is 34,799 customers. (OCA-II-5).
23 The Chart immediately below shows CAP participation by month since January 2019.

**Chart 3. Total Duquesne CAP Participation by Month
(January 2019 to May 2021)**



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As this Chart indicates, participation in Duquesne’s CAP was declining even before the start of the COVID-19 pandemic. From September 2019 (CAP participation = 36,787) to January of 2020 (CAP participation = 35,673), CAP participation declined by more than 1,000 customers.

Q. HAS DUQUESNE SUCCESSFULLY PROJECTED ITS CAP PARTICIPATION IN THE PAST?

A. No. When Duquesne Light was asked to provide a side-by-side comparison between its projected CAP participation and its actual CAP participation by month for the period January 2019 to present, the Company’s response demonstrated that Duquesne routinely over-projects its CAP participation. The Table below provides the comparison. Only in June and July of 2020, at the height of the COVID-19 pandemic when the Company was not removing CAP participants for failing to recertify, did actual CAP participation exceed projected levels. In the last seven months, however, actual CAP participation has been from 735 to more than 2,500 fewer customers than Duquesne had projected. A

1 positive number in the column labelled “difference” means that Duquesne forecast a
2 greater participation than it actually experienced.

	Forecast Participation	Actual Participation	Difference
'202010'	36,445	35,404	1,041
'202011'	36,330	34,695	1,635
'202012'	36,150	33,592	2,558
'202101'	35,000	34,138	862
'202102'	35,400	34,665	735
'202103'	35,800	34,757	1,043
'202104'	36,000	34,772	1,228
'202105'	36,200	34,705	1,495

3
4 For purposes here, as well, the number Duquesne Light proposes to use as the trigger for
5 application of the CAP offset trigger is more than 1,000 participants higher than its actual
6 CAP participation in May 2021. In order to reach that figure of 35,853 CAP participants,
7 Duquesne would need to retain all of its current CAP participants, and, in addition, enroll
8 1,148 *new* CAP participants. In contrast, in the most recent seven months (November
9 2020 through May 2021), Duquesne has had a net gain in CAP participation of ten (10)
10 customers (34,695 in November 2020 to 34,705 in May 2021). In each of its most recent
11 two months, CAP participation has declined (from 34,757 in March 2021 to 34,772 in
12 April 2021 to 34,705 in May 2021).

13

14 **Q. WHAT DO YOU RECOMMEND?**

1 A. I recommend the offset trigger be set at 35,000. This figure is based on average CAP
2 participation for the past twelve months (excluding the COVID-19 months in which exits
3 were not occurring due to a failure to recertify). This number assumes that the decline in
4 CAP participation experienced by Duquesne in the past several months will not continue.
5 However, this figure also takes into account Duquesne’s historic inaccuracy in
6 forecasting future CAP participation levels. It does not accept as reasonable a Company
7 forecast that CAP participation will increase by more than 1,100 participants in the next
8 seven months when CAP participation has increased by only 10 participants in the past
9 seven months.⁶²

10
11 **Part 6. Payment of Residential Deposits.**

12 **Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR**
13 **TESTIMONY.**

14 A. In this section of my testimony, I review a change to customer deposit payment
15 procedures as proposed by Duquesne. At page 2A of its Filed Tariff, Duquesne states
16 that, in Rule 5 of its Tariff, “Language has been modified to reflect that residential
17 customers/applicants are permitted to pay their deposit in four (4) twenty-five percent
18 (25%) installments.” However, when I look at Rule 5 of the Filed Tariff, the proposed
19 Tariff states in relevant part: “When the Company determines a deposit is required for
20 new service or for reconnection of service as described in Rule No. 40, such deposit shall
21 be payable within a reasonable time period after commencing or reconnecting electric

⁶² This reference to an increase in participation, of course, is a reference to a *net* increase. The net increase is the number of CAP participants newly enrolling in the program minus the number of CAP participants who are exiting the program.

1 service.” (Rule 5, First Revised Page No. 11). The change that is included in the notice
2 of changes at the beginning of the Filed Tariff, in other words, is not reflected in the
3 actual language of the Tariff.

4
5 **Q. WHAT DO YOU RECOMMEND?**

6 A. I recommend that Duquesne modify its Filed Tariff to reflect the change that it provides
7 in the description of tariff changes. I recommend that the relevant language of Rule 5 be
8 modified to state: “When the Company determines a deposit is required for new service
9 or for reconnection of service as described in Rule No. 40, such deposit shall be payable
10 within a reasonable time period after commencing or reconnecting electric service, *not to*
11 *be fewer than four (4) twenty-five percent (25%) installments with the first installment*
12 *billed no less than 30 days after the reconnection of service in the event of a*
13 *reconnection.*”

14
15 **Part 7. Customer Satisfaction / Customer Service.**

16 **Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

17 A. In this part of my testimony, I examine the Company’s performance regarding certain
18 aspects of customer service and customer satisfaction. The elements of customer service
19 on which I focus involve credit and collection (including the identification of Confirmed
20 Low-Income customers). The data I examine is data published by the PUC’s Bureau of
21 Consumer Services annual report on Universal Service Programs and Collections
22 Performance (previously cited in this Direct Testimony, hereafter BCS Report). The data

1 on customer satisfaction I review here is in response to the Direct Testimony of Company
2 witness Neiswonger (DLC St. 9, at 3 – 8) regarding customer satisfaction.

3
4 **A. Customer Service.**

5 **Q. HOW WELL DOES DUQUESNE IDENTIFY ITS CONFIRMED LOW-INCOME**
6 **CUSTOMERS?**

7 A. Duquesne Light identifies the lowest percentage of Confirmed Low-Income customers
8 amongst Pennsylvania’s electric utilities. According to BCS data (BCS Report, at 5),
9 Duquesne has identified only 9.0% of its total residential customer base as Confirmed
10 Low-Income (CLI). The fact that Duquesne has a lower percentage of estimated low-
11 income customers than other electric utilities (BCS report, at 6) is not the reason for this
12 low identification of CLI customers. Duquesne has the second lowest ratio of CLI
13 customers to estimated low-income customers amongst all electric utilities.⁶³

14
15 Confirming the low-income status of its customers is an important task for Duquesne
16 Light to perform. Innumerable programs and protections are provided for by PUC
17 regulations to low-income customers. Customers can only take advantage of these
18 programs and protections if Duquesne has confirmed their low-income status.

19

⁶³ The 2019 annual BCS report on universal service programs reports that, in 2019, Duquesne has 48,373 Confirmed Low-Income customers (BCS Report, at 6). In that same year, Duquesne had 103,720 estimated low-income customers. (Id.)

Table 22. Confirmed and Estimated Low-Income Customers: PA Electric (2019)
(BCS Annual Report, at 5, 6)

	Pct CLI of Total Residential	Percent Estimated LI of Total Residential	Percent CLI of Estimated LI
Duquesne	9.0%	19.3%	46.6%
Met-Ed	14.6%	23.1%	63.2%
PECO-Electric	9.4%	26.4%	35.6%
Penelec	18.2%	31.0%	58.7%
Penn Power	13.8%	24.6%	56.1%
PPL	15.4%	21.8%	70.6%
West Penn	11.8%	25.1%	47.0%
State Average	12.6%	24.4%	51.6%

1

2 Not only does Duquesne confirm a lower percentage of its low-income customers, but the
 3 numbers of customers it has confirmed the low-income status of has declined in recent
 4 years. According to BCS, the number of Duquesne Confirmed Low-Income customers
 5 increased from 48,500 in 2017 to 49,346 in 2018, before declining to 48,373 in 2019. I
 6 discussed Duquesne’s identification of Confirmed Low-Income customers, its under-
 7 enrollment of CAP customers, and its under-enrollment of CAP customers with income
 8 at or below 50% of Poverty, earlier in my testimony.

9

10 **Q. DOES DUQUESNE UNDER-SERVE ITS LOW-INCOME CUSTOMER BASE IN**
 11 **ANY OTHER FASHION?**

12 A. Duquesne Light appears to under-serve its low-income population with the offer of
 13 Payment Arrangements. Duquesne has the third highest percentage of Confirmed Low-
 14 Income customers in debt that are not on Payment Arrangements (52.3%). Only PECO-

1 Electric (61.7%) and PPL (66.7%) have a higher percentage of Confirmed Low-Income
2 customers in debt that are not on a Payment Arrangement.

3

	CLI in Debt on Arrangement	CLI in Debt Not on Arrangement	Pct of Total CLI in Debt Not on Arrangement
Duquesne	5.1%	5.6%	52.3%
Met-Ed	17.9%	13.1%	42.3%
PECO-Electric	2.3%	3.7%	61.7%
Penelec	17.3%	13.8%	44.4%
Penn Power	17.7%	14.0%	44.2%
PPL	11.2%	22.4%	66.7%
West Penn	19.3%	15.2%	44.1%

4

5 **Q. HAVE YOU HAD OCCASION TO EXAMINE THE COMPANY'S**
6 **COLLECTIONS PERFORMANCE FOR RESIDENTIAL CUSTOMERS AS A**
7 **WHOLE?**

8 A. Yes. Duquesne Light not only terminates service to a large and growing population of
9 residential customers, it has one of the highest termination rates in the state. According
10 to BCS, from 2017 to 2019, Duquesne increased its number of service terminations from
11 21,575 in 2017, to 26,119 in 2018, to 27,688 in 2019. (BCS Report, at 11).

12

13 BCS comments in its annual report: "Termination of public utility service is the most
14 serious consequence of nonpayment and is viewed as a last resort when customers fail to
15 meet their payment obligations. . . Any significant increase in a termination rate could
16 indicate a trend or pattern that the Commission may need to investigate." (BCS Report, at

1 11). The number of Duquesne terminations increased by 28.3% in that three year period,
2 the second highest increase in the state (below only West Penn). (BCS Report, at 11).

3
4 Not only did the number of Duquesne residential terminations increase in the three years
5 from 2017 to 2019, but the Duquesne termination rate steadily increased as well. The
6 Duquesne termination rate increased from 4.1% (2017) to 4.9% (2018) to 5.1% (2019).
7 No other electric utility in Pennsylvania had an increase in their termination rate of one
8 percent or more. (BCS Report, at 13).

9
10 This high termination rate occurs for Duquesne even though the Company does not
11 experience a high percentage of residential dollars in arrears. In 2019, only PECO-
12 Electric had a substantially higher termination rate than did Duquesne (PECO-Electric:
13 6.2%; Duquesne: 5.1%), with Met-Ed being virtually identical to Duquesne (5.2%).
14 (BCS Report, at 34). In contrast, Duquesne had one of the lowest percentage of
15 residential dollars in arrears in the state (2.9%). Only PECO-Electric (1.5%) had a lower
16 percent of billings in debt in 2019. The state average of percentage of billings in arrears
17 for electric utilities was 3.1%.

18
19 Moreover, Duquesne had one of highest termination rates in the state despite having the
20 second lowest percentage of residential customers in arrears. In 2019, despite Duquesne
21 having one of the highest termination rates, only PECO-Electric had a lower percentage
22 of residential electric customers in debt (PECO-Electric: 6.9%; Duquesne: 7.8%). (BCS
23 Report, at 21).

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Q. HAVE YOU HAD OCCASION TO EXAMINE DUQUESNE’S PERFORMANCE IN THE PUC’S “COLD WEATHER SURVEY”?

A. Yes. Separate from the BCS annual report on Universal Service Programs and Collections Performance, which I have been discussing above, is the Commission’s Cold Weather Survey.⁶⁴ Because the Commission notes that: “2020 data impacted by the Emergency Termination Moratorium Order at Docket M-2020-3019244,” I examine data from the 2019 survey. Consistent with other Pennsylvania electric utilities, the 2019 Cold Weather Survey reports that Duquesne reduced both the “total households without service after completion of the survey”⁶⁵ and total households without a central heating source due to termination of utility service.⁶⁶

However, consistent with the BCS data on the increase in service terminations, Duquesne Light was one of only two utilities (West Penn being the other) that experienced an increase in the total number of vacant residences after a service disconnection from the 2014-2017 three-year average (reported by the Commission) and 2019. Duquesne and West Penn, as reported above, were the two utilities who had the largest percentage increase in their respective terminations rates.

⁶⁴ Available at <https://www.puc.pa.gov/filing-resources/reports/gas-and-electric-cold-weather-survey-results/> (last accessed June 17, 2021).

⁶⁵ Excludes housings using potentially unsafe heating sources, other central heating sources, and vacant.

⁶⁶ Includes households using potentially unsafe heating sources, and exclude other central heating sources and vacant residences.

1 **Q. WHAT DO YOU CONCLUDE?**

2 A. Based on the data presented above, I conclude that Duquesne’s performance on collection
3 metrics is not exemplary as compared to other Pennsylvania electric utilities. It
4 consistently shows performance, and performance trends, that are not amongst the best,
5 or even in the middle-of-the-pack, amongst the state’s electric utilities.

6

7 **B. Customer Service and Customer Satisfaction.**

8 **Q. PLEASE DESCRIBE WHAT YOU FIRST EXAMINE IN YOUR DISCUSSION OF**
9 **CUSTOMER SERVICE AND CUSTOMER SATISFACTION.**

10 A. My first area of inquiry in this discussion of customer service and customer satisfaction
11 involves an examination of the Company’s performance on customer complaints and
12 compliance with Commission regulations. I base the discussion below on a review of the
13 2019 UCARE Report published by BCS.⁶⁷ I do not examine 2020 because the COVID-
14 19 pandemic would make the data from that year unrepresentative. Consider, for
15 example, that in 2019, electric utilities had 29,120 NFIs (Needs Further Investigation) for
16 residential payment arrangements, while in 2020, they had 2,584. (2020 UCARE, at 5).
17 In 2019, the Commission received 5,883 residential customer complaints, while in 2020,
18 it received only 3,024.⁶⁸

19

⁶⁷ Available at <https://www.puc.pa.gov/filing-resources/reports/consumer-activities-report-evaluation/> (last accessed June 17, 2021).

⁶⁸ The Commission footnotes this term in its UCARE report, stating that “Consumer complaints and [Payment Arrangements] PARs are classified as NFIs (Need Further Investigation) because they are cases that require further investigation.” (2020 UCARE, at 4, 5, 6, 7).

1 Even then, the 2020 UCARE statistics cited by Duquesne witness Jennifer Neiswonger
2 (DLC St. 9, at 5) were not quite complete. In 2020, while COVID-19 resulted in a
3 decrease in customer complaints across the electric industry, the Duquesne’s decrease
4 was lower than every other electric utility. While complaints across the electric industry
5 were down 49% on average, Duquesne’s decrease was down only 39%. (UCARE, at 5).
6 Of those complaints received, Duquesne had the highest rate of “justified” complaints.
7 While the statewide electric average justified rate was 5%, Duquesne’s justified
8 complaint rate was 7%. (UCARE, at 6). BCS notes that a “justified complaint” is one
9 “where, prior to BCS intervention, the company did not comply with Commission
10 Orders, policies, regulations, reports, Secretarial Letters, tariffs or guidelines when the
11 consumer brought the complaint to the company’s attention.” (UCARE, at 20). In 2020,
12 Duquesne was one of only two electric utilities that increased the average time in days it
13 took to respond to complaints about payment arrangements (PARs) that needed further
14 investigation. While in 2019, Duquesne responded in 4.0 days, in 2020, Duquesne took
15 nearly twice that long (7.9 days). The only other electric utility to increase its time to
16 respond was PECO-Electric (increasing from 6.6 to 6.8 days). The statewide average
17 response time was 5.9 days. (UCARE, at 7).

18
19 Finally, in 2020, Duquesne had a substantially higher “verified infraction” rate than every
20 other electric utility. According to BCS, an “infraction” is “a misapplication or
21 infringement of a Commission regulation, particularly the standards and billing practices
22 for residential utility service.” (UCARE, at 20). While Duquesne had 44 “verified

1 infractions” of Chapter 56 in 2020, the next highest was West Penn (33). In addition,
2 Met-Ed, PECO, Penelec and PPL all had 26 or fewer verified infractions in 2020.

3
4 In this regard, the 2020 performance was not different from 2019. In 2019, Duquesne
5 had:

- 6 ➤ The highest number of verified infractions (2019 UCARE, at 17);
- 7 ➤ The second lowest percent decrease in the number of residential complaints
8 (3.4%) (PECO being somewhat lower at 2.6%) (2019 UCARE, at 5);
- 9 ➤ The highest percentage of justified complaints (11%, with PPL being the next
10 highest at 9%, and the statewide average being 7%) (2019 UCARE, at 6); and
- 11 ➤ The highest number of “verified infractions” (44) (2019 UCARE, at 17).

12
13 This data presents a somewhat different picture of Duquesne “customer care”
14 performance from the picture portrayed by the statistics cited by Witness Neiswonger
15 (Duquesne St. 9).

16
17 **Q. WHAT DOES THE DATA SAY FURTHER ABOUT CUSTOMER SERVICE?**

18 A. The data published by BCS shows that while Duquesne’s call abandonment rate declined
19 from 2018 to 2019, Duquesne remained the utility with the highest call abandonment rate
20 amongst electric utilities in Pennsylvania (6%). (Customer Service Report, at 6). Its call
21 abandonment rate was two times higher in 2019 than it was in 2017 (3% vs. 6%).

1 Duquesne was one of only two utilities (along with PPL) whose percentage of calls
2 answered within 30 seconds declined from 2018 to 2019. While Duquesne’s
3 performance declined by four percent (from 90% to 86%), PPL’s performance declined
4 from 89% to 88%. (Customer Service Report, at 8). No utility had a percentage of calls
5 answered within 30 seconds performance lower than Duquesne, but only two had
6 percentages higher. The remaining four utilities all had an identical percentage (86%).
7

8 Duquesne had the second highest number of residential disputes that did not receive a
9 response within 30 days. (Customer Service Report, at 17). Indeed, four (4) electric
10 utilities had zero (0) residential disputes that were did not receive a response within 30
11 days, while PECO-Electric had only two (2).
12

13 **Q. WHAT DOES THE COMMISSION DATA SAY ABOUT CUSTOMER**
14 **SATISFACTION?**

15 A. The data I reviewed on “customer satisfaction” was data from the 2019 “Customer
16 Service Performance Report” (published in October 2020). (hereafter Customer Service
17 Report)⁶⁹ In my review, rather than combining “very satisfied” and “somewhat satisfied”
18 into a single metric, I examine the data for “very satisfied” (or, correspondingly, “very
19 courteous” or “very knowledgeable,” etc.). When a customer contacts the Duquesne
20 Light call center, for example, that customer is not seeking the Duquesne representative
21 to be “somewhat courteous.” When a customer contacts Duquesne Light with a problem,

⁶⁹ Available at <https://www.puc.pa.gov/filing-resources/reports/customer-service-performance-reports/> (last accessed June 17, 2021).

1 that customer is not seeking a representative who is only “somewhat knowledgeable.” To
2 combine those two scores is to present a skewed picture of customer satisfaction.

3
4 BCS reports that more than one-in-three (35%) customers trying to reach Duquesne Light
5 were not “very satisfied” with their ease in making contact. Duquesne Light had the
6 fourth lowest percentage of customers (65%) who said they were “very satisfied” with
7 their ease in making contact. (Customer Service Report, at 19). Imagine a customer with
8 the clock ticking on a shutoff notice. A low-income customer needs to contact a public
9 or private agency to seek assistance before the date they have been told is the final date
10 on which to pay a bill in order to avoid a shutoff. Nonetheless, they have sufficient
11 difficulty with the ease of reaching the Company that they express only “somewhat”
12 being satisfied.

13
14 When customers make a contact with the utility, more than one-in-five such customers
15 find the Company’s representative to be less than “very knowledgeable.” (Customer
16 Service Report, at 23). Only 79% of Duquesne’s customers found the call center
17 representative to be “very knowledgeable” when contacted. Moreover, one-in-six
18 customers making contact with Duquesne (16%) found the call center representative to be
19 less than “very courteous” with the customer. (Customer Service Report, at 23). A
20 minimum standard of performance in customer-company transactions is for the call
21 center representative to be courteous. In one-of-six instances, however, the customer is
22 left feeling ambivalent (at best) with the courtesy of Duquesne’s call center
23 representative.

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The shortcomings identified above are seen in the expressed satisfaction with Duquesne’s quality of service “*during recent contact.*” A full one-in-seven customers having a recent contact with Duquesne were not satisfied at all. (Customer Service Report, at 26). A bigger problem, however, is that more than one-of-four (28%) were less than “very satisfied” with the Company’s overall quality of service during a recent contact. The 72% of customers who were “very satisfied” with the overall quality of service during a recent contact was the third lowest percentage amongst Pennsylvania’s electric utilities.

The data is not broken down by those who are “very satisfied” and those who are only “somewhat satisfied” when the “recent contact” involved a “credit/collection” contact. Nonetheless, the data reveals that the “overall satisfaction” with credit/collection contacts has declined for Duquesne from 2017 (92%) to 2019 (90%).

Q. DO YOU HAVE ANY FINAL OBSERVATION ABOUT CUSTOMER SATISFACTION AS REPORTED BY DUQUESNE WITNESS NEISWONGER?

A. Yes. Duquesne witness Neiswonger report that “the Company benchmarks its performance using the J.D. Power Residential and Business Electric Utility Customer Satisfaction surveys.” (DLC St. 9, at 7). She reports that the Company’s J.D. Power overall score has improved in the past three years. Even then, the Company’s performance was at best average, with eight utilities having higher 2020 scores and eight other utilities have lower scores. (DLC Ex. JAN-3).

1 As is evident from the data above from the PUC's own reports, the "overall score" does
2 not tell the entire story. In order to truly examine a utility's performance, an examination
3 of the detailed data is needed. We know from the J.D. Power website, however, the
4 purchase of a "study subscription" provides access to "quarterly deliverables," including
5 "Access to a competitive industry data set allowing you to see how your utility stacks up
6 against your peers, the industry, and the highest performers across six factors and 36
7 attributes at both the national and regional levels."⁷⁰ To be presented with only a single
8 summary statistic rather than the greater detail on "six factors and 36 attributes" does not
9 provide a sound basis for decision-making. The J.D. Power discussion in the Direct
10 Testimony of DLC Witness Neiswonger should not be relied upon in this proceeding.

11
12 **Q. WHAT DO YOU CONCLUDE?**

13 A. While I do not assert that any of the data presented by DLC Witness Neiswonger is
14 erroneous, I do conclude that it is incomplete. An examination of the fuller set of data
15 leads to the conclusion that Duquesne's performance on customer service and customer
16 satisfaction is not quite as exemplary as an examination of the data in Witness
17 Neiswonger's testimony might at first seem to portray.

18
19 **Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?**

20 A. Yes, it does.
21
22

⁷⁰ Available at . https://www.jdpower.com/sites/default/files/file/2020-11/JDP_US_2020_ResidentialElectric_Brochure_FINAL_103020.pdf (last accessed June 17, 2021).

Appendix A:
Abbreviated Colton Vitae

Roger Colton
Fisher, Sheehan & Colton
Public Finance and General Economics
Belmont, MA

* * * * *

EDUCATION:

J.D. (Order of the Coif), University of Florida (1981)

M.A. (Regulatory Economics), McGregor School, Antioch University (1993)

B.A. Iowa State University (1975) (journalism, political science, speech)

PROFESSIONAL EXPERIENCE:

Fisher, Sheehan and Colton, Public Finance and General Economics: 1985 - present.

As a co-founder of this economics consulting partnership, Colton provides services in a variety of areas, including: regulatory economics, poverty law and economics, public benefits, fair housing, community development, energy efficiency, utility law and economics (energy, telecommunications, water/sewer), government budgeting, and planning and zoning.

Colton has testified in state and federal courts in the United States and Canada, as well as before regulatory and legislative bodies in more than three dozen states. He is particularly noted for creative program design and implementation within tight budget constraints.

LOCAL / PROFESSIONAL AFFILIATIONS:

- Past Chair: Belmont Zoning By-law Review Working Committee (climate change)
- Member: Board of Directors, Massachusetts Rivers Alliance
- Columnist: Belmont Citizen-Herald
- Producer: Belmont Media Center: BMC Podcast Network
- Host/producer: Belmont Media Center: Belmont Journal
- Member: Belmont Town Meeting
- Past vice-chair: Belmont Light General Manager Screening Committee
- Past Chair: Belmont Goes Solar
- Coordinator: BelmontBudget.org (Belmont's Community Budget Forum)
- Coordinator: Belmont Affordable Shelter Fund (BASF)
- Past Chair: Belmont Solar Initiative Oversight Committee
- Past Member: City of Detroit Blue Ribbon Panel on Water Affordability
- Past Chair: Belmont Energy Committee
- Member: Massachusetts Municipal Energy Group (Mass Municipal Association)
- Past Chair: Housing Work Group, Belmont (MA) Comprehensive Planning Process

Past Member: Board of Directors, Belmont Housing Trust, Inc.
 Past Chair: Waverley Square Fire Station Re-use Study Committee (Belmont MA)
 Past Member: Belmont (MA) Energy and Facilities Work Group
 Past Member: Belmont (MA) Uplands Advisory Committee
 Past Member: Advisory Board: Fair Housing Center of Greater Boston.
 Past Chair: Fair Housing Committee, Town of Belmont (MA)
 Past Member: Aggregation Advisory Committee, New York State Energy Research and Development Authority.
 Past Member: Board of Directors, Vermont Energy Investment Corporation.
 Past Member: Board of Directors, National Fuel Funds Network
 Past Member: Board of Directors, Affordable Comfort, Inc. (ACI)
 Past Member: National Advisory Committee, U.S. Department of Health and Human Services, Administration for Children and Families, Performance Goals for Low-Income Home Energy Assistance.
 Past Member: Editorial Advisory Board, International Library, *Public Utility Law Anthology*.
 Past Member: ASHRAE Guidelines Committee, GPC-8, *Energy Cost Allocation of Comfort HVAC Systems for Multiple Occupancy Buildings*
 Past Member: National Advisory Committee, U.S. Department of Housing and Urban Development, Calculation of Utility Allowances for Public Housing.
 Past Member: National Advisory Board: Energy Financing Alternatives for Subsidized Housing, New York State Energy Research and Development Authority.

PROFESSIONAL ASSOCIATIONS:

National Association of Housing and Redevelopment Officials (NAHRO)
 National Society of Newspaper Columnists (NSNC)
 Association for Enterprise Opportunity (AEO)
 Iowa State Bar Association
 Energy Bar Association
 Association for Institutional Thought (AFIT)
 Association for Evolutionary Economics (AEE)
 Society for the Study of Social Problems (SSSO)
 Association for Social Economics

BOOKS

Colton, *et al.*, *Access to Utility Service*, National Consumer Law Center: Boston (4th edition 2008).

Colton, *et al.*, *Tenants' Rights to Utility Service*, National Consumer Law Center: Boston (1994).

Colton, *The Regulation of Rural Electric Cooperatives*, National Consumer Law Center: Boston (1992).

BOOK CHAPTERS

Colton (2018). The equities of efficiency: distributing energy usage reduction dollars, Chapter in Energy Justice: US and International Perspectives (Edited by Raya Salter, Carmen Gonzalez and Elizabeth Ann Kronk Warner), Edward Elgar Publishing (London, England).

JOURNAL PUBLICATIONS

65 publications in industry and academic journals, primarily involving utility regulation and affordable housing. (list available upon request)

TECHNICAL REPORTS

200 technical reports for public-sector and private-sector clients (list available upon request)

JURISDICTIONS IN WHICH EXPERT WITNESS PROVIDED

- | | | |
|-----------------------------|---------------------------|---------------------------|
| 1. Maine | 17. Mississippi | 33. Colorado |
| 2. New Hampshire | 18. Tennessee | 34. New Mexico |
| 3. Vermont | 19. Kentucky | 35. Arizona |
| 4. Massachusetts | 20. Ohio | 36. Utah |
| 5. Massachusetts | 21. Indiana | 37. Idaho |
| 6. Rhode Island | 22. Michigan | 38. Nevada |
| 7. Connecticut | 23. Wisconsin | 39. Washington |
| 8. New Jersey | 24. Illinois | 40. Oregon |
| 9. Maryland | 25. Minnesota | 41. California |
| 10. Pennsylvania | 26. Iowa | 42. Hawaii |
| 11. Washington D.C. | 27. Missouri | |
| 12. Virginia | 28. Arkansas | Canadian Provinces |
| 13. North Carolina | 29. Texas (Federal Court) | 1. Nova Scotia |
| 14. South Carolina | 30. South Dakota | 2. Ontario |
| 15. Florida (Federal Court) | 31. North Dakota | 3. Manitoba |
| 16. Alabama | 32. Montana | 4. British Columbia |

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Direct Testimony, OCA Statement 4, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 30, 2021
*311962

Signature:



Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission

v.

Duquesne Light Company

Docket No. R-2021-3024750

DIRECT TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

Date June 30, 2021

1 **Introduction**

2 **Q. Please state your name, business address and occupation.**

3 A. My name is Noah D. Eastman. My business address is 555 Walnut Street, Forum Place, 5th
4 Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst
5 by the Pennsylvania Office of Consumer Advocate (OCA).

6

7 **Q. Please describe your educational background and qualifications to provide testimony**
8 **in this case.**

9 A. I have a bachelor's degree in Economics with a Business Concentration from Shippensburg
10 University. My educational background and qualifications are described in Appendix A.

11

12 **Q. On whose behalf are you testifying in this proceeding?**

13 A. I am testifying on behalf of the Office of Consumer Advocate.

14

15 **Purpose of Direct Testimony:**

16 **Q. Please describe the purpose of your Direct Testimony.**

17 A. The purpose of my Direct Testimony is to identify the impacts the COVID-19 pandemic
18 has had on the ratepayers of Pennsylvania. I will present information and analysis that
19 details the effects of the pandemic and resulting economic disruption on different groups.
20 With that I will also discuss the effects on small business in Pennsylvania and the measure
21 known as the coincident index, a single summary statistic used by the Federal Reserve
22 banks to measure economic conditions. The facts being presented should be considered by

1 the Public Utility Commission (PUC) when deciding on any revenue increase in this
2 matter.

3 **Impacts of the Pandemic on People in Pennsylvania**

4 **Q. What changes have occurred to the unemployment rate in Pennsylvania as a result of**
5 **the COVID-19 Pandemic?**

6 **A.** The pandemic led to economic shocks so unique that they have no historical equivalent. In
7 January 2020, the unemployment rate in Pennsylvania was 4.8%. In less than 3 months,
8 the unemployment rate more than tripled to 16.2%.¹ The most recently recorded monthly
9 unemployment rate, May 2021, recorded the unemployment rate in Pennsylvania as 6.9%,
10 still 43% above the January 2020 rate.² Along with this, the unemployment rate has been
11 relatively unchanged since September 2020.

12 **Q. What counties are found in the service territory of Duquesne Light?**

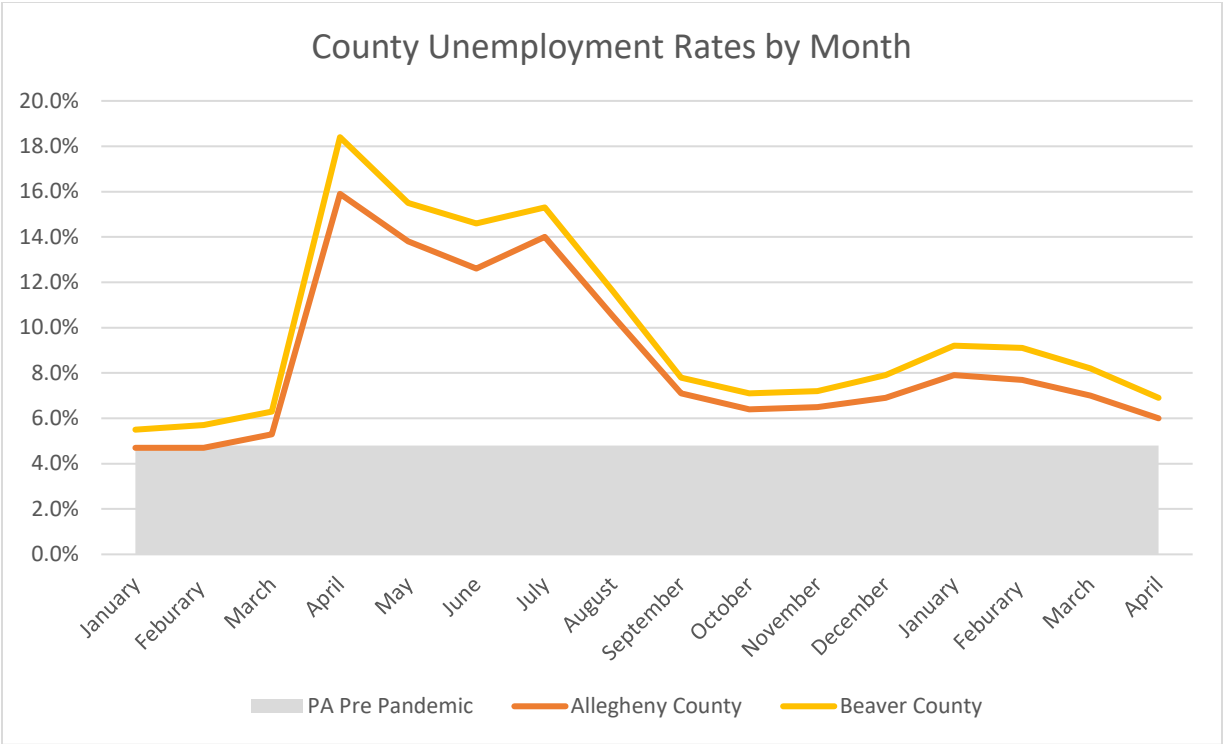
13 **A.** Duquesne Light Company serves approximately 600,000 customers in Allegheny and
14 Beaver counties.³

15 **Q. What unemployment rates have been observed in the counties that make up**
16 **Duquesne’s service territory?**

17 **A.** In both Allegheny and Beaver counties, unemployment is still elevated above pre-
18 pandemic levels. In Allegheny County, the unemployment rate was 6.0%, which is 28%
19 over the January 2020 unemployment rate. In Beaver County the unemployment rate was
20 6.9%, which is 25% over the January 2020 rate. The progression of unemployment
21 throughout the pandemic can be seen in Exhibit NDE-1 and below in Figure 1.

¹ Unemployment Rate in Pennsylvania. Federal Reserve Bank of St. Louis. <https://fred.stlouisfed.org/series/PAUR>
² (6.9%–4.8%)
4.8%

³[https://www.duquesnelight.com/company/about#:~:text=At%20Duquesne%20Light%20Company%20\(DLC,in%20Allegheny%20and%20Beaver%20counties.](https://www.duquesnelight.com/company/about#:~:text=At%20Duquesne%20Light%20Company%20(DLC,in%20Allegheny%20and%20Beaver%20counties.)



1

2 *Figure 1⁴*

3 **Q. What is the Household Pulse Survey (Pulse Survey)?**

4 **A.** The Pulse Survey is an experimental data product compiled by the United States Census
 5 Bureau. It was designed to deploy data collected on how the coronavirus pandemic has
 6 impacted people’s lives. The data is available disaggregated by state and metropolitan
 7 area, with the effect of the pandemic observed based on factors such as income,
 8 household size, employment status, and other socioeconomic factors. The data has been
 9 collected in three phases, with Phase 1 beginning in April 2020. The phases were
 10 collected from (1) April 23, 2020 – July 21, 2020, (2) August 19, 2020 – October 26,
 11 2020, (3) October 28, 2020 – March 29, 2021, and (3.1) April 14, 2021 - Present.

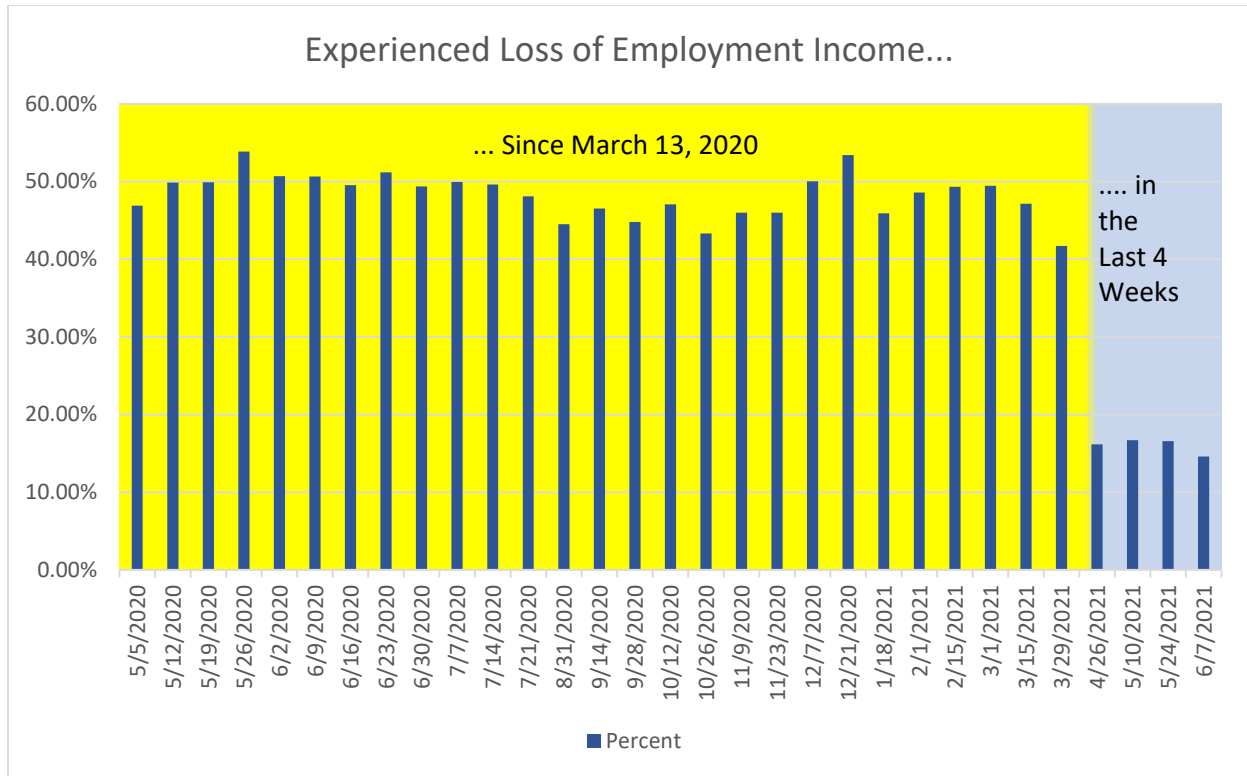
12 **Q. What trends have been identified in the Pulse Survey during the pandemic?**

⁴ U.S. Bureau of Labor Statistics, Unemployment Rate in Pennsylvania Counties, retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/categories/29613>. June 23, 2021.

1 A. There have been noticeable trends in responses by Pennsylvania Residents to both
2 “experienced loss in employment income” and “expected loss in employment income”.

3 **Q. What portion of Pennsylvania respondents stated that they experienced a loss in**
4 **employment income?**

5 Originally, the survey asked if respondents have experienced a loss in employment
6 income since March 13, 2020. This led to mostly consistent responses showing between
7 40% and 50% having experienced a reduction in employment income since March 13,
8 2020. Beginning in Phase 3.1, the question was revised to whether respondents have
9 experienced a reduction in employment income *in the last four weeks*. This gives a more
10 immediate view of the lingering effects of the pandemic, and the entirety of the Pulse
11 Survey results are below in Figure 2.



1
2 *Figure 2⁵*

3 **Q. What portion of Pennsylvania respondents expect to lose income in the next four**
4 **weeks?**

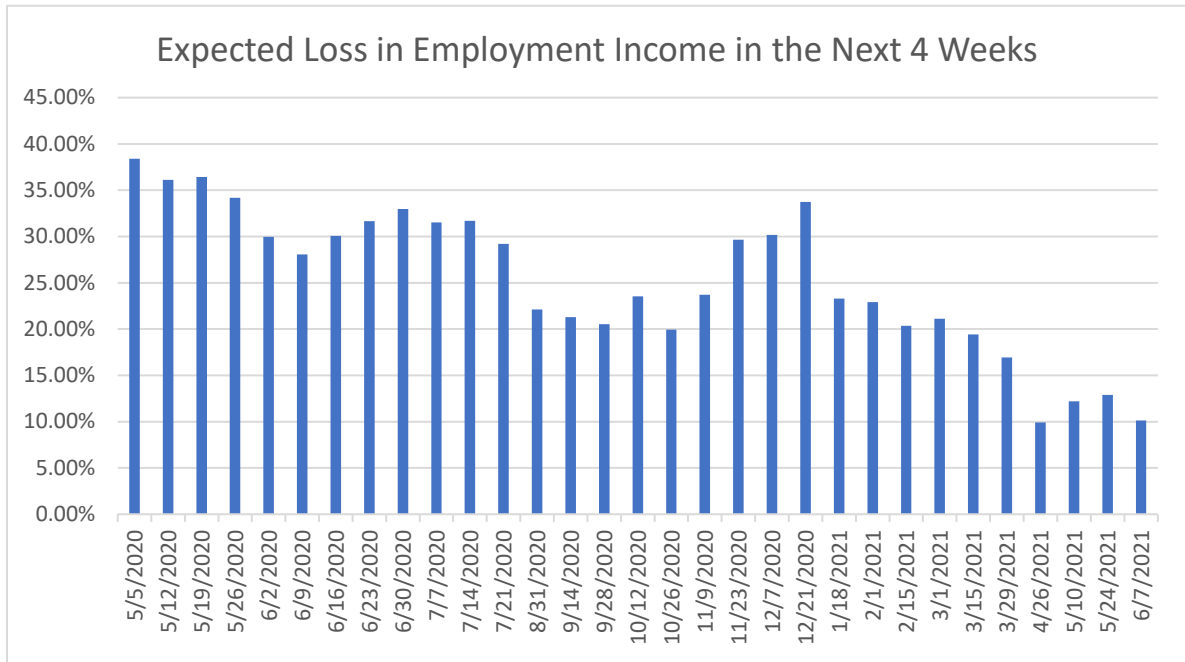
5 **A.** The most recent responses to Phase 3.1 of the Pulse Survey were collected from
6 5/12/2021 through 5/24/2021. During this period, 10.13% of respondents stated that they
7 expected to experience a loss in employment income in the next four weeks.

8 **Q. How does this compare to other points in the pandemic?**

9 **A.** The multiple waves of infections, economic stimulus, and estimations of the end of the
10 pandemic led to fluctuations in expectations of employment income. At the beginning of
11 the pandemic when layoffs were at unprecedented highs, expected loss in employment

⁵ U.S. Census Bureau. (2021). Household Pulse Survey.
<https://www.census.gov/data/tables/2021/demo/hhp/hhp31.html>

1 income peaked at nearly 40%. Peaks occurred again in June 2020 and December 2020,
2 coinciding with two more waves of infections. The current rate of 10.13% is much lower
3 than any point in the pandemic up to this point.



4
5 *Figure 3⁶*

6 **Q. Should this reduction in expected loss in employment income be taken as a sign that**
7 **the pandemic, and its effects, will soon be over?**

8 **A.** No. 1 in 10 people expecting a loss in income in the next 4 weeks is still a strong sign of
9 uncertainty for the short term. While the steady reduction is a good sign that the economy
10 and people’s lives are beginning to return to reach a new normal, it would be ill-advised
11 to assume that life will return to the pre-pandemic normal soon.

⁶ U.S. Census Bureau. (2021). Household Pulse Survey.
<https://www.census.gov/data/tables/2021/demo/hhp/hhp31.html>

1 **Q. How are those who have experienced and/or are expecting a reduction in**
 2 **employment income paying their bills?**

3 **A.** Currently, about 986,594 Pennsylvanians expect a reduction in employment income in
 4 the next four weeks. Of those, 32% are working, 29% are paying bills using credit or
 5 loans, 38% are selling possessions to pay their bills, and another 34% are using
 6 unemployment insurance (which expires in September).

Used in the last 7 days to meet spending needs*	Experienced Loss in Employment Income	Expect Loss in Employment Income
Regular income sources like those received before the pandemic	27.9%	32.1%
Credit cards or loans	25.2%	28.8%
Money from savings or selling assets or possessions	32.8%	37.8%
Borrowing from friends or family	16.9%	12.9%
Unemployment insurance (UI) benefit payments	23.2%	34.1%
Stimulus (economic impact) payment	21.5%	29.9%
Money saved from deferred or forgiven payments (to meet spending needs)	3.5%	4.6%
Supplemental Nutrition Assistance Program (SNAP)	10.5%	9.8%
Other	2.4%	2.2%
Did not report	28.1%	22.8%

7 *Table 1⁷*

8 **Q. Are there any other factors that seem to be correlated with experienced/expected**
 9 **reductions in employment income?**

10 **A.** Yes. Those with lower incomes have been disproportionately affected and are also facing
 11 much more uncertainty. Households that have reported their income, and that report
 12 measures them as making less than \$25,000, have experienced reductions in employment

⁷ U.S. Census Bureau. (2021). Household Pulse Survey.
<https://www.census.gov/data/tables/2021/demo/hhp/hhp31.html>

1 income at a rate of 21% in the last 4 weeks. With that, 19% expect to experience a
 2 reduction in employment income in the next 4 weeks.

3
 4

	Experienced Loss in Employment Income	Expect Loss in Employment Income
Total Reported	791,538	604,442
Less than \$25,000	21.2%	19.4%
\$25,000 - \$34,999	18.1%	16.6%
\$35,000 - \$49,999	8.0%	10.6%
\$50,000 - \$74,999	18.0%	21.7%
\$75,000 - \$99,999	11.1%	10.4%
\$100,000 - \$149,999	13.1%	11.7%
\$150,000 - \$199,999	8.0%	8.1%
\$200,000 and above	2.5%	1.5%

5 *Table 2⁸*

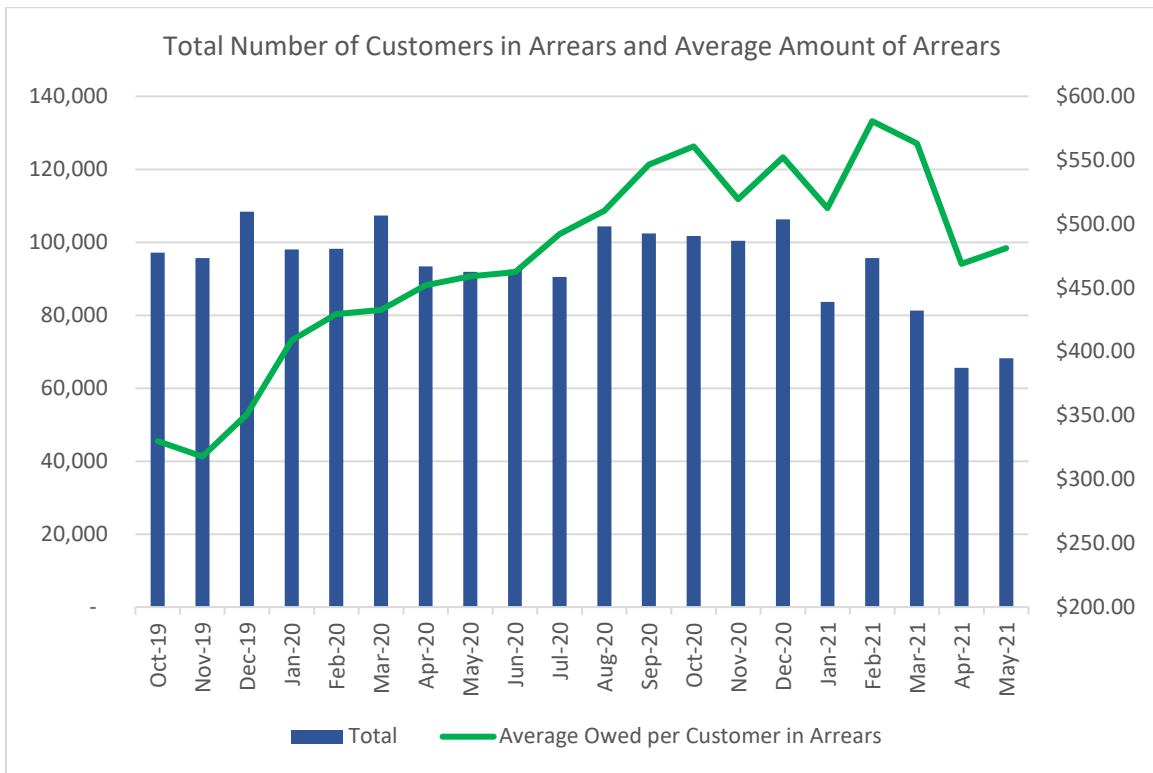
6 **Impacts on Duquesne Light Customers**

7 **Q. Are more customers having trouble paying their bills now compared to pre-**
 8 **pandemic?**

9 **A.** It would be difficult to come to an absolute conclusion without speaking to every
 10 Duquesne customer. However, the arrears data provided by the company in response to
 11 OCA Set II-10 and OCA Set II-12 indicates that the number of customers in arrears was
 12 elevated during the pandemic, and that the amount owed by each customer in arrears is
 13 more than 45% greater than what it was in October 2019, and 20% greater than what it

⁸ U.S. Census Bureau. (2021). Household Pulse Survey.
<https://www.census.gov/data/tables/2021/demo/hhp/hhp31.html>

1 was in January 2020. For those customers in arrears, it is apparent that they are having
 2 more trouble paying their bills than before the pandemic.



3
 4 *Figure 4⁹*

5 **The Pandemic’s Impact on Small Businesses**

6 **Q. How has the pandemic impacted small businesses in Pennsylvania?**

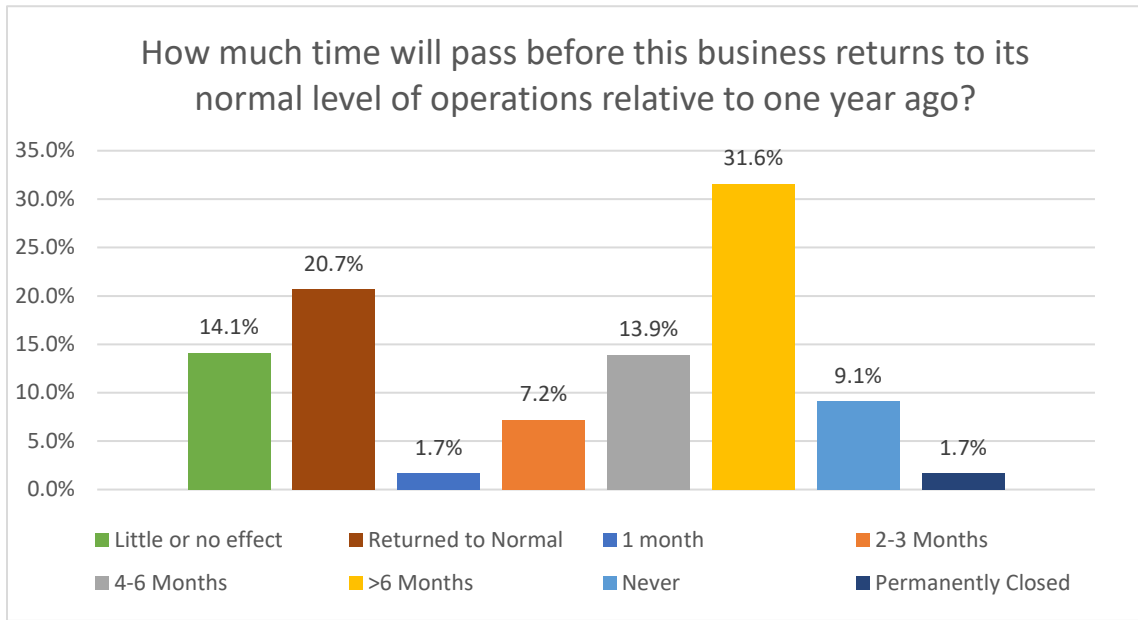
7 **A.** The Census Bureau has also conducted surveys similar to the Pulse Survey, but with a
 8 focus on the changes experienced by small businesses during the pandemic and
 9 expectations for the future. The most recent survey results were collected from June 7,
 10 2021 – June 13, 2021. When asked how their business has been affected by the COVID-
 11 19 Pandemic, 28.3% stated they had a faced a large negative impact, and another 44%
 12 faced at least a moderate negative impact.¹⁰

⁹ OCA Set II-10 and OCA Set II-12

¹⁰ U.S. Census Bureau. (2021). Small Business Pulse Survey. <https://portal.census.gov/pulse/data/>

1 **Q. What expectations do small businesses have for a return to normal?**

2 **A.** When asked how long the business expects to return to normal operations, the share of
3 businesses replying with greater than 6 months or never was 40.7%. The breakdown of
4 responses is shown in Figure 4 below. While businesses are expecting a shorter-term
5 return to normal, many are expecting a long-term recovery of their operations, or no
6 recovery at all.



7
8 *Figure 5¹¹*

9 **Employment Projections**

10 **Q. What are the employment expectations as we leave the Pandemic economic**
11 **environment?**

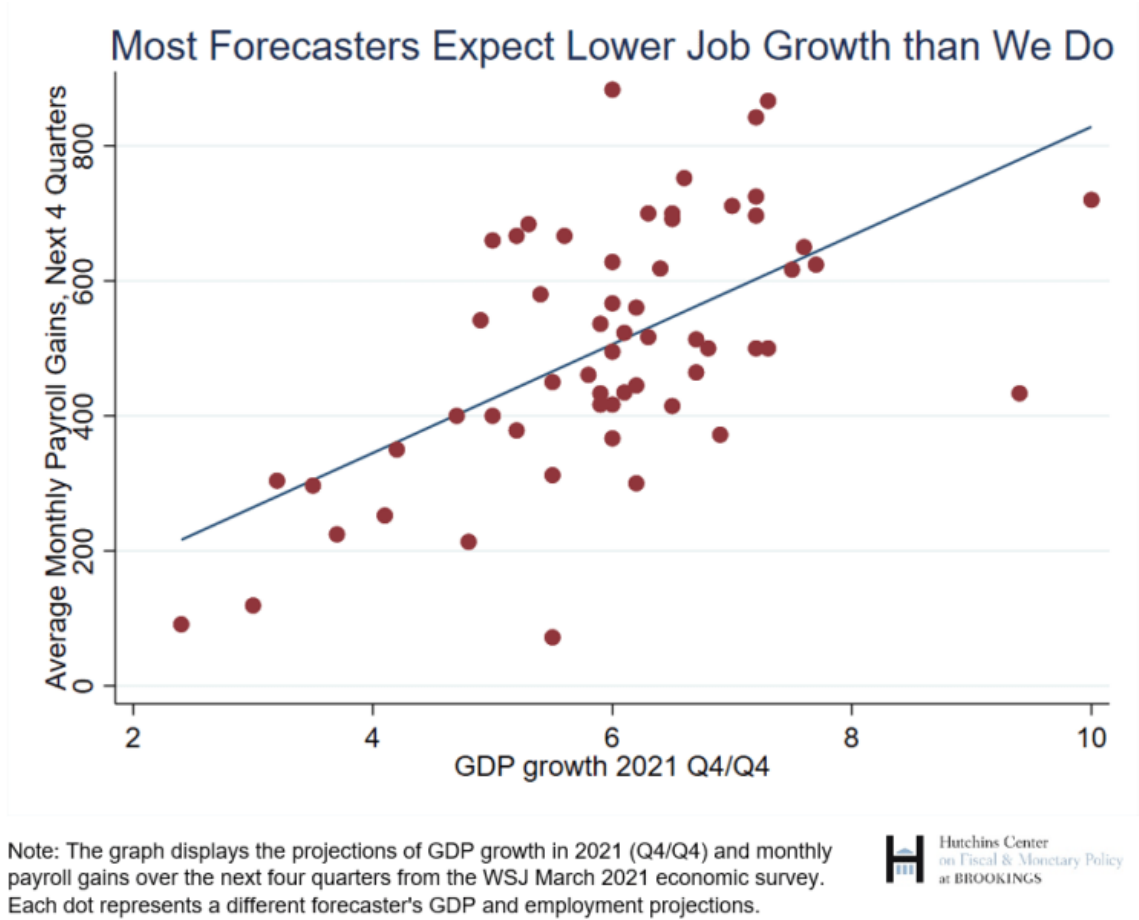
12 **A.** The Brookings Institution utilized publications from the Congressional Budget Office and
13 Federal Reserve to calculate their projection of when the economy will return to pre-

¹¹ U.S. Census Bureau. (2021). Small Business Pulse Survey. <https://portal.census.gov/pulse/data/>

1 pandemic employment levels. This was published in March 2021, using GDP growth to
2 estimate coinciding employment growth. While the United States as a whole is the
3 subject of their research, it is reasonable to assume that Pennsylvania, and specifically the
4 Duquesne Light territory, will follow a similar pattern of employment growth. In their
5 published paper, they set out multiple scenarios for the rate of job growth in the economic
6 recovery. The authors' estimate that the ten-month period from March 2021 through
7 March 2022 would bring with it average job growth of 700,000 to 1 million per month.¹²
8 This estimation is much faster than other forecasters' estimates, with other less optimistic
9 forecasts believing growth to be around 460,000 jobs per month. The Brookings
10 Institution also put together an analysis of the job growth forecasts of an economic survey

¹² Sheiner, L., Milesi-Ferretti, G. M. (2021, March 24). How many jobs is the US likely to add this year? Brookings.
<https://www.brookings.edu/blog/up-front/2021/03/22/how-many-jobs-is-the-u-s-likely-to-add-this-year/>.

1 by the Wall Street Journal, which is seen below in figure 6.



2
3 *Figure 6¹³*

4 **Q. What employment growth has been realized thus far?**

5 **A.** Employment growth by month since January 2021 has averaged below the expectations
6 of The Brookings Institution. Only one month has seen job growth in the range of
7 averages that they projected, and the current average job growth for 2021 is 478,000,
8 around the range of the less optimistic estimate mentioned above. It is difficult to make a

¹³ Sheiner, L.; Milesi-Ferretti, G. M. (2021, March 24). How many jobs is the US likely to add this year? Brookings. <https://www.brookings.edu/blog/up-front/2021/03/22/how-many-jobs-is-the-u-s-likely-to-add-this-year/>.

1 perfectly accurate estimate, but at the current pace it is very unlikely that the 9 million
2 jobs lost during the pandemic will be recovered within the next twelve months.

	Total Non-Farm Employment	Change in Employment
Jan-21	142,736,000	233,000
Feb-21	143,272,000	536,000
Mar-21	144,057,000	785,000
Apr-21	144,335,000	278,000
May-21	144,894,000	559,000
Average 2021		478,200

3 *Table 3¹⁴*

4 **Pennsylvania State Coincident Index**

5 **Q. What is the State Coincident Index?**

6 **A.** The State Coincident Index is an index that uses four state-level variables to help
7 summarize current economic conditions in one single statistic. “The four state-level
8 variables in each coincident index are (1) nonfarm payroll employment, (2) average hours
9 worked in manufacturing by production workers, (3) the unemployment rate, and (4)
10 wage and salary disbursements deflated by the consumer price index (U.S. city average).
11 The trend for each state’s index is set to the trend of its gross domestic product (GDP), so
12 long-term growth in the state’s index matches long-term growth in its GDP.”¹⁵ A rise in
13 the index indicates expanding economic activity, while a decline indicates a contraction.

14 **Q. What conclusions can be drawn from the activity in the State Coincident Index?**

¹⁴ Federal Reserve Bank of St. Louis. *All Employees, Total Nonfarm, Thousands of Persons, Monthly, Seasonally Adjusted*. <https://fred.stlouisfed.org/series/PAYEMS>

¹⁵ <https://www.philadelphiafed.org/surveys-and-data/regional-economic-analysis/state-coincident-indexes>

1 **A.** The April 2021 Coincident index for Pennsylvania was 114.61 and the US Coincident
2 Index was 126.27. The coincident index of both Pennsylvania and the US in February
3 2020 were 122.76 and 130.81, respectively. The coincident index is indexed to 100 based
4 on the 2007 measure. So, 36% of the index growth since 2007 that was seen in February
5 2020 is still yet to be recovered.¹⁶ The economy is beginning to recover, but there is still
6 a large amount to be done before we can declare normality.

7 **Conclusion:**

8 **Q.** **Does this conclude your testimony?**

9 **A.** Yes. However, I reserve the right to modify or supplement my testimony if necessary.

¹⁶ = $\frac{(114.61-100)-(122.76-100)}{(122.76-100)}$

**QUALIFICATIONS OF
NOAH D. EASTMAN**

Education

2019 B.S. Economics, Shippensburg University

Currently Pursuing: M.B.A., Shippensburg University

Positions

Jan. 2020 – Present Regulatory Analyst, Pennsylvania Office of Consumer Advocate

Experience

I am currently employed by the Pennsylvania Office of Attorney General, Office of Consumer Advocate (OCA) as a Regulatory Analyst. My responsibilities include financial and economic analysis, rate of return determination, and other business operations analysis in the review of utility filings with the Pennsylvania Public Utility Commission. Additional responsibilities with the OCA include formulating recommendations for utility filings and preparing testimony.

Relevant Training

IPU Accounting and Ratemaking Course, April 2020

IPU Intermediate Course, August 2020

Previous Cases wherein testimony was submitted

McCloskey v. Hidden Valley Utility Service - C-2014-2447138, C-2014-2447169

Application of Pennsylvania American Water Company - A-2020-3019634

Previous cases worked; no testimony submitted

PaPUC v. Reynolds Disposal Company - R-2020-3019612

Application of Pennsylvania American Water Company - A-2020-3021460

PaPUC v. Pike County Light and Power Company – R-2020-3022135, R-2020-3022134

OCA Exhibit NDE-1

Duquesne Light Company

Docket No. R-2021-3024750

Unemployment Rate by County

<i>Month</i>	<i>Allegheny County</i>	<i>Beaver County</i>
<i>January</i>	4.70%	5.50%
<i>February</i>	4.70%	5.70%
<i>March</i>	5.30%	6.30%
<i>April</i>	15.90%	18.40%
<i>May</i>	13.80%	15.50%
<i>June</i>	12.60%	14.60%
<i>July</i>	14.00%	15.30%
<i>August</i>	10.50%	11.60%
<i>September</i>	7.10%	7.80%
<i>October</i>	6.40%	7.10%
<i>November</i>	6.50%	7.20%
<i>December</i>	6.90%	7.90%
<i>January</i>	7.90%	9.20%
<i>February</i>	7.70%	9.10%
<i>March</i>	7.00%	8.20%
<i>April</i>	6.00%	6.90%

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
 :
 v. : Docket No. R-2021-3024750
 :
 Duquesne Light Company :

VERIFICATION

I, Noah D. Eastman, hereby state that the facts set forth in my Direct Testimony, OCA Statement 5, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 30, 2021
*311964

Signature: 
Noah D. Eastman

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC	:	
UTILITY COMMISSION	:	
	:	
V.	:	DOCKET NO. R-2021-3024750
	:	
DUQUESNE LIGHT COMPANY	:	

DIRECT TESTIMONY

OF

RON NELSON
DIRECTOR
STRATEGEN CONSULTING

ON BEHALF OF
THE OFFICE OF CONSUMER ADVOCATE

(PUBLIC VERSION)

June 30, 2021

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1 **I. INTRODUCTION**

2 **Q. Please state your name, business address and occupation.**

3 A. My name is Ron Nelson. I am a Director with Strategen Consulting. My business
4 address is Suite 400, 2150 Allston Way, Berkeley, California 94704.

5 **Q. On whose behalf are you testifying in this proceeding?**

6 A. I am testifying on behalf of the Office of the Consumer Advocate.

7 **Q. Please describe your formal education and professional experience.**

8 A. Currently, I am a Director at Strategen Consulting. The Strategen team is
9 nationally recognized for its thought leadership and deep expertise in rate design,
10 renewable program development, grid modernization, and new grid technologies
11 including distributed and centralized renewable energy, energy storage, smart grid
12 technologies, and electric vehicles. During my time at Strategen, I have worked with
13 numerous consumer advocates on issues related to cost of service modeling, rate
14 design, grid modernization, distributed energy resource ("DER") valuation and
15 integration, and performance-based regulation ("PBR").

16 Before joining Strategen in early 2018, I worked for the Minnesota Attorney
17 General's Office for almost five years, where I led the Office's work on cost of service,
18 rate design, renewable energy program design, and performance-based regulation.

19 Before that, I worked for two universities and the United States Geological Survey as an
20 economic researcher. I have a Master of Science from Colorado State University in

1 Agriculture and Resource Economics, and a Bachelor of Arts in Environmental
2 Economics and a Minor in Mathematics from Western Washington University.

3 **Q. Have you testified in similar regulatory proceedings previously?**

4 A. Yes. I have testified in 19 proceedings in Minnesota, Pennsylvania, Oklahoma,
5 Illinois, New Hampshire, Utah and Ohio. The issues covered in these proceedings
6 include marginal and embedded cost of service studies, revenue apportionment, rate
7 design, renewable program design, fuel clause adjustments, formula rates, decoupling,
8 performance-based regulation, multi-year rate plans, performance metrics, distributed
9 energy resource (“DER”) interconnection, DER compensation, DER integration, pilot
10 frameworks, automated metering infrastructure, and smart inverter specifications.

11 I have also assisted with testimonies and regulatory analysis in Hawai’i,
12 Washington D.C., Maryland, Minnesota, Massachusetts, California, North Carolina,
13 South Carolina, Kentucky, and the Federal Energy Regulatory Commission (“FERC”).

14 Regarding specific EV-related proceedings, I serve as the technical expert to the
15 Hawaii PUC on advanced rate design, including EV rates, and DER compensation
16 within Docket No. 2019-0323. I also work as stakeholders’ experts in advanced rate
17 design proceedings in Minnesota and Utah. The Minnesota PUC recently adopted my
18 proposed time-of-use (“TOU”) with critical peak pricing (“CPP”) rate design for large
19 C&I customers, including large EV charging facilities, for piloting and consideration as

1 a default rate in Docket No. 20-86. I have also assisted or been the lead analyst on EV
2 rate design and infrastructure proposals in Massachusetts and Washington DC.¹

3 A summary of my resume is attached as Schedule REN-1.

4 **Q. Have you previously provided testimony before the Pennsylvania Public**
5 **Utility Commission (“Commission”)?**

6 A. Yes. I submitted testimony on behalf of the OCA regarding PPL Electric Utilities
7 Corporation’s DER Management Plan in Docket No. P-2019-3010128.

8 **Q. What is the purpose of your testimony?**

9 A. The purpose of my testimony is to evaluate and review Duquesne Light
10 Company’s (“Company”) Transportation Electrification (“TE”) Programs and to make
11 recommendations on EV load management strategies. I will also briefly discuss the
12 Company’s proposed subscription rate pilot.

13 **Q. What portions of the Company’s filing will you be responding to?**

14 A. I will be responding to the Direct Testimonies of Sarah Olexsak (Statement 8) and
15 Margot Everett (Statement 17).

16 **Q. How is your testimony organized?**

¹ See DPU Docket No. 18-150, testimonies of Edward Burgess. See Also DC PSC Formal Case No. 1130, comments filed December 12, 2018.

1 A. My testimony is organized into several additional sections: Section II provides an
2 overview of the Company’s proposed TE programs; Section III discusses pilot best
3 practices and an evaluation of the EV ChargeUp Pilot; Section IV addresses the
4 Company’s proposed pilots; Section V discusses the Company’s residential subscription
5 rate pilot, and section VI summarizes my recommendations and concludes my
6 testimony.

7 **II. OVERVIEW OF THE COMPANY’S PROPOSALS**

8 **Q. What transportation-related pilots is the Company proposing in this**
9 **proceeding?**

10 A. The Company’s proposed TE Programs are divided into two portfolios: the
11 Charging Infrastructure Portfolio and the Customer Portfolio, each consisting of three
12 programs. The Charging Infrastructure Portfolio includes the Public, Workplace, and
13 Multi-Unit Dwelling Make-Ready Pilot (“Make-Ready Pilot”); the Fleet and Transit
14 Charging Pilot; and the Home Charging Pilot. The Customer Portfolio includes the
15 Awareness, Education, and Engagement program; the Fleet Electrification Advisory
16 Service program; and the Registration Incentive program. A description of each
17 program is provided in the table below:

18 **Table 1**

PROGRAM	DESCRIPTION
Charging Infrastructure Portfolio	

<p>Public, Workplace, and Multi-Unit Dwelling Make-Ready Pilot</p>	<p>Duquesne will construct and own make-ready infrastructure to facilitate the deployment of approximately 30 Level 2 (L2) charging stations and 4 DC Fast Charging (DCFC) stations annually. Customers will own the charging station.</p> <p>Customers that serve Environmental Justice (EJ) Areas receive specialized technical assistance and a \$5,000 L2 charging station rebate.</p>
<p>Fleet and Transit Charging Pilot</p>	<p>Duquesne will construct and own make-ready infrastructure for 38 non-transit L2 charging customers annually, with a target of 25% of participating customers serving or located in EJ Areas. Customers can elect to own the charging station or pay a monthly rate to have Duquesne own the charging station. Duquesne will also construct and own make-ready infrastructure and charging stations for 6 DCFC stations in 2022 for the Port Authority of Allegheny County.</p>
<p>Home Charging Pilot</p>	<p>Duquesne will construct make-ready infrastructure and cover \$500 (\$2,000 for low-income customers) of installation costs for 125 residential customers annually. Customers pay a monthly rate to have Duquesne own and maintain the station.</p>
<p>Customer Portfolio</p>	

Awareness, Education, and Engagement	Duquesne will educate customers about EVs and charging stations generally, as well as about Duquesne’s TE programs.
Fleet Electrification Advisory Service	Duquesne will provide targeted outreach to customers with vehicle fleets to help them develop fleet electrification plans.
Registration Incentive	Duquesne will provide a one-time incentive to customers who register their EVs with Duquesne.

1 **Q. How many years is the Company proposing the TE Pilots will go and what are**
 2 **the costs for each year?**

3 A. The Company is proposing a piloting period of three years, 2022-2024, with a
 4 total cost of \$10,779,574. The table, below, displays the per-year and total expenditures
 5 for each pilot.²

6 **Table 2**

PROGRAM	COSTS			
	2022	2023	2024	Total
Charging Infrastructure Portfolio				
Public, Workplace, and MUD Make-Ready Pilot	\$1,046,875	\$1,046,875	\$1,046,875	\$3,140,625
Fleet and Transit Charging Pilot	Fleet: \$927,616 Transit: \$1,083,832	Fleet: \$1,102,373	Fleet: \$1,265,571	\$4,379,392
Home Charging Pilot	\$502,371	\$377,471	\$380,471	\$1,260,313

² Company response to OCA-IV-1, Attachment 8.

Customer Portfolio				
Awareness, Education, and Engagement	\$392,460	\$261,000	\$261,000	\$914,460
Fleet Electrification Advisory Service	\$292,448	\$236,948	\$236,948	\$766,344
Registration Incentive	\$67,949	\$99,632	\$150,859	\$318,440
Total				\$10,779,574

1 **Q. What other transportation-related pilots is the Company proposing in this**
2 **proceeding?**

3 A. The Company is also proposing EV Pilot Rates associated with the Fleet and
4 Transit Charging Pilot and the Home Charging Pilot. These monthly rates are intended
5 to recover charger and charger installation costs from customers participating in each
6 Pilot.

7 Additionally, the Company is proposing the Residential Subscription Rate Pilot,
8 which applies to base distribution services. This Pilot would move customers away
9 from a volumetric rate structure and instead select a specified level of demand for a set
10 monthly charge.

11 **Q. How is the Company treating the costs of the pilots for ratemaking purposes?**

12 A. For the Charging Infrastructure Portfolio, the Company is treating the charger
13 and charger installation costs, including make-ready infrastructure, as rate-based
14 capital investments, and program management and implementation costs as expenses.
15 All costs associated with the Customer Portfolio are treated as expenses.

16 **Q. Please explain the purpose of the TE Pilots.**

1 A. TE is accelerating rapidly. It will lead to significant changes within the power
2 system and provide unique opportunities that could greatly benefit customers or create
3 significant costs for customers. Whether ratepayers see benefits or costs from TE will
4 largely be determined by how utilities integrate EVs. TE pilots provide insights into
5 how the utilities are thinking about TE. For example, are utilities seeing TE as a way to
6 justify more infrastructure spending or are they viewing TE as a flexible load that can
7 be managed thoughtfully to control rate pressure on their customers?

8 **Q. What is your recommendation?**

9 A. As I will discuss below, I am recommending the following:

- 10 1. That the Commission reject the Home Charging Pilot in its entirety;
- 11 2. That the Commission deny the Company's request to rate base behind-the-meter
12 make-ready infrastructure and EV charging stations for any of its proposed TE
13 Pilots. Accordingly, if the Company does not propose a reasonable rebate
14 structure for the Make-Ready Pilot and Fleet and Transit Charging Pilot in
15 rebuttal, reject these pilots.
- 16 3. If the Commission approves any of the Company's TE Pilots, the Commission
17 should:
 - 18 a. Require the Company to file an evaluation and assessment plan within 90
19 days after Commission approval to more clearly define the pilot
20 objectives, which will inform annual filing requirements for the approved
21 pilots.

1 b. Reduce the Company’s request for the Awareness, Education, and
2 Engagement program by 75% and reject the Fleet Electrification Advisory
3 Service.

4 c. Deny the Company’s request to extend the remaining pilots through 2024
5 but approve years 2022-2023 with my recommended modifications.

6 4. Within 18 months of a final order in this case, Duquesne should file a
7 comprehensive EV load management proposal that includes a description of the
8 Company's future offerings, investments required to offer each type of load
9 management offering, an estimated timeline to implement the offerings, to what
10 customers segments the offerings may be made available, and a proposed
11 implementation plan for ALM to mitigate customer and utility side
12 infrastructure requirements.

13 **III. ASSESSMENT OF THE COMPANY’S PREVIOUS EV CHARGEUP PILOT**

14 **Q. How is this section of your testimony organized?**

15 A. In Section III.A, I provide an overview of a basic pilot framework as a baseline
16 from which to evaluate the Company’s piloting proposals. Then, in Section III.B, I assess
17 the Company’s previous EV ChargeUp Pilot.

18 **A. Basic Pilot Framework**

19 **Q. What features should a pilot have?**

1 A. First, pilots should seek to answer important questions that provide tangible
2 benefits to ratepayers. Such questions may be related to new technologies, business
3 models, or pricing constructs that have the potential to deliver value to electric
4 customers. This step seems to be straightforward, but utilities frequently fail to clearly
5 articulate clear objectives associated with pilots.

6 Second, pilots should be designed to ensure transparency, enabling
7 comprehensive and efficient review of utility proposals and pilot implementation.
8 Transparency requires clear communication of the goals and objectives for proposed
9 projects, project economics, and measurement and evaluation criteria.

10 Third, pilots should strive for scalability since the delivery of meaningful system
11 and customer benefits can only be achieved at scale. There should be a clear path
12 towards scaling the project beyond the demonstration phase if the pilot is deemed
13 successful and beneficial to ratepayers.

14 Overall, pilots should be infrequent as to answer only questions that are
15 important and can generate customer benefits. If the importance of a question warrants
16 a pilot, the pilot should be designed with enough rigor to clearly articulate the question
17 and provide a clear answer, including, at a minimum, a basic evaluation and
18 assessment plan.

19 **Q. What are some of the potential pitfalls that these basic pilot features are**
20 **intended to avoid?**

1 A. As pilot proposals have become more common amongst regulated utilities many
2 pitfalls have been identified. According to Smart Electric Power Alliance (SEPA), a
3 trade association with a significant utility membership including Duquesne, the most
4 significant pitfall in pilots is “not providing the data and insights needed for the utility
5 or regulator to move to full deployment of the technology or program being piloted.”³
6 This lack of data and insight is often created from poorly defined pilot objectives and a
7 lack of structure, including a detailed evaluation and assessment plan. When basic
8 insights cannot be gleaned from pilot results, it is difficult for regulators to have the
9 confidence to allow the utility to scale the piloted offerings.

10 Ensuring that pilots have sound structure before approval should help avoid
11 these, as well as other, pitfalls.⁴

12 **B. Analysis of the EV ChargeUp Pilot**

13 **Q. Did the Company rely on any previous pilots to inform the design of its**
14 **currently proposed transportation electrification pilots?**

³ See Pilot Projects: Guidelines for a successful grid modernization pilot project program. SEPA. Downloadable here: <https://sepapower.org/resource/pilot-projects-guidelines-for-a-successful-grid-modernization-pilot-project-program/>

⁴ Some states, such as Vermont, Connecticut, and New York, have developed comprehensive pilot frameworks that provide needed structure around the use of pilots. These comprehensive pilot frameworks specify filing requirements and a pathway for pilots to scale. A key purpose of pilot frameworks is that they can streamline regulatory review and lower administrative burden when thoughtfully developed.

1 A. Yes. The Company relied partially on the process and results of its EV ChargeUp
2 Pilot, which was approved in Docket No. R-2018-3000124 and was implemented over a
3 2-year period.

4 **Q. Please provide a summary of the Company's EV ChargeUp Pilot, including its**
5 **objectives and metrics.**

6 A. The EV ChargeUp Pilot included a L2 Charging Station Evaluation, a DCFC
7 Evaluation, an EV Registration Incentive, and Education and Outreach activity.
8 According to the Company's response to discovery question OCA-IV-2, the objectives
9 of the Pilot were to help the Company understand 1) costs, complexities, and
10 implications of deploying EV charging infrastructure for customers, 2) ways to help
11 manage and minimize system impacts of transportation electrification across different
12 transportation segments, and 3) system impacts related to EV charging for distribution
13 system planning. The Company also listed the hypotheses that were testing in the Pilot
14 as follows:

- 15 • Through the offering of a make-ready financial incentive, public
16 charging infrastructure availability will increase across the Company's
17 service territory.
- 18 • The Company and Port Authority of Allegheny County can deploy
19 and evaluate the region's first electric buses powered by charging
20 infrastructure installed and owned by the Company.

- 1 • Through the administration of an EV registration incentive, the
2 Company can collect information regarding the location and charging
3 usage of customers with EVs.
- 4 • Through the implementation of EV education and outreach, the
5 customer's understanding of vehicle electrification will increase.

6 The metrics used by the Company to measure success of outcomes were number
7 of L2 charging ports energized, kWh consumed by electric buses, number of customers
8 receiving the registration incentive, and customer familiarity with EVs.

9 **Q. Did the EV ChargeUp Pilot have a well-developed pilot framework?**

10 A. No. Overall, the Company's EV ChargeUp Pilot lacked specificity and did not
11 answer unique or specific questions with measurable data. For example, one of the
12 Company's objectives was to understand "system impacts related to EV charging for
13 distribution system planning." However, there are many types of system impacts, and
14 the objective was so broadly stated that it could have meant anything. The Company
15 may have an implicit definition for this objective, but it was not made explicit so that
16 stakeholders, including the Commission, can clearly understand what is being tested in
17 the pilot. Furthermore, the Company did not explain why data needed to be collected
18 through a pilot and if that was the most cost-effective way to collect data.

19 An additional problem with the Company's stated objective to understand EV
20 charging impact on distribution system planning is that the Company does not file a

1 distribution system plan with the Commission that has a strong focus on DER
2 integration, as well as methods and strategies to avoid and/or justify distribution level
3 investments, also referred to as integrated distribution system plans.⁵ Pennsylvania’s
4 requirements for long-term infrastructure improvement plans and asset optimization
5 plans appear to differ significantly from distribution system planning processes in other
6 states, especially due to the lack of filing requirements related to DER integration.⁶ For
7 this reason, any distribution system planning related learnings from the pilot will be
8 necessarily internal to the utility and intangible to other stakeholders as well as the
9 Commission. This creates a lack of transparency and accountability.

10 Another objective of the pilot was to understand “ways to help manage and
11 minimize system the impact of transportation electrification.” However, it does not
12 appear that any of the hypotheses or metrics directly address this objective in a
13 meaningful way. Based on Duquesne’s currently proposed pilots, it appears that this
14 objective was not achieved. Specifically, the Company did not propose any pilots that
15 require customers to manage load to minimize system impacts.⁷

16 To ensure effective pilot implementation, objectives need to be clear and precise,
17 hypotheses need to provide useful questions to be answered, and metrics need to be
18 specific (e.g., proportion of off-peak charging, local distribution peaks, etc.) and directly

⁵ States that have active distribution system planning processes include, but are not limited to, Minnesota, Maryland, California and Connecticut.

⁶ See Chapter 121 of the Commission’s Regulations and 66 Pa. C.S. §1356.

⁷ I address the Company’s claim that the residential subscription rate is a form of load management later in my testimony.

1 map to objectives and hypotheses. Duquesne's previous pilot did not appear to have a
2 strong pilot framework.

3 **Q. What appeared to be the most significant lesson learned from the EV**
4 **ChargeUp Pilot?**

5 A. Based on the Company's previous objectives, hypotheses, and new proposal, the
6 Company appears to be overly focused on identifying opportunities for infrastructure
7 investment. For instance, a primary difference from the EV ChargeUp Pilots and the
8 current pilots is that the Company is proposing to own additional infrastructure,
9 including the charger. Additionally, the Company appears to be investigating the
10 impacts that EVs have on local transformers. However, it is unclear why a pilot is
11 needed for this investigation (i.e., no unique or specific questions appear to be posed).

12 **Q. Why is it important to reflect on the EV ChargeUp Pilot?**

13 A. The Company is partially relying on the previous pilots' structure and findings
14 to justify its current proposed pilots. This suggests that if the previous pilots were
15 designed poorly, the current pilots may suffer from similar structure flaws.

16 Based on the Company's detailed description of its residential subscription rate
17 pilot, in comparison, it appears that the Company likely created an evaluation and
18 assessment plan for that pilot. Witness Everett discusses that pilot in much more detail
19 than the Company does its TE Pilots. Specifically, there are clear objectives explicitly

1 stated,⁸ clear metrics,⁹ an analytical approach is specified,¹⁰ and there is a clear timeline
2 for the analysis to be conducted.¹¹ The same cannot be said for the Company's TE Pilots.
3 It is unclear as to why the Company does not have a more rigorous approach specific
4 for its TE Pilots.

5 **Q. Did Duquesne file anything that resembles an evaluation and assessment plan**
6 **for its EV ChargeUp Pilots?**

7 A. No. While the rigor and depth of an evaluation and assessment plan will vary
8 based on the resources expended within a pilot, each pilot should be accompanied by
9 an evaluation and assessment plan. I recommend that the Commission require
10 Duquesne to file a comprehensive evaluation and assessment plan within in 90 days of
11 approval if the Commission approves any of the Company's proposed pilots.¹²

12 **IV. ASSESSMENT OF THE COMPANY'S PROPOSED TE PROGRAMS**

13 **Q. How is this section of your testimony organized?**

14 A. In Section IV.A, I discuss the objectives of the Company's proposed TE Programs
15 and high-level structural components. In Section IV.B, I provide analysis of the
16 proposed rebates and incentives of the Company's pilot proposals. In Section IV.C, I

⁸ Witness Everett at 35, lines 4-5

⁹ E.g., Witness Everett at 37, lines 4-6.

¹⁰ Witness Everett at 40-41.

¹¹ Witness Everett at 36, lines 13-14.

¹² See The Company's response to OCA-IV-2.f.

1 discuss the importance of load management and provide analysis of the Company's
2 load management efforts within the pilots.

3 **A. Objectives and Structure**

4 **Q. What are the Company's objectives for the proposed TE Programs?**

5 A. According to the Company's responses to discovery question OCA-IV-4, there
6 are three objectives for the proposed TE Programs. The first objective is to evaluate the
7 grid impacts of EVs to inform its distribution system planning. The second objective is
8 to provide education and advisory services to help customers transition to EVs. The
9 third objective is to mitigate market obstacles to facilitate charging infrastructure
10 deployment.

11 **Q. Do you have any concerns with the Company's pilot objectives?**

12 A. Yes. My primary concern is that the Company's focus is on building
13 infrastructure, including both make-ready infrastructure for EV charging sites as well as
14 other distribution system infrastructure to accommodate increasing EV demand, rather
15 than integrating EVs onto the grid and minimizing the costs of transportation
16 electrification to ratepayers. EV integration and load management, such as ensuring
17 EVs charge during off-peak hours, are what bring ratepayer benefits, yet the
18 Company's stated objectives make no explicit mention of load management. In contrast,
19 two out of three objectives are about increasing infrastructure buildout to serve EV
20 charging. Correspondingly, the metrics to evaluate the pilots listed by the Company

1 primarily concern infrastructure construction, not load management. While
2 infrastructure is needed to support the growing number of EVs, TE Pilots that are not
3 accompanied with comprehensive load management offerings can lead to unreasonable
4 levels of rate pressure for ratepayers.

5 In addition, for the metrics the Company did identify, many were not specific
6 enough to allow for an effective evaluation of whether the objectives will be met.¹³ For
7 example, one of the metrics is stated as the “quantity and quality of data and analysis
8 gathered through the EV Registration incentive and Charging Infrastructure Portfolio.”
9 There are many types of data associated with EV charging, and specific pieces of data
10 are necessary to sufficiently inform the development of load management and other TE
11 programs. The Company should clarify explicit data collection and reporting metrics to
12 a higher level of detail, as transparency is important for regulators and intervenors to be
13 able to conduct a thorough analysis of the pilot proposals.

14 Moreover, the Company does not seem to have a detailed evaluation and
15 assessment plan for the proposed pilots. As discussed, previously, an evaluation and
16 assessment plan are essential for every pilot to ensure that the pilot is transparently and
17 effectively evaluated and that useful lessons are generated to inform program or rate
18 designs that deliver ratepayer benefits. With that said, each evaluation and assessment
19 plan needs to be built from clear objective that will create benefits for ratepayers.

¹³ See The Company’s response to OCA-IV-4 and OCA-XI-8.

1 **B. Make-ready and Incentives**

2 **Q. Do you have any concerns with the Company’s proposal to provide incentives**
3 **for charger installation for residential customers?**

4 Yes. Overall, the Company’s identification of publicly accessible EV
5 infrastructure for investment and proposals to provide additional technical and
6 financial support for low-income customers and customers in EJ Areas are appropriate.
7 However, I have concerns with the Company’s intent to use ratepayer funds to
8 construct make-ready infrastructure at individual homes. Residential charging stations
9 are not publicly accessible or shared, and thus do not expand access to EV charging as
10 much as publicly accessible or shared sites such as multi-unit dwellings, workplaces, or
11 other public locations. Moreover, low-income households tend to be renters and/or live
12 in multi-unit dwellings. In order to ensure that ratepayer dollars facilitate EV charging
13 access for those who are the least likely to afford it, investments should focus on
14 publicly accessible charging sites, not private homes. The Home Charging Pilot should
15 not be approved by the Commission. Instead, investments should be focused on
16 customer segments identified under the Make-Ready Pilot and Fleet and Transit Pilot.

17 **Q. Do you have any concerns with the Company’s proposal to own make-ready**
18 **infrastructure and EV chargers under the Make-Ready Pilot and Fleet and Transit**
19 **Charging Pilot?**

20 **A. Yes. I am concerned by the Company’s proposal to participate in competitive**
21 **markets without sufficient justification. The market for EV chargers is already mature**

1 and highly competitive, with many market providers offering a diversity of products
2 that serve a variety of customer needs. Not only would utility ownership of Electric
3 Vehicle Supply Equipment (EVSE) stifle competition in this market, but also there is
4 simply no need to use ratepayer funds to address a need that can already be met by the
5 market. Electric panels are also part of an emerging competitive market, with smart
6 panels beginning to offer load control options for DERs, including EVs.¹⁴ For the Make-
7 Ready Pilot and the Fleet and Transit Charging Pilot, the Company should not own EV
8 chargers. Providing customers with a rebate, however, would accomplish the goal of
9 lowering cost barriers while avoiding interference with the competitive market. But
10 even rebates need to be justified based on their value added and ratepayer impacts.

11 **Q. Do you have concerns with the Company's proposed cost treatment for the**
12 **Charging Infrastructure Portfolio?**

13 A. Yes. The Company's proposal to rate base costs associated with the Charging
14 Infrastructure Portfolio is unreasonable. Approving the Company's request to rate base
15 these costs would re-enforce the incentive to over-build EV infrastructure, which
16 already appears to be negatively influencing the Company's TE proposals. The
17 Commission should send a clear signal to Duquesne that load management is the

¹⁴ Utility Dive. 2019. "Ex-Tesla exec wants to increase utility control of DERs, and has a smart panel to do it." <https://www.utilitydive.com/news/Tesla-powerwall-inspires-electric-panel-span-DER-utility-metering-AMI-renewables-EV-solar-storage/563264/>

1 utility's central responsibility – allowing them to rate base behind-the-meter and other
2 EV-related infrastructure would not be an appropriate signal at this time.

3 **Q. What is your recommendation related to the Company's proposed Make-
4 Ready Pilot and Fleet and Transit Charging Pilot?**

5 A. I recommend that the Commission reject the Company's proposal to own behind
6 the meter assets. However, I find portions of the Company's proposal to support TE
7 reasonable. For that reason, I propose similar funding amounts, as modified by
8 recommendations in Section IV.E., for the Make-Ready and Fleet and Transit Charging
9 Pilots, but for those funds to be provided to customers in the form of rebates. Given that
10 the Company did not file an alternative TE Pilot that includes rebate amounts, I request
11 the Company propose rebate levels informed by the EV ChargeUp Pilot, where
12 applicable, in rebuttal.

13 **Q. Please provide support for your recommendation to use rebates instead of
14 approving the Company to own make-ready infrastructure.**

15 A. After reviewing the Company's EV ChargeUp annual reports, I did not find
16 anything that suggests the Company did not achieve its objectives using rebates.¹⁵ I also
17 did not find any evidence to suggest the Company did not reach its target level of
18 customers, achieve successful performance metrics, or that the pilot's rebate structure
19 contributed to any other quantifiable negative performance. The main hindrance to the

¹⁵ See Exhibit SO-1, SO-2, and SO-3.

1 EV ChargeUp pilot's results appears to be the Covid-19 epidemic, which is
2 understandable.

3 The Company's annual reports indicate many positive results. Some examples
4 include (1) incremental revenue, (2) participation from customers in environmental
5 justice areas, (3) increase utility engagement with customers, (4) increase EV awareness
6 and, finally, (4) the Company's conclusion that they are "encourage by the positive
7 overall response to the pilot to date, particularly with respect to the high degree of 'buy-
8 in' demonstrated by participants."¹⁶ Without information to suggest otherwise (i.e.,
9 objectives, metrics, or targets that were not clearly met), the Company's annual reports
10 do not appear to provide any need to move away from rebates.

11 **C. Load Management**

12 **Q. Why is load management so important for EVs?**

13 A. EVs are more flexible than many other traditional loads. This means in most
14 cases EVs can control the timing of energy charged from the grid and technologies are
15 available to control how fast EVs take power from the grid (i.e., throttling demand). If
16 customers are sufficiently educated and provided useful load management services, the

¹⁶ See Exhibit SO-1 at 5. See Also Exhibit SO-2 at 4 (unnumbered page). See generally Exhibit SO-1, SO-2, and SO-3. To be clear, I am cited the Company's claimed positive results. As discussed in Section II.B, I do not believe the pilot was initially structured to determine whether the pilot could succeed or fail—which is the problem with a poorly designed pilot. With that said, the evidence provided by the Company does not appear to support a move away from a rebate structure.

1 flexibility of EV load could help reduce rate pressure by spreading rates over more sales
2 units.

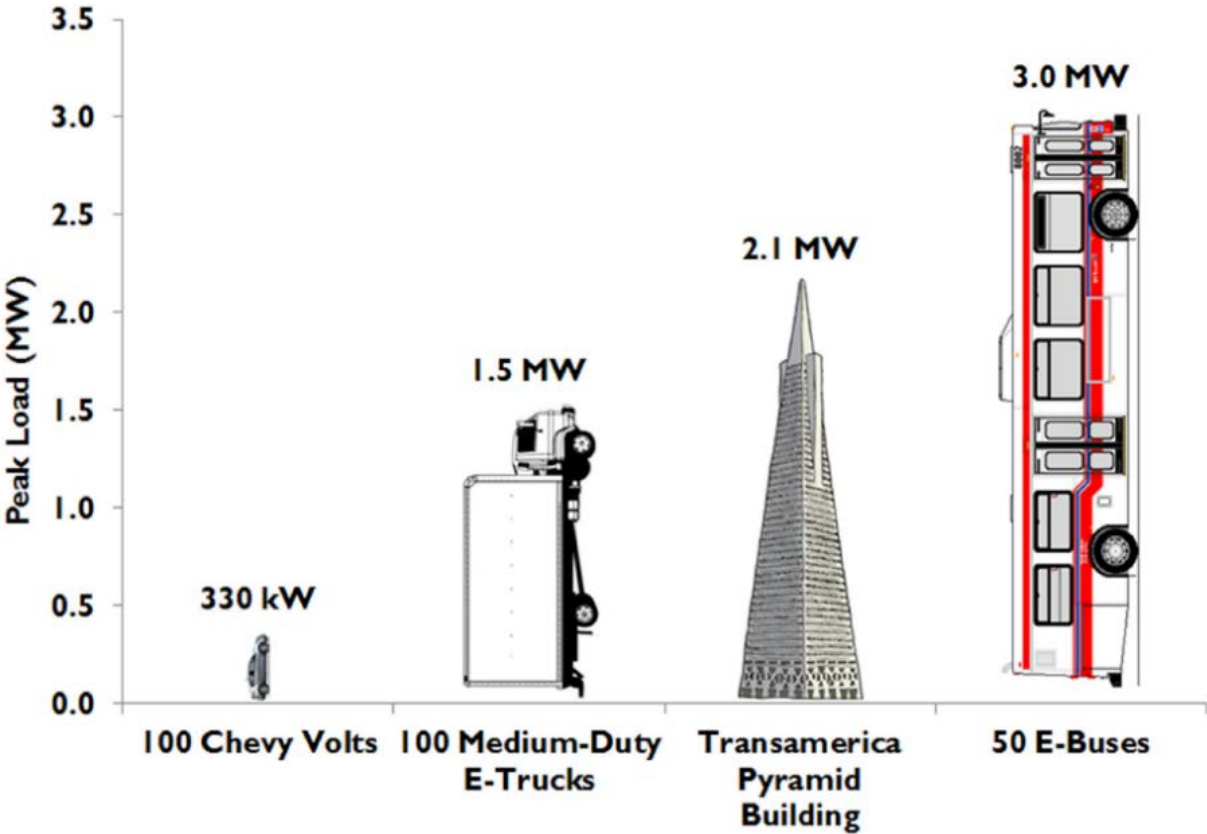
3 However, the load growth and magnitude that EVs could, and likely will,
4 represent over coming years should not be underestimated. Swift and focused attention
5 is required by regulators and utilities to ensure EV loads are managed through various
6 approaches. If unmanaged, the majority of EV load can occur during peak periods and
7 create considerable rate pressure, not only necessitating significant infrastructure
8 buildout to accommodate the higher peak load but also consuming energy when prices
9 are the highest. A study conducted in 2020 by the Lawrence Berkeley National
10 Laboratory suggests that California can save between \$90 to \$690 million, or up to 10%,
11 of grid operating costs by 2025 with managed charging compared to a scenario with
12 only unmanaged charging.¹⁷ While these figures may not be directly applicable to
13 Pennsylvania, they are illustrative of the potential impacts of unmanaged EV load. Load
14 management is crucial in limiting rate increases associated with TE.

15 Figure 1, below, provides an example of the peak load requirements associated
16 with different EV types.

17 **Figure 1**¹⁸

17 Julia K. Szinai, Colin J.R. Sheppard, Nikit Abhyankar, Anand R. Gopal. 2020. Reduced grid operating costs and renewable energy curtailment with electric vehicle charge management. *Energy Policy*, Volume 136. <https://doi.org/10.1016/j.enpol.2019.111051>.

¹⁸ See Commercial Vehicles and the Global Electricity Landscape. Presented by Calstart. September 19, 2019.



1

2 Figure 1 demonstrates that electrifying approximately 50 buses can create about

3 150% the peak load requirement of a modern (non-electrified) skyscraper.¹⁹

4 Additionally, even a small EV, such as a Chevy Volt, can create a significant spike in a

5 resident's peak demand. For example, a maximum non-coincident peak for a residential

6 customer could be approximately 6 kW. In this case, charging a Chevy Volt would

7 increase residential non-coincident peak demand by over 50%, which could create local

8 distribution capacity constraints. As EV penetrations increase, the need to avoid

¹⁹ See <https://chptap.lbl.gov/profile/239/pyramid-building.pdf>

1 charging during coincident system peaks is necessary to avoid even more significant
2 costs for ratepayers.

3 **Q. Are there any current trends in EVs that are particularly relevant to the**
4 **importance of load management?**

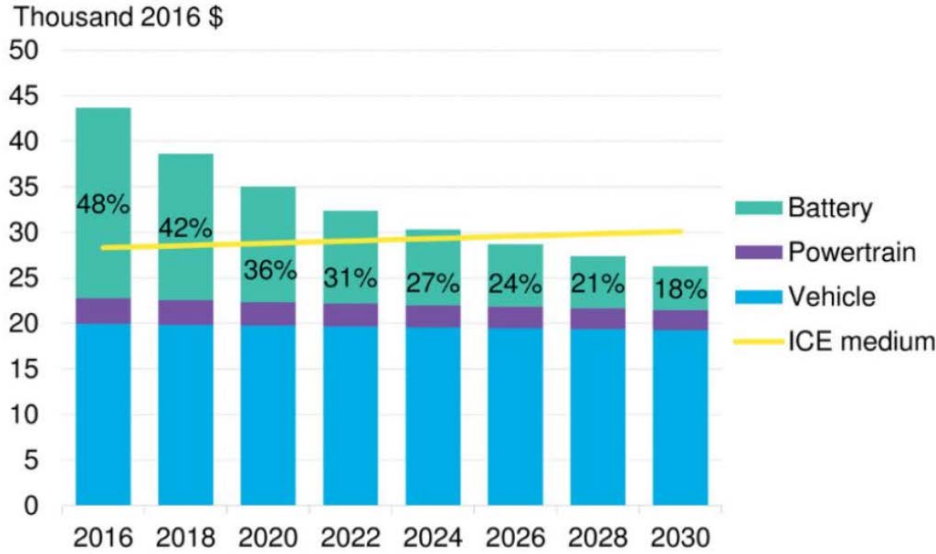
5 A. Yes. A key factor for customer's purchasing decisions is the sticker price of a
6 good, including cars. For an equivalent EV model, EVs have always required a
7 premium for purchase.

8 While EV growth in the Company's territory has been modest, a key threshold
9 for EV uptake is the sticker price. Once equivalent EVs have lower sticker prices that
10 comparable internal combustion models, adoption will likely accelerate faster. The
11 sticker price threshold forecast is shown in Figure 2, below.²⁰

12 **Figure 2**

20 Bloomberg NEF. 2017. "Electric Cars to Reach Price Parity by 2025."
<https://about.bnef.com/blog/electric-cars-reach-price-parity-2025/>

U.S. medium segment vehicle price estimates



Source: Bloomberg New Energy Finance

1

2 While Figure 2 is based on a somewhat dated forecast, the trend is similar for
3 more recent estimates in other countries and suggests that sticker price parity is
4 possible within the next 5 years.²¹

5 Furthermore, automakers are increasingly turning their focus to EVs. Honda has
6 a goal for 40% of sales to be EVs by 2030, 80% by 2035, and 100% by 2040; GM aspires to
7 have 40% of its models to be EVs by 2025, and 100% by 2035; and other automakers
8 such as BMW and Ford have also announced plans to introduce several EV models in
9 the coming years.²² IHS Markit has projected that approximately 130 EV models will be

²¹ See <https://bnef.turtl.co/story/evo-2021/?teaser=yes>
²² Consumer Reports. 2021. "Here Are Automakers' Plans for Adding More Electric Vehicles to Their Lineups." <https://www.consumerreports.org/hybrids-evs/why-electric-cars-may-soon-flood-the-us-market/>

1 available in the US in 2026.²³ The increase in customer options will accelerate EV
2 adoption.

3 **Q. What should be the utility's central role in transportation electrification?**

4 A. Given the significant ratepayer impacts of unmanaged EV charging, it is
5 incumbent on the utility to address load management concerns. Building infrastructure
6 to support TE is permissible and necessary, but load management is critical. Large
7 transportation electrification efforts by a utility should not be authorized until a
8 comprehensive load management plan has been developed and implemented.
9 Frontloading utility investment on EV infrastructure, without a comprehensive load
10 management plan, will lead to overbuilding because the utility will not likely have an
11 accurate understanding of how load management options can reduce the need for
12 infrastructure, nor will the utility be capable of integrating the impacts of load
13 management into their distribution system plans.

14 **Q. Do the Company's proposals sufficiently address load management?**

15 A. No. Consistent with the Company's last round of pilots, the Company's current
16 pilot objectives largely appear to be identifying infrastructure to build. In fact, the
17 Company does not appear to have plans for load management directly incorporated
18 into its proposed pilots. According to the Company's response to discovery OCA-IV-7,

23 Reuters. 2019. "Outside of Tesla, future EV sales in U.S. may be thin for most brands: study."
<https://www.reuters.com/article/us-autos-electric-forecast/outside-of-tesla-future-ev-sales-in-u-s-may-be-thin-for-most-brands-study-idUSKCN1SZ20I>

1 the Company does not have any load management programs under development. The
2 only load management offering currently available is an EV Time-of-Use (“TOU”) Pilot.

3 **Q. What load management programs should the Company consider?**

4 A. The Company should develop offerings for passive and active managed
5 charging, as well as Automated (or Active/Dynamic) Load Management (“ALM”).

6 1. *Passive Managed Charging*

7 **Q. What is passive managed charging?**

8 A. Passive managed charging focuses on altering customer behavior to affect
9 charging times.²⁴ This can be accomplished through rate design or other financial
10 incentives for off-peak charging and for avoiding on-peak charging.

11 **Q. How could the Company’s passive managed charging offerings in**
12 **development be improved?**

13 A. The Company currently has one passive managed charging offering under
14 consideration: an EV TOU rate. While an EV TOU rate with time-varying energy
15 charges is an important first step, more advanced rate designs are necessary to expand
16 options for customers and ensure EV load is shifted away from peak periods to off-peak
17 periods. For example, Xcel Energy Colorado and Minnesota currently offer commercial
18 and industrial customers an EV Critical Peak Pricing (“CPP”) Rate, under which energy

²⁴ Smart Electric Power Alliance. 2019. “EV Managed Charging: Lessons from Utility Pilot Programs.”
<https://sepapower.org/knowledge/ev-managed-charging-lessons-from-utility-pilot-programs/>

1 costs are considerably higher during utility-called critical peak events, on top of on-
2 peak and off-peak pricing during non-event periods.²⁵ San Diego Gas & Electric
3 currently offers the EV Grid Integration Pilot Program, a dynamic rate schedule that
4 reflects day-ahead wholesale electricity prices.²⁶ Providing a variety of rate designs can
5 help accommodate a diversity of customer needs and sophistication, thus creating more
6 grid flexibility and lower costs to ratepayers.

7 Additionally, the Company should also evaluate passive managed charging
8 efforts that go beyond rate design. Many utilities have implemented programs that
9 provide customers with a per kWh incentive for off-peak charging and/or monthly
10 incentive for avoiding on-peak charging. For instance, National Grid in Massachusetts
11 provide residential customers with an Off-Peak Charging Rebate of 3-5 cents per kWh
12 (depending on the season) for all off-peak charging.²⁷ In New York, Con Edison offers
13 the SmartCharge NY Program, which provides residential customers with a 10 cents per
14 kWh incentive for off-peak charging, a \$20 per month incentive for avoiding summer
15 peak charging, as well as ongoing participation incentives.²⁸ Fleet customers are also
16 able to participate in SmartCharge NY, earning 2.21 cents per kWh for off-peak

²⁵

Xcel Energy Colorado. 2021. *EV Critical Peak Pricing Information Sheet*.
<https://www.xcelenergy.com/staticfiles/xcel-responsive/Programs%20and%20Rebates/Business/EV-CPP-Info-Sheet.pdf>

²⁶San Diego Gas & Electric. 2017. *Schedule VGI*. https://www.sdge.com/sites/default/files/elec_elec-scheds_vgi.pdf

²⁷ Massachusetts Department of Public Utilities. 2019. *September 30 Order*, pg. 340-341, 387-392. Proceeding 18-150. <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/11262053>

²⁸ Con Edison. 2020. "ConEdison EV Managed Charging Filing." Case 18-E-0138.
<http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={F8F2D2E1-B190-4DB4-B3F3-2BDC127568F5}>

1 charging and \$250 per month for avoiding charging during demand response periods.
2 Central Hudson,²⁹ NYSEG, RG&E,³⁰ and Orange & Rockland³¹ have also proposed
3 similar programs as per Commission directive. This program structure can achieve
4 similar objectives as an EV TOU rate but could allow billing determinants to be
5 measured via the charger or the vehicle's onboard telematics.³² By not requiring a
6 separate meter, this type of program would be more affordable for customers,
7 particularly low-income households who are less likely to afford a separate meter for
8 EV charging.

9 2. *Active Managed Charging*

10 **Q. What is active managed charging?**

11 A. Active managed charging programs utilizes direct load control via the charger,
12 vehicle telematics, or smart circuit breaker or panel, to allow the utility or a third party
13 (e.g., aggregator, EV service provider) to determine and/or control the charging time,
14 level, and location.³³

²⁹ Central Hudson. 2020. "Central Hudson Electric Vehicle Managed Charging Proposal." Case 18-E-0138.
<http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={CE9F89CB-B8FF-43FB-9BEF-B63D6E62638C}>

³⁰ NYSEG & RG&E. 2020. "Mass Market Managed Charging Program Proposal." Case 18-E-0138.
<http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={DB610147-8910-4D1C-9BCF-C1E689129617}>

³¹ Orange & Rockland. 2020. "Managed Charging Program for Mass Market Customers." Case 18-E-0138.
<http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={AF86B4E0-861F-4AE1-BBD4-0EF3E4C561EB}>

³² Telematics describes the vehicle's onboard communication services and applications that enables communication between a vehicle and an established network. Telematics can be used for energy and charge reporting, GPS vehicle tracking, route management, battery health monitoring, direct load control, and more.

³³ Smart Electric Power Alliance. 2019. "EV Managed Charging: Lessons from Utility Pilot Programs."
<https://sepapower.org/knowledge/ev-managed-charging-lessons-from-utility-pilot-programs/>

1 **Q. Why is active managed charging necessary?**

2 A. Active managed charging allows for a greater degree of flexibility and control of
3 EV load than passive managed charging. Passive managed charging, which relies on
4 rate designs or program incentives to encourage off-peak charging, can oftentimes lead
5 to a load peak at the start of the off-peak period. Active managed charging allows the
6 utility or a third party to “smooth” the EV demand curve by scheduling charging
7 sessions. The Static Optimization program offered by Xcel Energy Colorado follows this
8 approach.³⁴ Active managed charging can also be used to ensure EVs are charged
9 during periods with the lowest energy costs or highest renewable energy penetration.
10 For example, the Charge Smart Program offered by Central Hudson and Orange &
11 Rockland in New York leverages networked chargers to shift EV charging to periods
12 when greenhouse gas emissions from power generation are the lowest, using forecast
13 and real-time emissions data.³⁵ Xcel Energy Colorado is also working with automakers
14 to implement the Charging Perks Pilot, which uses vehicle telematics to shift charging
15 to hours with the lowest day-ahead power production costs.³⁶ Under Xcel Energy

34 Xcel Energy Colorado. 2021. “2021/2022 Demand-Side Management Plan,” pg.262-263.
https://www.xcelenergy.com/staticfiles/xeresponsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/CO-DSM/CO_2021-22_DSM_Plan_Final.pdf

35 Orange & Rockland Store. 2020. “Charge Smart Program.”
https://myorustore.com/s/ORU/content_charge_smart_program.html

36 Xcel Energy Colorado. 2021. “2021/2022 Demand-Side Management Plan,” pg. 263-265.
https://www.xcelenergy.com/staticfiles/xeresponsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/CO-DSM/CO_2021-22_DSM_Plan_Final.pdf

1 Colorado’s TE Plan, all residential customers and certain MUD customers receiving
2 rebates for EV chargers and infrastructure are required to enroll in a managed charging
3 program.³⁷ Finally, active management can allow EVs to participate in demand
4 response (“DR”) programs, like the Active Demand Reduction programs implemented
5 by National Grid and Eversource in Massachusetts.³⁸

6 3. *Automated Load Management*

7 **Q. What is Automated Load Management?**

8 A. ALM, also known as Dynamic Load Management or EV Management Systems,
9 strategically distributes charging capacity among multiple charging ports at the same
10 charging site.

11 **Q. Why is Automated Load Management important?**

12 A. ALM can help safely connect multiple charging ports whose total nameplate load
13 would otherwise exceed the rated capacity of the customer connection. This in turn can
14 avoid or defer the need to upgrade certain customer-side and utility-side infrastructure

responsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/CO-DSM/CO_2021-
22_DSM_Plan_Final.pdf

37 Colorado Public Utilities Commission. 2021. *Decision No. C21-0117*, pg. 9-11. Proceeding No. 20A-0204E.

https://www.dora.state.co.us/pls/efi/efi_p2_v2_demo.show_document?p_dms_document_id=941065

38 Massachusetts Joint Statewide Electric and Gas. 2018. “Three-Year Energy Efficiency Plan 2019-2021.” Appendix K. <https://ma-eeac.org/wp-content/uploads/Exh.-1-Final-Plan-10-31-18-With-Appendices-no-bulk.pdf>

1 to accommodate the new EV charging load. For example, if a MUD seeks to deploy a
2 charging station with 5 ports, each with a 10-kW capacity, the distribution upgrades
3 would normally be sized to accommodate 50 kW of incremental coincidental charging
4 demand, equal to all 5 ports charging at full capacity. However, ALM can lower the
5 coincident charging demand to 30 kW, or 6 kW per port on average, when all 5 ports
6 are occupied, thus reducing distribution system upgrades to what is required for only 3
7 ports. In this scenario, when only 3 or fewer ports are occupied, the EVs can still charge
8 at full speed. Having ALM available to customers as an option can lead to significant
9 savings for ratepayers and ensure that investments in TE are used efficiently. Pacific
10 Gas & Electric has worked with EV service providers to implement ALM solutions at 20
11 MUD and workplace host sites as of Q4 2020 and saved between \$30,000 and \$200,000
12 per project.³⁹

13 **Q. What do you recommend?**

14 **A.** Regardless of whether the Commission approves or disapproves the Company's
15 TE Pilots, within 18 months of the final order, Duquesne should file a comprehensive
16 EV load management proposal that includes a description of the Company's future
17 offerings, investments required to offer each type of load management offering, an
18 estimated timeline to implement the offerings, to what customers segments the

39 Pacific Gas & Electric. 2021. Presentation at CPUC ALM/EV EMS Workshop, Panel 2.

1 offerings may be made available, and a proposed implementation plan for ALM to
2 mitigate customer and utility side infrastructure requirements.

- 3 o Regarding the information provided on offerings, the Company should
4 discuss opt-out offerings for passive managed charging and opt-in
5 offerings for active managed charging for all customer types.
- 6 o Six months prior to this filing, the Commission should require the
7 Companies to provide a presentation to stakeholders that provides an
8 overview of what will be in the comprehensive load management
9 proposal, allow for Q&A at the meeting, and allow stakeholders to file
10 comments on impressions and improvements that could be made to the
11 scope of the proposal.
- 12 o After the 18-month filing, the Commission should require one stakeholder
13 meeting with the purpose of allowing stakeholders to ask questions of the
14 Company, a round of formal comments from stakeholders on how to
15 improve the Company's filings, and a reply round for the Company to
16 respond to and incorporate feedback from stakeholders.

17 **D. Customer Education and Advisory Services**

18 **Q. Do you have any concerns about the Company's proposed Awareness,**
19 **Education, and Engagement program?**

1 A. Yes. In addition to increasing customer awareness and familiarity with EVs and
2 EV charging infrastructure, any customer education efforts should also address load
3 management to help customers minimize their charging costs and ensure that EV
4 charging incurs fewer costs to the grid. The availability of a single load management
5 offering, the EV TOU Pilot, for which many customer classes are ineligible, does not
6 warrant over \$900,000 in ratepayer funds for the Company to provide customer
7 education to customers, especially when load management is not at the core of the
8 utility education services.

9 **Q. Do you have any concerns about the Company's proposed Fleet Electrification**
10 **Advisory Service?**

11 A. Yes. Any fleet electrification advisory service would be inadequate without a
12 comprehensive analysis of the customer's needs and the Company's load management
13 offerings. According to the Company, the Fleet Electrification Advisory Service will
14 help fleets develop electrification plans by, among other things, identifying which
15 vehicles are the best candidates for electrification, calculating total cost of ownership,
16 and estimating the charging infrastructure required to support electrification.⁴⁰ It is
17 difficult to understand, and likely impossible, how any of these elements would be
18 accurately assessed without load management considerations. For example, the
19 suitability of each of the customer's vehicle types with each of the Company's load
20 management offerings would determine which vehicles are the best candidates for

⁴⁰ Testimony of Sarah Oleksak, pg, 57, lines 11-16 – pg. 58, line 1.

1 electrification; the ability of the customer to manage their charging or take part in
2 demand response programs would impact the total cost of ownership; and the
3 implementation of ALM would influence the amount of infrastructure needed. Thus,
4 the fleet advisory service would not be very helpful to customers until the Company
5 has sufficiently developed its load management offerings. That is if the goal is to
6 minimize system and customer costs with the Company's advisory services. If that is
7 not the goal, ratepayers should not be paying for the advisory services at all.

8 **Q. What are your recommendations related to the Company's request for**
9 **customer education and fleet advisory services cost recovery?**

10 A. I recommend reducing the Company's request for customer education by 75%
11 and rejecting the fleet advisory services. Load management should be the core of
12 customer education and a significant component of the Company's advisory services.
13 Until the Company has more comprehensively developed load management programs,
14 funding should be limited for these areas.

15 **E. Pilot Years 2023 and 2024**

16 **Q. Are the Companies proposing that the TE Pilots extend beyond 2022?**

17 A. Yes. As noted above, the Company is requesting cost recovery for three years—
18 2022-2024. The 2023 and 2024 cost recovery request are displayed in Section II above.

19 **Q. Based on your analysis of the Company's TE Pilot, what do you recommend**
20 **for 2023 and 2024?**

1 A. If the Company proposes a reasonable rebate structure for its Make-Ready Pilot
2 and Fleet and Transit Charging Pilot, I recommend that the Commission deny the
3 Company's request to extend the pilot through 2024 but approve years 2022-2023 with
4 my recommended modifications and filing requirements. Based on my analysis, the
5 need for additional load management offering is urgent and no EV pilots should be
6 approved after 2023 until the Company meets the requirements I recommend in the
7 next section.

8 **V. RESIDENTIAL SUBSCRIPTION RATE PILOT**

9 **Q. Did the Company propose any rate designs to accompany its TE pilots?**

10 A. Yes. The Company proposed a residential subscription rate.

11 **Q. Please describe the Company's residential subscription rate.**

12 A. The residential subscription rate does not appear to be directly tied to the TE
13 Programs, but the Company frames the residential subscription rate as one of two load
14 management efforts related to the TE Pilots.⁴¹ Specifically, the residential subscription
15 rate would offer customers the option to select a specified level of "grid access" for
16 distribution service for a set monthly charge.⁴² According to Witness Everett, the "rate
17 is structured based on incremental levels of demand ... based on a customer's (sic)
18 estimated maximum demand levels over the year."⁴³

⁴¹ Witness Kubiak Direct at 67-68. The other load management is the EV TOU discussed previously.

⁴² Witness Neiswonger Direct at 10.

⁴³ Witness Everett Direct at 35.

1 **Q. Please respond to the Company's proposed subscription rate.**

2 A. While a voluntary subscription rate could, under circumstances, provide a
3 beneficial price signal for the distribution system, I do not find framing the rate as a
4 load management offering to be persuasive for a couple of reasons.

5 First, the Company's subscription rate focuses on non-coincident peak (NCP),
6 not system peak. This means that the rate could conceivably increase usage for a
7 customer during system peak, but incent them to potentially lower NCP. TOU rates can
8 be designed to better reflect most of the costs caused (i.e., transmission and generation)
9 with a simpler pricing structure.

10 Second, the rate is incredibly hard for customers to understand, especially
11 because the Company is not providing any enabling technology. The Company is
12 essentially requiring customers to know the NCP demand requirement of each piece of
13 electrical equipment in their homes and guess at what their hourly demand
14 requirement are over the upcoming year.⁴⁴ As customers continue to add electrified
15 devices to their homes, such as EVs, this becomes increasingly difficult to impossible. In
16 fact, the subscription rate could act as a barrier to EV adoptions. For example, if a
17 customer opts into the subscription rate without an EV, that same customer could very
18 likely pay a penalty by increasing their peak demand with uncontrolled EV charging
19 because the Company has no load management options that can be paired with the

⁴⁴ See Rider No. 7, Determination of Demand For Distribution. See Also Witness Everett Direct at 38.

1 subscription plan. While the Company notes that customers will be contacted if they
2 exceed subscription demand thresholds, the Company does not indicate (1) how the
3 customer will be contacted or (2) how long after the threshold the customer will be
4 contacted. Furthermore, none of these requirements that the Company is committing to
5 is in the Rider No. 7, so the customer may not know about any of the commitments. The
6 price signal relied upon for the subscription rate is difficult for customers to understand
7 and therefore respond to.

8 For these reasons, the residential subscription rate should not be relied upon as a
9 load management tool for EV load.

10 **Q. Do you have outstanding questions related to the subscription rate pilot?**

11 A. Yes. I have multiple outstanding questions that I would like the Company to
12 respond to in rebuttal testimony.

13 First, the Company claims that the “cost of designing and implementing the
14 Residential Subscription Plan is \$67,000 over the course of three years.”⁴⁵ It is unclear
15 what this cost estimate includes. For example, does it include a portion of Witness
16 Everett’s testimony costs, evaluation and assessment of the pilot, or ongoing consultant
17 fees? Witness Everett mentions a pilot evaluation multiple times, including surveys and
18 an evaluation of a control group, but it does not appear that the Company explicitly
19 cited the costs of the analysis.⁴⁶ For this reason, I request the Company provide an

⁴⁵ Witness Neiswonger Direct at 11.

⁴⁶ Witness Everett Direct at 41.

1 estimate of the additional costs that will be incurred throughout the life of the pilot, if
2 any, and include any evaluation and assessment plan the Company or Witness Everett
3 has created to inform the analysis.

4 Second, I am confused by the Company's focus on its subscription rate plan
5 when it already has an approved TOU EV rate. As I noted above, the Company has
6 gone to great lengths to provide a detailed (and likely expensive) pilot proposal.
7 However, in a recent study commissioned by the Company, approximately 85% of
8 customers were very or somewhat interested in the TOU offering, while only 39% of the
9 customers were interested in a similar subscription rate plan.⁴⁷ This makes me question
10 the value that will be added by this pilot and why the Company should not first focus
11 on scaling its already approved EV TOU rate.

12 Third, I would like the Company to respond to my concern that the subscription
13 rate could embed a perverse incentive for the utility to advise larger than needed
14 subscription levels to its customers, especially if the offering were ever scaled to an
15 optional tariff. As designed, the customer would have to choose an annual kW
16 subscription level for which the customer will not exceed without penalty.⁴⁸ As noted
17 above, there is no reason why a customer should be able to do this with accuracy and
18 they will have little insight into how much their demand could increase each year. This

⁴⁷ See the Company's response to OCA-XI-12 Attachment 1.

⁴⁸ The Company created an overage bandwidth, but once that is hit three times in a year the customer will be charged for additional capacity.

1 lack of information paired with the Company's incentive to maximize profit, not only
2 gives the Company a financial incentive to get customers to over-subscribe for demand
3 but indicates they could be successful in doing so.⁴⁹

4 **Q. What is your recommendation related to the residential subscription rate?**

5 A. At this time, I do not object to the subscription rate, but reserve the right to do so
6 after reviewing the Company's response to this issue and the EV load management
7 options I covered above, as well as the testimonies of the other parties regarding the
8 residential subscription rate pilot.

9 **VI. RECOMMENDATIONS AND CONCLUSIONS**

10 **Q. Should the Commission approve the Company's proposed pilots?**

11 A. While it would be reasonable for the Commission to reject all of the Company's
12 proposed pilots on the grounds that the Company has not sufficiently developed its
13 load management offerings, the Company has appropriately prioritized publicly
14 accessible and shared infrastructure projects and will likely generate public benefits
15 within some of its pilot proposals with the right modifications. For that reason, I
16 recommend the Commission require the following:

- 17 • Reject the Home Charging Pilot in its entirety.
- 18 • Deny the Company's request to rate base behind-the-meter make-ready
- 19 infrastructure and EV charging stations for any of its proposed TE Pilots.

⁴⁹ See Witness Everett Direct at 46.

- 1 o If the Company does not propose a reasonable rebate structure for the
2 Make-Ready Pilot and Fleet and Transit Charging Pilot in rebuttal, reject
3 these pilots.
- 4 • If the Commission approves any of the Company's TE Pilots:
- 5 o Within 90 days of approval the Company should file the following:
- 6 ▪ An evaluation and assessment plan tied to more clearly defined
7 objectives, which will inform annual filing requirements for the
8 approved pilots.
- 9 o Reduce the Company's request for the Awareness, Education, and
10 Engagement program by 75% and reject the Fleet Electrification Advisory
11 Service.
- 12 o Deny the Company's request to extend the remaining pilots through 2024
13 but approve years 2022-2023 with my recommended modifications.
- 14 • Regardless of whether the Commission approves or disapproves the Company's
15 TE Pilots, within 18 months of the final order, Duquesne should file a
16 comprehensive EV load management proposal that includes a description of the
17 Company's future offerings, investments required to offer each type of load
18 management offering, an estimated timeline to implement the offerings, to what
19 customers segments the offerings may be made available, and a proposed
20 implementation plan for ALM to mitigate customer and utility side
21 infrastructure requirements.

Fleet and Transit Charging Pilot	\$2,011,448	\$2,011,448	\$1,102,373	\$1,102,373	\$1,265,571	\$0
Home Charging Pilot	\$502,371	\$0	\$377,471	\$0	\$380,471	\$0
Customer Portfolio						
Awareness, Education, Engagement	\$392,460	\$98,115	\$261,000	\$65,250	\$261,000	\$0
Fleet Electrification Advisory Service	\$292,448	\$0	\$236,948	\$0	\$236,948	\$0
Registration Incentive	\$67,949	\$67,949	\$99,632	\$99,632	\$150,859	\$0

1

2 **Q. Does this conclude your direct testimony?**

3 **A. Yes.**

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PROFESSIONAL BACKGROUND AND EDUCATION

EDUCATION

- M.S. **Agricultural and Resource Economics**
Colorado State University, Fort Collins, CO, 2013
- Minor **Mathematics**
Western Washington University, Bellingham, WA, 2011
- B.A. **Environmental Economics**
Western Washington University, Bellingham, WA, 2006

EMPLOYMENT

- 2018 - Present Director, Strategen Consulting
- 2013 – 2017 Utilities Economist, Antitrust and Utilities Division, Office of the Minnesota Attorney General
- 2012 – 2013 Consulting Economist, United States Geological Survey
- 2011 – 2013 Economic Research Assistant, Colorado State University

PREVIOUS TESTIMONY

Company	Docket No.	Subject
PECO Rocky Mountain Power	R-2021-3024601 20-035-04	Transportation Electrification ECOSS, Rate Design, Pilot Frameworks, AMI
Minnesota Power* Pennsylvania Power and Light Eversource	E-002/GR-19-442 P-2019-3010128 DE 19-057	ECOSS and low-income rate design DER integration and management ECOSS, MCOSS, Rate Design, Decoupling, and Performance-Based Regulation
Liberty Utilities	DE 19-064	MCOSS, Rate Design, and Performance- Based Regulation
Oklahoma Gas and Electric Public Service Company of Oklahoma	201800140 201800096	CCOSS and Rate Design Rate Design, Grid Modernization, and Performance-Based Regulation
Vectren Energy Delivery of Ohio Commonwealth Edison Ameren Illinois Company Oklahoma Gas and Electric Minnesota Power	18-0298-GA-AIR 18-0753 18-0537 201700496 E-002/GR-16-664	CCOSS and Rate Design Distributed Generation Rebates Distributed Generation Rebates CCOSS and Revenue Apportionment CCOSS, Rate Design, and the Utility Business Model
Otter Tail Power	E-002/GR-15-1033	Marginal and Embedded CCOSS and Rate Design
Xcel Energy	E-002/GR-15-826	CCOSS, Rate Design, and Performance- Based Regulation

Minnesota Energy Resources Corp.	G-011/GR-15-736	CCOSS and Rate Design
CenterPoint Energy	E-002/GR-15-424	CCOSS and Rate Design
Dakota Energy Association	E-002/GR-14-482	CCOSS and Rate Design
Xcel Energy	E-002/GR-13-868	CCOSS and Rate Design
Minnesota Energy Resources Corp.	G-011/GR-13-617	CCOSS
CenterPoint Energy	G-008/GR-13-316	CCOSS

*Settled before direct was filed

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024750
	:	
Duquesne Light Company	:	

VERIFICATION

I, Ron Nelson, hereby state that the facts set forth in my Direct Testimony, OCA Statement 6, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 30, 2021
*311966

Signature: *Ron Nelson*
Ron Nelson

Consultant Address: Strategen Consulting
2150 Allston Way
Suite 400
Berkeley, CA 94704

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)	
v.)	Docket No. R-2021-3024750
Duquesne Light Company)	

REBUTTAL TESTIMONY

OF

GLENN A. WATKINS

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

JULY 26, 2021

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1 **I. INTRODUCTION**

2

3 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A. My name is Glenn A. Watkins. My business address is 6377 Mattawan Trail,
5 Mechanicsville, Virginia 23116.

6

7 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING**

8 A. Yes. I filed direct testimony on June 30, 2021 which was designated as OCA
9 Statement No. 3.

10

11 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

12 A. The purpose of this testimony is to respond to the direct testimony of OSBA
13 witness Robert Knecht on issues concerning class cost of service and class revenue
14 allocations. I will also respond to the direct testimony of I&E witness Esyan Sakaya
15 on issues concerning Residential customer charges.

16

17 **II. CLASS COST OF SERVICE**

18

19 **Q. DID I&E WITNESS SAKAYA OPINE ON THE REASONABLENESS OF THE**
20 **COMPANY'S CLASS COST OF SERVICE STUDY ("CCOSS")?**

21 A. No. Mr. Sakaya does not opine on the reasonableness of the Company's
22 CCOSS.

23

24 **Q. DOES OSBA WITNESS KNECHT HAVE ANY DISAGREEMENTS AND**
25 **ADJUSTMENTS TO THE COST OF SERVICE STUDY CONDUCTED BY**
26 **COMPANY WITNESS GORMAN?**

27 A. Yes. Mr. Knecht has two disagreements with Mr. Gorman's approach to
28 classify and allocate distribution plant in which he then proposes several adjustments
29 to the Company's CCOSS. These disagreements and adjustments relate to: (1) the
30 classification of primary distribution plant (between customer and demand); and, (2)
31 the determination of various demand allocation factors.

1 **Q. PLEASE EXPLAIN MR. KNECHT’S DISAGREEMENT AND ADJUSTMENT**
2 **TO THE CLASSIFICATION OF PRIMARY DISTRIBUTION PLANT.**

3 A. As correctly noted by Mr. Knecht, the Company’s CCOSS classifies primary
4 voltage distribution plant as 100% demand-related; i.e., no primary voltage plant is
5 allocated based on number of customers but rather totally on non-coincident peak
6 (“NCP”) demands. Mr. Knecht disagrees with Mr. Gorman’s approach primarily
7 because of his assertions that Commission “precedent” requires that a portion of
8 primary voltage plant costs must be partially demand-related and partially customer-
9 related.

10 While Mr. Knecht accurately refers to prior cases in which the Commission
11 has approved the classification of primary distribution plant as partially customer and
12 partially demand related, it is apparent that Mr. Knecht has developed his opinion and
13 recommendation based on prior utility cases rather than the facts and circumstances
14 unique to Duquesne in this case. In other words, it is apparent that Mr. Knecht’s
15 position is that the facts and circumstances unique to an individual utility are not
16 relevant, but rather, prior Commission Decisions for entirely different utilities with
17 different facts and circumstances should trump the realities of an individual utility or
18 case. As a result, Mr. Knecht has classified each primary distribution plant account
19 as partially customer-related and partially demand-related.

20
21 **Q. BEFORE YOU EXPLAIN HOW MR. KNECHT CLASSIFIED DUQUESNE’S**
22 **PRIMARY DISTRIBUTION PLANT BETWEEN CUSTOMER AND**
23 **DEMAND, DOES HE PROVIDE OTHER REASONS IN SUPPORT OF HIS**
24 **OPINION THAT PRIMARY DISTRIBUTION PLANT MUST BE**
25 **CLASSIFIED AS PARTIALLY CUSTOMER-RELATED AND PARTIALLY**
26 **DEMAND-RELATED?**

27 A. Yes. On pages 13 and 14 of his direct testimony, Mr. Knecht states:
28 Moreover, the NARUC manual for electric cost allocation
29 specifies that distribution plant costs have both a demand and a
30 customer component, and it identifies the minimum system
31 approach as one of the standard methods. It indicates that the
32 minimum system should be applied to both primary and secondary
33 distribution plant (excluding substations). The manual further

1 supports the use of NCP and individual customer demands as
2 allocation factors for distribution-related costs. The Commission
3 has cited to the NARUC Manual in support of its decisions in PPL
4 Electric and UGI Electric.
5

6 **Q. DO YOU AGREE WITH MR. KNECHT'S CHARACTERIZATION THAT**
7 **DISTRIBUTION PLANT MUST BE CLASSIFIED AS PARTIALLY**
8 **CUSTOMER-RELATED AND PARTIALLY DEMAND-RELATED?¹**

9 A. Not at all. Nowhere in the NARUC Electric Utility Cost Allocation Manual
10 does it state, or even infer, that distribution plant must classified as partially demand
11 and partially customer. In fact, and as provided in my direct testimony (page 20),
12 what the NARUC Manual does state on this issue is as follows:

13 To ensure that costs are properly allocated, the analyst must first
14 classify each account as demand-related, customer-related, or a
15 combination of both. The classification depends upon the analyst's
16 evaluation of how the costs in these accounts were incurred. In
17 making this determination, supporting data may be more important
18 than theoretical considerations.

19
20 Allocating costs to the appropriate groups in a cost study requires a
21 special analysis of the nature of distribution plant and expenses.²
22

23 **Q. PLEASE EXPLAIN MR. KNECHT'S ALTERNATIVE CLASSIFICATION OF**
24 **DISTRIBUTION PLANT.**

25 A. First, it should be understood that Mr. Knecht accepted and utilized Mr.
26 Gorman's classification of every secondary voltage distribution plant account. With
27 regard to primary voltage distribution plant, Mr. Knecht simply classified these
28 primary plant accounts at half of Mr. Gorman's secondary customer percentages. To
29 illustrate, Mr. Gorman classified secondary overhead poles and conductors as 94.93%
30 customer-related and 5.07% demand-related. Mr. Knecht then classified primary
31 overhead poles and conductors 47.46% (half of 94.93%) as customer-related and the
32 remaining 52.54% as demand-related.

¹ It should be understood that the classification of distribution plant relates to overhead poles and conductors, underground conduit and conductors, and line transformers. These classifications do not apply to substations, services, or meters.

² "Electric Utility Cost Allocation Manual," National Association of Regulatory Utility Commissioners, January 1992, page 89.

1 Although Mr. Knecht was unable to conduct his own study specific to
2 Duquesne’s primary distribution system, he concluded “that the customer portion of
3 primary system costs is generally modestly lower than for secondary system plant.”³
4 Therefore, Mr. Knecht accepted each of Mr. Gorman’s customer classifications of
5 secondary distribution plant at face value and then simply assumed that the customer
6 component of each primary plant account should be classified at half the customer
7 component of the respective secondary distribution plant account.

8 Even if one were to accept Mr. Knecht’s proposition that Duquesne’s primary
9 voltage distribution plant accounts should be partially customer-related and partially
10 demand-related, I explained in my direct testimony that Mr. Gorman’s customer
11 percentages of secondary distribution plant are grossly overstated. Again, using
12 secondary poles and overhead conductors as an example, Mr. Gorman classified these
13 plant accounts as 95% customer-related and only 5% demand-related. Mr. Gorman’s
14 approach and conclusions defy logic wherein his assumptions and analyses are
15 severely flawed.

16
17 **Q. PLEASE EXPLAIN MR. KNECHT’S ADJUSTMENTS TO VARIOUS CLASS**
18 **DEMAND ALLOCATION FACTORS.**

19 A. On pages 15 and 16 of his direct testimony, Mr. Knecht asserts that there is a
20 double-counting of non-residential loads within certain demand allocators. As a
21 result, Mr. Knecht adjusted various NCP class allocation factors.

22 In order to understand Mr. Knecht’s adjustments to demand allocators, it is
23 important to understand how the Company has separated its various distribution plant
24 across sub-systems and classes. With respect to the Company’s overhead plant
25 accounts (both primary and secondary), these costs are allocated across all customer
26 classes based on each class’s NCP demand. Mr. Knecht makes no adjustments to the
27 demand allocators for overhead facilities.

28 With regard to Duquesne’s underground distribution facilities, the Company
29 has identified and separated three categories of underground distribution plant. These
30 categories include: the Downtown Pittsburgh Underground Network (“Network”);

³ Knecht direct, page 14, lines 24-26.

1 Underground Residential Developments (“URD”); and, all remaining (common)
2 underground facilities. With respect to the Downtown Pittsburgh Underground
3 Network, these facilities do not serve Residential customers such that these costs are
4 all assigned to non-Residential customers. With respect to the URD, these facilities
5 have been specifically identified and serve only Residential customers such that all
6 costs are assigned to the Residential class. The remaining underground facilities
7 (referred to as “Radial”) are allocated to all classes. Therefore, and while not
8 technically precise, the Network and URD costs can be thought of as being directly-
9 assigned.⁴ Because the Company was able to determine the Residential customers
10 that are served by underground facilities, Mr. Gorman assigned all of these costs to
11 the Residential class. Similarly, the Downtown Network costs were assigned to the
12 non-Residential classes.

13 Mr. Knecht takes issue with this separation such that he has ignored the
14 separation between the primary voltage URD and Radial facilities; i.e., he has
15 effectively combined primary URD and Radial and allocated these using the same
16 allocation factors across all classes. However, with respect to the secondary voltage
17 system, Mr. Knecht has increased the secondary demand allocation percentages to the
18 Residential class for the Radial facilities (and reduced the allocation percentages to
19 the non-Residential classes) but then he assigned 100% of the secondary URD costs
20 to the Residential class. In other words, Mr. Knecht increased the Residential cost
21 responsibility for secondary underground Radial facilities but then continued to
22 allocate 100% of the secondary URD costs to the Residential class. My Schedule
23 GAW-1R provides a comparison of the Company’s (Mr. Gorman’s) and Mr.
24 Knecht’s classification of distribution plant along with the ultimate assignment of
25 plant costs across Residential and non-Residential classes.

26
27 **Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE ACCURACY OF**
28 **MR. KNECHT’S ALTERNATIVE CCROSS?**

⁴ These costs are not “directly-assigned” to individual rates but rather recognize the fact that Residential customers do not utilize the Downtown Network facilities while non-Residential customers do not utilize the Residential Underground Development facilities.

1 A. On page 1 of his direct testimony, Mr. Knecht indicates there was a
2 communications snafu with his client such that he was unable to conduct timely
3 discovery in this case. While I am sympathetic to my colleague in this regard, Mr.
4 Knecht's alternative CCOSS is based on arbitrary and inconsistent adjustments and
5 not based on any supportable assumptions. Therefore, the results of Mr. Knecht's
6 CCOSS cannot be considered credible in any way and therefore should not be given
7 any consideration in this proceeding.
8

9 **III. REVENUE ALLOCATIONS**

10
11 **Q. CAN YOU PROVIDE A COMPARISON OF THE VARIOUS PARTIES'
12 RECOMMENDED CLASS REVENUE ALLOCATIONS?**

13 A. Yes. Although Duquesne, OSBA and OCA all provide their recommended
14 class revenue allocations based on the Company's proposed \$85.760 million overall
15 rate revenue increase, I&E witness Sakaya presents his recommendation at I&E's
16 recommended \$41.0 million rate revenue increase. Therefore, in order to provide an
17 apples-to-apples comparison of each parties' recommendation, the following table
18 presents each party's recommendation in terms of each class's percentage of the total
19 dollar increase as well as each class's percentage of the system average percentage
20 increase:
21
22
23
24
25
26
27
28
29
30
31

TABLE 1

Comparison of Revenue Allocation Recommendations

Rate Class	Percent of Total Rate Revenue Increase				Pct. of System Average Increase			
	Duquesne	OCA	I&E	OSBA	Duquesne	OCA	I&E	OSBA
RS	48.87%	45.37%	42.28%	79.63%	92%	85%	80%	150%
RH	7.36%	7.64%	14.48%	7.64%	145%	150%	292%	150%
RA	0.85%	0.73%	1.45%	0.88%	145%	125%	249%	150%
GS	1.93%	1.06%	1.25%	3.18%	91%	50%	60%	150%
GM<25	6.09%	5.12%	0.00%	1.00%	101%	85%	0%	17%
GM>25	14.00%	15.78%	22.07%	2.10%	111%	125%	177%	17%
GMH<25	0.66%	0.65%	0.00%	0.50%	101%	100%	0%	76%
GMH>25	1.55%	1.61%	3.20%	0.43%	145%	150%	288%	40%
GL	11.83%	14.63%	5.94%	1.95%	101%	125%	50%	17%
GLH	1.89%	1.96%	3.96%	1.46%	145%	150%	284%	112%
L	3.97%	4.24%	4.75%	0.57%	117%	125%	138%	17%
HVPS	0.00%	0.00%	0.00%	0.01%	0%	0%	0%	17%
SE	0.09%	0.14%	0.00%	0.05%	34%	50%	0%	17%
SL ⁵	0.61%	0.90%	0.00%	0.30%	34%	50%	0%	17%
UMS	0.29%	0.17%	0.61%	0.30%	145%	85%	306%	150%
Total	100.00%	100.00%	100.00%	100.00%	100%	100%	100%	100%

As can be observed from the table above, the OCA’s and Duquesne’s recommendations are fairly similar, at least in relative terms. I&E proposes significantly larger increases to the RH, RA GM>25, GMH>25, and GLH rate schedules. At the same time, I&E recommends significantly smaller increases to the GM<25, GMH<25, GL and Lighting classes. OSBA recommends significantly larger increases to each of the Residential rate schedules and Rate GS. OSBA recommends significantly smaller increases to the GM<25, GM>25, GMH<25, GMH>25, GL, and L rate schedules.

Q. HOW DID OSBA WITNESS KNECHT DEVELOP HIS RECOMMENDED CLASS REVENUE ALLOCATIONS?

A. Mr. Knecht relied primarily on the results of his alternative CCOSS but placed increase constraints of 150% of the system average increase on individual classes and placed a constraint that no class receive a rate decrease.

⁵ Includes SM, SH, PAL and AL.

1 **Q. WHAT ARE YOUR CONCLUSIONS REGARDING MR. KNECHT'S**
2 **PROPOSED CLASS REVENUE ALLOCATIONS?**

3 A. First, Mr. Knecht's class revenue allocations are predicated upon his
4 alternative class cost of service study in which I recommend that no weight be given
5 to that study. Second, I observed that with regard to the Residential class, which is
6 Duquesne's largest class, Mr. Knecht's recommendation is clearly an outlier wherein
7 he proposes much higher increases than either Duquesne, I&E or OCA. At the same
8 time, Mr. Knecht generally recommends almost no increases to most of the
9 Commercial classes. Mr. Knecht's recommendations for minimal increases to the
10 Commercial classes are the direct result of his unfounded cost shifting away from
11 Commercial customers to Residential customers. At a result, I recommend that Mr.
12 Knecht's class revenue allocations not be considered or given any weight.

13

14 **IV. RESIDENTIAL CUSTOMER CHARGES**

15

16 **Q. WHAT IS I&E WITNESS SAKAYA'S RECOMMENDATION CONCERNING**
17 **RESIDENTIAL CUSTOMER CHARGES?**

18 A. Mr. Sakaya recommends that the Company's proposed 30% increase to the
19 Residential customer charge be scaled-back proportionally based on the overall
20 increase authorized to the Residential class. To illustrate, the current Residential
21 customer charge is \$12.50 per month. Under the Company's proposal, this fixed
22 charge would be increased by \$3.75 to \$16.25 per month. If the Commission
23 authorized an overall revenue increase to the Residential class that is 50% of the
24 amount requested by Duquesne, the Residential customer charge would increase by
25 \$1.88 (50% of \$3.75) to \$14.38 per month.

26

27 **Q. DID MR. SAKAYA CONDUCT A RESIDENTIAL CUSTOMER COST**
28 **ANALYSIS FOR THIS CASE?**

29 A. No. On page of 8 of his direct testimony, Mr. Sakaya indicates that he did not
30 conduct a customer cost analysis for this case but notes that he does not agree with all
31 of the customer costs components claimed by the Company. However, Mr. Sakaya

1 believes that any changes he would propose would not result in customer costs
2 materially different from those proposed by the Company.

3
4 **Q. PLEASE RESPOND TO MR. SAKAYA'S RECOMMENDED SCALE-BACK**
5 **OF THE RESIDENTIAL CUSTOMER CHARGE.**

6 A. As discussed in my direct testimony, I recommend no increase to the fixed
7 monthly Residential customer charge. My recommendation is based on a detailed
8 analysis of Duquesne's Residential customer costs that include a provision for
9 indirect overhead costs. As set forth in my direct testimony, my analysis indicates
10 that the current Residential customer charge of \$12.50 per month is significantly
11 greater than the direct plus indirect customer costs. Using the example of the
12 Commission authorizing 50% of the Company's requested overall increase to the
13 Residential class, Mr. Sakaya's recommendation would result in even higher monthly
14 customer charges for the Residential class. As a result, I continue to recommend no
15 increase to the Residential customer charge.

16
17 **Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?**

18 A. Yes.

DUQUESNE LIGHT COMPANY
Comparison of Duquesne and OSBA Classification and Allocation of Distribution Plant
(\$000)

Gross Plant	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Total Company	Classification % Demand		Demand Allocator Percents				Customer Allocator Percents				Total Cost Assignment Rate RS/RH/RA		Total Cost Assignment Non-Res	
		Duquesne	Knecht	Rate RS/RH/RA		Non-Res		Rate RS/RH/RA		Non-Res		Duquesne	Knecht	Duquesne	Knecht
				Duquesne	Knecht	Duquesne	Knecht	Duquesne	Knecht	Duquesne	Knecht				
Primary															
Overhead (364+365)	\$ 998,045	100.00%	52.54%	48.43%	48.43%	51.57%	51.57%	0.00%	89.66%	100.00%	10.34%	\$ 483,382	\$ 678,659	\$ 514,663	\$ 319,386
UG Radial (366+367)	\$ 437,318	100.00%	85.70%	2.29%	47.17%	97.71%	52.83%	0.00%	88.90%	100.00%	11.10%	\$ 10,033	\$ 232,394	\$ 427,285	\$ 204,924
UG Network	\$ 80,835	100.00%	78.30%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	\$ -	\$ -	\$ 80,835	\$ 80,835
UG URD	\$ 80,900	100.00%	50.00%	100.00%	47.17%	0.00%	52.83%	0.00%	100.00%	100.00%	0.00%	\$ 80,900	\$ 59,532	\$ -	\$ 21,368
Transformers OH	\$ 31,045	100.00%	55.29%	48.43%	48.43%	51.57%	51.57%	0.00%	89.78%	100.00%	10.22%	\$ 15,036	\$ 20,774	\$ 16,009	\$ 10,271
Subtotal Primary												\$ 589,350	\$ 991,359	\$ 1,038,792	\$ 636,783
Secondary															
Overhead	\$ 255,428	5.07%	5.07%	50.01%	50.01%	49.99%	49.99%	89.78%	89.78%	10.22%	10.22%	\$ 224,160	\$ 224,159	\$ 31,269	\$ 31,269
UG Radial	\$ 52,014	71.40%	71.40%	2.44%	33.35%	97.56%	66.65%	88.90%	88.90%	11.10%	11.10%	\$ 14,130	\$ 25,608	\$ 37,884	\$ 26,407
UG Network	\$ 14,313	56.60%	56.61%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	\$ -	\$ -	\$ 14,313	\$ 14,313
UG URD	\$ 14,248	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	\$ 14,248	\$ 14,248	\$ -	\$ -
Transformers OH	\$ 269,079	10.58%	10.58%	2.05%	2.05%	97.95%	97.95%	89.78%	89.78%	10.22%	10.22%	\$ 216,593	\$ 216,593	\$ 52,486	\$ 52,486
Transformers Radial	\$ 95,034	85.89%	85.89%	0.00%	0.00%	100.00%	100.00%	88.90%	88.90%	11.10%	11.10%	\$ 11,922	\$ 11,922	\$ 83,112	\$ 83,112
Transformers URD	\$ 50,903	15.72%	15.72%	100.00%	47.17%	0.00%	52.83%	100.00%	100.00%	0.00%	0.00%	\$ 50,903	\$ 46,675	\$ -	\$ 4,228
Transformers Network	\$ 44,726	10.82%	10.82%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	\$ -	\$ -	\$ 44,726	\$ 44,726
Subtotal Secondary												\$ 531,956	\$ 539,205	\$ 263,790	\$ 256,541
Total Primary + Secondary												\$ 1,121,306	\$ 1,530,564	\$ 1,302,582	\$ 893,324

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

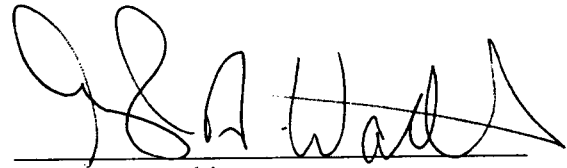
Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, Glenn A. Watkins, hereby state that the facts set forth in my Rebuttal Testimony, OCA Statement 3-R, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 26, 2021
*314105

Signature:


Glenn A. Watkins

Consultant Address: Technical Associates, Inc.
6377 Mattawan Trail
P.O. Box 1690
Mechanicsville, VA 23116

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

Rebuttal Testimony of
Roger D. Colton

On Behalf of:
Office of Consumer Advocate
Statement No. 4R

July 26, 2021

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

2 A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

3

4 **Q. ARE YOU THE SAME ROGER COLTON WHO PREVIOUSLY PREPARED**
5 **DIRECT TESTIMONY ON BEHALF OF THE OFFICE OF CONSUMER**
6 **ADVOCATE IN THIS PROCEEDING?**

7 A. Yes, I am.

8

9 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

10 A. The purpose of my Rebuttal Testimony is two-fold. First, I respond to the Direct
11 Testimony of Harry Geller regarding maximum CAP credits. Mr. Geller's reference to
12 "CAP" is a reference to Duquesne Light's Customer Assistance Program (CAP). Second,
13 I respond to the testimony of Teresa Ringenbach on behalf of Nationwide Energy
14 Partners.

15

16 **Part 1. Response to CAUSE-PA Witness Geller.**

17 **Q. PLEASE DESCRIBE THE ASPECT OF MR. GELLER'S DIRECT TESTIMONY**
18 **THAT YOU WISH TO RESPOND TO.**

19 A. Before I begin my response to Mr. Geller's proposal on when and how to adjust
20 maximum CAP credit ceilings, let me identify that aspect of Mr. Geller's testimony with
21 which I agree. Mr. Geller states that DLC should be "required to (1) actively monitor
22 and investigate if the usage levels giving rise to customers' exceeding their CAP
23 maximum levels are caused by factors beyond the household's control, and if so, the

1 household should not be sanctioned by loss of CAP rate; (2) notify all customers when
2 they reach 50, 75, and 90% of their CAP maximum levels and advise them of their
3 potential eligibility for exemptions; (3) classify “de facto” heating customers as heating
4 customers, so that they receive the higher level of maximum CAP credits; (4) to the
5 extent any rate increase is approved, increase the maximum CAP credit thresholds by an
6 amount equal to the annual average increase in residential rates; (5) closely track and
7 report the number of CAP customers who exceed their maximum CAP credit limit.”
8 (CAUSE-PA St. 1, at 7). I agree with each of those recommendations as being a
9 reasonable way to manage the maximum CAP credit ceiling in any utility’s CAP
10 program.

11
12 **Q. IS THERE ANY ASPECT OF MR. GELLER’S TESTIMONY REGARDING**
13 **MAXIMUM CAP CREDIT CEILINGS THAT YOU DISAGREE WITH?**

14 A. Yes. More specifically, I respond to Mr. Geller’s recommendation that “If more than 5%
15 of DLC’s CAP customers exceed 100% of their maximum CAP credit threshold prior to
16 the 11th month of a given program year, DLC should be required to further increase the
17 maximum CAP credit thresholds such that no more than 5% of CAP customers exceed
18 the maximum CAP credit threshold in a given year.” (CAUSE-PA St. 1, at 7). I
19 recommend that this proposal by Mr. Geller not be approved.

20
21 **Q. PLEASE EXPLAIN THE RATIONALE FOR YOUR RECOMMENDATION.**

22 A. A variety of information is needed in any particular situation before Duquesne could
23 determine an appropriate response to circumstances where “more than 5% of DLC’s CAP

1 customers exceed 100% of their maximum CAP credit threshold.” For example, what the
2 appropriate response might be would depend on the reason why maximum CAP credit
3 ceilings are being reached. On the one hand, CAP credit ceilings might be reached due to
4 high consumption on the part of CAP customers resulting in higher CAP credits. If high
5 consumption is the reason why CAP participants are exceeding maximum CAP credit
6 ceilings, the appropriate response might be targeting LIURP to high CAP credit
7 customers, not increasing the ceiling. On the other hand, CAP credit ceilings might be
8 reached because the low-incomes of CAP participants increase the difference between the
9 bill at standard rates and the CAP bill. If low incomes are the cause of CAP participants
10 exceeding their maximum CAP credit ceiling, the appropriate response might be to
11 consider adjustments in other aspects of the CAP program, such as modifying minimum
12 payments.

13
14 **Q. IS THERE A SECOND SET OF INFORMATION THAT WOULD BE NEEDED?**

15 A. Yes. Assessing an appropriate response might be would depend on who is exceeding the
16 maximum CAP Credit ceiling. CAP credits increase for CAP participants with the lowest
17 income levels (i.e., 0 – 50% of Poverty). If CAP participants across all Poverty levels are
18 exceeding the CAP Credit ceiling, perhaps an adjustment to the ceiling is appropriate. If,
19 however, the 5% threshold is occurring because of a sharp increase in the number of CAP
20 participants with income lower than 50% of Poverty, the response may be to target
21 additional LIURP assistance to that select group of CAP participants.

1 **Q. IS THERE A THIRD PIECE OF INFORMATION THAT WOULD BE**
2 **IMPORTANT TO KNOW BEFORE DECIDING AN APPROPRIATE**
3 **RESPONSE?**

4 A. Yes. Assessing an appropriate response might be would depend on *how long* CAP
5 participants are exceeding the maximum CAP Credit ceiling. If bills in any particular
6 year atypically increase, whether due to weather, or due to temporary income declines,
7 the percentage of CAP participants exceeding the maximum CAP Credit ceiling may be
8 temporary in nature. One cannot have lived through the recent COVID-19 pandemic
9 without recognizing that incomes may be subject to dramatic, but nonetheless temporary,
10 declines. One cannot have lived through recent dramatic heat waves without recognizing
11 that bills may be subject to dramatic, but nonetheless temporary, spikes. Duquesne
12 should not adopt a permanent change in the structure of CAP credits in response to what
13 could be a temporary phenomenon.

14
15 **Q. IS THERE A FINAL ADDITIONAL PIECE OF INFORMATION THAT SHOULD**
16 **BE CONSIDERED IN ASSESSING AN APPROPRIATE RESPONSE TO A HIGH**
17 **PERCENTAGE OF CUSTOMERS EXCEEDING THE MAXIMUM CAP CREDIT**
18 **CEILING?**

19 A. Yes. Assessing an appropriate response might be would depend on *the cause* of a higher
20 percentage of CAP participants exceeding the maximum CAP Credit ceiling. One cannot
21 merely assume that an increase in the percentage of CAP participants exceeding the CAP
22 Credit ceiling is evidence of a mismatch between the ceiling and available CAP Credits.
23 An increasing percentage of CAP participants exceeding the CAP credit ceiling may well

1 simply reflect a change in the mix of incomes within the CAP program. While the
2 percentage of CAP participants exceeding the CAP Credit ceiling is below 5% given the
3 historic mix of incomes within CAP (i.e., the “mix” of incomes being the percentage of
4 CAP participants at each Poverty level), the percent may exceed 5% if the mix changes
5 and more of the lowest income customers are being enrolled. In those circumstances, it
6 may well be that there is no need to change the CAP Credit ceiling at all.
7

8 **Q. WHAT DO YOU CONCLUDE?**

9 A. Assessing what an appropriate response might be to a higher percentage of CAP
10 participants with CAP credits exceeding the maximum CAP Credit ceiling requires
11 knowing what the underlying cause of the increase is. Duquesne should not adopt, in
12 advance, a single, remedy to a “problem” that may well have any number of alternative
13 causes and, therefore, any number of reasonable remedies. Which remedy might be most
14 reasonable or appropriate may depend on how big the problem is (i.e., how many CAP
15 participants exceed the CAP Credit ceiling), who is experiencing the problem (i.e.,
16 whether the problem is across-the-board or located primarily in a particular income
17 range), the cause of the problem (i.e., high bills vs. low incomes would merit
18 consideration of different remedies), or how long the problem can be expected to last
19 (i.e., if caused by an economic emergency associated with a pandemic; if caused by a
20 temporary spike in heat waves or cold spells). To decide upon, in advance, a single
21 solution, without allowing for any of this discussion and analysis, would be inappropriate
22 and Mr. Geller’s recommendation should not be approved.
23

1 **Part 2. Response to Nationwide Energy Partners Teresa Ringenbach.**

2 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR REBUTTAL**
3 **TESTIMONY.**

4 A. In this section of my Rebuttal Testimony, I respond to the recommendations of Teresa
5 Ringenbach on behalf of Nationwide Energy Partners. In her testimony, witness
6 Ringenbach recommends that Duquesne Light adopt a new master metering tariff “that
7 allows for master metering and redistribution of energy under the following conditions:

- 8 ➤ Master metering will be allowed for non-low income new and existing multifamily
9 properties.
- 10
- 11 ➤ Submetering must be AMI or other advanced revenue metering;
- 12
- 13 ➤ Technologies must be provided with billing to allow tenants access to their usage and
14 optional controls to receive a credit based on conservation actions.
- 15
- 16 ➤ Redistribution of energy costs may never exceed the total bill a customer would have
17 received for the same amount of usage for the tariffs in effect for the same time
18 period consistent with Section 1313 of the Public Utility Code.
- 19

20 (Nationwide Energy Partners St. 1, at 24).

21
22
23 **Q. DO YOU HAVE CONCERNS REGARDING THE CONSIDERATION OF THE**
24 **PROPOSED TARIFF THAT ALLOWS FOR MASTER METERING AND**
25 **REDISTRIBUTION OF ENERGY?**

26 A. Yes. I have three basic concerns about the tariff proposed by NEP. First, for years, the
27 Pennsylvania PUC, natural gas and electric distribution utilities, and other stakeholders
28 have been seeking to ensure the provision of affordable service to low-income customers.
29 Those efforts have resulted in a suite of universal service programs offered to income-
30 qualified customers. NEP has not explained how its provision of service is consistent

1 with these universal service efforts. For example, NEP has not proposed any standards
2 by which to measure whether someone is “low-income” or not. I have concerns about
3 how NEP would identify and respond to changes in income. We know from
4 Pennsylvania’s universal service efforts that incomes may vary within a year. That is one
5 reason that the Commission allows for the use of annualized income (e.g., 30-day or 90-
6 day income annualized to 12-months) to establish eligibility for universal service
7 programs (e.g., hardship fund) and customer protections (e.g., winter shutoff protections).
8 NEP does not address what happens to a tenant if or when that tenant’s income changes. I
9 have concerns about the adoption of a tariff with such a fundamental aspect undefined.

10
11 Second, I have a concern how, if at all, basic consumer protections will be provided. For
12 example, in my Direct Testimony, I identify a population of customers whose income is
13 not sufficiently low to qualify a customer for universal service programs, but not
14 sufficiently high to allow the customer to sustainably pay their electric bill over time. For
15 such customers, protections such as reasonable payment plans are an important part of
16 providing electric service. It is not clear how any or all of the Commission’s consumer
17 protections would be extended to tenants whose service is subject to the tariff as proposed
18 by NEP.

19
20 Third, I have a concern about the extent to which, if at all, the Commission’s consumer
21 protections applicable to residential customers would extend to service that is being billed
22 pursuant to a non-residential rate. No recognition has been given to this lack of clarity

1 about basic consumer protections designed to ensure fair treatment of Pennsylvania
2 households and a reasonable assurance of ongoing access to essential utility services.

3
4 My discussion above merely lists illustrative issues –it is not intended to be
5 comprehensive-- that NEP has not addressed in its proposal in this proceeding. Without
6 resolving these fundamental issues, having no evidentiary basis for such resolution, and
7 lacking clarity in how, if at all, basic consumer protections will be assured for tenants, the
8 proposed tariff advanced by NEP should not be approved.

9

10 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

11 A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Rebuttal Testimony, OCA Statement 4-R, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 26, 2021
*313856

Signature:


Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)
)
 v.) **Docket No. R-2021-3024750**
)
 Duquesne Light Company)

**SURREBUTTAL TESTIMONY
OF
LAFAYETTE K. MORGAN, JR.**

**ON BEHALF OF THE
OFFICE OF CONSUMER ADVOCATE**

August 10, 2021

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1 **INTRODUCTION**

2 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3 A. My name is Lafayette K. Morgan, Jr. My business address is 10480 Little Patuxent
4 Parkway, Suite 300, Columbia, Maryland, 21044. I am a Public Utilities Consultant
5 working with Exeter Associates, Inc. (Exeter). Exeter is a consulting firm specializing
6 in issues pertaining to public utilities.

7 Q. ARE YOU THE SAME LAFAYETTE K. MORGAN, JR. WHO SUBMITTED
8 PRE-FILED DIRECT TESTIMONY ON MAY 3, 2021 IN THIS
9 PROCEEDING?

10 A. Yes, I am.

11 Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

12 A. The purpose of my surrebuttal testimony is to address the issues discussed in the
13 rebuttal testimonies of Duquesne Light Company (Duquesne or the Company)
14 witnesses Jaime A. Bachota and Robert L. O'Brien, which were filed on July 26,
15 2021.

16 Q. ARE YOU INCLUDING UPDATED SCHEDULES SUMMARIZING THE
17 OCA'S CURRENT REVENUE REQUIREMENT POSITION IN THIS
18 PROCEEDING?

19 A. Yes. I have attached Surrebuttal Schedules LKM-1 to LKM-15 to this testimony
20 which present the OCA's updated position after taking the Company's rebuttal
21 position on certain issues into account.

22 Q. PLEASE SUMMARIZE THE OCA'S UPDATED RECOMMENDATION
23 AS A RESULT OF THE CHANGES DISCUSSED IN THIS TESTIMONY.

24 A. In this testimony, I respond to Duquesne witnesses' rebuttal testimonies on various
25 adjustments I recommended in my direct testimony. I have considered the issues

1 addressed in their rebuttal testimonies and, in some instances, I have modified my
2 adjustments where necessary. As a result of these changes, my revised recommended
3 total revenue requirement results in an increase in revenues of \$3,785,000 instead of
4 the \$2,754,000 decrease that I recommended in my direct testimony.

5 To the extent that the Company has rebutted my position on an issue that I
6 challenged in my direct testimony, but I did not address in this surrebuttal testimony,
7 it should not be construed that I agree with the Company.

8 **OCA ADJUSTMENTS TO DUQUESNE'S TEST YEAR**

9 **Cloud-Based Software Implementation Costs**

10 Q. PLEASE RESPOND TO MS. BACHOTA'S DISAGREEMENT WITH
11 YOUR ADJUSTMENT TO THE CLOUD-BASED IMPLEMENTATION
12 COSTS.

13 A. As I explained in my direct testimony, the Company has proposed to include certain
14 cloud-based implementation costs in rate base consistent with what was allowed in
15 Duquesne's last rate case (Docket No. R-2018-3000124). I recommended an
16 adjustment to remove these costs based upon my understanding of how these costs
17 should have been reflected on the Company's books and the cost of service. I gave
18 three reasons why I believed it was inappropriate to include the cloud-based
19 implementation costs.

20 In her rebuttal testimony, Ms. Bachota addressed each of the concerns that I
21 raised. My first concern was that if the implementation costs had been recorded as
22 operating expenses, then the Company should have made an adjustment to reduce
23 operating expenses to reflect the costs included in rate base. Ms. Bachota explained
24 that the costs had been recorded in a regulatory asset account rather than operating

1 expenses, so there is no need for an adjustment to further reduce operating expenses.
2 My second concern was that if Duquesne had adopted the FERC's accounting
3 directive affecting cloud-based implementation costs (which Duquesne said were the
4 same type of costs), then the implementation cost would have already been reflected
5 in the rate base. In response, Ms. Bachota stated that the Company adopted the
6 FERC's accounting for FERC reporting purposes, but not for GAAP purposes. As a
7 result, it was necessary to make a ratemaking adjustment to get the cloud-based
8 implementation costs and related depreciation impacts into rate base and the cost of
9 service. My third concern was that rate base and operating expenses may have been
10 overstated based on my understanding of the accounting of the cloud-based
11 implementation costs. Ms. Bachota stated that, based on her explanations, the
12 Company is not double counting the cloud-based implementation costs and that
13 operating expenses and rate base are not overstated.

14 Q. DO YOU NOW AGREE WITH MS. BACHOTA ON THE CLOUD-BASED
15 IMPLEMENTATION COSTS?

16 A. No. According to Ms. Bachota's rebuttal testimony, due to the issuance of Financial
17 Accounting Standards Board's Accounting Standards Update 2018-15 (ASU 2018-
18 15), after the Company's rate case settlement agreement, cloud-based costs were to be
19 included in rate base without regulatory asset treatment. Clearly, this means that
20 cloud-based costs should now be budgeted as capital costs consistent with the
21 accounting treatment when the project goes into service. Based on Ms. Bachota's
22 rebuttal testimony, there is still concern that there may have been costs included in
23 rate base as part of the adjustment to include cloud-based implementation costs, while
24 these costs were also being included as routine plant additions.

25 Q. IS THERE ANY EVIDENCE TO SUPPORT YOUR CLAIM?

1 A. Yes. In Attachment IE-RB-7-D, page 2, which supports the capital projects included
2 in the cost of service, the company includes the costs relating to the following capital
3 projects: 1) Work Planning Integration Software Replacements; 2) Web Content
4 Filter Replacement (WSA Replacement); and 3) Bias-Employee Engagement Survey
5 and Benchmarking Platform. However, in the response to OCA-VI-5, Attachment 1,
6 those same projects were included as part of the \$12.5 million that Mr. O'Brien
7 included in rate base in Adjustment No. 11. The fact that these projects appear to be
8 included in rate base in two separate places seems to indicate that rate base is
9 overstated. Therefore, I believe it is appropriate to remove the \$3.1 million of cloud-
10 based implementation costs included in rate base by the Company in Adjustment No.
11 11.

12 **Capitalized Pension Adjustment**

13 Q. PLEASE IDENTIFY THE MAIN AREA OF DISAGREEMENT WITH THE
14 COMPANY AND YOU WITH RESPECT TO THE CAPITALIZED
15 PENSION ADJUSTMENT.

16 A. Beginning on page 25, line 6 through page 36, Ms. Bachota responds to my
17 adjustment to remove the capitalized pension adjustment from rate base. She begins
18 with a historical narrative of the accounting for pension expense. I do not take issue
19 with this discussion because, for the most part, it recalls what has been stated in the
20 settlement agreements in past rate cases. I have not alleged that Duquesne did not
21 contribute to the pension plan as stated in the settlement agreements, nor have I
22 argued that the pension expense for ratemaking purposes should not be based upon
23 the contribution to the pension plan. Also, I have not disagreed with 1) the net
24 periodic costs recorded from 2006 through 2020; 2) the over- or under-funded status
25 of the plan from 2006 through 2020; 3) the quantification of the Company's

1 Capitalized Pension Adjustment in Docket Nos. R-2010-2179522, R-2013-2372129,
2 R-2018-3000124, or this proceeding. I have not disagreed with the drivers of the
3 contributions or the volatility of the associated amounts. I also agree with the
4 theoretical concept that once the Company's pension is fully funded; the Company
5 will not be required to make contributions to its plan and the cumulative difference
6 between the ASC 715 expense and pension contributions will continue to decrease
7 until they converge at the end of the pension. Hence, the focus of the Commission's
8 decision in this proceeding is whether the Company should be allowed to include the
9 *pro forma* capitalized pension contributions in rate base.

10 Q. MS. BACHOTA STATES THAT SHE DISAGREES WITH THE
11 STATEMENT YOU MADE IN YOUR DIRECT TESTIMONY THAT WHEN
12 THE ASC 715 COSTS ARE DETERMINED, THE COSTS ARE BROKEN
13 DOWN INTO THE EXPENSE AND CAPITAL COMPONENTS AND SUCH
14 AMOUNTS ARE ACTUALLY RECORDED IN THE COMPANY'S BOOKS
15 AND RECORDS FOR FINANCIAL REPORTING PURPOSES. PLEASE
16 RESPOND.

17 A. It is unclear what Ms. Bachota disagrees with because on page 31 of her testimony,
18 she states: "The Company's books and records capitalize approximately 50% of the
19 Company's pension cost as computed under ASC 715. The 50% capitalization rate
20 approximates the Company's historic annual percentage of capitalized labor costs."
21 While I did not specify the percentage capitalized or expensed, if 50% is capitalized
22 then the remaining 50% is expensed. I acknowledge that there is a possibility that
23 some percentage could go to other non-operating expense accounts. However, the
24 point is that it is the ASC 715 amount that is recorded on the Company's books.

25 Q. HAS MS. BACHOTA MISUNDERSTOOD YOUR ADJUSTMENT?

1 A. Yes. On page 34, lines 18 through 20, Ms. Bachota states “First, Mr. Morgan notes
2 that capitalized pension contributions should not be plant investments, but instead
3 considered a deferred debit or a regulatory asset.” When taken in isolation, one could
4 interpret my statement to mean that I was implying that pension costs should not be
5 recorded as part of plant investments. To be clear, my statement was addressing the
6 *pro forma* capitalized pension contributions that the Company is attempting to
7 include in rate base. My statement is based on the fact that the *pro forma* capitalized
8 pension contributions are pension contributions that have been separately tracked by
9 the Company to include in rate base, although not recorded in any of the plant
10 accounts on the Company’s books. Also, I was attempting to make clear that
11 capitalized pension contributions are part of the costs that make up Account No. 253
12 (Other Deferred Credits). Therefore, if the capitalized pension contributions are
13 separately identified, they should be reflected as a deferred debit rather than a *pro*
14 *forma* plant addition.

15 Q. WHY DO YOU CONTINUE TO BELIEVE THAT THE COMPANY’S
16 INCLUSION OF CAPITALIZED PENSION CONTRIBUTIONS IN RATE
17 BASE IS INAPPROPRIATE?

18 A. Beginning on page 34, line 25, Ms. Bachota explains the Company’s rationale for its
19 claim. She argues that the capitalized pension contributions adjustment represents the
20 amounts that were deposited by the Company in the pension trust in excess of the
21 ASC 715 capitalized amounts. However, the Company fails to include in rate base the
22 Other Deferred Credit liability account, representing the underfunded pension
23 amount, which would reduce rate base. As a result, the Company is taking a one-
24 sided approach which does not fully reflect the effect of the pension contributions.

1 Since the Company is arguing that the capitalized pension contribution adjustment
2 represents amounts that were deposited in the pension trust, it is important to
3 recognize that the capitalized pension contributions are included in the derivation of
4 the underfunded pension liability which is reflected on the balance sheet (but not
5 included in rate base). In fact, Ms. Bachota validates this claim when she states, “If
6 these amounts had not been put in the trust, the Company’s underfunded status would
7 be higher and greater future contributions would be required.”

8 It is improper to isolate one portion of the unfunded pension balance for inclusion
9 in rate base while ignoring the other portion.

10 Another reason for the Company’s adjustment, according to Ms. Bachota, is that
11 the “Company believes that it should be able to earn a reasonable rate of return on all
12 capital expenditures incurred through the end of the fully projected future test year as
13 it does for all plant items, including amounts attributable to labor benefits charged to
14 capital projects.”¹ The problem with this rationale is that the Company’s claim for the
15 capitalized pension contributions is not recognized in capitalized labor benefits in the
16 plant accounts. Instead, the capitalized pension contributions are a component of the
17 underfunded pension liability. The capitalized benefits have already been reflected in
18 the plant balances through the ASC 715 accrual.

19 Ms. Bachota also claims that not including capitalized pension contributions in
20 rate base would be inconsistent with all other capital charges, as well as inconsistent
21 with the prior approved rate treatment of such costs.² This is not accurate. Other
22 capital charges that are recognized for rate base treatment are also recognized for
23 GAAP purposes. The capitalized pension contributions, not being recognized as a
24 capital expenditure for GAAP purposes would, instead, be inconsistent with other

¹ Rebuttal Testimony of Ms. Bachota, page 32, line 28 - 31.

² Rebuttal Testimony of Ms. Bachota, page 32, line 31 to page 33, line 2.

1 capital charges. With regard to consistency with prior rate treatment, it is not
2 reasonable to perpetuate an inappropriate accounting treatment just because it may
3 have been previously allowed.

4 Finally, the Company claims it will be denied the ability to earn a fair rate of
5 return if this amount is not included in rate base in this proceeding. This claim is
6 flawed because the return earned by the pension plan is earned within the pension
7 trust, based on the pension plan's investments and is separate from the Company's
8 earnings. The contribution to the pension plan is a funding mechanism and not an
9 investment on which the Company earns a return.

10 Q. PLEASE RESPOND TO MS. BACHOTA'S CLAIM THAT THE
11 CAPITALIZED PENSION ADJUSTMENT IS AN INVESTMENT BY
12 THE COMPANY.

13 A. According to Ms. Bachota, if the settlements did not required contributions to the
14 pension trust in excess of ASC 715 capitalized amounts,

15 ...the Company could have contributed less to the pension trust and
16 invested that amount, which is significant, in additional plant
17 replacements that would have provided and would continue to
18 provide a return to the Company. While the Company is not
19 indicating that would be the preferred option, it illustrates that the
20 investment of these funds in the pension trusts represents an
21 investment of the Company's capital which deserves a return".³

22 I disagree with Ms. Bachota's statement completely. Companies are routinely
23 faced with deciding the use of available funds for operations. Under her logic, when
24 faced with the decision to use available capital to pay operating payroll or fund
25 Construction Work in Progress (CWIP), using the funds to pay the operating payroll
26 would convert the expenditures to an investment instead of being an operating

³ Rebuttal Testimony of Ms. Bachota, page 33, line 29 to page 34, line 4.

1 expense. There is no accounting text that defines an investment in this manner. In
2 fact, Ms. Bachota acknowledges the actual capital investment to be the capitalized net
3 periodic pension cost when she states my adjustment to remove the *pro forma*
4 capitalized pension contributions would limit the Company to include only the
5 capitalized net periodic pension cost in rate base.⁴

6 Q. PLEASE RESPOND TO MS. BACHOTA'S CLAIM THAT YOU ARE
7 PROPOSING TO CHANGE, RETROACTIVELY, A COMMITMENT
8 BY ELIMINATING AN ADJUSTMENT THAT HAS
9 ACCUMULATED OVER TIME.

10 A. It is important to note that Ms. Bachota is referring to black box settlements
11 that, by nature, provided little details on how the settlements were derived.⁵
12 More importantly, the terms of the settlement reflected language that expressly
13 provides that the parties are not bound by the positions taken in a settlement in
14 any future proceeding.

15 Q. PLEASE SUMMARIZE YOUR POSITION ON THE INCLUSION OF
16 CAPITALIZED PENSION CONTRIBUTIONS IN RATE BASE.

17 A. The Commission should deny the inclusion of the capitalized pension contributions in
18 rate base. The capitalized pension contributions do not represent costs recorded in the
19 plant accounts on which the Company is allowed to earn a return. Instead, as the
20 Company admits, the capitalized pension contributions are included in the pension
21 trust.⁶ Therefore, it is netted in the derivation of the unfunded pension liability. (If the
22 Commission determines the capitalized pension contributions should be included in
23 rate base, it would be appropriate to offset it with the unfunded pension liability.) The

⁴ Rebuttal Testimony of Ms. Bachota, page 34, line 28 to 31.

⁵ Rebuttal Testimony of Ms. Bachota, page 35, line 17.

⁶ Rebuttal Testimony of Ms. Bachota, page 32, line 22 to 28.

1 capitalized pension contributions do not represent costs eligible for inclusion in plant
2 accounts under Generally Accepted Accounting Principles (GAAP) and therefore,
3 they are not eligible for inclusion in rate base. Based on the foregoing reasons, the
4 Commission should reject the Company's claim.

5 **Projected Revenue Loss**

6 Q. PLEASE RESPOND TO THE COMPANY DISAGREEMENT WITH
7 YOUR ADJUSTMENT TO REMOVE THE PROJECTED REVENUE
8 LOSS.

9 A. Company witness O'Brien disagrees with my adjustment, in part, based upon his
10 belief that the revenue lost during the 2023 to 2025 period is the result of Act 129 and
11 that the Company will be penalized if not allowed to recover the projected post-
12 FPPTY lost revenues.⁷ However, as I understand it, there is no exception in the use of
13 a FPPTY for post-test year changes based upon an interpretation of Act 129.
14 Moreover, when working within a test year framework, there is a cut-off point where
15 changes that occur beyond the test year are not recognized. The Company's
16 subjective approach is inappropriate because it wants to choose which post-test year
17 costs to recover.

18 Q. MR. O'BRIEN INDICATES THAT IF YOUR ADJUSTMENT TO
19 REMOVE THE REVENUE LOSS ADJUSTMENT IS ACCEPTED,
20 THEN THE RELATED GROSS RECEIPTS TAX SHOULD BE
21 REFLECTED IN THE ADJUSTMENT. DO YOU AGREE?

22 A. Yes. In my direct testimony, I inadvertently left out the gross receipts tax effect from
23 my adjustment. In this filing, I have rectified the error.

⁷ Rebuttal Testimony of Mr. O'Brien, page 29, line 21 to page 30, line 3.

1 **Payroll Expense**

2 Q. PLEASE DISCUSS THE COMPANY’S DISAGREEMENT WITH YOUR
3 PAYROLL ADJUSTMENT.

4 A. In my direct testimony, I recommended adjustments to payroll expense to remove post-
5 FPPTY costs from the cost of service and to remove vacant positions from the
6 Company’s payroll expense claim. Both Mr. O’Brien and Ms. Bachota have disagreed
7 with parts of my adjustment.

8 First, Mr. O’Brien points out that my adjustments are based on total Company
9 amounts.⁸ Mr. O’Brien is correct, and I have made the necessary corrections in this
10 filing. With respect to my adjustment to the annualization of pay rate increases, Mr.
11 O’Brien disagrees with my adjustments to the Company’s payroll adjustments. I
12 believe it is fair to say that the disagreement between Mr. O’Brien and me is based
13 upon the understanding of the FPPTY concept. According to Mr. O’Brien,

14 ...the purpose of a test-year, such as the FPPTY, is to establish a
15 uniform measurement period to set rates that provide a utility with
16 an opportunity to earn the rate of return that is established during the
17 test-year. The establishment of reasonable levels for rate base,
18 revenues, expenses and rates of returns includes using a utility’s test
19 year budgeting data adjusted for reasonable known and measurable
20 events, as well as allowing certain normalization and annualizations
21 to provide a reasonable level of each component for when the rates
22 established in that test-year will be in effect.⁹

23 However, because Pennsylvania has adopted the use of a fully projected future test
24 year, in proceedings before this Commission, my determination of the costs allowed in
25 the test year is guided by the Commission’s implementation of the law that allows the

⁸ Rebuttal Testimony of Mr. O’Brien, page 11, beginning at line 20.

⁹ Rebuttal Testimony of Mr. O’Brien, page 44, lines 6 - 13.

1 use of the FPFTY. According to the Commission’s Implementation of Act 11 of 2012
2 Order in Docket No. M-2012-2293611, at page 5:

3 Section 315 of the Code, 66 Pa. C.S. § 315, contains the burden of
4 proof a utility has in various proceedings before the Commission.
5 With the enactment of Act 11, the burden of proof standard for
6 utilities in rate proceedings has been amended to permit use of either
7 a future test year or a “fully-projected future test year” in rate cases.
8 The fully-projected test year is defined as the 12-month period that
9 begins with the first month that the new rates will be placed into
10 effect, after application of the full suspension period permitted under
11 Section 1308(d). *See* 66 Pa. C.S. § 1308(d). Under this approach,
12 the risks associated with regulatory lag will be substantially reduced
13 because the new rates will be consistent with the test year used to
14 establish those rates for at least the first year.

15 Also, in the Advance Notice of Proposed Rulemaking Order in Docket No. L-2012-
16 2317273, at page 3, the Commission stated:

17 The FPFTY is a ratemaking mechanism that allows a utility to project
18 capital investment and correspondingly to include that projected
19 investment in the utility's claimed revenue requirement throughout
20 the twelve-month period beginning with the first month that the new
21 rates would be placed in effect. 66 Pa. C.S. §§315, 1350-1360; Pa.
22 Public Utility Commission v. Columbia Gas of PA Inc., Docket No.
23 R-2012-2321748, 2013 WL 2420877 (Pa. PUC). A public utility can
24 also use the FPFTY mechanism to project other revenue requirement
25 and ratemaking components such as operating revenues, operating
26 expenses, depreciation, interest expense, taxes, and return.

27 The foregoing is why I believe the revenues and costs included for ratemaking purposes
28 should be those that will be incurred during the FPFTY. My adjustments are based
29 upon the Commission’s orders, rather than Mr. O’Brien’s assertion that my adjustments
30 are based on that which would be to the detriment of the Company.

31 In fact, Mr. O’Brien uses the normalization of the COVID-related costs to
32 illustrate what he believes to be an inconsistency on my part.¹⁰ Mr. O’Brien may have

¹⁰ Rebuttal Testimony of Mr. O’Brien, page 45, lines 11.

1 misunderstood the rationale for an adjustment such as the normalization of costs. To
2 be clear, it is the Company that proposed an adjustment to normalize these costs. The
3 difference is the Company proposed a three-year normalization period while I
4 recommended a five-year period. However, this adjustment is necessary because these
5 were costs that were not reflected in operating expenses. Since they are considered non-
6 recurring, and not included in operating expenses, the five-year normalization is a
7 mechanism to provide for a reasonable recovery in rates. The inclusion in rates is not
8 intended to project or forecast the level of those costs to be incurred in the future, given
9 that they are non-recurring.

10 As I have discussed, the Commission’s orders provide the support for my
11 adjustment and Mr. O’Brien does not provide adequate justification for the
12 Commission to deviate from the policy position presented in its orders. Therefore, the
13 Company’s annualization adjustment should be rejected.

14 Q. PLEASE RESPOND TO MS. BACHOTA’S DISAGREEMENT WITH
15 YOUR PAYROLL VACANCY ADJUSTMENT.

16 A. According to Ms. Bachota, my adjustment to reflect actual vacancies is not
17 appropriate because the COVID-19 pandemic substantially impacted the Company’s
18 operations starting in March of 2020 resulting in the Company’s election to defer
19 hiring.¹¹ She claims the Company’s projections are accurate and may even be
20 slightly conservative. To support her claim, she states that in the Company’s last rate
21 case (Docket No. R-2018-3000124), the Company’s claim included a projected 1,582
22 employees as of the end of the FPFTY in that proceeding, and that at the end of the
23 Historical test Year (HTY) in this proceeding (the FPFTY in the last rate case
24 proceeding) the Company’s actual headcount was 1,584 employees. However, the

¹¹ Rebuttal Testimony of Ms. Bachota, page 5, line 29 to page 30, line 3.

1 Company's claim of the impact of the COVID-19 pandemic is not supported by its
2 number of employees. According to Ms. Bachota's testimony, the Company's current
3 headcount as of the end of June 2021 is 1,577 employees. The chart below is a
4 reproduction of the Company's response to I&E-RE-6-D, Page 2 of 2. On both that
5 chart, and the 1,577 employees as of the end of June 2021 (as stated in Ms. Bachota's
6 rebuttal testimony), it is shown that the increase in vacancies during the HTY may not
7 have necessarily been related to the impact of the COVID-19 pandemic given that the
8 number of vacancies as of June 2021 is virtually the same as the June 2020 vacancies.
9 Hence, it is not evident that the number of vacancies during the HTY is reflective of
10 the impact of the COVID-19 pandemic. Therefore, the Commission should reject the
11 Company's claim that the number of employees in the FPFTY is not representative of
12 normal vacancies.

	Vacant Positions			Vacancy Reserve			Total		
	Non-Union	Union	Total	Non-Union	Union	Total	Non-Union	Union	Total
Jan-18	33	69	102	(28)	(42)	(70)	5	27	32
Feb-18	32	82	114	(28)	(42)	(70)	4	40	44
Mar-18	29	92	121	(28)	(42)	(70)	1	50	51
Apr-18	57	100	157	(28)	(42)	(70)	29	58	87
May-18	42	102	144	(28)	(42)	(70)	14	60	74
Jun-18	31	104	135	(28)	(42)	(70)	3	62	65
Jul-18	26	106	132	(28)	(42)	(70)	(2)	64	62
Sep-18	18	106	124	(28)	(42)	(70)	(10)	64	54
Oct-18	12	88	100	(28)	(42)	(70)	(16)	46	30
Nov-18	4	90	94	(28)	(42)	(70)	(24)	48	24
Dec-18	2	95	97	(28)	(42)	(70)	(26)	53	27
Jan-19	57	48	105	(40)	(60)	(100)	17	(12)	5
Feb-19	66	50	116	(40)	(60)	(100)	26	(10)	16
Mar-19	69	54	123	(40)	(60)	(100)	29	(6)	23
Apr-19	70	60	130	(40)	(60)	(100)	30	0	30
May-19	59	67	126	(40)	(60)	(100)	19	7	26
Jun-19	50	70	120	(40)	(60)	(100)	10	10	20
Jul-19	42	74	116	(40)	(60)	(100)	2	14	16
Sep-19	43	93	136	(40)	(60)	(100)	3	33	36
Oct-19	41	81	122	(40)	(60)	(100)	1	21	22
Nov-19	43	75	118	(40)	(60)	(100)	3	15	18
Dec-19	38	74	112	(40)	(60)	(100)	(2)	14	12
Jan-20	60	84	144	(51)	(49)	(100)	9	35	44
Feb-20	61	98	159	(51)	(49)	(100)	10	49	59
Mar-20	62	96	158	(51)	(49)	(100)	11	47	58
Apr-20	66	98	164	(51)	(49)	(100)	15	49	64
May-20	56	103	159	(51)	(49)	(100)	5	54	59
Jun-20	55	103	158	(51)	(49)	(100)	4	54	58
Jul-20	53	105	158	(51)	(49)	(100)	2	56	58
Sep-20	49	90	139	(51)	(49)	(100)	(2)	41	39
Oct-20	46	86	132	(51)	(49)	(100)	(5)	37	32
Nov-20	45	94	139	(51)	(49)	(100)	(6)	45	39
Dec-20	46	96	142	(51)	(49)	(100)	(5)	47	42
Jan-21	71	73	144	(36)	(64)	(100)	35	9	44
Feb-21	71	82	153	(36)	(64)	(100)	35	18	53
Mar-21	73	86	159	(36)	(64)	(100)	37	22	59

1

2 **Incentive Compensation**

3 Q. PLEASE RESPOND TO THE COMPANY’S DISAGREEMENT WITH
4 YOUR ADJUSTMENT TO INCENTIVE COMPENSATION EXPENSE.

5 A. In my direct testimony, I recommended an adjustment to remove the portion of
6 incentive compensation related to the achievement of earnings/financial goals because
7 I believe the achievement of those goals benefit shareholders.

8 In disagreeing with my adjustment, the Company claims that the achievement
9 of financial goals provides important and direct benefits to customers. The Company
10 states that financial performance allows the Company to place debt in capital markets

1 at reasonable rates; reduces the need to go to the capital markets for financing; defer
2 the need to file for rate increases; and reduce the size of requested rate increases.

3 Virtually all of the reasons cited by the Company for inclusion of incentive
4 compensation in the cost of service would result in improved earnings and ultimately
5 higher shareholder value, which supports the recommendation that those costs be borne
6 by shareholders. Additionally, it appears that the Company agrees with the position I
7 took in my direct testimony that if the financial targets are set properly, achieving the
8 necessary performance goals should be self-supporting, as Ms. Bachota states that the
9 financial goals will “help to ensure there are sufficient funds to pay incentives.”

10 Based on the foregoing, the Commission should deny the Company’s claim for
11 recovery of the portion of the incentive compensation tied to earnings goals.

12 **Postretirement Benefits Expense**

13 Q. PLEASE RESPOND TO THE COMPANY’S DISAGREEMENT WITH
14 YOUR ADJUSTMENT TO THE POSTRETIREMENT BENEFIT
15 EXPENSE.

16 A. In my direct testimony, I attempted to calculate the normalized level of postretirement
17 benefit expense as I understood the presentation of the Company’s claim in its filing.
18 As explained in Ms. Bachota’s rebuttal testimony, my adjustment does not reflect the
19 regulatory liability portion of postretirement costs which represents the difference
20 between actual book accruals and the ratemaking allowance. She also indicates that in
21 preparing the Company’s rebuttal position, the Company performed a true up of its
22 OPEB expense claim which has resulted in an additional credit to OPEB expense.¹²
23 After reviewing the Company’s revised adjustment, I have accepted its revised OPEB
24 expense claim.

¹² Rebuttal Testimony of Ms. Bachota, page 12, line 22 - 25.

1 **Eligible Customer Listing Deferred Costs**

2 Q. PLEASE RESPOND TO THE COMPANY'S CLAIM FOR ELIGIBLE
3 CUSTOMER LISTING DEFERRED COSTS PRESENTED IN ITS
4 REBUTTAL TESTIMONY.

5 A. In my direct testimony I explained the Company's Eligible Customer Listing deferred
6 costs claim, and that the Company inadvertently did not include its proposed 3-year
7 recovery of the costs. I concluded that the 2018 costs incurred were not eligible for
8 recovery, but included a 3-year recovery of the 2020 cost. Since the Company did not
9 include the costs, my adjustment was increased the Company's operating expenses. In
10 the Company's rebuttal filing, the Company included both the 2018 costs and the
11 2020 costs. Therefore, I have revised my adjustment to reflect a decrease in operating
12 expenses to reflect only the 2020 costs since the rebuttal cost of service now reflects
13 both the 2018 and 2020 costs.

14 **COVID-Related Regulatory Asset**

15 Q. THE COMPANY HAS REVISED ITS CLAIM FOR THE COVID-
16 RELATED REGULATORY ASSET. HOW DOES THAT AFFECT YOUR
17 ADJUSTMENT?

18 A. I have reviewed the Company's claim for the COVID-19 regulatory asset. However,
19 the Company's revised claim does not change the form of my adjustment. In other
20 words, I still believe a 5-year normalization would be appropriate for the uncollectible
21 portion of the regulatory asset, and that, based on the revised savings, the net
22 incremental cost is not large enough to qualify as extraordinary to the point where they
23 impact the financial viability of the Company.

1 **AFUDC on Land Held for Future Use**

2 Q. PLEASE RESPOND TO DUQUESNE’S REBUTTAL TESTIMONY
3 REGARDING THE ALLOWANCE FOR FUNDS USED DURING
4 CONSTRUCTION ON LAND HELD FOR FUTURE USE.

5 A. In my direct testimony, I recommended that the Commission not allow the Company to
6 accrue Allowance for Funds Used During Construction (AFUDC) on land held for future
7 use as requested by the Company. In the Company’s rebuttal testimony, the Company
8 references FERC Accounting Release No. 5, “Capitalization of Interest During
9 Construction” (AR-5 Revised) as support for its position. The concludes that “the
10 Company is able to justify the time between the purchase of land and the construction as
11 being reasonable based upon the above discussion, AFUDC treatment on land is allowable
12 under AR-5 (Revised).”

13 Q. DO YOU AGREE WITH THE COMPANY’S CONCLUSION?

14 A. No. Under FERC accounting rules, property that is held in the Plant Held for Future Used
15 (Account No. 105) is not eligible for accruing AFUDC. It is property held in
16 Construction Work in Progress (CWIP) (Account No. 107) that is eligible for AFUDC
17 accrual. The Company has taken the FERC ruling out of context and asserting that simply
18 by being able to justify the time between the purchase land and construction is sufficient
19 to accrue AFUDC. In fact, a key part of the FERC ruling is that the following two
20 conditions are met: (1) capital expenditures for the project have been incurred; and (2)
21 activities that are necessary to get the construction project ready for its intended use are
22 in progress (AFUDC policy conditions). In other words, the ruling assumes the property
23 is included CWIP. The properties that the Company is attempting accrue AFUDC do
24 meet these conditions. I have provided copies of the account instructions and entire ruling
25 supporting FERC Accounting Release No. 5 to support my position.

1 Q. DOES THIS COMPLETE YOUR SURREBUTTAL TESTIMONY?

2 A. Yes, it does.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)	
)	
v.)	Docket No. R-2021-3024750
)	
Duquesne Light Company)	

**SCHEDULES ACCOMPANYING THE
SURREBUTTAL TESTIMONY
OF
LAFAYETTE K. MORGAN, JR.**

**ON BEHALF OF THE
OFFICE OF CONSUMER ADVOCATE**

August 10, 2021

Duquesne Light Company

Summary of Operating Income
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
	<u>Operating Revenues</u>					
1	Total Sales Revenues	\$ 550,379	\$ 8,451	\$ 558,830	\$ -	\$ 558,830
2	Other Revenues - Off System Sales	-	-	-	-	-
3	Other Operating Revenues	18,003	-	18,003	-	18,003
4	Revenue Increase	-	-	-	3,785	3,785
5	Total Operating Revenues	<u>\$ 568,382</u>	<u>\$ 8,451</u>	<u>\$ 576,833</u>	<u>\$ 3,785</u>	<u>\$ 580,618</u>
6						
7	<u>Operating Revenue Deductions</u>					
8	Operating & Maintenance Expenses	\$ 205,113	\$ (12,858)	\$ 192,255	\$ 49	\$ 192,304
9	Depreciation & Amortization Expense	181,309	(771)	180,538	-	180,538
10	Taxes Other Than Income Taxes	41,102	190	41,292	226	41,518
11	Total Operating Revenue Deductions	<u>\$ 427,524</u>	<u>\$ (13,438)</u>	<u>\$ 414,086</u>	<u>\$ 275</u>	<u>\$ 414,360</u>
12						
13	Operating Income Before Income Taxes	140,858	21,889	162,747	3,510	166,258
14						
15	Federal Income Tax	12,504	3,814	16,318	664	\$ 16,982
16	State Income Tax	<u>6,308</u>	<u>2,016</u>	<u>8,324</u>	<u>351</u>	<u>8,675</u>
17						
18	Net Operating Income	<u>\$ 122,046</u>	<u>\$ 16,059</u>	<u>\$ 138,105</u>	<u>\$ 2,496</u>	<u>\$ 140,601</u>
19						
20	Rate Base	<u>\$2,276,039</u>		<u>\$2,196,896</u>		<u>\$2,196,896</u>
21						
22	Return On Rate Base	<u>5.36%</u>		<u>6.29%</u>		<u>6.40%</u>

Duquesne Light Company

Summary of Revenue Increase at OCA Rate of Return
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount	Source
1	Adjusted Rate Base	\$2,196,896	Schedule LKM-2, Page 2
2	Required Rate of Return	<u>6.400%</u>	Per OCA Witness Garrett
3			
4	Net Operating Income Required	\$ 140,601	
5	Net Operating Income at Present Rates	<u>138,105</u>	Schedule LKM-1, Page 1
6			
7	Income Deficiency/(Surplus)	\$ 2,496	
8	Revenue Multiplier	<u>1.516558</u>	
9			
10	Required Change in Company Revenue	<u>\$ 3,785</u>	
11			
12	Proposed Revenue Change	\$ 3,785	
13	Less: Uncollectibles	1.3000% <u>49</u>	
14	Revenues After Uncollectibles	3,736	
15	Gross Receipts Tax	5.9000% 220	
16	PUC/OCA& OSBA	0.1461% <u>6</u>	
17	Income Before State Taxes	\$ 3,510	
18	State Income Tax Effect Tax Rate	9.9900%	
19	Less: State Income Tax	<u>351</u>	
20			
21	Income Before Federal Taxes	\$ 3,160	
22	Federal Income Tax	21.0000% <u>664</u>	
23			
24	Net Income Surplus/(Deficiency)	<u>\$ 2,496</u>	

Duquesne Light Company

Summary of Rate Base
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount per Company Filing	OCA Rate Base Adjustments	Amount After OCA Adjustments
1	Utility Plant	\$ 4,088,758	\$ (5,337)	\$ 4,083,421
2	Accumulated Depreciation	<u>(1,426,596)</u>	<u>771</u>	<u>(1,425,825)</u>
3	Net Plant in Service	2,662,162	(4,566)	2,657,596
4				
5	Working Capital	46,384	(169)	46,215
6	Materials & Supplies	26,057	-	26,057
7	Excess Pension Capitalized	74,408	(74,408)	-
8	Accumulated Deferred Income Taxes	(521,809)	-	(521,809)
9	Customer Deposits	<u>(11,163)</u>	<u>-</u>	<u>(11,163)</u>
10				
11	Total Rate Base	<u>\$ 2,276,039</u>	<u>\$ (79,143)</u>	<u>\$ 2,196,896</u>

Duquesne Light Company

Summary of Rate Base Adjustments
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Source</u>	<u>Amount</u>
1	Rate Base per Company Filing	Schedule LKM-2, Page 1	<u>\$ 2,276,039</u>
2			
3			
4	<u>OCA Adjustments:</u>		
5	Reverse Duquesne Cloud-Based Software	Schedule LKM -4	\$ (1,898)
6	Remove Pension Asset From Rate Base	Schedule LKM -5	(74,408)
7	Cash Working Capital	Schedule LKM -6	(169)
8	Remove EV Program Costs	Schedule LKM -13	<u>(2,669)</u>
9			
10	Total Ratemaking Adjustments		<u>\$ (79,143)</u>
11			
12	Adjusted Rate Base per OCA		<u><u>\$ 2,196,896</u></u>

Duquesne Light Company

Summary of Adjustments to Income Before Income Taxes
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount	Source
1	Operating Income per Company	<u>\$ 122,046</u>	Schedule LKM-1
2			
3	<u>OCA Adjustments:</u>		
4	Reverse Company's Revenue Loss Adjustment	\$ 5,655	Schedule LKM-7
5	Reflect Eligible Customer Listing Costs	48	Schedule LKM-8
6	Normalize Salaries and Wages Increase	3,229	Schedule LKM-9
7	Remove Incentive Compensation Related to Earnings	3,464	Schedule LKM-10
8	Reflect Average Postretirement Benefit Expense	-	Schedule LKM-11
9	Reverse Cloud-Based Software Costs Adjustment	337	Schedule LKM-4
10	Revise Normalization of COVID-Pandemic Costs	1,658	Schedule LKM-12
11	Adjustment to Remove EV Program Costs	1,173	Schedule LKM-13
12	Interest Synchronization	495	Schedule LKM-14
13	Total OCA Adjustments	<u>16,059</u>	
14			
15	Total OCA Adjustments	<u>\$ 138,105</u>	

Duquesne Light Company

Summary of Adjustments to Income Before Income Taxes
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	State Income Taxes	Federal Income Taxes	Income Before Income Taxes
1	Amount per Company	\$ 568,382	\$ 205,113	\$ 181,309	\$ 41,102	\$ 6,308	\$ 12,504	\$ 122,046
2								
3	<u>OCA Adjustments:</u>							
4	Reverse Company's Revenue Loss Adjustment	\$ 8,451	\$ -	\$ -	\$ 499	\$ 794	\$ 1,503	\$ 5,655
5	Reflect Eligible Customer Listing Costs	-	(68)	-	-	7	13	48
6	Normalize Salaries and Wages Increase	-	(4,232)	-	(308)	454	858	3,229
7	Remove Incentive Compensation Related to Earnings	-	(4,872)	-	-	487	921	3,464
8	Reflect Average Postretirement Benefit Expense	-	-	-	-	-	-	-
9	Reverse Cloud-Based Software Costs Adjustment	-	-	(474)	-	47	90	337
10	Revise Normalization of COVID-Pandemic Costs	-	(2,332)	-	-	233	441	1,658
11	Adjustment to Remove EV Program Costs	-	(1,353)	(297)	-	165	312	1,173
12	Interest Synchronization	-	-	-	-	(171)	(324)	495
13								
14	Total OCA Adjustments	\$ 8,451	\$ (12,858)	\$ (771)	\$ 190	\$ 2,016	\$ 3,814	\$ 16,059
15								
16	Total Adjusted Income	\$ 576,833	\$ 192,255	\$ 180,538	\$ 41,292	\$ 8,324	\$ 16,318	\$ 138,105

Duquesne Light Company

Adjustment to Reverse Duquesne Cloud-Based Software Costs Adjustment
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount ^{1/}
1	FTY Expenditures	\$ 1,169
2	FPFTY Expenditures	<u>1,920</u>
3		
4	Adjustment to Plant in Service	\$ (3,089)
5	PA Jurisdictional Factor for Software	<u>0.76793</u>
6		
7	Adjustment to PA Jurisdictional Plant in Service	\$ (2,372)
8		
9	Adjustment to Plant in Service	\$ (3,089)
10	Amortization Period (Years)	<u>5</u>
11		
12	Adjustment to Accumulated Amortization	\$ 618
13	PA Jurisdictional Factor	<u>0.76793</u>
14		
15	Adjustment to PA Jurisdictional Accumulated Amortization	<u>474</u>
16		
17	Net Adjustment to Rate Base	<u><u>\$ (1,898)</u></u>
18		
19	Adjustment to Annual Amortization Expense	\$ (618)
20	PA Jurisdictional Factor	<u>0.76793</u>
21		
22	Adjustment to Annual Amortization Expense	<u><u>\$ (474)</u></u>

Notes:

^{1/} DLC Exhibit 2, Book 5, Schedule D-11.

Duquesne Light Company

Adjustment to Remove Pension Asset From Rate Base
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Duquesne Revenue Loss Adjustment	<u>\$ 74,408</u>
2		
3	Adjustment to Operating Revenues	<u><u>\$(74,408)</u></u>

Notes:

^{1/} DLC Exhibit 2, Book 5, Schedule D-1.

Duquesne Light Company

Adjustment to Cash Working Capital
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No	Description	Amount
1	Operation & Maintenance Expenses	\$ 16,745
2	Supply Expense	13,797
3	Tax Expense	23,632
4	Interest Payments	(4,375)
5	Average Prepayments	18,260
6		
7	Total Cash Working Capital Requirements per OPA	\$ 68,058
8	Total Cash Working Capital Requirements per Company	68,307
9		
10	Adjustment to Cash Working Capital	(249)
11	Jurisdictional Allocation	67.91% ^{1/}
12		
13	Adjustment to Rate Base	\$ (169)

Notes

^{1/} Schedule D-1, Page 3, line 4, \$46,384/\$68307..

Duquesne Light Company

Calculation of Interest Expense Component for Working Capital
 For the Test Year Ending December 31, 2022
 (\$ in Thousands)

Line No.	Description	Number of Days	Number of Days	Total
1	Measures of Value at December 31, 2019			\$ 2,196,896
2	Long-term Debt Ratio			50.00%
3	Embedded Cost of Long-term Debt			4.29%
4				
5	Pro forma Interest Expense			<u>\$ 47,123</u>
6				
7	Daily Amount	365		\$ 129
8				
9	Days to mid-point of interest payments		91.25	
10	Less: Revenue Lag Days		<u>57.36</u>	
11				
12	Interest Payment lag days			<u>(33.89)</u>
13				
14	Total Interest for Working Capital			<u>\$ (4,375)</u>

Duquesne Light Company

Adjustment to Reverse Company's Revenue Loss Adjustment
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Duquesne Revenue Loss Adjustment	<u>\$ (8,451)</u>
2		
3	Adjustment to Operating Revenues	\$ 8,451
4	Adjustment to Gross Receipts Tax	<u>499</u>
5		
6	Net Revenue Adjustment	<u><u>\$ 7,952</u></u>

Notes:

^{1/} DLC Exhibit 2, Book 5, Schedule D-5-B.

Duquesne Light Company

Adjustment to Reflect Eligible Customer Listing Costs
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	ECL Triennial Solicitation Costs	\$ 134
2	Normalization Period	3
3		
4	Normalized ECL Triennial Solicitation Costs	\$ 45
5	Normalized ECL Triennial Solicitation Costs per Co.	113
6		
7	Adjustment to O&M Expense	\$ (68)

Notes:

^{1/} Company Response to I&E-RE-43-D.

Duquesne Light Company

Adjustment to Normalize Salaries and Wages Increase
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount ^{1/}
1	Post-FPPTY Costs Related to the 10/01/2022 Wage Rate Increase	\$ 978
2	Post-FPPTY Costs Related to the 01/01/2023 Wage Rate Increase	<u>1,211</u>
3		
4	Adjustment to Salary & Wage Expense	\$ (2,189)
5	PA Jurisdictional Factor for S&W	<u>0.8263</u>
6		
7	Adjustment to O&M Expense	\$ (1,809)
8		
9	Total Annualized O&M Payroll Expense	\$ 91,473 ^{1/}
10	Total Number of Employees	<u>1,642 ^{2/}</u>
11		
12	Average O&M Payroll per Employee	\$ 56
13		
14	Total Number of Employees in FPPTY Payroll	1,642
15	Average Actual HTY Number of Vacancy	<u>48 ^{2/}</u>
16	FPPTY Number of Employees less Vacancy	<u>1,594</u>
17		
18	Revised FPPTY O&M Payroll Expense	88,784
19		
20	Adjustment to Salary & Wage Expense	\$ (2,689)
21	PA Jurisdictional Factor for S&W	<u>0.8263</u>
22		
23	Adjustment to O&M Expense	<u>(2,222)</u>
24		
25	Total Adjustment to O&M Payroll	<u>\$ (4,031)</u>
26		
27	Adjustment to 401-K Expense	<u>\$ (202)</u>
28		
29	Adjustment to Payroll Taxes	<u>\$ (308)</u>

Notes:

^{1/} DLC Schedule D-7.

^{2/} Response to I&E-RE-6.

Duquesne Light Company

Adjustment to Remove Incentive Compensation Related to Earnings Goals
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u> ^{1/}
1	Short-Term Incentive Plan Earnings Based Payout	\$ 2,505
2	O&M Percentage (100% -31.89%)	<u>68.11%</u>
3		
4	Short-Term Incentive Plan Earnings Based Expense	\$ 1,706
5	Long-Term Incentive Plan Earnings Based Payout	<u>4,190</u>
6		
7	Adjustment to Incentive Compensation Expense	(5,896)
8	PA Jurisdictional Factor for S&W	<u>82.63%</u>
9		
10	Adjustment to O&M Expense	<u>\$ (4,872)</u>

Notes:

^{1/} Company Response to I&E-RE-8-D, page 4.

Duquesne Light Company

Adjustment to Reflect Average Postretirement Benefit Expense
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No.	Description	Amount ^{1/}
1	2-Year Average OPEB Expense	\$ -
2	Updated FPFTY Amount	-
3		
4	Adjustment to O&M Expense	\$ -
5	PA Jurisdictional Factor for S&W	82.63%
6		
7	Adjustment to O&M Expense	\$ -
8		

Notes:

^{1/} Company Response to I&E-RE-9-D, page 4.

Duquesne Light Company

Adjustment to Revise Normalization of COVID-Pandemic Costs
For the Test Year Ending December 31, 2022
(\$ in Thousands)

<u>Line No.</u>	<u>Description</u>	<u>Amount</u>
1	Estimated 2020 Under-Recovery of Uncollectibles	\$ 4,187
2	Estimated 2021 Under-Recovery of Uncollectibles	2,094
3		
4	Estimated Under-Recovery Uncollectibles due to COVID Pandemic	6,281
5		
6	Under-Recovery of Operating Expense	-
7		
8	COVID Pandemic Related Cost to be Recovered	\$ 6,281
9	Normalization Period (Years)	5
10		
11	Annual Recovery of COVID Pandemic Related Costs	\$ 1,256
12	Annual Recovery of COVID Pandemic Related Costs per Co.	3,588
13		
14	Adjustment to O&M Expense	\$ (2,332)

Notes:

^{1/} DLC Schedule D-12.

Duquesne Light Company

Adjustment to Remove EV Program Costs
For the Test Year Ending December 31, 2022
(\$ in Thousands)

Line No	Description	Amount ^{1/}
1	Capital Additions Related to EV Program	\$ (2,965)
2		
3	Adjustment to EV Accumulated Amortization	\$ 297
4		
5	Net Adjustment to Rate Base	<u>\$ (2,669)</u>
6		
7	EV Program Operating Expenses	<u>\$ (1,353)</u>
8		
9	EV Depreciation Expense	<u>\$ (297)</u>

Notes:

^{1/} Response to I&E-40-D.

Duquesne Light Company

Interest Synchronization Adjustment
For the Test Year Ending December 31, 2022

Line No.	Description	Amount
1	Company Rate Base	\$ 2,196,896 ^{1/}
2	Weighted Cost of Debt	2.150%
3		
4	Adjusted Interest Deduction	\$ 47,233
5	Interest Deduction Per Company	45,521 ^{2/}
6		
7	Adjustment to Synchronize Interest Expense	\$ 1,712
8	Effective State Income Tax Rate	9.99%
9		
10	Adjustment to State Income Taxes	\$ (171)
11		
12	Federal Income Tax Base	\$ 1,541
13	Federal Income Tax Rate	21.00%
14		
15	Adjustment to Federal Income Taxes	\$ (324)

Notes:

^{1/} Schedule LKM-2, Page 1.

^{2/} Schedule D-22

Duquesne Light Company

Calculation of Rate of Return
For the Test Year Ending December 31, 2022

<u>Line No.</u>	<u>Description</u>	<u>Capitalization Ratio</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
1	Long-Term Debt	50.00%	4.29%	2.15%
2	Short-Term Debt	0.00%	0.00%	0.00%
3	Total Debt	<u>50.00%</u>		<u>2.15%</u>
4	Preferred Stock	0.00%	0.00%	0.00%
5	Common Equity	<u>50.00%</u>	<u>8.50%</u>	<u>4.25%</u>
6				
7	Total	<u><u>100.00%</u></u>		<u><u>6.40%</u></u>

Source:
OCA Witness Garrett

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)	
)	
v.)	Docket No. R-2021-3024750
)	
Duquesne Light Company)	

Appendix A

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D.C. 20426

In Reply Refer To:
Office of Enforcement
Docket No. AI11-1-000
February 16, 2011

TO ALL JURISDICTIONAL NATURAL GAS PIPELINE COMPANIES AND
PUBLIC UTILITIES AND LICENSEES

Subject: Revision to Accounting Release No. 5, Capitalization of Allowance for Funds
Used During Construction

The Commission has historically relied on the guidance issued by the Commission's Chief Accountant in Accounting Release No. 5 (Revised) (AR-5),¹ Capitalization of Interest During Construction, to address when a company may begin to accrue an allowance for funds used during construction (AFUDC).² Under this guidance, a natural gas pipeline company was allowed to accrue AFUDC beginning with the date it filed an application for a certificate of public convenience and necessity (certificate) with the Commission, provided that it incurred construction costs on a continuous, planned progressive basis.

The natural gas industry has undergone substantial changes since the issuance of AR-5 in 1968. Today, many natural gas pipeline companies seeking to construct pipeline facilities participate in the pre-filing process instituted by the Commission in 2001.³ For

¹ *Accounting Release No. 5 (Revised), Capitalization of Interest During Construction*, effective January 1, 1968, FERC Stats. & Regs. ¶ 40,005.

² AR-5 uses the term "interest during construction" which is now referred to as AFUDC and as such we will use the term AFUDC in place of "interest during construction" in the revised AR-5.

³ In 2001, the Commission instituted an optional pre-filing process and encouraged entities seeking authorization to construct new facilities to prepare and submit to the Commission conceptual design and engineering features of the proposed project, as well as extensive information about potential environmental, security and safety impacts prior to filing a certificate application. See Office of Energy Projects Gas Outreach Team, *Ideas for Better Stakeholder Involvement in the Interstate Natural Gas Pipeline Planning Pre-Filing Process*, December 2001, available at <http://www.ferc.gov/legal/maj-ord-reg/land-docs/stakeholder.pdf>.

the past ten years, natural gas pipeline companies participating in the pre-filing process have typically incurred significant project-related costs prior to filing a certificate application with the Commission. These changes required the Commission to reconsider its longstanding policy of limiting AFUDC accruals generally to those costs incurred on the date a certificate application was filed with the Commission.

On March 18, 2010, the Commission revised its policy for accruing AFUDC in *Southern Natural* and *Florida Gas*.⁴ In these orders, the Commission concluded that the certificate application date was no longer an appropriate milestone for determining when to begin the accrual of AFUDC since many natural gas pipeline companies have been participating in the pre-filing process and have incurred significant project-related costs prior to filing a certificate application with the Commission.

The Commission found that it is important that the revised AFUDC policy achieve the following objectives: (a) be in harmony with the recent developments in the natural gas industry; (b) allow AFUDC capitalization on all prudent construction costs; (c) serve to promote infrastructure development by allowing for recovery of all monies invested in the construction of facilities; and (d) be directly correlated to the occurrence of construction project-related costs incurred to prepare the construction project for its intended use.

Based on the above objectives, the Commission revised its AFUDC accrual policy to allow natural gas pipeline companies to begin accruing AFUDC on construction projects when the following two conditions are met: (1) capital expenditures for the project have been incurred; and (2) activities that are necessary to get the construction project ready for its intended use are in progress (AFUDC policy conditions). The Commission explained that the term “activities” is to be construed broadly and includes all the actions, excluding preliminary survey and investigation activities, required to prepare the construction project for its intended use. In addition, the Commission found that the date that the Commission approves the request to initiate the pre-filing process is a strong indicator of the initiation of construction project-related activities.⁵

The Commission also directed applicants seeking a certificate for authorization to construct pipeline facilities to make a representation in their filing that AFUDC accruals included in the cost of the facilities are calculated in accordance with the Commission’s

⁴ *Southern Natural Gas Co.*, 130 FERC ¶ 61,193 (2010) (*Southern Natural*); *Florida Gas Transmission Co. LLC*, 130 FERC ¶ 61,194 (2010) (*Florida Gas*).

⁵ To accrue AFUDC prior or subsequent to the initiation of pre-filing, natural gas pipelines must be prepared to demonstrate that the AFUDC policy conditions have been met. *E.g.*, *Southern Natural*, 130 FERC ¶ 61,193 at P 36, 39; *Florida Gas* 130 FERC ¶ 61,194 at P 25, 28.

rules and regulations and pursuant to and consistent with the AFUDC policy conditions. Finally, the Commission emphasized that natural gas pipeline companies must retain records supporting the commencement of AFUDC accruals, and such AFUDC accruals will be subject to scrutiny through Commission audit or rate review, just as any other cost would.

Although the Commission established the revised AFUDC accrual policy in the context of when natural gas pipeline companies may begin AFUDC accruals, the revised policy is comparable with that currently used by public utilities and licensees. As a result, this revised AR-5 shall apply to all entities under the Commission's jurisdiction to which AFUDC is applicable. This revision will provide for consistency and uniformity in determining AFUDC.

Natural gas pipeline companies and public utilities and licensees may continue to accrue AFUDC for as long as the two conditions in the revised AFUDC policy continue to be met. However, AFUDC accruals must cease once the facility being constructed has been tested and is ready for, or placed in, service. This includes those portions of construction projects completed and put into service although the project is not fully completed. Finally, if construction is interrupted or suspended, AFUDC accruals must cease unless the company can justify the interruption as being reasonable under the circumstances.

The Commission delegated authority to act on this matter to the Director of the Office of Enforcement or his designee under 18 C.F.R. § 375.311 (2010). The Director has designated this authority to the Chief Accountant. This letter constitutes final agency action. Your company may file a request for rehearing with the Commission within 30 days of the date of this order under 18 C.F.R. § 385.713 (2010).

Sincerely,

Bryan K. Craig
Director and Chief Accountant
Division of Audits
Office of Enforcement

Enclosure

FEDERAL ENERGY REGULATORY COMMISSION

ACCOUNTING RELEASE NUMBER 5 (AR-5) (Revised)

Capitalization of Allowance for Funds Used During Construction

Question:

What is the proper period for capitalization of Allowance for Funds Used During Construction (AFUDC)?

Answer:

The capitalization period for AFUDC shall begin when two conditions are present: (1) capital expenditures for the project have been incurred; and (2) activities that are necessary to get the construction project ready for its intended use are in progress. AFUDC capitalization shall continue as long as these two conditions are present.

The term “activities” is to be construed broadly and includes all the actions required to prepare the construction project for its intended use, including activities prior to physical construction, such as the development of plans or the process of obtaining permits from governmental authorities. However, the term “activities” does not include preliminary survey and investigation activities. Activities occurring prior to the above two conditions being met would be considered preliminary in nature for the purpose of determining feasibility of projects under contemplation and would be included in Accounts 183, Preliminary Survey and Investigation Charges, or 183.2, Other Preliminary Survey and Investigation Charges, as appropriate. These preliminary activities would not be subject to AFUDC accruals until such a time as the two conditions are met and the amounts included in Account 183 or Account 183.2 are transferred to Account 107, Construction Work in Progress.

No AFUDC should be accrued during periods of interrupted construction unless the company can justify the interruption as being reasonable under the circumstances.

Capitalization of AFUDC stops when the facilities have been tested and are placed in, or ready for, service. This would include those portions of construction projects completed and put into service although the project is not fully completed. Should the test period exceed the allowable 30, 90, or 120 days, the company must submit full particulars and justification for an extension of such period to the Commission in accordance with Electric and Gas Plant Instruction 9(D) in the Uniform System of Accounts.

Bryan K. Craig
Director and Chief Accountant
Division of Audits
Office of Enforcement

Effective: March 18, 2010

Document Content(s)

AI11-1-000.DOC.....1-5

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)	
)	
v.)	Docket No. R-2021-3024750
)	
Duquesne Light Company)	

Appendix B

the supporting (old) fixed capital accounts until the reclassification shall have been accomplished.

104 Electric plant leased to others.

A. This account shall include the original cost of electric plant owned by the utility, but leased to others as operating units or systems, where the lessee has exclusive possession.

B. The property included in this account shall be classified according to the detailed accounts (301 to 399) prescribed for electric plant in service and this account shall be maintained in such detail as though the property were used by the owner in its utility operations.

105 Electric plant held for future use.

A. This account shall include the original cost of electric plant (except land and land rights) owned and held for future use in electric service under a definite plan for such use, to include: (1) Property acquired (except land and land rights) but never used by the utility in electric service, but held for such service in the future under a definite plan, and (2) property (except land and land rights) previously used by the utility in service, but retired from such service and held pending its reuse in the future, under a definite plan, in electric service.

B. This account shall also include the original cost of land and land rights owned and held for future use in electric service under a plan for such use, to include land and land rights: (1) Acquired but never used by the utility in electric service, but held for such service in the future under a plan, and (2) previously held by the utility in service, but retired from such service and held pending its reuse in the future under a plan, in electric service. (See Electric Plant Instruction 7.)

C. In the event that property recorded in this account shall no longer be needed or appropriate for future utility operations, the company shall request Commission approval of journal entries to remove such property from this account when the gain realized from the sale or other disposition of the property is \$100,000 or more, prior to their being recorded. Such filings shall include the description and original cost of individual properties removed from this account, the accounts charged upon removal, and any associated gains realized upon disposition of such property.

D. Gains or losses from the sale of land and land rights or other disposition of such property previously recorded in this account and not placed in utility service shall be recorded directly in accounts 411.6 or 411.7, as appropriate, except when determined to be significant by the Commission. Upon such a determination, the amounts shall be transferred to account 256, Deferred Gains from Disposition of Utility Plant, or account 187, Deferred Losses from Disposition of Utility Plant, and amortized to accounts 411.6, Gains from Disposition of Utility Plant, or 411.7, Losses from Disposition of Utility Plant, as appropriate.

E. The property included in this account shall be classified according to the detail accounts (301 to 399) prescribed for electric plant in service and the account shall be maintained in such detail as though the property were in service.

NOTE: Materials and supplies, meters and transformers held in reserve, and normal spare capacity of plant in service shall not be included in this account.

106 Completed construction not classified—Electric (Major only).

At the end of the year or such other date as a balance sheet may be required by the Commission, this account shall include the total of the balances of work orders for electric plant which has been completed and placed in service but which work orders have not been classified for transfer to the detailed electric plant accounts.

NOTE: For the purpose of reporting to the Commission the classification of electric plant in service by accounts is required, the utility shall also report the balance in this account tentatively classified as accurately as practicable according to prescribed account classifications. The purpose of this provision is to avoid any significant omissions in reported amounts of electric plant in service.

107 Construction work in progress—Electric.

A. This account shall include the total of the balances of work orders for electric plant in process of construction.

B. Work orders shall be cleared from this account as soon as practicable after completion of the job. Further, if a project, such as a hydroelectric project, a steam station or a transmission line, is designed to consist of two or more units or circuits which may be placed in service at different dates, any expenditures which are common to and which will be used in the operation of the project as a whole shall be included in electric plant in service upon the completion and the readiness for service of the first unit. Any expenditures which are identified exclusively with units of property not yet in service shall be included in this account.

C. Expenditures on research, development, and demonstration projects for construction of utility facilities are to be included in a separate subdivision in this account. Records must be maintained to show separately each project along with complete detail of the nature and purpose of the research, development, and demonstration project together with the related costs.

108 Accumulated provision for depreciation of electric utility plant (Major only).

A. This account shall be credited with the following:

(1) Amounts charged to account 403, Depreciation Expense, or to clearing accounts for current depreciation expense for electric plant in service.

(2) Amounts charged to account 403.1, Depreciation expense for asset retirement costs, for current depreciation expense related to asset retirement costs in electric plant in service in a separate subaccount.

(3) Amounts charged to account 421, Miscellaneous Nonoperating Income, for

expenses included in protection, item 7, and in injuries and damages, item 8.

(16) *Taxes* includes taxes on physical property (including land) during the period of construction and other taxes properly includible in construction costs before the facilities become available for service.

(17) *Allowance for funds used during construction* (Major and Nonmajor Utilities) includes the net cost for the period of construction of borrowed funds used for construction purposes and a reasonable rate on other funds when so used, not to exceed, without prior approval of the Commission, allowances computed in accordance with the formula prescribed in paragraph (a) of this subparagraph. No allowance for funds used during construction charges shall be included in these accounts upon expenditures for construction projects which have been abandoned.

(a) The formula and elements for the computation of the allowance for funds used during construction shall be:

$$A_i = s(S/W) + d(D/D + P + C)(1 - S/W)$$

$$A_e = [1 - S/W][\rho(P/D + P + C) + c(C/D + P + C)]$$

A_i = Gross allowance for borrowed funds used during construction rate.

A_e = Allowance for other funds used during construction rate.

S = Average short-term debt.

s = Short-term debt interest rate.

D = Long-term debt.

d = Long-term debt interest rate.

P = Preferred stock.

ρ = Preferred stock cost rate.

C = Common equity.

c = Common equity cost rate.

W = Average balance in construction work in progress plus nuclear fuel in process of refinement, conversion, enrichment and fabrication, less asset retirement costs (See General Instruction 25) related to plant under construction.

(b) The rates shall be determined annually. The balances for long-term debt, preferred stock and common equity shall be the actual book balances as of the end of the prior year. The cost rates for long-term debt and preferred stock shall be the weighted average cost determined in the manner indicated in §35.13 of the Commission's Regulations Under the Federal Power Act. The cost rate for common equity shall be the rate granted common equity in the last rate proceeding before the ratemaking body having primary rate jurisdictions. If such cost rate is not available, the average rate actually earned during the preceding three years shall be used. The short-term debt balances and related cost and the

average balance for construction work in progress plus nuclear fuel in process of refinement, conversion, enrichment, and fabrication shall be estimated for the current year with appropriate adjustments as actual data becomes available.

NOTE: When a part only of a plant or project is placed in operation or is completed and ready for service but the construction work as a whole is incomplete, that part of the cost of the property placed in operation or ready for service, shall be treated as *Electric Plant in Service* and allowance for funds used during construction thereon as a charge to construction shall cease. Allowance for funds used during construction on that part of the cost of the plant which is incomplete may be continued as a charge to construction until such time as it is placed in operation or is ready for service, except as limited in item 17, above.

(18) *Earnings and expenses during construction.* The earnings and expenses during construction shall constitute a component of construction costs.

(a) The earnings shall include revenues received or earned for power produced by generating plants during the construction period and sold or used by the utility. Where such power is sold to an independent purchaser before intermingling with power generated by other plants, the credit shall consist of the selling price of the energy. Where the power generated by a plant under construction is delivered to the utility's electric system for distribution and sale, or is delivered to an associated company, or is delivered to and used by the utility for purposes other than distribution and sale (for manufacturing or industrial use, for example), the credit shall be the fair value of the energy so delivered. The revenues shall also include rentals for lands, buildings etc., and miscellaneous receipts not properly includible in other accounts.

(b) The expenses shall consist of the cost of operating the power plant, and other costs incident to the production and delivery of the power for which construction is credited under paragraph (a), above, including the cost of repairs and other expenses of operating and maintaining lands, buildings, and other property, and other miscellaneous and like expenses not properly includible in other accounts.

(19) *Training costs* (Major and Nonmajor Utilities). When it is necessary that employees be trained to operate or maintain plant facilities that are being constructed and such facilities are not conventional in nature, or are new to the company's operations, these costs may be capitalized as a component of construction cost. Once plant is placed in service, the capitalization of training costs shall cease and subsequent training costs shall be expensed. (See Operating Expense Instruction 4.)

(20) *Studies* includes the costs of studies such as nuclear operational, safety, or seismic studies or environmental studies mandated by regulatory bodies relative to plant under construction. Studies relative to facilities in service shall be charged to account 183, Preliminary Survey and Investigation Charges.

(21) *Asset retirement costs.* The costs recognized as a result of asset retirement obligations incurred during the construction and testing of utility plant shall constitute a component of construction costs.

B. For Nonmajor utilities, the cost of construction of property chargeable to the electric

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
 :
 v. : Docket No. R-2021-3024750
 :
 Duquesne Light Company :

VERIFICATION

I, Lafayette K. Morgan, hereby state that the facts above set forth in my Surrebuttal Testimony, OCA Statement 1-SR, are true and correct and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 10, 2021
*314863

Signature: 
Lafayette K. Morgan

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission

v.

Duquesne Light Company

Docket No. R-2021-3024750

SURREBUTTAL TESTIMONY

OF

DAVID J. GARRETT

ON BEHALF OF

THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 10, 2021

I. INTRODUCTION

1 **Q. Please state your name and business address.**

2 A. My name is David J. Garrett. My business address is 101 Park Avenue, Suite 1125,
3 Oklahoma Company, Oklahoma 73102.

4 **Q. By whom are you employed and in what capacity?**

5 A. I am the managing member of Resolve Utility Consulting, LLC. I am an independent
6 consultant specializing in public utility regulation.

7 **Q. Have you previously filed testimony in this proceeding?**

8 A. Yes. I filed direct testimony in OCA Statement 2 on June 30, 2021, on behalf of the
9 Pennsylvania Office of Consumer Advocate (“OCA”). A summary of my qualifications is
10 included in my direct testimony.

11 **Q. What is the purpose of your surrebuttal testimony?**

12 A. My surrebuttal testimony responds to the rebuttal testimony of Duquesne Light Company’s
13 (“DLC” or the “Company”) witness Paul Moul.

14 **Q. Did any of the Company’s rebuttal testimony you reviewed cause you to change your
15 positions and recommendations as stated in your direct testimony?**

16 A. No. To the extent I did not specifically address a statement made in the Company’s rebuttal
17 testimony filed in this case, it should not constitute my agreement with such testimony.

18 **Q. In his rebuttal testimony, did Mr. Moul raise any new, significant issues related to
19 your cost of equity and rate of return testimony and analysis?**

20 A. No. In Mr. Moul’s rebuttal testimony, it is clear that he disagrees with my opinions
21 regarding DLC’s cost of capital and my return on equity (“ROE”) recommendation.
22 However, I do not believe he raised any new, significant arguments or issues in addition to

1 those provided in his direct testimony. Thus, in my surrebuttal testimony, I will not repeat
2 all of the arguments and points raised in my direct testimony; rather, I will reiterate a few
3 important points in my response to Mr. Moul’s rebuttal testimony and rebut several
4 inaccurate statements made by Mr. Moul.

5 **Q. Please describe the organization of your surrebuttal testimony.**

6 A. In my surrebuttal, I respond to six pertinent issues discussed in Mr. Moul’s rebuttal
7 testimony, including (1) capital structure; (2) the growth rate input to the Discounted Cash
8 Flow (“DCF”) Model; (3) Mr. Moul’s ROE comparisons; (4) the overall results of the
9 Capital Asset Pricing Model (“CAPM”); (5) the leverage adjustment; and (6) managerial
10 performance.

I. CAPITAL STRUCTURE

11 **Q. Please summarize Mr. Moul’s surrebuttal testimony regarding capital structure.**

12 A. Mr. Moul disagrees with my capital structure proposal. He suggests there is no basis to
13 deviate from the Company’s actual capital structure¹ and that my capital structure proposal
14 “is simply designed to lower the revenue requirement.”²

15 **Q. Do you have a response to Mr. Moul’s rebuttal testimony regarding capital structure?**

16 A. Yes. First, Mr. Moul is wrong when he says that my proposals are *designed* to lower the
17 revenue requirement. Mr. Moul has no basis to make that assertion; moreover, he is
18 incorrect. Because Mr. Moul’s filed positions regarding the company debt ratio (and ROE)

¹ Rebuttal Testimony of Paul R. Moul, p. 10, lines 18-20.

² *Id.* at lines 6-8.

1 are so unreasonably high, any reasonable adjustment to those proposals will naturally result
2 in a lower revenue requirement, all else held constant. In light of the evidence presented
3 in my testimony, my proposed debt ratio is not only reasonable, but arguably *low*. The
4 average debt ratio of Mr. Moul’s own proxy group is 52%, which is 200 basis points *higher*
5 than my proposed 50% debt ratio. Mr. Moul notes that the debt ratios of the proxy group’s
6 operating subsidiaries are lower than those of their parent companies. This is not
7 surprising. In finance we assume that firms (and investors) seek to maximize profit. All
8 else held constant, a lower authorized debt ratio for regulated utilities results in more profit.
9 The same is not true for their parent companies, who can maximize profit by using their
10 relatively higher leveraged capital to fund their subsidiaries in the form of “equity,” thereby
11 earning an equity-level return on low-cost debt. This is a strategy known as “double
12 leverage,” and it is financially profitable to the extent it is allowed by regulators.
13 Regardless, it is the capital structures of the parents, not the subsidiaries, that are more
14 reflective of capital structures that exist in a competitive environment. Thus, the
15 Commission should consider the debt ratios of the proxy group (52%) when assessing a
16 fair debt ratio for the Company.

II. DCF GROWTH RATE

17 **Q. Please summarize Mr. Moul’s surrebuttal testimony regarding the growth rate input**
18 **to the DCF Model.**

19 A. Mr. Moul disagrees with my use of projected nominal GDP as a limiting factor for long-
20 term growth projections of the proxy utility group. Mr. Moul relies instead on the growth
21 rates published by various analysts.

1 **Q. Please summarize the problems you have with the growth rates Mr. Moul used in his**
2 **DCF Model.**

3 A. The problems I have with Mr. Moul's growth rate inputs could be summarized into four
4 key points: (1) analysts' growth rates cover short-term time periods; (2) it is not reasonable
5 to assume that any company can outpace the growth rate of the aggregate economy in
6 which it operates over the long run; and (3) analysts' growth rates appear to ignore the
7 qualitative aspects of utility operations and the fact they are very low growth companies,
8 including DLC. I will address each of these points below.

9 **Q. Are the analyst growth rates used by Mr. Moul in his DCF Model long-term growth**
10 **rates?**

11 A. No. Growth rates published by various analysts typically cover a period of 3 – 10 years.
12 However, the growth rate input in the constant growth DCF Model (or the terminal growth
13 rate in a multi-stage DCF Model) contemplates a *long-term* period of time (technically,
14 infinity). Regardless of the quantitative accuracy of the published growth rates Mr. Moul
15 relies upon, the Commission should understand, that it is Mr. Moul, not the commercial
16 analysts, who is suggesting to the Commission that the proxy companies will experience
17 these annual rates of growth year after year for many years into the future.

18 **Q. Is it reasonable to assume that a company's earnings or dividends will grow at an**
19 **annual rate greater than that of the projected annual growth rate of the aggregate**
20 **economy in which it operates?**

21 A. No. This is a fundamental concept in finance, but it also make sense intuitively. The
22 growth rate of our economy is most widely measured by U.S. GDP. As discussed in my
23 direct testimony, a reasonable projection of annual GDP growth going forward is about
24 3.8%. We could think of GDP as an "average" of sorts, which means there are relatively
25 high-growth companies (that have not yet reached their mature stage of the lifecycle) that

1 are bringing the average up, and likewise, there are relatively low growth companies that
2 are bringing the average down. Some companies would even have negative growth rates
3 (i.e., decreasing earnings and/or dividends). The growth rates of all the companies in the
4 U.S. market are constantly changing over time, but GDP growth is relatively consistent.
5 Mathematically, if a company were to consistently outpace GDP growth year after year,
6 then it would eventually have earnings that exceeded U.S. GDP, regardless of its starting
7 point. An appropriate metaphor might be two runners in an infinite race. If Runner A runs
8 at a faster pace than Runner B, Runner A will eventually surpass Runner B no matter the
9 head-start distance Runner B was given. It is simply not reasonable to assume that the
10 earnings of any one company, especially a low growth utility, would ever surpass U.S.
11 GDP, which is currently about \$21 trillion.

12 **Q. Do analysts' growth rates adequately consider the qualitative aspects of utility**
13 **operations and the fact they are intrinsically very low growth companies?**

14 A. No, not in my opinion. Proxy groups of utilities are useful for estimating cost of equity in
15 that they provide the requisite data to conduct the financial models we use to estimate utility
16 cost of equity. However, it is important to keep in mind that the primary purpose of this
17 exercise is to estimate a cost of equity for DLC itself. With that in mind, it is useful to
18 consider some intrinsic, qualitative growth indicators for DLC, such as total load growth
19 and customer growth. As discussed in my direct testimony, DLC's own estimates for total
20 customers and total load are *negative*.³ From a qualitative standpoint, there is simply no
21 reasonable way to reconcile DLC's own negative growth projections for total load and

³ See Exhibit DJG-5; see also response to OCA-III-7.

1 customers with long-term growth rates used by Mr. Moul, which exceed the growth rate of
2 the entire U.S. economy on average. DLC, like its peers, are inherently very low growth
3 companies, and that low growth rate should be reflected in a reasonable DCF cost of equity
4 estimate.

III. Comparison to Pennsylvania Allowed ROEs

5 **Q. Please comment on Mr. Moul’s comparison to “utility returns recently authorized by**
6 **the Commission.”**

7 A. Mr. Moul cites to a variety of ROEs allowed by the Public Utility Commission since 2018.
8 They include ROEs for small and large gas utilities, a small electric utility, and a large
9 water utility. Several were determined based on market information before the impact of
10 the COVID-19 pandemic. The PUC allowed PECO Gas a 10.24% ROE based upon a time
11 frame which included the COVID-19 pandemic shut-down and re-opening. It should be
12 noted, however, that none of the allowed rates of returns incorporated his particular
13 approach to estimating a cost of equity, such as his leverage adjustment to the DCF and
14 CAPM.

15 **Q. Mr. Moul also references an ROE identified by the Commission for use in electric**
16 **utility Distribution System Improvement Charges (DSICs). Should the Commission**
17 **use that DSIC ROE as a limit in this proceeding?**

18 A. No, I disagree with Mr. Moul’s suggestion. I have been advised that the DSIC allows DLC
19 to impose a surcharge to recover certain eligible investments in electric infrastructure
20 replacements between base rate cases. As such, the DSIC amounts to an automatic rate
21 recovery mechanism for DLC that, in turn, lowers its risk.

22 Commission regulations allow DLC to implement a DSIC surcharge to further
23 public policy which favors replacement of certain electric infrastructure, subject to

1 consumer protections. Consumers are protected by a 5% cap on the amount of eligible
2 investment in plant which DLC may recover through the DSIC surcharge. DLC's
3 calculated achieved return on its DSIC eligible plant investment is compared to one of two
4 benchmarks. The first benchmark is the utility's allowed ROE in a base rate case within
5 two years. In the absence of a specific allowed ROE, the Commission's Quarterly Earnings
6 Report identifies an industry ROE for use in the DSIC. The benchmark ROE serves as a
7 guard against over-earnings. If DLC's calculated achieved return on its DSIC investment
8 exceeds the applicable benchmark ROE, then DLC cannot collect the DSIC surcharge for
9 the next quarter.

10 An ROE that is calculated in some way by Commission staff, for use in a single
11 quarter test of whether an electric utility without a recent allowed cost of equity may be
12 over-earning through its DSIC surcharge, is not suited to identification of the cost of
13 common equity which DLC should be allowed the opportunity to earn as of the end of the
14 FPPTY.

IV. Credibility of CAPM Results

15 **Q. Please summarize Mr. Moul's surrebuttal testimony regarding your CAPM results.**

16 A. Mr. Moul claims that the results of my CAPM are "simply not credible."⁴

17 **Q. Please summarize the inputs and results of your CAPM.**

18 A. The results of my CAPM, though perhaps lower than the ROEs typically awarded to
19 shareholders, are perfectly reasonable. The CAPM is a Nobel-prize-winning financial

⁴ Rebuttal Testimony of Paul R. Moul p. 24, line 19.

1 model that has three inputs: (1) risk-free rate; (2) beta; and (3) the ERP. I will summarize
2 and contrast the sources of these inputs between my CAPM and Mr. Moul's CAPM.

3 1. Risk-free rate

4 Financial analysts use the yield on Treasury securities as a proxy for the risk-free rate. I
5 used a recent 30-day average on the daily yields on 30-year Treasury bonds as a proxy for
6 the risk-free rate in my CAPM. This is a very reasonable approach. In contrast, Mr. Moul
7 relies on projected bond yields. I have reviewed dozens of utility ROE testimony dating
8 back more than 20 years. In nearly every one of those cases, the witness representing the
9 utility will rely on a forward-looking or projected Treasury bond yield for the risk-free rate,
10 instead of relying on the current, *known* Treasury bond yield. In every single one of those
11 cases, I cannot recall a single instance in which the utility's projected bond yield was *lower*
12 than the current bond yield. In other words, I cannot recall a single case in which a utility
13 witness's prediction of the future did not, all else held constant, result in a higher cost of
14 equity estimate in the present. After observing this tactic numerous times over many years
15 without exception, it reinforces my opinion that it is preferable to use known (current) bond
16 yields rather than unknown (future) bond yields.

17 2. Beta

18 For the beta input in my CAPM, I relied on the betas published by Value Line. In my
19 experience, the vast majority of ROE witnesses in utility rate proceedings (representing
20 both utilities and customers) rely on Value Line betas without further adjustment. In
21 contrast, Mr. Moul takes the unusual approach of adjusting Value Line's published betas.
22 It is not surprising that this adjustment is in the upward direction.

1 3. ERP

2 Mr. Moul criticized me for looking back over 30 *days* to get an average yield on T-bonds
3 for my risk-free rate and described it as “backward-looking.”⁵ Curiously, Mr. Moul relies
4 on data that predates the invention of color televisions in his ERP estimate. Relying on
5 data dating back to 1940 is not a reasonable approach in estimating the ERP.⁶ As discussed
6 in my direct testimony, there is substantial evidence showing that the current and forward-
7 looking ERP is notably lower than the historical ERP (especially if one begins their
8 historical ERP analyses just after the end of the Great Depression). In contrast to Mr.
9 Moul’s approach, I relied on a survey of thousands of unbiased experts in helping develop
10 a reasonable estimate for the ERP. I also looked at the estimate published by Duff & Phelps
11 (a respected, international corporate advising firm) and the estimate published by one of
12 the world’s leading experts on the ERP – Dr. Aswath Damodaran. The *highest* ERP from
13 these sources is 5.6% (notably lower than Mr. Moul’s 8.72% estimate). In my CAPM, I
14 used the *highest*, of the foregoing ERP estimates, which all else held constant, produces a
15 higher CAPM cost of equity result.

16 **Q. Based on this summary, what do you conclude about the results on your CAPM**
17 **analyses as compared with Mr. Moul’s results?**

18 A. I used reasonable figures for each of the three CAPM inputs. My inputs are not affected
19 by biases. Indeed, there is very little, if any of my own personal judgement injected into
20 the CAPM results. The current risk-free rate is known. It does not require a subjective
21 estimate or adjustment. The betas I used are published by Value Line. To my knowledge,

⁵ Rebuttal Testimony of Paul R. Moul, p. 28, lines 20-21.

⁶ *See* Exhibit PRM-1, Sch. 12.

1 Value Line does not have any conflict of interest with either utilities or ratepayers that
2 might affect their judgment. The ERP I used comes from a survey of thousands of unbiased
3 experts. Based on these inputs, the results of my CAPM are quite reasonable. That result
4 indicates a cost of equity of 7.2% for DLC.

5 **Q. In addition to these CAPM inputs, does Mr. Moul continue to maintain that a size**
6 **premium should be incorporated into the model?**

7 A. Yes. As discussed in my direct testimony however, the size premium phenomenon has not
8 been consistently observed since the early 1980s. After 1983, U.S. small-cap stocks
9 actually underperformed relative to large cap stocks. In other words, the size effect
10 essentially reversed. It is simply inappropriate to insert a size premium adjustment to the
11 CAPM.

12 **Q. Mr. Moul suggests that your CAPM result should be tested against a CAPM result**
13 **from a Commission Quarterly Earnings Report. Please comment.**

14 A. As I discussed above regarding Mr. Moul's criticism of my DCF results, Mr. Moul has
15 picked out an ROE result from a Commission Quarterly Earnings Report which the
16 Commission considered in setting an ROE to apply as a test for over-earnings, within the
17 limited context of the DSIC. The purpose of this rate proceeding is different, as the ROE
18 allowed by the Commission will provide the Company with an opportunity to earn an
19 overall return, without any express cap on those earnings. My CAPM analysis is soundly
20 based and provides a check on the reasonableness of my DCF results.

V. Leverage Adjustment

1 **Q. Please summarize Mr. Moul’s rebuttal testimony regarding his leverage adjustment.**

2 A. Mr. Moul claims that I “never really refute” his leverage adjustment and that I employ his
3 leverage adjustment approach through the use of a similar mathematical technique as part
4 of my capital structure analysis, thereby “validating [his] approach.”⁷

5 **Q. What is your response to Mr. Moul’s rebuttal testimony regarding the leverage**
6 **adjustment?**

7 A. First, Mr. Moul’s claim that I “never really refute” his leverage adjustment is inaccurate. I
8 spend several pages in my direct testimony refuting this unreasonable adjustment.⁸ This
9 discussion is preceded by the sentence: “I disagree with Mr. Moul’s leverage adjustment
10 for several reasons.”⁹ In case it was not very clear in my direct testimony, I definitely
11 refute Mr. Moul’s leverage adjustment. Mr. Moul also states: “[Mr. Garrett] employs my
12 leverage adjustment approach through the use of the Hamada formula to unlever and
13 relever betas as part of his capital structure analysis, thereby validating my approach.”¹⁰
14 This statement is misleading at best. First, I definitely do *not* employ Mr. Moul’s leverage
15 adjustment (nor have I ever seen any other witness employ it). To be clear, Mr. Moul is
16 using the leverage adjustment to his cost of equity estimate (making his results higher). It
17 is true that I use the Hamada mathematical technique in my capital structure analysis.
18 However, it is for a very different purpose than Mr. Moul used the formula. I used the

⁷ Rebuttal Testimony of Paul R. Moul, p. 24, lines 6-11.

⁸ Direct Testimony of David J. Garrett, pp. 47-49.

⁹ *Id.* at p. 47, line 13.

¹⁰ Rebuttal Testimony of Paul R. Moul, p. 30, lines 18-19 through p. 31, lines 1-2.

1 Hamada formula for the purpose of assessing estimated costs of debt and equity at various
2 debt ratios. To be clear, my use of the Hamada formula has no impact at all on my cost of
3 equity estimate or proposed ROE. I do not use the Hamada formula to increase the betas
4 published by Value Line as Mr. Moul has. Rather, I use the Hamada formula to estimate
5 the Company's relative cost of capital at different debt ratio levels. As discussed in my
6 direct testimony, using the Hamada formula to *increase* Value Line's published utility
7 betas, such as Mr. Moul did, is unreasonable. Thus, my use of the Hamada formula as part
8 of a comprehensive capital structure analysis does *not* "validate" Mr. Moul's leverage
9 adjustment as a device for increasing his cost of equity estimate.

VI. Managerial Performance

10 **Q. Please summarize Mr. Moul's rebuttal testimony regarding management**
11 **performance.**

12 A. Mr. Moul reaffirms his belief that "[DLC] has performed in an exemplary manner and that
13 performance should be recognized in this case."¹¹

14 **Q. Has your opinion on this issue changed since filing your direct testimony?**

15 A. No. I maintain the opinion stated in my direct testimony that the Commission should
16 affirmatively reject any consideration of managerial performance in its consideration of a
17 fair awarded ROE. As stated in my direct testimony, the awarded ROE should be based
18 on the utility's cost of equity. Ratepayers should not be obligated to fund an additional
19 wealth transfer to shareholders in exchange for Company management doing its job.

¹¹ Rebuttal Testimony of Paul R. Moul, p. 32, lines 4-5.

1 **Q. Does this conclude your surrebuttal testimony?**

2 **A. Yes.**

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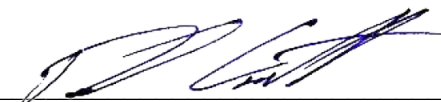
BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, David J. Garrett, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 2-SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 10, 2021
*314852

Signature: 
David J. Garrett

Consultant Address: Resolve Utility Consulting, PLLC
101 Park Avenue
Suite 1125
Oklahoma City, OK 73102

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Pennsylvania Public Utility Commission)
v.) Docket No. R-2021-3024750
Duquesne Light Company)**

**SURREBUTTAL TESTIMONY
OF
GLENN A. WATKINS
ON BEHALF OF THE
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE**

AUGUST 10, 2021

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1 **I. INTRODUCTION**

2

3 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A. My name is Glenn A. Watkins. My business address is 6377 Mattawan Trail,
5 Mechanicsville, Virginia 23116.

6

7 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING**

8 A. Yes. I filed direct testimony on June 30, 2021 which was designated as OCA
9 Statement No. 3 as well as rebuttal testimony on July 26, 2021 which was designated
10 as OCA Statement No. 3R.

11

12 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

13 A. The purpose of this testimony is to comment and respond to the rebuttal
14 testimonies of Duquesne witnesses Gorman and Ogden as well as OSBA witness
15 Knecht on issues concerning class cost of service, revenue allocations and residential
16 customer charges.

17

18 **II. CLASS COST OF SERVICE AND REVENUE ALLOCATIONS**

19

20 **A. Response to Duquesne Rebuttal Testimony**

21 **Q. DO YOU HAVE ANY PRELIMINARY COMMENTS REGARDING THE**
22 **REBUTTAL TESTIMONIES OF COMPANY WITNESSES GORMAN AND**
23 **OGDEN AS IT RELATES TO CLASS COST OF SERVICE?**

24 A. Yes. As discussed in my direct testimony, class cost allocations should be
25 used as a guide in establishing class revenue responsibility. This is because cost
26 allocations are not surgically precise and require numerous subjective decisions
27 concerning the ultimate allocation of joint costs that serve all customers. As such,
28 there is no mathematically precise algorithm or methodology that can assign joint
29 costs to classes with absolute certainty. Indeed, most experts in the field agree with
30 this philosophy which has explicitly been opined upon by the U.S. Supreme Court as
31 identified and discussed in my direct testimony. In this case, although Mr. Ogden

1 acknowledges that my class revenue allocations are based upon the average of Mr.
2 Gorman's preferred cost allocation study (that classifies a significant portion of
3 secondary distribution plant as customer-related) and my study that classifies
4 secondary distribution plant as 100% demand-related, Mr. Gorman's rebuttal
5 testimony is devoted to his criticisms concerning my 100% demand allocation study.
6 As such, Mr. Gorman's rebuttal testimony suggests that his study is 100% correct and
7 that my alternative study is 100% flawed.

8 With regard to Mr. Gorman's assertions that my study should not be
9 considered, I provided a detailed explanation of why Mr. Gorman's classification of
10 secondary distribution plant (Accounts 364-368) between customer and demand is
11 grossly overstated in my direct testimony. Therefore, and as a starting point, I
12 recommend that the Commission first evaluate the reasonableness of the end results
13 of Mr. Gorman's analyses and recommendations as they relate to the allocation of
14 secondary distribution costs to individual classes.

15 As discussed in my direct testimony, Mr. Gorman's "Minimum System"
16 analysis results in a classification of secondary distribution plant (Accounts 364-368)
17 of 76.13% as customer-related and 23.87% as demand-related. In this regard, Mr.
18 Gorman has classified secondary overhead (poles, conductors, and transformers) as
19 92.10% customer-related which means that less than 8% of the total cost of secondary
20 overhead distribution costs are assigned based on demand such that for 92% of the
21 cost, a small residential apartment dweller is assigned the same cost responsibility as
22 a large commercial customer taking service at secondary voltage.

23
24 **Q. ON PAGE 2 OF HIS REBUTTAL TESTIMONY, MR. GORMAN INDICATES**
25 **THAT THE METHODOLOGY HE USED IN THIS CASE IS THE SAME AS**
26 **IN THE LAST FOUR DUQUESNE GENERAL RATE CASES. DO YOU**
27 **HAVE A RESPONSE TO THIS STATEMENT?**

28 **A.** Yes. While Mr. Gorman is correct that he has used the same methodology as
29 in the past, he fails to mention that each of those cases were settled and that there
30 were opposing views and recommendations regarding class cost allocations in each of

1 those cases wherein no finding was made on the appropriateness of any class cost of
2 service study.

3
4 **Q. MESSRS. GORMAN AND KNECHT REFER TO CLASS COST OF SERVICE**
5 **STUDIES YOU CONDUCTED CONCERNING PPL ELECTRIC UTILITY IN**
6 **WHICH YOU ALSO CLASSIFIED DISTRIBUTION PLANT AS 100%**
7 **DEMAND-RELATED AND WERE NOT APPROVED BY THE**
8 **COMMISSION. PLEASE RESPOND TO THESE COMMENTS.**

9 A. These witnesses' statements are correct in that my studies were not approved
10 by the majority of the Commission. However, I believe it is worthy to note that in
11 both the 2010 and 2012 PPL Electric rate cases (Docket Nos. R-2010-2161694 and R-
12 2012-2290597), Commissioners Gardner and Cawley each provided Dissenting
13 Statements on the issue of class cost allocations. Both of these Dissenting Statements
14 unequivocally supported my recommended CCOSS.

15 In the 2010 and 2012 PPL rate cases, I conducted a Customer/Density
16 analyses similar to that I conducted for this case. While the Commission did not
17 specifically reject my Customer/Density analyses in the PPL cases (which were
18 largely un rebutted), I provided detailed theoretical support, compliance with the 1992
19 NARUC Manual, compliance with more recent NARUC publications, and detailed
20 technical analyses supporting my Customer/Density studies which clearly indicated
21 that distribution plant (Accounts 364-368) should be classified and allocated as 100%
22 demand-related. Indeed, in his Dissenting Statement in Docket No. R-2012-2290597,
23 Commissioner Cawley specifically addressed the inadequacy of PPL's Minimum
24 System approach as well as the appropriateness of my analysis wherein he stated:

25 In fact, OCA presents valid arguments that this [minimum size] model
26 is not well suited for the PPL service area. If, for example, a
27 disproportionate number of residential customers lived in rural or
28 suburban areas, the higher, less dense costs of serving these customers
29 might justify allocating more costs to residential customers. However,
30 the density studies provided by PPL show just the opposite, that various
31 classes of customers were very evenly distributed across its service
32 area. Thus, there is no clear justification for why the "minimum size"
33 model should be used in this instance to allocate more costs to the
34 residential class [Dissenting Statement, page 3].

1 Commissioner Cawley Dissenting Statement also noted that:

2 the more recent 2000 NARUC report (2000 NARUC Report) does not
3 indicate that distribution plant must be classified as partially demand-
4 related and partially customer-related, but the 2000 NARUC Report
5 indicates that the majority of states use a basic customer method in
6 which all distribution costs, except for services and meters, are
7 classified as demand-related. This report provides: There are a
8 number of methods for differentiating between the customer and
9 demand components of embedded distribution plant. The most
10 common method used is the basic customer method, which classifies
11 all poles, wire, and transformers as demand related and meters, meter-
12 reading and billing as customer-related. This general approach is used
13 in more than thirty states [Dissenting Statement, page 4].
14

15 **Q. PLEASE COMMENT ON MR. GORMAN’S CLAIM THAT YOU DO NOT**
16 **PROVIDE ANY EMPIRICAL DATA TO SUPPORT YOUR CLAIM THAT**
17 **THE ONLY JUSTIFICATION FOR A CUSTOMER-RELATED PORTION OF**
18 **THE DISTRIBUTION SYSTEM IS TO RECOGNIZE DIFFERENCES IN**
19 **CUSTOMER DENSITY.**

20 A. Mr. Gorman’s statement is factually incorrect. Empirical means: originating
21 or based on observation or experience; or, capable of being verified or disproved by
22 observation or experiment. In these regards, in my direct testimony (page 23), I
23 provided examples, based on my experience, of similar urban electric utilities in
24 which there is no customer-related portion within the classification or allocation of
25 distribution plant. I also set forth the conceptual (theoretical) framework for
26 evaluating whether a customer component of distribution plant is or is not
27 appropriate. With this conceptual framework, I tested by observation and data
28 specific to Duquesne whether a customer component of secondary distribution plant
29 is appropriate (direct testimony, pages 17-20).
30

31 **Q. PLEASE COMMENT ON MR. GORMAN’S ASSERTION THAT HIS STUDY**
32 **DOES REFLECT DIFFERENCES IN CUSTOMER DENSITIES AMONG**
33 **RATE CLASSES.**

34 A. On page 11 of his rebuttal testimony, Mr. Gorman notes that a portion of the
35 system that supplies Underground Residential Developments (“URD”) was allocated

1 only to the residential rate classes and that the portion of the system that supplies the
2 Downtown Network was allocated only to non-residential classes. While these two
3 statements are indeed true, they in no way relate to the mix of customers relative to
4 customer densities. As noted by Mr. Gorman, underground facilities in residential
5 neighborhoods are exclusively used by residential customers and were only allocated
6 to the residential class. Similarly, the Downtown Network serves almost exclusively
7 non-residential customers such that commercial/industrial were allocated these costs.
8 Mr. Gorman's statements are nothing more than a red herring in that I took no issue
9 with his assignment of costs associated with URDs or the Downtown Network costs;
10 i.e., I used the same approach as he did.

11 Finally, and notwithstanding the above, the total gross plant associated with
12 the secondary system URD is \$65.151 million¹ while the gross plant associated with
13 the secondary Downtown Network is \$59.039 million.² This compares to the
14 remaining gross plant subject to Mr. Gorman's minimum system study that totals
15 \$671.556 million.³ As such, Mr. Gorman uses his minimum system approach to
16 classify and allocate 84% of the Company's total secondary distribution plant
17 (Accounts 364-368).

18
19 **Q. PLEASE COMMENT ON MR. GORMAN'S ASSERTION THAT THE**
20 **NUMBER OF CUSTOMERS THAT ARE CONNECTED TO THE**
21 **SECONDARY DISTRIBUTION SYSTEM IS AN IMPORTANT**
22 **CONSIDERATION IN THE DESIGN AND INSTALLATION, AND HAS A**
23 **SIGNIFICANT IMPACT ON COSTS.**

24 A. First, Mr. Gorman provides no basis for this statement. Second, while the
25 design, installation, and cost of distribution plant associated with services (Account
26 369) and meters (Account 370) are clearly customer-related and have a significant
27 effect on costs, the design and installation of plant associated with poles (Account
28 364), overhead conductors (Account 365), underground conduit and conductors
29 (Accounts 366 and 367), and line transformers (Account 368) are designed and

¹ Accounts 366, 367, and 368 (secondary voltage).

² *Id.*

³ Accounts 364, 365, 366, 367, and 368 (secondary voltage).

1 installed to meet maximum potential load requirements, including those for an
2 individual circuit as well as contingency provisions for looped circuits to serve loads
3 during power outages normally on other circuits. In these regards, it should be clearly
4 understood that Mr. Gorman and I have both classified and allocated services and
5 meters based on customer counts, while his minimum size approach, and our
6 disagreements rests only with Accounts 364-368.

7
8 **Q. PLEASE COMMENT ON THE QUOTE MR. GORMAN PROVIDED ON**
9 **PAGE 12 OF HIS REBUTTAL TESTIMONY THAT RELATES TO DR.**
10 **BONBRIGHT’S PRINCIPLES OF PUBLIC UTILITY RATES.**

11 A. The quote in question from Dr. Bonbright’s book is as follows:

12 While ... inclusion of the costs seems to us clearly indefensible, *its*
13 *exclusion from the demand-related costs stands on much firmer*
14 *ground.*
15

16 As will be discussed below, Mr. Gorman is taking Dr. Bonbright’s treatise as well as
17 my testimony out of context. First, Mr. Gorman failed to include the remainder of
18 Dr. Bonbright’s discussion of this topic, which is as follows:

19 **But if the hypothetical cost of a minimum-sized distribution**
20 **system is properly excluded from the demand-related costs for the**
21 **reason just given, while it is also denied a place among the**
22 **customer costs for the reason stated previously, to which cost**
23 **function does it then belong? The only defensible answer, in our**
24 **opinion, is that it belongs to none of them.** Instead, it should be
25 recognized as a strictly unallocable portion of total costs. And this is
26 the disposition that it would probably receive in an estimate of long-
27 run marginal costs. But fully-distributed cost analysts dare not avail
28 themselves of this solution, since they are the prisoners of their own
29 assumption that “the sum of the parts equals the whole.” **They are**
30 **therefore under impelling pressure to fudge their cost**
31 **apportionments by using the category of customer costs as a**
32 **dumping ground for costs that they cannot plausibly impute to**
33 **any of their other cost categories.** [Emphasis added]⁴
34

35 Dr. Bonbright was a clear advocate of marginal cost pricing such that his
36 discussion on this topic is directed to the fact that any so-called minimum system

⁴ Bonbright, James, Principles of Public Utility Rates, Second Edition, page 492.

1 costs (resulting from an embedded cost study) are unallocable such that they would
2 not be recognized under long-run marginal cost pricing. Furthermore, Dr.
3 Bonbright's discussion on this topic actually relates to the determination of those
4 costs that should be included in fixed customer charges.

5 Mr. Gorman takes my testimony out of context by stating "Mr. Watkins
6 advocates for *inclusion* of the minimum system in demand-related costs, exactly what
7 Professor Bonbright argued against." As discussed in my direct testimony, this so-
8 called minimum system is nothing more than a calculation of a theoretical system that
9 serves no load wherein its entire purpose is to respond to situations in which the mix
10 (distribution) of customers varies with customer densities. My detailed analysis
11 clearly shows that there is no material difference in the distribution of customers
12 across Duquesne's service territory. Therefore, it is improper to simply assume that a
13 classification and allocation of distribution plant Accounts 364-368 is required or
14 needed. Indeed, by doing so creates a distinct bias against residential customers.

15
16 **Q. PLEASE COMMENT ON MR. GORMAN'S ALLEGATION THAT YOU DID**
17 **NOT OFFER ANY EVIDENCE CONTRARY TO THE LONG-STANDING**
18 **THEORETICAL SUPPORT FOR USE OF A MINIMUM SYSTEM STUDY**
19 **TO CLASSIFY DISTRIBUTION PLANT.**

20 A. Again, Mr. Gorman's statement is factually incorrect. First, and as discussed
21 earlier, I provided a detailed discussion in my direct testimony relating to the need to
22 test whether a portion of distribution plant is appropriately allocated partially based
23 on number of customers. Next, my direct testimony is clear that there may be
24 instances in which a classification of distribution plant based partially on number of
25 customers may indeed be appropriate when proper testing and evaluation is
26 conducted. Rather, Mr. Gorman simply makes an *a priori* assumption that there must
27 be a customer portion of secondary distribution plant. Finally, I also discuss in my
28 direct testimony that while the minimum system approach may be appropriate if it is
29 found that there should be a customer-related portion of distribution plant, one must
30 recognize the load carrying capability of even the minimum size plant.

31

1 **Q. PLEASE COMMENT ON MR. GORMAN’S TESTIMONY WHEREIN HE**
2 **CLAIMS THAT THE SECONDARY SYSTEM MUST HAVE A CUSTOMER**
3 **COMPONENT BY CITING A PASSAGE FROM THE 1992 NARUC**
4 **ELECTRIC UTILITY COST ALLOCATION MANUAL.**

5 A. On page 13 of his rebuttal testimony, Mr. Gorman provides a quotation from
6 the NARUC Manual as follows:

7 Distribution plant Accounts 364 through 370 involve demand and
8 customer costs. The customer component of distribution facilities is
9 that portion of costs which varies with the number of customers. Thus,
10 the number of poles, conductor, transformers, services, and meters are
11 directly related to the number of customers on the utility’s system.
12

13 In this regard, I have several comments. First and foremost, this quotation refers to
14 Accounts 364 through 370. Accounts 369 (services) and 370 (meters) are universally
15 accepted to be customer-related costs wherein Mr. Gorman and I both allocated these
16 plant accounts based on number of customers. Accounts 364 through 368 are the
17 plant accounts in which there are disagreements in this case. Indeed, I would agree
18 that the composite costs associated with Accounts 364-370 are partially customer-
19 related and partially demand-related. Nonetheless, this statement in no way negates
20 the statement in the NARUC Manual quoted in my direct testimony that states:

21 To ensure that costs are properly allocated, the analyst must first
22 classify each account as demand-related, customer-related, or a
23 combination of both. The classification depends upon the analyst’s
24 evaluation of how the costs in these accounts were incurred. In
25 making this determination, supporting data may be more important
26 than theoretical considerations.
27

28 Allocating costs to the appropriate groups in a cost study requires a
29 special analysis of the nature of distribution plant and expenses. (page
30 89)
31

32 Second, as noted in my direct testimony, several Commissions in other States
33 have found that it is inappropriate to classify Accounts 364-368 as partially customer-
34 related in that these plant costs are 100% demand-related. Furthermore, in
35 Commission Cawley’s Dissenting Statement in Docket No. R-2012-2290597, he
36 stated that the general approach, which classifies all poles, wires, and transformers as

1 demand-related and meters, meter reading, and billing as customer-related is used in
2 more than thirty States.

3 Third, from a conceptual point of view, distribution costs associated with
4 natural gas mains and water mains are the same as distribution costs relating to
5 Accounts 364-368 for cost allocation purposes. I have been a participant in dozens of
6 Pennsylvania natural gas distribution and water utility rate cases since at least the
7 late-1990s and I am not aware of a single natural gas or water case in which an
8 approved cost allocation study has allocated mains costs based partially on number of
9 customers.

10
11 **Q. DOES MR. GORMAN HIMSELF ACKNOWLEDGE THAT SUPPORTING**
12 **DATA MAY BE MORE IMPORTANT THAN THEORETICAL**
13 **CONSIDERATIONS AS IT RELATES TO WHETHER SECONDARY**
14 **DISTRIBUTION PLANT SHOULD OR SHOULD NOT CONTAIN A**
15 **CUSTOMER COMPONENT?**

16 A. Yes. On page 5 of his rebuttal testimony in response to OSBA witness
17 Knecht, Mr. Gorman also references the same passage from the NARUC Cost
18 Allocation Manual that I cite in my direct testimony. This being, “supporting data
19 may be more important than theoretical considerations (Manual, page 89).”

20
21 **Q. PLEASE COMMENT ON MR. GORMAN’S STATEMENT ON PAGE 15 OF**
22 **HIS REBUTTAL TESTIMONY THAT “DUQUESNE LIGHT INSTALLS**
23 **SECONDARY DISTRIBUTION PLANT PRIMARILY TO SERVE**
24 **RESIDENTIAL CUSTOMERS.”**

25 A. While there is no doubt that the majority of customers served by Duquesne’s
26 secondary system are residential customers simply because this class represents
27 89.66% of Duquesne’s total customer base, the reality is that the residential class
28 represents only about 32% of the energy utilized by all Duquesne customers and 44%
29 of the total non-coincident peak (“NCP”) demands.

30
31

1 **B. Response to OSBA Rebuttal Testimony**

2 **Q. PLEASE RESPOND TO OSBA WITNESS KNECHT’S ASSERTION THAT**
3 **LARGER CUSTOMERS TEND TO BE LESS EXPENSIVE TO SERVE PER**
4 **UNIT OF PEAK DEMAND THAN SMALLER CUSTOMERS.**

5 A. On page 4 of his rebuttal testimony, Mr. Knecht states:

6 As I indicated in my direct testimony, the distribution system must be
7 sized to both meet the peak demand of customers served “downstream”
8 from each individual asset to interconnect all customers. Larger
9 customers tend to be less expensive to serve per unit of peak demand,
10 partly for reasons of geographic density, but partly because the cost of
11 extending the distribution system to attach larger customers is not
12 proportional to peak demand.
13

14 Mr. Knecht’s conclusions are simply incorrect. Notwithstanding the cost of service
15 lines and meters (which are customer-related), the asset costs associated with poles,
16 conductors, conduit, and transformers are related to the size of such facilities wherein
17 the sizes are determined based on the anticipated peak load placed on those facilities.
18 As discussed at great length in my direct testimony, to the extent that customer
19 classes are reasonably inter-dispersed within a given electrical circuit, the costs per
20 unit of peak demand are the same across all customer classes for the assets in
21 question. In other words, if there are no differences in customer densities across the
22 circuit, the cost per KW remains the same for the accounts in question.
23

24 **Q. ON PAGE 5 OF HIS REBUTTAL TESTIMONY, MR. KNECHT SUGGESTS**
25 **THAT YOUR COST ALLOCATION STUDY THAT CLASSIFIED**
26 **DISTRIBUTION PLANT COSTS AS 100% DEMAND-RELATED INCLUDES**
27 **AN INADVERTENT, BUT MATERIAL, ERROR RELATING TO THE**
28 **ALLOCATION OF SECONDARY OVERHEAD LINE TRANSFORMER**
29 **COSTS. PLEASE RESPOND TO MR. KNECHT’S REBUTTAL TESTIMONY**
30 **IN THIS REGARD.**

31 A. Mr. Knecht is correct. The cost allocation study I performed in my direct
32 testimony that classified secondary distribution plant as 100% demand-related
33 inappropriately utilized the same demand allocators for transformers as used by Mr.

1 Gorman. However, Mr. Gorman's NCP demand allocators for transformers are
 2 reduced to reflect the load carrying capability of transformers within his Minimum-
 3 System study. Because my study does not include a customer component of
 4 transformers, the demand allocators should reflect the total class NCPs and not the
 5 reduced demands used by Mr. Gorman. In this regard, it should be noted that my
 6 error relates to both overhead line transformers as well as underground radial
 7 transformers.

8 As a result, I have corrected my 100% demand study to reflect each class's
 9 appropriate demand allocators for transformers. This correction has relatively small
 10 impacts on class rates of return. A summary of the resulting indexed (relative) class
 11 RORs are provided in table below while the details of my corrected study are
 12 provided in my filed workpapers:

13 **Comparison of OCA Original and Corrected CCOSS Results**
 14 **(Indexed RORs at Current Rates)**

Rate Schedule	Original			Corrected		
	Gorman's Study	OCA Study	Average	Gorman's Study	OCA Study	Average
RS	101%	161%	128%	101%	137%	118%
RH	47%	65%	56%	47%	53%	50%
RA	62%	99%	79%	62%	78%	70%
GS	107%	225%	156%	107%	205%	149%
GM<25	129%	111%	120%	129%	115%	122%
GM>25	87%	42%	62%	87%	55%	70%
GMH<25	103%	99%	101%	103%	101%	102%
GMH>25	60%	23%	40%	60%	35%	47%
GL	115%	60%	85%	115%	77%	94%
GLH	50%	7%	25%	50%	18%	33%
L	98%	51%	72%	98%	64%	80%
HVPS	13793%	13909%	13850%	13793%	13909%	13850%
SE	215%	130%	167%	215%	153%	181%
SL	280%	268%	274%	280%	271%	275%
UMS	44%	255%	115%	44%	225%	108%
Total	100%	100%	100%	100%	100%	100%

1 As can be seen above, while there are relatively small changes in relative class
2 profitabilities, the directional relationships across classes remain the same.

3
4 **Q. DO THE CORRECTIONS TO YOUR 100% DEMAND COST ALLOCATION**
5 **STUDY ALTER YOUR REVENUE ALLOCATION RECOMMENDATIONS?**

6 A. No. As explained in my direct testimony, I based my recommended class
7 revenue allocations on the average of Mr. Gorman's CCOSS results and my study
8 that classifies secondary distribution plant as 100% demand-related. The correction
9 to my original 100% demand study is not material such that my recommended class
10 revenue allocations remain unchanged.

11
12 **Q. WITH THE ABOVE CORRECTION TO YOUR 100% DEMAND STUDY, DO**
13 **ALL CLASSES CONTINUE TO MOVE CLOSER TO PARITY?**

14 A. Yes. I have also provided (in my filed workpapers) an analysis that shows
15 each class's movement to parity under my recommended class revenue allocations.
16 With the correction to my 100% demand study, all classes continue to move closer to
17 parity under my recommendations.

18
19 **III. RESIDENTIAL RATE DESIGN**

20
21 **Q. PLEASE RESPOND TO COMPANY WITNESS GORMAN'S REBUTTAL**
22 **TESTIMONY CONCERNING RESIDENTIAL CUSTOMER COSTS.**

23 A. On page 18 of his rebuttal testimony, Mr. Gorman refers to a prior Aqua
24 Pennsylvania base rate case (Docket No. R-0038805) where the Commission opined
25 that certain indirect costs may be included in the customer charge. Mr. Gorman's
26 representation of the Commission's findings in the Aqua case is incomplete.
27 Specifically, and with regard to the Aqua case in question, the Commission found as
28 follows:

29 First, the ALJ correctly found that the cost of customer equipment, and
30 also of meters and service line maintenance, is properly includable in a
31 cost study . . .

1 Second, we find that it is reasonable and proper to include allocated
2 portions of indirect costs, such as employee benefits, local taxes and
3 other general and administrative costs, in a cost study. We caution that
4 these are costs which may considered for inclusion in the customer
5 charge, but such claims are subject to scrutiny on a case-by-case basis.
6 [Order, at page 72]
7

8 Given the Commission's findings in the Aqua case, an examination of the
9 level of indirect costs included within the Company's proposed customer charge is
10 helpful. In my direct testimony, and as shown in my Schedule GAW-6, I have indeed
11 included several "indirect" costs within my customer cost analysis including:
12 capitalized pensions; customer deposits; Automated Metering Infrastructure (AMI)
13 costs and amortizations; office supplies and expenses – bill printing; maintenance of
14 general plant associated with meters; and, administrative and general expenses for
15 employee benefits. Although my customer cost study includes several million dollars
16 of indirect overhead costs, Mr. Gorman's study goes much further in that his analysis
17 includes even more overhead costs that have nothing to do with connecting or
18 maintaining a customer's account including: cash working capital; materials and
19 supplies; Accumulated Deferred Income Taxes (ADIT) associated with general plant;
20 depreciation of general plant; other intangible amortizations; outside services –
21 customer care; and, administrative and general salaries.

22 In summary, while it is my opinion that the appropriate customer costs for
23 evaluating residential customer charges should only include the direct costs required
24 to connect and maintain a customer's account, my analysis does indeed include a
25 significant level of indirect overhead costs. Furthermore, even with my inclusion of
26 numerous indirect costs, my calculated residential customer cost analysis is \$8.82 per
27 month as compared to the current residential customer charge of \$12.50 per month.
28 Therefore, by maintaining the current residential customer charge of \$12.50 per
29 month, there remains an additional provision of at least \$3.68 (\$12.50 minus \$8.82)
30 for even more overhead costs within the residential customer charge.
31
32
33

1 **IV. MASTER METER MULTI-FAMILY HOUSING**

2

3 **Q. WHAT ARE MR. KNECHT’S CONCERNS REGARDING THE COMPANY’S**
4 **AND NATIONWIDE ENERGY PARTNERS’ PROPOSALS CONCERNING**
5 **MASTER METER MULTI-FAMILY HOUSING FACILITIES?**

6 A. On page 23 of his rebuttal testimony, Mr. Knecht opines that if the master
7 metered programs proposed in this case are approved and that if master meter
8 facilities continue to be billed under commercial rates, there will be a negative impact
9 for other medium and larger general service customers due to his belief that these
10 customers have better load factors than master metered facilities.

11

12 **Q. DO YOU AGREE WITH MR. KNECHT’S CONCERNS REGARDING**
13 **MASTER METER MULTI-FAMILY HOUSING?**

14 A. Not necessarily. By Mr. Knecht’s own admission on page 23 of his rebuttal
15 testimony, any impact is unknown at this point in time. Therefore, his assertions are
16 merely speculative. There are many factors that would need to be considered in
17 evaluating any differences in the load shapes and load factors between master
18 metered multi-family housing facilities and all other medium and large general
19 service customers. These factors would include the additional diversities of demand
20 with multiple energy users within the same building, demand-side management
21 programs that would be available to master metered facilities, and the centralization
22 of heating and cooling facilities.

23 In these regards, in the District of Columbia, PEPCO offers a separate master
24 metered apartment building rate. While I do not know whether PEPCO’s rates in the
25 District are reasonably cost-based, the distribution rates for Master Metered
26 Apartments (Rate Schedule MMA) are lower than the General Service Commercial
27 rate (Rate Schedule GS-ND) but are somewhat higher than the traditional residential
28 rate (Rate Schedule R). A copy of PEPCO’s District of Columbia rates are provided
29 in my Schedule GAW-1SR.

30

1 **Q. WHAT IS MR. KNECHT’S RECOMMENDATION CONCERNING THE**
2 **PROPOSALS FOR MASTER METERED MULTI-FAMILY HOUSING?**

3 A. On page 19 of his rebuttal testimony, Mr. Knecht indicates that if the
4 Commission does approve the proposed changes, that the master metered service be
5 included as part of the residential class for cost allocation and revenue allocation
6 purposes.

7
8 **Q. DO YOU AGREE WITH MR. KNECHT’S RECOMMENDATION?**

9 A. No. Master metered multi-family facilities are indeed commercial customers.
10 That is, these facilities (whether low income or not) are owned by commercial
11 investors and/or quasi-governmental agencies. As such, these facilities should
12 continue to be treated as commercial customers. Furthermore, if one were to accept
13 Mr. Knecht’s logic, then commercial nursing homes, assisted housing facilities and
14 hotels should also be treated as “residential” for cost allocation purposes. Clearly,
15 such treatments are at odds with accepted industry practices.

16
17 **Q. DOES THIS COMPLETE YOUR TESTIMONY?**

18 A. Yes.



An Exelon Company

**DISTRICT OF COLUMBIA
RESIDENTIAL SERVICE
SCHEDULE MMA
UPDATED FEBRUARY 28, 2020**

	<u>Billing Months of June – October 2019 (Summer)</u>	<u>Billing Months of November 2019 – May 2020 (Winter)</u>	<u>Billing Months of June – October 2020 (Summer)</u>	<u>Billing Months of November 2020 – May 2021 (Winter)</u>
Generation ¹				
Minimum charge *	\$ 1.61 per month	\$ 2.03 per month	\$ 1.51 per month	\$ 1.93 per month
In excess of 30 kwh	\$ 0.05078 per kwh	\$ 0.06456 per kwh	\$ 0.04872 per kwh	\$ 0.06297 per kwh
Admin Charge	\$ 0.00300 per kwh	\$ 0.00300 per kwh	\$ 0.00150 per kwh	\$ 0.00150 per kwh
Procurement Cost Adjustment	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/CurrentTariffsDC.aspx for monthly rate			
Transmission ²				
Minimum charge **	\$ 0.12 per month	\$ 0.12 per month	\$ 0.12 per month	\$ 0.12 per month
In excess of 30 kwh	\$ 0.00710 per kwh	\$ 0.00710 per kwh	\$ 0.00710 per kwh	\$ 0.00710 per kwh
Distribution ³				
Customer Charge	\$ 11.84 per month	\$ 11.84 per month	\$ 11.84 per month	\$ 11.84 per month
First 400 kwh	\$ 0.00891 per kwh	\$ 0.00891 per kwh	\$ 0.00891 per kwh	\$ 0.00891 per kwh
In excess of 400 kwh	\$ 0.02542 per kwh	\$ 0.02542 per kwh	\$ 0.01774 per kwh	\$ 0.01774 per kwh
Delivery Tax ⁴				
Public Space Occupancy Surcharge ⁵	\$ 0.0070 per kwh	\$ 0.0070 per kwh	\$ 0.0070 per kwh	\$ 0.0070 per kwh
Administrative Credit	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/CurrentTariffsDC.aspx for monthly rate			
Sustainable Energy Trust Fund ⁶				
Energy Assistance Trust Fund ⁷	\$ 0.0029016 per kwh	\$ 0.0029016 per kwh	\$ 0.0029016 per kwh	\$ 0.0029016 per kwh
RADS Surcharge ⁸	\$ 0.0002322 per kwh	\$ 0.0002322 per kwh	\$ 0.0002322 per kwh	\$ 0.0002322 per kwh
Bill Stabilization Adjustment ⁹	\$ 0.000634 per kwh	\$ 0.000634 per kwh	\$ 0.000634 per kwh	\$ 0.000634 per kwh
Underground Project Charge ¹⁰	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/BillStabilizationAdjustment.aspx for monthly rate			
Underground Rider ¹⁰	\$ 0.00004 per kwh	\$ 0.00004 per kwh	\$ 0.00004 per kwh	\$ 0.00004 per kwh
	\$ 0.00100 per kwh	\$ 0.00100 per kwh	\$ 0.00100 per kwh	\$ 0.00100 per kwh
Rider EDIT ¹¹				
	Five Year EDIT Credit – Effective 8/13/18 to 8/12/23		Ten Year EDIT Credit – Effective 8/13/18 to 8/12/28	
	<u>June – October (Summer)</u>	<u>November– May (Winter)</u>	<u>June – October (Summer)</u>	<u>November– May (Winter)</u>
First 400 kWhrs	\$-0.00049 per kwh	\$-0.00049 per kwh	\$-0.00167 per kwh	\$-0.00167 per kwh
Over 400 kWhrs	\$-0.00140 per kwh	\$-0.00098 per kwh	\$-0.00477 per kwh	\$-0.00333 per kwh

* The minimum charge includes the first 30 kWh or fraction thereof of consumption. The minimum charge for the period June 2020 through May 2021 includes an administrative charge of \$0.045 per month. This charge is derived by multiplying the administrative charge in effect by the 30 kWh, the quantity assumed in the minimum charge. The administrative charge is \$0.0015 per kWh from June 2020 through May 2021.

** The Minimum charge includes the first 30 kWh or fraction thereof of consumption.

¹ Rates are effective with Usage on and after the period as referenced above.

² Effective Usage on and after May 1, 2018.

³ Effective Usage on and after August 13, 2018.

⁴ Effective January 1, 2005.

⁵ Effective with Meters read on and after March 1, 2020.

⁶ Effective October 1, 2019.

⁷ Effective Usage on and after October 1, 2017.

⁸ Effective Usage on and after November 19, 2019.

⁹ Effective January 1, 2010.

¹⁰ Effective Usage on and after February 23, 2020.

¹¹ Effective Usage on and after August 13, 2018.



An Exelon Company

**DISTRICT OF COLUMBIA
RESIDENTIAL SERVICE
SCHEDULE R¹
UPDATED FEBRUARY 28, 2020**

	<u>Billing Months of June – October 2019 (Summer)</u>	<u>Billing Months of November 2019 – May 2020 (Winter)</u>	<u>Billing Months of June – October 2020 (Summer)</u>	<u>Billing Months of November 2020 – May 2021 (Winter)</u>
Generation²				
Minimum charge *	\$ 1.82 per month	\$ 1.90 per month	\$ 1.72 per month	\$ 1.80 per month
In excess of 30 kwh	\$ 0.05757 per kwh	\$ 0.06020 per kwh	\$ 0.05572 per kwh	\$ 0.05848 per kwh
Admin Charge	\$ 0.00300 per kwh	\$ 0.00300 per kwh	\$ 0.00150 per kwh	\$ 0.00150 per kwh
Procurement Cost Adjustment	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/CurrentTariffsDC.aspx for monthly rate			
	<u>Billing Months of June – October (Summer)</u>	<u>Billing Months of November – May (Winter)</u>		
Transmission³				
Minimum charge **	\$ 0.12 per month	\$ 0.12 per month		
In excess of 30 kwh	\$ 0.00790 per kwh	\$ 0.00790 per kwh		
Distribution⁴				
Customer Charge	\$ 15.09 per month	\$ 15.09 per month		
First 400 kwh	\$ 0.00800 per kwh	\$ 0.00800 per kwh		
In excess of 400 kwh	\$ 0.02283 per kwh	\$ 0.01594 per kwh		
Delivery Tax⁵	\$ 0.0070 per kwh	\$ 0.0070 per kwh		
Public Space Occupancy Surcharge⁶	\$ 0.00214 per kwh	\$ 0.00214 per kwh		
Administrative Credit	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/CurrentTariffsDC.aspx for monthly rate			
Sustainable Energy Trust Fund⁷	\$ 0.0029016 per kwh	\$ 0.0029016 per kwh		
Energy Assistance Trust Fund⁸	\$ 0.0002322 per kwh	\$ 0.0002322 per kwh		
RADS Surcharge⁹	\$ 0.000634 per kwh	\$ 0.000634 per kwh		
Bill Stabilization Adjustment¹⁰	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/BillStabilizationAdjustment.aspx for monthly rate			
Underground Project Charge¹¹	\$ 0.00005 per kwh	\$ 0.00005 per kwh		
Underground Rider¹¹	\$ 0.00129 per kwh	\$ 0.00129 per kwh		
Rider EDIT¹²	<u>Five Year EDIT Credit – Effective 8/13/18 to 8/12/23 June – October (Summer)</u>	<u>November– May (Winter)</u>	<u>Ten Year EDIT Credit – Effective 8/13/18 to 8/12/28 June – October (Summer)</u>	<u>November– May (Winter)</u>
First 400 kwhrs	\$-0.00014 per kwh	\$-0.00014 per kwh	\$-0.00047 per kwh	\$-0.00047 per kwh
Over 400 kwhrs	\$-0.00039 per kwh	\$-0.00027 per kwh	\$-0.00133 per kwh	\$-0.00093 per kwh

* The minimum charge includes the first 30 kWh or fraction thereof of consumption. The minimum charge for the period June 2020 through May 2021 includes an administrative charge of \$0.045 per month. This charge is derived by multiplying the administrative charge in effect by the 30 kWh, the quantity assumed in the minimum charge. The administrative charge is \$0.0015 per kWh from June 2020 through May 2021.

** The Minimum charge includes the first 30 kWh or fraction thereof of consumption.

¹ R is combined with AE and RTM.

² Rates are effective with Usage on and after the period as referenced above.

³ Effective Usage on and after May 1, 2018.

⁴ Effective Usage on and after August 13, 2018. RAD customers do not pay distribution charges or certain surcharges.

⁵ Effective January 1, 2005.

⁶ Effective with Meters read on and after March 1, 2020.

⁷ Effective October 1, 2019.

⁸ Effective Usage on and after October 1, 2017.

⁹ Effective Usage on and after November 19, 2019.

¹⁰ Effective January 1, 2010.

¹¹ Effective Usage on and after February 23, 2020.

¹² Effective Usage on and after August 13, 2018.



An Exelon Company

**DISTRICT OF COLUMBIA
GENERAL SERVICE LOW VOLTAGE NON-DEMAND
SCHEDULE GS - ND
UPDATED FEBRUARY 28, 2020**

	<u>Billing Months of June – October 2019 (Summer)</u>	<u>Billing Months of November 2019 – May 2020 (Winter)</u>	<u>Billing Months of June – October 2020 (Summer)</u>	<u>Billing Months of November 2020 – May 2021 (Winter)</u>
Generation¹				
All kwh	\$ 0.05576 per kwh	\$ 0.05724 per kwh	\$ 0.05424 per kwh	\$ 0.05600 per kwh
Admin Charge *	\$ 0.00450 per kwh	\$ 0.00450 per kwh	\$ 0.00450 per kwh	\$ 0.00450 per kwh
Procurement Cost Adjustment	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/CurrentTariffsDC.aspx for monthly rate			
	<u>Billing Months of June – October (Summer)</u>	<u>Billing Months of November – May (Winter)</u>		
Transmission²				
All kwh	\$ 0.00560 per kwh	\$ 0.00560 per kwh		
Distribution³				
Customer Charge	\$ 27.42 per month	\$ 27.42 per month		
All kwh	\$ 0.04173 per kwh	\$ 0.03266 per kwh		
Delivery Tax⁴	\$ 0.0077 per kwh	\$ 0.0077 per kwh		
Public Space Occupancy Surcharge⁵	\$ 0.00214 per kwh	\$ 0.00214 per kwh		
Administrative Credit Sustainable Energy Trust Fund⁶	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/CurrentTariffsDC.aspx for monthly rate			
	\$ 0.0029016 per kwh	\$ 0.0029016 per kwh		
Energy Assistance Trust Fund⁷	\$ 0.0002322 per kwh	\$ 0.0002322 per kwh		
RADS Surcharge⁸	\$ 0.000634 per kwh	\$ 0.000634 per kwh		
Bill Stabilization Adjustment⁹	https://www.pepco.com/MyAccount/MyBillUsage/Pages/DC/BillStabilizationAdjustment.aspx for monthly rate			
Underground Project Charge¹⁰	\$ 0.00013 per kwh	\$ 0.00013 per kwh		
Underground Rider¹⁰	\$ 0.00340 per kwh	\$ 0.00340 per kwh		
Rider EDIT¹¹	<u>Five Year EDIT Credit – Effective 8/13/18 to 8/12/23 June – October (Summer)</u>	<u>November – May (Winter)</u>	<u>Ten Year EDIT Credit – Effective 8/13/18 to 8/12/28 June – October (Summer)</u>	<u>November – May (Winter)</u>
All kWhrs	\$-0.00100 per kwh	\$-0.00078 per kwh	\$-0.00342 per kwh	\$-0.00267 per kwh

* The 'Admin Charge' was previously included in the generation rate. This is not a new charge.

¹ Rates are effective with Usage on and after the period as referenced above.
² Effective Usage on and after May 1, 2018.
³ Effective Usage on and after August 13, 2018.
⁴ Effective January 1, 2005.
⁵ Effective with Meters read on and after March 1, 2020.
⁶ Effective October 1, 2019.
⁷ Effective Usage on and after October 1, 2017.
⁸ Effective Usage on and after November 19, 2019.
⁹ Effective January 1, 2010.
¹⁰ Effective Usage on and after February 23, 2020.
¹¹ Effective Usage on and after August 13, 2018.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

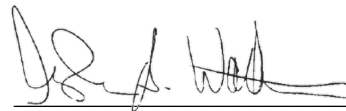
Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, Glenn A. Watkins, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 3-SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 10, 2021
*315160

Signature:



Glenn A. Watkins

Consultant Address: Technical Associates, Inc.
6377 Mattawan Trail
P.O. Box 1690
Mechanicsville, VA 23116

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission

v.

Duquesne Light Company

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Docket No. R-2021-3024750

Surrebuttal Testimony of
Roger D. Colton

On Behalf of:
Office of Consumer Advocate
Statement No. 4-SR

August 10, 2021

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

2 A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

3

4 **Q. ARE YOU THE SAME ROGER COLTON WHO HAS PREVIOUSLY PREPARED**
5 **DIRECT AND REBUTTAL TESTIMONY ON BEHALF OF THE OFFICE OF**
6 **CONSUMER ADVOCATE IN THIS PROCEEDING?**

7 A. Yes, I am.

8

9 **Q. PLEASE EXPLAIN THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY.**

10 A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of:

11 ➤ Christine Wilson on behalf of the Bureau of Investigation and Enforcement
12 (I&E);

13

14 ➤ Robert Knecht on behalf of the Office of Small Business Advocate (OSBA);

15

16 ➤ Jennifer Neiswonger on behalf of Duquesne Light Company;

17

18 ➤ David Ogden on behalf of Duquesne Light Company; and

19

20 ➤ Katherine Scholl on behalf of Duquesne Light Company.

21

22

23 **Part 1. Response to I&E Witness Christine Wilson.**

24 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
25 **TESTIMONY.**

26 A. In this section of my testimony, I respond to the Rebuttal Testimony of I&E witness

27 Christine Wilson who opposes any further COVID-19 emergency relief as offered by

28 Duquesne Light. Ms. Wilson argues that the unemployment rate in Pennsylvania has

29 fallen to only 6.9% in May 2021. (I&E St. 1-R, at 14). She argues instead that if further

1 emergency relief is offered, it should be done on a statewide basis rather than by
2 individual utilities. (Id.) Ms. Wilson does not report that while the unemployment rate is
3 now 6.9%, that unemployment rate is nonetheless still 50% higher than it was before the
4 start of the COVID-19 pandemic.

5
6 In addition to my Surrebuttal Testimony, OCA Witness Noah Eastman is filing
7 Surrebuttal Testimony providing responding in relevant part to Ms. Wilson’s Rebuttal
8 Testimony.

9
10 **Q. ARE THINGS GOING AS WELL AS MS. WILSON SUGGESTS IN HER**
11 **REBUTTAL TESTIMONY?**

12 A. No. Consider the weekly COVID-19 impacts for the Week 28 (April 14 through April
13 26) (the first week of Phase 3.1 of the Census PULSE Surveys) through Week 33 (June
14 23 through July 5) (the most recent PULSE Survey available). The updated PULSE
15 Survey data is presented in the Table below. In the Table, the income ranges where the
16 percentage of Pennsylvania residents having no difficulty at all in paying usual household
17 expenses is lower in Week 33 than it was in Week 28 is shaded in yellow. In contrast, in
18 the Table, the income ranges where the percentage of Pennsylvania residents having a
19 “somewhat” or “very” difficult time is higher in Week 33 than it was in Week 28 is
20 shaded in blue.

Week	Not at All Difficult				Somewhat or Very Difficult			
	Below \$25,000	\$25,000 - \$34,999	\$35,000 - \$49,999	\$50,000 - \$74,999	Below \$25,000	\$25,000 - \$34,999	\$35,000 - \$49,999	\$50,000 - \$74,999
28	20.6%	33.6%	51.6%	52.1%	54.8%	45.8%	21.4%	18.6%
29	25.2%	25.5%	45.7%	55.7%	48.6%	54.6%	29.0%	19.0%
30	19.7%	26.5%	45.2%	56.6%	56.5%	47.1%	30.7%	19.7%
31	25.2%	28.7%	44.4%	47.9%	50.2%	53.9%	20.6%	26.3%
32	18.2%	30.6%	44.4%	59.1%	53.0%	45.8%	30.6%	24.9%
33	25.6%	26.2%	48.7%	58.7%	49.3%	57.2%	28.3%	19.5%

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The Table demonstrates that in only two of the four income ranges have the lack of payment difficulties decreased. The Table further documents that in three of the four income ranges have the extent of “somewhat” or “very” difficult times in paying usual household expenses increased. The decrease in the number of residents having no payment difficulties, along with the increase in the number of residents having substantial difficulties, has occurred notwithstanding the presence of federal stimulus dollars.

Q. IS THERE ANY OTHER SIGNIFICANT OBSERVATION FLOWING FROM THE TABLE ABOVE?

A. Yes. The Table above shows that only one-of-four instances of persons with income below \$35,000 are having no difficulty in paying their usual household expenses. Three-of-four Pennsylvanians at these income ranges are still having difficulties. Indeed, more than half of residents with income as high as \$25,000 to \$35,000 are having some difficulties in paying their usual household expenses. In fact, despite Ms. Wilson’s testimony about how much better things are today because unemployment is at 6.9%,

1 50% to 60% of Pennsylvania’s residents with income less than \$35,000, as of the most
2 recent week for which data is available, are having a “somewhat” or “very” difficult time
3 in paying their usual household expenses. More than one-in-four households with
4 income between \$35,000 and \$50,000 are having a somewhat or very difficult time,
5 compared to nearly one-in-five residents with incomes of \$50,000 to \$75,000.

6
7 I conclude that Ms. Wilson provides no basis for disallowing my proposed COVID-19
8 relief program.

9
10 **Q. DOES MS. WILSON OFFER ANY SPECIFIC OBJECTIONS TO THE**
11 **MODIFICATIONS YOU RECOMMEND FOR THE DUQUESNE LIGHT**
12 **PROPOSED EMERGENCY RELIEF PROGRAM?**

13 A. Yes, she offers several recommendations on the assumption that the Duquesne Light
14 program is, in fact, approved. Ms. Wilson opposes my recommendation that Duquesne
15 Light extend its emergency program to December 31, 2022, recommending that the
16 program extend only to March 31, 2022. (I&E St. 1-R, at 14). I provided a detailed
17 explanation in my Direct Testimony of why a longer time frame is not only reasonable,
18 but necessary to address the economic crisis appertaining to the COVID-19 pandemic.
19 Ms. Wilson does not seek to rebut that information supporting a longer program time-
20 frame.

21
22 Ms. Wilson states that she agrees with my recommendation that the administrative costs
23 identified by Duquesne Light be over and above the proposed \$3.0 million budget. The

1 proposed budget should comprise dollars that are available in their entirety for emergency
2 grant. (I&E St. 1-R, at 15).

3
4 Ms. Wilson either states that she agrees with, or offers no opinion with respect to, several
5 of my recommendations, including my recommendation that the program not have a
6 minimum income requirement (I&E St. 1-R, at 14); that there should be a minimum
7 arrearage requirement ((I&E St. 1-R. at 15); and that there should be a clarification that
8 there will be a dollar-for-dollar credit toward customer arrearages (I&E St. 1-R, at 15);
9 and that the waiver of reconnection fees be over and above the proposed \$3.0 million for
10 emergency grants.

11
12 Ms. Wilson finally opposes my recommendation that Duquesne be allowed to exceed its
13 \$3.0 million program budget under certain circumstances. She does not comment on my
14 recommendation that Duquesne not require a “timely” payment in order to gain access to
15 an emergency grants. Both of these recommendations are further addressed in my
16 response to Duquesne Light witness Katherine Scholl below.

17
18 **Part 2. Response to OSBA Witness Robert Knecht.**

19
20 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
21 **TESTIMONY.**

22 **A.** In this section of my Direct Testimony, I respond to the Rebuttal Testimony of OSBA
23 witness Robert Knecht regarding the allocation of universal service costs. Mr. Knecht

1 opposes my recommended multi-class allocation and urges that universal service costs
2 should be allocated exclusively to the residential class.

3
4 **Q. PLEASE RESPOND TO MR. KNECHT’S TESTIMONY REGARDING THE**
5 **BILL IMPACT ON SMALL BUSINESS.**

6 A. Mr. Knecht objects to what he calls a “double standard for affordability” in examining
7 the impact of a multi-class allocation of universal service costs. The distribution of
8 universal service costs to small business, however, is substantially less than the
9 distribution of costs to residential customers, even under the allocation method
10 recommended in my testimony. As presented in Mr. Watkins’ Schedule GSW-7, even
11 under the multi-class allocation, small business (GS) would experience a monthly bill
12 impact of only \$2.74, or somewhat less than \$33 per year. This is lower than the RS bill
13 impact of \$3.51; the RH bill impact of \$4.38; and less than the RA bill impact of \$3.47.

14
15 Mr. Knecht argues that keeping universal service costs allocated exclusively to residential
16 customers would have no affordability impacts. As Mr. Watkins’ Schedule GAW-7
17 shows, however, that without a multi-class allocation, the residential classes would bear a
18 universal service burden of \$5.91/month (RS); \$8.07/month (RH), and \$9.12/month
19 (RA). The residential classes would, in other words, shoulder a burden of between \$71
20 and \$109 per year. The disproportionate affordability impact on residential customers,
21 particularly those low-income customers not participating in CAP, is evident.

1 **Q. PLEASE RESPOND TO MR. KNECHT’S REBUTTAL TESTIMONY**
2 **REGARDING “CONCEPTUAL DIFFERENCES IN COST RECOVERY**
3 **POLICIES.”**

4 A. Mr. Knecht proposes “two general philosophies” for universal service cost recovery: the
5 “insurance model” and the “public policy tax model.” (OSBA St. 1-R, at 7). After
6 extensively discussing these “general philosophies,” Mr. Knecht states that he supports
7 “legislated benefits” that are “financed. . .through taxation policy” and are provided
8 “regardless of heating fuel” and “regardless of whether they enroll in a utility program.”
9 (OSBA St. 1-R, at 9). He concludes that “it is not at all clear that utility programs
10 represent a particularly effective means of assistance for low-income residents.” (OSBA
11 St. 1-R, at 9).

12
13 Irrespective of Mr. Knecht’s perspectives on whether universal service costs should be
14 recovered through utility rates, Pennsylvania has determined that providing such
15 assistance is a proper utility function, the costs of which should be included in rates. His
16 discussion of whether universal service costs should be taxpayer-funded or ratepayer-
17 funded is a discussion of an issue that is not presented in this proceeding. His
18 recommendation of a program “financed through taxation policy” and providing benefits
19 “regardless of heating fuel” and “regardless of whether [a household] enroll[s] in a utility
20 program” is not a proposal that has been presented in this proceeding.

21

1 **Part 3. Response to Duquesne Light Witness David Ogden.**

2 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
3 **TESTIMONY.**

4 A. In this section of my testimony, I respond to the Rebuttal Testimony of David Ogden
5 regarding the extent to which the Company’s proposed increase in its residential
6 customer charge will disproportionately adversely affect low-income customers. If low-
7 income customers are, on average and disproportionately, also low use, the Company’s
8 proposed increased customer charge will harm low-income customers in particular.

9
10 Witness Ogden offers data which he claims reflects the consumption of CAP customers
11 and that of Confirmed Low-Income customers. According to Mr. Ogden, in the 12
12 months ending April 2021, CAP customers and Confirmed Low-Income customers had
13 nearly identical consumption (718 vs. 709 kWh for non-heating; 1,021 vs. 983 for
14 heating, respectively). (DLC St. 16-R, at 12). Mr. Ogden did not explain how he selected
15 his “CAP participants” and provided no data underlying his calculation. For example, he
16 did not explain whether he selected “full-year” CAP participants (i.e., those who
17 participated for the entire 12-month period) or whether he simply summed the usage for
18 all CAP participants, no matter when they joined or how long they remained on the
19 program. The Company’s own independent third-party universal service evaluation,
20 however, notes that “full year” participants have substantially higher consumption than
21 part-year participants (OCA-II-17, Duquesne Light Universal Service Programs, Final
22 Evaluation Report, at 61) (hereafter, DLC CAP Evaluation,). I have attached this page to
23 my Surrebuttal Testimony as Schedule RDC-1SR. One reason for the higher usage of

1 full-year participants is that CAP participation is not constant over the course of a 12-
2 month period.

3
4 **Q. IS THERE REASON TO BELIEVE THAT MR. OGDEN'S CAP USAGE IS**
5 **SUBSTANTIALLY TOO LOW?**

6 A. Yes. Mr. Ogden testifies that at the Company's proposed rates, a CAP non-heating
7 participant would have a monthly bill of \$63.32 (annualized to an annual bill of \$759.79
8 (rounded to \$760). DLC's own CAP evaluation states that the Company's CAP provided
9 an effective annual discount of 28% of non-heating CAP bill. (DLC CAP Evaluation, at
10 62). Given Mr. Ogden's stated CAP usage (and bill at proposed rates), that would imply
11 a CAP credit of \$213 (\$212.74) ($\$760 * .028 = \212.74). The analysis doesn't change if
12 one does not focus exclusively on CAP non-heating bills. Using Mr. Ogden's stated
13 usage for CAP heating accounts of 960 for the 12 months ending April 2020 yield a
14 monthly bill of \$88.30, or an annual bill of \$1,059.55 (rounded to \$1,060). The effective
15 discount of 28% would yield a CAP credit of \$296.67 (rounded to \$297).

16
17 Mr. Ogden's CAP credits are clearly too low. The Bureau of Consumer Services (BCS)
18 annual Report on Universal Service Programs and Collections Performance reports the
19 average annual CAP credits for each electric distribution utility. For Duquesne Light, the
20 average annual CAP credit in Calendar Year 2019 (which would cover eight of the
21 twelve months of Mr. Ogden's "twelve months ending April 2020) was \$624. (BCS
22 Annual Report, at 56). There is simply no way to take Mr. Ogden's "average CAP usage"
23 for either heating or for non-heating customers and generate a bill that would result in the

1 CAP credit that Duquesne Light reported providing in 2019. Given Mr. Ogden's analysis
2 using Duquesne's proposed rates in 2021:

3 ➤ The annual non-heating bill would be \$760, offset by a CAP credit of \$624.

4 ➤ The annual heating bill would be \$1,060, offset by a CAP credit of \$624.

5 In both instances, the percentage of the total bill offset by the CAP credit is clearly too
6 high, the reason being that the calculated CAP bill is too low based on Mr. Ogden's
7 unreasonably low consumption.

8
9 **Q. IS THERE ANY OTHER WAY TO SUBJECT MR. OGDEN'S CAP USAGE TO A**
10 **REALITY CHECK?**

11 A. Yes. Remember, that Mr. Ogden's reported CAP usage would result in a non-heating
12 annual bill of \$760 (for the 12 months ending April 2020) and would result in a heating
13 bill of \$1,060 (for the same 12 month period). The annual BCS report on Universal
14 Service Programs and Collections Performance, however, reports not only the CAP
15 Credit, but the CAP Bill (defined as the bill to be paid by a CAP Participant). The sum of
16 those two numbers would be the bill at standard residential rates. In 2019 (again, which
17 covers 8 months of the 12 month period selected by Mr. Ogden), the annual CAP Bill for
18 Duquesne Light was \$636 (BCS Report, at 55). The annual CAP Credit for Duquesne
19 Light was \$624. The bill at standard residential rates for a CAP participant in 2019
20 would have been \$1,260 ($\$636 + \$624 = \$1,260$). This total is a blending of heating and
21 non-heating CAP participants. Mr. Ogden's reported CAP usage is not only in error, it is
22 in error by a wide margin.

1 **Q. WHY IS THIS DISCUSSION OF CAP USAGE IMPORTANT FOR ASSESSING**
2 **LOW-INCOME ENERGY CONSUMPTION?**

3 A. Mr. Ogden reports a consumption level for CAP participants, and a separate consumption
4 level for Confirmed Low-Income customers. In his discussion, his data for these two
5 populations (for the twelve-months ending April 2020) are not substantially different.
6 However, the CAP participant population is a subset of the Confirmed Low-Income
7 population. If the CAP usage is much higher than that which Mr. Ogden reports, which
8 as is seen below is in fact the case, that means that the non-CAP low-income usage is
9 much lower than that which Mr. Ogden reports. Given that, as I document in my Direct
10 Testimony, the CAP participant population is a small percentage of the total low-income
11 population, the much lower consumption would apply to a much larger low-income
12 population.

13
14 Mr. Ogden's reported usage for CAP participants is untenable given actual data on CAP
15 bills reported by Duquesne to the PUC's Bureau of Consumer Services. When that CAP
16 participant usage is adjusted upwards to reflect actual bills, the usage for the remaining
17 low-income population, which is much larger, is much lower. Mr. Ogden's testimony
18 cannot support the conclusion that he reaches: that low-income usage is higher than non-
19 low-income usage.

20
21 **Part 4. Response to Duquesne Light Witness Jennifer Neiswonger.**

1 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
2 **TESTIMONY.**

3 A. In this section of my testimony, I respond to the Rebuttal Testimony of Jennifer
4 Neiswonger with respect to customer satisfaction and the Company’s requested equity
5 adder for exemplary management. (DLC St. 9-R, at 7 – 9). Ms. Neiswonger argues that
6 DLC’s performance is within the margin of error, if the direction of error is correct, of
7 better performing electric utilities. She argues further that “it is equally, if not more,
8 important to be showing continuous improvement against yourself.” (Id., at 8). She
9 argues that Duquesne improved its performance in 2018 and 2019. (Id., at 8).

10

11 An improvement in customer satisfaction, standing alone, does not provide evidence of
12 “exemplary management.” Despite the improvement in the limited number of customer
13 satisfaction metrics that Ms. Neiswonger cites, in 2020:

- 14 ➤ Of the decrease in customer complaints across the electric industry,
15 Duquesne’s decrease was lower than every other electric utility.
- 16
- 17 ➤ Of those complaints received, Duquesne had the highest rate of “justified”
18 complaints.
- 19
- 20 ➤ Duquesne was one of only two electric utilities that increased the average time
21 in days it took to respond to complaints about payment arrangements (PARs)
22 that needed further investigation.
- 23
- 24 ➤ Duquesne had a substantially higher “verified infraction” rate than every other
25 electric utility.
- 26

27 Moreover, in 2019, Duquesne had:

- 28 ➤ The highest number of verified infractions (2019 UCARE, at 17);

29

- 1 ➤ The second lowest percent decrease in the number of residential complaints
2 (3.4%) (PECO being somewhat lower at 2.6%) (2019 UCARE, at 5);
3
- 4 ➤ The highest percentage of justified complaints (11%, with PPL being the next
5 highest at 9%, and the statewide average being 7%) (2019 UCARE, at 6); and
6
- 7 ➤ The highest number of “verified infractions” (44) (2019 UCARE, at 17).
8

9 Despite the improvement in the limited number of metrics Ms. Neiswonger identifies,
10 when one examines the overall satisfaction during a customer’s most recent contact with
11 the utility, the percentage of customers who were “very satisfied” with the overall quality
12 of service during a recent contact was the third lowest percentage amongst
13 Pennsylvania’s electric utilities.

14

15 Ms. Neiswonger’s argument that Duquesne’s performance is within the margin of error
16 of higher performing utilities is hardly a basis for a finding of exemplary management.
17 Her argument assumes, in Duquesne’s favor, that the Duquesne score should be adjusted
18 upwards while the scores of the higher performing utilities should remain constant.
19 Moreover, in noting that the Duquesne scores have a margin of error, she does not
20 acknowledge that the margin of error is plus *or minus* 5%. It is, in other words, just as
21 likely that the Duquesne customer satisfaction scores reported in the PUC’s UCARE
22 report are too high by 5% as they are too low.

23

24 **Q. WHAT DO YOU CONCLUDE?**

25 A. Even as Ms. Neiswonger responds to a few of the metrics where Duquesne performs poor
26 relative to other Pennsylvania electric utilities, there were other metrics I identified in my

1 Direct Testimony that she did not even attempt to rebut. The Rebuttal Testimony of Ms.
2 Neiswonger does not provide a basis for approving Duquesne’s claim for an equity adder
3 based on exemplary management.
4

5 **Part 5. Response to Duquesne Light Witness Katherine Scholl.**

6 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
7 **TESTIMONY.**

8 A. In this section of my testimony, I respond to the Rebuttal Testimony of Katherine Scholl
9 regarding residential COVID—19 debt relief and universal service.
10

11 **Q. ARE THERE ANY OF YOUR PROPOSED MODIFICATIONS IN THE**
12 **DUQUESNE LIGHT DEBT RELIEF PROGRAM THAT MS. SCHOLL**
13 **ACCEPTED?**

14 A. Yes. Ms. Scholl stated that Duquesne Light accepted the following modifications to the
15 proposed debt relief program as I recommended in my Direct Testimony: (1) removing
16 the 150% income threshold from the program guidelines; (2) limiting eligibility to
17 residential customers with an arrearage of \$100 and 60-days past due. (DLC St. 7-R, at
18 9). Moreover, Ms. Scholl appears to agree with my recommendation that administrative
19 costs not be charged to the program; she states that “the Company intends to reserve the
20 \$3 million budget for matching debt forgiveness.” (DLC St. 7-R, at 10). Accordingly,
21 these recommendations will no longer be discussed in my Surrebuttal Testimony.
22

1 **Q. PLEASE RESPOND TO YOUR PROPOSED MODIFICATIONS IN THE**
2 **DUQUESNE LIGHT DEBT RELIEF PROGRAM THAT YOU BELIEVE ARE NO**
3 **LONGER NECESSARY?**

4 A. In my Direct Testimony, I noted one ambiguity in the Duquesne Light COVID-19 debt
5 relief program, whether Duquesne Light would require customer payments to be *timely* in
6 order to receive a matching grant. (see, OCA St. 4, at 5). Ms. Scholl clarifies the
7 ambiguity, however, by explaining that the “matching grant” is a *one-time* matching
8 grant. (DLC St. 7-R, at 10). As a one-time grant, the issue of whether customers must
9 make a “timely” payment in order to earn a corresponding matching grant does not
10 present itself.

11
12 An additional implication of this explanation is that my concern about whether Duquesne
13 Light should be provided flexibility in its budget is resolved. As I explained in my Direct
14 Testimony, my budget concern was based on the fact that it would not be possible for
15 Duquesne to determine, in advance, the extent to which customers would receive a
16 monthly matching credit. Some customers might die; some might move; others might
17 have service disconnected. It is an impossible task to project, in advance, how much of a
18 \$300 grant (delivered in monthly installments) would actually be delivered, and thus
19 impossible to project how much of a \$3 million budget would actually be spent, under
20 such circumstances. Given, however, that Ms. Scholl reports the matching grant is a *one-*
21 *time* grant of not to exceed \$300, where the entire \$300 is delivered in one lump-sum
22 (DLC St. 7-R, at 9 – 10), that uncertainty is resolved. Under those circumstances, I
23 accept Duquesne’s \$3 million budget as reasonable.

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Q. PLEASE RESPOND TO MS. SCHOLL’S REBUTTAL TESTIMONY REGARDING DUQUESNE’S LOW-INCOME OUTREACH.

A. Ms. Scholl opposes addressing issues involving low-income outreach in this rate proceeding. She argues, instead, that outreach issues should be limited to consideration in the Company’s proceeding regarding its proposed Universal Service and Energy Conservation Plan (USECP). (DLC St. 7-R, at 12). What Ms. Scholl does not acknowledge, however, is that there are low-income protections that are *not* part of the USECP. One such protection, for example, involves winter shutoff protections. In addition, expanding the Company’s Confirmed Low-Income population is not addressed in a utility’s USECP proceeding.

In addition, Ms. Scholl does not acknowledge the fact that identifying low-income customers has cost implications. As I document in my Direct Testimony, not only is there a higher percentage of Confirmed Low-Income customers in arrears (than residential customers generally), but those Confirmed Low-Income customers who are in arrears are much deeper in arrears. The breadth and depth of low-income arrears affects not only the collection expenses which Duquesne collects through rates, it affects rate elements such as bad debt expenses and working capital expenses as well. The higher percentage of Confirmed Low-Income customers who are disconnected for nonpayment results in a greater dollar amount of lost revenue attributable to customers being off-the-system. None of these issues would be addressed in the Company’s USECP proceeding. All of these issues are implicated by my discussion of Duquesne’s low-income outreach.

1 The outreach shortcomings I identified in my Direct Testimony should be addressed by
2 the Commission in this proceeding.

3
4 **Q. PLEASE RESPOND TO MS. SCHOLL’S COMMENTS REGARDING**
5 **“TARGETING” OUTREACH TO IMPROVE UNIVERSAL SERVICE**
6 **ENROLLMENT FOR CUSTOMERS WITH INCOME LOWER THAN 50% OF**
7 **POVERTY.**

8 A. Ms. Scholl argues that she views “targeted” outreach to include only that “outreach that is
9 specifically addressed to an individual.” (DLC St. 7-R, at 12 – 13). I do not believe that
10 her conclusion is consistent with the Commission’s statement in its decision regarding the
11 Columbia Gas 2020 rate case that:

12 we expect the Company to continue working with its USAC on its Outreach
13 Strategy and Communication Plan going forward. These continuing efforts
14 should include examining current outreach strategies for effectiveness and
15 developing new outreach efforts to improve CAP participation levels even
16 more, which, in turn, will likely reduce future arrearage levels. Further, the
17 Company needs to determine whether it has exhausted all grassroots
18 community-based avenues to identify new low-income customers. For
19 example, besides the community-based organizations Columbia already is
20 working with, are there other local organizations it can partner with, such as
21 food banks, schools, Head Start or other preschool programs to implement
22 more fully its outreach strategies?

23
24 (PUC vs. Columbia Gas, Docket No. R-2020-3018835, at 195). The Commission’s own
25 language (“other local organizations it can partner with, such as food banks, schools,
26 Head Start or other preschool programs”) makes clear that “targeted” outreach is not a
27 reference to “outreach that is specifically addressed to an individual” as Ms. Scholl
28 claimed was her understanding, but rather to groups of people that were likely to result in
29 reaching the population with characteristics identified by the Commission (i.e., those with

1 income less than 50% of Poverty). In her rebuttal testimony, Ms. Scholl again makes
2 clear that Duquesne’s outreach is a generic outreach directed to “low-income” customers
3 generally rather than directed in a fashion that is likely to reach that lowest income
4 population that is under-represented in the Company’s programs. (DLC St. 7-R, at 13).

5
6 **Q. PLEASE RESPOND TO MS. SCHOLL’S REBUTTAL TESTIMONY**
7 **REGARDING THE UNDER-ENROLLMENT OF THE LOWEST INCOME**
8 **CUSTOMERS IN UNIVERSAL SERVICE PROGRAMS?**

9 A. The most important statement in Ms. Scholl’s Rebuttal Testimony is her
10 acknowledgement that I correctly point out that the Company under-enrolls its lowest
11 income customers (“while enrollment in CAP may be lower for some customer segments.
12 . . .”, DLC St. 7-R, at 13). She responds to that under-enrollment by seeking to change my
13 testimony into a claim that the Company is “under-serving its low-income customers.”
14 (Id.) She then responds to that *new* argument, which she created, by listing the various
15 universal service programs that Duquesne offers. (DLC St. 7-R, at 13 – 14). What she
16 does *not* acknowledge, however, is that the universal service programs she lists (e.g.,
17 CAP, hardship fund, arrearage forgiveness) are not helpful to those lowest-income
18 customers who are not enrolled in the program (e.g., in Ms. Scholl’s own words,
19 “enrollment in CAP may be lower for some customer segments”).

20
21 What I document in my Direct Testimony, and as Ms. Scholl acknowledges is true (DLC
22 St. 7-R, at 13), is that the Company’s lowest income (i.e., below 50% of Poverty)

1 population is under-enrolled in its low-income programs. The Company should develop
2 a plan by which it will describe how it intends to remedy that under-enrollment.

3
4 Ms. Scholl's objection that developing an outreach plan to remedy its under-enrollment
5 of the lowest income population would conflict with the Company's USECP proceeding
6 should be rejected. As I note above, not all low-income protections are considered to be
7 "universal service" programs considered in the USECP proceeding. Moreover, to argue
8 that developing a plan to remediate any low-income shortcoming identified in a non-
9 universal service proceeding would conflict with the USECP is inconsistent with
10 regulatory practices. Consider, for example, that Columbia Gas was directed to address
11 the low-income outreach shortcomings as identified in the Commission's periodic
12 management audit. That remediation occurred outside the USECP process. Clearly, the
13 USECP process was not intended to displace all other regulatory review and remediation
14 orders.

15
16 **Q. PLEASE RESPOND TO MS. SCHOLL'S REBUTTAL TESTIMONY**
17 **REGARDING THE ALLOCATION OF UNIVERSAL SERVICE COSTS.**

18 A. Ms. Scholl argues that universal service costs should be allocated exclusively to the
19 residential class. She reasons that "commercial and industrial customers are not eligible
20 for the universal service programs and therefore do not directly contribute to the costs of
21 the programs, or directly benefit from the programs." (DLC St. 7-R, at 14). Ms. Scholl's
22 argument has previously been presented to the Commission and rejected. In its Final
23 Order setting forth the Revised CAP Policy Statement, the Commission said: "Universal

1 service funding from non-residential classes, while not mandatory, is permissible: ‘Thus,
2 under *Lloyd*, there is no statutory requirement that the funding for special programs
3 come only from those who benefit from the programs. However, the lack of such a
4 requirement does not mean that funding for special programs must come from those who
5 do not benefit’ *MEIUG v. Pa. PUC*, 960 A.2d 189, 202 (2008), citing *Lloyd v. Pa. PUC*,
6 904 A.2d 1010 (Pa. Cmwlth. 2006).” (Final Order, at 98) (emphasis added). The
7 Commission stated: “While there are strong arguments to be made that non-residential
8 classes do benefit from universal services, there are also strong arguments to be made in
9 favor of multi-class allocation even if one discounts any non-residential benefits.” (Final
10 Order, at 97) (emphasis added). Ms. Scholl’s testimony on universal service cost
11 allocation provides no reason to allocate costs exclusively to residential customers.
12

13 **Q. PLEASE RESPOND TO MS. SCHOLL’S REBUTTAL TESTIMONY**
14 **REGARDING THE CAP PARTICIPATION RATE WHICH WOULD TRIGGER**
15 **COST OFFSETS.**

16 A. Ms. Scholl argues that the cost offset trigger proposed by DLC of 35,863 is reasonable
17 and should be approved. She states that the proposed trigger is only an increase of 1,199
18 customers, or 3.5%. (DLC St. 7-R, at 15). That number is, however, misleading. As of
19 May 2021, DLC would have needed a net gain of 1,148 CAP participants to reach DLC’s
20 proposed trigger of 35,863. By July, when Ms. Scholl filed her Rebuttal Testimony,
21 DLC needed 1,148. From May 2021 to July 2021, in other words, CAP participation
22 declined by 51 participants (1,199 – 1,148 = 51). Indeed, CAP participation had also
23 declined in March and April 2021. (OCA St. 4, at 28). That decline was after a seven

1 month period when DLC experienced a *total* increase in CAP participation of only ten
2 (10) customers. (OCA St. 4, at 28). For Ms. Scholl to argue that, contrary to this
3 performance, DLC will now replace all those who exit the program *plus* experience an
4 increase of 1,199 participants would be unreasonable.

5
6 Ms. Scholl finally argues that “if the Commission accepts Witness Colton’s proposal to
7 increase outreach and enrollment in CAP for customers at 0 – 50% of the FPL,
8 enrollment may be higher.” (DLC St. 7-R, at 15). That argument does not provide reason
9 to reject my proposed trigger. The trigger is not to be based on what “may” happen. In
10 addition, any Company planning an implementation process for enhanced outreach would
11 involve a ramp-up period. The trigger is not tied to that ramp-up period.

12
13 In conclusion, Ms. Scholl does not rebut the proposed trigger recommended in my Direct
14 Testimony. The trigger proposed by Ms. Scholl should not be adopted.

15
16 **Q. PLEASE RESPOND TO MS. SCHOLL’S REBUTTAL TESTIMONY**
17 **REGARDING THE NUMBER OF INSTALLMENT PAYMENTS ALLOWED**
18 **FOR CASH SECURITY DEPOSITS?**

19 A. Ms. Scholl opposes my recommendation to incorporate the practice of allowing cash
20 security deposits to be paid in four installments into Duquesne’s tariff. (DLC St. 7-R, at
21 15 – 16). Ms. Scholl does not argue that Duquesne considers four installments to be
22 unreasonable. Indeed, she concedes that “the company current allows customers to pay
23 the security deposit in four (4) 25% installments.” (DLC St. 7-R, at 15). She states

1 simply that “the Company does not believe that codifying the current rule is the best way
2 to achieve the desired goal.” (Id.).

3
4 What Ms. Scholl does not acknowledge, however, is that what I recommend is *precisely*
5 what the Company first proposed when it filed this rate case. At page 2A of its Filed
6 Tariff, Duquesne states that, in Rule 5 of its Tariff, “Language has been modified to
7 reflect that residential customers/applicants are permitted to pay their deposit in four (4)
8 twenty-five percent (25%) installments.” That proposal then was not reflected in the
9 actual Tariff language presented by DLC. Ms. Scholl’s argument that tariff language
10 reflecting the Company’s current practices, as well as reflecting the tariff language that
11 the Company said it *intended* to present in this proceeding, should now be found to be
12 unreasonable, should not be accepted. My recommended tariff language on the payment
13 of deposits should be adopted. I have attached page 2A of Duquesne’s Filed Tariff to this
14 Surrebuttal Testimony as Schedule RDC-2SR.

15
16 **Q. WHAT DO YOU CONCLUDE BASED ON YOUR SURREBUTTAL**
17 **TESTIMONY ABOVE?**

18 A. Based on the discussion in my Direct and Surrebuttal Testimony, the following
19 recommendations in my Direct Testimony should be adopted:

- 20 ➤ I recommend approval of the proposed Duquesne Light debt relief program,
21 with a set of modifications. My recommended modification include:
22
23 ○ the Company should eliminate its minimum income eligibility of
24 150% of Poverty Level. This recommendation has been accepted by
25 Duquesne.
26

- 1 ○ the end-date of the program should be extended until December 31,
2 2022 unless it is extended further upon petition of one of the parties to
3 this proceeding.
- 4
- 5 ○ the arrearage limitation proposed by Duquesne should be expanded to
6 require an arrearage of \$100 and 60-days past due. This
7 recommendation has been accepted by Duquesne.
- 8
- 9 ○ the proposed \$3.0 million be reserved exclusively for the Company’s
10 proposed matching credits. That budget should not include either
11 administrative costs or waived reconnect charges. This
12 recommendation has been accepted by Duquesne.
- 13
- 14 ○ the ambiguity regarding whether payments must be “timely” in order
15 to generate a matching credit should be found to have been resolved,
16 and my corresponding recommendation is now moot. By extension,
17 my proposal to provide Duquesne some flexibility in staying within its
18 proposed \$3 million budget should also be found to be moot.

- 19
- 20 ➤ the residential customer charge recommended by OCA witness Glenn
21 Watkins be adopted.
- 22
- 23 ➤ Duquesne Light should be directed to submit a detailed three-year outreach
24 plan to the Bureau of Consumer Services. This outreach plan should include
25 specific quantitative outcome goals regarding (1) the expansion of the
26 identification of Confirmed Low-Income customers; (2) the expansion of CAP
27 enrollment; and (3) the expansion of CAP enrollment by customers with
28 income at or below 50% of Poverty. The outreach plan should include
29 specifically identified activities directed toward reaching customers with
30 income at or below 50% of Poverty. The outreach plan should include a
31 detailed description of community-based organizations with whom Duquesne
32 will work, including but not limited to, grassroots community-based
33 organizations, food banks, schools, Head Start and other preschool programs.
34 Duquesne Light should be directed to provide regular reports to the Bureau of
35 Consumer Services on its performance with respect to the measureable goals
36 established in the Plan.
- 37
- 38 ➤ Duquesne universal service costs be allocated among all customer classes.
39 The specific allocation is set forth in the Direct Testimony of OCA witness
40 Glenn Watkins.

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- the trigger for the bad debt offset included in Duquesne’s Universal Service Rider (Rider No. 5) be set at 35,000.

- the relevant language of Rule 5 be modified to state: “When the Company determines a deposit is required for new service or for reconnection of service as described in Rule No. 40, such deposit shall be payable within a reasonable time period after commencing or reconnecting electric service, not to be fewer than four (4) twenty-five percent (25%) installments with the first installment billed no less than 30 days after the reconnection of service in the event of a reconnection.”

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Schedule RDC – 1SR



**Duquesne Light
Universal Service Programs
Final Evaluation Report**

July 2015

**Table VII-5B
CAP Removal for Reaching Maximum Credit**

	All 2013 CAP Participants		Treatment Group 2013 Enrollees That Did Not Participate in the Year Prior to Enrollment	
	#	%	#	%
Final Analysis Group	18,152	100%	1,062	100%
Received Maximum Credit [‡]	1,509	8%	112	11%
Received Maximum Credit and Not Removed	1,133	6%	107	10%
Received Maximum Credit and Removed	376	2%	5	<1%

CAP Credits

Table VII-6 displays the mean and median CAP credits, as well as the percent of customers who received the maximum CAP credit. The mean CAP credit for all 2013 electric non-heating CAP participants was \$253 and it was \$318 for those who remained on CAP for the full year. While nine percent of all 2013 electric non-heating participants received the maximum CAP credit, 11 percent of the full year CAP participants received the maximum credit. Electric heating customers received higher average CAP credits, but only two percent received the maximum CAP credit.

**Table VII-6
CAP Credits Received**

	Electric Non-Heating				Electric Heating			
	Obs.	Mean Credits	Median Credits	Received Max Credit [†]	Obs.	Mean Credits	Median Credits	Received Max Credit [†]
All 2013 Participants	Credits Received in 2013				Credits Received in 2013			
All	16,316	\$253	\$204	9%	1,836	\$354	\$218	2%
Full Year CAP	10,028	\$318	\$318	11%	1,142	\$457	\$389	2%
Treatment Group	Credits Received in Year after Enrollment				Credits Received in Year after Enrollment			
All	964	\$228	\$153	12%	98	\$319	\$264	0%
Full Year CAP	767	\$272	\$226	14%	79	\$389	\$326	0%

[†] The electric non-heating customer is defined as "receiving maximum credit" if the customer received over \$560 in the post-period.[‡] The electric heating customer is defined as "receiving maximum credit" if the customer received over \$1,400 in the post-period.

Table VII-7 displays the mean percent discount off the full electric bill received by the CAP participants. While electric heating participants received an average discount of 27 percent if they remained in CAP for the full year, they received an average discount of ten percent if they did not remain in CAP for the full year. Electric non-heating participants received an

average discount of 28 percent if they remained in CAP for the full year, and they received an average discount of 12 percent if they did not remain in CAP for the full year.

**Table VII-7
Mean Percent Discount on Duquesne Light Bill
By Full Year CAP Status**

	All 2013 Participants			Treatment Group		
	Non Electric Heating	Electric Heating	All	Non Electric Heating	Electric Heating	All
Full Year CAP	28%	27%	28%	24%	24%	24%
Not Full Year CAP	12%	10%	12%	5%	2%	5%
Total	22%	20%	22%	20%	20%	20%

Table VII-8 displays the distribution of the discount on the Duquesne Light bill. The table shows that while 23 percent of non-electric heating customers who remained on CAP for the full year received a discount of less than ten percent, 64 percent of CAP participants who did not remain on CAP for the full year received a discount of less than ten percent. The table also shows that 11 percent of non-electric heating full year CAP participants received a discount of more than 50 percent and four percent of non-electric heating partial year CAP participants received a discount of more than 50 percent.

**Table VII-8
Distribution of Discount on Duquesne Light Bill
By Full Year CAP Participation**

Percent Discount	All 2013 Participants				Treatment Group			
	Non-Electric Heating		Electric Heating		Non-Electric Heating		Electric Heating	
	Full Year	Not Full Year	Full Year	Not Full Year	Full Year	Not Full Year	Full Year	Not Full Year
<10%	23%	64%	27%	72%	32%	85%	24%	95%
10-19%	13%	9%	10%	6%	14%	5%	15%	0%
20-29%	15%	8%	17%	6%	14%	3%	22%	0%
30-39%	22%	9%	21%	7%	20%	5%	25%	5%
40-49%	17%	6%	15%	4%	12%	2%	6%	0%
≥50%	11%	4%	11%	4%	9%	2%	8%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Table VII-9A displays the percent discount on the electric bill by poverty level. The table shows that lower poverty level customers generally had greater discounts on their bill.

Schedule RDC – 2SR

Exhibit No. DBO-1

SUPPLEMENT NO. 25
TO ELECTRIC – PA. P.U.C. NO. 25



SCHEDULE OF RATES

For Electric Service in Allegheny and Beaver Counties

(For List of Communities Served, see Pages No. 4 and 5)

Issued By

DUQUESNE LIGHT COMPANY

411 Seventh Avenue
Pittsburgh, PA 15219

Mark E. Kaplan

Interim President and Chief Executive Officer

ISSUED: April 16, 2021

EFFECTIVE: June 15, 2021

Filed at Docket No. R-2021-3024750

NOTICE

THIS TARIFF SUPPLEMENT ADDS PAGES AND RIDERS, MAKES CHANGES TO THE TABLE OF CONTENTS, RULES AND REGULATIONS, RATE SCHEDULES, RIDER MATRIX, RIDERS AND APPENDIX A AND MAKES INCREASES AND DECREASES TO THE RATES CONTAINED IN THE RATE SCHEDULES AND RIDERS.

See Page Two

LIST OF MODIFICATIONS MADE BY THIS TARIFF

CHANGES – (Continued)

Table of Contents

**Fourth Revised Page No. 3
Cancelling Third Revised Page No. 3**

Table of Contents information previously found on Third Revised Page No. 3, Cancelling Second Revised Page No. 3 has been moved to Original Page No. 3A to accommodate the additional Riders added to Tariff No. 25.

Table of Contents

Original Page No. 3A

Table of Contents information previously found on Third Revised Page No. 3, Cancelling Second Revised Page No. 3 has been moved to Original Page No. 3A to accommodate the additional Riders added to Tariff No. 25.

Original Page No. 124A has been added to the Table of Contents to reflect the additional page added to Rider No. 16 – Service to Non-Utility Generating Facilities (Pages No. 123-124A).

Rider No. 19 – Community Development for New Load has been added to Tariff No. 25 and to the Table of Contents.

Administrative update to the page numbering on the Table of Contents page. Rider No. 21 - Net Metering Service now reflects the addition of Page No. 136A which was added and approved in the Company's DSP IX proceeding at Docket No. P-2020-3019522, Order entered January 14, 2021.

Rider No. 23 - Home Charging Pilot Program has been added to Tariff No. 25 and to the Table of Contents.

Rider No. 24 – Fleet Charging Pilot Program has been added to Tariff No. 25 and to the Table of Contents.

Rider No. 25 – New Business Stimulus has been added to Tariff No. 25 and to the Table of Contents.

Rider No. 26 – Crisis Recovery Program has been added to Tariff No. 25 and to the Table of Contents.

Rules and Regulations

The Electric Service Tariff

3.1 Definitions

(2) Applicant

**First Revised Page No. 7
Cancelling Original Page No. 7**

Language has been added to clarify that the definition of “Applicant” includes non-residential applicants.

Rules and Regulations

Contracts, Deposits and Advance Payments

Rule No. 5 - Deposits and Advance Payments

**First Revised Page No. 11
Cancelling Original Page No. 11**

Language has been modified to reflect that residential customers/applicants are permitted to pay their deposit in four (4) twenty-five percent (25%) installments.

Language has been modified to clarify security deposits for non-residential customers/applicants.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

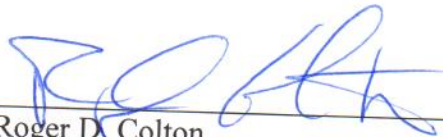
Pennsylvania Public Utility Commission :
v. : Docket No. R-2021-3024750
Duquesne Light Company :

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 4-SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 10, 2021
*314853

Signature:



Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission

v.

Duquesne Light Company

Docket No. R-2021-3024750

SURREBUTTAL TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 10, 2021

1 **Introduction**

2 **Q. Please state your name, business address and occupation.**

3 A. My name is Noah D. Eastman. My business address is 555 Walnut Street, Forum Place, 5th
4 Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst
5 by the Pennsylvania Office of Consumer Advocate (OCA).

6

7 **Q. Are you the same Noah D. Eastman who filed OCA Statement 5 in this proceeding?**

8 A. Yes.

9

10 **Purpose of Surrebuttal Testimony:**

11 **Q. Please describe the purpose of your Surrebuttal Testimony.**

12 A. The purpose of my surrebuttal testimony is to present updated statistics regarding the
13 economic and labor outlook with regard to the COVID-19 Pandemic and to respond to the
14 Rebuttal Testimony of I&E Witness Christine Wilson (I&E Statement No. 1-R).

15

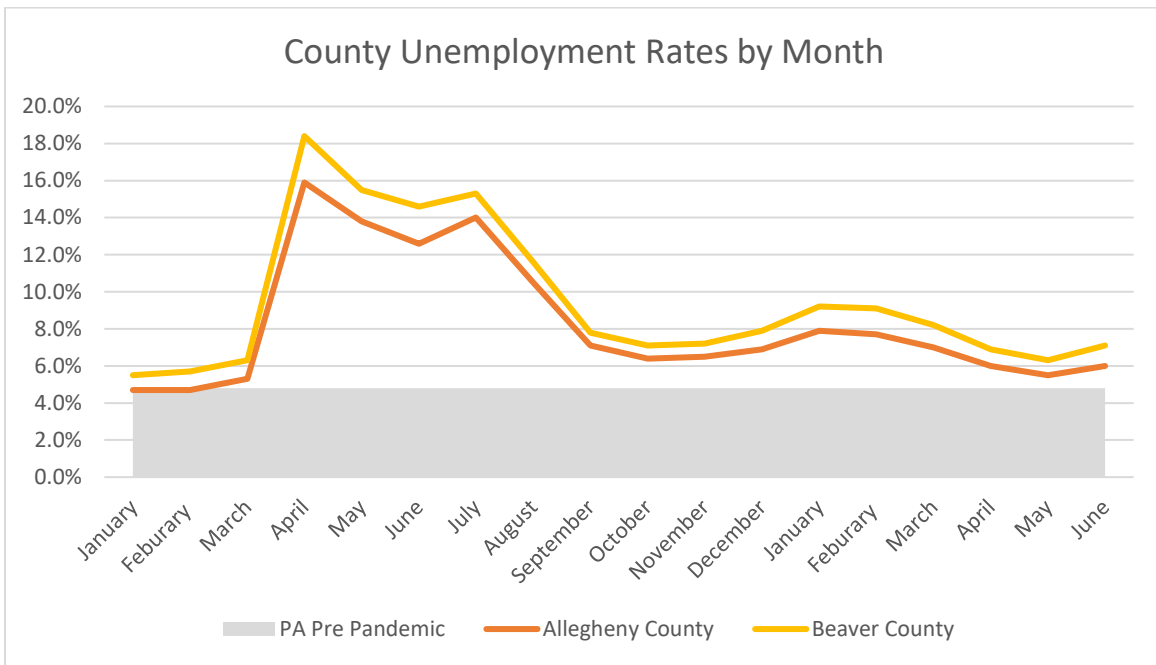
16 **Q. What arguments did Witness Wilson make in her rebuttal testimony relating to the
17 economic aspects of the COVID-19 pandemic?**

18 A. Ms. Wilson states that the COVID-19 relief program proposed by Duquesne and supported
19 with modifications by OCA Witness Colton should be disallowed. Witness Wilson's first
20 reason is that the unemployment rate has decreased to 6.9% from the high of 16.2% in 2020
21 (I&E Statement 1-R, pg. 14). Their second reason is that recent orders from the
22 Commission creates payment arrangements that offer adequate flexibility and time for
23 consumers (I&E Statement 1-R, pg. 14).

1 **Updated Unemployment Statistics**

2 **Q. Before responding to I&E witness Wilson, what is the updated unemployment rate**
3 **for the Duquesne counties and Pennsylvania?**

4 **A.** There has been a slight uptick in the Pennsylvania unemployment rate in June, which can
5 be seen separated by county below in Figure 1 and in Exhibit NDE-1. The unemployment
6 rate in Pennsylvania is still at 6.9% as of June 2021.



7
8 *Figure 1¹*

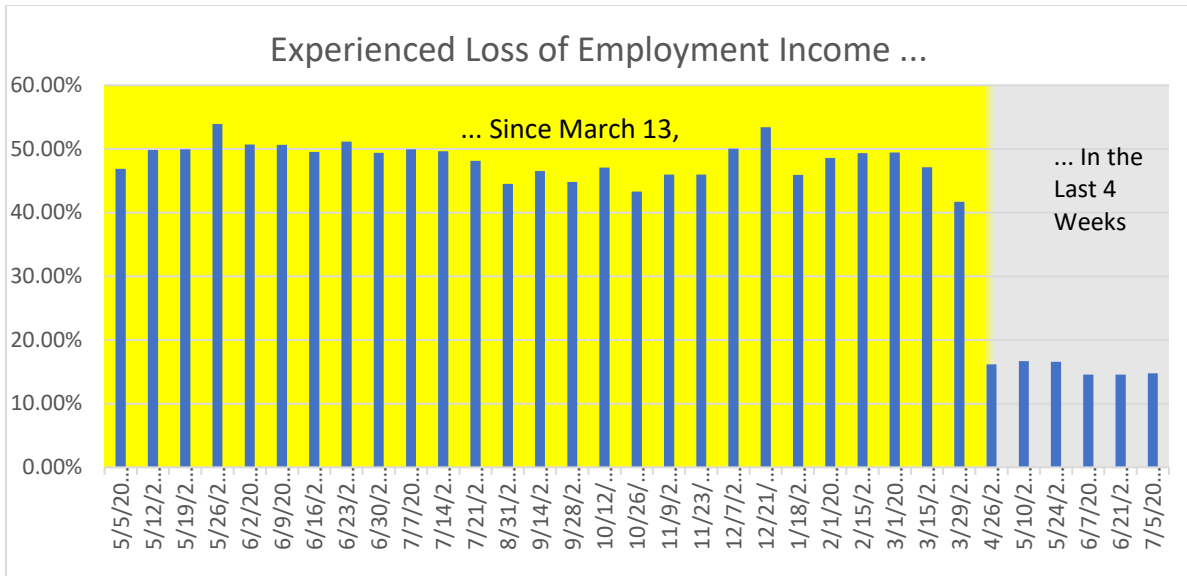
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¹ U.S. Bureau of Labor Statistics, Unemployment Rate in Pennsylvania Counties, retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/categories/29613>. August 4, 2021.

1 **Updates to the Household Pulse Survey**

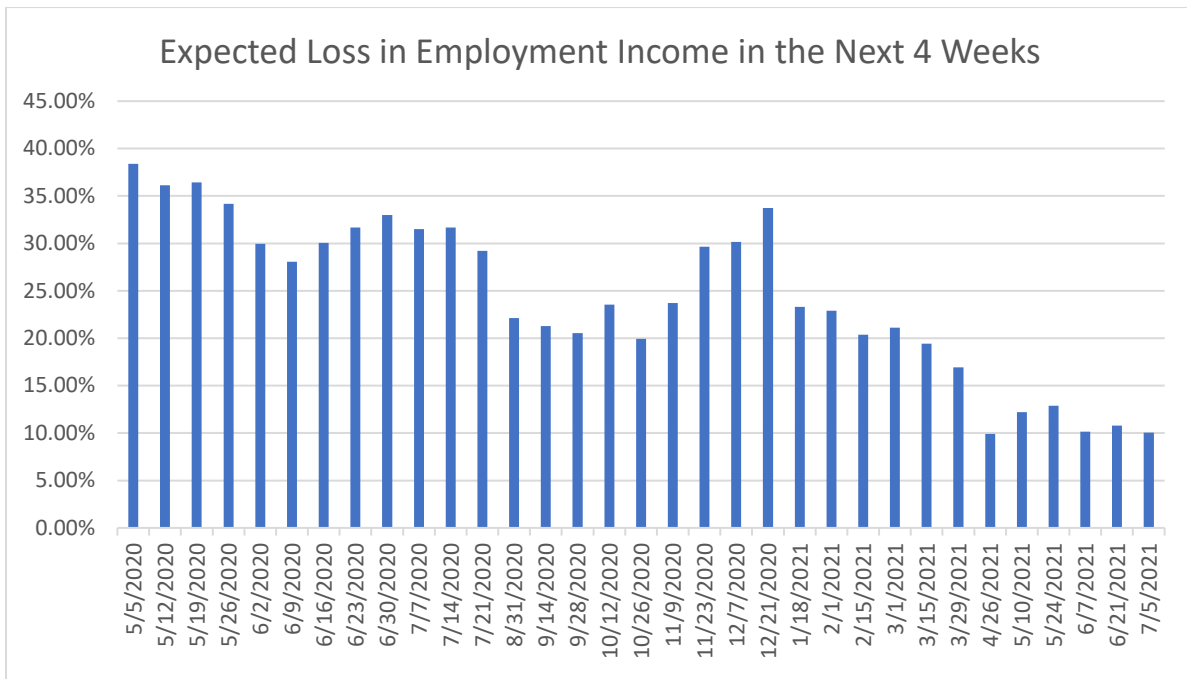
2 **Q. Has there been any updates to the Household Pulse Survey mentioned in your**
3 **Direct Testimony (OCA Statement 5)?**

4 A. There have been two more releases of data covering the period from June 9 – June 21 and
5 June 23 – July 5. Those expecting income loss in the next four weeks is still over 10%
6 and those having experienced a loss in income is slightly higher than the June 7th release
7 at 14.77%.



1

2 Figure 2²



3

4 Figure 3³

5

² U.S. Census Bureau. (2021). Household Pulse Survey.
<https://www.census.gov/data/tables/2021/demo/hhp/hhp31.html>

³ Ibid.

1 **Updates to the Business Pulse Survey**

2 **Q. Have there been any drastic changes in the responses to the Business Pulse survey?**

3 A. No. While there have been slight fluctuations, the share of businesses that expect to
4 return to its normal operations in 6 months or less is relatively unchanged. Currently,
5 57.4% of businesses are back to their normal level of operation or expect to be within 6
6 months or less, while the remaining 42.6% don't expect to return to their normal level of
7 operation for at least 6 months.

8

9 **Job Growth**

10 **Q. Were any job growth numbers released since you filed your Direct Testimony?**

11 A. Yes. The April and May job numbers were revised, which I reconciled on figure 4 below.
12 Also, the June 2021 job numbers were released, and employment increased by 850,000.
13 These changes brought the average monthly employment growth for 2021 to 542,667 per
14 month.

	Total Non-Farm Employment	Change in Employment
Jan-21	142,736,000	233,000
Feb-21	143,272,000	536,000
Mar-21	144,057,000	785,000
Apr-21	144,326,000	269,000
May-21	144,909,000	583,000
Jun-21	145,759,000	850,000
Average 2021		542,667

15 *Figure 4⁴*

⁴ Federal Reserve Bank of St. Louis. *All Employees, Total Nonfarm, Thousands of Persons, Monthly, Seasonally Adjusted.* <https://fred.stlouisfed.org/series/PAYEMS>

1 **Response to I&E Witness Wilson**

2 **Q. Do you agree with Ms. Wilson’s arguments that the economic climate is improving**
3 **in such a way that the RRP is unnecessary?**

4 A. No. As I have laid out in my Direct and this Surrebuttal Testimony, while the economy
5 has shown major improvements since the Pandemic began in early 2020, it has seen very
6 slow improvement over the last 11 months. For example, unemployment was flat for
7 most of late 2020 and early 2021, and very recently in the Duquesne service territory
8 unemployment rates increased. The Household Pulse and Business Pulse Surveys find
9 that consumers are still incredibly uncertain about the future, as 10% of households still
10 expect a reduction in income and more than 40% of businesses expect 6 months or more
11 to return to their normal level of operations.

12
13 Vaccination rates have slowed dramatically over recent weeks and children under 12 are
14 still ineligible for any vaccine. Moreover, in the time since Direct Testimony was filed in
15 this case, a new variant of the COVID-19 virus has led to large increases in cases across
16 many states. This variant threatens the unvaccinated population of Pennsylvania (no
17 doses yet received), which stands at 42.2% of the state population.⁵

18
19 While there have been improvements, and the response to the pandemic has been
20 generally positive by the PUC and utilities, the most powerful force at play during the
21 pandemic leading up to this point and into the future is: uncertainty. Until we have
22 achieved drastically low levels of infections combined with much higher levels of

⁵COVID-19 Vaccine Dashboard. (2021). PA Department of Health. (Retrieved 08/04/2021)
<https://www.health.pa.gov/topics/disease/coronavirus/Vaccine/Pages/Dashboard.aspx> (

1 vaccinations, it would be irresponsible to assume that economic recovery is certain or
2 permanent.

3

4 **Conclusion**

5 **Q. Are there any other updates you would like to present?**

6 A. No, I have no more updates that at this time. The data that I have updated should confirm
7 that the labor market and the economy as a whole are still recovering, and it will take
8 time before it returns to pre-pandemic levels.

9

10 **Q. Does this conclude your Surrebuttal Testimony?**

11 A. Yes. However, I reserve the right to modify or supplement my testimony if necessary.

OCA Exhibit NDE-1S

PECO Energy Company - Electric

Docket No. R-2021-3024601

Unemployment Rate by County

<i>Month</i>	<i>Allegheny County</i>	<i>Beaver County</i>
<i>January</i>	4.70%	5.50%
<i>February</i>	4.70%	5.70%
<i>March</i>	5.30%	6.30%
<i>April</i>	15.90%	18.40%
<i>May</i>	13.80%	15.50%
<i>June</i>	12.60%	14.60%
<i>July</i>	14.00%	15.30%
<i>August</i>	10.50%	11.60%
<i>September</i>	7.10%	7.80%
<i>October</i>	6.40%	7.10%
<i>November</i>	6.50%	7.20%
<i>December</i>	6.90%	7.90%
<i>January</i>	7.90%	9.20%
<i>February</i>	7.70%	9.10%
<i>March</i>	7.00%	8.20%
<i>April</i>	6.00%	6.90%
<i>May</i>	5.50%	6.30%
<i>June</i>	6.00%	7.10%

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
 :
 v. : Docket No. R-2021-3024750
 :
 Duquesne Light Company :

VERIFICATION

I, Noah D. Eastman, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 5-SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 10, 2021
*315159

Signature: 
Noah D. Eastman

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC	:	
UTILITY COMMISSION	:	
	:	
	:	
V.	:	DOCKET NO. R-2021-3024750
	:	
	:	
DUQUESNE LIGHT COMPANY	:	
	:	

SURREBUTTAL TESTIMONY

OF

RON NELSON
DIRECTOR
STRATEGEN CONSULTING

ON BEHALF OF
THE OFFICE OF CONSUMER ADVOCATE

(PUBLIC VERSION)

August 10, 2021

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1 **I. INTRODUCTION**

2 **Q. Please state your name, business address and occupation.**

3 A. My name is Ron Nelson. I am a Director with Strategen Consulting. My business
4 address is Suite 400, 2150 Allston Way, Berkeley, California 94704.

5 **Q. Have you previously submitted testimony in this proceeding?**

6 A. Yes. I submitted direct testimony marked as OCA Statement No. 6, on behalf of
7 the Office of the Consumer Advocate. My background and qualifications are set forth in
8 that statement.

9 **Q. What is the purpose of your surrebuttal testimony?**

10 A. My surrebuttal testimony will address issues regarding Duquesne Light
11 Company's ("Duquesne" or "Company") proposed Transportation Electrification
12 ("TE") Programs and Residential Subscription Rate Pilot. I will respond to the rebuttal
13 testimony of Duquesne witnesses Sarah Olexsak (Statement No. 8-R), Jennifer
14 Neiswonger (Statement No. 9-R), Margot Everett (Statement No. 17-R), and Jason
15 Harchick (Statement No. 18-R); ChargePoint, Inc. witness Matthew Deal (Statement No.
16 1-R); and Natural Resources Defense Council ("NRDC") witness Kathleen Harris
17 (Statement No. 2-R).

1 **II. TRANSPORTATION ELECTRIFICATION PROGRAMS**

2 **Q. Please summarize in your own words the Company response to your direct**
3 **testimony.**

4 A. The Company claims that my recommendations for more comprehensive load
5 management offerings is premature and potentially unnecessary. The Company
6 supports its position by noting that I have not demonstrated the cost-effectiveness of
7 my recommendation, have not offered specific improvements to the Company's pilot
8 proposals and evaluation, and have not determined whether demand from the
9 Company's customers is present for additional load management products.¹

10 **Q. Do you have general reactions to the Company's response?**

11 A. Yes. The Company has requested me to (1) redesign aspects of the Company's
12 pilot, (2) develop an evaluation and assessment plan for the Company, (3) estimate the
13 cost to implement load management programs that would be developed by the
14 Company, (4) conduct consumer research for the utility on their own customers, and (4)
15 conduct cost-effective analysis on hypothetical load management programs.²

16 My interpretation of the Company's requests and responses to my testimony is
17 that they are trying to shift the burden of proof from the utility to the intervenor. The
18 Company seems to be implying that if I do not have a fully implementable load

¹ For example, Witness Olexsak Rebuttal page 11, line 12, to page 12, line 3, and Witness Olexsak Rebuttal page 29, lines 1-5

² For example, Witness Olexsak Rebuttal page 11, line 12, to page 12, line 3, and Witness Olexsak Rebuttal page 29, lines 1-5.

1 management offering with supporting consumer research and cost-benefit analysis that
2 the Commission should ignore my concerns with the Company's proposal. This would
3 be an unsurpassable barrier for any intervenor.

4 My recommendations, rather, create a process for the utility to answer all of the
5 outstanding questions they raise, such as cost effectiveness of load management
6 programs, because they are important questions. My testimony expands on what many
7 industry experts throughout the country agree on – EVs are a highly flexible and
8 controllable load that should be passively or actively managed to ensure cost effective
9 integration. However, it is impossible for any intervenor to have insight into the costs of
10 designing such programs because only the utility has complete insights into (1) what
11 investments have already been made, (2) investments that are in the planning stage, and
12 (3) how current load management functionalities could be applied to EVs, among many
13 other things. For that reason, additional information and filings from the Company are
14 required to begin exploring a comprehensive load management approach that is
15 inclusive of EVs.

16 **Q. Are you aware of proceedings in other states that are similar to what you are**
17 **recommending with load management?**

18 A. Yes. I am aware of multiple proceedings that are similar. For example, the Utah
19 Commission recently required Rocky Mountain Power to provide more information on
20 advanced rate design and demand response functionalities based on my analysis and

1 recommendations in its rate case.³ Another example is the Minnesota PUC which is
2 requiring Xcel Energy to file an advanced rate design strategy that demonstrates rate
3 design plans for all significant rate classes including rate designs specifically tailored to
4 EVs.⁴ Yet another example, is the Hawaii PUC which has required the utilities to
5 participate in a proceeding to develop advanced rate designs, including forms of load
6 management for EVs, for all customer classes, and creating revised DER compensation
7 programs.⁵ What I am recommending Duquesne do for load management is much more
8 narrow and less burdensome than these proceedings, but they are all related to
9 efficiently managing customer load through price signals, including EVs. Importantly,
10 my recommendation to the Commission is to start a process that leads to
11 comprehensive evaluation of EV load management offerings, not to adopt any specific
12 offerings or approve any implementation costs at this time.

13 **A. Load Management**

14 **Q. Duquesne claims that the benefits of its TE proposals warrant the programs'**
15 **approval despite the lack of emphasis on load management (St. No. 8-R, pg. 7, lines 9-**
16 **11). Do you agree?**

17 **A.** No. The short-term benefits of the proposed TE programs should not be used as
18 justification to embed long-term inefficiencies. The reasonableness of the proposed
19 programs should not be considered in isolation from a larger context of a reasonable TE

³ See MN PUC Docket Nos. 20-86, 21-101, and 20-627.

⁴ See Utah PSC 20-034-04.

⁵ See Hawaii PUC Docket No. 2019-0323.

1 strategy. Throughout my direct testimony, I discussed multiple shortcomings with the
2 Company's pilot structure, pilot objectives, and lack of load management options.
3 Allowing Duquesne to rate base behind-the-meter and other EV-related infrastructure
4 while not focusing on load management strategies would lead to unreasonable cost
5 burdens for ratepayers in the long run.

6 **Q. Duquesne argues that your load management recommendations are**
7 **unreasonable because you did not provide quantitative evidence that the benefits of**
8 **load management would outweigh the costs (St. No. 8-R, pg. 7, lines 12-19). Do you**
9 **agree?**

10 A. No. There is a clear consensus within the industry that EV load should be
11 managed and that load management will save costs in the long term.⁶ It is Duquesne's
12 responsibility to study potential program types and structures to understand the costs
13 and benefits of different EV load management strategies to the Company's system and

6 Smart Electric Power Alliance (SEPA). *A Comprehensive Guide to Electric Vehicle Managed Charging*.
https://go.sepapower.org//124671/2019-05-08/8qz87j/124671/75603/A_Comprehensive_Guide_to_EV_Managed_Charging.pdf

National Association of Regulatory Utility Commissioners (NARUC). *Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators*. <https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE>

Rocky Mountain Institute. *Electric Vehicles as Distributed Energy Resources*. https://rmi.org/wp-content/uploads/2017/04/RMI_Electric_Vehicles_as_DERs_Final_V2.pdf

1 provide cost-effective offerings to customers. Given that DLC has existing load
2 management programs, many of these investments and associated functions should be
3 transferrable to developing EV-related programs. For example, the EV TOU tariff was
4 apparently cost effective. However, the Company did not discuss to the extent EV
5 would be able to participate in current load management programs or the cost of
6 creating programs that would allow increased participation. This is why I recommend
7 requiring the Company to undergo the exploration and development of a
8 comprehensive EV load management strategy – the Company apparently will not do it
9 without a regulatory requirement.

10 **Q. Duquesne claims that rejecting the proposed TE programs would deprive the**
11 **Company of the data that can inform future EV load management offerings (St. No.**
12 **8-R, pg. 8, lines 3-7; St. No. 18-R, pg. 7, lines 5-21). Do you agree?**

13 A. No. While load management offerings would benefit from additional data, it is
14 unclear why Duquesne would not be unable to develop load management offerings
15 without data from its proposed TE programs. The Company should already have some
16 data on customer charging behavior through its previous EV offerings, including the
17 EV ChargeUp Pilot, that can inform the development of load management offerings. Of
18 note, the Company was able to develop an EV TOU rate, approved in Docket No. P-
19 2020-3019522, without the data to be collected through the proposed programs.

20 Utilities regularly collect load data from customers through load research
21 studies. When asked why the Company does not collect load from EVs, like it collects

1 data to set rates and design most other tariffs (i.e., using load research data), the
2 Company stated it “has determined that the best method to obtain accurate and
3 comprehensive ... (data) ... is through the proposed TE Programs.”⁷ Importantly, the
4 Company’s response lacked any clear reasoning or factual basis for this conclusion. It
5 still remains unclear and un rebutted that the Company could collect similar, if not the
6 exact same, data from a load research study.

7 Furthermore, any load management offerings will likely have to undergo several
8 iterations as more data becomes available, particularly since current and near-future EV
9 owners are early adopters who may not represent the charging behavior of all future EV
10 customers. The need for iterations, however, does not mean that load management
11 should be delayed until large amounts of infrastructure investments have already been
12 made. Rather, load management should be prioritized in order to ensure that
13 investments in EV charging infrastructure are efficient and do not unreasonably burden
14 ratepayers.

15 Moreover, as discussed throughout my direct testimony, it is unclear how
16 Duquesne plans to use data from the proposed programs to inform future load
17 management offerings. None of the Company’s objectives for the TE programs
18 addresses load management. Rather, they all focus on building infrastructure. There
19 needs to be clear objectives related to load management with a clear framework to

⁷ See the Company’s response to OCA-XI-10.c.

1 assess potential load management offerings that the data Duquesne intends to collect
2 can inform.

3 **Q. Duquesne asserts that its existing load management options and the**
4 **Residential Subscription Rate Pilot proposed in this proceeding are sufficient (St.**
5 **No. 8-R, pg. 8, lines 10-19; pg. 9, lines 7-9). Do you agree?**

6 A. No. The Company lists its load management offerings as comprising a third-
7 party load control program via its smart meter network, a demand response program,
8 an EV TOU rate, as well as the proposed Residential Subscription Rate Pilot. However,
9 the demand response offering is no longer available as of June 2021, and it is unclear
10 whether EVs can participate in the third-party load control program or not. I discussed
11 how the Residential Subscription Rate Pilot is ill-suited for load management in my
12 direct testimony and will continue to do so in Section III below. The availability of a
13 single load management offering, the EV TOU rate, is not sufficient. Providing a variety
14 of load management options is necessary to accommodate diverse customer needs and
15 sophistication and would create more grid flexibility and lead to lower costs to
16 ratepayers in the long term.

17 **Q. Duquesne claims that its implementation of an Outage Management System**
18 **("OMS") in 2022 is necessary before it can implement active managed charging or**
19 **Automated Load Management ("ALM"), otherwise the programs would be less**
20 **robust and potentially less cost-effective (St. No. 18-R, pg. 6, lines 15-23; pg. 8, lines 4-**
21 **7). Is this an appropriate reason to delay the implementation of load management?**

1 A. No. The timeline I recommended (18 months after the approval of the TE
2 Programs) would give Duquesne until 2023 to file a proposed load management plan.
3 This appears to allow sufficient time after the OMS becomes available for the Company
4 to develop load management offerings, the implementation of which will likely come
5 several months after that. In fact, the timing of the OMS appears to align well with the
6 timeline for load management implementation. For example, the Company could
7 conceivably propose pilots to directly explore how OMS functionalities can be best
8 utilized to support active managed charging and ALM. It is not necessary for the OMS
9 to already be implemented for Duquesne to develop load management options.
10 Additionally, without the OMS, the Company can still develop passive managed
11 charging offerings.

12 **Q. ChargePoint argues that even though load management is beneficial, it would**
13 **be sufficient for the Commission to require EV chargers deployed through the TE**
14 **Programs to have managed charging capabilities (St. No. 1-R, pg. 7, lines 10-17). Do**
15 **you agree?**

16 A. No. Approving Duquesne's proposed programs while the Company has not
17 sufficiently developed its load management plan will send the wrong signal to the
18 utility. I maintain that the Commission should make the approval of the Company's
19 proposals conditional on its filing of a load management plan in order to send a strong
20 signal to the Company that load management should one of its primary focuses.

1 **B. Utility Ownership of Charging Infrastructure**

2 **Q. Duquesne argues that charging infrastructure needs in DLC’s service territory**
3 **are not being met by the market, and that there is no empirical evidence to suggest**
4 **that utility ownership of EV infrastructure interferes with the competitive market (St.**
5 **No. 8-R, pg. 17, lines 1-8; pg. 8, lines 4-23). Is this a persuasive argument to support**
6 **utility ownership of EV charging infrastructure?**

7 A. No. Whether a utility should be allowed to own EV charging infrastructure is a
8 public policy issue, balancing between limiting ratepayer costs and facilitating charging
9 infrastructure deployment to support TE. However, there is no clear direction from the
10 Commission, the Legislature, or any other state agencies that calls for utility ownership
11 of EV infrastructure. Without clear policy goals or explicit guidance on ownership from
12 a regulator, utility ownership requires strong justification as it increases rates and is not
13 required for TE. Furthermore, without clear policy goals or an agreed upon framework,
14 there is no way to evaluate when utility ownership is no longer necessary for market
15 development. When asked at what point utility ownership of behind-the-meter assets
16 would no longer be necessary, the Company stated it “cannot predict future conditions
17 ”⁸ It is in the Company’s financial interest to own behind the meter assets going
18 forward, regardless of market characteristics, which is one of the risks of allowing it in
19 the first place and the risk is greater when no goals or framework is guiding their
20 ownership.

⁸ See the Company’s response to OCA-XI-15.

1 **Q. NRDC claims that the Commission should approve utility ownership of**
2 **charging infrastructure because it is standard utility practice in other TE programs**
3 **across the country (St. No. 2-R, pg. 5, lines 5-14; pg. 6, lines 1-10). Do you agree?**

4 A. No. Different states across the country are pursuing different ownership models
5 to facilitate charging infrastructure deployment, and there is no single approach that
6 can be considered standard industry practice. While some states do allow utility
7 ownership of charging infrastructure, others have implemented TE programs in which
8 utilities only provide rebates for, but do not own, behind-the-meter make-ready
9 infrastructure and chargers, such as New York⁹ and Massachusetts¹⁰. Again, whether
10 utilities should own behind-the-meter charging infrastructure depends on each state's
11 public policy goals. In Pennsylvania, there is no clear policy guidance that supports
12 utility ownership of charging infrastructure. Because of the lack of clear policy guidance
13 or unique insights created, the Commission should not approve the proposed pilot
14 programs with the ownership model as proposed by Duquesne.

9 New York Public Service Commission. Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs, pg. 32-33. Case 18-E-0138.

<http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={6238DD07-3974-4C4E-9201-3E339E311916}>

10 Massachusetts Department of Public Utilities. September 18, 2018 Decision, pg. 16-17. Docket 17-13.
<https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/9800474>

1 **C. Pilot Structure**

2 1. *Reporting and Evaluation*

3 **Q. Duquesne claims that its proposed TE Programs were designed with clear**
4 **objectives, outcomes, metrics, data inputs, and targets (St. No. 8-R, pg. 29, lines 1-5).**
5 **Do you agree?**

6 A. No. The Company has not addressed my concerns with its pilot structure, which
7 I discussed in direct testimony. The Company simply stating that the objectives and
8 metrics are clear does not mean that they are clear.¹¹ For example, one of the metrics is
9 the “quantity and quality of data and analysis gathered through the EV Registration
10 incentive and Charging Infrastructure Portfolio.” However, Duquesne does not
11 elaborate on what constitutes a sufficient level of quantity or quality for the data it
12 intends to collect, nor explain what types of data (e.g., charging session duration, timing
13 and size of peak load, location, etc.) it is collecting. Moreover, the Company’s stated
14 objectives for the TE Programs still do not address load management, which should be
15 central in any utility TE programs. Without a clear objective focused on load
16 management, and corresponding metrics and data inputs, the pilots would not help
17 explore questions most important to ratepayers.

18 **Q. Duquesne claims that it asked you to provide evaluation criteria, but that you**
19 **were unwilling to do so.¹² Can you please respond?**

¹¹ Witness Olexsak page 29, lines 1-2.

¹² Witness Olexsak Rebuttal page 29, lines 1-4.

1 A. Yes. For clarity, I have attached as Exhibit REN-1SR the Company's discovery
2 request referenced by witness Olexsak in rebuttal testimony in its entirety.

3 My entire testimony explains what I think the Company's objective should be
4 with TE programs – cost effectively integrating EVs by developing comprehensive load
5 management offerings. I then provided a detailed recommendation to the Commission
6 that would be a starting point for the Company. The Company, however, has suggested
7 rejecting my recommendation. As support for its position, the Company states that I did
8 not design an entire TE program consistent with my recommendations. That is an
9 unreasonable request. Instead, my recommendation to make the Company improve its
10 TE strategy should be adopted.

11 **Q. With respect to my recommendation that the Company provide key data**
12 **derived from the pilots, Duquesne stated, “Due to customer privacy concerns, I**
13 **disagree with providing customer load profiles by site, costs that site hosts are**
14 **charging drivers to use their charging stations, and charging station location.**
15 **Customers may refrain from participating in TE Programs if such information is**
16 **required to be shared publically (sic).”¹³ Do you agree with their concerns?**

17 A. No. I do not agree with the Company's concerns because they did not actually
18 say what the concern was. The Company noted “customer privacy concerns” but not
19 the exact concern, such as the inability to anonymize customer data. Citing “general
20 concerns” about providing some of the most useful data from the pilot, as the Company

¹³ Witness Olexsak Rebuttal page 31, lines 2-5.

1 has, is not sufficient justification. If the data can be anonymized, I recommend that it be
2 provided in order to advance the development of load management programs and
3 improve transparency of the distribution system planning process.¹⁴ The TE pilots are
4 optional programs that customers choose to accept funds provided by all ratepayers.
5 Thus, the programs must provide clear value to ratepayers, including through the
6 collection of data and identification of benefits. If customers do not want to provide
7 critical data, they do not need to participate.

8

9 2. *Charging Infrastructure Portfolio*

10 **Q. Duquesne claims that utility ownership of charging infrastructure is more**
11 **appropriate than rebates because the upfront costs of charging infrastructure and the**
12 **time and resources necessary to manage installations can deter customers from**
13 **deploying charging stations (St. No. 8-R, pg. 39, lines 17-19). Do you agree?**

14 A. No. As discussed in my direct testimony, nothing in the EV ChargeUp Pilot
15 results suggests that rebates were insufficient to facilitate the deployment of charging
16 infrastructure. Additionally, noting that the cost of a product is a deterrent is not useful
17 or persuasive argument. Any consumer is more likely to use a product that is cheaper,
18 all else being constant, that is simply an observation that a simple demand curve is
19 downward sloping, not a basis for supporting utility ownership of a product.

¹⁴ Specific locations cannot be anonymized, but the Company did not explain why or whether load profiles and pricing data could be anonymized.

1 **Q. Duquesne states that if the Commission rejects utility ownership of behind-**
2 **the-meter infrastructure, the Company would cover up to 100% make-ready costs for**
3 **selected projects (St. No. 8-R, pg. 41, lines 5-7; pg. 45, lines 22-24). Do you agree with**
4 **this approach?**

5 A. Partly. I support the Company providing customers with rebates for make-ready
6 costs. However, there should be a limit on the incentive level each site can receive, as
7 well as differentiation between sites in an Environmental Justice (“EJ”) Area and those
8 not in an EJ Area. I recommend a 75% limit on make-ready costs for sites in an EJ Area
9 and 50% for sites not in an EJ Area.

10 **Q. Duquesne argues that its Home Charging Pilot should be approved because**
11 **80% of EV charging happens at home and close to half of households at or below**
12 **150% federal poverty line in the Pittsburgh metro region own a detached home (St.**
13 **No. 8-R, pg. 51, lines 10-12, 18-19). Do you agree?**

14 A. No. The high rate of home charging is logically related to the availability, or lack
15 thereof, of publicly accessible charging options, and this figure does not dispute the fact
16 that public, workplace, and multi-unit dwelling charging sites expand charging access
17 to a greater number of customers than home chargers do. This data is also collected
18 from current EV owners, who are early adopters or wealthy households that do not
19 represent the demographics of future EV owners. Thus, I maintain that program
20 funding should be focused on the market segments identified under the Public,
21 Workplace, and Multi-Unit Dwelling Make-Ready Pilot. However, if the Commission

1 decides to approve the Home Charging Pilot, eligibility should be limited to only low-
2 income households and/or those in EJ Areas as a way to better ensure equity.

3 **Q. ChargePoint asserts that the Home Charging Pilot should be approved because**
4 **Level 2 chargers are necessary for EVs with higher battery capacity, enables managed**
5 **charging, and are important for customers' decision to purchase EVs. Do you agree?**

6 A. No. First, since most EV drivers do not entirely deplete their battery capacity
7 daily, Level 1 charging is sufficient to allow drivers to top up their EV battery every
8 day. This is partially supported by the market research conducted by Duquesne. In
9 Duquesne EV survey, 55 percent of respondents indicated their main reason for not
10 installing level II chargers was "No need for Level II, Level I is sufficient."¹⁵ Second,
11 managed charging is not an exclusive functionality to Level 2 and higher-power
12 chargers, provided that load management offerings allow EV owners to participate via
13 vehicle telematics. Many EV's onboard control systems also allow customers to
14 schedule their charging sessions. Xcel Energy Colorado's Charging Perks Pilot also
15 utilizes vehicle telematics to allow both Level 1 and Level 2 chargers to take part in
16 active managed charging, scheduling charging sessions to align with periods with low
17 electricity costs or high renewable energy production.¹⁶ Lastly, ChargePoint's argument

¹⁵ See the Company's response to OCA Set XI 12.

¹⁶ Xcel Energy Colorado. 2021-2022 Demand-Side Management Plan, pg. 263-264.

https://www.xcelenergy.com/staticfiles/xcel-responsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/CO-DSM/CO_2021-22_DSM_Plan_Final.pdf

1 does not address the inequity in using ratepayer funds to subsidize private home
2 chargers for wealthy households, who represent the majority of current and near-future
3 EV owners.

4 3. *Customer Portfolio*

5 **Q. Duquesne argues that the Awareness, Education, and Engagement program and the**
6 **Fleet Electrification Advisory Service should be approved at the proposed budgets because**
7 **they are necessary to increase customer knowledge of EV charging and infrastructure (St. No.**
8 **8-R, pg. 54, lines 20-23; pg. 57, lines 1-8). Do you agree?**

9 A. No. The Company has not addressed my concerns about the lack of load
10 management, which was the reason for my recommendation to reduce the Awareness,
11 Education, and Engagement budget and reject the Fleet Electrification Advisory Service.
12 Without sufficient attention to load management, any customer education or advisory
13 services would be inadequate.

14 **Q. NRDC claims that since the fleet advisory service can be used to conduct a**
15 **comprehensive analysis of customers' needs to inform load management efforts, it**
16 **should not be rejected (St. No. 2-R, pg. 7, lines 10-19). Do you agree?**

17 A. Partly. While I agree that the fleet advisory service can allow the Company to
18 gather data that can inform the development of load management offerings, such an
19 objective is not present in the Company's proposed pilot structure. The fleet advisory
20 service should not be approved until there are clear objectives, metrics, and data inputs
21 and reporting requirements that link to load management outcomes. Without such

1 direct links, the Company has no accountability for utilizing these inactions and
2 translating them into tangible load management programs.

3 **III. RESIDENTIAL SUBSCRIPTION RATE PILOT**

4 **Q. Duquesne argues that the subscription rate is a load management program**
5 **because it encourages customers to reduce their non-coincident peak and that non-**
6 **coincident peak is more reflective of costs to the system than coincident peak (St. No.**
7 **17-R, pg. 13, lines 17-20; pg. 16, lines 1-5). Do you agree?**

8 A. No. As I discussed in direct testimony, load management should reflect all costs
9 of EV charging on the system, including generation, transmission, as well as
10 distribution. By solely focusing on non-coincident peak demand, the subscription rate
11 does not encourage customers to lower their coincident peak and ignores generation
12 and transmission costs.

13 **Q. Duquesne asserts that the subscription rate pilot is not too hard for customers**
14 **to understand since the Company will provide enabling technology to customers,**
15 **including making hourly kWh usage data available and offering alerts when**
16 **customers are approaching and/or exceeding their subscription level (St. No. 9-R, pg.**
17 **6, lines 10-17). Do you agree?**

18 A. No. The Company's own research indicates that customers do not understand
19 the difference between kW demand and kWh energy usage, which is crucial for
20 customers to be able to manage their consumption to stay within their subscription

1 level.¹⁷ In fact, I find it misleading that the Company can claim the Subscription Rate
2 Pilot is not hard for customers to understand based on the results of the Company's
3 own research. Company research demonstrated that 96 percent of customer's
4 incorrectly interpreted the Subscription Rate bill – yet the Company rebuts my position
5 that the rate is confusing and proposes that the Commission approve the rate.

6 Furthermore, 75 percent of customers “did not correctly define Kilowatts” – yet
7 the Company rebuts my position that the rate is confusing and proposes the
8 Commission approve the rate. This level of confusion does not seem reasonable, even
9 for a pilot.

10 The only positive feedback that I can find in the Company's survey on the
11 Subscription Rate is that some customers like the idea of paying fixed monthly charges
12 to help with budgeting. However, the Company already has a Budget Billing program
13 that achieves this for customers using, an assumedly, less confusing rate design. To
14 leverage the interest in fixed billing for the Subscription Rate, the consultant suggests
15 that the Company, among other things, “Consider offering the program to customers
16 currently enrolled in Budget Billing”¹⁸ To summarize, the Company's potential plan
17 for this Subscription Rate plan is to take customers off the straight forward Budget
18 Billing plan and put them on a rate that 96 percent of customers did not understand and
19 that 75 percent did not understand what one of the primary billing components was

¹⁷ See Exhibit JAN-1-R, OCA-I-14 Supplement – Attachment 1

¹⁸ See Exhibit JAN-1-R, OCA-I-14 Supplement – Attachment 1

1 (i.e., the demand charge). This does not seem like a strategy that would benefit
2 ratepayers.

3 Based off the Company's own research, I recommend rejecting the Subscription
4 Rate Pilot without prejudice and all related cost recovery. It is clearly confusing to
5 customers and the only potential value that the Company has identified (i.e., budget
6 billing) is already provided by an existing, and simpler tariff.

7 **Q. Do you find the Company's support for pushing the Subscription Rate Pilot**
8 **forward, while rebutting your recommendation for additional EV load management**
9 **offerings to be contradictory?**

10 A. Yes. It is unclear why the Company is supporting the Subscription Rate Pilot so
11 adamantly when the customer comprehension of the offering is very poor, while on the
12 other hand not agreeing to any new EV load management offerings or a timeline on
13 which new offerings would be proposed. There are numerous load management tariffs
14 being piloted or currently available, such as TOU with critical peak pricing, in other
15 states that the Company could design and implement now, but instead it is choosing to
16 push a rate that very few customers understand.

17 It is important to note that the Subscription Rate could increase fixed cost
18 recovery and stabilize cash flow for the Company, while other EV load management
19 offerings would focus on reducing capital investments. For this reason, one could
20 assume the Company's economic incentives could be factoring into its decision-making

1 process. The Subscription Rate Pilot provides a clear example of why the Commission
2 needs should require more transparency with the Company's load management
3 strategy. I continue to strongly recommend the Commission require the Company to
4 take additional action to advance load management in this proceeding.

5 **IV. CONCLUSION**

6 **Q. Does this conclude your direct testimony?**

7 **A. Yes.**

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49. Reference Direct Testimony of Ron Nelson at p. 18, lines 14-19. Please identify the objectives, outcomes, metrics, targets, and data inputs that Mr. Nelson believes the Company should use to evaluate its proposed TE programs.

Response:

The scope of my testimony was to evaluate the Company's pilot proposal, not to create the pilot programs for the Company. For that reason, among others, I did not conduct the analysis requested.

Part of my testimony focused on the importance of a transparent pilot framework to avoid common pitfalls and noted that some states have created formal frameworks for pilots. Formalizing pilot frameworks can help avoid common pitfalls associated with pilots and reduce disputes between stakeholders.

Witness: Ron Nelson

Date: 07/12/2021

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024750
	:	
Duquesne Light Company	:	

VERIFICATION

I, Ron Nelson, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 6-SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 10, 2021
*314854

Ron Nelson
Signature: _____
Ron Nelson

Consultant Address: Strategen Consulting
2150 Allston Way
Suite 400
Berkeley, CA 94704



COMMONWEALTH OF PENNSYLVANIA

June 30, 2021

Deputy Chief Administrative Law Judge Joel H. Cheskis
The Honorable John Coogan
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120

**Re: Pennsylvania Public Utility Commission v. Duquesne Light Company 1308(d)
Proceeding / Docket No. R-2021-3024750**

Dear Judge Cheskis and Judge Coogan:

Enclosed please find the Direct Testimony and Exhibits of Robert D. Knecht, labeled OSBA Statement No. 1, on behalf of the Office of Small Business Advocate (“OSBA”), in the above-captioned proceeding.

As evidenced by the enclosed Certificate of Service, all known parties will be served, as indicated.

If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Sharon E. Webb

Sharon E. Webb
Assistant Small Business Advocate
Attorney I.D. No. 73995

Enclosures

cc: PA PUC Secretary Rosemary Chiavetta (Cover Letter & Certificate of Service only)
Robert D. Knecht
Parties of Record

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA PUBLIC UTILITY
COMMISSION**

v.

DUQUESNE LIGHT COMPANY

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Docket No. R-2021-3024750

Direct Testimony and Exhibits of

ROBERT D. KNECHT

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

- Cost Allocation**
- Revenue Allocation**
- Rate Design**
- Small Business Initiatives**
- EV Charging Programs**

Date Served: June 30, 2021

Date Submitted for the Record: _____

DIRECT TESTIMONY OF ROBERT D. KNECHT

1 **1. Witness Identification and Summary of Conclusions**

2 **Q. Mr. Knecht, please state your name and briefly describe your qualifications.**

3 A. My name is Robert D. Knecht. I am a Principal of Industrial Economics, Incorporated
4 ("IEc"), a consulting firm located at 2067 Massachusetts Avenue, Cambridge, MA 02140.
5 I specialize in the economic analysis of basic industries. My consulting practice currently
6 consists primarily of the preparation of analysis and expert testimony in the field of
7 regulatory economics on a variety of topics. I obtained a B.S. degree in Economics from
8 the Massachusetts Institute of Technology in 1978, and a M.S. degree in Management from
9 the Sloan School of Management at M.I.T. in 1982, with concentrations in applied
10 economics and finance. I am appearing in this proceeding on behalf of the Pennsylvania
11 Office of Small Business Advocate ("OSBA"). My résumé and a listing of the expert
12 testimony that I have filed in utility regulatory proceedings during the past five years are
13 attached in Exhibit IEC-1.

14 **Q. Please describe your assignment in this matter.**

15 A. The OSBA requested that I review the filing of Duquesne Light Company ("DLC" or "the
16 Company"), to evaluate whether the rates proposed for small business customers are
17 consistent with sound economics and regulatory principles. My evaluation is generally
18 limited to issues of cost allocation, revenue allocation and rate design. I also address the
19 various initiatives for small businesses, in which the Company proposes that it impose
20 higher rates on some general service customers for the benefit of other general service
21 customers. I also present OSBA's policy positions and my analysis of the variety of
22 programs proposed by DLC for subsidizing the development of charging infrastructure for
23 electric vehicles ("EVs").

24 **Q. Is this testimony complete?**

25 A. No. Due to a communications snafu with OSBA, I was unable to conduct timely discovery.
26 This testimony is therefore based on my review of the Company's filing.

1 **Q. How is the balance of your testimony organized?**

2 A. This testimony is organized as follows:

- 3 • Section 2 provides a brief overview of the rate classes under which small and
4 medium businesses take service.
- 5 • Section 3 presents my evaluation of the Company's allocated class cost of service
6 study ("ACOSS").
- 7 • Section 4 reviews the Company's proposed allocation of the rate increase ("revenue
8 allocation") among the various rate classes.
- 9 • Section 5 reviews the Company's proposed rate design for the rate classes under
10 which small and medium businesses take service.
- 11 • Section 6 addresses the various initiatives proposed by the Company related to
12 small and medium general service customers.
- 13 • Section 7 addresses the various programs put forward by the Company in this
14 proceeding for investing in and subsidizing electric vehicle charging infrastructure.

15 **2. General Service Rate Classes**

16 **Q. Please describe the general service tariff categories at DLC.**

17 A. The non-residential tariff classes for small and medium customers in the Company's tariff
18 consist of Rate GS/GM, Rate GMH, Rate GL and Rate GLH.

19 The GS/GM tariff applies to general service small and medium customers. However, this
20 class has distinct sets of tariff charges for three sub-classes: GS, GM customers below 25
21 kW in maximum demand ("GM<25"), and GM customers at or above 25 kW in maximum
22 demand ("GM>=25").

23 The nearly 25,000 GS customers are the smallest customers in the class, consisting of
24 customers with average monthly billing demand below 5 kW and new uncategorized
25 customers. Average annual consumption for this class is only about 4,000 kWh, well below
26 the average residential customer use of over 7,000 kWh. Further detail regarding the
27 makeup of this class is requested in discovery. However, in my experience, many of the

1 customers in this type of class are small businesses, but many are not. These customers
2 are generally not demand-metered, and the tariff charges include only a customer charge
3 and an energy charge.¹

4 GM customers are split into the below and at/above 25 kW mark (20,200 and 6,800
5 customers respectively) based on average historical billing demand. The tariff rates
6 include a customer charge, energy charge and billing demand charge. The average usage
7 for GM<25 is about 30,000 kWh (30 MWh) per year, about six times the size of the typical
8 residential customer. For GM>=25, the average usage is considerably larger, at about 310
9 MWh per year.

10 The GMH class comprises customers whose “sole method of space heating” is electricity,
11 except that customers may obtain supplemental heat from renewable sources. The Rate
12 GMH customer count is much smaller than the corresponding Rate GM counts, by a factor
13 of 8 to 10. The tariff appears to be designed to be more attractive to heating loads, since
14 the demand charge applies only in the summer months, with a higher energy charge in the
15 non-summer months. For cost allocation purposes, the Company splits the GMH class into
16 GMH<25 kW and GMH>=25 kW, much like the GM subclasses, although the tariff
17 charges are not differentiated. On a per-customer basis, average usage rates for this class
18 and the two sub-classes are similar to those for Rate GM.

19 The 736 Rate GL customers are general service customers with minimum demand of 300
20 kW.² Average per-customer use is more than ten times that for GM>=25, at about 3,500
21 MWh per year. The base rate tariff consists of a hybrid fixed/demand charge based on the
22 300 kW of minimum demand, and a demand charge for peak demand above 300 kW.

¹ Energy charges are those that vary with the total energy consumed over the billing period, measured in kilowatt-hours (“kWh”), a unit of energy. The Company often refers to these as “volumetric” charges. Energy (or volumetric) charges are distinct from demand charges, which are based on the peak usage in a narrow window of time (typically 15 minutes) within the billing period. Demand charges are based on kilowatts (“kW”), a unit of power, or the rate of energy use. Conceptually, an energy charge is comparable to a charge for a vehicle based on miles driven; the demand charge is based on the maximum speed.

² The tariff does not appear to indicate how the 300 kW is determined, but since the minimum tariff charge is based on 300 kW of demand, it does not really matter.

1 Like Rate GMH, Rate GLH is a class limited to customers using only electricity for heat,
2 with demand charges applying only in the summer. Average customer size is similar to
3 that for Rate GL. There are fewer than 90 customers in this rate class.

4 The Rate GL and GLH classes apply to customers up to 5,000 kW in contract demand, at
5 which point Rate L applies.

6 **Q. Why does the Company have a separate “heating” class for GM and GL customers?**

7 A. I do not know. It may be simply inertia, in which the current tariff reflects a tariff design
8 for integrated utilities, and thus may simply be resistance to change.

9 The primary reason for establishing a separate rate class is that the customers have distinct
10 cost-to-serve differences. Thus, for example, it could potentially be argued that heating
11 customers are less costly to serve per unit of annual peak billing demand, because winter
12 peaks impose less stress on parts of the distribution system because the system is sized to
13 meet summer peak loads. However, the Company’s cost allocation methodology appears
14 to assign demand-related costs to the GMH and GLH classes based on their winter “non-
15 coincident” peaks, thereby implying that there is no cost advantage to heating peak loads.
16 In fact, the average class load factors for the GMH and GLH classes based on the non-
17 coincident peak allocators used in the Company’s ACOSS are lower than those for the
18 regular GM and GL classes. Thus, there appears to be an inconsistency between the
19 Company’s proposal to retain its special heating classes and the cost of service
20 methodology that determines the cost basis for service.

21 For the purposes of this proceeding, I recommend that the Company explain why retaining
22 the GMH and GLH classes is appropriate. In particular, the Company should explain why
23 the cost basis for these classes relies on the customers’ winter-peak demands, while the
24 tariff charges exclude a winter demand charge.

25

1 **3. Cost Allocation**

2 **Q. What is the purpose of a utility’s allocated cost of service study (“ACOSS”)?**

3 A. The most important criterion for setting regulated utility rates is the cost incurred by the
4 utility for providing the service.³ To assign costs to specific customers, utilities aggregate
5 customers into rate classes, within which the customers have similar load sizes, seasonal
6 consumption, peak demand patterns, and other characteristics. An ACOSS is an analytical
7 tool with which the utility’s total cost (or “revenue requirement”) is allocated among each
8 of the rate classes. These allocated costs are then used as a key input in determining the
9 total revenues that the utility plans to recover from each rate class through tariff rates.

10 In using the results from an ACOSS to develop class revenue requirements, utilities and
11 regulatory authorities usually have a longer-term goal of moving the revenue recovered
12 from each class as close as possible to the costs allocated to that class. Thus, rate classes
13 whose revenues substantially exceed allocated costs are assigned either relatively low rate
14 increases or rate decreases. Rate classes whose revenues are well below allocated costs are
15 assigned relatively larger rate increases than those classes whose revenues are only slightly
16 below allocated costs.

17 In addition to class revenue requirement issues, an ACOSS can provide useful cost
18 information regarding the specific nature of utility tariff charges. In particular, an ACOSS
19 provides a cost basis for the relative magnitude of the various individual tariff charges,
20 including the customer charge, demand charges and commodity charges.

21 **Q. How does an ACOSS assign costs to the various rate classes?**

22 A. The underlying principle of an ACOSS is that costs are assigned to the rate classes that
23 *cause* the utility to incur those costs. This principle of cost causation is both equitable and
24 economically efficient. It is equitable because costs are borne by those customers who
25 cause them. It is economically efficient because the price signal for consumption from a
26 particular rate class is reasonably consistent with the cost incurred by the utility to provide
27 the service. In that way, the consumer receives the correct price signal for determining

³ The Commonwealth Court affirmed this basic principle, referring to cost of service as the “polestar” criterion. Lloyd v. Pennsylvania Public Utility Commission, 904 A.2d 1010, 1020 (Pa. Cmwlth. 2006).

1 whether he should purchase more or less of the utility service. In effect, the consumer
2 balances the value that he receives from the purchase of that service against the utility's
3 cost of providing the service.

4 **Q. What issue is most debated with respect to electric utility distribution company**
5 **("EDC") cost allocation?**

6 A. The most contentious issue regarding EDC cost allocation usually revolves around the
7 "classification" and "allocation" of joint use distribution plant costs, including substations,
8 poles, overhead and underground lines, and transformers. This debate arises for several
9 reasons.

10 • First, this plant represents a substantial portion of the overall distribution plant,
11 making the issue of critical importance to the overall allocation of rate base.
12 Moreover, because O&M costs are substantially allocated in proportion to the
13 allocation of plant, the allocation of plant has a large impact on the allocation of
14 O&M costs.

15 • Second, unlike meters and service line plant, this plant represents "joint use"
16 costs, meaning that multiple rate classes rely on the same plant. These costs
17 therefore generally cannot be directly assigned to the specific rate class which
18 uses the plant. Rather, the costs must be allocated using some reasonable factors
19 based on cost causation.

20 • Third, the economics literature provides little theoretical support for the allocation
21 of such costs, other than to state that the allocated costs should lie somewhere
22 between the short-run marginal cost of providing service and the standalone cost
23 of serving a particular class. These guidelines leave considerable leeway for
24 allocating electric distribution plant costs.

25 • Fourth, the various methodologies offered by cost allocation analysts produce a
26 wide range of cost allocation outcomes.

27 The debate for allocating joint use distribution plant costs generally revolves around which
28 factors best reflect "cost causation." These factors typically fall into three categories: peak

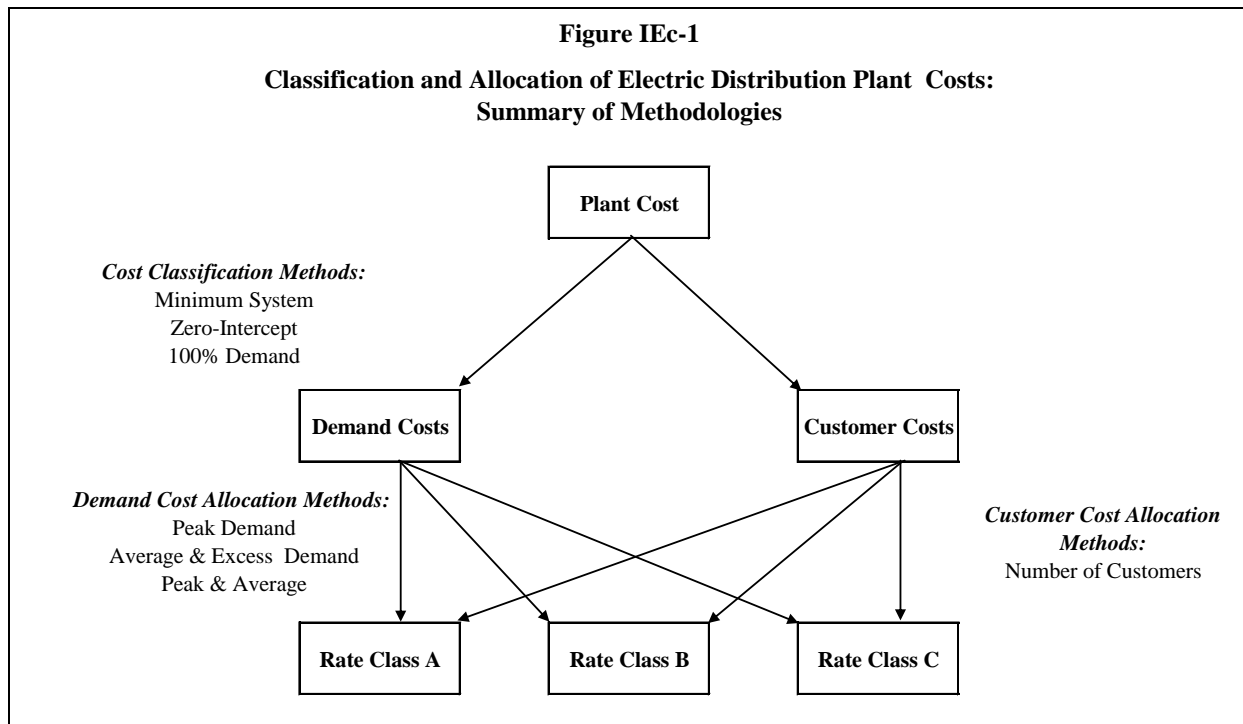
1 demand, annual energy usage (or its arithmetic equivalent, average demand), and number
2 of customers. These three “classification” factors are generally abbreviated as “demand,”
3 “energy” and “customer.”

4 **Q. Please describe the issues involved in the classification and allocation of joint-use**
5 **electric distribution plant costs.**

6 A. An electric distribution system must be designed to meet two objectives. First, the poles,
7 wires and transformers must be large enough to be able to deliver power from the
8 transmission grid to customer premises at the time when the load on each component of
9 the system is the highest. Second, the system must be designed to interconnect all the
10 EDC’s customers.

11 A two-step process is generally used to recognize how these system design considerations
12 cause costs to be incurred and to assign costs to rate classes. First, distribution plant costs
13 are *classified* into “demand-related” and “customer-related” components, to reflect both
14 the peak demand and size of system design considerations. Second, each component of
15 the classified costs is *allocated* among the various rate classes. Customer-related costs are
16 generally allocated on the basis of the number of customers, or the number of customers
17 weighted by relative cost (e.g., for meters and service drops). Demand-related costs are
18 allocated on the basis of some measure of customer peak demand.

19 Figure IEc-1 below depicts this two-step process schematically, and identifies the primary
20 methodologies used by cost allocation analysts for each step. In my experience, all of these
21 methods are in general use, although experts disagree about which method best reflects
22 cost causation.



1 **Q. Please briefly discuss the electric distribution plant cost *classification* methods shown**
 2 **in Figure IEC-1.**

3 A. The “minimum system” approach is based on the idea that the customer-related component
 4 of costs should represent those costs that would be incurred to meet minimal demand levels.
 5 It is calculated by determining what the cost of the electric distribution system would be if
 6 only minimum-sized poles, wires and transformers were installed. The ratio of the cost of
 7 this minimum system to the cost of the actual system is deemed to be the percentage of the
 8 cost of the actual system that is customer-related. All costs incurred in excess of the
 9 minimum system are considered demand-related.

10 The minimum system approach is often criticized for failing to recognize that a minimum
 11 system has some load carrying capability, and therefore overstates the customer-related
 12 component of costs. This critique is addressed by some analysts using a “zero-intercept”
 13 methodology. In a zero-intercept approach, the minimum system is based not on the cost
 14 of the actual minimum-sized plant, but on the implicit cost of plant with zero load carrying
 15 capability. The cost of a zero-capacity transformer, for example, is determined using
 16 statistical methods, which show a mathematical relationship between the cost of a
 17 transformer and its capacity.

1 A second criticism of both the minimum system and zero-intercept methods is that it is not
2 clear that the customer portion of costs, as measured in this method, does in fact vary over
3 the longer term with number of customers. There is conceptual appeal in the argument that
4 it costs less per unit of demand to attach one customer with a 100 kW load than to attach
5 20 customers with 5 kW loads, since serving the smaller customers will generally require
6 more poles, more conductor feet, and more (smaller) transformers. However, neither the
7 minimum system nor the zero-intercept method attempts to measure these scale economies
8 that are related to system topology.

9 Finally, the “100% demand” approach assumes that all distribution costs are demand-
10 related, and that there is no customer component at all. This method simply assumes that
11 there are no economies of scale related to serving larger customers on the distribution
12 system, and that all customers have the same cost per unit of peak demand.

13 **Q. What is Commission precedent in Pennsylvania for classification of joint-use**
14 **distribution plant?**

15 A. To my knowledge, Commission precedent was established in a 2012 PPL Electric base
16 rates case, in which the Commission approved the use of a “minimum system”
17 classification approach for both primary and secondary voltage distribution plant.⁴ This
18 method included an adjustment for line transformers, to reflect the load carrying capability
19 of the minimum system. This decision was based, in part, on the methodologies put
20 forward in NARUC’s 1972 Electric Utility Cost Allocation Manual (“NARUC Manual”).

21 This methodology was confirmed in the fully litigated 2018 UGI Electric base rates
22 proceeding, in which the Commission cited to its decision in PPL Electric and to the
23 NARUC Manual.⁵

24 **Q. Please address the issues relating to the *allocation* of distribution plant costs.**

⁴ Opinion and Order, Pennsylvania Public Utility Commission, Docket No. R-2012-2290597, Order Entered December 28, 2012, pages 105- 113.

⁵ Opinion and Order, Pennsylvania Public Utility Commission, Docket No. R-2017-2640058, Order Entered October 25, 2018, 159-160.

1 A. The most common methods for allocating the demand component of electric distribution
2 plant costs are either a peak demand method or the average-and-excess (“A&E”) demand
3 method. Under the peak demand method, costs are allocated based on each class’s
4 contribution to peak demand. Peak demand methods include coincident peak (“CP”), non-
5 coincident peak (“NCP”) and individual customer maximum demand (“ICMD”) methods.
6 Under the CP method, costs are allocated based on each class’s contribution to a measure
7 of the diversified system peak. That is, the peak demand for each class represents that
8 class’ share of demand at the system peak. For NCP, costs are generally allocated based
9 on the diversified sum of peak demands within each class. That is, the NCP allocator
10 reflects maximum demand for the class. Some classes may peak in the winter and some in
11 the summer, and the NCP will reflect the respective peaks, regardless of when the system
12 peak occurs. For ICMD, costs are allocated based on the undiversified sum of each
13 individual customer’s peak demand within each class.⁶ For electric utilities, generation
14 and transmission demand-related costs are more commonly allocated using a diversified
15 CP method, whereas distribution costs are more commonly allocated using NCP and ICMD
16 methods.⁷

17 The A&E method allocates demand costs based on a weighted average of “average
18 demand,” which is proportional to annual energy consumption, and “excess demand,”
19 which is the difference between peak demand and average demand. Depending on the
20 weighting method used, the A&E allocator is often similar to a peak demand allocator,
21 because it is based on an “average demand” measure and a “peak minus average demand”
22 measure.

⁶ Load diversity refers to the fact that not all customers experience their peak demand at the same time. Thus, for example, it is not necessary to build electric generation capacity sufficient to meet the sum of the individual peak demands of every single customer on the grid. These “benefits of diversity” necessarily decrease as the electric plant in service gets closer to the individual customers. While generation capacity can reflect the benefits of diversity from all customers and rate classes, local transformers and service drops must generally be sized to meet individual customer peaks.

⁷ For distribution system costs, some analysts argue that distribution costs related to peak periods should be allocated using multiple on-peak hours, and that there should be geographic differences in when these high usage hours occur. As smart meters become more prevalent, this approach becomes more technically feasible. However, because PCL&P does not have smart meters, this approach is moot for this proceeding.

1 In addition, in Pennsylvania and elsewhere, some experts advocate the use of a peak-and-
2 average (“P&A”) allocation method for demand costs. In this method, costs are allocated
3 based on a weighted average of average demands and peak demands.

4 **Q. What is the Company’s approach to cost allocation in this proceeding?**

5 A. The Company’s cost allocation methodology and the associated ACOSS are presented by
6 Mr. Howard S. Gorman at DLC Statement No. 15. The Company’s ACOSS was provided
7 in working electronic format in response to I&E-RS-2-D.

8 For cost classification, the Company applies a minimum system analysis to its secondary
9 voltage plant, and it adjusts the demand allocator for line transformers to reflect the peak
10 load carrying capability of the minimum system. For the primary voltage system, which
11 represents the vast majority of distribution plant costs, the Company uses a 100 percent
12 demand classification approach.

13 For cost allocation purposes, the Company generally relies on NCP demand allocators. In
14 so doing, however, the Company segregates its system not only into primary and secondary
15 voltage categories (which is standard practice), but also into network and non-network
16 categories. It also segregates its underground systems into non-network, radial, and
17 underground residential development (“URD”) systems. The Company develops separate
18 NCP allocators, generally at both primary and secondary voltage, for each of these asset
19 groupings.

20 **Q. Do you agree with the Company’s methods for joint-use distribution plant allocation?**

21 A. I agree that distribution plant costs, particularly secondary voltage distribution plant,
22 should have both a customer and a demand component, for the cost causation reasons
23 discussed earlier, and based on Commission precedent. However, both traditional industry
24 practice and relatively recent Commission decisions imply that primary system costs
25 should also include both a customer component and a demand component.⁸ The Company,
26 however, classifies all primary system costs as 100 percent demand-related, and thus is
27 inconsistent with Commission precedent.

⁸ Regarding Commission precedent, the example of PPL Electric is discussed in detail below.

1 As a conceptual matter, I prefer the use of a zero-intercept approach to the minimum system
2 approach for distribution plant cost classification, because the zero-intercept approach
3 addresses the problem of the load-carrying capability of the minimum system. However,
4 because the zero-intercept approach for an EDC is more complicated, more data intensive
5 and sometimes more subjective than a minimum system analysis, the minimum system
6 approach is often preferred. Moreover, Commission precedent supports use of the
7 minimum system method. Thus, I do not object to the use of a minimum system method
8 in this proceeding.

9 I also agree that a peak demand method is appropriate for allocating the demand-related
10 portion of distribution plant costs. An electric distribution system must be sized to meet
11 peak demands, or customers will see their electric use constrained during peak periods. I
12 also agree that DLC's use of the class NCP allocator for primary system distribution costs
13 is consistent with industry practice, and it reflects a measure of the load diversity that the
14 electric distribution system experiences at primary voltage.⁹

15 However, at the secondary voltage level, there are few benefits of load diversity for poles,
16 conductors and transformers. These assets must generally be sized to meet the peak
17 demands of a very few customers within a narrow geographic area. Thus, a better allocator
18 would be a sum of individual customer peaks allocator.

19 **Q. Are DLC's cost classification methods consistent with the practices of other**
20 **Pennsylvania EDCs and industry practice?**

21 A. While I do not believe that the Company's methods are outside the range of industry
22 practice, a reasonable case can be made that some component of primary system plant
23 should be classified as customer-related, rather than classifying all primary system plant as

⁹ As a theoretical matter, the NCP is not well justified. Plant assets that are located near customers must be sized to meet the individual customer peaks for customers in that geographic area, not the diversified sum of class peaks. Plant assets that are "deeper" in the system, notably substations, must be sized to meet the diversified demand of all customers "downstream" from those assets, from all classes, not from a single class. Thus, a cost-based allocation approach should be more reflective of coincident peak ("CP") demands for deep system assets, and sum of individual customer demands ("ICMD") for local assets. Nevertheless, using the NCP allocator is traditional and widespread, perhaps because it is something of a compromise between the two alternatives.

1 demand-related. In that respect, my experience in Pennsylvania EDC cost allocation is as
2 follows:

3 For many years, PPL Electric used an approach that is conceptually similar to that offered
4 by the Company in this proceeding, in that it used 100 percent demand classification for
5 its primary system and a minimum system approach for secondary distribution plant.
6 However, PPL Electric modified its method to include a customer component for its
7 primary distribution system (excluding substations). The Commission explicitly approved
8 the revised method in December 2012.¹⁰

9 In addition, the FirstEnergy EDCs use a minimum system methodology for distribution
10 plant cost classification (excluding substations), applying the analysis to both primary and
11 secondary systems.¹¹

12 Finally, the Commission has recently approved the classification approach used at UGI
13 Electric, which incorporates a customer classification for both primary and secondary
14 voltage systems.¹²

15 A comparison of classification parameters for the various Pennsylvania EDCs in which I
16 have submitted testimony is shown in RDK WP1, “Classification” worksheet.

17 Moreover, the NARUC manual for electric cost allocation specifies that distribution plant
18 costs have both a demand and a customer component, and it identifies the minimum system
19 approach as one of the standard methods. It indicates that the minimum system should be
20 applied to both primary and secondary distribution plant (excluding substations). The
21 manual further supports the use of NCP and individual customer demands as allocation

¹⁰ Opinion and Order, Pennsylvania Public Utility Commission, Docket No. R-2012-2290597, Order Entered December 28, 2012, pages 105-113.

¹¹ OSBA Statement No. 1, Docket No. R-2016-2537349 et al., pages 9-15.

¹² Opinion and Order, Pennsylvania Public Utility Commission, Docket No. R-2017-2640058, Order Entered October 25, 2018, 159-160.

1 factors for distribution demand-related costs.¹³ The Commission has cited to the NARUC
2 Manual in support of its decisions in PPL Electric and UGI Electric.

3 **Q. Have you developed your own version of an ACOSS?**

4 A. The Company's ACOSS model in this proceeding is unusually complex, and it cannot
5 easily be modified to reflect alternative classification of primary system assets. I have
6 therefore developed a simpler working spreadsheet model that approximates the results of
7 the Company's model, which I have simulated to reflect the changes I propose. Due to the
8 complexity of the Company's model, my version is a reasonable approximation to the
9 Company's model, rather than an exact replication.

10 **Q. Do you have any significant methodological or numerical concerns with the**
11 **Company's ACOSS?**

12 A. As detailed further below, I recommend that the following modifications be made to the
13 Company's ACOSS methodology:

14 1. First, the Company's methodology is not consistent with both Commission
15 precedent and the NARUC Manual regarding the classification of primary voltage
16 system joint-use plant.

17 2. Second, the Company appears to inequitably double-count non-residential loads in
18 allocating overhead conductors and underground conductors/conduit. Non-residential
19 loads are assigned a full share of all overhead and underground plant, while residential
20 customers are assigned a disproportionately small share of underground plant.

21 **Q. How have you addressed the classification of primary voltage system plant?**

22 A. At this writing, I do not have sufficient information to derive the minimum system
23 classification parameters for distribution plant. Based on my review of primary
24 distribution plant classification at other Pennsylvania EDCs, I conclude that the customer
25 portion of primary system costs is generally modestly lower than for secondary system
26 plant. As a reasonable but conservative adjustment, I have therefore classified DLC's

¹³ "Electric Utility Cost Allocation Manual," National Association of Regulatory Utility Commissioners, January 1992, pages 86-92, and 96-97.

1 primary distribution plant with one-half the customer component of the secondary
2 distribution plant. Thus, for example, where DLC classifies secondary underground
3 conductors/conduit as 44 percent customer-related, I classify the primary underground
4 system as 22 percent customer-related. I expect that a detailed minimum system evaluation
5 of the primary voltage system would produce higher “customer components” for plant
6 costs, based on the results of other Pennsylvania EDCs.

7 **Q. Please address the issue of double-counting non-residential customer demands for**
8 **allocating overhead and underground assets.**

9 A. As I indicated earlier, the Company takes the approach of developing separate allocators
10 for its underground conductors and conduit, ostensibly to reflect the specific usage for
11 those assets. While this effort to more precisely allocate these specific costs is
12 commendable, it must be undertaken in a careful and consistent manner. In particular, it
13 must be recognized that the underground assets serve to reduce the need for poles and
14 overhead conductors. Thus, the allocation factors for the poles and overhead conductors
15 should be adjusted to reflect the fact that some load is served through the underground
16 assets. Because DLC does not make such an adjustment, non-residential customers are
17 effectively charged a full share of the costs for both underground and overhead assets,
18 while residential customers are not.¹⁴

19 As an illustration, Table IEc-1 below compares the peak demands used to allocate primary
20 voltage overhead and underground assets for the RS class and the GM< 25 class. As
21 shown, the Company’s allocation method implicitly assumes that the entire GM<25 load
22 is served by underground facilities, while only about 14 percent of the RS load is so served.
23 However, the Company also assumes that the entire load for both RS and GM<25 load is
24 served from the overhead facilities. While DLC implicitly double-counts the loads for both
25 classes, the double-counting is far greater for the non-residential classes than for the
26 residential classes. This unusual approach to cost allocation produces the unusual result

¹⁴ This problem does not appear to apply to the Company’s split of costs between “network” and “non-network” cost categories, where both the costs and the allocators are demarcated between the two systems. In addition, this problem does not appear to customer counts for underground assets, where the Company appears to apply a full share to the residential class. However, the Company appears to double-count demands when allocating overhead and underground demand-related costs.

1 that while Rate RS represents over 41 percent of class primary voltage non-coincident peak
 2 demand, it is allocated only 31 percent of primary voltage system costs. Similarly, the
 3 primary system costs allocated to non-residential classes tend to be 15 to 40 percent higher
 4 than those classes' respective share of NCP demand.

Table IEC-1		
DLC Distribution Allocation Factors		
	RS	GM<25
Total Primary NCP (kW)	1,153	153
DLC Allocator for Poles and OH (kW)	1,153	153
Percent OH Allocated	100%	100%
Sum of DLC Allocators for UG (kW)	159	153
Percent UG Allocated	14%	100%
Source: RDK WP1 "Allocators" tab.		

5 **Q. How did you adjust for this double-counting?**

6 A. At this writing, I do not have sufficient information to correct DLC's allocation factors for
 7 both overhead and underground assets to eliminate inappropriate double-counting. I
 8 therefore employed a simple and consistent approach, in which both overhead and
 9 underground assets are allocated using the same NCP demand allocators. My approach is
 10 consistent with the practice of other Pennsylvania EDCs, which has generally been
 11 approved by the Commission.

12 **Q. Did you make any other modifications to the Company's ACOSS methodology?**

13 A. The Company's ACOSS classifies certain costs as customer-related that are more
 14 reasonably reflected as demand-related or energy-related. First, the Company incurs
 15 uncollectibles costs associated with non-payment of customer bills, which it classifies as
 16 100 percent customer-related. Second, the Company classifies costs for its various social
 17 benefits programs as entirely customer-related, such as the various EV program costs.

18 In general, the Commission's policy in Pennsylvania for costs that are not directly related
 19 to the specific ratepayers who must pay for those costs is to recover those costs through
 20 energy (or volumetric) charges. In particular, costs for universal service programs are

generally recovered in energy charges. Similarly, the subsidy costs for energy efficiency and conservation (“EE&C”) programs are similarly recovered in energy charges.

Therefore, to avoid distorting the cost basis for customer charges, I have modified the Company’s classification method to treat these costs (where I can identify them) as energy related in my ACOSS. Note that I have not changed the allocation methodology – I have simply reclassified the costs for rate design purposes.

Q. What are the results of your alternative ACOSS simulation?

A. Table IEc-2 below shows class rates of return at present rates for both my near-replication of the Company’s ACOSS and my alternative simulation. As shown, the changes that I incorporated into my analysis serve to increase costs to the classes with smaller customers (residential and GS), while reducing allocated costs for larger customers.

Table IEc-2 Comparative Cost Allocation Results Class Rates of Return at Present Rates		
Class	DLC	RDK
RS	5.4%	2.6%
RH	2.6%	1.2%
RA	3.4%	1.5%
GS	5.7%	2.1%
GM<25	6.9%	9.2%
GM>25	4.7%	10.2%
GMH<25	5.5%	6.5%
GMH>25	3.2%	7.6%
GL	6.1%	12.6%
GLH	2.7%	6.2%
L	5.2%	12.7%
HVPS	782.7%	671.6%
SE	11.5%	22.7%
SL	15.1%	16.4%
UMS	2.4%	-1.8%
System	5.4%	5.4%
Source: RDK WP1, RDK WP2		

1 **4. Revenue Allocation**

2 **Q. What is revenue allocation?**

3 A. Revenue allocation is the assignment of the dollar net increase or decrease to each of the
4 Company's rate classes in a base rates proceeding. In contrast, *rate design* determines how
5 the allocated revenue is recovered from individual ratepayers within each class. From a
6 cost recovery standpoint, revenue allocation addresses *inter-class* cross-subsidization
7 issues, while rate design addresses *intra-class* cross-subsidization issues.

8 **Q. What are the primary economic and regulatory criteria for revenue allocation?**

9 A. In general, allocated cost is the primary criterion used by regulators in the revenue
10 allocation process. Most utilities and regulators adopt a policy in a base rates proceeding
11 of attempting to move revenues more into line with allocated costs by varying the
12 magnitude of the rate increases for the individual classes. However, regulators also subject
13 the rate increases to other non-cost criteria of ratemaking. Of the traditional rate design
14 criteria, the most common non-cost considerations in the revenue allocation process are:

- 15 • the *gradualism* principle (or avoidance of “rate shock”), in which large rate
16 increases for individual customers or classes of customers are avoided; and
- 17 • the *value of service* principle, which is often used to mitigate rate increases
18 for customers or customer classes with relatively price-elastic demand.¹⁵

19 Using these criteria, the utility will develop a proposal for assigning the increase in the
20 revenue requirement among the classes that reflects both cost and non-cost considerations.
21 With this proposal, the ACOSS can be simulated at both present and proposed rates to
22 evaluate the magnitude of “progress” has been made toward the policy of achieving cost-
23 based rates.

24 **Q. What is the Commission's standard for measuring progress toward cost-based rates?**

¹⁵ See, for example, Principles of Public Utility Rates, Second Edition, Bonbright, Danielsens, Kamerschen, 1988, pages 383 to 387. Note that the criteria in this text apply to the overall development of a utility rate structure. The criteria that I discuss in this testimony are those that apply to the revenue allocation portion of the process, which is only one aspect of the overall development of utility rates.

1 A. For many years, participants in Pennsylvania utility regulatory proceedings have relied on
2 a metric known as the “indexed rate of return,” or “relative rate of return.” DLC Witness
3 Ogden confirms that the Company relies on this flawed metric.

4 The indexed rate of return metric is derived as the ratio of the class rate of return on rate
5 base to the systemwide average return on rate base. Thus, for example, if a rate class is
6 earning 2 percent on rate base at current rates and the system average is 5 percent, the
7 indexed rate of return metric is $2.0/5.0 = 0.4$. The metric correctly indicates that this class
8 is under-recovering costs. As a measure of progress, however, the indexed rate of return
9 metric overstates progress toward cost-based rates, and it can falsely show progress when
10 none exists. For example, the indexed rate of return metric will show that an across-the-
11 board rate increase results in progress toward cost-based rates, when in fact such an
12 increase necessarily produces zero progress toward cost-based rates.¹⁶ Unless there is some
13 radical shift in utility cost structure, assigning the same percentage increase to each class
14 in each base rate proceeding simply cannot move rates more into line with allocated cost,
15 as a matter of simple arithmetic. As such, the indexed rate of return metric should not be
16 used to indicate whether a proposed revenue allocation scheme results in any progress
17 toward cost-based rates.

18 The Commission has recently addressed this concern. In an order involving the City of
19 Bethlehem – Water Department, the Commission concluded:

20 "As noted by the OSBA, the proper yardstick for measuring the degree of
21 movement toward cost of service is the change in the absolute level of class
22 subsidies at present and proposed rates."¹⁷

23 I have therefore relied on the dollar value of subsidies at present and proposed rates in
24 evaluating the progress toward cost-based rates for revenue allocation in this proceeding.

25 In so doing, however, I note that this metric can also be misleading.

¹⁶ See RDK WP1 “Indexed RoR” worksheet for a numerical example demonstrating this result.

¹⁷ *Pennsylvania Public Utility Commission v. City of Bethlehem -- Water Department*, Docket No. R-2020-3020256, Order entered April 15, 2021, at 36.

1 As a general rule, if a rate class that is under-recovering costs at present rates is assigned
2 an above-average system increase, the revenues for that class are moving more into line
3 with allocated cost. However, the subsidy metric used by the Commission may indicate
4 that the class subsidy in dollar terms is increasing, even if a class that is currently receiving
5 a subsidy is assigned an above-average increase.¹⁸ That is, the subsidy to the class in
6 question may increase in dollar terms, even if it is decreasing as a percentage of base rates.

7 Thus, for this proceeding, I considered both dollar value of cross subsidies and the revenue-
8 cost (“R-C”) ratio metric. The “R-C” metric represents (unsurprisingly) the ratio of class
9 revenues to class allocated costs, and thus implicitly recognizes the subsidy as a percentage
10 of the class revenue requirement.

11 **Q. Is the Company’s proposed revenue allocation consistent with its own ACOSS?**

12 A. The Company’s revenue allocation proposal is reasonably consistent with its ACOSS
13 results, although it fails to make progress toward cost-based rates for a number of non-
14 residential rate classes. In particular, the GM<25, GMH<25 and GL classes all exhibit
15 class rates of return at present rates that are a little above system-average, but the Company
16 assigns rate increases to those classes that are also moderately above system average. This
17 results in increasing subsidies and R-C ratios moving a little further away from unity for
18 those classes. On a quantitative basis, however, the changes needed to address these
19 inequities are relatively modest, involving a reduction in the proposed increases for these
20 classes of less than 2 percent.

21 **Q. Does your alternative cost allocation analysis imply an alternative revenue allocation?**

22 A. Yes. To develop my alternative revenue allocation proposal, I began by calculating the
23 rate change needed to bring proposed revenues into line with allocated cost using my
24 alternative ACOSS. I then made two adjustments to those values. First, to reflect concerns
25 regarding rate gradualism, I limited the maximum increase to 1.5 times system average.
26 DLC’s proposed system average is 15.6 percent, and thus the maximum increase is set at
27 23.4 percent. Second, I set the minimum rate change at zero, to avoid rate reductions.

¹⁸ See RDK WP1, “Indexed RoR” worksheet.

1 The net effect of these adjustments is a revenue shortfall of \$5.5 million. I then reallocated
 2 that shortfall to those classes that are not capped by the 1.5X rule. In this way, all other
 3 classes contribute to the subsidy needed for the constrained classes. The details for these
 4 calculations are provided in RDK WP2 “Summary” worksheet. My alternative revenue
 5 allocation is shown in Table IEc-3 below, compared to the Company’s filed proposal.

Table IEc-3				
Comparative Revenue Allocation Proposals				
Class	DLC		RDK	
	\$000	%	\$000	%
RS	\$41,913	14.3%	\$68,297	23.4%
RH	\$6,316	22.5%	\$6,554	23.4%
RA	\$728	22.5%	\$755	23.4%
GS	\$1,658	14.2%	\$2,729	23.4%
GM<25	\$5,222	15.7%	\$861	2.6%
GM>25	\$12,011	17.3%	\$1,804	2.6%
GMH<25	\$583	16.2%	\$427	12.1%
GMH>25	\$1,311	22.3%	\$365	6.6%
GL	\$10,152	15.8%	\$1,673	2.6%
GLH	\$1,620	22.5%	\$1,256	17.8%
L	\$3,408	18.3%	\$485	2.6%
HVPS	\$0	0.0%	\$8	2.6%
SE	\$80	5.4%	\$39	2.6%
SL	\$521	5.2%	\$259	2.6%
UMS	\$251	22.5%	\$261	23.4%
System	\$85,773	15.6%	\$85,773	15.6%
Source: RDK WP1, RDK WP2				

1 **5. Rate Design Issues**

2 **Q. What is the Company’s general approach to rate design for the non-residential rate**
3 **classes in this proceeding?**

4 A. For the smallest customers in the Rate GS class, the Company proposes a relatively large
5 increase in the customer charge (30.0 percent), and a more modest increase to the energy
6 charge (14.9 percent).

7 For the GM, GMH, GL and GLH classes, the Company generally proposes a lower-than-
8 average increase to the customer charge, moderate increases to demand charges and the
9 highest increases to the energy charges. The higher increase for the energy charge is
10 primarily related to “rolling in” the current DSIC charges. As such, the Company is not
11 proposing any major differences compared to the rates that are currently in place. The
12 Company’s rate design for all classes is presented in RDK WP1 “RevPrf DLC” worksheet.

13 **Q. Please describe your assessment of the GS tariff.**

14 A. Like most other Pennsylvania EDCs, DLC’s tariff charges for the smallest general service
15 customers consist of a flat monthly customer charge and a per-kWh energy charge. A
16 comparison of the Company’s proposal with other Pennsylvania EDCs is shown in Table
17 IEc-4 below.

Table IEC-4 Pennsylvania EDC Tariff Rates for Small General Service Customers			
	Rate	Customer Charge (\$/month)	Energy Charge (cents/kWh)
DLC Current	GS	\$12.50	7.331
DLC Proposed	GS	\$16.25	8.424
UGI Electric*	GS-1	\$9.83	4.311
PPL Electric	GS-1	\$22.00	**
Metropolitan Edison	GS-Small	\$21.88	4.069
Pennsylvania Electric	GS-Small	\$18.33	3.624
Penn Power	GS-Small	\$24.89	3.623
West Penn Power	Rate 20 GS	\$9.52	3.529
PECO	GS***	\$14.49	4.78
* Does not reflect current base rate case. ** PPL Electric applies a \$4.361 per kW demand charge, as all customers have smart meters. *** Single-phase service without demand measurement; most PECO GS customers have demand meters, with demand charge of \$8.36/kW. Source: Utility tariffs posted on websites			

1 As shown, the major Pennsylvania EDCs have monthly customer charges in excess of the
 2 DLC proposal, and most have materially lower energy charges.

3 In terms of allocated cost, I rely on a cost metric including all customer-related costs in the
 4 Company's ACOSS and my alternative ACOSS (which excludes uncollectibles and social
 5 program costs). The Company's ACOSS shows a cost basis of about \$29 per customer per
 6 month, while my alternative ACOSS implies costs of \$39 per customer per month,
 7 reflecting the alternative classification of primary voltage system costs. Regardless of the
 8 ACOSS used, the Company's proposed customer charge is well below allocated cost.

9 Finally, it is likely that there are a significant number of GS customers that are not, in fact,
 10 small businesses. Each of these customers is attracting customer costs to the class of some
 11 \$30 to \$40 per month in the ACOSS, but providing only a small fraction of that amount in
 12 the monthly customer charge.

1 **Q. What, then, do you recommend with respect to Rate GS tariff design?**

2 A. I agree with the Company's proposal to apply a substantial increase to the GS-1 customer
3 charge, and I conclude that the Company has reasonably reflected rate gradualism
4 considerations in doing so. If the Company's overall increase is scaled back, I believe that
5 the scaleback should be applied primarily to the energy charge, thereby retaining the
6 Company's customer charge proposal.

7 **Q. Please provide any specific comments that you have regarding rate design for the two**
8 **Rate GM sub-classes.**

9 A. The Company's rate design for GM customers consists of a customer charge, an energy
10 charge, and a demand charge for demand above 5 kW. In evaluating the magnitude of the
11 customer charge, it therefore must be recognized that it is implicitly recovering not only
12 customer costs, but demand costs for the first 5 kW.

13 Regarding the customer charge, the Company proposes to set the customer charge for
14 GM<25 at \$63 per month, and for GM>=25 at \$76 per month. However, because the
15 proposed demand charge is \$7.89 per kW, and most bills presumably have billing demand
16 above 5 kW, the implied customer-related costs being recovered in the customer charge
17 are \$23.55 and \$35.55 per month for GM<25 and GM>=25 respectively. These values
18 are well below the customer cost values in both the Company's ACOSS and my own,
19 which are \$55 and \$193 for the Company's ACOSS, and \$66 and \$200 for my ACOSS.¹⁹

20 Thus, the Company's rate design for the GM class does not set the customer charge unduly
21 high. The customer charge for GM>=25 is surprisingly low when compared to allocated
22 cost.

23 Regarding the energy and demand charges, it is unclear how the Company derived the
24 proposed values, other than through inertia. In the ACOSS, costs not classified as
25 customer-related are almost entirely demand-related, which suggests that the demand
26 charge should dominate cost recovery. At present rates, the demand charges do generate

¹⁹ For heterogeneous classes like GM and even GM<25, the customer charge should reflect the customer-related costs for the smallest customers within the class. While the customer cost for small customers is not easily derived from my ACOSS, that cost should lie between \$39 and \$66 for GM<25, and between \$66 and \$200 for GM>=25. These values still lie well below the Company's implied customer charge for these classes.

1 more revenue than the energy charges, but by only a relatively small amount for the
2 GM<25 class. The higher proposed percentage increases for the energy charge have the
3 effect of increasing the importance of energy charges on bills compared to the result of the
4 last base rate case, which does not appear to be consistent with the Company's ACOSS
5 philosophy.

6 Including an energy charge in the tariff design may be an effort to protect very low load
7 factor customers, particularly those with peak demands that do not coincide with system or
8 class peaks, from the high bills that would result from shifting cost recovery from energy
9 charges to demand charges.

10 Thus, at this time, I recommend that the Company explain its rate design philosophy for
11 the GM classes, and explain whether it would be more appropriate to increase the relative
12 importance of customer and demand charges.

13 **Q. Please address the Company's rate design proposal for Rate GL.**

14 A. Rate GL base rates are essentially recovered through a two-block declining block demand
15 charge. The first block is technically a minimum charge for all load up to 300 kW of billing
16 demand. Because the minimum customer size for Rate GL is 300 kW, it is likely that most
17 monthly billing demands exceed 300 kW (although actual billed demand is not currently
18 available to me). The current rates are \$10.60 per kW for that first 300 kW block, and
19 \$8.41 for all kW in excess of 300. The Company proposes to increase those to \$12.25 and
20 \$10.66, increases of 15.6 percent and 26.8 percent respectively. In effect, larger customers
21 in the class will experience higher rate increases.

22 The premium for the first block demand charge is presumably designed to recover
23 customer-related costs, because the tariff has no customer charge. The current differential
24 is \$2.19 per kW, thereby implying a customer charge of about \$657 for the first 300 kw.
25 With the proposed increase, the premium shrinks to \$1.59 per kW, or \$477 per month.
26 Both the Company's ACOSS and my ACOSS show customer-related costs for Rate GL of
27 about \$390 per month. I therefore conclude that the Company's proposal to shrink the
28 implicit demand charge differential is directionally consistent with costs and reasonable.

29 **Q. Do you have any further comments on tariff design for Rates GMH and GLH?**

1 A. The Company’s rate design for these classes is essentially to set the summer rates equal to
2 those for the corresponding regular rate class (GM and GL), and to set the winter energy
3 charge at the level needed to meet the revenue target for the class. As I indicated earlier,
4 the Company appears to have an inconsistency between its costing philosophy and its rate
5 design philosophy for these classes, that should be explained. If, in fact, the Company
6 believes that distribution costs to serve these classes are determined by winter peaks, the
7 Company should consider adopting a winter demand charge for these classes, or simply
8 phasing them out.

9 As I indicated earlier, the Company should explain its thinking in this respect.

10 **6. General Service Initiatives**

11 **Q. Please describe the initiatives proposed by the Company for general service**
12 **customers in this proceeding.**

13 A. The Company has proposed three initiatives to address perceived problems faced by certain
14 general service customers in its service territory. To the best of my knowledge, the
15 Company proposes that the shareholder contribution for these efforts be zero, and the
16 ratepayer contribution (if any) is 100 percent. In effect, the Company has proposed that
17 its general service customers subsidize efforts to assist some general service customers
18 who were negatively impacted by the pandemic and other economic events.

19 The proposals include:

- 20 1. Rider 19: Community Development for New Load/New Community Development
21 Rider
- 22 2. Rider 25: New Business Stimulus
- 23 3. Rider 26: Crisis Recovery Program

24 **Q. In general, do you recommend that the Commission adopt these proposals?**

25 A. I do not. Electric distribution utilities should focus on providing safe and reliable service
26 at reasonable and non-discriminatory rates. The Company’s proposals, while presumably
27 well-intentioned, represent an attempted expansion of the utility’s role in taxing some
28 customers for the benefit of other customers, in an effort to achieve economic and social

1 policy goals. In effect, the utility is usurping the proper role of government, presumably
2 because the utility has determined that the government's efforts are ineffective or
3 insufficient. Moreover, because the utility is not offering any of its own funds in support
4 of these initiatives, it is assuming both taxing and spending authority to achieve these ends.

5 While utilities sometimes have such a role, it is typically mandated by legislation, such as
6 for residential universal service programs and energy efficiency/conservation programs in
7 Pennsylvania. In both cases, the legislature explicitly assigned the task for those
8 redistributive efforts to the utility. For the general service programs proposed by DLC in
9 this proceeding, I do not believe that such mandates exist.

10 I acknowledge that, in making these proposals, the Company has put strict time limits on
11 all of the programs, so there is some hope that this is not the start of a large cross-subsidy
12 program for non-residential customers. However, approval of these programs may simply
13 mean that new and more expensive programs will eventually be offered, which will evolve
14 and grow, to the point where the tariff impact on those customers who do not benefit from
15 the programs becomes material. Doubtless the utilities will always find some specific
16 circumstances that justify taking dollars from some customers and giving those dollars to
17 other customers (while patting themselves on the back).

18 Nevertheless, I recognize that I have an old-fashioned regulatory philosophy (in which
19 ratepayers pay for what they get), which may be out of touch with today's environment.
20 The balance of my review of these proposals represents my effort to identify the advantages
21 and disadvantages of each proposal.

22 **Q. Please describe the New Community Development Rider ("NCDR") program as**
23 **proposed by the Company.**

24 A. The NCDR is presented by DLC witness Margot Everett (Statement No. 17) and is shown
25 in the proposed tariff at Rider 19. The program essentially offers a temporary reduction
26 in non-summer base distribution demand charges for both new customers and increased
27 loads for existing customers. The minimum load increase is 10 kW. Customers in Rates
28 GM<25, GM>25, GL and L are eligible to participate; customers in Rate GMH and GLH
29 are apparently ineligible. Discounts to the demand charges begin at 25 percent in 2022 and

1 decline by 500 basis points each year, zeroing out in 2027. The Company offers no
2 projections regarding net changes in load and net changes in distribution rate revenues.²⁰

3 Witness Everett indicates that the objective of the program is “. . . to provide an incentive
4 to attract non-residential customers with beneficial load profiles to the Company’s service
5 territory,” which would appear to include new customers, customers increasing their loads,
6 and customers who had shut down operations during the pandemic. The Company is
7 apparently attempting to achieve this goal by setting the discount for customers with
8 relatively lower summer peaks is, on average, higher than the discount for strongly
9 summer-peaking customers.

10 As a technical matter, it is not entirely clear how the incremental demand subject to the
11 rate discount will be determined for customers who qualify as a result of a forecast increase
12 in load.

13 The Company also indicates that customers who take advantage of this discount may not
14 avail themselves of other rate discounts in the tariff.

15 **Q. Please provide your evaluation of this proposal.**

16 A. The obvious downside to this proposal is that Rider 19 is inequitable and discriminatory,
17 in that new loads/customers are eligible for discounted rates whereas existing customers
18 receiving the identical service are not. Moreover, the Company offers no evidence that the
19 program will actually be effective in attracting net new load, rather than simply providing
20 an opportunity for increased loads to free ride on the discount. Finally, any incremental
21 revenues associated with attracting new (non-free-riding) loads appear to accrue entirely
22 to DLC shareholders.

²⁰ I acknowledge that making such estimates would be difficult, in that it would require the Company to identify not only the magnitude of participating loads, but also the “free-rider” eligible loads that the Company would have experienced without the proposed program.

1 The mitigating factors are (a) any (non-free-riding) new loads will eventually benefit
2 ratepayers in general, (b) the discounts decline and disappear over time,²¹ and (c) it does
3 not appear that DLC is requiring any explicit contribution from existing ratepayers to fund
4 this effort.

5 Thus, if the Commission concludes that the proposal is not unduly discriminatory, the
6 Commission should recognize that the benefits of this proposal will flow primarily to DLC
7 shareholders, at least until the next base rates case. Thus, if the Commission sees merit in
8 this proposal, I recommend that the Commission make it clear that the cost for any rate
9 discounts that would remain in effect for the next base rates case be absorbed by the
10 Company. That is, these discounts should not be recognized as an offset to “present rates”
11 revenue in DLC’s next base rates case, if the FPPTY for that case is before 2027.

12 **Q. Please describe the Company’s New Business Stimulus Rider (“NBSR”).**

13 A. The NBSR is two-year rate discount for new loads at “Vacant Retail Storefronts” located
14 in certain specific geographic areas. The proposed discount is 30 percent of “variable base
15 distribution charges,” a term that does not appear to be defined in the tariff but which DLC
16 Witness Kubiak indicates means distribution demand and energy charges. Eligibility as
17 defined in the proposed tariff page is limited to “new small and medium business
18 customers” (neither term appears to be defined in the tariff), although the rider matrix
19 indicates that the eligible classes are GS/GM and GMH (which may include non-business
20 customers). The specific geographical areas of eligibility are Local Neighborhood
21 Commercial (“LNC”) districts, Qualified Low-Income Census Tracts (“QCT”) and
22 Neighborhood Assistance Program (“NAP”) districts.

23 The intent of the program is to foster redevelopment of business activity in economically
24 disadvantaged neighborhoods, as a response to the business closures from the pandemic.

25 In support of the program, the Company indicates that 70 percent of survey respondents
26 believed that lower rates would be valuable to new businesses.

²¹ In particular, I note that the proposed structure avoids the primary problem with some historical economic development rates in Pennsylvania, namely those in which discounts became permanently entrenched and all but impossible to remove.

1 Witness Kubiak indicates that the cost of the discounts will be \$276,000, based on 540 new
2 customers over a two-year period. Amortized over three years, the annual cost is \$92,000.

3 **Q. Please provide your evaluation of the proposed NBSR/Rider No. 25.**

4 A. Like the NCDR, the NBSR is inequitable and discriminatory, in that it results in different
5 rates for new and existing customers who obtain the same service. In addition, I note that
6 the NBSR would appear to depart from the “postage-stamp” principle that generally applies
7 to ratemaking in Pennsylvania, in which rates are uniform within the utility’s service
8 territory.

9 In addition, I am advised by OSBA counsel that the Company’s proposal may be in legal
10 conflict with Section 1304 of the Public Utility Code. OSBA counsel advises that it is
11 conducting a legal review of this (and similar proposals elsewhere) and will present its
12 evaluation in its briefs in this matter.

13 The mitigating factors related to this proposal are (a) it is a well-intentioned effort to
14 redevelop disadvantaged areas (although not so well-intentioned that DLC volunteered any
15 shareholder funds), (b) any load growth may eventually benefit other ratepayers, and (c)
16 the cost impact is relatively small.

17 **Q. Please describe Rider No. 26, the Crisis Recovery Program (“CRP”).**

18 A. The CRP is a payment arrangement program for non-residential customers who
19 accumulated an overdue balance during the pandemic. Eligible customers are those in
20 GS/GM and GMH who did not have an overdue balance at February 29, 2020 but currently
21 have a balance, and who can demonstrate that they were impacted by COVID-19. If
22 eligible, customers would have their delinquent balances frozen for six months at the time
23 they are enrolled, and 25 percent of the frozen balance would be forgiven if the customer
24 pays its regular bills in full during the six-month period. The 75 percent balance for the
25 delinquent amount would then be recovered in an 18-month payment arrangement. The
26 window for enrolling in the program would close June 30, 2022.

27 The Company estimates the cost for the program at \$423,000, amortized over three years
28 for an annual cost of \$141,000.

1 **Q. Please provide your evaluation of the CRP.**

2 A. The potential benefits of the program relate to the potential for these discounts to allow
3 some customers to stay in business, thereby providing obvious benefits to those participants
4 but also to the utility and eventually to other ratepayers from the increased loads. The
5 program may also benefit the utility by reducing account balances that would otherwise be
6 written off. It is certainly possible that the improved collection rate associated with the
7 payment arrangements will offset the cost of forgiveness. (To my knowledge, DLC has
8 not included this offset in its cost calculations.)

9 Because this program applies to all customers within the eligible classes, it is not as
10 obviously discriminatory as the other programs. However, it may be seen as inequitable,
11 as customers who have responsibly paid their bills through the pandemic, especially those
12 who were also negatively impacted by the pandemic, are picking up part of the bill for
13 those who did not. In addition, it would appear to be inequitable that Company
14 shareholders make no contribution to the cost for this program, while potentially benefiting
15 from improved collection rates.

16 Like the other programs, this one is limited to a short time frame and has a relatively low
17 cost. As such, it does not have long-term negative implications.

18 **7. EV Charging Initiatives**

19 **Q. Please describe your understanding of the Company’s proposals for requiring its**
20 **ratepayers to invest in and subsidize the development of electric vehicle (“EV”)**
21 **charging infrastructure.**

22 A. In this filing, the Company offers four “pilot” programs designed to encourage and
23 subsidize the development of infrastructure for EV charging, specifically:

24 1. A “Public, Workplace, and MUD Make-Ready Pilot” (“M-RP);

25 2. A “Fleet Pilot;”

26 3. A “Transit Pilot;” and,

27 4. A Home Charging Pilot (“HCP”).

1 The Company also intends to spend over half a million dollars on customer awareness,
2 education and advisory services (which I believe can be described as “marketing”).

3 Total budgeted cost for these programs in 2022 is \$3.0 million in capital and \$1.4 million
4 in O&M cost. Ratepayers will be responsible for 100 percent of cost; DLC shareholders
5 will contribute zero. The anticipated benefits from the programs in the form of increased
6 electric distribution loads will initially accrue to utility shareholders but may eventually
7 offset future rates.

8 The Company indicates that these programs will (a) provide the Company with grid impact
9 data which will allow it to better plan for a transition to a market environment with wide
10 adoption of EVs; (b) leverage the Company’s position as a “trusted” source for charging
11 infrastructure; (c) allow the utility to provide new products and services (presumably with
12 financial support from the captive customer base).²²

13 **Q. What are OSBA’s policy positions regarding utility subsidies for EV charging**
14 **infrastructure?**

15 A. My understanding of OSBA’s policy positions are as follows:

16 1. The OSBA acknowledges that it is conventional wisdom that internal
17 combustion engine (“ICE”) vehicles are in the early stages of a significant
18 transition to battery-powered electric vehicles. In OSBA’s view, the timing and
19 eventual success of that transition is uncertain.

20 2. As a general rule, the OSBA believes that achieving societal benefits associated
21 with the transition away from ICE vehicles should generally be the
22 responsibility of government, not electric ratepayers, unless and until the
23 government explicitly assigns that responsibility to utility ratepayers. Raising
24 electric rates to achieve societal aims is an inequitable and regressive method
25 for funding government programs.

²² DLC Statement No. 8 at 4.

- 1 3. Successful transition to an EV-world requires that unregulated entities take
2 primary responsibility for the development of vehicle charging infrastructure.
3 Unregulated entities tend to be more innovative and nimble than utilities for
4 adapting to and accommodating market changes, and utilities are not equipped
5 to make the huge investments necessary to develop all of the necessary
6 infrastructure.
- 7 4. Permitting utilities to compete with unregulated firms on unequal terms, such
8 as through subsidies from captive ratepayers, will tend to discourage entry and
9 participation by unregulated firms and may therefore be harmful to widespread
10 development of charging infrastructure.
- 11 5. A minimum condition for subsidies for EV charging infrastructure is that
12 subsidies should only be offered where the utility demonstrates *both* that (a)
13 demand for EV charging is growing, and (b) this demand for EV charging
14 infrastructure will not be met by unregulated firms. Citing only to increased
15 demand for EVs is insufficient to justify taxing ratepayers, if the growing
16 demand can adequately be met by unsubsidized unregulated entities, or by
17 direct government intervention. Economic evaluation of these programs should
18 be based on a comparison to what development would occur without the utility
19 intervention, not by simply assuming that the effects of utility subsidies are
20 entirely incremental.
- 21 6. It is unclear that electric distribution utilities have any technological or
22 operating advantages relative to unregulated competitors for developing and
23 operating this infrastructure.
- 24 7. If the Commission deems that subsidies are appropriate to facilitate the
25 development of a nascent industry, they should be available on a competitively
26 neutral and non-discriminatory basis.
- 27 8. In general, any subsidies should be of a temporary nature, designed to address
28 specific problems associated with EV charging infrastructure development, in
29 a way that will not impose long-term burdens on ratepayers. Thus, temporary

1 rate discounts for new operations are less distortive and burdensome than large
2 capital investments that will burden ratepayer bills for a decade or more.

3 9. To the extent that the EDC can demonstrate that the usage patterns for EV
4 charging represent off-peak demand and thus contribute less to distribution
5 costs than other loads, this lower cost to serve is better addressed by adopting
6 time-of-use distribution rates which treat all off-peak loads in a non-
7 discriminatory matter, rather than subsidizing one favored industry.

8 10. To the extent that the Commission determines that ratepayer subsidized
9 investments are appropriate (which the OSBA generally opposes), any risk
10 associated with technological or operational failures should remain with EDC
11 shareholders. The EDC should indemnify ratepayers against any legal and
12 litigation liabilities associated with EV charging infrastructure that appears on
13 the Company's books.

14 As explained further below, the OSBA concludes that none of the Company's proposed
15 EV charging initiatives are consistent with this policy. In particular, the Company
16 acknowledges that all programs involve utility capital investments that will remain on the
17 utility's books for years, with full funding from ratepayers. Moreover, the OSBA does
18 not believe that there is sufficient evidence demonstrating that the demand for this charging
19 infrastructure cannot be met by unregulated entities without the need for ratepayer
20 subsidies, or that the program is not more appropriately and equitably subsidized by
21 government to achieve public policy objectives.

22 OSBA therefore recommends that the first three of the proposed EV charging pilot
23 programs be rejected. OSBA takes no position regarding the adoption of the HCP, as it
24 appears to apply only to low-income Residential customers and the costs for this program
25 are presumably assigned to and recovered from Residential customers. However, the
26 OSBA respectfully submits that the Company should indemnify its ratepayers from any
27 insurance, damages and legal costs associated with this in-home Company-owned
28 equipment. It is not reasonable to risk imposing significant legal costs on future ratepayers

1 associated with Company investment in in-home electrical equipment for which it has
2 neither a particular expertise nor reasonable control over the assets.

3 **Q. Please describe the proposed M-RP.**

4 A. As a general rule, on-site “behind-the-meter” investments in electrical equipment at the
5 customer site are the responsibility of the customer. In the M-RP, DLC proposes that it
6 (i.e., captive ratepayers) assume the responsibility for installing this equipment on
7 customer premises. This equipment would be owned by the utility, and DLC would
8 presumably absorb product liability risk for this equipment. Subsidies would be provided
9 for both Level 2 (“L2”) and direct current fast charger (“DCFC”) charging operations. As
10 I understand it, the program would apply to (a) multi-use dwellings (“MUD”), (b) non-
11 residential workplace locations, (c) public charging stations (including proprietary Tesla
12 outlets). Special efforts will be undertaken in specific geographical locations, namely
13 those designated as “Environment Justice” areas.

14 As I understand it, this proposal is reflected in a change to the Company’s tariff at page 13,
15 Section 6.1 of the rules and regulations. It is not clear to me whether there are any limits
16 on the costs associated with the make-ready infrastructure (except for rebates to L2 stations
17 in EJ areas), or whether those costs will be included in the Company’s calculation of the
18 contribution-in-aid-of-construction (“CIAC”).²³ The Company’s claimed costs for FPFTY
19 2022 are \$900,000 in capital and \$147,000 in annual O&M, based on the forecast for 12
20 L2 sites and 2 DCFC sites.

21 The Company indicates that this program is generally available on a non-discriminatory
22 basis, and thus will not discourage future investment. Of course, this is a pilot program
23 with constrained participation that may not be continued, and thus the customers who are
24 the quickest may obtain a competitive advantage.

²³ If these costs are included in the CIAC calculation, and if the CIAC calculation reasonably protects existing customers from system expansion costs related to new customers, it should be recognized that this program is not providing subsidies to new customers. In those circumstances, the OSBA’s concerns regarding this program are limited to the inequities of providing this service to only one industry, and the risk potential for the equipment on the Company’s books.

1 While the Company claims that the offer is competitively neutral, it will require that
2 eligible customers meet certain conditions that may not apply or be attractive to all
3 interested parties, notably the requirement to subscribe to charging networking services
4 and to provide the Company with charging data through a network vendor.

5 **Q. Please describe the Fleet Pilot.**

6 A. The proposed Fleet Pilot involves the Company directly investing in L2 charging
7 infrastructure for charging commercial vehicle fleets. The Company would both own and
8 maintain the electric distribution assets, the behind-the-meter “make-ready” assets, and the
9 charging stations themselves, although customers are given the option to own the charging
10 equipment. Customers are also given a menu of approved charging equipment from the
11 Company from which they can choose. For this service, the Company proposes a monthly
12 charge per charging port, in addition to the regular distribution rate for the electric service.
13 For those customers who elect to directly purchase Company-supplied chargers, a lower
14 monthly charge applies.

15 This program is set forth in proposed Tariff Rider No. 24. It is available to the first twelve
16 customers per year in Rates GS/GM, GMH, GL, GLH and L who have a fleet of at least
17 six vehicles.

18 The forecast FPFTY cost is \$729,000 in capital and \$201,000 in O&M. It is not clear
19 whether the Company has recognized revenue in its FPFTY cost claim.

20 Participating customers will be required to enter into a contract of at least 10 years, host at
21 least 4 charging ports, share charging data with DLC, and generally allow DLC reasonable
22 access to maintain its equipment.

23 It is not clear why this infrastructure cannot be provided by unregulated firms. Moreover,
24 the Company calculates that the revenues generated from charges to customers will cover
25 the full cost. However, that may not be the case for the FPFTY, as revenues appear to fall
26 short of the claimed revenue requirement for that year. Moreover, if this program can be
27 implemented at no net cost to ratepayers, there is no need to include this in the Company’s
28 regulated business, since the program should be self-sustaining.

1 The Company’s key advantage is that it faces no risk if the revenues do not materialize as
2 forecast, since the costs can always be shifted to ratepayers. Thus, the proposal is anti-
3 competitive, in that it gives DLC a significant competitive advantage vis-à-vis unregulated
4 firms for providing this infrastructure. It is therefore possible that this proposal will
5 discourage unregulated entities from pursuing this business, and therefore may serve to
6 actually delay the adoption of this technology for vehicle fleets.

7 **Q. Please describe the Transit Pilot.**

8 A. The Transit Pilot is similar to the Fleet Pilot, except that it applies only to providing
9 ratepayer-subsidized infrastructure to the Port Authority of Allegheny County.
10 Specifically, the Company will “install, own and maintain” six 150-kW DCFC charging
11 stations at the Port Authority’s East Liberty Garage. The Company proposes to include
12 \$984,000 in capital and \$100,000 in O&M expense in the revenue requirement claim to be
13 recovered from ratepayers. The charge to the Port Authority for this service appears to be
14 zero.²⁴ This program will presumably discourage unregulated entities from offering this
15 infrastructure to other government entities across the Commonwealth. Unfortunately, this
16 program has the appearances of an attempt to curry favor with local government authorities
17 at ratepayer expense, particularly since the terms are more attractive to the Port Authority
18 than they are to the other fleet operators.

19 **Q. Please describe the Home Charging Pilot (“HCP”).**

20 A. The HCP is a proposed pilot program for Company installation of L2 home charging
21 stations for residential customers. Under this program, the Company will own the L2
22 charging stations and contribute an additional \$500 toward installation (\$2,000 for low-
23 income households). The Company proposes that it will recover the direct costs from
24 monthly charges to ratepayers over a five-year period, although the overhead and
25 administrative costs will be passed on to ratepayers. The forecast FPFTY costs are
26 \$352,000 in capital and \$152,000 in annual O&M. Customers will be required to (a) enter
27 into a 5-year agreement, (b) share charging data with DLC, and (c) maintain active WiFi
28 at the service address.

²⁴ DLC Statement No. 8 at page 44.

1 I am advised by counsel that OSBA is concerned about the risks absorbed by the Company
2 associated with owning and operating in-home equipment over which it has no control, in
3 addition to the general risk associated with charging equipment with which the Company
4 has little operational experience. The OSBA respectfully submits that these risks should
5 not be passed to ratepayers and should remain the responsibility of DLC shareholders in
6 the event of accidents, damages and litigation.

7 **Q. Does this conclude your direct testimony?**

8 A. Yes, it does.

EXHIBIT IEc-1

RÉSUMÉ AND EXPERT TESTIMONY LIST

FOR

ROBERT D. KNECHT

Overview

Mr. Knecht has more than 35 years of practical economic consulting experience, focusing on the energy, utility, metals and mining industries. For the past 25 years, Mr. Knecht's practice has primarily involved providing analysis, consulting support and expert testimony in regulatory matters, primarily involving electric and natural gas utilities. Mr. Knecht's work includes many aspects of utility regulation, including industry restructuring, cost unbundling, cost allocation, rate design, rate of return, customer contributions, energy efficiency programs, smart metering programs, treatment of stranded costs and utility revenue requirement issues. He has worked for state advocacy agencies, industrial customer groups, law firms, regulatory agencies, government agencies and utilities, in both the United States and Canada. He has provided expert testimony in more than one hundred separate utility proceedings.

In addition to his work with regulated utilities, Mr. Knecht has consulted on international industry restructuring studies, prepared economic policy analyses, participated in a variety of litigation matters involving economic damages, and developed energy industry forecasting models.

Education

Master of Science, Management (Applied Economics and Finance), Sloan School of Management, M.I.T.

Bachelor of Science, Economics, Massachusetts Institute of Technology

Select Project Experience

For more than twenty years, Mr. Knecht has provided consulting services, analysis and expert testimony before the Pennsylvania Public Utility Commission on all manner of regulatory proceedings to the **PENNSYLVANIA OFFICE OF SMALL BUSINESS ADVOCATE**. In addition to expert testimony, Mr. Knecht has assisted OSBA with the development of public policy positions, litigation strategy, and longer term strategy.

For the **INDUSTRIAL GAS USERS ASSOCIATION**, Mr. Knecht provided consulting and expert witness services in a generic cost allocation proceeding involving Gaz Métro before the Régie de l'énergie in Québec.

For the **NEW BRUNSWICK PUBLIC INTERVENER**, Mr. Knecht provides consulting and expert witness services in a variety of regulatory proceeding before the New Brunswick Energy and Utilities Board involving New Brunswick Power, Enbridge Gas New Brunswick, and petroleum products. Mr. Knecht has addressed issues of load forecasting, costs forecasting, cost of capital, allocation of corporate overhead costs, utility cost allocation, revenue allocation, market-based rate design, cost-based rate design, and rate decoupling.

For **L'ASSOCIATION QUÉBÉCOISE DES CONSOMMATEURS INDUSTRIELS D'ÉLECTRICITÉ (AQICIE) AND LE CONSEIL DE L'INDUSTRIE FORESTIÈRE DU QUÉBEC (CIFQ)**, Mr. Knecht provided analysis, consulting advice and expert testimony before the Régie de l'énergie in regulatory matters involving Hydro Québec Distribution and TransÉnergie. This work includes revenue requirement, power purchasing, cost allocation, treatment of cross-subsidies, and rate design.

For the **INDEPENDENT POWER PRODUCERS SOCIETY OF ALBERTA**, Mr. Knecht provided consulting advice, analysis and expert testimony before the Alberta Energy and Utilities Board in a series of proceedings involving the restructuring of the electric utility industry, the unbundling of rates, and the development of transmission rates.



EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2012-2017

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
R-2016-2580030	Pennsylvania Public Utility Commission	UGI Penn Natural Gas	April 2017	Pennsylvania Office of Small Business Advocate	Test year, load forecast, O&M expenses, rate base, rate of return, cost allocation, rate design, EE&C program, capacity assignment
Matter 336	New Brunswick Energy & Utilities Board	New Brunswick Power	January 2017	New Brunswick Public Intervener	Financial forecast, equity requirement, depreciation life, variance mechanisms, cost allocation, rate design
Matter 338	New Brunswick Energy & Utilities Board	Generic	December 2016	New Brunswick Public Intervener	Retail petroleum margins
Matter 330	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	September 2016	New Brunswick Public Intervener	Revenue requirement, investment test, customer retention initiatives, cost allocation, rate design
R-2016-2537359	Pennsylvania Public Utility Commission	West Penn Power Company	July 2016	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design.
R-2016-2537355	Pennsylvania Public Utility Commission	Pennsylvania Power Company	July 2016	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design.
P-2016-2537609, 2537594	Pennsylvania Public Utility Commission	UGI Central Penn Gas, UGI Penn Natural Gas	July 2016	Pennsylvania Office of Small Business Advocate	Waiver of DSIC cap.
P-2016-2543523	Pennsylvania Public Utility Commission	UGI Utilities, Inc., Electric Division	July 2016	Pennsylvania Office of Small Business Advocate	Default service procurement.
R-2016-2529660	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania, Inc.	June 2016	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design.
R-2015-2469275	Pennsylvania Public Utility Commission	PPL Electric Utilities Corporation	May 2016	Pennsylvania Office of Small Business Advocate	Default service procurement plan.
R-2015-2518438	Pennsylvania Public Utility Commission	UGI Utilities, Inc., Gas Division	April 2016	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design, energy efficiency and conservation program.

EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2012-2017

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
P-2016-2521993	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania, Inc.	April 2016	Pennsylvania Office of Small Business Advocate	Waiver of DSIC cap.
M-2015-2477174	Pennsylvania Public Utility Commission	UGI Utilities, Inc., Electric Division	February 2016	Pennsylvania Office of Small Business Advocate	Energy efficiency and conservation plan review and development.
Matter No. 306	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	February 2016	New Brunswick Public Intervenor	Financial review, investment prudence, revenue requirement, cost allocation, rate design, market-based pricing.
P-2015-2511333, 2511351, 2511355, 2511356	Pennsylvania Public Utility Commission	Metropolitan Edison, Pennsylvania Electric, Pennsylvania Power, West Penn Power	January 2016	Pennsylvania Office of Small Business Advocate	Default service procurement plans, purchase of receivables.
P-2015-2501500	Pennsylvania Public Utility Commission	Philadelphia Gas Works	October 2015	Pennsylvania Office of Small Business Advocate	DSIC rate design under cash flow regulation, capital structure
P-2014-2459362	Pennsylvania Public Utility Commission	Philadelphia Gas Works	June 2015	Pennsylvania Office of Small Business Advocate	Demand side management programs, rate decoupling mechanism, incentive mechanism, cost-benefit analysis.
R-2015-2469275	Pennsylvania Public Utility Commission	PPL Electric Utilities	June 2015	Pennsylvania Office of Small Business Advocate	Misc. revenue requirement issues, cost allocation, rate design
R-2015-2468056	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	June 2015	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design, customer contribution policy
R-2015-2461373	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	April 2015	Pennsylvania Office of Small Business Advocate	Load balancing rates, reconciliation
R-2014-2456648	Pennsylvania Public Utility Commission	Peoples TWP LLP	March 2015	Pennsylvania Office of Small Business Advocate	Load balancing rates, reconciliation
R-3867-2013	Régie de l'énergie, Québec	Société en commandite Gaz Métro	February 2015	l'Association des Consommateurs de Gaz	Distribution cost allocation

EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2012-2017

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
R-3888-2014	Régie de l'énergie, Québec	Hydro Québec TransÉnergie	December 2014	AQCIE/CIFQ	Transmission customer contribution policy
R-2014-2428744 R-2014-2428742	Pennsylvania Public Utility Commission	Pennsylvania Power Company, West Penn Power Company	November 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
M-2014-2430781	Pennsylvania Public Utility Commission	PPL Electric Utilities	October 2014	Pennsylvania Office of Small Business Advocate	Smart meter procurement, rate design
Matter No. 253	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	September 2014	New Brunswick Public Intervenor	Financial review, investment prudence, revenue requirement, cost allocation, rate design, market-based pricing.
P-2014-2417907	Pennsylvania Public Utility Commission	PPL Electric Utilities	July 2014	Pennsylvania Office of Small Business Advocate	Default service procurement, class eligibility, reconciliation
R-2014-2406274	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	June 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2014-2407345	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	June 2014	Pennsylvania Office of Small Business Advocate	Customer contribution policy, alternative financing mechanism
R-2014-2408268	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2014	Pennsylvania Office of Small Business Advocate	Gas procurement sharing mechanism, cost allocation
R-2014-2397237	Pennsylvania Public Utility Commission	Pike County Light & Power (Electric)	April 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2014-2397353	Pennsylvania Public Utility Commission	Pike County Light & Power (Gas)	April 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation
R-2014-2399598	Pennsylvania Public Utility Commission	Peoples TW Phillips	March 2014	Pennsylvania Office of Small Business Advocate	Gas procurement, design day demand, cost allocation rate design, retainage
P-2013-2389572 (Remand)	Pennsylvania Public Utility Commission	PPL Electric Utilities	February 2014	Pennsylvania Office of Small Business Advocate	Time of use rates, net metering rates

EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2012-2017

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
Matter 225	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	January 2014	New Brunswick Public Intervenor	Financial review, investment prudence, revenue requirement, cost allocation, rate design, market-based pricing.
P-2013-2391368, P-2013-2391372, P-2013-2391375, P-2013-2391378	Pennsylvania Public Utility Commission	Metropolitan Edison, Pennsylvania Electric, Pennsylvania Power, West Penn Power	January 2014	Pennsylvania Office of Small Business Advocate	Default service procurement, cost allocation, rate design
Matter No. 214	New Brunswick Energy & Utilities Board	Generic	November 2013	New Brunswick Public Intervenor	Maximum retail margins for motor fuel and residential heating oil.
Matter No. 171	New Brunswick Energy & Utilities Board	New Brunswick Power	September 2013	New Brunswick Public Intervenor	Amortization method for deferral costs associated with refurbishing Point Lepreau Generating Station
C-2013-2367475	Pennsylvania Public Utility Commission	PPL Electric Utilities	August 2013	Pennsylvania Office of Small Business Advocate	Forecasting and reconciliation of default service electric costs and revenues.
P-2011-2277868, I-2012-2320323	Pennsylvania Public Utility Commission	Generic	August 2013	Pennsylvania Office of Small Business Advocate	Ratemaking treatment for customers in overlapping NGDC service territories ("gas-on-gas").
P-2013-2356232	Pennsylvania Public Utility Commission	UGI Central Penn Gas, UGI Penn Natural Gas, UGI Utilities (Gas Division)	July 2013	Pennsylvania Office of Small Business Advocate	Program design, cost recovery and rate design for alternative system expansion financing pilot program ("GET Gas")
R-2013-2355886	Pennsylvania Public Utility Commission	Peoples TWP LLC	July 2013	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2013-2361764, R-2013-2361763, R-2013-2361771	Pennsylvania Public Utility Commission	UGI Central Penn Gas, UGI Penn Natural Gas, UGI Utilities (Gas Division)	July 2013	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas.



INDUSTRIAL ECONOMICS, INCORPORATED

ROBERT D. KNECHT

EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2012-2017

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
Matter No. 178	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	July 2012	NB Public Intervenor	System expansion economic test, test year revenue requirement, cost allocation, rate design, treatment of stranded costs.
R-2012-2290597	Pennsylvania Public Utility Commission	PPL Electric Utilities	June 2012	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2012-2293303	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2012	Pennsylvania Office of Small Business Advocate	Treatment of pipeline credits
AUC ID #1633	Alberta Utilities Commission	Alberta Electric System Operator	April 2012	Powerex, Northpoint Energy Solutions, Cargill	Economic efficiency issues for allocation of constrained transmission capacity.
R-2012-2286447	Pennsylvania Public Utility Commission	Philadelphia Gas Works	April 2012	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas retainage, reconciliation
R-2012-2281465	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2012	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas retainage, gas price procurement and hedging
R-2011-2273539	Pennsylvania Public Utility Commission	Peoples TWP	March 2012	Pennsylvania Office of Small Business Advocate	Design day demand methodology
P-2011-2273650 P-2011-2273668 P-2011-2273669 P-2011-2273670	Pennsylvania Public Utility Commission	Metropolitan Edison, Pennsylvania Electric, Penn Power, West Penn Power	February 2012	Pennsylvania Office of Small Business Advocate	Default service procurement, retail market enhancement, rate design.
R-2011-2264771	Pennsylvania Public Utility Commission	PPL Electric Utilities	January 2012	Pennsylvania Office of Small Business Advocate	TOU Rates

Note: Dates shown reflect submission date for direct testimony.

May 2017

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EXHIBIT IEc-2

RDK WORKPAPERS

RDK WP1: Near Replication of DLC ACOSS

RDK WP2: RDK Alternative ACOSS and Revenue Allocation

Workpapers will be transmitted via separate e-mail attachment simultaneous to e-mail service of this document

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA PUBLIC UTILITY
COMMISSION**

v.

DUQUESNE LIGHT COMPANY

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Docket No. R-2021-3024296

VERIFICATION

I, Robert D. Knecht, hereby state that the facts set forth in my Direct Testimony labelled OSBA Statement No. 1 and associated Exhibits IEC-1 and IEC-2 are true and correct to the best of my knowledge, information, and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 19 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).



Date: June 30, 2021

Robert D. Knecht

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024750
	:	
Duquesne Light Company	:	
1308(d) Proceeding	:	

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email only (*unless other noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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/s/ Sharon E. Webb

Sharon E. Webb
Assistant Small Business Advocate
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COMMONWEALTH OF PENNSYLVANIA

July 26, 2021

Deputy Chief Administrative Law Judge Joel H. Cheskis
Administrative Law Judge John Coogan
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120

**Re: Pennsylvania Public Utility Commission v. Duquesne Light Company 1308(d)
Proceeding / Docket No. R-2021-3024750**

Dear Judge Cheskis and Judge Coogan:

Enclosed please find the Rebuttal Testimony and Exhibit of Robert D. Knecht, labeled OSBA Statement No. 1-R, on behalf of the Office of Small Business Advocate (“OSBA”), in the above-captioned proceeding.

As evidenced by the enclosed Certificate of Service, all known parties will be served, as indicated.

If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Sharon E. Webb

Sharon E. Webb
Assistant Small Business Advocate
Attorney I.D. No. 73995

Enclosures

cc: PA PUC Secretary Rosemary Chiavetta (Cover Letter & Certificate of Service only)
Robert D. Knecht
Parties of Record

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA PUBLIC UTILITY
COMMISSION**

v.

DUQUESNE LIGHT COMPANY

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Docket No. R-2021-3024750

Rebuttal Testimony and Exhibit of

ROBERT D. KNECHT

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

- Non-Residential Class Composition**
- Cost Allocation**
- Revenue Allocation**
- Rate Design**
- Master-Metered Multifamily Service**

Date Served: July 26, 2021

Date Submitted for the Record: _____

REBUTTAL TESTIMONY OF ROBERT D. KNECHT

1 **1. Introduction**

2 **Q. Mr. Knecht, please state your name and briefly describe your qualifications.**

3 A. My name is Robert D. Knecht. I submitted direct testimony and associated exhibits earlier
4 in this proceeding and my qualifications were presented therein.

5 **Q. Please describe the purpose of this rebuttal testimony.**

6 A. This rebuttal testimony responds to certain aspects of the direct testimony submitted by the
7 following witnesses:

8 Glenn A. Watkins and Roger D. Colton, representing the Pennsylvania Office of Consumer
9 Advocate (“OCA”) on matters of cost allocation and revenue allocation;

10 Esyon A. Sakaya, representing the Commission’s Bureau of Investigation and Enforcement
11 (“I&E”), on matters of revenue allocation and rate design; and

12 Teresa Ringenbach, representing Nationwide Energy Partners LLC (“NEP”) on matters of
13 electricity service for master-metered multifamily residential dwellings; and

14 This testimony also updates some of the analysis presented in my direct testimony for
15 additional discovery, which serves to inform this rebuttal.

16 **Q. How is the balance of your testimony organized?**

17 A. This testimony is organized as follows:

18 • Section 2 provides a brief update of the rate classes under which small and medium
19 businesses take service.

20 • Section 3 addresses Witness Watkins’ and Witness Colton’s cost allocation
21 recommendations.

22 • Section 4 evaluates the revenue allocation and scaleback recommendations of
23 Witnesses Sakaya and Watkins.

- 1 • Section 5 addresses the rate design issues raised by Witness Sakaya. It also briefly
2 addresses the Company’s Rider 3.
- 3 • Section 6 reviews the Company’s proposed changes regarding service to master-
4 metered multifamily residences, and the alternative proposal offered by Witness
5 Ringenbach.

6 **2. General Service Rate Classes**

7 **Q. Have interrogatory responses received since your direct testimony was submitted**
8 **provide any more information regarding the nature of customers in the GS/GM and**
9 **GL rate classes?**

10 A. No. Unfortunately, the Company does not maintain any information regarding the makeup
11 of these classes in terms of SIC or NAICS codes. The Company indicates only that it
12 identifies each new customer in these classes as either commercial or industrial, although
13 neither of those terms appears to be defined in the Company’s tariff. Similarly, the
14 Company has not conducted any evaluations of the makeup of those classes.¹ Thus, it is
15 not possible for me to evaluate whether the GS rate class is dominated by small business
16 or whether the class consists of a wide range of other kinds of customers. It is also
17 impossible to evaluate how much of the GS/GM and GL classes consist of government and
18 other non-business customers.

19 **Q. Did interrogatory responses received since your direct testimony was submitted**
20 **clarify the Company’s rationale for retaining a separate electric space heating class**
21 **for the GM and GL classes?**

22 A. No. As I hypothesized, the Company’s primary rationale appears to be inertia, and concern
23 regarding intra-class rate shifts (even if such shifts are cost-based).² In fact, the Company
24 acknowledges that it does not rigidly follow tariff specifications when determining

¹ OSBA-I-1, OSBA-I-2.

² OSBA-I-11(b),(c),(e).

1 customer eligibility for these classes, and even one of the sample customer bills it provided
2 indicate that some customers in this class are summer-peaking customers.³

3 The Company's responses do confirm that, for cost allocation purposes, demand-related
4 costs are assigned to these rate classes based on class winter peaks. As I indicated in my
5 direct testimony, this costing method is inconsistent with class rate design for the GMH
6 and GLH classes, in which no demand charges are imposed in winter months.

7 **3. Cost Allocation**

8 **Q. Before providing rebuttal testimony, do you have any corrections to your direct
9 testimony as a result of responses to discovery?**

10 A. I do. The Company's response to OSBA-I-35 indicates that the Company's filed ACOSS
11 contains an error in developing the meters cost allocator, which serves to understate the
12 costs assigned to the GM<25kW and GMH<25kW rate classes (and of course overstate the
13 costs for the other rate classes). Unfortunately, the meter count values provided in the
14 response to OSBA-I-35 are substantially at variance with the meter count values in the
15 Company's meters cost workpaper. I also note that the labor cost values in the derivation
16 of meters cost values appear to be understated, as they fail to gross up the cost for paid time
17 unrelated to productive O&M work. I therefore will attempt to resolve this inconsistency
18 through informal discovery and adjust the labor cost values, and I will incorporate any
19 necessary changes in my ACOSS model in surrebuttal testimony, if the impacts are
20 material.

21 **Q. Please summarize Witness Watkins' disagreement with the Company's ACOSS.**

22 A. In the Company's ACOSS, joint use distribution plant costs for the secondary voltage
23 systems are "classified" into customer-related and demand-related components, using a
24 "minimum system" methodology. Primary voltage system assets are classified as entirely
25 demand-related. Witness Watkins disagrees that secondary voltage system assets should
26 have a customer component to costs, and develops an alternative version of the Company's
27 ACOSS using an approach that classifies secondary distribution costs as entirely demand-

³ OSBA-I-12(b), OSBA-I-3 Attachment 4.

1 related. Witness Watkins then develops revenue allocation recommendations based on an
2 average of the 100 percent demand ACOSS simulation and the Company's ACOSS.

3 **Q. Is Witness Watkins' view consistent with Commission precedent regarding the**
4 **classification of electric distribution company ("EDC") distribution plant?**

5 A. I do not believe so. As I explained in my direct testimony, my understanding of
6 Commission precedent involves decisions regarding PPL Electric in 2012 and UGI Electric
7 in 2018, in which the Commission affirmatively approved the classification of EDC
8 distribution plant into both customer and demand components, *for both the primary and*
9 *secondary voltage systems.*

10 In making those decisions, the Commission was well aware of the arguments raised by
11 Witness Watkins related to the Bonbright treatise (OCA Statement No. 3 at 14-15), and did
12 not conclude that those remarks justified departing from the minimum system classification
13 methodology.

14 **Q. Please address Witness Watkins' argument that including a customer component in**
15 **the classification of distribution plant is only necessary if average customer class**
16 **geographic densities vary between urban and rural areas.**

17 A. I respectfully disagree with Witness Watkins in this matter. Including a customer
18 component in the classification of costs recognizes the economies of scale of
19 interconnecting larger customers. As I indicated in my direct testimony, the distribution
20 system must be sized to both meet the peak demand of customers served "downstream"
21 from each individual asset and to interconnect all customers. Larger customers tend to be
22 less expensive to serve per unit of peak demand, partly for reasons of geographic density,
23 but partly because the cost of extending the distribution system to attach larger customers
24 is not proportional to peak demand. These latter economies exist for both urban and rural
25 areas. If larger customers are more geographically concentrated in urban areas, this
26 implies only that the customer component of costs should be higher under those conditions
27 than it would be if customers were uniformly distributed through the service territory. It
28 does not imply that the customer component of costs should be zero if customers are
29 uniformly distributed.

1 **Q. Please address Witness Watkins' argument that utilities are trending to operating**
2 **more of their distribution systems at primary voltage.**

3 A. This trend implies that primary voltage systems are increasingly being used to interconnect
4 individual or small customer groups, suggesting that it is increasingly important to
5 recognize scale economies in the primary voltage system by including a customer
6 component of cost for both primary and secondary voltage systems.

7 **Q. Have you reviewed Witness Watkins' ACOSS in detail regarding technical issues?**

8 A. I have not. However, my limited review suggests that Witness Watkins' ACOSS
9 simulation that classifies distribution plant costs as 100 percent demand related includes
10 what I expect is an inadvertent but material error, relating to the allocation of secondary
11 overhead line transformer costs. In the Company's ACOSS, the line transformer costs are
12 classified using a minimum system method, and the demand component of costs is
13 allocated using a demand allocator that is adjusted downward to reflect the peak load
14 carrying capability of the minimum system. In the Schedule GAW-4 ACOSS simulation,
15 it appears that although Witness Watkins rejects the minimum system classification method
16 and sets the customer component for these costs to zero, the simulation continues to use
17 the adjusted demand allocator. Obviously, if there is no minimum system, it is incorrect
18 to adjust the demand allocation factor for the load carrying capability of that minimum
19 system. This explains why Witness Watkins' ACOSS assigns zero costs for secondary
20 overhead line transformers to the RS class.⁴ Having participated in numerous proceedings
21 with Witness Watkins, I expect that this error was unintentional. Nevertheless, because
22 the account in question represents some \$269 million in gross plant assets, I believe this
23 error has a material impact on Witness Watkins' calculations.

24 **Q. Do you have other concerns regarding Witness Watkins' cost allocation approach?**

25 A. As I explained in my direct testimony, the Company's ACOSS method fails to include a
26 customer component of costs for primary distribution system assets, and it inappropriately

⁴ The overhead line transformer costs allocated to Rate RS in Witness Watkins ACOSS at Schedule GAW-4 page 1 are primary system transformer costs.

1 double-counts certain distribution demands for assigning costs to non-residential
2 customers. Witness Watkins' method retains both of those problems.

3 **Q. What do you conclude regarding Witness Watkins' proposed cost allocation**
4 **approach?**

5 A. I recommend that the Commission not adopt Witness Watkins' cost allocation approach
6 because it fails to reflect the economies of scale in both the primary and secondary voltage
7 systems for serving larger customers, it is not consistent with Commission precedent, and
8 it contains modeling errors which serve to understate costs associated with providing
9 service to the residential rate classes.

10 **Q. What is Witness Colton's position on cost allocation?**

11 A. Witness Colton concludes that the Company's universal spending for low-income
12 residential customers should not be recovered only from the residential class. Witness
13 Colton proposes that these costs be allocated to and recovered from the various rate classes
14 based on distribution revenues. The impact of this proposal (without concomitant
15 evaluation of the impact of the base rates changes) is shown in Witness Watkins' testimony
16 at Schedule GAW-7.

17 **Q. Can you respond to Witness Colton's argument that assigning the entirety of**
18 **universal service costs to the residential class makes bills for regular residential**
19 **customers unaffordable.**

20 A. Whether a particular rate impact is unaffordable is a judgmental matter, which I leave to
21 the Commission. Based on the figures in Witness Watkins' testimony, the savings to the
22 RS class from Witness Colton's proposal would be about \$2.40 per month for every
23 customer in the class, a base rate reduction of 4.9 percent. If the savings are applied only
24 to customers who are not in the customer assistance program ("CAP"), the per month
25 savings would be modestly higher. However, based on the figures in Witness Colton's
26 Table 18 for 2021, about 35,000 residential customers are in the CAP, representing about
27 6.4 percent of the customer base. Assuming that the 6.4 percent value is a reasonable proxy
28 for the share of residential revenues associated with CAP customers, the impact on non-
29 CAP bills would for Rate RS would be about \$2.57 per month, or 5.2 percent of base rates.

1 **Q. Witness Colton indicates that the proposed change will have a “*de minimis*” impact**
2 **on non-residential customers. Can you comment?**

3 A. I suppose the term *de minimis* is as subjective as the term “unaffordable.” However,
4 Witness Colton’s position regarding what is affordable and what is *de minimis* appear to
5 be internally inconsistent. Witness Colton first indicates that a 5.2 percent base rate impact
6 for Rate RS customers associated with the current allocation method for universal service
7 costs makes those rates unaffordable. Witness Colton then concludes that the base rate
8 impacts on non-residential customers of the OCA universal service proposal, which range
9 from 7.0 percent to 8.0 percent for the distribution voltage classes (excluding lighting), are
10 *de minimis*. It would seem that Witness Colton applies a double standard for affordability.

11 **Q. What are the key conceptual differences in cost recovery policies for universal**
12 **services?**

13 A. I observe two general philosophies: the insurance model, and the public policy tax model.

14 The philosophy of recovering all costs from the residential class is based on the argument
15 that only residential customers are eligible for the benefits. A universal service program is
16 a form of insurance, in which residential electric customers are paying premiums to the
17 utility, so that they will be eligible for cash benefits in the event they have an unfortunate
18 turn in their economic circumstances. In this model, it can be argued that it is not unfair
19 that only residential electric customers should get the benefits from the program, because
20 it is only residential electric customers who pay for the program. It can also be argued that
21 these programs are an integral part of utility service, and thus there is less of a need to
22 separately report the charge on the utility bill.

23 The alternative model is the government policy tax model. This model, as described in
24 some detail by Witness Colton, is based on the argument that there are societal benefits
25 associated with assisting low-income residents. Under this paradigm, all customers should
26 pay because all customers obtain the social benefits. In effect, this form of a low-income
27 programs looks like many other such government programs which provide both individual
28 and societal benefits, and the costs of which are borne by the taxpayers. The government,
29 of course, has a great deal more flexibility as to how and from whom it can recover those
30 costs than does a regulated utility. In this model, providing universal service benefits

1 becomes a public policy expenditure that is not related to providing electric distribution
2 service. As such, charges to customers to recover the costs for this social policy program
3 should be explicitly identified on customer bills.⁵

4 **Q. Of the two models for recovery of utility low-income assistance programs, which do**
5 **you advocate?**

6 A. My recommendation is that the Commission retain the insurance model, for reasons of cost
7 causation and equity. In this model, customers pay for the benefits for which they are
8 eligible. Residential customers benefit from the insurance, and residential customers pay
9 for that insurance. Non-residential customers are not eligible for that insurance, and they
10 therefore should not pay for the insurance.

11 While I acknowledge that there are ancillary benefits with policies that assist low-income
12 residents, I observe that using broad societal benefits for allocating utility costs may lead
13 to more confusion and complexity in regulatory matters. If all societal benefits get factored
14 into utility rate cost causation, there will be no end of claimants seeking special treatment.
15 For example, the OSBA could argue that small businesses provide benefits to the economy
16 in the form of job creation, economic dynamism, services for low-income communities, *et*
17 *cetera, et cetera*, and are therefore deserving of subsidies from the other rate classes. Thus,
18 under Witness Colton's philosophy, the costs for the various economic development and
19 electric vehicle charging programs proffered by DLC in this proceeding would be charged
20 to all rate classes to reflect the alleged social benefits associated with those programs.

21 In addition, for cost recovery policy, the taxation model cannot easily be implemented
22 across non-residential customers in a way that reflects the social benefits of the universal
23 service programs. In the insurance model, residential customers of DLC pay for the
24 insurance and they benefit from the program if the need arises. Other parties are
25 unaffected. In the tax model, however, the social benefits from the DLC CAP program
26 inure to all residents, businesses and other organizations in DLC's service territory, in a
27 manner that is difficult to quantify. Based on Witness Colton's description of the benefits,

⁵ In addition, because it has been a long-standing Commission policy to recover universal service costs only from residential customers, a philosophical change in that policy as recommended by Witness Colton should be explicitly reflect on non-residential customer bills, in the interests of regulatory transparency.

1 one could reasonably assume that the benefits to businesses are related to employment
2 costs. Thus, a logical recovery method would focus on employment, rather than electricity
3 usage. In contrast, however, Witness Colton proposes to assign costs in a way that imposes
4 a higher unit cost on small business customers than on larger business customers. For
5 example, Witness Colton’s proposal for the GS class involves a cost increase of 0.82 cents
6 per kWh. However, for Rate L that value is only 0.15 cents per kWh, and for the largest
7 electricity consumers in Rate HVPS the value is 0.002 cents per kWh. Thus, under Witness
8 Colton’s allocation, small businesses are taxed at an energy cost rate many times that of
9 larger businesses, despite the fact that the larger businesses tend to be large employers who
10 presumably benefit from the values to which Witness Colton cites. This is particularly
11 surprising since Witness Colton claims that other jurisdictions that use the taxation model
12 assign costs on a kWh basis, implying equal per-kWh taxes across rate classes.⁶

13 As to the societal benefits of aid to low-income customers, it is not at all clear that utility
14 programs represent a particularly effective means of assistance for low-income residents,
15 except as it relates to providing an insurance policy to the specific residential customers
16 who benefit from that insurance. In my view, achieving the broad societal benefits from
17 low-income assistance is better accomplished through programs that (a) provide benefits
18 to all low-income customers regardless of their heating fuel, (b) provide benefits to all low-
19 income customers, regardless of whether they enroll in a utility program, (c) are carefully
20 integrated into all other legislated benefits for low-income customers, and (d) are financed
21 in a more progressive manner through taxation policy.

22 **4. Revenue Allocation**

23 **Q. What are the positions of the various parties regarding the assignment of the rate**
24 **increase across the various rate classes (“revenue allocation”) in this proceeding?**

25 A. The Company, OCA Witness Watkins and I all prepared separate versions of the ACOSS
26 and developed alternative revenue allocation recommendations at the full \$85.8 million
27 proposed base rate increase. In addition, OCA Witness Colton’s proposal would shift cost
28 responsibility for the CAP, thereby reducing rates for residential customers and increasing

⁶ “In the states which have universal service programs designed most closely to Pennsylvania’s, electric universal service costs are collected on a uniform kWh basis amongst all customer classes.” OCA Statement No. 4 at 62.

1 them for all other classes. It appears that the two OCA proposals are additive, meaning
2 that the OCA's overall proposed revenue allocation is the sum of those two
3 recommendations. I&E Witness Sakaya does not contest either the Company's ACOSS
4 method or its proposed revenue requirement at the full \$85.8 million request, but rather
5 offers modified revenue allocation versions at scaled back increases of \$69.8 and \$41.0
6 million. Since there is virtually no chance that the Commission will approve the
7 Company's entire claimed increase (based on my experience in Pennsylvania), Witness
8 Sakaya's scaleback approach should be considered an alternative revenue allocation
9 proposal.

10 Each witness' revenue allocation proposal is detailed in my workpapers at RDK WP2-R in
11 the "RevAlloc" worksheet. In reviewing these recommendations, I conclude that all of
12 the proposals are at least directionally consistent with the cost allocation results relied upon
13 by the respective witness. Because I do not agree with the cost allocation methodologies
14 used by the Company, Witness Sakaya or Witness Watkins, I recommend against adopting
15 these alternative revenue allocation methods.

16 However, if the Commission does approve either the Company's or the OCA's cost
17 allocation method, I believe it should consider whether the OCA and I&E proposed
18 revenue allocations violate the principle of rate gradualism. Consider first the OCA
19 revenue allocation (reflecting both the recommendations of both Witness Colton and
20 Witness Watkins), summarized in Table IEC-S1 below:

Table IEC-S1			
Summary of OCA Revenue Allocation Proposal			
Class	\$000	% Increase	Multiple of System Avg
RS	\$24,616	8.4%	0.54
RH	\$ 4,788	17.1%	1.10
RA	\$ 228	7.1%	0.45
GS	\$ 1,731	14.8%	0.95
GM<25	\$ 6,783	20.5%	1.31
GM>25	\$18,459	26.7%	1.71
GMH<25	\$ 818	22.7%	1.46
GMH>25	\$ 1,839	31.2%	2.00
GL	\$17,232	26.8%	1.72
GLH	\$ 2,260	31.4%	2.02
L	\$ 5,031	26.9%	1.73
HVPS	\$ 20	6.2%	0.40
SE	\$ 213	14.3%	0.92
SL	\$ 1,423	14.3%	0.92
UMS	\$ 232	20.8%	1.34
System	\$85,773	15.6%	1.00
Source: RDK WP2-R			

1 The rightmost column of Table IEC-S1 shows the ratio of the OCA proposed percentage
2 increase in base rates to the systemwide percentage base rate increase. It is not uncommon
3 for the Commission to rely on a multiplier of 1.5 or 2.0 times the system average increase
4 as an upper bound for the average rate increase for any particular class, recognizing that
5 intra-class rate design changes may exacerbate that increase for some customers. As
6 shown, the OCA proposal is at the 2.0 times upper bound for the GMH>25kW and GLH
7 rate classes, and exceeds the 1.5 times limit for three other general service classes. The
8 Commission may wish to consider whether this proposal reasonably reflects the principle
9 of rate gradualism at this time (if it chooses to accept the OCA cost allocation proposal).

1 Turning to the I&E proposal, I agree with Witness Sakaya that there are several advantages
2 to using an alternative scaleback mechanism to improve progress toward cost-based rates
3 relative to the proposal offered by the Company. First, the primary advantage is that it
4 maintains or even increases progress toward cost-based rates relative to the Company's
5 proposal, whereas the traditional "proportional scaleback" method reduces that progress.
6 Second, from a customer acceptability standpoint, the alternative scaleback approach
7 generally means that no customer class is worse off than under the utility's filed proposal,
8 which may reduce customer complaints and dissatisfaction regarding the regulatory
9 process. Nevertheless, the principle of rate gradualism should continue to apply to the
10 scaled back rates, particularly since the parties to this proceeding all know that some
11 scaleback is virtually certain.

12 Table IEC-S2 below provides the same values for the I&E revenue allocation proposal after
13 scaleback. In preparing this table, I assumed an overall \$55 million increase, and I
14 interpolated between the two alternative approaches, as Witness Sakaya recommends. My
15 calculations are detailed in RDK WP2-R.

Table IEC-S2			
Summary of I&E Revenue Allocation Proposal			
Class	\$000	% Increase	Multiple of System Avg
RS	\$25,485	8.7%	0.87
RH	\$ 6,119	21.8%	2.18
RA	\$ 660	20.4%	2.04
GS	\$ 809	6.9%	0.69
GM<25	\$ 792	2.4%	0.24
GM>25	\$10,485	15.1%	1.51
GMH<25	--	0.0%	0.99
GMH>25	\$ 1,311	22.3%	2.23
GL	\$ 4,812	7.5%	0.75
GLH	\$ 1,620	22.5%	2.25
L	\$ 2,657	14.2%	1.42
HVPS	--	0.0%	0.00
SE	--	0.0%	0.00
SL	--	0.0%	0.00
UMS	\$ 251	22.5%	2.25
System	\$55,000	10.0%	1.00
Source: RDK WP2-R			

1 As shown in Table IEC-S2, the I&E proposal would result in rate increases for several
2 classes that are outside the usual bounds for rate gradualism, including proposed increases
3 for the GLH and UMS lighting classes of 22.5 percent compared to a system average
4 increase of 10.0 percent. As it is difficult to believe that the Commission would approve a
5 2.25 times system average increase for the residential class, it may wish to consider
6 whether it should be similarly resistant to applying that magnitude an increase to non-
7 residential customers.

1 **5. Rate Design Issues**

2 **Q. Before addressing rebuttal issues, please comment on the Company's Rider 3, based**
3 **on responses to IRs received after the due date for direct testimony.**

4 A. In OSBA-I-27, the OSBA requested an explanation for why schools and governmental
5 customers appear to be allowed a 30-day bill payment grace period, while other non-
6 residential customers are given only 15 days. I hate to be a grinch about this, but this tariff
7 provision appears to be unreasonably discriminatory to small and medium businesses, and
8 the Company offers no defense for this policy in its response. This is particularly
9 problematic since, as I indicated earlier, the Company does not categorize its non-
10 residential customers beyond "commercial" and "industrial." I conjecture that it is possible
11 that government customers have lower uncollectible rates, which may therefore offset the
12 advantage of more lax payment terms. However, without evidence supporting this policy,
13 I recommend that this rider be eliminated, and payment terms for government customers
14 should be same as that for other customers in the general service rate classes.

15 **Q. Please comment on I&E Witness Sakaya's recommendations regarding the customer**
16 **charge for Rate GS/GM and Rate GMH customers at pages 8-11 in I&E Statement**
17 **No. 3.**

18 A. It appears that Witness Sakaya inadvertently used the incorrect cost values in preparing
19 this analysis. For example, Witness Sakaya reports a \$37.46 monthly cost for GM>25kW
20 customers at page 11. In fact, the Company's cost analysis shows a customer cost of
21 \$120.81 (which Witness Sakaya correctly reports at page 8), and that value excludes all
22 customer related costs associated with the secondary distribution plant and a variety of
23 A&G costs. My own analysis, including all customer-related costs in the ACOSS, shows
24 a \$193.37 per month value using the Company's costing method and \$199.69 per month
25 using my costing method. I expect that Witness Sakaya will update the analysis to reflect
26 the correct costs.

1 **6. Master-Metered Multifamily Service**

2 **Q. Please provide the background to the issue of master-metered multifamily service in**
3 **this proceeding.**

4 A. In this proceeding, DLC proposes a modification to its policy regarding the metering
5 requirements for certain multi-family residential properties, to allow for master-metering
6 rather than requiring individual metering in certain circumstances. Nationwide Energy
7 Partners (“NEP”) contests the new policy, generally arguing that DLC should be more
8 flexible in allowing multi-family buildings to take master-metered service from the utility
9 and self-meter the individual residents.

10 Small and medium businesses are affected by this policy, because master-metered
11 residential properties with multiple dwelling units take service under a non-residential
12 general service tariff. Since residential loads tend to have load shapes that are relatively
13 costly to serve, increasing residential loads in master-metered buildings will tend to
14 increase unit costs assigned to non-residential rate classes.

15 **Q. Please describe DLC’s current policy on this issue.**

16 A. This issue is addressed in Sections 18 and 41 of the “Rules and Regulations” section of
17 DLC’s current tariff:

18 18. REDISTRIBUTION All electric energy shall be consumed by the customer
19 to whom the Company supplies and delivers such energy, except that (1) the
20 customer owning and operating a separate office building, and (2) any other
21 customer who, upon showing that special circumstances exist, obtains the
22 written consent of the Company may redistribute electric energy to tenants of
23 such customer, but only if such tenants are not required to make a specific
24 payment for such energy. This Rule shall not affect any practice undertaken
25 prior to June 1, 1965. See Rule No. 41 for special requirements for residential
26 dwelling units in a building.

27 . . .

28 41. PROHIBITION OF RESIDENTIAL MASTER METERING Each
29 residential dwelling unit in a building must be individually metered by the
30 Company for buildings connected after January 1, 1981. For the purposes of
31 the Rule, a dwelling unit is defined as: One or more rooms for the use of one
32 or more persons as a housekeeping unit with space for eating, living, and
33 sleeping, and permanent provisions for cooking and sanitation. This Rule does
34 not preclude the use of a single meter for the common areas and common

1 facilities of a multi-tenant building. This Rule shall not affect any practice
2 undertaken prior to January 1, 1981.

3 In short, DLC does not provide service to multiple residences or businesses through a single
4 utility meter except where grandfathered or in the case of a separate office building.
5 Because there is no explicit prohibition, I believe that sub-metering in the case of a separate
6 office building is permitted.

7 **Q. What changes has DLC proposed in this case?**

8 A. It is my understanding that in the last DLC base rates proceeding, some parties expressed
9 concern that DLC's requirement that multifamily residences be individually metered by
10 DLC was imposing needless costs on developers/operators of low-income multifamily
11 dwellings, since the electric bills for the tenants in these buildings were typically paid
12 directly by the landlord. I also understand that advocates for low-income customers were
13 concerned that individual metering of multifamily buildings would somehow increase costs
14 for tenants where individual metering is required. This matter was addressed in the
15 settlement of that proceeding. The settlement stipulated:

16 Within 180 days of the effective date of rates, Duquesne Light will convene a
17 non-confidential collaborative with all parties to this proceeding, and all
18 interested stakeholders who are developers of multifamily housing within its
19 service territory, to discuss the feasibility of revising its retail tariff to permit
20 master-metering of multifamily housing. Parties to the collaborative will
21 specifically consider:

- 22 a. Under what circumstances master-metering would be permitted, and the
23 factors Duquesne Light would require a building owner to meet before
24 approving a master-metering configuration;
- 25 b. The impact that any such tariff change would have on low income tenants'
26 ability to continue to afford utility service;
- 27 c. The impact of individual customers not utilizing Advanced Metering
28 Infrastructure ("AMI") meters; and
- 29 d. The impact that any such change would have on the Company's revenue
30 allocation and the ability to meet its projected revenue requirements.

31 The parties to the collaborative will make a good faith effort, in coordination
32 with the Company, to develop consensus on the scope of a tariff revision that
33 permits master-metering, taking into consideration all of the foregoing factors.
34 Additional collaborative meetings will be held thereafter, as necessary, but not

1 less than on an annual basis, in an effort to reach consensus on any issues which
2 remain unresolved after the first collaborative is held. Based on feedback from
3 the collaborative meetings, Duquesne Light will present a proposal regarding
4 master-metering of multifamily housing buildings as a part of its next general
5 base rate case. The treatment of any alleged confidential information during
6 the collaborative will be subject of an agreement of the parties and stakeholders
7 participating in the collaborative.

8 Pursuant to those stakeholder consultations, the Company proposes to add the following
9 exception to Rule 41:

10 41.1 RESIDENTIAL MASTER METERING FOR NEW LOW-INCOME
11 SUPPORTIVE HOUSING Notwithstanding anything in Rule No. 41 to the
12 contrary, a single meter may be used for certain multi-tenant premises (“master
13 metering”), where the premises:

- 14 1. Is a new service;
- 15 2. Is master-metered through entire premises (i.e., no individual tenant
16 meters);
- 17 3. Has a minimum of four (4) dwelling units; and
- 18 4. Is low-income supportive housing (i.e., housing that is permanently
19 available to low-income tenants where the housing provider is responsible
20 for utility bills).

21 To be eligible to master-meter a given residential building, in addition to
22 satisfying the other criteria herein, a provider of low-income housing must
23 either:

- 24 1. Show that the building is a Public Housing Authority development, or
- 25 2. Certify that all tenants are (i) eligible for a Housing Choice Voucher
26 (HCV), available to residents who make 50% or less of the median family
27 income, or (ii) have household incomes equal to or less than 150% of
28 federal poverty guidelines.

29 Customers permitted to use master metering under this Rule must also, on a
30 continuing basis:

- 31 1. Annually certify their on-going conformance to the above criteria; and
- 32 2. Participate in each of the Company’s applicable energy efficiency,
33 conservation, and/or usage reduction programs.

34 The Company may retain the customer’s security deposit, paid pursuant to Rule
35 No. 5, for the entire duration of the master metering arrangement. If a customer

1 using master metering under this Rule fails to comply with any of the foregoing
2 eligibility criteria or ongoing requirements, the Company may require the
3 customer to reconfigure the customer's electrical equipment, at customer
4 expense, to allow the Company to separately meter each dwelling unit.

5 **Q. Has the Company done any analysis of the impact of this proposed change?**

6 A. The Company has made little or no effort to evaluate the impacts of the proposed changes.
7 The Company indicates:

- 8 • The Company does not know how many buildings would have qualified for the
9 proposed rate treatment in the past five years. (OSBA-I-8(a))
- 10 • The Company does not know how the proposed change in the tariff will affect
11 revenues. (OSBA-I-8(b))
- 12 • The Company does not know whether relaxing the individual metering
13 requirement will result in any construction cost savings for developers of low-
14 income housing. (OSBA-I-8(c))
- 15 • The Company has no estimate for the future number of buildings and residential
16 units that will qualify for master-metering under the proposed tariff change.
17 (OSBA-I-8(d)).
- 18 • The Company has conducted no analysis of the load profile for the residential
19 loads that will be served through general service tariffs under the revised master-
20 metering proposal. (OSBA-I-8(e))
- 21 • The Company has no estimate of the incremental EE&C costs that will be
22 assigned to general service customers as a result of the shift of loads from
23 individually-metered residential rates to master-metered non-residential rates.
24 (OSBA-I-8(h))
- 25 • The Company does not appear to have any systematic evidence that the electric
26 bills for the eligible properties are being paid in full by the landlord, which was
27 one basis for undertaking this review.

- 1 • The Company does not know the number of customers, units or consumption
2 levels for master-metered residential customers currently in its service territory
3 (OSBA-I-8(j)), although it reports to NEP that it has 130 master-metered
4 buildings with one or more residential dwelling units (Nationwide I-4).
- 5 • The Company has not performed any studies regarding historical or prospective
6 inter- and intra-class revenue allocation impacts from converting existing services
7 from individually-metered to master-metered buildings. (Nationwide-I-15, 16)

8 The Company's position regarding its failure to perform the revenue allocation impact
9 analysis specified in the settlement is that because the new requirement only applies to new
10 customers, there is no revenue allocation impact. (DLC Statement No. 6 at 6) This
11 argument makes little sense. New customers are either individually metered or master-
12 metered, and the change in policy will affect where and how the costs and revenues from
13 the new customer will be recognized in future base rates proceedings.

14 **Q. What is OSBA's position regarding this proposal?**

15 A. I am advised by counsel that OSBA concludes that the Company has not met its legal
16 burden to justify the changes that it proposes, and in fact has not fully complied with the
17 settlement terms from the last base rates case by not addressing revenue allocation
18 implications.

19 However, if the Commission determines that this change should be implemented, I
20 recommend the following tariff modifications to address the cost and revenue allocation
21 inequities. Specifically, I recommend that master-metered multifamily service be included
22 as part of the Residential class for cost allocation and revenue allocation purposes. Because
23 the load shape for multifamily residences should be reasonably similar to that for single
24 family residences, there will be no distortions created by including residential loads in the
25 GS classes. For rate design purposes, DLC would then create a separate sub-class within
26 Rate RS that would apply to master-metered multifamily customers. If it so chose (and if
27 the Commission agreed), the Company could use the relevant GS/GM or GL tariff charges
28 (much in the way that Rider 12 non-residential customers now pay residential tariff charges
29 while being part of the general service class).

1 **Q. What is NEP’s proposal?**

2 A. NEP proposes that developers/owners of multi-family residential properties be permitted
3 to purchase electricity supplies and distribution services in bulk for all tenants, and that it
4 be allowed to individually meter and charge tenants for that service at owner-specified
5 rates. NEP indicates that these rates must legally be at or below the regular utility
6 residential rates.⁷ I am advised by counsel that OSBA will evaluate this legal position in
7 its briefs as necessary.

8 Specifically, NEP proposes a revised paragraph 18 and a supplementary paragraph 41.2,
9 shown below:

10 18. REDISTRIBUTION All electric energy shall be consumed by the Customer
11 to whom the Company supplies and delivers such energy, except for (1) any
12 Customer who owns and operates a separate office building, or (2) any
13 Customer who meets the requirements of Rule 41.1 and Rule 41.2 addressing
14 the use of master meters in buildings with at least four (4) residential dwelling
15 units may redistribute electric energy to the tenants of such customer.

16 41.2. RESIDENTIAL MASTER METERING IN NON-LOW-INCOME
17 SUPPORTIVE HOUSING Notwithstanding anything in Rule No. 41 to the
18 contrary, the Company shall install, own, operate and maintain a single
19 commercial account (“Master Metering”), and redistribution of electric energy
20 may occur, for multi-tenant premises that include at least four (4) dwelling units
21 where, all of the following criteria are met:

- 22 1. The Customer or its authorized representative verifies in writing that it
23 will comply with the requirements of 66 Pa.C.S. § 1313, price upon resale
24 of public utility services.
- 25 2. The Customer or its authorized representative provides each dwelling unit
26 in the premises with (1) a revenue grade smart meter according to the
27 American National Standards Institute and (2) at least one energy
28 technology for energy efficiency, energy control or demand response.
- 29 3. The tenant in each dwelling unit in the premises will have access to
30 information on their hourly, monthly and annual electric energy usage.

31 Customers or their authorized representative permitted to use Master Metering
32 under this Rule shall also comply with the following:

⁷ See DLC-NEP-I-6(u).

1 1. The Company may request and the Customer or its authorized
2 representative shall provide within 60 days of a request information to
3 certify ongoing compliance with the above criteria: and

4 The Company shall provide a Commission approved form for Customer or
5 Authorized Representative contact information and required details to ensure
6 proper delivery of such a request; Customers or their authorized representative
7 shall notify Duquesne of their decision to Master Meter under this Rule and
8 shall submit the notice to the Company using a form previously reviewed and
9 approved by the Commission. The Company shall make the form available on
10 its website. The Company shall advise the Customer if the form has any
11 deficiencies within fourteen (14) days of its submission. The Company shall
12 participate in a Commission staff mediation of any unresolved deficiencies
13 should one be requested by the Customer or its authorized representative.

14 In effect, NEP proposes that it be permitted to go into competition with DLC to provide
15 customer services, EE&C services, metering and billing functions for residents of multi-
16 family buildings.

17 **Q. What arguments does NEP advance in support of this proposal?**

18 A. NEP advances a variety of advantages for the proposal, although many of these arguments
19 appear to be related to the specific services that NEP would offer rather than to the general
20 change in the tariff which would allow both NEP and other parties to compete in this
21 market. These include the following:

- 22 1. The Company's limited proposal for new master-metered buildings with low-income
23 residents, which precludes sub-billing of tenants, conflicts with PURPA. This, of
24 course, ignores the Company's claim that the landlords in these buildings pay the
25 tenants' electric bills.⁸
- 26 2. Customers get renewable and/or non-carbon energy with no net price premium.
- 27 3. Setting the baseline for EE&C programs is somehow easier with master-metering
28 because customer consent requirements are reduced.
- 29 4. Allowing property owners to control the installation and/or relocation of electrical
30 equipment in the building will reduce costs and construction delays for the building

⁸ DLC Statement No. 6 at 7.

1 owners/developers compared to having to work with the utility to do so. It may also
2 reduce utility costs passed on to other ratepayers, by reducing the investment required
3 for new customers.

4 5. NEP argues that master-metering reduces the landlord-tenant problem for EE&C
5 programs, although it is unclear why a landlord would have any increased incentive
6 to invest in conservation when the tenant is paying utility rates to the landlord.

7 5. Improved availability of EV charging stations, although there is no obvious language
8 in the tariff to guarantee that master-metering will increase EV charging
9 opportunities.

10 6. Reduced administrative problems for DLC associated with tenant turnover and
11 account changes.

12 7. Building owners will be better able to participate in wholesale market demand-
13 response programs (possibly resulting in lower-quality service to tenants).

14 8. Reduced collection risk for utilities, ostensibly because uncollectibles rates are lower
15 for commercial than for residential customers.

16 9. Lower bills for tenants, if the building owner chooses to pass on the lower cost of
17 commercial versus residential service (which, of course, it has zero incentive to do).

18 10. NEP asserts that it “has no reason to believe” that adopting its proposal would result
19 in a significant shift in inter- or intra-class revenue allocations between now and the
20 next DLC base rates case. The assertion, of course, provides zero evidence for the
21 contention, and ignores the fact that changing the redistribution policy now will likely
22 have long-term rather than short-term revenue allocation implications.

23 **Q. Do you have any additional concerns regarding the NEP proposal beyond those**
24 **related to the DLC proposal?**

25 A. I have the following concerns:

1 *Rate Class Definitions:* The general rate design issue regarding the NEP proposal is that
2 electric rates in Pennsylvania are differentiated between residential service and non-
3 residential service due to the different requirements of the customer classes, the different
4 protections offered to residential and non-residential customers, and the different costs to
5 serve. Expanding the loophole by which some residential customers are served through
6 general service rates is arguably inconsistent with a basic regulatory policy standard in
7 Pennsylvania of having different residential and non-residential rates. I am advised by
8 counsel that OSBA will address this legal issue in its briefs as necessary.

9 *Class Cost Impacts:* NEP's proposal will presumably result in a prospective shift of both
10 new and current individual residential accounts to non-residential general service accounts,
11 relative to continuing the status quo. The magnitude of that shift is unknown, and NEP
12 offers no estimate. However, this will mix more residential load shapes into the non-
13 residential classes' load, which will generally have a negative impact on their load factors,
14 particularly for the medium and larger general service customers (who have better load
15 factors in general). The magnitude of this impact is unknown, and NEP offers no estimate.

16 *Revenue Allocation:* As discussed above, the Company somehow believes it is not
17 necessary for it to evaluate revenue allocation impacts of the Company's proposed change.
18 NEP reaches a similar conclusion, despite the fact that the settlement in the last base rates
19 case explicitly agreed that a revenue allocation impact was a necessary part of any rate
20 change.

21 *Customer Choice:* Individual residential customers in the NEP scheme will not have a
22 choice of suppliers. While this effect may be the same as that for customers currently in
23 the "special case" situations in DLC's tariff where master-metering is allowed, NEP
24 proposes what could be a significant expansion of tenants taking service through a master
25 meter. This, NEP's proposal would expand the problem, possibly materially. Similarly,
26 individual tenants will not have the opportunity for time-of-use rates, unless such rates are
27 offered by the landlord.

28 *Unregulated Rates:* The rates paid by tenants are not regulated, except for the cap. It is
29 also unknown how effective or diligent NEP and other owner/developers would be in

1 ensuring that rates are always below the cap. Whether the NEP proposal is permitted
2 under Pennsylvania legislation and the Commission’s regulations are legal issues for
3 OSBA counsel. NEP indicates that it provides these services elsewhere in Pennsylvania,
4 although that appears to be limited to five buildings in PECO’s service territory with 63
5 tenants.⁹

6 *Universal Service Charges:* By taking DLC service through general service rates, the
7 developers/landlords would avoid contributing to universal service (customer assistance
8 program, “CAP”) costs (at least under the current DLC policy). Of course, there does not
9 appear to be anything to stop developers/landlords from implicitly including the cost of
10 universal service charges in their bills to residents, since those costs are an integral (albeit
11 hidden) part of DLC’s residential rates.

12 *Universal Service Eligibility:* Customers taking service through the master-meter are not
13 eligible for universal service, either in DLC’s proposal or in NEP’s proposal. NEP
14 indicates that it does not serve “low-income properties.”¹⁰ NEP also argues that the
15 discount it proposes for its own service (\$2 per month) is similar to the CAP discount.

16 *Utility EE&C:* Having more residential customers taking service through commercial rates
17 may complicate the utility’s ability to meet the legislative requirement that each class pay
18 for its own EE&C programs. CSP’s serving residential customers will presumably also
19 be engaged in projects for these general service customers, and will need to track costs
20 separately.

21 *Consumer Protections:* NEP indicates that it would attempt to adhere to Pennsylvania
22 rules regarding disconnection for non-payment, but it appears that the actual rules are those
23 established by the property owner and NEP and include the potential for eviction.¹¹

24 **Q. What, then, do you recommend regarding the NEP proposal?**

⁹ See DLC-NEP-I-1,2,15.

¹⁰ See DLC-NEP-I-25, I-6(o),(p).

¹¹ See DLC-NEP-I-6(i)

1 A. For the reasons detailed above, I recommend that the NEP proposal be rejected. However,
2 if the Commission determines that there is merit in the NEP proposal, I offer the same
3 recommendation regarding cost and revenue allocation as I do for the DLC proposal. That
4 is, master-metered multifamily customers should be treated as Rate RS customers for the
5 purposes of cost and revenue allocation. In that way, small business customers will not be
6 negatively impacted by NEP's proposal, which should relate only to residential class
7 impacts.

8

9 **Q. Does this conclude your rebuttal testimony?**

10 A. Yes, it does.

EXHIBIT IEc-R1

RDK WORKPAPERS

RDK WP2-R: RDK ACROSS with Supplemental Calculations

Workpapers will be transmitted via separate e-mail attachment simultaneous to e-mail service of this document

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA PUBLIC UTILITY
COMMISSION**

v.

DUQUESNE LIGHT COMPANY

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:
:
:
:

Docket No. R-2021-3024750

VERIFICATION

I, Robert D. Knecht, hereby state that the facts set forth in my Rebuttal Testimony labelled OSBA Statement No. 1-R and associated Exhibit IEC-R1 are true and correct to the best of my knowledge, information, and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 19 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).



Date: July 26, 2021

Robert D. Knecht

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024750
	:	
Duquesne Light Company	:	
1308(d) Proceeding	:	

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email only (*unless other noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

Deputy Chief Administrative Law Judge Joel
H. Cheskis
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COMMONWEALTH OF PENNSYLVANIA

August 10, 2021

Deputy Chief Administrative Law Judge Joel H. Cheskis
Administrative Law Judge John Coogan
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120

**Re: Pennsylvania Public Utility Commission v. Duquesne Light Company 1308(d)
Proceeding / Docket No. R-2021-3024750**

Dear Judge Cheskis and Judge Coogan:

Enclosed please find the Surrebuttal Testimony and Exhibits of Robert D. Knecht, labeled OSBA Statement No. 1-S, on behalf of the Office of Small Business Advocate (“OSBA”), in the above-captioned proceeding.

As evidenced by the enclosed Certificate of Service, all known parties will be served, as indicated.

If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Sharon E. Webb

Sharon E. Webb
Assistant Small Business Advocate
Attorney I.D. No. 73995

Enclosures

cc: PA PUC Secretary Rosemary Chiavetta (Cover Letter & Certificate of Service only)
Robert D. Knecht
Parties of Record

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA PUBLIC UTILITY
COMMISSION**

v.

DUQUESNE LIGHT COMPANY

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Docket No. R-2021-3024750

Surrebuttal Testimony and Exhibit of

ROBERT D. KNECHT

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

**Cost Allocation
Revenue Allocation
Rate Design
Small Business Initiatives
Electric Vehicle Subsidies**

Date Served: August 10, 2021

Date Submitted for the Record: _____

SURREBUTTAL TESTIMONY OF ROBERT D. KNECHT

1 **1. Introduction**

2 **Q. Mr. Knecht, please state your name and briefly describe your qualifications.**

3 A. My name is Robert D. Knecht. I submitted direct testimony, rebuttal testimony, and
4 associated exhibits earlier in this proceeding and my qualifications were presented therein.

5 **Q. Please describe the purpose of this rebuttal testimony.**

6 A. This surrebuttal testimony responds to certain aspects of the direct testimony submitted by
7 the following witnesses:

8 Howard S. Gorman, representing the Duquesne Light Company (“DLC” or “the
9 Company”) and Glenn A. Watkins representing the Pennsylvania Office of Consumer
10 Advocate (“OCA”) on matters of cost allocation;

11 Company Witness David B. Ogden relating to revenue allocation and rate design issues;

12 Company Witnesses Margot C. Everett and Krysia Kubiak relating to the various small
13 business initiatives proposed by the Company in this proceeding;

14 Matthew Deal, representing ChargePoint, Inc. (“ChargePoint”) and Company Witness
15 Sarah J. Oleksak regarding subsidy programs for electric vehicle (“EV”) charging
16 infrastructure.

17 **Q. How is the balance of your testimony organized?**

18 A. This testimony is organized by subject matter. Issues related to cost allocation, revenue
19 allocation, rate design, small business initiatives and subsidies for electric vehicle charging
20 (“EV”) infrastructure are addressed in Sections 2 through 6 respectively.

21 **2. Cost Allocation**

22 **Q. In response to your direct testimony, Witness Gorman asserts that the Commission’s**
23 **decision in the Company’s last base rates case provides more recent precedent in**
24 **support of the Company’s methodology for its allocated cost of service study**

1 (“ACOSS”), as compared to the decisions to which you cite in your direct testimony.
2 Please respond.

3 A. Based on my review of the settlement document, the recommended decision, and the
4 Commission’s order at Docket Nos. R-2018-3000124/3000829, I find no Commission
5 approval of the Company’s cost allocation methodology. Based on this record, I conclude
6 (as a non-lawyer) that the revenue allocation settlement in the last case was a “black box”
7 settlement, and it was not based on any explicit cost allocation methodology. This is
8 common practice in Pennsylvania. In order to achieve a settlement of revenue allocation
9 and rate design issues, parties to base rates cases consider the cost allocation and revenue
10 allocation recommendations of all of the witnesses, and they craft a compromise that is not
11 based on any specific costing methodology. If it were necessary to identify a specific cost
12 allocation methodology in a settlement, few electric and gas industry base rates cases
13 would settle. As OSBA indicated in its statement of support in the Company’s last base
14 rates case, the revenue allocation “. . . Settlement increases for the small business classes
15 reflect a compromise among the parties, particularly with respect to the litigation positions
16 of OSBA and OCA”¹

17 Thus, what the Commission did in Matter R-2018-2000124/3000829 was approve a
18 compromise revenue allocation settlement that was not tied to any particular cost allocation
19 methodology. It did not approve a cost allocation methodology. While I am not an
20 attorney, I doubt this approval qualifies as precedent.

21 Moreover, Witness Gorman’s attempt to use prior proceeding settlements as precedent will
22 likely serve to reduce parties’ interest in settling base rates proceedings. This conflicts
23 with the Commission’s practice to encourage settlements, and it will likely just encourage
24 more extended litigation. I encourage the Commission to emphatically reject Witness
25 Gorman’s attempt to use black box settlement provisions as precedent for future cases.

¹ Recommended Decision, Administrative Law Judge Katrina L. Dunderdale, Docket No. R-2018-3000124, October 10, 2018, at 67

1 **Q. Witness Gorman also indicates, in support of the Company's methodology, that the**
2 **current approach has been used for many years and OSBA has not heretofore taken**
3 **exception to that method. Please respond.**

4 A. OSBA has not yet taken a position regarding the appropriate cost allocation methodology
5 in this proceeding. I am advised by OSBA counsel that it will do so in its briefs. The
6 Company's attorneys will presumably be free at that time to address the issue of historical
7 consistency at the appropriate time, and to argue that no party may ever change its position
8 regarding a technical matter of regulatory policy.

9 I was retained by OSBA to provide an independent evaluation of the Company's cost
10 allocation methodology, and I have done so. I was not a participant in earlier DLC base
11 rates proceedings, and thus Witness Gorman's complaint is irrelevant to my testimony.

12 In respect of Witness Gorman's argument that the Company has long-used the
13 methodology offered in this proceeding, I observe that PPL Electric used a similar
14 approach of classifying only the secondary voltage system into customer and demand
15 components. It then determined in the PPL Electric 2010 (Docket No. R-2010-2161694)
16 proceeding that it was more accurate to classify both primary and secondary voltage
17 systems into customer and demand components. The Commission agreed. Thus, at least
18 from the perspective of Commission precedent, a long-established practice of classifying
19 primary distribution system assets as entirely demand related can reasonably be modified.

20 **Q. Still at a general level, Witness Watkins observes that your direct testimony**
21 **advocated a cost allocation methodology based on precedent, rather than developing**
22 **a methodology based on the specific attributes of the DLC distribution system. Please**
23 **respond.**

24 A. I respectfully disagree. First, cost allocation methods differ between utilities and
25 regulatory jurisdictions for reasons beyond the specific nature of a particular service
26 territory. For the classification of both electric and gas distribution plant, the choice of
27 classification methods is much more dependent on cost allocation philosophy than it is on
28 the specifics of any particular utility. For both gas and electric distribution utilities, the
29 choice of classification methodology has an enormous impact on the allocation of costs,
30 far more than could be justified by differences in individual distribution systems. Thus, at

1 least in my experience, it is common for regulators to maintain reasonable consistency in
2 basic cost allocation philosophy across utilities within the jurisdiction. In Pennsylvania,
3 for the gas distribution industry, that has generally resulted in policies which reject the
4 classification of gas mains costs into customer and demand components. For the electric
5 industry, the jurisdictional policy favors a customer-demand classification approach.

6 Moreover, It is certainly not difficult to find examples in the gas industry where witnesses
7 representing the OCA and I&E have cited to Commission precedent in support of their
8 proposed methodology for excluding a customer component of costs. In fact, the
9 Commission itself has cited to precedent across companies in support of its regulatory
10 findings.²

11 Second, regardless of the choice of a classification method, the underlying analysis must
12 necessarily reflect the specifics of the utility. The utility-specific factors include the
13 magnitude of booked costs by plant account, the utility and rate class relative loads and
14 load shapes, and the investment relationship between minimum-sized system assets and
15 higher capacity equipment. All of these factors are reflected in my analysis.

16 Third, regarding my concerns about the allocation of underground system costs, I
17 acknowledged and in fact commended the Company for attempting to be more precise in
18 segregating and allocating its assets. My concerns, however, are that the end result is an
19 allocation of plant that is not supported by any detailed evidence, it defies common sense
20 and it is inconsistent with the results at other Pennsylvania EDCs. As I explained in my
21 direct testimony and further below, I believe these results reflect not differences in the DLC
22 system, but unsupported or dubious assumptions in the cost allocation modelling.

23 **Q. In his rebuttal testimony, did Company Witness Gorman modify the ACCOSS?**

24 A. Yes, but the modifications were minimal, and had no material impact on allocated cost.
25 The primary change was to modify class revenues at present rates in the updated ACCOSS.

² See, for example, Opinion and Order, Pennsylvania Public Utility Commission, Docket No. R-2020-3018835, Order entered on February 19, 2021, at 213. *“Based on our prior determinations on our preferred ACCOSS in natural gas proceedings, we believe that the P&A ACCOSS is best suited in this proceeding.”*

1 I updated my “near replication” analysis in RDK WP1-S, which is being circulated with
2 this testimony.

3 **Q. Let’s turn to the issue of classifying primary distribution system plant. Witness**
4 **Gorman indicates that developing a minimum system calculation for primary**
5 **distribution system plant is meaningless. Can you respond?**

6 A. I agree with Witness Gorman that any standard method for classifying distribution system
7 plant is imperfect and is at best an estimate. I would also agree that it is high time for the
8 industry to begin to develop costing methodologies for distribution plant that are more
9 precise than the traditional methods for assigning distribution plant across rate classes, to
10 better reflect both the costs associated with expanding capacity and extending the system
11 to interconnect customers.

12 Nevertheless, until better methods are developed, the Commission, as well as experts for
13 several other Pennsylvania EDCs (West Penn Power, Penn Power, UGI Electric, PPL
14 Electric) have been able to develop minimum system classification factors for primary
15 system plant. I respectfully disagree that the Commission’s preferred method is
16 meaningless.

17 **Q. Witness Gorman indicates that if a minimum system calculation were to be developed,**
18 **the values you use in your direct testimony have too high a customer component. Can**
19 **you respond?**

20 A. I requested the information necessary to include a minimum system classification for
21 primary distribution system assets in OSBA-I-36, and the Company declined to provide
22 them. It is a little disingenuous for Witness Gorman to now criticize my estimates.
23 Moreover, as shown in Table IEc-S1 below, the parameters that I use for classifying
24 distribution plant have a lower customer component than the parameters used at UGI
25 Electric and PPL Electric where the Commission has explicitly approved this methodology,
26 and well below those at other large Pennsylvania EDCs. The parameters are also well
27 below those used by West Penn and Penn Power in their most recent base rates proceeding,
28 although these values were not explicitly approved by the Commission because the cases
29 were settled.

Table IEC-S1 Classification of Joint Use Distribution Plant: Primary Voltage System Customer Component of Costs						
	DLC Proposed	RDK Proposed	PPL Electric	UGI Electric	West Penn	Penn Power
364: Poles	0%	47%	51%	57%	82%	81%
365: OH Conductors	0%	47%	48%	36%	92%	90%
366: UG Conduit	0%	20%	81%	24%	NM	NM
367: UG Conductors	0%	20%	81%	100%	87%	85%
Sub-Totals	0%	37%	59%	45%	88%	88%
Note: Underground conduit plant at West Penn and Penn Power is minimal. Source: RDK Records, RDK WP1-S						

- 1 **Q. Both Witness Gorman and Witness Watkins make reference to the NARUC Electric**
2 **Utility Cost Allocation Manual (“Manual”).³ What does the Manual indicate**
3 **regarding the classification of electric distribution plant?**
- 4 A. The Manual generally indicates that a typical functionalization and classification of joint
5 use distribution plant (poles, conductors, conduit and line transformers) would include
6 segregation into primary and secondary voltage categories, and classification into demand
7 and customer components (page 89). For classifying joint use plant, the Manual posits the
8 “minimum size” (or minimum system) approach and the “minimum intercept” approach.
9 Both of these methods rely on the idea that the customer component of distribution plant
10 costs is based on the cost of either the smallest equipment in use on the system or on the
11 statistically estimated cost of equipment with zero load carrying capability. Conceptually,
12 these models are very similar.
- 13 If a minimum system method is used, the Manual is silent as to whether the classification
14 analysis should be applied separately to both primary and secondary voltage. If the
15 minimum intercept method is used, the Manual specifically indicates that a minimum
16 intercept analysis should be conducted separately for primary voltage and secondary

³ Witness Watkins in particular objects to certain general statements that I made in my direct testimony regarding the dictates of the Manual. While I do not believe my statements are inaccurate, this surrebuttal testimony provides a more careful description of the Manual.

1 voltage systems for Accounts 365 (Overhead Conductors) and Accounts 366 and 367
2 (Underground Conductors and Conduit)”⁴ Given the conceptual similarities between the
3 minimum system and minimum intercept approaches, it is not unreasonable to conclude
4 that the Manual would apply separate minimum system analyses to primary and secondary
5 voltage systems. In the alternative, it could reasonably be inferred that the Manual would
6 apply the minimum system analysis to the combined primary and secondary systems.

7 My experience in Pennsylvania is consistent with both of those interpretations. UGI
8 Electric and PPL Electric use separate minimum system analyses for primary and
9 secondary systems. West Penn Power and Penn Power apply the minimum system analysis
10 to the combined systems.

11 **Q. In your direct testimony, you expressed concern about potential double-counting of**
12 **customer loads for the allocation of overhead and underground conductors and**
13 **conduit. Please explain generally why you have this concern.**

14 A. In my experience, ACOSS analyses generally reflect that the distribution plant cost to serve
15 larger customers per unit of peak demand is no higher, and usually lower, than that to serve
16 smaller customers. In DLC’s ACOSS, the reverse is true.

17 Table IEC-S2 below compares the DLC’s unit cost to serve customers by class with ACOSS
18 analyses at UGI Electric and PPL Electric, both based on demand costs and based on total
19 costs. (I have limited this analysis to the primary voltage system, as that represents a
20 significant majority of DLC’s plant costs and represents the primary area of disagreement.)
21 As shown, DLC shows the unusual pattern that large customers are substantially more
22 expensive to serve than smaller customers per unit of peak demand. That is, as customers
23 get bigger, the unit cost gets higher, implying that there are diseconomies of scale. This
24 result is partly due to the lack of a customer component for distribution costs, but even if
25 customer-related costs are excluded, as shown in Table IEC-S2, the pattern at DLC is
26 unusual and counter-intuitive. At DLC, the plant costs for primary distribution assets for

⁴ Re Account 365, the Manual indicates, “Total primary or secondary dollars in the account . . . are assigned to customer and demand components based on conductor investment ratio.” Re Accounts 366 and 367, the Manual indicates, “If conductors are booked by voltage, as between primary and secondary, a customer component is developed for each. If network and URD investments are segregated, a customer component must be developed for each.”

1 the medium and larger general service customers are higher than that for both residential
2 and small general service, while the reverse is true for both PPL Electric and UGI Electric.

3 Moreover, while the DLC results are relatively favorable for its residential customers, that
4 same result does not apply to small general service customers. Thus, the difference at
5 DLC is not due to favorable treatment for small customers, it is due to favorable treatment
6 for residential customers only.

Table IEc-S2				
Primary System Distribution Plant Costs per Unit of NCP Demand				
	Residential	GS/GS-1/GS-1	GM/GS-4/GS-3	GL/LP/L
DLC (Demand/Total)	\$433	\$670	\$677	\$709
UGI Elec. Demand Only	\$259	\$259	\$259	\$259
PPL Elec. Demand Only	\$137	\$137	\$137	\$137
UGI Electric Total	\$575	\$794	\$315	\$283
PPL Electric Total	\$368	\$457	\$153	\$137

Gross Plant costs for primary voltage system costs in accounts 364 to 367.
Source: RDK Records, RDK WP1-S, "UGI PPL" worksheet

7 **Q. Based on the additional discovery responses you received, please update your**
8 **understanding of the Company's methodology for functionalizing, classifying and**
9 **allocating primary and secondary voltage system plant costs.**

10 **A.** The Company's method is the following:

- 11 • Plant costs are sub-functionalized between primary and secondary voltage
12 systemsbased primarily on a review of purchases between 1999 and 2019.⁵ A
13 significant majority (73 percent) of joint use distribution costs (Accounts 362-368)
14 are deemed to be related to the primary voltage system.
- 15 • The Company segregates the costs for some plant equipment between its downtown
16 network and its non-network systems. The entire downtown network is deemed to
17 be non-residential, but it represents under 3 percent of distribution plant costs for

⁵ DLC Statement No. 15 at 19.

1 those accounts that are segregated. Cost segregation is undertaken for substations
2 (Account 362), underground conductors and conduit (366, 367), and line
3 transformers (368). Non-network costs in accounts 366 to 368 (underground
4 conductors/conduit and line transformers) are further segregated into underground
5 residential developments (“URD”) and “Radial” systems.⁶ The URD system serves
6 only residential customers; the Radial system serves primarily non-residential
7 customers. As Witness Watkins correctly points out, this sub-functionalization is
8 essentially an effort to directly assign underground system costs between residential
9 and non-residential classes. No similar effort is made to directly assign overhead
10 system costs.

- 11 • As discussed above and in my direct testimony, primary voltage system costs are
12 assumed to be entirely related to non-coincident peak (“NCP”) demand; secondary
13 voltage system costs are classified using a minimum system method.
- 14 • The Company develops separate NCP demand allocation factors for its network,
15 non-network, URD and Radial systems. The network and non-network demand
16 allocators sum to the total system NCP. Allocators for the URD and Radial systems
17 are intended to reflect the usage of the underground systems.

18 **Q. Given this methodology, why does the Company’s allocation produce results that are**
19 **counter-intuitive and at odds with the results from other Pennsylvania EDCs.**

20 A. This unusual pattern results primarily from three factors:

- 21 • First, a disproportionate share of underground system costs is “directly assigned”
22 to the non-residential classes. For the primary voltage system, the non-residential
23 classes are assigned 85 percent of costs, while representing only 53 percent of
24 distribution system NCP demand.⁷

⁶ Line transformer costs are first segregated between overhead and underground assets, and the underground assets are further segregated into network, URD, and Radial systems.

⁷ My more detailed calculations regarding these figures are shown in RDK WP1-S in the “UGI PPL” worksheet.

- 1 • Second, despite being assigned a disproportionate share of underground system
2 costs, non-residential customers are assigned a full share of overhead system costs.
- 3 • Third, the Company adjusts the allocator for the Radial system underground plant
4 costs to exclude residential customers not served by those assets. However, it
5 makes no similar adjustment for non-residential customers and assumes all non-
6 residential loads are served by these assets.

7 **Q. Please explain how the Company segregates its underground conductor and conduit**
8 **costs between the downtown network, radial and URD cost categories for ACOSS**
9 **purposes.**

10 A. These values represent engineering estimates, and do not appear to be based on any
11 contemporaneous accounting data or on any available detailed studies. OSBA requested
12 the details for this cost segregation in OSBA-I-33, but no details were provided. Given the
13 large cost impact that this “direct assignment” approach has on allocated cost, I conclude
14 that a fundamental aspect of the Company’s ACOSS results is unsupported. Without this
15 support, I conclude that the approach used in my direct testimony is superior, because it
16 follows the common practice of allocating all demand-based costs using NCP demands.

17 **Q. Does the Company explain why it does not make an adjustment to overhead system**
18 **costs to reflect the higher assignment of underground system costs to non-residential**
19 **customers?**

20 A. The Company’s position appears to be that every customer uses the overhead system
21 equally, and that non-residential customers disproportionately use the underground
22 systems. I respectfully disagree. If, indeed, non-residential customers use a
23 disproportionate share of the underground system, that reduces the need for overhead
24 system costs. In effect, if the underground system were to be replaced by overhead system
25 assets, the Company’s method would have us believe that non-residential customers are
26 disproportionately responsible for overhead system costs, beyond that which would be
27 assigned using a demand allocator.

28 **Q. Do you have any other concerns regarding the Company’s allocation of distribution**
29 **plant assets?**

1 A. Yes. The Company’s “direct assignment” approach for cost allocation is imperfect, in that
2 some residential customers are served by the Radial system. The Company assumes that
3 97.5 percent of residential loads are not served from the Radial system. When asked to
4 provide details for this estimate, the Company indicates only that it relied on engineering
5 estimates, and it provided no supporting detail (OSBA-I-33(c)). Moreover, unlike the
6 adjustment for residential customers, the Company assumes that all non-residential load is
7 served by underground Radial system assets. This assumption is not reasonable. It is
8 likely that a significant share of non-residential load does not use underground assets.
9 When queried for the basis for this assumption, the Company offers no explanation other
10 than it did not make an adjustment for non-residential customers (OSBA-I-33(c)).

11 **Q. At page 5 of his rebuttal testimony, Witness Watkins observes that in making your**
12 **modifications to demand allocators to reflect the concerns discussed above, you failed**
13 **to adjust the classification of secondary URD costs to be consistent with your thesis.**
14 **Please respond.**

15 A. Witness Watkins is correct. It was my intent to adjust the URD allocation factors to be
16 consistent with the treatment of overhead and underground radial costs, and thus I should
17 have adjusted the classification factor in those allocators. In fact, Mr. Watkins critique
18 applies both to my treatment of primary and secondary URD costs, because I include a
19 customer component in my primary system voltage allocations. I therefore modified my
20 classification factors for URD assets to be consistent with those used for the Radial system.

21 In reviewing my calculations based on Witness Watkins calculations, I also observed that
22 in developing my demand allocation factors for underground Radial and URD systems, I
23 based those allocators on total NCP demand. Because these systems do not include the
24 downtown network, I adjusted my allocators to exclude downtown network demands.

25 The former correction serves to increase costs assigned to non-residential customers; the
26 latter correction modestly reduces costs assigned to non-residential customers.

27 **Q. Do you have any other corrections to your ACOSS analysis?**

28 A. Yes. I observe that the Company sub-functionalizes its substation costs into network and
29 non-network categories, with network customers representing about 2.5 percent of system

costs for that account and 2.6 percent of system NCP demand. However, the Company allocates the non-network costs based on total system NCP demand, rather than non-network demands. In effective, network demands are counted twice; first for network costs and then for non-network costs. I have corrected for this inconsistency in my surrebuttal ACOSS (RDK WP2-S).

Q. What are the net impacts of the revisions to your ACOSS?

A. To a large extent, the modifications that I made to my direct testimony ACOSS tend to offset, resulting in only modest changes in allocated cost. Table IEc-S2 below compares class rates of return at present rates in my direct testimony with the updated values in RDK WP2-S. The table includes the Company’s updated values as well.

Table IEc-2 Comparative Cost Allocation Results Class Rates of Return at Present Rates			
Class	DLC Rebuttal	RDK Direct	RDK Surrebuttal
RS	5.4%	2.6%	2.6%
RH	2.5%	1.2%	1.1%
RA	3.3%	1.5%	1.4%
GS	5.8%	2.1%	2.1%
GM<25	6.9%	9.2%	9.0%
GM>25	4.7%	10.2%	10.0%
GMH<25	5.5%	6.5%	6.3%
GMH>25	3.2%	7.6%	7.5%
GL	6.2%	12.6%	12.8%
GLH	2.7%	6.2%	7.0%
L	5.2%	12.7%	12.5%
HVPS	739%	672%	671%
SE	11.5%	22.7%	21.8%
SL	15.1%	16.4%	16.4%
UMS	2.4%	-1.8%	-1.8%
System	5.4%	5.4%	5.4%
Source: DLC Exhibit 6-1(R)), RDK WP2, RDK WP2-S			

1 **3. Revenue Allocation**

2 **Q. Witness Ogden indicates, “The Company’s proposed revenue allocation is impartial**
3 **and does not favor any rate class or customer group, whereas the revenue allocations**
4 **proposed by OCA and OSBA each favor their respective customer groups, at the**
5 **expense of other customer groups.” Please respond.**

6 A. It is unfortunate that Witness Ogden feels the need to smear the integrity of Witness
7 Watkins and me. I believe that Witness Watkins and I both prepared cost allocation
8 analyses in good faith, and we developed revenue allocation proposals based on that
9 analysis. Similarly, we both recognize the limits to cost allocation analyses, and we both
10 recognize that there are disagreements among experts. While I believe the Company’s cost
11 allocation analysis is similarly based on principle, there is no denying that the method used
12 by the Company is not consistent with established Commission precedent, and it produces
13 the highly unusual result that the Company’s implied cost to provide primary voltage
14 distribution service to larger customers is more expensive per unit of peak demand than to
15 provide that service to smaller customers. There is nothing about the Company’s costing
16 method that implies it is any more impartial than the analyses put forward by Mr. Watkins
17 and me.

18 **Q. Witness Ogden indicates that the Company considered three different measures of**
19 **progress toward cost-based rates in developing its revised rebuttal revenue allocation,**
20 **in response to your direct testimony. Please comment.**

21 A. Consideration of all three metrics is far superior to the Commission’s traditional practice
22 of relying solely on the badly flawed indexed rate of return metric. The Company is to be
23 commended.

24 **Q. Did the Company update its revenue allocation proposal in rebuttal?**

25 A. Yes it did, although the changes were relatively modest.

26 **Q. What is your assessment of the Company’s rebuttal revenue allocation proposal?**

27 A. Like its direct case, I believe the Company’s revised revenue allocation proposal is
28 reasonably consistent with its cost allocation methodology, and reasonably reflects the
29 principle of rate gradualism. I disagree with it only in that it relies on a cost allocation

1 methodology that is not consistent with Commission precedent and produces results at
 2 variance with those of other Pennsylvania EDCs.

3 **Q. In light of the changes to your ACOSS, did you develop an alternative revenue**
 4 **allocation proposal?**

5 A. I did, as shown in RDK WP2-S. In so doing, I used the same calculation methodology as
 6 detailed in my direct testimony. Because the cost allocation results are little changed, so
 7 too is my proposed revenue allocation. Table Iec-S3 below compares my revenue
 8 allocation analyses.

Table Iec-S3 Comparative Revenue Allocation Proposals						
Class	DLC Rebuttal		RDK Direct		RDK Surrebuttal	
	\$000	%	\$000	%	\$000	%
RS	\$40,889	14.3%	\$68,297	23.4%	\$68,057	23.3%
RH	\$ 6,176	22.5%	\$ 6,554	23.4%	\$ 6,532	23.3%
RA	\$ 711	22.5%	\$ 755	23.4%	\$ 752	23.3%
GS	\$ 1,521	14.2%	\$ 2,729	23.4%	\$ 2,725	23.3%
GM<25	\$ 4,983	15.7%	\$ 861	2.6%	\$ 917	2.8%
GM>25	\$13,065	17.3%	\$ 1,804	2.6%	\$ 1,923	2.8%
GMH<25	\$ 555	16.2%	\$ 427	12.1%	\$ 466	12.9%
GMH>25	\$ 1,300	22.3%	\$ 365	6.6%	\$ 435	7.4%
GL	\$ 9,928	15.8%	\$ 1,673	2.6%	\$ 1,781	2.8%
GLH	\$ 1,676	22.5%	\$ 1,256	17.8%	\$ 836	11.6%
L	\$ 3,889	18.3%	\$ 485	2.6%	\$ 516	2.8%
HVPS	\$ 0	0.0%	\$ 8	2.6%	\$ 9	2.8%
SE	\$ 76	5.4%	\$ 39	2.6%	\$ 41	2.8%
SL	\$ 511	5.2%	\$ 259	2.6%	\$ 276	2.8%
UMS	\$ 246	22.5%	\$ 261	23.4%	\$ 260	23.3%
System	\$85,528	15.5%	\$85,773	15.6%	\$85,526	15.5%
Source: Table DBO-1(R); RDK WP1-S; RDK WP2-S						

1 **Q. Please address Witness Ogden’s proposal for a revenue allocation scaleback in the**
2 **event that the Commission modifies the overall proposed revenue requirement in this**
3 **proceeding.**

4 A. As I understand it, Witness Ogden proposes that the Commission first issue its decision on
5 the revenue requirement, on the cost allocation methodology, and on the revenue allocation
6 at the originally proposed revenue requirement. In the compliance phase of the process,
7 the Company would then prepare a revised ACOSS based on the new revenue requirement
8 and the approved ACOSS methodology. The Company would then develop a revenue
9 scaleback using the approved revenue allocation, with some combination of proportional
10 reductions and judgmental adjustments. (The Company would presumably include
11 consideration of the revised ACOSS, since there would be no reason other than revenue
12 allocation to create the new ACOSS in the compliance phase.) Witness Ogden does not
13 contemplate any involvement of the other parties to this proceeding in the compliance
14 process. This failure is particularly problematic, as there is potential for disagreement
15 regarding cost allocation, and there is almost certain to be disagreement regarding the
16 unspecified judgmental criteria the Company proposes to apply to revenue allocation in
17 this process.

18 As a theoretical matter, I generally agree with Witness Ogden that a revenue allocation
19 scaleback would be much more accurate if undertaken after the Commission’s decisions
20 on revenue requirement and cost allocation methodology are known. Procedurally,
21 however, I do not know how that process would work without either (a) denying
22 participants a right to participate in the revised revenue allocation or (b) incurring a
23 significant time delay in the process. If these issues can be resolved, I would support
24 Witness Ogden’s proposal. However, if they cannot, the proportional scaleback approach
25 has certain advantages. First, to the extent the full requirement revenue allocation sets
26 upper bounds on rates as a multiple of system average, a proportional scaleback retains
27 those bounds. Thus, for example, if the Commission approves a maximum increase for a
28 particular class of 1.5 times the system average at the full revenue requirement, that limit

1 will generally be automatically maintained with a proportional scaleback.⁸ Second, with a
2 proportional scaleback, all classes that were assigned increases at the full requirement
3 benefit from an overall reduction. Third, the proportional scaleback is arithmetically
4 simple, and thus is typically not contested in the compliance process.

5 The procedural problems can also be resolved by developing an alternative arithmetic
6 scaleback approach in the evidentiary portion of the proceedings. As a conceptual matter,
7 I believe that such an approach can be reasonable. However, as I indicated in my rebuttal
8 testimony, the scaleback proposal should be subject to the same considerations as the
9 revenue allocation at the full revenue requirement, namely the progress toward cost-based
10 rates and consideration of the principle of rate gradualism. Thus, while I do not disagree
11 that an alternative scaleback proposal such as that advanced by I&E Witness Sakaya in this
12 proceeding could theoretically be reasonable, I concluded (in my rebuttal testimony) that
13 Witness Sakaya's proposal was not consistent with the cost and rate gradualism principles.

14 Thus, unless the procedural problems that I identified can be resolved, I recommend that
15 the Commission adopt a proportional scaleback approach to whatever revenue allocation
16 proposal it adopts in this proceeding.

17 **4. Rate Design Issues**

18 **Q. In your direct testimony, you raised questions regarding the basis for retaining**
19 **separate heating and non-heating rates for both the GM and GL rate classes. Please**
20 **address Witness Ogden's response to your questions.**

21 A. Witness Ogden confirms my hypothesis that the heating classes have existed for many
22 (more than 40) years, stretching back to the time of fully integrated rates for generation,
23 transmission and distribution service. Witness Ogden also confirms that, for cost
24 allocation purposes, the heating classes peak in winter months, and that distribution costs
25 are assigned to those classes based on the winter peaks in the ACOSS. Witness Ogden
26 then indicates that a separate heating class rate allows "rate design to be tailored to these
27 customers' load profiles, but then indicates that the lack of a demand charge in the winter

⁸ This conclusion is not quite correct if some classes are awarded rate decreases, but that issue does not obtain in the present matter.

1 for the heating classes is related to revenue stability rather than matching costs and rates.
2 Witness Ogden also makes reference to a higher load factor for the heating classes, which
3 may be true on a billing demand basis but is not true for the Company's NCP demands in
4 its cost allocation study.

5 At the end of the day, however, Witness Ogden indicates that the Company is willing to
6 undertake an "internal" review of the rate design for the current heating service classes "for
7 potential review" in a future base rate case, addressing ". . . 1) winter demand charge for
8 heating classes, 2) phase out and merge the heating classes into non-heating classes, 3)
9 closing the heating classes to new customers." The Company also sensibly proposes to
10 consider bill impacts resulting from any proposed change in rate design.

11 I agree with the Company's proposal, with only minor modifications. I agree that a
12 detailed evaluation of the general service rate design cannot reasonably take place in the
13 context of this proceeding, and it is best carried out by the Company between rate filings.
14 The minor modifications/clarifications I propose are as follows: First, I recommend that
15 this review be submitted with the Company's next base rates case filing for public review.
16 Witness Ogden's references to "internal review" and "potential review" are a recipe for
17 continuing the status quo. Second, while bill impacts are an important consideration, they
18 should be considered as part of a rate design transition, and not as rationale for rejecting
19 cost-based rate design changes.

20 **Q. In your direct testimony, you also raised a question about the mix of revenues**
21 **recovered in the demand and energy charges in the Rate GM tariff (both above and**
22 **below 25 kW). Please address Witness Ogden's response.**

23 A. Witness Ogden indicates that the Company carefully considered the balance between
24 demand charge and energy charge revenues, and it opted to disproportionately increase the
25 energy charge to improve revenue stability and to protect low load factor customers from
26 high bills. Because it is not feasible to precisely match rate design with the cost causation
27 parameters in the ACOSS, the Company's approach is not obviously unreasonable. In
28 moving to greater dependence on the energy charge rather than the demand charge,
29 however, the Company is generally moving away from cost-based rates. My experience
30 also is that Pennsylvania EDCs have generally been increasing the relative importance of

1 demand charges (vis-à-vis energy charges) rather than decreasing them. Given its
2 preference for energy charges, the Company may wish to consider modifying its energy
3 charges to better align with distribution system peak periods, through seasonal or other
4 time-differentiated rates.

5 However, because the Company has agreed to undertake a review of the heating class tariff
6 design for its next base proceeding, I do not recommend that it also undertake a detailed
7 review of the energy/demand split in the GM tariff at this time. The compounding effect
8 on rates of two significant tariff changes can often be problematic.

9 **5. Small Business Initiatives**

10 **Q. Does the Company acknowledge that it has not recognized revenues from incremental**
11 **loads related to the Community Development Rider (“CDR”) program in its test year**
12 **forecast and that the benefits would flow to shareholders in the near term?**

13 A. Yes, in Witness Everett’s rebuttal testimony at page 8.

14 **Q. Does the Company acknowledge that there may be free riders associated with the**
15 **proposed CDR program?**

16 A. Yes, in Witness Everett’s rebuttal testimony at page 8-9.

17 **Q. Do you agree with Witness Everett’s contention regarding the CDR program that “. . .**
18 **even if the Company were to benefit from these increases in sales in the short run,**
19 **customers are not harmed and all the benefits from increased sales contributing to**
20 **fixed costs in the long run accrue to all customers, not the Company”?**

21 A. Only in part. Witness Everett is incorrect about the lack of harm, since the Company is
22 including the costs of the program in the FPFTY revenue requirement, rather than funding
23 the initiative through shareholder funds. I agree that any longer-term benefits of
24 incremental loads (excluding all free-riding loads) will eventually accrue to ratepayers.
25 Thus, the equity balance of the CDR program is as follows. The Company incurs no cost
26 and no risk, and it benefits in the short run from any incremental load. Ratepayers bear
27 the entire upfront cost, and they may or may not see longer term benefits from the
28 incremental loads associated with the program. I do not believe that this qualifies as an

1 equitable balance of risks, costs and rewards between shareholder and ratepayer. I
2 therefore retain the recommendations in my direct testimony.

3 **Q. Turning to the New Business Stimulus Rider (“NBSR”), Company Witness Kubiak**
4 **frames the policy issue as follows: “The question remains, in the face of an**
5 **unprecedented economic impact from a global pandemic, is the utility’s role in its**
6 **community to simply continue providing safe, reliable service as he asserts, or is it**
7 **reasonable to consider that additional assistance may be needed?” Do you agree?**

8 A. Generally, I do. I observe only that by “utility’s role,” Witness Kubiak refers to the utility
9 as the entity that imposes a fee (or tax) on captive ratepayers in order to achieve a general
10 social benefit, as well as a rate reduction benefit for certain favored ratepayers. Witness
11 Kubiak makes it clear that the utility is not the entity that will fund such benefits – it is the
12 ratepayers.

13 **6. Electric Vehicle Charging Subsidies**

14 **Q. Witness Deal representing ChargePoint responds to your direct testimony by**
15 **expressing disappointment that you recommend rejecting programs that “. . . would**
16 **provide significant benefits to many small businesses who may be interested in hosting**
17 **EV charging stations or electrifying their fleets.” Please respond.**

18 A. In representing the OSBA, I attempt to take a principled approach to intra-class revenue
19 recovery and rate design issues. I am primarily motivated by attempting to match revenues
20 with costs, a principle which the Commonwealth Court has denoted the “polestar” criterion
21 for ratemaking.

22 Witness Deal is correct that subsidies for EV charging infrastructure may possibly help
23 some small businesses, while also helping equipment vendors such as ChargePoint. What
24 Witness Deal ignores is that these subsidies are necessarily provided by other small
25 business customers. I therefore worked with OSBA to offer a set of reasonable regulatory
26 principles that we believe the Commission should consider in evaluating whether EV
27 charging infrastructure should be subsidized, and thus how to reasonably balance the
28 interests of both the beneficiaries and providers of the subsidies. These principles are set

1 forth in my direct testimony at pages 32-34. While the specifics vary, these principles are
2 generally applicable to other proposed subsidy programs for small business customers.

3 In addition to the regulatory principles listed in my direct testimony, it is also important to
4 recognize that adopting subsidies for EV charging infrastructure at this time will require a
5 tax on small businesses, many of whom have been devastated by the pandemic. The
6 damage from the pandemic to small businesses is well-documented.⁹ In contrast, at least
7 some of the benefits of the subsidies will flow to equipment vendors such as ChargePoint,
8 whose business has boomed over the past year. ChargePoint has a market cap of some
9 \$7.5 billion at 5 August 2021.¹⁰ ChargePoint reports that its quarter-ending April 2021
10 revenues are up 24 percent over the prior year, with gross margin up 21 percent.
11 ChargePoint expects its current-year second quarter revenues to increase by 13.5 to 25.9
12 percent relative to its first quarter revenues. ChargePoint also reports that EV sales are up
13 40 percent year over year.¹¹ Very few small businesses can sport such numbers.

14 Thus, the Commission should consider whether it is equitable to require day care centers,
15 restaurants, hair salons, dry cleaners, retail shops and the wide array of other small
16 businesses, many who are struggling to survive, to subsidize these booming businesses.

17 **Q. Witness Deal also argues that you ignored the benefit associated with future EV**
18 **charging loads to other base rate customers. Please respond.**

19 A. I acknowledged the potential for such benefits. However, there is no evidence that
20 subsidies to EV charging infrastructure will increase distribution system loads to the
21 benefit of other customers. First, there is no evidence that such subsidies result in
22 increased load, because EV charging load will grow with or without subsidies. How much
23 of the incremental EV charging load would not have occurred without the subsidies is
24 unanalyzed and unknown. Second, it is far from clear, even if there are incremental loads

⁹ See, e.g., OCA Statement No. 5 at 9-14. Moreover, even as of the most recent US Census survey (July 18, 2021), over 67 percent of Pennsylvania businesses still report that the pandemic is having either a large or moderate negative impact on them. See <https://portal.census.gov/pulse/data/>

¹⁰ <https://finance.yahoo.com/quote/CHPT?p=CHPT&.tsrc=fin-srch> reviewed 5-Aug-2021 8:10a.

¹¹ https://s22.q4cdn.com/779683160/files/doc_financials/2022/q1/ChargePoint-Reports-First-Quarter-Fiscal-2022-Financial-Results-2021.pdf reviewed 5-August-2021 8:13a.

1 associated with subsidized charging infrastructure, whether those loads will generate
2 revenues in excess of the incremental cost to serve. Depending on the nature of the
3 charging operations, the loads can potentially have extremely unattractive load factors, and
4 may put strains on specific components of the electric distribution system requiring system
5 upgrades. At this time, the long-term impact of increased EV charging loads on
6 distribution system costs is speculative. For those reasons, I do not believe that
7 hypothetical benefits from possible incremental loads justifies significant utility
8 investment at ratepayer expense.

9 **Q. Turning to the Company’s rebuttal Witness Oleksak, does the Company acknowledge**
10 **that its proposed subsidy programs for EV charging infrastructure would address**
11 **only a small part of the demand as you indicated in your direct testimony.**

12 A. Yes. Witness Oleksak acknowledges this fact at page 17 of the rebuttal testimony. From
13 a ratepayer perspective, the good news is that this approach limits the magnitude of the
14 subsidies demanded from them. From a regulatory perspective, the bad news is that this
15 approach represents a textbook example of undue discrimination, with similarly situated
16 customers being treated unequally. Recipients of the subsidies must either be fast, lucky,
17 politically connected or have advantageous relationships with the Company to get the
18 subsidies, while other less fortunate customers do not.

19 **Q. Witness Oleksak indicates that you do not dispute the Company’s assertion that the**
20 **Fleet Charging Pilot programs have a positive cost-benefit ratio. Please respond.**

21 A. As I indicated at page 33 in my direct testimony, any cost benefit analysis of subsidies for
22 EV charging infrastructure must separate incremental loads that would not otherwise be
23 achieved and free-rider loads that the Company would otherwise have seen without the
24 subsidies. It is my understanding that the Company did not make such an assessment for
25 its Fleet Charging Pilot and assumed that all loads associated with subsidized infrastructure
26 were causally related to the subsidies.

27 **Q. Does the Company acknowledge that small business customers will be required to**
28 **contribute to subsidies for the Fleet Charging Pilot program?**

29 A. Yes. At page 48, Witness Oleksak indicates, “The remaining program costs are socialized
30 among the C&I customer class.”

1 **Q. Does this conclude your surrebuttal testimony?**

2 **A. Yes, it does.**

EXHIBIT IEc-S1

RDK ELECTRONIC WORKPAPERS

RDK WP1-S: Near Replication of DLC Rebuttal ACOSS

RDK WP2-S: RDK Surrebuttal ACOSS

Workpapers will be transmitted via separate e-mail attachment simultaneous to e-mail service of this document

EXHIBIT IEC-S2

REERENCED INTERROGATORY RESPONSES

(Statements OSBA-I-R and OSBA-I-S)

DLC-NEP-I-1

DLC-NEP-I-2

DLC-NEP-I-6

DLC-NEP-I-15

DLC-NEP-I-25

Nationwide-I-15

Nationwide-I-16

OSBA-I-1

OSBA-I-3

OSBA-I-8

OSBA-1-11

OSBA-I-12

OSBA-I-27

OSBA-I-33

OSBA-I-35

OSBA-I-36

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: V.P. Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 1

1. Please identify the number of master metered buildings in Pennsylvania that are submetered by, or for which the electric service is otherwise managed by, NEP.

RESPONSE:

Five (5).

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 2

2. For the buildings identified in response to question (1): please identify the number of tenants, by year and broken down by residential and nonresidential, to which electric service was terminated for the period 2017 through 2021 YTD.

RESPONSE:

The number of total disconnections executed by NEP in Pennsylvania for each year are below. These figures do not account for multiple disconnections of the same tenant. Therefore, because some tenants are disconnected multiple times, the number of individual tenants who were disconnected at any point during the given year will be lower than the numbers reflected below.

2017:	0 residential tenants; 0 nonresidential tenants
2018:	4 residential tenants; 0 nonresidential tenants
2019:	113 residential tenants; 0 nonresidential tenants
2020:	27 residential tenants; 0 nonresidential tenants
2021 YTD:	63 residential tenants; 0 nonresidential tenants

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 6

6. With respect to NEP-submetered residential buildings in Pennsylvania, provide NEP's policies, procedures, and practices for each of the following, and provide all related documents.
- a. The rates charged to residential tenants for electric service.
 - b. How residential tenants' rates for electric service are established.
 - c. Whether and how residential tenants can participate in the calculation of rates for electric service.
 - d. The information available to residential tenants regarding how their electric rates are calculated, and the method by which residential tenants access such information.
 - e. The structure and billing determinants reflected residential tenants' electric rates (e.g., fixed customer charge, per-kWh charges, etc.).
 - f. How residential tenants are billed for electric service (e.g., separate monthly bill, etc.)
 - g. Residential tenants' options for remitting payment for electric service
 - h. Payment terms applicable to residential tenants' charges for electric service. Address in your answer, at a minimum: the time period between bill render date and due date, and the amount and applicability of late payment charges.
 - i. How residential tenants' obligations to pay for electric service are enforced.
 - j. How residential tenants choose an electric generation supplier (EGS).
 - k. Payment arrangement terms to which residential tenants are entitled.
 - l. Due process prior to service termination to which residential tenants are entitled.
 - m. The process by which residential tenant disputes regarding electric service (including but limited to disputes concerning billing, metering, service termination, and quality of service) are initiated, received, evaluated, resolved, and/or appealed (as applicable).
 - n. How residential tenants are made aware of the dispute processes identified in response to part (m) above.
 - o. Bill-payment assistance programs available to residential tenants.
 - p. How residential tenants are made aware of the bill-payment assistance programs identified in response to part (o) above.
 - q. Energy efficiency programs available to residential tenants.
 - r. How residential tenants are made aware of the energy efficiency programs identified in response to part (q) above.
 - s. Budget billing programs available to residential tenants.

- t. How residential tenants are made aware of the budget billing programs identified in response to part (s) above.
- u. Time-of-use programs made available to residential tenants.
- v. For each of the items identified in responses to (a) through (u) above, please identify the entity(ies) with the discretion to establish and/or modify such item, and describe and explain the process by which such entity(ies) establish and/or modify such item.

RESPONSE:

Response 6.a.: The rates charged to residential tenants by NEP are the approved rates of the local electric utility. NEP employs a team of qualified individuals to monitor the approved rates of the local electric utilities in each service territory in which it operates, including all riders and fees, and to incorporate those rates into NEP's billing system on a monthly basis. In order to ensure that amounts billed by NEP do not exceed those that would be billed by the local utility in compliance with 66 Pa.C.S. Section 1313, Price upon resale of public utility services, each component of the utility's rates are rounded down to the nearest cent prior to being summed for a total billing amount.

Response 6.b.: See Response 6.a.

Response 6.c.: Residential tenants can only participate in the calculation of rates for electric service to the extent that those rates are established through PUC proceedings. NEP does not alter the established rates, and therefore there is no process at NEP in which resident participation is possible.

Response 6.d.: NEP communicates to residents, including on their monthly billing statements, that the rates applied to their usage are the "applicable local utility rates for residential service." Utility tariff rates and riders are publically available to utility customers as well as members of the public.

Response 6.e.: See Response 6.a.

Response 6.f.: Residential tenants receive separate paper monthly bills, and may elect to receive paperless billing and/or manage their account through NEP's online resident portal or smartphone app.

Response 6.g.: Residents may pay their bills by check, in person at Walmart and Kroger locations, by signing up for Autopay with a credit card, debit card or bank account, via electronic bill pay set up with their bank, online through NEP's resident portal or smartphone app, or by phone.

Response 6.h. Bills are due a minimum of 14 days from the date the bill is issued. NEP allows a 7-day grace period following the due date during which no action is taken, and payments received during the grace period are considered on-time. A twenty dollar (\$20) late payment fee is applied to accounts with past-due balances greater than \$100 for payments received following the grace period.

Response 6.i. Tenants obligations to pay for electric service are enforced as directed by the property owner or condominium association and described in the contract between that entity and NEP, and may include disconnection of electric service and/or eviction of apartment tenants at the landlord's option.

Where disconnection of service has been authorized by the property owner or condominium association, NEP adheres as closely as possible to the procedures applicable to public utilities in Pennsylvania, including all notice requirements, the Winter Disconnect Rule, and COVID-19-related restrictions, prior to disconnecting electric service (See Response 6.l. below). Where specified by an agreement between an apartment community owner and NEP, NEP may request that the community owner initiate eviction proceedings against tenants whose past-due balances exceed \$500. Under all such agreements, community owners have the option of assuming the tenant's past-due balance instead of initiating eviction proceedings.

Response 6.j. Residential tenants do not independently choose an EGS apart from the property owner's selection of a competitive supplier.

Response 6.k. If a resident is scheduled for disconnection and is unable to pay the full past due balance by the date on the disconnect notice, NEP will offer a 50/50 payment plan to avoid disconnection. The plan will require a payment of 50% of the amount on the disconnect notice (by the date on the notice) and the remaining 50% within 14 days of the disconnect day. This plan is only applicable prior to disconnection.

40% Down Plan: This payment plan requires a down payment of 40% of the total current balance unless a community requests NEP to offer 30%. Once the payment is posted to the account, we will be able to set the remaining balance on the account for a 3, 6, or 9-month plan. In order to enroll in the 9-month plan we would need to receive a copy of the resident's current lease. Once the payment is posted we will disperse evenly at a 1% interest rate. The payment plan amount is a separate and additional charge added to the monthly charges. If the bill is not paid in full the payment plan will be canceled and the resident will have to pay a 50% down payment to set up another payment plan.

Response 6.l. NEP adheres as closely as possible to the procedures applicable to public utilities in Pennsylvania, including all notice requirements, the Winter Disconnect Rule, and COVID-19-related restrictions, prior to disconnecting electric service. Written notice of disconnect is postmarked to residents at least 14 days prior to disconnection in Summer months (4/16 - 10/31) and at least 24 days prior to disconnection in Winter months (11/1 - 4/15). NEP will not disconnect power if the projected low for the day of disconnect is below 10 degrees. NEP will not disconnect power if the projected high for the day of disconnect and the day after disconnect is below 32 degrees.

Response 6.m.: Resident complaints and questions are fielded by NEP’s in-house call center and resident support specialists. Any issues that cannot be resolved by the first-line resident support team are escalated to the appropriate department for further evaluation and response, including but not limited to meter testing and rate verification.

Response 6.n.: Residents options for contacting NEP’s resident support team are indicated on resident bills, within NEP’s online resident portal and smartphone app, and on NEP’s website.

Response 6.o.: Residents in need of bill payment assistance are directed to local community organizations. Depending on their income level, need and their NEP bill, residents may or may not qualify for assistance.

Response 6.p.: NEP does not typically service low income properties. To the extent tenants need assistance in payment they are directed to online resources or provided bill pay options as indicated in Response 6.k.

Response 6.q.: NEP does not provide energy efficiency programs on an individual by individual resident basis. NEP assists property owners with energy efficiency upgrades on a property-wide basis.

Response 6.r.: See Response 6.q. Residents have access to any technologies which may impact usage within their unit and have access to individual usage through smart meter data.

Response 6.s.: NEP does not presently offer budget billing programs.

Response 6.t.: See Response 6.s.

Response 6.u.: NEP does not presently offer time-of-use programs.

Response 6.v.: Items “a” through “e” cover local electric utility rates which are established through the ratemaking process at the Pennsylvania Public Utility Commission. As noted in Item “c,” NEP does not alter the approved rates of the local electric utility, and is bound by 66 Pa.C.S. Section 1313 to bill tenants at rates that do not exceed those of the local electric utility. Items “f” and “i” are governed by NEP’s contract with the property owner, and cannot be altered except by mutual agreement in writing of the property owner and NEP. Items “h,” “k” through “n,” and “p” through “u” are determined internally by NEP with reference to industry best practices, the practices of local electric utilities, and the technological capabilities available to NEP.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 15

15. Reference Direct Testimony of Teresa Ringenbach, p. 7, lines 4-7. Provide all documents related to the impacts of NEP's services on utilities or non-participating customers.

RESPONSE:

NEP has operated in the PECO and Ohio utility service territories. The majority of our business is within the AEP Ohio service territory. None of the rate cases in PECO or AEP Ohio have included submetering by NEP as a revenue impact.

AEP Ohio rate cases since NEP business began:

Case Number	Case Title	Open Date	Closed Date
20-0585-EL-AIR	Ohio Power Company	04/09/2020	
11-0352-EL-AIR	OHIO POWER COMPANY	01/27/2011	
R-2018-3000164	PECO Energy Company – Electric Division	03/29/2018	12/20/2018
R-2021-3024601	PECO Energy Company – Electric Division	03/30/2021	

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 25

25. Reference Direct Testimony of Teresa Ringenbach, p. 18, lines 9-10. Does Ms. Ringenbach agree that access to Duquesne Light's Customer Assistance Program may also allow tenants to reduce their costs? If not, why not?

RESPONSE:

It is Ms. Ringenbach's understanding that Duquesne Light's proposal is that a master metered building will not have submeters for tenants and tenants will also no longer have access to the Customer Assistance Program. Under this circumstance, no, the tenant will not be able to access the Customer Assistance Program to reduce their costs.

In addition, not all tenants qualify for the Customer Assistance Program. Therefore access to the Program may be available, but actual use of the program is not. NEP will provide an immediate minimum discount to all tenants regardless of income.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: C. James Davis

Nationwide-I-15

15. Reference Duquesne Statement No. 6 p. 6 lines 4-9: Please provide any Documents or studies Duquesne has performed, obtained, consulted or utilized in the last five (5) years addressing inter- and intra-class revenue allocation impacts from converting existing services from individually metered dwelling units to master metered buildings.

Response:

The Company has not performed any studies, nor does it have any documents addressing inter- and intra-class revenue allocation impacts from converting existing services from individually metered dwelling units to master metered buildings.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: C. James Davis

Nationwide-I-16

16. Please provide any Documents or studies Duquesne has performed, obtained, consulted or utilized in the last five (5) years addressing inter- and intra-class revenue allocation impacts from prospectively allowing master meters on buildings that house multi-family tenants who would otherwise be individually metered under Duquesne's current Tariff Rules.

Response:

The Company has not performed any studies, nor does it have any documents addressing inter- and intra-class revenue allocation impacts from prospectively allowing master meters on buildings that house multi-family tenants who would otherwise be individually metered under Duquesne's current Tariff Rules. Such an evaluation would be needed before any change in master metering rules on a broad scale could be adopted. See also DLC St. No. 6, p. 6, lines 4-9.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: David Ogden

OSBA-I-1

1. To the extent available, please provide a dataset showing number of customers and recent annual kWh consumption for the GS, GM, GMH, GL, GLH and L rate classes (separately) by NAICS or SIC Code, in MS Excel electronic format. Please segregate the GM and GMH classes into the below and at/above 25 kW categories.

Response:

Please see OSBA-I-1 - Attachment 1 for the dataset showing the number of customers at December 31, 2020 and the 2020 annual kWh consumption for GS, GM, GMH, GL, GLH, and L rate classes. Governmental, institutional and nonprofit entities are likely represented in every rate schedule. The Company does not track customers within each C&I rate schedule by NAICS code. At the time a customer account is established, the Company will assign the customer to the appropriate commercial or industrial rate schedule based on the customer's description of their business.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: Katherine Scholl

OSBA-I-3

3. Please provide a copy of a recent representative bill for the GS, GM (both under and over 25 kW), GMH (both under and over 25 kW), GL, GLH and L rate classes. For the GMH classes, please provide a winter bill and a summer bill.

Response:

See attachments:

- OSBA-I-3 - Attachment 1 GL.pdf
- OSBA-I-3 - Attachment 2 GLH.pdf
- OSBA-I-3 - Attachment 3 GMG25.pdf
- OSBA-I-3 - Attachment 4 GMHG25 summer.pdf
- OSBA-I-3 - Attachment 5 GMHG25 winter.pdf
- OSBA-I-3 - Attachment 6 GMHL25 summer.pdf
- OSBA-I-3 - Attachment 7 GMHL25 winter.pdf
- OSBA-I-3 - Attachment 8 GML25.pdf
- OSBA-I-3 - Attachment 9 GS.pdf
- OSBA-I-3 - Attachment 10 L.pdf



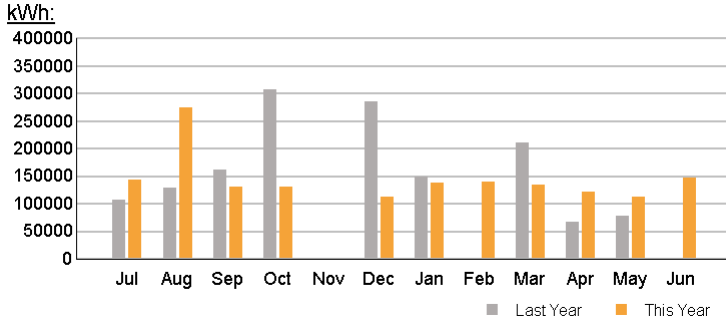
REDACTED

Account # [REDACTED]

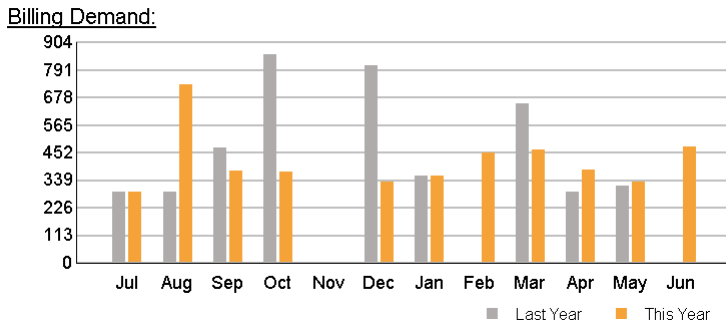
Due Date	Amount Due
07/22/2021	12,675.31

Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	150585	5020	30	71
Last Month	115935	3998	29	55
Same Month Last Year	0	0	0	0



Average Monthly Usage for the last 12 months: 135952 kWh
 Total Annual Usage for the last 12 months: 1631426 kWh



Bill Summary

Bill ID: [REDACTED]	Date Prepared: 06/21/2021
Previous Account Balance	20,441.55
Payment(s) Received as of 06/21/2021	- 20,441.55
Balance Forward	\$0.00
DLC Charges	5,161.12
Supply Charges - [REDACTED]	7,514.19
AMOUNT DUE BY 07/22/2021	\$12,675.31

Message Center

Signing up for our e-Bill program is fast and easy! Enroll today at DuquesneLight.com/ebill.

Duquesne Light shares customer information with some trusted partners that offer programs and services you may find valuable. These trusted service providers operate under confidentiality agreements and cannot share your information with others. For more information, please visit DuquesneLight.com/privacy.

MAR: Barbara Le a - 412-393-2428
Online: www.DuquesneLight.com

Phone: 412-393-7300

BI_POSTAL_20210621PRD.xml

Billing and meter reading details on page 3

Please return this portion with your payment. Please enclose check facing forward. Make payment payable to Duquesne Light Company in US Currency.

A late charge of 1.25% may be assessed after 2021-07-22



Account # [REDACTED]

Due Date	Amount Due
07/22/2021	12,675.31

\$ **DO NOT PAY**

USD Amount Enclosed

Please mail payment to:

DUQUESNE LIGHT COMPANY
 PO BOX 371324
 PITTSBURGH PA 15250-7324



DO NOT PAY, YOUR AUTOPAY PAYMENT OF \$12,675.31 WILL BE PROCESSED ON 07/22/2021

General Information

Visit us online or call to learn about payment options, or for a copy of our rate schedules. For questions about your bill, please contact us before the bill due date.

- Online: www.DuquesneLight.com
Phone: 412-393-7300
Mail: Dept 6-1, 411 7th Ave Ste 3, Pittsburgh, PA 15219-1942

Billing and Service Options

Sign up online for any of the following services:

- E-Billing - Free service lets you view bills online
Budget Billing - Levels out payments across the year
Start/Stop Service - If you're moving and need to have your service turned on or off, you must call Customer Service at 412-393-7300 or visit our website
Double Notice Protection - Sends a payment reminder to you and a person you designate

Dollar Energy Fund

Give to Dollar Energy Fund to help people in our community without heat or light. There are several easy ways to donate and your gift is tax deductible.

- Text: Make a one-time donation of \$5 by texting POWER to 50000
Online: Visit www.DuquesneLight.com and select "Payment Options" from the Account Billing menu
Phone: 412-393-7300
Mail: Sign up below to add a monthly pledge to your bill or make a one-time donation by mailing a check to: Duquesne Light Hardship Fund Donations, Dept 15-1, 411 7th Ave Ste 3, Pittsburgh, PA 15219-1942

Understanding Your Bill

- Customer Charge - A monthly basic service charge that includes costs for meter reading, customer billing, service equipment, and other expenses.
Demand - A measure of customer or system load requirements over a measured period of time.
Distribution Charges - Basic service charges for delivering electricity over a distribution system to the home or business from the transmission system.
Distribution System Improvement Charge (DSIC) - A charge for company investment to improve service quality and increase safety by repairing, improving, or replacing eligible infrastructure used to deliver electricity.
DLC Charges - Services necessary for the physical delivery of electricity service, such as supply, including default service, transmissions and distribution.
Kilowatt (kW) - A measure of electrical power that is equal to 1,000 watts.
Kilowatt-Hour (kWh) - The basic unit of electric energy for which most customers are charged.
Meter Multiplier - The number used to calculate your total electrical usage in kWh (may vary depending on your meter type).
Meter Reading - An actual (Act) reading is a reading taken from the meter. An estimated (Est) reading is used when no actual reading is available and is based on past electric usage.
Non-Basic Service Charges - Any category of service not related to basic service.
Smart Meter Charge - Charges for advanced metering technology and related infrastructure that will provide the ability for features such as two-way communication and interval usage data.
Supply Charges - Basic service charges for generation supply to retail customers.
Transmission Charges - Basic service charges for the cost of transporting electricity over high voltage wires from the generator to the distribution system.

MANAGE YOUR ACCOUNT WITH A TOUCH. WITH OUR CONVENIENT AND FLEXIBLE MOBILE APP, YOU CAN SCHEDULE PAYMENTS, SET BILL REMINDERS, MONITOR YOUR DAILY ENERGY USAGE, AND MORE. DOWNLOAD TODAY. (Includes App Store and Google Play logos)

Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account Detail

Supplier Agreement ID: [REDACTED]

Meter Reading Usage Information

Meter Number	[REDACTED]
Voltage	277/480V

Meter Readings - kWh

Present	06/17/2021 Act	7,485.2980
Prior	05/18/2021 Act	7,234.3230
Difference		250.9750
Your Meter Multiplier		600
Total kWh Used		150,585.0000

Meter Readings - kVARh

Present	06/17/2021 Act	1,088.0090
Prior	05/18/2021 Act	1,017.5650
Difference		70.4440
Your Meter Multiplier		600
kVARh		42,266.4000

Demand Information

Demand Reading (on-peak)	0.8070
kW (on-peak)	484.2000
PFM	1.0000
Adjusted kW	484.2000

Total Billed Demand	484.2000
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Total kWh Used	150,585.0000
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Current Bill Details

DLC Rate GL-Large Commercial

DLC Charges

\$5,161.12

Customer Charge			0.01
Demand Distribution	300.0000 kW	10.600000	3,180.00
Demand Distribution	184.2000 kW	8.410000	1,549.12
PA EEA Fixed			93.62
PA EEA Fixed			94.23
PA EEA Variable	103.3536 kW	0.270000	27.91
PA EEA Variable	135.1547 kW	0.130000	17.57
Smart Meter Charge Thre	MTR	0.070000	0.07
DSIC Surcharge		4.01	199.00
Pennsylvania Tax Adjustm			- 0.41

Supply Charges - [REDACTED]

\$7,514.19

Generation-Trans	150585.0000 kWh	7,514.19
	0.049900	

Service Charges	\$12,675.31
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Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID: [REDACTED]
Rate Schedule: GL-Large Commercial

The Price to Compare for your rate class is not calculated because supply rates change hourly, with charges based on your load in those hours. See Rider No. 9, Day-Ahead Hourly Price Service, in our tariff, which can be found at www.duquesnelight.com. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

- Generation/Supply prices and charges are set by the electric generation supplier you have chosen
- The Public Utility Commission regulates distribution prices and services
- The Federal Energy Regulatory Commission regulates transmission prices and services

For questions regarding the supplier portion of your bill, call [REDACTED]

Additional Notifications

- Give to Dollar Energy Fund to help people without heat or light. Make a monthly pledge at www.duquesnelight.com or send a check to Duquesne Light Hardship Fund Donations, 411 Seventh Avenue MD 15-1, Pittsburgh, PA 15219. Your gift is tax deductible.
- Duquesne Light offers energy efficiency programs to help customers save money by conserving energy and reducing demand. To participate or to learn more about these programs, visit www.wattchoices.com.

**Additional Notifications**

- Effective Jun. 1, changes in the costs to enhance the competitive energy market in PA, will increase the monthly bill of a large commercial customer using 500 kW and 200,000 kWh by about 0.02 or less than 1 .
- Effective Jun. 1, changes in the Energy Efficiency Surcharge, reflecting costs related to the Watt Choices program, will decrease the monthly bill of a large commercial customer using 500 kW and 200,000 kWh by about 121 or less than 1 .
- The Price to Compare for your rate class is not calculated because supply rates change hourly, with charges based on your load in those hours. See Rider No. 9, Day-Ahead Hourly Price Service, in our tariff, which can be found at www.duquesnelight.com.
- Estimated Gross Receipts Tax of 747.85 and Estimated PA State Tax of 861.92 are included in your rates.

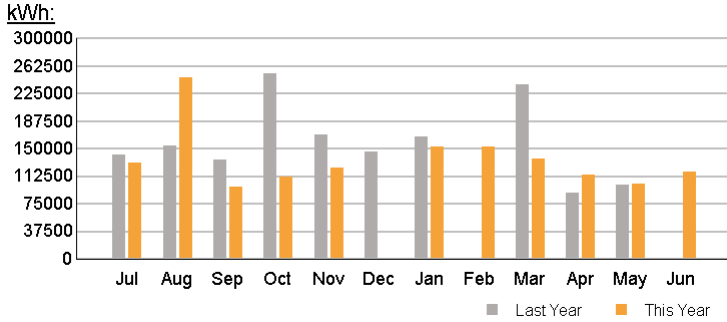


Account # [REDACTED]

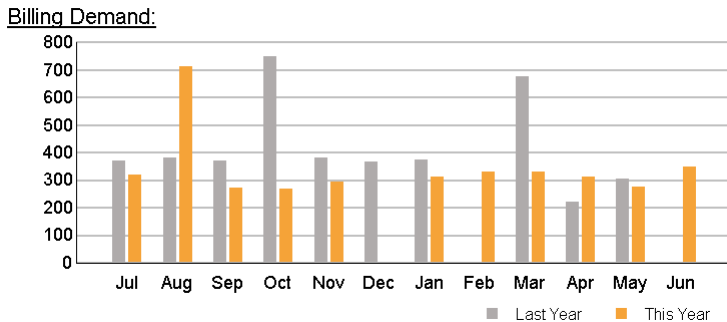
Due Date	Amount Due
07/07/2021	4,348.48

Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	121654	4055	30	71
Last Month	104704	3610	29	55
Same Month Last Year	0	0	0	0



Average Monthly Usage for the last 12 months: 126657 kWh
 Total Annual Usage for the last 12 months: 1519886 kWh



Bill Summary

Bill ID: [REDACTED]	Date Prepared: 06/21/2021
Previous Account Balance	3,117.93
Payment(s) Received as of 06/01/2021	- 3,117.93
Balance Forward	\$0.00
DLC Charges	4,348.48
AMOUNT DUE BY 07/07/2021	\$4,348.48

Message Center

Signing up for our e-Bill program is fast and easy! Enroll today at DuquesneLight.com/ebill.

Duquesne Light shares customer information with some trusted partners that offer programs and services you may find valuable. These trusted service providers operate under confidentiality agreements and cannot share your information with others. For more information, please visit DuquesneLight.com/privacy.

MAR: Christina Navadauskas - 412-393-7851
 Online: www.DuquesneLight.com

Phone: 412-393-7300

BI_POSTAL_20210621PRD.xml

Billing and meter reading details on page 3



Please return this portion with your payment. Please enclose check facing forward.
 Make payment payable to Duquesne Light Company in US Currency.

A late charge of 1.25% may be assessed after 2021-07-07

Due Date	Amount Due
07/07/2021	4,348.48

\$

USD Amount Enclosed

Account # [REDACTED]

Please mail payment to:

DUQUESNE LIGHT COMPANY
 PO BOX 371324
 PITTSBURGH PA 15250-7324



General Information

Visit us online or call to learn about payment options, or for a copy of our rate schedules. For questions about your bill, please contact us before the bill due date.

Online: www.DuquesneLight.com

Phone: 412-393-7300

Mail: Dept 6-1
411 7th Ave Ste 3
Pittsburgh, PA 15219-1942

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Dollar Energy Fund

Give to Dollar Energy Fund to help people in our community without heat or light. There are several easy ways to donate and your gift is tax deductible.

Text: Make a one-time donation of 5 by texting POWER to 50000

Online: Visit www.DuquesneLight.com and select "Payment Options" from the Account Billing menu

Phone: 412-393-7300

Mail: Sign up below to add a monthly pledge to your bill or make a one-time donation by mailing a check to:

Duquesne Light Hardship Fund Donations
Dept 15-1
411 7th Ave Ste 3
Pittsburgh, PA 15219-1942

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Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account Detail

Supplier Agreement ID: [REDACTED]

Meter Reading Usage Information

Meter Number	[REDACTED]
Voltage	277/480V
Meter Readings - kWh	
Present 06/17/2021 Act	13,153.9780
Prior 05/18/2021 Act	12,849.8420
Difference	304.1360
Your Meter Multiplier	400
Total kWh Used	121,654.4000
Meter Readings - kVARh	
Present 06/17/2021 Act	1,841.9440
Prior 05/18/2021 Act	1,716.1680
Difference	125.7760
Your Meter Multiplier	400
kVARh	50,310.4000
Demand Information	
Demand Reading (on-peak)	0.8510
kW (on-peak)	340.4000
PFM	1.0481
Adjusted kW	356.7732
Total Billed Demand	356.7732

Current Bill Details

DLC Rate	GLH-Large Commercial Heating		
DLC Charges	\$4,348.48		
Demand Distribution	300.0000 kW	10.600000	3,180.00
Demand Distribution	56.7732 kW	8.410000	477.46
Customer Charge			0.01
PA EEA Fixed			93.62
PA EEA Fixed			94.23
PA EEA Variable	141.4546 kW	0.270000	38.19
PA EEA Variable	184.9791 kW	0.130000	24.05
Smart Meter Charge Thre	MTR	0.070000	0.07
DSIC Surcharge			156.70
Pennsylvania Tax Ad ustment			- 0.33
Sales Tax			284.48

Total kWh Used 121,654.4000

Service Charges \$4,348.48

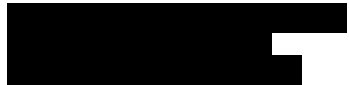
Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID: [REDACTED]
Rate Schedule: GLH-Large Commercial Heating

The Price to Compare for your rate class is not calculated because supply rates change hourly, with charges based on your load in those hours. See Rider No. 9, Day-Ahead Hourly Price Service, in our tariff, which can be found at www.duquesnelight.com. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

- Generation/Supply prices and charges are set by the electric generation supplier you have chosen
- The Public Utility Commission regulates distribution prices and services
- The Federal Energy Regulatory Commission regulates transmission prices and services



For questions regarding the supplier portion of your bill, call [REDACTED]

- [REDACTED] will provide a separate bill for your generation and transmission.

Additional Notifications

- Give to Dollar Energy Fund to help people without heat or light. Make a monthly pledge at www.duquesnelight.com or send a check to Duquesne Light Hardship Fund Donations, 411 Seventh Avenue MD 15-1, Pittsburgh, PA 15219. Your gift is tax deductible.

Additional Notifications

- Duquesne Light offers energy efficiency programs to help customers save money by conserving energy and reducing demand. To participate or to learn more about these programs, visit www.wattchoices.com.
- SIGN UP FOR AUTOPAY and learn about other convenient payment options by visiting our website www.duquesnelight.com.
- Effective Jun. 1, changes in the costs to enhance the competitive energy market in PA, will increase the monthly bill of a large commercial customer using 500 kW and 200,000 kWh by about 0.02 or less than 1 .
- Effective Jun. 1, changes in the Energy Efficiency Surcharge, reflecting costs related to the Watt Choices program, will decrease the monthly bill of a large commercial customer using 500 kW and 200,000 kWh by about 121 or less than 1 .
- The Price to Compare for your rate class is not calculated because supply rates change hourly, with charges based on your load in those hours. See Rider No. 9, Day-Ahead Hourly Price Service, in our tariff, which can be found at www.duquesnelight.com.
- Estimated Gross Receipts Tax of 239.78 and Estimated PA State Tax of 276.35 are included in your rates.

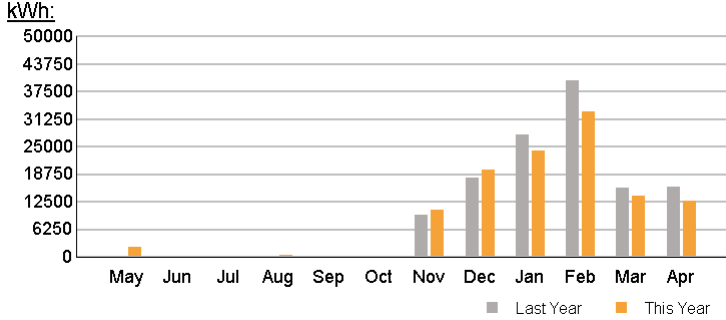


Account # [REDACTED]

Due Date	Amount Due
05/10/2021	681.66

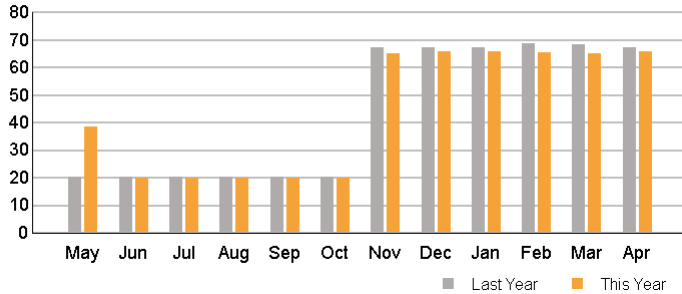
Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	13194	440	30	54
Last Month	14310	493	29	43
Same Month Last Year	16448	498	33	49



Average Monthly Usage for the last 12 months: 10271 kWh
Total Annual Usage for the last 12 months: 123246 kWh

Billing Demand:



Bill Summary

Bill ID: [REDACTED]	Date Prepared: 04/22/2021
Previous Account Balance	687.65
Payment(s) Received as of 03/30/2021	- 687.65
Balance Forward	\$0.00
DLC Charges	681.66
AMOUNT DUE BY 05/10/2021	\$681.66

Message Center

Duquesne Light partners with Dollar Energy Fund to provide assistance to customers who struggle to pay their electric bill. If you would like to support the Dollar Energy Fund and your neighbors in need, make a tax deductible monthly pledge at DuquesneLight.com/dollar.



Online: www.DuquesneLight.com

Phone: 412-393-7300

BI_EBILL_20210422PRD.xml

Billing and meter reading details on page 3

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A late charge of 1.25% may be assessed after 2021-05-10



Account # [REDACTED]

Due Date	Amount Due
05/10/2021	681.66

\$ [REDACTED]

USD Amount Enclosed

Please mail payment to:

DUQUESNE LIGHT COMPANY
PO BOX 371324
PITTSBURGH PA 15250-7324



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Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account Detail

Supplier Agreement ID:

Meter Reading Usage Information

Meter Number	
Voltage	277/480V
Meter Readings - kWh	
Present 04/22/2021 Act	10,315.5790
Prior 03/23/2021 Act	10,051.7050
Difference	263.8740
Your Meter Multiplier	50
Total kWh Used	13,193.7000
Meter Readings - kVARh	
Present 04/22/2021 Act	713.9600
Prior 03/23/2021 Act	695.7590
Difference	18.2010
Your Meter Multiplier	50
kVARh	910.0500
Demand Information	
Demand Reading (on-peak)	1.3290
kW (on-peak)	66.4500
PFM	1.0000
Adjusted kW	66.4500
Total Billed Demand	66.4500

Current Bill Details

DLC Rate	GM-Medium Commercial	25	
Price to Compare	0.0554 / kWh		
DLC Charges			\$681.66
Customer Charge			65.68
PA EEA Surcharge	13193.7000 kWh	0.001300	17.15
Energy Distribution	13193.7000 kWh	0.009685	127.78
Demand Distribution	61.4500 kW	6.540000	401.88
Smart Meter Charge Thre	MTR	0.070000	0.07
DSIC Surcharge		4.01	24.56
Pennsylvania Tax Adjustm			- 0.05
Sales Tax			44.59

Total kWh Used 13,193.7000

Service Charges \$681.66

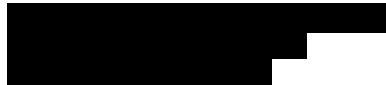
Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID:
Rate Schedule: GM-Medium Commercial > 25

The current Price to Compare is listed above in Account Detail and will change quarterly beginning June 1. Your actual PTC may differ based on your specific demand usage patterns. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

- Generation/Supply prices and charges are set by the electric generation supplier you have chosen
- The Public Utility Commission regulates distribution prices and services
- The Federal Energy Regulatory Commission regulates transmission prices and services



For questions regarding the supplier portion of your bill, call

- will provide a separate bill for your generation and transmission.

Additional Notifications

- Give to Dollar Energy Fund to help people without heat or light. Make a monthly pledge at www.duquesnelight.com or send a check to Duquesne Light Hardship Fund Donations, 411 Seventh Avenue MD 15-1, Pittsburgh, PA 15219. Your gift is tax deductible.

Additional Notifications

- Duquesne Light offers energy efficiency programs to help customers save money by conserving energy and reducing demand. To participate or to learn more about these programs, visit www.wattchoices.com.
- SIGN UP FOR AUTOPAY and learn about other convenient payment options by visiting our website www.duquesnelight.com.
- A change in the Default Service Supply rate that went into effect March 1 decreased the overall bill of an average medium commercial customer (using 30 kW and 10,000 kWh) who purchases electric generation from Duquesne Light by about 76, or 8 .
- A change in the Distribution System Improvement Charge, effective April 1, will increase your monthly bill by about 2, or less than 1 .
- Estimated Gross Receipts Tax of 37.59 and Estimated PA State Tax of 43.32 are included in your rates.



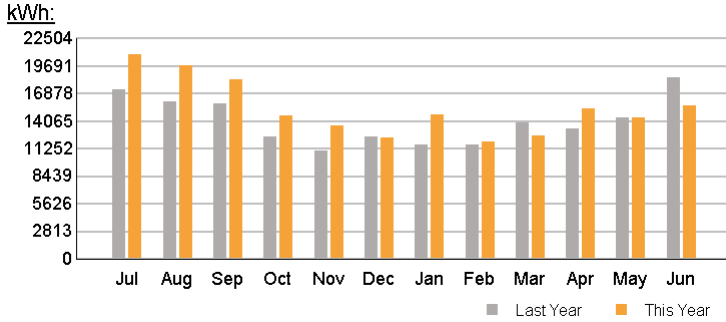
Account # [REDACTED]

REDACTED

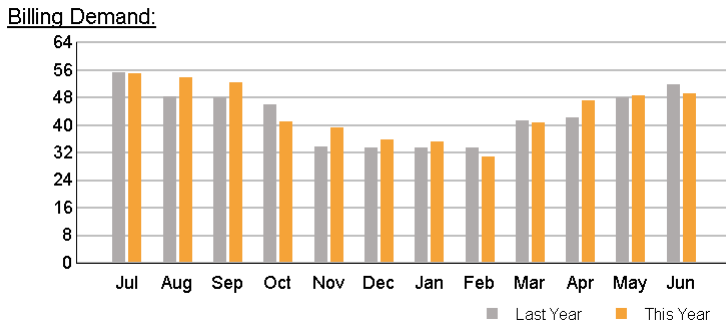
Due Date	Amount Due
07/09/2021	1,801.75

Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	15920	531	30	68
Last Month	14655	505	29	60
Same Month Last Year	18707	585	32	71



Average Monthly Usage for the last 12 months: 15570 kWh
 Total Annual Usage for the last 12 months: 186836 kWh



Bill Summary

Bill ID: [REDACTED]	Date Prepared: 06/23/2021
Previous Account Balance	1,274.19
Payment(s) Received as of 06/09/2021	- 1,274.19
Balance Forward	\$0.00
DLC Charges	659.03
Supply Charges	1,142.72
AMOUNT DUE BY 07/09/2021	\$1,801.75

Message Center

Signing up for our e-Bill program is fast and easy! Enroll today at DuquesneLight.com/ebill.

Duquesne Light shares customer information with some trusted partners that offer programs and services you may find valuable. These trusted service providers operate under confidentiality agreements and cannot share your information with others. For more information, please visit DuquesneLight.com/privacy.

Online: www.DuquesneLight.com

Phone: 412-393-7300

BI_ED1_20210623PRD.xml

Billing and meter reading details on page 3

Please return this portion with your payment. Please enclose check facing forward. Make payment payable to Duquesne Light Company in US Currency.

A late charge of 1.25% may be assessed after 2021-07-09



Account # [REDACTED]

Due Date	Amount Due
07/09/2021	1,801.75

\$ [REDACTED]

USD Amount Enclosed

Please mail payment to:

DUQUESNE LIGHT COMPANY
 PO BOX 371324
 PITTSBURGH PA 15250-7324



General Information

Visit us online or call to learn about payment options, or for a copy of our rate schedules. For questions about your bill, please contact us before the bill due date.

- Online: www.DuquesneLight.com
Phone: 412-393-7300
Mail: Dept 6-1, 411 7th Ave Ste 3, Pittsburgh, PA 15219-1942

Billing and Service Options

Sign up online for any of the following services:

- E-Billing - Free service lets you view bills online
Budget Billing - Levels out payments across the year
Start/Stop Service - If you're moving and need to have your service turned on or off, you must call Customer Service at 412-393-7300 or visit our website
Double Notice Protection - Sends a payment reminder to you and a person you designate

Dollar Energy Fund

Give to Dollar Energy Fund to help people in our community without heat or light. There are several easy ways to donate and your gift is tax deductible.

- Text: Make a one-time donation of \$5 by texting POWER to 50000
Online: Visit www.DuquesneLight.com and select "Payment Options" from the Account Billing menu
Phone: 412-393-7300
Mail: Sign up below to add a monthly pledge to your bill or make a one-time donation by mailing a check to: Duquesne Light Hardship Fund Donations, Dept 15-1, 411 7th Ave Ste 3, Pittsburgh, PA 15219-1942

Understanding Your Bill

- Customer Charge - A monthly basic service charge that includes costs for meter reading, customer billing, service equipment, and other expenses.
Demand - A measure of customer or system load requirements over a measured period of time.
Distribution Charges - Basic service charges for delivering electricity over a distribution system to the home or business from the transmission system.
Distribution System Improvement Charge (DSIC) - A charge for company investment to improve service quality and increase safety by repairing, improving, or replacing eligible infrastructure used to deliver electricity.
DLC Charges - Services necessary for the physical delivery of electricity service, such as supply, including default service, transmissions and distribution.
Kilowatt (kW) - A measure of electrical power that is equal to 1,000 watts.
Kilowatt-Hour (kWh) - The basic unit of electric energy for which most customers are charged.
Meter Multiplier - The number used to calculate your total electrical usage in kWh (may vary depending on your meter type).
Meter Reading - An actual (Act) reading is a reading taken from the meter. An estimated (Est) reading is used when no actual reading is available and is based on past electric usage.
Non-Basic Service Charges - Any category of service not related to basic service.
Smart Meter Charge - Charges for advanced metering technology and related infrastructure that will provide the ability for features such as two-way communication and interval usage data.
Supply Charges - Basic service charges for generation supply to retail customers.
Transmission Charges - Basic service charges for the cost of transporting electricity over high voltage wires from the generator to the distribution system.

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Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account Detail

Supplier Agreement ID:

Meter Reading Usage Information

Meter Number	
Voltage	120/208V
Meter Readings - kWh	
Present 06/23/2021 Act	14,702.0810
Prior 05/24/2021 Act	14,304.0860
Difference	397.9950
Your Meter Multiplier	40
Total kWh Used	15,919.8000
Meter Readings - kVARh	
Present 06/23/2021 Act	5,504.0630
Prior 05/24/2021 Act	5,337.6780
Difference	166.3850
Your Meter Multiplier	40
kVARh	6,655.4000
Demand Information	
Demand Reading (on-peak)	1.1820
kW (on-peak)	47.2800
PFM	1.0508
Adjusted kW	49.6818
Total Billed Demand	49.6818

Current Bill Details

DLC Rate	GMH-Med Commercial Heat	25	
Price to Compare	0.0616 / kWh		
DLC Charges			\$659.03
Customer Charge			54.52
PA EEA Surcharge	3714.6200 kWh	0.001300	4.83
PA EEA Surcharge	12205.1800 kWh	0.001500	18.31
Energy Distribution	15919.8000 kWh	0.013961	222.26
Demand Distribution	44.6818 kW	6.540000	292.22
Smart Meter Charge Thre	MTR	0.070000	0.07
DSIC Surcharge		4.01	23.75
Pennsylvania Tax Adjustment			- 0.05
Sales Tax			43.12
Supply Charges			\$1,142.72
Energy Supply	3714.6200 kWh	0.042487	157.82
Energy Supply	12205.1800 kWh	0.052045	635.22
Energy Transmission	3714.6200 kWh	0.002748	10.21
Energy Transmission	12205.1800 kWh	0.005180	63.22
Demand Transmission	49.6818 kW	4.055667	201.49
Sales Tax			74.76

Total kWh Used 15,919.8000

Service Charges \$1,801.75

Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID:
Rate Schedule: GMH-Med Commercial Heat > 25

The current Price to Compare is listed above in Account Detail and will change quarterly beginning June 1. Your actual PTC may differ based on your specific demand usage patterns. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

Additional Notifications

- Give to Dollar Energy Fund to help people without heat or light. Make a monthly pledge at www.duquesnelight.com or send a check to Duquesne Light Hardship Fund Donations, 411 Seventh Avenue MD 15-1, Pittsburgh, PA 15219. Your gift is tax deductible.
- Duquesne Light offers energy efficiency programs to help customers save money by conserving energy and reducing demand. To participate or to learn more about these programs, visit www.wattchoices.com.
- SIGN UP FOR AUTOPAY and learn about other convenient payment options by visiting our website www.duquesnelight.com.
- Effective Jun. 1, changes in the Customer Charge, reflecting costs to enhance the competitive energy market in PA, will decrease the monthly bill of a medium commercial customer using 30 kW and 10,000 kWh by about 0.02 or less than 1.
- Effective Jun. 1, changes in the Energy Efficiency Surcharge, reflecting costs related to the Watt Choices program, will increase the monthly bill of a medium commercial customer using 30 kW and 10,000 kWh by about 2 or less than 1.
- Estimated Gross Receipts Tax of 99.35 and Estimated PA State Tax of 114.50 are included in your rates.



REDACTED

Account # [REDACTED]

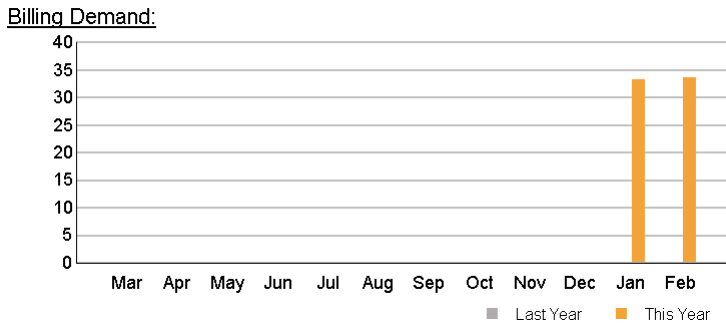
Due Date	Amount Due
04/14/2021	1,240.74

Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	11934	385	31	31
Last Month	18096	584	31	29
Same Month Last Year	0	0	0	0



Average Monthly Usage for the last 2 months: 15015 kWh
 Total Annual Usage for the last 2 months: 30031 kWh



Bill Summary

Bill ID: [REDACTED]	Date Prepared: 03/14/2021
Previous Account Balance	1,828.48
Payment(s) Received as of 02/25/2021	- 1,828.48
Balance Forward	\$0.00
DLC Charges	468.18
Supply Charges - [REDACTED]	772.56
AMOUNT DUE BY 04/14/2021	\$1,240.74

Message Center

Introducing your new bill! We've redesigned it to be simple and easy to understand, and we also added color to make it easy to read. For more information on how to read your bill, visit DuquesneLight.com/newbill.

Duquesne Light partners with Dollar Energy Fund to provide assistance to customers who struggle to pay their electric bill. If you would like to support the Dollar Energy Fund and your neighbors in need, make a tax deductible monthly pledge at DuquesneLight.com/dollar.



MAR: Mark Skosnik - 412-393-7995
Online: www.DuquesneLight.com

Phone: 412-393-7300

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Billing and meter reading details on page 3

Please return this portion with your payment. Please enclose check facing forward. Make payment payable to Duquesne Light Company in US Currency.

A late charge of 1.25% may be assessed after 2021-04-14



Account # [REDACTED]

Due Date	Amount Due
04/14/2021	1,240.74

\$ [REDACTED]

USD Amount Enclosed



Please mail payment to:

DUQUESNE LIGHT COMPANY
 PO BOX 371324
 PITTSBURGH PA 15250-7324



General Information

Visit us online or call to learn about payment options, or for a copy of our rate schedules. For questions about your bill, please contact us before the bill due date.

- Online: www.DuquesneLight.com
Phone: 412-393-7300
Mail: Dept 6-1, 411 7th Ave Ste 3, Pittsburgh, PA 15219-1942

Billing and Service Options

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- E-Billing - Free service lets you view bills online
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Start/Stop Service - If you're moving and need to have your service turned on or off, you must call Customer Service at 412-393-7300 or visit our website
Double Notice Protection - Sends a payment reminder to you and a person you designate

Dollar Energy Fund

Give to Dollar Energy Fund to help people in our community without heat or light. There are several easy ways to donate and your gift is tax deductible.

- Text: Make a one-time donation of \$5 by texting POWER to 50000
Online: Visit www.DuquesneLight.com and select "Payment Options" from the Account Billing menu
Phone: 412-393-7300
Mail: Sign up below to add a monthly pledge to your bill or make a one-time donation by mailing a check to: Duquesne Light Hardship Fund Donations, Dept 15-1, 411 7th Ave Ste 3, Pittsburgh, PA 15219-1942

Understanding Your Bill

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Demand - A measure of customer or system load requirements over a measured period of time.
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Kilowatt (kW) - A measure of electrical power that is equal to 1,000 watts.
Kilowatt-Hour (kWh) - The basic unit of electric energy for which most customers are charged.
Meter Multiplier - The number used to calculate your total electrical usage in kWh (may vary depending on your meter type).
Meter Reading - An actual (Act) reading is a reading taken from the meter. An estimated (Est) reading is used when no actual reading is available and is based on past electric usage.
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Smart Meter Charge - Charges for advanced metering technology and related infrastructure that will provide the ability for features such as two-way communication and interval usage data.
Supply Charges - Basic service charges for generation supply to retail customers.
Transmission Charges - Basic service charges for the cost of transporting electricity over high voltage wires from the generator to the distribution system.

MANAGE YOUR ACCOUNT WITH A TOUCH. WITH OUR CONVENIENT AND FLEXIBLE MOBILE APP, YOU CAN SCHEDULE PAYMENTS, SET BILL REMINDERS, MONITOR YOUR DAILY ENERGY USAGE, AND MORE. DOWNLOAD TODAY. (Includes App Store and Google Play logos)

Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account # [REDACTED]

Account Detail

Supplier Agreement ID: [REDACTED]

Meter Reading Usage Information

Meter Number	[REDACTED]
Voltage	120/240V
Meter Readings - kWh	
Present 03/14/2021 Act	10,887.1180
Prior 02/11/2021 Act	10,588.7620
Difference	298.3560
Your Meter Multiplier	40
Total kWh Used	11,934.2400
Demand Information	
Demand Reading (on-peak)	0.8500
kW (on-peak)	34.0000
PFM	1.0000
Adjusted kW	34.0000

Current Bill Details

DLC Rate	GMH-Med Commercial Heat	25	
Price to Compare	0.0498 / kWh		
DLC Charges			\$468.18
Customer Charge			54.53
PA EEA Surcharge	11934.2400 kWh	0.001300	15.51
Energy Distribution	11934.2400 kWh	0.029609	353.36
DSIC Surcharge	3.35		14.18
Pennsylvania Tax Adjustment			- 0.04
Sales Tax			30.64
Supply Charges - [REDACTED]			\$772.56
Generation-Trans	11934.2400 kWh	0.060500	722.02
Sales Tax			50.54

Total Billed Demand 34.0000

Total kWh Used 11,934.2400

Service Charges \$1,240.74

Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID: [REDACTED]
Rate Schedule: GMH-Med Commercial Heat > 25

The current Price to Compare is listed above in Account Detail and will change quarterly beginning June 1. Your actual PTC may differ based on your specific demand usage patterns. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

- Generation/Supply prices and charges are set by the electric generation supplier you have chosen
- The Public Utility Commission regulates distribution prices and services
- The Federal Energy Regulatory Commission regulates transmission prices and services






For questions regarding the supplier portion of your bill, call [REDACTED]

Additional Notifications

- Give to Dollar Energy Fund to help people without heat or light. Make a monthly pledge at www.duquesnelight.com or send a check to Duquesne Light Hardship Fund Donations, 411 Seventh Avenue MD 15-1, Pittsburgh, PA 15219. Your gift is tax deductible.
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- SIGN UP FOR AUTOPAY and learn about other convenient payment options by visiting our website www.duquesnelight.com.
- Estimated Gross Receipts Tax of 68.41 and Estimated PA State Tax of 78.85 are included in your rates.

General Information

Visit us online or call to learn about payment options, or for a copy of our rate schedules. For questions about your bill, please contact us before the bill due date.

-  **Online:** www.DuquesneLight.com
-  **Phone:** 412-393-7300
-  **Mail:** Dept 6-1
411 7th Ave Ste 3
Pittsburgh, PA 15219-1942





Billing and Service Options

Sign up online for any of the following services:

- **E-Billing** - Free service lets you view bills online
- **Budget Billing** - Levels out payments across the year
- **Start/Stop Service** - If you're moving and need to have your service turned on or off, you must call Customer Service at 412-393-7300 or visit our website
- **Double Notice Protection** - Sends a payment reminder to you and a person you designate

Dollar Energy Fund


Give to Dollar Energy Fund to help people in our community without heat or light. There are several easy ways to donate and your gift is tax deductible.

-  **Text:** Make a one-time donation of \$5 by texting POWER to 50000
-  **Online:** Visit www.DuquesneLight.com and select "Payment Options" from the Account Billing menu
-  **Phone:** 412-393-7300
-  **Mail:** Sign up below to add a monthly pledge to your bill or make a one-time donation by mailing a check to:

Duquesne Light Hardship Fund Donations
Dept 15-1
411 7th Ave Ste 3
Pittsburgh, PA 15219-1942

Understanding Your Bill

- **Customer Charge** – A monthly basic service charge that includes costs for meter reading, customer billing, service equipment, and other expenses. These expenses are incurred even in months when customers do not use electricity.
- **Demand** – A measure of customer or system load requirements over a measured period of time. The actual demand is the highest average kilowatt usage measured amount of all 15-minute intervals during a billing period. The billing demand is the product of the actual demand and the power factor multiplier which identifies the total power provided to the customer.
- **Distribution Charges** – Basic service charges for delivering electricity over a distribution system to the home or business from the transmission system.
- **Distribution System Improvement Charge (DSIC)** – A charge for company investment to improve service quality and increase safety by repairing, improving, or replacing eligible infrastructure used to deliver electricity.
- **DLC Charges** – Services necessary for the physical delivery of electricity service, such as supply, including default service, transmissions and distribution.
- **Kilowatt (kW)** – A measure of electrical power that is equal to 1,000 watts.
- **Kilowatt-Hour (kWh)** – The basic unit of electric energy for which most customers are charged. It equals the amount of electricity used by 10, 100-watt light bulbs left on for one hour.
- **Meter Multiplier** – The number used to calculate your total electrical usage in kWh (may vary depending on your meter type).
- **Meter Reading** – An actual (Act) reading is a reading taken from the meter. An estimated (Est) reading is used when no actual reading is available and is based on past electric usage.
- **Non-Basic Service Charges** – Any category of service not related to basic service.
- **Smart Meter Charge** – Charges for advanced metering technology and related infrastructure that will provide the ability for features such as two-way communication and interval usage data.
- **Supply Charges** – Basic service charges for generation supply to retail customers.
- **Transmission Charges** – Basic service charges for the cost of transporting electricity over high voltage wires from the generator to the distribution system.




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DOWNLOAD TODAY.

Download on the App Store | GET IT ON Google Play



Dollar Energy Fund

Monthly Pledge:

- 1.00
- 2.00
- Other: .00



Account Detail

Supplier Agreement ID: [REDACTED]

Meter Reading Usage Information

Meter Number	[REDACTED]
Voltage	120/240V

Meter Readings - kWh

Present	06/23/2021 Act	54,590.6260
Prior	05/24/2021 Act	53,921.8010
Difference		668.8250
Your Meter Multiplier		1
Total kWh Used		668.8250

Demand Information

Demand Reading (on-peak)	4.3000
kW (on-peak)	4.3000
PFM	1.0000
Adjusted kW	4.3000

Total Billed Demand	4.3000
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Current Bill Details

DLC Rate	GMH-Med Commercial Heat	25	
Price to Compare	0.0630 / kWh		
DLC Charges			\$72.13
Customer Charge			54.51
PA EEA Surcharge	156.0592 kWh	0.001300	0.20
PA EEA Surcharge	512.7658 kWh	0.001500	0.77
Energy Distribution	668.8250 kWh	0.013961	9.34
DSIC Surcharge		4.01	2.60
Pennsylvania Tax Adjustment			- 0.01
Sales Tax			4.72
Supply Charges			\$51.09
Energy Supply	156.0592 kWh	0.050497	7.88
Energy Supply	512.7658 kWh	0.052649	27.00
Energy Transmission	156.0592 kWh	0.002331	0.36
Energy Transmission	512.7658 kWh	0.006041	3.10
Demand Transmission	4.3000 kW	2.185000	9.40
Sales Tax			3.35

Total kWh Used	668.8250
-----------------------	-----------------

Service Charges	\$123.22
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Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID: [REDACTED]

Rate Schedule: GMH-Med Commercial Heat < 25

The current Price to Compare is listed above in Account Detail and will change every June and December. Your actual PTC may differ based on your demand usage kWh. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

Additional Notifications

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- Effective Jun. 1, changes in the Customer Charge, reflecting costs to enhance the competitive energy market in PA, will increase the monthly bill of a small commercial customer using 20 kW and 6,000 kWh by about 0.02 or less than 1.
- Effective Jun. 1, changes in the Energy Efficiency Surcharge, reflecting costs related to the Watt Choices program, will increase the monthly bill of a small commercial customer using 20 kW and 6,000 kWh by about 1.20 or less than 1.
- Estimated Gross Receipts Tax of 6.80 and Estimated PA State Tax of 7.83 are included in your rates.

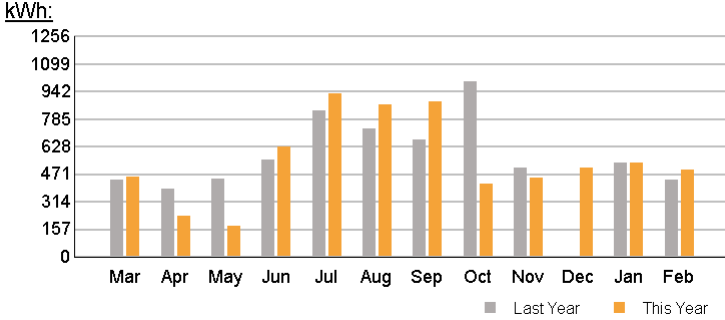


Account # [REDACTED]

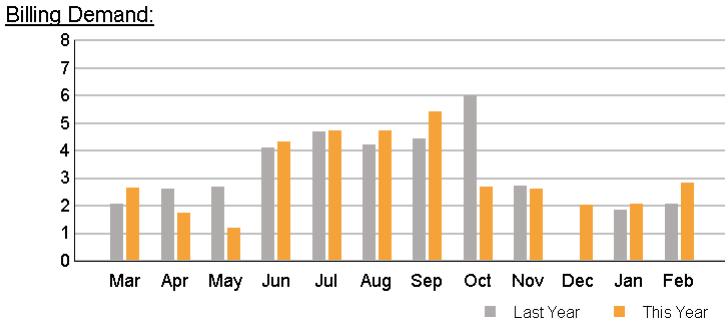
Due Date	Amount Due
03/08/2021	106.23

Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	507	17	29	26
Last Month	551	16	35	33
Same Month Last Year	452	16	29	33



Average Monthly Usage for the last 12 months: 561 kWh
 Total Annual Usage for the last 12 months: 6737 kWh



Bill Summary

Bill ID: [REDACTED]	Date Prepared: 02/18/2021
Previous Account Balance	107.77
Payment(s) Received as of 02/03/2021	- 107.77
Balance Forward	\$0.00
DLC Charges	77.57
Supply Charges	28.66
AMOUNT DUE BY 03/08/2021	\$106.23

Message Center

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BI_POSTAL_20210218PRD.xml

Online: www.DuquesneLight.com

Phone: 412-393-7300

Billing and meter reading details on page 3

Please return this portion with your payment. Please enclose check facing forward. Make payment payable to Duquesne Light Company in US Currency.

A late charge of 1.25% may be assessed after 2021-03-08



Account # [REDACTED]

Due Date	Amount Due
03/08/2021	106.23

\$ [REDACTED]

USD Amount Enclosed




Please mail payment to:

DUQUESNE LIGHT COMPANY
 PO BOX 371324
 PITTSBURGH PA 15250-7324



General Information

Visit us online or call to learn about payment options, or for a copy of our rate schedules. For questions about your bill, please contact us before the bill due date.

-  **Online:** www.DuquesneLight.com
-  **Phone:** 412-393-7300
-  **Mail:** Dept 6-1
411 7th Ave Ste 3
Pittsburgh, PA 15219-1942





Billing and Service Options

Sign up online for any of the following services:

- **E-Billing** - Free service lets you view bills online
- **Budget Billing** - Levels out payments across the year
- **Start/Stop Service** - If you're moving and need to have your service turned on or off, you must call Customer Service at 412-393-7300 or visit our website
- **Double Notice Protection** - Sends a payment reminder to you and a person you designate

Dollar Energy Fund

Give to Dollar Energy Fund to help people in our community without heat or light. There are several easy ways to donate and your gift is tax deductible.

-  **Text:** Make a one-time donation of \$5 by texting POWER to 50000
-  **Online:** Visit www.DuquesneLight.com and select "Payment Options" from the Account Billing menu
-  **Phone:** 412-393-7300
-  **Mail:** Sign up below to add a monthly pledge to your bill or make a one-time donation by mailing a check to:

Duquesne Light Hardship Fund Donations
Dept 15-1
411 7th Ave Ste 3
Pittsburgh, PA 15219-1942

Understanding Your Bill

- **Customer Charge** – A monthly basic service charge that includes costs for meter reading, customer billing, service equipment, and other expenses. These expenses are incurred even in months when customers do not use electricity.
- **Demand** – A measure of customer or system load requirements over a measured period of time. The actual demand is the highest average kilowatt usage measured amount of all 15-minute intervals during a billing period. The billing demand is the product of the actual demand and the power factor multiplier which identifies the total power provided to the customer.
- **Distribution Charges** – Basic service charges for delivering electricity over a distribution system to the home or business from the transmission system.
- **Distribution System Improvement Charge (DSIC)** – A charge for company investment to improve service quality and increase safety by repairing, improving, or replacing eligible infrastructure used to deliver electricity.
- **DLC Charges** – Services necessary for the physical delivery of electricity service, such as supply, including default service, transmissions and distribution.
- **Kilowatt (kW)** – A measure of electrical power that is equal to 1,000 watts.
- **Kilowatt-Hour (kWh)** – The basic unit of electric energy for which most customers are charged. It equals the amount of electricity used by 10, 100-watt light bulbs left on for one hour.
- **Meter Multiplier** – The number used to calculate your total electrical usage in kWh (may vary depending on your meter type).
- **Meter Reading** – An actual (Act) reading is a reading taken from the meter. An estimated (Est) reading is used when no actual reading is available and is based on past electric usage.
- **Non-Basic Service Charges** – Any category of service not related to basic service.
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Dollar Energy Fund

Monthly Pledge:

- 1.00
- 2.00
- Other: .00



Account Detail

Supplier Agreement ID: [REDACTED]

Meter Reading Usage Information

Meter Number	[REDACTED]
Voltage	120/240V

Meter Readings - kWh

Present	02/18/2021 Act	22,909.5810
Prior	01/20/2021 Act	22,402.5820
Difference		506.9990
Your Meter Multiplier		1
Total kWh Used		506.9990

Demand Information

Demand Reading (on-peak)	2.9000
kW (on-peak)	2.9000
PFM	1.0000
Adjusted kW	2.9000

Total Billed Demand	2.9000
----------------------------	---------------

Current Bill Details

DLC Rate	GMH-Med Commercial Heat	25
Price to Compare	0.0579 / kWh	

DLC Charges

Customer Charge			54.49
PA EEA Surcharge	506.9990 kWh	0.001300	0.66
Energy Distribution	506.9990 kWh	0.029609	15.01
DSIC Surcharge	3.35		2.35
Pennsylvania Tax Adjustment			- 0.01
Sales Tax			5.07
			\$77.57

Supply Charges

Energy Supply	506.9990 kWh	0.050497	25.60
Energy Transmission	506.9990 kWh	0.002331	1.18
Sales Tax			1.88
			\$28.66

Total kWh Used	506.9990
-----------------------	-----------------

Service Charges	\$106.23
------------------------	-----------------

Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID: [REDACTED]

Rate Schedule: GMH-Med Commercial Heat < 25

The current Price to Compare is listed above in Account Detail and will change every June and December. Your actual PTC may differ based on your demand usage kWh. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

Additional Notifications

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- Duquesne Light offers energy efficiency programs to help customers save money by conserving energy and reducing demand. To participate or to learn more about these programs, visit www.wattchoices.com.
- SIGN UP FOR AUTOPAY and learn about other convenient payment options by visiting our website www.duquesnelight.com.
- A change in the Default Service Supply rate that went into effect December 1, increased the monthly bill of an average small commercial customer (using 20 kW and 6,000 kWh) who purchases their generation from Duquesne Light by about 2, or less than 1.
- A change in the single-phase Smart Meter Charge (see Understanding Your Bill section on page 2), effective January 1, will decrease the overall monthly bill by about 0.18, or less than 1.
- A change in the poly-phase Smart Meter Charge (see Understanding Your Bill section on page 2), effective January 1, will increase the overall monthly bill by about 1.01, or less than 1.
- A change in the State Tax Adjustment Surcharge, effective January 1, will decrease your overall monthly bill by about 0.03, or less than 1.
- Effective January 1, the Distribution System Improvement Charge (see Understanding Your Bill section on page 2) will increase your monthly bill by about 2, or less than 1.
- Estimated Gross Receipts Tax of 5.86 and Estimated PA State Tax of 6.75 are included in your rates.

General Information

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Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account Detail

Supplier Agreement

Meter Reading Usage Information

Current Bill Details

Meter Number
Voltage 120/240V

Meter Readings - kWh

Present 06/23/2021 Act 58,430.5780
Prior 05/24/2021 Act 57,352.5060
Difference 1,078.0720
Your Meter Multiplier 1
Total kWh Used 1,078.0720

Demand Information

Demand Reading (on-peak) 10.9800
kW (on-peak) 10.9800
PFM 1.0000
Adjusted kW 10.9800

Total Billed Demand 10.9800

DLC Rate GM-Medium Commercial 25
Price to Compare 0.0670 / kWh
DLC Charges \$122.68

Customer Charge 54.51
PA EEA Surcharge 0.33
PA EEA Surcharge 1.24
Energy Distribution 15.05
Demand Distribution 39.11
DSIC Surcharge 4.42
Pennsylvania Tax Adjustment - 0.01
Sales Tax 8.03

Supply Charges \$87.05

Energy Supply 12.70
Energy Supply 43.52
Energy Transmission 2.03
Energy Transmission 6.84
Demand Transmission 4.05
Demand Transmission 12.21
Sales Tax 5.70

Total kWh Used 1,078.0720

Service Charges \$209.73

Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID:
Rate Schedule: GM-Medium Commercial < 25

The current Price to Compare is listed above in Account Detail and will change every June and December. Your actual PTC may differ based on your demand usage kWh. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

Additional Notifications

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- Effective Jun. 1, changes in the Customer Charge, reflecting costs to enhance the competitive energy market in PA, will increase the monthly bill of a small commercial customer using 20 kW and 6,000 kWh by about 0.02 or less than 1.
- Effective Jun. 1, changes in the Energy Efficiency Surcharge, reflecting costs related to the Watt Choices program, will increase the monthly bill of a small commercial customer using 20 kW and 6,000 kWh by about 1.20 or less than 1.
- Estimated Gross Receipts Tax of 11.56 and Estimated PA State Tax of 13.33 are included in your rates.

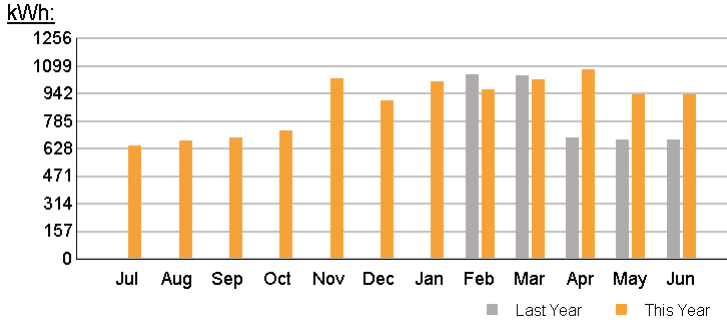


Account #

Due Date	Amount Due
07/26/2021	157.52

Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	948	32	30	68
Last Month	948	33	29	60
Same Month Last Year	694	22	32	71



Average Monthly Usage for the last 12 months: 897 kWh
 Total Annual Usage for the last 12 months: 10767 kWh

Bill Summary

Bill ID:	Date Prepared: 06/23/2021
Previous Account Balance	155.08
Payment(s) Received as of 06/16/2021	- 155.08
Balance Forward	\$0.00
DLC Charges	92.79
Supply Charges	64.73
AMOUNT DUE BY 07/26/2021	\$157.52

Message Center

Signing up for our e-Bill program is fast and easy! Enroll today at DuquesneLight.com/ebill.

Duquesne Light shares customer information with some trusted partners that offer programs and services you may find valuable. These trusted service providers operate under confidentiality agreements and cannot share your information with others. For more information, please visit DuquesneLight.com/privacy.

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Online: www.DuquesneLight.com

Phone: 412-393-7300

Billing and meter reading details on page 3

Please return this portion with your payment. Please enclose check facing forward. Make payment payable to Duquesne Light Company in US Currency.

A late charge of 1.25% may be assessed after 2021-07-26



Account #

Due Date	Amount Due
07/26/2021	157.52

\$

USD Amount Enclosed

Please mail payment to:

DUQUESNE LIGHT COMPANY
 PO BOX 371324
 PITTSBURGH PA 15250-7324



General Information

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Mail: Sign up below to add a monthly pledge to your bill or make a one-time donation by mailing a check to: Duquesne Light Hardship Fund Donations, Dept 15-1, 411 7th Ave Ste 3, Pittsburgh, PA 15219-1942

Understanding Your Bill

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Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account Detail

Supplier Agreement ID:

Meter Reading Usage Information

Meter Number	
Voltage	120/240V
Meter Readings - kWh	
Present 06/23/2021 Act	62,787.3580
Prior 05/24/2021 Act	61,839.4960
Difference	947.8620
Your Meter Multiplier	1
Total kWh Used	947.8620

Current Bill Details

DLC Rate	GS-Small Commercial		
Price to Compare	0.0644 / kWh		
DLC Charges			
Customer Charge			12.51
PA EEA Surcharge	221.1678 kWh	0.001300	0.29
PA EEA Surcharge	726.6942 kWh	0.001500	1.09
Energy Distribution	947.8620 kWh	0.073313	69.49
DSIC Surcharge		4.01	3.34
Pennsylvania Tax Adjustment			- 0.01
Sales Tax			6.08
Supply Charges			
Energy Supply	221.1678 kWh	0.050497	11.17
Energy Supply	726.6942 kWh	0.052649	38.26
Energy Transmission	221.1678 kWh	0.011129	2.46
Energy Transmission	726.6942 kWh	0.011850	8.61
Sales Tax			4.23

Total kWh Used 947.8620

Service Charges \$157.52

Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID:
Rate Schedule: GS-Small Commercial

The current Price to Compare is listed above in Account Detail and will change every June and December. Your actual PTC may differ based on your demand usage kWh. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

Additional Notifications

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- Effective Jun. 1, changes in the Energy Efficiency Surcharge, reflecting costs related to the Watt Choices program, will increase the monthly bill of a small commercial customer using 20 kW and 6,000 kWh by about 1.20 or less than 1.
- Estimated Gross Receipts Tax of 8.69 and Estimated PA State Tax of 10.01 are included in your rates.



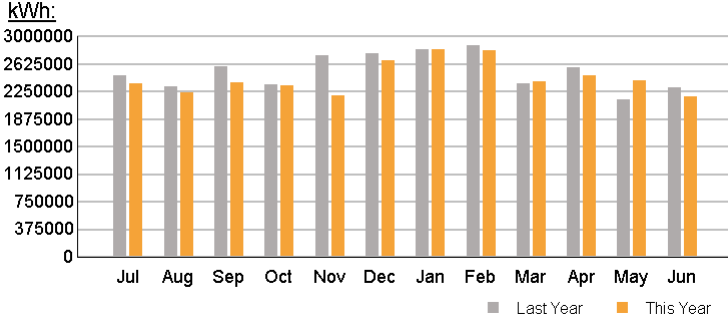
REDACTED

Account # [REDACTED]

Due Date	Amount Due
07/09/2021	55,960.12

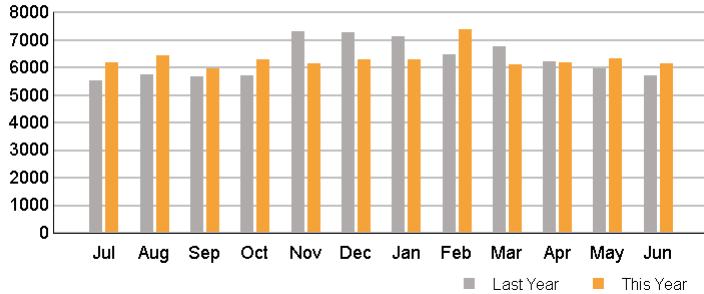
Usage and Demand

Period	Total kWh Usage	Avg Daily kWh Usage	# of Days	Avg Daily Temp (F)
Current Month	2207306	73577	30	71
Last Month	2434272	78525	31	59
Same Month Last Year	2327843	72745	32	70



Average Monthly Usage for the last 12 months: 2466354 kWh
 Total Annual Usage for the last 12 months: 29596250 kWh

Billing Demand:



Bill Summary

Bill ID: [REDACTED]	Date Prepared: 06/23/2021
Previous Account Balance	57,871.67
Payment(s) Received as of 06/10/2021	- 57,871.67
Balance Forward	\$0.00
DLC Charges	55,960.12
AMOUNT DUE BY 07/09/2021	\$55,960.12

Message Center

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MAR: Barbara Le a - 412-393-2428
Online: www.DuquesneLight.com

Phone: 412-393-7300

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Billing and meter reading details on page 3



Please return this portion with your payment. Please enclose check facing forward.
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Account # [REDACTED]

Due Date	Amount Due
07/09/2021	55,960.12

\$

USD Amount Enclosed

[REDACTED]

Please mail payment to:

DUQUESNE LIGHT COMPANY
 PO BOX 371324
 PITTSBURGH PA 15250-7324



[REDACTED]

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Dollar Energy Fund

Monthly Pledge:

- 1.00
2.00
Other: .00



Account Detail

Supplier Agreement ID: [REDACTED]

Meter Reading Usage Information

Meter Number	[REDACTED]
Voltage	2.4/4.16KV
Meter Readings - kWh	
Present 06/22/2021 Act	28,084.8800
Prior 05/23/2021 Act	27,395.0970
Difference	689.7830
Your Meter Multiplier	3200
Total kWh Used	2,207,305.6000
Meter Readings - kVARh	
Present 06/22/2021 Act	9,016.7930
Prior 05/23/2021 Act	8,680.7400
Difference	336.0530
Your Meter Multiplier	3200
kVARh	1,075,369.6000
Demand Information	
Demand Reading (on-peak)	1.7810
kW (on-peak)	5,699.2000
PFM	1.0923
Adjusted kW	6,225.2361
Total Billed Demand	6225.2362

Current Bill Details

DLC Rate	L-Large Industrial		
DLC Charges	\$55,960.12		
Customer Charge	0.01		
Demand Distribution	5000.0000 kW	6.980000	34,900.00
Demand Distribution	1225.2362 kW	13.120000	16,075.10
PA EEA Fixed	281.03		
PA EEA Fixed	954.91		
PA EEA Variable	845.6669 kW	0.400000	338.27
PA EEA Variable	2325.5839 kW	0.500000	1,162.79
Smart Meter Charge Thre	MTR	0.070000	0.07
DSIC Surcharge	4.01		2,153.86
Pennsylvania Tax Ad ustment	- 4.47		
Sales Tax	98.55		

Total kWh Used 2,207,305.6000

Service Charges \$55,960.12

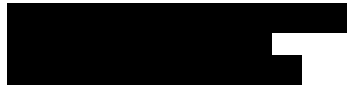
Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID: [REDACTED]
Rate Schedule: L-Large Industrial

The Price to Compare for your rate class is not calculated because supply rates change hourly, with charges based on your load in those hours. See Rider No. 9, Day-Ahead Hourly Price Service, in our tariff, which can be found at www.duquesnelight.com. For more information supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

- Generation/Supply prices and charges are set by the electric generation supplier you have chosen
- The Public Utility Commission regulates distribution prices and services
- The Federal Energy Regulatory Commission regulates transmission prices and services



For questions regarding the supplier portion of your bill, call [REDACTED]

- [REDACTED] will provide a separate bill for your generation and transmission.

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- Duquesne Light offers energy efficiency programs to help customers save money by conserving energy and reducing demand. To participate or to learn more about these programs, visit www.wattchoices.com.
- SIGN UP FOR AUTOPAY and learn about other convenient payment options by visiting our website www.duquesnelight.com.
- The Price to Compare for your rate class is not calculated because supply rates change hourly, with charges based on your load in those hours. See Rider No. 9, Day-Ahead Hourly Price Service, in our tariff, which can be found at www.duquesnelight.com.
- Effective Jun. 1, changes in the costs to enhance the competitive energy market in PA, will increase the monthly bill of a large industrial customer using 500 kW and 200,000 kWh by about 0.02 or less than 1¢.
- Effective Jun. 1, changes in the Energy Efficiency Surcharge, reflecting costs related to the Watt Choices program, will increase the monthly bill of a large industrial customer using 500 kW and 200,000 kWh by about 29¢ or 2¢.
- Estimated Gross Receipts Tax of 3,295.83 and Estimated PA State Tax of 3,798.59 are included in your rates.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: Yvonne Phillips, Katherine Scholl, and David Ogden

OSBA-I-8

8. Reference Statement No. 6, master metering proposal:
 - a. Please provide a listing of all new residences constructed in the Company's service territory that would have qualified for the proposed master metering arrangement in the past five years, showing the number of buildings, the number of residential units, an indicator as to whether the building has electric heat, and the estimated annual electric consumption for each.
 - b. Please provide the Company's comparative analysis of the per-residence electric service cost (total bill basis) for service provided through the proposed master metered arrangement and service provided through regular residential service with customer assistance program credits. Please include supporting workpapers.
 - c. Please provide the Company's estimate of the construction cost savings of adopting a master meter for a new residential building, compared to the cost of installing individual meters, both per unit and as a percentage of the average unit construction cost for new buildings. Please include supporting workpapers.
 - d. Please provide the Company's estimate of the number of buildings and the number of units for each of the next five years, by rate class, with supporting assumptions and

workpapers. Please explain how this estimate is reflected in the Company's load forecasting.

- e. Please provide the Company's estimate of the billing load profile for the average unit within a qualifying building by rate class, showing seasonal distribution billing demands, seasonal transmission billing demands, and seasonal energy consumption.
- f. Please provide all correspondence related to the collaborative meetings held on June 19, 2019 and February 24, 2021, as well as meeting invitation lists, meeting attendance lists, and meeting minutes. Please include a copy of the presentation circulated at the February 24, 2021 meeting.
- g. Please provide the factual basis for the understanding expressed at page 7 lines 14 to 17 of the referenced testimony. Please also discuss whether this understanding applies to buildings owned by public housing authorities or to all buildings that would be eligible for the proposed treatment.
- h. Please provide the Company's estimate of its annual EE&C spending plans for new buildings qualifying for the proposed master metering arrangement for the current EE&C plan period.
- i. In MS Excel electronic format, please provide a monthly history for the past five years of the Company's default service rate for each of the following rate classes: RS, RH, GS, GM<25 kW, GM>=25 kW, GMH, GL and GLH rate classes.
- j. Please provide the current number of customers, the number of units, and the estimated annual kWh consumption of master metered residential customers taking service under non-residential rate class tariffs, by rate class as defined in the cost allocation study.

Response:

- a. The Company is unable to provide the information requested because it does not know which recently-constructed buildings may hypothetically have met the master metering eligibility criteria proposed in this proceeding.
- b. The Company lacks the data required to perform the requested analysis.
- c. The Company does not know the construction cost impacts of master metering versus individual metering.
- d. Assuming that “buildings” as used in this question refers to new residential buildings with master metering arrangements under the Company’s proposed Rule 41.1: The Company does not have the requested projections.
- e. The Company does not maintain this type of analysis. See part (b).
- f. See Nationwide-I-9.
- g. This understanding is based on input from external stakeholders, as well as the Company's experience working with public housing providers through its energy efficiency programs.
- h. The Company has no such estimate.
- i. Please see OSBA-I-8 Attachment 1 for the Company’s default service rates for the last five years for the following rate classes: RS, RH, RA, GS, GM<25, GMH<25, GM>25<200, and GMH>25<200. Currently, customers on rate classes GM>200, GMH>200, GL and GLH are on Hourly Price Service under the provisions of Rider No. 9 – Day-Ahead Hourly Price Service.

- j. The Company does not know the number of residential units in master metered buildings in its service territory.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: David Ogden and Howard Gorman

OSBA-I-11

11. Reference: Rate design for GMH and GLH customers:

- a. Please specify the historical months for the NCP for Rates GMH and GLH, as used to develop the distribution demand allocators.
- b. If allocated distribution costs for the GMH and GLH rate classes are dependent on the winter class NCP demands, please explain why no demand charge applies to the winter season.
- c. In light of your response to part (a), please explain why it is appropriate to apply a (full) demand charge to winter season demands for Rates GM and GL.
- d. Does the absence of a demand charge in the winter for Rates GMH and GLH implicitly provide a larger potential credit for net metered service than that for Rates GM and GL? Please explain your response.
- e. Please explain generally why the Company believes it is reasonable and necessary to retain heat and non-heat rate classes for the purpose of setting distribution rates.
- f. Please specify when the GMH and GLH classes were established and provide the Company's contemporaneous rationale for establishing those rate classes.

Response:

- a. The annual NCP values at Transmission level, for each class, for years 2005-2019, are shown on Exhibit 6-9E, lines 35-49. The table below provides the time of the class NCPs.

Year	GMH<25		GMH>25		GLH	
	NCP	Date/Time	NCP	Date/Time	NCP	Date/Time
2019	15.1	01/31/19 @ 9AM	52.7	01/31/19 @ 8AM	78.2	01/31/18 @ 8AM
2018	12.6	01/06/18 @ 3PM	62.5	01/05/18 @ 11AM	84.3	01/05/18 @ 8AM
2017	10.5	12/27/17 @ 9AM	58.1	02/01/17 @ 1PM	86.0	01/09/17 @ 9AM
2016	12.9	02/14/16 @ 9AM	56.0	12/16/16 @ 11AM	90.7	01/19/16 @ 8AM
2015	15.3	02/15/15 @ 9AM	61.5	02/16/15 @ 10AM	98.7	02/16/15 @ 9AM
2014	15.0	01/07/14 @ 11AM	65.1	01/07/14 @ 11AM	104.3	01/07/14 @ 9AM
2013	11.7	01/23/13 @ 12PM	57.6	01/23/13 @ 12PM	98.2	01/23/13 @ 8AM
2012	11.1	01/20/12 @ 12PM	50.3	01/20/12 @ 12PM	96.9	07/18/12 @ 12PM
2011	12.2	01/22/11 @ 9AM	56.4	01/24/11 @ 10AM	103.6	01/24/11 @ 9AM
2010	14.0	01/02/10 @ 3PM	60.2	01/30/10 @ 10AM	106.3	01/29/10 @ 7AM
2009	16.9	01/17/09 @ 8AM	60.1	01/16/09 @ 11PM	107.4	02/05/09 @ 7AM
2008	17.9	12/06/08 @ 3PM	55.2	01/26/08 @ 3PM	105.3	02/21/08 @ 7AM
2007	16.1	01/20/07 @ 3PM	63.6	02/10/07 @ 3PM	110.6	02/08/07 @ 7AM
2006	11.9	02/18/06 @ 3PM	55.7	02/18/06 @ 3PM	98.4	08/03/06 @ 11AM
2005	12.9	01/22/05 @ 3PM	60.3	01/22/05 @ 3PM	101.8	01/28/05 @ 7AM

- b. As reflected in the table to part (a), GMH and GLH rate classes are predominantly dependent on the winter class NCP demands. It should be noted that the Company has consistently provided the complementary electric space heating rates for over 40 years. Over the course of this period, the Company has not billed for demand during the winter season, only for usage. For each rate class, roughly 10% of eligible GM and GL customers have elected the space heating rate. The Company designed the GMH and

GLH rate classes to be revenue neutral from a base distribution revenue perspective. If the Company were to consider the presence of a winter demand charge under the current construct, the Company would have to either reduce the fixed customer charge and/or the variable kWh rate in order for revenues to remain neutral.

- c. Part (a) does not address Rates GM and GL specifically. Regardless, the Company needs to have facilities in place throughout the year. The present rate design includes demand rates based on year-round monthly billing determinants. While the Company could consider a different rate design, this could have a significant cost shift among customers. In addition, the use of Contract Demand in the tariff smooths out billing to some extent.
- d. The billing provisions of Rider No. 21 – Net Metering Service states that a “customer-generator will receive credit for each kilowatt-hour received by the Company up to the total amount of electricity delivered to the Customer during the billing period at the full retail rate consistent with Commission regulations.” Based simply on this provision alone, during the winter months, rate GMH/GLH could technically have a larger full retail rate than Rate GM/GL, because customer-generators are still responsible for the customer charge, demand charge and other applicable charges under the applicable rate schedule.
- e. See part (b) and (c). A different rate design could have a significant cost shift among customers.
- f. Rate GMH (formerly known as Rate HG), was established for rates effective February 10, 1971, as ordered by the Public Utility Commission Docket No. C.18808 dated January 22, 1971. Rate GLH (formerly known as Rate HN) was established for rates

effective January 19, 1973, which was created to clarify the application of the Seasonal All-Electric Rate.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: David Ogden and Katherine Scholl

OSBA-I-12

12. Reference Rate GMH eligibility:

- a. Please indicate whether the kWh equivalent for heat loss associated with supplemental renewable energy sources is included in the 25% calculation, and provide the rationale for the approach.
- b. Please provide a representative sample calculation of customer eligibility for Rate GMH for a customer with a rooftop solar installation.

Response:

- a. Per the Company's tariff, the 25% applies to "the customer's entire electric energy requirements during the heating season" (emphasis added).
- b. The Company does not have the representative calculation requested. The Company construes Rate GMH eligibility criteria liberally, and will generally place an eligible customer on Rate GMH upon customer request, where the customer demonstrates that the Company's electric service is the sole method of space heating (e.g., through proof of equipment installation and/or winter heating load profile).

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: David Ogden

OSBA-I-27

27. Reference Rider No. 3:

- a. Please define the purpose of this rider, and the net cost or benefit relative to regular tariff service for the FPPTY.

Response:

Rider No. 3 – School and Governmental Service Discount Period allows for the Late Payment Charge specified in the applicable rate to be added to the net amount for failure to make payment of Company charges within thirty days from the mailing date, versus the fifteen day period that's reflected in the Late Payment Charge provision for each applicable rate schedule. The Company does not track the estimated net cost of benefit relative to regular tariff service because it does not know the amount of Rider No. 3 customers' bills that they would have been paid between 15-30 days after the customers' bill due date.

Duquesne Light Company
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Interrogatories of the
Office of Small Business Advocate

Set I

Witness: Howard Gorman

OSBA-I-33

33. Reference functionalization and allocation of underground conductors, DLC Statement

No. 15 at page 18:

- a. Please explain generally why the allocated cost per unit of overall class NCP demand for both primary and secondary demand related costs for underground conductors is far lower for the residential classes than for the non-residential classes. Do underground conductors disproportionately serve non-residential customers?
- b. Please provide supporting calculations or a reference for the segregation of underground conductors and conduit costs between radial, network and URD.
- c. Please provide the basis for the determination that 97.5 percent of the residential class does not use the underground radial system. Please also provide the corresponding values for the other rate classes.

Response:

- a. It appears the question refers to information presented on Exhibit 6-3, line 7 regarding Primary voltage assets and line 8 regarding Secondary voltage assets. The Company did not examine this question specifically, however, the following factors may be contributing to this effect:
 - The Company separates its distribution assets among Non-Network, serving all customers; Network, serving only non-residential; Radial, serving primarily

non-residential; and URD, serving only residential. These components have different cost structures.

- Residential customers are physically closer to each other than non-residential, which could allow more efficiency in asset deployment.
 - Regarding Secondary, the load-carrying capacity of the minimum system is excluded from demand-related costs.
- b. The segregation of underground conductors and conduit costs among radial (72%), network (14%) and URD (14%) is an estimate provided by Company engineering.
- c. The estimate that 97.5 percent of the residential class does not use the underground radial system was provided by Company engineering. This adjustment applies only to the residential classes.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: Howard Gorman

OSBA-I-35

35. Reference Exhibit 6-9H:

- a. Please provide the basis for the blending factors used in this analysis.
- b. Please provide the basis for the labor hours values used in this analysis. Please indicate whether the estimates include travel to site time.
- c. Please provide the basis for the fringe markup, and indicate whether it includes a provision for vacation, illness, and employee training downtime.

Response:

- a. The blending ratio should have been 33% Poly/ 67% Alpha, based on the following meter counts provided by the Company. The Company will address this in rebuttal testimony.

Type	Total	In Classes with One Type	In Blended Classes
Poly	22,287	8,267	14,020
Single	595,500	566,782	28,718
Alpha/ERT	148		148
Total	617,935	575,049	42,886

- b. The labor hours are estimated hours as of December 2019. The labor hours include travel time to and from the job sites. The hourly labor rates are from the Collective Bargaining Agreement and will be effective starting October 1, 2021.

- c. The fringe markup of 26.70% represents actual costs for December 2019 expressed as a percent of direct salary, for the following items: Employer payroll taxes- 6.17%; Health care- 7.49%; Pension/ 401K- 11.78%; FAS 106 (retirement benefits other than pension)- 0.16%; Miscellaneous- 0.91%; Workers' Compensation- 0.18%.
- Neither the fringe rate or the hourly labor rate are adjusted for vacation, illness, holiday or employee training downtime.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Small Business Advocate

Set I

Witness: Howard Gorman

OSBA-I-36

36. Reference Exhibit 6-9C:
- a. Please provide minimum system calculations for primary system costs for Accounts 365, 366/367 Radial, 366/367 Network, 366/367 URD, and 368.1.
 - b. Please explain why the Company chooses to classify primary system distribution plant as 100 percent demand-related, in light of the NARUC Electric Utility Cost Allocation Manual and Commission precedent.

Response:

- a. The Company did not perform a Minimum System study for the Primary portions of any accounts, because the Primary portion of the distribution system was classified as 100% demand-related, as the Company has done since at least 2005. The information to perform such a study is not readily available, and it would take significant time and effort to do a study.
- b. The NARUC Manual, January 1992 edition, page 90, states, "The customer component of distribution facilities is that portion of costs which varies with the number of customers." The Primary Distribution system includes assets rated 4kV through 23kV. Very few customers are served at Primary voltage levels, most are connected to the system through the Secondary distribution system. Therefore the

number of customers has almost no effect on the cost of the Primary system, and it is not appropriate to classify any portion as customer-related.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA PUBLIC UTILITY
COMMISSION**

v.

DUQUESNE LIGHT COMPANY

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:
:
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:

Docket No. R-2021-3024296

VERIFICATION

I, Robert D. Knecht, hereby state that the facts set forth in my Surrebuttal Testimony labelled OSBA Statement No. 1-S and associated Exhibits IEc-S1 and IEc-S2 are true and correct to the best of my knowledge, information, and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 19 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Date: August 10, 2021



Robert D. Knecht

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024750
	:	
Duquesne Light Company	:	
1308(d) Proceeding	:	

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email only (*unless other noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024750
	:	
Duquesne Light Company	:	

DIRECT TESTIMONY OF HARRY GELLER

ON BEHALF OF

**THE COALITION FOR AFFORDABLE UTILITY SERVICES AND
ENERGY EFFICIENCY IN PENNSYLVANIA (“CAUSE-PA”)**

June 30, 2021

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PREPARED DIRECT TESTIMONY OF HARRY GELLER

I. WITNESS BACKGROUND

Q: Please state your name, occupation, and business address.

A: My name is Harry Geller. I am an attorney. I am the former Director of the Pennsylvania Utility Law Project. I am currently retired, but serve as Senior Counsel to the Pennsylvania Utility Law Project (PULP) and as a consultant to legal aid programs and their clients. I maintain an office at 118 Locust St., Harrisburg, PA 17101; however since the issuance of the Governor’s COVID-19 emergency disaster declaration, I am working from 4213 Orchard Hill Rd, Harrisburg, PA 17110.

Q: Briefly outline your education and professional background.

A: I received my B.A. Degree from Harpur College, State University of New York at Binghamton in 1966, and a J.D. degree from Washington College of Law, American University in 1969. Upon graduation from law school, I entered the Volunteers in Service to America (VISTA) program, where I was assigned to the New York University Law School. I took courses in the Law School’s Urban Affairs and Poverty Law program and worked with the Community In Action Program on the West Side of Manhattan in New York City from 1969-1971. In 1971, I started as a Staff Attorney for the New York City Legal Aid Society, Criminal Court and Supreme Court Branches in New York County. In 1974, I moved to Pennsylvania and began working for Legal Services, Incorporated (LSI). LSI was a civil legal aid program serving Adams, Cumberland, Franklin, and Fulton Counties. I worked at LSI from 1974-1987 first as a Staff Attorney, then as Managing Attorney, and ultimately became Executive Director. Through a restructuring with other legal services programs, LSI became part of what is now known as MidPenn Legal Services and Franklin County Legal Services.

CAUSE-PA Statement 1, Harry Geller

1 In 1988, I was hired to be the Executive Director of PULP, a statewide project dedicated
2 to the rights of low income utility customers. At PULP, I represented low income individuals with
3 utility and energy concerns, and supported organizations advocating for low income households
4 in utility and energy matters. As the Executive Director of PULP, I consulted and co-counseled on
5 a wide variety of individual utility consumer cases, and I participated in task forces, work groups
6 and advisory panels, including the Low Income Home Energy Assistance Program (LIHEAP)
7 Advisory Committee. I frequently trained community organizations, legal aid staff and advocacy
8 groups across Pennsylvania about the various utility and energy matters affecting Pennsylvania's
9 low income population. I retired from PULP on June 30, 2015. Although no longer employed by
10 PULP, I now serve as a Senior Counsel to PULP and as a consultant to legal aid programs and
11 their clients. In sum, I have over 50 years' experience with households in poverty, including over
12 30 years focusing specifically on utility and energy issues affecting low income consumers. My
13 resume is attached as Appendix A.

14 **Q: For whom are you testifying in this proceeding?**

15 A: I am testifying on behalf of the Coalition for Affordable Utility Services and Energy
16 Efficiency in Pennsylvania (CAUSE-PA).

17 **Q: Please describe the focus of your work over the past fifty years.**

18 A: I have represented low income individuals and organizations serving low income
19 populations in a wide variety of legal matters, including family law, public benefits,
20 unemployment compensation, utility shut-offs, debtor/creditor, and housing related disputes. Over
21 the past 32 years, both at PULP and in retirement, my focus has been ensuring that low income
22 households can connect to, afford, and maintain utility and energy services.

CAUSE-PA Statement 1, Harry Geller

1 In all of these legal matters, I worked almost exclusively on behalf of low income
2 individuals and households. Through this work, I have become intimately familiar with the daily
3 lives of countless of our poorest citizens. I have spent thousands of hours assisting clients in
4 combing through their budgets to attempt to assist them to make ends meet. Over the years, I have
5 consistently had to address the issues which have arisen for the significant number of low income
6 families who have an inability to pay for the most basic monthly necessities on the incomes they
7 have. Almost every month, my clients faced the stark necessity of choosing which bills they could
8 forego with the least drastic consequences.

9 In addition to my deep understanding of the daily monetary struggles facing poor families,
10 I have an extensive knowledge of the array of programs designed to allow low income individuals
11 to afford utility service. While at PULP, I was involved in numerous proceedings evaluating the
12 effectiveness of required Universal Service Programs to assist low income families. I have spent
13 thousands of hours identifying issues in Universal Services and making recommendations for
14 changes to Universal Service programming to better serve low income consumers. This advocacy
15 has strongly informed my awareness of the necessity of these programs as well as the recognition
16 that successfully integrated programs for low income consumers were essential to their
17 effectiveness. I have also spent hundreds, if not thousands, of hours identifying other barriers to
18 low income consumers establishing and staying connected to affordable utility services, including
19 in the context of rate proceedings.

20 As director of PULP, I played an instrumental role in the development, oversight, and
21 monitoring of the initial pilots and then the statutorily required low income Universal Service
22 Programs, each of which is structured to provide a different and complementary form of assistance
23 to low income customers, such that those customers have the ability to afford and maintain basic

CAUSE-PA Statement 1, Harry Geller

1 utility service. For example, the Customer Assistance Program (CAP) provides alternatives to
2 traditional collection methods for low income, payment troubled utility customers. The Low
3 Income Usage Reduction Program (LIURP) is a targeted weatherization program designed to assist
4 low income households with the highest energy consumption, payment problems, and arrearages.
5 The Customer Assistance and Referral Evaluation Service Program (CARES) provides assistance
6 and referrals to resources for special needs, low income customers. These programs work in
7 tandem and are designed to assist low income households in maintaining affordable utility services
8 and safe living environments while reducing utility collection costs, thereby benefitting other
9 ratepayers.

10 Further, over the years I have advocated with utility providers and regulators to improve
11 policies and practices that create barriers for low income customers' ability to access and afford
12 utility service. This includes advocacy to improve how utilities administer their Universal Service
13 programs and LIHEAP processes, but also advocacy to improve the ways that utilities interface
14 with and respond to the needs of all of their low income customers, including those who are not
15 enrolled in a utility Universal Service Program.

16 **Q: Have you testified in any proceeding before the Pennsylvania PUC?**

17 A: Yes. I have presented testimony in many proceedings before the PUC. A complete list is
18 included in my resume, which is attached as Appendix A.

19 **Q: What information did you rely on in preparing your testimony for this proceeding?**

20 A: In addition to publicly available information, compiled by the PUC and other sources, I
21 relied on information contained in DLC's rate case filing, other PUC proceedings involving DLC,

1 and discovery responses provided by DLC in response to discovery requests by CAUSE-PA and
2 the other parties in this proceeding.

3 **Q: What is the purpose of your testimony?**

4 A: CAUSE-PA intervened in this proceeding to ensure that the proposed rate increase and rate
5 design will not adversely affect Duquesne Light's (DLC or the Company) low income customers'
6 ability to connect to, maintain, and afford electric service, which is essential for lighting, heating,
7 cooking, and hot water – all critical components to a safe and healthy home.

8 **Q: Please summarize your testimony and explain how is your testimony is organized?**

9 A: My testimony is divided into nine substantive sections and one section summarizing my
10 proposals and recommendations. In Section I, I have described my background and the purpose of
11 my testimony.

12 In Section II and Section III, I discuss DLC's proposed rate increase and the financial
13 impact that it will have on its low income ratepayers, particularly in face of the current pandemic
14 and associated economic crisis. DLC estimates that – based on pre-pandemic available data – more
15 than 15% of its residential customers in its service territory are confirmed to be low income – and
16 an even greater percentage are estimated to be low income, especially in the wake of the
17 pandemic.¹ As the data available in this proceeding shows, thousands of low and moderate income
18 households in DLC's service territory are already struggling to pay for basic life necessities, and
19 many cannot afford to maintain service to their homes at existing rates. Further increasing the cost
20 of electric service will increase already high levels of unaffordability for low and moderate income
21 customers, leading to increased terminations and associated health risks.

¹ CAUSE-PA I-7; Pennsylvania Weatherization Providers Task Force, Interrogatories, Q-I-12.

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1 In Section IV, I discuss DLC’s proposed rate design, which seeks to recover a large portion
2 of the residential cost of service through a fixed monthly customer charge. DLC’s proposal to
3 substantially increase its fixed residential customer charge will undermine energy efficiency
4 efforts and erodes the ability of households to achieve meaningful bill savings through the adoption
5 of energy efficient products and practices. To the extent that any of the proposed rate increase is
6 found to be just and reasonable, it should be added to the volumetric charge, rather than the fixed
7 charge portion of the bill.

8 In Section V, I discuss the Company’s proposal to provide temporary relief as a result of
9 the COVID-19 pandemic through the COVID-19 Debt Relief Program for non-low income
10 residential customers. The Company’s current proposal fails to provide any additional relief for
11 low income customers at or below 150% FPL, despite evidence that this group of customers has
12 the greatest need for assistance. As a condition of approval of the COVID-19 Debt Relief Program
13 for residential customers, DLC should be required to provide matching additional funding in the
14 amount of \$3 million (plus associated administrative costs) for DLC’s Hardship Fund as a
15 temporary COVID-19 debt relief measure for low income customers. As a condition of approving
16 the COVID-19 Debt Relief Program for residential customers, DLC should also be required to
17 provide sufficiently flexible payment arrangements and to memorialize its procedures, so that
18 eligible residential customers are referred to the Company’s low income programs and other
19 sources of assistance, such as LIHEAP and Emergency Rental Assistance Program (ERAP).

20 In Section VI, I discuss the limitations and need for improvements in DLC’s universal
21 service program in order to address the unaffordability experienced by low income customers at
22 existing and proposed rates. First, I discuss how DLC’s proposed rate increase will affect CAP
23 participants and will cause increasing number of CAP participants to exceed their maximum CAP

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1 credit thresholds. I recommend that DLC is required to (1) actively monitor and investigate if the
2 usage levels giving rise to customers' exceeding their CAP maximum levels are caused by factors
3 beyond the household's control, and if so, the household should not be sanctioned by loss of CAP
4 rate; (2) notify all customers when they reach 50, 75, and 90% of their CAP maximum levels and
5 advise them of their potential eligibility for exemptions; (3) classify "de facto" heating customers
6 as heating customers, so that they receive the higher level of maximum CAP credits; (4) to the
7 extent any rate increase is approved, increase the maximum CAP credit thresholds by an amount
8 equal to the annual average increase in residential rates; (5) closely track and report the number of
9 CAP customers who exceed their maximum CAP credit limit. If more than 5% of DLC's CAP
10 customers exceed 100% of their maximum CAP credit threshold prior to the 11th month of a given
11 program year, DLC should be required to further increase the maximum CAP credit thresholds
12 such that no more than 5% of CAP customers exceed the maximum CAP credit threshold in a
13 given year.

14 In this section, I also discuss the limitations of DLC's LIURP, otherwise known as Smart
15 Comfort, compared to the estimated need amongst low income customers in DLC's service
16 territory. LIURP is critically important to help reduce high energy usage in low income homes,
17 and can help control unaffordable energy costs and lessen the impact of the rate increase on
18 vulnerable households. I recommend that DLC be required to (1) increase its annual LIURP
19 budget by \$1 million; and (2) carryover any unspent LIURP funds from a previous program year
20 in order to ensure that low income customers are able to sufficiently access LIURP services in
21 order to improve their energy efficiency and monthly bills.

22 In Section VII, I discuss the Company's proposed transportation electrification initiatives
23 in terms of their impact of low income customers. While I appreciate the Company's efforts to

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1 serve environmental justice communities, I am concerned that low income customers will, by and
2 large, fail to see any direct benefits from the proposed pilots. Indeed, for the vast majority of low
3 income customers, purchasing and maintaining an electric vehicle (EV) is unaffordable and far
4 beyond reach. As I explain, installing charging facilities for personal EVs in low income
5 communities before low income consumers can reasonably afford to purchase and maintain an
6 EV, may facilitate gentrification in low income neighborhoods – increasing housing costs and
7 displacing low income families. Thus, I recommend a number of modifications to DLC’s
8 proposals to better focus program dollars on electrification of accessible transit options that serve
9 all households. To the extent EV infrastructure for personal vehicles is approved, I recommend
10 that low income consumers be exempt from the costs.

11 In Section VIII, I discuss the need for DLC to revise its residential service application
12 process. Specifically, I discuss how DLC currently requires notarization – along with submission
13 of a government-issued identification – in order for applicants to establish service in their name.
14 These requirements can be burdensome to meet – especially for uniquely vulnerable populations,
15 including immigrant consumers and those experiencing housing insecurity. I recommend that the
16 Company eliminate its requirement that residential customers provide notarization as a condition
17 of establishing service, and that it accept additional forms of identification.

18 Finally, in Section IX, I summarize my proposal and recommendations set forth in my
19 direct testimony.

1 **II. RATE INCREASE**

2 **Q: Please summarize DLC’s requested rate increase, as it applies to residential**
3 **customers.**

4 On April 16, 2021, Duquesne Light Company submitted a rate filing, Supplement No. 25
5 to Tariff Electric – Pa. P.U.C. No. 25, which proposes a general increase in electric distribution
6 rates of approximately \$115 million. If DLC’s requested rate increase is approved, DLC projects
7 that monthly bill for a residential customer who uses 600 kWh of electricity would increase by
8 \$7.73 from \$100.12 to \$107.85, or by 7.72%. This equates to approximately \$92.76 per year. Of
9 course, the financial impact of DLC’s proposed rate increase will be much higher for households
10 with higher usage, including those who heat with electricity.

11 As I will discuss later in my testimony, DLC’s proposed rate increase represents a
12 significant increase in the price of essential services – especially for low income customers, who
13 already struggle to afford basic utility services.

14 **Q: Do you support the Company’s requested rate increase?**

15 **A:** No, I do not support DLC’s requested rate increase, as it is neither just nor reasonable, and
16 is not in the public interest. DLC’s current rates are already unaffordable, making service
17 inaccessible to thousands of low income households. Further increasing rates will only exacerbate
18 this existing problem.

19 Now is a particularly bad time to time to raise rates for essential utility services, such as
20 electricity, which is critical to ensuring that families are safe in their homes. Throughout the
21 pandemic, low income households have experienced disproportionate health and economic harm
22 – with greater job and wage losses, increased food insecurity, and accrual of unprecedented levels

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1 of debt for basic life necessities.² While the general economic outlook has begun to improve, and
2 the more fortunate among us have seen their home values, pensions, IRAs, and savings increase,
3 low income communities continue to face stark challenges, including ongoing economic
4 instability, job insecurity, housing instability, and disparities in access to health care, amongst
5 other systemic inequities, and are at risk of being left behind in the recovery. Increasing rates for
6 electricity at this time – without substantial mitigation to fully remediate existing unaffordability
7 – would be unjust, unreasonable, and contrary the public interest.

8 As a foundational principle, I do not believe that rates are just and reasonable if they are
9 not also reasonably affordable for those seeking service, such that all Pennsylvanians – regardless
10 of income – can maintain safe and affordable electricity to their home. As I will discuss, the data
11 shows quite clearly that low income families are unable to afford to maintain service to their home
12 at current rates, and any further rate increase will serve to exacerbate levels of existing rate
13 unaffordability. As such, it would be both unjust and unreasonable to approve any rate increase at
14 this time, absent substantial additional mitigation measures to address *existing* rate unaffordability
15 and to fully remediate additional unaffordability created by DLC’s proposal to substantially
16 increase rates.

² See Diana Hernández, Yumiko Aratani, Yang Jiang, Energy Insecurity among Families with Children, National Center for Children in Poverty, January 2014, at 3, available at: http://www.nccp.org/publications/pub_1086.html; Liz Szabo and Hannah Recht, The other COVID-19 risk factors: How race, income, ZIP code can influence life and death, USA Today, April 22, 2020, available at: <https://www.usatoday.com/story/news/health/2020/04/22/howcoronavirus-impacts-certain-races-income-brackets-neighborhoods/3004136001/>; see also Vanessa Williams, Disproportionately black counties account for over half of coronavirus cases in the U.S. and nearly 60% of deaths, study finds, Washington Post, May 6, 2020, available at: <https://www.washingtonpost.com/nation/2020/05/06/study-finds-that-disproportionately-black-counties-account-more-than-half-covid-19-cases-us-nearly-60-percent-deaths/>.

1 **III. RATE IMPACT ON LOW INCOME CONSUMERS**

2 **Q: How many customers in DLC’s service territory are considered to be low income**
3 **customers?**

4 A: It is difficult to answer this question, especially in light of the pandemic – which has likely
5 increased the number of households in poverty across the state. But there are a number of metrics
6 to assess poverty levels in DLC’s service territory.

7 Pennsylvania’s large public utilities track and classify their low income customer
8 populations in two ways – estimated low income customers and confirmed low income.³ While
9 the number of estimated and confirmed low income customers in DLC’s service territory has likely
10 grown due to the economic impact of the COVID-19 pandemic, available data shows that DLC
11 had a substantial number of both estimated and confirmed low income customers prior to the
12 pandemic. As discussed in greater detail below, a household must have income at or below 150%
13 of the federal poverty level (FPL) to be considered low income. For context, a family of four with
14 household income at or below 150% FPL has a maximum gross annual income of \$39,750 – or
15 \$3,312.50 per month.⁴

16 DLC estimates that more than 15% – 86,834 out of 542,772 – of residential customers in
17 its service territory are low income.⁵ This is the Company’s “estimated low income customers”
18 count, which the Company notes is calculated based on U.S. Census data – the most recent of
19 which was as of 2019.⁶ The number of low income customers in DLC’s service territory likely

³ See Pa. PUC, BCS, 2019 Report on Universal Service Programs & Collections Performance, at 2,4 (Sep. 2020) (herein 2019 Universal Service Report).

⁴ See US Dept. of Health & Human Services, HHS Poverty Guidelines for 2021, <https://aspe.hhs.gov/poverty-guidelines>.

⁵ CAUSE-PA I-7; Pennsylvania Weatherization Providers Task Force, Interrogatories, Q-I-12.

⁶ CAUSE-PA I-7.

1 increased as a result of the economic harm and increased unemployment experienced as a result
2 of the COVID-19 pandemic.

3 The Company also tracks “confirmed low income customers.” As of April 2021, DLC
4 reported that 41,283 (7.6%) of its residential customers were classified as “confirmed low
5 income.”⁷ The Company defines a “confirmed low income customer” as a customer who meets
6 one of the following: (1) a customer/applicant who has enrolled in CAP without defaulting due to
7 being over income (over 150% FPL) within the last year; (2) a customer who has received a
8 LIHEAP grant within the past program year; (3) a customer who has completed a Smart Comfort
9 visit in the past year with an FPI score of 1 at the time of the visit; or (4) a customer who has
10 visited a Community Based Organization (CBO) and was confirmed to have low income by
11 providing income documentation to a CAP Agent in the last year.⁸

12 The estimated low income customer figure presents a more accurate picture of DLC’s pre-
13 pandemic low income customer population. While both metrics show that a significant number of
14 DLC customers are low income, the confirmed low income customer count provides only a limited
15 assessment of the low income population – counting only the number of customers who have
16 already affirmatively obtained assistance or otherwise provided verified documentation of their
17 income level to the Company.

18 For purposes of evaluating the affordability of DLC’s rates and the effectiveness of its
19 universal service program participation and outreach, it is more accurate to utilize the census-based
20 estimated low income customer counts. Regardless of the measure applied, there are a substantial
21 number of low income customers in DLC’s service territory.

⁷ CAUSE-PA I-6, Attachment.

⁸ CAUSE-PA I-4.

1 **Q: How much income must a household earn each month to be considered low income?**

2 A: Generally, the Commission considers a “low income” customer to be any customer whose
 3 income is at or below 150% of the federal poverty level (FPL).⁹ With some exceptions, most utility
 4 assistance programs, including DLC’s CAP, require households to have income that is not greater
 5 than 150% FPL to qualify for bill discounts and/or arrearage forgiveness, and no greater than 200%
 6 FPL to qualify for grant assistance.¹⁰

7 The FPL is a measure of poverty based exclusively on the size of the household, but not
 8 on the composition of the household (i.e. whether the household consists of adults or children) or
 9 a household’s geography. As a baseline, a family of four at 150% FPL has a gross annual income
 10 of just \$39,750, while a family of four at 50% FPL has a gross annual income of just \$13,250.¹¹

11 Table 1 shows household income, by FPL and household size:

12 **Table 1: Percentages of Federal Poverty Levels by household size and income¹²**

Household/ Family Size	25%	50%	75%	100%	125%	150%	200%
1	\$3,220	\$6,440	\$9,660	\$12,880	\$16,100	\$19,320	\$25,760
2	\$4,355	\$8,710	\$13,065	\$17,420	\$21,775	\$26,130	\$34,840
3	\$5,490	\$10,980	\$16,470	\$21,960	\$27,450	\$32,940	\$43,920
4	\$6,625	\$13,250	\$19,875	\$26,500	\$33,125	\$39,750	\$53,000

13

⁹ See 52 Pa. Code §§ 54.72, 62.2 (Defining low income customers for the purposes of electric and natural gas Universal Service programs and reporting).

¹⁰ Duquesne Light Company 2017-2019 Universal Service and Energy Conservation Three Year Plan, Docket No. M-2016-2534323, at 12, 19 (USECP filed March 12, 2018).

¹¹ U.S. Dept. of Health and Human Services, 2021 U.S. Federal Poverty Guidelines, available at: <https://aspe.hhs.gov/2021-poverty-guidelines>.

¹² Id.

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1 For comparison, a full time (40 hours/ week) worker making a minimum wage (\$7.25 per
2 hour) has a gross annual income of \$15,080, assuming no time off. This is substantially less than
3 a household needs to meet their basic expenses in any of the counties that the Company serves.¹³

4 A benchmark often used to assess how much income a household needs to live without
5 assistance in Pennsylvania is called the Self-Sufficiency Standard. This is a tool that measures the
6 income that a family must earn to meet their basic needs and consists of the combined cost of six
7 (6) basic needs – housing, child care, food, health care, transportation, and taxes – without the help
8 of public subsidies.¹⁴ Unlike the federal poverty level, which does not change based on geographic
9 location or family composition, the Self-Sufficiency Standard accounts for the varied costs of the
10 six basic needs in different geographic areas and for differently aged household members.¹⁵ For
11 reference, the average Self-Sufficiency Standard in DLC’s service territory for a family of four
12 with two adults and two school aged children is approximately \$57,645 per year, approximately
13 \$17,895 more than a 4-person household with income at 150% FPL makes in a given year.¹⁶

14 The income levels of the Company’s confirmed low income customers do not approach
15 these levels. The average annual household income for the DLC’s confirmed low income
16 customers is \$13,854, and the average annual income for DLC’s CAP customers is \$13,931.¹⁷

¹³ Self-Sufficiency Standard, <http://www.selfsufficiencystandard.org/Pennsylvania>.

¹⁴ See PathWays PA, Overlooked and Undercounted 2019 Brief: Struggling to Make Ends Meet in Pennsylvania,

available at: <http://www.selfsufficiencystandard.org/Pennsylvania>.

¹⁵ See PathWays PA, Overlooked and Undercounted, How the Great Recession Impacted Household Self-Sufficiency in Pennsylvania,

<http://www.selfsufficiencystandard.org/sites/default/files/selfsuff/docs/PA2012.pdf>.

¹⁶ See PathWays PA, 2021 Self-Sufficiency Standard Table, by County, <http://www.selfsufficiencystandard.org/pennsylvania>. The self-sufficiency standard for a household with two adults and two school-aged children is \$57,912 for Allegheny County and \$57,378 for Beaver County.

¹⁷ CAUSE-PA-I-9; CAUSE-PA-I-10.

1 These customers have far less than the amount needed to be self-sufficient. Any increase in the
2 cost of necessities, including the rates for electric service, will result in increased unaffordability
3 for low and moderate income households living below the self-sufficiency standard, and will likely
4 result in the corresponding increase in uncollectible expenses, service terminations, and associated
5 hardships.

6 **Q: Please explain how the COVID-19 pandemic has impacted the poverty rate in**
7 **DLC’s service territory.**

8 A: I believe the number of low income households in the Company’s service territory is likely
9 much higher than ever before as a result of the COVID-19 pandemic. Low income workers are
10 less likely to have paid sick leave or personal time to care for themselves or their families.¹⁸ Many
11 low wage and hourly workers are employed in the service, hospitality, and retail sectors, which
12 have been especially hard hit by the economic impacts of the COVID-19 pandemic.¹⁹

13 Until very recently, many of the emergency measures necessary to protect public health –
14 including protections from eviction, foreclosure, and utility terminations, as well as short-term

¹⁸ 92% of workers in the top quarter of earnings (meaning hourly wages greater than \$32.21) have access to some form of paid sick leave, versus only 51% of workers earning wages in the lowest quarter (\$13.80 or less). See Drew Desilver, As coronavirus spreads, which U.S. workers have paid sick leave – and which don’t?, Pew Research Center, March 12, 2020, available at: <https://www.pewresearch.org/fact-tank/2020/03/12/as-coronavirus-spreads-which-u-s-workers-have-paid-sick-leave-and-which-dont/>.

¹⁹ See Martina Hund-Mehjean & Marcela Escobari, Brookings, Our Employment System has Failed Low-Wage Workers. How Can We Rebuild (April 28, 2020), available at: <https://www.brookings.edu/blog/up-front/2020/04/28/our-employment-system-is-failing-low-wage-workers-how-do-we-make-it-more-resilient/>.

[W]orkers who earn low wages and do not have employer-sponsored health care account for 22 percent or 32 million of the country’s workforce. In a crisis, these workers are least attached to their employer and thus the most likely to be laid off or have their hours reduced. And nearly 40 percent of them, 12.3 million individuals, work in the hospitality and retail sectors, the two sectors most immediately impacted by COVID-19-related layoffs.

Id.; see also Stephanie Deluca et al., Johns Hopkins Univ. of Medicine, The Unequal Cost of Social Distancing, <https://coronavirus.jhu.edu/from-our-experts/the-unequal-cost-of-social-distancing>.

1 emergency unemployment assistance – have somewhat masked the extent of the problem. While
2 Pennsylvania continues on its road to recovery from the COVID-19 pandemic, available data
3 suggests unprecedented levels of evictions, foreclosures, and utility terminations await low
4 income families in the coming months.²⁰ For example, the United States Census Bureau’s Pulse
5 Survey for the week of May 26 to June 7, 2021, found that 18.4% of adults lived in a household
6 that was not current on the mortgage or rent, and eviction or foreclosure in the next two months
7 was either very likely or somewhat likely.²¹ The same survey showed that 24.6% of adults lived
8 in a household where it has been somewhat or very difficult to pay for usual household
9 expenses.²²

10 **Q: How would DLC’s proposed rate increase impact low income households?**

11 A: Low income households are struggling now more than ever. Even in relatively good
12 economic times, low income families struggle to make ends meet each month and often are forced
13 to make untenable choices between affording utility services and other basic necessities – such as
14 food, medicine, and housing. Any increase in costs for essential services, like electricity, will
15 severely impact low income households ability to afford these necessities.

16 DLC’s proposed average monthly increase of \$7.73 for a customer using 600 kWh is a
17 substantial increase in basic living expenses for low income households. The average annual
18 income for the Company’s confirmed low income customers is \$13,854.²³ For a household at this
19 income level, the \$92.76 annual increase represents a substantial increase in the prices of basic

²⁰ See US Census Bureau, Measuring Household Experiences during the Coronavirus Pandemic: Household Pulse Survey – Phase 3.1, available at: <https://www.census.gov/data/experimental-data-products/household-pulse-survey.html>.

²¹ Id.

²² Id.

²³ CAUSE-PA-I-9.

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1 services – amounting to .7% of total household income. While this might seem like a small number,
2 it is substantial in terms of measuring an affordable energy burden, defined as the percentage of
3 income paid toward household energy costs.²⁴ For low income households who already struggle
4 to afford their monthly bills, the effects of the increase may profoundly impact their ability to
5 connect to, maintain, and afford electric service. Thus, a key component in determining if a
6 proposed rate is just and reasonable is to measure its effect on rate affordability.

7 To further contextualize the impact of the proposed rate increase on low income
8 households, it is helpful to look at the relative energy burden of low income households. To be
9 affordable, a household's total housing costs – *including utility costs* – should account for no more
10 than 30% of a household's total income.²⁵ According to formal Commission policy, a household's
11 *combined* energy burden (electric and gas) should not exceed 6% of household income for those
12 with incomes between 0-50% FPL, or 10% of household income for those with income between
13 51-150% FPL.²⁶ But, across Pennsylvania, households with income at or below 150% FPL spend
14 as much as 29% of their income on energy costs alone.²⁷ By comparison, the Bureau of Consumer
15 Services (BCS) estimates that the energy burden of Pennsylvania's residential customers as a
16 whole (exclusive of those enrolled in a Customer Assistance Program (CAP)) is roughly 4%.²⁸

²⁴ See 52 Pa. Code § 69.265(2)(i).

²⁵ US Dep't of Housing & Urban Development, Defining Housing Affordability, available at: <https://www.huduser.gov/portal/pdredge/pdr-edge-featd-article-081417.html>.

²⁶ Id.; 2019 Amendments to Policy Statement on Customer Assistance Program, 52 Pa. Code § 69.261-69.267, Final Policy Statement and Order, Docket No. M-2019-3012599, (Final Policy Statement entered Nov. 5, 2019).

²⁷ See Fisher, Sheehan & Colton, The Home Energy Affordability Gap: Pennsylvania (April 2021), http://www.homeenergyaffordabilitygap.com/03a_affordabilityData.html.

²⁸ Energy Affordability for Low income Customers, Docket No. M-2017-2587711, Order, at 8 (Jan. 17, 2019); see also Diana Hernandez, Energy Insecurity: A Framework for Understanding Energy, the Built Environment, and Health Among Vulnerable Populations in the Context of Climate Change, 103(4) Am. J. Pub. Health (2013) available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673265/#bib20>.

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1 Increasing rates will further exacerbate existing disparities in energy burden for low income
2 households – adding an average .7% to the energy burden of confirmed low income households.

3 CAP helps to mitigate the disproportionate energy burden on low income households. But
4 increasing rates – without also adjusting the maximum CAP credit threshold – will cause financial
5 harm to low income families regardless of CAP enrollment status.

6 As discussed in further detail below, in 2018, the Commission approved the Company's
7 implementation of a percentage of payment plan (PIPP) structure for its CAP – which DLC
8 implemented in January 2021 after multiple delays.²⁹ Pursuant to DLC's newly implemented
9 program, CAP customers pay one of three CAP rates: (1) a percentage of their monthly gross
10 household income; (2) the average monthly bill; or (3) the customer's actual usage if it is less than
11 a PIPP and less than an average monthly bill.³⁰ Under the PIPP CAP rate, customers are billed
12 according to PIPP tiers, as I will discuss below.³¹ Once a CAP customers' applicable CAP rate is
13 established, the customer is billed at that rate each month.

14 CAP customers who pay a CAP rate based on their average or actual bill will experience
15 the full impact of the rate increase, up to their applicable PIPP rate. CAP customers who pay the
16 PIPP CAP rate will be shielded from the rate increase, but only if their total annual CAP credit
17 (the difference between the CAP rate and the full residential tariff rate) is less than the maximum
18 CAP credit limit, as discussed in further detail below.³² If a CAP customer exhausts all of their
19 maximum CAP credits within the 12-month program year, they no longer receive a CAP bill that

²⁹ See Duquesne Light Company Universal Service and Energy Conservation Plan, Order on Reconsideration, Docket No. M-2016-2543423, at Appendix A (Order entered April 19, 2018).

³⁰ DLC St. 7 at 5: 1-4.

³¹ Id. at 5: 6-10.

³² 2017-2019 DLC USECP at 6.

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1 is based on their ability to pay, but instead must pay the full residential tariff rate - regardless of
2 the fact that a full rate tariff bill is, by definition, unaffordable for the CAP participants. I will
3 discuss the need for DLC to increase its maximum CAP credit threshold limits later in my
4 testimony.

5 Notably, CAP only reaches a small portion of eligible customers. As of January 2021, only
6 34,223 of DLC's residential customers were enrolled in CAP³³ - compared to 86,834 households
7 that DLC estimates are low income in its service territory and 41,283 households that DLC has
8 *confirmed* to be low income customers in its service territory.³⁴ In other words, more than half of
9 DLC's estimated low income customers are not enrolled in CAP and will bear the full, unmitigated
10 impact of the proposed rate increase.

11 The overwhelming energy burden faced by low income households makes it difficult to
12 pay for other basic necessities, such as housing, food, and medicine; threatens stable and continued
13 employment and education; has a substantial and long-term impact on mental and physical health;
14 creates serious risks to households and the larger community; and negatively impacts the broader
15 economy.³⁵ According to the US Energy Information Administration, roughly 1 in 5 households
16 in 2015 – when the economy was experiencing a relatively prosperous economic period – reported
17 that they reduced or forwent other critical necessities like food and medicine to afford their home
18 energy costs, and more than 1 in 10 reported keeping their home at an unsafe or unhealthy

³³ CAUSE-PA-I-2, Attachment.

³⁴ CAUSE-PA I-6, Attachment; CAUSE-PA I-7.

³⁵ Diana Hernández, Yumiko Aratani, Yang Jiang, Energy Insecurity among Families with Children, National Center for Children in Poverty, January 2014, at 3, available at: http://www.nccp.org/publications/pub_1086.html; US EIA, Residential Energy Consumption Survey (2015), <https://www.eia.gov/consumption/residential/reports/2015/energybills/>; see also NEADA, 2018 National Energy Assistance Survey, at 17, 20 (Dec. 2018), <http://neada.org/wp-content/uploads/2015/03/liheapsurvey2018.pdf> (hereinafter NEADA Survey).

1 temperature.³⁶ Even with financial assistance, low income households are still unable to afford the
2 costs of energy. According to a survey conducted by the National Assistance Directors'
3 Association, 72% of LIHEAP recipients reported that they forgo other necessities to afford energy,
4 and 26% reported keeping their home at unsafe or unhealthy temperatures.³⁷ As recent research
5 and data has shown time and time again, vulnerable low income families simply cannot afford the
6 cost of energy services.

7 Ultimately, an increase in rates for electric service such as the increase proposed in the
8 present case will compound existing unaffordability for vulnerable households and is likely to
9 result in a corresponding increase in uncollectible expenses and involuntary payment-related
10 terminations. These impacts can and do have deep and lasting impacts on the health, stability, and
11 well-being of impacted households, and the welfare of communities as a whole.³⁸ As such, no rate
12 increase should be permitted without first addressing the current affordability gap for DLC's low
13 income customers.

14 **Q: Is there other evidence that the Company's low income customers already struggle**
15 **to afford and maintain electric service – even before any rate increase is approved?**

16 A: Yes. There are strong indicators that service is already unaffordable. A disproportionate
17 percentage of DLC's low income customers face arrears in higher amounts compared to residential
18 customers as a whole. As of May 2021, the average arrearage of confirmed low income customers
19 not enrolled in CAP was \$771.32, and the average arrearage of CAP customers was \$898.48.³⁹

³⁶ US EIA, Residential Energy Consumption Survey (2015),
<https://www.eia.gov/consumption/residential/reports/2015/energybills/>.

³⁷ NEADA Survey at 17, 20.

³⁸ Id.

³⁹ CAUSE-PA-I-11, Attachment.

1 Comparatively, the average arrearage of non-low income residential customers was considerably
2 less at \$412.96.⁴⁰

3 The Company's CAP and low income customers also face correspondingly higher risk of
4 involuntary termination compared to residential customers as a whole. For example, in 2019, a
5 total of 6,974 confirmed low income and CAP customers had their service terminated for non-
6 payment – representing approximately 25% of residential service terminations that year, despite
7 the fact that confirmed low income customers represent just 7.6% of DLC's residential
8 customers.⁴¹ These indicators demonstrate that DLC's low income customers already struggle to
9 pay for electric service, and will likely experience increased payment trouble if the proposed rate
10 increase is approved without taking necessary measures to mitigate the impacts of the rate increase
11 on low income households.

12 **Q: Do you believe that there is an increased threat of termination for low income**
13 **customers as a result of the proposed rate increase?**

14 A: Yes. Low income customers already have a markedly higher rate of termination compared
15 to average residential customers. DLC did not perform residential terminations for non-payment
16 in 2020. However, as noted above, CAP and other confirmed low income customers represented
17 one-fourth of all residential involuntary terminations for non-payment, despite comprising only
18 7.6% of residential customers.⁴² Thus, prior to the COVID-19 termination moratorium, confirmed
19 low income customers were far more likely to have service terminated than general residential

⁴⁰ Id.

⁴¹ CAUSE-PA-I-18; CAUSE-PA-I-20; CAUSE-PA-I-22; CAUSE-PA I-7; Pennsylvania Weatherization Providers Task Force, Q-I-12.

⁴² Id.

1 customers. This disparity in termination rates is likely to continue and become even more
2 pronounced if rates are increased.

3 **Q: How does loss of electricity impact a household?**

4 A: Loss of electricity can and does have a deep and lasting impact on the health and well-
5 being of an entire household – as well as the community as a whole. The loss of electric service
6 can often mean that a household is unable to use their primary heating source in the winter, even
7 if that heating source is non-electric. When a household is unable to use a primary or secondary
8 heating system, they often resort to dangerous and/or high-cost heating, cooking, and lighting
9 alternatives – such as use the of alternate fuels or portable generators – which increases the risk of
10 carbon monoxide poisoning and home fires. The Commission has consistently documented this in
11 its annual Cold Weather Survey. In 2019, DLC reported that 281 households in its service territory
12 were without a central heating source in the wintertime.⁴³ Significantly, the annual Cold Weather
13 Survey reflects only two points in time – in December and February – and only tracks customers
14 actually terminated in the year the survey is initially conducted. It does not track customers who
15 were terminated in past years who were unable to restore service or those without central heating
16 at other points of the year. Thus, the number of households (including children and the elderly)
17 without operational central heating systems who must endure the cold for various lengths during
18 cold weather months could be significantly higher than reported. The loss of electric service can
19 also have a significant impact on the ability of vulnerable populations to manage medical
20 conditions. Further, the loss of essential utility service is also a common catalyst to homelessness,⁴⁴

⁴³ 4-Year Average, 2019 & 2020 Cold Weather Survey Results – Electric,
https://www.puc.pa.gov/media/1497/cold_weather_survey_results_e-ng2020.pdf.

⁴⁴ See Joint State Gov't Comm'n, Gen. Assembly of the Commw. of Pa., Homelessness in Pennsylvania: Causes, Impacts, and Solutions: A Task Force and Advisory Committee Report (2016),

1 which ultimately causes communities to expend an even greater level of resources to adequately
2 address homelessness and protect the overall safety and well-being of community members.

3 **Q: Does the Low Income Home Energy Assistance Program (LIHEAP) mitigate the**
4 **harm of the proposed rate increase on low income households?**

5 A: No. Relative to estimated need, there are few DLC customers who receive LIHEAP
6 assistance. In 2020, the number of DLC customers receiving LIHEAP Cash Grants was 5,911,⁴⁵
7 which is approximately 15% of DLC’s confirmed low income population, and about 7% of DLC’s
8 estimated low income customers.⁴⁶

9 LIHEAP is a critically important program and provides life-sustaining assistance to those
10 in need, but the Program is intended to only provide supplemental assistance. LIHEAP benefits
11 are not adjusted to mitigate the financial impact of a rate increase. As proposed, DLC’s residential
12 rates would increase by an average of \$92.76 per year.⁴⁷ In comparison, the average Cash Grant
13 amount for electric customers in the 2020-2021 LIHEAP program year was \$281.⁴⁸ In other words,
14 the proposed rate increase will consume more than one-third of the average LIHEAP Cash Grant,
15 eclipsing the significant portion of the benefits received by low income customer through the
16 LIHEAP Program.

<http://jsg.legis.state.pa.us/resources/documents/ftp/documents/HR550%201%20page%20summary%204-6-2016.pdf>.

⁴⁵ CAUSE-PA I-16, Attachment.

⁴⁶ CAUSE-PA I-6, Attachment, CAUSE-PA I-7.

⁴⁷ See DLC St. 1 at 6: 11-17.

⁴⁸ Appendix B, Pa. Dep’t of Human Services, Energy Assistance Summary (EASUM), at 68 of 136 (report generated June 19, 2021).

1 **Q: Does DLC’s Low Income Usage Reduction Program (LIURP), otherwise known as**
2 **Smart Comfort, help mitigate existing unaffordability or offset the financial impact of the**
3 **proposed rate increase on low income households?**

4 A: LIURP Programs, including Smart Comfort, can play an important role in mitigating
5 unaffordability for low income consumers, and I support robust energy efficiency measures in
6 order to reduce bills of low income customers. However, as I discuss later in my testimony, Smart
7 Comfort only serves a small percentage of customers who need energy efficiency measures to
8 achieve usage reductions and bill savings.

9 For Smart Comfort to have a meaningful impact to offset current levels of rate
10 unaffordability, as well as the financial impact of the Company’s proposed rate increase, DLC
11 must make critical changes to its LIURP policies and procedures to expand usage reduction
12 services for more at-need households.

13 **Q: Are low income customers who are enrolled in CAP protected from the financial**
14 **impact of the proposed rate increase?**

15 A: Partially, yes. But, as I discussed above and will address in further detail in Section VI,
16 CAP customers who are charged the actual or average CAP rate will experience the full financial
17 impact of the proposed rate increase, up to the CAP PIPP amount. And all CAP customers,
18 including those on the actual, average, or PIPP CAP rates, will more quickly reach DLC’s
19 maximum CAP credit thresholds.⁴⁹ Once a customer reaches their maximum CAP credit threshold
20 in a given program year, **they will be billed the full monthly tariff** residential rate, rather than
21 their CAP rate. When rates increase without the corresponding increase to the maximum CAP
22 credit threshold, CAP customers will reach their maximum CAP credit threshold more quickly,

⁴⁹ 2017-2019 DLC USECP at 6.

1 requiring them to pay categorically unaffordable rates until the end of the program year. As I will
2 discuss in Section VI, adjusting the maximum CAP credit threshold is essential to ensuring that
3 CAP participants can continue to receive critical bill savings necessary to maintaining affordable
4 electric services.

5 **IV. RATE DESIGN**

6 **Q: Please summarize DLC's proposed residential rate design.**

7 A: The Company is proposing to continue its structure of using a combination of fixed charge
8 and energy-based (i.e. usage) rates for all residential rate classes – Residential Service Rate RS,
9 Residential Heating Service Rate RH, and Residential Service Add-On Heat Pump Rate RA.⁵⁰ The
10 Company proposes to increase the fixed monthly charge from \$12.50 to \$16.25 – an increase of
11 \$3.75 or approximately 30%.⁵¹ After the fixed charge portion, recovery of the remaining revenue
12 required will be through a single volumetric charge per kWh.⁵²

13 **Q: How would DLC's proposed rate design impact low income households?**

14 A: This substantial increase to the fixed charge will undermine the ability of consumers to
15 control costs through energy efficiency, conservation, and consumption reduction, which is
16 particularly problematic for low income consumers. These customers already struggle to pay for
17 electric service, and rely on the ability to offset bills through careful conservation and usage
18 reduction. Regardless of the level of household usage, any increase to the fixed charge prevents
19 customers from exercising the ability to use conservation measures to mitigate that portion of the
20 rate increase.

⁵⁰ DLC St. 16 at 12: 10-19.

⁵¹ Id. at 12: 10-19; Exhibit DBO-2.

⁵² Id. at 12: 10-19.

1 **Q: Would DLC’s proposed rate increase to the fixed charge affect the Company’s**
2 **LIURP Program – Smart Comfort?**

3 A: Yes. DLC’s proposal undermines the explicit goals of LIURP. The Commission’s LIURP
4 regulations plainly provide that the program is intended to help low income customers to reduce
5 their energy bills, and in turn, to “decrease the incidence and risk of customer payment
6 delinquencies and the attendant utility costs associated with uncollectible account expenses,
7 collection costs and arrearage carrying costs.”⁵³ By reducing the amount of bill savings that can
8 be obtained through LIURP participation, the proposed increase to the fixed charge threatens the
9 continued effectiveness of ratepayer investments intended to reduce energy consumption,
10 delinquencies, collections, and uncollectible costs. The explicit goals of the LIURP program will
11 be more difficult to achieve as the fixed portion of a customer’s bill is increased.

12 LIURP, when utilized properly, is effective at achieving energy reductions and producing
13 meaningful average bill savings. In 2016, the last year of which industry wide data is available,
14 LIURP saved participants, on average, between \$92 (electric baseload) and \$222 (electric heating)
15 each year – or between \$7.67 and \$18.50 each month.⁵⁴ While I will discuss the need for DLC to
16 make improvements to its LIURP program later in this testimony, the fact remains that the ability
17 to save money through energy efficiency is tied directly to a bill structure that bases costs on

⁵³ 52 Pa. Code § 58.1 (“The programs are intended to assist low income customers conserve energy and reduce residential energy bills. The reduction in energy bills should decrease the incidence and risk of customer payment delinquencies and the attendant utility costs associated with uncollectible accounts expense, collection costs and arrearage carrying costs.”).

⁵⁴ 2019 Universal Service Report at 49 (Estimated annual bill reductions are based on the average of the public utility results from each category of LIURP jobs completed in the program year, evaluated in following year, and reported in the year after that).

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1 customer usage. But as more residential customer costs are shifted to the fixed charge, the
2 achievable bill savings – and the corresponding impact on bill payment behavior – will erode.

3 This is even more critical for households with income above 150% FPL but less than 200%
4 FPL who are ineligible for CAP or LIHEAP, but are eligible for energy efficiency and conservation
5 services through LIURP or the federal Weatherization Assistance Program – both of which have
6 income guidelines up to 200% FPL. It is critical that these households retain the ability to reduce
7 their monthly energy costs through adoption of comprehensive energy efficiency and conservation
8 programming.

9 Given that low income customers carry significant arrears compared to residential
10 customers as a whole, and often lack the ability to reasonably control usage due to poor housing
11 stock and older, less efficient appliances,⁵⁵ it is critical that these customers have access to
12 effective conservation tools capable of producing meaningful and lasting bill reductions. Of
13 course, in addition to undermining the effectiveness of millions of dollars in LIURP investments,
14 DLC's high fixed charge proposal will also undermine the bill savings achievable through the
15 investment of millions of ratepayer dollars in energy efficiency through its Act 129 Energy
16 Efficiency and Conservation Program Plan. Indeed, an increase to the fixed charge erodes bill
17 savings from energy efficiency and conservation efforts across the board, and penalizes customers
18 who have already taken steps to reduce energy consumption – in essence allowing utilities to
19 recover lost revenue attributable to reduced energy usage.

⁵⁵ See ACEEE, [Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low income and Underserved Communities](https://www.aceee.org/sites/default/files/publications/researchreports/u1602.pdf) (April 2016), available at: <https://www.aceee.org/sites/default/files/publications/researchreports/u1602.pdf>.

1 **Q: Do you have any recommendations that could help mitigate the effect of the proposed**
2 **rate design on low income customers?**

3 A: Yes. DLC's fixed monthly customer charge should not be increased. To the extent that any
4 increase in the Company's residential distribution rates is approved, it should be applied to the
5 volumetric charge. This would protect the ability of low income households to lower their utility
6 costs by reducing consumption and would preserve the effectiveness of LIURP at reducing
7 customer bills and improving payment behavior.

8 **V. PANDEMIC RELIEF PROGRAMS**

9 **Q: Is the Company proposing any additional residential customer assistance in its**
10 **present rate filing as a result of the COVID-19 pandemic?**

11 A: Yes. The Company is proposing a temporary COVID-19 debt relief program that is
12 available to non-CAP customers between 151% and 300% FPL with delinquent balances of at least
13 \$100.⁵⁶ As proposed, customers who make a payment will receive matching forgiveness of up to
14 \$300, as well as a payment arrangement up to 36 months on the remaining unpaid balance.⁵⁷ DLC
15 proposes that grants are awarded on a first come, first served basis, and a Program budget not to
16 exceed \$3 million (plus administrative costs).⁵⁸ Additionally, DLC is proposing that, for customers
17 or applicants seeking restoration, the Company will also waive the reconnection fee and restore
18 service if 25% of a customer's outstanding balance is paid.⁵⁹ The Company proposes that the

⁵⁶ DLC St. 7 at 12: 2-12.

⁵⁷ Id.

⁵⁸ Id. The total Program budget would be \$3 million, plus \$500,000 for administrative costs. DLC St. 7 at 12: 14-17.

⁵⁹ DLC St. 7 at 12: 2-12.

1 Program would begin January 15, 2022 and remain open until March 31, 2022, or when funding
2 is exhausted, whichever is earlier.⁶⁰

3 **Q: Do you support the proposed COVID-19 Debt Relief Program for residential**
4 **customers?**

5 A: I strongly support DLC's efforts to provide debt relief to residential customers to help
6 alleviate unprecedented levels of arrears. However, as proposed, the COVID-19 Debt Relief
7 Program is not equitably designed to meet the needs of DLC's low and moderate income
8 residential customers living below the self-sufficiency standard. Significantly, the Company has
9 not proposed in its filing any additional relief for customers at or below 150% FPL. As discussed
10 above, the arrearage levels of DLC's confirmed low income and CAP customers are significantly
11 higher than the average arrearage levels carried by non-low income residential customers. Given
12 the disproportionate economic harm suffered by low income communities throughout the
13 pandemic, it is essential that low income customers are also able to access pandemic debt relief
14 programs. I recommend changes below to help ensure that the program will more appropriately
15 and equitably serve the needs of DLC's low income consumers who are most in need of assistance.

16 **Q: Does the Company operate a Hardship Fund?**

17 A: Yes. DLC operates a Hardship Fund that is administered by Dollar Energy Fund (DEF).⁶¹
18 The Hardship Fund grant is designed specifically for lower-income residential customers at or
19 below 200% FPL, with grant amounts up to \$500.⁶² A household can only receive one Hardship

⁶⁰ Id.

⁶¹ DLC St. 7 at 8: 21-24.

⁶² Id. at 9: 1-6.

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1 Fund grant through DEF within a program year, with a 30-day stay on termination being placed
2 on the account upon receipt of the grant.⁶³

3 **Q: Is the Company proposing any changes to the Hardship Fund in this proceeding?**

4 A: No. The Company notes that, in April 2020, it was granted permission to temporarily
5 increase the eligible for its Hardship Grant up to 250% FPL, with a maximum grant amount of
6 \$1,000, and that the Company also contributed an additional \$750,000 to its DEF Hardship Grant
7 – allowing an additional 1,300 grant recipients in 2020.⁶⁴

8 **Q: Is DLC’s Hardship Fund sufficient to meet the needs of its low income customers?**

9 A: No. The hardship grants awarded by DLC are small in comparison to the need amongst
10 DLC’s low income customers. Each year since 2017, including in 2020, less than 3,000 low
11 income customers receive assistance through the Hardship Fund – with an average grant amount
12 of under \$300.⁶⁵

13 **TABLE 2: Hardship Fund Grants Issued by Income⁶⁶**

Year	0-50% FPL	51-100% FPL	101-150% FPL	> 150% FPL	Income Unavailable	Total Grants Issued
2017	427	889	648	192	81	2237
2018	261	535	478	209	105	1588
2019	312	651	718	313	138	2132
2020	441	847	808	376	189	2661
2021 (YTD)	61	149	180	173	74	637

14

⁶³ DLC St. 7 at 9: 1-6.

⁶⁴ DLC St. 7 at 9: 8-20.

⁶⁵ CAUSE-PA III-2(A), Attachment 1.

⁶⁶ Id.

TABLE 3: Hardship Fund Average Grant Amount by Income⁶⁷

Year	0-50% FPL	51-100% FPL	101-150% FPL	> 150% FPL	Income Unavailable	Overall Average
2017	\$217.64	\$210.78	\$219.13	\$206.22	\$170.36	\$205.08
2018	\$181.75	\$173.77	\$177.44	\$163.43	\$133.57	\$167.46
2019	\$208.49	\$185.57	\$184.90	\$203.15	\$148.22	\$187.33
2020	\$298.61	\$258.08	\$253.58	\$262.99	\$214.44	\$256.54
2021 (YTD)	\$207.24	\$152.27	\$154.13	\$178.79	\$136.81	\$165.85

DLC’s failure to propose additional COVID-19 assistance for customers at or below 150% FPL categorically omits low income customers who have suffered disproportionate economic harm as a result of the COVID-19 pandemic. These customers are therefore dependent upon the Hardship Fund. However, since the eligibility level for the Hardship Fund has been increased, low income customers in crisis are competing against an even larger pool of people in need. While I am encouraged that DLC made a contribution to its Hardship Fund in 2020, that contribution was far less than the funding proposed for the COVID-19 Debt Relief Program – and serves only a small portion of the need for assistance amongst DLC’s low income customers. It is critical that DLC bolster its Hardship Fund to better account for the needs of its low income customers, and the disproportionate economic hardship suffered by low income families.

Q: Do you have any recommendations related to the COVID-19 Debt Relief Program for residential customers?

A: Yes. First, DLC should be required to provide matching additional funding - \$3 million, plus associated administrative costs - for its Hardship Fund to ensure that households with income below 150% FPL have more equitable access to emergency assistance. Given that the moratorium

⁶⁷ CAUSE-PA III-2(B), Attachment 1.

1 on utility terminations has lifted, grant assistance is vital to ensure that low income customers can
2 stay connected to critical electric services.

3 Second, as a condition of approving the COVID-19 Debt Relief Program for residential
4 customers, residential customers who apply for the Program should concurrently be screened for
5 eligibility for DLC's CAP and Hardship Fund programs, as well as other sources of utility
6 assistance, including LIHEAP, ERAP, and the Homeowner Assistance Fund, when available.⁶⁸
7 DLC indicates that customers who earn up to 150% FPL will be referred to CAP, as well as other
8 available assistance programs, including LIHEAP.⁶⁹ But all customers enrolling in the COVID-
9 19 Debt Relief Program should be screened for these other sources of assistance, as the eligibility
10 for ERAP and the Homeowner Assistance Fund are much higher than 150% FPL.⁷⁰

11 Third, customers who are placed in payment arrangements pursuant to the COVID-19 Debt
12 Relief Program should be offered longer, more flexible payment arrangements in line with the
13 payment arrangements terms outlined in the Commission's Order at M-2020-3019244 – so that
14 residential customers at or below 250% FPL participating in the COVID-19 Debt Relief Program
15 are able to enter into payment arrangements for a duration of 5 years.⁷¹ Given the Commission's
16 guidance on the need to alleviate the continued economic harm faced by lower income customers

⁶⁸ See American Rescue Plan Act of 2021, HR 1319, Title II, Part 2, Subtitle K, § 2911; American Rescue Plan Act of 2021, HR 1319, Title III, Subtitle B, § 3201; Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. N., Title V, Subtitle A, § 501; American Rescue Plan Act of 2021, HR 1319, Title II, Subtitle K, § 2912 & Title III, Subtitle B, § 3206.

⁶⁹ CAUSE-PA-II-11. While DLC indicates that they intend to screen residential customers for low income program eligibility and other available assistance, DLC has not memorialized this procedure as a requirement of the Program.

⁷⁰ See American Rescue Plan Act of 2021, HR 1319, Title II, Part 2, Subtitle K, § 2911; American Rescue Plan Act of 2021, HR 1319, Title III, Subtitle B, § 3201; Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. N., Title V, Subtitle A, § 501; American Rescue Plan Act of 2021, HR 1319, Title II, Subtitle K, § 2912 & Title III, Subtitle B, § 3206.

⁷¹ Public Utility Service Termination Moratorium, Order, Docket No. M-2020-3019244, at 4 (Order entered March 18, 2021).

1 as a result of COVID-19 – compounded by the increased risk of unaffordability posed by DLC’s
2 proposed rate increase – DLC should be required to offer flexible payment arrangement standards
3 to customers for the duration of the COVID-19 Debt Relief Program.

4 **VI. UNIVERSAL SERVICE PROGRAMS**

5 **Q: Please describe the Company’s low income assistance programs.**

6 A: DLC operates four Universal Service programs that assist low income customers: (1) the
7 Customer Assistance Program (CAP); (2) the Customer Assistance Referral and Evaluation
8 Services (CARES); (3) the Hardship Fund; and (4) the LIURP, otherwise known as Smart
9 Comfort.⁷²

10 **A. Customer Assistance Program**

11 **Q: Please describe the Company’s Customer Assistance Program (CAP).**

12 A: DLC’s CAP is available for to customers with gross household income at or below 150%
13 FPL.⁷³ As explained above, DLC implemented a Percentage of Income CAP design in January
14 2021.⁷⁴ Under the current CAP design, CAP customers are billed one of the following CAP rates:
15 (1) a percentage of their monthly gross household income; (2) the average monthly bill; or (3) the
16 customer’s actual usage, if it is less than a PIPP and average monthly bill.⁷⁵ Under the PIPP
17 calculation, customers are billed according to the following PIPP tiers:

⁷² DLC St. 7 at 4: 8-13.

⁷³ Id. at 4: 16-22.

⁷⁴ See Duquesne Light Company Universal Service and Energy Conservation Plan, Order on Reconsideration, at Appendix A (entered April 19, 2018, at Docket No. M-2016-2543423).

⁷⁵ DLC St. 7 at 5: 1-4.

1

Table 4: DLC PIPP Tiers⁷⁶

Income Category	Residential Service Percentage of Income Payment	Residential Electric Heat Percentage of Income Payment
Up to 50% FPL	2%	6%
51% to 100% FPL	4%	10%
101 to 150% FPL	4%	10%
*Minimum Payment	\$20	\$40

2

3 Pursuant to the Average Monthly Bill method, if a customer’s average monthly bill, which
 4 is based on a 12 month rolling average that would otherwise be the budget billing payment, is less
 5 than what the PIPP CAP bill would be, the customer’s monthly payment would equal the 12 month
 6 average bill.⁷⁷ Pursuant to the actual usage method, if a customer’s bill according to their actual
 7 usage is less than what their CAP bill would be under either the PIPP or Average Monthly Bill
 8 method, the customer’s required payment would be based on their actual monthly usage.⁷⁸
 9 Customers who report \$0 income are required to make a monthly minimum payment of either \$20
 10 for residential service customers, or \$40 for residential heating customers – unless the customer’s
 11 actual usage in a given month results in a bill that is less than the minimum payment, in which
 12 case the customer is billed their actual usage.⁷⁹

13 **Q: Is the Company proposing any changes to its CAP in this proceeding?**

14 A: No. The Company’s expert witness, Ms. Katherine Scholl, indicates that the Company is
 15 not proposing any changes to its CAP, as the Company’s Universal Service and Energy
 16 Conservation Plan (USECP) is currently pending Commission review at Docket No. M-2019-

⁷⁶ Id. at 5: 6-10.

⁷⁷ Id. at 5: 11-19.

⁷⁸ Id. at 5: 6- 1-6.

⁷⁹ Id. at 6: 10-17.

1 3008227. With the exception of updated CAP participation and enrollment in 2022 of 35,853, the
2 Company does not propose any additional changes to its CAP in this rate proceeding.⁸⁰

3 **Q: Do you agree that no additional changes are warranted to DLC’s CAP, given the**
4 **pending USECP proceeding at M-2019-3008227?**

5 A: No. The affordability of CAP rates is a critical component of determining whether rates
6 are just, reasonable, and in the public interest in the context of this rate proceeding. In order to be
7 just and reasonable, it is critical that rates – including CAP rates – are affordable for those served.
8 Given disproportionate economic harm borne by low income customers as a result of the COVID-
9 19 pandemic that compounded unaffordability prior to the pandemic, it is all the more imperative
10 that the affordability of the current rates provided to low income customers are taken into
11 consideration in an overall determination of whether to approve DLC’s proposal to increase those
12 rates.

13 **Q: Do you have any concerns about DLC’s CAP that need to be addressed through this**
14 **proceeding?**

15 A: Yes. I am concerned that DLC’s proposed rate increase will cause an increase in CAP
16 customers exceeding their maximum CAP credit threshold in a given program year. As I described
17 above, the Company’s maximum annual CAP credit threshold – i.e. the difference between the
18 CAP rate and the full tariff residential rate – is tiered, based on the household’s applicable
19 percentage of income.⁸¹

⁸⁰ Id. at 7: 9-17.

⁸¹ 2017-2019 DLC USECP at 6.

Table 5: Maximum CAP Credit Limit

Income	Electric Non-Heating	Electric Heating
0-50% FPL	\$1,600	\$2,350
51-100% FPL	\$1,400	\$1,800
51-101% FPL	\$900	\$1,300

Once a customer meets and exceeds their maximum CAP credit limit within the program year, they will be subject to bills that are by definition unaffordable for low income CAP participants. This is especially problematic for low income customers who live in poor housing stock, have older and/or inefficient appliances, and who have larger family sizes, corresponding with higher usage.

A significant number of DLC CAP customers exceeded their CAP maximum credit limit in recent years. The below Table shows the number of CAP participants who exceeded their CAP credit limit thresholds, compared to total CAP participants:

Table 6: CAP Participants Exceeding Maximum CAP Credit Limits

	Number of CAP Participants Exceeding Max. CAP Limit ⁸²	Average Number of CAP Participants ⁸³	Percent of CAP Participants Exceeding Max. CAP Limit
2018	5,273	35,232	15%
2019	5,221	36,465	14%
2020	6,719	35,887	19%

DLC implemented its CAP PIPP design in January 2021, at which time all CAP participants were restarted with the maximum CAP credit amount. As of June 21, 2021, less than 6 months into the program year, 309 CAP customers have already exceeded their maximum CAP credits at current rates and an additional 641 CAP customers have exceeded between 70-99% of

⁸² CAUSE-PA I-14 - SUPPLEMENT.

⁸³ CAUSE-PA I-2; III-17.

1 their maximum CAP credits.⁸⁴ If DLC’s proposed rate increase is approved, far more CAP
 2 customers will exceed the maximum and the process will be accelerated.

3 In 2020, through the pandemic, nearly 1 in 5 CAP customers exceeded their maximum
 4 CAP credit limit – further underscoring the need for additional emergency pandemic relief for this
 5 uniquely vulnerable customer group. Also note that a noticeably higher number of CAP customers
 6 exceeded their maximum CAP credit limit than in the preceding two years – increasing by roughly
 7 4% over 2018 and 2019. I suspect that increased residential usage associated with the pandemic
 8 may be a primary factor driving the increase in CAP customers exceeding their maximum CAP
 9 credit threshold last year. If so, this highlights that the level of DLCs maximum CAP credit has
 10 been set too low, leaving no room for a household which needs to adapt to changing circumstances.

11 The consequences of exceeding the maximum CAP credit limit are severe. The monthly
 12 bill of customers who exceed the maximum CAP credit limit is substantially higher – adding, on
 13 average, well over \$100 to the monthly CAP bill.⁸⁵ These rates are categorically unaffordable for
 14 low income CAP customers.

15 **Table 7: Average Bill Before and After Exceeding Maximum CAP Credit Limit**

Program Year	Average CAP Bill Before Exceeding Max CAP Credit	Average Bill After Exceeding Max CAP Credit	Average Increase After Exceeding Max CAP Credit
2018	\$67.99	\$153.77	\$85.78
2019	\$65.57	\$152.48	\$86.91
2020	\$66.00	\$145.12	\$79.12
2021 YTD	\$112.11	\$198.03	\$85.92

16

17 **Q: Do you have any recommendations related to DLC’s CAP maximum credits?**

⁸⁴ CAUSE-PA III-14.

⁸⁵ CAUSE-PA III-12, Attachment.

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1 A: Yes. In order to ensure that CAP customers are able to reasonably access CAP and maintain
2 affordable monthly bills while enrolled in CAP, DLC should be required to take steps to ensure
3 that its CAP customers can receive affordable CAP bills without regularly reaching and exceeding
4 their maximum CAP thresholds.

5 Specifically, DLC should actively monitor and investigate if the usage level giving rise to
6 reaching the CAP maximum level has been caused by factors beyond the household's control, and
7 would be eligible for adjustments to their maximum CAP credits based on extenuating
8 circumstances, including but not limited to the list provided in DLC's USECP.⁸⁶ If this is the case,
9 the household should not be sanctioned by loss of CAP rate. Second, DLC should be actively
10 notifying all customers when they reach 50, 75, and 90% of their CAP maximum levels and
11 advising them of their potential eligibility for exemption.

12 Third, many of DLC's customers are using electric de facto heating but are not classified
13 as electric heating customers.⁸⁷ As such, their maximum CAP levels are significantly reduced as
14 compared to those households who are classified as heating customers. Since these "de facto"
15 heating customers are dependent upon electric heat to survive the winter, they should be classified
16 as heating customers and receive the higher level of maximum CAP credits. DLC should amend
17 any current tariff which continues to perpetuate this inequity.

18 Finally, to the extent any increase in rates is approved, DLC should be required to increase
19 its maximum CAP credit thresholds by an amount equal to the annual average increase in
20 residential rates. Moving forward, I recommend that DLC closely track and report on the number
21 CAP customers who exceed their maximum CAP credit limit. If more than 5% of DLC's CAP

⁸⁶ 2017-2019 USECP at 6.

⁸⁷ CAUSE-PA III-18.

1 customers exceed 100% of their maximum CAP credit threshold prior to the 11th month of a given
2 program year, DLC should be required to further increase the maximum CAP credit thresholds
3 such that no more than 5% of CAP customers exceed the maximum CAP credit threshold in a
4 given year.

5 ***B. LIURP/Smart Comfort***

6 **Q: Please describe the Company's Smart Comfort Program.**

7 A: DLC's LIURP – otherwise known as the Smart Comfort Program – targets residential
8 customers with gross incomes less than 150% FPL, and seniors whose gross household income is
9 less than 200% FPL, who have baseload electric usage higher than 500 kWh per month and who
10 have been residing at their current address for at least 6 months.⁸⁸ Usage reduction measures
11 available through Smart Comfort include appliance and lighting replacement and weatherization
12 measures.⁸⁹ Low income customers with baseload usage less than 500 kWh per month may
13 participate in Watt Choice – the Company's Energy Efficiency program pursuant to Act 129.⁹⁰
14 The Company authorizes its LIURP contractors to spend up to \$200 per electric baseload Smart
15 Comfort visit without prior approval from the Company for incidental repairs and health and safety
16 measures.⁹¹ In the case of electric heating customers, the Company authorizes its LIURP
17 contractors up to \$600 without prior Company approval for health and safety measures and
18 incidental repairs needed to effectively install conservation measures.⁹²

⁸⁸ DLC St. 7 at 9-10.

⁸⁹ Id.

⁹⁰ DLC St. 7 at 10: 1-9.

⁹¹ Id. at 10: 11-15.

⁹² Id. at 10: 15-19.

1 **Q: Is the Company proposing any changes or improvements to its LIURP in the**
 2 **present proceeding?**

3 A: No. Ms. Scholl indicates that the Company is not proposing any changes to its LIURP.⁹³

4 **Q: Do you agree that no additional changes are warranted to DLC’s LIURP?**

5 A: No. DLC’s LIURP can play an important role in mitigating unaffordability for low income
 6 consumers, and ultimately reduce levels of uncollectible expenses and involuntary terminations
 7 for non-payment. However, DLC’s LIURP only serves a small portion of those in need of
 8 comprehensive energy efficiency and usage reduction services.⁹⁴ According to DLC’s last
 9 universal service program needs assessment, 41,085 customers could qualify to be treated through
 10 LIURP.⁹⁵ Despite a significant number of customers estimated to be eligible for LIURP services,
 11 DLC only serves a small subset of customers through its LIURP, and has significantly underspent
 12 its annual LIURP budget since 2019.⁹⁶ DLC served 3,224 customers through its LIURP in 2018,
 13 and served just 725 households through LIURP in 2019.⁹⁷ The following Table shows the
 14 Company’s projected LIURP budget, compared to its actual LIURP budget:

15 **Table 7: LIURP – Projected v. Actual Budgets⁹⁸**

	Projected Budget	Actual Budget
2018	\$2,409,000	\$2,341,637
2019	\$2,409,000	\$622,772
2020	\$2,409,000	\$1,566,479
2021 as of April 30 th	\$2,409,000	\$707,564

⁹³ Id. at 11: 1-3.

⁹⁴ CAUSE-PA I-25.

⁹⁵ Interrogatories of Pennsylvania Weatherization Providers Task Force, Q-I-9; 2017-2019 USECP, Three Year Plan, Docket No. M-2016-2534323, at 22 (USECP filed May 12, 2017).

⁹⁶ CAUSE-PA-I-25; CAUSE-PA-I-28.

⁹⁷ Id.

⁹⁸ CAUSE-PA-I-28.

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For LIURP to have a meaningful impact to remediate DLC’s existing rate unaffordability and to offset the impact of any rate increase, DLC must make critical changes to its LIURP to ensure that customers can achieve bill savings through energy efficiency measures. While the Company notes that it has not turned away any eligible customers from receiving service under LIURP,⁹⁹ the fact remains that DLC’s LIURP only manages to reach a small portion of its estimated eligible population. This suggests that the program is not well known or is inaccessible – not that all those in need have been served.

Further, DLC has a disproportionately low LIURP budget compared to other electric distribution companies (EDCs). Despite reporting more than half a million residential customers, DLC’s LIURP budget is significantly smaller than the LIURP budgets of EDCs with similar customer counts:

TABLE 8: EDC 2020 Projected LIURP Budget¹⁰⁰

EDC	LIURP Budget (2020)	Residential Customers (2019)	Est. Annual LIURP Cost per Residential Customer	Est. Monthly LIURP Cost per Residential Customer
Duquesne	\$3,053,500¹⁰¹	538,534	\$5.67	\$0.47
Met-Ed	\$5,442,000	504,684	\$10.78	\$0.90
PECO	\$5,600,000	1,488,812	\$3.76	\$0.31
Penelec	\$6,126,000	500,877	\$12.23	\$1.02
Penn Power	\$3,643,161	146,017	\$24.95	\$2.08
PPL	\$10,000,000	1,233,836	\$8.10	\$0.68

⁹⁹ Id.

¹⁰⁰ 2019 Universal Service Report at 4, 45.

¹⁰¹ Please note the discrepancy between the 2020 LIURP budget reported by the Company through discovery and by the Universal Service Report, and that the 2019 Universal Service Report noted that the 2020 projected spending might include carryover of unspent LIURP funds from the previous program year. 2019 Universal Service Report at 45. Assuming the 2020 LIURP budget reported by the Company in Table 7, the estimated monthly LIURP cost per residential customer would be only \$0.37.

West Penn	\$6,426,697	627,499	\$10.24	\$0.85
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Q: Do you have any specific recommendations for how DLC can improve its LIURP?

A: Yes. To help offset the impact of the rate increase on low income, high usage customers, and to bring greater parity to the availability of LIURP services to low income households in DLC’s service territory, I recommend that DLC increase its annual LIURP budget by \$1 million. I also recommend that the Commission require DLC to carryover any unspent LIURP funds from a previous program year in order to ensure that low income customers are able to sufficiently access LIURP services in order to improve their energy efficiency and monthly bills.

VII. TRANSPORTATION ELECTRIFICATION PROPOSALS

Q: Please summarize DLC’s existing transportation electrification (TE) programs.

A: DLC’s expert witness, Ms. Sarah Oleksak, describes DLC’s existing EV initiatives in her testimony.¹⁰² The proposed TE Programs consist of two Portfolios – the Charging Infrastructure Portfolio, which includes three programs related to EV charging stations, and the Customer Portfolio – designed at consumer awareness, education, and engagement, Fleet Electrification Advisory Services, and registration incentives.¹⁰³

As part of the EV ChargeUp Pilot, the Company has implemented a Level 2 Charging Station Evaluation, a DCFC Evaluation, and EV Registration Incentive, and executed Education and Outreach activity.¹⁰⁴ The Company filed annual reports in 2020 and 2021 pursuant to the parties’ Settlement in the Company’s 2018 base rate case.¹⁰⁵ The Company also provided a report

¹⁰² See DLC St. 8.

¹⁰³ DLC St. 8 at 4: 10-22.

¹⁰⁴ Id. at 15: 6-9.

¹⁰⁵ Id. at 15: 13-20.

1 in this proceeding on the EV ChargeUp Pilot Level 2 Charging Evaluation, which includes an
2 evaluation of customer participation and feedback, public access to charging stations, and charging
3 station usage.¹⁰⁶

4 **Q: What programs is the Company proposing as part of its Charging Infrastructure**
5 **Portfolio?**

6 A: The Company proposed Charging Infrastructure Portfolio includes the following:

- 7 • A public, workplace, and multi-unit dwelling (MUD) Make-Ready Pilot, through which
8 the Company will construct and own make-ready infrastructure to facilitate the deployment
9 of charging stations and fast charging stations.¹⁰⁷
- 10 • A Fleet and Transit Charging Pilot, through which the Company will construct and own
11 make-ready and charging infrastructure to serve customers with electric fleets.¹⁰⁸
- 12 • A Home Charging Pilot, through which the Company will construct and own make-ready
13 and charging station infrastructure to serve residential customers.¹⁰⁹

14 **Q: Are low income households participating in DLC's existing EV programs?**

15 A: It's hard to determine, based on DLC's available information. DLC indicated in response
16 to discovery that it is not able to track EV registrations in order to determine how many of its 4,123
17 EV registrations through December 2020 were in Environmental Justice (EJ) Areas.¹¹⁰ Further,
18 the Company is not able to identify the number of EV owners in its service territory who are low

¹⁰⁶ Id. at 16: 3-10.

¹⁰⁷ Id. at 16: 17-22.

¹⁰⁸ Id. at 17: 1-6.

¹⁰⁹ DLC St. 8 at 17: 7-9.

¹¹⁰ CAUSE-PA II-4. The Company notes that it can analyze customer information obtained in the EV ChargeUp Pilot's EV Registration Incentive to determine that approximately 17% of the Company's customers received incentive to live within a designated EJ Area. I note that this not speak to whether customers within this 17% are low income.

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1 income, and has not conducted a study of EV ownership by income.¹¹¹ Without DLC having
2 meaningfully investigated EV ownership amongst low income consumers in its service territory,
3 it is difficult to determine the precise need for EVs and EV infrastructure amongst low income
4 customers in DLC's service territory. However, DLC cites in its responses to discovery to an
5 evaluation by Cox Automotive.¹¹² In this evaluation, Cox Automotive found that, in an electrified
6 market, the percent of EV buyers from \$0-\$14,999 is approximately 0%, the percent of EV buyers
7 from \$15,000 to \$19,000 is approximately 0%, and the percent of EV buyers from \$20,000 to
8 \$29,999 was only 1%.¹¹³ Indeed, EV buyers were almost entirely customers with incomes at or
9 above \$250,000.¹¹⁴

10 **Q: Are low income customers able to access EVs and infrastructure related to EVs?**

11 A: No. In my experience, purchasing an EV is not an affordable or feasible option for the
12 average low income household. A family of four at 150% FPL makes just \$39,750. At this level
13 of income, families struggle to afford public transit options, let alone have available income to
14 purchase and maintain an EV. While the costs of EVs have decreased in recent years, the average
15 cost to purchase an EV remains high – estimated to be approximately \$55,600 in 2019.¹¹⁵ This is
16 far more than the total gross annual income of low income families, even without the costs of
17 maintenance, registration, insurance, and other associated costs involved with owning electric
18 vehicles. Simply installing EV chargers and make-ready in low income communities is likely to

¹¹¹ I&E-RE-37-D; CAUSE-PA II-1; CAUSE-PA-II-4.

¹¹² CAUSE-PA II-1.

¹¹³ Cox Automotive, State of Electrification, Q4 2020, at 7, available at: [Cox-Automotive-Q4-2020-State-of-Electrification-Update.pdf \(coxautoinc.com\)](https://www.coxautoinc.com/State-of-Electrification-Update.pdf).

¹¹⁴ Id.

¹¹⁵ Hearst Autos Research, How Much Is an Electric Car?, Car and Driver, available at: <https://www.caranddriver.com/research/a31544842/how-much-is-an-electric-car/>.

1 bring with it “green gentrification”¹¹⁶ – in which low income communities and communities of
2 color are displaced from their neighborhood as higher income families look to take advantage of
3 the green infrastructure investments, and drive up rents in the process.

4 **Q: Does vehicle electrification provide any other benefits to low income households?**

5 A: The Company describes how transportation electrification has associated benefits for
6 disadvantaged communities, such as reduced emission and associated health benefits.¹¹⁷ I agree
7 that there are likely tangible emission benefits as a result of transportation electrification that can
8 help to lessen the historical burden of emissions in low income communities and communities of
9 color.¹¹⁸ That said, I question whether investments in infrastructure for electrification of personal
10 vehicles owned almost exclusively by wealthier households provides a measurable air quality
11 benefit in low income communities, where such vehicles do not presently exist and could not be
12 afforded, and where wealthier households do not live and work and are less likely to visit.

13 It is essential that initiatives aimed at transportation electrification provide a clear and
14 direct benefit to low income customers – especially when low income consumers are expected to
15 share in the cost. Low income families already shoulder a disproportionate energy burden, and
16 are at the same time disproportionately exposed to environmental pollutants and the effects of
17 climate change.

¹¹⁶ Barcelona Laboratory for Urban Environmental Justice and Sustainability; Critical Sustainability Studies, available at: <http://www.bcneuj.org/green-gentrification/>.

¹¹⁷ DLC St. 8 at 11.

¹¹⁸ EJ communities – which are disproportionately low income communities and communities of color – experience the compounding harm of economic and environmental inequity and injustice. These communities often live closer to mass transit, power plants, and other industrial sites, and their homes are often older and have little insulation, drafty windows and doors, and poor ventilation. As a result, people who reside in EJ Areas are most likely to be exposed to harmful emissions and other environmental pollutants both inside and outside of their homes which exacerbates negative health outcomes. See Cheryl Katz, People in Poor Neighborhoods Breathe More Hazardous Particles, Scientific American (Nov. 2012), <https://www.scientificamerican.com/article/people-poor-neighborhoods-breathe-more-hazardous-particles/>.

1 **Q: Do low income households pay for DLC’s existing EV programs?**

2 A: Yes. DLC indicates that the costs of the Make-Ready Pilot will be recovered through base
3 distribution rates.¹¹⁹ For the Home Charging Pilot and the Fleet Pilot, the Company proposes to
4 recover program costs from both participants through the pilot program and through general rates,
5 consistent with how costs from other customer programs are collected.¹²⁰

6 **Q: Please describe the Public, Workplace, and Multi-Unit Dwelling Make-Ready Pilot**
7 **(Make Ready Pilot).**

8 A: Through the Make-Ready Pilot, the Company proposes to work with customers to provide
9 all necessary supply infrastructure, including service connections and EV make ready “behind the
10 meter for L2 and DCFC stations in public, workplace, and MUD settings.”¹²¹ Customers would be
11 responsible for acquiring, installing, owning, and maintaining the charging station.¹²² In support
12 of the Make-Ready Pilot, DLC’s expert witness, Ms. Oleksak, explains that the Make-Ready Pilot
13 was developed based on the need for more charging infrastructure in the Company’s service
14 territory.¹²³

15 **Q: Do you support DLC’s Make-Ready Pilot?**

16 A: No, not as proposed. Ms. Oleksak notes that, in an effort to alleviate the costs of the
17 charging station, qualified customers in EJ Areas will be provided a charging station rebate of up
18 to \$5,000 per dual-port L2 unit, along with specialized technical assistance.¹²⁴ Simply installing

¹¹⁹ DLC St. 8 at 33: 6-7

¹²⁰ DLC St. 17 at 56.

¹²¹ DLC St. 8 at 21: 15-20.

¹²² Id. at 21: 20-21.

¹²³ Id. at 22: 5-6.

¹²⁴ Id. at 31: 10-18.

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1 EV chargers and Make-Ready in EJ communities will not change the fact that EVs are still far out
2 of reach for low income households. As such, I am concerned that DLC’s proposal is likely to
3 bring with it “green gentrification”¹²⁵ – in which the people of color and low income families who
4 live in those EJ areas are displaced from their neighborhood as higher income families look to take
5 advantage of the green infrastructure investments, and drive up rents in the process.

6 While I appreciate that DLC is taking the initiative to identify ways to serve historically
7 disadvantaged communities,¹²⁶ I am concerned that DLC’s proposed Make-Ready Pilot fails to
8 adequately target low income consumers and may instead exacerbate the displacement of low
9 income communities and communities of color. As noted above, EV costs are still well out of
10 reach for the average low income household. Low income families often struggle to afford a bus
11 pass – let alone the cost of purchasing an EV, registering and maintaining the vehicle, and the
12 associated insurance costs.

13 For these reasons, I do not support the Make-Ready Pilot as proposed. Rather than invest
14 in further home charging initiatives, I recommend that DLC focus its program dollars to incentivize
15 electrification of more accessible transportation options. I address below DLC’s proposal for a
16 Fleet and Transit Charging Pilot, and believe a targeted approach of that Pilot should be undertaken
17 and evaluated before this initiative is undertaken. If the Make-Ready Pilot proposal is ultimately
18 approved as proposed, the cost of electrification should not be borne by low income customers,
19 who are unable to obtain any benefit now or in the foreseeable future, and whose rental units may
20 be subject to unaffordable rents as a result of gentrification. I recommend that confirmed low
21 income and CAP customers should be exempt from paying for the costs of the Make-Ready Pilot.

¹²⁵ Barcelona Laboratory for Urban Environmental Justice and Sustainability; Critical Sustainability Studies, available at: <http://www.bcnuej.org/green-gentrification/>.

¹²⁶ CAUSE-PA II-2.

1 **Q: Please describe the Fleet and Transit Charging Pilot.**

2 A: Through the Fleet and Transit Charging Pilot, the Company proposes to install, own, and
3 maintain EV infrastructure, including Make-Ready infrastructure and charging stations on behalf
4 of fleet customers.¹²⁷ The Company states that the goal of the Fleet and Transit Charging Pilot “is
5 to reduce the upfront cost for EV charging and to reduce the project planning and execution burden
6 for customers to help spur transportation electrification adoption.”¹²⁸ Under the Fleet and Transit
7 Charging Pilot, the Company proposes to: (1) continue to install, own, operate, and maintain
8 electric facilities up to the customer’s service point; and (2) install, own, and maintain the Make-
9 Ready infrastructure from the service point up to the charging station stub.¹²⁹ The Company also
10 proposes a Fleet Electrification Advisory Service, to conduct a fleet assessment (or utilize existing
11 assessments) in order to determine the size of the project and identify appropriate and cost-
12 effective locations for charging infrastructure.¹³⁰

13 **Q: Does DLC indicate that the Fleet and Transit Charging Station will support**
14 **disadvantaged communities?**

15 A: Yes. The Company indicates that it will target school districts, municipal governments, and
16 non-profit organizations that serve EJ Areas to participate in the Pilot, and indicates that it will
17 target 25% of projects annually which serve or are sited within EJ Areas.¹³¹ The Company also

¹²⁷ DLC St. 8 at 33: 10-14.

¹²⁸ Id. at 33: 10 – 34:1-2.

¹²⁹ Id. at 36: 1-8.

¹³⁰ DLC St. 8 at 38: 8-16.

¹³¹ Id. at 41: 9-11.

1 proposes to leverage relationships with its CBOs in an effort to identify appropriate non-profit
2 entities serving low income customers and EJ Areas.¹³²

3 **Q: Do you support DLC’s Fleet and Transit Charging Station proposal?**

4 A: In part, yes. However, further targeting is necessary to ensure the program reaches low
5 income communities and communities of color. I agree that electrification of mass transit will
6 serve the public interest, especially if electrification is focused on serving EJ Areas, and I am not
7 opposed to the Pilot Program – provided the costs are recovered equitably from all customer
8 classes.

9 That said, I am concerned that DLC’s proposed Pilot is not sufficiently focused on
10 electrification of mass transit that actually serves EJ areas. It is unclear why DLC proposes to
11 target just 25% of program dollars for projects in EJ areas, when those in EJ areas are in greater
12 need of assistance to drive emissions reductions. Also, while DLC indicates that it will dedicate a
13 set portion of the Fleet and Charging Station Pilot to serve EJ areas, the Company does not indicate
14 how it will specifically target and/or prioritize these areas. The Company proposes to work through
15 a Fleet Electrification Advisory Service, and to leverage relationships with CBOs in order to
16 identify appropriate non-profit entities to target its initiative, but it is not clear who will participate
17 in that advisory group or how DLC will make decisions regarding the prioritization of services
18 through this program.¹³³

19 I recommend that DLC be required to devote 100% of program budget to support projects
20 sited in or that directly serve EJ areas. Further, I recommend that the Company be required to
21 further explain how it will prioritize mass transit and fleet electrification initiatives serving the

¹³² Id. at 41: 14-22.

¹³³ DLC St. 8 at 38: 8-16; DLC St. 8 at 41: 14-22.

1 poorest communities in DLC’s service territory and/or which serve other uniquely vulnerable
2 populations – such as paratransit services for low income Seniors and people with a disability. I
3 also recommend that, if not already intended, the Fleet Electrification Advisory Service be open
4 to stakeholders and inclusive of local environmental justice groups.

5 **Q: Please describe DLC’s proposed Home Charging Pilot?**

6 A: The Company proposes to offer an optional pilot to install a L2 station in residential
7 customers’ homes, and to install, own, and maintain the L2 station on the customer’s behalf over
8 a 5-year period.¹³⁴ Residential customers are eligible for the Pilot: (1) if they have no overdue bills
9 at the service address; (2) own a single-family detached home, row house or duplex property with
10 a personal garage or private driveway suitable for charging station installation; and (3) own or
11 lease an EV, which is registered at the service address.¹³⁵ Customers will enroll in the Pilot for a
12 period of 5 years.¹³⁶

13 **Q: Is the Company proposing any additional assistance to low income customers**
14 **interested in participating in the Pilot?**

15 A: Yes. The Company proposes that it will cover up to the Standard Installation Costs for
16 customers at or below 150% FPL – i.e. up to \$2,000 of combined Installation Costs and required
17 Home Electrical Upgrade Costs.¹³⁷ A customer would then be responsible for payment of any
18 upgrades beyond this initial allowance.¹³⁸

¹³⁴ Id. at 45: 7-9.

¹³⁵ Id. at 48: 5-12.

¹³⁶ Id. at 49: 1-8.

¹³⁷ Id. at 51: 1-7.

¹³⁸ Id. at 51: 1-7.

1 **Q: Do you support DLC’s proposed Home Charging Pilot?**

2 A: No, not as proposed. Again, the cost of EV ownership and maintenance is simply out reach
3 of the average low income customer. I am concerned that providing enhanced incentives for EV
4 home chargers in low income neighborhoods could lead to increased gentrification within EJ areas.
5 As such, at this time, I do not support the provision of enhanced EV home charging incentives in
6 EJ areas. Moreover, to the extent the program is ultimately approved, I recommend that DLC’s
7 confirmed low income and CAP customers be exempt from paying for that rider.

8 **VIII. CUSTOMER SERVICE IMPROVEMENTS**

9 **Q: Do you have any concerns about DLC’s policies and procedures related to its**
10 **customers or applicants for service?**

11 A: Yes. I am concerned with whether applicants for service with the Company face
12 unnecessary and burdensome barriers to establishing service. Pursuant to DLC’s Residential
13 Application for Electric Services, customers are required to send (1) the completed application;
14 and (2) a notarized statement including notary signature to the Company.¹³⁹ Requiring notarization
15 in order to establish services poses a significant barrier to establishing service – especially for low
16 income customers or customers who are experiencing homelessness, who may not be able to find
17 transportation, locate, and employ a notary required to complete the application. I am also
18 concerned that DLC’s identification requirements are unnecessarily restrictive, and will have a
19 disproportionate impact on Seniors, immigrants, homeless individuals, and other uniquely
20 vulnerable households who may not have a photo identification.

¹³⁹ CAUSE-PA III-8; CAUSE-PA III-9.

1 **Q: Do you have any recommendations to improve DLC’s application procedures for**
2 **residential customers?**

3 A: Yes. I recommend that the Company eliminate its requirement that applicants for
4 residential service provide a notarized statement as a condition of establishing service. DLC
5 should also expand the list of acceptable identification to include any document issued by any
6 public agency which contains the name and address of the tenant. Other identification should
7 also be accepted, including Individual Tax Identification Numbers, social security cards, birth
8 certificates, health insurance cards, school identification, work identification, or government
9 benefit letters or cards that do not list an address, if they are presented in combination with
10 another utility bill or lease.

11 **IX. SUMMARY OF RECOMMENDATIONS**

12 **Q: Please summarize your recommendations set forth in your direct testimony?**

13 A: In my Direct Testimony, I made several recommendations to address current
14 unaffordability and mitigate the financial impact of any proposed rate increase on low income
15 households. I recommend the Commission order the following:

- 16 • Deny the Company’s proposed rate request.
- 17 • Deny DLC’s request to increase its fixed monthly customer charge. To the extent that any
18 increase in the Company’s rates is approved, it should be applied to the volumetric charge.
- 19 • Require DLC to provide matching additional funding in the amount of \$3 million (plus
20 associated administrative costs) for DLC’s Hardship Fund as a temporary COVID-19 debt
21 relief measure.
- 22 • Require DLC to screen residential customers who apply for the COVID-19 Debt Relief
23 Program for eligibility for low income assistance programs and other sources of assistance,
24 such as LIHEAP, ERAP, and the Homeowner Assistance Fund. DLC should also be
25 required to work with stakeholders through its Advisory Group in order to better coordinate
26 referrals to available sources of assistance, such as through CBOs.

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- 1 • Require DLC to offer more flexible payment arrangements to customers who enroll in the
2 COVID-19 Debt Relief Program, in line with the payment arrangement lengths set forth in
3 the Commission Order at M-2020-3019244, for the duration of the COVID-19 Debt Relief
4 Program.
- 5 • Require DLC to actively monitor and investigate if CAP customers' usage levels giving
6 rise to reaching the CAP maximum level has been caused by factors beyond the
7 household's control and CAP participants would be eligible for adjustments to their
8 maximum CAP credits based on extenuating circumstances, including but not limited to
9 the list provided in DLC's USECP. If this is the case, the household should not be
10 sanctioned by loss of CAP rate.
- 11 • Require DLC to actively notifying all customers when they reach 50, 75, and 90% of their
12 CAP maximum levels and advise them of possible exemptions.
- 13 • Require DLC to classify "de facto" heating customers as heating customers, so that they
14 receive the higher level of maximum CAP credits. DLC should amend any current tariff
15 which continues to perpetuate this inequity.
- 16 • To the extent any increase in rates is approved, require DLC to increase its maximum CAP
17 credit thresholds by an amount equal to the annual average increase in residential rates.
- 18 • Require DLC to closely track and report on the number CAP customers who exceed their
19 maximum CAP credit limit. If more than 5% of DLC's CAP customers exceed 100% of
20 their maximum CAP credit threshold prior to the 11th month of a given program year, DLC
21 should be required to further increase the maximum CAP credit thresholds such that no
22 more than 5% of CAP customers exceed the maximum CAP credit threshold in a given
23 year.
- 24 • Require DLC to increase its annual LIURP budget by \$1 million.
- 25 • Require DLC to carryover any unspent LIURP funds from a previous program year in order
26 to ensure that low income customers are able to sufficiently access LIURP services in order
27 to improve their energy efficiency and monthly bills.
- 28 • Require DLC to further incentivize electrification of more accessible transportation
29 options, rather than invest in personal vehicle charging through the Make Ready Pilot. If
30 the proposal is ultimately approved, DLC should not provide enhanced incentives for
31 personal EV charging infrastructure build-out in EJ areas at this time, and should exempt
32 low income customers from paying the costs of the Make Ready Pilot.
- 33 • Require DLC to devote 100% of program budget for the Fleet and Transit Charging Station
34 Pilot to support projects sited in or that directly serve EJ areas. The Company should also
35 be required to further explain how it will prioritize mass transit and fleet electrification
36 initiatives serving the poorest communities in DLC's service territory and/or which serve
37 other uniquely vulnerable populations – such as paratransit services for low income Seniors
38 and people with a disability.
- 39 • Require DLC's Fleet Electrification Advisory Service be open to stakeholders and
40 inclusive of local environmental justice groups.
- 41 • Exempt low income customers from paying for the costs of the Home Charging Pilot.

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- Require DLC to eliminate its requirement that applicants for residential service provide a notarized application as a condition of establishing service.
- Require DLC to accept alternative identification, including ITINs, social security cards, birth certificates, health insurance cards, school identification, work identification, or government benefit letters or cards that do not list an address if they are presented in combination with another utility bill or lease.

Q: Does this conclude your direct testimony?

A: Yes.

CAUSE-PA Statement 1, Geller

APPENDIX A: Resume of Harry Geller

RESUME OF HARRY S. GELLER

EDUCATIONAL BACKGROUND:

Harpur College, State University of New York at Binghamton, B.A. 1966

Washington College of Law, American University, J.D. 1969

New York University Law School, courses in Urban Affairs and Poverty Law, as part of
Volunteers in Service to America (VISTA) Program 1969-1971

EMPLOYMENT:

1988 – 2015 Executive Director, Pennsylvania Utility Law Project (PULP), a project of the civil non-profit Pennsylvania Legal Aid Network. PULP is dedicated to providing technical support, information sharing, and representation to low-income individuals and organizations, assisting and advocating for the low income in utility and energy matters. Responsibilities include project oversight, case consultation, co-counseling, and participation on task forces, work groups and advisory panels, community education and training in utility and energy matters affecting the low-income.

While at PULP, served in the following capacities:

- Chairman, Low-Income Home Energy Assistance Program (LIHEAP) Advisory Committee to the Secretary, Pennsylvania Department of Human Services
- Member, Pennsylvania Public Utility Commission, Consumer Advisory Council
- Coordinator, Pennsylvania Legal Services Utility/Energy Work Groups
- Member, Weatherization Policy Advisory Committee to the Department of Community and Economic Development
- Member, PECO Universal Service Advisory Committee and LIURP Subcommittee

1974-1987 Staff Attorney, Managing Attorney and ultimately, Executive Director of Legal Services, Incorporated (LSI), a civil legal services program serving Adams, Cumberland, Franklin and Fulton Counties. Through a restructuring with other legal services programs, LSI became part of what is now known as MidPenn Legal Services and Franklin County Legal Services.

1971-1972 Staff Attorney, New York City Legal Aid Society, Criminal Court and Supreme Court Branches, New York County.

1969-1971 Volunteer in Service to America (VISTA) assigned to the New York University Law School Project on Urban Affairs and Poverty Law.

BAR ADMISSIONS

New York State

Commonwealth of Pennsylvania

United States District Court, Middle District of Pennsylvania

Cases in which Harry S. Geller has participated as a witness before the Pennsylvania Public Utility Commission since July 1, 2015

- Tenant Union Representative Network v. PECO Energy Company, C-2020-3021557
- Pennsylvania Public Utility Commission v. Philadelphia Gas Works, R-2020-3017206
- Petition of PPL Electric Utilities Corporation for Approval of a Default Service Program for the Period of June 1, 2021 through May 31, 2025, Docket No. P-2020-3019356.
- Petition of PECO Energy Company for Approval of Its Default Service Program for the Period from June 1, 2021 through May 31, 2025, Docket No. P-2020-3019290.
- Petition of Duquesne Light Company for Approval of Default Service Plan for the Period June 1, 2021 through May 31, 2025, Docket No. P-2020-3019522.
- Joint Application of Aqua America, Inc., Aqua Pennsylvania, Inc., Aqua Pennsylvania Wastewater, Inc., Peoples Natural Gas Company LLC and Peoples Gas Company LLC for all of the Authority and Necessary Certificates of Public Convenience to Approve a Change in Control of Peoples Natural Gas Company LLC, and Peoples Gas Company LLC by way of the Purchase of all of LDC Funding LLC's Membership Interests by Aqua America, Inc., Docket Nos. A-2018-3006061, A-2018-3006062, A-2018-3006063.
- Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc. et al. Docket Nos. R-2018-3003558 et seq.
- Pennsylvania Public Utility Commission v. Duquesne Light Company, Docket No. R-2018-3000124.
- Pennsylvania Public Utility Commission v. PECO Energy Company- Electric Division, Docket No. R-2018-3000164.
- Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company for Approval of their Default Service Programs for the period commencing June 1, 2019 through May 31, 2023, Docket Nos. P-2017-2637855, P-2017-2637857, P-2017-2637858; P-2017-2637866.
- Pennsylvania Public Utility Commission et al. v. Philadelphia Gas Works, Docket No. R-2017-2586783.
- PECO Energy Company's Pilot Plan for an Advance Payments Program and Petition for Temporary Waiver of Portions of the Commission's Regulations with Respect to that Plan, Docket No. P-2016-2573023.
- Petition of PECO Energy Company for Approval of a Default Service Program for the Period of June 1, 2017 through May 31, 2019, Docket No. P-2016-2534980.
- Petition of PPL Electric Utilities Corporation for Approval of a Default Service Program and Procurement Plan for the Period of June 1, 2017 through May 31, 2021, Docket No. P-2016-2526627.
- Petition of Duquesne Light Company for Approval of a Default Service Program for the Period of June 1, 2017 through May 31, 2021, Docket No. P-2016-2543140.
- Pennsylvania Public Utility Commission et al. v. Columbia Gas of Pennsylvania, Inc., Docket No. R-2016-2529660.
- Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company for Approval of their Default Service Programs for the period commencing June 1, 2017 through May 31, 2019, Docket Nos. P-2015-2511333, P-2015-25113351, P-2015-2511355; P-2015-2511356.
- Petition of PPL Electric Utilities Corporation for Approval of its Energy Efficiency and Conservation Plan, Docket No. M-2015-2515642.

CAUSE-PA Statement 1, Geller

APPENDIX B: PA Department of Human Services, Energy Assistance Summary (EASUM)

Energy Assistance Summary (EASUM)

9/27/2020 - 6/17/2021

STATE WIDE

Cash Demographic Report (LIH660-R01)

	ITEM	COUNT	AMOUNT	%	AVG		ITEM	COUNT	AMOUNT	%	AVG
HOUSING	Owner	111,319	\$29,824,299	37	\$268	PAYMENT SENT	Electric	99,440	\$27,943,828	33	\$281
	Renter	145,565	\$41,943,478	48	\$288		FuelOil	46,513	\$13,788,150	15	\$296
	RenterWithHeat	4,009	\$580,618	1	\$145		Coal	1,650	\$398,486	1	\$242
	SubsidizedWithHeat	60	\$21,744	0	\$362		NaturalGas	140,661	\$38,583,714	46	\$274
	SubsidizedNoHeat	37,665	\$11,074,286	12	\$294		Kerosene	3,181	\$1,009,583	1	\$317
	Roomer	199	\$40,598	0	\$204		Propane	9,588	\$2,580,628	3	\$269
	Other	4,099	\$1,365,400	1	\$333		WoodOrOther	1,084	\$312,277	0	\$288
								BlendedFuel	799	\$233,757	0
RACE	AmericanIndian	695	\$206,619	0	\$297	INCOME RANGE	0 - 999	16,504	\$14,929,006	5	\$905
	Other	26,115	\$7,458,373	9	\$286		1000 - 1999	2,370	\$2,000,654	1	\$844
	NativeHawaiian	338	\$111,425	0	\$330		2000 - 2999	2,338	\$1,834,752	1	\$785
	Black	76,980	\$22,343,093	25	\$290		3000 - 3999	3,184	\$2,019,428	1	\$634
	White	189,490	\$52,128,074	63	\$275		4000 - 4999	3,501	\$1,980,741	1	\$566
	Asian	5,659	\$1,530,862	2	\$271		5000 - 5999	3,722	\$1,691,646	1	\$454
	Unknown	3,639	\$1,071,977	1	\$295		6000 - 6999	4,694	\$1,860,076	2	\$396
								7000 - 7999	5,389	\$1,875,017	2
DISABLED	YES	37,086	\$8,384,548	12	\$226	8000 - 8999	7,735	\$2,339,771	3	\$302	
	NO	265,754	\$76,446,186	88	\$288	9000 - 9999	49,972	\$13,049,544	16	\$261	
AGE 60 & ABV	YES	119,542	\$28,034,449	39	\$235	10000 - 10999	15,764	\$3,641,496	5	\$231	
	NO	183,374	\$56,815,974	61	\$310	11000 - 11999	14,721	\$3,118,996	5	\$212	
AGE 5 & BLW	YES	55,531	\$16,538,927	18	\$298	12000 - 12999	16,074	\$3,273,455	5	\$204	
	NO	247,385	\$68,311,496	82	\$276	13000 - 13999	15,680	\$3,128,689	5	\$200	
PAY_TYPE	DIRECT	4,927	\$1,096,784	2	\$223	14000 - 14999	17,723	\$3,519,221	6	\$199	
	PROVIDER	299,042	\$84,039,796	98	\$281	15000 - 15999	15,194	\$3,017,161	5	\$199	
REFUNDS		4,129	\$896,295		\$217	16000 - 16999	14,914	\$2,961,000	5	\$199	
						17000 - 17999	11,893	\$2,362,800	4	\$199	
						18000 - 18999	10,369	\$2,063,400	3	\$199	
						19000 - 19999	11,099	\$2,208,900	4	\$199	
						> 19999	60,058	\$11,967,179	20	\$199	
						PAYMENT TYPE	Regular	302,916	\$84,850,423		\$280
							Reissue	170	\$49,069		\$289
							Secondpay	593	\$162,955		\$275
							Underpay	142	\$28,576		\$201
							Extraordinary	148	\$45,557		\$308
						TOTAL PMT		303,969	\$85,136,580		\$280
						RECOUPMENTS		218	\$48,985		\$225
						NET PAID			\$85,087,595		
						PMT SUB TYPE	APD	0	\$0		\$0
							STD	303,969	\$85,136,580		\$280

APPENDIX B

* Counts, Amounts (\$), % and AVG from HOUSING, RACE, DISABLED, OVER-60 and INCOME RANGE category are from Regular payments only

** Counts, Amounts (\$), % and AVG from PAY_TYPE category are from All Payment Types (Regular, Reissue, Secondpay, Underpay and Extraordinary)

*** Counts, Amounts (\$), % and AVG from PAYMENT_SENT category are from All Payment Types (Regular, Reissue, Secondpay, Underpay and Extraordinary)

AVERAGE HOUSEHOLD SIZE: 3.16

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission

v.

Duquesne Light Company

:
:
:
:
:

Docket No. R-2021-3024750

**REBUTTAL TESTIMONY OF HARRY GELLER
ON BEHALF OF
THE COALITION FOR AFFORDABLE UTILITY SERVICES AND
ENERGY EFFICIENCY IN PENNSYLVANIA (“CAUSE-PA”)**

July 26, 2021

PUBLIC VERSION

Issues Addressed:

Master Metering Proposals

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APPENDIX A: Discovery Responses

1 **PREPARED REBUTTAL TESTIMONY OF HARRY GELLER, ESQ.**

2 **Q: Please state your name, occupation, and business address.**

3 A: Harry Geller. I am an attorney. I am currently retired, though I maintain an office at the
4 Pennsylvania Utility Law Project (PULP), 118 Locust St., Harrisburg, PA 17101, and serve as a
5 consultant to PULP and its clients.

6 **Q: Did you previously submit testimony in this proceeding?**

7 A: Yes, I submitted Direct Testimony in this proceeding, CAUSE-PA Statement 1.

8 **I. SCOPE OF TESTIMONY AND ISSUES ADDRESSED**

9 **Q: What is the purpose of your testimony?**

10 A: The purpose of my testimony is to respond to Nationwide Energy Partners' (NEP or
11 Nationwide) proposal set forth in the Direct Testimony of NEP's expert witness, Ms. Teresa
12 Ringebach. In short, Ms. Ringebach proposes a paradigm changing tariff that would allow
13 residential multifamily buildings in DLC service territory - including all multifamily buildings
14 constructed since 1981 which currently are required to be individually metered - to be master-
15 metered. Such a tariff change would allow NEP and other submetering and third-party billing
16 companies to operate in the Duquesne Light Company (DLC, Duquesne, or the Company) service
17 territory and to remove tenant status as a utility customer and the rights, privileges, and protections
18 afforded by Pennsylvania statutes, regulations, and policies. As I discuss throughout, NEP's
19 proposed tariff language fails to put in place adequate safeguards and protections for residential
20 utility consumers, and may work to sever the rights of many affected residential tenants to
21 participate in DLC's universal service programs and disenfranchise renters in DLC's service

1 territory from even the most basic billing, collections, and termination protections provided for in
2 the Public Utility Code, the Commission’s regulations, and Commission orders.

3 NEP’s proposed tariff change would allow building owners and landlords to control the
4 terms and conditions of utility service to tenants, allowing them to potentially sidestep dozens of
5 critically important consumer protections. Some building owners may choose to maintain DLC’s
6 individual metering, others could decide to master meter existing or newly built properties – and
7 still others could decide to do their own submetering and rebill tenants for service on their own or
8 through a third party. Through my testimony, I analyze NEP’s practices and procedures as a direct
9 example of how this tariff proposal will impact the rights and responsibilities of tenants in the DLC
10 service territory; however, NEP represents just one entity that would be permitted to operate in
11 DLC’s service territory should its proposed broad-based tariff be approved.

12 As I will discuss, NEP’s proposal jeopardizes residential customers’ ability to stay
13 connected to and afford utility services, especially for low and moderate income households, and
14 exposes residential tenants to serious and substantial harm – stripping renters of decades of laws
15 designed to prevent the curtailment of utility service as a mechanism to constructively evict tenants
16 from their home as well as depriving them of access to the Commonwealth’s range of currently
17 available public policy safety net protections. NEP represents that their tenants are non-low income
18 and that it attempts to adhere to certain standards for utility practice in Pennsylvania.¹ But
19 currently *all* tenants who reside in an individually metered unit in DLC’s service territory, not just
20 those who are low income, are afforded full access to a panoply of important consumer protections
21 with regard to billing requirements, collections standards, limits on terminations, protections from

¹ CAUSE-PA to NEP, I-13; DLC to NEP I-6.

1 landlord retribution or negligence, consumer confidentiality, and programs to assist those who
2 encounter a financial hardship. NEP's proposed tariff language serves as a gateway for master/sub
3 metering companies with a wide array of practices, motives, and adherence to utility protections,
4 who may serve tenants of all income levels. As such, I recommend that the Commission reject
5 NEP's broad based paradigm changing master metering and submetering tariff proposal, and
6 instead approve the limited master metering proposal set forth by DLC.

7 In assessing NEP's proposals in this proceeding, I note that there are many complex and
8 nuanced questions at issue regarding the legality of rebilling and submetering services, such as
9 those proposed to be offered by NEP, and the legal impact that NEP's proposal would have on the
10 applicable rights of residential tenants in DLC's service territory. While I note through my
11 testimony where additional legal issues may be addressed in briefing, I am advised by counsel for
12 CAUSE-PA that I am not under any obligation to do so to preserve these issues for further
13 litigation. Specifically, CAUSE-PA reserves the right to address any legal issues in this case
14 through briefing – regardless of whether I have specifically identified the issues in testimony.

15 **Q: What issues do you plan to address in your testimony?**

16 A: Through my Rebuttal Testimony, I will analyze NEP's tariff proposal, and its possible
17 effects on residential tenants. In doing so, I will discuss DLC's current metering rules for
18 residential multifamily buildings, NEP's proposed metering rules for residential multifamily
19 buildings, and DLC's proposed metering rules for residential multifamily buildings – and will
20 compare and contrast each model in terms of the rights that would attach for residential tenants.

21 In Section II, I will review DLC's current residential multifamily metering rules, which
22 requires that multifamily buildings install individual meters in tenant units.

1 In Section III, I will discuss NEP’s master metering proposal. In doing so, I will analyze
2 NEP’s proposal through the lens of its own business practices, comparing and contrasting the rights
3 of tenants under DLC’s current metering rules with the rights of tenants under NEP’s proposed
4 metering rules. I will discuss the possible differences in applicable billing, collections, and
5 termination standards for master and/or sub-metered multifamily buildings. I will walk through
6 various statutory and regulatory rights of tenants that may be severed when a residential building
7 is master metered – from the foundational definition of “customer” to the explicit rights of
8 residential tenants under the Discontinuance of Service to Leased Premises Act (DSLPA), and
9 dozens of other provisions in between.

10 I will also discuss the applicable rates for individually metered multifamily tenants
11 compared to the rates paid by tenants in master metered multifamily buildings – including those
12 buildings which are sub-metered by a third party. In discussing rates, I will address the price on
13 resale, bundling of rates, fees and charges, and notice of rate increases.

14 I will then discuss differences in the confidentiality of tenants under DLC’s individual
15 metering rules compared to confidentiality of tenants under NEP’s proposed metering rules.

16 Finally in this section, I will discuss the potential impact of NEP’s proposal on the ability
17 of low income tenants to access universal service programs in DLC’s service territory – including
18 DLC’s Customer Assistance Program (CAP), Low Income Usage Reduction Program (LIURP),
19 and Hardship Fund program.

20 In Section IV, I will contrast NEP’s broad-based proposal with DLC’s limited master
21 metering proposal, which would allow supportive low income housing providers to master meter
22 a residential multifamily building if the housing provider is subject to long-term use restrictions
23 that obligate the housing provider to reduce rent and pay for utility costs – without passing those

1 utility costs on through rent. Unlike NEP’s model, this limited exception could improve the rights
2 of low income tenants – helping to stabilize affordable housing costs without exposing tenants to
3 the severe consequences that I will discuss in my testimony below.

4 Based on this extensive analysis, I conclude that NEP’s residential master metering tariff
5 proposal, if approved, has the potential to eviscerate the rights of residential tenants in DLC’s
6 service territory, and must be rejected. In comparison, DLC’s very narrow and targeted proposal
7 will help advance protections for vulnerable consumers in DLC’s service territory and should be
8 approved.

9 **Q: Do you address or respond to any other party’s direct testimony in this proceeding?**

10 A: No. However, my silence in response to other party’s direct testimony is not an indication
11 of my agreement therewith. I stand firmly on the evaluation, analysis, and recommendations
12 contained in my direct testimony, and reserve the right to respond to other parties’ rebuttal
13 testimony.

14 **II. DLC’S CURRENT MULTIFAMILY METERING RULES**

15 **Q: Please describe DLC’s current tariff rules related to master metering of properties.**

16 A: The Company’s Tariff Rule 18 requires that a customer consume the energy they purchase
17 from DLC and prohibits redistribution of electricity, absent a special showing. Tariff Rule 41
18 prohibits master metering of residential buildings connected to DLC’s system after January 1, 1981
19 and requires that each residential dwelling unit in the building have an individual meter through
20 DLC.²

² DLC St. 6 at 2: 12-17.

1 **Q: Are there presently any master metered multifamily residential buildings in DLC's**
2 **service territory?**

3 A: Yes. DLC currently serves 130 master metered buildings with more than one residential
4 unit.³ It is not clear at this time how many residential tenants reside in these master metered
5 buildings, though I believe this likely includes duplexes, triplexes, and other small multifamily
6 buildings – or mixed-use buildings, such as a business with an attached residential unit.

7 **Q: In this proceeding, has DLC proposed to modify its tariff rules affecting master**
8 **metering?**

9 A: Yes. Pursuant to the Joint Petition for Settlement in DLC's last rate proceeding, Docket
10 No. R-2018-3000124, collaborative meetings were held on June 19, 2019, and February 24, 2021,
11 to discuss the feasibility and merits of permitting master metering of affordable multifamily
12 housing.⁴

13 Based on these collaborative meetings, the Company set forth the following proposal in
14 this rate proceeding for master metering for new residential multifamily premises, where the
15 premises:⁵

- 16 • Is a new service, i.e. a new construction or otherwise newly connected to the
17 Company's distribution system;
- 18 • Is master metered through the entire building;
- 19 • Has a minimum of four dwelling units; and
- 20 • Is low income supportive housing.

³ NEP St. 1 at 6: 8-9.

⁴ DLC St. 6 at 3: 19 – 4: 34.

⁵ Id. at 5: 1-14.

1 DLC’s expert witness, Yvonne Phillips, indicates that “low income supportive housing”
2 refers to housing that is “permanently available to low-income tenants where the housing provider
3 is responsible for utility bills.”⁶ Additionally, the low income housing provider must: (1) show that
4 the building is a public housing authority development; or (2) certify annually that all tenants are
5 (i) eligible for a Housing Choice Voucher (HCV), available to residents who make 50% or less of
6 the median family income; and (ii) have household incomes equal to or less than 150% FPL.⁷

7 If a master metered customer becomes non-compliant with these eligibility requirements,
8 they will be required to update the building’s electric systems at their expense to allow the
9 Company to separately meter each residential unit.⁸

10 **Q: Do you support DLC’s master metering proposal?**

11 A: Yes, I am supportive of DLC’s narrow master metering proposal. I am generally opposed
12 to master-metering of multifamily buildings, as it eviscerates critical statutory and regulatory
13 protections for residential consumers. However, I am not opposed to DLC’s specific and limited
14 proposal for master metering set forth in the present proceeding, given the specific requirements
15 and protections proposed by DLC. As I will discuss at the conclusion of my Rebuttal Testimony,
16 DLC’s limited master metering proposal would help reduce costs for low income housing
17 providers, while imposing robust current and prospective requirements to help ensure that tenants
18 are not separated from critical utility protections.

⁶ DLC St. 6 at 5: 5-20.

⁷ Id. at 5: 5-20.

⁸ Id. at 5: 15-20.

1 **III. NEP'S MULTIFAMILY METERING PROPOSAL**

2 **Q: What services does NEP provide for residential multifamily buildings?**

3 A: NEP describes its services as follows:

4 NEP's business model is a service provided to multifamily Property Owners
5 or developers who construct or renovate such properties. Our client and
6 contractual relationship is with and directed by the Property Owner or
7 developer. We are hired to handle the design, construction, management
8 and billing of all energy services. Our most common service is for electricity
9 and water; however, we also have natural gas clients.⁹

10 In short, NEP contracts with landlords to install and maintain metering infrastructure for residential
11 tenant units in multifamily buildings, and performs all aspects of residential billing, collections,
12 and termination for residential electric, water, and natural gas services.

13 **Q: Does NEP propose any changes or additions to DLC's proposed Tariff rules**
14 **regarding master metering?**

15 A: Yes. NEP is proposing a new DLC Tariff provision, Rule 41.2., which would allow master
16 metering and the associated redistribution of energy under the following conditions:¹⁰

- 17 • Master metering is allowed for non-low income new and existing multifamily
18 properties;
- 19 • Submetering must be AMI or another advanced revenue metering;
- 20 • Technologies must be provided with billing so that tenants can access usage
21 information and optional controls to receive a credit based on conservation actions;
22 and
- 23 • Redistribution of energy costs may never exceed the total bill a customer would
24 have received for the same amount of usage for Tariffs in effect, pursuant to Section
25 1313 of the Public Utility Code.

⁹ NEP St. 1 at 8: 20-9:1.

¹⁰ Id. at 24: 3-18.

1 NEP also proposes that a Commission-approved form be used by property owners or their
2 authorized representatives to notify DLC of the decision to master meter, and that verification of
3 compliance will be available to DLC on “no more than an annual basis.”¹¹

4 **Q: Does NEP propose to determine if tenants in multifamily properties are low income**
5 **under its master meter proposal?**

6 A: NEP’s proposal lacks any requirement that property owners collect, verify, and periodically
7 reassess the income of tenants in master metered properties to determine whether residents are
8 “non-low income” – a feature included in its proposal outlined above. Low income customers may
9 reside in properties that become master metered under NEP’s proposal, or may subsequently move
10 into these properties. Further, customers may become low income while residing in a master
11 metered property because of numerous factors, including job losses and wage reductions. NEP’s
12 proposal fails to propose any reasonable mechanism to account for or determine low income status
13 and may very well result in low income tenants being cut off from crucial protections and sources
14 of utility assistance.

15 **Q: Do you support NEP’s tariff proposal related to master metering?**

16 A: No. NEP’s tariff proposal could allow landlords to circumvent applicable law, regulation,
17 and Commission policy governing the rights of residential tenants to access and maintain service
18 in their home based on just and reasonable terms, conditions, and rates. NEP’s master metering
19 proposal could also work to prohibit tenants in master metered properties from accessing most
20 forms of utility assistance – including DLC’s CAP, LIURP, and Hardship Fund Program. It is
21 crucial that the Commission reject NEP’s proposal, as it lacks any provisions to preserve the rights

¹¹ Id. at 24:16-18.

1 of tenants in DLC’s service territory currently enjoyed by tenants who reside in individually
2 metered buildings.

3 **Q: What protections are afforded to residential customers pursuant to Pennsylvania law**
4 **and Commission regulation?**

5 A: Residential customers are provided numerous protections related to billing, services, and
6 termination set forth in Chapters 14 and 15 of the Pennsylvania Public Utility Code, and Chapter
7 56 of the Commission’s regulations.¹² Chapter 28 of the Public Utility Code, together with
8 Chapters 54 and 58 of the Commission’s regulations and formal Commission policy, also provide
9 various mandates and standards regarding the availability of universal service programs to ensure
10 residential low income consumers can maintain utility service to their home.¹³ I note that I do not
11 intend this to be a complete accounting of all possible statutory and regulatory protections afforded
12 to residential customers in Pennsylvania, but simply to show examples of the wide range of
13 statutory, regulatory, and policy provisions that could be impacted by NEP’s proposed tariff.

14 **Q: Are the same protections afforded and accessible to tenants who presently reside in**
15 **individually metered buildings available if the building is later master metered, pursuant to**
16 **NEP’s proposed tariff?**

17 A: What protections are afforded to tenants in a master metered and/or sub-metered
18 multifamily buildings is an open legal question, which CAUSE-PA reserves the right to address
19 through briefing. That said, I am concerned that many of the protections available to tenants who
20 reside in individually metered buildings may be unavailable to residential customers who reside in
21 master metered buildings – either as a practical or legal matter, or both. As noted throughout,

¹² See 66 Pa. C.S. § 1401 *et seq.*; 66 Pa. C.S. § 1501 *et seq.*; 52 Pa. Code § 56.1 *et seq.*

¹³ See 66 Pa. C.S. §§ 2802, 2803, 2804; 52 Pa. Code § 54.71-.78; 52 Pa. Code § 58.1 *et seq.*; 52 Pa. Code § 69.265.

1 NEP’s model for submetering services provides an instructive example of the kinds of standards,
2 policies, and practices that submetering companies are currently applying in other areas of the
3 state, and which may be permitted to be applied to tenants in master and/or sub-metered buildings
4 pursuant to NEP’s proposed tariff revisions.

5

6 **A. Billing, Collections, and Terminations Standards**

7 **Q: Please describe in further detail the billing, collections, and termination protections**
8 **available to residential tenants with individually metered service.**

9 A: Chapter 14 of the Public Utility Code, also known as the Responsible Utility Consumer
10 Protection Act, applies to electric distribution companies (EDCs), natural gas distribution
11 companies (NGDCs), water and wastewater utilities, and steam heat utilities.¹⁴ Chapter 14 sets
12 forth various provisions related to residential billing, collections, and terminations for residential
13 utility consumers. Chapter 56 of the Commission’s regulations implements the statutory provisions
14 of Chapter 14, and sets forth uniform standards for the provision of residential service.¹⁵ Chapter
15 56 establishes account billing, termination, and customer compliant procedures; credit and deposit
16 requirements; and customer complaint procedures.

17 Chapter 15 of the Public Utility Code governs Pennsylvania public utilities’ provision of
18 services and facilities – including the provision of service to residential tenants. DSLPA is codified
19 in subchapter B of Chapter 15, and includes the rules and requirements related to discontinuance
20 or termination of services to tenant-occupied premises.¹⁶ These rules and requirements are
21 applicable to all tenants, regardless of the building meter configuration, though it can be difficult

¹⁴ 66 Pa. C.S. § 1401 *et seq.*

¹⁵ 52 Pa. Code § 56.1.

¹⁶ 52 Pa. Code § 56.1 *et seq.*

1 to enforce some of the provisions of the DSLPA when a tenant resides in a master metered
2 building.

3 **Q: Pursuant to NEP’s proposal, will tenants who reside in newly master metered and/or**
4 **sub-metered multifamily buildings be afforded the same billing, collections, and termination**
5 **protections available to tenants who reside in individually metered units?**

6 A: It is an open question of law whether tenants who reside in master metered multifamily
7 buildings are entitled to the same billing, collections, and termination protections available to
8 residential customers. Nevertheless, as a practical matter and based on the terms of NEP’s tariff
9 proposal and its current practices in other jurisdictions, I am concerned that NEP’s proposal could
10 serve to eviscerate the rights of tenants who reside in buildings that may be re-metered under
11 NEP’s proposal. In the following sections, I will discuss the possible impact of NEP’s master
12 metering proposal on a number of tenant billing, collections, and termination protections afforded
13 to individually metered residential consumers pursuant to Chapters 14, 15, and 56 in further detail.

14 *i. Definition Of Customer*

15 **Q: Please briefly describe how a customer is defined pursuant to Chapter 56 of the**
16 **Commissions regulations and Chapter 14 of the Pennsylvania Statutes?**

17 A: The definition of “customer” is foundational to the provision of residential service, and
18 determines which consumers have access to certain rights. A “customer” is defined in Chapter 14
19 as “a natural person in whose name a residential service account is listed and who is primarily
20 responsible for payment of bills rendered for the service or any adult occupant whose name appears
21 on the mortgage, deed or lease of the property for which the residential utility service is

1 requested.”¹⁷ The definition of a customer includes a person who, within 30 days of service
2 termination or discontinuance, seeks to restore service at the same location or another location
3 within the utility’s service territory.

4 Similarly, the Commission’s regulations define a customer as a “natural person at least 18
5 years of age in whose name a residential service account is listed and who is primarily responsible
6 for payment of bills rendered for the service or an adult occupant whose name appears on the
7 mortgage, deed or lease of the property for which the residential public utility service is
8 requested.”¹⁸ This term includes a person who seeks to have service reconnected at the same
9 location (or transferred to another location in a service territory) within 30 days of termination or
10 disconnection.¹⁹

11 **Q: If a tenant rents a unit in a property with master metered and/or sub-metered**
12 **services, would that tenant be considered a “customer”?**

13 A: Whether a tenant who rents a unit in a master or sub-metered property would be considered
14 a “customer” is an open question of law, which CAUSE-PA reserves the right to address through
15 briefing.

16 Nevertheless, based on NEP’s practices in other areas of the state, and the manner in which
17 master metered and sub-metered buildings have been operated in the state to date, I am concerned
18 that tenants in master and/or sub-metered building may be excluded from the definition of a
19 customer, truncating a plethora of other rights currently available to tenants who reside tenant units
20 that are individually metered by DLC.

¹⁷ 66 Pa. C.S. § 1403.

¹⁸ 52 Pa. Code § 56.2(i).

¹⁹ 52 Pa. Code § 56.2(ii).

1 NEP’s business model (just one possible model for submetering and/or third party billing)
2 provides that the landlord is the utility customer, which currently serves to sever the relationship
3 between the tenant and the utility in the areas where NEP operates. While the landlord’s name is
4 on a bill, NEP is the authorized representative on the utility account.²⁰ Tenants have access to
5 usage information but do not have the ability to receive a bill directly from the utility.²¹

6 Under the NEP submetering and rebilling model, NEP acts as an agent of the landlord in
7 providing utility services to tenants – not on behalf of the consumers it serves. As NEP explained,
8 it “does not have any contracts with tenants” and “[a]ll of NEP’s contracts are with, and all of
9 NEP’s services are performed on behalf of, property owners or condominium associations.”²²

10 **Q: Would NEP’s metering proposal have an impact on tenants with regard to the**
11 **definition of customer?**

12 A: Yes, it certainly could. Again, whether a tenant who resides in a sub-metered building is a
13 “customer” is an open question of law, reserved for briefing. Nevertheless, pending resolution of
14 that legal question, NEP’s proposal could have a substantial impact on tenants. The definition of
15 “customer” is foundational and determines whether a residential tenant is afforded a range of
16 consumer protections. As such, NEP’s proposal has the potential to exclude tenants in newly
17 master metered buildings from numerous crucial protections that flow from being utility
18 “customers” - even though tenants in master metered properties are often still responsible for
19 paying the utility costs and as discussed below, and are subject to the loss of service to their home
20 for nonpayment. How those costs are recovered from tenants varies greatly – with some recovering
21 equally from all tenants through a separate charge or as a component of rent, and others recovering

²⁰ DLC to NEP I-12.

²¹ CAUSE-PA to NEP I-2.

²² DLC to NEP I-5.

1 from tenants by hiring companies such as NEP to submeter and bill tenants directly for service.
2 Regardless of how those costs are recouped, I am concerned that, under NEP’s proposal, tenants
3 in master metered buildings may not be considered customers of the public utility – and would be
4 unable to access the protections afforded to customers of a public utility. Failing to treat tenants in
5 master metered properties as utility “customers” would separate tenants in master and/or sub-
6 metered properties from critical utility protections that are required by statute and regulation,
7 which are currently available to tenants who reside in individually metered units in DLC’s service
8 territory, and ultimately jeopardizes tenants’ ability to stay connect to and afford utility services.

9 *ii. Billing and Payment Standards*

10 **Q: What rights and protections are individually metered residential customers provided**
11 **regarding billing and payments pursuant to Chapter 14 of the Public Utility Code and**
12 **Chapter 56 of the Commission regulations?**

13 A: Chapter 14 of the Pennsylvania Utility Code and Chapter 56 of the Commissions
14 regulations set forth numerous provisions related to billing and payment standards for utility
15 customers. While I do not attempt to provide a comprehensive list of billing and payment
16 provisions required of public utilities, the following provisions are particularly salient to residential
17 customers facing the prospect of master metering:

- 18 • *Budget Billing:* Individually metered residential customers are provided with the option of
19 budget billing of their utility bills. Section 56.12(8) (budget billing) of the Commission’s
20 regulations requires public utilities to provide residential customers, “on a year-round
21 rolling enrollment basis, with an optional billing procedure which averages estimated
22 public utility service costs over a 10-month, 11-month or 12-month period to eliminate, to
23 the extent possible, seasonal fluctuations in public utility bills.” This Section further sets
24 for specific guidelines for review and reconciliation of budget billing amounts.
25

- 1 • Billing for Merchandise, Appliance, and Nonrecurring and Recurring Services:
2 Individually metered residential customers receive utility bills with itemized charges for
3 basic services. Specifically, Section 56.13 (Billings for merchandise, appliances and
4 nonrecurring and recurring services) requires that charges for other than basic services
5 “must appear after charges for basic services and distinctly separate.” This includes
6 “charges for optional recurring services which are distinctly separate and clearly not
7 required for the physical delivery of service.”
8
- 9 • Billing Information: Residential customers with individual meters have access to specific
10 billing information set forth in the Commission regulations. Pursuant to Section 56.15
11 (billing information), a bill rendered by a public utility must clearly include specific
12 information, including but not limited to, the amount due for services rendered during the
13 current billing period which specifies the charges for basic service, any energy or fuel
14 adjustment charge, and charges and surcharges for rates.
15
- 16 • Fees: Section 56.21(5) (payments, fees) of the Commission’s regulations requires that
17 “[f]ees or charges assessed and collected by the public utility for utilizing a payment option
18 must be included in the public utility’s tariff on file at the Commission.” Section 1407 of
19 the public utility code further merits a public utility to require a reconnection fee based
20 upon the utility’s costs as approved by the Commission prior to reconnection of services
21 following a lawful termination.
22
- 23 • Accrual of Late Charges: Section 56.22(a) (accrual of late charges) prohibits a utility from
24 levying or assessing late charges or fees, “in an amount which exceeds 1.5% interest per
25 month on the overdue balance of the bill. These charges are to be calculated on the overdue
26 portions of the bill only. The interest rate, when annualized, may not exceed 18% simple
27 interest per annum.”
28
- 29 • Application of Partial Payments: Section 56.23 (application of partial payments between public
30 utility and other service) of the Commission regulations requires that payments received by a utility
31 company “without written instructions that they be applied to merchandise, appliances, special
32 services, meter testing fees or other nonbasic charges and which are insufficient to pay the balance
33 due for the items plus amounts billed for basic public utility service shall first be applied to the
34 basic charges for residential public utility service.”

35 **Q: What billing and payment standards are tenants subjected to if they reside in master**
36 **and/or sub-metered buildings?**

37 **A:** What billing and payment standards are applicable to tenants if they reside in master and/or
38 sub-metered buildings is an open question of law, which CAUSE-PA reserves the right to address
39 in briefing.

1 Nevertheless, as a matter of practicality and based on NEP’s existing sub-metering
2 practices in other areas of the state, I am concerned that tenants who reside in any master-metered
3 buildings – regardless of submetering status – will not have access to the same billing and payment
4 application standards provided to individually metered residential customers in NEP’s proposal is
5 approved. When the landlord is the customer of the public utility, tenants are not a customer of the
6 public utility, do not receive a bill from the public utility, and are not protected by the billing and
7 payment application standards that apply for individually metered tenants.

8 For example, NEP’s policies and procedures as a sub-metering provider and third-party
9 biller in other areas of the state appear to circumvent numerous bill and payment standards and
10 protections provided to individually metered residential customers. While NEP claims that it
11 attempts to adhere to the Commission’s standards for the provision of residential service,²³ my
12 review of NEP’s policies, practices, and procedures has led me to conclude that NEP’s services
13 are not consistent with any of the above noted standards for billing and payment application.
14 Before walking through each area of divergence, it is important to note that this comparative
15 analysis is illustrative of *one potential model* of submetering and rebilling that tenants may
16 encounter if NEP’s proposal were approved. Other models could impose even more egregious
17 billing, collections, and terminations practices that further complicate the ability of residential
18 consumers to access and maintain utility services to their home.

- 19 • *Budget Billing*: NEP indicates in response to discovery that it does not offer budget billing,
20 in any form.²⁴ As such, tenants who are master metered under NEP are not able utilize
21 budget billing to create more predictable bills throughout the year and financially plan for
22 future utility expenses. This is particularly harmful for tenants who might experience
23 fluctuating or seasonal income who rely on budget billing to maintain services throughout
24 the year.

²³ DLC to NEP I-6.i.

²⁴ *Id.* at I-6.s.

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- Billing for Merchandise, Appliances and Nonrecurring and Recurring Services: Tenants who reside in NEP master metered properties receive bills with a singular balance, comprising potentially multiple components. For example, NEP may include on a tenant’s bill not only charges for utility usage from a utility, but also common area usage, trash, and other community services.²⁵ These additional charges can be unrelated to basic utility services, but are nevertheless incorporated into a singular balance on customer’s bills.²⁶ Tenants who are unable to keep up with these consolidated charges are subject to termination, regardless of whether the customer fails to pay their basic utility charges, or another charge within the consolidated bill.²⁷ As I will discuss below, tenants who are unable to keep up with these costs may face additional ramifications, including eviction at the recommendation of NEP.
 - Billing Information: NEP’s bills to tenants lack the detail provided to residential customers who are individually metered. In particular, NEP’s bills do not provide a statement related to the rate schedule, or an explanation of how to verify the accuracy of the bill.²⁸ NEP does not inform tenants of options to file a formal or informal complaint with the Commission.²⁹ The public utilities providing electricity and water service are not mentioned anywhere on the bill to contact in the event of an emergency.
 - Fees: Tenants in NEP master metered properties may be charged a number of fees without regards to whether these fees have been included in DLC’s approved tariff. This may include, but is not limited to, Walmart and Kroger fees,³⁰ NEP’s service fee for phone payments,³¹ “Water Billing Fees”,³² trash collection fees,³³ and late payment fees determined by NEP – rather than the utility.³⁴ These fees are consolidated into a singular billing amount, and it is unclear at this time whether the fees compound month to month.³⁵
 - Accrual of Late Charges: Tenants in NEP master metered properties must abide by NEP’s terms and conditions related to late charges and fees. In response to discovery, NEP

²⁵ Id. at I-35.b.

²⁶ Id. at I-53.

²⁷ See CAUSE-PA to NEP I-1.

²⁸ DLC to NEP I-7.a, attachment.

²⁹ DLC to NEP I-46.

³⁰ Id. at I-50.

³¹ Id. at I-51.

³² Id. at I-53; see also CAUSE-PA to NEP I-12 (in communities where a water billing fee is charged, residents are billed the bulk commercial rate for water and NEP then charges a “water billing fee” to cover the administrative costs).

³³ DLC to NEP I-53.

³⁴ Id. at I-53.

³⁵ Id.

1 indicates that bills are due a minimum of 14 days from the date that the bill is issued, with
2 a 7-day grace period following the due date in which no action is taken.³⁶ Following the
3 grace period, a \$20 late payment fee is applied to the account for past-due balances greater
4 than \$100.³⁷ NEP’s \$20 late fee is assessed regardless of the amount of the overdue
5 balance. In other words, a customer with a \$100 balance is charged a 20% late fee –
6 exponentially higher than the 1.5% cap on late fees in the Commission’s regulations.
7 Again, it is not clear at this time whether the fees compound month to month.
8

- 9 • Application of Partial Payments: Tenants who reside in NEP master metered properties
10 receive a bill with a singular balance for which they are responsible. If a customer tenders
11 partial payment of their bill, NEP indicates that these partial payments are applied to the
12 oldest portion of the resident’s balance first,³⁸ regardless of whether the charges were for
13 basic utility services or some other fee that a tenant incurs. While NEP notes that accounts
14 with \$100.00 or more in arrears for “electric usage” may be subject to termination, its
15 payment posting standards appear to apply any partial payment first to the full past due
16 balance – including fees for trash, water billing fees, late payment fees, or any other charges
17 which may appear on a bundled utility bill.³⁹ This compounds payment trouble – resulting
18 in termination of all utility services, even if payment was adequate to pay for one or more
19 of those services.⁴⁰

20 **iii. Credit and Deposit Standards**

21 **Q: What credit and deposit standards are set forth in Pennsylvania statute and**
22 **Commission regulation?**

23 A: Section 1404 of the Public Utility Code (Cash Deposits and Household Information
24 Requests) sets for statutory rules and requirements related to charging and retention of security
25 deposits by utilities. Subchapter C, Chapter 56 (56.31-56.38) of the Commission’s regulations
26 govern credit and deposit standards and procedures for applicants for utility service.

27 Section 56.32 sets forth specific requirements for a public utility to require a cash deposit
28 from an applicant for service. Absent collecting a deposit allowed by a separate regulation or order,

³⁶ DLC to NEP I-6 h; CAUSE-PA to NEP I-46.

³⁷ DLC to NEP I-6 h, CAUSE-PA to NEP I-46.

³⁸ CAUSE-PA to NEP I-1.

³⁹ Id.

⁴⁰ CAUSE-PA to NEP I-6.

1 a utility may require a “cash deposit, payable during a 90-day period in accordance with Section
2 56.38 (relating to payment period for deposits by applicants), in an amount that is equal to 1/6 of
3 an applicant’s estimated annual bill at the time the public utility determines a deposit is required”
4 based on a number of factors, including nonpayment of an undisputed delinquent account.”⁴¹
5 Section 56.32(2) requires that assessments of creditworthiness should be based on “generally
6 accepted credit scoring methodology, as provided in a Commission-approved tariff, and which
7 employs standards for using the methodology that fall within the range of general industry practice.
8 The credit scoring methodology utilized for this purpose must specifically assess the risk of public
9 utility bill payment.”

10 Section 1404(a.1) prohibits a customer or applicant who is confirmed to be income eligible
11 for a customer assistance program from being required to provide a cash deposit. Similarly, Section
12 56.32(e) also prohibits a public utility from requiring a cash deposit from an applicant who is
13 confirmed to be CAP eligible, based on household income. Pursuant to Section 56.32(e), an
14 applicant is confirmed to be CAP eligible if the applicant provides income documentation or other
15 information “attesting to [their] eligibility for state benefits based on household income eligibility
16 requirements” consistent with the utility’s CAP.

17 **Q: What credit and deposit standards would tenants be afforded if they reside in a**
18 **master and/or sub-metered multifamily building?**

19 **A:** The applicable credit and deposit standards legally afforded to tenants who reside in a
20 master and/or sub-metered building is an open legal question to which CAUSE-PA reserves the
21 right to address in briefing.

⁴¹ See also 66 Pa. C.S. § 1404(a).

1 Nevertheless, NEP’s services in other areas of the state again provide an illustrative
2 example of the kinds of credit and deposit standards which are currently imposed on residents of
3 a master metered or sub-metered residential buildings – and which could be imposed on tenants in
4 DLC’s service territory if NEP’s proposed tariff were approved. Residential tenants served by
5 NEP are charged a standard \$100 security deposit for electric services, which is due along with
6 the first set of charges on the resident’s account.⁴² NEP states that it may waive a security deposit
7 if a resident (1) signs up for automatic payment; (2) submits a letter of credit from a utility provider;
8 or (3) provides a credit score or evidence of creditworthiness in some cases.⁴³ NEP does not appear
9 to provide low income tenants with any specific exemption to its security deposit requirements.⁴⁴
10 There also appears to be the opportunity for wide variations on which tenants are charged security
11 deposits under NEP’s policies and procedures, as security deposits are governed by NEP’s
12 contracts with property owners.⁴⁵ This opens the door to potential unjust, inequitable, and
13 discriminatory treatment of tenants based on undisclosed criteria. In comparison, tenants who
14 reside in an individually metered unit are protected from potential unjust, inequitable, or
15 discriminatory treatment in credit determinations.⁴⁶

⁴² DLC to NEP I-52.

⁴³ Id.

⁴⁴ CAUSE-PA to NEP I-44, 45.

⁴⁵ CAUSE-PA to NEP I-44.

⁴⁶ 52 Pa. Code § 56.31 (“An essential ingredient of the credit and deposit policies of each public utility shall be the equitable and nondiscriminatory application of those precepts and to potential and actual customers throughout the service area without regard to the economic character of the area or any part thereof. Deposit policies must be based upon the credit risk of the individual applicant or customer rather than the credit history of the affected premises or the collective credit reputation or experience in the area in which the applicant or customer lives and without regard to race, age over 18 years of age, National origin, marital status, color, religious creed, ancestry, union membership, gender, sexual orientation, gender identity or expression, AIDS or HIV status, or disability.”).

1 **Q: What effect would NEP’s tariff proposal have on tenants with regard to credit and**
2 **deposit standards?**

3 A: Again, that is hard to say for certain, given the open question of law I note above. However,
4 NEP’s business model provides insight. Tenants seeking to establish services in master metered
5 properties served by NEP are required to comply with different rules related to payment of security
6 deposits than residential customers who are individually metered. For low and moderate income
7 customers, the security deposit requirements could pose significant challenges to establishing
8 services, especially given tenants would incur additional moving and relocation expenses. While
9 tenants in non-master metered properties may waive security deposits if they are confirmed to be
10 income eligible for CAP, tenants in metered properties such as those served by NEP must
11 overcome additional hurdles - proving creditworthiness or committing to automatic payments in
12 order to waive security deposits. For low and moderate income customers who struggle to make
13 ends meet on a daily basis, these requirements could create a significant hardship, making it
14 difficult for some consumers to connect to basic utility services.

15 NEP claims that it does not serve low income tenants (though it does not make any effort
16 to identify the income of the tenants it serves).⁴⁷ However, this does not eliminate my concern
17 with NEP’s proposal to allow master metering of residential buildings in DLC’s service territory.
18 As I have previously noted, NEP’s service model is but one of many possible models for credit
19 and deposit standards that a landlord could impose on residential tenants if NEP’s tariff proposal
20 to permit unrestricted master metering of residential multifamily buildings is approved. There are
21 absolutely no safeguards built into NEP’s proposal that would ensure low income residents in

⁴⁷ See CAUSE-PA to NEP I-38; DLC to NEP I-6.p.

1 master metered buildings are not charged a security deposit as a condition of establishing electric
2 service to their unit.

3 *iv. Payment Arrangements*

4 **Q: Are tenants who reside in master and/or sub-metered multifamily buildings and fall**
5 **behind on their bill able to access payment arrangements comparable to the payment**
6 **arrangements available to tenants in an individually metered multifamily building?**

7 A: The question of whether tenants who reside in master and/or sub-metered buildings are
8 entitled to payment arrangements comparable to payment arrangements offered to tenants in
9 individually metered multifamily buildings is an open question of law, to which CAUSE-PA
10 reserves the right to address in briefing.

11 Nevertheless, as a practical matter, and based on NEP's current practices in other areas of
12 Pennsylvania, I am concerned that tenants who reside in master and/or sub-metered multifamily
13 buildings will not have the same access to the payment arrangements available to tenants in
14 individually metered multifamily buildings.

15 Again, NEP's services provide an example of the types of truncated payment arrangements
16 which may be made available to tenants outside of the payment arrangement standards for tenants
17 with individual meters. While tenants in properties serviced by NEP have some access to payment
18 plans,⁴⁸ the payment arrangements offered to these tenants are not as extensive as those available
19 to tenants with individual meters.

20 Residential utility customers who are individually metered have access to payment
21 arrangements issued either through the utility or by the Commission. Section 56.97(b) of the

⁴⁸ DLC to NEP I-6 k.

1 Commission regulations require public utilities to exercise good faith and fair judgment in
2 negotiating a payment arrangement with a residential consumer, and lists a number of factors that
3 must be taken into account when entering into a reasonable payment arrangement - including but
4 not limited to, the size of the unpaid balance and the customer's ability to pay. In turn, Section
5 56.285 provides additional standards for utility-issued payment arrangements that apply only to
6 victims of domestic violence with a Protection from Abuse Order (PFA) or other court order which
7 provides clear evidence of domestic violence.⁴⁹ (Note that I will discuss additional protections
8 available to victims of domestic violence below).

9 Section 1405 of the Public Utility Code authorizes the Commission to establish payment
10 arrangements between a public utility and a customer or applicant for services.⁵⁰ Section 1405 sets
11 forth specific requirements related to the length of payment arrangements,⁵¹ the number of
12 payment arrangements,⁵² and the extension of payment arrangements.⁵³

13 By contrast, NEP indicates that they offer payment plans for residential customers who are
14 scheduled for disconnection and are unable to pay the full past due balance by the date indicated
15 on the disconnection notice:⁵⁴

- 16
- 17 • 50-50 Plan: NEP will offer a 50/50 payment plan to avoid disconnection, in which the
18 residential tenant is required to pay 50% of the amount of the disconnect notice by the date
19 indicated on the notice, and the remaining 50% within 14 days of the date of disconnection.
 - 20 • 40% Down Plan: NEP requires a down payment of 40% of the total current balance, unless
21 the community requests that NEP offer 30%. Once an initial payment is posted, NEP sets

⁴⁹ 52 Pa. Code § 56.285.

⁵⁰ 66 Pa. C.S. § 1405(a).

⁵¹ 66 Pa. C.S. § 1405(b).

⁵² 66 Pa. C.S. § 1405(d).

⁵³ 66 Pa. C.S. § 1405(e).

⁵⁴ DLC to NEP I-6 k.

1 the remaining balance on a 3, 6, or 9-month payment plan. In order to enroll in the 9-month
2 plan, they are required to be provided with a copy of the tenant's lease. The payment plan
3 – once posted – will disperse evenly at a 1% interest rate. This payment plan will appear
4 as a separate and additional charge on tenant's bills, and if a bill is not paid in full, the
5 payment plan will be cancelled and the tenant will have to pay a 50% down payment to set
6 up another payment plan.
7

8 Thus, while NEP does offer a form of payment plan for past-due balances, the payment
9 plans offered by NEP are distinct from payment arrangements available to residential customers
10 who reside in an individually metered multifamily building. Significantly, the payment plans offered
11 by NEP require large upfront payments, regardless of a tenant's ability to pay or their income
12 status. For low income tenants, or tenants who have faced recent changes in income or financial
13 circumstances, producing 40-50% of their past due balance may pose an insurmountable barrier –
14 a barrier not faced by residential customers who reside in an individually metered residential unit.
15 Tenants who manage to meet the steep upfront payment requirements are offered much shorter
16 payment arrangement lengths than payment arrangements offered to other utility customers.⁵⁵

17 Again, NEP's policies regarding payment arrangements are just one of many possible
18 policies that could be imposed by a landlord on a residential tenant. If NEP's proposal were
19 accepted, tenants that currently have access to strong payment arrangement protections could be
20 deprived of a payment arrangement of any kind – for any reason – without any consideration of
21 the customer's ability to pay.

⁵⁵ See 66 Pa C.S. § 1405.

1 v. **Termination of Service Procedures**

2 **Q: Please explain the notification procedures Pennsylvania utilities are required to**
3 **follow prior to termination for residential customers, including for those who reside in an**
4 **individually metered multifamily building.**

5 A: Pursuant to Section 56.81, an authorized involuntary termination of service may occur after
6 notice is provided for a number of circumstances, including but not limited to, nonpayment of an
7 undisputed delinquent amount. Sections 56.91 through 56.100 set forth notice procedures utilities
8 are required to follow prior to termination of service. Public utilities in Pennsylvania are required
9 to notify customers of a pending termination at several crucial points and by specified means prior
10 to termination service.⁵⁶

- 11 • 10 Days Prior to Termination: Section 56.91 requires public utilities to send written notice
12 of termination, with the contents of such notices being set forth by regulation.⁵⁷
13
- 14 • 3 Days Prior to Termination: Section 56.93 requires public utilities to attempt to make
15 personal contact with the customer or responsible adult occupant three days prior to
16 termination of service, and is explicit in the manner by which the 3-day personal contact
17 notice is to be provided.⁵⁸
18
- 19 • 48 Hours Prior to Termination: Section 56.95 requires public utilities to post notice at the
20 service location 48 hours prior to termination during the winter months (December through
21 March).⁵⁹ 48 hour notice is also required for victims of domestic violence with a Protection
22 from Abuse Order or some other court order establishing evidence of domestic violence.⁶⁰
23

⁵⁶ There are different termination rules for victims of domestic violence with a Protection from Abuse Order (PFA) or other court order with evidence of domestic violence, which I will discuss separately below. See 66 Pa. C.S. § 1417; 52 Pa. Code §§ 56.321 – 56.361.

⁵⁷ 52 Pa. Code § 56.91; 66 Pa. C.S. § 1406(b)(1)(i).

⁵⁸ 52 Pa. Code § 56.93; 66 Pa. C.S. § 1406(b)(1)(ii)

⁵⁹ 52 Pa. Code § 56.95; 66 Pa. C.S. § 1406(b)(1)(iii). Victims of domestic violence with a PFA or other court order which contains evidence of domestic violence are to be provided with this additional 48-hour posted notice of termination year-round. 52 Pa. Code §§ 56.335.

⁶⁰ 52 Pa. Code § 56.335.

- 1 • Immediately Prior to Termination: Section 56.94 requires public utilities “to attempt to
2 make personal contact with a responsible adult at the residence of the customer” at the time
3 that service is terminated.⁶¹ Additionally, a utility may not complete service termination if
4 “evidence is presented which indicates that payment has been made, a serious illness or
5 medical condition exists, or a dispute or complaint is properly pending or if the employee
6 is authorized to receive payment.”⁶²

7 Additionally, Section 56.96 requires that, after termination, “notice that reflects the
8 requirements in § 56.91 (relating to general notice provisions and contents of termination notice)
9 as well as a medical emergency notice in the form which appears in Appendix B (relating to
10 medical emergency notice) shall be conspicuously posted or delivered to a responsible adult person
11 or occupant at the residence of the customer and at the affected premises.”

12 **Q: Are tenants who reside in master and/or sub-metered multifamily buildings provided**
13 **with the same termination standards and procedures available to tenants who reside in**
14 **individually metered multifamily buildings?**

15 A: The question of whether tenants who reside in master and/or sub-metered multifamily
16 building are entitled to the same termination standards and procedures available to other residential
17 customers (including those who currently reside in individually metered multifamily buildings) is
18 an open legal question to which CAUSE-PA reserves the right to address in briefing.

19 However, as a practical matter and based on NEP’s current practices in other areas of the
20 state, I am concerned that – pursuant to NEP’s proposed tariff – tenants in master and/or sub-
21 metered multifamily buildings will not have access to the same termination standards and
22 procedures provided to other residential customers (including those currently residing in

⁶¹ 52 Pa. Code § 56.94; 66 Pa. C.S. § 1406(b)(1)(iv) (“After complying with paragraphs (ii) and (iii), the public utility shall attempt to make personal contact with the customer or responsible adult at the time service is terminated.” (emphasis added)).

⁶² 52 Pa. Code § 56.94(1).

1 individually metered multifamily buildings), though some limited protections may nevertheless
2 attach through the Discontinuance of Service to Leased Premises Act (DSLPA), discussed below.

3 Again, NEP’s service delivery model offers an example of the types of termination
4 practices and procedures that tenants may encounter if NEP’s master metering proposal were
5 approved. With regard to its termination practices, NEP states that it “adheres as closely as
6 possible” to Pennsylvania law, regulation, and policies related to involuntary termination of
7 residential utility service.⁶³ As measured by the information NEP has provided, this indefinite
8 standard of NEP’s general intent is not borne out in practice. NEP’s termination procedures
9 substantially diverge from the notice procedures provided to residential customers who are
10 individually metered. In response to discovery, NEP provided a copy of its written notice for
11 involuntary termination of service to residential tenants.⁶⁴ This notice lacks many of the explicit
12 notice requirements set forth in the Commission’s regulations, and is merely appended to a regular
13 bill – with the label “Disconnect Notice” at the top.⁶⁵ Tenants at risk of termination are not
14 provided with notice of the availability of certain winter protections, medical protections, or
15 payment arrangements which NEP asserts that it provides.

16 NEP’s procedures prior to terminating a tenant’s service are also distinct from the
17 procedures offered to individually metered residential customers. NEP indicates that written notice
18 of termination is postmarked to residents at least 14 days prior to termination in summer months,
19 and 24 days prior to termination in winter months.⁶⁶ NEP also places “automatic and in-person

⁶³ DLC to NEP I-6.i.

⁶⁴ DLC to NEP I-7.a, attachment.

⁶⁵ CAUSE-PA to NEP I-47, I-48. Notably, “disconnection” or “discontinuance” are terms of art which generally refer to a *voluntary* cessation of service with consent of the customer, whereas “termination” refers to the involuntary termination of service without consent. See 52 Pa. Code § 56.2.

⁶⁶ DLC to NEP, Set I, 6.l.

1 phone calls to residents eligible for service termination prior to such terminations.”⁶⁷ NEP has only
2 provided limited information on how long prior to termination these phone calls are made –
3 indicating that autodialer phone calls are made “several days” prior to termination, and an “in-
4 person” phone call is made on the day that the tenants is eligible for termination.⁶⁸ NEP has not
5 provided any indication of the information provided to tenants facing imminent termination during
6 these phone calls (such as how a tenant could stop the termination or any additional protections
7 from termination that may apply), or whether multiple attempts to contact the tenant are made.
8 Moreover, it appears NEP does not make any attempt to provide personal contact with an adult
9 resident in person at the residence immediately prior to termination.⁶⁹ In contrast, as explained
10 above, DLC must attempt to provide notice at the residence immediately prior to termination of
11 residential tenants. This is colloquially known as the “last knock rule” – and provides a critically
12 important safeguard to prevent the termination of medically vulnerable consumers or to otherwise
13 stop a termination based on certain exigencies.⁷⁰

14 NEP’s course of action and sanctions for non-payment by tenants also venture well outside
15 those allowed for nonpayment by a tenant who resides in an individually metered multifamily
16 building. In response to discovery, NEP indicates that it performs collections actions against
17 tenants as directed by a property owner or condominium association pursuant to the contract
18 between the landlord and NEP.⁷¹ These remedies may include not only termination of services ***but***

⁶⁷ DLC to NEP, Set I, 7.c.

⁶⁸ CAUSE-PA to NEP I-7, I-35.

⁶⁹ CAUSE-PA to NEP I-35.

⁷⁰ 52 Pa. Code § 56.94.

⁷¹ DLC to NEP I-6.i.

1 **also eviction**.⁷² Where balances exceed \$500, NEP may actually *require* a landlord to initiate
2 eviction proceedings.⁷³

3 **Q: How would tenants facing termination be impacted by NEP’s proposed tariff**
4 **changes?**

5 A: Tenants who reside in an individually metered multifamily building currently have access
6 to the robust termination notice requirements and termination procedures set forth in Pennsylvania
7 statute and Commission regulations. If unrestricted multifamily master metering were permitted
8 pursuant to NEP’s proposal, tenants who reside in multifamily master metered buildings may be
9 subject to termination procedures established by the landlord or by third-party sub metering and
10 rebilling companies, such as NEP. Again, NEP represents only one possible example of the
11 termination procedures that tenants in DLC’s service territory may face if NEP’s tariff proposal
12 were approved.

13 As I discussed in my Direct Testimony, residential customers in DLC’s service territory
14 already struggle to maintain and afford services, even with the protections required under
15 application statutes, regulations, and Commission policy. If NEP’s proposed tariff revision were
16 approved, tenants may face harsher and more protracted termination procedures, and – as I discuss
17 later in by Rebuttal Testimony – may not be able to rely on universal service programs or other
18 sources of assistance that are generally available to low income utility customers in order to stave
19 off termination and/or eviction.

⁷² Id.

⁷³ Id.

1 **vi. Winter Protections From Termination**

2 **Q: Please summarize the winter terminations procedures set forth under Chapter 56.**

3 Section 56.100(b) prohibits an electric distribution utility from terminating service to
4 customers with household incomes at or below 250% FPL, unless otherwise allowed under the
5 regulations, between December 1 and March 31.

6 **Q: What are NEP's policies and procedures related to the winter protections from**
7 **termination?**

8 A: NEP indicates in response to discovery that it adheres "as closely as possible to the
9 procedures" of the "Winter Disconnect Rule."⁷⁴ Specifically, between November 1 and April 15,
10 NEP provides 10 additional days for tenants from the date a notice of termination is postmarked
11 to the scheduled disconnection date, and postpones or cancels termination if (1) the scheduled low
12 for the day is less than 10 degrees Fahrenheit; or (2) the high for the date of termination and the
13 following day are both scheduled to be below 32 degrees.⁷⁵

14 **Q: How would tenants who face termination during the winter months be impacted by**
15 **NEP's proposed tariff?**

16 A: Under NEP's proposed tariff language, tenants who reside in master metered or sub
17 metered communities may not have guaranteed access to the protections of the Winter Moratorium
18 on utility terminations, as there is an open question whether these tenants are legally considered
19 customers of the public utility (discussed above).

20 Nevertheless, as a practical matter and based on existing practice, I am concerned that
21 NEP's tariff proposal may not be able to access the emergency winter termination protections

⁷⁴ DLC to NEP I-6.i.

⁷⁵ CAUSE-PA to NEP I-39.

1 designed to ensure that all individuals can maintain heat to their home in winter. In short, NEP's
2 proposed tariff revisions would expose tenants who reside in a master and/or sub-metered property
3 to termination of service in the winter months – forcing families in DLC's service territory to go
4 without heat if they are unable to afford to pay. As explained below, these same households will
5 not be able to access any of DLC's universal service programs to help them catch up with arrears
6 – and may have difficulty accessing federal or state assistance programs as well. Again, NEP's
7 business model offers an illustrative example of the kinds of policies tenants in master metered
8 buildings would be exposed to under NEP's proposal. While NEP provides some additional notice
9 provisions for its tenants during winter months and does not terminate services if temperatures on
10 scheduled dates on or around termination are precipitously low, tenants who reside in master/sub
11 metered buildings serviced by NEP will largely remain subject to potential termination during the
12 winter months. I note that NEP's temperature thresholds (low of under 10 degrees / high of under
13 32 degrees) for winter protections are arbitrary, and in no way resemble the strong protections of
14 the winter moratorium. Indeed, if a tenant is terminated in winter, the very next day could drop
15 below freezing. The bottom line is: tenants who are currently protected during the winter months
16 from utility termination may lose access to these protections, and will face the prospect of
17 termination and eviction during the winter. In my experience, tenants who are unable to afford
18 their basic utility costs will be faced with untenable choices of paying for utility services or other
19 basic necessities – such as food, medicine, or housing – or will rely on unsafe energy sources in
20 order to remain in their homes.

1 *vii. Protections for Customers with Medical Conditions*

2 **Q: Please summarize the medical certificate procedures set forth in Chapter 14 of the**
3 **Public Utility Code and Chapter 56 of the Commission regulations.**

4 Chapter 14 defines medical certificate as a written document that certifies “that a customer
5 or member of the customer's household is seriously ill or has been diagnosed with a medical
6 condition which requires the continuation of service to treat the medical condition; and is signed
7 by a licensed physician, nurse practitioner or physician's assistant.” Section 1406(f) of the Public
8 Utility Code prohibits a public utility from terminating service to a residential premise when a
9 customer has submitted a medical certificate.

10 Sections 56.111 – 56.118 set forth the Commission’s regulations related to medical
11 certificates. For customers who submit a medical certificate that complies with the requirements
12 of Section 56.113, a public utility cannot terminate service for a maximum time period of 30 days.
13 Customers who have not kept up with current charges, pursuant to Section 56.116, may renew
14 their medical certificates up to two times.⁷⁶ Customers who continue to keep up with current
15 charges while a medical certificate is in place can continue to renew the certificate every 30 days,
16 regardless of underlying arrearages.⁷⁷

17 **Q: Are tenants who reside in multifamily master and/or sub-metered buildings**
18 **protected by the medical certification requirements?**

19 A: I am advised by CAUSE-PA that the question of whether tenants who reside in a
20 multifamily master and/or sub-metered buildings are protected by the medical certification

⁷⁶ 52 Pa. Code § 56.114.

⁷⁷ 52 Pa. Code § 56.116.

1 requirements is an open question of law, and that CAUSE-PA reserves the right to further discuss
2 this matter in briefing.

3 In any event, I note that even if a landlord or sub-metering/rebilling company is not
4 required to comply with the Commission's medical protections, it is possible they may
5 nevertheless voluntarily adhere to the Commission's medical certification requirements. But the
6 extent of that adherence will likely vary widely and will be difficult to oversee and enforce. For
7 example, NEP indicates that it will stop a pending termination to a sub-metered tenant unit if a
8 customer provides a correctly completed medical certificate.⁷⁸ However, NEP fails to provide any
9 information regarding its policies and procedures for how its tenants might obtain and submit a
10 valid medical certificate, or whether the tenants will have to meet other requirements to postpone
11 termination.

12 **Q: How would tenants who suffer from a serious illness or medical condition be impacted**
13 **by NEP's proposed tariff?**

14 A: There is no guarantee in NEP's proposed tariff language that tenants who suffer from a
15 serious illness or medical condition and reside in master/sub metered communities can utilize
16 medical certificates to postpone termination. While NEP provides limited procedures for
17 submitting a medical certificate, as I have explained, NEP represents only one of many variations
18 of master/sub metered companies that might operate if NEP's proposal is granted. The purpose of
19 medical certificates is to provide a basic level of protection to medically vulnerable households
20 from termination activity and ensure that households experiencing serious medical conditions or
21 chronic illness remain connected to services. The protections set forth in Chapter 14 of the Public
22 Utility Code and Chapter 56 of the Commission's regulations are carefully crafted in such a way

⁷⁸ CAUSE-PA to NEP I-34.

1 to ensure that medically vulnerable Pennsylvanians are protected from the acute risk of harm that
2 would result if service to their homes were terminated. Under NEP's proposal, medically
3 vulnerable tenants in master/sub metered communities would potentially suffer loss of utility
4 services and/or face eviction that could potentially pose an acute risk to the health and safety of
5 those tenants.

6 *viii. Disputes, and Informal and Formal Complaints*

7 **Q: What rights and protections are available to individually metered residential**
8 **customers who dispute their charges, and/or seek to file informal or formal complaints?**

9 A: Sections 56.140 through 56.181 of the Commission regulations set forth provisions related
10 to utility disputes and informal, and formal complaints. In particular, Section 56.141 sets forth
11 specific guidelines when a utility receives notice of a dispute. This Section requires a public utility
12 to attempt to resolve the dispute in accordance with Section 56.151 once a dispute is lodged.⁷⁹
13 Moreover, once a termination dispute or complaint has been properly submitted, termination is
14 prohibited until resolution of the dispute or complaint.⁸⁰

15 **Q: What rights or protections are available to tenants who reside in a multifamily master**
16 **metered building who notify the utility of a dispute, and/or seek to file informal or formal**
17 **complaints?**

18 A: Again, there is an open legal question as to whether tenants who reside in a multifamily
19 master metered building are a customer of the utility, which CAUSE-PA reserves the right to
20 address through briefing. Nevertheless, I am concerned that, while these tenants would
21 nevertheless retain some limited rights pursuant to the Public Utility Code and Commission

⁷⁹ 52 Pa. Code § 56.141(1).

⁸⁰ 52 Pa. Code § 56.141(2).

1 regulation (such as those conferred through the Discontinuance of Service to Leased Premises Act)
2 regardless of how that legal question is resolved, they may not be protected by the same panoply
3 of rights available to those who reside in an individually metered residential unit. As such, while
4 tenants in a master metered multifamily building may still be able to file a dispute – or pursue a
5 formal or informal complaint – it is uncertain whether tenants in master metered multifamily
6 buildings would not have access to the same outcome as a tenant who resides in an individually
7 metered residential unit because they do not enjoy the same rights.

8 *ix. Protections for Victims of Domestic Violence*

9 **Q: Please summarize protections available to victims of domestic violence with a PFA**
10 **or a court order issued by a court of competent jurisdiction in Pennsylvania which provides**
11 **clear evidence of domestic violence.**

12 In recognition of the unique and harmful barriers for victims of domestic violence in
13 accessing utility services, the General Assembly exempted victims of domestic violence from the
14 billing and collections standards contained in Chapter 14 of Title 66 of the Pennsylvania
15 Consolidated Statutes.⁸¹ In turn, this vulnerable customer segment is exempt from the general
16 billing, collection, and termination standards contained in Chapter 56, subchapters A-K, of the
17 Pennsylvania Code.

18 Instead, victims of domestic violence with a PFA or other court order “which provides
19 clear evidence of domestic violence against the applicant or customer” are subject to the former
20 billing, credit and collections regulations contained in Chapter 56, Title 52 of the Pennsylvania
21 Code – codified in subsections L-V of the Chapter.⁸² These separate regulations provide significant

⁸¹ 66 Pa. C.S. § 1417.

⁸² *Id.*; 52 Pa. Code §§ 56.251 to 56.461 (subchapters L-V).

1 protection for victims of domestic violence and work to alleviate many common barriers victims
2 face when attempting to connect to utility service after leaving an abusive home. The following
3 summarizes the pertinent protections:

4 • 52 Pa. Code § 56.285

5 ○ Service cannot be denied based on utility arrears accrued in someone else’s name.

6 “A utility may not require, as a condition of furnishing of residential service,
7 payment for residential service previously furnished under an account in the name
8 of a person other than the applicant unless a court, district justice, or administrative
9 agency has determined that the applicant is legally obligated to pay for the service
10 previously furnished.”

11 ○ Access to extended payment arrangements based on individualized circumstances.

12 “An outstanding residential account with the utility may be amortized over a
13 reasonable period of time. Factors to be taken into account include the size of the
14 unpaid balance, the ability of the applicant to pay, the payment history of the
15 applicant and the length of time over which the bill accumulated.”

16 • 52 Pa. Code § 56.323

17 ○ No termination for debt accrued in someone else’s name.

18 “Unless expressly and specifically authorized by the Commission, service may not
19 be terminated nor will a termination notice be sent for any of the following reasons:

20 ...

21 (8) Nonpayment for residential service already furnished in the names of persons
22 other than the customer unless a court, district justice or administrative agency has
23 determined that the customer is legally obligated to pay for the service previously
24 furnished.”

25 • 52 Pa. Code § 56.335

26 ○ 48-hour stay and posted notice if no “personal contact” immediately preceding
27 termination.

28 “If a prior contact has not been made with a responsible adult occupant either at
29 the residence of the customer, as required under § 56.334 ... or at the affected
30 dwelling, the employee may not terminate service but shall conspicuously post a
31 termination notice at the residence of the customer at the affected dwelling,

1 advising that service will be disconnected not less than 48 hours from the time and
2 date of posting.”

3 **Q: Are victims of domestic violence who reside in a master and/or sub-metered**
4 **multifamily building able to access these protections?**

5 A: As with the other consumer protections discussed throughout, there is an open legal
6 question whether a tenant in a master or sub-metered multifamily building may be legally entitled
7 to these protections. That said, as a practical matter – and based on existing practices in other parts
8 of the state – I am concerned that victims of domestic violence who reside in master metered
9 multifamily buildings are unable to access these protections.

10 **Q: How would NEP’s master metering proposal impact victims of domestic violence in**
11 **DLC’s service territory?**

12 A: The ability to leave a violent relationship often hinges on access to financial resources and
13 assistance – and victims are often required to make untenable choices when they lack necessary
14 financial resources.⁸³ While domestic violence occurs across every income level, and poverty is
15 not a cause of domestic violence, domestic violence and poverty are linked – often resulting from
16 economic abuse perpetrated by an abuser during a relationship or following separation.⁸⁴

17 Domestic violence is pervasive. The Center of Disease Control and Prevention’s National
18 Intimate Partner and Sexual Violence Survey estimates that about 1 in 3 people experience sexual

⁸³ Erika Sussman and Sara Wee, Accounting for Survivor’s Economic Security: An Atlas for Direct Service Providers, mapbook 1, CSAJ, 4, available at: www.csaj.org/library. Costs of safety include: relocation, new or increased rent, transportation, childcare, court and legal fees, travel to family and mobilizing social support, as well as time spent in accessing advocacy and other services. Id.

⁸⁴ See Pa. Coalition Against Domestic Violence, Financial Abuse, available at: <https://www.pcadv.org/financial-abuse/>.

1 violence, physical violence, and/or stalking by an intimate partner during their lifetime.⁸⁵
2 According to the National Network to End Domestic Violence (NNEDV)'s 2019 National Census
3 of Domestic Violence Services, 2,630 victims were served by domestic violence programs *on a*
4 *single day* in Pennsylvania in 2019.⁸⁶

5 The protections for victims of domestic violence described above were developed in
6 recognition of the pervasiveness of domestic violence and unique threats to safety and financial
7 stability faced by victims when they are unable to connect and maintain service as a result of debts
8 accrued by their abuser. Chief among the protections above is the provision exempting victims of
9 domestic violence from occupant liability to ensure they will not be held responsible for the debts
10 of their abuser or otherwise prevented from later reconnecting to service.

11 It is unclear whether tenants subject to master/sub-metering under NEP's proposal will
12 have access to any protections related to billing, collections, or termination, and – as I discuss
13 below – whether these tenants will be cut off from access to universal service programs aimed at
14 improving affordability of services. Again, NEP's own practices are instructive here, as NEP holds
15 all tenants responsible for utility arrears to the extent their name appears on the lease – without
16 any consideration of whether the tenant is a victim of domestic violence.⁸⁷ In short, NEP's master
17 metering proposal sidesteps critically important protections for victims of domestic violence,

⁸⁵ Ctrs. for Disease Control & Prevention, The National Intimate Partner and Sexual Violence Survey (NISVS), Executive Summary (2015), available at: <https://www.cdc.gov/violenceprevention/datasources/nisvs/summaryreports.html>.

⁸⁶ Nat'l Network to End Domestic Violence, Domestic Violence Counts: 14th Annual Census Full Report (2019), available at https://nnedv.org/wp-content/uploads/2020/03/Library_Census-2019_Report_web.pdf.

⁸⁷ CAUSE-PA to NEP I-23.

1 which is – quite simply – dangerous to the health and safety of victims of domestic violence and
2 their children.

3 *x. Discontinuance of Service to Leased Premises Act (DSLPA)*

4 **Q: Please describe the tenant protections available under the DSLPA.**

5 A: The Discontinuance of Services to Leased Premises Act (DSLPA) sets forth the rights of
6 tenants who receive regulated utility service for which the account is listed in the landlord's
7 name.⁸⁸ DSLPA protects a tenant's right to continued utility service where: (1) the utility
8 terminates service to a leased premises due to nonpayment by the landlord ratepayer;⁸⁹ or, (2) the
9 landlord ratepayer seeks to voluntarily relinquish service to a leased premises despite the fact that
10 tenants are still residing in the rental unit.⁹⁰ Tenants have the right to enforce DSLPA rights
11 through the Commission's informal and formal complaint process.⁹¹

12 With regard to potential utility termination to a leased premises in which service is listed
13 in the landlord or agent's name, DSLPA requires that specific notices be provided to landlords (37
14 day notice) and their tenants (30 days notice) prior to termination of service for non-payment. A
15 utility must serve landlords with written notice no less than thirty-seven days prior to the
16 termination of utility service to a leased premises.⁹² The landlord is required to notify the utility of
17 the names and addresses of any tenants. Notice to tenants is required no less than seven days after

⁸⁸ 66 Pa. C.S. Ch. 15 Subch. B.

⁸⁹ 66 Pa. C.S. § 1527.

⁹⁰ 66 Pa. C.S. § 1523(b).

⁹¹ 66 Pa. C.S. § 1523(a)(3).

⁹² See 66 Pa. C.S. § 1523(a)(1); see also 66 Pa. C.S. § 1525 (both prescribing the means and content of the required landlord notice.).

1 notice to landlords, and at least thirty days before service to the premises is terminated.⁹³ Utilities
2 are required to provide notice to any dwelling units that are “reasonably likely” to be tenant
3 occupied.⁹⁴ The notice to tenants must be mailed or hand-delivered to tenants and posted at the
4 premises “in those common areas of the building or mobile home park where it is reasonably likely
5 to be seen by affected tenants.”⁹⁵

6 The 30-day notice provided to tenants at risk of termination due to a landlord’s nonpayment
7 must inform the tenant of their right to continue service by paying an amount equal to the bill for
8 the thirty-day period preceding the notice or the billing month preceding the notice.⁹⁶ Tenants
9 may subsequently continue to maintain services at the residence if they pay for each subsequent
10 30-day period of service.⁹⁷ The tenant may then deduct the amount of their payments from their
11 rental payments,⁹⁸ and are protected from retribution by the landlord.⁹⁹ Under DSLPA, a utility
12 must return any partial payments if service is subsequently terminated due to the tenant’s inability
13 to pay the full 30-day bill.¹⁰⁰

14 As I mentioned above, the DSLPA also provides protections to tenants if a landlord
15 ratepayer elects to voluntarily discontinue service.¹⁰¹ Before a utility may discontinue service at
16 the request of the landlord: (1) the landlord must submit a notarized form swearing under penalty

⁹³ 66 Pa. C.S. § 1523(a)(3).

⁹⁴ Id.

⁹⁵ 66 Pa. C.S. § 1526.

⁹⁶ 66 Pa. C.S. § 1523(b).

⁹⁷ 66 Pa. C.S. § 1527(b).

⁹⁸ 66 Pa. C.S. § 1529.

⁹⁹ 66 Pa. C.S. § 1531.

¹⁰⁰ 66 Pa. C.S. § 1527(c).

¹⁰¹ 66 Pa. C.S. § 1523(b).

1 of law that the unit is unoccupied;¹⁰² (2) the utility must obtain consent from all of the affected
2 tenants;¹⁰³ or (3) the utility must obtain the names and addresses of the affected tenants and provide
3 notice to each dwelling unit, and provide affected tenants with the same rights they would have if
4 their service were being terminated for nonpayment.¹⁰⁴

5 DSLPA allows affected tenants to pay the ongoing charges and deduct that amount from
6 their rent or other money owed to the landlord ratepayer,¹⁰⁵ and provides anti-retaliatory provisions
7 meant to prevent the landlord ratepayer from acting against the affected tenants.¹⁰⁶ DSLPA also
8 expressly provides that any waivers of a tenant's rights granted by the statute are void and
9 unenforceable.¹⁰⁷

10 **Q: Do you have any concerns about tenants' rights to continued service pursuant to**
11 **DSLPA under NEP's master metering proposal?**

12 A: Yes. Although the rights of tenants under DSLPA attach by law, I am concerned that master
13 metering and sub-metering configurations permitted by NEP's proposal will undermine the ability
14 of tenants to exercise their DSLPA rights.

15 Before discussing those broad concerns, I note here that I do not offer an opinion as to the
16 legality of NEP's specific business model in relation to the DSLPA. Nevertheless, CAUSE-PA

¹⁰² 66 Pa. C.S. § 1523(b)(1).

¹⁰³ 66 Pa. C.S. § 1523(b)(2).

¹⁰⁴ 66 Pa. C.S. § 1523(b)(3); § 1523(c).

¹⁰⁵ 66 Pa. C.S. § 1529.

¹⁰⁶ 66 Pa. C.S. § 1531.

¹⁰⁷ 66 Pa. C.S. § 1530.

1 reserves the right to explore issues surrounding the legality of NEP’s services in relation to the
2 DSLPA through briefing.

3 In short, by allowing a landlord to submeter a multifamily building, NEP’s proposal
4 complicates the ability of tenants to prevent termination based on a landlord’s nonpayment and
5 undermines protections against the voluntary discontinuance of service to a leased unit without the
6 express consent of the tenant.

7 First, multifamily master metering can serve to undermine the ability of tenants to exercise
8 their right to prevent a termination of service pursuant to DSLPA when the landlord fails to make
9 payments on the bill. As explained above, if a landlord is responsible for the bill (as is the case for
10 all master metered buildings), and later stops making payment on that service, DSLPA allows a
11 tenant to pay for the last 30 days of service to avoid termination, and permits that tenant to deduct
12 that amount from their rent.¹⁰⁸ When a landlord stops paying for service to a tenant with an
13 individual meter, the tenant need only pay the last 30 days of service to their unit to prevent the
14 termination. This amount is typically less than rent, ensuring that the tenant can prevent the loss
15 of service by redirecting their rental payment to cover the last 30 days of service. But when it
16 happens in a master metered property, tenants have to come up with enough to pay for the last 30
17 days of service *to the entire building* – not just their unit. This can be very difficult for tenants to
18 achieve in the short 30-day window they have to prevent the pending termination.

19 I note that under a submetering configuration, if a third party submetering or rebilling agent
20 were to become insolvent – or otherwise stop making payment on the bill to the utility for any
21 reason – the harm to tenants could compound. Under this scenario, a tenant in a sub-metered

¹⁰⁸ 66 Pa. C.S. § 1529.

1 property may have already paid the third party submetering/rebilling agent for that service. While
2 a tenant may have recourse in court system, it can take years for a claim like that to be resolved –
3 and certainly much longer than the 30 days that the tenants in that building have to prevent the loss
4 of service to their home. It should be noted that third party submetering and rebilling agents are
5 not necessarily headquartered in the same county, the same state, or even the same country, raising
6 complicated service and venue issues that further truncate the ability for a tenant to seek redress
7 through the courts.¹⁰⁹

8 Moreover, I am concerned about the consequences of NEP’s master metering proposal
9 related to the *voluntary* discontinuance of services by a landlord to a leased premises. If a landlord
10 is permitted to submeter a multifamily building, they will effectively have full control over the
11 service to each unit and can turn service on or off without ever contacting the utility – evading
12 requirements in DSLPA that a landlord submit a notarized form attesting that the residence is
13 unoccupied or that the tenant otherwise consents to the disconnection.

14 Over the last five decades, I have assisted tenants in hundreds of cases where a landlord
15 had been initially successful in the attempt to shut off utility service to a leased premise in order
16 to circumvent the eviction process. Under these circumstances, service could be terminated in the
17 midst of winter or in cases of an occupants’ serious illness. Often it is only after the shut-off that
18 the tenants are aware that the landlord had contacted the utility. But not all tenants know that this
19 practice is illegal, or have the resources, knowledge, or access to legal counsel to protect
20 themselves against this practice. Once service to a property is shut off, families without access to
21 or knowledge of their rights may be forced from their homes with little to no warning, especially

¹⁰⁹ See, e.g., CAUSE-PA to NEP I-5.

1 in winter or summer when temperatures can be extreme – incurring substantial expense in the
2 process. If NEP’s proposed tariff language were approved, this illegal and dangerous practice will
3 further evade review.

4 **Q: Do you have any other comments regarding the impact of NEP’s tariff proposal on**
5 **tenants’ rights to continued service?**

6 A: Yes. I note that the General Assembly has passed two Acts governing the discontinuance
7 of service to leased premises in Pennsylvania. In addition to DSLPA, the Utility Service Tenants
8 Rights Act (USTRA), codified at 68 PS §§ 399.1-399.18, applies to utilities not otherwise subject
9 to the Commission’s jurisdiction. USTRA mirrors the rights and protections available to tenants
10 under DSLPA.

11 Together, DSLPA and USTRA were intended to protect all innocent tenants in
12 Pennsylvania from the actions, negligence, and/or default of their landlord. If approved, NEP’s
13 tariff proposal may evade these critically important protections, exposing tenants in DLC’s service
14 territory to unnecessary risks and harm.

15 **B. Rates for Residential Master Metered Properties**

16 ***i. Price of Service Upon Resale***

17 **Q: What protections exist in Pennsylvania related to the resale price of public utilities?**

18 A: Section 1313 of the Pennsylvania Utility Code (Price Upon Resale of Public Utility
19 Services), in relevant part, prohibits a corporation or other entity from purchasing service from a
20 public utility and reselling it to consumers, where the bill rendered exceeds the amount which the
21 public utility would bill its own residential consumers for the same quantity of service under the
22 residential rate of its tariff in effect. A person or entity that violates that prohibition is guilty of a

1 summary offense, punishable by a “fine of \$100 multiplied by the number of residential bills
2 exceeding the maximum prescribed by section 1313.” 66 Pa. C.S § 3313 (excessive price on
3 resale).

4 **Q: How are rates charged to tenants who reside in a multifamily master metered**
5 **property?**

6 A: The method of resale varies widely and is typically determined by the provisions of a lease
7 agreement – to the extent there is one – or through some other rental arrangement (written or oral)
8 between a landlord and tenant.

9 For master metered buildings without submetering, landlords may divide the bill equally
10 based on the number of units in the building; the number of tenants, rooms, or square footage of
11 each unit; or some other arbitrary method having no relationship to the actual bill rendered by the
12 public utility. It can be extremely difficult for a tenant in a multifamily master metered building
13 to determine whether the costs passed on to them include a price premium on the service, as the
14 tenant has no access to the bill to determine what they are being charged – or what other tenants
15 in the building are being charged.

16 For master metered buildings with submetering, the tenant may be able to verify the
17 monthly usage to their unit (if allowed access to the meter and presented properly on the bill) - but
18 it can still be quite complicated for a tenant to determine whether they are being charged excessive
19 rates in violation of Section 1313. As explained above, the residential billing standards in Chapter
20 56 that require itemization of all charges do not apply to master metered services – obfuscating the
21 ability of a tenant to review whether their bill is accurate. As I will explain below, tenants subject
22 to submetering do not receive notice of a proposed or approved residential rate change (either to
23 base rates or the applicable default service rate) – further complicating the ability of tenants with

1 submetered service to determine whether the submetering company has adjusted the applicable
2 rates.

3 Again, NEP’s business model offers one example of the ways in which a submetering
4 company may charge tenants for service. As the listed customer of a utility, NEP is charged at
5 commercial/ industrial rates of service. Tenants served by NEP are subsequently charged the
6 utility’s applicable residential rates of service – in addition to NEP’s other fees and charges, which
7 I explained above. Residential rates for services are generally higher than comparable industrial
8 commercial rates of service, thus allowing NEP to make a profit on the difference.¹¹⁰ Moreover,
9 while NEP shops for competitive rates from suppliers, it charges tenants the applicable default
10 rates for residential generation services.¹¹¹ NEP does provide some basic itemization on the bill,
11 including “customer charge” and “electric usage” – and notes the total kWh included in the
12 charges.¹¹² But there is no information on the bill about where a tenant may look to verify the
13 charges. In fact, the bill contains no information about the public utility at all, belying NEP’s
14 claim that it “communicates to residents that rates charged are based on those of the local electric
15 utility.”¹¹³

16 In discussing NEP’s rates, I am offering an example of the types of charges that a
17 residential tenant may pay when subject to submetering by a company such as NEP. I do not offer
18 a legal opinion about whether NEP’s pricing policies are compliant with applicable statutes,

¹¹⁰ CAUSE-PA to NEP I-32. See also Company’s April 16, 2021 Filing Letter, indicating that, if DLC’s entire request is approved, the total bill for an average residential customer using 600 kilowatt-hours would increase from \$100.12 to \$107.85 per month – amounting to approximately 0.18 per kWh. The total bill for an average commercial customer using 10,000 kilowatt-hours would increase from \$862.14 to \$916.99 per month, and the total bill for an average industrial customer using 200,000 kilowatt-hours would increase from \$16,546.49 to \$17,246.75 per month – amount respectively to approximately 0.09 per kWh.

¹¹¹ CAUSE-PA to NEP, I-32, I-33.

¹¹² DLC to NEP I-7a, attachment.

¹¹³ CAUSE-PA to NEP I-1.

1 Commission regulation, and Commission policy. Nevertheless, I have been advised by counsel for
2 CAUSE-PA that it reserves the right to address the properness of NEP’s pricing policies in
3 briefing.

4 *ii. Notification of Increased Rates*

5 **Q: Please summarize what notice of tariff or tariff changes are provided to residential**
6 **customers with individual meters?**

7 A: Section 53.45, Title 52 of the Pennsylvania Code set forth specific requirements related to
8 the timing and contents of notice of tariff or tariff changes for customers. Specifically, Section
9 53.45(b)(1)(ii) requires a public utility to notify its customers by written or printed notice, mailed
10 at least 61 days (or hand delivered at least 60 days) prior to the proposed effective date of the tariff.
11 This notice is required to include, but is not limited to, the ability of consumers object to or contest
12 the proposed rate increase.¹¹⁴

13 **Q: What information is provided to sub-metered tenants serviced by NEP about**
14 **proposed tariffs or tariff changes?**

15 A: NEP does not notify residents of proposed or upcoming changes in rates.¹¹⁵

16 I also have significant questions regarding whether NEP adjusts its residential rates in line
17 with proposed tariff changes as of the effective date of rates. In response to discovery, NEP
18 explained that it adjusts residential rates “on a monthly basis” – without specifying whether rates
19 charged are adjusted on the utility’s effective date of rates.¹¹⁶ Based on this response, I am

¹¹⁴ See also 66 Pa. C.S. § 1308 (voluntary changes in rates) (“[u]nless the commission otherwise orders, no public utility shall make any change in any existing and duly established rate, except after 60 days notice to the commission, which notice shall plainly state the changes proposed to be made in the rates then in force, and the time when the changed rates will go into effect.”)

¹¹⁵ DLC to NEP, I-7.e.

¹¹⁶ DLC to NEP I-6.a.

1 concerned tenants served by NEP may be charged higher rates for part of the month when
2 distribution or generation rates change.¹¹⁷ NEP provided information about the applicable date of
3 new rates in properties managed by NEP in Pennsylvania since 2018, but this information was
4 provided on the last business day before this testimony was due – leaving insufficient time to fully
5 analyze this information. I reserve the right to amend my testimony upon further review of this
6 information.

7 **Q: How are tenants effected by NEP’s policies and procedures related to notice of tariffs**
8 **or tariff changes?**

9 A: Without adequate notice of proposed tariffs and tariff changes, tenants lose the right to
10 provide public utilities, stakeholders and parties, and the Commission with critical input about
11 whether increasing the costs of services is just, reasonable, and in the public interest. By failing to
12 provide advance notice of tariffs or tariff changes, NEP’s policies and procedures also deprive
13 tenants of the ability to financially plan for upcoming changes in rates, as well as other tariff
14 changes.

15 **C. Confidentiality of Consumer Information**

16 **Q: What confidentiality protections are available to public utility customers?**

17 A: An EDC or EGS “may not release private customer information to a third party unless the
18 customer has been notified of the intent and has been given a convenient method of notifying the
19 entity of the customer's desire to restrict the release of the private information.”¹¹⁸ In short, a utility

¹¹⁷ CAUSE-PA to NEP I-31, attachment.

¹¹⁸ 52 Pa. Code § 54.8.

1 may not provide account information – including usage data, payment history, or other information
2 – to any third party, including to a landlord or property owner, without consent of the customer.

3 **Q: Do these confidentiality protections apply to tenants who reside in a master metered**
4 **property?**

5 A: It is unclear and an open legal question to which CAUSE-PA reserves the right to address
6 in briefing whether tenants who reside in a master metered multifamily property are “customers”
7 of the public utility, and hence whether their utility data is protected from disclosure to third
8 parties. However, as a practical matter and based on NEP’s current practices, I am concerned about
9 the potential for third-party disclosure and breaches of confidentiality under NEP’s tariff proposal.

10 Again, NEP’s business model is instructive of the kinds of disclosure a tenant could be
11 subjected to if its proposed tariff revisions are approved. In response to discovery, NEP indicates
12 that it acts as an agent of a property owner and, as such, provides regular reports to property owners
13 or designated property managers about usage by unit, property-wide usage, past-due accounts,
14 accounts eligible for termination, accounts with “abnormally high usage”, and various other
15 reports showing trends and analyses.¹¹⁹ NEP further indicates that it provides account information
16 to submit unpaid account balances to third party collections.¹²⁰ It does not appear from NEP’s
17 response that tenants receiving NEP’s service may elect to limit the amount or types of information
18 provided to property owners – or other third-parties designated by property owners.

19 NEP’s disclosure of tenant information to landlords and building owners is particularly
20 troubling, given its use of advanced metering – which could potentially reveal when a tenant is

¹¹⁹ CAUSE-PA to NEP I-53.

¹²⁰ Id. at I-54.

1 home, whether they go on vacation, whether they have visitors, what appliances they use, the
2 temperature they keep their home, and other highly sensitive information about a tenant's
3 movements and usage.

4 If NEP's tariff proposal is approved, it has the potential to allow landlords to eviscerate
5 tenant privacy, circumventing important consumer protections available to tenants who reside in
6 an individually metered tenant unit.

7 **D. Service Affordability**

8 **Q: Are tenants who reside in master and/or sub-metered properties eligible for DLC's**
9 **universal service programs?**

10 A: NEP asserts that, if a property is master and/or sub-metered, tenants in that property are
11 not a customer of DLC, and are unable to access assistance through any available universal service
12 programs.¹²¹ As I noted above, the question of whether a tenant who resides in a master and/or
13 sub-metered building is a customer is a legal question, which CAUSE-PA reserves the right to
14 address through briefing.

15 Nevertheless, as a practical matter – and based on current practice – I am very concerned
16 that DLC's Customer Assistance Program, Hardship Fund Program, and Low Income Usage
17 Reduction Program will be unavailable to tenants in master metered and/or sub-metered buildings.

18 **Q: Does NEP acknowledge that tenants in master metered properties would not have**
19 **access to universal service programs pursuant to its proposal?**

20 A: Yes, Ms. Ringenbach acknowledges through her testimony that NEP's proposal would not
21 allow tenants to access CAP, but asserts that "a CAP program is not needed for master metering

¹²¹ NEP St. 1 at 26: 11-16.

1 under [NEP’s] proposal.”¹²² In place of access to universal service assistance, NEP proposes to
2 provide tenants in master metered properties in DLC’s service territory with a meager \$2/month
3 credit - which NEP claims is “modeled on CAP.”¹²³

4 **Q: Is NEP’s \$2/month discount “modeled on CAP”?**

5 A: No. I discussed the structure of CAP, and the benefits delivered through the program, at
6 length in my direct testimony. This proposal bears no resemblance to CAP – or to DLC’s LIURP
7 and Hardship Fund programs.

8 **Q: What impact would NEP’s proposal have on rate affordability for tenants in newly**
9 **master metered properties?**

10 Without access to assistance otherwise available to tenants in individually metered
11 buildings, NEP’s master metering proposal – if approved and implemented - will exacerbate
12 existing rate unaffordability for low and moderate income tenants, placing them at increased risk
13 of increased termination and eviction.

14 Again, NEP’s business model provides an example of the impact NEP’s proposal may have
15 on the accessibility and affordability of electric service. NEP reports that it presently serves
16 [START CONFIDENTIAL] [REDACTED] [REDACTED] [REDACTED] [END CONFIDENTIAL] in
17 Pennsylvania, all within the PECO service territory.¹²⁴ In 2019, NEP reported 113 residential
18 terminations; in 2020, NEP reported 27 terminations; and in 2021, NEP reported 63 residential
19 terminations.¹²⁵ These are significant termination rates, with nearly [START CONFIDENTIAL]
20 [REDACTED] [END CONFIDENTIAL] of tenants served by NEP terminated for nonpayment in 2019,

¹²² Id. at 26: 13-16.

¹²³ NEP St. 1 at 26: 13-16.

¹²⁴ DLC to NEP, I-3. Confidential; CAUSE-PA to NEP I-3.

¹²⁵ DLC to NEP I-2.

1 assuming equivalent numbers of residential customers served by NEP. In comparison, the
2 termination rate for PECO’s residential customers was 6.2% in 2019, and 5.8% in 2018.¹²⁶ NEP
3 does not maintain data in an accessible manner about the number of “Disconnect Notices” that
4 NEP sent to Pennsylvania tenants per year.¹²⁷

5 Tenants serviced by NEP also experience high levels of arrears. NEP reported that in 2018,
6 [START CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] of its tenants had past due
7 balances; in 2019, [START CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] of its tenants
8 had past due balances; in 2020, [START CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL]
9 of its residential tenants had past due balances; and as of June 1, 2021, [START
10 CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] of its customers had past due balances.¹²⁸

11 NEP’s tenants with past due balances also carry significant arrears – with the total amount of
12 tenants’ past due balances of [START CONFIDENTIAL] [REDACTED]
13 [REDACTED] [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [END CONFIDENTIAL] The average (mean) level of arrears for customers indebted to NEP is
17 substantial – ranging between \$177 and \$694 in 2019; \$250-\$627 in 2020; and \$235-\$665 in
18 2021.¹³⁰

¹²⁶ Pa. PUC, BCS, 2019 Report on Universal Service and Collections Performance, at 13 (2020),
https://www.puc.pa.gov/General/publications_reports/pdf/EDC_NGDC_UniServ_Rpt2019.pdf.

¹²⁷ CAUSE-PA to NEP I-41.

¹²⁸ DLC to NEP, I-55. Confidential.

¹²⁹ Id.

¹³⁰ CAUSE-PA to NEP I-19.

1 **Q: NEP claims that it does not serve low income communities.¹³¹ Does this resolve your**
2 **concerns about affordability of service for master metered properties?**

3 A: No. DLC clearly serves households that struggle to pay their bill, as evidenced by the data
4 I just reviewed. Given the consequences of nonpayment to NEP are both service termination and
5 eviction, tenants who can afford to pay will pay for their service.

6 The fact is, NEP has no idea whether low income customers reside in properties serviced
7 by NEP, as it does not collect resident income data.¹³² NEP claims that it “generally serves
8 communities with relatively high rents” and that it does not believe that a “significant number” of
9 tenants in its communities are low income.¹³³ However, NEP does not provide information about
10 rents charged with which to assess that claim, or provide anything more than speculation that it
11 does not serve low income households. Indeed, even if NEP only serves high end rental properties,
12 there is no guarantee that a tenant will not lose their job or encounter other unexpected financial
13 hardship – such as unplanned medical or legal expenses - that may cause the household to struggle
14 financially for some period of time, or indefinitely. Without data on household income of those it
15 serves, it is impossible to determine how many low income customers reside in NEP’s serviced
16 communities.

17 That said, most important to this inquiry is not whether NEP serves low income customers,
18 but whether NEP’s proposal in this case will sever the ability of low income tenants to access
19 universal service programs to help maintain service to their home. NEP’s tariff proposal, if
20 approved, opens the way for various other master/sub metering companies to operate in DLC’s

¹³¹ CAUSE-PA to NEP I-13(C).

¹³² Id.

¹³³ Id.

1 service territory, which may provide submetering and billing services to a more diverse range of
2 communities than those serviced by NEP – including low income communities, who struggle to
3 maintain service without access to assistance.

4 Ms. Ringenbach claims that tenants will “never be charged more than they would pay if
5 they were individually metered residential customers of the utility, and if they participate in control
6 options made available to them, they will pay less.”¹³⁴ Ms. Ringenbach claims that utility rates are
7 determined in the following manner:¹³⁵

- 8 ○ NEP monitors approval rates of electric utilities, including riders and fees;
- 9 ○ NEP then applies utilities tariffed rates and rounds each component of the
- 10 rates down to the nearest cent before summing those components, to
- 11 allegedly ensure that the total bill amount does not exceed the amount that
- 12 would be applied by the utility.

13 However, as I noted above, I have concerns about NEP’s utility bundling and application
14 of fees and charges that are over and above the charges that an individually metered residential
15 consumer would otherwise pay for the exact same service, and I question NEP’s understanding of
16 Pennsylvania’s highly developed network of social safety-net programs, including CAP and
17 LIHEAP – as well as other established assistance programs. While NEP represents only one
18 example of the many companies that would be allowed to master meter and sub-meter if NEP’s
19 proposed tariff language were approved, the overall unaffordability of NEP’s rates and other
20 associated charges – including late fees – is a palpable example of the inherent risks of allowing
21 master metering and sub-metering, as proposed by NEP. NEP’s offer to provide a meager \$2 per
22 month bill discount is more than eclipsed by the added fees and charges NEP bakes into its rates.
23 In any event, NEP’s proposal would not apply to all those tenants who may be subject to master

¹³⁴ NEP St. 1 at 10: 8-10.

¹³⁵ Id. at 10: 14-23.

1 metering if NEP’s proposal were approved. In short, there is no evidence that “being a submetered
2 tenant behind a master meter is more economically beneficial to the tenant,” as Ms. Ringenbach
3 claims.¹³⁶ Quite the contrary, multifamily master metering can add substantial costs to tenants
4 compared to the cost of service for those served by an individual meter.

5 **Q: If NEP’s master metering proposal is approved, would it have an impact on customers**
6 **currently enrolled in DLC’s universal service programs?**

7 A: Yes. NEP’s proposal is not limited to new construction. If a multifamily building owner
8 were to re-meter the building, preexisting CAP participants would lose critical bill assistance they
9 have come to rely on when making ends meet.¹³⁷ For these CAP customers, NEP proposes that
10 remaining unforgiven arrears frozen through CAP “will be handled by [DLC] as they are with any
11 customer or CAP customer with a closed utility account.”¹³⁸ In other words, any deferred arrears
12 will come due immediately – stripping the tenant of the right to earn forgiveness on those arrears
13 over time.

14 **Q: Do you agree with Ms. Ringenbach that master metering will increase adoption of**
15 **conservation and energy efficiency measures?**

16 A: No. There is no evidence that master metering improves the overall energy efficiency of
17 properties – or otherwise reduces usage in individual tenant units.

18 While NEP touts its energy efficiency and carbon reduction programming as a benefit of
19 master metering,¹³⁹ NEP was unable to substantiate those claims.¹⁴⁰ Based on my review of NEP’s

¹³⁶ NEP St. 1 at 23:7-8.

¹³⁷ Id. at 27: 21- 28: 3.

¹³⁸ CAUSE-PA to NEP I-20(C).

¹³⁹ NEP St. 1 at 9-1.

¹⁴⁰ CAUSE-PA to NEP, I-25, I-65, I-70, I-71, I-75.

1 responses to discovery, it appears that NEP is largely removed from the property owner’s decisions
2 regarding installation of energy efficiency measures.

3 Contrary to Ms. Ringenbach’s claim, NEP’s service model cuts low income customers off
4 from the ability to utilize energy efficiency programs such as LIURP, which provides free,
5 comprehensive energy efficiency and conservation services to low income households.¹⁴¹ It also
6 prevents moderate and higher income households from accessing the enhanced incentives
7 available for comprehensive energy efficiency through DLC’s Act 129 programming. Perversely,
8 in charging tenants DLC’s residential rates, tenants still pay NEP for the costs of residential Act
9 129 programming – as well as LIURP, CAP, and a range of other programs operated by the public
10 utility. But tenants pay those costs to NEP, not to DLC, and are unable to access assistance through
11 the programs.

12 Ms. Ringenbach claims that “[w]hile the utility may perform an audit or offer energy
13 conservation suggestions, it is only the Property Owner that can make a decision to install or
14 implement conservation efforts,” and claims that tenants bear the costs but not the benefits of these
15 programs.¹⁴² This is simply not true, and evidences a fundamental misunderstanding of the services
16 provided through LIURP, Act 129, and the federal Weatherization Assistance Program – each of
17 which provides free or low cost energy efficiency and conservation measures to tenants, with
18 simple landlord approval. These programs are not limited to a simple audit, or suggestions to the
19 property owner. The programs provide thousands of dollars in energy efficiency improvements
20 that benefit both the tenant and the property owner– allowing the tenant to reduce their energy
21 consumption, improve the energy efficiency of their residence, and achieve meaningful bill - while

¹⁴¹ See DLC to NEP I-6.q.

¹⁴² NEP St 1 at 18-19.

1 also providing the landlord with tangible improvements to the property. NEP's submetering
2 structure makes tenants and their landlords ineligible for these free or low cost services,
3 undermining attempts to improve energy efficiency adoption.

4 Finally, there is no evidence for Ms. Ringenbach's claim that tenants misuse the system of
5 rebates offered by energy efficiency and conservation programs, in which tenants claim rebates
6 for a particular technology or device but fail to install the measure.¹⁴³ This is pure conjecture. NEP
7 has not offered any evidence that tenants regularly misuse energy efficiency and conservation
8 programs in this manner. Again, Ms. Ringenbach seems to have a fundamental misunderstanding
9 of LIURP, Act 129, and WAP programs, all of which provide substantial comprehensive direct
10 installation programming – wherein a contractor goes to the property and installs a range of
11 efficiency measures and other efficiency upgrades in the home. If NEP's proposal is approved,
12 tenants would no longer have access to these comprehensive programs to help reduce usage in
13 their home.

14 **Q: Having reviewed NEP's proposal and its consequences to residential tenants, what is**
15 **your overarching conclusion?**

16 A: NEP has put forth a tariff proposal that is woefully inadequate to serve the needs of
17 residential tenants in DLC's service territory. Rather than advance tenant protections, NEP's
18 proposal could sever the access of residential tenants who reside in buildings re-metered under
19 NEP's proposed tariff to a range of statutory, regulatory, and policy protections and programs.
20 These policies, protections, and programs each advance a significant public interest designed to
21 ensure that tenants can equitably, efficiently, and affordably access and maintain service to their

¹⁴³ NEP St. 1 at 19: 6-13.

1 rental unit. As such, NEP's tariff proposal is contrary to the public interest, unsupported by
2 evidence, and must be rejected.

3 **IV. DLC'S MASTER METERING PROPOSAL**

4 **Q: Do you support DLC master metering proposal, as described by DLC's expert**
5 **witness, Yvonne Phillips?**

6 A: Yes. As I noted briefly at the outset of my testimony, I am generally supportive of DLC's
7 proposal to allow master metering under the restrictive, very limited, and detailed conditions set
8 forth in DLC's proposal.

9 DLC's master metering proposal is designed to provide tenants with several important
10 protections. Critically, DLC's master metering proposal limits master metering to low income
11 supportive housing subject to long-term use restrictions, where the housing provider is responsible
12 for utility bills.¹⁴⁴ While customers under a master meter are not eligible for universal service
13 programs, limiting master metering to supportive low income housing, wherein utilities are paid
14 for by housing providers and rents charged to low-income are limited by law and most often based
15 on household income,¹⁴⁵ mitigates the concerns I have raised above related to tenant protections.
16 Moreover, master metering housing providers will be subject to the following additional
17 protections:¹⁴⁶

¹⁴⁴ DLC St. 6 at 7.

¹⁴⁵ Ehren Dohler, et al., Supportive Housing Helps Vulnerable People Live and Thrive in the Community, Center on Budget and Policy Priorities, available at: <https://www.cbpp.org/research/housing/supportive-housing-helps-vulnerable-people-live-and-thrive-in-the-community>.

¹⁴⁶ DLC St. 6 at 7-8.

- 1 ○ Providers are prohibited from reselling electricity delivered to their building, such
2 as through a tenant sub-metering arrangement, which would circumvent the many
3 tenant protections discussed above;
- 4 ○ Providers are required to participate in the Company’s EE&C and LIURP
5 programs, ensuring adoption of deep energy efficiency and conservation services;
- 6 ○ Providers are required to annually recertify compliance with master metering
7 requirements, including tenant’s household income or HCV [Housing Choice
8 Voucher] eligibility, as applicable to help to ensure that the property does not need
9 to become individually metered;
- 10 ○ Providers must post a security deposit, thereby significantly reducing, if not
11 eliminating, the additional complication and risk to all tenants in master metered
12 properties of either bearing the cost or losing when the owner/landlord/manager
13 defaults & fails to pay utility bills.

14 **Q: Do you agree with Ms. Ringenbach’s assertion that DLC’s proposal precludes tenants**
15 **from control of their utilities, as no submetering is provided.**

16 A: No. First of all, it’s important to remember that the broad-based current tariff that has been
17 in effect since 1981 requires each new building to be individually metered. Therefore, under the
18 current paradigm all tenants in buildings constructed in the last 40 years and for the foreseeable
19 future have control of their utilities and access to each of the regulatory and statutory public policy
20 protections that exist. DLC’s proposed tariff, as I noted, is a narrowly designed and very specific
21 exception intended to apply only to certified low-income housing providers that do not pass on
22 utility costs to residents. DLC is proposing to limit master metering to low income supportive
23 housing specifically *because* tenants in supportive housing are not responsible for their electric

1 costs. Rather, utility costs are paid for by the low income housing provider – which also provides
2 reduced rent based on the household’s ability to pay. Populations that live in supportive housing
3 are uniquely vulnerable populations, including Seniors, victims of domestic violence, individuals
4 who have recently experienced homelessness, individuals battling drug and alcohol addiction, and
5 other transitional populations working to regain financial stability.

6 By contrast, NEP’s proposal wrests control over utilities from tenants who are directly
7 responsible for utility payments. NEP claims that providing tenants with AMI or other smart meter
8 sub-metering technology will allow tenants to have control of their utility costs. But this
9 technology is already available to tenants in DLC’s service territory with individually metered
10 service. Ultimately, NEP’s proposal provides less control to residential tenants – not more.

11 **Q: Do you agree with Ms. Ringenbach’s criticism of DLC’s proposal as unduly limiting**
12 **to only low income supportive housing?**

13 A: No, as I have discussed in extensive detail, NEP’s proposed tariff places tenants at
14 substantial risk of losing protections currently afforded to residential customers with individual
15 meters. If any master metering tariff proposal is granted, robust limitations and protections must
16 be put into place to ensure that it is in the public interest and that all utility customers can maintain
17 access to utility services and safety-net protections.

18 **Q: Does this conclude your Rebuttal Testimony?**

19 A: Yes.

CAUSE-PA Statement 1-R
APPENDIX A

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 1

CAUSE-PA to NEP I-1. Please answer the following:

- A. Explain whether the charges for each utility service billed by NEP are itemized in detail such that a tenant can identify the exact charges for electric service and how that rate was calculated. If the charges for each utility service are not itemized, please explain how a residential consumer is able to calculate the exact charges for each service.
- B. Describe the payment posting rules utilized by NEP if a partial payment is received.
- C. Provide a copy of any internal policies, practices, guidelines, or similar written or electronic document which describes NEP's payment posting rules.
- D. Identify whether NEP terminates service to all billed utility services as a consequence of nonpayment of a single utility service.

RESPONSE:

- A. NEP's bills set out separate charges for each utility as well as the usage associated with such charges. See NEP Attachments to DLC Set I, No. 7. NEP communicates to residents that the rates charged are based on those of the local electric utility. In some jurisdictions where NEP operates, local utilities are required to provide a rate calculator online, so customers, whether tenants or not, can confirm their bills. NEP supports this service being available to customers. To NEP's knowledge this service is not required in Pennsylvania. See Response to DLC Set I, Nos. 6.a through 6.d.
- B. Payments received during normal business hours are applied same-day. Payments received after normal business hours are applied the next business day. All partial payments are applied to the oldest portion of the resident's balance first.
- C. See NEP Confidential Attachment CAUSE-PA Set I, No. 1. C.
- D. See Response to DLC Set I, No. 53.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: Vice President, Business Development

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 2

CAUSE-PA to NEP I-2. In the residential multifamily properties that NEP serves in
Pennsylvania, do tenants or occupants have the option to receive a
bill directly from the utility?

RESPONSE:

No. Not unique to NEP, master meter design is to have a single utility meter at the curb. NEP includes submetering to ensure tenants are billed and informed of their usage. However, master metering can occur without submetering in which case a tenant would be billed based on a formula or some other recovery by the property owner. In either scenario the utility customer for the total property is the master meter. The infrastructure behind the curb is not utility owned or used and therefore the physical construction does not provide for some tenants to be with a utility meter and others with a master meter. This would be impossible at a master-metered community.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 3

CAUSE-PA to NEP I-3. Please identify the address of each multifamily residential property and the number of submetered residential units for each building served by NEP in Pennsylvania, and provide a representative example of a bill provided to residents that includes any information that appears on the bill regarding the fees and charges included on the bill.

RESPONSE:

Address	Units	Electric	Water
2529 E Carson St, Pittsburgh, PA 15203	270	N	Y
4055 Ridge Ave, Philadelphia, PA 19129	416	Y	Y
335 E King St, Malvern, PA 19355	190	Y	N
330 Jacksonville Rd, Warminster, PA 18974	257	N	Y
1 Parker Ave, Philadelphia, PA 19128	149	Y	Y
600 Righters Ferry Rd, Bala Cynwyd, PA 19004	275	Y	Y
2323 Race St, Philadelphia, PA 19103	293	Y	Y
1350 Ventana Dr, Coraopolis, PA 15108	470	N	Y

See NEP Attachments to DLC Set I, No. 7 for representative bill sample; also NEP Attachment CAUSE-PA Set I, No. 3.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: Vice President, Business Development

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 5

CAUSE-PA to NEP I-5. Where is NEP headquartered?

RESPONSE:

Nationwide Energy Partners, LLC is headquartered in Columbus, OH. Physical address:

230 West St, Suite 150
Columbus, OH 43215

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 6

CAUSE-PA to NEP I-6. What amount of time must a residential customer be in arrears
and/or what level of arrears must a residential tenant accrue to be
considered eligible for termination?

RESPONSE:

In communities where disconnection is permitted by NEP's contract with the property owner, residents receive a Disconnect Notice with their next bill when their accounts have at least \$100.00 of charges for electric usage that is past due at the time of their next bill being sent.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Mindy Strong
Title: Resident Support Supervisor

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 7

CAUSE-PA to NEP I-7. Please indicate whether NEP provides notice to tenants prior to termination, and specifically describe what notice is provided to tenants prior to termination and when such notice is provided to tenants. Please provide a representative sample of all written notices, call scripts, or other written or electronic notices, policies, procedures, or standards governing notice of termination described in response to this question.

RESPONSE:

Yes. NEP provides written notice in the form of a Disconnect Notice sent with eligible residents' bills, notice via autodialer several days prior to disconnection, and notice via in-person telephone call on the day the resident is eligible for disconnection. See Response to CAUSE-PA Set I, No. 6, Response to DLC Set I, Nos. 6.i, 6.k, 6.l, and 7.c., and NEP Confidential Attachment CAUSE-PA Set I, No. 7.

Docket Nos.: R-2021-3024750; C-2021-3025538
 C-2021-3025462; C-2021-3026057
 Sponsor: Drew Romig
 Title: Corporate Counsel

Nationwide Energy Partners, LLC
 Response to The Coalition for Affordable Utility Services and Energy Efficiency in
 Pennsylvania Interrogatories, Set I, No. 12

CAUSE-PA to NEP I-12. Please identify every other charge or fee assessed by NEP on residential tenants for each of the residential properties NEP serves in Pennsylvania. For each charge or fee please identify (1) the amount of the charge or fee; (2) the purpose of the charge or fee; (3) the conditions under which the charge or fee are assessed to tenants; (4) the consequences to tenants for non-payment of the charge or fee.

RESPONSE:

NEP has limited its response below to the relevant communities, i.e. those billed by NEP for electric service. NEP bills residents for the following:

4055 Ridge Ave, Philadelphia, PA 19129	<u>Charge</u>
Electric Usage	Based on current PECO default service tariff, subject to Winter Discount Rate*
Water Usage	Based on metered pro-rata share of master bill
Water Billing Fee	\$3.50
Community Charge (Trash collection)	\$10.00

[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

335 E King St, Malvern, PA 19355	<u>Charge</u>
Electric Usage	Based on current PECO default service tariff
Water Usage	Based on metered pro-rata share of master bill
Water Billing Fee	\$4.00

1 Parker Ave, Philadelphia, PA 19128	<u>Charge</u>
Electric Usage	Based on current PECO default service tariff
Water Usage	Based on metered pro-rata share of master bill
Water Billing Fee	\$4.00

600 Righters Ferry Rd, Bala Cynwyd, PA 19004	<u>Charge</u>
Electric Usage	Based on current PECO default service tariff
Water Usage	Based on metered pro-rata share of master bill
Water Billing Fee	\$4.00
NEP Energy Discount	(\$2.00)

2323 Race St, Philadelphia, PA 19103	<u>Charge</u>
Electric Usage	Based on current PECO default service tariff
Water Usage	Based on metered pro-rata share of master bill
Water Billing Fee	\$5.00
NEP Energy Discount	(\$3.00)

Water billing fees: At communities where a water billing fee is charged, the property owner has employed NEP to submeter water consumption and bill residents their portion of the master meter bill based on their consumption. Residents are billed the bulk, commercial rate for water. NEP charges a “water billing fee” to cover the administrative costs of this action. Pursuant to NEP’s contract with the property owner, NEP is authorized and directed to collect and retain this fee.

Community charges: In order to simplify community billing by presenting residents with a singular bill for all services provided by the property owner and payable by residents pursuant to their leases, NEP may add certain charges to its bills as directed by the property owner. This is a fee-free service, and may include trash collection, community wi-fi, and the like.

NEP Energy Discount: This is a credit to residents’ bills that is applied at certain communities where NEP’s contract with the property owner so directs. The purpose of this credit is twofold: both (1) to provide an additional layer of assurance that residents do not pay more than they would with the local utility, and (2) to approximate the average savings residents may realize by shopping their load to competitive generation suppliers.

In addition to the above, the following fees and charges may apply:
Security deposit: See Response to CAUSE-PA Set I, No. 44

Late fee: See Response to CAUSE-PA Set I, No. 46

Meter Testing Deposit: See Response to CAUSE-PA Set I, No. 28

Docket Nos.: R-2021-3024750; C-2021-3025538
 C-2021-3025462; C-2021-3026057

Sponsor: Winston Frost
 Title: Billing Manager

Nationwide Energy Partners, LLC
 Response to The Coalition for Affordable Utility Services and Energy Efficiency in
 Pennsylvania Interrogatories, Set I, No. 13

CAUSE-PA to NEP I-13. See NEP Response to DLC, Set I, No. 2. For 2016 to date in 2021, disaggregated by year and month, please indicate:

- A. How many residential tenants were terminated for non-payment at each residential property served by NEP in Pennsylvania, disaggregated by building location;
- B. How many residential tenants were terminated for reasons other than non-payment at each residential property served by NEP in Pennsylvania, disaggregated by building location; and
- C. How many residential tenants identified in subparts (A) and (B) were low income (i.e. those with household incomes at or below 150% of the Federal Poverty Level) at each residential property served by NEP in Pennsylvania, disaggregated by building location.

RESPONSE:

A.*	2016	2017	2018	2019	2020	2021
4055 Ridge Ave, Philadelphia, PA 19129	91	0	4	91	21	35
335 E King St, Malvern, PA 19355	1	0	0	0	0	0
1 Parker Ave, Philadelphia, PA 19128	16	0	0	0	0	0
600 Righters Ferry Rd, Bala Cynwyd, PA 19004	0	0	0	22	6	28
2323 Race St, Philadelphia, PA 19103	n/a	n/a	n/a	n/a	n/a	0

*Response covers only communities billed for electric service by NEP. Figures represent number of terminations and do not account for some residents being terminated

multiple times. Therefore, the number of “residential tenants” terminated, as prompted by the question, is likely less than the figures as represented above, but is not readily ascertainable based on the format in which NEP maintains this data.

B. None.

C. NEP does not collect resident income data. Because NEP does not serve any low-income-specific communities, such as those that participate in Section 8 voucher programs, and NEP generally serves communities with relatively high rents, NEP does not believe there to be any significant number of residents in communities it serves with household incomes at or below 150% of the Federal Poverty Level.

Docket Nos.: R-2021-3024750; C-2021-3025538
 C-2021-3025462; C-2021-3026057
 Sponsor: Jacki Daniels
 Title: Senior Account Manager

Nationwide Energy Partners, LLC
 Response to The Coalition for Affordable Utility Services and Energy Efficiency in
 Pennsylvania Interrogatories, Set I, No. 19

CAUSE-PA to NEP I-19. See NEP Response to DLC, Set I, 55. For 2016 to date in 2021, disaggregated by year, please identify for each NEP-submetered residential building in Pennsylvania, the mean and median of past-due balances of residential tenants identified as having past-due balances.

RESPONSE:

NEP's response has been limited to 2018 through 2021 as agreed by CAUSE-PA.

[as of June 1 in each year]		2018	2019	2020	2021
4055 Ridge Ave, Philadelphia, PA 19129	Mean	\$398.38	\$177.17	\$249.93	\$282.46
	Median	\$179.70	\$151.90	\$193.55	\$181.92
335 E King St, Malvern, PA 19355	Mean	\$256.78	\$340.69	\$252.99	\$235.43
	Median	\$186.87	\$163.79	\$149.35	\$172.10
1 Parker Ave, Philadelphia, PA 19128	Mean	\$276.24	\$354.99	\$627.12	\$286.30
	Median	\$139.01	\$190.52	\$545.02	\$153.44
600 Righters Ferry Rd, Bala Cynwyd, PA 19004	Mean	\$362.66	\$694.68	\$458.17	\$665.09
	Median	\$413.90	\$363.10	\$433.94	\$271.50
2323 Race St, Philadelphia, PA 19103	Mean	n/a	n/a	n/a	\$0.00
	Median	n/a	n/a	n/a	\$0.00

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 20

CAUSE-PA to NEP I-20. See NEP St. 1 at 27: 21 – 28:3, in which Ms. Teresa Ringenbach disagrees that master metering should only be provided to new service. Please specifically describe:

- A. What information and/or notices will tenants in a property that becomes master metered be provided? Please provide a copy of any information and/or notices that Nationwide intends to provide to such tenants.
- B. Will a tenant be given the opportunity to opt out of master metering? If the answer to this question is yes or in the affirmative, please specifically describe which tenants would be able to opt out of master metering, and the process by which they would opt out.
- C. Does NEP intend to allow customers enrolled in a Customer Assistance Program (CAP) to continue to pay their applicable CAP rates of service? If the answer to this question is no or in the negative, please describe the process by which CAP customers in a master metered property will be required to exit CAP, and what will happen with any pre-program arrears if and when the customer exits CAP.

RESPONSE:

- A. Tenants will be notified of a submetering arrangement, and will affirmatively consent to such arrangement upon reviewing and signing their lease or a renewal thereof. NEP requires, as a non-negotiable part of its contracts, that its customers insert language substantially similar to the “Form Lease Language” in the contracts included in NEP Confidential Attachment to DLC Set I, No. 4. and will not convert a property to submetered service until the property owner confirms that all tenants have executed leases containing such language.
- B. No. See response to CAUSE-PA Set I, No. 2.
- C. No. After notice as provided in Response A the customer will begin service with NEP. Any remaining arrears will be handled by Duquesne Light as they are with any customer or CAP customer who has a closed utility account.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 23

CAUSE-PA to NEP I-23. Does NEP impose occupant liability on utility debts accrued in the name of an adult occupant not otherwise listed on the bill? If the answer to this question is yes, please provide a copy of any written policies or procedures governing how and when occupant liability is imposed.

RESPONSE:

For clarity, NEP does not unilaterally impose liability on any party. Submetered utility bills are considered a portion of rent in the arrangement between tenants and property owners, and any tenant whose name appears on the lease for the unit will be responsible for payment of utility bills in accordance with the terms of their lease. NEP acts as directed by the property owner to collect the appropriate amounts from the appropriate parties.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 24

CAUSE-PA to NEP I-24. If a resident is terminated for nonpayment of a utility bill, how does NEP collect from that resident? Please describe and provide a copy of any and all written policies or procedures describing NEP's collections activities, and provide a copy of any contract with a third party to engage in collections on behalf of NEP.

RESPONSE:

See NEP response to DLC Set I, No. 6.k regarding payment plans and NEP response to CAUSE-PA Set I, No. 8 regarding collections. In addition, NEP sometimes does not collect from residents and elects to absorb the bad debt. See NEP Confidential Attachment CAUSE-PA Set I, No. 24.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: Vice President, Business Development

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 25

CAUSE-PA to NEP I-25. For each residential master metered building NEP serves in Pennsylvania, please provide a copy of any and all bills, contracts, service agreements, and/or financing agreements for energy efficiency services. To the extent not already listed in the produced documents, please provide an itemized list of all energy efficiency measures installed in each residential property, the cost associated with each measure, and the projected energy and bill savings associated with each measure.

RESPONSE:

Because NEP is not the property owner, may not always be aware of every energy efficiency measure property owners choose to install and therefore cannot provide the requested information. However, NEP's master-metered service program provides a single baseline against which to gauge the effectiveness of efficiency measures at the property.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Rick Eurich

Title: Controller

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 31

CAUSE-PA to NEP I-31. For each residential building NEP serves or served in Pennsylvania since January 2011, please identify the building address, the electric and/or natural gas service territory, the date (month, day, and year) that rates were changed to reflect a change in distribution rates and/or generation charges, and the amount of the distribution and/or generation charges assessed before and after the change.

RESPONSE:

NEP has limited its response to 2018 through 2021 pursuant to discussion with CAUSE-PA. Unless otherwise indicated, the rates provided apply to all residents of all buildings submetered for electric service in Pennsylvania by NEP, all of which are in the PECO service territory. NEP does not presently submeter natural gas in Pennsylvania.

See NEP Attachment CAUSE-PA Set I, No. 31.

PECO

Residential - Gas Heat

<https://www.peco.com/CustomerService/RatesandPricing/RateInformation/Pages/CurrentElectric.aspx>

Customer Charge (\$/mo)
Generation Charge (\$/kWh)
Transmission (\$/kWh)
Distribution (\$/kWh)
NEP Winter Discount - Over 800 kWh
Dobson Discount over 1500 kWh

Test Calculation

kWh

0-800

800-1500

Over 1500

Bill

Generation

Transmission

Distribution

\$/kWh

Rate Change mo-mo

Rate Change YTD

Customer Charge

48: Customer Charge

39: Provision for the Recovery of Consumer Education Plan

45: Distribution System Improvement Charge

31: State Tax Adjustment Clause

33: Federal Tax Adjustment Clause

Total Customer Charge

Generation

32: Generation Supply Adjustment

38: Universal Service Fund

Total Generation

Transmission

40: Transmission Service Charge

41: Non-Bypassable Transmission Charge

Total Transmission

Distribution

37: Nuclear Decommissioning Cost Adjustment

48: Variable Distribution Service Charge

42: SMART METER COST RECOVERY SURCHARGE

43: Provision for Tax Accounting Repair Credit

44: Provision for the Recovery of Energy Efficiency and Conservation

45: Distribution System Improvement Charge

31: State Tax Adjustment Clause

33: Federal Tax Adjustment Clause

Total Distribution

Federal Tax Adjustment

Fixed
Distribution

NEP Winter Discount - Over 800 kWh Dobson Discount over 1500 kWh

INPUTS

Base Charges

49: Customer Charge
49: Variable Distribution Service Charge
34: Generation Supply Adjustment

Riders

39: Nuclear Decommissioning Cost Adjustment
40: Universal Service Fund
41: Provision for the Recovery of Consumer Education Plan
42: Transmission Service Charge
43: Non-Bypassable Transmission Charge
44: Provision for Tax Accounting Repair Credit
45: Provision for the Recovery of Energy Efficiency and Conservation
46: Distribution System Improvement Charge
33: Federal Tax Adjustment Credit (FTAC)

Taxes

32: State Tax Adjustment Clause

Discounts

NEP Winter Discount - Over 800 kWh
Dobson Discount over 1500 kWh

42: SMART METER COST RECOVERY SURCHARGE

3/1/2018 Winter	4/1/2018 Winter	5/1/2018 Winter	6/1/2018 Summer	7/1/2018 Summer	8/1/2018 Summer	9/1/2018 Summer	10/1/2018 Winter
8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46
0.06214	0.06214	0.06214	0.06432	0.06432	0.06432	0.06088	0.06088
0.00990	0.00990	0.00990	0.00848	0.00848	0.00848	0.00848	0.00848
0.06345	0.06345	0.06345	0.06643	0.06643	0.06643	0.06643	0.06643
-0.04065	-0.04065	-0.04065	0.00000	0.00000	0.00000	0.00000	-0.04074
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
700	700	700	700	700	700	700	700
700	700	700	700	700	700	700	700
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
\$ 103.30	\$ 103.30	\$ 103.30	\$ 105.92	\$ 105.92	\$ 105.92	\$ 103.51	\$ 103.51
\$ 43.50	\$ 43.50	\$ 43.50	\$ 45.02	\$ 45.02	\$ 45.02	\$ 42.62	\$ 42.62
\$ 6.93	\$ 6.93	\$ 6.93	\$ 5.94	\$ 5.94	\$ 5.94	\$ 5.94	\$ 5.94
\$ 52.88	\$ 52.88	\$ 52.88	\$ 54.96	\$ 54.96	\$ 54.96	\$ 54.96	\$ 54.96
\$ 0.1476	\$ 0.1476	\$ 0.1476	\$ 0.1513	\$ 0.1513	\$ 0.1513	\$ 0.1479	\$ 0.1479
	0.0%	0.0%	2.5%	0.0%	0.0%	-2.3%	0.0%
	0%	0%	3%	3%	3%	0%	0%
8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
-0.000845	-0.000845	-0.000845	-0.000845	-0.000845	-0.000845	-0.000845	-0.000845
8.459155	8.459155	8.459155	8.459155	8.459155	8.459155	8.459155	8.459155
0.06401	0.06401	0.06401	0.06619	0.06619	0.06619	0.06275	0.06275
-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187
0.06214	0.06214	0.06214	0.06432	0.06432	0.06432	0.06088	0.06088
0.00698	0.00698	0.00698	0.00532	0.00532	0.00532	0.00532	0.00532
0.00292	0.00292	0.00292	0.00316	0.00316	0.00316	0.00316	0.00316
0.00990	0.00990	0.00990	0.00848	0.00848	0.00848	0.00848	0.00848
-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
0.06359	0.06359	0.06359	0.06520	0.06520	0.06520	0.06520	0.06520
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019
0.00237	0.00237	0.00237	0.00374	0.00374	0.00374	0.00374	0.00374
-6.359E-06	-6.359E-06	-6.359E-06	-6.52E-06	-6.52E-06	-6.52E-06	-6.52E-06	-6.52E-06
0.06345	0.06345	0.06345	0.06643	0.06643	0.06643	0.06643	0.06643

	-0.04065	-0.04065	-0.04065	-0.04177	-0.04177	-0.04177	-0.04074	-0.04074
	-0.02032	-0.02032	-0.02032	-0.02089	-0.02089	-0.02089	-0.02037	-0.02037
\$/mo	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
\$/kWh	0.06359	0.06359	0.06359	0.06520	0.06520	0.06520	0.06520	0.06520
\$/kWh	0.06401	0.06401	0.06401	0.06619	0.06619	0.06619	0.06275	0.06275
\$/kWh	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
\$/kWh	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187
\$/mo	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
\$/kWh	0.00698	0.00698	0.00698	0.00532	0.00532	0.00532	0.00532	0.00532
\$/kWh	0.00292	0.00292	0.00292	0.00316	0.00316	0.00316	0.00316	0.00316
\$/kWh	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019
\$/kWh	0.00237	0.00237	0.00237	0.00374	0.00374	0.00374	0.00374	0.00374
%								
%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
	-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
	-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%
\$/kWh	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

11/1/2018 Winter	12/1/2018 Winter	1/1/2019 Winter	2/1/2019 Winter	3/1/2019 Winter	4/1/2019 Winter	5/1/2019 Winter	6/1/2019 Summer
8.51	8.51	10.00	10.00	10.00	9.97	9.97	9.97
0.06275	0.06275	0.06241	0.06241	0.06526	0.06526	0.06526	0.06526
0.00532	0.00532	0.00580	0.00580	0.00580	0.00580	0.00580	0.00580
0.06754	0.06287	0.06240	0.06240	0.06240	0.06222	0.06222	0.06222
-0.04068	-0.03928	-0.02693	-0.03918	-0.04004	-0.03998	-0.03998	0.00000
0.00000	-0.01964	-0.01346	-0.01959	0.00000	0.00000	0.00000	0.00000
<hr/>							
700	700	700	700	700	700	700	700
700	700	700	700	700	700	700	700
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
\$ 103.43	\$ 100.16	\$ 101.43	\$ 101.43	\$ 103.42	\$ 103.27	\$ 103.27	\$ 103.27
\$ 43.93	\$ 43.93	\$ 43.69	\$ 43.69	\$ 45.68	\$ 45.68	\$ 45.68	\$ 45.68
\$ 3.72	\$ 3.72	\$ 4.06	\$ 4.06	\$ 4.06	\$ 4.06	\$ 4.06	\$ 4.06
\$ 55.78	\$ 52.52	\$ 53.68	\$ 53.68	\$ 53.68	\$ 53.53	\$ 53.53	\$ 53.53
\$ 0.1478	\$ 0.1431	\$ 0.1449	\$ 0.1449	\$ 0.1477	\$ 0.1475	\$ 0.1475	\$ 0.1475
-0.1%	-3.2%	1.3%	0.0%	2.0%	-0.2%	0.0%	0.0%
0%	-3%	0%	0%	2%	2%	2%	2%
<hr/>							
8.45	8.45	10	10	10	10	10	10
0	0	0	0	0	0	0	0
0.058305	0.058305	0	0	0	-0.029	-0.029	-0.029
-0.0008508	-0.0008508	-0.001	-0.001	-0.001	-0.0009971	-0.0009971	-0.0009971
8.5074542	8.5074542	9.999	9.999	9.999	9.9700029	9.9700029	9.9700029
0.06275	0.06275	0.06241	0.06241	0.06526	0.06526	0.06526	0.06526
0	0	0	0	0	0	0	0
0.06275	0.06275	0.06241	0.06241	0.06526	0.06526	0.06526	0.06526
0.00532	0.00532	0.0058	0.0058	0.0058	0.0058	0.0058	0.0058
0	0	0	0	0	0	0	0
0.00532	0.00532	0.00580	0.00580	0.00580	0.00580	0.00580	0.00580
0	0	0	0	0	0	0	0
0.06710	0.06243	0.06241	0.06241	0.06241	0.06241	0.06241	0.06241
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0.00045	0.00045	0.00000	0.00000	0.00000	-0.00018	-0.00018	-0.00018
-6.755E-06	-6.288E-06	-6.241E-06	-6.241E-06	-6.241E-06	-6.223E-06	-6.223E-06	-6.223E-06
0.06754	0.06287	0.06240	0.06240	0.06240	0.06222	0.06222	0.06222

-6.54500 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000
 -0.04085 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000

-0.04068 -0.03928 -0.02693 -0.03918 -0.04004 -0.03998 -0.03998 -0.03998
-0.02034 -0.01964 -0.01346 -0.01959 -0.02002 -0.01999 -0.01999 -0.01999

8.45 8.45 10.00 10.00 10.00 10.00 10.00 10.00
 0.06710 0.06243 0.06241 0.06241 0.06241 0.06241 0.06241 0.06241
 0.06275 0.06275 0.06241 0.06241 0.06526 0.06526 0.06526 0.06526

-0.0006 -0.0006 -0.0006 -0.0006 -0.0006 -0.0006 -0.0006 -0.0006
 -0.00187 -0.00187 -0.00171 -0.00171 -0.00171 -0.00171 -0.00171 -0.00171
 -0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01
 0.00532 0.00532 0.0058 0.0058 0.0058 0.0058 0.0058 0.0058
 0.00316 -0.00151 -0.00151 -0.00151 -0.00151 -0.00151 -0.00151 -0.00151
 -0.0019 -0.0019 0 0 0 0 0 0
 0.00374 0.00374 0.00374 0.00374 0.00374 0.00374 0.00374 0.00374
 0.69% 0.69% 0.00% 0.00% 0.00% -0.29% -0.29% -0.29%
 -65.45% 0.00% 0.00% 0.00% 0.00%

-0.01% -0.01% -0.01% -0.01% -0.01% -0.01% -0.01% -0.01%

-30% -30% -30% -30% -30% -30% -30% -30%
 -15% -15% -15% -15% -15% -15% -15% -15%

0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000

7/1/2019 Summer	8/1/2019 Summer	9/1/2019 Summer	10/1/2019 Winter	11/1/2019 Winter	12/1/2019 Winter	1/1/2020 Winter	2/1/2020 Winter
9.97	9.97	9.97	10.46	10.46	10.46	9.97	9.97
0.06211	0.06211	0.06262	0.06262	0.06262	0.06144	0.06144	0.06144
0.00570	0.00570	0.00570	0.00570	0.00570	0.00623	0.00623	0.00623
0.06412	0.06412	0.06412	0.06653	0.06653	0.06844	0.06505	0.06505
0.00000	0.00000	0.00000	-0.04139	-0.04139	-0.04179	-0.03982	-0.03982
0.00000	0.00000	0.00000	0.00000	0.00000	-0.02090	-0.01991	-0.01991
700	700	700	700	700	700	700	700
700	700	700	700	700	700	700	700
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
\$ 102.32	\$ 102.32	\$ 102.68	\$ 104.85	\$ 104.85	\$ 105.73	\$ 102.87	\$ 102.87
\$ 43.48	\$ 43.48	\$ 43.83	\$ 43.83	\$ 43.83	\$ 43.01	\$ 43.01	\$ 43.01
\$ 3.99	\$ 3.99	\$ 3.99	\$ 3.99	\$ 3.99	\$ 4.36	\$ 4.36	\$ 4.36
\$ 54.86	\$ 54.86	\$ 54.86	\$ 57.03	\$ 57.03	\$ 58.36	\$ 55.51	\$ 55.51
\$ 0.1462	\$ 0.1462	\$ 0.1467	\$ 0.1498	\$ 0.1498	\$ 0.1510	\$ 0.1470	\$ 0.1470
-0.9%	0.0%	0.3%	2.1%	0.0%	0.8%	-2.7%	0.0%
1%	1%	1%	3%	3%	4%	1%	1%
9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
-0.000997	-0.000997	-0.000997	-0.000997	-0.000997	-0.000997	0	0
			0.489527	0.489527	0.489527	0	0
9.969003	9.969003	9.969003	10.45853	10.45853	10.45853	9.97	9.97
0.06211	0.06211	0.06262	0.06262	0.06262	0.06144	0.06144	0.06144
0	0	0	0	0	0	0	0
0.06211	0.06211	0.06262	0.06262	0.06262	0.06144	0.06144	0.06144
0.0057	0.0057	0.0057	0.0057	0.0057	0.00623	0.00623	0.00623
0	0	0	0	0	0	0	0
0.00570	0.00570	0.00570	0.00570	0.00570	0.00623	0.00623	0.00623
0	0	0	0	0	0	0	0
0.06413	0.06413	0.06413	0.06342	0.06342	0.06524	0.06505	0.06505
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
-6.413E-06	-6.413E-06	-6.413E-06	-6.342E-06	-6.342E-06	-6.524E-06	0	0
			0.0031139	0.0031139	0.0032033	0	0
0.06412	0.06412	0.06412	0.06653	0.06653	0.06844	0.06505	0.06505

0.00000	0.00000	0.00000	0.48953	0.48953	0.48953	0.00000	0.00000
0.00000	0.00000	0.00000	0.00311	0.00311	0.00320	0.00000	0.00000

-0.03958	-0.03958	-0.03973	-0.04139	-0.04139	-0.04179	-0.03982	-0.03982
-0.01979	-0.01979	-0.01987	-0.02069	-0.02069	-0.02090	-0.01991	-0.01991

9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97
0.06413	0.06413	0.06413	0.06342	0.06342	0.06524	0.06505	0.06505
0.06211	0.06211	0.06262	0.06262	0.06262	0.06144	0.06144	0.06144

-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00261	-0.00261
-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
0.0057	0.0057	0.0057	0.0057	0.0057	0.00623	0.00623	0.00623
0.00083	0.00083	0.00083	0.00083	0.00083	0.00265	0.00265	0.00265
0	0	0	0	0	0	0	0
0.00312	0.00312	0.00312	0.00312	0.00312	0.00312	0.00312	0.00312
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	4.91%	4.91%	4.91%	0.00%	0.00%

-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%
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-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
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3/1/2020 Winter	4/1/2020 Winter	5/1/2020 Winter	6/1/2020 Summer	7/1/2020 Summer	8/1/2020 Summer	9/1/2020 Summer	10/1/2020 Winter
9.97	9.98	9.98	9.98	9.99	9.99	10.00	10.00
0.05972	0.05972	0.05972	0.05888	0.05888	0.05888	0.05852	0.05852
0.00623	0.00623	0.00623	0.00517	0.00517	0.00517	0.00517	0.00517
0.06505	0.06507	0.06507	0.06571	0.06574	0.06574	0.06570	0.06570
-0.03930	-0.03931	-0.03931	0.00000	0.00000	0.00000	0.00000	-0.03884
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

700	700	1600	1600	1600	1600	1600	1600
700	700	800	800	800	800	800	800
0	0	700	700	700	700	700	700
0	0	100	100	100	100	100	100
\$ 101.67	\$ 101.70	\$ 192.11	\$ 217.61	\$ 217.65	\$ 217.65	\$ 217.01	\$ 189.83
\$ 41.80	\$ 41.80	\$ 95.55	\$ 94.21	\$ 94.21	\$ 94.21	\$ 93.63	\$ 93.63
\$ 4.36	\$ 4.36	\$ 9.97	\$ 8.27	\$ 8.27	\$ 8.27	\$ 8.27	\$ 8.27
\$ 55.51	\$ 55.54	\$ 86.59	\$ 115.13	\$ 115.17	\$ 115.17	\$ 115.11	\$ 87.93
\$ 0.1452	\$ 0.1453	\$ 0.1201	\$ 0.1360	\$ 0.1360	\$ 0.1360	\$ 0.1356	\$ 0.1186
-1.2%	0.0%	88.9%	13.3%	0.0%	0.0%	-0.3%	-12.5%
0%	0%	89%	115%	115%	115%	114%	87%

9.97	9.98	9.98	9.98	9.98	9.98	9.98	9.98
0	0	0	0	0	0	0	0
0	0.003992	0.003992	0.003992	0.007984	0.007984	0.007984	0.007984
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0.00998	0.00998
9.97	9.983992	9.983992	9.983992	9.987984	9.987984	9.997964	9.997964

0.05972	0.05972	0.05972	0.05888	0.05888	0.05888	0.05852	0.05852
0	0	0	0	0	0	0	0
0.05972	0.05972	0.05972	0.05888	0.05888	0.05888	0.05852	0.05852

0.00623	0.00623	0.00623	0.00517	0.00517	0.00517	0.00517	0.00517
0	0	0	0	0	0	0	0
0.00623	0.00623	0.00623	0.00517	0.00517	0.00517	0.00517	0.00517

0	0	0	0	0	0	0	0
0.06505	0.06505	0.06505	0.06569	0.06569	0.06569	0.06558	0.06558
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0.00000	0.00002	0.00002	0.00002	0.00005	0.00005	0.00005	0.00005
0	0	0	0	0	0	0	0
0	0	0	0	0	0	6.558E-05	6.558E-05
0.06505	0.06507	0.06507	0.06571	0.06574	0.06574	0.06570	0.06570

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00998	0.00998
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00007	0.00007

-0.03930	-0.03931	-0.03931	-0.03893	-0.03894	-0.03894	-0.03884	-0.03884
-0.01965	-0.01965	-0.01965	-0.01946	-0.01947	-0.01947	-0.01942	-0.01942

9.97	9.98	9.98	9.98	9.98	9.98	9.98	9.98
0.06505	0.06505	0.06505	0.06569	0.06569	0.06569	0.06558	0.06558
0.05972	0.05972	0.05972	0.05888	0.05888	0.05888	0.05852	0.05852

-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261
-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
0.00623	0.00623	0.00623	0.00517	0.00517	0.00517	0.00517	0.00517
0.00265	0.00265	0.00265	0.00355	0.00355	0.00355	0.00355	0.00355
0	0	0	0	0	0	-0.00011	-0.00011
0.00312	0.00312	0.00312	0.00286	0.00286	0.00286	0.00286	0.00286
0.00%	0.04%	0.04%	0.04%	0.08%	0.08%	0.08%	0.08%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.10%	0.10%

0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
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11/1/2020 Winter	12/1/2020 Winter	1/1/2021 Winter	2/1/2021 Winter	3/1/2021 Winter	4/1/2021 Winter	5/1/2021 Winter	6/1/2021 Summer
10.00	10.00	10.01	10.01	10.01	10.09	10.09	10.09
0.05852	0.05920	0.05920	0.05920	0.05761	0.05761	0.05761	0.05817
0.00517	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00585
0.06570	0.06548	0.06630	0.06630	0.06630	0.06654	0.06654	0.06507
-0.03884	-0.03894	-0.03917	-0.03917	-0.03869	-0.03876	-0.03876	0.00000
0.00000	-0.01947	-0.01958	-0.01958	0.00000	0.00000	0.00000	0.00000
1600	1600	1600	1600	1600	1600	1600	1600
800	800	800	800	800	800	800	800
700	700	700	700	700	700	700	700
100	100	100	100	100	100	100	100
\$ 189.83	\$ 188.37	\$ 189.53	\$ 189.53	\$ 189.28	\$ 189.69	\$ 189.69	\$ 216.64
\$ 93.63	\$ 94.72	\$ 94.72	\$ 94.72	\$ 92.18	\$ 92.18	\$ 92.18	\$ 93.07
\$ 8.27	\$ 8.10	\$ 8.10	\$ 8.10	\$ 8.10	\$ 8.10	\$ 8.10	\$ 9.36
\$ 87.93	\$ 85.55	\$ 86.71	\$ 86.71	\$ 89.01	\$ 89.42	\$ 89.42	\$ 114.21
\$ 0.1186	\$ 0.1177	\$ 0.1185	\$ 0.1185	\$ 0.1183	\$ 0.1186	\$ 0.1186	\$ 0.1354
0.0%	-0.8%	0.6%	0.0%	-0.1%	0.2%	0.0%	14.2%
87%	86%	87%	87%	87%	87%	87%	114%
9.98	9.98	9.98	9.98	9.98	10.02	10.02	10.02
0	0	0	0	0	0	0	0
0.007984	0.007984	0.03493	0.03493	0.03493	0.073146	0.073146	0.073146
0	0	-0.002003	-0.002003	-0.002003	-0.0020186	-0.0020186	-0.0020186
0.00998	0.00998	0	0	0	0	0	0
9.997964	9.997964	10.012927	10.012927	10.012927	10.091127	10.091127	10.091127
0.05852	0.05920	0.05920	0.05920	0.05761	0.05761	0.05761	0.05817
0	0	0	0	0	0	0	0
0.05852	0.05920	0.05920	0.05920	0.05761	0.05761	0.05761	0.05817
0.00517	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00585
0	0	0	0	0	0	0	0
0.00517	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00585
0	0	0	0	0	0	0	0
0.06558	0.06536	0.06609	0.06609	0.06609	0.06609	0.06609	0.06463
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0.00005	0.00005	0.00022	0.00022	0.00022	0.00046	0.00046	0.00046
0	0	-1.326E-05	-1.326E-05	-1.326E-05	-1.331E-05	-1.331E-05	-1.302E-05
6.558E-05	6.536E-05	0	0	0	0	0	0
0.06570	0.06548	0.06630	0.06630	0.06630	0.06654	0.06654	0.06507

0.00998	0.00998	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00007	0.00007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

-0.03884	-0.03894	-0.03917	-0.03917	-0.03869	-0.03876	-0.03876	-0.03873
-0.01942	-0.01947	-0.01958	-0.01958	-0.01935	-0.01938	-0.01938	-0.01936

9.98	9.98	9.98	9.98	9.98	10.02	10.02	10.02
0.06558	0.06536	0.06609	0.06609	0.06609	0.06609	0.06609	0.06463
0.05852	0.05920	0.05920	0.05920	0.05761	0.05761	0.05761	0.05817

-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00199
-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.03
0.00517	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00585
0.00355	0.00333	0.00333	0.00333	0.00333	0.00333	0.00333	0.00330
-0.00011	-0.00011	0	0	0	0	0	0
0.00286	0.00286	0.00286	0.00286	0.00286	0.00286	0.00286	0.00143
0.08%	0.08%	0.35%	0.35%	0.35%	0.73%	0.73%	0.73%
0.10%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

0.00%	0.00%	-0.02%	-0.02%	-0.02%	-0.02%	-0.02%	-0.02%
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-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
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InHance Summary

7/1/2021 Summer		1/1/2021	2/1/2021	3/1/2021	4/1/2021
10.09	PECCC/DMECC	10.01	10.01	10.01	10.09
0.05817	PECG/DMEG	59.200	59.200	57.610	57.610
0.00585	PECT/DMETM	5.06	5.06	5.06	5.06
0.06509	PECD/DMED	66.2976	66.2976	66.2976	66.5374
0.00000	DMECR	-39.1673	-39.1673	-38.6903	-38.7622
0.00000	DMC15	-19.5836	-19.5836	0.0000	0.0000

1600
 800
 700
 100
 \$ 216.67
 \$ 93.07
 \$ 9.36
 \$ 114.24
 \$ 0.1354
 0.0%
 114%

10.02
 0
 0.076152
 -0.0020192
 0
10.094133

0.05817
 0
0.05817

0.00585
 0
0.00585

0
 0.06463
 0.00000
 0
 0
 0.00047
 -1.302E-05
 0
0.06509

0.00000
0.00000

-0.03873
-0.01937

10.02 Check, does not show up on list of changes
0.06463
0.05817

-0.0006
-0.00199
0.03
0.00585
0.00330
0
0.00143
0.76%
0.00%

-0.02%

-30%
-15%

0.00000

5/1/2021 6/1/2021 7/1/2021

10.09	10.09	10.09
57.610	58.170	58.170
5.06	5.85	5.85
66.5374	65.0732	65.0919
-38.7622	0.0000	0.0000
0.0000	0.0000	0.0000

PECO

Residential - Electric Heat

<https://www.peco.com/CustomerService/RatesandPricing/RateInformation/Pages/CurrentElectric.aspx>

Customer Charge (\$/mo)
Generation Charge (\$/kWh)
Transmission (\$/kWh)
Distribution (\$/kWh)
PECO Electric Heat Winter Discount (\$/kWh)

Test Calculation

kWh

0-800

800-1500

Over 1500

Bill

Generation

Transmission

Distribution

\$/kWh

Rate Change mo-mo

Rate Change YTD

Customer Charge

48: Customer Charge

39: Provision for the Recovery of Consumer Education Plan

45: Distribution System Improvement Charge

31: State Tax Adjustment Clause

33: Federal Tax Adjustment Clause

Total Customer Charge

Generation

32: Generation Supply Adjustment

38: Universal Service Fund

Total Generation

Transmission

40: Transmission Service Charge

41: Non-Bypassable Transmission Charge

Total Transmission

Distribution

37: Nuclear Decommissioning Cost Adjustment

48: Variable Distribution Service Charge

42: SMART METER COST RECOVERY SURCHARGE

43: Provision for Tax Accounting Repair Credit

44: Provision for the Recovery of Energy Efficiency and Conservation

45: Distribution System Improvement Charge

31: State Tax Adjustment Clause

33: Federal Tax Adjustment Clause

Total Distribution

Federal Tax Adjustment

Fixed
Distribution

Winter Discount (\$/kWh)

NEP Winter Discount - Over 800 kWh

Dobson Discount over 1500 kWh

INPUTS

Base Charges

50: Customer Charge
50: Variable Distribution Service Charge Summer
50: Variable Distribution Service Charge Winter
34: Generation Supply Adjustment

Riders

39: Nuclear Decommissioning Cost Adjustment
40: Universal Service Fund
41: Provision for the Recovery of Consumer Education Plan
42: Transmission Service Charge
43: Non-Bypassable Transmission Charge
44: Provision for Tax Accounting Repair Credit
45: Provision for the Recovery of Energy Efficiency and Conservation
46: Distribution System Improvement Charge
33: Federal Tax Adjustment Credit (FTAC)

Taxes

32: State Tax Adjustment Clause

Discounts

NEP Winter Discount - Over 800 kWh
Dobson Discount over 1500 kWh

44: SMART METER COST RECOVERY SURCHARGE

	3/1/2018 Winter	4/1/2018 Winter	5/1/2018 Winter	6/1/2018 Summer	7/1/2018 Summer	8/1/2018 Summer	9/1/2018 Summer	10/1/2018 Winter
	8.46	8.46	8.46	8.46	8.46	8.46	8.46	8.46
	0.06214	0.06214	0.06214	0.06432	0.06432	0.06432	0.06088	0.06088
	0.00990	0.00990	0.00990	0.00848	0.00848	0.00848	0.00848	0.00848
	0.06345	0.06345	0.06345	0.06643	0.06643	0.06643	0.06643	0.06643
	-0.01812	-0.01812	-0.01812	0.00000	0.00000	0.00000	0.00000	-0.01812
	700	700	700	700	700	700	700	700
	700	700	700	700	700	700	700	700
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	\$ 90.62	\$ 90.62	\$ 90.62	\$ 105.92	\$ 105.92	\$ 105.92	\$ 103.51	\$ 90.83
	\$ 43.50	\$ 43.50	\$ 43.50	\$ 45.02	\$ 45.02	\$ 45.02	\$ 42.62	\$ 42.62
	\$ 6.93	\$ 6.93	\$ 6.93	\$ 5.94	\$ 5.94	\$ 5.94	\$ 5.94	\$ 5.94
	\$ 40.19	\$ 40.19	\$ 40.19	\$ 54.96	\$ 54.96	\$ 54.96	\$ 54.96	\$ 42.28
	\$ 0.1295	\$ 0.1295	\$ 0.1295	\$ 0.1513	\$ 0.1513	\$ 0.1513	\$ 0.1479	\$ 0.1298
		0.0%	0.0%	16.9%	0.0%	0.0%	-2.3%	-12.3%
		0.0%	0.0%	16.9%	16.9%	16.9%	14.2%	0.2%
	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	-0.000845	-0.000845	-0.000845	-0.000845	-0.000845	-0.000845	-0.000845	-0.000845
	8.459155	8.459155	8.459155	8.459155	8.459155	8.459155	8.459155	8.459155
	0.06401	0.06401	0.06401	0.06619	0.06619	0.06619	0.06275	0.06275
	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187
	0.06214	0.06214	0.06214	0.06432	0.06432	0.06432	0.06088	0.06088
	0.00698	0.00698	0.00698	0.00532	0.00532	0.00532	0.00532	0.00532
	0.00292	0.00292	0.00292	0.00316	0.00316	0.00316	0.00316	0.00316
	0.00990	0.00990	0.00990	0.00848	0.00848	0.00848	0.00848	0.00848
	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
	0.06359	0.06359	0.06359	0.06520	0.06520	0.06520	0.06520	0.06520
	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019
	0.00237	0.00237	0.00237	0.00374	0.00374	0.00374	0.00374	0.00374
	-6.359E-06	-6.359E-06	-6.359E-06	-6.52E-06	-6.52E-06	-6.52E-06	-6.52E-06	-6.52E-06
	0.06345	0.06345	0.06345	0.06643	0.06643	0.06643	0.06643	0.06643

-0.01812	-0.01812	-0.01812	-0.01812	-0.01812	-0.01812	-0.01812	-0.01812
-0.04065	-0.04065	-0.04065	-0.04177	-0.04177	-0.04177	-0.04074	-0.04074
-0.02032	-0.02032	-0.02032	-0.02089	-0.02089	-0.02089	-0.02037	-0.02037

\$/mo	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
\$/kWh	0.06359	0.06359	0.06359	0.06520	0.06520	0.06520	0.06520	0.06520
\$/kWh	0.04547	0.04547	0.04547	0.04708	0.04708	0.04708	0.04708	0.04708
\$/kWh	0.06401	0.06401	0.06401	0.06619	0.06619	0.06619	0.06275	0.06275

\$/kWh	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
\$/kWh	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187	-0.00187
\$/mo	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
\$/kWh	0.00698	0.00698	0.00698	0.00532	0.00532	0.00532	0.00532	0.00532
\$/kWh	0.00292	0.00292	0.00292	0.00316	0.00316	0.00316	0.00316	0.00316
\$/kWh	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019
\$/kWh	0.00237	0.00237	0.00237	0.00374	0.00374	0.00374	0.00374	0.00374

%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
	-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
	-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%

\$/kWh	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
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11/1/2018 Winter	12/1/2018 Winter	1/1/2019 Winter	2/1/2019 Winter	3/1/2019 Winter	4/1/2019 Winter	5/1/2019 Winter	6/1/2019 Summer
8.51	8.51	10.00	10.00	10.00	9.97	9.97	9.97
0.06088	0.06088	0.06070	0.06070	0.06355	0.06355	0.06355	0.06355
0.00848	0.00381	0.00429	0.00429	0.00429	0.00429	0.00429	0.00429
0.06754	0.06287	0.06240	0.06240	0.06240	0.06222	0.06222	0.06222
-0.01812	-0.01812	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	0.00000
700	700	700	700	700	700	700	700
700	700	700	700	700	700	700	700
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
\$ 91.65	\$ 85.11	\$ 87.44	\$ 87.44	\$ 89.43	\$ 89.27	\$ 89.27	\$ 101.01
\$ 42.62	\$ 42.62	\$ 42.49	\$ 42.49	\$ 44.49	\$ 44.49	\$ 44.49	\$ 44.49
\$ 5.94	\$ 2.67	\$ 3.00	\$ 3.00	\$ 3.00	\$ 3.00	\$ 3.00	\$ 3.00
\$ 43.10	\$ 39.83	\$ 41.94	\$ 41.94	\$ 41.94	\$ 41.79	\$ 41.79	\$ 53.53
\$ 0.1309	\$ 0.1216	\$ 0.1249	\$ 0.1249	\$ 0.1278	\$ 0.1275	\$ 0.1275	\$ 0.1443
0.9%	-7.1%	2.7%	0.0%	2.3%	-0.2%	0.0%	13.1%
1.1%	-6.1%	-3.5%	-3.5%	-1.3%	-1.5%	-1.5%	11.5%
8.45	8.45	10	10	10	10	10	10
0	0	0	0	0	0	0	0
0.058305	0.058305	0	0	0	-0.029	-0.029	-0.029
-0.0008508	-0.0008508	-0.001	-0.001	-0.001	-0.0009971	-0.0009971	-0.0009971
8.5074542	8.5074542	9.999	9.999	9.999	9.9700029	9.9700029	9.9700029
0.06275	0.06275	0.06241	0.06241	0.06526	0.06526	0.06526	0.06526
-0.00187	-0.00187	-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00171
0.06088	0.06088	0.06070	0.06070	0.06355	0.06355	0.06355	0.06355
0.00532	0.00532	0.0058	0.0058	0.0058	0.0058	0.0058	0.0058
0.00316	-0.00151	-0.00151	-0.00151	-0.00151	-0.00151	-0.00151	-0.00151
0.00848	0.00381	0.00429	0.00429	0.00429	0.00429	0.00429	0.00429
0	0	0	0	0	0	0	0
0.06710	0.06243	0.06241	0.06241	0.06241	0.06241	0.06241	0.06241
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0.00045	0.00045	0.00000	0.00000	0.00000	-0.00018	-0.00018	-0.00018
-6.755E-06	-6.288E-06	-6.241E-06	-6.241E-06	-6.241E-06	-6.223E-06	-6.223E-06	-6.223E-06
0.06754	0.06287	0.06240	0.06240	0.06240	0.06222	0.06222	0.06222

		-6.54500	0.00000	0.00000	0.00000	0.00000	0.00000
		-0.04085	0.00000	0.00000	0.00000	0.00000	0.00000
-0.01812	-0.01812	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677
-0.04107	-0.03827	-0.02596	-0.03822	-0.03907	-0.03902	-0.03902	-0.03902
-0.02053	-0.01913	-0.01298	-0.01911	-0.01954	-0.01951	-0.01951	-0.01951

8.45	8.45	10.00	10.00	10.00	10.00	10.00	10.00
0.06710	0.06243	0.06241	0.06241	0.06241	0.06241	0.06241	0.06241
0.04898	0.04431	0.04564	0.04564	0.04564	0.04564	0.04564	0.04564
0.06275	0.06275	0.06241	0.06241	0.06526	0.06526	0.06526	0.06526

-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
-0.00187	-0.00187	-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00171
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.00532	0.00532	0.0058	0.0058	0.0058	0.0058	0.0058	0.0058
0.00316	-0.00151	-0.00151	-0.00151	-0.00151	-0.00151	-0.00151	-0.00151
-0.0019	-0.0019	0	0	0	0	0	0
0.00374	0.00374	0.00374	0.00374	0.00374	0.00374	0.00374	0.00374
0.69%	0.69%	0.00%	0.00%	0.00%	-0.29%	-0.29%	-0.29%
		-65.45%	0.00%	0.00%	0.00%	0.00%	0.00%

-0.01% -0.01% -0.01% -0.01% -0.01% -0.01% -0.01% -0.01%

-30% -30% -30% -30% -30% -30% -30% -30%
 -15% -15% -15% -15% -15% -15% -15% -15%

0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000

7/1/2019 Summer	8/1/2019 Summer	9/1/2019 Summer	10/1/2019 Winter	11/1/2019 Winter	12/1/2019 Winter	1/1/2020 Winter	2/1/2020 Winter
9.97	9.97	9.97	10.46	10.46	10.46	9.97	9.97
0.06040	0.06040	0.06091	0.06091	0.06091	0.05943	0.05853	0.05853
0.00653	0.00653	0.00653	0.00653	0.00653	0.00888	0.00888	0.00888
0.06412	0.06412	0.06412	0.06653	0.06653	0.06844	0.06505	0.06505
0.00000	0.00000	0.00000	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677
700	700	700	700	700	700	700	700
700	700	700	700	700	700	700	700
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
\$ 101.71	\$ 101.71	\$ 102.06	\$ 92.50	\$ 92.50	\$ 94.44	\$ 90.95	\$ 90.95
\$ 42.28	\$ 42.28	\$ 42.64	\$ 42.64	\$ 42.64	\$ 41.60	\$ 40.97	\$ 40.97
\$ 4.57	\$ 4.57	\$ 4.57	\$ 4.57	\$ 4.57	\$ 6.22	\$ 6.22	\$ 6.22
\$ 54.86	\$ 54.86	\$ 54.86	\$ 45.29	\$ 45.29	\$ 46.63	\$ 43.77	\$ 43.77
\$ 0.1453	\$ 0.1453	\$ 0.1458	\$ 0.1321	\$ 0.1321	\$ 0.1349	\$ 0.1299	\$ 0.1299
0.7%	0.0%	0.4%	-9.4%	0.0%	2.1%	-3.7%	0.0%
12.2%	12.2%	12.6%	2.1%	2.1%	4.2%	0.4%	0.4%
9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
-0.000997	-0.000997	-0.000997	-0.000997	-0.000997	-0.000997	0	0
			0.489527	0.489527	0.489527	0	0
9.969003	9.969003	9.969003	10.45853	10.45853	10.45853	9.97	9.97
0.06211	0.06211	0.06262	0.06262	0.06262	0.06114	0.06114	0.06114
-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00261	-0.00261
0.06040	0.06040	0.06091	0.06091	0.06091	0.05943	0.05853	0.05853
0.0057	0.0057	0.0057	0.0057	0.0057	0.00623	0.00623	0.00623
0.00083	0.00083	0.00083	0.00083	0.00083	0.00265	0.00265	0.00265
0.00653	0.00653	0.00653	0.00653	0.00653	0.00888	0.00888	0.00888
0	0	0	0	0	0	0	0
0.06413	0.06413	0.06413	0.06342	0.06342	0.06524	0.06505	0.06505
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
-6.413E-06	-6.413E-06	-6.413E-06	-6.342E-06	-6.342E-06	-6.524E-06	0	0
			0.0031139	0.0031139	0.0032033	0	0
0.06412	0.06412	0.06412	0.06653	0.06653	0.06844	0.06505	0.06505

0.00000	0.00000	0.00000	0.48953	0.48953	0.48953	0.00000	0.00000
0.00000	0.00000	0.00000	0.00311	0.00311	0.00320	0.00000	0.00000
-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677
-0.03932	-0.03932	-0.03947	-0.04112	-0.04112	-0.04199	-0.03974	-0.03974
-0.01966	-0.01966	-0.01973	-0.02056	-0.02056	-0.02099	-0.01987	-0.01987

9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97
0.06413	0.06413	0.06413	0.06342	0.06342	0.06524	0.06505	0.06505
0.04736	0.04736	0.04736	0.04665	0.04665	0.04847	0.04828	0.04828
0.06211	0.06211	0.06262	0.06262	0.06262	0.06114	0.06114	0.06114

-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00171	-0.00261	-0.00261
-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020
0.0057	0.0057	0.0057	0.0057	0.0057	0.00623	0.00623	0.00623
0.00083	0.00083	0.00083	0.00083	0.00083	0.00265	0.00265	0.00265
0	0	0	0	0	0	0	0
0.00312	0.00312	0.00312	0.00312	0.00312	0.00312	0.00312	0.00312
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	4.91%	4.91%	4.91%	0.00%	0.00%

-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%
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-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
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3/1/2020 Winter	4/1/2020 Winter	5/1/2020 Winter	6/1/2020 Summer	7/1/2020 Summer	8/1/2020 Summer	9/1/2020 Summer	10/1/2020 Winter
9.97	9.98	9.98	9.98	9.99	9.99	10.00	10.00
0.05711	0.05711	0.05711	0.05627	0.05627	0.05627	0.05591	0.05591
0.00888	0.00888	0.00888	0.00872	0.00872	0.00872	0.00872	0.00872
0.06505	0.06507	0.06507	0.06571	0.06574	0.06574	0.06559	0.06559
-0.01677	-0.01677	-0.01677	0.00000	0.00000	0.00000	0.00000	-0.01677
700	700	700	700	700	700	700	700
700	700	700	700	700	700	700	700
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
\$ 89.96	\$ 89.99	\$ 89.99	\$ 101.48	\$ 101.50	\$ 101.50	\$ 101.15	\$ 89.41
\$ 39.98	\$ 39.98	\$ 39.98	\$ 39.39	\$ 39.39	\$ 39.39	\$ 39.14	\$ 39.14
\$ 6.22	\$ 6.22	\$ 6.22	\$ 6.10	\$ 6.10	\$ 6.10	\$ 6.10	\$ 6.10
\$ 43.77	\$ 43.80	\$ 55.54	\$ 55.98	\$ 56.01	\$ 56.01	\$ 55.91	\$ 55.91
\$ 0.1285	\$ 0.1286	\$ 0.1286	\$ 0.1450	\$ 0.1450	\$ 0.1450	\$ 0.1445	\$ 0.1277
-1.1%	0.0%	0.0%	12.8%	0.0%	0.0%	-0.3%	-11.6%
-0.7%	-0.7%	-0.7%	12.0%	12.0%	12.0%	11.6%	-1.3%
9.97	9.98	9.98	9.98	9.98	9.98	9.98	9.98
0	0	0	0	0	0	0	0
0	0.003992	0.003992	0.003992	0.007984	0.007984	0.007984	0.007984
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0.00998	0.00998
9.97	9.983992	9.983992	9.983992	9.987984	9.987984	9.997964	9.997964
0.05972	0.05972	0.05972	0.05888	0.05888	0.05888	0.05852	0.05852
-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261
0.05711	0.05711	0.05711	0.05627	0.05627	0.05627	0.05591	0.05591
0.00623	0.00623	0.00623	0.00517	0.00517	0.00517	0.00517	0.00517
0.00265	0.00265	0.00265	0.00355	0.00355	0.00355	0.00355	0.00355
0.00888	0.00888	0.00888	0.00872	0.00872	0.00872	0.00872	0.00872
0	0	0	0	0	0	0	0
0.06505	0.06505	0.06505	0.06569	0.06569	0.06569	0.06558	0.06558
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0	0	0	0	0	0	0	0
0	0	0	0	0	0	-0.00011	-0.00011
0.00000	0.00002	0.00002	0.00002	0.00005	0.00005	0.00005	0.00005
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0.00006558	0.00006558
0.06505	0.06507	0.06507	0.06571	0.06574	0.06574	0.06559	0.06559

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00998	0.00998
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00007	0.00007
-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677
-0.03931	-0.03932	-0.03932	-0.03921	-0.03922	-0.03922	-0.03908	-0.03908
-0.01966	-0.01966	-0.01966	-0.01961	-0.01961	-0.01961	-0.01954	-0.01954

9.97	9.98	9.98	9.98	9.98	9.98	9.98	9.98
0.06505	0.06505	0.06505	0.06569	0.06569	0.06569	0.06558	0.06558
0.04828	0.04828	0.04828	0.04892	0.04892	0.04892	0.04881	0.04881
0.05972	0.05972	0.05972	0.05888	0.05888	0.05888	0.05852	0.05852

-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261
-0.020	-0.010	-0.010	-0.010	-0.010	-0.010	-0.010	-0.010
0.00623	0.00623	0.00623	0.00517	0.00517	0.00517	0.00517	0.00517
0.00265	0.00265	0.00265	0.00355	0.00355	0.00355	0.00355	0.00355
0	0	0	0	0	0	-0.00011	-0.00011
0.00312	0.00312	0.00312	0.00286	0.00286	0.00286	0.00286	0.00286
0.00%	0.04%	0.04%	0.04%	0.08%	0.08%	0.08%	0.08%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.10%	0.10%

0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
---------	---------	---------	---------	---------	---------	---------	---------

	11/1/2020 Winter	12/1/2020 Winter	1/1/2021 Winter	2/1/2021 Winter	3/1/2021 Winter	4/1/2021 Winter	5/1/2021 Winter	6/1/2021 Summer
	10.00	10.00	10.01	10.01	10.01	10.09	10.09	10.09
	0.05591	0.05659	0.05659	0.05659	0.05500	0.05500	0.05500	0.05618
	0.00872	0.00839	0.00839	0.00839	0.00839	0.00839	0.00839	0.00915
	0.06559	0.06537	0.06630	0.06630	0.06630	0.06654	0.06654	0.06507
	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	0.00000
	700	700	700	700	700	700	700	700
	700	700	700	700	700	700	700	700
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
\$	89.41	\$ 89.50	\$ 90.17	\$ 90.17	\$ 89.06	\$ 89.30	\$ 89.30	\$ 101.37
\$	39.14	\$ 39.61	\$ 39.61	\$ 39.61	\$ 38.50	\$ 38.50	\$ 38.50	\$ 39.33
\$	6.10	\$ 5.87	\$ 5.87	\$ 5.87	\$ 5.87	\$ 5.87	\$ 5.87	\$ 6.41
\$	55.91	\$ 55.75	\$ 56.42	\$ 56.42	\$ 56.42	\$ 56.67	\$ 56.67	\$ 55.64
\$	0.1277	\$ 0.1279	\$ 0.1288	\$ 0.1288	\$ 0.1272	\$ 0.1276	\$ 0.1276	\$ 0.1448
	0.0%	0.1%	0.7%	0.0%	-1.2%	0.3%	0.0%	13.5%
	-1.3%	-1.2%	-0.5%	-0.5%	-1.7%	-1.5%	-1.5%	11.9%
	9.98	9.98	9.98	9.98	9.98	10.02	10.02	10.02
	0	0	0	0	0	0	0	0
	0.007984	0.007984	0.03493	0.03493	0.03493	0.073146	0.073146	0.073146
	0	0	-0.00200299	-0.00200299	-0.00200299	-0.00201863	-0.00201863	-0.00201863
	0.00998	0.00998	0	0	0	0	0	0
	9.997964	9.997964	10.012927	10.012927	10.012927	10.0911274	10.0911274	10.0911274
	0.05852	0.05920	0.05920	0.05920	0.05761	0.05761	0.05761	0.05817
	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00199
	0.05591	0.05659	0.05659	0.05659	0.05500	0.05500	0.05500	0.05618
	0.00517	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00585
	0.00355	0.00333	0.00333	0.00333	0.00333	0.00333	0.00333	0.0033
	0.00872	0.00839	0.00839	0.00839	0.00839	0.00839	0.00839	0.00915
	0	0	0	0	0	0	0	0
	0.06558	0.06536	0.06609	0.06609	0.06609	0.06609	0.06609	0.06463
	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	0	0	0	0	0	0	0	0
	-0.00011	-0.00011	0	0	0	0	0	0
	0.00005	0.00005	0.00022	0.00022	0.00022	0.00046	0.00046	0.00046
	0	0	-1.3262E-05	-1.3262E-05	-1.3262E-05	-1.331E-05	-1.331E-05	-1.3017E-05
	0.00006558	0.00006536	0	0	0	0	0	0
	0.06559	0.06537	0.06630	0.06630	0.06630	0.06654	0.06654	0.06507

0.00998	0.00998	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00007	0.00007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677	-0.01677
-0.03908	-0.03912	-0.03938	-0.03938	-0.03891	-0.03898	-0.03898	-0.03912
-0.01954	-0.01956	-0.01969	-0.01969	-0.01945	-0.01949	-0.01949	-0.01956

9.98	9.98	9.98	9.98	9.98	10.02	10.02	10.02
0.06558	0.06536	0.06609	0.06609	0.06609	0.06609	0.06609	0.06463
0.04881	0.04859	0.04932	0.04932	0.04932	0.04932	0.04932	0.04786
0.05852	0.05920	0.05920	0.05920	0.05761	0.05761	0.05761	0.05817

-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006
-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00261	-0.00199
-0.010	-0.010	-0.010	-0.010	-0.010	-0.010	-0.010	0.030
0.00517	0.00506	0.00506	0.00506	0.00506	0.00506	0.00506	0.00585
0.00355	0.00333	0.00333	0.00333	0.00333	0.00333	0.00333	0.00330
-0.00011	-0.00011	0	0	0	0	0	0
0.00286	0.00286	0.00286	0.00286	0.00286	0.00286	0.00286	0.00143
0.08%	0.08%	0.35%	0.35%	0.35%	0.73%	0.73%	0.73%
0.10%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

0.00%	0.00%	-0.02%	-0.02%	-0.02%	-0.02%	-0.02%	-0.02%
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-30%	-30%	-30%	-30%	-30%	-30%	-30%	-30%
-15%	-15%	-15%	-15%	-15%	-15%	-15%	-15%

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
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InHance Summary

7/1/2021 Summer		1/1/2021 Winter	2/1/2021 Winter	3/1/2021 Winter	4/1/2021 Winter	5/1/2021 Winter
10.09	PEHCC	10.01	10.01	10.01	10.09	10.09
0.05817	PEHG	56.590	56.590	55.000	55.000	55.000
0.00585	PEHT	8.39	8.39	8.39	8.39	8.39
0.06509	PEHD	66.2976	66.2976	66.2976	66.5374	66.5374
0.00000	PEEWD	-16.7700	-16.7700	-16.7700	-16.7700	-16.7700
700						
700						
0						
0						
\$ 100.47	SAMDV	72.2117	72.2117	72.2117	72.2117	72.2117
\$ 40.72						
\$ 4.10						
\$ 55.66						
\$ 0.1435						
-0.9%						
10.9%						
10.02						
0						
0.076152						
-0.00201923						
0						
10.0941328						
0.05817						
0						
0.05817						
0.00585						
0						
0.00585						
0						
0.06463						
0.00000						
0						
0						
0.00047						
-1.3021E-05						
0						
0.06509						

0.00000
0.00000

-0.01677
-0.03873
-0.01937

10.02 Check, does not show up on list of changes

0.06463
0.04786
0.05817

-0.0006
-0.00199
0.030
0.00585
0.00330
0
0.00143
0.76%
0.00%

-0.02%

-30%
-15%

0.00000

6/1/2021 7/1/2021
Summer Summer

10.09	10.09
56.180	58.170
9.15	5.85
65.0732	65.0919
0.0000	0.0000

72.2117 72.2117

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 32

CAUSE-PA to NEP I-32. Does NEP charge residential tenants the applicable rate of the local Electric Distribution Company (EDC) for residents or commercial and industrial customers?

RESPONSE:

NEP uses the residential rates of the local utility for residential tenants. See NEP Response to DLC Set I, No. 6.a.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 33

CAUSE-PA to NEP I-33. For each residential building NEP serves or served in Pennsylvania since 2018, please identify the monthly generation charge for residential customers and indicate whether the rates charged were for default service or [competitive] generation supply. If generation services were provided by an electric generation supplier, please indicate the name of the supplier and provide a copy of the applicable service contract that lists the applicable rates for generation service.

RESPONSE:

NEP charges residents based on the rates for default service. See NEP response to CAUSE-PA Set I, No. 31 for applicable generation charges. As the designated agent of the property owner, NEP may secure competitive generation supply for a community's aggregate load at the master meter, which rates are not applicable to residents. Supply is currently procured through Energy Harbor for each community in Pennsylvania. See NEP Confidential Attachment CAUSE-PA Set I, No. 33.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Mindy Strong
Title: Resident Support Supervisor

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 34

CAUSE-PA to NEP I-34. Does NEP accept a medical certificate to stop a pending termination of a residential customer? If so, please provide a copy of any written procedures, policies, standards governing the submission of medical certificates and/or any notices used to inform consumers of the medical certificate protections.

RESPONSE:

Yes, NEP will stop a pending residential service termination of services of a residential customer, if the customer has a medical need and provides a correctly completed medical certificate. See NEP Confidential Attachment CAUSE-PA Set I, No. 34.

Docket Nos.: R-2021-3024750; C-2021-3025538

C-2021-3025462; C-2021-3026057

Sponsor: Mindy Strong

Title: Resident Support Supervisor

Nationwide Energy Partners, LLC

Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 35

CAUSE-PA to NEP I-35. Does NEP or a representative attempt to make personal contact with a resident at the residential unit immediately prior to terminating service? If so, please explain what the employee or representative is trained to tell the resident, and identify any and all ways that a resident may stop an active termination of their property. Please provide a copy of any training materials or other written policies, procedures, or standards related to this notice requirement.

RESPONSE:

NEP attempts to contact residents eligible for termination via autodialer and with a live representative via telephone prior to disconnection. Residents may avoid termination by entering into a payment plan, paying their past-due balance, or submitting to NEP a medical certificate demonstrating medical need. See NEP response to CAUSE-PA Set I, No. 7.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 38

CAUSE-PA to NEP I-38. Does NEP ask for, record, or otherwise track household income of the residential tenants it serves in Pennsylvania? If so, please indicate the number of households in each of its residential building with income at or between 0-50% of the federal poverty level; 51-100% of the federal poverty level, 101-150% of the Federal Poverty Level; 151-200% of the Federal Poverty Level; and 201-250% of the Federal Poverty Level. Please disaggregate by building location, month, and Federal Poverty Level tier.

RESPONSE:

No, NEP does not record the income of any resident.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 39

CAUSE-PA to NEP I-39. See NEP Response to DLC Set I, No. 6, subpart k. Please define the “Winter Disconnect Rule” referenced in this response and explain how the Winter Disconnect Rule is applied, the parameters of the rule, and/or what requirements a residential tenant must meet in order to be protected from termination in winter.

RESPONSE:

From November 1st through April 15th, NEP will provide an additional 10 days for residents from the date the notice is postmarked to the scheduled disconnection date - the notice period will be at least 24 days.

In addition, NEP will monitor weather via the National Weather Service forecast, and terminations will be postponed or cancelled if:

- The scheduled low for the day of disconnection is lower than 10 degrees Fahrenheit.
- The high for the day of disconnection and the high of the following day are both scheduled to be below 32 degrees Fahrenheit.

See NEP Confidential Attachment CAUSE-PA Set I, No. 39.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 41

CAUSE-PA to NEP I-41. How many “Disconnect Notices” did NEP send to a residential
tenant in Pennsylvania in 2018, 2019, 2020, and 2021,
disaggregated by month and building location.

RESPONSE:

NEP does not maintain this data in a format that would make a response readily
ascertainable.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 44

- CAUSE-PA to NEP I-44. See NEP Response to DLC Set I, No. 7a, attachment and Set I, No. 52. Are all tenants served by NEP assessed a \$100 security deposit? If so, please explain the circumstances under which a security deposit is returned. If not, please answer:
- A. Under what circumstances does NEP assess a security deposit? Provide a copy of any written policies, procedures, or standards for when a security deposit is assessed.
 - B. How does NEP determine the amount of an assessed security deposit? Please provide a copy of any written policies, procedures, or standards explaining how NEP determines the amount of an assessed security deposit.

RESPONSE:

No. Security deposits are governed by NEP's contract with the property owner. Some property owners choose to take on tenants' unpaid balances themselves. Others authorize NEP to collect security deposits which can be applied to residents' unpaid balances. NEP assesses a \$100 security deposit for electric billing and a \$50 security deposit for water billing, which can be waived by a tenant providing a letter of credit from a previous utility provider, by signing up for autopay, or by having a previous account in good standing with NEP. Security deposits are returned (1) upon the resident setting up autopay, (2) after 12 months of on-time payments, (3) after 24 months, or (4) upon resident move-out where the resident's account is not past-due, whichever occurs first. Security deposits that have not been returned will be retained by NEP to the extent necessary to cover residents' outstanding balances after the resident has moved out.

See NEP Confidential Attachment CAUSE-PA Set I, No. 44.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 45

CAUSE-PA to NEP I-45. See NEP Response to DLC Set I, No. 7a, attachment. Does NEP assess a security deposit to low income tenants? If so, does NEP provide for any security deposit discount or extended time for a household to pay the security deposit? If not, please explain how NEP informs tenants of the ability to waive a security deposit based on household income, and the process that NEP uses to allow low income households to obtain a waiver.

RESPONSE:

See Responses to CAUSE-PA Set I, No. 13.C and CAUSE-PA Set I, No. 44.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 46

CAUSE-PA to NEP I-46. See NEP Response to DLC Set I, No. 7a, attachment. Please identify the late fee charged at each of the residential buildings served by NEP in Pennsylvania. If the fee varies at an individual residential building, please explain the basis for that variation.

RESPONSE:

Following a 7-day grace period, NEP charges a \$20 late fee at all properties for residents whose past-due balance is greater than \$100.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 47

CAUSE-PA to NEP I-47. See NEP Response to DLC Set I, No. 7a, attachment. Does NEP send any other written notice of termination to residential tenants prior to termination, apart from the attached “Disconnect Notice”?

RESPONSE:

No.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Winston Frost
Title: Billing Manager

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 48

CAUSE-PA to NEP I-48. See NEP Response to DLC Set I, No. 7a, attachment. Is the page with the heading “Disconnect Notice” sent as an attachment to the customer bill, as a separate mailing, or some other way? Please explain.

RESPONSE:

This is sent as an attachment to the resident’s bill in the same mailing.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 53

CAUSE-PA to NEP I-53. Does NEP share residential tenant usage data or other individual account information or payment history with the landlord, building owner, property management company, or other related entity?

RESPONSE:

NEP performs its services as an agent of the property owner, and therefore provides regular reports to the property owner or their designated property management covering usage by unit, property-wide usage, past-due accounts, accounts eligible for disconnection, accounts with abnormally high usage which could indicate an appliance malfunction, and other reports showing trends and analysis. See Exhibit F to each of the contracts included in Confidential NEP Attachment DLC Set I, No. 4.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 54

- CAUSE-PA to NEP I-54. Does NEP share residential tenant usage data or other individual account information or payment history with any third party? If so, please identify the following:
- A. The third parties with which data is shared;
 - B. The specific type of information or data shared;
 - C. Whether the information is such that the landlord, building owner, property management company, or other related entity could identify the tenant;
 - D. Whether the information is anonymized, and if so, how.
 - E. The purpose of sharing information;
 - F. Whether and how tenants are notified that their information is, may, or will be shared;
 - G. Whether and how tenants are able to protect their individual tenant data from disclosure.

RESPONSE:

See Response to CAUSE-PA Set I, No. 53. NEP may also share account information for the purposes of submitting unpaid accounts to a third party collections agency. Residents are not able to influence disclosure of their data for these limited purposes.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 65

CAUSE-PA to NEP I-65. See NEP St. 1 at 4:16. Are any of the buildings served by NEP considered “carbon neutral”? Please provide supportive documentation.

RESPONSE:

NEP secures generation supply from carbon-free sources, establishing a carbon neutral electricity supply. However, given that many factors outside of NEP’s control or knowledge play a role in a community’s total carbon footprint, NEP is unable to determine whether, or by whom, these communities would be considered “carbon neutral.” NEP provides the single meter functionality and control for electricity carbon information for the whole community.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: Vice President, Business Development

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 70

CAUSE-PA to NEP I-70. See NEP St. 1 at 13: 3-5. Please provide any reports or other assessments of energy reduction or carbon goals achieved by NEP customers as a result of services provided by NEP.

RESPONSE:

NEP provides a single utility account and meter for all property load. This allows property owners to easily calculate their baseline. We do not currently provide separate reporting outside of this baseline usage for total usage to property owners.

For example, Fannie Mae offers a Green Mortgage Loan Program and reduces points from mortgage loans where multifamily property owners can prove their property. All improvements must be verified, and the Bright Power measurement guide states it is easier and more straightforward to verify the energy efficiency and water saving measures where the whole property usage data is aggregated, rather than strictly individually metered property. See NEP Attachment CAUSE-PA Set I, No. 70.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: Vice President, Business Development

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 71

CAUSE-PA to NEP I-71. See NEP St. 1 at 16: 7-20. Are tenants responsible for their own energy efficiency upgrades in their individual unit? If so, are the costs of energy efficiency upgrades included directly on the customer bill?

RESPONSE:

This section of the testimony references the use of a master meter for measurement and verification. NEP provides a single meter service which creates a single source for baseline. Property owners offer and provide energy efficiency measures. NEP is not part of the arrangements between its customers (the Property Owners) and their tenants as relates to energy efficiency measures. Charges for energy efficiency measures do not appear on bills supplied to tenants by NEP.

NEP may credit tenants for Property Owner programs which the Property Owner directs NEP to manage.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: Vice President, Business Development

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 75

CAUSE-PA to NEP I-75. See NEP St. 1 at 20: 12-14. Please explain the basis of Ms. Ringenbach's conclusion that a tenant is not properly incentivized to participate in a demand response program if they do not own the property, even if they are responsible for paying the bill? Please provide any and all research, reports, or other information or data Ms. Ringenbach relied on in reaching this conclusion.

RESPONSE:

Most demand response controls relate to equipment not typically owned by a tenant such as thermostats, water heater controls, HVAC, etc. In addition, rental tenants do not typically live on premise long term. So a bid into an aggregated program in November for the following planning year could not show up if the tenant moves. Allowing a tenant to receive a credit each month as proposed by NEP allows a tenant to take advantage of DR program credit without needing to be in the program long term because the property owner is bidding and aggregating both the owned property used for DR actions and moving of accounts is no longer a concern.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 2

2. For the buildings identified in response to question (1): please identify the number of tenants, by year and broken down by residential and nonresidential, to which electric service was terminated for the period 2017 through 2021 YTD.

RESPONSE:

The number of total disconnections executed by NEP in Pennsylvania for each year are below. These figures do not account for multiple disconnections of the same tenant. Therefore, because some tenants are disconnected multiple times, the number of individual tenants who were disconnected at any point during the given year will be lower than the numbers reflected below.

2017:	0 residential tenants; 0 nonresidential tenants
2018:	4 residential tenants; 0 nonresidential tenants
2019:	113 residential tenants; 0 nonresidential tenants
2020:	27 residential tenants; 0 nonresidential tenants
2021 YTD:	63 residential tenants; 0 nonresidential tenants

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 3

3. Identify the number of (i) residential tenants and (ii) nonresidential tenants

CONFIDENTIAL RESPONSE:

[START CONFIDENTIAL] [REDACTED] [END
CONFIDENTIAL]

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 5

5. Provide ten copies of NEP contracts with tenants in NEP-submetered residential buildings (one contract from each of ten separate buildings) in Pennsylvania, redacting information that would identify the tenant.

RESPONSE:

NEP does not have any contracts with tenants. All of NEP's contracts are with, and all of NEP's services are performed on behalf of, property owners or condominium associations.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 6

6. With respect to NEP-submetered residential buildings in Pennsylvania, provide NEP's policies, procedures, and practices for each of the following, and provide all related documents.
- a. The rates charged to residential tenants for electric service.
 - b. How residential tenants' rates for electric service are established.
 - c. Whether and how residential tenants can participate in the calculation of rates for electric service.
 - d. The information available to residential tenants regarding how their electric rates are calculated, and the method by which residential tenants access such information.
 - e. The structure and billing determinants reflected residential tenants' electric rates (e.g., fixed customer charge, per-kWh charges, etc.).
 - f. How residential tenants are billed for electric service (e.g., separate monthly bill, etc.)
 - g. Residential tenants' options for remitting payment for electric service
 - h. Payment terms applicable to residential tenants' charges for electric service. Address in your answer, at a minimum: the time period between bill render date and due date, and the amount and applicability of late payment charges.
 - i. How residential tenants' obligations to pay for electric service are enforced.
 - j. How residential tenants choose an electric generation supplier (EGS).
 - k. Payment arrangement terms to which residential tenants are entitled.
 - l. Due process prior to service termination to which residential tenants are entitled.
 - m. The process by which residential tenant disputes regarding electric service (including but limited to disputes concerning billing, metering, service termination, and quality of service) are initiated, received, evaluated, resolved, and/or appealed (as applicable).
 - n. How residential tenants are made aware of the dispute processes identified in response to part (m) above.
 - o. Bill-payment assistance programs available to residential tenants.
 - p. How residential tenants are made aware of the bill-payment assistance programs identified in response to part (o) above.
 - q. Energy efficiency programs available to residential tenants.
 - r. How residential tenants are made aware of the energy efficiency programs identified in response to part (q) above.
 - s. Budget billing programs available to residential tenants.

- t. How residential tenants are made aware of the budget billing programs identified in response to part (s) above.
- u. Time-of-use programs made available to residential tenants.
- v. For each of the items identified in responses to (a) through (u) above, please identify the entity(ies) with the discretion to establish and/or modify such item, and describe and explain the process by which such entity(ies) establish and/or modify such item.

RESPONSE:

Response 6.a.: The rates charged to residential tenants by NEP are the approved rates of the local electric utility. NEP employs a team of qualified individuals to monitor the approved rates of the local electric utilities in each service territory in which it operates, including all riders and fees, and to incorporate those rates into NEP’s billing system on a monthly basis. In order to ensure that amounts billed by NEP do not exceed those that would be billed by the local utility in compliance with 66 Pa.C.S. Section 1313, Price upon resale of public utility services, each component of the utility’s rates are rounded down to the nearest cent prior to being summed for a total billing amount.

Response 6.b.: See Response 6.a.

Response 6.c.: Residential tenants can only participate in the calculation of rates for electric service to the extent that those rates are established through PUC proceedings. NEP does not alter the established rates, and therefore there is no process at NEP in which resident participation is possible.

Response 6.d.: NEP communicates to residents, including on their monthly billing statements, that the rates applied to their usage are the “applicable local utility rates for residential service.” Utility tariff rates and riders are publically available to utility customers as well as members of the public.

Response 6.e.: See Response 6.a.

Response 6.f.: Residential tenants receive separate paper monthly bills, and may elect to receive paperless billing and/or manage their account through NEP’s online resident portal or smartphone app.

Response 6.g.: Residents may pay their bills by check, in person at Walmart and Kroger locations, by signing up for Autopay with a credit card, debit card or bank account, via electronic bill pay set up with their bank, online through NEP’s resident portal or smartphone app, or by phone.

Response 6.h. Bills are due a minimum of 14 days from the date the bill is issued. NEP allows a 7-day grace period following the due date during which no action is taken, and payments received during the grace period are considered on-time. A twenty dollar (\$20) late payment fee is applied to accounts with past-due balances greater than \$100 for payments received following the grace period.

Response 6.i. Tenants obligations to pay for electric service are enforced as directed by the property owner or condominium association and described in the contract between that entity and NEP, and may include disconnection of electric service and/or eviction of apartment tenants at the landlord's option.

Where disconnection of service has been authorized by the property owner or condominium association, NEP adheres as closely as possible to the procedures applicable to public utilities in Pennsylvania, including all notice requirements, the Winter Disconnect Rule, and COVID-19-related restrictions, prior to disconnecting electric service (See Response 6.l. below). Where specified by an agreement between an apartment community owner and NEP, NEP may request that the community owner initiate eviction proceedings against tenants whose past-due balances exceed \$500. Under all such agreements, community owners have the option of assuming the tenant's past-due balance instead of initiating eviction proceedings.

Response 6.j. Residential tenants do not independently choose an EGS apart from the property owner's selection of a competitive supplier.

Response 6.k. If a resident is scheduled for disconnection and is unable to pay the full past due balance by the date on the disconnect notice, NEP will offer a 50/50 payment plan to avoid disconnection. The plan will require a payment of 50% of the amount on the disconnect notice (by the date on the notice) and the remaining 50% within 14 days of the disconnect day. This plan is only applicable prior to disconnection.

40% Down Plan: This payment plan requires a down payment of 40% of the total current balance unless a community requests NEP to offer 30%. Once the payment is posted to the account, we will be able to set the remaining balance on the account for a 3, 6, or 9-month plan. In order to enroll in the 9-month plan we would need to receive a copy of the resident's current lease. Once the payment is posted we will disperse evenly at a 1% interest rate. The payment plan amount is a separate and additional charge added to the monthly charges. If the bill is not paid in full the payment plan will be canceled and the resident will have to pay a 50% down payment to set up another payment plan.

Response 6.l. NEP adheres as closely as possible to the procedures applicable to public utilities in Pennsylvania, including all notice requirements, the Winter Disconnect Rule, and COVID-19-related restrictions, prior to disconnecting electric service. Written notice of disconnect is postmarked to residents at least 14 days prior to disconnection in Summer months (4/16 - 10/31) and at least 24 days prior to disconnection in Winter months (11/1 - 4/15). NEP will not disconnect power if the projected low for the day of disconnect is below 10 degrees. NEP will not disconnect power if the projected high for the day of disconnect and the day after disconnect is below 32 degrees.

Response 6.m.: Resident complaints and questions are fielded by NEP’s in-house call center and resident support specialists. Any issues that cannot be resolved by the first-line resident support team are escalated to the appropriate department for further evaluation and response, including but not limited to meter testing and rate verification.

Response 6.n.: Residents options for contacting NEP’s resident support team are indicated on resident bills, within NEP’s online resident portal and smartphone app, and on NEP’s website.

Response 6.o.: Residents in need of bill payment assistance are directed to local community organizations. Depending on their income level, need and their NEP bill, residents may or may not qualify for assistance.

Response 6.p.: NEP does not typically service low income properties. To the extent tenants need assistance in payment they are directed to online resources or provided bill pay options as indicated in Response 6.k.

Response 6.q.: NEP does not provide energy efficiency programs on an individual by individual resident basis. NEP assists property owners with energy efficiency upgrades on a property-wide basis.

Response 6.r.: See Response 6.q. Residents have access to any technologies which may impact usage within their unit and have access to individual usage through smart meter data.

Response 6.s.: NEP does not presently offer budget billing programs.

Response 6.t.: See Response 6.s.

Response 6.u.: NEP does not presently offer time-of-use programs.

Response 6.v.: Items “a” through “e” cover local electric utility rates which are established through the ratemaking process at the Pennsylvania Public Utility Commission. As noted in Item “c,” NEP does not alter the approved rates of the local electric utility, and is bound by 66 Pa.C.S. Section 1313 to bill tenants at rates that do not exceed those of the local electric utility. Items “f” and “i” are governed by NEP’s contract with the property owner, and cannot be altered except by mutual agreement in writing of the property owner and NEP. Items “h,” “k” through “n,” and “p” through “u” are determined internally by NEP with reference to industry best practices, the practices of local electric utilities, and the technological capabilities available to NEP.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 7

7. Provide representative examples of each of the following notices issued to residential tenants in a typical building submetered by NEP. To the extent the notice is not issued, explain why not.
- a. Bill for electric service
 - b. Terms, conditions, or rules applicable to electric service
 - c. Notice of upcoming service termination
 - d. Notice of completed service termination
 - e. Notice of upcoming change in rates
 - f. Notice of upcoming change in terms, conditions, or rules applicable to electric service.

RESPONSE:

Response 7.a.: A copy of a typical bill for electric service has been provided. See NEP Attachment Set I, No. 7.a.

Response 7.b.: To the extent that such conditions are applicable, they are contained within residents' leases with their property owners and not provided by NEP.

Response 7.c.: A copy of a typical notice of upcoming service termination has been provided. In addition to this notice, NEP places automatic and in-person phone calls to residents eligible for service termination prior to such termination. See NEP Attachment Set I, No. 7.a.

Response 7.d.: NEP does not notify residents after their service is terminated.

Response 7.e.: NEP does not provide residents with notices of upcoming changes in rates.

Response 7.f.: See Response 7.b.



230 West St. Suite 150 | Columbus, OH | 43215

ON BEHALF OF YOUR COMMUNITY,
 DOBSON MILLS

Addressee

NED0611E
 9000000145 73/1



4041 RIDGE AVE # [REDACTED]
 PHILADELPHIA PA 19129-1551

Account Number	Invoice Date	Due Date
180452	Jun 11, 2021	Jun 28, 2021
Community Billing Cycle	If Paid After 07/5/2021	Total Amount Due
05/10/21 - 06/10/21	\$440.40	\$420.40

SEE METER GRAPHS BELOW FOR ACTUAL READ DATES

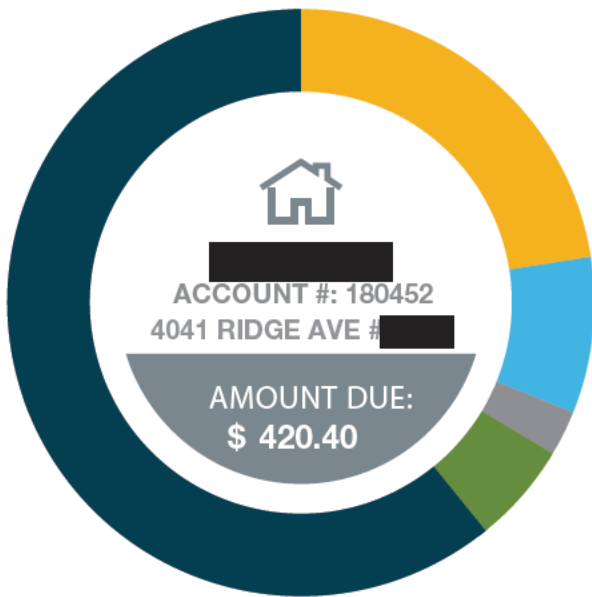
Please Make Checks Payable And Remit To



NATIONWIDE ENERGY PARTNERS
 PO BOX 183009
 COLUMBUS, OH 43218-3009

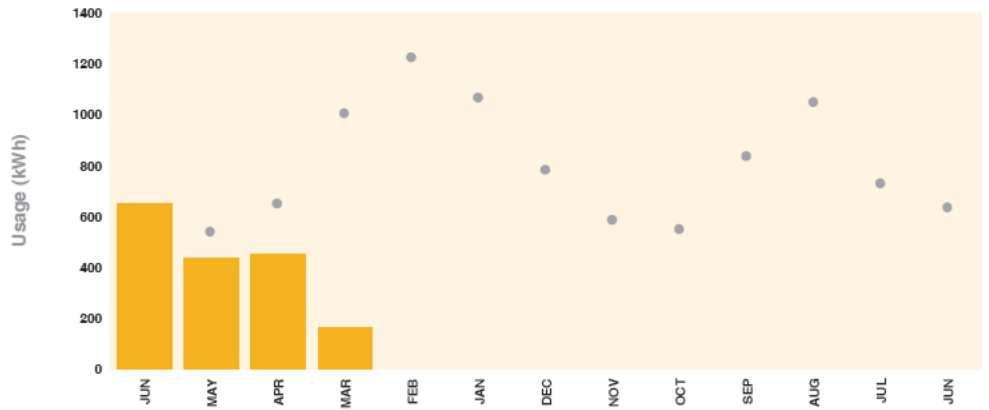
062821000000000001&04520000000042043

****DISCONNECT NOTICE****



Message Center
 Warning: Your Account is Past Due!
 Please make your payment immediately.

Questions?
 Please call our support team at
 (614) 918-2031 or (877) 818-2637
 or visit us online at
NationwideEnergyPartners.com



current read	previous read	meter conversion	usage (kWh)
7274	-	6621 X	1 = 653

current read date	previous read date
APPENDIX A 06-10-21	05-10-21

PAYMENT METHODS

NEP Autopay

Sign up for autopay to have the payments for your NEP bill automatically withdrawn from your bank account or credit card each month, at no cost to you.

Electronic Bill Pay

Set up directly through your bank online, electronic bill pay allows you to send money from your bank account directly to NEP to pay your bill. You choose the amount you want to pay and the date you want the payment to be applied.

Online Payment

Pay online anytime through NEP's website. Residents can register online or quick pay without having to set up an online account.

In-Store Payment

A number of stores, such as Wal Mart, accept payments at all locations in the continental US. **Bring your NEP statement with you.** *Service fees may apply.*






Mail

Pay by check by mailing the detachable payment stub along with your check in the return envelope provided with your monthly invoice. **Please include your NEP account number on your check.**

Phone

Residents may pay their bill 24 hours a day, 7 days a week, through NEP's automated phone system. Residents may also call our toll free Resident Support number to pay with a live agent during office hours. *Service fees will apply for payments made with a live agent.*

Billing Summary

Previous Balance	\$255.83
Previous Payments	\$0.00
<hr/>	
 Balance Forward	\$255.83
Balance Forward	\$255.83
 ELECTRIC 653 kWh	\$94.40
Customer Charge	\$10.09
NEP Energy Discount	\$0.00
Electric Usage	\$84.31
Community Discount	\$0.00
 WATER & SEWER 	\$36.67
Water & Sewer Fixed	\$0.00
Water & Sewer Usage	\$36.67
 COMMUNITY CHARGES	\$10.00
Trash Removal	\$10.00
 ADJUSTMENTS & FEES	\$23.50
Penalty	\$20.00
Water Billing Fee	\$3.50
TOTAL AMOUNT DUE ON JUN 28, 2021	\$420.40

BILLING BREAKDOWN

Community

Community charges are charges your community has chosen to allocate to its residents for services rendered in common areas. These charges are typically outlined in your lease.

Utility

Utility charges are measured and billed based on meter reads and applicable local utility rates for residential service. These charges represent the utilities portion of your rent or dues.

SECURITY DEPOSIT

A security deposit may be applied to your first bill. This deposit is 100% refundable after 12 months of on time payments. There are two ways to have this deposit waived:

- Sign up for Autopay
- Submit a letter of credit from a previous provider

FEES

NEP provides metering and billing services on behalf of your community owner or community association. Failure to receive a bill does not change the due date or possibility of disconnection due to non payment. A late fee of \$20 will be assessed for past due balances over \$100.

A \$30.00 charge may be applied to your account for all payments not honored by the bank for any reason, including, but not limited to: Insufficient funds (NSF), account closed, payment stopped, no signature, and improperly drawn or submitted.

All fees are subject to change per your community's request.

If you have filed for bankruptcy protection, please provide us a copy of your petition, case number, and the court in which your case was filed

GO PAPERLESS

Never worry about missing a bill by signing up for paperless billing! You'll receive an email the moment your bill is available when you sign up through "My Account" at NationwideEnergyPartners.com.



230 West St. Suite 150 | Columbus, OH | 43215

Invoice Date	Account Number
Jun 11, 2021	180452

Addressee
██████████
4041 RIDGE AVE # ██████████
PHILADELPHIA PA 19129

****DISCONNECT NOTICE ****

Dear ██████████,

The purpose of this letter is to notify you that in accordance with the authority given to Nationwide Energy Partners (NEP) by your Community, your electric service will be disconnected as a result of your failure to pay for your utilities portion of rent or condominium dues. As of the date of this letter, your past due balance is **\$255.83**.

In order to AVOID DISCONNECTION OF YOUR ELECTRIC SERVICE,

- You must set up a payment plan (if eligible) or pay your FULL past due balance*
- Payment must be paid and received by NEP by **6:00 pm on June 29, 2021 ****

What happens if I don't pay my past due amount and my electric service gets disconnected? In order to get your electric service reconnected you must:

- Pay your past due balance of **\$255.83** in FULL **
- Pay a \$50.00 service fee

If you make a payment on a business day and notify NEP of your payment by 12:30pm EST, service will be reconnected the same day. If payment is made after 12:30pm EST, service will be reconnected the next business day.

*If making a payment towards a payment plan, you MUST call Resident Support, Monday through Friday between the hours of 8:00am and 6:00pm, to inform them that your payment has been made in order for it to be properly set up in the billing system.

**Payments MUST be made via credit or debit card or certified funds. Checks or eChecks will not be accepted. Failure to follow payment instructions could result in immediate disconnection of electric service.

Any payments made at Kroger or Walmart will require receipt being emailed to the Resident support team at residentsupport@nationwideenergypartners.com or faxed to 866-295-4121 or

Payment Options: You can make payment of your past due balance by the following methods:

- Visit us online at NationwideEnergyPartners.com
- Call our Resident Support Team at (614) 918-2031 or (877) 818-2637
- Visit your local Walmart Money Center or Kroger. You must bring your current billing statement to validate your account number. Payments can only be made by cash or a PIN-based debit card and must still be received by NEP by the above date. **

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 12

12. Explain whether and how NEP reconciles a building's total submetered consumption to the building's master meter.

RESPONSE:

NEP reconciles total submetered consumption to the consumption registered by the master meter on a monthly basis in order to determine the portion of the master meter bill for which the property owner reimburses NEP. While the property owner's name is on the bill, remains the utility customer and bears ultimate responsibility for the payment of the master meter bill, NEP is the authorized representative on the utility account. NEP generally pays that bill on the property owner's behalf and secures reimbursement from the tenants for their submetered usage and from the property owner for all common area usage. The property owner's NEP bill is calculated as: $(\text{Master Meter kWh} - \text{Submetered resident kWh}) \times \text{Commercial Rate}$.

Note that NEP may also submeter specific common area features, such as pools and area lighting, to provide the property owner with a more complete understanding of how their community uses energy than would be achievable as a separately metered utility customer. The kWh registered by these common area submeters would be incremental to the above reconciliation formula.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 35

35. Reference Direct Testimony of Teresa Ringenbach, p. 21, lines 22-23.
- a. Please define “total bill amount basis” as used herein.
 - b. For purposes of calculating “total bill amount basis,” has NEP ever included charges on a bill other than charges for basic electric service?

RESPONSE:

- 35.a. See Response to 6.
- 35.b. Water, natural gas, where authorized by landlord and regulations common area usage, trash and other community services may be billed. See also Response to 6.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 46

46. Reference Direct Testimony of Teresa Ringenbach, p. 27, lines 8-9. Where a tenant in an NEP-submetered building alleges that the rate charged by NEP exceeds the legal limit, does NEP provide the tenant with information on how they can pursue legal recourse? If yes, please provide such information

RESPONSE:

NEP does not explicitly inform tenants of their formal and informal options to obtain legal recourse of a perceived overbilling situation. However all residential tenants have the same access as residential customers of utilities do to the Pennsylvania Public Utility Commission's informal and formal complaint resolution process when they believe a violation of the Public Utility Code has occurred.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 50

50. Reference Exhibit TR-9, p. 2. Identify each “service fee,” including the amount of such fee, associated with in-store payments.

RESPONSE:

Walmart - \$1.50
Kroger - \$2.00

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 51

51. Reference Exhibit TR-9, p. 2. Identify each “service fee,” including the amount of such fee, associated with payments made via phone.

RESPONSE:

A service fee of \$3.50 is charged for payments made over the phone with an agent.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 52

52. Reference Exhibit TR-9, p. 2. With respect to security deposits:
- a. Provide the average amount of a security deposit charged to residential tenants.
 - b. Explain how the amount of a tenant's security deposit is calculated.
 - c. Explain when a tenant's security deposit becomes due for payment.
 - d. Describe tenants' options, if any, to defer or spread out payment of a security deposit.

RESPONSE:

52.a. Residents are charged a one hundred dollar (\$100) security deposit for electric service and/or a fifty dollar (\$50) security deposit for water service, as applicable.

52.b. Amounts are standardized and intended to cover approximately one month worth of typical residential usage. See Response 52.a. above.

52.c. Security deposits become due along with the first set of charges applied to a resident's account on the specified due date.

52.d. Security deposits are waived for residents who either (1) sign up for automatic payments, (2) submit a letter of credit from a utility provider, or (3), in some cases, provide a credit score or similar measure of creditworthiness.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Teresa Ringenbach
Title: VP Business Development

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 53

53. Reference Exhibit TR-9. Identify every other charge or fee NEP assesses on tenants other than the charges identified on page 1 of the bill as “Electric” or “Water & Sewer.” For each such charge or fee, identify, at a minimum: the average amount of the charge or fee, the conditions under which it is assessed upon tenants, the authority under which NEP assesses the charge or fee, and the consequences to tenants for non-payment of the charge or fee.

RESPONSE:

For certain communities that have hired NEP to allocate a master metered water bill to residents, by submetering or otherwise, NEP charges an administrative “Water Billing Fee” between \$3 and \$5. At the direction of and as a service to the property owner, NEP may also consolidate trash collection fees and allocations of other community utility or service bills into its bill. Each such charge is assessed under authority derived from the lease agreement between the property owner and resident, which describes each such charge and pursuant to which residents have agreed to pay each such charge to the property owner or their designated agent, such as NEP. Late payment fees are also assessed as described in Response 6.h. All charges and fees are incorporated into a resident’s singular balance; NEP does not make a distinction between charge categories for purposes of the enforcement mechanisms described in Response 6.i.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Jacqueline Daniels
Title: Sr. Account Manager

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 55

- 55. Reference Exhibit TR-9, p. 2. For each year 2017 through 2021 YTD, identify, for all NEP-submetered residential buildings in Pennsylvania:
 - a. The number and percentage of tenants with past due balances.
 - b. The number and percentage of tenants with past due balances greater than \$100.
 - c. The total amount of tenants' past due balances.
 - d. The total amount of past due balances of tenants with past due balances greater than \$100.
 - e. The total amount of late payment fees assessed on tenants with past due balances greater than \$100.
 - f. For those tenants with past due balances greater than \$100, the percentage of such balance composed of late payment charges.

CONFIDENTIAL RESPONSE:

[START CONFIDENTIAL] [REDACTED]

[END CONFIDENTIAL]

- 55.e. NEP does not maintain reports from which this data could be readily ascertained.
- 55.f. NEP does not maintain reports from which this data could be readily ascertained.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024750
	:	
Duquesne Light Company	:	

**SURREBUTTAL TESTIMONY OF HARRY GELLER, ESQ.
ON BEHALF OF
PITTSBURGH UNITED**

August 10, 2021

Topics Addressed:

Rate Design

Rate Affordability / Rate Impact on Low Income Consumers

Low Income Programming

1 **PREPARED SURREBUTTAL TESTIMONY OF HARRY GELLER, ESQ.**

2 **Q: Please state your name, occupation, and business address.**

3 A: My name is Harry Geller. I am an attorney. I am the former Director of the Pennsylvania
4 Utility Law Project. I am currently retired but serve as Senior Counsel to the Pennsylvania Utility
5 Law Project (PULP) and as a consultant to legal aid programs and their clients. I maintain an office
6 at 118 Locust St., Harrisburg, PA 17101.

7 **Q: Did you previous submit testimony in this proceeding?**

8 A: Yes. I submitted direct testimony, pre-marked as CAUSE-PA Statement 1 and rebuttal
9 testimony, pre-marked as CAUSE-PA Statement 1-R.

10 **Q: What is the purpose of your surrebuttal testimony?**

11 A: My surrebuttal testimony responds to the rebuttal testimony of Duquesne Light Company's
12 (DLC, Duquesne Light, or the Company) expert witness Katherine M. Scholl (DLC Statement 7-
13 R) regarding my recommendations that DLC make immediate improvements to its universal
14 service programs in this rate proceeding.

15 Next, my surrebuttal testimony responds to the rebuttal testimony of DLC expert witness
16 Sarah J. Oleksak's (DLC Statement 8-R) regarding my recommended improvements to DLC's
17 proposed EV pilot programs.

18 I will also address the Office of Consumer Advocate expert witness Roger Colton's rebuttal
19 testimony (OCA Statement 4-R) regarding my recommended adjustments to the maximum credit
20 thresholds of DLC's Customer Assistance Program (CAP), and the Bureau of Investigation and
21 Enforcement (I&E) expert witness Christine Wilson's rebuttal testimony (I&E Statement 1-R)
22 regarding my recommended improvements to DLC's LIURP budget.

1 Finally, my surrebuttal testimony responds to Office of Small Business Advocate (OSBA)
2 expert witness Robert D. Knecht's rebuttal testimony (OSBA St. 1-R) related to the cost and
3 revenue allocation of master-metered multifamily customers and his response to Mr. Colton's
4 proposed allocation of universal service costs.

5 Absence of a response to any specific recommendation or position of any witness does not
6 indicate my agreement. Unless required for context in providing further responses to rebuttal
7 testimony, I will not reiterate the extensive arguments and evidence that I have provided through
8 by direct testimony and rebuttal testimony. To the extent an argument raised by any party in
9 rebuttal is already sufficiently addressed in my direct testimony or rebuttal testimony, I do not
10 intend to respond, and stand by the evaluations, analyses, and recommendations contained in my
11 direct testimony and rebuttal testimony.

12 **Q: How if your surrebuttal testimony organized?**

13 A: I will begin by responding to the rebuttal testimony of Ms. Scholl regarding my
14 recommended improvements to DLC's universal service programs. Next, my surrebuttal testimony
15 responds to Ms. Olexsak's rebuttal testimony related to my recommended improvements to DLC's
16 proposed EV pilot programs. I will then address Mr. Colton's rebuttal testimony regarding my
17 recommendation to adjust DLC's maximum CAP credit thresholds, and to Ms. Wilson's rebuttal
18 testimony to my recommendations to improve DLC's LIURP budget. Finally, I will discuss Mr.
19 Knecht's rebuttal testimony related to the cost and revenue allocation of master-metered
20 multifamily tenants and to Mr. Colton's recommended allocation of universal service costs.

1 **Response to DLC Expert Witness Katherine M. Scholl**

2 **Q: Does Ms. Scholl believe that DLC should make improvements to its universal service**
3 **programs in this context of this rate proceeding?**

4 A: No. Ms. Scholl argues that many of the recommendations set forth by OCA expert witness
5 Mr. Colton, Pennsylvania Weatherization Providers Taskforce (PWPTF) expert witness Eugene
6 M. Brady, and myself are not appropriately raised in the current proceeding.¹ Ms. Scholl argues
7 that these recommendations related to USECP design should be raised in DLC's currently pending
8 Universal Service and Energy Conservation Plan (UESCP) proceeding.²

9 **Q: What is your response to Ms. Scholl's argument that your recommendations should**
10 **be deferred to DLC's USECP proceeding?**

11 A: I disagree with Ms. Scholl's assessment that universal service issues should not be
12 considered at this time and should be relegated only to DLC's USECP proceeding. DLC is
13 proposing to increase residential rates now, in the context of this proceeding. If approved, DLC's
14 rate increase will have a direct and immediate impact on rates charged to DLC's residential
15 customers – including its low income customers, exacerbating existing levels of unaffordability.³
16 Considering a rate increase now while deferring consideration of its effect on CAP and other low
17 income DLC customers, and how to ameliorate the effect of the rate increase on those
18 economically vulnerable customers, would effectively deprive low income customers of critical
19 assistance, requiring CAP customers and other low income customers to pay unaffordable rates
20 until DLC's USECP is again subject to review.

¹ DLC St. 7-R at 12, 19, 28.

² Id. at 12: 1-21; 19: 13-18.

³ CAUSE-PA St. 1 at 16:10 – 18:2.

1 **Q: Please summarize Ms. Scholl’s rebuttal testimony related to CAP maximum credits**
2 **to which you wish to respond.**

3 A: Ms. Scholl disagrees with my recommendation to monitor and adjust the maximum CAP
4 credit limits to mitigate the impact of the rate increase on low income CAP customers.⁴ Ms. Scholl
5 believes DLC maximum CAP credit policies are adequate, and describes how the Company has a
6 two-fold approach to managing CAP maximum credits: (1) a DLC employee reviews a list of
7 customers who are at or near their CAP maximum discount and engages these customers to
8 determine if an exception or referrals are appropriate; and (2) DLC’s internal team reviews the list
9 of customers granted exceptions so that they remain in place through program events like
10 recertification.⁵ Ms. Scholl indicates that, to date, 182 customers have been granted exceptions to
11 the CAP maximum discounts.⁶

12 Ms. Scholl also argues that CAP maximums are an important cost containment measure,
13 and that a 90% of CAP customers do not reach their CAP maximums.⁷ Ms. Scholl estimates that
14 the total number of CAP customers who have used at least 70% of their discount currently equate
15 to fewer than 3% of all CAP customers – just a few months after implementation of DLC’s recently
16 redesigned percentage of income play.⁸ Ms. Scholl further estimates that, in the first 5 months of
17 the new CAP, the figures are on track to maintain the percentage of customers hitting their
18 maximum discounts at 5%.⁹

⁴ Id. at 38:21 – 39:4.

⁵ DLC St. 7-R at 21: 1-18.

⁶ Id. at 21: 20-28.

⁷ Id. at 22-23.

⁸ Id. at 23: 6-19.

⁹ Id. at 23-24.

1 **Q: What is your response to Ms. Scholl’s rebuttal testimony related to DLC’s maximum**
2 **CAP credits?**

3 A: I disagree with Ms. Scholl’s assessment that DLC’s CAP is currently on track to maintain
4 a 5% level of participants who exceed their maximum CAP credit thresholds. As I described in my
5 direct testimony, a significantly higher percentage of DLC CAP customers have exceeded their
6 CAP maximum credit limits each year since 2018.¹⁰ In the first 6 months since implementation of
7 DLC’s PIPP, hundreds of CAP customers have reached or are close to reaching the maximum
8 CAP credit threshold, and will be charged categorically unaffordable rates for the remainder of the
9 program year.¹¹ Attachment A to my testimony provides a chart showing the difference between
10 the amount a CAP customer pays before and after exceeding their maximum CAP credits. In the
11 last 6 months, CAP customers exceeding their maximum CAP credits paid anywhere from \$9.83
12 to \$166.12 each month in excess of their otherwise applicable CAP rate.¹² As I explained in my
13 direct testimony, this substantial increase in CAP rates is unaffordable for low income households,
14 and has far-reaching impacts on health, safety, and economic stability of that household – as well
15 as the broader community.

16 Given that a significant percent of CAP participants are already near or exceeding their
17 maximum CAP credit limits in the early portion of the year, and the substantial financial impact
18 on CAP customers who exceed their maximum CAP credit thresholds, I believe systematic
19 improvements are needed to ensure that CAP participants can achieve affordable monthly bills
20 throughout the program year.

¹⁰ CAUSE-PA St. 1 at 36: 8-12; see also CAUSE-PA III-11, attachment; CAUSE-PA I-14, supplement.

¹¹ CAUSE-PA to DLC I-14 supplement; CAUSE-PA to DLC III-11 attachment; CAUSE-PA to DLC III-12 attachment.

¹² See Attachment A; see also CAUSE-PA to DLC III-12 attachment.

1 Ms. Scholl's reliance on the number of households currently exceeding their maximum
2 CAP credit limit does not address the issue at hand. DLC is proposing to substantially increase
3 residential rates in this proceeding. CAP customers' maximum level of assistance will decrease –
4 dollar for dollar – with any approved rate increase. The impact of the rate increase on CAP
5 customer rates must be fully addressed and remediated in this proceeding.

6 **Q: Please summarize Ms. Scholl's rebuttal testimony related to *de facto* electric heating**
7 **customers to which you wish to respond.**

8 A: Ms. Scholl disagrees with my recommendation to treat *de facto* electric heating customers
9 as heating customers for the purposes of determining CAP maximum credit limits.¹³ Ms. Scholl
10 opines that treating *de facto* heating customers in this manner will reduce customer incentive to
11 eliminate space heaters.¹⁴

12 **Q: Do you agree with Ms. Scholl's assessment of *de facto* heating customers?**

13 A: No. While I agree with Ms. Scholl that providing customers with a safe source of heat is
14 tantamount, and that *de facto* heating customers must be treated through available energy
15 efficiency and weatherization programs,¹⁵ I disagree with Ms. Scholl's assessment that treating *de*
16 *facto* heating customers as heating customers for the purposes of determining maximum CAP
17 credit limits will make these customers less likely to remediate their reliance on *de facto* heating
18 sources. *De facto* heating is used to describe when customers use portable space heaters or other
19 supplemental heating devices as their primary heating source because they do not have or are
20 unable to use their central heating system. The situation most often occurs when a customer's
21 central heating system is broken and in need of repair, or when delivery of natural gas or other

¹³ DLC St. 7-R at 22: 11-22.

¹⁴ Id.

¹⁵ Id.

1 deliverable fuel is terminated or depleted. Reliance on a *de facto* heating source is not only
2 unaffordable, it can also be unsafe. Many low income households must turn to *de facto* heating as
3 a last and only remaining alternative to freezing during the winter. In the short term, purchasing
4 space heaters is significantly less expensive than furnace repair and replacement, the cost of a
5 minimum fuel delivery, or being able to pay past due deposits and reconnection fees to a utility.
6 However, in the long term, reliance on *de facto* heating sources provides unreliable and often
7 unsafe heating to households, resulting in higher direct and indirect costs to households, depletion
8 of CAP credits, rate unaffordability, and potential termination. I disagree strongly with Ms.
9 Scholl's depiction that providing *de facto* heating customers with additional assistance by treating
10 *de facto* heating customer as heating customers for the purposes of CAP maximum credits will
11 somehow make these customers content living with unsafe heating sources if provided with the
12 assistance and education necessary to fix their primary heat. While *de facto* heating customers
13 should be referred and encouraged to participate in available assistance programs to resolve the *de*
14 *facto* heating, these customers nevertheless require affordable essential electric service and should
15 not be punished for needing to rely on *de facto* heating through loss of CAP rates.

16 **Response to DLC Expert Witness Sarah J. Olexsak**

17 **Q: Please briefly summarize the rebuttal testimony of Ms. Olexsak regarding**
18 **transportation electrification to which you wish to respond.**

19 A: Ms. Olexsak disagrees with my assessment that low income customers are not able to
20 access electric vehicles (EVs) and infrastructure related to EVs.¹⁶ Ms. Olexsak argues that, as the
21 price of EVs continues to drop, the used EV market expands, and certain state and federal

¹⁶ CAUSE-PA St. 1 at 44: 10-11.

1 incentives are available, obtaining an EV will be attainable for all customers.¹⁷ Ms. Olexsak
2 estimates that many EVs cost less than \$30,000, after potential incentives, and that EV owners
3 save \$6,000 to \$10,000 on total ownership over the life of the vehicle.¹⁸ Ms. Olexsak argues that
4 some used EVs start as low as \$6,000, not including the cost of maintenance or electricity (fuel)
5 and insurance, though she provided no evidence of local used EV pricing.¹⁹

6 Ms. Olexsak further disagrees with my concerns that EV infrastructure buildouts may result
7 in “green gentrification” in low income communities and communities of color.²⁰ Ms. Olexsak
8 reiterates that customers cite to lack of public charging stations as the number one barrier to
9 purchasing an EV.²¹ Ms. Olexsak voices concern that failing to serve EJ communities in EV
10 initiatives might lead to charging deserts and fewer fueling options for low income customers.²²
11 Ms. Olexsak argues that electric utilities are well situated to improve the equitable inclusion of
12 low income customers to EV participation.²³

13 **Q: What is your response to Ms. Olexsak’s rebuttal testimony related to low income**
14 **consumers’ access to EVs and the benefits of EV ownership?**

15 A: I recognize that the price of some EVs might have dropped over the course of recent years.
16 Ms. Olexsak argues that my estimated average cost of \$55,600 in 2019 for an EV is inflated as a
17 result of luxury EVs on the market.²⁴ However, even at \$30,000 - as estimated by Ms. Olexsak -

¹⁷ DLC St. 7-R at 22: 19-23.

¹⁸ Id. at 23: 1-10.

¹⁹ Id. at 23: 11-17.

²⁰ Id. at 24-26.

²¹ Id. at 24: 17-21.

²² Id. at 24-25.

²³ Id. at 25: 15- 26: 3.

²⁴ Id. at 23: 1-4.

1 EV ownership remains well out of reach for most low income households.²⁵ While Ms. Olexsak
2 indicates that some used EVs start as low as \$6,000, Ms. Olexsak does not indicate how many
3 lower priced EVs are on the resale market and accessible to low income families in the DLC
4 service territory. Moreover, the source that Ms. Olexsak cites as discussing the availability of
5 \$6,000 EVs explains that, while second-hand EVs are the best opportunity to bring EVs to larger
6 client bases, certain barriers exist that require policy solutions, such as the fact that incentives for
7 new EV purchases are not normally extended to used EVs.²⁶ Nevertheless, even if there were
8 adequate \$6,000 EVs on the market, the fact remains that vehicle purchase and maintenance is far
9 out of reach for many low income households.

10 In response to discovery, Ms. Olexsak explained that DLC did not study EV ownership by
11 income among its own customers, and cites to a study from Cox Automotive describing EV
12 ownership generally.²⁷ That report shows that the vast majority of EV owners (85%) have income
13 exceeding \$75,000/year – far more than average households in DLC’s service territory, who make
14 on average just \$13,854/year.²⁸

15 I agree with the premise of Ms. Olexsak’s argument that low income customers must not
16 be ignored in the momentum towards EV expansion and that electric utilities have a role to play
17 to ensure equitable access to EV solutions for low income customers. While I have explained that
18 the proposed EV pilots that Ms. Olexsak describes in her direct testimony are not adequately

²⁵ See CAUSE-PA St. 1 at 44: 11-18.

²⁶ World Resources Institute, [The \\$6,000 Electric Vehicle: The Power of the Used Car Market to Bring Electric Vehicles to Everyone](https://www.wri.org/insights/6000-electric-vehicle-power-used-car-market-bring-electric-vehicles-everyone) (August 2019), available at: <https://www.wri.org/insights/6000-electric-vehicle-power-used-car-market-bring-electric-vehicles-everyone>.

²⁷ CAUSE-PA to DLC II-11; CAUSE-PA to DLC I-9.

²⁸ Id., citing Cox Automotive, State of Electrification Q4 2020, available at: <https://www.coxautoinc.com/wp-content/uploads/2021/03/Cox-Automotive-Q4-2020-State-of-Electrification-Update.pdf>.

1 designed to meet the needs of low income households,²⁹ I recommend several improvements and
2 modifications to the proposed EV pilots to ensure that low income consumers are able to access,
3 participate, and directly benefit from these pilots.³⁰

4 **Response to OCA Expert Witness Roger Colton**

5 **Q: Please summarize Mr. Colton's rebuttal testimony related to DLC's maximum CAP**
6 **credit limits to which you wish to respond.**

7 A: Along with Ms. Scholl, Mr. Colton opposes my recommendation that DLC more closely
8 monitor and adjust its maximum CAP credit threshold to mitigate the impact of the rate increase
9 on CAP customers.³¹ Mr. Colton sows doubt into the need to address maximum CAP credits in
10 this proceeding and advocates for delay, arguing that DLC should be required to collect a plethora
11 of additional information before adjusting CAP maximum.

12 **Q: What is your response to Mr. Colton's opposition to your recommendation that DLC**
13 **more closely monitor and increase its maximum CAP credit limits?**

14 A: First, I disagree with Mr. Colton's assertion that it is inappropriate to require DLC to adjust
15 its CAP maximums if a full accounting of the reasons why customers are exceeding their CAP
16 maximum limits is unknown. I agree that, for customers who are experiencing high usage and/or
17 usage beyond their controls, targeted LIURP services might be valuable. CAP participants who
18 reach a certain percentage of their CAP maximum credit limits can and should be targeted for
19 LIURP services regardless of whether DLC raises its CAP maximum credit thresholds. However,
20 for those customers who are not able to achieve adequate bill reductions through LIURP or other

²⁹ CAUSE-PA St. 1 at 46-51.

³⁰ Id. at 53: 28-41.

³¹ OCA St. 4-R at 2: 12-19.

1 energy efficiency assistance programs, DLC must ensure that there are reasonable guardrails in
2 place for CAP customers to equitably access critical bill savings through the program.

3 I also disagree with Mr. Colton that a larger percent of customers between 0-50% FPL
4 exceeding their CAP maximum credit limits compared to CAP participants with higher incomes
5 justifies DLC not adjusting its CAP maximum credit thresholds.³² Low income customers with
6 incomes at or below 50% FPL represent the most vulnerable CAP customers who struggle on a
7 daily basis to make ends meet. We should all be very concerned that households at this income
8 level are exceeding the CAP credit limit at high rates – causing them to face full residential rate
9 bills for the remainder of the program year. While I agree with Mr. Colton that these customers
10 might benefit from LIURP referral, for those low income customers who cannot reduce their usage
11 levels as a result of LIURP services, safeguards should be established to ensure that DLC’s most
12 vulnerable customers are not barred from receiving consistent bill discounts through CAP for the
13 remainder of the program year.

14 Finally, I disagree with Mr. Colton that DLC should not have to adjust their maximum
15 CAP credit limits because temporary phenomenon might cause higher numbers of CAP
16 participants to exceed their CAP maximum limits. I do not deny that certain phenomenon – such
17 as the COVID-19 pandemic or extreme weather events – can cause changes that might affect the
18 number of customers who reach their CAP maximum limits. However, neither Mr. Colton nor I
19 can predict when or how long low income customers will be affected by these types of extreme
20 events. As we have seen, events such as the COVID-19 pandemic have had pervasive and
21 potentially long-lasting effects on low income consumers – making ongoing support through CAP

³² I note that while households at 0-50% FPL appeared to exceed their maximum CAP credit threshold at higher rates under DLC’s former CAP design, the data shows that households at 0-50% FPL are exceeding the CAP credit thresholds at an equal or lower rate compared to other income groups under DLC’s PIPP CAP design implemented in January 2021. CAUSE-PA to DLC III-11.

1 even more critical. Low income customers rely on CAP rates of service to maintain essential
2 electric service year-round. Those who cannot maintain their CAP discounts throughout the year
3 because of improperly low CAP maximum thresholds should not be disregarded with the
4 assumption that the economic pressures that they face might be temporary. As I acknowledged
5 earlier, CAP customers surpassing their CAP credit maximums is a longstanding problem with
6 DLC. Economic downturns, no matter how long they last, only exacerbate existing issues, which
7 reinforces why this must be remedied.

8 **Response to I&E Expert Witness Christine Wilson**

9 **Q: Please summarize Ms. Christine Wilson’s rebuttal testimony related to DLC’s annual**
10 **LIURP budget to which you wish to respond.**

11 A: I&E’s expert witness Ms. Wilson opposes my recommendation that DLC increase its
12 annual LIURP budget by \$1 million.³³ Instead, Ms. Wilson recommends that the Company’s
13 budget amount of \$3,053,500 as presented in the Company’s most recent ongoing USECP at
14 Docket No. M-2019-3008227 be allowed.³⁴ Ms. Wilson also recommends that any carryover to
15 future years be disallowed.³⁵ In support of her recommendation, Ms. Wilson notes that the
16 Company failed to spend its existing LIURP budgets in 2018, 2019, and 2020.³⁶ Ms. Wilson also
17 argues that, while I indicate that critical changes are needed to DLC’s LIURP, I do not detail
18 proposed improvements.³⁷

³³ DLC St. 1-R at 18:15-16.

³⁴ Id. at 18: 18- 19:4.

³⁵ Id.

³⁶ Id. at 19: 6-14.

³⁷ Id.

1 Ms. Wilson argues that recent Commission decisions support her position to deny my
2 recommended LIURP improvements.³⁸ Ms. Wilson cites to Commission Orders in PECO Energy
3 Company – Gas Division and Columbia Gas, and incorrectly argues that these decisions preclude
4 consideration of universal service issues – such as LIURP issues – in the present rate proceeding.³⁹

5 **Q: What is your response to Ms. Wilson’s rebuttal testimony regarding DLC’s LIURP**
6 **budget?**

7 A: Counsel for CAUSE-PA advises me that the effect of the recent Commission decisions is
8 a legal question which CAUSE-PA reserves the right to address in briefing. Notwithstanding this
9 reservation, I note that the Commission explicitly stated in Pa. PUC v. Columbia Gas that its
10 decision was limited to the circumstances presented in that proceeding.⁴⁰ In a Joint Statement,
11 Chairman Gladys Brown Dutrieuille and Vice Chairman David Sweet further emphasized that the
12 decision in the Columbia Gas case was limited to the facts of the case.⁴¹ Similarly, in the recent
13 PECO Gas rate case, Chairman Dutrieuille and Vice Chairman Sweet noted in a Joint Statement
14 that the Commission decision in the PECO Gas rate case was not precedential.⁴² Specifically,
15 Chairman Dutrieuille and Vice Chairman Sweet noted:

16 ... [T]he Commission’s decision in Columbia Gas *does not establish a precedent* where universal
17 service polices are exclusively addressed within the confines of a USECP proceeding. CAPs
18 contribute to over 80 percent of the costs associated with universal service programs, which is an

³⁸ I&E St. 1-R at 19: 16-19.

³⁹ Id. at 19-20.

⁴⁰ Pa. P.U.C. v. Columbia Gas of Pa., Inc., Opinion and Order, Docket No. R-2020-3018835, at p. 261 (Order entered Feb. 19, 2021).

⁴¹ Pa. P.U.C. v. Columbia Gas of Pa., Inc., Joint Statement of Chairman Gladys Brown Dutrieuille & Vice Chairman David W. Sweet, Docket No. R-2020-3018835 (Joint Statement Feb. 19, 2021).

⁴² Pa. PUC v. PECO Energy Company, Joint Statement of Chairman Gladys Brown Dutrieuille & Vice Chairman David W. Sweet, Docket No. R-2020-3018929 (Joint Statement dated June 17, 2021).

1 expense borne by ratepayers. Rate cases can offer an opportunity to “look under the hood,” to see
2 how these programs and their respective expenses interact.⁴³

3
4 I also note that Ms. Wilson’s assessment of DLC’s annual underspending of its LIURP
5 budget is incomplete. In my direct testimony, I describe at length how, despite significant number
6 of customers estimated to be LIURP eligible, DLC has only historically served a small subset of
7 these customers.⁴⁴ Ms. Wilson’s assessment that DLC failed to spend its LIURP budget in 2020
8 fails to account for one important factor – the impact of COVID-19 on LIURP services. While
9 DLC has traditionally underspent its LIURP budget, it is unclear what portion of underspending
10 in 2020 was attributed to impediments caused by COVID-19, including work stoppages, stay-at-
11 home orders, and customers being unable or unwilling to seek LIURP improvements due to safety
12 concerns of contractors and associated workers being in homes. Also, in 2019, DLC’s LIURP
13 underspending was associated with DLC’s change in contractors, which explains but does not
14 excuse or justify DLC’s underspending in that year.

15 I also disagree with Ms. Wilson that DLC’s historic underspending is a basis to permit
16 DLC to not rollover unspent LIURP funding, or to make improvements to its LIURP budget. As I
17 detail in my direct testimony, despite DLC’s LIURP budget being significantly smaller than the
18 LIURP budgets of other EDCs with similar customer counts, DLC has only served a small subset
19 of eligible customers and only spent a subset of its LIURP budget.⁴⁵ This inability to reach those
20 in need of LIURP services should not be interpreted as a lack of need for LIURP services. Instead,
21 I recommend that DLC work with parties and stakeholders to develop more effective ways in

⁴³ Pa. PUC v. PECO Energy Company, Joint Statement of Chairman Gladys Brown Dutrieuille & Vice Chairman David W. Sweet, Docket No. R-2020-3018929 (Joint Statement dated June 17, 2021) (internal citation omitted) (emphasis added).

⁴⁴ CAUSE-PA St. 1 at 40.

⁴⁵ Id. at 40-42.

1 which to reach low income customers in dire need of usage reduction services through the program.
2 I also support the recommendation of the expert witness for Pennsylvania Weatherization
3 Providers Task Force, Eugene M. Brady, that DLC should partner more with agencies experienced
4 in providing service to low income consumers, including weatherization services, and various
5 other Community Based Organizations.⁴⁶

6 **Response to OSBA Expert Witness Mr. Robert D. Knecht**

7 **Q: Please summarize Mr. Robert D. Knecht's recommendation concerning master**
8 **metering.**

9 A: Mr. Knecht recommends in his rebuttal testimony that master-metered multifamily service
10 be included as part of the Residential class for cost allocation and revenue allocation purposes.⁴⁷

11 **Q: What is the basis for Mr. Knecht's recommendation?**

12 A: Mr. Knecht analyzes the master/sub metering proposal set forth by Nationwide Energy
13 Partners (NEP) in its direct testimony and describes a number of concerns with NEP's proposal,
14 including (1) allowing property owners/landlord to avoid contributing to universal service costs;
15 and (2) NEP's tenants losing access to universal services, the ability to shop for suppliers, energy
16 efficiency and conservation programs, and various consumer protections.⁴⁸ While Mr. Knecht
17 recommends that NEP's proposal is rejected, in the event that the Commission allows any master
18 metering proposal, Mr. Knecht recommends that master-metered multifamily customers should be
19 treated as Rate RS customers for the purpose of cost and revenue allocation.⁴⁹

⁴⁶ PWPTF St. 1 at 7-8.

⁴⁷ OSBA St. 1-R at 19: 19-22.

⁴⁸ Id. at 23-25.

⁴⁹ Id. at 25: 1-7.

1 Mr. Knecht opines that the load shape for multifamily residences should be reasonably
2 similar to that for single family residences, so there will be no distortions created by this
3 allocation.⁵⁰ Mr. Knecht posits that DLC should thus create a separate sub-class within Rates RS
4 that would apply to master-metered multifamily customers.⁵¹

5 **Q: Do you agree with Mr. Knecht's recommendation regarding master metering?**

6 A: No. Like Mr. Knecht, I am highly concerned with NEP's master and sub-metering proposal
7 and recommend in my rebuttal testimony that NEP's proposal be rejected in its entirety.⁵²
8 However, I disagree with Mr. Knecht that, if the Commission ultimately approve a master metering
9 proposal, master-metered multifamily service should be included as part of the residential class for
10 cost allocation and revenue allocation purposes. First, there is no basis for Mr. Knecht's claim that
11 the load shape for multifamily residences should be reasonably similar to those of single-family
12 residences. Many master metered multifamily buildings are mixed use, with both businesses and
13 residential units. And many others have substantial common areas with significant electric usage
14 that would not follow the same usage patterns as a single family home. Second, it is inappropriate
15 to shift the costs of multifamily buildings to residential customers. Multifamily buildings are often
16 medium and large size users, and are thus separate and distinct from smaller users under RS rates.
17 If any master metering proposal is approved by the Commission, it should not result in shifting the
18 costs of servicing business, government, or non-profit customers to the residential class – thus
19 further adding to the pervasive unaffordability faced by DLC's residential customers – particularly
20 its low income customers. Ultimately, however, I recommend that NEP's proposal be rejected,
21 which would render Mr. Knecht's recommendation moot.

⁵⁰ Id. at 19: 22-25.

⁵¹ Id. at 19: 25-26.

⁵² See CAUSE-PA St. 1-R.

1 **Q: Please summarize Mr. Knecht’s testimony related to the cost allocation of universal**
2 **services to which you wish to respond.**

3 A: Mr. Knecht responds in his rebuttal testimony to recommendations of OCA expert witness
4 Mr. Colton.⁵³ In his direct testimony, Mr. Colton concludes that DLC’s universal service costs
5 should not be recovered solely from the residential class and proposes a cost allocation to be
6 recovered from various rate classes based on the distribution of revenues.⁵⁴ Mr. Knecht estimates
7 that, assuming 6.4% is the share of residential revenues associated with CAP customers, the impact
8 on non-CAP bills for the Rate RS could be about \$2.57 per month, or 5.2% of base rates, and
9 argues that non-residential customers will be impacted more than on a *de minimis* basis, as
10 characterized by Mr. Colton.⁵⁵ Mr. Knecht rationalizes that universal service costs should be
11 recovered solely from residential customers, as only residential customers are eligible for program
12 benefits.⁵⁶ Mr. Knecht analogizes universal services to insurance, in which residential customers
13 pay premiums to a utility so that they are eligible for “cash benefits in the event of an unfortunate
14 turn in their economic circumstances.”⁵⁷ Mr. Knecht also argues that basing allocation of costs on
15 broad societal benefits can lead to regulatory confusion, as societal benefits get factored into utility
16 rate cost causation and claimants may continually seek special treatment based on these grounds.⁵⁸
17 Mr. Knecht argues that it is unclear that utility programs represent an effective means of assisting

⁵³ OSBA St. 1-R at 6-10.

⁵⁴ OCA St. 4 at 57: 10-18.

⁵⁵ OSBA St. 1-R at 6: 17- 7:10.

⁵⁶ Id. at 7: 14-22.

⁵⁷ Id. at 7: 14-22.

⁵⁸ Id. at 8: 11-20.

1 low income residents, apart from the insurance policy analogy he posits, and argues for broader
2 improvements in low income assistance.⁵⁹

3 **Q: Do you support Mr. Colton’s recommendation that universal service costs are**
4 **allocated amongst all customer classes?**

5 A: Yes, I support Mr. Colton’s recommendation that universal service costs are not solely
6 allocated to residential customers. I disagree with Mr. Knecht’s assessment that residential
7 customers should bear the full weight of universal service costs as only residential customers may
8 derive benefits from these programs. Poverty is a broad social problem, affecting all customers
9 and requiring holistic societal solutions. Utility insecurity is a pervasive problem with long-term
10 and far-ranging consequences for low income households and the surrounding communities in
11 which they live and work.⁶⁰ Families who are unable to afford critical utility services are more
12 prone to a variety of adverse consequences, including increased rates of health complications and
13 hospitalization, eviction, and food insecurity.⁶¹ For children in low income households, utility
14 insecurity has been linked to long-term health consequences and developmental
15 delays.⁶² Moreover, communities of color continue to experience utility insecurity at

⁵⁹ Id. at 9: 1-21.

⁶⁰ Diana Hernández, Yumiko Aratani, Yang Jiang, Energy Insecurity among Families with Children, National Center for Children in Poverty, January 2014, at 3, available at: https://www.nccp.org/wp-content/uploads/2014/01/text_1086.pdf.

⁶¹ Environmental and Climate Justice Program, NAACP, Lights Out In The Cold: Reforming Utility Shut-Off Policies as If Human Rights Matter (March 2017), available at <https://naacp.org/resources/lights-out-cold>.

⁶² See e.g., Diana Hernandez, editorial, Energy Insecurity: A Framework for Understanding Energy, the Built Environment, and Health Among Vulnerable Populations in the Context of Climate Change, *American Journal of Public Health*, Vol.103, No 4 (April 2013), available at:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673265/pdf/AJPH.2012.301179.pdf>;

Diana Hernández, Yumiko Aratani, and Yang Jiang, Energy Insecurity Among Families with Children (January 2014), available at http://www.nccp.org/publications/pdf/text_1086.pdf.

1 disproportionately higher levels.⁶³ The utility insecurity faced by low income and minority
2 households has only been exacerbated as a result of the COVID-19 pandemic.⁶⁴

3 While universal service program participants may derive the most direct benefits from
4 universal service programs, these programs provide important societal benefits that are also
5 enjoyed by non-residential ratepayers that should not be ignored. Contrary to Mr. Knecht's
6 characterization, acknowledging the broad societal benefits of universal services does not
7 engender regulatory confusion or special treatment. Rather, acknowledging these broader societal
8 benefits through rate allocation allows for more accurate utility rate cost causation. Many universal
9 service program participants are employed – yet do not receive a wage that is adequate to afford
10 basic household needs.⁶⁵ Many others are retired Seniors that do not receive enough in Social
11 Security or retirement benefits to afford basic life necessities, such as utility services.
12 Moreover, low income customers faced with utility insecurity often struggle to cope with
13 heightened levels of stress, anxiety, and depression, and must take time away from work to arrange
14 payments, locate or apply for assistance programs, and arrange for reconnections⁶⁶ – all of which
15 significantly undermine worker productivity. Universal service programs also help utility
16 companies to control uncollectible expenses, helping to bridge the gap in these circumstances,

⁶³ Environmental and Climate Justice Program, NAACP, Lights Out In The Cold: Reforming Utility Shut-Off Policies as If Human Rights Matter (March 2017), available at <https://naacp.org/resources/lights-out-cold>.

⁶⁴ Samantha Artiga, Rachel Garfield, Kendal Orgera, Kaiser Family Foundation, Communities of Color at Higher Risk for Health and Economic Challenges Due to COVID-19 (April 7, 2020), <https://www.kff.org/coronavirus-covid-19/issue-brief/communities-of-color-at-higher-risk-for-health-and-economic-challenges-due-to-covid-19/>.

⁶⁵ See, e.g., MIT's Living Wage Calculator for Pennsylvania (a one adult, one child household would need to earn \$24.30/hour to earn a wage that could cover basic expenses in PA, but the average wage for the federal poverty threshold is \$8.13/hour, and the minimum wage in PA is \$7.25/hour), available at <https://livingwage.mit.edu/states/42>.

⁶⁶ Diana Hernadez, Understanding 'energy insecurity' and why it matters to health, Social Science & Medicine, Volume 167, October 2016, available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5114037/>; See also Ariel Drebohl & Lauren Ross, ACEEE, Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low-income and Underserved Communities, at 13 (April 2016), available at: <https://www.aceee.org/sites/default/files/publications/researchreports/u1602.pdf>.

1 which benefits all customers. Thus, each of us, regardless of rate class, receives the benefits
2 derived by a healthy and productive community- making it sound policy for all customers to share
3 in the cost of providing universal access to our most vulnerable residents.

4 While I don't disagree with the premise that universal service programs might provide
5 additional assistance to low income customers through various improvements, I disagree with Mr.
6 Knecht that the benefits of universal services are unclear. Universal service programs provide not
7 only a safety net for at-need residential customers but also broad societal benefits for all customer
8 classes (industry, business, commerce, educational institutions, hospitals, local and state
9 governments, and other residential customers) in specific and identifiable ways. In turn, the
10 responsibility to provide universal access to life-sustaining utility services should be shared by all
11 utility consumers – not simply residential customers.

12 **Q: Does this conclude your surrebuttal testimony?**

13 A: Yes.

CAUSE-PA Statement 1-SR

Attachment A

CAP Bill Before/After CAP Maximum Threshold Reached

*data from DLC to CAUSE-PA III-12 attachment

REPORT_MONTH	BEFORE AVG	AFTER AVG	Difference
201801	\$ 95.01	\$ 148.79	\$ 53.78
201802	\$ 74.54	\$ 96.52	\$ 21.98
201803	\$ 63.22	\$ 64.91	\$ 1.69
201804	\$ 14.33	\$ 201.67	\$ 187.34
201805	\$ 100.58	\$ 253.04	\$ 152.46
201806	\$ 77.57	\$ 186.35	\$ 108.78
201807	\$ 67.10	\$ 176.69	\$ 109.59
201808	\$ 52.91	\$ 111.85	\$ 58.94
201809	\$ 63.99	\$ 147.84	\$ 83.85
201810	\$ 53.59	\$ 135.70	\$ 82.11
201811	\$ 80.03	\$ 155.61	\$ 75.58
201812	\$ 72.99	\$ 166.24	\$ 93.25
AVERAGE 2018			
201901	\$ 62.38	\$ 150.77	\$ 88.39
201902	\$ 64.58	\$ 150.22	\$ 85.64
201903	\$ 78.47	\$ 169.10	\$ 90.63
201904	\$ 62.76	\$ 146.57	\$ 83.81
201905	\$ 55.42	\$ 145.14	\$ 89.72
201906	\$ 63.99	\$ 144.62	\$ 80.63
201907	\$ 65.65	\$ 145.61	\$ 79.96
201908	\$ 64.70	\$ 134.98	\$ 70.28
201909	\$ 65.69	\$ 160.08	\$ 94.39
201910	\$ 62.36	\$ 155.78	\$ 93.42
201911	\$ 66.51	\$ 156.53	\$ 90.02
201912	\$ 74.34	\$ 170.34	\$ 96.00
AVERAGE 2019			
202001	\$ 81.62	\$ 170.18	\$ 88.56
202002	\$ 63.37	\$ 148.71	\$ 85.34
202003	\$ 74.76	\$ 152.02	\$ 77.26
202004	\$ 63.28	\$ 140.20	\$ 76.92
202005	\$ 58.44	\$ 151.33	\$ 92.89
202006	\$ 62.63	\$ 145.04	\$ 82.41
202007	\$ 60.81	\$ 145.64	\$ 84.83
202008	\$ 65.32	\$ 144.72	\$ 79.40
202009	\$ 60.37	\$ 153.05	\$ 92.68
202010	\$ 62.78	\$ 153.31	\$ 90.53
202011	\$ 64.78	\$ 134.91	\$ 70.13
202012	\$ 73.86	\$ 102.34	\$ 28.48
AVERAGE 2020			
202101	\$ 64.36	\$ 74.19	\$ 9.83
202102	\$ 205.57	\$ 371.69	\$ 166.12
202103	\$ 140.04	\$ 243.88	\$ 103.84
202104	\$ 109.50	\$ 200.35	\$ 90.85
202105	\$ 94.51	\$ 163.64	\$ 69.13
202106	\$ 58.69	\$ 134.43	\$ 75.74
AVERAGE 2021			

CAUSE-PA Statement 1-SR
Attachment B

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set I

Witness: Katherine Scholl

CAUSE-PA-I-4

4. How does the Company define the term “confirmed low income customer”? Please describe how a customer is designated as a confirmed low income customer, the proof (if any) required for a customer to be designated as “confirmed low income,” and how long that designation is applied before new proof is required.

Response:

Duquesne Light defines the term “confirmed low income customer” as a customer who has met at least one of the following:

1. A customer/applicant who has enrolled in CAP without defaulting due to being over-income (over 150% FPL) within the last year.
2. A customer who has received a LIHEAP (CASH or CRISIS) grant within the past program year.
3. A customer who has completed a Smart Comfort Visit in the past year with an FPI score of 1 at the time of the visit.
4. A customer who has visited a Community Based Organization and confirmed low income by providing income documentation to a CAP Agent in the last year.

A customer must provide written documentation of income and household size. Proof may consist of pay stubs, declaration letter from Social Security Administration or Temporary Aid to Needy Families. Customers with income provided by a family member or other source may provide documentation from the provider indicating the amount and frequency of their aid. Customers with no household income are required to sign a Zero Income Form if applying for the Customer Assistance Program.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set I

Witness: Katherine Scholl

CAUSE-PA-I-7

7. As of January 2021, how many estimated low-income customers reside within DLC's service territory? Please explain how the Company arrived at the estimated figures, and include citation and/or copies of any and all work papers used to perform this estimation.

Response:

The Company referenced U.S. Census data -- the most recent of which is as of 2019 -- to develop the following estimate:

	Allegheny County	Beaver County	Total
Total Population in the County	1,184,108	161,388	1,345,496
Individuals at/below 150% FPL	195,454	29,284	224,738
Est. % of County Population in DLC Service Territory	88%	90%	
Est. # Individuals in DLC territory under 150% FPL	171,413	26,238	197,652
Est. Household Size (people per household)	2.29	2.19	
Est # Households in DLC territory under 150% FPL	74,853	11,981	86,834

Sources:

Population and poverty data:

<https://data.census.gov/cedsci/table?q=s1701&g=0500000US42003,42007&tid=ACST1Y2019.S1701&hidePreview=true>

Household size:

<https://www.census.gov/quickfacts/fact/table/beavercountypennsylvania,alleghenycountypennsylvania,US/HCN010212>

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set I

Witness: Katherine Scholl

CAUSE-PA-I-9

9. What is the average annual income of DLC's currently identified confirmed low income customers?

Response:

The average annual household income of DLC's currently confirmed low-income customers is \$13,854.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set I

Witness: Katherine Scholl

CAUSE-PA-I-10

10. What is the average annual income of DLC's currently enrolled CAP customers?

Response:

The average annual household income of DLC's currently enrolled CAP customers is \$13,931.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set I

Witness: Katherine Scholl

CAUSE-PA-I-14 - SUPPLEMENT

14. From 2018 to date in 2021, disaggregated by month and year, please indicate how many CAP customers exceeded their CAP maximum credit limit.

Response:

	2018	2019	2020	2021
Jan	967	206	356	68
Feb	851	189	369	18
Mar	788	266	436	87
Apr	6	287	409	98
May	14	291	399	101
Jun	35	298	416	
Jul	57	303	424	
Aug	101	262	400	
Sep	92	243	349	
Oct	126	288	390	
Nov	104	260	353	
Dec	124	309	398	

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set II

Witness: Sarah Oleksak

CAUSE-PA-II-1

1. Has Duquesne done a study, or is it aware of any study, showing the ownership rate of electric vehicles (“EV”) by income? If so, please provide a copy of any such study performed by Duquesne or of which it is aware.

Response:

The Company has not conducted a study of EV ownership rate by income among customers. Cox Automotive describes EV ownership rate by income in its State of Electrification Update.¹

¹ Cox Automotive (2021, March). State of Electrification Q4 2020. <https://www.coxautoinc.com/wp-content/uploads/2021/03/Cox-Automotive-Q4-2020-State-of-Electrification-Update.pdf>

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set III

Witness: Katherine Scholl

CAUSE-PA-III-11

11. For 2018 to date in 2021, disaggregated by month and year, please indicate the number of CAP customers that have reached 70-80%, 80-90%, and 100% or more of the maximum CAP credit threshold. Please further disaggregate this data by federal poverty level (0-50% FPL; 51-100% FPL; and 51-150% FPL) and service type (electric heating or electric non-heating).

Response:

See CAUSE-PA-III-11 - Attachment 1. Please note that the Company will supplement its response to CAUSE-PA I-14 in light of this response.

	Heating			Heating Total	Non-Heating			Non- Heating Total	Grand Total
	0 - 50	50 - 100	100 - 150		0 - 50	50 - 100	100 - 150		
201801	11	5		16	398	422	9	829	845
201802	12	7	2	21	345	406	10	761	782
201803	11	10	2	23	307	445	16	768	791
201804	17	5	2	24					24
201805	17	4		21	2			2	23
201806	9	1	1	11	1			1	12
201807	10	5	1	16	8	1		9	25
201808	14	3		17	20	5		25	42
201809	12	9		21	38	29		67	88
201810	24	7		31	115	60		175	206
201811	25	7		32	130	100		230	262
201812	23	12		35	187	118	3	308	343
201901	29	14	1	44	261	172	3	436	480
201902	26	10	2	38	227	172	3	402	440
201903	25	13	2	40	294	257	5	556	596
201904	27	12		39	295	239	4	538	577
201905	20	9		29	282	244		526	555
201906	19	9	1	29	297	245	3	545	574
201907	16	10	1	27	299	246	4	549	576
201908	22	6		28	245	247	2	494	522
201909	22	10	1	33	241	273	4	518	551
201910	31	13	1	45	258	278	4	540	585
201911	25	10	1	36	191	201	3	395	431
201912	29	15		44	211	238	5	454	498
202001	33	13		46	248	242	2	492	538
202002	20	8		28	269	249	4	522	550
202003	23	13		36	293	319	6	618	654
202004	24	9		33	263	261	5	529	562
202005	27	6		33	252	255	2	509	542
202006	26	6		32	294	278	2	574	606
202007	23	10		33	262	268	3	533	566
202008	18	12		30	248	285	4	537	567
202009	20	9		29	234	249	3	486	515
202010	18	11		29	267	244	2	513	542
202011	19	9		28	214	172	5	391	419
202012	29	7		36	224	207	5	436	472
202101	9	5	1	15	93	61	3	157	172
202102		1	5	6	5	13	16	34	40
202103	4	13	11	28	33	50	47	130	158
202104	7	14	15	36	32	59	61	152	188
202105	5	21	12	38	49	74	89	212	250
202106	3	17	5	25	60	105	101	266	291

	Heating			Heating Total	Non-Heating			Non- Heating Total	Grand Total
	0 - 50	50 - 100	100 - 150		0 - 50	50 - 100	100 - 150		
201801	3	6		9	314	315	4	633	642
201802	2	5		7	309	254	2	565	572
201803	5	3		8	285	263	12	560	568
201804	9	4		13					13
201805	15	3	1	19					19
201806	9	3		12					12
201807	9			9	3	2		5	14
201808	10	3		13	8	5		13	26
201809	11	2		13	20	5		25	38
201810	13	5		18	36	21		57	75
201811	18	1	1	20	81	46		127	147
201812	17	4		21	99	75		174	195
201901	14	7		21	162	101	2	265	286
201902	20	6	2	28	140	97	2	239	267
201903	29	6	1	36	185	120	3	308	344
201904	19	10	1	30	191	163	2	356	386
201905	17	10		27	193	143	3	339	366
201906	12	4		16	201	146	3	350	366
201907	16	5		21	210	151	1	362	383
201908	13	7		20	197	134	1	332	352
201909	19	4		23	161	129	3	293	316
201910	24	7		31	165	170	4	339	370
201911	18	5		23	137	137		274	297
201912	27	7		34	141	120	1	262	296
202001	22	6		28	155	148	2	305	333
202002	24	7		31	178	132	2	312	343
202003	17	7	1	25	227	182	3	412	437
202004	14	7		21	193	170	3	366	387
202005	13	6		19	178	142	1	321	340
202006	14	4		18	198	146	2	346	364
202007	17	5		22	193	158		351	373
202008	21	4		25	194	183		377	402
202009	12	5		17	151	162		313	330
202010	15	5		20	166	152	1	319	339
202011	12	4		16	182	120	1	303	319
202012	18	9		27	158	104	1	263	290
202101	5	4	1	10	55	55	2	112	122
202102		1	3	4	4	7	10	21	25
202103	3	10	8	21	7	30	35	72	93
202104	2	10	7	19	28	40	53	121	140
202105	7	14	11	32	32	53	54	139	171
202106	1	11	4	16	26	54	51	131	147

	Heating			Heating To	Non-Heating			Non-Heating	Grand Total
	0 - 50	50 - 100	100 - 150		0 - 50	50 - 100	100 - 150		
201801	3	1		4	230	206	2	438	442
201802	3	5		8	233	196	1	430	438
201803		1		1	240	195	2	437	438
201804	1	2		3					3
201805	8	1		9					9
201806	8	3		11					11
201807	3	2		5					5
201808	4			4	6	1		7	11
201809	8	2		10	11	4		15	25
201810	9	2		11	21	10		31	42
201811	9	2		11	28	20		48	59
201812	18	1		19	69	35		104	123
201901	14	2		16	97	69	1	167	183
201902	12	2		14	108	59	1	168	182
201903	19	4	1	24	139	72	3	214	238
201904	25	3		28	134	74	3	211	239
201905	9	4	1	14	137	90	2	229	243
201906	8	6		14	127	87	1	215	229
201907	8	3		11	141	97	3	241	252
201908	7	1		8	133	73	2	208	216
201909	6	4		10	127	81		208	218
201910	15	5		20	119	85		204	224
201911	16	5		21	94	93		187	208
201912	11	4		15	91	82		173	188
202001	17	4		21	112	102		214	235
202002	16	4	1	21	100	91	1	192	213
202003	17	6		23	156	103		259	282
202004	16	4		20	126	85	1	212	232
202005	10	3		13	143	102		245	258
202006	12	5		17	148	95	2	245	262
202007	11	2		13	120	63	1	184	197
202008	12	3		15	140	84	1	225	240
202009	6	2		8	139	87		226	234
202010	12	2		14	96	96	1	193	207
202011	12	2		14	98	82	1	181	195
202012	12	2		14	124	80		204	218
202101	4	2		6	50	21		71	77
202102		2	3	5		3	9	12	17
202103	1	3	3	7	7	19	25	51	58
202104	2	4	8	14	11	21	28	60	74
202105	2	5	7	14	22	34	40	96	110
202106	4	7	5	16	29	44	42	115	131

	Heating			Heating Total	Non-Heating			Non- Heating Total	Grand Total
	0 - 50	50 - 100	100 - 150		0 - 50	50 - 100	100 - 150		
201801	3		1	4	330	184	11	525	529
201802	2		1	3	263	172	9	444	447
201803	1	1	1	3	336	204	8	548	551
201804	1		1	2	1	3	1	5	7
201805	2	1	1	4	2			2	6
201806	11		1	12					12
201807	8	2	1	11					11
201808	4		1	5	1			1	6
201809	3			3	9	1		10	13
201810	7	2		9	15	6		21	30
201811	7	2		9	19	8		27	36
201812	7			7	40	19		59	66
201901	22	2		24	71	28		99	123
201902	11	1		12	72	43	1	116	128
201903	11	3		14	100	55	2	157	171
201904	17	3	1	21	106	54	2	162	183
201905	21	3		24	98	49		147	171
201906	5	3	1	9	107	70		177	186
201907	8	3		11	103	50	4	157	168
201908	8	1		9	92	60		152	161
201909	9	1		10	107	54	1	162	172
201910	5			5	101	64	1	166	171
201911	10	3		13	89	45		134	147
201912	16	3		19	89	59		148	167
202001	10	3		13	77	61		138	151
202002	13	1		14	89	60	1	150	164
202003	13	3	1	17	111	80	1	192	209
202004	8	1		9	130	54		184	193
202005	10	1		11	104	48	1	153	164
202006	6	1		7	124	83	1	208	215
202007	10	3		13	116	48	1	165	178
202008	9			9	103	52		155	164
202009	11	2		13	85	52		137	150
202010	7	3		10	111	65		176	186
202011	10	3		13	81	55		136	149
202012	12	3		15	80	58	2	140	155
202101	6		1	7	41	20		61	68
202102		1	2	3		7	8	15	18
202103	1	4	11	16	12	17	42	71	87
202104	1	5	3	9	15	34	40	89	98
202105	3	6	4	13	13	31	44	88	101
202106	1	1	1	3	23	34	46	103	106

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set III

Witness: Katherine Scholl

CAUSE-PA-III-12

12. For 2018 to date in 2021, disaggregated by month and year, regarding customers who exceeded their maximum CAP credit threshold, please indicate the average customer bill (1) prior to the customer exceeding the maximum CAP credit threshold; and (2) after exceeding the maximum CAP credit threshold.

Response:

See CAUSE-PA-III-12 - Attachment 1.

REPORT_MONTH	BEFORE AVG	AFTER AVG	CAUSE-PA-III-12 - Attachment 1
201801	\$ 95.01	\$ 148.79	
201802	\$ 74.54	\$ 96.52	
201803	\$ 63.22	\$ 64.91	
201804	\$ 14.33	\$ 201.67	
201805	\$ 100.58	\$ 253.04	
201806	\$ 77.57	\$ 186.35	
201807	\$ 67.10	\$ 176.69	
201808	\$ 52.91	\$ 111.85	
201809	\$ 63.99	\$ 147.84	
201810	\$ 53.59	\$ 135.70	
201811	\$ 80.03	\$ 155.61	
201812	\$ 72.99	\$ 166.24	
201901	\$ 62.38	\$ 150.77	
201902	\$ 64.58	\$ 150.22	
201903	\$ 78.47	\$ 169.10	
201904	\$ 62.76	\$ 146.57	
201905	\$ 55.42	\$ 145.14	
201906	\$ 63.99	\$ 144.62	
201907	\$ 65.65	\$ 145.61	
201908	\$ 64.70	\$ 134.98	
201909	\$ 65.69	\$ 160.08	
201910	\$ 62.36	\$ 155.78	
201911	\$ 66.51	\$ 156.53	
201912	\$ 74.34	\$ 170.34	
202001	\$ 81.62	\$ 170.18	
202002	\$ 63.37	\$ 148.71	
202003	\$ 74.76	\$ 152.02	
202004	\$ 63.28	\$ 140.20	
202005	\$ 58.44	\$ 151.33	
202006	\$ 62.63	\$ 145.04	
202007	\$ 60.81	\$ 145.64	
202008	\$ 65.32	\$ 144.72	
202009	\$ 60.37	\$ 153.05	
202010	\$ 62.78	\$ 153.31	
202011	\$ 64.78	\$ 134.91	
202012	\$ 73.86	\$ 102.34	
202101	\$ 64.36	\$ 74.19	
202102	\$ 205.57	\$ 371.69	
202103	\$ 140.04	\$ 243.88	
202104	\$ 109.50	\$ 200.35	
202105	\$ 94.51	\$ 163.64	
202106	\$ 58.69	\$ 134.43	

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(CAUSE-PA)

Set III

Witness: Katherine Scholl

CAUSE-PA-III-14

14. For 2021, 2022, and 2023, disaggregated by year, poverty tier, and service type, please indicate the number of CAP customers that would exceed their CAP maximum credit limit if current rates were to remain in place, assuming the following Percentage of Income Payment tiers:

Income Category	Residential Service Non-Electric Heat Percentage of Income Payment	Residential Electric Heat Percentage of Income Payment
Up to 50% of FPL	2%	6%
51% to 100% FPL	4%	10%
101% to 150% FPL	4%	10%

Response:

The Company's CAP program, which uses the Percent of Income Payment tiers noted above, was launched on in January of 2021. A distribution of CAP customers who are approaching or who have reached their maximum annual discount is as follows:

As of 6/21/2021

Non-Heating	PIPP	Maximum Annual Discount	# Customers	70-79%	80-89%	90-99%	100%+	% of Customers 100%+	Total 70%+	% of Cust 70%+
0-50%	2%	\$1,600	6,396	65	33	25	46	0.7%	169	2.6%
50-100%	4%	\$1,400	14,390	111	58	46	88	0.6%	303	2.1%
100-150%	4%	\$900	8,907	107	56	54	150	1.7%	367	4.1%

Heating	PIPP	Maximum Annual Discount	# Customers	70-79%	80-89%	90-99%	100%+	% of Customers 100%+	Total 70%+	% of Cust 70%+
0-50%	6%	\$ 2,350	705	5	3	3	3	0.4%	14	2.0%
50-100%	10%	\$ 1,800	2,238	26	17	8	9	0.4%	60	2.7%
100-150%	10%	\$ 1,300	1,242	9	7	8	13	1.0%	37	3.0%

Total			33,878	323	174	144	309	0.9%	950	2.8%
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The Company cannot accurately project the number of CAP customers that will exceed their CAP maximum credit limit in 2021, 2022, and 2023. Caution should be exercised when attempting to project future scenarios based on these and historical data for several reasons:

- With only five months of data – and those months not including the summer heating months – there is very limited ability to project future behavior with any degree of precision.
- All customers started in the new program with their maximum annual discount fully available. Customers have their maximum annual discount reset in the anniversary month that correlates with when they entered CAP. Accordingly, many customers have had their maximum discount reset already within the new program. This will not recur in future years.

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(CAUSE-PA)

Set III

Witness: Katherine Scholl

CAUSE-PA-III-17

17. How many DLC customers were enrolled in DLC's CAP in 2018, disaggregated by month, year, and the following Federal Poverty Income Guidelines (FPIG) tiers: 0-50% Federal Poverty Level (FPL); 51-100% FPL; and 101-150% FPL? Please provide this data in an Excel spreadsheet.

Response:

See CAUSE-PA-III-17 – Attachment 1.

CAUSE-PA-III-17 - Attachment 1

# CAP Customers					
	201801	201802	201803	201804	201805
0 - 50	6,933	6,670	6,574	6,864	6,946
50 - 100	17,119	17,315	17,240	17,445	17,437
100 - 150	10,117	10,231	10,440	10,686	10,710
TOTAL	34,169	34,216	34,254	34,995	35,093

201806	201807	201808	201809	201810	201811	201812
6,928	7,038	7,183	7,227	7,342	7,329	7,327
17,439	17,561	17,655	17,648	17,770	17,768	17,769
10,721	10,722	10,820	10,882	10,938	10,965	11,021
35,088	35,321	35,658	35,757	36,050	36,062	36,117

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(CAUSE-PA)

Set I

Witness: Katherine Scholl

CAUSE-PA-I-25

25. How many LIURP jobs were completed by DLC for calendar years 2018 to date in 2021, disaggregated by month and year?

Response:

Below are comprehensive tables from 2018 to date 2021 identifying the completed LIURP jobs by month and year:

2018	Total Visits	SF*	MF*	Owner*	Renter*	H&S**
January	335	N/A	N/A	N/A	N/A	N/A
February	233	N/A	N/A	N/A	N/A	N/A
March	253	N/A	N/A	N/A	N/A	N/A
April	242	N/A	N/A	N/A	N/A	N/A
May	273	N/A	N/A	N/A	N/A	N/A
June	385	N/A	N/A	N/A	N/A	N/A
July	281	N/A	N/A	N/A	N/A	N/A
August	399	N/A	N/A	N/A	N/A	N/A
September	262	N/A	N/A	N/A	N/A	N/A
October	346	N/A	N/A	N/A	N/A	N/A
November	165	N/A	N/A	N/A	N/A	N/A
December	50	N/A	N/A	N/A	N/A	N/A
Total:	3224	0	0	0	0	4099

* The Company did not break out visits by type in 2018

** The Company only tracked health and safety measures in total and not by visit

2019	Total Visits	SF	MF	Owner	Renter	H&S
January	2	2		1	1	2
February	1	1			1	0
March	12	12		9	3	6
April	13	13		8	5	6
May	31	31		17	14	14
June	19	19		8	11	11
July	24	24		10	14	7
August	48	48		24	24	17
September	60	60		27	33	19
October	163	67	96	38	125	34
November	94	92	2	38	56	35
December	258	77	181	34	224	50
Total:	725	446	279	214	511	201

2020	Total Visits	SF	MF	Owner	Renter	H&S
January	103	80	23	34	69	83
February	150	150		54	96	71
March	58	58		25	33	28
April	0	0		0	0	0
May	19	19		8	11	7
June	167	167		59	108	56
July	242	242		92	150	63
August	118	118		44	74	26
September	142	142		57	85	28
October	166	161	5	55	111	40
November	258	159	99	61	197	63
December	217	217		89	128	67
Total:	1640	1513	127	578	1062	532

2021	Total Visits to date	SF	MF	Owner	Renter	H&S
January	213	137	76	40	173	17
February	107	107		38	69	19
March	230	230		88	142	64
April	223	223		94	129	35

May	145	145		65	80	20
Total:	918	842	76	325	593	155

Duquesne Light Company
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Interrogatories of
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania
(CAUSE-PA)

Set I

Witness: Katherine Scholl

CAUSE-PA-I-28

28. For 2018 to date in 2021, disaggregated by year, please provide DLC's projected LIURP budget and actual LIURP budget.

Response:

Please see comprehensive table identifying projected and actual budgets for period 2018 through April 30, 2021:

LIURP – Projected vs. Actual Budgets – Years Ending Dec. 31		
	Projected Budget	Actual Budget
2018	\$ 2,409,000	\$ 2,341,637
2019	\$ 2,409,000	\$ 622,772
2020	\$ 2,409,000	\$ 1,566,479
2021 as of April 30th	\$ 2,409,000	\$ 707,564

Please note that Duquesne Light does not and has not turned away any eligible customer from receiving service under the program. The Company does not maintain a wait list because it has accommodated all eligible customers who wish to participate.

Buchanan

Ingersoll · Rooney

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July 2, 2021

VIA EFILING

Deputy Chief Administrative Law Judge Joel H. Cheskis
The Honorable John Coogan
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

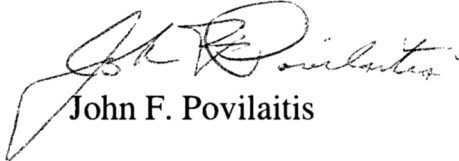
Re: Pennsylvania Public Utility Commission, Office of Consumer Advocate, Office of
Small Business Advocate v. Duquesne Light Company;
Docket No. R-2021-3024750, C-2021-3025538, C-2021-3025462, C-2021-
3026057

Dear Secretary Chiavetta:

On behalf of Nationwide Energy Partners, LLC (“NEP”), enclosed please find the Direct
Testimony and Exhibits of Teresa Ringenbach, labeled Nationwide Energy Partners, LLC
Statement No. 1, in the above-referenced proceeding.

This document is being served as indicated in the Certificate of Service.

Very truly yours,



John F. Povilaitis

JFP/tlg

Enclosure

cc: Rosemary Chiavetta, Secretary (*Letter and Certificate of Service only*)
Certificate of Service

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket Nos. R-2021-3024750, C-2021-3025538, C-2021-3025462, C-2021-3026057

**DIRECT TESTIMONY OF
TERESA RINGENBACH**

Nationwide Energy Partners LLC Statement No. 1

**Addressing: Duquesne Light Company's proposed tariff rules on master metering,
proposed master metering tariff rule providing for master meters and smart submeters.**

July 2, 2021

DIRECT TESTIMONY OF TERESA RINGENBACH

1 **I. BACKGROUND**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND ON WHOSE**
3 **BEHALF YOU ARE TESTIFYING.**

4 A. My name is Teresa Ringenbach. I am the Vice President, Business Development with
5 Nationwide Energy Partners, LLC (“NEP”). My business address is 230 West Street, Suite
6 200, Columbus, Ohio 43215. I am presenting testimony in this proceeding on behalf of
7 NEP.

8 **Q. WHAT ARE YOUR JOB RESPONSIBILITIES?**

9 A. I lead NEP’s business development, and its government and regulatory affairs. My team
10 includes legal, governmental affairs and regulatory functions.

11 **Q. PLEASE DESCRIBE YOUR ENERGY EXPERIENCE AND EDUCATIONAL**
12 **BACKGROUND.**

13 A. I hold a Bachelor’s Degree in Business Administration with a concentration in International
14 Business from the University of Toledo. I started in the energy industry in 2001 with
15 IntegrYS Energy Services, Inc. (formerly WPS Energy Services, Inc. and FSG Energy
16 Services, Inc.), as a Customer Service and Marketing Specialist promoting and managing
17 Ohio residential and small commercial electric offers. In 2002, I became an Account
18 Manager – Inside Sales, where I sold and managed government aggregation programs for
19 both gas and electric. In 2005, I was promoted to Regulatory Specialist. In that position,
20 I was responsible for regulatory compliance throughout the United States and Canada. In
21 2006, I accepted the position of Regulatory Affairs Analyst – East, which required covering
22 gas and electric issues in New England, New York, New Jersey, Ohio and Pennsylvania.

1 In the spring of 2008, I accepted the Regulatory Affairs Analyst position for the Midwest
2 region covering Ohio, Michigan, Illinois, Indiana, Kentucky, and all of Canada. In that
3 position, I directed the regulatory and legislative efforts affecting Integrys Energy’s gas
4 and electric business. In August 2009, I joined Direct Energy as the Manager of
5 Government and Regulatory Affairs for the Midwest. I managed the regulatory and
6 legislative activities of Direct Energy throughout the Midwest, primarily in Ohio, Illinois,
7 Indiana, Kentucky, and Michigan. My responsibilities covered electric, gas, and home
8 services issues for all levels of customers, from residential to large industrial customers.
9 In October 2020, I joined Builders Resource Group, a related company that provides shared
10 services to NEP, among others. I currently act as a shared service to NEP and a related
11 company, Armada Power.

12 **Q. PLEASE DESCRIBE THE SERVICES AND FACILITIES THAT NEP PROVIDES**
13 **TO ITS CUSTOMERS.**

14 A. NEP is a Columbus, Ohio-based provider of installation, submetering, billing, collections,
15 electrification and energy efficiency services to the owners and developers of multifamily
16 properties. With more than twenty years of experience serving over 32,000 residents at
17 over 150 properties, including in excess of 1,600 tenant residents in PECO’s service
18 territory, NEP has developed a multifamily-specific energy service model (“Smart
19 Property Platform”) that provides substantial benefits to Property Owners and their tenants.
20 NEP’s Smart Property Platform incorporates proven and reliable industry standard
21 equipment, infrastructure and smart meters. We offer many sustainability features, such
22 as demand management and frequency response technology, ChargePoint electric vehicle
23 charging stations, designed infrastructure, plus a substantial amount of usage data and

1 analytics for property managers and maintenance personnel, along with an online resident
2 portal providing tenants with visibility into – and control over – their personal utility usage.
3 Our customers are typically multifamily development owners, developers or condominium
4 associations (“Property Owner(s)”). We are often our Property Owners’ authorized
5 representative with their local utility. The key to being able to deploy our services is the
6 ability of a Property Owner to choose to manage the energy of an entire tenant-occupied
7 building through a master meter construct with the property under a single account owned
8 by the local utility and smart submeters installed in each rental unit at the multifamily
9 building(s).

10 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE A PUBLIC UTILITY**
11 **COMMISSION?**

12 A. Yes. A list of the cases in which I have previously provided testimony is included with my
13 CV and attached hereto as NEP Exhibit TR-1.

14 **Q. WHY DID NEP FILE THIS COMPLAINT AGAINST DUQUESNE LIGHT**
15 **COMPANY (“DUQUESNE” or “DLC”)?**

16 A. NEP filed a formal Complaint against DLC to challenge its existing and proposed tariff
17 provisions that operate to prevent NEP from conducting business in DLC’s service
18 territory, thereby depriving Duquesne customers who are owners of multifamily properties
19 and their tenants from receiving the conservation, energy efficiency and other benefits that
20 are available to similarly situated Property Owners and their tenants in other portions of
21 Pennsylvania such as PECO’s service territory and other states like Ohio and New York.
22 NEP is aware of customer interest in its services in Duquesne’s service territory. Although
23 NEP has had discussions with Duquesne about introducing its services in its service

1 territory, DLC has cited tariff Rule 41 as prohibiting the use of master meters in new or
2 existing multifamily tenant buildings. In NEP's view, Duquesne tariff Rules 18 and 41,
3 operating together, unreasonably bar the use of master meters in circumstances where their
4 use would promote conservation and provide benefits to tenants that would be unavailable
5 to them if they were individually metered residential customers of the utility. While tariff
6 Rules 18 and 41, were put in place more than 40 years ago, they appear to have been
7 implemented as a full ban on master metering and in my opinion not consistent with the
8 Public Utility Regulatory Policies Act of 1978 (PURPA). The policy behind PURPA was
9 to incentivize residential customers (including tenants in multifamily buildings) to
10 conserve electric energy by metering and paying based on their actual usage rather than
11 being billed without regard to their actual individual use. Tariff Rules 18 and 41 effectively
12 and unnecessarily prohibit submetering arrangements that could achieve the higher
13 conservation benefits than individual metering. That problem has only been amplified by
14 40 years of unrecognized innovation in the submetering space. Today, the availability of
15 smart submeters and the interest of Property Owners in offering smart, efficient and carbon
16 neutral buildings have made these Duquesne rules obsolete and actually counterproductive
17 to the conservation and efficiency movement. With the advancement of smart energy
18 technologies and the ability of the private sector to make available to Property Owners/NEP
19 customer programs that are efficient and cost effective, the advantages of utility
20 individually metered tenant premises are no longer preferable to master metered smart and
21 green properties. In fact, master metering with submetering – NEP's business model –
22 provides faster access to these technologies and controls without the need for lagging
23 regulatory approvals or one size fits all utility programs. As I note later in my testimony,

1 these utility programs may neither accessible to nor functional for multifamily residents
2 and owners.

3 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

4 A. The purpose of my testimony is to describe and explain the services NEP provides to
5 Property Owners in multiple states including Pennsylvania, but cannot provide in
6 Duquesne's service territory because of DLC's current and proposed tariff rules. In my
7 view, these tariff rules unreasonably prevent NEP from assisting Duquesne customers in
8 improving their operations as Property Owners and providing energy efficiency to their
9 tenants. While DLC has proposed in this case some expansion of the use of master meters
10 in multifamily buildings, the scope of what is proposed to be permitted in tariff Rule 41.1
11 is unreasonably narrow. NEP proposes a change to Duquesne's proposed tariff rules that
12 will allow any multifamily Property Pwner that meets the eligibility requirements of the
13 rule the option to choose master metering with submetering.

14 **II. DUQUESNE'S TARIFF RULE STRUCTURE**

15 **Q. PLEASE DESCRIBE DLC'S CURRENT TARIFF RULES THAT RELATE TO**
16 **MASTER METERING.**

17 Tariff Rule 18 requires a customer to use/consume the electric energy it purchases from
18 DLC and prohibits the redistribution of such electric energy except under specific
19 situations, including the showing of "special circumstances." Tariff Rule 41 directly
20 prohibits master metering of residential buildings connected to DLC's system after January
21 1, 1981 by requiring that each residential dwelling unit in a building have its own individual
22 meter supplied by DLC. The DLC tariff Rule 18 allows master metering for commercial

1 properties with commercial tenants. Master metering for residential properties is fully
2 prohibited.

3 **Q. WHAT IS YOUR UNDERSTANDING OF THE NUMBER OF MASTER**
4 **METERED BUILDINGS WITH RESIDENTIAL DWELLING UNITS THERE ARE**
5 **PRESENTLY IN DLC’S SERVICE TERRITORY AND THE IMPACT NEP’S NEW**
6 **PROPOSED TARIFF RULE 41.2 WILL HAVE ON THOSE EXISTING**
7 **BUILDINGS?**

8 A. In discovery, DLC advised that it currently serves 130 master metered buildings with one
9 or more residential dwelling units. *See* NEP Exhibit TR-2. It is clear that DLC has little
10 information beyond the number of master metered buildings and has done little analysis of
11 these types of arrangements. For example, DLC has no records indicating when any of the
12 master metered installations were made or how many of these master metered buildings
13 have submeters installed. *See* NEP Exhibit TR-3. It does not know the number of master
14 metered buildings that are occupied by low-income tenants. *See* NEP Exhibit TR-4.
15 Moreover, DLC has not performed any studies and has no documents from within the last
16 five years addressing inter or intra-class revenue allocation impacts that might result from
17 converting existing services from individually metered dwellings to master metered
18 buildings. *See* NEP Exhibit TR-5. Nor has DLC performed any studies or has any
19 documents in the last five years addressing inter or intra-class revenue allocation impacts
20 from prospectively allowing master meters on buildings that house multi-family tenants
21 who would otherwise be individually metered under DLC’s existing tariff rules. *See* NEP
22 Exhibit TR-6. DLC has not prepared any study or report comparing uncollectibles
23 associated with master metered residential buildings to those with individually metered

1 residences in its service territory. *See* NEP Exhibit TR-7. It is my impression that
2 Duquesne feels it has tariff rules in place that allow it to deny all requests for redistribution
3 of electricity to tenants, and therefore it has no need to study the effects of allowing
4 redistribution under any circumstances. *See* NEP Exhibit TR-8. However, based upon our
5 experience in providing our services in PECO's service territory and in Ohio, we have not
6 received any feedback from the utilities suggesting that they or non-participating customers
7 have been materially adversely affected by the provision of our services.

8 **Q. HOW HAS DUQUESNE PROPOSED TO MODIFY ITS TARIFF RULES**
9 **AFFECTING MASTER METERING?**

10 A. Duquesne has proposed to allow master metering for a multifamily property in an
11 extremely limited circumstance. To qualify the property must be new construction and
12 have low income tenants. DLC then layers on additional restrictions to prohibit use of
13 submetering and thus prohibits billing of residents based on their actual usage. This will
14 disconnect the control a tenant has over its usage and bill.

15 **Q. ARE THERE OTHER DLC PROPOSED TARIFF RESTRICTIONS THAT WILL**
16 **NOT ACHIEVE THE BENEFITS OF MASTER METERING?**

17 A. Yes. DLC's proposed tariff places a condition on the Property Owner that tenants cannot
18 be billed for electricity. This is flawed and not consistent with PURPA policy because it
19 is likely to result in higher and wasteful energy use by tenants. This approach fully
20 disconnects the tenant from its energy usage and costs, which will ultimately eliminate any
21 efforts to conserve. It may also resolve any ability to pay concerns, but it is not likely to
22 result in lower overall energy usage and could potentially result in higher and wasteful use.
23 This in turn would result in a higher cost to be recovered again through rent or a form of

1 cost recovery not associated with the energy use. DLC's proposed tariff Rule 41.1 and
2 Rule 18 are not likely to provide benefits to the tenants.

3 **Q. WHAT IS YOUR UNDERSTANDING OF WHY DUQUESNE HAS PROPOSED A**
4 **CHANGE IN ITS TARIFF RULES THAT WILL ALLOW SOME MEASURE OF**
5 **MASTER METERING?**

6 A. My understanding is this was the result of a prior settlement in Docket No. R-2018-
7 3000124 where an agreement was reached to discuss the creation of a master metering
8 tariff. That resulted in two collaborative discussions followed by the proposed changes in
9 this case.

10 **Q. WAS NEP PART OF THE COLLABORATIVE IN DOCKET NO. R-2018-3000124**
11 **REFERENCED BY DLC WITNESS PHILLIPS IN DLC STATEMENT NO. 6?**

12 A. No. NEP was neither a party to that case nor the collaborative that arose from it. While I
13 have had conversations with representatives of DLC regarding NEP's business and the
14 need for a change to DLC's master metering prohibition to facilitate our entry into DLC's
15 service territory as early as January 2021, we were neither informed of nor invited to the
16 collaborative in February 2021.

17 **Q. PLEASE DESCRIBE NEP'S BUSINESS MODEL IN MORE DETAIL AND**
18 **EXPLAIN WHY IT IS DEPENDENT ON ELECTRIC UTILITIES LIKE DLC**
19 **ALLOWING MASTER METERING IN MULTIFAMILY BUILDINGS?**

20 A. NEP's business model is a service provided to multifamily Property Owners or developers
21 who construct or renovate such properties. Our client and contractual relationship is with
22 and directed by the Property Owner or developer. We are hired to handle the design,
23 construction, management and billing of all energy services. Our most common service is

1 for electricity and water; however, we also have natural gas clients. The foundation of our
2 service begins with the design of the infrastructure. We work as the authorized
3 representative to engineer the energy infrastructure behind the meter. This allows us to
4 ensure the full value and use of the property for the Property Owner and tenants. For
5 example, we will work with the utility to ensure our infrastructure does not cross into the
6 utility distribution systems, move, and place our systems to allow for safety concerns such
7 as not near playgrounds or pools and customize metering to fit unit size by using ‘mini’
8 meters and other smaller technologies. We finance the equipment and recover the costs
9 through a capped billing model. This model then allows us to add other energy services
10 including advanced billing options, a carbon or green total property supply guarantee,
11 electric vehicle charging stations, demand response and energy efficiency technologies all
12 while ensuring tenant billing is tied to usage and never more than a utility would have
13 charged. This approach connects the Property Owner to true control for purposes of design,
14 construction costs, conservation and marketing and provides tenants access to energy
15 control options customized to a rental situation. These are substantial benefits. Unlike
16 some earlier attempts to deploy master meters in utility service territories with tariff rules
17 similar to DLC’s rules, the primary goal of NEP’s use of master meters is not to
18 economically advantage the Property Owner at the cost of conservation of energy.
19 NEP’s program starts with the installation of a utility master meter at the curb for the
20 multifamily property occupied by residential tenants. NEP then builds out the
21 infrastructure at the multi-family property, including transformers and conduit privatized
22 on the property similar to commercial master metered customers. This infrastructure
23 includes an Advanced Metering Infrastructure (“AMI”) utility/revenue grade smart

1 submeter installed for each tenant. This arrangement incents the Property Owner to
2 provide each tenant with the controls that allow them to reduce or change their electrical
3 usage by giving the Property Owner insights into potential energy investments for the
4 property and the tenant greater clarity and control over their consumption behavior. Tenant
5 control over their usage, the provision of detailed data to each tenant on their usage, smart
6 technologies and participation in aggregated demand response programs are important
7 elements of the NEP program.

8 Consistent with legal requirements, tenants will never be charged more than they would
9 pay if they were individually metered residential customers of the utility, and if they
10 participate in control options made available to them, they will pay less.

11 **Q. HOW DOES NEP ENSURE THAT TENANT TOTAL BILL AMOUNTS NEVER**
12 **EXCEED THE UTILITY TOTAL BILL AMOUNT TO AN INDIVIDUALLY**
13 **METERED RESIDENTIAL CUSTOMER?**

14 A. NEP employs a team of qualified individuals to monitor the approved rates of the local
15 electric utilities in each service territory in which it operates, including all riders and fees.
16 That team maintains the inputs in NEP's billing system against which each resident's usage
17 is calculated to arrive at a total billing amount. By applying each component of a utility's
18 tariffed rates individually and simply rounding each resulting component down to the
19 nearest cent before summing those components, NEP ensures that its total bill amount
20 never exceeds the amount that would be applied by the local utility on a total bill basis. By
21 further applying a credit (i.e., the two dollar credit discussed later in my testimony) to each
22 bill, NEP is able to mimic the benefits residents are likely to realize by successfully
23 shopping for an electric generation supplier. In conjunction with NEP's commitment to

1 secure only carbon-free generation supply, residents end up receiving a premium,
2 environmentally-friendly product while receiving a guaranteed total bill that is less than
3 the utility, all without having to lift a finger.

4 Of course, human error is still possible, and NEP encourages residents to compare their
5 total bill against the local utility's online rate calculator where available. If a discrepancy
6 is found, NEP will issue a credit on the resident's next monthly bill, though in practice
7 this is extremely rare.

8 **Q. HOW IS CUSTOMER SHOPPING FOR ELECTRICITY AFFECTED BY NEP'S**
9 **PROGRAM?**

10 A. Shopping still takes place, however it occurs at the master meter location and is undertaken
11 by the Property Owner or NEP as the authorized representative on the utility account. NEP
12 only shops (as the authorized representative) for carbon free or renewable energy supply.
13 This ensures that the entire property can claim the carbon or renewable benefit. It aligns
14 Property Owner interest in climate change and carbon reduction control with the properties
15 they own. Without a master meter, Property Owners who shop have no insight or controls
16 over the type of energy used. As tenants move in and out, their decisions to shop may not
17 align with the climate and carbon reduction goals of the property. Today, many investors
18 in multifamily buildings are looking for commitments on carbon and efficiency and the
19 ability of a Property Owner to meet those requirements through a master meter and supply
20 control that benefits both the owner through investment and tenants through control and
21 savings. The NEP model provides tenants an energy cost that cannot exceed what they
22 otherwise would have paid to the utility for what is normally a "premium" (i.e., carbon
23 free) supply product and benefits Property Owners who are trying to meet their climate

1 goals. This also permits the Property Owner or developer to market a carbon free or green
2 option for tenants so inclined to support such accommodations.

3 Without master metering, a Property Owner has no control over the type of energy
4 consumed on its property and cannot make claims of green or carbon free because the
5 Property Owner has no insights or controls over the type of energy contracted by each
6 tenant.

7 **III. BENEFITS TO PROPERTY OWNERS/DEVELOPERS, UTILITIES AND**
8 **TENANTS**

9 **Q. YOU MENTIONED EARLIER THAT THERE ARE BENEFITS TO ALLOWING**
10 **MASTER METERS THAT ACCRUE TO PROPERTY OWNERS/DEVELOPERS.**
11 **CAN YOU BE MORE SPECIFIC ABOUT THOSE BENEFITS?**

12 A. Master metering provides the Property Owner with control over the energy decisions for
13 its property. A property with master metering can make long term investments and
14 decisions without concerns of disruption due to resident move in/move out. For example,
15 most energy efficiency programs require some form of a baseline reduction in kilowatt-
16 hours (“kWh”). To achieve this objective, properties typically must show a 20% or more
17 reduction in usage. However, for multifamily properties there is an administrative hurdle
18 to showing this reduction not present for non-multifamily commercial properties.
19 Multifamily properties in DLC’s service territory must request permission and access to
20 each resident’s DLC account to set the energy baseline. To the extent residents move out
21 of the building, new customer consents and information must be obtained. Over the course
22 of a multi-year program this onerous process can be nearly impossible to achieve.
23 Therefore, many multifamily properties in our experience do not take advantage of these

1 programs. However, if there is a single master meter, the baseline energy
2 usage/consumption for the property is set at the single utility account and moving residents
3 with ever shifting utility accounts are no longer a problem. This use of a master meter
4 construct with a single utility account allows multifamily properties to prove their
5 efficiency reductions and carbon goals more easily and maintain that proof.

6 Property Owners and developers must pay for the electrical infrastructure installed on their
7 property. This payment occurs either to the utility or to a contractor at the time of
8 construction and may include transformers, CT cabinets, conduit, meter pads and other
9 necessary equipment. A utility may offer a split cost construct where certain equipment
10 may have to be contributed by the Property Owner as a payment to the utility and other
11 pieces are paid for and owned fully by the Property Owner but used by the utility for the
12 service at the multifamily building. When the utility installs, provides or owns the
13 equipment in a non-master metered property the tenant meters and infrastructure leading
14 to those meters is owned by the utility even if payment at construction of the infrastructure
15 is from the Property Owner/developer. The utility dictates the costs, equipment and
16 timeframe to install. This leaves the Property Owner with no control of equipment costs
17 and at the mercy of the utility to meet construction deadlines which, if missed, could lead
18 to costly delays for a project. Keep in mind Property Owners do not earn revenue on a
19 property until tenants move in and start paying rent. Therefore, any construction delay is
20 likely to adversely impact the Property Owner's revenue and costs. A developer or
21 Property Owner working with a company like NEP is gaining a service dedicated to their
22 project. This provides expertise in working with the utility, greater control over their
23 construction timelines, equipment costs and the sizing of submeters for tenant space than

1 could be offered by the local electric utility. The NEP service also is privately financed
2 and funded, ensuring that other utility customers no longer have to subsidize the project or
3 equipment installed at the premises. To the extent an existing property had a contribution
4 in kind meaning a portion of their behind the curb infrastructure was covered by the utility
5 and has not been paid back, NEP pays the remaining amount to the utility. Typically we
6 see a 60/40 split where 60% of a cost must be returned (paid back) to the utility. These
7 costs are normally on a 10 year schedule therefore any payment by NEP will result in faster
8 payback and cash to the utility. This produces efficiencies for the Property Owner and
9 utility.

10 There are multiple benefits to the Property Owner from a properly designed master meter
11 arrangement and they include the following:

- 12 a) Reduction in construction equipment costs and time.
- 13 b) Designed energy infrastructure to maximize space, safety and usage for a
14 multifamily property.
- 15 c) Expertise for utility interactions and account decisions to ensure proper billing and
16 servicing of the property.
- 17 d) Allows for streamlined tenant move in and move out processes, which removes
18 utility costs and administrative concerns with landlord/tenant utility accounts. A
19 master meter eliminates the return of service to the landlord from a departing tenant
20 and back to a new tenant, which can create administrative and cost issues for
21 Property Owners and the utility. Master metering also removes utility complaints
22 or disagreements over who is responsible for past due bills or time periods based
23 on tenant move in/move out dates. A single account pays the utility consistently,

1 allowing the Property Owner to better manage energy costs and tenants billed
2 accurately based on tenant move in/move out.

3 e) Allows the ability to track usage at a community complex, building and resident
4 level. This level of usage insight provides greater maintenance, potential pro-active
5 actions for equipment failures, and property comparisons for residents interested in
6 conservation.

7 f) Provides the community complex with prompt predictive insights and control for
8 maintenance and troubleshooting without waiting for a tenant to complain to the
9 utility and the utility response. Without master metering with submetering, the
10 Property Owner will not even know a tenant has complained to the utility, leaving
11 an issue unaddressed until it may be too late, thereby creating unnecessary costs.

12 g) Allows the Property Owner to better manage its asset by receiving insights into
13 electrical anomalies that can damage its property.

14 h) Enables the Property Owner to receive traditional payback for energy efficiency
15 and demand response investments through a shared savings model. Traditional
16 energy efficiency and demand response investments are recovered through a
17 reduction or savings on the electricity bill. Property Owners under the current DLC
18 rules who invest in energy efficiency or demand response for a tenant will likely
19 not recover their investment and therefore may not be incented to make such an
20 investment. While on the one hand the tenant may achieve a lower energy bill using
21 the more costly energy efficient equipment the Property Owner has provided, the
22 Property Owner will only incur a cost without payback. Under this situation, the
23 only likelihood of a Property Owner recovering its investment would be through

1 charging higher rent, once again leading to a disincentive for the Property Owner
2 to invest. Higher rents could lead to less interest in renting and in some instances
3 potentially draw criticism from local affordable housing interests. Master metering,
4 however, bridges this gap and allows for a more uniform distribution of energy
5 efficiency benefits from energy technology measures between tenants and Property
6 Owners.

7 i) Enables measurement and verification in an efficient and verifiable manner for
8 energy efficiency and energy technology programs. As noted earlier, there are
9 programs for Property Owners, both commercial and multifamily, which offer
10 incentives for energy reduction. Whether it is investors, loan programs or
11 certifications such as LEED they all require a baseline measurement from which to
12 measure reductions. However, multifamily locations are at a distinct disadvantage
13 when there is not a master meter option. The Property Owner must obtain consent
14 to access each tenant's utility account and as tenants move in/move out this onerous
15 process makes the ability to prove compliance nearly impossible. A master meter
16 with a submetering option ensures a single consistent, measurable and verifiable
17 account for the entire property, making access to these programs faster and easier
18 for multifamily Property Owners. It also allows for the policy goals of
19 municipalities and, states to be verifiably achieved faster by centralizing the
20 decision for the property with the owner.

21 j) Allows a Property Owner to move the infrastructure on the property to meet safety
22 and property needs – something that a Property Owner cannot do if the
23 infrastructure at the multifamily building is owned and controlled by the utility.

1 Older properties trying to compete in the rental market often look for new design
2 and energy options to better utilize space. Moving utility owned equipment is often
3 costly or refused by the utility, restricting how a property can redesign for better
4 use or safety. In addition, space is at a premium so the location of meters and meter
5 size can be a concern. The property owner’s ability to customize a property is often
6 refused or restricted (and in either event is costly) when a utility owns and controls
7 infrastructure at the multifamily property. This potential problem can be alleviated
8 with non-utility equipment deployed at a property.

9 k) Allows for full energy bill and usage insights and controls. NEP places water,
10 electricity and, in some circumstances natural gas, all on a single energy bill. This
11 allows the tenant to take actions and engage on a more holistic approach with their
12 energy conservation efforts.

13 **Q. IS THERE AN ECONOMIC ADVANTAGE TO A PROPERTY OWNER OR**
14 **DEVELOPER FROM PARTICIPATING IN A PROGRAM SUCH AS NEP’S?**

15 A. Yes. As noted earlier, there are clear economic, energy and conservation benefits to a
16 Property Owner from master metering with submetering. Property Owners are a business
17 and make decisions to the benefit of their business. While the benefits under the proposed
18 NEP tariff (discussed in detail later) accrue from the efficiencies previously discussed,
19 DLC’s proposed and existing tariff Rules 18 and 41 disconnect any tenant control, shift the
20 costs into a likely “non-energy” (i.e., rent) related recovery and provide no control over
21 how or what costs tenants pay for their usage. DLC’s proposal has no ties to conservation,
22 climate action or advanced energy services. By buying electricity at a commercial
23 customer rate and reselling it to tenants at no more than the utility’s residential customer

1 rate, NEP's model creates a purchase and reselling differential that makes funds available
2 to the Property Owner's use. This allows and incents the Property Owner to invest in
3 efficiency upgrades, infrastructure and other energy controls, and such improvements
4 become part of the building "product" that is offered to tenants. This form of financing,
5 by using the differential discussed above, ensures a permanent cap that will likely lower
6 tenants' energy bills for premium (i.e., carbon free) services, while allowing a shared
7 recovery of costs and payment of services to NEP. The energy efficient technologies owned
8 by the Property Owner are offered to tenants as additional energy reduction program
9 options they can choose to use. This further reduces tenants' costs because they are billed
10 based on their actual usage and have access to their specific usage data. The energy
11 efficiency investments made by the Property Owner turn into conservation and efficiency
12 savings that directly benefit the tenant. Keep in mind that although the property is master
13 metered, the tenant is individually billed for their electric usage and through the use of
14 submeters and the data it provides has direct control over their usage and bill.

15 **Q. HOW DOES MASTER METERING AND PROGRAMS SUCH AS NEP'S**
16 **INCREASE THE USE OF CONSERVATION OR ENERGY EFFICIENCY**
17 **MEASURES?**

18 A. As noted by DLC in discovery, many utility conservation and energy efficiency programs
19 are restricted to Property Owners. While the utility may perform an audit or offer energy
20 conservation suggestions, it is only the Property Owner that can make a decision to install
21 or implement conservation efforts. For residents who rent their homes, it is the Property
22 Owners not the residents typically who make all decisions regarding weatherization,
23 efficient appliances and energy technologies. However, under current tariff rules 18 and

1 41, the tenant who is metered by the utility and actually uses the electricity is not the
2 Property Owner. Unlike a single family residence, a tenant does not have the ability to
3 install or use utility weatherization, efficiency or technology programs despite paying
4 toward EE&C programs. In other words, tenants have the cost but not the benefits of these
5 programs.

6 Therefore, while a utility may have a smart thermostat program or rebate program, the
7 tenant individually metered by the utility who takes advantage of the program may not be
8 able to use the technology. This also means that a utility program which relies on number
9 of rebates issued or number of purchases of technologies to achieve efficiency targets may
10 not see the return from those products sold to residential customers who rent their homes.
11 This is because tenants who consecutively occupy a dwelling unit could each claim and
12 receive a rebate for a particular technology or device and never actually install it, which
13 masks the true success level of the utility program.

14 **Q. IS PARTICIPATION IN DEMAND RESPONSE PROGRAMS PART OF ENERGY**
15 **CONSERVATION THAT PROPERTY OWNERS, UTILITIES AND TENANTS**
16 **MISS WHEN TENANTS ARE INDIVIDUALLY METERED BY THE UTILITY?**

17 A. Yes. A residential tenant customer may have some access to a utility time of use program
18 and thereby receive some demand response benefits, but those benefits are limited for
19 tenants in multifamily buildings. To actively participate in wholesale market demand
20 response, PJM requires the use of a utility account number in order to aggregate residential
21 customers. For renters, this is a difficult if not impossible process to manage. The tenant
22 move in/move out process means that the account number participation for a multifamily
23 property is constantly changing. The result is the property's baseline and control would be

1 in flux despite no change in the premises or technologies used to meet the peak or demand
2 response calls. Under an NEP-type program, demand controls can be installed quickly and
3 efficiently across all rental units in the property which aggregate at the master meter, a
4 single utility account. This allows the Property Owner to participate in PJM demand
5 response programs that reduce demand on the utility grid with a single account and a master
6 metered baseline. The benefits of this participation are a sharing of the revenue between
7 the Property Owner, NEP and the participating tenants who receive credits on their
8 electricity bills. This broadening of the use of demand response benefits the utility as well
9 who would not see this reduction of grid needs if each tenant was an individually metered
10 utility residential customer. Tenants with smart submeters paid for by the Property Owner
11 behind a master meter can obtain such long term benefits which would not be achievable
12 if the tenant loads were not aggregated. Nor would an individually metered residential
13 tenant utility customer likely participate in a PJM demand response program due to their
14 lack of ownership of the property. Such long term benefits exceed the costs of establishing
15 individual utility accounts with each tenant.

16 **Q. ARE UTILITIES BENEFITED FROM PROGRAMS SUCH AS NEP'S THAT USE**
17 **MASTER METERS AND SMART SUBMETERS?**

18 A. Yes. With a master meter, the utility benefits from the efficiency of now servicing only a
19 single meter and having a single customer contact. This avoids the costs to the utility of
20 responding to and managing hundreds of accounts. This also means utility call centers can
21 operate more efficiently and the utility has one customer contact during a service outage.
22 The time, costs, and effort to install and replace metering within a multifamily development
23 or building is reduced with a master meter. Whereas individually metered utility customer

1 tenants are less likely than Property Owners to participate in utility energy efficiency or
2 conservation programs such as those offering smart thermostats or appliance replacement
3 assistance, these programs designed for multifamily buildings will have more participation
4 and the tenant loads are more likely to be reached by utility programs. As noted earlier,
5 tenants accessing utility programs but not actually deploying the energy efficiency
6 equipment they obtain would be avoided.

7 With master metering, a utility's service load is more stable because as tenants move in
8 and move out, that load is not shifted on and off default service but maintained through a
9 single supplier contract with the Property Owner. Finally, collection risk is shifted away
10 from the utility because uncollectible accounts are typically greater for residential
11 customers than commercial customers.

12 **Q. CAN YOU DESCRIBE THE BENEFITS TO TENANTS OF ALLOWING MASTER**
13 **METERS ON MULTIFAMILY BUILDINGS?**

14 A. There are many benefits to tenants from a program like NEP's being authorized under
15 Duquesne's tariff. Those benefits start with the tenant smart meter. Our smart metered
16 billing provides information about, and control of the consumption of electricity in their
17 unit. This gives the tenant responsibility for, and insight into, their own electricity usage.
18 Under NEP's program, each tenant receives a bill, a sample of which is attached as NEP
19 Exhibit TR-9, on a date they set. For example, a tenant can choose to pay weekly, bi-
20 monthly or on a date they set for the month. Tenants receive or have access to daily usage
21 information that allows them to actively make decisions about their energy usage and to
22 reduce their costs. As noted earlier, the bills to tenants are designed to never exceed what
23 they would have paid the utility on at total bill amount basis. However, we offer additional

1 insights and incentives to further lower their bill. For example, the tenant's smart meter
2 takes daily reads that are visible to the tenant through an online portal that allows the tenant
3 to view and react with actions to reduce their consumption. This daily view and response
4 encourages conservation or management to the customers budget. All of the tenant's
5 charges are displayed on a highly detailed bill showing usage trends in their building
6 relative to their neighbors. Collectively attached as NEP Exhibit TR-10 are screen shots
7 from the online portal that show the detailed information available to submetered tenants.
8 In addition, we add other utility costs into this single bill so tenants also see water or natural
9 gas usage data – giving them a holistic view and approach to energy conservation. All of
10 these features of smart meter submetering and master metering allow for a greater level of
11 personal usage and cost control for tenants who are not the Property Owner than through
12 traditional master metering or even direct metering by the utility. These are some of the
13 benefits that augment what are considered the standard conservation benefits that come
14 from the utility individually metering tenants. Even though the tenant would voluntarily
15 forgo the opportunity to shop for an electricity supplier, by leasing in a property focused
16 on climate change targets and energy controls they can enjoy using a carbon free and
17 climate focused electricity supply without an additional cost. Often these types of
18 electricity supply products come at a premium cost to the residential tenant compared to
19 default service or plain vanilla system mix electricity supply from a supplier. In addition,
20 this product does not change as long as the tenant lives at the property; therefore, no EGS
21 contract renewal or supplier contract terms changes apply. This approach actually allows
22 more tenant load to participate in the competitive market than would otherwise likely
23 occur. Multifamily tenants tend to reside in their communities short-term, often one or two

1 years. This rules out long-term agreements for tenants and a frequent shifting of supply
2 changes by unit to the extent there is shopping. It also means a Property Owner who wants
3 climate focused energy solutions may be restricted from creating a fully carbon neutral or
4 green property based on the decisions of other tenants. Given that premium products often
5 come at a higher cost for residential customers, master metering allows for a capped bill,
6 insights to likely lower their bill, and customized approaches specific to a customer who
7 rents their home. Being a submetered tenant behind a master meter is more economically
8 beneficial to the tenant, especially if the Property Owner passes along a bill credit based
9 on the lower cost of a commercial load versus a residential load.

10 Earlier I mentioned that tenants can elect to participate in PJM demand response programs
11 through the Property Owner or an NEP service provider that will provide them a bill credit.
12 The Property Owner can invest in a demand management and frequency response
13 technology platform that improves water heating efficiency, peak demand management,
14 grid stability and cold load pickup following outages. Rooftop solar and Electric Vehicle
15 charging stations can also be a part of a Property Owner's green, smart building. Credits
16 from these programs and access to vehicle charging are additional benefits to the tenant
17 that come from a master metered demand response or EV charging program financed
18 through the master meter model.

19 **Q. IS NEP PROSING ANY OTHER BENEFIT TO TENANTS WHO PARTICIPATE**
20 **IN NEP'S MASTER METER PROGRAM?**

21 A. Yes. NEP is proposing to offer a minimum credit or credit floor in the amount of \$2/month
22 to tenants participating in its Master Meter Program outlined in this testimony and in

1 accordance with our proposed new Tariff Rule 41.2. *See*, NEP Exhibit TR-11. This credit
2 could increase based on participation and additional program offerings.

3 **Q. WHAT IS NEP’S PROPOSAL FOR A REASONABLE DLC TARIFF RULE**
4 **GOVERNING USE OF MASTER METERS IN NEW BUILDINGS OCCUPIED BY**
5 **TENANTS WHERE THE OWNER WISHES TO BE MASTER METERED?**

6 A. NEP is proposing a new DLC tariff provision Rule 41.2, NEP Exhibit TR-3, that allows
7 for master metering and redistribution of energy under the following conditions:

- 8 • Master metering will be allowed for non-low income new and existing multifamily
9 properties.
- 10 • submetering must be AMI or other advanced revenue metering
- 11 • technologies must be provided with billing to allow tenants access to their usage
12 and optional controls to receive a credit based on conservation actions.
- 13 • Redistribution of energy costs may never exceed the total bill a customer would
14 have received for the same amount of usage for the tariffs in effect for the same
15 time period consistent with Section 1313 of the Public Utility Code.

16 A Commission approved form will be used by Property Owners or their authorized
17 representatives to notify the utility of their decision to master meter and a verification of
18 compliance process will be available for DLC on no more than an annual basis.

19 **Q. DO YOU BELIEVE THAT AN EVALUATION OF INTER OR INTRA-CLASS**
20 **REVENUE ALLOCATION IMPACTS FROM PROSPECTIVELY ALLOWING**
21 **MATER METERS ON BUILDINGS THAT HOUSE MULTI-FAMILY TENANTS**
22 **WHO WOULD OTHERWISE BE INDIVIDUALLY METERED UNDER DLC’S**

1 **EXISTING TARIFF RULES IS NECESSARY BEFORE NEP’S PROPOSED RULE**
2 **41.2 COULD BE IMPLEMENTED?**

3 A. No. Based upon our experience in Pennsylvania and other states, we have no reason to
4 believe that implementing master metering in Duquesne’s service territory along the lines
5 of NEP’s business model would trigger a significant shift in DLC’s inter or intra class
6 revenue allocations between now and its next likely rate case.

7 **Q. DO YOU AGREE WITH DLC WITNESS PHILLIPS’ ASSERTION IN DUQUESNE**
8 **STATEMENT NO. 6, PAGE 6, LINES 12-15 THAT A MASTER METERED**
9 **BUILDING MAY REPRESENT INCREASED COLLECTIONS RISK IF THE**
10 **LANDLORD DEFAULTS ON ITS ELECTRIC BILLS COMPARED TO**
11 **INDIVIDUALLY METERED UNITS?**

12 A. No. First, please note that Ms. Phillips’ answer about increased collection risk is tentative
13 and speculative at the very least by the use of the word “may.” This tentative approach is
14 fully consistent with DLC’s lack of information about comparative collections risk. Indeed,
15 in discovery, DLC has indicated that it has prepared no study or report comparing the
16 uncollectibles associated with master metered residential buildings with those associated
17 with individually metered residences in its service territory. *See* NEP Exhibit TR-7.
18 Importantly, DLC has also advised that it has prepared no study or report in the last five
19 years addressing DLC’s total arrearages and uncollectible amounts as a percentage of
20 revenues collected for master metered buildings versus individual residential metered
21 housing units. Duquesne’s uncollectible rates indicate that the risk of non-collection from
22 residential customers is significantly higher than for commercial and industrial customers.
23 Therefore, all things being equal, DLC’s revenues from multifamily building commercial

1 customers should be more stable than if tenants were individually metered as residential
2 customers.

3 **Q. DOES NEP SUPPORT A PROVISION OF MASTER METERING SOLELY TO**
4 **LOW INCOME PROPERTIES?**

5 A. No. Climate and energy concerns must be addressed on a broad scale. NEP believes the
6 benefits of master metering are not unique to income level and should not be restricted
7 solely to low income properties, although it does not object to Duquesne proposed Rule
8 41.1. However the master meter options for customers need to be expanded. We support
9 an approach that would allow any multifamily property with more than one unit to
10 participate in master metering.

11 **Q. DOES NEP SUPPORT A CUSTOMER ASSISTANCE PLAN (“CAP”) TYPE**
12 **PROGRAM FOR LOW INCOME RESIDENTS?**

13 A. No. With our proposed approach to include a guaranteed credit of \$2 a month that is
14 modeled on a CAP discount and a benefit to all customers without application or income
15 qualification. Therefore, a CAP program is not needed for master metering under our
16 proposal.

17 **Q. DOES NEP AGREE THAT ALLOWING LANDLORD-OWNED SUBMETERS**
18 **BEHIND UTILITY MASTER METERS ENABLES UNSCRUPULOUS**
19 **LANDLORDS TO OVERCHARGE TENANTS AS CLAIMED BY DUQUESNE**
20 **WITNESS YVONNE PHILLIPS IN STATEMENT NO. 6?**

21 A. No. First let me repeat that my understanding is that by law landlords reselling electricity
22 to residential customers can only bill residential tenants a total bill amount that is no more
23 than what the resident would have been charged in a total utility bill. Second, NEP’s

1 service offering is superior to the low income master meter option Duquesne is offering in
2 proposed Rule 41.1 because without any ability to verify usage to a submeter read under
3 DLC's proposal, the Property Owner could be charging a resident more than their usage.
4 To achieve the full benefits of master metering, each resident should be billed based on
5 their actual usage. To achieve this submetering is necessary. Submetering provides the
6 resident control over their usage and in turn their billing. This allows for the Property
7 Owner to invest and receive the benefits of their investment through the single master
8 metered bill. Submetering the resident then provides the protection offered by law for
9 rates, a bill based on actual usage and in turn that actual usage will reduce when the resident
10 takes advantage of the investments in efficiency by the Property Owner and the Property
11 Owner receives payback through the master meter bill. Without submetering the resident
12 is separated from their individual usage and may not be as efficient or energy conscious.

13 **Q. WOULD ANY POSSIBLE ADDITIONAL PROCESS AND EFFORT BE NEEDED**
14 **BY A UTILITY LIKE DLC TO EFFECT A SERVICE TERMINATION OF A**
15 **MASTER METERED RESIDENTIAL PROPERTY JUSTIFY REJECTION OF**
16 **NEP'S PROPOSED TARIFF RULE 41.2?**

17 A. No. As indicated both in in the response to Nationwide I-17 DLC addresses the termination
18 process issue as well as in DLC Statement No. 6, page 8 at lines 12-21 showing there is an
19 existing process and requirements in place. Therefore no new requirements should be
20 necessary. *See NEP Exhibit TR-7.*

21 **Q. DOES NEP AGREE THAT MASTER METERING SHOULD ONLY BE**
22 **PROVIDED TO NEW SERVICE AS CLAIMED BY DLC WITNESS PHILLIPS?**

23 A. No. The benefits of master metering with submetering should not be restricted to new

1 construction. The master meter construct brings benefits to the Property Owner and
2 residents not achievable through individual utility metering. Bill protection for the tenant
3 already exists by statute.

4 **Q. DOES NEP AGREE THAT MASTER METERING SHOULD BE RESTRICTED**
5 **TO ONLY “LOW-INCOME SUPPORTIVE HOUSING”?**

6 No. The benefits of master metering with submetering are not restricted by income. The
7 barriers to resident and Property Owner access to energy efficiency or whole property
8 modifications beneficial to the environment are not unique to low income tenants. Any
9 multifamily property with more than 4 units should qualify for master metering.

10 **Q. DOES NEP AGREE THAT A SECURITY DEPOSIT IS NEEDED FOR MASTER**
11 **METERING?**

12 A. To the extent DLC’s existing requirements for a commercial account would require a
13 security deposit NEP does not object to its imposition.

14 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

15 A. Yes, but I reserve the right to file such additional testimony as may be necessary or
16 appropriate.

Exhibit TR-1

Teresa L. Ringenbach

Government Public Relations and Regulatory Affairs Professional

Twenty years technical, legislative and regulatory experience in retail energy, advanced energy and energy efficiency.

Professional Summary:

- Represented multiple retail energy companies before state government and regulatory commissions.
- Represented advanced energy and infrastructure positions in legislative and regulatory working groups and interested party discussions.
- Expert witness before legislative committees and formal regulatory commission proceedings.
- Crafted policy, strategy and legislation to support advanced energy markets including energy efficiency, grid modernization, renewable and retail energy.

Specialties:

- Government and Public Relations
- Regulatory Affairs
- Legislative and regulatory strategy and policy
- Regulatory compliance
- Cross team coordination

Career Summary

6/2011 – Present Direct Energy, LLC Columbus, Ohio
Senior Manager, Government and Regulatory Affairs

- Lead downstream regulatory and legislative efforts in Ohio, Kentucky, Illinois, Michigan, New York and Indiana.
- Develop policy and implementation including drafting and passing legislation and amendments.
- Promote and present expert witness testimony on company positions before legislatures and public utility commissions.
- Deep technical understanding of energy to implement natural gas, home services, and electric initiatives which expand markets.
- Hire and manage outside lobbyists, legal counsel, and consultants.
- Cross functional reporting and coordination on government and regulatory matters which affect the business.
- Manage an internal team of three and external team of eight.

8/2009 – 6/2011 Direct Energy, LLC Columbus, Ohio
Manager Government and Regulatory Affairs – Midwest

- Lead downstream regulatory and legislative efforts in Ohio, Illinois, Michigan, and Pennsylvania.
- Protect and defend company position before legislatures and public utility commissions.
- Promote natural gas, home services, and electric initiatives which expand markets.
- Hire and manage outside lobbyists, legal counsel, and consultants.
- Report on government and regulatory matters which affect the business.

3/2008 – 8/2009 Integrys Energy Services, Inc. Columbus, Ohio
Regulatory Affairs Analyst – Midwest and Canada

- Lead regulatory and legislative efforts in Ohio, Illinois, Wisconsin, Michigan, Minnesota, Canada and the Midwest –ISO.
- Understand the retail electric and natural gas markets in all Midwest states.
- Ensure the company position is presented and protected in utility commission proceedings.
- Develop relationships with key legislators and represent the company to lobby for or against legislative changes at the state level.
- Hire and manage lobbyists and outside legal counsel.
- Monitor regulatory proceedings.
- Compose, review and coordinate all corporate regulatory filings in the Midwest and Canada.
- Report on regulatory and legislative issues which could affect the business.
- Lead training to ensure compliance with new and existing regulatory requirements.

10/2006-3/2008 Integrys Energy Services, Inc. Cleveland, Ohio
Regulatory Affairs Analyst – East

- Lead regulatory and legislative efforts in the New England states, New York, New Jersey, Pennsylvania, and Ohio.
- Maintained in-depth knowledge of the regulatory issues affecting retail electric and natural gas markets in the east.
- Ensured the company position was presented and protected in utility commission proceedings.
- Developed relationships with key legislators and represented the company to lobby for or against legislative changes at the state level.
- Responsible for hiring and managing lobbyists and outside counsel.
- Monitored regulatory proceedings.
- Compose, review and coordinate all corporate regulatory filings in the east.

8/2005 – 10/2006 WPS Energy Services, Inc. Cleveland, Ohio
Regulatory Specialist

- Ensured compliance with reporting to maintain government licensing and certification including – FERC, DOE, NERC, ISO's, State, and Regional governments in both the United States and Canada.
- Created and maintained database of licenses and reporting requirements

- Assigned reporting to responsible parties and ensured reporting is completed
- Researched and completed government licensing and registration at state, ISO, and regional level
- Monitored, reviewed and coordinated regulatory changes, rules and information among functional groups

9/2001 – 8/2005 WPS Energy Services, Inc. Cleveland, Ohio
Account Manager, Inside Sales

- Initiated and maintained electric and natural gas aggregation programs in Ohio.
- Coordinated processes among functional groups.
- Monitored and participated in regulatory changes.
- Ensured program compliance with all state, federal and utility regulations.
- Maintained certifications with utilities and the State of Ohio.
- Contracted creation and negotiation
- Formulated and defined processes for opt-outs.
- Created and defined customer service processes, scripts and responses for over 100,000 customers.
- Lead representative to public officials.
- Conducted sales presentations, created and contacted sales leads with local governments.
- Wrote and published quarterly community newsletter for each electric program.

Education

5/1999 University of Toledo Toledo, Ohio
 Bachelor Degree
 Major: Marketing with a concentration in International Business
 Certified Energy Manager class
 Natural Gas 101
 Natural Gas Hedging
 Electric 101

Legislative and Regulatory Policy Groups

2020	Governor Pritzker Energy Policy Working Group
2018-2019	Public Utilities Commission of Ohio Power Forward Working Group
2018-2019	Illinois Commerce Commission NextGrid
2017-2019	Michigan Public Service Commission implementation of PA 341
2013-2018	Public Utilities Commission of Ohio electric and gas market working groups
2018-2020	AEP Ohio GridSmart Working Group
2019-2020	FirstEnergy Ohio SmartGrid Working Group

Professional Organization

2011 – Present Ohio Gas Suppliers Association
Chairman of the Board

2015 – 2016 ECN
President

2004 – 2010 Retail Energy Supply Association
Ohio Electric State Chair

2009 – 2015 Retail Energy Supply Association
Ohio Gas State Chair

2008 – 2009 Retail Energy Supply Association
Illinois Natural Gas State Chair
Illinois Natural Gas Vice State Chair 2013

2009-Present Illinois Competitive Energy Association
Board Member
Secretary 2011-2012
Chairman of the Board September 2015-Present

2011 – Present Ohio Gas Suppliers Association
Chairman of Board

Utility Commission Expert Witness Testimony Case List

Kentucky:
2010-00146

Ohio:
08-0935-EL-SSO
10-2929-EL-UNC
10-2586-EL-SSO
11-0346-EL-SSO
12-1230-EL-SSO
12-1685-GA-AIR
12-1842-GA-EXM
12-2637-GA-EXM
15-0441-EL-UNC
14-1297-EL-SSO
14-1693-EL-RDR
20-585- EL- AIR

Pennsylvania:
P-2009-209933
P-2009-2099182
P-2009-2143588
R-2010-2201702
R-2009-2139884
P-2009-2097639
P-2009-2145498

Illinois:
09-0301
14-0097
12-0569

Connecticut:
08-02-06

Exhibit TR-2

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Yvonne Phillips

Nationwide-I-4

4. Please indicate by number of meters and customer type how many master meters for buildings with one or more residential dwelling units are presently served by Duquesne?

Response:

Upon information and belief, the Company currently serves approximately 130 master metered buildings with one or more residential dwelling units.

Exhibit TR-3

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Yvonne Phillips

Nationwide-I-5

5. With respect to the master meters identified in the response to Set I No. 4, please identify how many master meter installations were made prior to January 1, 1981 and how many were made from January 1, 1981 to the present.

Response:

To the best of my knowledge, the Company does not have records indicating when the “master meter installations were made.”

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Yvonne Phillips

Nationwide-I-6

6. With respect to the master meter installations identified in the response to Set I No. 4, to the extent of Duquesne's knowledge, how many of the master metered buildings have tenants sub-metered?

Response:

The Company does not know how many master metered buildings identified in response to Nationwide-I-4 have tenants sub-metered.

Exhibit TR-4

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Yvonne Phillips

Nationwide-I-7

7. With respect to the installations identified in the response to Set I No. 6, how many buildings are occupied by tenants Duquesne considers to be low-income tenants, as defined by the Company in proposed Tariff Rule 41.1?

Response:

The Company does not know the number of master metered buildings that are occupied by low-income tenants. The Company believes that the majority of master metered buildings in its service territory are supportive housing (e.g., Housing Authority buildings).

Exhibit TR-5

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: C. James Davis

Nationwide-I-15

15. Reference Duquesne Statement No. 6 p. 6 lines 4-9: Please provide any Documents or studies Duquesne has performed, obtained, consulted or utilized in the last five (5) years addressing inter- and intra-class revenue allocation impacts from converting existing services from individually metered dwelling units to master metered buildings.

Response:

The Company has not performed any studies, nor does it have any documents addressing inter- and intra-class revenue allocation impacts from converting existing services from individually metered dwelling units to master metered buildings.

Exhibit TR-6

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: C. James Davis

Nationwide-I-16

16. Please provide any Documents or studies Duquesne has performed, obtained, consulted or utilized in the last five (5) years addressing inter- and intra-class revenue allocation impacts from prospectively allowing master meters on buildings that house multi-family tenants who would otherwise be individually metered under Duquesne's current Tariff Rules.

Response:

The Company has not performed any studies, nor does it have any documents addressing inter- and intra-class revenue allocation impacts from prospectively allowing master meters on buildings that house multi-family tenants who would otherwise be individually metered under Duquesne's current Tariff Rules. Such an evaluation would be needed before any change in master metering rules on a broad scale could be adopted. See also DLC St. No. 6, p. 6, lines 4-9.

Exhibit TR-7

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Yvonne Phillips

Nationwide-I-17

17. Reference Duquesne Statement No. 6 p. 8 lines 12-15: Please provide all Documents (including studies and reports) supporting or addressing Duquesne's assertion that "a master metered building may represent increased collections risk if the landlord defaults on their electric bills compared to individually metered units.

Response:

The Company has not prepared a study or report comparing the uncollectibles associated with master-metered residential buildings to those associated with individually-metered residences in its service territory. Because residential buildings in the Company's service territory are required to be individually metered, except in limited circumstances, the Company lacks the data necessary to perform such a comparative analysis. However, as discussed at DLC St. No. 6, p. 8, lines 12-21, because service terminations of master-metered residential buildings are subject to extensive additional process, the Company anticipates that such actions would be comparably more cumbersome and less effective from a collections standpoint.

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Katherine Scholl

Nationwide-I-18

18. For the last five (5) years, please provide Duquesne's total arrearages and uncollectible amounts as a percentage of revenues collected for master metered buildings versus individual residential metered housing units.

Response:

See Nationwide-I-17.

Exhibit TR-8

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Yvonne Phillips

Nationwide-I-2

2. With respect to any requests identified in the answer to Set I No. 1, please indicate Duquesne's response to such requests if the Documents provided do not so indicate.

Response:

With respect to each of the requests identified in Nationwide I-1, the Company denied the customer's request to redistribute.

Exhibit TR-9



230 West St. Suite 150 | Columbus, OH | 43215

ON BEHALF OF YOUR COMMUNITY,
[Community Name]

Addressee

JOHN DOE
123 SOUTH ST. STE 150
COLUMBUS OH 43215-2785

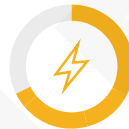
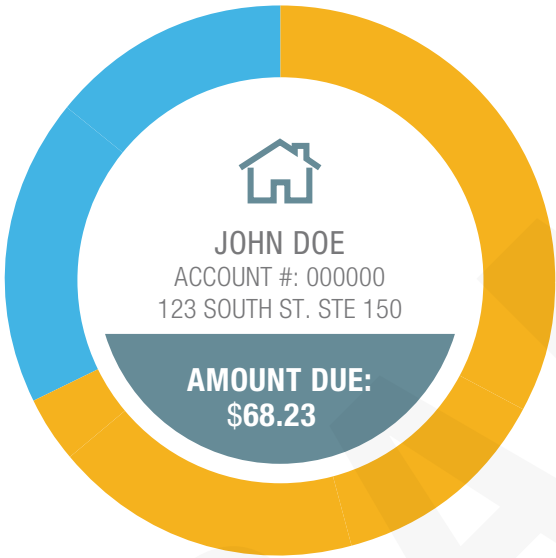
NATIONWIDE ENERGY PARTNERS
PO BOX 183009
COLUMBUS OH 43218

072514000000000000043236000000003226&7

Account Number	Invoice Date	Due Date
000000	JUN 11, 2019	JUN 28, 2019
Community Cycle*	If Paid After 7/4/19	Total Amount Due
5/10/19 - 6/10/19	\$68.23	\$68.23

*If applicable, see meter graphs below for actual read dates

Please Make Checks Payable And Remit To



ELECTRIC

\$51.28



WATER & SEWER

\$16.95

Message Center

Thank you for your patronage.
Prompt payment is greatly appreciated.

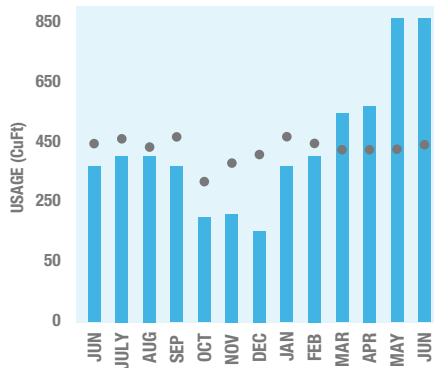
Questions?

Please call our support team at
(877) 818-2637 or visit us online at
NationwideEnergyPartners.com



Meter #: 123456789

■ YOUR USAGE
● COMMUNITY AVG.

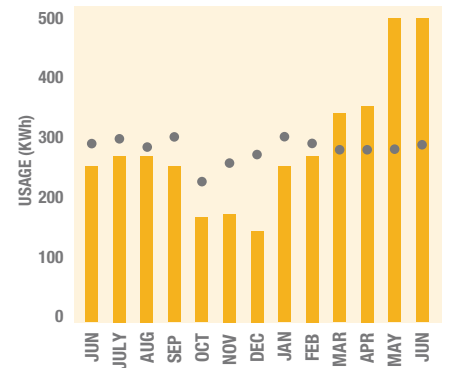


current read	previous read	meter conversion	usage (cf)
84710	- 82220	X .1136	= 332.89
previous read date	current read date		
05.10.2019	06.10.2019		



Meter #: 987654321

■ YOUR USAGE
● COMMUNITY AVG.



current read	previous read	meter conversion	usage (kwh)
3685	- 3000	X 1	= 685
previous read date	current read date		
05.10.2019	06.10.2019		

PAYMENT METHODS

NEP Autopay

Sign up for autopay to have the payments for your NEP bill automatically withdrawn from your bank account or credit card each month, at no cost to you.

Electronic Bill Pay

Set up directly through your bank online, electronic bill pay allows you to send money from your bank account directly to NEP to pay your bill. You choose the amount you want to pay and the date you want the payment to be applied.

Online Payment

Pay online anytime through NEP's website. Residents can register online or quick pay without having to set up an online account.

In-Store Payment

A number of stores, such as Wal-Mart, accept payments at all locations in the continental US. **Bring your NEP statement with you.** *Service fees may apply.*

Mail


Pay by check by mailing the detachable payment stub along with your check in the return envelope provided with your monthly invoice. **Please include your NEP account number on your check.**


Phone

Residents may pay their bill 24 hours a day, 7 days a week, through NEP's automated phone system. Residents may also call our toll free Resident Support number to pay with a live agent during office hours. *Service fees will apply for payments made with a live agent.*

Billing Summary

Previous Balance	\$61.00
Previous Payments	\$-61.00

 ELECTRIC 685 kWh	\$51.28
Customer Charge	\$4.52
Electric Usage	\$46.76

 WATER & SEWER 332 CuFt	\$16.95
Water & Sewer Fixed	\$14.19
Water & Sewer Usage	\$2.76

TOTAL AMOUNT DUE ON JUN 28, 2019 **\$68.23**

BILLING BREAKDOWN

Community

Community charges are charges your community has chosen to allocate to its residents for services rendered in common areas. These charges are typically outlined in your lease.

Utility

Utility charges are measured and billed based on meter reads and applicable local utility rates for residential service. These charges represent the utilities portion of your rent or dues.

SECURITY DEPOSIT

A security deposit may be applied to your first bill. This deposit is 100% refundable after 12 months of on-time payments. There are two ways to have this deposit waived:

- Sign up for Autopay
- Submit a letter of credit from a previous provider

FEES

NEP provides metering and billing services on behalf of your community owner or community association. Failure to receive a bill does not change the due date or possibility of disconnection due to non-payment. A late fee of \$20 will be assessed for past due balances over \$100.

A \$30.00 charge may be applied to your account for all payments not honored by the bank for any reason, including, but not limited to: Insufficient funds (NSF), account closed, payment stopped, no signature, and improperly drawn or submitted.

All fees are subject to change per your community's request.

GO PAPERLESS

Never worry about missing a bill by signing up for paperless billing! You'll receive an email the moment your bill is available when you sign up through "My Account" at NationwideEnergyPartners.com.

For more information regarding your billing summary and charges, please visit our website at NationwideEnergyPartners.com

Exhibit TR-10



Hello, John

Estimated Bill

Set

MY THRESHOLD:

\$120.00



NOTIFY ME WHEN:

I exceed this amount. (My Estimated Bill exceeds this amount.)



I am likely to exceed this amount by the end of the billing period. (My Projected Bill exceeds this amount.)





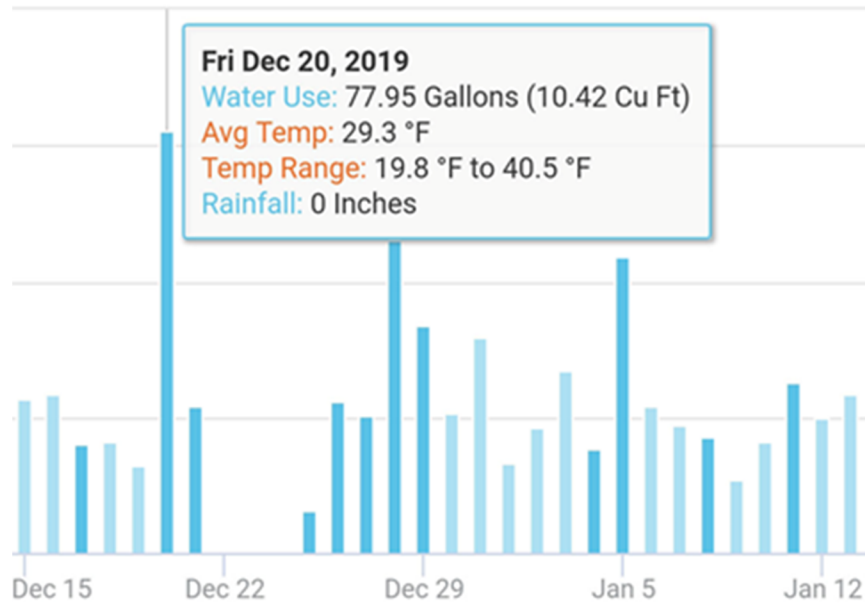
Hello, John

Hourly

Daily

Monthly

< **Dec 15, 2019** to **Jan 13, 2020** >





Hello, John

Current Billing Period



Jan 10, 2020 - Feb 9, 2020

Estimated Bill

\$38.40

Projected Bill

\$85.57

(as of 1/13/2020 9:00 AM)

Day 4 of 31

Water

106.1 Gallons

Electric

41.38 kWh



Hello, John

Summary

Total Use during this time period	366.1 kWh
--------------------------------------	------------------

Minimum Use for a single Day	6.93 kWh
---------------------------------	-----------------

Average Use per Day	12.2 kWh
------------------------	-----------------

Maximum Use for a single Day	19.42 kWh
---------------------------------	------------------



Hello, John

Current Balance

\$0.00

[Pay Bill Now](#)



No open alerts. (0 closed)



0 open

[See All Alerts](#)

0 closed

Current Billing Period



Jan 10, 2020 - Feb 9, 2020



Hello, John

Summary

Total Use
during this time period **783.4 Gallons** **104.7 Cu Ft**

Minimum Use
for a single Day **0.07 Gallons** **0.01 Cu Ft**

Average Use
per Day **26.11 Gallons** **3.49 Cu Ft**

Maximum Use
for a single Day **77.95 Gallons** **10.42 Cu Ft**



51% 5:05 PM



nepoh.utilityhawk.us



NATIONWIDE
ENERGY PARTNERS
on behalf of your community



Hello, John

Current Balance

\$0.00

Pay Bill Now



No open alerts. (0 closed)



0 open

See All Alerts

0 closed

Current Billing Period



Jan 10, 2020 - Feb 9, 2020

Estimated Bill

Projected Bill

★★★★★ **\$38.40**

Live Chat

(as of 1/13/2020 9:00 AM)



Hello, John

Hourly

Daily

Monthly



Dec 15, 2019

to

Jan 13, 2020

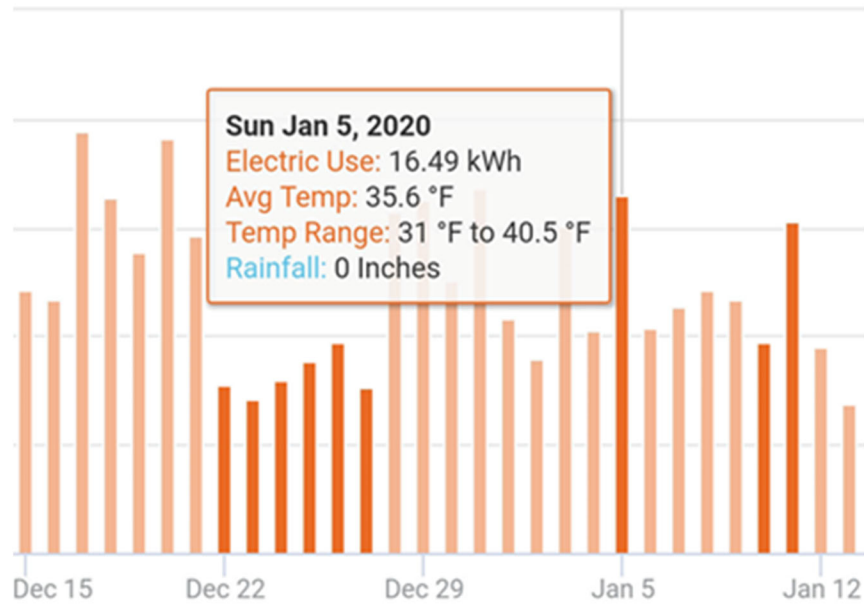


Exhibit TR-11

18. REDISTRIBUTION All electric energy shall be consumed by the Customer to whom the Company supplies and delivers such energy, except for (1) any Customer who owns and operates a separate office building, or (2) any Customer who meets the requirements of Rule 41.1 and Rule 41.2 addressing the use of master meters in buildings with at least four (4) residential dwelling units may redistribute electric energy to the tenants of such customer.

41.2. RESIDENTIAL MASTER METERING IN NON-LOW-INCOME SUPPORTIVE HOUSING Notwithstanding anything in Rule No. 41 to the contrary, the Company shall install, own, operate and maintain a single commercial account (“Master Metering”), and redistribution of electric energy may occur, for multi-tenant premises that include at least four (4) dwelling units where, all of the following criteria are met:

1. The Customer or its authorized representative verifies in writing that it will comply with the requirements of 66 Pa.C.S. § 1313, price upon resale of public utility services.
2. The Customer or its authorized representative provides each dwelling unit in the premises with (1) a revenue grade smart meter according to the American National Standards Institute and (2) at least one energy technology for energy efficiency, energy control or demand response.
3. The tenant in each dwelling unit in the premises will have access to information on their hourly, monthly and annual electric energy usage.

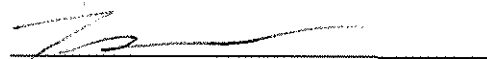
Customers or their authorized representative permitted to use Master Metering under this Rule shall also comply with the following:

1. The Company may request and the Customer or its authorized representative shall provide within 60 days of a request information to certify ongoing compliance with the above criteria: and

The Company shall provide a Commission approved form for Customer or Authorized Representative contact information and required details to ensure proper delivery of such a request; Customers or their authorized representative shall notify Duquesne of their decision to Master Meter under this Rule and shall submit the notice to the Company using a form previously reviewed and approved by the Commission. The Company shall make the form available on its website. The Company shall advise the Customer if the form has any deficiencies within fourteen (14) days of its submission. The Company shall participate in a Commission staff mediation of any unresolved deficiencies should one be requested by the Customer or its authorized representative.

VERIFICATION

I, Teresa Ringenbach, Vice President of Business Development with Nationwide Energy Partners, LLC (“NEP”), hereby verify that the information in the foregoing Statement No. 1 and Exhibits of NEP filed at Docket No. R-2021-3024750 et al., are true and correct to the best of my information, knowledge and belief. I understand that the statements are made subject to the penalties of 18 Pa. C.S. Section 4904, relating to the unsworn falsification to authorities.



Signature

Dated: July 2, 2021

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission,	:	
Office of Consumer Advocate, Office of Small	:	Docket No. R-2021-3024750
Business Advocate	:	C-2021-3025538
	:	C-2021-3025462
v.	:	C-2021-3026057
	:	
Duquesne Light Company	:	

CERTIFICATE OF SERVICE

I hereby certify that this day I served a copy of the foregoing document upon the persons listed below in the manner indicated in accordance with the requirements of 52 Pa. Code § 1.54.

Via Email:

Hon. Joel H. Cheskis
Deputy Chief Administrative Law Judge
Hon. John M. Coogan
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120
jcheskis@pa.gov
jcoogan@pa.gov

Christy M. Appleby
Phillip D. Demanchick
Aron J. Beatty
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Michael Turzai, Esquire
General Counsel and Vice President
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Michael.Turzai@peoples-gas.com

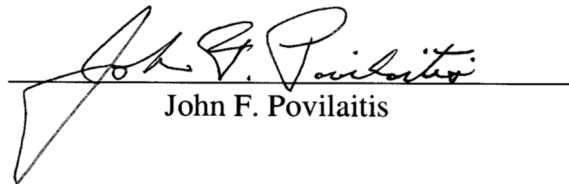
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Eckert Seamans Cherin & Mellott, LLC
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Harrisburg, PA 17101
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August 10, 2021

VIA EMAIL

Deputy Chief Administrative Law Judge Joel H. Cheskis
The Honorable John Coogan
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission, Office of Consumer Advocate, Office of
Small Business Advocate v. Duquesne Light Company;
Docket No. R-2021-3024750, C-2021-3025538, C-2021-3025462, C-2021-
3026057

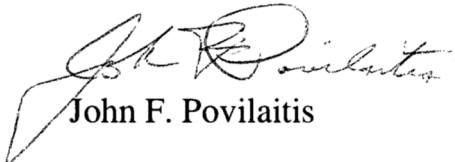
Dear Judge Cheskis and Judge Coogan:

On behalf of Nationwide Energy Partners, LLC (“NEP”), enclosed please find the
Surrebuttal Testimony and Exhibits of Teresa Ringenbach, labeled Nationwide Energy Partners,
LLC Statement No. 1-SR, in the above-referenced proceeding.

CONFIDENTIAL and HIGHLY CONFIDENTIAL materials will be provided only to
counsel for Parties whose representatives have executed and served a non-disclosure certificate.
Please distribute within your organization consistent with the Protective Order entered in this
proceeding.

This document is being served as indicated in the Certificate of Service.

Very truly yours,



John F. Povilaitis

JFP/tlg

Enclosure

cc: Rosemary Chiavetta, Secretary (*Letter and Certificate of Service only*)
Certificate of Service

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket Nos. R-2021-3024750, C-2021-3025538, C-2021-3025462, C-2021-3026057

**SURREBUTTAL TESTIMONY OF
TERESA RINGENBACH**

Nationwide Energy Partners LLC Statement No. 2

**Addressing: Response to Duquesne Light Company, CAUSE-PA, OCA and OSBA
Testimony Re Master Meters.**

August 10, 2021

SURREBUTTAL TESTIMONY OF TERESA RINGENBACH

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND ON WHOSE**
3 **BEHALF YOU ARE TESTIFYING.**

4 A. My name is Teresa Ringenbach. I am the Vice President, Business Development with
5 Nationwide Energy Partners, LLC (“NEP”). My business address is 230 West Street, Suite
6 200, Columbus, Ohio 43215. I am presenting this surrebuttal testimony in this proceeding
7 on behalf of NEP.

8 **Q. DID YOU SUBMIT TESTIMONY PREVIOUSLY IN THIS PROCEEDING?**

9 A. Yes. I submitted Direct Testimony on behalf of NEP, Nationwide Energy Partners LLC
10 Statement No. 1, addressing Duquesne Light Company’s (“Duquesne” or “DLC”)
11 proposed tariff rules on master metering as well as NEP’s proposed master metering tariff
12 providing, under certain circumstances, expanded use of master meters in multi-family
13 properties along with privately owned sub-meters.

14 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

15 A. The purpose of this surrebuttal testimony is to address the criticisms and misunderstandings
16 of Duquesne (witness Phillips), the OCA (witness Colton), the OSBA (witness Knecht)
17 and CAUSE-PA (witness Geller) in connection with NEP’s proposed new Duquesne Tariff
18 Rule No. 41.2 that allows for master metering and redistribution of electric energy under
19 the following conditions:

- 20 • Master metering will be allowed for non-low income new and existing multifamily
21 properties in addition to proposed Tariff Rule No. 41.1
- 22 • Submetering must be AMI or other advanced revenue grade metering.

- 1 • Technologies must be provided with billing to allow tenants access to their usage
2 and optional controls to receive a credit based on conservation actions.
- 3 • Redistribution of energy costs may never exceed the total bill a customer would
4 have received for the same amount of usage for the tariffs in effect for the same
5 time period consistent with Section 1313 of the Public Utility Code.

6 **Q. DOES NEP OPPOSE DUQUESNE’S PROPOSED TARIFF RULE 41.1 IN THIS**
7 **PROCEEDING?**

8 A. No. NEP does not oppose proposed Rule 41.1. However, I pointed out in my Direct
9 Testimony that if implemented without required submeters and individual billing of tenants
10 for usage, the original conservation/efficiency purpose of tariff limitations, such as
11 Duquesne Tariff Rules 18 and 41 on redistribution of electricity, cannot be fully satisfied.
12 Duquesne and other parties may have construed NEP’s position as critical of Duquesne’s
13 proposed Tariff Rule 41.1. *See* Phillips St. 6-R, p. 2. In fact, NEP believes that both
14 proposed Tariff Rules 41.1 and 41.2 can co-exist and be implemented simultaneously
15 without harm to tenants in multi-family buildings. Among other things, the operation of
16 *both* tariff rules will allow property owners, regardless of tenant income status, to use
17 master metering and relieve property owners of multi-family buildings from the potentially
18 large expense of directly paying for the installation of individual utility meters and design
19 of property infrastructure in each dwelling unit in the building. *See*, NEP Exhibit TR-12.

20 **Q. PLEASE SUMMARIZE THE VARIOUS CRITICISMS OF NEP’S PROPOSED**
21 **MASTER AND SUBMETERING PROGRAM THAT HAVE BEEN ALLEGED BY**
22 **VARIOUS PARTIES IN THIS PROCEEDING AND NEP’S RESPONSE.**

23 A. Those criticisms, which I will address in greater detail below, are predicated on some
24 fundamental misapprehensions and misunderstandings about the nature of NEP’s business
25 model and its proposal in this proceeding. First, NEP is *not* trying to be and should not be

1 characterized or held to the standards of a “public utility” in Pennsylvania. *See* Phillips St.
2 No. 6-R, pp. 2-3. Doing so creates an improper basis on which to evaluate NEP and its
3 proposal as a private company, which provides value and options for property owners and
4 in turn their tenants in multi-family buildings that are *different* than what a typical local
5 utility like Duquesne might offer. Claiming a service like that proposed by NEP should be
6 disallowed based solely on whether or not the utility may also offer a partially similar
7 service is not the appropriate standard by which to judge NEP’s offering and certainly not
8 a reason to suggest – indirectly or otherwise -- that NEP is a public utility and should
9 provide identical or nearly identical products and services as a public utility. NEP should
10 not be deprived of an opportunity to offer infrastructure installations on private property,
11 billing or supply services that are unrelated to Duquesne public utility services.
12 Importantly, under NEP’s proposed service model, Duquesne will retain its fundamental
13 role as the provider of electric distribution services and in that connection will still deliver
14 power to and bill the property, albeit a property that will now be centralized into a single
15 master meter account. Allowing the property owner and tenants the opportunity to benefit
16 from the centralized single point of utility service by participating in energy efficiency,
17 investment attraction, demand response or other programs not necessarily offered by
18 Duquesne is one of the purposes of the Proposed Tariff Rule 41.2. Preserving this
19 optionality for both property owners and tenants alike is a critical factor that was
20 completely ignored by all the critics of NEP’s proposal.

21 First, opposition to NEP’s proposed Tariff Rule 41.2 has focused on differences in
22 consumer protections. *See* Phillips St. 6-R, pp. 3, 11-24; Geller St. 1-R, pp. 15-59; Colton
23 St. 4R, pp. 6-8. While there are differences between what a utility like Duquesne is

1 required by law and regulations to provide to its customers and what NEP as a private
2 entity provides to tenants in multi-family buildings, there is no question that NEP does
3 provide consumer protection services, albeit ones that do not directly match Duquesne's
4 protections. The point is there is no reason for these different products and services to
5 provide the same protections to customers/tenants. Importantly, none of Duquesne's
6 claimed consumer protections apply today to any of the 130 master metered properties or
7 the commercial master metered properties operating in Duquesne's service territory. None
8 of the critics of NEP's master and submetering program have alleged any systemic
9 problems with tenants in multi-family buildings being served by NEP that could possibly
10 be used to justify identical consumer protections from both a public utility like Duquesne
11 and a private company like NEP.

12 Lack of Government oversight of NEP's proposal is not an issue. As previously pointed
13 out by NEP in its Direct Testimony, there are laws governing submetering and the PaPUC
14 has authority over submetering. In addition, a tariff approved by the Commission is clearly
15 a form of oversight. NEP proposed tariff Rule 41.2 provides Commission oversight over
16 submetering. It should also be noted that despite Duquesne's focus on NEP, the tariff will
17 govern any property owner or company utilizing submetering. A narrow view that because
18 DLC has energy efficiency programs and that portions of these programs could be used by
19 tenants, is not sufficient to restrict access to other programs which may benefit a property
20 or tenant.

21 Second, tenants behind master metered buildings are *not* utility customers and should not
22 be treated as such in addressing what the various parties characterize as "customer
23 protections." As I pointed out in my Direct Testimony and re-emphasize here, NEP

1 provides a number of customer protections to tenants in our multi-family buildings, but
2 makes no pretense of offering all those types of protections that have been mandated under
3 existing law and regulation for customers of “public utilities” like Duquesne. It is both
4 unfair and unreasonable to evaluate NEP and its proposal in this proceeding under a utility-
5 type standard, which is decidedly *not* what NEP is providing to either property owners or
6 their tenants in multi-family buildings. NEP believes that property owners of multi-family
7 buildings should have an additional option to use a master meter (similar to the current
8 option for commercial office buildings, the option under Rule 41.1 for low income tenant
9 buildings and the 130 grandfathered multi-family buildings in Duquesne’s service
10 territory) rather than pay for the installation of behind the curb infrastructure and individual
11 meters installed by the local utility at property owner expense in all dwelling units within
12 the multi-family building.

13 Third, DLC, CAUSE-PA and OCA have given no consideration to the benefits to property
14 owners of commercial buildings from NEP’s master meter proposal. Instead, they focus
15 solely on unsubstantiated fears that tenants will be harmed from our proposal. NEP’s
16 billing practices show concern for tenants who encounter difficulties paying their bills, but
17 no concern is shown by these parties for commercial property owners whose options are
18 unreasonably limited by the master meter ban and are compelled to pay for additional
19 infrastructure required by utilities such as Duquesne. In my Direct Testimony, I pointed
20 out the specific benefits of our NEP proposal and Tariff Rule 41.2 to *all* potential
21 stakeholders – something the critics of our proposal failed to do.

22 Fourth, NEP’s critics fail to acknowledge that PURPA did not establish a complete ban on
23 master metering. Rather, it created a standard under which the costs and benefits of

1 individual meters could be evaluated in a multi-tenant building, principally from the
2 perspective of tenant conservation and energy efficiency. PURPA is rooted in high level
3 policies in favor of conservation and energy efficiency – *not* the customer protection
4 approach used by NEP’s critics in this proceeding. The options currently available to
5 property owners through master metering and smart submeters did not exist when PURPA
6 was enacted and tariff rules implementing PURPA went into effect.

7 PURPA’s policy emphasis on energy conservation and efficiency predated the availability
8 of smart submeters and programs like that administered by NEP, all of which provide
9 substantial opportunities for energy conservation and energy efficiency in buildings that
10 are master metered. PURPA’s discouragement of master-metered buildings was based on
11 the assumption that individual residential units in such multi-family buildings would not
12 have separate individual meters, thereby foreclosing tenants from direct control of and
13 knowledge about their energy consumption. NEP’s master meter regime expressly
14 provides for the use of individual dwelling unit submeters (albeit not owned by the local
15 utility like Duquesne), thereby providing residential tenants the very energy information
16 and customer control over usage PURPA is attempting to address. Thus, NEP’s master
17 meter program and proposed tariff provision in this proceeding are completely consistent
18 with PURPA and its conservation and energy efficiency policies. Duquesne’s blanket
19 prohibition of master metering in Tariff Rule 41 was an over-reaction to PURPA’s policy
20 of limiting/restricting master metering *if* certain specific conditions were met and our
21 critics’ attempt to prohibit NEP’s proposal in this proceeding is not consistent with PURPA
22 and denies tenants in multi-family buildings some additional choice in effecting energy
23 savings and efficiency.

1 Finally, NEP’s critics have largely ignored that my Direct Testimony pointing out that
2 investment and access to capital are driven by businesses’ decisions relating to climate and
3 the environment. NEP’s proposal allows property owners the ability to control and
4 investment their properties to lower their cost of capital, attract investors and also ensure
5 immediate credit and access to technologies which assists with tenants’ affordability.

6 **Q. DO YOU AGREE WITH DUQUESNE, OCA AND CAUSE-PA THAT**
7 **EXCEPTIONS TO RULES 18 AND 41 (LIKE NEP’S PROPOSED TARIFF RULE**
8 **41.2) SHOULD NOT BE PERMITTED BECAUSE IMPORTANT TENANT**
9 **PROTECTIONS FROM PROPERTY OWNERS ARISE FROM THESE RULES?**

10 A. No. These parties chastise NEP’s business model and proposed Tariff rule for not
11 providing tenants in multi-family buildings the kinds of “consumer protections” afforded
12 to utility customers that are individually metered. They ignore, however, that the history of
13 Duquesne’s tariff provisions limiting redistribution of electricity focused on conservation
14 and energy efficiency, not on customer protection. Yet, Duquesne and other NEP critics
15 are defending Rules 18, 41 and 41.1 and attacking NEP proposed Rule 41.2 on the basis of
16 *consumer protection* and not *energy conservation*. This is a decided shift in emphasis not
17 supported by the actual facts and historical development, and intended to benefit Duquesne
18 while ignoring other stakeholders and potential benefits to them.

19 **Q. WHY DO YOU CALL THIS A SHIFT IN EMPAHSIS?**

20 A. As I noted above, Duquesne has shifted the issues around the application of Tariff Rule 18
21 from energy conservation, that was previously an explicit exception to the ban on the
22 redistribution of energy, to one of consumer protection. Previously, Tariff Rule 18
23 contained an exception as follows: “except where such payments would encourage energy

1 conservation.” However, in its 2018 rate case at Docket No. R-2018-3000124, Duquesne
2 eliminated the energy conservation exception completely. Likewise in 2018 Duquesne
3 removed Tariff Rule 14.3 from its tariff, which provision expressly allowed submetering
4 at customer expense. I am not sure the significance of these Rule changes was appreciated
5 by the Commission and Parties because Rule 14.3 was purportedly removed “as
6 unnecessary” and Rule 18 was amended “for clarity”. *See* NEP Exhibit TR-13. This is
7 important because this elimination effectively precluded customers from using submeters
8 to support the energy conservation exception in Tariff Rule 18 that allowed the
9 redistribution of energy that would occur in master metered buildings with submetering. In
10 addition, Duquesne has made it clear that in the last five years it has never found the
11 “special circumstances” provided for in Rule 18 as an exception to the ban on redistribution
12 of electric energy to be present. In fact, one of Duquesne’s special circumstances criteria
13 for an exception to tariff Rule 18 has never been applied. *See* NEP Exhibit TR-14, Set I
14 No.2, Set I No. 3, Set I No. 12 and NEP Set II, No. 5). It is clear that Duquesne considers
15 its tariff to prohibit master metering and has no plans to provide an exception to the ban on
16 master metering, other than its proposed Rule 41.1. *See* NEP Exhibit TR-15. In the context
17 of a request for a conversion of eight (8) individual meters to one master meter, a Duquesne
18 employee remarked that they had never heard of DLC doing this at a customer’s request.
19 *See* NEP Exhibit TR-16. The effect of Duquesne’s tariff changes has been to disconnect
20 master metering limitations from the inability to conserve electric energy, and to justify
21 limitations/bans on master metering on “consumer protections”, which are not the basis for
22 master metering limitations contained in PURPA or in Duquesne’s earlier tariff rules on
23 master metering.

1 **Q. WHY DO YOU SAY THAT DUQUESNE’S CURRENT TARIFF RULES 18 AND 41**
2 **DO NOT REFLECT PURPA’S INTENT WITH RESPECT TO MASTER**
3 **METERING?**

4 While I am not an attorney, I understand that PURPA’s purpose is to encourage
5 conservation by, for instance, rewarding consumers who turn off unnecessary lights,
6 purchase energy efficient appliances, or conserve heat or air conditioning. Stated
7 differently, PURPA’s purpose is to (1) promote conservation of energy, (2) optimize the
8 efficiency of use of facilities and resources, and (3) provide equitable rates to consumers.
9 Duquesne has eliminated the energy conservation exception in Rule 18 and in this
10 proceeding attacks NEP’s meter and submetering program primarily on an alleged
11 difference in consumer protections. Importantly, I have never understood PURPA to
12 mandate individual utility meters for each tenant in multi-family buildings because it
13 provides that separate metering for new buildings shall be appropriate if the building: (i)
14 contains more than one unit; (ii) the occupant of each unit controls a portion of the
15 electricity used in that unit; and (iii) with respect to such portion of electric energy used
16 in such unit, the long-run benefits to the electric consumers in such building exceed the
17 costs of purchasing and installing separate meters in such building.

18 **Q. WHY DO YOU BELIEVE DUQUESNE IS SO RESISTANT TO NEP’S**
19 **PROPOSED METERING AND SUBMETERING PRODCUT OFFERING,**
20 **ESPECIALLY SINCE NEP IS LAWFULLY PROVIDING THOSE SERVICES IN**

1 **PECO’S SERVICE TERRITORY UNDER A COMISSION APPROVED TARIFF**
2 **PROVISION?**

3 A. As I explained above, Duquesne has treated its tariff language and implementation strategy
4 as an effective ban on master metering of multi-family buildings. Duquesne has failed to
5 understand and recognize the changes in technology that allow for lower cost private party
6 installation of infrastructure, smart submeters, and submetering to achieve greater energy
7 efficiency, demand response, investment and lower cost of capital for the property
8 owner/business owner in a master metered building with submeters. *See*, NEP Exhibit TR-
9 17. This lack of understanding eliminates customer choice and options in obtaining the
10 kinds of energy efficiency and conservation benefits NEP’s service model can provide.
11 Duquesne has attempted to justify this reluctance to give tenants in multi-family buildings
12 this choice under consumer protection theories which, I have noted above, are not part of
13 PURPA’s original limitation on master metering. In contrast to Duquesne, PECO allows
14 NEP’s service model by tariff rule. See NEP Exhibit TR-18. NEP has successfully
15 delivered its services in PECO’s service territory since 2008 without being challenged as
16 abusive of tenants. It is clear that Duquesne’s roadblock to our program is really about
17 preserving direct access to tenants and what appears to be a financial benefit of that
18 relationship to DLC.

19 **Q. WHY DO YOU SAY DUQUESNE’S POLICY ON MASTER METERS**
20 **FINANCIALLY BENEFITS DLC?**

21 A. Duquesne appears to benefit financially from its ban on master metering multi-family
22 properties. Duquesne benefits financially from the master meter ban by its requirements
23 for capital contributions from property owners for buildings it insists must have individual

1 tenant meters owned by Duquesne. Because these contribution requirements can be very
2 large, they are likely to be an obstacle to the construction of both new affordable housing
3 as well as apartment buildings not designed for low income tenants. Allowing master
4 metering with third party installed behind the curb infrastructure and smart meters like that
5 proposed by NEP in this proceeding allows both the property owner and Duquesne to avoid
6 these expenditures. Developers of affordable housing have brought this fact to Duquesne's
7 attention, as evidenced by communications to DLC from Pennsylvania Senator Jay Costa
8 in requests to waive Duquesne's individual tenant utility meter requirement and allow a
9 "waiver" similar to that provided by PECO. See NEP Exhibit TR-19. Affordable housing
10 developers have stated that avoiding a large and unnecessary outlay of funds through
11 required contributions to Duquesne can better enhance their properties and create better
12 environments for low-moderate income seniors in the region. See NEP Exhibit TR-20.
13 While Duquesne has responded to this advocacy by proposing Rule 41.1, it refuses to allow
14 other property owners and developers of multi-family housing the option of better
15 enhancing their properties and creating better environments for tenants by rejecting
16 proposed tariff Rule 41.2.

17 **Q. ARE YOU AWARE OF ANY CIRCUMSTANCES IN PECO'S SERVICE**
18 **TERRITORY, WHERE MASTER METERING WITH SMART SUBMETERS IS**
19 **PERMITTED, THAT HAVE LED TO PROBLEMS OR CONCERNS**
20 **WARRANTING EITHER ADDITIONAL TENANT PROTECTIONS OR THE**

1 **NEED TO ELIMINATE THE USE OF MASTER METERS AND SMART**
2 **SUBMETERS FOR TENANTS?**

3 A. No. Duquesne, CAUSE-PA and OCA have not recognized that NEP is far from the only
4 provider of submetered tenant services in Philadelphia and in fact is one of the smaller
5 providers of such services in that City. Despite this situation, and recognizing that
6 Philadelphia has a high concentration of low income residents, *See* NEP Exhibit TR-21,
7 NEP is unaware that existing protections for such tenants have been found inadequate by
8 the Pennsylvania Public Utility Commission (“Commission” or “PaPUC”), the General
9 Assembly or elsewhere. NEP itself has a very low level of complaints (i.e., 7 in the last
10 four years, including none in 2018 and 2021) against it wherever it operates. Nor do the
11 parties opposing NEP’s master and sub-metering option appear to be concerned that 130
12 multi-family buildings with master meters served by Duquesne are grandfathered under
13 Tariff Rule 18, and those tenants are presumably exposed to the same alleged dangers (i.e.,
14 lack of consumer protections) of being a tenant behind a master meter. Similar to
15 Philadelphia, there has been no outcry for further consumer protections for master metered
16 tenants in Pittsburgh.

17 **Q. ARE TENANTS BEHIND MASTER METERS USING SMART SUBMETERS**
18 **WITHOUT CONSUMER PROTECTION?**

19 A. No. Pennsylvania has firmly established protections for tenants in master metered
20 buildings, including protections from utility service termination of property owners and
21 limits on the price of service resold to tenants in such buildings. However, Duquesne,
22 CAUSE-PA and to some extent OCA ignore these existing tenant protections, preferring
23 instead to claim that the absence of all utility-like protections for payment troubled

1 residential customers of public utilities justifies some utilities, like Duquesne, effectively
2 banning the use of master meters for property owners of multi-family buildings. These
3 Parties recognize and acknowledge that NEP has some tenant protections in place but, as
4 noted above, wrongly insist that private entities like NEP be compared to Duquesne's
5 legally mandated consumer protections as a public utility. By (i) essentially claiming these
6 existing protections are insufficient and inadequate for tenants of master metered buildings
7 compared to residential customers of utilities, (ii) effectively banning all master meters for
8 multi-family buildings, and (iii) compelling the use of individual residential meters for all
9 tenants NEP's critics render meaningless and superfluous the protections that have already
10 been provided for tenants behind master meters. The only exception to the master metering
11 ban NEP's critics are willing to make is for service under proposed Rule 41.1 where no
12 feedback on their energy usage is provided to the tenant.

13 **Q. GIVEN THE CONCERNS EXPRESSED BY DUQUESNE, CAUSE-PA, OCA AND**
14 **OSBA TO NEP'S PROPOSED TARIFF RULE 41.2, IS NEP AMENABLE TO ANY**
15 **MODIFICATIONS OF ITS PROPOSAL?**

16 A. Yes. I will review later in my testimony specific modifications to NEP's proposal which
17 should alleviate some of the concerns of these Parties. However, it is NEP's impression
18 that a significant amount of the opposition to proposed Rule 41.2 is based on the perception
19 that allowing use of the new proposed Tariff Rule will rapidly lead to new and more
20 widespread use of master meter with submetering in the Duquesne service territory, thereby
21 creating a revenue concern before Duquesne's next rate case. To allay concerns about the
22 impact of the proposal on tenants, NEP would be willing to limit approvals under Tariff
23 Rule 41.2 to 130 existing developments (i.e., multiple buildings at a single site) and new

1 buildings, and to review all impacts (e.g., revenue impacts on the utility as well as costs
2 and benefits to property owners, tenants and other stakeholders) of Tariff Rule 41.2 in
3 Duquesne's next rate case. Developments should be treated similar to a property that is a
4 single high rise. This interval would also provide an opportunity to do the studies
5 recommended by OSBA (OSBA St. 1-R, pp. 23-25) on the effect of Tariff Rules 41.1 and
6 41.2 (including the impact of Duquesne's current 130 current master metered buildings)
7 on Duquesne's revenues and cost allocations. Duquesne has proposed Tariff Rule 41.1
8 without the benefit of such studies. Rather than reject Tariff Rule 41.1 for failure to prepare
9 such studies in advance, the Commission should provide additional time for real world
10 experience to be accumulated on the effect of these rules in DLC's service territory based
11 on proper revenue and cost allocation analyses. Attached to this Surrebutal Testimony as
12 NEP Exhibit TR- 22 is a revised version of Tariff Rule 41.2 showing the modifications to
13 that proposed provision that are acceptable to NEP and are responsive to some of the issues
14 raised by OCA, Duquesne, OSBA and CAUSE-PA.

15 **Q. PLEASE SUMMARIZE THE MODIFICATIONS CONTAINED IN NEP EXHIBIT**
16 **TR-22 REGARDING PROPOSED TARIFF RULE 41.2.**

17 A. NEP proposes to clarify portions of the proposed Tariff Rule 41.2 and expand certain
18 requirements to address the concerns of the opposing parties I have discussed earlier in my
19 testimony. These modifications include:

- 20 • NEP's proposed master and submetering program reflected in Tariff Rule 41.2 will be
21 subject to a total limit of 130 existing developments and new buildings. Requests to
22 convert to NEP's master and submetering-type program for existing buildings will be

1 treated on a first come, first served basis. Duquesne will provide the number of
2 development spots still available to a property owner upon request.

3 • A mandatory minimum \$2 per tenant bill credit regardless of income level or usage. This
4 will ensure tenants receive an immediate benefit from a master meter construct.

5 • To address concerns in the differences in bill collection activity compared to Duquesne,
6 NEP provides the following modifications:

7 ○ Number of days due from bill issue date including number of days grace period will
8 match the current Duquesne tariff in effect for the month the bill is issued.

9 ○ Any past due or collection recovery fees may not exceed the collection recovery
10 fees of the utility based on the tariff requirements in effect for the month the bill to
11 collect such costs is issued.

12 ○ Meter testing fees and testing request requirements will match the applicable time
13 to test and fee recovery amounts applicable to a utility under Pennsylvania law and
14 the applicable utility tariff.

15 ○ A payment plan option must be made available to tenants having trouble paying
16 their bills, but such plan shall not greater than the lesser of (i) 12 months or (ii) the
17 remaining term of the tenant's lease. Unlike Duquesne, which can continue to
18 work with a payment troubled customer at a new location if payments under a plan
19 are not made, a property owner/master meter provider will not have the same access
20 once a tenant moves. This ensures payment plans are offered, but recognizes NEP
21 is not providing a utility service and is restricted to receiving payments under a plan
22 to the time when a tenant resides at the property.

- 1 ○ Notices of disconnection must match the number and type of notices provided by
2 the rules, regulations and statutes applicable to Duquesne. This will resolve DLC’s
3 concern that NEP provides all such notices, except for a post termination notice
4 after full disconnect.
- 5 ○ Service may only be disconnected for non-payment.
- 6 • Tenants must be informed prior to lease signing of the following:
- 7 ○ Signing the lease will include submetering electricity service.
- 8 ○ Certain low income programs available from a utility to assist payment troubled
9 customers will not be available to tenants served via a property master meter and
10 privately installed smart submeters.
- 11 ○ Prior to lease signing, individual tenants will be notified that the property owner
12 has chosen a competitive supplier on their behalf. However, individual tenants will
13 receive a written explanation of emissions and environmental attributes of the
14 chosen supply.
- 15 ○ An explanation of how the bill is calculated and which technologies have been
16 provided under Tariff Rule 41.2(i.e., Thermostat, smart energy control devices and
17 EV charging).
- 18 • EV charging or other technologies chosen by the property owner may not be separately
19 billed to the tenant, or treated as a separate line item of usage and are also subject to the
20 total bill cap amount less \$2 credit to qualify for Tariff Rule 41.2.

1 **Q. DOES NEP OBJECT TO OSBA’S RECOMMENDATION TO CONSIDER A SUB-**
2 **CLASS OF MASTER METERED MULTI-FAMILY CUSTOMERS WITHIN THE**
3 **RATE RS CLASS?**

4 A. Yes. OSBA recommends that master metered multifamily service be included as part of
5 the residential class for cost allocation and revenue allocation purposes if the Commission
6 approves proposed Tariff Rule 41.1. (Knecht p. 19, lines 19-22). OSBA also recommends
7 creation of a sub-class of master metered multifamily customers within the Rate RS class.
8 (Knecht p. 19, lines 25-29). The issue of whether all multi-family buildings (the 130
9 grandfathered buildings, buildings served under proposed Rule 41.1 and proposed Rule
10 41.2) should be a separate rate sub-class, should be studied and examined in Duquesne’s
11 next base rate case.

12 **Q. HAVE YOU REVIEWED DUQUESNE’S, CAUSE-PA’S AND OCA’S REBUTTAL**
13 **TESTIMONY CITING NUMEROUS DIFFERENCES BETWEEN RULES AND**
14 **POLICIES APPLIED TO RESIDENTIAL APARTMENT UNIT UTILITY**
15 **CUSTOMERS AND TENANTS RESIDING IN NEP MANAGED MULTI-FAMILY**
16 **BUILDINGS AND THEIR SUGGESTION THAT NEP’S PROPOSAL SHOULD BE**
17 **REJECTED BECAUSE OF THOSE DIFFERENCES?**

18 A. Yes.

19 **Q. DO YOU AGREE WITH THAT POSITION?**

20 A. No I do not. Tenants in multi-family buildings should have the freedom to choose how to
21 acquire energy-type services based on their living conditions, including living in multi-
22 family buildings operating under NEP’s master meter and sub- meter program.

1 Property owners of multi-family buildings should not be permitted to have a master meter
2 combined with sub-meter option only if they implement all the public utility rules and
3 programs required of public utilities from published tariffs, Chapter 56 service termination
4 rules, customer assistance programs (“CAP”), Chapter 14 and more. Neither commercial
5 property owners nor NEP are providing a utility service and they should not be judged by
6 the scope of Duquesne’s programs or the scale of its operations. NEP is providing a
7 different service and should be free to do so without being encumbered by sweeping
8 prohibitions on master metering that do not fully reflect NEP’s business model, predicated
9 in part on individual dwelling unit meters not owned by the utility. However, NEP’s
10 proposed tariff, as modified in this testimony, will set the Commission-approved and
11 regulated requirements for master metering with submetering. That said, NEP has agreed
12 to implement certain consumer protections for the benefit of tenants in multi-family
13 buildings taking its services, thus ensuring some consistency (i) with Duquesne’s
14 individually metered customer/tenants and (ii) among other submetering companies that
15 will be required to adhere to similar requirements.

16 **Q. HOW MANY OTHER SUBMETERING COMPANIES ARE CURRENTLY**
17 **OFFERING ELECTRIC SERVICE IN PECO’S SERVICE TERRITORY?**

18 A. I am aware of the following companies, although there may be others.

- 19 • RealPage
- 20 • EMS
- 21 • Conservice
- 22 • Yardi
- 23 • PayLease
- 24 • Multifamily Utility Co.

- 1 • Sunburst Energy Systems (Monitor Data Systems)
- 2 • United Utility Services
- 3 • National Exemption Service (NES)

4 In addition, we are aware that some property owners have pursued master metering with
5 submetering without the use of a service provider.

6 **Q. DUQUESNE PROVIDED INFORMATION ON CONSERVATION/EFFICIENCY**
7 **PROGRAMS THEY PROVIDE WHICH WOULD BENEFIT MULTIFAMILY**
8 **PROPERTIES. DO YOU AGREE THE EXISTENCE OF THESE PROGRAMS**
9 **SHOULD BE USED TO PROHIBIT MASTER METERING?**

10 A. No. The standard offer program provided by Duquesne is a variable discount that ends
11 after 12 months. Philips St. 6-R, pp. 15-16. Duquesne claims a 7% discount to PLC
12 option. As noted in my testimony NEP proposes that the tariff require a mandatory \$2
13 per bill credit each month regardless of income or tenant lease status. This is not a
14 variable discount to a price to compare or any other variable rate but a guaranteed
15 minimum discount. This means it will not go lower and could go higher depending on
16 programs offered by the property owner. In addition, this credit is not restricted to 12
17 months but exists for the entire time the tenant resides within a master metered building
18 under 41.2.

19 Duquesne also claims a property owner could access tenant usage. *See*, NEP Exhibit TR-
20 23. However, this requires entry of each individual address by unit in order to receive
21 only historical usage information. This does not provide access to real time information
22 or account numbers for use with demand response enrollments at the wholesale level. In
23 addition, I will highlight again that this information provides to the property owner no
24 control or information related to the type of generation, emissions or carbon purchased by

1 a tenant who is metered separately by Duquesne. The nature of the electricity used by an
2 individual tenant is a key piece of information that investors look for in today's
3 environment. Master metering with submetering not only provides the usage information
4 at the tenant level for control and whole market participation such as demand response,
5 but allows the property owner to make decisions on a whole community basis for carbon,
6 demand response and other key pieces which would incent investment in a building by
7 investors. Duquesne's data does not provide this insight. I will also note that even if
8 Duquesne wanted to provide this emissions, carbon and generation data, they could not
9 do so because the utility does not have insight or access to what contracts a tenant is
10 under, only the pricing.

11 Duquesne holds a view that availability and access solely to the utility's EE&C program
12 is sufficient for these properties and master metering as a spur to conservation/efficiency
13 is irrelevant due to the existence of the Duquesne programs. However, according to
14 Duquesne's data for participation by multifamily properties: 50% of the participating
15 properties replaced non-tenant owned appliances, meaning fixed, long term durable items
16 like refrigerators as opposed to a power strip or light bulb. The majority of refrigerators
17 installed were in master metered premises. In fact, only 19% were in non-master metered
18 premises versus 31% for master metered units. This shows master metering brings a
19 benefit to landlords, which incents greater investment in efficiency within dwelling units
20 through appliance replacement where a tenant would not have the ownership authority to
21 replace, but the tenant definitely benefits from the replacement. This significantly higher
22 use of refrigerator participation by master metering customers shows the tie between
23 master metering and conservation/efficiency I have been referring to.

1 I will also note that the DLC programs seem to focus on low income multifamily
2 properties, which further restricts access to programs by multifamily property owners and
3 tenants that do not meet the low income threshold. NEP is not opposed to a low income
4 focused utility energy efficiency program or a low income focused master meter tariff.
5 However, multifamily property owners who do not meet the low income threshold in
6 41.1 or tenants who do not meet the low income threshold should be provided a path to
7 participate in and receive benefits of master metering with submetering. That is the
8 purpose of proposed tariff 41.2 to create a tariff with consumer protections which allow
9 any multifamily property owner to control the energy decisions on their property while
10 retaining tenant control plus tariff mandated tenant discounts and access to technologies.

11 **Q. TO ENSURE CONSISTENCY IN SERVICE ARE THERE ANY MODIFICATIONS**
12 **TO THE TERMS AND DISCLOSURES UNDER WHICH TENANTS WOULD**
13 **RECEIVE ELECTRIC SERVICE FROM MASTER METERED SUBMETERED**
14 **PROPERTY OWNERS THAT NEP IS WILLING TO ADOPT GIVEN THE**
15 **CONCERNS PARTIES' HAVE EXPRESSED WITH TENANT PROTECTIONS?**

16 Yes. NEP's position is centered on there being more access to data, energy technologies,
17 energy programs, and capital which add to tenant control and choice in addition to the
18 property owner benefits. As I noted earlier and as I have reflected in the modified attached
19 Tariff Rule 41.2, NEP will expand the technology requirement to include examples of such
20 technologies such as EV charging and to the extent the technology is used to meet the tariff
21 Rule will be subject to the bill cap provision. To address the issue that tenants should be
22 making an informed choice when they agree to lease in a building where the dwelling is
23 not metered by the utility, Tariff Rule 41.2 has been modified to require notice to any

1 potential tenant considering a lease in a master metered and privately submetered multi-
2 family building advising that by leasing the property owner will choose their competitive
3 energy supply and certain utility programs like CAP, Dollar Energy Fund, and LIHEAP
4 are not available. However, they will receive the environmental attributes of the supply
5 chosen for the property.

6 **Q. DO YOU AGREE WITH DUQUESNE’S CRITICISMS OF A COMMISSION**
7 **STAFF REVIEW PROCESS FOR APPLICATIONS REJECTED BY DUQUESNE**
8 **UNDER PROPOSED TARIFF RULE 41.2?**

9 A. No. Duquesne’s concerns regarding PaPUC staff involvement in reviewing determinations
10 under Rule 41.2 are unsupportable. Given the history of Duquesne’s handling of master
11 meter exceptions in the past, the steps Duquesne has taken to effectively ban master meters
12 and eliminate pro-conservation options despite the advent of smart submeters, its efforts to
13 bar NEP from this proceeding, and its failure to address broader master meter issues in its
14 master meter collaborative, Duquesne’s judgments under Tariff Rule 41.2 should be
15 subject to Commission staff review. Such a process and use of PaPUC staff resources is
16 warranted, similar to how utility treatment of competitive suppliers’ issues were made
17 subject to the Commission staff-operated Office of Competitive Market Oversight
18 (“OCMO”) process, which also required an allocation of staff resources.

19 **Q. PLEASE CLARIFY’S NEP’S APPROACH TO FEES FOR IN-PERSON**
20 **PAYMENTS.**

21 A. NEP does not charge tenants a fee for in-person payments. For example, Kroger (i.e., a
22 grocery store chain) charges a \$2.00 fee for in-person payments and Walmart charges
23 \$1.00. My understanding is that this a similar arrangement to what Duquesne does, i.e.,

1 Duquesne does not charge a fee but Duquesne's vendors would charge such a fee.
2 Duquesne's website lists links to vendors that will accept bill payments, however, upon
3 contacting those that list utility bill pay through the link, these vendors have indicated they
4 no longer do so. That said, it appears NEP has the same process as Duquesne, i.e., NEP
5 does not charge a fee, but the vendor providing the in-person bill pay service may do so.

6 **Q. ARE THE CRITICISMS AGAINST NEP'S CHALLENGES TO THE**
7 **AVAILABILITY TO DUQUESNE LIGHT'S ENERGY CONSERVATION**
8 **PROGRAMS TO TENANTS IN MULTI-FAMILY BUILDINGS JUSTIFIED?**

9 A. No. I understand and acknowledge that certain energy conservation offerings under
10 Duquesne Light may in fact be available to tenants in multi-family buildings with the
11 landlord's approval. However, the key point on this subject in my Direct Testimony is that
12 under NEP's master and submetering program, property owners are able to provide access
13 to other non-utility related energy conservation programs that often provide substantial
14 benefits to tenants in the multi-family buildings taking advantage of our services. There
15 are investment opportunities and loan programs designed around
16 Renewable/Resilient/Climate/Energy Efficiency/Demand Response programs unrelated to
17 Duquesne that are available. For example, I previously referenced how aggregation of
18 tenants for participation in PJM demand response programs is simplified by eliminating
19 the need to obtain individual utility account numbers and track those account number
20 changes as tenants move in and out. Master metering would allow a single utility account
21 number, which does not change with changes in tenants, and that single meter creates the
22 demand baseline used for participation. Also, I have attached examples of the significant
23 change in both access to capital and investor decisions over the last few years. *See* NEP

1 Exhibit TR-17. Many large banks and investors are looking for the businesses they lend
2 to or invest in to provide environmental and climate data. Master metering not only
3 maintains the data in a single place (the master meter account), but also allows for the
4 property owner’s decisions to be based on this data to meet the needs of the entire
5 community/building. I will also note that if Duquesne’s programs ended, and the
6 prohibition on master metering remained in place, Duquesne customers might have no
7 access to any energy conservation and efficiency programs – a result that could be
8 mitigated by allowing NEP’s master and submetering program (which often allow tenants
9 to access energy and efficiency programs other than those administered by the utility) to
10 be implemented.

11 **Q. DO YOU AGREE WITH THE CRITICISM THAT NEP HAS NOT SHOWN**
12 **SUPERIOR ENERGY EFFICIENCY COMPARED TO DUQUESNE’S**
13 **PROGRAMS OFFERED TO INDIVIDUALLY METERED RESIDENTIAL**
14 **TENANTS (Phillips St. 6-R, p. 10, lines 13-23 and p. 11, lines 1-5).**

15 A. No. Master metering with submetering provides access to a greater array of energy
16 conservation and efficiency programs than are available through Duquesne. While we
17 stand firmly behind the savings and benefits of our energy conservation programs for
18 both property owners and their tenants in multi-family buildings, demonstrating
19 “superior” energy efficiency is not the proper standard on which to evaluate whether to
20 approve NEP’s proposal for a master and submeter program. Duquesne’s programs do
21 not incorporate climate-focused investment in the businesses that own these properties,
22 access to aggregated property participation in PJM’s demand response programs,
23 emphasize low income qualified customers over other multifamily properties and tenants,

1 and make it difficult to create property-wide programs or technology access. In addition,
2 under PURPA, so long as tenants have the ability to see their actual usage and engage in
3 energy efficiency and conservation efforts, PURPA's policies have been implemented.
4 NEP's program accomplishes this result, albeit in a different manner than a utility
5 structure mandating individual residential unit meters tied directly to the utility as a
6 "customer." The NEP structure improves on Duquesne's model by connecting the
7 incentive not only to the tenant, but also the property owner. In addition, as noted
8 previously, the NEP proposal is reflected in a tariff provision that requires a mandated
9 instant credit to the tenant, a cap on total bill plus access to technologies by the tenant.
10 *See*, NEP Exhibit TR-22. None of these benefits exist today for non-master metered
11 properties. Therefore, the NEP master and submetering proposal has clear benefits for
12 both property owners and tenants in multi-family buildings.

13 **Q. DO YOU AGREE WITH DUQUESNE WITNESS PHILLIPS THAT A 10%**
14 **IMPACT WOULD BE SIGNIFICANT (Philips St. 6-R, pp.24-25)?**

15 A. Given the dearth of master metering in Duquesne's service territory and the limits on use
16 of proposed tariff Rule 41.2 I have proposed, I do not believe we would ever hit a 10%
17 impact to revenue based on both an analysis of the total addressable market and the type
18 of customers which will have usage and distribution costs shift to a master meter
19 commercial account. As I noted previously, we are proposing a cap on conversions to no
20 more than 130 developments prior to the next rate case.

1 **Q. DOES NEP AGREE THERE IS A POTENTIAL SIGNIFICANT REVENUE LOSS**
2 **TO DUQUESNE RELATED TO MASTER METERING?**

3 A. NEP disagrees that there is a 1:1 cost and revenue loss when a residential tenant is moved
4 to submetering. Unlike a single family home where the infrastructure is curb connected to
5 each individual home for multifamily there are not multiple wires to multiple tenants tied
6 directly to the curb distribution system. Rather it is a meter installation with costs and
7 infrastructure still born by the property owner as indicated by DLC. See NEP Exhibit TR-
8 19. The master meter and all infrastructure to the curb will continue to service the property
9 from DLC and be paid for by the master metered commercial account. Also, as tenants
10 move regularly and create vacancies, there is not a one to one correlation of the number of
11 units submetered and the number of residential accounts moved from Duquesne. Some
12 units may not be occupied or consistently occupied. The likelihood of a significant shift
13 in residential customers for DLC is small. As previously noted NEP currently services only
14 **[BEGIN CONFIDENTIAL]** [REDACTED] **[END CONFIDENTIAL]** units in Pennsylvania. In
15 addition, the NEP proposed tariff restricts master metering to only buildings with four or
16 more units similar to the DLC proposed tariff. Even if NEP doubles its business in DLC's
17 service territory, I estimate the total potential impact to revenue using the customer charge
18 to be immaterial.

19 As I stated in my initial testimony customers move in and out of the DLC territory and
20 change in their usage is expected in the normal course of business. Revenue and costs
21 changes related to changes in service are addressed in rate cases. Similarly any changes
22 related to greater use of master metering would need to be reviewed in the next rate case
23 as are all tariff provisions, revenue and costs.

1 **Q. CAN YOU PLEASE SUMMARIZE NEP’S SURREBUTTAL POSITION?**

2 A. Yes. Master metering plus submetering provides benefits to both property owners and
3 tenants that go beyond the limited programs offered by Duquesne. The consumer protection
4 concerns raised by opponents were based on differences in NEP consumer protections
5 versus the utility, but were not based on a complete lack of consumer protections by NEP.
6 NEP has provided a modified version of proposed Tariff Rule 41.2 to address the
7 differences in consumer protections, provide clear notices to tenants on differences in
8 service by utilities, and provide technologies and bill credits. These tariff requirements
9 ensure consistency in protections regardless of whether NEP or another service provider is
10 chosen by the property owner. Finally, NEP supports a cap on the number of conversion
11 of existing developments eligible for master metering and privately owned submeters in
12 multi-family buildings in the Duquesne service territory, with a review of the costs and
13 revenue impacts in the next rate case.

14 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

15 A. Yes, but I reserve the right to file such additional testimony as may be necessary or
16 appropriate.

NEP Exhibit TR-12

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

6. Identify, describe and explain CAUSE-PA’s specific role in developing Duquesne Light’s proposal in this proceeding for master metering for new residential multifamily premises under the criteria specified on page 6, lines 16-20 of your Rebuttal testimony. Provide all documents that support your answer.

RESPONSE:

CAUSE-PA submitted expert testimony on the issue in DLC’s last rate case, and representatives for CAUSE-PA participated in the issue-specific collaborative meetings. Counsel for CAUSE-PA also had a brief call with DLC regarding the issue on March 16, 2021.

See NEP to CAUSE-PA, I-6, Attachment; see also NEP to CAUSE-PA I-7, Attachment and NEP to CAUSE-PA I-8, Attachment.

Response Provided By:
Elizabeth R. Marx, Esq.
Counsel for CAUSE-PA

Dated: August 6, 2021

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission	:		
	:	Docket No.	R-2018-3000124
	:		R-2018-3000829
v.	:		
	:		
Duquesne Light Company	:		

CAUSE-PA STATEMENT NO. 2

DIRECT TESTIMONY OF SARAH RALICH

ON BEHALF OF

THE COALITION FOR AFFORDABLE UTILITY SERVICES AND
ENERGY EFFICIENCY IN PENNSYLVANIA (“CAUSE-PA”)

June 25, 2018

PREPARED DIRECT TESTIMONY OF SARAH RALICH

1 **Q: Please state your name, occupation, and business address.**

2 A: Sarah Ralich. I am the Energy and Construction Manager for ACTION-Housing, Inc. My
3 work address is 611 William Penn Place, Suite 800, Pittsburgh, PA 15219-6927.

4 **Q: Briefly outline your education and professional background.**

5 A: I have a Bachelor's Degree in Urban Studies from the University of Pittsburgh and have
6 been a Building Performance Institute (BPI) certified Building Analyst Professional since 2014.
7 I am a BPI certified multifamily and single-family energy auditor.

8 Since 2013, I have been employed by ACTION-Housing, Inc. When I began my
9 employment with ACTION, I was hired as the Construction Services Coordinator. In that role, I
10 helped build and manage "The One Stop", which was a multifamily energy efficiency program
11 run within ACTION-Housing that performed energy audits and savings calculations for more
12 than 3,500 units of multifamily buildings and coordinated the implementation of energy retrofits
13 between utility companies, engineers, contractors, and clients. I also worked closely with our
14 development and asset management teams as an energy construction consultant for new and
15 existing multifamily buildings.

16 My current position is as ACTION-Housing's Energy & Construction Manager. I
17 perform many of the same roles as my previous position with expanded oversight of the portfolio
18 of housing developments owned, operated, or managed by ACTION-Housing. Among the added
19 responsibilities of my new position are establishing and maintaining a monthly monitoring
20 program to track our current buildings' energy performance, working with Duquesne Light to
21 take ACTION-Housing's building portfolio through available energy retrofit programs, as well
22 as advising and managing our current real estate development and retrofit construction projects.

1 Prior to my positions with ACTION-Housing, I worked as a construction project manager
2 where I oversaw the development of more than \$5 million of historic renovation work and
3 managed all active construction job for a Pittsburgh-based developer. I also have experience
4 working in community development and outreach. I have attached my resume as Appendix A to
5 my testimony.

6 **Q: Please describe ACTION-Housing, Inc.**

7 A: ACTION-Housing was founded in 1957 to address some of the Pittsburgh region's most
8 pressing housing issues. The organization was originally called the "Allegheny Council To
9 Improve Our Neighborhoods – Housing" – hence the acronym ACTION. Although we are now
10 only ACTION-Housing, Inc. without the acronym, the guiding mission of the organization has not
11 changed. Our mission is "to empower people to build more secure and self-sufficient lives through
12 the provision of decent, affordable housing, essential supportive services, asset building programs,
13 and educational and employment opportunities."¹ Over the past 30 years, ACTION-Housing has
14 developed or assisted in the development of more than 4,500 units of housing – both single-family
15 and multifamily – for the elderly, people with disabilities, the homeless, veterans, young people
16 who have aged out of foster care, and families and individuals with low income. Currently,
17 ACTION-Housing owns, operates, or manages more than 1,825 units of affordable multifamily
18 housing in the greater Pittsburgh area.

19 **Q: Have you testified in any proceeding before the Pennsylvania PUC?**

20 A: No.

¹ See: <http://www.actionhousing.org/index.php/about-us/history-mission>

1 **Q: For whom are you testifying in this proceeding?**

2 A: I am testifying on behalf of the Coalition for Affordable Utility Services and Energy
3 Efficiency in Pennsylvania (“CAUSE-PA”).

4 **Q: What is the purpose of your testimony?**

5 A: The purpose of my testimony is to discuss the impact that Duquesne Light Company’s
6 proposed increase in its fixed customer charge on ACTION-Housing as an affordable multifamily
7 housing developer, owner, and manager, as well as on the residents of our buildings. Specifically,
8 as outlined in more detail below, I offer that Duquesne’s proposed increase from a \$10 per month
9 fixed customer charge to \$16.25 per month is not a just and equitable rate structure as it would
10 impose costs on affordable multifamily housing providers and their tenants that are not able to be
11 mitigated through energy conservation or usage reduction. Like CAUSE-PA’s other witness, I
12 believe that any rate increase authorized in this proceeding should be assessed entirely through the
13 Company’s volumetric charge. Furthermore, I propose that if any customer charge increase is
14 permitted to go through that Duquesne Light should modify its existing tariff provision that
15 prohibits master-metering of multifamily premises. I also make some recommendations about
16 access to aggregate usage data that would allow for benchmarking of large residential multifamily
17 buildings that is being contemplated by the City of Pittsburgh. Finally, I offer support for
18 Duquesne’s clarification of its summary billing provisions that allow for summary bills.

19 **Q: Please describe ACTION-Housing’s portfolio of properties.**

20 A: ACTION-Housing performs a variety of roles in the development and operation of
21 multifamily housing. As a developer, we seek projects that will advance our mission of providing
22 affordable multifamily housing to individuals and families with low-income and/or who are

1 otherwise vulnerable. We develop housing using a variety of funding, including through the
2 federal Low Income Housing Tax Credit program (LIHTC) and various HUD-related programs.

3 While some of our units are master-metered – those built before 1980 – the vast majority
4 of our units are individually metered by Duquesne Light. Currently, we have 1,164 affordable
5 multifamily units that we own, operate, or manage which are individually metered by Duquesne
6 Light. When developing projects within Duquesne’s service territory, we make a determination
7 of whether the units should be tenant-paid or landlord-paid depending on the characteristics of the
8 target population of the building or the building’s heating and cooling structure. For example, we
9 have often determined that for buildings designed to house tenants in a specific supportive housing
10 program or individuals with disabilities that it is preferable to have the electricity be landlord-paid
11 rather than tenant-paid. Also, depending on how the building’s heating and cooling systems are
12 designed we have often found that we would like more information and control over electricity
13 consumption for the building as a whole which often requires us to be the owner of the utility
14 accounts. Of the 1,164 individually metered units owned, operated, or managed by ACTION-
15 Housing, they are broken down as follows:

Number of units individually metered and tenant-paid	Number of units individually metered and landlord paid
1,019	145

16 **Q: Please describe the characteristics of the tenants living in the units that ACTION-**
17 **Housing owns, manages, or operates.**

18 A: All of our tenants are vulnerable in some way and are all low-to-moderate income. Many
19 have more than one vulnerable characteristic. What I mean is that these households are often both
20 economically vulnerable and either elderly, living with a disability, a veteran, a youth aging out of
21 foster care, or someone re-entering society after incarceration. Across the majority of units I

1 describe above, the average household size is 1.12 persons and the average income of the
2 households is \$13,805 annually. This means that on average, these units are rented by households
3 who live at incomes at or below approximately 115% of the federal poverty level.

4 **Q: Are the characteristics of the buildings and tenants that you mention unique to**
5 **ACTION-Housing?**

6 A: No. There are a number of providers of affordable, multifamily housing within Allegheny
7 and Beaver Counties. While I cannot speak with the metering structure of each of them, I know
8 from conversations with other developers that they have a mix of individually metered and master
9 metered properties and that within their individually metered properties they have a mix of
10 properties that are individually metered, tenant paid and those that are individually metered,
11 landlord-paid. Furthermore, while I cannot speak to the precise demographics of the tenants who
12 reside in other properties, we know from publically available data that there are tens of thousands
13 of units of affordable multifamily housing in Allegheny and Beaver counties. While this is an
14 inadequate supply for the need, it nonetheless demonstrates that there are a significant number of
15 tenants who reside in affordable multifamily housing.

16 **Q: Please describe your concerns about how Duquesne's proposed rate structure would**
17 **impact ACTION-Housing and its tenants.**

18 A: Duquesne's proposed rate increase would have a significant impact on the affordability of
19 utility rates for those units for which we pay the usage and for our tenants who pay their own usage
20 each month. While I do not have access to the meter data for the units for which we are not the
21 customer, I do know that, on average, for the individually metered units that we pay as the
22 customer, our average usage in 2017 was 193 kWh per month. Based on the data provided by

1 Duquesne in their filing, this would result in an average rate increase of 17.8% for distribution
2 service for these units.²

3 While any increase in rates would impact our operations and our tenants, the decision of
4 Duquesne Light to seek to collect a significant portion of its rate increase through a fixed charge
5 is particularly problematic because there is no way to ACTION-Housing or its tenants to mitigate
6 this increase through energy conservation or usage reduction. Mr. Geller – CAUSE-PA’s other
7 witness – has laid out detailed reasons why the fixed charge increase is problematic in general for
8 low-income, low-usage customers.³ I agree with his analysis and conclusions. The focus of my
9 testimony, however, is the impact that this decision will have specifically for those low-income
10 households who reside in affordable multifamily housing and those non-profit developers – like
11 ACTION-Housing – who pay the bills for a significant portion of the individually metered units.

12 **Q: Have you calculated the impact that the proposal to increase the customer charge to**
13 **\$10 per month to \$16.25 per month would have for ACTION-Housing and its tenants?**

14 A: Yes. It would cost ACTION-Housing approximately \$906.25 more per month if the
15 requested increase is granted to \$16.25 per month from the current \$10. This is for the units that
16 are individually metered and we pay. For our tenants who pay their bills directly, the increase
17 would be, in aggregate \$6,368.75 per month.

18 **Q: Would ACTION-Housing or its tenants be able to mitigate or reduce this burden?**

19 A: No. Unlike charges that are assessed based on consumption, a fixed charge remains the
20 same regardless of how much you consume. This is particularly problematic for our tenants
21 because they live in smaller units that tend to use less electricity. Furthermore, ACTION-Housing
22 is deeply committed to energy efficiency, conservation, and usage reduction. As a non-profit

² See Exhibit 1, Part IV, Attachment DFR IV-D-1 filed with Duquesne’s rate filing.

³ See CAUSE-PA Statement No. 1 at 18-21.

1 provider of affordable housing, we do everything we can to reduce costs for our tenants and our
2 operating expenses so that we can recirculate savings back into the buildings that we manage and
3 operate ensuring that they remain affordable. We do this in a variety of ways, for example, over
4 the past five years, ACTION-Housing has participated in Duquesne Light's Act 129 multifamily
5 program and has installed measures which Duquesne has estimated would save approximately
6 450,000 kWh per year. We did this not only for the energy savings themselves – but for the cost
7 savings that we thought would come from those energy savings. In addition, using dollars from
8 the Weatherization Assistance Program (WAP), we completed a whole building retrofit of 72 units
9 which we estimate will save more than 53,000 kWh of energy per year. The funding for this
10 project came from both WAP and the operating capital of the building itself. Again, we made this
11 investment not simply to save energy, but also to save money through usage reduction. If the fixed
12 charge is increased to the \$16.25 that Duquesne requests, we will not be getting the same savings
13 we were anticipating when we made the investment.

14 **Q: In addition to the \$10 customer charge, Duquesne currently charges a flat \$4.36 per**
15 **month for its smart meter charge and a retail market enhancement surcharge, which is**
16 **reflected on bills as a \$14.36 monthly charge. Given this, isn't the increase in the fixed**
17 **monthly cost less than \$2 per month?**

18 A: It is true that currently, Duquesne has rolled into its fixed charge these two additional
19 charges that add \$4.36 per month to the monthly customer charge. As I understand it, Duquesne
20 is proposing to roll their smart meter costs into base rates rather than have a standalone surcharge.
21 Some portion of this amount is undoubtedly accounted for in their proposed \$16.25 customer
22 charge and some portion is accounted for in their volumetric charge which they propose to increase

1 from \$0.047054 per kWh to \$0.061147 per kWh for residential customers.⁴ That is, these costs
2 are not going away; they will just be collected in a different fashion. To the extent that the costs
3 are rolled into the consumption-based, volumetric charge they can be mitigated and avoided
4 through usage reduction and energy conservation. However, going forward, with a customer
5 charge of \$16.25 there are increased costs that will be unable to be mitigated at all regardless of
6 how little consumption is used by the household.

7 **Q: Do you have any proposals that could help remediate the financial impact of**
8 **Duquesne’s proposed rate increase and rate design on low income consumers living in**
9 **multifamily housing?**

10 A: Yes. To the extent that any increase in rates is approved, I recommend that the increase is
11 recovered exclusively through the volumetric charge. Adding additional costs to the fixed
12 customer charge will have a disproportionate impact on low income households, and works to
13 undermine energy efficiency efforts of low income households and affordable multifamily housing
14 providers. Duquesne’s fixed customer charge should remain \$10 per month and all other costs –
15 including smart meter charges – should be rolled into the consumption-based per kWh charge.

⁴ See Part IV, Attachment DFR IV-C-Proof, Part 1 of 18, pages 1-2, filed with Duquesne’s rate filing.

1 **Q: Why doesn't ACTION-Housing simply master meter those properties for which it has**
2 **determined that it will be responsible for electricity usage rather than the tenants?**

3 A: We wish that this were an option to consider, but Duquesne's current tariff prohibits
4 residential master metering for any units connected after January 1, 1981.⁵ If we were allowed to
5 master meter those buildings for which we have determined that it makes sense to ACTION-
6 Housing to pay the bills we could avoid paying a residential customer charge on each of the
7 individual meters, Duquesne could avoid that cost associated with installing, maintaining, reading,
8 billing, and accounting for these individual meters, and we could do so without any net increase
9 in energy usage by household residing in the properties. This is the case because we would more
10 than likely sub-meter the units for purposes of ensuring usage controls over tenant consumption
11 and so as to monitor spikes in usage that are attributable to particular units within a building. We
12 would not sub-meter for the purposes of re-billing customers. Furthermore, many of our funders
13 require that we have living unit-level consumption data, but they do not require that the metering
14 is done by the utility.

15 **Q: To your knowledge, do any of the other major electric utilities have prohibitions on**
16 **master metering that are as strict as Duquesne Light's?**

17 A: No. To my knowledge, Duquesne Light is the only major electric distribution company
18 that has a blanket prohibition on master metering without exception. Both PECO Energy
19 Company's and PPL Electric Utilities, Inc.'s respective tariffs have a preference for individually
20 metered units but allow metering to be done either by the customer (i.e., behind the utility meter),

⁵ See Duquesne Light Company Supplement No. 107 to Electric – PA P.U.C. No. 24, Third Revised Page No. 29, ¶ 41. Available at: https://www.duquesnelight.com/docs/default-source/default-document-library/CurrentTariff.pdf?sfvrsn=e69ca442_44

1 the utility or allow for master metering upon request and approval by the Company.⁶ A review of
2 the four First Energy Company's electric tariffs does not appear to show any prohibition at all.⁷

3 **Q: Do you believe Duquesne should modify its tariff to allow residential master-metering**
4 **in certain cases?**

5 A: Yes. I understand the prohibition has been in Duquesne's tariff for decades and that its
6 impetus was a concern that master-metered buildings would lead to increased usage and waste
7 because tenants would not have a direct connection to their energy usage. However, with advances
8 in customer-side sub-metering technology, I do not believe these concerns should prevent a change
9 in the tariff. Allowing residential master metering with appropriate assurances of sub-metering or
10 other checks on tenant usage should be sufficient. In my view, Duquesne Light should modify its
11 tariff to mirror the provisions contained in PECO or PPL's tariffs that allow for master metering
12 under certain circumstances. Specifically, Duquesne should allow master metering where
13 individual metering is infeasible from a financial, technical, or engineering point of view or any
14 other valid reason – including but not limited to the added additional operating costs associated
15 with individual metering – and master-metering will not have a significant impact on the
16 consumption of an individual customer.

⁶ See PECO Energy Company, Tariff Electric Pa. P.U.C. No. 6, Original Page No. 22 at 13.1. Available at: <https://www.peco.com/SiteCollectionDocuments/CurrentElecTariff.pdf>; See also PPL Electric Utilities, Inc., Tariff Supplement No. 42, Electric Pa. P.U.C. No. 201, Fourth Revised Page No. 9A, Tariff Rule 5F. Available at: <https://www.pplelectric.com/-/media/PPLElectric/At-Your-Service/Docs/Current-Electric-Tariff/master.pdf>

⁷ See generally tariffs of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company. Available at: https://www.firstenergycorp.com/content/customer/customer_choice/pennsylvania/pennsylvania_tariffs.html#Met-Ed

1 **Q: Do you have any other comment or concerns about aspects of Duquesne’s terms and**
2 **conditions of service that you would like to address?**

3 A: Yes, I have two. First, I would like to commend Duquesne for proposing to formalize
4 summary billing for multiple meter locations. In their proposed tariff, Duquesne provides for a
5 new summary billing protocol.⁸ This is a helpful addition to the Company’s tariff and will be
6 useful for entities like ACTION-Housing who manage multiple meters within buildings and across
7 the service territory.

8 Second, I would like to encourage Duquesne to modify its internal billing systems to be
9 able to provide anonymized, aggregated meter data within residential buildings that are larger than
10 50,000 square feet. Currently, the City of Pittsburgh has a Building Benchmarking Ordinance that
11 requires owners of non-residential buildings over 50,000 square feet to annually report their energy
12 and water consumption to the City in a process called benchmarking.⁹ There are ongoing
13 discussions within the City of Pittsburgh to amend this ordinance to require similar benchmarking
14 for residential buildings that are larger than 50,000 square feet. CAUSE-PA and ACTION-
15 Housing support benchmarking. Energy benchmarking is an important part of energy efficiency
16 work in all buildings, especially multifamily buildings. As discussed above, per Duquesne Light’s
17 tariff, multifamily buildings are individually metered and the tenant meters are paid for by the
18 occupants. This arrangement makes it very difficult to receive whole building data every
19 year. Understanding how much energy a building is consuming every year is vital information

⁸ See Duquesne Light Company Supplement No. 174 to Electric – PA P.U.C. No. 24, Fifth Revised Page No. 23, ¶ 20.2.

⁹ See Title 6, Art. II, § 629 of City of Pittsburgh Municipal Code. Available at: https://library.municode.com/pa/pittsburgh/codes/code_of_ordinances?nodeId=COOR_TITSIXCO_ARTIISU_CH6_29BUBE

1 when planning for energy efficient upgrades or monitoring current building systems for
2 performance.

3 In response to discovery, Duquesne Light reported while it does not currently have the
4 capability of aggregating energy usage for all meters in a residential multifamily building to
5 provided aggregate, whole-building data, that it is considering expanding its customer engagement
6 functions to include this capability.¹⁰ While this is encouraging, Duquesne provided no time frame
7 for when this may occur. Given that large residential building benchmarking is a priority of the
8 City of Pittsburgh and affordable housing developers in the city, I believe Duquesne should
9 commit to implementing the capability of providing aggregate energy usage for all meters in a
10 residential multifamily building within 6 months of the date rates are effective in this proceeding.

11 **Q: Do you have any recommendations about what this should look like?**

12 A: I do not have technical recommendations, but I do have suggestions about what should be
13 included. Specifically, any provision of aggregate data should have the capability of mapping
14 individual energy meters (customer accounts) to physical buildings regardless of who pays the
15 energy bill. In order to protect tenant privacy, the data should be provided only on an aggregate
16 and anonymous basis so that there is no means of disaggregating the data. Finally, whatever
17 system is developed should allow for the automated transfer of whole building data directly into
18 commercial benchmarking tools – such as Portfolio Manager.

19 **Q: Please summarize your conclusions.**

20 A: To ensure that any approved increase in rates does not disproportionately harm low income
21 households' and affordable housing providers' ability to control usage through the adoption of
22 energy efficiency measures, I recommend the following:

¹⁰ See Duquesne Response to CAUSE-PA II-2 and II-3.

1 • Reject Duquesne’s proposal to increase the fixed customer charge, and require that any
2 approved rate increase be collected through the volumetric charge.

3 • Duquesne should modify its tariff to permit master metering of residential buildings where
4 individual metering is infeasible from a financial, technical, or engineering point of view or
5 any other valid reason – including but not limited to the added additional operating costs
6 associated with individual metering – and master-metering will not have a significant impact
7 on the consumption of an individual customer.

8 • Within 6 months of the effective date of rates, Duquesne Light should ensure that it has the
9 internal capacity to provide anonymous, aggregate residential usage data to large residential
10 buildings for purposes of benchmarking and ensure that the data can be transferred directly
11 into commercially available benchmarking tools.

12 **Q: Does this conclude your Direct Testimony?**

13 **A:** Yes.

Sarah Ralich – 717-212-9270 – sarahralich@gmail.com

Qualifications

- Background in project management, grant writing and compliance.
- Experience in data collecting, analysis, and presentation for the purpose of reporting and advocacy work.
- Experience building strong relationships and partnerships with policy makers, elected officials and partners on a nationwide scale.

Experience

Nov 2013-Present

ACTION-Housing, Inc.

Pittsburgh, PA

Energy & Construction Manager

- Raised over \$110,000 in grants for ACTION-Housing's low-income housing energy efficiency policy program.
- Coordination and implementation of a multidepartment approach to energy efficiency and sustainability initiatives.
- Established a monthly monitoring program to track our current building's energy performance and worked with local utilities to take ACTION's building portfolio through available energy retrofit programs.
- Advise and manage current real estate development and retrofit construction projects.
- Performed as an expert panelist/speaker at a number of national and local conferences.

Construction Services Coordinator

- Built The One Stop energy shop program from inception to a fully functional and funded business unit with the Program Manager; performed energy audits and savings calculations for over 3,500 units in multifamily buildings.
- Coordinated the implementation of energy retrofits between utility companies, engineers, contractors, and clients.
- Worked with the development and asset management teams as an energy construction consultant for new and existing buildings.

August 2011-Oct 2013

Botero Development

Pittsburgh, PA

Project Manager

- Project Manager for over 5 million dollars of development and historic renovation work.
- Joined midway through a 5-unit remodel of condemned row houses into custom townhomes earning the company and its shareholders an 80% profit.
- Managed the remodeling of two 3-story historic building and an office-building project from conception through tenant relations associated with design and functionality.
- Managed all active job sites, including interpreting architectural drawings, scheduling subcontractors, all materials ordering, and interior/exterior design decisions.

Sep 2010-July 2011

AgRecycle, Inc.

Pittsburgh, PA

Manager of Products and Services

- Responsible for all product orders and customer service.
- Coordinated zero waste events.
- Created and maintained relationships with other green industry stakeholders, public officials, and customers.

Aug 2008-Aug 2010

Lawrenceville United

Pittsburgh, PA

Project Coordinator

- Responsible for all community outreach including: attending meetings, managing the website, writing/layout for bi-monthly newsletter, email updates and all social media updates.
- Managed the Real Estate Committee and oversaw the RFP process for the 10th Ward Scattered Sights project.
- Collected, analyzed and mapped crime data; worked with the police on neighborhood safety initiatives.
- Coordinated & planned events/programs and recruit & coordinate volunteers.
- Grant writing/administration and budget management.
- Created and maintained relationships with Public Officials, City Officials, Corporate donors, Community Members, and other Community Stakeholders.

Education & Certifications

Class of 2009 University of Pittsburgh, Pittsburgh, PA

B.A., Urban Studies

- Completed courses in city planning, data & mapping, community organizing, neighborhood and city trends, historic preservation and geology. Proficient in ArcGIS.

Building Performance Institute

- Building Analyst Professional, 2014
- Multifamily Building Analyst Professional, 2015

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2018-3000124
	:	R-2018-3000829
v.	:	
	:	
Duquesne Light Company	:	

CAUSE-PA STATEMENT NO. 2-SR

SURREBUTTAL TESTIMONY OF SARAH RALICH

ON BEHALF OF

THE COALITION FOR AFFORDABLE UTILITY SERVICES AND
ENERGY EFFICIENCY IN PENNSYLVANIA (“CAUSE-PA”)

August 6, 2018

PREPARED SURREBUTTAL TESTIMONY OF SARAH RALICH

1 **Q: Please state your name, occupation, and business address.**

2 A: Sarah Ralich. I am the Energy and Construction Manager for ACTION-Housing, Inc. My
3 business address is 611 William Penn Place, Suite 800, Pittsburgh, PA 15219-6927.

4 **Q: Did you previously submit testimony in this proceeding?**

5 A: Yes. I submitted direct testimony that was labeled CAUSE-PA Statement No. 2.

6 **Q: What is the purpose of your surrebuttal testimony?**

7 A: The purpose of my surrebuttal is to respond to the rebuttal testimony of Duquesne Light
8 witness Joseph G. DeMatteo,¹ which concerned my proposal that Duquesne revise its current tariff
9 and allow residential master-metering under certain circumstances.² I will also respond to
10 Duquesne Light witness Katherine M. Scholl.³ Ms. Scholl addressed my recommendation in direct
11 testimony that Duquesne Light allow anonymized, aggregated meter data for residential buildings
12 larger than 50,000 square feet.⁴

MASTER-METERING

13 **Q: What was your recommendation in direct testimony concerning master-metering?**

14 A: In my direct testimony, I discussed in detail how Duquesne's proposal to increase its
15 customer charge from \$10 per month to \$16.25 per month would materially and adversely affect
16 ACTION-Housing and its tenants. Specifically, based on the fact that ACTION-Housing currently
17 is the customer on 145 individually metered units, I concluded that Duquesne's proposed fixed
18 charge would cost us approximately \$900 per month more in added costs that we could not avoid,

¹ Duquesne Light Co. St. No. 6-R.

² CAUSE-PA St. No. 2 at 9-10.

³ Duquesne Light Co. St. No. 7-R

⁴ CAUSE-PA St. No. 2 at 11-12.

1 and that it would cost our low-income tenants who reside in individually metered, tenant-paid
2 units, in aggregate, \$6,368.75 more per month.⁵ CAUSE-PA's other witness, Mr. Harry Geller,
3 addressed ways of mitigating the impact of this increase for low income, individually-metered,
4 tenant-paid households in his direct testimony.⁶ In my direct testimony, I addressed two ways that
5 the impact of the Company's rate increase and rate design could be lessened for affordable
6 multifamily housing developers. Specifically, I recommended that any approved rate increase not
7 include an increase to the fixed customer charge,⁷ and that Duquesne modify its tariff to allow
8 residential master-metering in certain cases.⁸

9 **Q: Did any other party file direct testimony supporting the position to allow residential**
10 **master-metering?**

11 A: Yes. Collectively, the Keystone Energy Efficiency Alliance (KEEA), the Natural
12 Resources Defense Council (NRDC), and the Clean Air Council (CAC), through their witness
13 Brendon Baatz, made a similar proposal.⁹

14 **Q: Please summarize Mr. DeMatteo's response to your proposal.**

15 A: Mr. DeMatteo criticizes the proposal for several reasons. First, he indicates that both
16 CAUSE-PA and KEEA/NRDC/CAC failed to identify the impact of the proposed tariff rule
17 change on the Company's revenues, revenue allocation, or cost of service.¹⁰ Second, he argues that
18 neither party addressed the customer impacts of the proposal regarding participation in the
19 Company's low income programs, supplier shopping, or the process of transition from individual-

⁵ CAUSE-PA St. No. 2 at 6.

⁶ CAUSE-PA St. No. 1 at 21-23.

⁷ CAUSE-PA St. No. 2 at 8.

⁸ CAUSE-PA St. No. 2 at 10.

⁹ KEEA/NRDC/CAC St. No. 1 at 38.

¹⁰ Duquesne Light. Co. St. No. 6-R at 16.

1 to master-metering.¹¹ Finally, Mr. DeMatteo contends that there was insufficient data about the
2 number of multifamily buildings that would elect master-metering if it were available.¹²

3 **Q: Are Mr. DeMatteo's concerns valid?**

4 A: Mr. DeMatteo raises some valid concerns about the potential impact of this tariff change
5 on low income customers if precautions are not taken, and about the currently unknown impact on
6 the Company's revenue, revenue allocation, and the cost of service.

7 At the outset, I want to make it clear that I share Mr. DeMatteo's concern that low income
8 customers who reside in individually metered, tenant paid units must have access to, and should
9 continue to have access to, the panoply of assistance programs that Duquesne Light is required to
10 provide. They should also continue to have access to LIHEAP. I do not believe that any proposed
11 tariff change should permit multifamily housing providers to convert properties that are currently
12 individually metered and tenant-paid to master-metered without first showing that the tenants who
13 reside in the building would not be materially impacted in terms of their total housings costs (rent
14 and utilities combined). This determination would have to be shown by the building
15 owner/developer at the time it wishes to convert service. For affordable multifamily housing units,
16 the availability of utility assistance programs may simply be a wash, as most affordable housing
17 is limited to charging rent that does not exceed 30% of a household's income inclusive of utility
18 costs. If the utilities are individually metered, the affordable housing provider has to factor in a
19 utility allowance when determining rent. However, if utilities are included in rent, the total can
20 still not exceed 30% of the household's income. For many households residing in subsidized
21 housing, this may functionally be the same outcome, even factoring in the utility's universal

¹¹ Duquesne Light Co. St. No. 6-R at 16-17.

¹² Duquesne Light Co. St. No. 6-R at 17.

1 service programs. That said, I share Mr. DeMatteo's concern that these benefits should not be
2 lightly cast aside.

3 That said, as my direct testimony makes clear, ACTION-Housing currently is the customer
4 of 145 individually metered units and already pays all of the energy costs for those units.¹³ The
5 tenants residing in those units currently do not have access to universal service programs or
6 LIHEAP. This means that converting buildings where the developer is already the customer of
7 record on the individual meters would not impact tenant access to universal service programs or
8 LIHEAP.

9 Regarding Mr. DeMatteo's concern that I did not provide an analysis of the impact to the
10 Company's revenue, revenue allocation, or cost of service, and that I could not estimate the how
11 many of ACTION-Housing's buildings would elect master-metering if a tariff change were made,
12 I believe Mr. DeMatteo raises important points that can nonetheless be accommodated.

13 First, while I agree with Mr. DeMatteo that I did not estimate how many of ACTION-
14 Housing's buildings would elect master-metering, this is because it is impossible to know at this
15 point in time. In response to discovery, I provided data about our current building mix and, in
16 response to a question from Duquesne about how many buildings ACTION-Housing would seek
17 to convert, I indicated that if master-metering were possible, ACTION-Housing would investigate
18 the cost of transitioning individually metered buildings to master-metered buildings on a case by
19 case basis to determine whether the expense could be recovered within a reasonable payback
20 period.¹⁴ This remains true.

¹³ CAUSE-PA St. No. 2 at 4.

¹⁴ See CAUSE-PA Response to DLCO Set I-2, attached hereto at Appendix A.

1 Second, Mr. DeMatteo is also correct that I did not provide an analysis of the impact to the
2 Company’s revenue, revenue allocation, or cost of service. I recognize that this is an important
3 consideration for Duquesne.

4 **Q: Given the concerns raised by Mr. DeMatteo, have you revised your position about the**
5 **terms under which Duquesne should modify its tariff to permit master-metering?**

6 A: Yes. To be clear, I continue to believe that Duquesne should revise its tariff to permit
7 master-metering under certain circumstances. In my direct testimony, I stated:

8 Duquesne Light should modify its tariff to mirror the provisions contained in PECO
9 or PPL’s tariffs that allow for master metering under certain circumstances.
10 Specifically, Duquesne should allow master metering where individual metering is
11 infeasible from a financial, technical, or engineering point of view or any other
12 valid reason – including but not limited to the added additional operating costs
13 associated with individual metering – and master-metering will not have a
14 significant impact on the consumption of an individual customer.¹⁵

15 I believe these are appropriate factors to consider and that PECO and PPL’s tariffs provide a model
16 for how a change could be implemented. Under this proposal, Duquesne would continue to
17 maintain a default preference for individual metering, while applicants for master-metering would
18 have to show the conditions noted above before master-metering would be approved by the
19 Company.

20 However, in light of Mr. DeMatteo’s concerns, I am modifying my recommendation
21 concerning master-metering. I recommend:

- 22 • Within 3 months of the effective date of rates in this proceeding, Duquesne Light
23 should convene a collaborative with all parties to this proceeding, and all interested
24 stakeholders who are developers of multifamily housing within its service territory,

¹⁵ CAUSE-PA St. No. 2 at 10:10-16.

1 to discuss the feasibility of revising its tariff to permit master-metering of
2 multifamily housing.

- 3 • Parties to the collaborative should specifically consider:
 - 4 1. Under what circumstances master-metering would be permitted,
5 including whether it should be limited to new construction only, and if
6 not, the factors that the Company would require before any existing
7 individually metered buildings could be converted;
 - 8 2. the impact that any such tariff change would have on low income
9 tenants' ability to continue to afford utility service; and,
 - 10 3. the impact any such change would have on the Company's revenue
11 allocation and the ability to meet its projected revenue.
- 12 • The parties to the collaborative should make a good faith effort to develop
13 consensus on the scope of a tariff revision that permits master-metering, taking into
14 consideration all of the foregoing factors. If consensus is reached, Duquesne should
15 be required to file a tariff revision by no later than 9 months after the first
16 collaborative meeting. If consensus cannot be reached, Duquesne should be
17 required to address the issue of how it will allow for master-metering in its next
18 general base rate case.

19 It is my view that if such a collaborative were to occur, the parties, acting in good faith, would be
20 able to reach a sensible tariff revision that satisfies Duquesne's concerns, protects low income
21 households, and provides the needed flexibility to developers of affordable multifamily housing.

AGGREGATED METER DATA

1 **Q: Addressing Ms. Scholl’s rebuttal testimony, what was your recommendation in direct**
2 **testimony?**

3 A: In direct testimony, I recommended that Duquesne take steps to modify its internal billing
4 systems to be able to provide anonymized, aggregated meter data within residential buildings that
5 are larger than 50,000 square feet.¹⁶ As I indicated in direct, the City of Pittsburgh currently has a
6 Building Benchmarking Ordinance that requires owners of non-residential buildings over 50,000
7 square feet to annually report their energy and water consumption to the City in a process called
8 benchmarking,¹⁷ and there are ongoing discussions within the City of Pittsburgh to amend this
9 ordinance to require similar benchmarking for residential buildings that are larger than 50,000
10 square feet. I recommended that Duquesne commit to implementing the capability of providing
11 aggregate energy usage data for residential multifamily buildings within 6 months of the effective
12 date of rates in this proceeding.¹⁸

13 **Q: Please describe Ms. Scholl’s response to this recommendation.**

14 A: Ms. Scholl made no commitments to implement a system to provide aggregated meter data
15 to its customers. While Ms. Scholl indicates in rebuttal that Duquesne is exploring this capability
16 for its commercial and industrial customers and that, once tested, it will “determine the feasibility”
17 of extending the capability to residential multi-family dwellings, she ultimately asserts that the
18 “Company is not committing to implementing the functionality.”¹⁹

¹⁶ CAUSE-PA St. No. 2 at 11.

¹⁷ See Title 6, Art. II, § 629 of City of Pittsburgh Municipal Code. Available at:
https://library.municode.com/pa/pittsburgh/codes/code_of_ordinances?nodeId=COOR_TITSIXCO_ARTIISU_CH6_29BUBE

¹⁸ CAUSE-PA St. No. 2 at 12.

¹⁹ Duquesne Light Co. St. 7R at 26.

1 **Q: What is your response?**

2 A: Ms. Scholl's response is disappointing. Ms. Scholl provided no timeline and no reason for
3 the delay in implementing this capability. If Duquesne determines that the capability will be
4 implemented for commercial and industrial customers, it appears as though there is no justification
5 to delay implementation of the capability to residential multifamily buildings as well.

6 Providing aggregated meter data is important for Duquesne's customers to be able to
7 perform energy benchmarking of its buildings, and is critical to comprehensive energy efficiency
8 within multifamily buildings. Indeed, the ability to appropriately benchmark and monitor the
9 energy usage within our affordable housing properties is critical, and ensures that we can control
10 our costs to allow us to continue to provide affordable housing to economically vulnerable
11 Pittsburghers for years to come.

12 As discussed in my direct testimony, Duquesne's current tariff prohibits master-metering
13 of buildings constructed after 1981. This means that all residential construction built in the last 37
14 years is individually metered, and most of the meters are paid by individual tenants. This
15 arrangement makes it very difficult to receive whole-building data because it requires the owner
16 of each meter to provide usage and consumption data for the meter. In fact, one of the reasons why
17 ACTION-Housing has determined that it must be the customer on the meters of many of its new
18 buildings – despite the fact that it must currently individually meter its new construction – is to
19 ensure that we can access and monitor energy usage and, ultimately, energy costs. This is a blunt
20 means of resolving the meter data access problem, but it demonstrates the importance of access to
21 whole building data. However, paying for all of the individual metering is an added cost in
22 construction, an added expense for operating the building, and an added administrative
23 complication in aggregating the data manually.

1 While aggregated data would not resolve the added construction or operating costs, which
2 could be addressed by implementing my proposed tariff change discussed above, it would address
3 the last concern. In fact, even if the Company does not change its tariff to allow master-metering
4 as a result of the collaborative that I recommend above, implementing the ability to receive whole-
5 building, aggregated meter data would address one of the factors which leads some housing
6 developers – including ACTION-Housing – to remain the customer on each individual meter.

7 Given that large residential building benchmarking is a priority of both the City of
8 Pittsburgh and the city’s affordable housing developers, I continue to believe that Duquesne should
9 commit to implementing the capability of providing anonymized, aggregate energy usage for all
10 meters in a residential multifamily building within 6 months of the date rates are effective in this
11 proceeding. Ms. Scholl provided no reason why this could not or should not occur. If a longer
12 timeframe would more reasonably allow the Company to ensure the success of providing aggregate
13 energy usage, I am open to this, but the promise to explore the possibility of it occurring – without
14 any definite commitment or timeframe – is insufficient.²⁰

15 **Q: Please summarize your conclusions.**

16 **A:** To ensure that any approved increase in rates does not disproportionately harm low income
17 households’ and affordable housing providers’ ability to control usage through the adoption of
18 energy efficiency measures, I recommend the following, consistent with my direct testimony:

- 19 • Reject Duquesne’s proposal to increase the fixed customer charge, and require that any
20 approved rate increase be collected through the volumetric charge.
- 21 • Within 6 months of the effective date of rates, Duquesne Light should ensure that it has the
22 internal capacity to provide anonymized, aggregate residential usage data to large residential

²⁰ In direct testimony, I provided suggestions about that capability that I believe is important. Specifically, any provision of aggregate data should have the capability of mapping individual energy meters (customer accounts) to physical buildings regardless of who pays the energy bill. In order to protect tenant privacy, the data should be provided only on an aggregate and anonymized basis so that there is no means of disaggregating the data. Finally, whatever system is developed should allow for the automated transfer of whole building data directly into commercial benchmarking tools – such as Portfolio Manager. See CAUSE-PA St. No. 2 at 12.

1 buildings for purposes of benchmarking and ensure that the data can be transferred directly
2 into commercially available benchmarking tools.

3 I also recommend a modification of my position in direct testimony concerning master-metering,
4 in response to the concerns raised by Duquesne:

5 • Within 3 months of the effective date of rates, Duquesne should convene a collaborative
6 consisting of the parties to this proceeding and any affordable multifamily housing providers
7 within its service territory to discuss revising Duquesne's tariff to permit master-metering of
8 residential buildings. The parties to the collaborative should specifically consider:

- 9 ○ Under what circumstances master-metering would be permitted, including whether
10 it should be limited to new construction only, and if not, the factors that the
11 Company would require before any existing individually metered buildings could
12 be converted;
- 13 ○ the impact that any such tariff change would have on low income tenants' ability
14 to continue to afford utility service; and,
- 15 ○ the impact any such change would have on the Company's revenue allocation and
16 the ability to meet its projected revenue.

17 • The parties to the collaborative should make a good faith effort to develop consensus on the
18 scope of a tariff revision that permits master-metering taking into consideration all of the
19 foregoing factors.

20 • If consensus is reached, Duquesne should be required to file a tariff revision by no later than 9
21 months after the first collaborative meeting. If consensus cannot be reached, Duquesne should
22 be required to address the issue of how it will allow for master-metering, which contains each
23 of the low-income tenant protections I have outlined, in its next general base rate case.

24 **Q: Does this conclude your Surrebuttal Testimony?**

25 **A:** Yes.

**INTERROGATORIES AND REQUESTS FOR
PRODUCTION OF DOCUMENTS TO
CAUSE-PA – SET I**

2. For each building identified in #1 above, please identify:
- a. The number of residential units in the building;
 - b. Whether the building is master-metered or individually-metered;
 - c. For buildings that are master-metered, whether they are also separately sub-metered; and
 - d. For buildings that are not master-metered, whether ACTION-Housing would seek to have the building master-metered if such option were available.

RESPONSE:

- a. See CAUSE-PA Set I-2(a) and (b) – Attachment
- b. CAUSE-PA Set I-2(a) and (b) - Attachment
- c. No.
- d. If master metering were possible, ACTION-Housing would investigate the cost associated with transitioning individually metered buildings to master metered buildings on a case by case basis to determine whether the expense could be recovered within a reasonable payback period.

Responsible Witness: Sarah Ralich

ACTION-Housing Managed and Owned				
Property #	Units	Comments	Master Metered	Owner /Tenant Paid
1	35		N	T
2	14		N	T
3	25		N	T
4	10		N	T
5	24	4 locations	N	T
6	12		N	T
7	4		N	T
8	12		N	T
9	40		N	T
10	47		N	T
11	12		N	T
12	103		Y	O
13	43		N	T
14	10		N	T
15	25		N	T
16	40		N	T
17	42		N	T
18	15		N	T
19	6	2 locations	N	T
20	43		N	O
21	84		Y	O
22	38	2 locations	N	T
23	12		N	T
24	12		N	T
25	25		N	T
26	30		N	T
27	39		N	O
28	20		N	T
29	23		N	T
30	47	2 locations	N	O
31	27		N	T
32	15		N	T
Unit Total	934			

ACTION-Housing Managed Not Owned				
Property #	Units	Comments	Master Metered	Owner /Tenant Paid
33	70		Y	O
34	40		N	T
35	16		N	T
36	16		N	O
Unit Total	142			

ACTION-Housing Owned Not Managed				
Property #	Units	Comments	Master Metered	Owner /Tenant Paid
37	61		N	T
38	36		N	T
39	250		Y	O
40	37		N	T
41	28		N	T
42	72		N	T
43	28		N	T
44	36		N	T
45	19		N	T
46	28		N	T
Unit Total	595			

ACTION-Housing - Units in Production				
Property #	Units	Comments	Master Metered	Owner /Tenant Paid
47	33	Anticipated Nov. 2018	N	T
48	41	Anticipated Oct. 2018	N	T
49	26	Anticipated Jan. 2019	N	T
Unit Total	100			

Total # of units by type	
Master Metered	507
Individually Metered	1,164
Owner Paid	652
Tenant Paid	1,019

Total Number of Units	1,671
------------------------------	--------------

Verification

I, Sarah Ralich, hereby state that the responses provided in the attached interrogatory responses are true and correct to the best of my knowledge, information and belief, that I am duly authorized to make this Verification, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 10 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

7/10/2018
Date


Sarah Ralich

NEP Exhibit TR-13

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. R-2018-3000124

Duquesne Light Company

Statement No. 15

DIRECT TESTIMONY OF DAVID B. OGDEN

Dated: March 28, 2018

1 **Q. Do the forecasted revenues at current and proposed rates reflect reduced sales from**
2 **the effects of energy efficiencies?**

3 A. Yes. In developing the Company's sales forecast, Mr. Mobley at DLC Statement No. 3
4 accounts for the reduced sales due to energy efficiencies projected through the end of the
5 fully projected future test year. The proposed rates and fully projected future test year
6 revenue were calculated based on Mr. Mobley's sales forecast.

7 **V. PROPOSED RETAIL TARIFF CHANGES**

8 **Q. Please describe the contents of Exhibit DBO-3.**

9 A. This exhibit sets forth in detail the modifications being proposed to the Company's tariff
10 provided in Exhibit DBO-1, including the changes in rates and rate design previously
11 described in my testimony, to recover the proposed distribution revenue requirement that
12 is being requested. The proposed modifications are also shown in a redline version of the
13 tariff supplement provided in Exhibit DBO-2.

14 **Q. Are you proposing changes to the Rules and Regulation section of the proposed tariff**
15 **supplement?**

16 A. Yes. The Company is proposing certain administrative changes as well as changes to reflect
17 current business practices that are described in the list of modifications within DBO-2, as
18 well as in Exhibit DBO-3, the Digest of Proposed Changes contained within Duquesne
19 Light's proposed supplement.

20 **Q. Are you proposing changes to the tariff rate schedules section of the proposed tariff**
21 **supplement?**

22 A. Yes. The distribution rates identified in each rate schedule in Exhibit DBO-1 have been
23 modified to achieve the allocated revenue increase previously described in my testimony.



SCHEDULE OF RATES

For Electric Service in Allegheny and Beaver Counties

(For List of Communities Served, see Pages No. 4 and 5)

Issued By

DUQUESNE LIGHT COMPANY

411 Seventh Avenue
Pittsburgh, PA 15219

Richard Riazzi

President and Chief Executive Officer

ISSUED: March 28, 2018

EFFECTIVE: May 29, 2018

Filed at Docket No. R-2018-3000124

NOTICE

**THIS TARIFF SUPPLEMENT MAKES CHANGES TO THE
TABLE OF CONTENTS, RULES AND REGULATIONS, RATE SCHEDULES,
RIDERS AND APPENDIX A AND MAKES INCREASES AND DECREASES TO THE
RATES CONTAINED IN THE RATE SCHEDULES, RIDERS AND APPENDIX A.**

See Page Two

LIST OF MODIFICATIONS MADE BY THIS TARIFF

CHANGES

Rules and Regulations

Measurement and Use of Service Fifth Revised Page No. 22
14.2 Customer Request for Special Metering – (Continued) Cancelling Fourth Revised Page No. 22

Language has been removed as obsolete.

Rules and Regulations

Measurement and Use of Service Fifth Revised Page No. 22
14.3 Sub-Metering Cancelling Fourth Revised Page No. 22

Rule No. 14.3 Sub-Metering has been removed as unnecessary.

Rules and Regulations

Bills and Net Payment Periods Fifth Revised Page No. 23
18. Redistribution Cancelling Fourth Revised Page No. 23

Language has been modified for clarity.

Rules and Regulations

Bills and Net Payment Periods Fifth Revised Page No. 23
20.2 Summary Billing Cancelling Fourth Revised Page No. 23

Rule No. 20.2 Summary Billing has been added to explain the availability of Summary Bills to qualifying customers.

Rules and Regulations

Bills and Net Payment Periods Sixth Revised Page No. 23A
Cancelling Fifth Revised Page No. 23A

Rule No. 20.2 Bills (as numbered in Fifth Revised Page No. 23A, Cancelling Fourth Revised Page No. 23A in Supplement No. 128) has been renumbered to Rule No. 20.3 and Rule No. 20.3 Budget Payment Plan for Residential Customers (as numbered in Fifth Revised Page No. 23A, Cancelling Fourth Revised Page No. 23A in Supplement No. 128) has been renumbered to Rule No. 20.4 to accommodate the addition of Rule No. 20.2 Summary Billing in Supplement No. 174.

Rules and Regulations

Bills and Net Payment Periods Sixth Revised Page No. 23A
20.4 Budget Payment Plan for Residential Customers Cancelling Fifth Revised Page No. 23A

Language has been inserted to clarify budget billing for customers of bill-ready EGSs.

RULES AND REGULATIONS - (Continued)

MEASUREMENT AND USE OF SERVICE - (Continued)**14.2 CUSTOMER REQUEST FOR SPECIAL METERING – (Continued)**

The Company has adopted a program that provides all customers with meters to provide data for normal monthly billing services. In the event that a residential or small commercial customer, or an EGS on behalf of a residential or small commercial customer, requests an upgrade to an Alpha Powerplus meter, which the Company provides for large commercial and industrial customers, installation of that meter will be provided at a cost of \$586.00, plus additional costs for the appropriate communication/system infrastructure. These net incremental charges, as set forth in the Company's Advance Meter Catalog, may be paid to the Company by either the customer or the EGS, or jointly by the customer and the EGS pursuant to a mutual agreement.

~~Act 129 of 2008 ("Act") required electric distribution companies ("EDCs") with at least 100,000 customers to file a Smart Meter Procurement and Installation Plan ("Plan") for Commission approval. The Commission's Smart Meter Procurement and Installation Implementation Order entered June 24, 2009, at Docket No. M-2009-2092655 set forth additional details for EDCs and rules for customers who request a smart meter prior to the EDC installing a smart meter on their premise. For customers who request a smart meter installed at their premise prior to October 2012, the Company will install an interval meter in lieu of a smart meter. The meter will be provided at a cost of \$586.00, as specified above, plus \$719.00 for the appropriate communication/system infrastructure. For a customer requesting pulse data from the interval meter, an additional charge of \$197.00 will apply. The requesting customer's account must be current and all payments must be made up-front prior to installation.~~ (C)

~~**14.3 SUB-METERING** If a customer wishes to have metering installed in addition to the Company installed meter, the meter must be installed on the customers electrical system and at the expense of the customer.~~ (C)

15. INABILITY TO READ RESIDENTIAL METERS When scheduled readings of kilowatt-hour meters are not obtained because of inability to gain access to the meter location, the customer may read his meter and furnish the Company the reading on cards supplied by the Company, or by telephone to the Company, in which case the bill will be rendered on the basis of such reading; otherwise, the Company will estimate the bill. No more than five (5) successive bills will be rendered on readings made by the customer.

15.1 INABILITY TO READ COMMERCIAL OR INDUSTRIAL METERS When scheduled readings of kilowatt-hour and demand meters are not obtained, the Company may render an interim statement for each month until the meters are read.

16. USE OF SERVICE BY CUSTOMER The customer shall use the electric service only at the premise where service is established; and after electric service has been established, shall notify the Company of any change in connected load, demand, or other conditions of use. The customer shall notify the Company of other on site sources of electric generation or electricity concurrently produced as a by-product of another process or electricity produced utilizing renewable resources. Customers who own and operate electric generation equipment shall conform with the Company's "Electric Service Installation Rules," copies of which may be obtained by calling, e-mailing or writing the Company's business office or at www.duquesnelight.com. For customers who own and operate electric generation, the provisions of Rider No. 16 - Service to Non-Utility Generating Facilities and Rider No. 21 - Net Metering Service may also apply.

RULES AND REGULATIONS - (Continued)

MEASUREMENT AND USE OF SERVICE - (Continued)

18. REDISTRIBUTION All electric energy shall be consumed by the customer to whom the Company supplies and delivers such energy, except that (1) ~~a the~~ customer owning and operating a separate office building, and (2) any other customer who, upon showing that special circumstances exist, obtains the written consent of the Company may redistribute electric energy to tenants of such customer, but only if such tenants are not required to make a specific payment for such energy. ~~, except where such payments would encourage energy conservation.~~ (C)

This Rule shall not affect any practice undertaken prior to June 1, 1965. See Rule No. 41 for special requirements for residential dwelling units in a building.

18.1 ELECTRIC VEHICLE CHARGING For purposes of third party-owned electric vehicle charging stations, charging the electric vehicle shall not be considered redistribution as defined in Rule No. 18 - Redistribution. Electric vehicles are defined as any vehicle licensed to operate on public roadways that are propelled in whole or in part by electrical energy stored on-board for the purpose of propulsion. Types of electric vehicles include, but are not limited to, plug-in hybrid electric vehicles and battery electric vehicles. Electric vehicle charging stations shall be made in accordance with the Company's "Electric Service Installation Rules," a copy of which may be found at www.duquesnelight.com. The station must be designed to protect for back flow of electricity to the Company's electrical distribution circuit as required by Company rules. The Company shall not be liable for any damages associated with operation of the charging station. For stations dedicated solely for the purpose of charging electric vehicles wherein a third party owns the charger and allows an electric vehicle owner to use their facility to charge an electric vehicle, the owner of the charging facility shall notify the Company at least one hundred twenty (120) days in advance of the planned installation date and may be required to install metering for the station as determined by the Company. The third party owner of the station shall be responsible for all applicable Tariff rates, fees and charges. For such installations, the electric vehicle owner shall be responsible for all fees imposed by the owner of the station for charging the electric vehicle.

19. CONTINUITY AND SAFETY The Company will use all reasonable care to provide safe and continuous delivery of electricity but shall not be liable for any damages arising through interruption of the delivery of electricity or for injury to persons or property resulting from the use of the electricity delivered.

BILLS AND NET PAYMENT PERIODS

20. BILLING The Company will render a bill monthly for electric service.

20.1 BILLING OPTIONS Customers who elect to purchase their electricity from an Electric Generation Supplier ("EGS") may choose: (1) Consolidated Billing and receive a single bill from the Company that includes Company charges and EGS charges; or (2) Separate Billing and receive one bill from the Company for Company charges and a second bill from the EGS for EGS charges. The customer's billing option will be communicated to the Company by the EGS, in accordance with the provisions contained in the Company's Supplier Tariff.

20.2 SUMMARY BILLING The Company may, at its discretion and upon customer request, provide Summary Bills in lieu of individual bills to qualifying customers. Summary Bills shall include an abridged summary of electric service usage and charges associated with each meter location. The Company may remove a customer from Summary Billing at its option or at the customer's request. (C)

For the purpose of determining whether to provide Summary Billing, the Company may consider, among other factors, whether the read and due dates of the multiple meter locations allow for Summary Billing without adversely affecting the timely payment of bills, and whether Summary Billing would have an adverse financial impact on the Company.

NEP Exhibit TR-14

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set I

Witness: Yvonne Phillips

Nationwide-I-1

1. Please describe and provide all Documents associated with requests by customers to redistribute electricity pursuant to Duquesne Tariff Rule 18 in the last five (5) years.

Response:

Please see Nationwide-I-1 Attachment 1.

NEP Exhibit TR-15

March 26, 2021

Via Email

[REDACTED]

Re: Electricity Service to [REDACTED]

[REDACTED]

This letter responds to your letter dated January 8, 2021 regarding electric service to the [REDACTED] at [REDACTED]. In your January 8th letter, you described [REDACTED]'s intent to redistribute electric service, delivered to [REDACTED] by Duquesne Light, to a third party, [REDACTED] on [REDACTED]. You further explained that [REDACTED] would "reimburse [REDACTED] for the actual costs of the electricity that it uses on the [REDACTED] (as determined by meters or estimates)." You estimated that this arrangement would persist for up to six months, during which time [REDACTED] and/or [REDACTED] would configure facilities to receive a single Duquesne Light electric service to the [REDACTED]. [REDACTED] would thereafter redistribute electricity via customer-owned equipment to the separately-tenanted buildings on the [REDACTED].

This proposed arrangement does not conform to Duquesne Light's tariff, and as such, it is impermissible. Duquesne Light's tariff, which is approved by the Public Utility Commission and is available on Duquesne Light's website, is binding on Duquesne Light and all of its customers. Tariff Rule 18 generally prohibits customers from redistributing electric service delivered by Duquesne Light (with limited exceptions that do not pertain to the scenario you describe in your January 8th letter). First, you propose to receive payment from [REDACTED] specifically for redistributed electric service, which Rule 18 prohibits in all instances. Second, the service configuration you propose would yield the redistribution of electric service, on a permanent basis, from [REDACTED] to each of the separately-tenanted [REDACTED] buildings. This would further violate Rule 18, which requires separate Duquesne Light services to be established to each customer on the [REDACTED].

Duquesne Light is willing to explore strategies to support the development of separate services to the [REDACTED] buildings. As noted below, we met with [REDACTED] throughout October and December 2020 to discuss options and costs, and to discuss [REDACTED]'s plans for electrical separation. We previously discussed potential options with [REDACTED] multiple times:

- January 6, 2021: DLC gave proposed solutions to [REDACTED].
- January 12, 2021: DLC discussed the [REDACTED] electrical separation concept with [REDACTED], with the objective to begin finalizing the details and estimating costs.
- January 19, 2021: DLC presented 4 revised options to [REDACTED], and addressed issues related to redundancy, redistribution, and battery backup power.
- January 29, 2021: DLC presented a revision of Option 1 to [REDACTED] from the January 19 meeting that provided redundant primary feeds and eliminated the redistribution concern. DLC gave the parties an estimate of their share of the cost which was [REDACTED]. [REDACTED] indicated that this addressed their concerns with redundancy and redistribution. [REDACTED] were going to discuss within themselves. DLC is prepared to move forward as soon [REDACTED] approve.
- March 4, 2021: [REDACTED] discussed locations of current customer owned transformers and the feasibility of using the existing transformer locations.

DLC is committed to continuing to explore options related to the transition of electrical service from [REDACTED]. Please note that any such option requiring redistribution must be a temporary accommodation only, with terms agreed upon by all relevant parties.

Sincerely,

Krysia Kubiak
Director, External Affairs

Cc: [REDACTED]

To: Dematteo, Joseph G. <JDematteo@duqlight.com>; Goldbach, Adam M. <AGoldbach@duqlight.com>

Cc: Kubiak, Krysia <KKubiak@duqlight.com>

Subject: FW: Master Metering Issue - Low-Income Housing

Joe and Adam-

By way of providing more background about our conversation this morning, below is one of the early e-mails we received from [REDACTED] where they talk about costs to developers. They sent the attached letter to Senator Costa's office (which is how we were pulled into the conversation) and they shared with us the attached provision from PPL's tariff, which they feel is something we should adopt.

This is the link to all of the facilities they currently have [REDACTED]

They also mention two upcoming projects [REDACTED]

In terms of current status, we have not heard from anyone since we confirmed with them after multiple conversations that we do not plan to change our tariff to provide an exemption to the prohibition on master metering. But we do expect that it is an issue about which we'll continue to get calls.

Thanks for talking through it with us this morning.

Lauren

From: [REDACTED]

Sent: Thursday, May 04, 2017 10:33 AM

To: Katarski, Lauren L. <LKatarski@duqlight.com>; Lauteri, David J. <DLauteri@duqlight.com>

Cc: [REDACTED]

Subject: Master Metering Issue - Low-Income Housing

Lauren and David,

Thank you for spending the time to hear about the burden of the master metering requirement to low income senior housing.

As we hoped to convey in the meeting, we are an affordable housing development/management company that prides itself on developing high-quality, extremely energy-efficient and well-designed rental housing with a special focus on seniors. We take great pride in our product and the quality controls we've implemented to deliver a high level of on-site management that is responsive to our residents' needs. One measure our founder (my father) employed was that our senior residents do not have to pay for their utilities so that a monthly rent payment takes care of everything. This is very beneficial as the seniors age-in-place because they only have one bill to remember.

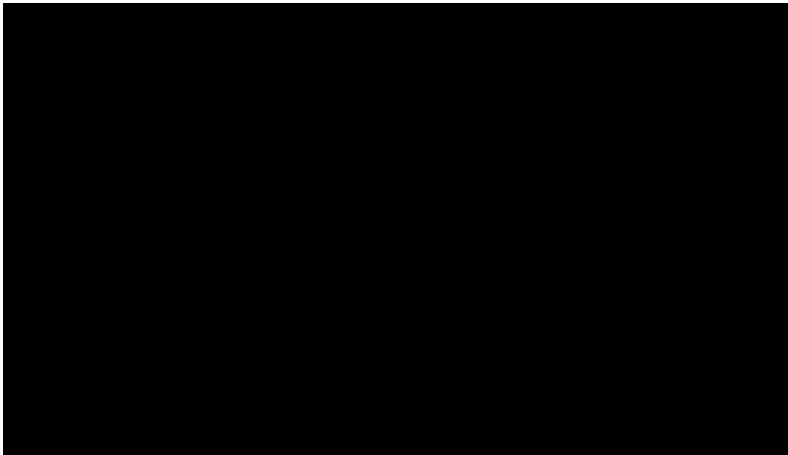
Due to the nature of our funding resulting from the rent caps imposed by the low-income housing tax credit program; most of our 23-property portfolio either breaks even or minimally cash flows. The \$5,000 – 10,000 additional Duquesne Light meter charges is a great burden to affordable housing developers. It also has a \$50,000 - \$60,000 first costs to install all the meters. This is a significant add to the project. We go through incredible hoops including multiple layers of bureaucracy and regulation to provide high quality affordable housing to those in need and are determined to find a better solution than this one-size-fits-all tariff.

I've attached the following to for your reference:

- 1) A letter we sent to Sen. Costa explaining the issue in real numbers and offering a PILOT program solution
- 2) An example of how PPL (Central/Eastern PA) has properly addressed this issue

By the end of [REDACTED] we will be adding [REDACTED] affordable, extremely energy-efficient, Passive House units to the region in the form of two projects, [REDACTED] We are hoping to move this issue forward and find an equitable solution so that we, along with the region's other affordable housing developers ([REDACTED] to name a couple), can use this unnecessary outlay of money to Duquesne Light to better enhance our properties and create even better environments for low-moderate income seniors in the region.

Please keep us informed as to the next steps to move this issue forward. Again, we really appreciate your help!



From: Goldbach, Adam M.
Sent: Thursday, June 22, 2017 8:12 AM
To: Navadauskas, Christina M. <CNavadauskas@duqlight.com>
Cc: Alan, Gregory M. <GAlan@duqlight.com>; Elder, Earl R. <EElder@duqlight.com>; Frantz, Robert J. <RFrantz@duqlight.com>; Hughes, Henry M. <HHughes@duqlight.com>; Jackson, Traci <TJackson@duqlight.com>; Leja, Barbara A. <BLEja2@duqlight.com>; Skosnik, Mark <Mskosnik@duqlight.com>; Telin, Jerome J. <JTelin@duqlight.com>
Subject: RE: Low Income Senior Housing - Master Metering Issues

All,

I have an internal meeting on Monday with Krysia and Lauren Katarski regarding this issue and they are getting claims from this developer that they know of instances where senior facilities are master metered but of course the developer wouldn't divulge that information.

So I've been asked for our meeting on Monday if we know of any locations where a senior facility(not a nursing home) is master metered and if so do we know why(for instance was it built prior to 1981)?

This is similar to the previous question that I posed a few weeks ago but I wanted to circle back with everyone so that if you have any information I can present that at the meeting on Monday.

Thank You!

Adam

From: Goldbach, Adam M.
Sent: Thursday, June 01, 2017 7:17 AM
To: Navadauskas, Christina M. <cnavadauskas@duqlight.com>
Cc: Alan, Gregory M. <galan@duqlight.com>; Elder, Earl R. <eelder@duqlight.com>; Frantz, Robert J. <rfrantz@duqlight.com>; Hughes, Henry M. <hhughes@duqlight.com>; Jackson, Traci <tjackson@duqlight.com>; Leja, Barbara A. <bleja2@duqlight.com>; Skosnik, Mark <mskosnik@duqlight.com>; Telin, Jerome J. <jtelin@duqlight.com>
Subject: RE: Low Income Senior Housing - Master Metering Issues

Correct and that's are argument but it appears this developer is going to fight that any way they can.

Thanks!

Adam

From: Navadauskas, Christina M.
Sent: Wednesday, May 31, 2017 6:18 PM
To: Goldbach, Adam M. <AGoldbach@duqlight.com>
Cc: Alan, Gregory M. <GAlan@duqlight.com>; Elder, Earl R. <EElder@duqlight.com>; Frantz, Robert J. <RFrantz@duqlight.com>; Hughes, Henry M. <HHughes@duqlight.com>; Jackson, Traci <TJackson@duqlight.com>; Leja, Barbara A. <BLEja2@duqlight.com>; Skosnik, Mark <Mskosnik@duqlight.com>; Telin, Jerome J. <JTelin@duqlight.com>
Subject: Re: Low Income Senior Housing - Master Metering Issues

By the way, I believe Master Metering is prohibited by our tariff for ALL residential multi-units where there are permanent sleeping and cooking facilities in the units, and tenants are not transient. Nursing facilities don't have cooking facilities in the units. Hotels and motels, etc are okay. So, it's more about being non-transient apartments, not about age or income.

Sent from my iPhone

On May 31, 2017, at 5:29 PM, Navadauskas, Christina M. <CNavadauskas@duqlight.com> wrote:

Last fall I had [REDACTED] apartments in [REDACTED] Tenants are low income, with a preference for autistic tenants, and individually metered. Again, autistic, not senior, but they are special needs and I didn't allow Master Metering.

Sent from my iPhone

On May 31, 2017, at 5:03 PM, Goldbach, Adam M. <AGoldbach@duqlight.com> wrote:

All,

I just got a call from [REDACTED] who is getting pulled into a situation where a developer is building a low income senior housing facility(not a nursing home) and we told them it had to be individually metered per Rule 41 which they are arguing. They're threatening to go to the Mayor's office, PUC, etc., so Lauren is just trying to gather some information to help our cause if this does get escalated.

So, If any of you know of any low income senior facility that was built after 1981 that has individual metering as it should please pass that along as that could help the case. Again we're not concerned with nursing homes and if you know of any in this boat that are master metered that may be helpful for them to know as well.

No need to spend a lot of time on this just pass along anything you might have off the top of your head that might help out.

Thanks!

Adam

- If they are master metered, do we know why they were setup that way

Don't spend a ton of time but if you would please provide this information on the site(s) in your area and any other background on these that you feel might be useful. Additionally they have two new projects coming which are [REDACTED] so if you have any dealings/information on those please let me know.

I'll gather the information you provide and will get it back to Lauren but if you have any questions on this let me know.

Thanks!

Adam

From: Katarski, Lauren L.
Sent: Monday, June 26, 2017 3:53 PM
To: Dematteo, Joseph G. <JDematteo@duqlight.com>; Goldbach, Adam M. <AGoldbach@duqlight.com>
Cc: Kubiak, Krysia <KKubiak@duqlight.com>
Subject: FW: Master Metering Issue - Low-Income Housing

Joe and Adam-

By way of providing more background about our conversation this morning, below is one of the early e-mails we received from [REDACTED] where they talk about costs to developers. They sent the attached letter to Senator Costa's office (which is how we were pulled into the conversation) and they shared with us the attached provision from PPL's tariff, which they feel is something we should adopt.

This is the link to all of the facilities they currently have [REDACTED]

They also mention two upcoming projects [REDACTED]

In terms of current status, we have not heard from anyone since we confirmed with them after multiple conversations that we do not plan to change our tariff to provide an exemption to the prohibition on master metering. But we do expect that it is an issue about which we'll continue to get calls.

Thanks for talking through it with us this morning.

Lauren

From: [REDACTED]
Sent: Thursday, May 04, 2017 10:33 AM
To: Katarski, Lauren L. <LKatarski@duqlight.com>; Lauteri, David J. <DLauteri@duqlight.com>
Cc: [REDACTED] <tjoyce@pasenate.com>
Subject: Master Metering Issue - Low-Income Housing

Lauren and David,

NEP Exhibit TR-16

Ditommaso, Erin

From: Brown, Diane E.
Sent: Monday, March 6, 2017 4:37 PM
To: Elder, Earl R.
Cc: Biedrzycki, Susan J.
Subject: RE: [REDACTED]

Hi Earl,

Thanks, that was my first instinct. I also discussed with Sue B today. I'll let [REDACTED] know.

Diane Brown

Technical Service Rep, PA-TD
412-393-7972
debrown@duqlight.com

"Please be mindful of what you say, do, or display so as to not offend anyone."

Duquesne Light Company
2645 New Beaver Ave. Pittsburgh, PA 15233
DuquesneLight.com



From: Elder, Earl R.
Sent: Monday, March 06, 2017 4:36 PM
To: Brown, Diane E. <DEBrown@duqlight.com>
Cc: Biedrzycki, Susan J. <SBiedrzycki@duqlight.com>
Subject: RE: [REDACTED]

Diane,

We do not allow master metering in this case so let him know and if he argumentative give them my ph#.

Thank you,
Earl

From: Brown, Diane E.
Sent: Monday, March 06, 2017 10:31 AM
To: Elder, Earl R. <EElder@duqlight.com>
Cc: Biedrzycki, Susan J. <SBiedrzycki@duqlight.com>
Subject: [REDACTED]

Hi Earl,

Just a heads up...I just got a call from [REDACTED] on behalf of [REDACTED]. He was inquiring about changing this building from 8 individual meters (including a house meter) to master-metering. I advised him to have the property owner call. I've never heard of us doing this at the customer's request. The building was just built in 2012. They want to make this change for cost-savings. They currently pay all the electric bills for the units. [REDACTED] referenced the house meter account ID [REDACTED].

Diane Brown

Technical Service Rep, PA-TD

412-393-7972

debrown@duqlight.com

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Duquesne Light Company

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NEP Exhibit TR-17



Citi Commits \$1 Trillion to Sustainable Finance by 2030

By Ed Skyler, Head of Global Public Affairs, Citi

APRIL 15, 2021 10:15 AM

The last year has marked major steps in Citi's commitment to combating the climate crisis. In July 2020, we announced our new five-year, 2025 Sustainable Progress Strategy to help accelerate the transition to a low-carbon economy, including a \$250 billion environmental finance goal. Just last month, we announced our commitment to net zero emissions by 2050 and laid out the first steps we'll take to get there.

Today, we're excited to share that we are committing \$1 trillion to sustainable finance by 2030, which aligns with the ambitious agenda of the United Nations' Sustainable Development Goals (SDGs), and builds on the work we outlined in our 2025 Sustainable Progress Strategy. Crucially, this \$1 trillion includes extending our current environmental finance target from \$250 billion by 2025 to \$500 billion by 2030. We will finance and facilitate a wide array of climate solutions -- from renewable energy and clean technology, to water conservation and sustainable transportation -- and will further accelerate the transition to a sustainable, low-carbon economy that balances the environmental, social and economic needs of society.

In addition, we finance many other activities in support of the SDGs outside of environmental finance. These include important investments in education, affordable housing, health care, economic inclusion, community finance, international development finance, racial and ethnic diversity and gender equality. We are committing an additional \$500 billion to these activities by 2030, as part of our \$1 trillion sustainable finance effort.

Given our global footprint and our role in supporting economic activity around the world, Citi has a role to play in achieving the SDGs -- and in this moment as we look towards emerging and rebuilding from the COVID-19 pandemic, it's more crucial than ever that we address these priorities together.

As the pandemic has made clear, our economic and physical health, our environment and our social stability are all inextricably linked. At Citi, our response is similarly multi-pronged and interconnected. In 2020, we launched \$1 billion in strategic initiatives to help close the racial wealth gap and increase economic mobility in the U.S. We have invested in 13 companies through Citi's \$200 million Impact Fund since its launch last January, the majority of which are founded by women and/or minorities. We continue to be the largest U.S. affordable housing development lender, providing \$7 billion in loans for affordable housing projects in the U.S. in 2020.

To support communities most impacted by COVID-19, we have committed over \$100 million in relief and recovery efforts. Citi was selected by Gavi, the Global Vaccine Alliance, as sole financial advisor to the COVAX Facility to support the fair and equitable distribution of vaccines. We also expanded the global Pathways to Progress job skills-building initiative, led by a three-year, \$100 million investment from the Citi Foundation. We continue to be transparent about our pay equity work and efforts to increase women and U.S. minorities in senior and high paying roles.

While there is still much to do and the challenges are immense, our goals are both ambitious and urgent and our commitment to collective action -- with governments, clients and competitors -- is stronger than ever.

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Marie Wells

I would love to work towards this part of banking in any area.

Reply



Dy

Ook

Reply



Rustom baluya

Yes

Reply



AJOY KUMAR DAS

Green Hydrogen plant/BioMethane/CCUS/Microgrid/Nanigrid projects are online.
Appreciate if you provide assistance to set up above projects.

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Larry Fink's 2021 letter to CEOs

Dear CEO,

BlackRock is a fiduciary to our clients, helping them invest for long-term goals. Most of the money we manage is for retirement – for individuals and pension beneficiaries like teachers, firefighters, doctors, businesspeople, and many others. It is their money we manage, not our own. The trust our clients place in us, and our role as the link between our clients and the companies they invest in, gives us a great responsibility to advocate on their behalf.

This is why I write to you each year, seeking to highlight issues that are pivotal to creating durable value – issues such as **capital management**, **long-term strategy**, **purpose**, and **climate change**. We have long believed that our clients, as shareholders in your company, will benefit if you can create enduring, sustainable value for *all* of your stakeholders.

I began writing these letters in the wake of the financial crisis. But over the past year, we experienced something even more far-reaching – a pandemic that has enveloped the entire globe and changed it permanently. It has both exacted a horrific human toll and transformed the way we live – the way we work, learn, access medicine, and much more.

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subsidies, the current situation remains one of economic devastation, with unemployment severely elevated, small businesses shuttering daily, and families around the world struggling to pay rent and buy food.

The pandemic has also accelerated deeper trends, from the growing retirement crisis to systemic inequalities. Several months into the year, the pandemic collided with a wave of historic protests for racial justice in the United States and around the world. And more recently, it has exacerbated the political turmoil in the U.S. This month in the U.S., we saw political alienation – fueled by lies and political opportunism – erupt into violence. The events at the U.S. Capitol are a stark reminder of how vulnerable and how precious a democratic system can be.

Despite the darkness of the past 12 months, there have been signs of hope, including companies that have worked to serve their stakeholders with courage and conviction. We saw businesses rapidly innovate to keep food and goods flowing during lockdowns. Companies have stepped up to support non-profits serving those in need. In one of the great triumphs of modern science, multiple vaccines were developed in record time. Many companies also responded to calls for racial equity, although much work remains to deliver on these commitments. And strikingly, amid all of the disruption of 2020, businesses moved forcefully to confront climate risk.

I believe that the pandemic has presented such an existential crisis – such a stark reminder of our fragility – that it has driven us to confront the global threat of climate change more forcefully and to consider how, like the pandemic, it will alter our lives. It has reminded us how the biggest crises, whether medical or environmental, demand a global and ambitious response.

In the past year, people have seen the mounting physical toll of climate change in fires, droughts, flooding and hurricanes. They have begun to see the direct financial impact as energy companies take billions in climate-related write-downs on stranded assets and regulators focus on climate risk in the global financial system. They are also increasingly focused on the significant economic opportunity that the transition will create, as well as how to execute it in a just and fair manner. No issue ranks higher than climate change on our clients' lists of priorities. They ask us about it nearly every day.

A Tectonic Shift Accelerates

In January of last year, I wrote that climate risk is investment risk. I said then that as markets started to price climate risk into the value of securities, it would spark a fundamental reallocation of capital. Then the pandemic took hold – and in March, the conventional wisdom was the crisis would divert attention from climate. **But just the opposite took place, and the reallocation of capital accelerated even faster than I anticipated.**

From January through November 2020, investors in mutual funds and ETFs invested \$288 billion globally in sustainable assets, a 96% increase over the whole of 2019.¹ I believe that this is the beginning of a **long but rapidly accelerating transition** – one that will unfold over many years and reshape asset prices of every type. **We know that climate risk is investment risk. But we also believe the climate transition presents a historic investment opportunity.**

Essential to this transition has been the growing availability and affordability of sustainable investment options. Not long ago, building a climate-aware portfolio was a painstaking process, available only to the largest investors. But the creation of sustainable index investments has enabled a massive acceleration of capital towards companies better prepared to address climate risk.

Today we are on the cusp of another transformation. Better technology and data are enabling asset managers to offer customized index portfolios to a much broader group of people – another capability once reserved for the largest investors. As more and more investors choose to tilt their investments towards sustainability-focused companies, the tectonic shift we are seeing will accelerate further. And because this will have such a dramatic impact on how capital is allocated, every management team and board will need to consider how this will impact their company's stock.

Alongside the shift in investor behavior, we have seen a landmark year in the policy response to climate change. In 2020, the EU, China, Japan, and South Korea all made historic commitments to achieve net zero emissions. With the U.S. commitment last week to rejoin the Paris Agreement, 127 governments – responsible for more than 60% of global emissions – are considering or already implementing commitments to net zero. Momentum continues to build, and in 2021 it will accelerate – with dramatic implications for the global economy.

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Larry Fink on our sustainable future

Larry Fink, BlackRock's Chairman and CEO, joins The Bid podcast to talk about how the energy transition, including the widespread adoption of net zero, will fundamentally reshape the global economy.

The Opportunity of the Net Zero Transition

There is no company whose business model won't be profoundly affected by the transition to a net zero economy – one that emits no more carbon dioxide than it removes from the atmosphere by 2050, the scientifically-established threshold necessary to keep global warming well below 2°C. As the transition accelerates, companies with a well-articulated long-term strategy, and a clear plan to address the transition to net zero, will distinguish themselves with their stakeholders – with customers, policymakers, employees and shareholders – by inspiring confidence that they can navigate this global transformation. But companies that are not quickly preparing themselves will see their businesses and valuations suffer, as these same stakeholders lose confidence that those companies can adapt their business models to the dramatic changes that are coming.

It's important to recognize that net zero demands a transformation of the entire economy. Scientists agree that in order to meet the Paris Agreement goal of containing global warming to “well below 2 degrees above pre-industrial averages” by 2100, human-produced emissions need to decline by 8-10% annually between 2020 and 2050 and achieve “net zero” by mid-century. The economy today remains highly dependent on fossil fuels, as is reflected in the carbon intensity of large indexes like the S&P 500 or the MSCI World, which are currently on trajectories substantially over 3°C.²

That means a successful transition – one that is just, equitable, and protects people's livelihoods – will require both technological innovation and planning over decades. And it can only be accomplished with leadership, coordination, and support at every level of government, working in partnership with the private sector to maximize prosperity. Vulnerable communities and developing nations, many of them already exposed to the worst physical impacts of climate change, can least afford the economic shocks of a poorly implemented transition. We must implement it in a way that delivers the urgent change that is needed without worsening this dual burden.

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Of course, investors cannot prepare their portfolios for this transition unless they understand how each and every company is prepared both for the physical threats of climate change and the global economy's transition to net zero. They are asking managers like BlackRock to accelerate our data and analysis capabilities in this area – and we are committed to meeting their needs.

Why Data and Disclosure Matter

Assessing sustainability risks requires that investors have access to consistent, high-quality, and material public information. This is why last year, we asked all companies to report in alignment with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the Sustainability Accounting Standards Board (SASB), which covers a broader set of material sustainability factors. We are greatly encouraged by the progress we have seen over the past year – a 363% increase in SASB disclosures and more than 1,700 organizations expressing support for the TCFD. (BlackRock issued **our own** inaugural TCFD and SASB reports last year.)

TCFD reports are the global standard for helping investors understand the most material climate-related risks that companies face, and how companies are managing them. Given how central the energy transition will be to every company's growth prospects, **we are asking companies to disclose a plan for how their business model will be compatible with a net zero economy** – that is, one where global warming is limited to well below 2°C, consistent with a global aspiration of net zero greenhouse gas emissions by 2050. **We are asking you to disclose how this plan is incorporated into your long-term strategy and reviewed by your board of directors.**

We appreciate that disclosure can be cumbersome and that the variety of reporting frameworks creates further complexity for companies. **We strongly support moving to a single global standard, which will enable investors to make more informed decisions about how to achieve durable long-term returns.** Because better sustainability disclosures are in companies' as well as investors' own interests, I urge companies to move quickly to issue them rather than waiting for regulators to impose them. (While the world moves towards a single standard, BlackRock continues to endorse TCFD- and SASB-aligned reporting.) In addition, I believe TCFD should not just be adopted by public companies. If we want these disclosures to be truly effective – if we want to see true societal change – they should be embraced by large private companies as well.

Further, it is not just companies that face climate-related risk. For example, we believe that issuers of public debt also should be disclosing how they are addressing climate-related risks. But measurement and disclosure are not the only challenges. Governments around the world, under severe fiscal strain from the pandemic, also need to undertake massive climate infrastructure projects, both to protect against physical risk and to deliver clean energy. These challenges will require creative public-private partnership to finance them, as well as better disclosures to attract capital.

BlackRock's Net Zero Commitment

The world is moving to net zero, and BlackRock believes that our clients are best served by being at the forefront of that transition. We are carbon neutral today in our own operations and are committed to supporting the goal of net zero greenhouse gas emissions by 2050 or sooner. No company can easily plan over thirty years, but we believe all companies – including BlackRock – must begin to address the transition to net zero today. We are taking a number of steps to help investors prepare their portfolios for a net zero world, including capturing opportunities created by the net zero transition.

We are outlining these actions in greater detail in **a letter** we sent today to our clients. They include: publishing a temperature alignment metric for our public equity and bond funds, where sufficient data is available; incorporating climate considerations into our capital markets assumptions; implementing a "heightened-scrutiny model" in our active portfolios as a framework for managing holdings that pose significant climate risk (including flagging holdings for potential exit); launching investment products with explicit temperature alignment goals, including products aligned to a net zero pathway; and using stewardship to ensure that the companies our clients are invested in are both mitigating climate risk and considering the opportunities presented by the net zero transition.

Our net zero commitment

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Sustainability and Deeper Connections to Stakeholders Drives Better Returns

In 2018, I wrote urging every company to articulate its purpose and how it benefits all stakeholders, including shareholders, employees, customers, and the communities in which they operate. Over the course of 2020, we have seen how purposeful companies, with better environmental, social, and governance (ESG) profiles, have outperformed their peers. During 2020, 81% of a globally-representative selection of sustainable indexes outperformed their parent benchmarks.³ This outperformance was even more pronounced during the first quarter downturn, another instance of sustainable funds' resilience that we have seen in prior downturns.⁴ And the broader array of sustainable investment options will continue to drive investor interest in these funds, as we have seen in 2020.

But the story goes deeper. It's not just that broad-market ESG indexes are outperforming counterparts. It's that within industries – from automobiles to banks to oil and gas companies – we are seeing another divergence: companies with better ESG profiles are performing better than their peers, enjoying a “sustainability premium.”⁵

It is clear that being connected to stakeholders – establishing trust with them and acting with purpose – enables a company to understand and respond to the changes happening in the world. Companies ignore stakeholders at their peril – companies that do not earn this trust will find it harder and harder to attract customers and talent, especially as young people increasingly expect companies to reflect their values. **The more your company can show its purpose in delivering value to its customers, its employees, and its communities, the better able you will be to compete and deliver long-term, durable profits for shareholders.**

I cannot recall a time where it has been more important for companies to respond to the needs of their stakeholders. We are at a moment of tremendous economic pain. We are also at a historic crossroads on the path to racial justice – one that cannot be solved without leadership from companies. A company that does not seek to benefit from the full spectrum of human talent is weaker for it – less likely to hire the best talent, less likely to reflect the needs of its customers and the communities where it operates, and less likely to outperform.

While issues of race and ethnicity vary greatly across the world, we expect companies in all countries to have a talent strategy that allows them to draw on the fullest set of talent possible. **As you issue sustainability reports, we ask that your disclosures on talent strategy fully reflect your long-term plans to improve diversity, equity, and inclusion, as appropriate by region.** We hold ourselves to this same standard.

Questions of racial justice, economic inequality, or community engagement are often classed as an “S” issue in ESG conversations. But it is misguided to draw such stark lines between these categories. For example, climate change is already having a disproportionate impact on low-income communities around the world – is that an E or an S issue? What matters is less the category we place these questions in, but the information we have to understand them and how they interact with each other. Improved data and disclosures will help us better understand the deep interdependence between environmental and social issues.

I am an optimist. I have seen how many companies are taking these challenges seriously – how they are embracing the demands of greater transparency, greater accountability to stakeholders, and better preparation for climate change. I am encouraged by what I have seen from businesses. And now, business leaders and boards will need to show great courage and commitment to their stakeholders. We need to move even faster – to create more jobs, more prosperity, and more inclusivity. I have great confidence in the ability of businesses to help move us out of this crisis and build a more inclusive capitalism.

Before 2020, vaccines typically took 10 to 15 years to develop. The fastest ever developed was for the mumps – it took four years. Today, we have multiple companies across the globe delivering vaccines that they developed in under a year. They are demonstrating the power of companies – the power of capitalism – to respond to human needs. As we move forward from the pandemic, facing tremendous economic pain and inequality, we need companies to embrace a form of capitalism that recognizes and serves all their stakeholders.

The vaccine is a first step. The world is still in crisis and will be for some time. We face a great challenge ahead. The companies that embrace this challenge – that seek to build long-term value for their stakeholders – will help deliver long-term returns to shareholders and build a brighter and more prosperous future for the world.

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Larry Fink

Chairman and Chief Executive Officer

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Our 2020 sustainability actions

In January 2020, BlackRock outlined our conviction that sustainability risk is investment risk. We committed to making sustainability a key component of the way we manage risk, construct portfolios, design products and engage with companies. Read how we progressed against these commitments.

> **Read more**

Where we stand

- > Sustainability through stewardship
- > From purpose to prosperity
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¹ Sources: Simfund, Broadridge, GBI. Data as of November 2020. Closed-end funds, funds of funds excluded; Money Market funds included.

² January 2021. Estimated values from S&P/Trucost temperature alignment ranges.

³ Source: BlackRock. As of December 2020. This is a set of 32 globally-representative, widely analyzed sustainable indices and their non-sustainable counterparts. Indices are used for illustrative purposes only and are not intended to be indicative of any fund's performance. It is not possible to invest directly in an index.

⁴ Source: BlackRock. 94% of the sustainable indexes referenced above outperformed their parent benchmarks during COVID-19 crisis Q1 2020.
<https://www.blackrock.com/corporate/about-us/sustainability-resilience-research>

⁵ Based on a comparison between the MSCI ACWI Focus ESG Index and the MSCI ACWI Index from January 2020 to November 2020. The return analysis attributed outperformance to the ESG index's increased exposure to companies with high ESG scores and reduced exposure to companies with low ESG scores, within each industry. This ESG index was selected for its industry-neutral construction and global exposure. Results may vary for other index comparisons.

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8/5/2021

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Climate Capital **Deutsche Bank AG**

Turn green or lose 'licence to operate', says Deutsche Bank chief

Germany's largest lender raises sustainability targets one year after announcing them

Olaf Storbeck in Frankfurt MAY 20 2021

Deutsche Bank AG updates

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Deutsche Bank chief executive Christian Sewing has warned that lenders “risk losing their licence to operate” if they fail to make green finance a priority, as the group raised its own targets.

Germany's biggest bank on Thursday laid out plans to increase its financing aimed at environmentally sustainable projects to about €220bn by 2023, two years earlier and 10 per cent higher than its [existing targets](#).

Facing pressure from investors and activists, Deutsche Bank for the first time broke down its targets across its businesses. The investment bank will have to account for €105bn of the green business; the private bank will be required to contribute €86bn and the corporate bank €30bn.

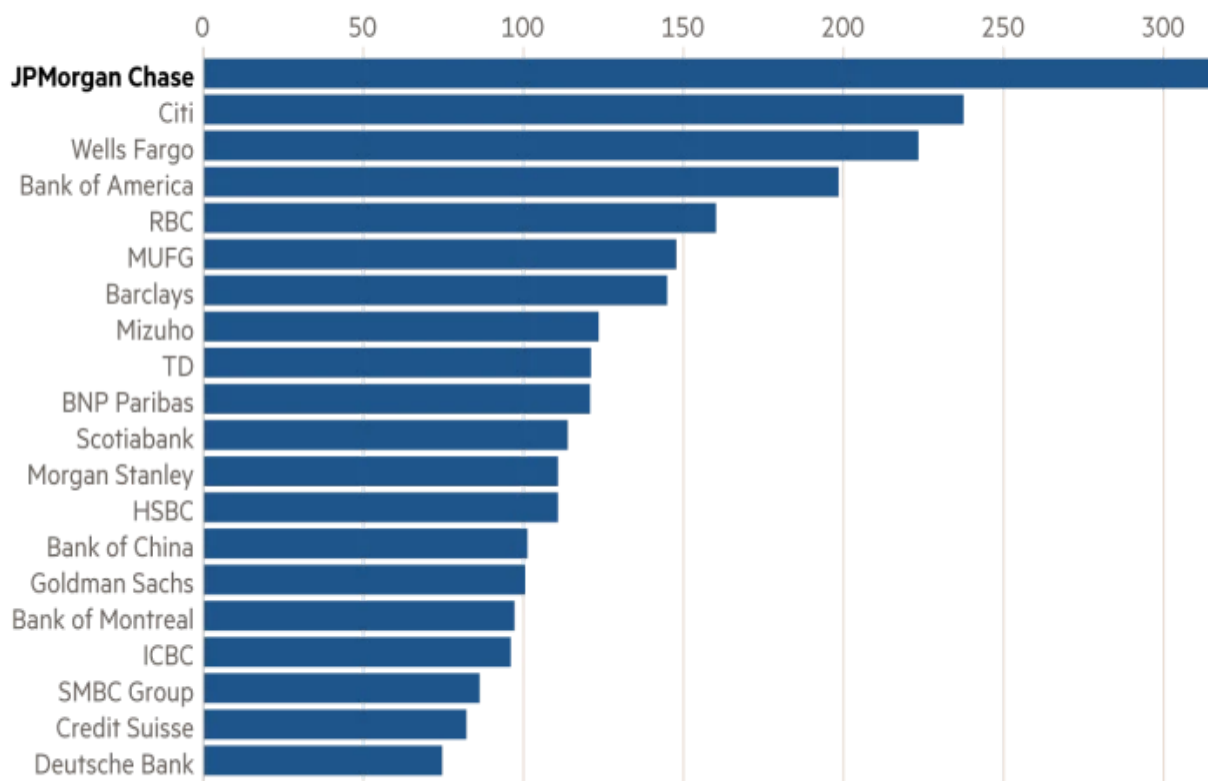
Sewing told investors that he also regards the bank's push “as a unique opportunity to gain market share”.

The banking industry faces increasing calls from some investors to stop financing carbon-intensive projects and to scale up their green lending. The pressure has intensified since the 2015 Paris accord, which introduced a commitment to limit global warming to well below 2C compared with pre-industrial levels.

Deutsche Bank's new targets drew criticism for not going far enough.

JPMorgan Chase remains the world's largest banker of fossil fuels

Cumulative fossil fuel loans 2016-20 (\$bn)



Source: Banking on Climate Change
© FT

It is “window dressing” and “mere opportunism”, said Regine Richter, a campaigner at environmental lobby group Urgewald, who pointed to the bank’s recent role as an adviser on the aborted initial public offering of oil and gas group Wintershall DEA, and a client list that includes ExxonMobil and Chevron.

Deutsche Bank said in July last year that it will “end” its global business activities in coal mining by at least 2025, while stopping the financing of new oil and gas projects in the Arctic region.

Deutsche Bank did not lay out sustainability targets for DWS, its asset management business which is listed separately and run as an independent company.

DWS last month received a mediocre rating in a sustainability ranking conducted by French environmental lobby group Reclaim Finance. Germany’s biggest asset manager was ranked 17th out of 29 European asset managers, trailing behind French rival Axa Investment Manager, which was ranked first.

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Finance

Investors With \$4 Trillion Ask Banks to Raise Climate Ambitions


Aviva, Fidelity International and M&G Investments are among the firms increasing pressure on the world's biggest lenders.

By [Alastair Marsh](#)

July 6, 2021, 7:01 PM EDT

A coalition of investors overseeing a combined \$4.2 trillion of assets are asking the world's biggest banks to take more aggressive action in addressing climate change and biodiversity decline.

Aviva Investors, Fidelity International and M&G Investments were among 115 investors that wrote to 63 banks, including JPMorgan Chase & Co., Deutsche Bank AG and Standard Chartered Plc, to take several steps beyond what they've already committed to doing, including a complete exit from all coal finance by 2040 at the latest. The investors also requested that banks publish short-term climate targets before their annual shareholder meetings next year, and identify and disclose their impacts and dependencies on biodiversity.

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The fund managers said banks can play a key role in enabling the low-carbon transition and helping avert the worst consequences of climate change and biodiversity loss. It's also in their own self interest to throw their weight behind efforts to limit global warming since banks are exposed to the potentially significant effect on companies' profits and the value of their assets stemming from the transition away from fossil fuels and the physical impacts of climate change and nature loss.

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“The message from investors is clear: Distant net zero targets and warm words about the importance of biodiversity are not enough,” said Jeanne Martin, senior campaign manager at ShareAction, the U.K. nonprofit that coordinated the letters. “Investors want concrete action now, and those banks which fail to respond can expect serious challenges at their next AGMs.”

The investor group, which also includes Man Group Plc and Federated Hermes Inc.'s EOS division, said they were calling on the banks to strengthen their strategies ahead of the United Nations' conventions on biodiversity and climate change that will be held in October and November respectively.

They want the banks to go beyond the pledges they have already made through voluntary initiatives such as the Net-Zero Banking Alliance. Signatories to that initiative have pledged to set their first round of climate targets by the end of next year, whereas the investor letters call on banks to publish comprehensive short-term climate targets, defined as five to 10 years, and covering all relevant financial services, ahead of banks' mid-year annual meetings.

The investor coalition also asked the banks to align their climate plans with the International Energy Agency's net-zero scenario that calls for an end to fossil fuel exploration and development, or another 1.5 degrees Celsius scenario that doesn't rely on so-called negative emission technologies. In addition, they called for banks to publish a biodiversity strategy

before the October summit that covers their impacts and dependencies on the natural world, as well as a commitment to engage in the development of the Taskforce on Nature-Related Financial Disclosures.

The investors have asked the banks to respond to their letters by Aug. 15, and warned lenders' progress on these issues "may be taken into consideration within investors' 2022 AGM voting action and engagement activities."

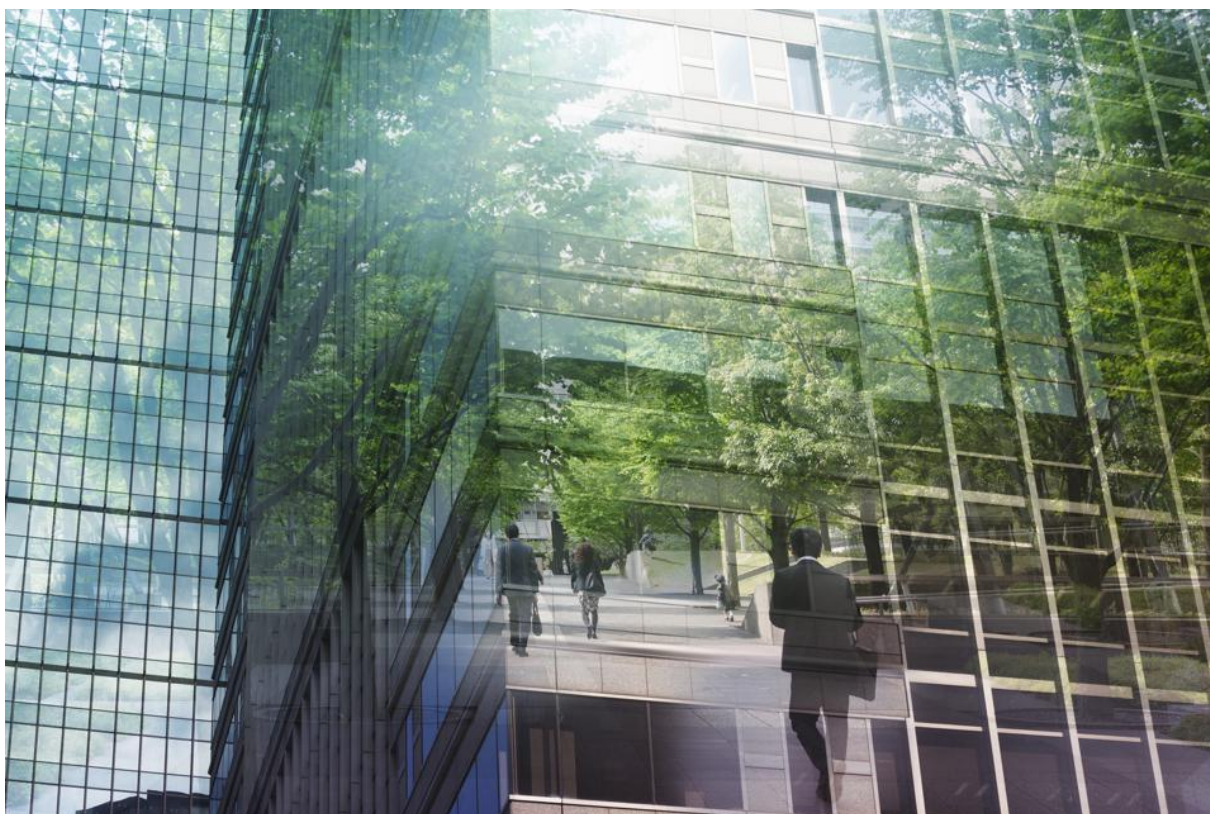
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Lack Of U.S. Climate Finance Regulation Presents Unique Opportunity For CRE Investors



Bradford Dockser Forbes Councils Member
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*CEO and Co-Founder of **Green Generation**, which engineers and implements comprehensive integrated energy efficiency solutions.*



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This year's Earth Day held particular importance. I didn't need to revisit the doomsday statistics or look to signs of progress to substantiate that point. After all, measures of the efforts to mitigate and ultimately reverse

anthropogenic climate change were **front and center** throughout the Biden-Harris administration's recent Leaders Summit on Climate and will remain salient for the foreseeable future.

But on a personal level, this year's observance of Earth Day gave special cause for reflection. Earth Day 2021 coincided with the 10th anniversary of the day my wife and I decided to launch Green Generation, fully committing to the urgent need to decarbonize the built environment.

Much has changed in the decade since. What started as a humble effort to deliver proven building energy efficiency solutions across the addressable markets too often missed by the incumbent energy service company (ESCO) model — commercial real estate (CRE) and private equity (PE) — has since flourished into a global enterprise situated at the nexus of real estate, sustainability, technology and capital markets.

The CRE and PE industries, to be sure, have changed, too. Since the rebound from the financial crisis of the late 2000s especially, the **premium** that CRE developers and investors assign to “green” or sustainable building construction and, among building owners, operators and tenants, climate-aligned operations, has grown increasingly well-established. At the same time, investor interest in digital building performance enhancement solutions — including environmental and climate proptech — has seen **impressive growth** in recent years. And that's to say nothing of the customer-centricity movement that's given rise to the “space as a service” model championed by the office-leasing behemoth WeWork, among others.

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Looking ahead, the concomitant pandemic-era needs for CRE to better enable public health measures like social distancing and adapt to the increased leverage of health- and sustainability-conscious investors and

consumers will intensify these trends. CRE digitization **will continue**. ESG investing will grow more ubiquitous. The value of proptech innovations and building management solutions that support community well-being and, importantly, **environmental sustainability** will **strengthen**.

And for a sector that in 2020 was responsible for **nearly 30%** of the U.S.'s annual energy consumption, this is an encouraging outlook. But when we stop and take stock of the **comparatively poor** progress made toward decarbonizing the U.S. commercial buildings sector and acknowledge that the global buildings sector recorded its **highest-ever annual operational emissions in 2019**, it's excruciatingly clear that CRE needs to pick up the pace.

It's this persistence of the building emissions challenge that led me this Earth Day to wonder what the next era of sustainability might look like for CRE. What, if any, resources and strategies for building decarbonization remain untapped and unexploited? And for those solutions, what levers exist to thrust them from the margins and into the limelight?

One particularly conspicuous and yet **underleveraged** resource is private finance. But that's quickly changing.

Beginning in 2021, Blackstone, one of the world's largest CRE investors, has committed to **reducing the carbon intensity of its holdings by 15%**, including real estate assets and private equity, within three years of acquisition. Nuveen, another U.S.-based investment firm with a multibillion-dollar CRE portfolio, has pledged to implement onsite renewable generation, deep energy retrofits and other measures across its properties to **achieve net-zero carbon emissions by 2040**. The Urban Land Institute's (ULI) Greenprint Center for Building Performance, whose membership represents upwards of \$1.2 trillion in real estate assets under management, has been so successful in its pursuit of a 50% reduction in carbon emissions by 2030 that it's established a new, more ambitious target of **net-zero by 2050**. And Allianz Real Estate is on track to reduce portfolio emissions by 25% by

implementing a structured ESG framework modeled after Carbon Risk Real Estate Monitor decarbonization pathways. Indeed, global investors' demand for sustainable CRE investment opportunities is so strong that, in April, the American investment manager Invesco launched the world's first green building ETF on the NYSE.

Still, there's significant ground to cover. As recently as 2019, only 3.3% of investment-grade multifamily units and 13.8% of all commercial office buildings in the top 30 multifamily and office markets in the U.S., respectively, were certified "green," according to CBRE Group. Moreover, respondents to a recent survey on CRE trends conducted by PwC and ULI indicated they are less concerned with adapting to climate change and complying with sustainability requirements than perhaps more salient, immediately impactful challenges.

More aggressively leveraging the demonstrated willingness of major institutional investors across CRE, then, is key. Fortunately, the Biden-Harris administration appears to understand this. President Biden is expected to issue an executive order regarding federal regulation of climate-related financial risks. And he has already begun to lean on the Securities and Exchange Commission to oversee institutional investors' use of ESG investment practices and disclosures, moves in line with what UNEP Finance Initiative and Climate-KIC found in a recent report is advocated by global sustainable finance experts.

More robust, responsive regulation of sustainable finance definitions, monitoring and disclosure is critical to advancing climate alignment across CRE. Its comparative absence in the U.S., for instance, is at least partly responsible for U.S. real estate companies' lagging their European and Asian counterparts on environmental sustainability performance in the latest S&P Global Corporate Sustainability Assessment.

CRE investors that produce functional and, importantly, accessible methods of monitoring, implementing and disclosing portfolio sustainability

measures can expect to strengthen their double bottom lines. Yet, whether they realize it or not, the absence of a climate-aligned financial regulatory framework is as much a challenge for U.S. CRE investors as it is an opportunity to advance the decarbonization of their industry.

How is that? As we've seen [in the E.U.](#) and, more recently, [New York state](#), CRE investors that succeed in implementing these sustainability frameworks may reasonably expect to [be involved](#) in the development and implementation of industry regulation, too. This is a unique opportunity for those who best understand the sector to mitigate the negative climate impacts associated with still more delays in supportive regulation.

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Bradford Dockser

CEO and Co-Founder of [Green Generation](#), which engineers and implements comprehensive integrated energy efficiency solutions. [Read Bradford Dockser's full executive... Read More](#)

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Banks Increasingly See Climate Risk As Top Priority



Steve Culp Contributor ⓘ
Leadership

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While they have made progress, banks still face some significant hurdles in reaching their stated ...

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understand and manage such risk. For example, Accenture research conducted in May shows that almost three-quarters (71%) of U.S. banks can monitor and assess their carbon footprint today, and 67% are prepared to direct capital away from the energy sector to assist in the transition to a low-carbon economy.

Similarly, six major US banks have agreed to align their lending portfolios with the stated goals of the Paris Agreement, and are supplying specific details about how they will accomplish this. One such bank is working with clients that have coal-fired facilities to address the disclosure of greenhouse gas (GHG) emissions. The same bank said it will stop providing financing and/or financing advisory services for companies with such facilities after 2021.

But the industry, as a whole, remains under scrutiny. The problem is that, while banks can control their own policies and actions, they have only limited control over the actions of their clients. Banks have been criticized for contributing to climate change by funding fossil fuel projects (with the 60 largest banks investing \$3.8 billion in fossil fuel projects from 2016 to 2020) although they have been redirecting their activities toward climate-friendly ventures. As of May 2021, according to [Bloomberg](#), banks' \$203 billion of bonds and loans to such ventures outpaced their \$189 billion of bonds and loans for hydrocarbon-based projects.

Banks still face some significant hurdles in reaching their stated climate risk objectives. One major difficulty is in addressing “[Scope 3](#)” or clients' carbon emissions. While nearly two-thirds (62%) of the banks we surveyed said they are monitoring clients' emissions and environmental profiles, over a third (35%) said that the availability and granularity of such data is insufficient to assess not only climate risk but the financial risk associated

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in attitudes toward climate change. French and UK bank regulators are **already conducting climate-related stress tests** and central banks are incorporating climate risk factors into their oversight, with the Bank of England now taking environmental sustainability and the government's goal of a net-zero economy into account when purchasing debt. The US Federal Reserve Bank is said to be studying similar actions.

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Banks increasingly understand what expectations are being put upon them, but getting there will not be easy, particularly in relation to the accessibility and scalability of relevant ESG data. The magnitude and complexity of the data challenges that lie ahead, including the sheer amount of unstructured non-financial data that will need to be captured and analyzed, is daunting but not insurmountable. We are seeing banks working to develop the data models, analytical tools, and approaches needed to assess their clients' environmental impact, but this is a learning process. They need to look outside their commitments to the energy industry – to heavily fossil-fuel dependent sectors such as agriculture, manufacturing, construction, and transportation – to have a more complete picture on their portfolio of the climate impact supported by their investments.

Nearly four in ten U.S. banks still do not have a defined approach to measure and assess the impact of transitioning away from fossil fuels to new green energy sources on their financial results. Banks, therefore, will need to

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through both lenses helps to bring the focus and importance closer to the business agenda of the institution, rather than viewing it as just a “regulatory” or “hygiene” effort.

Addressing these challenges will take time and commitment, but as more stakeholders, including investors and customers, focus on climate change and climate risk there are important implications for banks who can get it right. 73% of U.S. banks we surveyed believe that effectively managing climate risk and promoting the transition to a green economy will help their bank attract talent and customers.



Steve Culp

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I am the senior managing director of Accenture Digital Risk and Compliance. Based in Chicago, I have more than 20 years of global experience working with clients to...

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\$7 trillion asset manager BlackRock makes climate change central to its investment strategy for 2021

PUBLISHED WED, DEC 16 2020•8:31 AM EST UPDATED WED, DEC 16 2020•9:55 AM EST



Jessica Dickler
@JDICKLER

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KEY POINTS

The world’s biggest investor is putting environmental and social priorities at the forefront of its investment approach.

With assets under management of more than \$7 trillion, BlackRock has significant influence on most of the companies in the S&P 500.



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VIDEO 07:17

BlackRock CEO Larry Fink on climate change and ESG investing

Investors are increasingly interested in [companies that are environmentally and socially conscious](#), and the world's largest asset manager is no exception.

[In an annual letter to CEOs](#) earlier this year, [BlackRock](#) Chairman and CEO [Larry Fink](#) said “climate change has become a defining factor in companies’ long-term prospects ... But awareness is rapidly changing, and I believe we are on the edge of a fundamental reshaping of finance.”

Now, the firm has updated its [global principles](#) and [guidelines](#) to reflect its commitment to climate and diversity.

In the midst of the [Covid-19 pandemic](#), “investors and others will be looking to see how companies are rebuilding their businesses for long-term sustainability and value creation,” BlackRock said in its [2021 stewardship expectations](#).

More from Impact Investing:

[A \\$7 trillion climate change warning to the stock market](#)

[Climate funds hold less than 1% of 401\(k\) money](#)

[These green energy tax credits are set to expire](#)

“The changes we have made to our stewardship principles and voting guidelines strengthen our expectations of management and boards in ensuring companies have a





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proxy reports.



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VIDEO 05:29

PRO BlackRock's Mike Pyle on building a post-pandemic portfolio in 2021

Given the size BlackRock's vote represents, these new guidelines could be the difference between the slow pace of change at companies and [more immediate action](#).

"Where we believe companies are not moving with sufficient speed and urgency, our most frequent course of action will be to hold directors accountable by voting against their re-election," BlackRock said in the report.

"The Commission's action is a significant step in the right direction."



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VIDEO 03:59

Joe Biden administration will join the Paris agreement, combat climate change: CEO of MSCI

[President-elect Joe Biden](#) has called [climate change](#) “the No. 1 issue facing humanity.”

Impact investing experts say that the President-elect’s remarks, along with the \$7 trillion fund manager’s plans, represent an important shift in favor of addressing environmental challenges.

“There’s no question that we now have a more conducive political environment,” Cook said. “Shareholders are more emboldened to act on these issues, particularly these large asset managers.”

BlackRock’s willingness to support more shareholder resolutions on socially responsible issues, including climate change, will set the tone for smaller investors, as well, said Cook.

As these policies become more relevant, “it becomes necessary for investors to think





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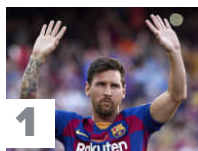
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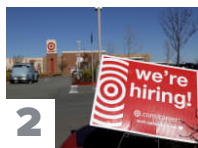
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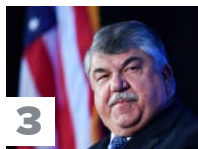
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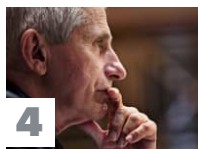
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TOP *of* MIND

INVESTING IN CLIMATE CHANGE



On the heels of a climate-focused World Economic Forum in Davos, the unveiling of Europe's new Green Deal, and increased attention on climate change by the world's largest asset managers and banks, climate change is undoubtedly Top of Mind. We speak with Michael Greenstone of the University of Chicago, Nathaniel Keohane of the Environmental Defense Fund and GS's own Steve Strongin and Jeff Currie about the climate challenge, and what it will take to address it. We then turn to GS analysts Michele Della Vigna and Alberto Gandolfi to discuss how capital markets and climate policy are driving transformational shifts in the energy industry, and what it means for sector returns. Finally, our GS SUSTAIN team and head of the GS Sustainable

Finance Group, John Goldstein, provide insight and advice on ESG investing and integration, and the growing implications of shareholders and clients increasingly demanding more accountability on climate.



If we end up choosing policies that are expensive, we're going to run out of enthusiasm before we've made substantial progress against climate change... carbon pricing is our best bet to achieve carbon reductions on the cheap.

- Michael Greenstone

Carbon pricing would enable specialization in finding a solution based on who's best at solving the problem... as opposed to who's causing the problem.

- Steve Strongin

The key [to ESG investing] is to clear out preconceptions and treat ESG like any other investing question, which requires forming a clear investment thesis.

- John Goldstein



WHAT'S INSIDE

INTERVIEWS WITH:

Michael Greenstone, Director of the Energy Policy Institute (EPIC), University of Chicago

Nathaniel Keohane, Vice President, Environmental Defense Fund

Steve Strongin, Head of Global Investment Research, Goldman Sachs

John Goldstein, Head of Sustainable Finance Group, Goldman Sachs

GLOBAL PROBLEM, LOCAL RICH SOLUTION
Jeff Currie, GS Commodities Research

CARBONOMICS: THE FUTURE OF ENERGY
Michele Della Vigna, GS Energy Industry Research

THE EUROPEAN GREEN DEAL: A €7TN PLAN
Alberto Gandolfi, GS Europe Utilities Research

Q&A ON ESG INVESTING
Derek Bingham, GS SUSTAIN

...AND MORE

Allison Nathan | allison.nathan@gs.com Gabriel Lipton Galbraith | gabe.liptongalbraith@gs.com Jenny Grimberg | jenny.grimberg@gs.com

Investors should consider this report as only a single factor in making their investment decision. For Reg AC certification and other important disclosures, see the Disclosure Appendix, or go to www.gs.com/research/hedge.html.

Macro news and views

We provide a brief snapshot on the most important economies for the global markets

US

Latest GS proprietary datapoints/major changes in views

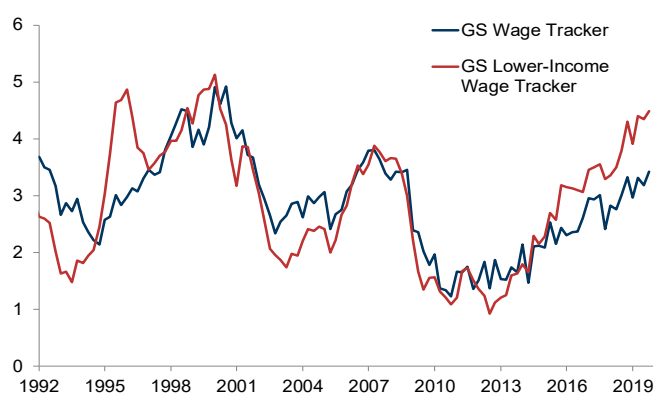
- We think growth should pick up from its current pace of around 2% to the 2.25-2.5% range, in part because of a strong positive impulse from financial conditions.

Datapoints/trends we're focused on

- The decline of the ISM manuf. survey to a cycle-low; we expect a gradual manuf. recovery on the back of encouraging January surveys, reduced trade risks and firmer global growth.
- The impact of US election uncertainty on sentiment indicators.
- A rise in the GS wage tracker to 3¼ - 3½%, a new cyclical high, despite a decline in average hourly earnings growth.

Steady wage gains

GS wage tracker, percent change, year ago



Source: Goldman Sachs Global Investment Research.

Europe

Latest GS proprietary datapoints/major changes in views

- We expect a gradual reacceleration of growth to an annualized pace of 1.2% in H1 and 1.5% in H2 2020.
- We've raised our expectation for core inflation in the Euro area by 20bp to 1.3% yoy by December 2020.

Datapoints/trends we're focused on

- A more encouraging Composite PMI, with new orders rising sharply, despite an unchanged overall reading in January.
- Stronger forward-looking indicators, especially for German IP.
- The second phase of Brexit negotiations; we expect a more elastic timeline than the UK government has articulated.

A sharp rebound

German IP and leading indicators, percent change, year prior



Source: Haver Analytics, Markit, Goldman Sachs Global Investment Research.

Japan

Latest GS proprietary datapoints/major changes in views

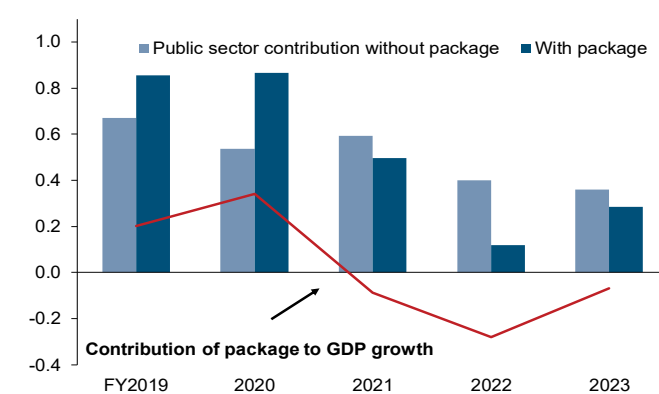
- We expect ¥3tn of the government's recent fiscal package will be spent in FY2020, boosting growth by 0.3pp to 0.4%.
- We lowered our Q4 2019 GDP estimate by 50bp to -3.0 qoq ann. and marginally raised our recession prob. to 38%.

Datapoints/trends we're focused on

- The domestic macro implications of the coronavirus, which poses downside risks given inbound China tourist consumption is currently 15x larger than during the 2003 SARS outbreak.
- The output gap; we think the BOJ will refrain from further easing as long as it remains positive and ¥/USD is above 100.

Turning the fiscal corner

Estimated contribution to GDP growth of fiscal package, pp



Source: Goldman Sachs Global Investment Research.

Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

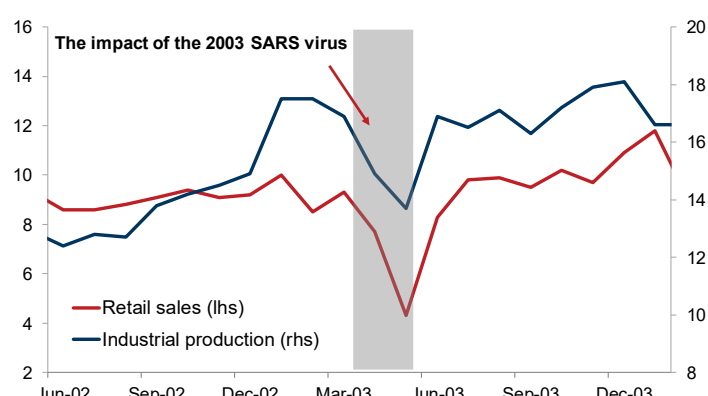
- No major change in views.

Datapoints/trends we're focused on

- The coronavirus outbreak; past viruses suggests the hit to growth should prove short-lived, though downside risks remain.
- Fiscal stimulus in Asia, with China, Japan, Korea, Taiwan, Australia, and India set to boost spending in 2020.
- Russia's recently announced 0.5% of GDP fiscal package, which presents upside to our above-consensus 2020 GDP forecast of 2.2%.

History as a guide?

China retail sales (lhs); China industrial production (rhs), percent



Source: NBS, CEIC, Goldman Sachs Global Investment Research.

Investing in climate change

On the heels of a climate-focused World Economic Forum in Davos, the unveiling of Europe's new Green Deal, and increased attention on climate change by the world's largest asset managers and banks, climate change is undoubtedly Top of Mind. We dig into the climate challenge, what it will take to address it, and the growing investment implications as shareholders and clients increasingly demand more accountability on climate.

We start by speaking with two climate policy experts, Michael Greenstone, Director of the Energy Policy Institute at the University of Chicago, and Nathaniel Keohane, Senior Vice President of the Environmental Defense Fund. They both argue that putting a price on carbon is our best bet to realizing carbon reductions efficiently, which is essential to managing the delicate balance between pursuing cleaner energy and economic growth—the core dilemma underlying the climate challenge. That said, they believe that addressing climate change is not incompatible with growth, but rather essential to it, as the only path to a prosperous future is a low-carbon one (see pg. 22 for GS economists' review of climate change and growth).

But how will carbon pricing actually help achieve an efficient solution to climate change? Steve Strongin, head of GS Global Investment Research, explains that setting a price for carbon would be an important step in incentivizing enough R&D to actually solve the problem. And knowing what removing a ton of carbon from the atmosphere is worth will motivate people to maximize the amount of carbon removed per dollar spent—the definition of an efficient solution.

That said, establishing a price for carbon is easier said than done. In practice, the primary mechanisms for doing so are carbon taxes, which effectively assign a price for carbon, and cap-and-trade programs, which set a limit on emissions—typically for a certain sector or industry—and enable participants to trade emissions allowances under the cap, which gives rise to a carbon price at which the demand and supply for allowances clears.

Greenstone is relatively agnostic between the two options; in his view, any price for carbon materially above zero would be a positive step, and whether we get there via carbon taxes or cap-and-trade programs just depends on whether having certainty on price (via a tax) or on emissions reductions (via cap-and-trade) is more important, because you can't have both. Keohane believes that any approach must put both a price and a limit on emissions to ensure progress towards emissions targets. So he prefers cap-and-trade programs to pure carbon taxes, and points to the success of the 1990 cap-and-trade system for sulfur emissions in eradicating acid rain as evidence that such programs work.

But Jeff Currie, global head of GS Commodities Research argues that the acid rain problem was very different than today's climate challenge; the number and diversity of countries involved was smaller, the source of harmful emissions was more concentrated, and income inequality—which lies at the center of backlash to addressing climate change today—was lower. In his view, that means rich people in rich countries will have to play a larger role in solving (i.e. paying for) this global problem.

Strongin, for his part, agrees that rich countries will have to bear the majority of the initial costs, and makes the larger point that most of today's policy proposals to address climate change—from carbon taxes, to cap-and-trade programs, and beyond—share the problem of assuming that the answer lies with the

So what exactly is the climate challenge?

It's the rise in the world's average temperatures largely caused by an increase in the level of carbon dioxide in the atmosphere, which [evidence suggests](#) has increased the probability of extreme weather events, raised average sea levels, and had other negative consequences for people and the planet. At the UN Climate Change conference in Paris in 2015 (COP21), 184 countries committed to the [Paris Agreement](#), which pledged to keep the rise of global average temperatures to well below 2 °C above pre-industrial levels, and to attempt to further limit the temperature increase to 1.5 °C.

source of the problem—utilities, cars and energy producers. But, Strongin says, these sectors are not typically considered the most innovative areas of the economy, and others may be better placed to find more efficient solutions. In his view, a carbon price, a funding mechanism from which to pay innovators for each ton of carbon their technologies remove, and a referee to verify those savings will motivate the most efficient answers.

Across the current spectrum of possible solutions, Strongin sees the most hope for batteries and carbon capture and sequestration technologies to be part of the climate solution, given their immense scalability, as does Greenstone. But they point out that we may not yet know which technology will be the best answer. After all, Strongin says, no one could have anticipated that shale would have solved the problem of "peak oil"—but it did.

Michele Della Vigna, head of GS Energy Industry Research, also sees sequestration technologies as a potentially important part of the answer. That's because his [Carbonomics](#) work has found that today's conservation technologies have the potential to abate only about half of current carbon emissions at a carbon price of less than \$200/ton, and would leave a quarter unabated. More broadly, Della Vigna argues that capital markets' focus on decarbonization is paving the way for an energy transition. Tighter financing for hydrocarbon assets is driving consolidation in the oil & gas industry, which he believes is likely to lead to a halt in non-OPEC supply growth, higher energy prices and increased profitability of Big Oils. In his view, these shifts should ultimately enable Big Oils to be part of the solution to climate change.

Alberto Gandolfi, head of GS European Renewables, then takes a close look at Europe's new Green Deal—a plan for Europe to reach net zero carbon emissions by 2050. He sees the plan as a €7tn investment opportunity that will generate strong returns for European "Climate Champions" in the coming decades, and will likely reshape the larger economy in the process.

More broadly, how should investors—and corporates, for that matter—approach green/sustainable investing? Derek Bingham, head of GS Americas SUSTAIN research, answers our clients' most-asked questions about ESG investing. And we then dive deeper with John Goldstein, head of the GS Sustainable Finance Group, who discusses everything from the investment rationale for sustainable investing, to the ESG strategies that hold the most value today, and those on the horizon for tomorrow.

Allison Nathan, Editor

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Goldman Sachs and Co. LLC



Interview with Michael Greenstone

Michael Greenstone is Director of the Energy Policy Institute at the University of Chicago (EPIC) and former Chief Economist of the Council of Economic Advisers under President Obama. He explains the importance of pricing carbon to unleash the power of markets and innovators to find the most cost-effective climate solutions, and how the social cost of carbon can help set pricing policies. He also discusses the promise of batteries and carbon capture and sequestration.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: How should we think about the tradeoff between promoting economic growth and mitigating the costs of climate change? Isn't there an unsolvable dilemma in that the developing countries that need to reduce future emissions the most also have the greatest need for cheap energy?

Michael Greenstone: That dilemma is what I call the Global Energy Challenge—how societies around the world, but especially developing countries, balance the need for cheap and reliable energy that is so critical for economic growth with the need to manage pollutants that result from that energy consumption and increase the odds of disruptive climate change. Societies are going to reach different conclusions about that delicate balance based on a range of factors, including economics, values, and preferences for redistribution today and across generations. But figuring out the right balance on a global basis is one of the most pressing challenges of our time and one where I think facts and evidence can make a contribution.

Allison Nathan: Is it realistic to think that the lion's share of energy developing economies need to propel growth is going to come from anything but fossil fuels?

Michael Greenstone: Not given the way that energy markets are constructed currently where pollution, be it local air pollution or greenhouse gases, is not priced. The result is an uneven playing field that favors fossil fuels, and this is especially so in today's developing countries. In the absence of fundamental changes in the construction of these markets or the private costs of fossil fuels versus low-carbon energy sources, we should expect developing countries to continue to prioritize the use of fossil fuels. We don't have many instances of economies achieving high living standards without high energy consumption, and by 2040 energy demand in OECD countries should remain fairly stable while roughly doubling in developing countries. So any solution to the global climate problem will require changes in developing economies' energy markets or technological breakthroughs to address their energy needs.

Allison Nathan: Is it possible to shift the economics of energy in a way that favors cleaner energy sources?

Michael Greenstone: Yes. Climate change is the result of two market failures. The first is that there is no cost to generating pollution and the damage it inflicts on people and the planet. The simple solution to that failure is to put a price on carbon so that people have to pay to pollute. That would effectively raise the cost of carbon-intensive energy sources. The complication to that solution is that it reduces the purchasing power of consumers.

But that could be mitigated, for example, by governments refunding the revenues from a carbon tax to the public, and in a progressive way that would ensure that the costs of the tax would be borne by higher income households.

The second market failure is that there is too little incentive to invest in R&D for low-carbon technologies because investors are unlikely to reap all of the benefit of this R&D; even if the R&D produces commercial ideas—which is not a given—basic advances will inevitably spillover to others who didn't incur the investment costs. Again, there is a simple solution to this failure, which is government funding/subsidization of basic R&D for low-carbon energy sources or other technological solutions that will make cleaner energy sources cheaper—and competitive with fossil fuels—or carbon-intensive energy sources less polluting. Another possibility is that rich countries could directly subsidize the use of low-carbon energy sources in developing countries. However, I would not want to run for Senator in Massachusetts, Alabama, or really any state on a platform of "let's pay for India and China to have cheaper energy."

Allison Nathan: What's the right price for carbon?

Michael Greenstone: Ideally, the price of carbon should reflect the value of the damages associated with the pollution it creates. During my time in the Obama administration, I co-led, with Cass Sunstein, an effort to develop such a "social cost of carbon" for the US government that added up the costs associated with the release of a ton of carbon dioxide into the atmosphere in terms of changes in mortality rates, crop yields, labor supply, flooding, and so forth. The value that we came up with was \$51/ton. So we found that every ton of CO₂ released into the atmosphere caused \$51 worth of damages in present value terms.

This estimate can be used for thinking about the "right" price of carbon, and several proposals for carbon taxes in the US and elsewhere have loosely pegged the tax to it. The estimate also provides a bright line to assess which policies are worth pursuing, and which ones cost more than they're worth. For example, research I conducted on home energy efficiency programs, such as attic insulation, found that the cost per ton of CO₂ abated was several hundred dollars versus only \$51/ton of benefit. Given these practical uses of the social cost of carbon, I think it's the most important number you've never heard of.

Allison Nathan: How much confidence do you have that this \$51/ton estimate is still accurate today?

Michael Greenstone: At the time that we developed the initial estimate, it was clear that the understanding of the science and economics of climate change was advancing rapidly, and a framework for how to ensure that the estimate remained current was required. The Obama administration tasked the National

Academy of Sciences with developing recommendations on such a framework—which they’ve done—but those have been totally ignored by the current administration. Under President Trump, a series of changes have been made that have reduced the original \$51/ton number to somewhere between \$1 and \$7, but none of the changes are justified by frontier science or economics research—they were political decisions.

Seeing a clear need for robust research that could keep the social cost of carbon current with the latest developments in the field, myself and a few of my colleagues have established something called the [Climate Impact Lab](#), which aims to produce an updated social cost of carbon that reflects the National Academy of Science’s recommendations. This is a work in progress, but I think the \$51/ton estimate will likely change once we follow the recommendations and incorporate the latest evidence. At least in the area of mortality, the most updated evidence suggests that the costs of the release of a ton of CO₂ for mortality alone appear to be 10 or 15 times larger than what was embedded in the Obama-era social cost of carbon.

Allison Nathan: Are cap-and-trade schemes or carbon taxes more effective in achieving a price for carbon?

Michael Greenstone: Relative to where policy is today, I think the debate about whether a cap-and-trade scheme or a carbon tax is preferable is just a parlor game. The real issue is that the effective price on carbon in most parts of the United States and certainly around the world today is basically zero. So the first and most important step is to raise the price of carbon towards the social cost of carbon; whether we get there through a trading scheme or a carbon tax is less important.

Allison Nathan: That said, policymakers will ultimately have to decide which approach to take if we’re serious about putting a price on carbon. So how would you advise them?

Michael Greenstone: The primary advantage of a cap-and-trade scheme is you have certainty on emissions, and the primary advantage of a carbon tax is that you have certainty on price. The dilemma is you can’t guarantee both the price and the quantity. So choosing the best approach depends on political and societal judgments about the greater risk. If you think the greater risk lies with the politics—and that big energy price spikes would undermine the entire system—a carbon tax is more appropriate. But if you think the greater risk lies with larger climate damages in the event we end up getting more emissions than expected at a particular carbon price, a cap-and-trade scheme is preferable.

Allison Nathan: If countries take different approaches to establishing a price for carbon—and we end up with many prices of carbon—what implications would that have?

Michael Greenstone: We already see an exceptionally wide range of prices for carbon around the world; Sweden’s price is about \$125/ton and the EU and California’s prices are in the high-teens or low-20s/ton. But these differences are a second order problem. Right now, the average price for a ton of carbon across the world is roughly \$2.50 because most of the world has a price of zero. So what strikes me as the most urgent problem are all of those zeros. Once all countries are above zero and committed to carbon pricing, I think the issue of different countries having different prices that you’re raising becomes a more important one. Of course, the ultimate solution is a global price for carbon,

but I don’t see that happening in the foreseeable future, given very different fundamentals in India, China, and the US.

Allison Nathan: Should other policies beyond carbon pricing—like efficiency standards, conservation policies or sector-specific regulations—be part of the policy mix?

Michael Greenstone: The problem is that the primary policy/regulatory alternatives to carbon pricing tend to be more expensive on a per ton basis. This is especially the case for policies that are more opaque in how they would operate and less directly targeted at emissions reductions, such as energy efficiency policies that generally have a diffuse set of goals. My view is that if we end up choosing policies that are expensive, we’re going to run out of enthusiasm before we’ve made substantial progress against climate change. That’s why it’s so critical to ruthlessly search for the cheapest reductions in CO₂. And, honestly, carbon pricing is our best bet to achieve carbon reductions on the cheap. That said, we should absolutely pursue non-pricing policies where the current or future benefits in terms of carbon reductions are projected to be larger than the costs. The climate problem has arrived and we need to get on with it.

Allison Nathan: There’s a lot of activity and innovation in low-carbon technologies. Which look the most promising?

Michael Greenstone: I think it’s hard to see a path to a green future that doesn’t run through more efficient batteries. In the power sector, renewables run into the well-known problem that the sun doesn’t shine all the time and the wind doesn’t blow all the time. Right now, we’re largely filling in those gaps with fossil fuels by using natural gas plants. A greener alternative would be to improve batteries so that they can provide the storage to smooth out the production of energy from renewables. And if the power sector becomes low carbon through the use of batteries, they can also be the key to reducing petroleum consumption in the transport sector. This would solve the problem that in some states currently the CO₂ emissions from an electric vehicle exceed the CO₂ emissions from an internal combustion engine car—this is because in these states the EVs are basically plugged into a coal plant. So I see batteries as potentially pivotal.

I also think that making serious progress on carbon capture and sequestration has got to be an important piece of the puzzle. The world is awash in inexpensive fossil fuels, and the idea that we’re just going to leave them in the ground strikes me as very unlikely. So I think it is incumbent on the world to find a way to use them that is consistent with climate goals, and the path to that is through capture and sequestration. I consider it a tragedy of policy that the world is not operating several demonstration coal and natural gas carbon capture and sequestration plants at scale.

All that said, my views that these technologies will be at the center of solving climate change are just guesses. The core problem today is that we have not yet unleashed the power of markets and innovators to come up with the right solutions. The contrast with fossil fuel recovery where there is a clear price incentive and the kind of miraculous technical achievement that hydraulic fracturing for gas and oil requires is striking. Until there’s a price incentive, and markets are allowed to do what they’re so good at—ruthlessly seek out the most economical way to do something—we’ll all be left just guessing as to what the most promising low-carbon technology really is.

Interview with Nathaniel Keohane

Nathaniel Keohane is Senior Vice President of the Environmental Defense Fund and former Special Assistant to President Obama for Energy and Environment on the National Economic Council. Below, he argues that the only pathway to future prosperity is a low carbon one, and that carbon pricing, preferably via emissions trading programs, is central to achieving global climate goals.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: The UN climate talks that took place in Madrid last month have been described as a failure. Do you agree?

Nathaniel Keohane: The reality is that the Madrid talks were never expected to be that important. The meeting in Glasgow at the end of this year is more significant, because it will mark

the five-year anniversary of the Paris Agreement, when countries are due to update and ideally strengthen their emission targets. That said, Madrid was deeply disappointing. First, parties were unable to agree on guidance around the use of carbon markets to meet their targets. This issue was already carried over from 2018, and was once again kicked down the road. Second, parties weren't even able to agree on language calling for more ambition in addressing climate change. While such language would have been only rhetorical, the fact that countries couldn't agree to affirm that more ambition is needed was not a good sign. So it's hard to describe Madrid as anything but a failure. It certainly reinforced the sense that we are seeing very little forward progress right now in the UN.

Allison Nathan: So, where are we today in terms of achieving the Paris climate accord's goal of limiting the increase in global average temperatures to below 2 degrees Celsius above pre-industrial levels?

Nathaniel Keohane: We are very far away, and headed in the wrong direction. Although growth in global carbon and greenhouse gas emissions have begun to slow, emissions are still rising. Even if countries met their current targets, we would still be far off the trajectory needed to meet the two-degree goal. Any chance of meeting it will require global emissions to peak in the next decade—the sooner the better—and then get onto a very steep downward path.

Allison Nathan: What is the most efficient way to achieve the required emissions reductions—via policy or markets?

Nathaniel Keohane: Successfully addressing climate change requires both policy and markets. Markets are the most powerful force we have to address climate change, but they won't move towards solutions on their own; private actors by themselves generally won't take into account that emitting carbon dioxide, methane and other greenhouse gases has significant implications for the health of the planet and for current and future generations. As an economist would say, we are dealing with a massive negative externality. So we need policies that harness the power of markets to achieve our climate goals, in particular by rewarding private actors that embrace and deploy low-carbon technologies and develop the new and better technologies that we'll need.

Allison Nathan: What government policies can most effectively achieve this?

Nathaniel Keohane: First, we need policies that put a price on carbon so that the damage to the planet inflicted by carbon emissions can be embedded as an actual cost. This will provide a powerful economic incentive to cut emissions by deploying clean energy, reducing tropical deforestation, decarbonizing industry, and so on. But the price is only a means to an end. We need policies that reflect the end we're trying to achieve: limiting the total amount of pollution that we put into the atmosphere, and ultimately driving it to net zero. It's not enough to just emit less carbon; to stabilize the climate, we have to get to the point where we are taking out as much carbon from the atmosphere as we are putting in. So it's critical that policies establish both pollution limits as well as a price on carbon, which will help steer us towards achieving those limits in the quickest, most cost effective way.

Allison Nathan: So are cap-and-trade systems or carbon taxes more preferable in addressing climate change?

Nathaniel Keohane: We need both a limit and a price on emissions, and there are multiple ways to do that. The advantage of cap-and-trade programs is that, by design, they integrate both; the cap sets a limit on total emissions, and trading emissions allowances within that cap gives rise to a price. This approach has proven successful in the past. The most effective environmental policy the world has ever seen was the trading system Congress put in place in 1990 to address acid rain, which reduced the sulfur pollution that causes acid rain by 86% between 1995 and 2015. And in the climate arena, current cap-and-trade schemes in the EU and parts of the US are leading to lower emissions.

In contrast, a carbon tax by itself only sets a price on carbon—not a limit on emissions. That makes a pure carbon tax less preferable, in my view. But carbon taxes could be structured to incorporate a limit, for example, by including a provision that sets out a trajectory for emissions reductions over time; if that reduction isn't met, the carbon tax would automatically rise.

Allison Nathan: Won't a carbon price high enough to materially reduce emissions risk a political backlash to climate change policies? Can such backlash be overcome?

Nathaniel Keohane: The politics cannot be ignored. We learned that the hard way from the experience of the 2009 Waxman-Markey cap-and-trade bill, which passed the House but failed in the Senate. A key lesson from that experience is that those of us who advocated for the bill focused too much on the mechanism of cap-and-trade and not enough on the outcome—that is, the benefits that addressing climate change would bring for the lives of taxpayers and voters, and for their children's lives.

Today, I think people have become increasingly aware of the damage from unchecked climate change because they actually see it. The Australian wildfires are just the latest example of the extreme weather events that climate change makes more likely. But governments also need to clearly articulate to voters, taxpayers, and consumers what they're getting out of policies to reduce emissions.

Addressing climate change is not only compatible with growth and prosperity—it is essential to it. There is no high carbon path to future prosperity because the impacts of climate change will be devastating to people, to economies and to the planet. A prosperous future is a low carbon one. The policies we put in place and the actions we take now and in the coming years will determine whether the transition is one of high prosperity and better, faster growth—or whether we put the brakes on growth because we waited so long to act.

Allison Nathan: Do we need national climate legislation in the US to really address climate change globally?

Nathaniel Keohane: In my view, the most important and vital step that can be taken to address climate change globally is passing national climate legislation in the US. First, national action drives international action, not the other way around. How far we get under the Paris climate accord will depend entirely on what national and regional governments are willing to do to fight climate change, and this is especially true for the world's largest emitters. Second, while state-level action is important, the US will never be able to reduce its emissions to zero or beyond just by acting at the state level. Finally, American leadership has always been—and remains—vital to this issue given America's historical leadership role in international diplomacy in general, and its place as the largest emitter historically. We've put more carbon into the atmosphere than anyone else. We won't have strong action from China, India and others without acting here at home.

Allison Nathan: Does US national climate legislation require bipartisan support? Is it naïve to think such bipartisan support is achievable anytime soon?

Nathaniel Keohane: For climate legislation to be effective, it has to be durable. That's true for legislation in general, but it's especially true for climate policy that will influence investors' and businesses' decisions about real assets—power plants, industrial facilities, manufacturing plants, and so on—that will last 30, 40, 50 years. In order for those decisions to be made, there has to be confidence that climate policy will remain in place. And the best way to ensure that is to get bipartisan support. So we have to aim for that. Is that naïve? It's certainly challenging, given the current degree of polarization on a whole range of issues, but I think we need to try.

Allison Nathan: In that context, is this year's US election as pivotal as it seems?

Nathaniel Keohane: Without speaking to the election specifically, I will say that time is running out. Another four years or five years of inaction on this issue will set us back even further in terms of both America's emissions trajectory, as well as our leadership in the world.

Allison Nathan: How seriously should we take China's commitment to addressing climate change?

Nathaniel Keohane: Very seriously. China is acting for a set of reasons. First, it needs to solve an air pollution crisis in its cities, which reached a level that threatened the legitimacy of the government. Taking action on climate—for example, by reducing coal-fired power generation—also has clean air benefits. Second, the Chinese government sees an enormous opportunity to lead the world in renewable energy and other clean tech, and climate policy can create a domestic market to help support that. Third, under the Obama administration, China saw leadership on climate as critical to its positioning as a global power. That's less true now, which is one reason to expect that while China will meet the commitments it has already made, it likely won't show much new ambition until we have a US president that's willing to make it a priority.

Allison Nathan: Setting climate policy aside, what is the most productive way for the private sector to engage in addressing climate change today?

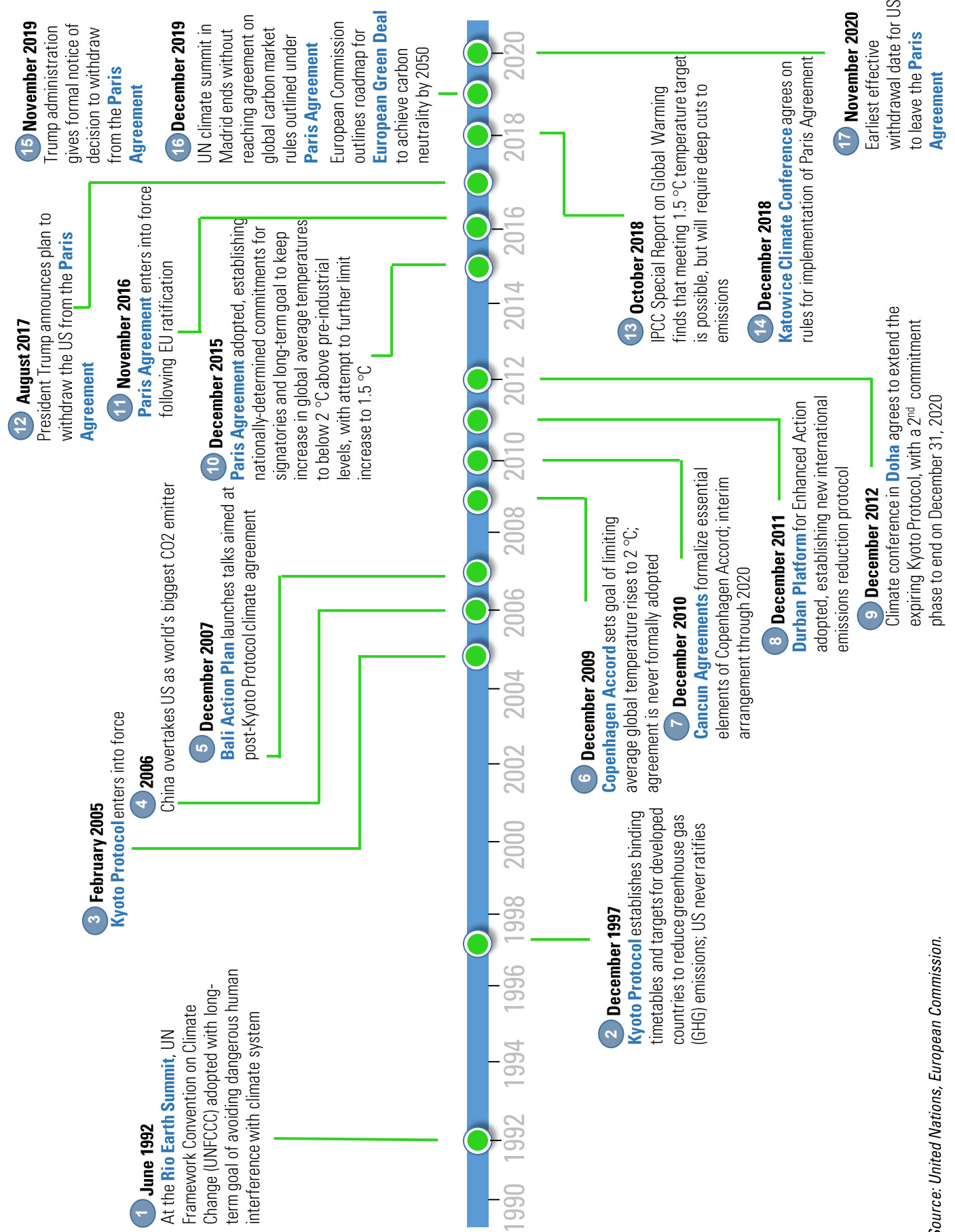
Nathaniel Keohane: I've seen a surge in interest from private and institutional investors that want to play a bigger role in addressing climate change. I think about investor engagement in three buckets. First is investing in technologies that could be part of the solution. There's a whole range of potential technology investments, and we need all of them, from more cost-efficient renewable energy, which is already showing signs of scalability, to carbon capture technologies that are in a more nascent stage, but show substantial promise. Second, investors can divest from fossil fuel-intensive technologies. Coal in particular is a no-brainer: the world should not be investing in new coal-fired power plants, full stop. And, third, capital owners and asset managers can take a much more proactive role in pushing companies to do more on climate both in their operations and their advocacy. So investors should be demanding more of the companies they are investing in.

Allison Nathan: What will you be watching this year?

Nathaniel Keohane: Well, I will be looking to see whether countries bring more ambition to the table when they revise their targets leading up to Glasgow at the end of the year. But I will be even more focused on developments at the national and regional level, which, as I said, will be crucial to driving international action. What will Europe do in the context of its new Green Deal? How will China's roll-out this year of an emissions trading system for its power sector—the world's largest—go? Will Australia respond to the wildfires with new climate policy? At the international level, aside from Glasgow, I'll be following the aviation sector. Starting next year, most international flights will be covered by a cap on carbon emissions at 2020 levels. If that system succeeds, it could be a template for carbon markets globally.

Finally, despite the gridlock at the UN level, there is potential for a coalition of countries to come together outside of the UN process and agree amongst themselves on standards for high-integrity carbon markets. Again, given the importance of establishing a carbon price that will help harness the power of the private sector alongside governments to address the climate challenge, that would be a meaningful step forward.

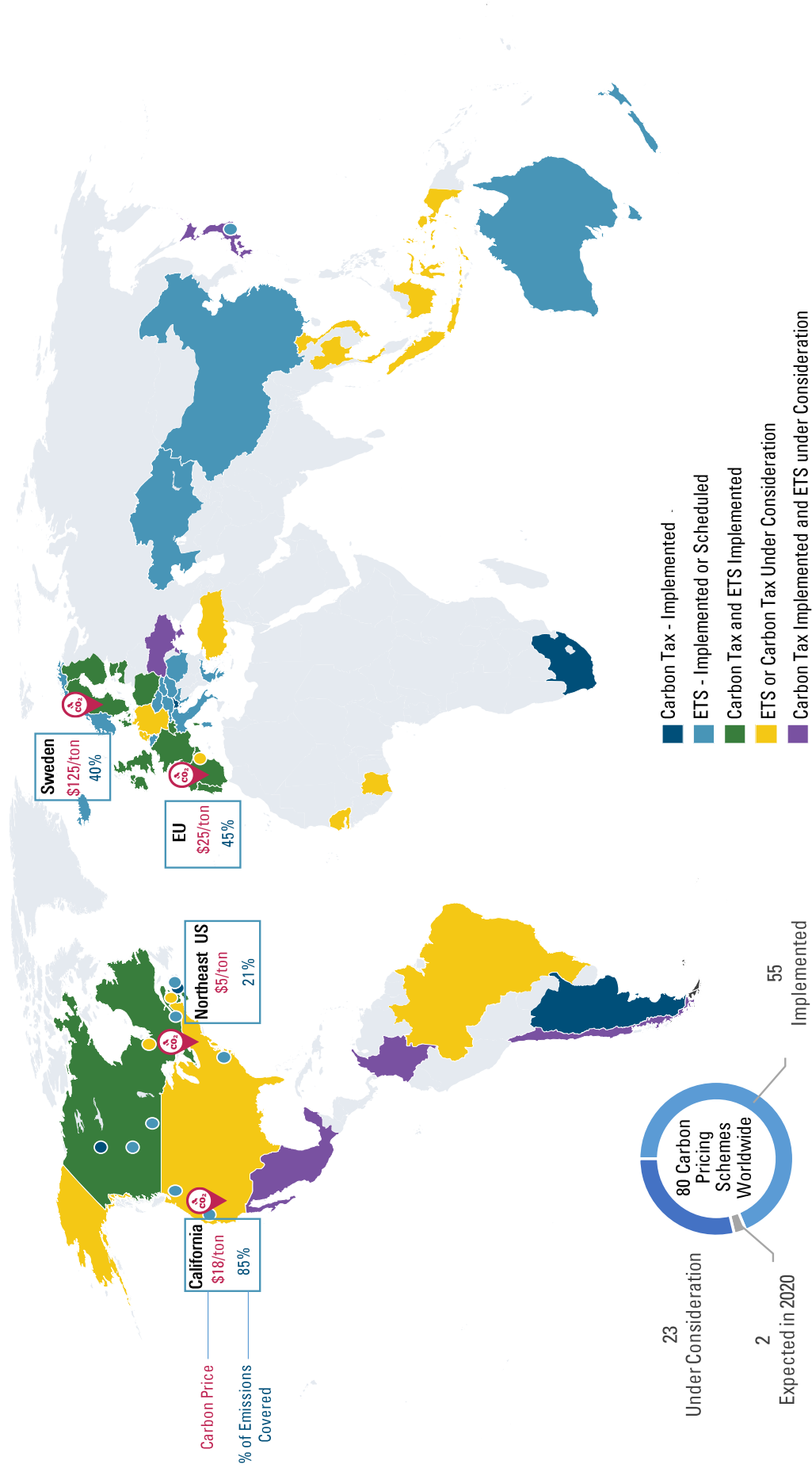
The history of climate policy



Source: United Nations, European Commission.

Carbon pricing today: few and varied

20% of global greenhouse gas emissions are covered under carbon pricing initiatives



Note: Carbon prices may not be comparable among countries, due to differences in sectors covered, allowances distributed, and exemptions applied.
Source: World Bank.

Interview with Steve Strongin

Steve Strongin is the head of Goldman Sachs Global Investment Research and a member of the Board of Directors of Ocean Conservancy, the Jury of World Resources Institute's Ross Prize for Cities, and the Becker Friedman Institute Advisory Council. Below, he argues that while most policy proposals to address climate change today—such as cap-and-trade schemes and emissions taxes—focus on emitters, it's not clear that's where the most efficient solution will come from.



Allison Nathan: Several experts tell us that establishing a price for carbon is essential to start to address climate change. What will carbon pricing actually achieve?

Steve Strongin: Carbon prices can help address climate change in three ways. First, the key to solving climate change is maximizing the amount of carbon

removed from the atmosphere per dollar spent. The only way to motivate people to focus on the most efficient solutions is to pay them per ton of carbon removed, and establishing a carbon price per ton would be the first step in that direction. Second, while most of the current policies and regulations focus on the sources of carbon—utilities, cars and energy producers—it's not clear that's where the solution will come from. Carbon pricing would enable specialization in finding a solution based on who's best at solving the problem—whether that be through different agricultural practices, re-forestation or improved batteries for use in the power sector, etc.—as opposed to who's causing the problem. And, third, a carbon price will facilitate R&D because the most basic element of investing is calculating the present value of what the technology/solution might be worth, and that requires a price.

Allison Nathan: Cap-and-trade programs are often discussed as one of the best ways to establish a carbon price. Do you agree?

Steve Strongin: Perhaps, but not necessarily. The problem with most of the carbon price proposals today is that they essentially assume the answer. The simplest example of that are cap-and-trade schemes. These schemes basically identify a certain set of emissions as the problem, and reducing them as the solution. That may be the answer. But it also may be that those emissions are actually economically efficient, and the solution instead lies in reducing emissions elsewhere or capturing and sequestering carbon. If that's the case, cap-and-trade doesn't necessarily get you the right answer. In general, I think if we continue to try to solve climate change by getting rid of emissions sources one by one—via cap-and-trade schemes, or taxes on emitters, etc.—it's very unlikely to get us the whole way there.

Allison Nathan: Experts often say that the "unleashing of market forces" once we have a carbon price will lead to the most efficient solution to climate change. Is there too much optimism about the power of markets to solve this?

Steve Strongin: There may be. The key to unleashing market forces is setting up conditions that allow people to make money pursuing creative solutions. Case in point, in the 2000s, we were concerned about the concept of "peak oil" and running out

of energy. At the time, there was a similar debate about what technologies were going to solve this problem. As it turned out, we solved the problem, and a large part of the solution was shale oil, which wasn't on anybody's original list of potential solutions; it was discovered because the oil price was high and people were motivated to find an answer.

“The key to unleashing market forces is setting up conditions that allow people to make money pursuing creative solutions to the problem.”

Today, as I said, most of the policy proposals focus on taxing emitters in the utilities and transportation sectors, rather than solving the problem elsewhere. And it's ironic that the places where we've provided the biggest incentives to come up with technological innovation to solve climate change are electric utilities and car companies, which are not typically considered the most innovative sectors of the global economy. So we need to structure the system so that innovations have a chance to happen across the economy. If we can expand the problem in this way, then I am optimistic that market forces will solve it.

That said, I think the bigger problem may be naivety about how simple it will be to establish the conditions that will unleash market forces. You could declare a carbon price tomorrow, but if you haven't learned how to measure carbon emissions from all possible sources, and you haven't figured out how to provide credits for as-of-yet-undiscovered methods of reducing carbon, you haven't unleashed market forces. For example, you'll need to figure out how to think about providing credit for methane reductions, or for plants whose roots decay at different rates, or whatever else people think of.

Allison Nathan: So what should we do next to move in the right direction?

Steve Strongin: If you're going to create the flexibility we need to find a solution, then you have to find a way to pay for it. Solutions that focus on emitters, like a gasoline or electricity tax, are, of course, revenue-producing. But solutions like cultivating natural carbon storage or atmospheric capture and sequestration will require that investors be paid a capture fee. People sometimes argue that revenues from emitter taxes can be redirected as capture fees and cover the costs of motivating investment in other, more innovative solutions. But experience so far with emitter taxes suggests these revenues are too low to completely, or even mostly, cover the costs, and the level of taxes required to do so leads to significant voter opposition. And by that I don't just mean that politicians can't get enough votes for the taxes, but that people actually take to the streets in

opposition, which we have already seen even in countries like France.

Allison Nathan: What could a mechanism that generates enough revenues to finance a solution actually look like?

Steve Strongin: As a practical matter, I think you will end up having to negotiate a funding mechanism at the international level, with the richer countries bearing the majority of the costs initially. You will also need a referee who can certify that a solution is indeed reducing carbon in the atmosphere and is therefore eligible for a subsidy. This would have to be an international organization, probably affiliated with the national laboratories in a number of countries. I think it will be very hard to make real progress without those two things—a funding mechanism and a referee on the international level—so getting those two objectives on the global climate agenda would be a critical step forward.

Allison Nathan: That seems like a very tall order. What if it doesn't happen?

Steve Strongin: You essentially get a version of what we have today, which is lots of small programs in lots of countries that result in different carbon prices around the world. That isn't necessarily a bad starting point. From the standpoint of motivating innovation to solve the problem, having any price at all that people can invest against will create information. And there are ultimately mechanisms like border adjustment carbon taxes, which tax imports and rebate exports for their carbon content, to attempt to account for the differences in carbon values in different places, although measuring carbon content in this way is easier said than done. But when you look at this solution cumulatively, you still have high carbon emissions. You're not going to get to low global emissions without a global program. Without one you run the risk of motivating a shift in activities to places with no or low carbon prices, which would be deeply counterproductive given the extended supply lines, increased shipping times, etc. this would likely imply.

Allison Nathan: If we think about the solutions, the experts often say we'll need everything and the kitchen sink to meet our climate goals. But in practice, is there likely to be a lot of little answers, or a handful of big ones? And if it's the latter, what looks most promising today?

Steve Strongin: The answer is, of course, that there will be a mix of solutions. But in reality, this will likely mean a lot of smaller, low-cost solutions that are cheap—so why not do it—but are difficult to scale, and a handful of more expensive, big solutions that scale to absorb all of the smaller projects that don't work.

As I said, only investment in innovation will determine what those scalable solutions are in the end. But at this point the two

most scalable solutions seem to be related to batteries, which can be put almost anywhere and create efficiencies, and atmospheric capture/sequestration, which potentially encompasses everything from catalytic filters, to living bricks that absorb carbon, to new types of plants and re-forestation. In reality, it's hard to see how economies around the world, and developing economies in particular, will give up cheap carbon fuels that are so critical to transportation and growth, or change dietary habits to reduce emissions, etc. So you have to believe that some form of capture/sequestration will be a potentially big part of the solution.

Allison Nathan: So addressing climate change doesn't necessarily spell doom for the fossil fuel industry?

Steve Strongin: It's easy to assume that addressing climate change means the end of the fossil fuel industry. But two underlying assumptions of that view may not turn out to be true: first, that you'll actually get a global consensus to cap emissions, and second, that that's the right way of solving the climate problem. It may well be that some combination of conservation that reduces emissions and capture/sequestration is the right mix. And if sequestration ends up being a significant part of that mix, then the fossil fuel industry probably exists forever, but not all of it, as different parts of the industry have different carbon intensities. For example, consuming natural gas locally to produce electricity is a relatively low-carbon activity, while transmitting it through home networks that leak releases a significant amount of methane into the atmosphere. Along these same lines, the production of heavy oils is exceptionally carbon-intensive. Having a price of carbon that will draw out these differences will be helpful in guiding where the industry goes from here.

Allison Nathan: Does the big investment cycle that finding a solution ultimately requires mean that addressing global climate change could be net positive for growth?

Steve Strongin: If we solve this problem through classic innovation that results in cheaper, cleaner energy sources and/or atmospheric capture technologies that allow us to aggressively use fossil fuels without negative pollution effects, that could be massively positive for growth. But if we continue to address climate change primarily through conservation solutions that target emitters, the growth implications are more likely to be negative, and the less efficient the solution, the more negative the impact on growth. That's why I think motivating the pursuit of innovative solutions is so critical. As countries get richer, they care more about their environments and can also afford more creative solutions. And if we can find an answer that's growth positive, everyone is better off. If we only incentivize answers that are growth negative, this will become a larger and larger political problem over time, and a more and more disruptive one.

Global problem, local rich solution

Jeff Currie argues that unlike the experience with acid rain in the '90s, the global distribution of carbon emissions and increasing inequality make tackling climate change more difficult

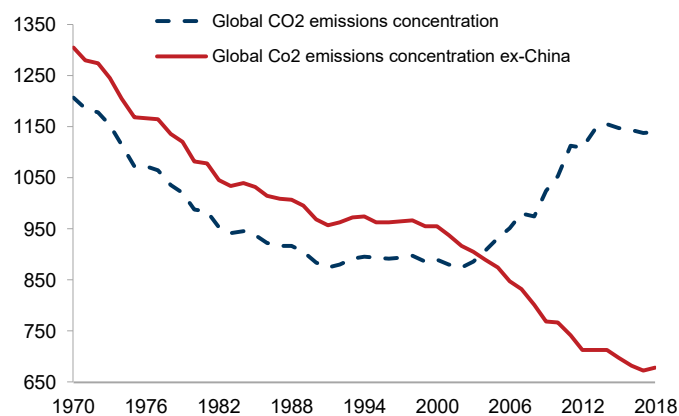
The reduction of acid rain from sulfur emissions in Europe and North America during the 1990s is widely lauded as an environmental policy success. It was the first time market forces were unleashed on a complex, cross border environmental problem that required large-scale investment in new technologies. And it worked; the establishment of a cap-and-trade program for sulfur emissions led to substantial investment in sulfur abatement technologies, and, ultimately a dramatic decline in sulfur emissions that largely eradicated acid rain in the western hemisphere. So, with such a successful blueprint to work with, why has the war on carbon emissions been such a failure?

We believe that the answer lies in the larger and more diverse set of countries involved, increased income inequality and the greater complexity of the problem—the effects of carbon emissions are felt globally long after they are released, they come from a myriad of sources, and are more expensive to abate. Taken together, these three factors have made a market solution difficult to achieve, without which it becomes harder to incentivize the technological innovation that was the basis for success in the war on acid rain.

Acid rain: a more concentrated problem

In 1979, when the treaty that laid the foundation for the war on acid rain was signed, nearly 80% of all sulfur emissions came from NATO/Warsaw Pact countries. This concentration of emissions allowed for an enforceable treaty (unlike the Paris Agreement) under the military alliances of the US and USSR, who were motivated to take the lead because they were hurt by their own emissions.

The concentration of ex-China emissions has fallen sharply



Source: IEA, World Bank, Goldman Sachs Global Investment Research.

Today, the problem is more diffuse—encompassing China, India and Latin America—and a solution for it is therefore more difficult to enforce. While China represents 30% of global carbon emissions, the concentration of emissions beyond China drops sharply, with the US emitting 15%. At the same

time, some of the world's biggest emitters are dealing with even more pressing concerns—China is just now dealing with acid rain. In contrast to the diversity of emissions, 83% of global AUM still resides in the US, Europe and Japan, a concentration similar to sulfur in 1979. As a result, western capital sits at the center of the war on climate change, as political solutions remain elusive.

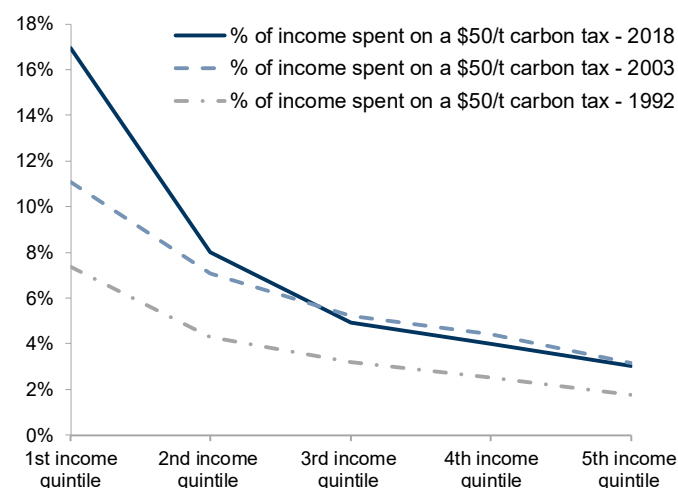
Rising inequality stands in the way of political solutions

Many of the countries at the center of climate change also face a greater level of populism owing to economic inequality and high living costs—tensions that carbon abatement will only exacerbate. The disappointing conclusion of the recent COP25 climate negotiations held in Madrid underscores the problem this poses. COP25 was originally supposed to be hosted by Brazil, but was moved to Chile after the newly elected president rejected it, and then ultimately to Madrid due largely to populist unrest in Santiago. The event itself failed to yield results due to what Australia, Brazil and China felt was unfair treatment of past abatement efforts and expenditures. That three out of the two-hundred participating countries could stall progress points to the deeper coordination problem in the war on carbon versus the war on sulfur.

While climate change and income inequality are often described as two of the largest challenges facing the world today, the underlying politics of these challenges are largely one and the same. In 1979, not only was the source of the problem contained to fewer countries, but income inequality in these countries was lower, particularly in the rich countries where opposition to climate policy is nearly as strong as it is in poor countries today.

Carbon inequality has risen since the 1990's

% pre-tax income spent on a \$50/t carbon tax by income quintile in US



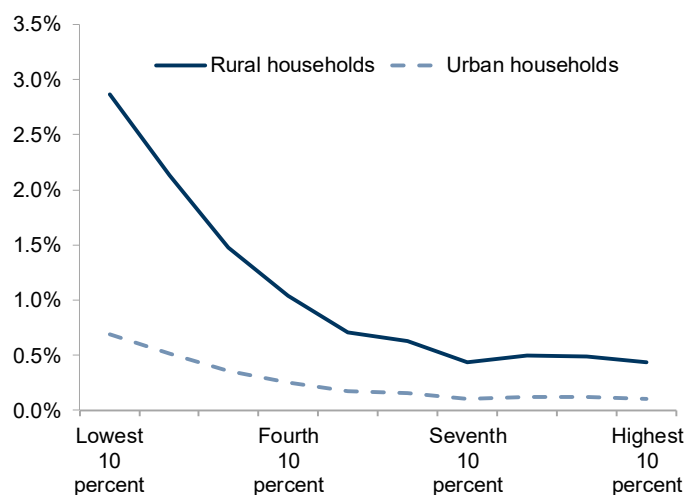
Source: CMU, BLS, CES, Goldman Sachs Global Investment Research.

We estimate that lower-income households in the US will lose two times more income from a \$50/ton carbon tax today than in 1992—while higher-income ones will bear around the same. Further, carbon inequality is more extreme when focusing on the rural and suburban regions where travel by automobile is critical. The share of the US population that resides outside of cities sits at the core of the difference between the US and Europe. In the US, 55% of the population lives in suburbia

while in Europe only 30% do. Like in the US, the rural population in Europe opposes the costs of climate policy. In France, the *gilets jaunes* (yellow vests) protested over a 15% rise in petrol prices, and in the Netherlands Dutch farmers stormed The Hague last October in protest to green policy.

The rural poor spend the most on heating

US urban and rural household spending on heating oil, % of income



Source: CMU, BLS, CES, Goldman Sachs Global Investment Research.

Putting this together, it is simply too expensive for the world's poor to make the appropriate investments required to reach a net zero carbon world. We estimate that achieving net zero emissions by 2050 will cost each person in the US \$4,000/year—assuming the technology works. By definition, conservation without compensation is a regressive tax to the poor. For this reason, progressive taxation solutions that avoid targeting the world's poor need to be at the center of any solution to carbon emissions.

A carbon dividend to redistribute revenues from a carbon tax can offset the cost of abatement for lower-income households and has become part of the climate discussion in the US. But the carbon dividend program currently under discussion would only cover a fraction of the total cost. In other words, current proposals are asking US citizens in low-income, rural households to drive less—even though they primarily drive to get to work—and reduce their heating and cooling demand, which consume a substantial proportion of their income.

Further, policies aimed at cutting funding to fossil fuel companies will only create energy inflation and act as an additional tax on the world's poor. In contrast, the Acid Rain Program (ARP) was a success because it focused on harnessing market forces to abate sulfur using the best available technology. As a result, a low-cost solution was found, which reduced the implied tax on the poor.

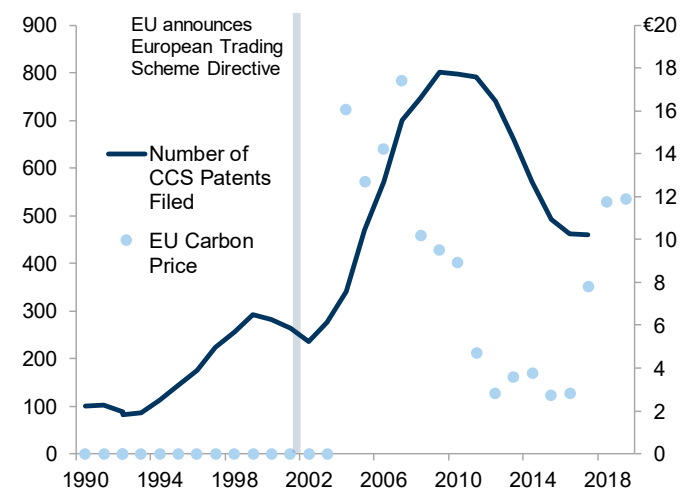
Market-based solutions stimulate technology

But finding a low-cost solution for climate change won't be easy. Pollutants causing climate change come from many sources and are costly to abate. In contrast, the acid rain problem was far more contained, with sulfur pollutants largely coming from coal-powered generation and vehicle emissions, primarily in rich countries. As a result, a cap-and-trade scheme was able to effectively address the problem, targeting sulfur emitters and establishing a price for sulfur that stimulated

investment in sulfur scrubber R&D. Importantly, this investment took place largely outside of the industry. GE/Alstom—not utilities and oil companies—drove innovation in desulfurization while BASF/Englehard—not automobile companies—drove innovation in catalytic converters.

Carbon capture/storage patents surged/faded with CO2 prices

Number of CCS patents filed, total; EU carbon price, euros



Source: EPO, USPTO, IEA, Bloomberg, Goldman Sachs GIR.

In tackling climate change, the EU initially proposed a market-based solution in 2002 using the sulfur dioxide market as a blueprint, which successfully stimulated R&D and innovation. In fact, after real carbon prices peaked in 2008, so did the number of CCS patents. However, once it became clear that the EU emissions trading scheme was not the global panacea initially thought, R&D slowed tremendously.

Even so, these schemes can only be effective when dealing with carbon emissions that come from far more sources and involve far more regions. Without a European carbon border tax to contain these issues, the EU carbon price faced stiff headwinds from the rest of the world and so did R&D. Phase 2 of the trade war will likely need to focus on carbon border taxes if the EU wants to make the Green Deal work.

Carbon capture is progressive, but needs market forces for more R&D

The war on acid rain was successful owing to a combination of a more concentrated and less diverse set of countries involved, less unequal consumption of high-sulfur goods, and the ability to use market forces to address a narrower problem. As the former two are unlikely to be created in the current environment, only progressive solutions where the rich pay for the poor will work in the war on climate change. Solutions that employ carbon capture will also reduce the burden on the world's poor. The technology is still far away, but not too far from where desulfurization technologies were in 1980, which means market-based solutions can still create innovations that help solve the problem, as they did with the war on acid rain. To unleash these forces, rich countries—and especially the rich people in them—will need to come to the realization that if they want to address climate change, they'll have to pay for it.

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Goldman Sachs and Co. LLC

Carbonomics: the future of energy

Michele Della Vigna argues that the capital markets' focus on decarbonization is transforming the energy industry

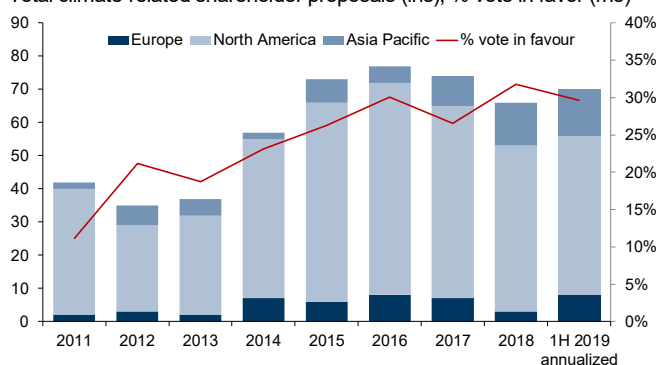
Climate change is re-shaping the energy industry through technological innovation and capital markets pressure. An assessment of the road to decarbonization suggests a substantial need for technological innovation to reach net zero emission goals (see pg.15). Capital markets are taking a leading role in financing this energy transition while tightening financing for hydrocarbon assets. A new Age of Restraint on hydrocarbon developments is driving consolidation in the oil & gas industry, which, in turn, is likely to lead to a halt in non-OPEC supply growth, higher energy prices and increased profitability of Big Oils. These shifts should enable Big Oils to become part of the solution—rather than the problem—of climate change.

Growing investor demand for decarbonization...

Over the past eight years, investors have taken an increasingly active role in pushing corporate management to incorporate climate change into their business plans and strategy. The number of climate-related shareholder proposals has almost doubled since 2011, and the percent of investors voting in favor of such proposals has tripled over the same period. This investor pressure has a clear bias towards energy producing firms. Data from ProxyInsight shows that 50% of shareholder proposals target energy producers with a further 10% targeting financial institutions that lend to energy producers. As a result, financing conditions have tightened across the hydrocarbon industry, leading to a new age of capital constraint that's driving structural changes in the industry.

Capital markets are taking center stage in climate debate

Total climate-related shareholder proposals (lhs); % vote in favor (rhs)



Source: ProxyInsight, data compiled by Goldman Sachs GIR.

...leading to a new age of capital restraint and underinvestment in oil

The onset of this Age of Restraint marks the end of a period of oil & gas revolutions that saw substantial industry fragmentation, resource expansion and cost inflation, all fueled by cheap financing. Specifically, the period between 2004-16 saw two oil & gas revolutions. The first one (2004-13) was driven by National Oil Companies (NOCs) that deployed their growing balance sheets towards rapid international expansion via a combination of exploration and M&A activities. The second one (2009-16) was led by US exploration & production (E&P) companies, unlocking 100+ billion barrels of US shale oil.

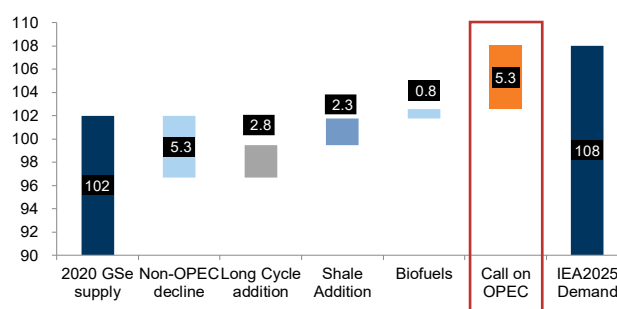
Since 2014, however, tighter financial conditions have raised barriers to entry while increasing the equity risk premium on new long-cycle developments, leading to a more concentrated industry with higher returns and lower volume growth. A small group of companies (the "Seven Sisters") emerged as the structural winners, continuing to invest in new projects consistently through 2014-19. As a result, Big Oils doubled their market share in long-cycle projects and US shale oil over this five-year period and re-established the attractive returns that were lost during the oil & gas revolutions of the 2000s.

The end of non-OPEC growth is near

At the same time, under-investment in the oil sector resulting from the higher financing costs and industry consolidation is now set to end a decade of credit-fueled shale oil hyper-growth, with higher decline rates/slowing productivity improvements in shale oil reinforcing the slowdown. This, combined with a thinner pipeline of mega long-cycle projects, leads us to expect that non-OPEC oil production will stop growing from 2021, providing upside risk to energy prices.

Underinvestment means end of non-OPEC growth by 2021

Key drivers of oil supply growth over 2020-25E, million blpd



Source: IEA WEO 2018, Goldman Sachs Global Investment Research.

From Big Oil to Big Energy

The restoration of profitability to Big Oils is leading them to a position where they can leverage the higher returns from their traditional oil & gas businesses to foster innovation and investment in their transition towards Big Energy. Indeed, Big Oils have shown a tremendous ability to adapt to technological change in their 100+ years of history, and have many tools to drive a low-carbon transition toward cleaner energy providers, including a deeper presence in the global gas and power chains through retail, EV charging and renewables; biofuels; petrochemicals; improved upstream and industrial operations; nature-based solutions and carbon capture.

In these ways, [we believe](#) that Big Oils can transition to Big Energy while improving corporate returns and renewing value via greater scale and integration. We estimate that this transition has the potential to lead to a 20%+ reduction in Big Oils' greenhouse gas emissions (GHG) by 2030—consistent with the global ambition to contain global warming within 2 °C—and to Big Oils becoming part of the solution, rather than the problem, of climate change in the coming decades.

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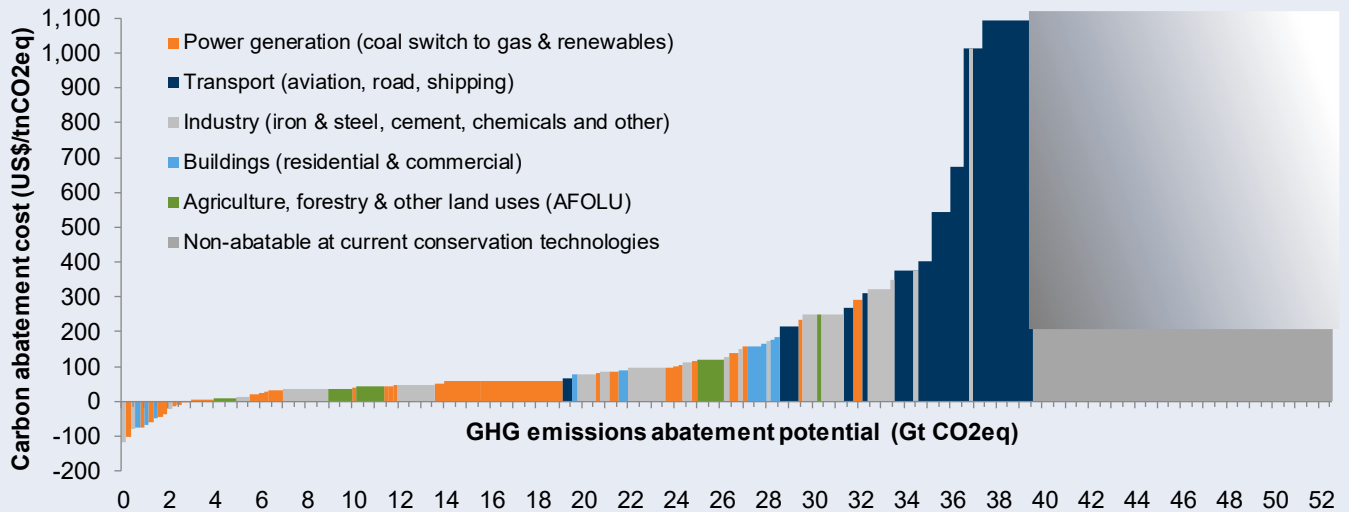
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Carbonomics: the cost of decarbonization

In our recent [Carbonomics](#) report, we constructed a carbon abatement cost curve for conservation technologies that are currently available at commercial scale across key industries globally: power generation, industry, transport, buildings and agriculture.

The cost curve is steep, with large investment opportunities in low-cost areas, particularly in power generation, but rapidly rising costs at higher levels of decarbonization. At the current costs of commercially available CO₂-abatement technologies, we estimate that around half of current anthropogenic greenhouse gas (GHG) emissions can be abated at an implied CO₂ price of less than \$200/tnCO₂eq (ton of carbon dioxide equivalent). Carbon prices of less than US\$100/tnCO₂eq would transform the power generation industry from carbon-intensive fuels (coal and oil) to cleaner alternatives (gas, solar, wind), but would have little impact on mobility, industry or buildings, excluding technology-specific incentives. Most notably, we estimate that roughly a quarter of total current GHG emissions are not abatable under currently available large-scale commercial technologies.

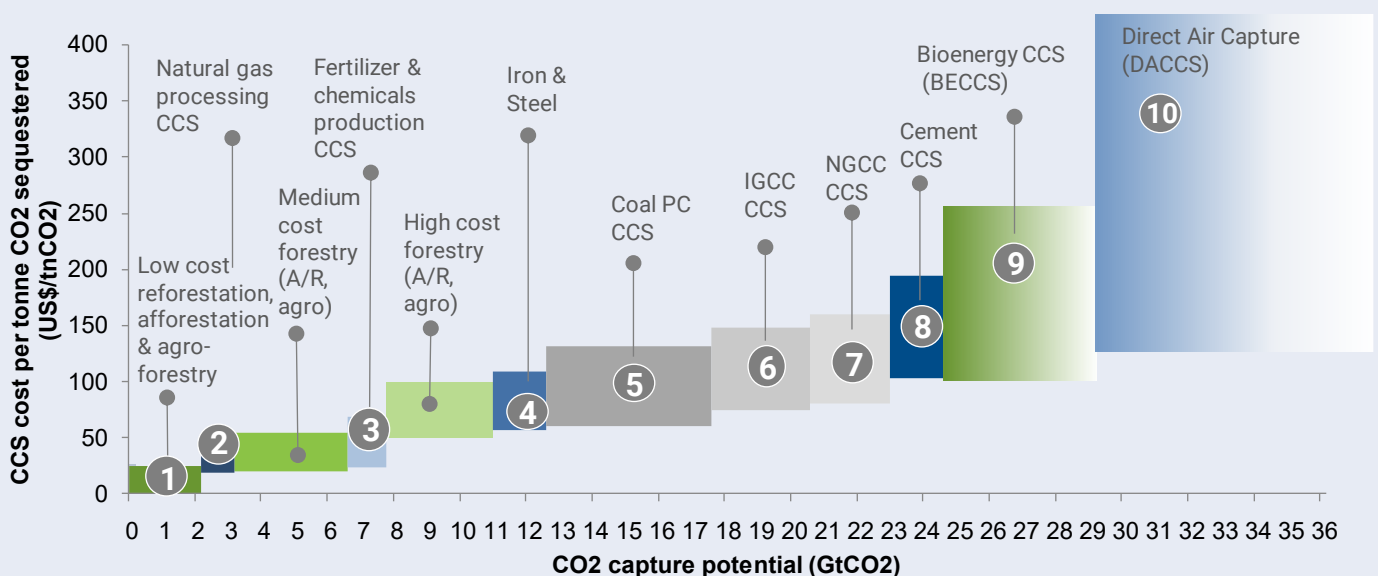
Plenty of low-cost emissions reduction opportunities, but steepening beyond the 50% mark



Source: Goldman Sachs Global Investment Research.

Further technological innovation and greater investment in sequestration technologies will therefore be required to achieve net zero carbon emissions. Carbon sequestration technologies, which capture or reduce CO₂ emissions that are already in the atmosphere, have seen a revival in recent years, but they have not yet reached the large-scale adoption and economies of scale that traditionally lead to a breakthrough in cost competitiveness, especially when compared with other CO₂-reducing technologies such as renewables. Part of the challenge is that direct air carbon capture and storage (DACCS) technologies have highly uncertain economics, with estimates ranging between \$40-400/ton (at scale), and only small pilot plants currently in operation. Investments in carbon capture, utilization and storage (CCUS) plants over the past decade have therefore been less than 1% of those in renewable power. The importance of DACCS lies in its potential to be almost infinitely scalable and standardizable, which could ultimately position it as a carbon price setter in a net zero emission scenario.

Carbon sequestration: a silver bullet?



Source: Global CCS Institute, Goldman Sachs Global Investment Research.

Michele Della Vigna, GS Head of Energy Industry Research

The European Green Deal: a €7tn plan

Alberto Gandolfi argues the Green Deal could reshape Europe's power sector and economy

In December 2019, the European Commission outlined a roadmap for the "European Green Deal," committing to publish a comprehensive set of policies to reach net zero carbon emissions by 2050. We estimate that this plan—which is unprecedented in size and ambition—could amount to €7tn of cumulative spending split between investments and subsidies over that time period. The Green Deal is likely to reshape the entire European economy, changing the way we generate electricity, heat our homes, travel, and could even go as far as impacting diets and spending habits.

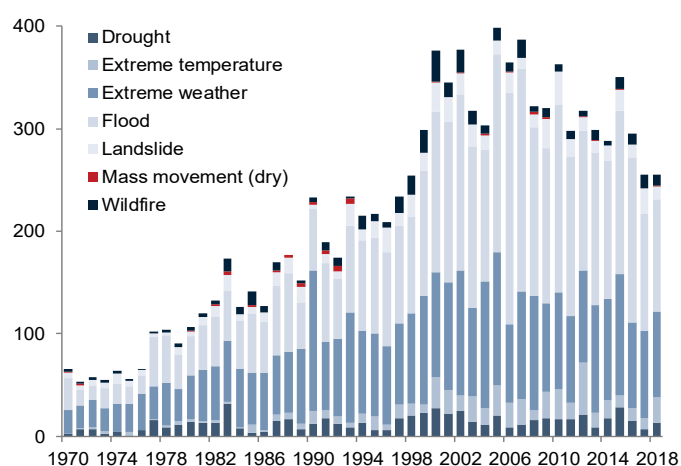
European Utilities will be at the forefront of this monumental transformation, likely undertaking most of the Green Deal investments, which account for about half of the plan's expected spending. This is set to kick off an era of earnings growth and regulatory stability [for Utilities], thanks to a combination of secular growth in infrastructure activities (renewables and networks), higher power demand and lower-for-longer funding costs (e.g. through green bonds). We believe the resulting strong visibility on capital allocation and returns will support a sustained re-rating for the companies most exposed to these trends—"Climate Champions."

Why a Green Deal?

During 2019, public awareness about climate change increased substantially, in large part fueled by a spike in weather-related natural disasters such as the wildfires in California, the Amazon and Australia. Indeed, these events are symptomatic of a broader trend of a rise in the incidence of weather-related natural disasters by roughly 350% since 1970.

Extreme weather now more common

Global number of reported weather-related natural disasters



Source: International Disaster Database, ourworldindata.org, GS GIR.

To address increased political focus on environmental issues, the new European Commission, which took office in November 2019, made climate policy central to its agenda. It has committed to a comprehensive set of measures that will culminate in a tightening of 2030 emission reduction targets and the adoption of a climate neutrality ("net zero carbon emissions") target by 2050 through a European directive currently planned for the first half of 2020. Thereafter, the Commission plans to adopt further sector-specific measures to

address the need to reduce emissions in non-energy sectors, including transport, heating and farming.

A €7 trillion investment opportunity

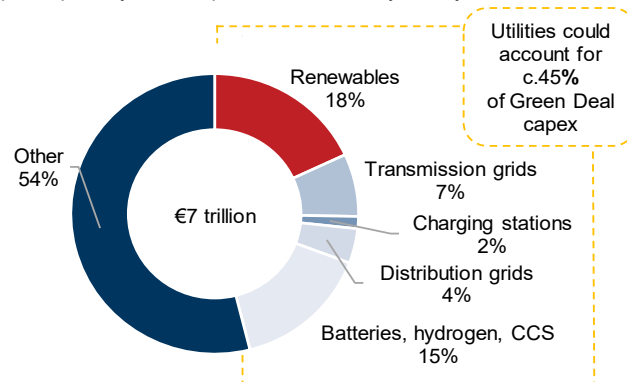
We estimate that the Green Deal will stimulate around €7 trillion in investments—or roughly €230bn per year for thirty years—with major repercussions across the entire economy. Specifically, we identify the following key areas of investment:

- **The electricity system: €2.4tn.** We estimate that €1.3tn will be needed to fully decarbonize the power mix through substantial deployment of wind and solar. To integrate the more volatile output profile of renewables compared to existing technologies, as well as to accommodate higher demand from electrification, €500bn and €300bn will have to be invested in high voltage (transmission) and low voltage (distribution) grids, respectively. A further c.€300bn will be needed to build a sufficient charging network to enable a shift to electric mobility.
- **Heating: €1.8tn.** We estimate that over €1.6tn will be needed for insulation and energy efficiency improvements to buildings while over €100bn will be required to incentivize the substitution of gas boilers with heat pumps.
- **Electric mobility: €1.7tn.** We estimate that roughly €1.2tn and €500bn of incentives will be required to finance the full decarbonization personal cars and public/commercial road transport (buses & trucks), respectively.
- **New technologies: €1.2tn.** This will include the development of hydrogen (power-to-gas) infrastructure for seasonal energy storage, the widespread adoption of lithium-ion grid-level batteries to modulate renewable output and stabilize short-term S&D imbalances, and the installation of carbon-capture facilities (CCS) in industries where emissions cannot be fully avoided.

We estimate that Utilities could account for nearly 45% of Green Deal-related capex, or around €3tn through 2050. Investments would span from developing renewables, to upgrading power networks, to deploying batteries and building fuel cells (hydrogen-based power plants) and fitting gas plants with CCS technologies.

A boon for utilities investment

Capex implied by the European Green Deal, by activity

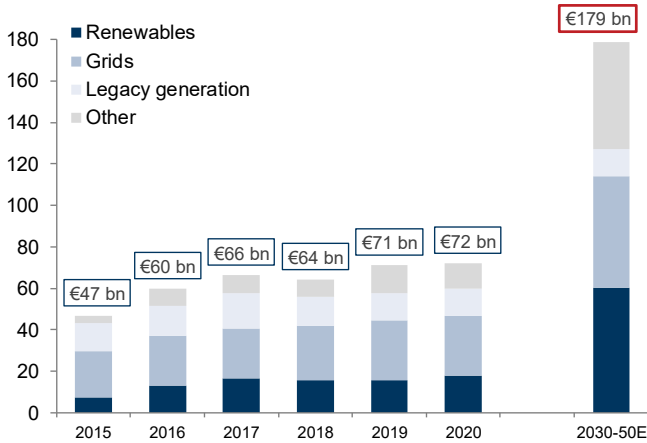


Source: Goldman Sachs Global Investment Research.

Climate spending could more than double annual investments for European Utilities compared to the current run rate of just under €80bn to about €180bn per year. We expect broadly two-

thirds of this capex to be directed at infrastructure activities, such as the construction of renewables and power networks.

Utilities capex could more than double to €180bn a year
Aggregate annual sector capex by activity, €bn



Source: Company data, Goldman Sachs Global Investment Research.

Favor the "Climate Champions"

The upgrade in capex and growth would be particularly relevant for a subset of companies—"Climate Champions"—that enjoy vast exposure to renewables and power networks.

Given the growth visibility that Green Deal policies will provide, and in light of the growing importance of scale to safeguard returns, we expect the relatively fragmented global renewables market—where the top 10 firms account

for only about 15% of market capitalization—to start consolidating. In Europe, this trend should be particularly pronounced due to the European Commission's stated intention to relax antitrust laws to support the leadership of European companies on the global stage.

Net zero feasibility: a difficult "last mile"

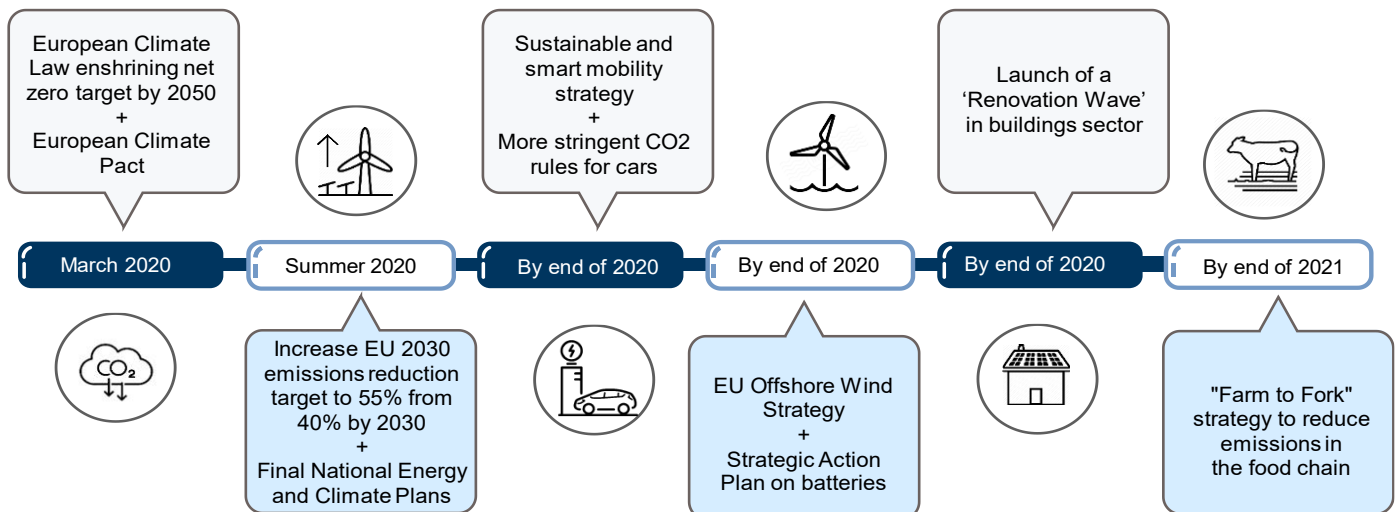
While an 80% reduction in emissions by 2050 should be feasible (largely through electrification and a complete decarbonization of the power mix), and 90% could be achievable (e.g. through an extensive adoption of hydrogen as feedstock in industrial processes), achieving the last 10%-20% might prove difficult, for three reasons: (1) this "last mile" would be more expensive as it would have to rely on less mature technologies such as carbon capture sequestration or hydrogen/fuel cells, while yielding a lower marginal gain in terms of emissions avoided; (2) for global exporting industries, the costs related to emissions reductions (e.g. carbon levies, carbon capture equipment) might lower competitiveness, hurt profitability and have negative implications for employment; and (3) cost inflation on carbon-intensive habits, such as car usage and red meat consumption, could disproportionately affect the spending power of the lower income brackets of society, creating possible political and social hurdles to additional emissions reductions.

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Goldman Sachs and Co. LLC

The EU's path to "net zero"



Source: Goldman Sachs Global Investment Research.

Interview with John Goldstein

John Goldstein is head of the Goldman Sachs Sustainable Finance Group. He shares his observations and advice about ESG integration strategies for investors and corporates.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs Research.



Allison Nathan: How have you seen growth in ESG investing evolve?

John Goldstein: I think my own story is a good illustration of the magnitude of growth in ESG investing. I co-founded a small, dedicated ESG and impact investing firm—Imprint Capital—in 2007, which went from being a very small firm to a somewhat small firm over the course

of about eight years, initially working with large US foundations and then with financial institutions. In 2015, one of those institutions—Goldman Sachs—endeavored to buy us rather than become one of our clients. And so our \$550 million asset manager became a part of Goldman Sachs Asset Management, and, over about four years, what was initially a combined \$3 billion in ESG assets grew to north of \$60 billion today.

Alongside this growth in ESG strategies has been substantial evolution of them. In general, they have become both broader and deeper; strategies that were once centered in active equities moved into passive equities, then fixed income, and, most recently, private equity. And what started as simplistic negative screening of companies you don't want to own has transitioned into the creation of highly thoughtful portfolios across a range of public and private assets to manage climate risk. Finally, as the sophistication of these strategies has grown, so has engagement across different types of investors. Case in point: hedge funds used to be on the periphery of ESG investing, but interest from the hedge fund community has surged in the last 6-12 months.

Allison Nathan: Why now for a surge in interest in ESG investing?

John Goldstein: As Goldman Sachs CEO David Solomon put it, it's largely the confluence of urgency and economics. Events like the wildfires in Australia have provided a sense of urgency to the issue because they're visible in a fundamentally different way than they've been historically. That alone arguably wouldn't be enough to drive the growth in interest we're seeing. But on top of that, we've seen the economics evolve in a way that has strengthened the business case for ESG investing. For example, renewables are now the lowest cost form of new energy in many parts of the world, and comprised more than 70% of new power generation capacity last year. That is a seismic shift from where we were even 10 years ago.

We've also seen a new breed of practitioners and firms focusing resources on ESG integration. And as more and better products and services enter the market, and investors can implement those strategies with greater degrees of sophistication, success begets success; so we've seen somewhat of a virtuous cycle take hold.

Allison Nathan: That said, the original grounding of ESG investing in ideology has tended to make investors skeptical of these strategies. What's your response to critics who argue that ESG investing is just a passing fad? Is there a durable investment rationale for it?

John Goldstein: There is often a preconception that these strategies are an ideological pursuit, which I find typically leads to two groups of investors—those that are too apt to love them, and those that are too apt to hate them. But the key is to clear out these preconceptions and treat ESG like any other investing question, which requires forming a clear investment thesis. In my view, this thesis revolves around the recognition that the world is changing, which is leading to new drivers of returns, risk and efficiency. Take renewable power; for some companies, it drives growth—which is really about revenues. For other companies, it reduces risk—which is really about minimizing losses or drawdowns. And for still others, it lowers energy expenses—which is really about margins. Any one of these levers can provide a clear investment thesis for ESG integration. So today, the business case is fundamentally different and stronger. That, along with more sophisticated products that enable crisper execution, substantially bolsters the investment rationale for ESG investing.

Allison Nathan: Where should investors that are just beginning to think about ESG integration start? How should they think about some of the resources available, like third party ratings, and what are best practices in terms of organizing a team around ESG integration?

John Goldstein: In terms of where to start, again, number one is to approach the ESG discussion as an investment discussion and have an investment thesis. There's no one magical thesis, but have a thesis that makes sense relative to your broader strategies. As investors are finding their footing, data like external ratings can be a useful starting point. But I think it's important to see them as an input, not as an answer—similar to a credit agency rating. Investors should have a clear understanding of what these ratings are and where they come from; generally, they are the result of scraping lots of data, some of which is about performance, but much of which is about whether companies have policies and make disclosures, which are weighted in various ways. So use these ratings to begin your process, not end your process, and consider them in the context of sector and industry specific views and data, some of which may already exist in your organization.

To that end, while there is no one right answer in terms of team organization and staffing, we've generally seen that hybrid approaches that have both PMs/analysts with deep sector expertise/portfolio construction know-how as well as a dedicated ESG resource that can provide extra support to the investment process strike a useful balance; this type of approach avoids putting ESG expertise in a silo but is also realistic about what it takes to add new knowledge and capabilities to an organization.

Allison Nathan: It's tempting for new investors to focus on ESG funds, but many well-known ESG companies look very highly valued today. Is there an ESG bubble today?

John Goldstein: I think that's probably too strong of a phrase. Like any investment story, as ESG becomes better understood and more widely practiced, the bar for adding value rises. That's

how it should be, and ESG is no different. But as the conviction in their stories rises, valuations can continue to rise. So some of the companies with seemingly high premiums today could continue to skyrocket. That said, investors will likely be rewarded for having differentiated insight on which names really have an exciting trajectory, and which ones don't.

Allison Nathan: So where can investors find value today?

John Goldstein: That answer is constantly changing; what's interesting at one point can quickly become less interesting. But, generally speaking, in both public and private markets, the key is finding stories that have graduated from being nascent, high risk and capital intensive, but are not yet flooded with capital, either because the market hasn't yet realized that they've reached this stage, or hasn't yet figured out how to access them. One strategy we've seen to tap into this space is buying mediocre ESG companies that want to be great. Other strategies target companies whose sectors are in significant flux, but have the potential to transition into successful businesses amid these shifts. And, in some cases, we've seen investors, such as hedge fund activists, looking to partner with companies who want to go through that transition. These all take work, but the market usually ultimately rewards such efforts. Sweat and complexity are often ways to make money.

“The key is finding stories that have graduated from being nascent, high risk and capital intensive, but are not yet flooded with capital, either because the market hasn't yet realized that they've reached this stage, or hasn't yet figured out how to access them.”

Allison Nathan: What about credit strategies, and green bonds in particular?

John Goldstein: Green bonds are a useful tool for both investors and companies in signaling a commitment to green priorities. For investors, this is a relatively straightforward proposition; for basically the same return, investors can reflect a green agenda in their portfolios. For companies, a bit more work is required in terms of having to actually issue green bonds, segregate the use of proceeds and provide accounting for them. And this work does not generally materially benefit their risk profile. But companies derive the benefit of diversifying their investor base in a constructive way and signaling to employees, shareholders and customers a green direction for their firm.

That said, a new green bond framework that Goldman Sachs helped Italian utility Enel implement serves as an intriguing example of the even deeper economic proposition of making companies accountable for results. The bond is structured without segregated proceeds—so that the company can spend the revenues in any way it wants—but with covenants that require the company to reach 55% installed renewable capacity by the end of 2021, or face a 25bps per annum increase in the interest rate it pays on the bond. In my view, that structure provides an interesting proposition for everyone involved. For Enel, it sends a

very clear signal to the market about the seriousness of its commitment to green objectives, which ultimately helped it save a material amount of money on the well-subscribed issuance. And for investors, the structure provides clarity on the company's green agenda, allows investors to pay the company for performance and to get paid themselves if the company fails to deliver. I think we'll see more of this type of innovation that enhances the value proposition of some of these instruments going forward.

Allison Nathan: What regulatory changes do you see coming down the pipe that investors should be aware of?

John Goldstein: The first change to be aware of is a fairly extensive set of regulations coming from the European Union on sustainable finance taxonomy. This was initially designed to help avoid greenwashing, and is set to include regulations about what counts as sustainable finance, which will apply to products from asset managers, as well some products from banks and insurance companies. Although it's tempting to dismiss these regulations because they will only take effect in Europe, of course, US companies have a substantial amount of investors that are based in Europe, and many US asset managers market products in Europe. And I think other countries are watching Europe to see what they can learn, and potentially emulate.

The second change is a softer form of regulation that may become less soft over time. The Task Force on Climate-Related Financial Disclosures (TCFD), which is a network of central banks around the world, is coalescing around a disclosure standard for a wide variety of companies and financial market participants to better document, understand and manage climate risk.

And the third change is a broader push for companies to have better data on fewer things that matter more. Some of that is embedded in the sustainability accounting standards board (SASB). Although none of these changes are imminent, market participants are already beginning to focus on them, and trying to get ahead of them, which will likely bring forward the timing of their impact.

Allison Nathan: You speak to a lot of corporates in addition to investors. What are you hearing from them, and what's your advice for them?

John Goldstein: Corporates are feeling the pressure for more ESG engagement on all sides. The demand for ESG data points has exploded; one CFO recently told me she had been asked for 2,000 different ESG data points in the last year. But even beyond these data requests, shareholders, employees and business partners are all clearly signaling to corporates the growing importance of these issues, which is coming through to them loud and clear.

My advice to corporates is, understand the scrutiny you're under and be sensible about that; know your ratings and be thoughtful about them, but also don't chase your tail. Focus on having a strong core business strategy, a compelling story behind it, and metrics that reinforce it. In short, when thinking about ESG integration do what you strive to do every day: run a good business, have a good strategy, execute well and communicate thoughtfully.

Q&A with Derek Bingham

Derek Bingham, Americas head of GS SUSTAIN, answers key questions about ESG investing

Q: How is ESG investing defined?

A: ESG investing can mean a lot of different things. The exclusion of firms from portfolios is probably the oldest and best known variety, but the greater trend in recent years has been toward a broader definition of “ESG integration,” including using ESG as a risk management tool across sectors, as well as recognizing opportunities inherent in sustainable business practices and products.

Q: What’s driving demand for ESG investing?

A: The demand is primarily coming from clients that are increasingly requiring asset managers to demonstrate ESG credentials and principles in order to win mandates. Status as a signatory to the Principles of Responsible Investment (PRI) is generally well regarded, as is a program of corporate engagement. Beyond client demand, other catalysts for the increasing adoption of ESG include capital markets regulation, corporate sponsorship, and asset managers’ search for differentiation and alpha through emerging ESG strategies/data.

Q: Are investors more focused on the E, S, or G today?

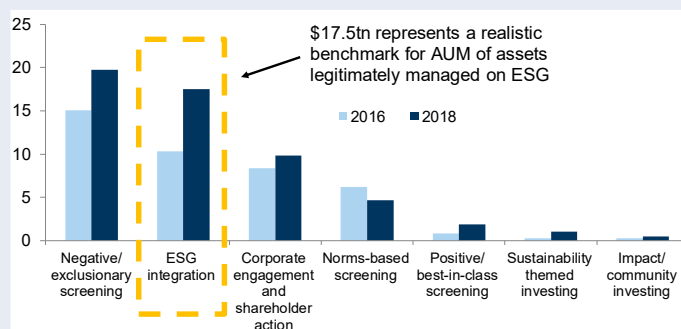
A: There are always focal issues in each category at any given time, and the emphasis will vary by sector and by company. However, environmental considerations seem to be receiving the greatest attention from both asset owners and managers today. This includes a search for companies with smaller emissions footprints, mitigation solutions, and an active dialog about the ‘investability’ of the traditional Energy sector.

Q: How big is the ESG investment market today, and how fast is it growing?

A: Growth in sustainable assets, a broad category of investments that consider ESG factors in portfolio selection and management, increased by 34% between 2016-18 to \$30.7tn globally in 2018—up from a 25% increase between 2014-16—according to GSIA. From that total, negative/exclusionary screening accounted for \$19.8tn AUM, up from \$15.1tn in 2016. However, ESG integration has delivered the largest absolute increase in assets, growing \$7.2tn (a 30% CAGR) since 2016. Sustainability-themed investing has seen the fastest levels of growth from a smaller base, rising to \$1tn in 2018 from just \$276bn in 2016, a CAGR in excess of 90%.

ESG AUM has risen substantially in recent years

Total assets incorporating ESG by type, including double counting; \$tn

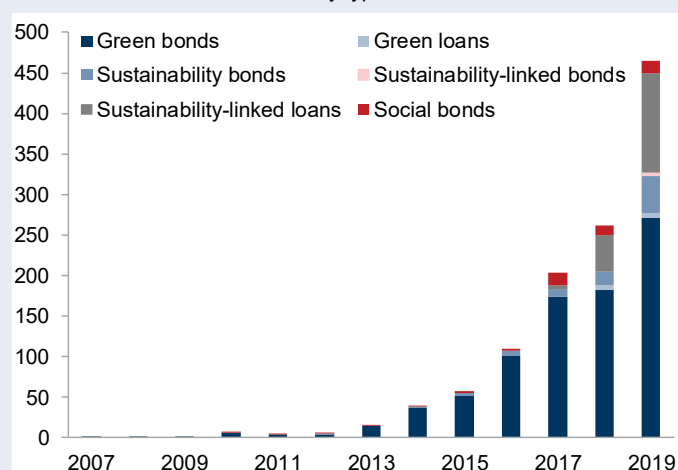


Source: Global Sustainable Investment Alliance, Goldman Sachs GIR.

The market for “green finance”—bonds earmarked for specific ESG-related purposes—is also expanding. Green bonds, first issued in 2007, have seen accelerating issuance, with over 18x growth from 2013-2018. Europe has largely led the increase, although North America and Asia have been closing the gap more recently. Liquidity appears to be slightly worse for green bonds than for comparable conventional bonds, potentially a result of the larger buy-and-hold investor-base for these securities. A host of related products (green loans, sustainability bonds, social bonds) have also begun to see rising issuance in recent years.

The market for “green finance” is expanding rapidly

Total sustainable debt issuance by type, \$bn



Source: Bloomberg New Energy Finance, Goldman Sachs GIR.

Q: Are data/metrics sufficient to support ESG investing?

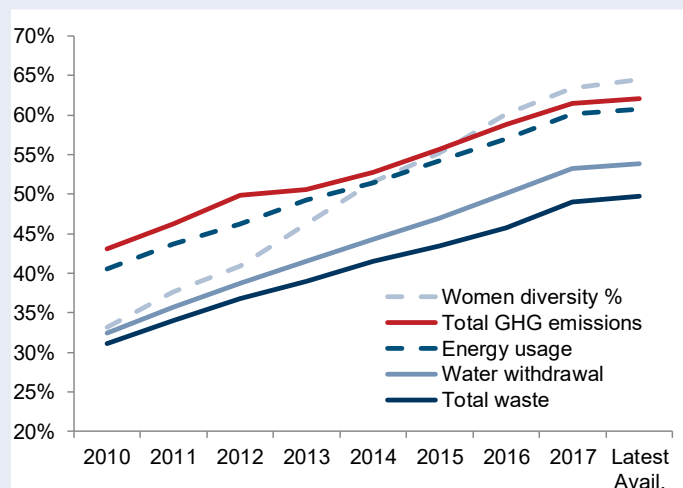
A: Generally speaking, yes. On the environmental side, data related to waste and emissions are available (e.g. metric tons of waste generation and scope 1 & 2 GHG emissions), and disclosures on companies’ resource usage, such as power and water, is relatively robust. On the social side, data relating to human capital, including employee health & safety (e.g., injuries and fatalities) as well as talent attraction & retention (e.g., compensation, turnover, diversity, training, etc.) is plentiful. Relevant ESG topics will vary by sector, and so will the available data, which is commonly disclosed in companies’ annual reports, sustainability reports and on corporate websites. Most of the best-known financial data providers are also now collecting and offering ESG indicators.

In terms of corporate disclosures specifically, significant data challenges remain, but disclosures for global (MSCI ACWI) constituents have climbed steadily from the 30-40% disclosure range 8 years ago to the 50-60% range today across many of the most widely cited metrics mentioned above. Focusing on metrics that are most material by sector, the disclosure picture looks even better. For example, latest GHG emissions disclosure among global Chemicals firms in the ACWI is 83%. For global Airlines it’s 86%. Disclosure of energy usage in the Steel sector is 75%, as is disclosure of water withdrawal by global Miners.

In cases where material ESG exposure is hard to measure, disclosures are insufficient, or good metrics are not available or only tell part of the story, there are other useful data sources, including regulatory sources, conventional or social media feeds, and specialized third-party databases, etc., which could increasingly complement the ESG mosaic.

ESG disclosure is marching higher

Average disclosure rate for MSCI ACWI constituents, %



Source: Bloomberg, Thomson Reuters, Goldman Sachs GIR.

Q: How should I think about third-party ratings, and which are most useful?

A: Third party ratings, such as those from MSCI and Sustainalytics, often serve as a starting place for investors beginning to integrate ESG considerations into their investment processes. These raters offer aggregated scores combining a large set of company-reported metrics and policies, as well as some estimates. Generally, as active investors become more comfortable with analyzing ESG data, they move towards developing their own methodologies based on a more focused subset of metrics identified as financially material. This evolution offers a pathway for ESG-integration to serve as a differentiating factor for active investors.

Q: Won't incorporating ESG considerations hurt investment performance?

A: Not necessarily. Our work [has indicated](#) that using a sector-relative approach, companies with better metrics on material, environmental and social factors have tended to outperform. This makes sense intuitively. Companies better positioned to take advantage of ESG-related demand trends will see it on their top line, while companies that operate more efficiently, effectively and with better regulatory relations should see cost benefits. Setting aside whole sectors introduces benchmark risk, but alternate or custom benchmarks can be substituted (carbon-free benchmarks, for example) for those wishing to express particular ESG-related views into their portfolios.

Q: How can I spot "greenwashing" by corporates?

A: Greenwashing comes in many forms and is not always black and white. Generally speaking, companies touting environmental and sustainability (E&S) accomplishments that are materially removed from the operational or product impacts

of their business could be scrutinized for this practice. Reporting that heavily favors disclosure of policies rather than measurable performance metrics or quantitative targets is another red flag. As investors gain conviction in what they feel are material E&S factors for a given business, they will more easily be able to identify greenwashing.

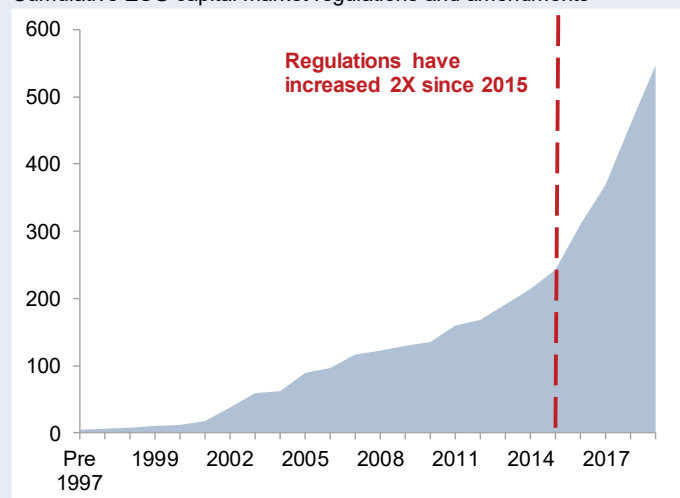
Q: What other pitfalls should investors be aware of?

A: Somewhat related to the topic of greenwashing, a common pitfall is giving too much credit for ESG disclosure alone, or penalizing companies for non-disclosure. Our research [has found](#) that this tends to favor larger, lower-growth companies with more resources and more mature reporting efforts. This approach can also introduce geographic biases given significant differences in disclosure rates by region. Related to this is a failure to narrow one's focus to issues that are the most relevant to a given industry. For example, putting a significant weight on the environmental impact of a packaged software company is unlikely to lead to a useful investment conclusion.

Q: How might future capital markets regulation affect ESG investing?

A: Future regulation has the potential to significantly alter how ESG data is reported and consumed. At present, the vast majority of ESG data is reported voluntarily by corporates outside of their annual reports and regulatory filings. The voluntary nature of disclosure contributes to many of the issues ESG data currently faces around quality, standardization, and timeliness. As regulation around corporate disclosure of ESG data grows, it is possible this data could increasingly migrate into regulatory filings, diminishing today's data challenges. On the investor side, regulation could impact how these groups measure, structure and communicate their use of ESG data in their investment processes, as well as how asset managers market their offerings.

Capital market regulations based on ESG have accelerated



Source: PRI, Data compiled by Goldman Sachs GIR.

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Climate change and growth

Climate change has increasingly drawn the attention of economists. Recently, over 3,500 economists—including 27 Nobel Laureates and 4 former Fed Chairs—signed a statement supporting a carbon tax in the US, and research on the economics of climate change has grown markedly.

Assessing the welfare effect of climate change

One key challenge economists face is assessing the welfare effects of climate change. Welfare effects include not only output losses and monetary damages, but effects such as increased mortality, species loss, and environmental degradation. While there is no clear-cut way to quantify such losses, economists have constructed methods for estimating monetized equivalents.¹

Recent academic studies have identified a wide range of channels for a welfare impact of climate change at the micro level, such as increased frequency of storms, lower crop yields in agriculture, lower productivity in manufacturing, and higher crime and mortality through which climate change can lower welfare. Researchers have also looked at the relationship between climate change and growth at the country and region level, with an influential [study](#) finding that higher temperatures have likely already weighed on aggregate growth in poor countries.

Empirical evidence on the welfare effects from climate change by sector

Sector/Channel	Study	Key Finding/Description of Channel	Direct Output effect?
Agriculture	Moore, Baldos, Hertel & Diaz (2017)	A 2°C increase in the global temperature vs. 1995-2005 baseline lowers major crop yields by 10-30%.	Yes (negative)
Manufacturing (productivity)	Zhang, Deschenes, Meng, Zhang (2018)	A day with temperature above 90°F (26°C) decreases China plants' output and TFP by around 0.5%, relative to a day with temperature between 50-60°F (i.e. 21-26°C).	Yes (negative)
Energy	Aufhammer (2018)	Rising temperature increases electricity consumption (e.g. summer AC) but lowers natural gas demand (e.g. winter heating) in California.	Yes (ambiguous)
Storms	Hsiang and Jina (2014)	Tropical cyclones persistently depress growth rates for 15 years with a 7% cumulative decline in per capita income after 20 years.	Yes (negative, at least in study)
Sea-level rise	NA	Houses, offices, plants and infrastructure could be chronically inundated.	Yes (ambiguous)
Mortality	Deschenes and Greenstone (2011)	Under a "business as usual" scenario, climate change will increase the US annual mortality rate by about 1% by 2100 (and boost annual residential energy consumption by 20-25%, corresponding to 0.1% of GDP.)	Mostly no
Migration	Bohra-Mishra, Oppenheimer, Hsiang (2014)	Above 25 °C, a rise in temperature is related to an increase in outmigration in India.	No
Crime and conflict	Burke, Hsiang, Miguel (2015)	A 1σ increase in temperature increases the frequency of interpersonal conflict (e.g. domestic violence, murder, road rage) by 2.4% and of intergroup conflict (e.g. riots, land invasions, civil war, coups) by 11.3%.	No
Temperament/ happiness	Baylis (2015)	An increase in the temperature from 70°F to 80°F (i.e. 21°C to 26°C) lowers happiness as much as a switch from Sunday to Monday does.	No
Species and forestry loss	NA	Climate change leads to a loss of species and forests.	No

Source: compiled by Goldman Sachs Global Investment Research.

An even harder challenge for researchers is estimating the impacts of future climate change. There is considerable uncertainty about how much temperatures will rise, and even more uncertainty about how that will affect natural systems and how humans will adapt. Scientists are particularly worried about potential nonlinear effects, such as "tipping points" that lead to sudden and large changes in physical systems, but these are inherently hard to predict.

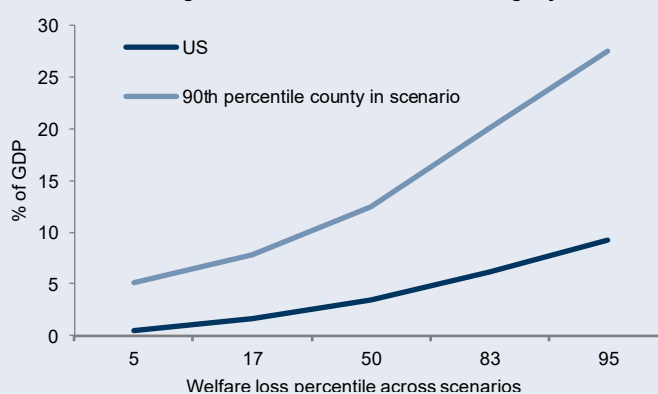
The large uncertainty and different assumptions made by researchers have led to a wide range of estimates of the welfare effects of long-run climate change. A recent study by Hsiang et al. that estimates future economic damages from climate change in the US finds a large right tail in the distribution of potential welfare losses and large heterogeneity in estimated welfare losses by region, underscoring the risk of potentially very large long-run welfare effects.²

Assessing the growth effect of climate change

While assessing the welfare effect of climate change is difficult, the potential effects of decarbonization policies on economy-wide activity is also ambiguous, for three reasons. First, abatement in the polluting industries also requires both capital investment and the hiring of additional workers. Second, workers and firms typically shift to other often cleaner production or innovation activities (or less regulated areas). Third, the policy details and fiscal picture also matter.

We note once again, however, that short-term growth is not equivalent to welfare. Overall, our survey of the literature suggests that policies aimed at curbing emissions could trigger significant shifts in the economy and have the potential to raise welfare of current and especially future generations.

Annual long-run welfare loss from climate change by scenario*



*From the Hsiang et al (2017) meta-study which simulates welfare losses in 2080-2099 under the Representation Concentration Pathway 8.5 ("Minimal Change in Policy/Technology")
Source: Hsiang et al (2017), Goldman Sachs Global Investment Research.

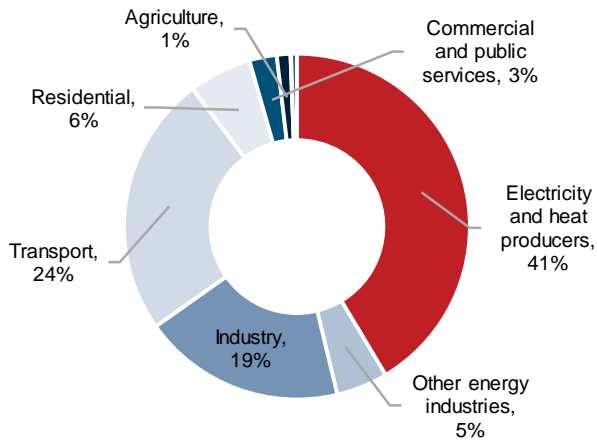
David Choi and Daan Struyven, GS US Economics Research

¹ For instance, economists have relied on estimates on the value of a statistical life and estimates of the economic cost of crime.

² Solomon Hsiang, Robert Kopp, Amir Jina et al., "Estimating economic damage from climate change in the United States," *Science*, 2017.

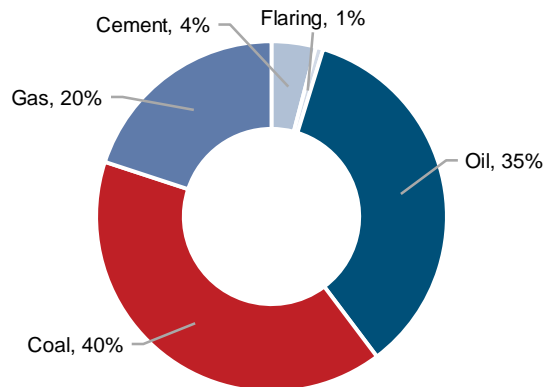
The global state of climate

Three sectors account for 85% of global emissions...
Carbon dioxide emissions by sector, %



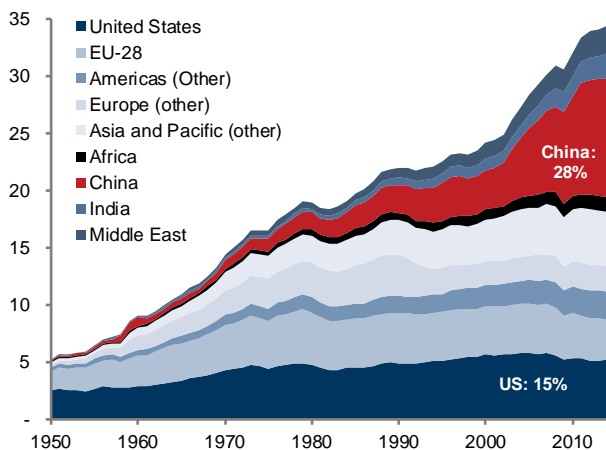
Source: International Energy Agency, Goldman Sachs GIR.

...and three fuel sources account for 95%
Carbon dioxide emissions by fuel type, %



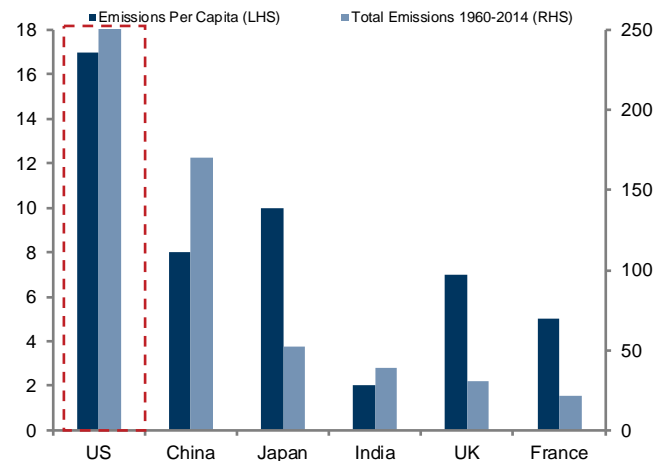
Source: Global Carbon Project, Goldman Sachs GIR.

China is now the biggest polluter on an absolute basis...
Annual carbon dioxide emissions, billions of tons



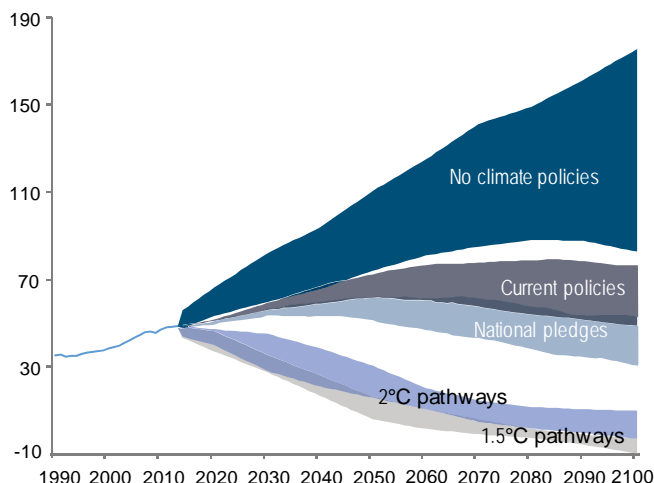
Source: World Bank, Goldman Sachs GIR.

...but the US has emitted more historically and per capita
Carbon dioxide emissions, tons (LHS), billions of tons (RHS)



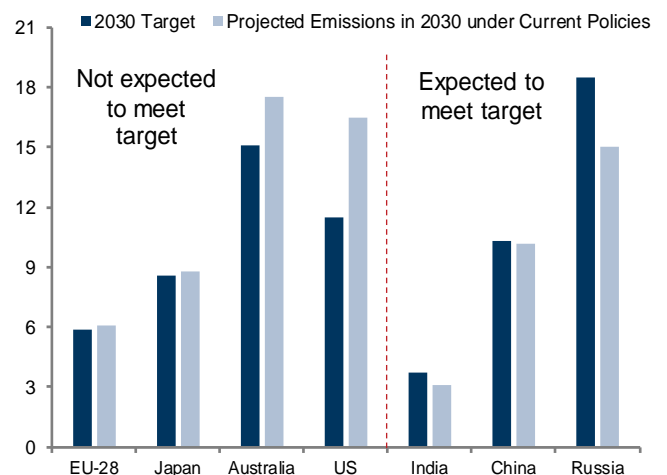
Source: World Bank, Goldman Sachs GIR.

Paris Agreement aims to limit global temperature rise to 1.5 °C
Global greenhouse gas emissions, billions of tons



Note: Each band represents a range between high and low estimates.
Source: CAT, IPCC, Goldman Sachs GIR.

Tracking progress towards Paris emission targets
Annual carbon dioxide emissions per capita, tons



Note: US pledge to 2025; EU doesn't include Green Deal as hasn't been formalized.
Source: United Nations, Goldman Sachs GIR.

Summary of our key forecasts

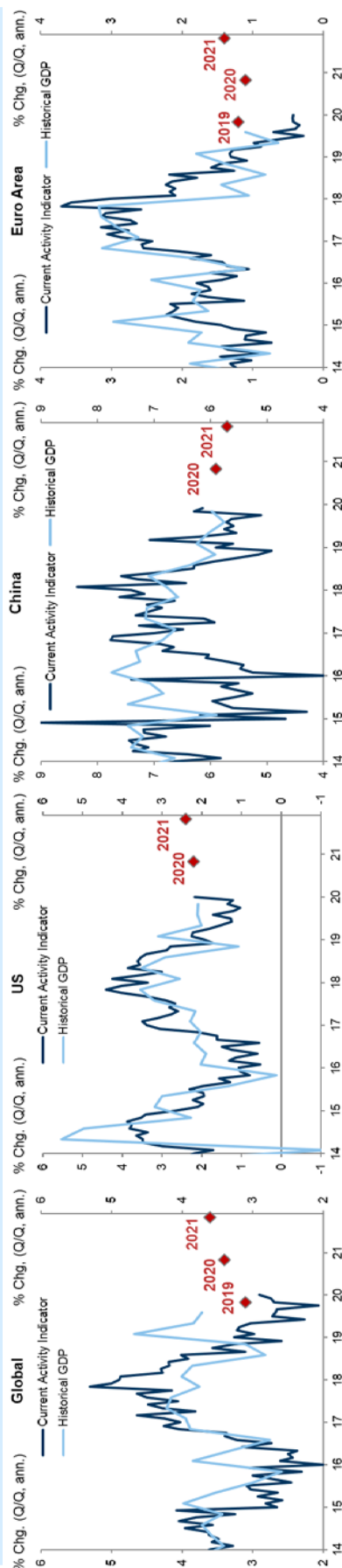
GS GIR: Macro at a glance

Watching

- **Globally**, we expect growth to pick up to 3.4% in 2020 from 3.1% in 2019, in response to easier financial conditions and friendlier trade policy. We're most confident that sequential growth will improve in the US and UK, owing to easier financial conditions and a decline in Brexit uncertainty, respectively, and also expect a gradual improvement in the Euro area and Japan.
- **In the US**, we expect growth to rise from the current pace of around 2.0% to the 2.25 – 2.50% range in 2020, owing to easier financial conditions, an end to trade escalation, and a reduced drag from inventory adjustment. We estimate the probability of recession in the next 12 months is around 15%. We expect core PCE inflation to rise from current levels to just shy of 2.0% by Q4 2020.
- **We expect the Fed to remain on hold through 2020** given our forecast of slightly above-trend growth and inflation near 2%; we see the bar for the policy rate to move in either direction as high.
- **In the Euro area**, we expect a gradual pickup in annualized growth from its current pace of around 0.5% to a slightly-above trend 1.1% in 2020, driven by an expected improvement in manufacturing, a modest fiscal impulse, and receding risks around Brexit and the global trade war. The EU Withdrawal Agreement is now UK law, with the UK embarking on a post-Brexit status quo transition phase on January 31; we believe the timescale for the second phase of Brexit talks will be more elastic than the government has articulated.
- **We think the ECB** will leave interest rates on hold but will maintain its EUR 20bn/month QE program until Q4 2021 in light of subdued inflation.
- **In China**, we expect a notable, if temporary, hit to growth from the coronavirus outbreak over the next couple of months and see downside risk to our full-year GDP growth forecast of 5.9% for 2020, although we believe the impact is likely to be confined mainly to the first quarter.

Goldman Sachs Global Investment Research.

Growth



Source: Haver Analytics and Goldman Sachs Global Investment Research.

Note: GS CAI is a measure of current growth. For more information on the methodology of the CAI please see "Trackin' All Over the World - Our New Global CAI," Global Economics Analyst, February 25, 2017.

Forecasts

Economics		Markets				Equities																		
GDP growth (%)	2020	Interest rates 10Yr (%)	Last	E2020	E2021	FX	Last	3m	12m	S&P 500	E2020	E2021	Returns (%)											
	GS		Mkt.	GS	Cons.								GS	Cons.	12m	YTD	E2020	P/E						
Global	3.4	3.1	3.6	3.3	US	1.60	2.25	2.30	EUR/\$	1.10	1.11	1.15	Price	3,400	--	--	S&P500	4.0	1.4	18.8x				
US	2.2	1.8	2.4	1.9	Germany	-0.41	0.00	0.20	GBP/\$	1.30	1.35	1.37	EPS	\$174	\$177	\$183	MIXAPJ	2.0	-0.8	13.9x				
China	5.9	5.9	5.7	5.8	Japan	-0.04	0.10	0.15	\$/JPY	109	110	105	Growth	6%	9%	5%	Topix	6.0	-2.7	15.2x				
Euro area	1.1	1.0	1.4	1.3	UK	0.45	1.20	1.40	\$/CNY	6.92	6.85	6.90					STOXX 600	5.0	-1.1	15.2x				
Policy rates (%)	2020	2021		Commodities		Credit (bp)	Last	3m	12m	E2020	E2021	Consumer	E2020	E2021	Wage Tracker 2019 (%)									
	GS	Mkt.	GS	Mkt.	CPI (% yoy)										Unemp. Rate	CPI (% yoy)	Unemp. Rate	Q1	Q2	Q3	Q4			
US	1.63	1.40	2.13	1.26	Nat Gas (\$/mmBtu)	1.9	2.5	2.5	USD	IG	99	115	--	US	2.4	3.3	2.1	3.1	3.0	3.3	3.2	3.4		
Euro area	-0.50	-0.53	-0.50	-0.52	Crude Oil, Brent (\$/bbl)	60	63	63	HY	371	425	--	Euro area	1.1	7.5	1.3	7.3	2.4	2.4	2.2	2.2	2.4	--	
China	2.50	2.50	2.25	2.59	Copper (\$/mt)	5,613	6,300	7,000	EUR	IG	104	112	--	China	3.6	--	1.6	--	7.0	7.0	7.0	7.0	7.0	
Japan	-0.10	-0.04	-0.10	-0.07	Gold (\$/troy oz)	1,573	1,600	1,600	HY	328	380	--	Japan											

Source: Bloomberg, Goldman Sachs Global Investment Research. For important disclosures, see the Disclosure Appendix or go to www.gs.com/research/hedge.html.

As of Jan. 30, 2020.

Glossary of GS proprietary indices

Current Activity Indicator (CAI)

GS CAIs measure the growth signal in a broad range of weekly and monthly indicators, offering an alternative to Gross Domestic Product (GDP). GDP is an imperfect guide to current activity: In most countries, it is only available quarterly and is released with a substantial delay, and its initial estimates are often heavily revised. GDP also ignores important measures of real activity, such as employment and the purchasing managers' indexes (PMIs). All of these problems reduce the effectiveness of GDP for investment and policy decisions. Our CAIs aim to address GDP's shortcomings and provide a timelier read on the pace of growth.

For more, see our CAI page and Global Economics Analyst: Trackin' All Over the World – Our New Global CAI, 25 February 2017.

Dynamic Equilibrium Exchange Rates (DEER)

The GSDEER framework establishes an equilibrium (or "fair") value of the real exchange rate based on relative productivity and terms-of-trade differentials.

For more, see our GSDEER page, Global Economics Paper No. 227: Finding Fair Value in EM FX, 26 January 2016, and Global Markets Analyst: A Look at Valuation Across G10 FX, 29 June 2017.

Financial Conditions Index (FCI)

GS FCIs gauge the "looseness" or "tightness" of financial conditions across the world's major economies, incorporating variables that directly affect spending on domestically produced goods and services. FCIs can provide valuable information about the economic growth outlook and the direct and indirect effects of monetary policy on real economic activity.

FCIs for the G10 economies are calculated as a weighted average of a policy rate, a long-term risk-free bond yield, a corporate credit spread, an equity price variable, and a trade-weighted exchange rate; the Euro area FCI also includes a sovereign credit spread. The weights mirror the effects of the financial variables on real GDP growth in our models over a one-year horizon. FCIs for emerging markets are calculated as a weighted average of a short-term interest rate, a long-term swap rate, a CDS spread, an equity price variable, a trade-weighted exchange rate, and—in economies with large foreign-currency-denominated debt stocks—a debt-weighted exchange rate index.

For more, see our FCI page, Global Economics Analyst: Our New G10 Financial Conditions Indices, 20 April 2017, and Global Economics Analyst: Tracking EM Financial Conditions – Our New FCIs, 6 October 2017.

Goldman Sachs Analyst Index (GSAI)

The US GSAI is based on a monthly survey of GS equity analysts to obtain their assessments of business conditions in the industries they follow. The results provide timely "bottom-up" information about US economic activity to supplement and cross-check our analysis of "top-down" data. Based on analysts' responses, we create a diffusion index for economic activity comparable to the ISM's indexes for activity in the manufacturing and nonmanufacturing sectors.

Macro-Data Assessment Platform (MAP)

GS MAP scores facilitate rapid interpretation of new data releases for economic indicators worldwide. MAP summarizes the importance of a specific data release (i.e., its historical correlation with GDP) and the degree of surprise relative to the consensus forecast. The sign on the degree of surprise characterizes underperformance with a negative number and outperformance with a positive number. Each of these two components is ranked on a scale from 0 to 5, with the MAP score being the product of the two, i.e., from -25 to +25. For example, a MAP score of +20 (5;+4) would indicate that the data has a very high correlation to GDP (5) and that it came out well above consensus expectations (+4), for a total MAP value of +20.

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Disclosure Appendix

Reg AC

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We, Alberto Gandolfi, Derek Bingham, and Michele Della Vigna, CFA, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

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NEP Exhibit TR-18

PECO Energy Company

Electric Service Tariff

COMPANY OFFICE LOCATION

2301 Market Street

Philadelphia, Pennsylvania 19103

For List of Communities Served, See Page 4.

Issued June 15, 2021

Effective July 1, 2021

**ISSUED BY: M. A. Innocenzo – President & CEO
PECO Energy Distribution Company
2301 MARKET STREET
PHILADELPHIA, PA. 19103**

NOTICE

RULES AND REGULATIONS (continued)

12.6 RELOCATION OF DELIVERY POINT. In the event that the Company shall be required by any public authority to place underground any portion of its mains, wires, or service-supply lines, or relocate any poles or feeders, the customer, at the customer's own expense, shall change the location of his point of delivery to a point readily accessible to the new location.

13. CUSTOMER'S USE OF SERVICE

13.1 RESALE OF SERVICE. Pursuant to Section 1313 of the Public Utility Code, 66 Pa. C.S. § 1313, a customer may resell Energy and Capacity and/or service provided by PECO Energy under its default service plan if: (1) the Company provides such service under a single contract at one application of an available Base Rate and for the total requirements of the premises served, and (2) the location and use of the service conforms to the availability requirements of this Tariff for provision to the customer for the customer's own account.

All residential units connected after May 10, 1980, except those dwelling units under construction or under written contract for construction as of that date must be individually metered by either the Company, the AMSP or the landlord for their basic electric service supply. Centrally supplied master metered heating, cooling or water heating service may be provided if such supply will result in energy conservation. The bill rendered by the reseller to any consumer shall not exceed the amount which PECO Energy would bill its own residential customers for the same quantity of service under the applicable tariffed residential rate.

The requirements for individually metered dwelling units in new construction may be waived at the sole discretion of the Company. Such waiver will only be granted when the owner can demonstrate to the Company that there are valid reasons for such waiver and that there will not be a significant impact on the consumption of an individual customer.

In accordance with the Commission's Policy Statement at Docket No. M-2017-2604382, the electricity sales by a person, corporation (C) or other entity, not a public utility, owning and operating an electric vehicle charging facility for the sole purpose of recharging an electric vehicle battery for compensation shall not be construed to be sales to residential consumers and therefore do not fall under the pricing requirements of 66 Pa.C.S. § 1313. Such sales are therefore not considered a resale of service as defined in this tariff rule, Rule 13.1.

Electric Vehicle charging stations shall be constructed in accordance with the Company's service installation policies contained (C) in its Electric Service Requirements Manual ("Blue Book"), a copy of which may be found at www.peco.com. The customer, who may be either the owner or the host of a third-party owned charging station, shall notify the Company at least one hundred twenty (120) days in advance of the planned installation date and may be required to install metering for the station as determined by the Company.

13.2 FLUCTUATIONS. Electric service must not be used in such a manner as to cause unusual fluctuations or disturbances in the Company's supply system, and, in the case of violation of this rule, the Company may discontinue service, or require the customer to modify the installation and/or equip it with approved controlling devices.

13.3 TYPE OF INSTALLATIONS. Motor and other installations connected to the Company's lines must be of a type to use minimum starting current and must conform to the requirements of the Company as to wiring, character of equipment, and control devices.

13.4 UNBALANCED LOAD. The customer shall at all times take, and use, energy in such manner that the load will be balanced between phases to within nominally 10%. In the event of unbalanced polyphase loads, the Company reserves the right to require the customer to make the necessary changes at the customer's expense to correct the unsatisfactory condition, or to compute the demand used for billing purposes on the assumption that the load on each phase is equal to that on the greatest phase.

13.5 ADDITIONAL LOAD. The service connection, transformers, meters and equipment supplied by the Company for each customer, have definite capacity, and no additions to the equipment or load connected thereto will be allowed except by consent of the Company.

13.6 CHANGE OF INSTALLATION. The customer shall give immediate written notice to the Company of any proposed increase or decrease in, or change of purpose or location of, the installation.

13.7 FAILURE TO GIVE NOTICE. Failure to give notice of additions or changes in load or location shall render the customer liable for any damage to the meters or their auxiliary apparatus, or the transformers, or wires, of the Company, caused by the additional or changed installation.

14. METERING

14.1 SUPPLY OF METERS. An EGS that is also an AMSP may provide Advanced Meter Services in accordance with the Electric Generation Supplier Coordination Tariff. Otherwise, subject to Rules 14.3 and 14.9, the measurement of service for billing purposes shall be by meters furnished and installed by the Company. The Company will select the type and make of metering equipment to be used for meters supplied by the Company, and may, from time to time, change or alter the equipment, its sole obligation being to supply meters that will accurately and adequately furnish records for billing purposes. In fulfilling its obligations with respect to metering and meter reading, and with respect to AMSPs that provide Advanced Meter Services, the Company will comply with Electric Generation Supplier Coordination Tariff.

14.2 SPECIAL MEASUREMENTS. The Company shall have the right, at its option and its own expense, to place demand meters, reactive-component meters, or other instruments, on the premises of any customer except for any customer for whom an AMSP is providing Advanced Meter Services, for the purpose of measuring the demand and/or the power factor, or for other tests of all, or any part, of the customer's load.

14.3 CUSTOMER REQUEST FOR SPECIAL METER. If a customer for whom the Company is providing either metering and meter reading wishes to replace its billing metering equipment, to the extent technically possible, the Company may offer, provide and support a selection of qualified meters and may perform installation within a reasonable amount of time and at the expense of the customer. The customer must pay for any such metering equipment based on the net incremental cost of purchasing and installing the new metering equipment as approved by the Commission. The Company will own and maintain all such new metering equipment.

(C) Denotes Change

NEP Exhibit TR-19

Ditommaso, Erin

From: Costa, Senator Jay <Jay.Costa@pasenate.com>
Sent: Thursday, April 1, 2021 2:19 PM
To: Kubiak, Krysia
Subject: [EXTERNAL]

WARNING: This email message did not originate from Duquesne Light and is from an external organization. DO NOT CLICK links or attachments unless you recognize the sender and are certain the content is safe. If this message is suspicious, please click the **"Report Suspicious"** button located on the Outlook Toolbar at the top of your screen.

Krysia;

I received the below email from [REDACTED] regarding their PHFA housing project.

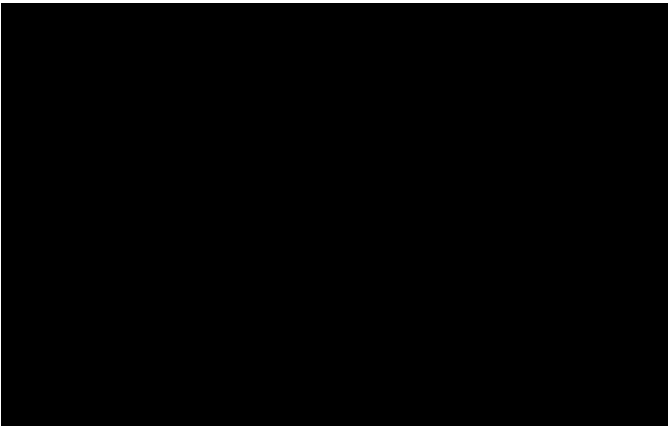
Their position seems to make sense to me. Can you look into this and see if there is something that can be done to resolve. These guys do a fair amount of affordable housing with PHFA around Allegheny County and their work is always high quality.

Thanks again and stay safe.

Jay Costa

At issue is the number of meters that Duquesne Light is requiring in our affordable senior apartment building(s) where the tenant Does Not pay the utilities. Our model for senior housing is to only require them to pay one bill, the rent. We therefore include all utilities within the rent, so there is no need for separate metering. We have done this for decades, since the 1980's. In the last few years, Duquesne Light changed their "requirements" and started requiring a separate meter for each apartment unit. This comes with a meter fee, which in a calendar year adds up to more than \$12,000/year on top of the actual electric usage costs. As you might imagine, this is very detrimental to an affordable senior housing project as our margins are extremely slim. We have found that other electric utility providers in PA (mostly in the Philadelphia area) allow for a waiver for affordable and/or HUD financed properties to not have to meter every unit in a senior building. This is all we are asking for as the separate meter requirement is very expensive both as a first cost and more importantly as an ongoing operational cost. If you know somebody who can make a reasonable decision at Duquesne Light, that would be helpful.

Thanks



NEP Exhibit TR-20

To: Dematteo, Joseph G. <JDematteo@duqlight.com>; Goldbach, Adam M. <AGoldbach@duqlight.com>

Cc: Kubiak, Krysia <KKubiak@duqlight.com>

Subject: FW: Master Metering Issue - Low-Income Housing

Joe and Adam-

By way of providing more background about our conversation this morning, below is one of the early e-mails we received from [REDACTED] where they talk about costs to developers. They sent the attached letter to Senator Costa's office (which is how we were pulled into the conversation) and they shared with us the attached provision from PPL's tariff, which they feel is something we should adopt.

This is the link to all of the facilities they currently have [REDACTED]

They also mention two upcoming projects [REDACTED]

In terms of current status, we have not heard from anyone since we confirmed with them after multiple conversations that we do not plan to change our tariff to provide an exemption to the prohibition on master metering. But we do expect that it is an issue about which we'll continue to get calls.

Thanks for talking through it with us this morning.

Lauren

From: [REDACTED]

Sent: Thursday, May 04, 2017 10:33 AM

To: Katarski, Lauren L. <LKatarski@duqlight.com>; Lauteri, David J. <DLauteri@duqlight.com>

Cc: [REDACTED]

Subject: Master Metering Issue - Low-Income Housing

Lauren and David,

Thank you for spending the time to hear about the burden of the master metering requirement to low income senior housing.

As we hoped to convey in the meeting, we are an affordable housing development/management company that prides itself on developing high-quality, extremely energy-efficient and well-designed rental housing with a special focus on seniors. We take great pride in our product and the quality controls we've implemented to deliver a high level of on-site management that is responsive to our residents' needs. One measure our founder (my father) employed was that our senior residents do not have to pay for their utilities so that a monthly rent payment takes care of everything. This is very beneficial as the seniors age-in-place because they only have one bill to remember.

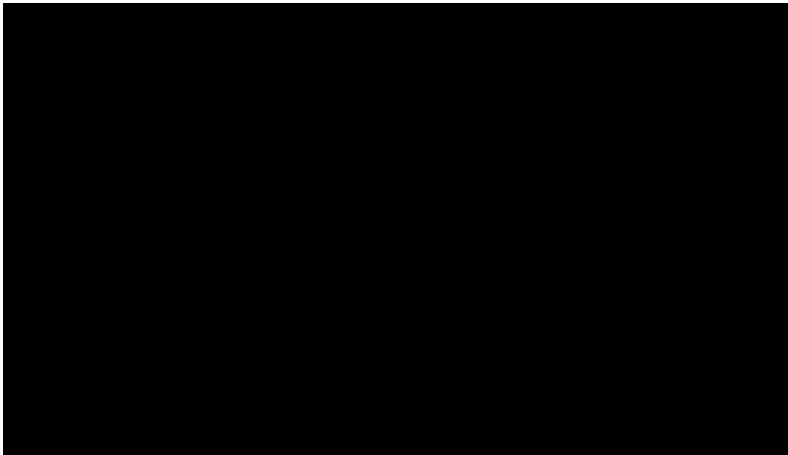
Due to the nature of our funding resulting from the rent caps imposed by the low-income housing tax credit program; most of our 23-property portfolio either breaks even or minimally cash flows. The \$5,000 – 10,000 additional Duquesne Light meter charges is a great burden to affordable housing developers. It also has a \$50,000 - \$60,000 first costs to install all the meters. This is a significant add to the project. We go through incredible hoops including multiple layers of bureaucracy and regulation to provide high quality affordable housing to those in need and are determined to find a better solution than this one-size-fits-all tariff.

I've attached the following to for your reference:

- 1) A letter we sent to Sen. Costa explaining the issue in real numbers and offering a PILOT program solution
- 2) An example of how PPL (Central/Eastern PA) has properly addressed this issue

By the end of [REDACTED] we will be adding [REDACTED] affordable, extremely energy-efficient, Passive House units to the region in the form of two projects, [REDACTED] We are hoping to move this issue forward and find an equitable solution so that we, along with the region's other affordable housing developers ([REDACTED] to name a couple), can use this unnecessary outlay of money to Duquesne Light to better enhance our properties and create even better environments for low-moderate income seniors in the region.

Please keep us informed as to the next steps to move this issue forward. Again, we really appreciate your help!



NEP Exhibit TR-21



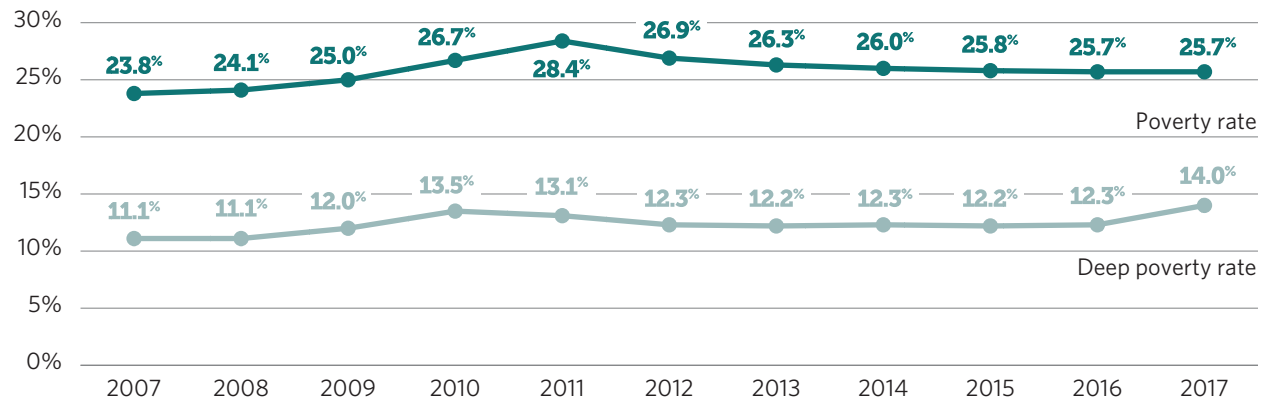
The State of Philadelphians Living in Poverty, 2019

Overview

Nearly 400,000 Philadelphia residents—roughly 26 percent of the city’s population—lived below the poverty line in 2017. And that percentage, which is among the highest for any American city, has not changed substantially in recent years, even as the national rate has fallen.

As highlighted in Pew’s 2018 report “[Philadelphia’s Poor: Experiences From Below the Poverty Line](#),” this is about more than money. It affects health outcomes, employment prospects, exposure to crime, and access to quality schools.

Poverty and Deep Poverty in Philadelphia, 2007-17

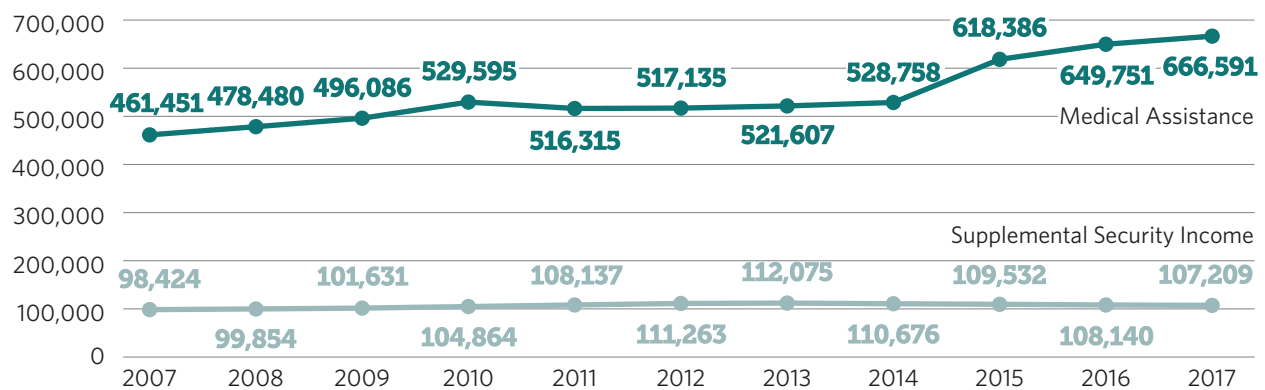


Philadelphia's poverty rate, down from a high of 28.4 percent in 2011, has remained essentially unchanged over the past five years. And the city's deep poverty rate—measuring households with incomes no more than half of the federal poverty threshold—increased in 2017. A household of four was living in poverty in 2017 if its income was \$24,600 or less and in deep poverty at \$12,300 or less.

Source: U.S. Census Bureau, American Community Survey, one-year estimates, 2007-17, Table B17002 (Ratio of Income to Poverty Level in the Past 12 Months), <http://factfinder.census.gov>

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Public Benefit Enrollment Trends in Philadelphia, 2007-17



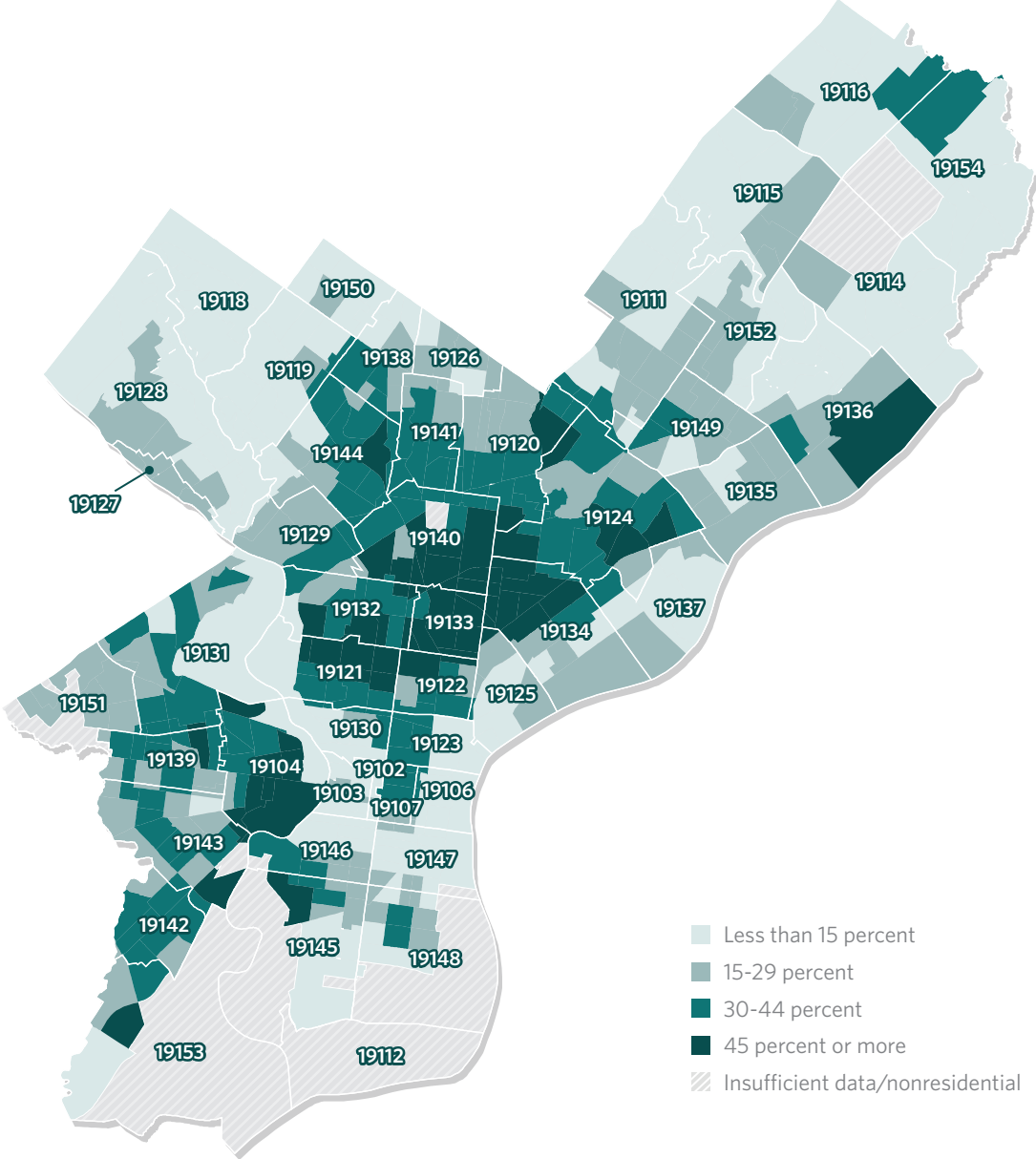
Philadelphians' enrollment in Medical Assistance, or Medicaid—the federal-state program that helps low-income individuals and families pay for health care—has grown dramatically after the 2015 expansion of eligibility in Pennsylvania under the Affordable Care Act. Supplemental Security Income benefits are available to disabled individuals or those 65 or older who have limited income and resources. Ninety-two percent of Philadelphians enrolled for Supplemental Security Income qualified for it because of a disability.

Notes: Enrollment data for Medical Assistance are from the Pennsylvania Department of Human Services (<http://listserv.dpw.state.pa.us/ma-food-stamps-and-cash-stats.html>), and Supplemental Security Income data are from the Social Security Administration (https://www.ssa.gov/policy/docs/statcomps/ssi_sc/2017/index.html). Numbers represent enrollment for the month of December for each calendar year.

Sources: Pennsylvania Department of Human Services; Social Security Administration

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Percentage of Philadelphians Living Below the Federal Poverty Line



Poverty in Philadelphia is widespread, with the highest concentrations found primarily in parts of North and West Philadelphia. In some areas, including much of North Philadelphia, the poverty rate is over 45 percent; in most of the city’s residential ZIP codes, it is over 20 percent.

Source: U.S. Census Bureau, American Community Survey, five-year estimates, 2013-17, Table S1701 (Poverty Status in the Past 12 Months), <http://factfinder.census.gov>

Contact: Elizabeth Lowe, communications officer

Email: elowe@pewtrusts.org

Project website: pewtrusts.org/philaresearch

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NEP Exhibit TR-22

18. REDISTRIBUTION All electric energy shall be consumed by the Customer to whom the Company supplies and delivers such energy, except for (1) any Customer who owns and operates a separate office building, or (2) any Customer who meets the requirements of Rule 41.1 and Rule 41.2 addressing the use of master meters in buildings with at least four (4) residential dwelling units may redistribute electric energy to the tenants of such customer.

41.2. RESIDENTIAL MASTER METERING IN NON-LOW-INCOME SUPPORTIVE HOUSING Notwithstanding anything in Rule No. 41 to the contrary, the Company shall install, own, operate and maintain a single commercial utility account (“Master Metering”), and redistribution of electric energy may occur, for no more than 130 existing multi-tenant premises or any new construction multi-tenant premises that include at least four (4) dwelling units where, all of the following criteria are met:

1. The Customer or its authorized representative verifies in writing that it will comply with the requirements of 66 Pa.C.S. § 1313, price upon resale of public utility services.
2. The Customer or its authorized representative provides each dwelling unit in the premises with (1) a revenue grade smart meter according to the American National Standards Institute (2) shared access to electric vehicle charging on the premises and (3) at least one energy technology for energy efficiency, energy control or demand response.
 - a. Technologies used to achieve compliance with this tariff, including electric vehicle charging, may not be separately billed, or treated as a separate line item of usage and are subject to the requirements of 66 Pa.C.S.1313
3. A mandatory minimum \$2 per tenant bill credit is provided regardless of income level or usage.
4. Collection and billing for submetered usage must meet the following requirements:
 - a. Number of days due from bill issue date including number of days grace period will match the current Duquesne Light Company tariff rules, applicable statutes and regulations in effect for the month the bill is issued.
 - b. Any past due or collection recovery costs may not exceed the collection recovery costs of Duquesene Light based on the tariff rules, applicable statutes and regulations in effect for the month the bill to collect such costs is issued.
 - c. Meter testing fees and testing request requirements will match the applicable time to test and fee recovery amounts as applicable to a electric utility under Pennsylvania law or Duquesne Light tariff rules, applicable statutes and regulations.

- d. A payment plan option must be made available but is not required to exceed 12 months and may not be shorter than the term of the tenant's lease.
 - e. Notices of disconnection must match the number and type provided by the applicable Duquesne tariffs rules, applicable statutes and regulations.
 - f. Service may only be disconnected for non-payment or a safety concern but may not be disconnected for any other reason.
5. Tenants must be informed prior to lease signing of the following:
- a. Signing the lease will include submetering electricity service.
 - b. Applicable low income programs which will not be accessible during submetering
 - c. That supplier choice is made by the property including individual tenants along with an explanation of emissions and environmental attributes of the chosen supply.
6. An explanation of how tenants' bills are calculated and which technologies have been provided under this tariff (ie. thermostat, smart energy control devices and EV charging). The tenant in each dwelling unit in the premises will have access to information on their hourly, monthly and annual electric energy usage.

Customers or their authorized representative permitted to use Master Metering under this Rule shall also comply with the following:

- 1. The Company may request and the Customer or its authorized representative shall provide within 60 days of a request information to certify ongoing compliance with the above criteria: and

The Company shall provide a Commission approved form for Customer or Authorized Representative contact information and required details to ensure proper delivery of a request under this rule; Customers or their authorized representative shall notify Duquesne of their decision to Master Meter under this Rule and shall submit the notice to the Company using a form previously reviewed and approved by the Commission. The Company shall make the form available on its website. The Company shall advise the Customer if the form has any deficiencies within fourteen (14) days of its submission. The Company shall participate in a Commission staff mediation of any unresolved deficiencies should one be requested by the Customer or its authorized representative.

NEP Exhibit TR-23

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set III

Witness: Yvonne Phillips and David Defide

NEP-III-6

6. Please describe any ways in which Duquesne provides owners of multi-family buildings served by Duquesne through individual residential meters, aggregated data on energy usage for the building.

Response:

Duquesne Light provides owners/managers of multi-family buildings with four or more units with aggregated building electric usage data via its online web-portal. Further information is available online at https://apps.pittsburghpa.gov/redtail/images/6418_DLC_-_ENERGY_STAR_Portfolio_Manager_Training_Guide_-_May_2019.pdf.

See also NEP-III-6 Attachment 1, an instructional slideshow provided to external parties to facilitate their access to aggregated data.

ENERGY STAR Benchmarking Guide

July, 2020



Table of Contents

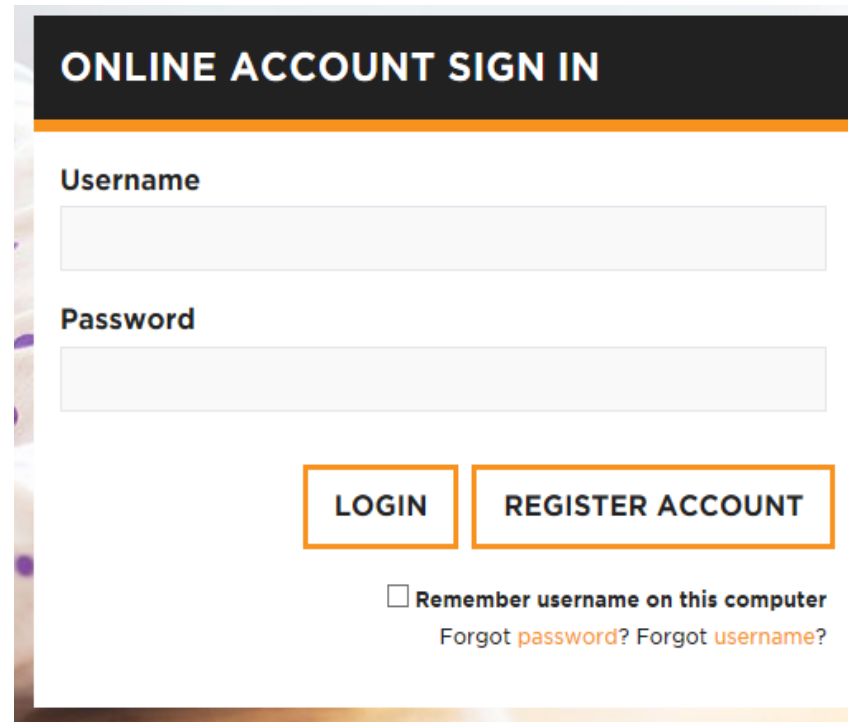
- Create a “MyAccount” – Page 3
- MyAccount Features and Functionality – Page 9
- ENERGY STAR Building – Commercial Meters Only – Page 12
- ENERGY STAR Buildings – Commercial and Residential Meters– Page 20
- Linking to EPA’s ENERGY STAR Portfolio Manager– Page 29
- Optional: Customers With Previously Reported Meter Consumption Data – Page 41
- Data Dictionary – Page 43



Create a “MyAccount”

Step 1: Register Account

If you do not have login credentials click register account here:



The screenshot shows a web form titled "ONLINE ACCOUNT SIGN IN". It features two input fields: "Username" and "Password". Below the fields are two buttons: "LOGIN" and "REGISTER ACCOUNT". At the bottom, there is a checkbox labeled "Remember username on this computer" and two links: "Forgot password?" and "Forgot username?".

Hints and Tricks:

- You will need your **account number** and **supplier agreement number** in order to register your account. Both can be found on your bill (next page)
- Setup should take less than 5 minutes

Finding My Account Number and Supplier Agreement ID


Customer Name and Service Address:

John Smith
1600 Pennsylvania Ave
Pittsburgh, PA
Bill ID: 123456789

Account Number:	1234-567-000
Rate: GM-Medium Commercial < 25	
Rider Code: 003	
Date Prepared: 01/25/18	

Page 4 of 4

Shopping Information Box

When shopping for electricity with an Electric Generation Supplier, please provide the following:

Supplier Agreement ID: **1234-567-000**

Rate Schedule: GM-Medium Commercial < 25

If you are already shopping, it is important to understand the terms of your contract and expiration date.

Hints and Tricks:

- The **Account Number** can be found in the upper right hand corner on page 4 of your bill.
- The **Supplier Agreement #** can be found on page 4 of your bill.

Provide Information

Enter the required information and click NEXT:

1 Account Info 2 Select Person 3 User Information

ACCOUNT INFO

Account Number
____-____-____

Last 4 Digits of Primary User's SSN

Or

Meter Number

NEXT



1 Account Info 2 Select Person 3 User Information

SELECT PERSON

PLEASE FIND YOURSELF IN THE LIST BELOW:

Name

John Smith

NEXT

* If you are not on the list please contact our [Customer Service Desk](#) to have yourself added.

Troubleshooting

NOTE: If there is already a web account associated with a person the page will display like this:

The screenshot shows a three-step process: 1. Account Info, 2. Select Person, and 3. User Information. The 'Select Person' step is active. Below the steps, the text reads 'SELECT PERSON' followed by a black box with white text: 'PLEASE FIND YOURSELF IN THE LIST BELOW:'. Underneath, there is a table with a header 'Name' and one entry: 'John Smith' with a 'LOGIN' button next to it. Below the table, a message states: '*This person has already registered. Please login to access your account.' At the bottom, a note says: '* If you are not on the list please contact our [Customer Service Desk](#) to have yourself added.'

Name
John Smith

LOGIN

*This person has already registered. Please login to access your account.

* If you are not on the list please contact our [Customer Service Desk](#) to have yourself added.

Troubleshooting

Hints and Tricks:

- DLC has specific username and password requirements.

The screenshot displays a three-step registration process. Step 1 is 'Account Info', Step 2 is 'Select Person', and Step 3 is 'User Information', which is currently active. The user's name is 'John Smith'. Below the name, a box lists requirements for the username: it must be between 4 and 16 characters, alphanumeric, and unique. Below this, there are input fields for 'Username', 'Password', 'Confirm Password', 'Email', and 'Confirm Email'. A box lists requirements for the password: it must be between 8 and 16 characters, include lower case, upper case, numbers, and special characters. At the bottom, there is a checkbox for accepting terms and conditions.

1 Account Info 2 Select Person 3 User Information

USER INFORMATION

John Smith

Your username must be of the following:

- ⊗ Be between 4 and 16 characters
- ⊗ Alphanumeric (letters and numbers)
- ⊗ Username must be unique

Username

Passwords must meet all of the following criteria:

- ⊗ Between 8 and 16 characters
- ⊗ Lower case
- ⊗ Upper case
- ⊗ Numbers
- ⊗ Special characters

Password

Confirm Password

Email

Confirm Email

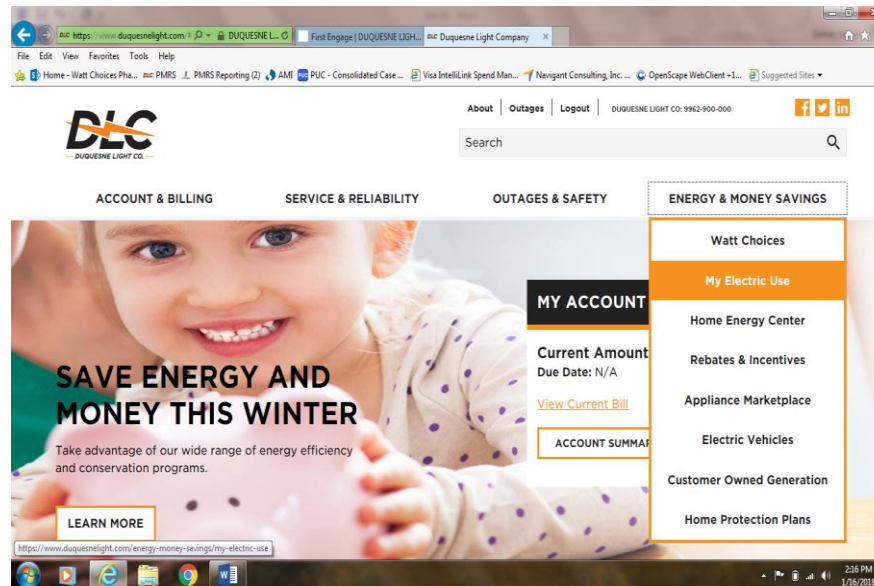
Please accept our [Terms and Conditions](#).



MyAccount Features and Functionality

Access “My Electric Use”

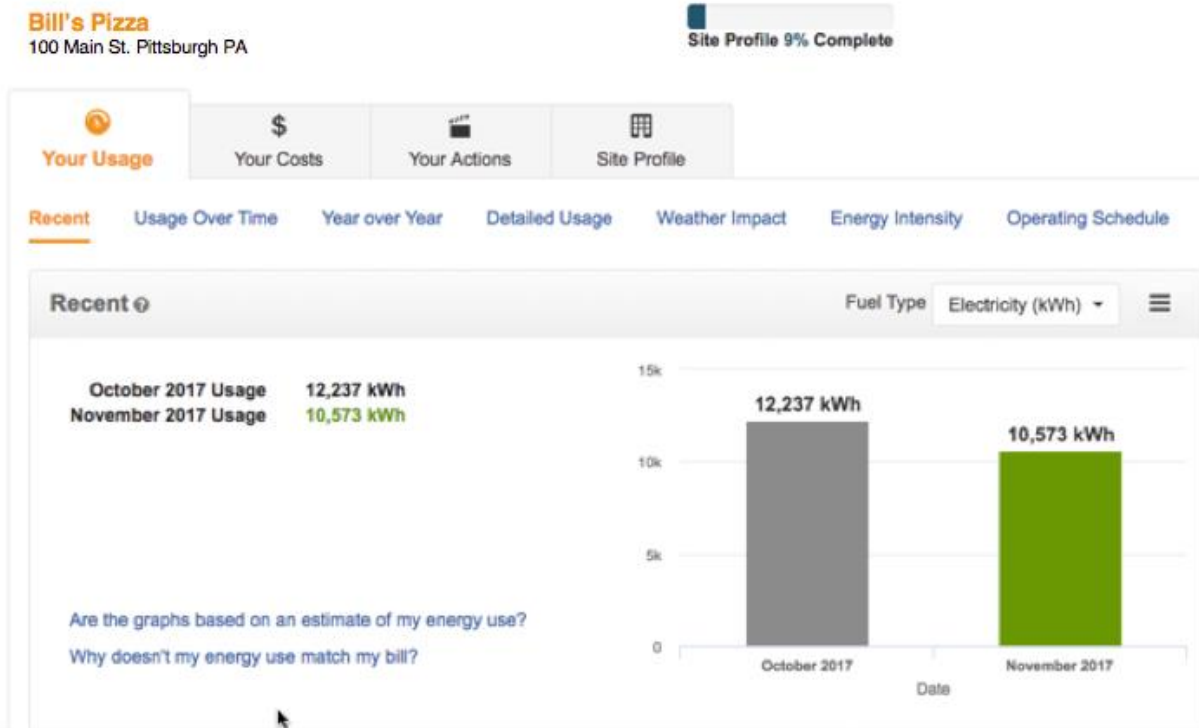
Select Energy & Money Savings in the Top Navigation Bar and then navigate to “My Electric Use”



Hints and Tricks:

- You can also use MyAccount to view rebates and incentives

Review Your Usage and Key Details



Hints and Tricks:

- Business customers can view their usage, cost, and other facility specific insights
- Customers can download their interval usage data and account information



ENERGY STAR Building: Commercial Meters Only

Portfolio Manager Setup

My Account > Dashboard > Your Usage

Find out more about Duquesne Light.
Duquesne Light customer intelligence platform unlocks the value of energy use information to transform how businesses understand and interact with energy.
Read more

Site Profile 18% Complete

Your Usage | Your Costs | Your Actions | Site Profile

Recent | Usage Over Time | Year over Year | Weather Impact | Energy Intensity

- Navigate to “My Account” and then select “ENERGY STAR Facilities”

Access Portfolio Manager

ENERGY STAR Facilities ▾

ENERGY STAR® PortfolioManager®

1 Create an ENERGY STAR Account

If you do not already have an ENERGY STAR account go to www.energystar.com to get started. Once you have created an account go to your Portfolio Manager® link within the ENERGY STAR site.

2 Create A Building Within Portfolio Manager®

You've heard it before: you can't manage what you don't measure. That's why EPA created ENERGY STAR Portfolio Manager®, an online tool you can use to measure and track energy

3 Create A Data Connection Between Both Sites

In order to take advantage of all our features you should create a connection to your ENERGY STAR Portfolio Manager® Account. This way you can share data and your score between them.

Create an Account

If you have already got an ENERGY STAR account

If you already have a Portfolio Manager® Account you can get started on creating a new building. This building can be a single location or many locations which you can then submit data to ENERGY STAR in order to get a score. This tool is designed to help commercial property managers aggregate their usage data for the ENERGY STAR data transfer. Once a building is created you can then manage the connection and see a snap shot of the aggregated usage data.



Add New Facility

- Login to Portfolio Manager at: <https://portfoliomanager.energystar.gov/>
- Create an Account if you have not already done so
- Add a **Property** to share/receive data from the MyAccount

Add New Facility

Name your ENERGY STAR Building

* Add Building Name:

Create An ENERGY STAR Facility ✕

Empire State Building [Edit](#)

(0 Selected)



Name ▲

Address ▼

Please enter valid site name or address to perform search. For exact results, use quotes on your search (i.e. "101 Old-Main", "101 N Old-Main") and do not include street suffix (Road, Rd, Street, St)

Showing 0 to 0 of 0 entries

- Name your ENERGY STAR building (recommended that this match what you call the building in the EPA's ENERGY STAR site)
- Add individual tenant meters using search field (see next slide)

Add Tenant Meters

Create An ENERGY STAR Facility ✕

Empire State Building [Edit](#) (6 Selected)

main

<input type="checkbox"/>	Name	Address
<input type="checkbox"/>	265 MAIN ST CONDO H.A.	265 MAIN ST BSMT, PITTSBURGH, PA 15201
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 2, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 1, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 S MAIN ST, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	319 W MAIN LLC	319 W MAIN ST FLR 2, CARNEGIE, PA 15106

Showing 1 to 10 of 843 entries

Prev 1 2 3 4 5 ... 85 Next

<< Back Add Selected



Create An ENERGY STAR Facility ✕

Empire State Building [Edit](#) (6 Selected)

[+ Add More](#) [Remove All](#)

Name	Address	
317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 2, PITTSBURGH, PA 15220	Remove
317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 1, PITTSBURGH, PA 15220	Remove
317 SOUTH MAIN PARTNERS LP	317 S MAIN ST, PITTSBURGH, PA 15220	Remove
319 W MAIN LLC	319 W MAIN ST FLR 2, CARNEGIE, PA 15106	Remove
401 S GROUP LLC	401 S MAIN ST, PITTSBURGH, PA 15245	Remove

Showing 1 to 6 of 6 entries

<< Back Create Facility

Hints and Tricks

- Meters can be searched by address or customer name
- Use quotation marks "" to search for specific fields or limit the search
- Unlimited number of tenants can be added
- Searching by multiple addresses is allowed for one virtual building

Authenticate Facility

Empire State Building

[Edit/Add Facilities](#) | [Authenticate Facilities](#)

ENERGY STAR Facilities Search Name or Addr...

Address	Name	Meter Points	Authentication
317 S MAIN ST, PITTSBURGH, PA 15220	317 SOUTH MAIN PARTNERS LP	3	⚠ Unauthenticated
317 MAIN ST UNIT 1, PITTSBURGH, PA 15220	317 SOUTH MAIN PARTNERS LP	1	⚠ Unauthenticated
317 MAIN ST UNIT 2, PITTSBURGH, PA 15220	317 SOUTH MAIN PARTNERS LP	1	⚠ Unauthenticated
319 W MAIN ST FLR 2, CARNEGIE, PA 15106	319 W MAIN LLC	1	⚠ Unauthenticated
401 S MAIN ST, PITTSBURGH, PA 15215	401 S GROUP LLC	1	⚠ Unauthenticated
424 N CRAIG ST MAIN, PITTSBURGH, PA 15213	424 GOLD WAY PARTNERS LLC	1	⚠ Unauthenticated

Setting Up a Connection to ENERGY STAR ✕

In order to set up a connection with ENERGY STAR you must authenticate the unique addresses in your building.

Service Agreement Number

317,
PITTSBURGH, PA 15220

317 MAIN STREET,
PITTSBURGH, PA 15220

317 S MAIN ST,
PITTSBURGH, PA 15220

[Download Authorization Form](#)

Have all of the tenants authorized data transfers to the EPA for benchmarking?
 Yes No

Cancel
Submit

Display 10 records per page

Showing 1 to 6 of 6 entries

Hints and Tricks:

- Buildings with 3 or less tenants will be prompted to verify that all tenants have authorized data transfer
- Buildings with 4 or more tenants do not have to verify authorization
- One service agreement number must be provided to authenticate the user

Authentication Code

Setting Up a Connection to ENERGY STAR



Success!

Please Note: Once authenticated and we connect to your Portfolio Manager Account a transfer of all available data will occur. This transfer will happen on a ongoing monthly basis unless you choose to pause this transfer.

Already have a Portfolio Manager® Account?

If you already have an ENERGY STAR Portfolio Manager account, then you can:

Step 1: [Log into Energy Star Portfolio Manager.](#)

Step 2: Click on the "Contacts" link in the upper right hand corner of your screen.

Step 3: Add "Duquesne Light Company" as a Contact.

Step 4: When prompted, use this confirmation code to verify your identity.

Step 5: Follow the steps provided in [this EPA guide](#) to complete the process.

Connection Code

7eAwRvoy

Close

- The Connection Code displayed upon successful authentication is critical to linking your account to EPA's ENERGY STAR portfolio manager
- Information is provided here for connecting to "Duquesne Light Company"

Aggregated Monthly usage

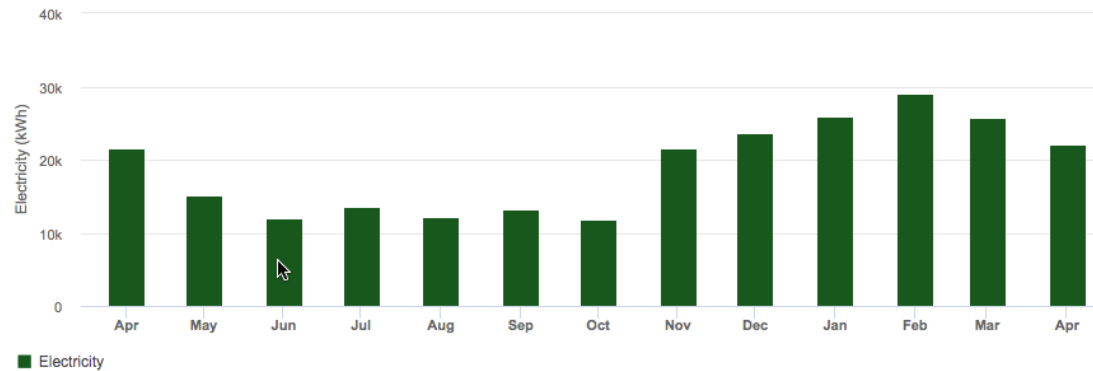
Empire State Building

[Edit/Add Facilities](#) | [Update Connection](#)

⚠ Setup connection to ENERGY STAR: You may have not verified connection code with ENERGY STAR Portfolio Manager follow the steps in [Update Connection](#) or try refreshing the page. [Refresh](#)

Aggregated Usage History

From: To:



- Aggregated monthly usage should be viewable and exportable for the combined tenant usage in the virtual building
- Links are provided at the top of the page for updating the connection with ENERGY STAR portfolio manager



ENERGY STAR Building: Commercial and Residential Meters

Portfolio Manager Setup

My Account > Dashboard > Your Usage

Find out more about Duquesne Light.
Duquesne Light customer intelligence platform unlocks the value of energy use information to transform how businesses understand and interact with energy.
Read more

Site Profile 18% Complete

Your Usage | Your Costs | Your Actions | Site Profile

Recent | Usage Over Time | Year over Year | Weather Impact | Energy Intensity

- Navigate to “My Account” and then select “ENERGY STAR Facilities”

Access Portfolio Manager

ENERGY STAR Facilities ▾

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Add New Facility

- Login to Portfolio Manager at: <https://portfoliomanager.energystar.gov/>
- Create an Account if you have not already done so
- Add a **Property** to share/receive data from the MyAccount

Add New Facility

Name your ENERGY STAR Building

* Add Building Name:

Create An ENERGY STAR Facility ✕

Empire State Building [Edit](#)

(0 Selected)



Name ▲

Address ▼

Please enter valid site name or address to perform search. For exact results, use quotes on your search (i.e. "101 Old-Main", "101 N Old-Main") and do not include street suffix (Road, Rd, Street, St)

Showing 0 to 0 of 0 entries

- Name your ENERGY STAR building (recommended that this match what you call the building in the EPA's ENERGY STAR site)
- Add individual tenant meters using search field (see next slide)

Add Tenant Meters

Create An ENERGY STAR Facility
✕

Empire State Building [Edit](#) (6 Selected)

	Name	Address
<input type="checkbox"/>	265 MAIN ST CONDO H.A.	265 MAIN ST BSMT, PITTSBURGH, PA 15201
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 2, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 1, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 S MAIN ST, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	319 W MAIN LLC	319 W MAIN ST FLR 2, CARNEGIE, PA 15106

Showing 1 to 10 of 843 entries

Prev
1
2
3
4
5
...
85
Next

<< Back
Add Selected



Create An ENERGY STAR Facility
✕

Empire State Building [Edit](#) (6 Selected)

[+ Add More](#) [Remove All](#)

Name	Address	
317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 2, PITTSBURGH, PA 15220	Remove
317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 1, PITTSBURGH, PA 15220	Remove
317 SOUTH MAIN PARTNERS LP	317 S MAIN ST, PITTSBURGH, PA 15220	Remove
319 W MAIN LLC	319 W MAIN ST FLR 2, CARNEGIE, PA 15106	Remove
401 S GROUP LLC	401 S MAIN ST, PITTSBURGH, PA 15245	Remove

Showing 1 to 6 of 6 entries

<< Back
Create Facility

Hints and Tricks

- Residential meters can be searched by **address only** to protect residential customer information
- Commercial meters can be searched by address or customer name
- Use quotation marks “” to search for specific fields or limit the search
- Unlimited number of tenants can be added
- Searching by multiple addresses is allowed for one virtual building

Authenticate Facility

Create An ENERGY STAR Facility
✕

Empire State Building [Edit](#) (4 Selected)

	Name	Address
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 2, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	317 SOUTH MAIN PARTNERS LP	317 MAIN ST UNIT 1, PITTSBURGH, PA 15220
<input checked="" type="checkbox"/>	Residential	317 MAIN ST, PITTSBURGH, PA 15201
<input checked="" type="checkbox"/>	Residential	317 MAIN ST, PITTSBURGH, PA 15201
<input type="checkbox"/>	Residential	317 MAIN ST, IMPERIAL, PA 15201

Showing 1 to 7 of 7 entries

<< Back
Add Selected

Setting Up a Connection to ENERGY STAR

In order to set up a connection with ENERGY STAR you must authenticate the unique addresses in your building.

Service Agreement Number

317,
PITTSBURGH, PA 15220

317 MAIN STREET,
PITTSBURGH, PA 15220

317 S MAIN ST,
PITTSBURGH, PA 15220

Download Authorization Form

Have all of the tenants authorized data transfers to the EPA for benchmarking?

Yes No

Cancel

Submit

Hints and Tricks:

- One service agreement number must be provided to authenticate the user
- Each unique address will require a service agreement authorization

Authentication Code

Setting Up a Connection to ENERGY STAR



Success!

Please Note: Once authenticated and we connect to your Portfolio Manager Account a transfer of all available data will occur. This transfer will happen on a ongoing monthly basis unless you choose to pause this transfer.

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Step 4: When prompted, use this confirmation code to verify your identity.

Step 5: Follow the steps provided in [this EPA guide](#) to complete the process.

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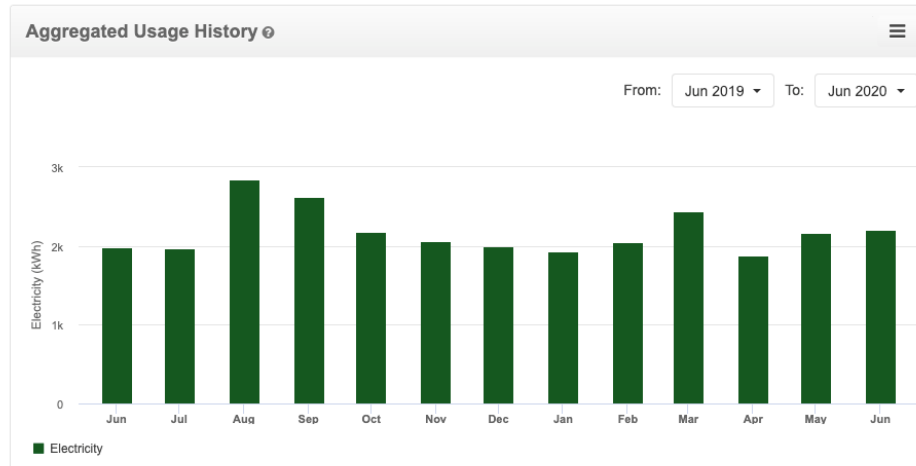
7eAwRvoy

Close

- The Connection Code displayed upon successful authentication is critical to linking your account to EPA's ENERGY STAR portfolio manager
- Information is provided here for connecting to "Duquesne Light Company"

Aggregated Monthly usage

Empire State Building

[Edit/Add Facilities](#) | [Update Connection](#)


ENERGY STAR Facilities

Address	Name	Meter Points	Authentication	Actions
317 MAIN ST, PITTSBURGH, PA 15201	Residential	1	Authenticated	Remove
317 MAIN ST, PITTSBURGH, PA 15201	Residential	1	Authenticated	Remove
317 MAIN ST, PITTSBURGH, PA 15201	Residential	1	Authenticated	Remove
317 MAIN ST, PITTSBURGH, PA 15201	Residential Screenshot	1	Authenticated	Remove

- Residential customer names do not appear; “Name” is displayed as “Residential” for all customer addresses added to the virtual building
- Aggregated monthly usage should be viewable and exportable for the combined tenant usage in the virtual building
- Links are provided at the top of the page for updating the connection with ENERGY STAR portfolio manager

Additional Information: Residential Meters

- Residential customers can move in and move out from time to time; the solution automatically pulls in one row/record for each separate account holder
- By populating each row/record for a residential meter, this whole building view captures all residential usage regardless of whether end users have moved in or moved out
- Residential customer names are protected at all points in the process; no solution end-users will have access to residential customer information
- Up to 2 years of historical consumption will be available in this whole building view



Linking to EPA's ENERGY STAR Portfolio Manager

Access Portfolio Manager

ENERGY STAR Facilities ▾

ENERGY STAR® PortfolioManager®

1 Create an ENERGY STAR Account

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Add New Facility

- Login to Portfolio Manager at: <https://portfoliomanager.energystar.gov/>
- Create an Account if you have not already done so
- Add a **Property** to share/receive data from the MyAccount

Create a Meter

Summary

Details

Energy

Water

Waste & Materials

Goals

Design

Meter Summary

Meters - Used to Compute Metrics (1)

Add A Meter

Get Started Setting Up Meters for Headquarters

There are four ways to enter meter data. First, you can enter manually, starting below. Second, you can set up your meters below, then upload a specially formatted spreadsheet with just your bill data. Third, for advanced users, you can use our upload tool that allows you to set up all of your meters and enter bill data. And finally, you can hire an organization that exchanges data to update your energy data automatically.



Sources of Your Property's Energy

What kind of **energy** do you want to track? Please select all that apply.

- Electric
 - purchased from the grid
 - How Many Meters?
 - generated onsite with my own solar panels
 - generated onsite with my own wind turbines
- Natural Gas
- Propane
- Fuel Oil (No. 2)
- Diesel
- District Steam
- District Hot Water
- District Chilled Water

Tracking Energy

To track your energy, create an energy meter for each source of energy from a utility, a neighboring building, or an onsite solar or wind panel. If you purchase a raw fuel (e.g. gas) and produce your own fuel (e.g., electricity or chilled water), you only need a meter for the fuel you purchased (e.g. gas), and not for the fuel you produce.

Two Meters Needed for Onsite Solar/Wind

If you've got onsite Solar (or Wind), you still need to enter an Electric Grid Meter. [Learn More.](#)

Create a Meter

About Your Meters for Headquarters

Enter the information below about your new meters. The meter's **Units** and **Date Meter became Active** are required. You can also change the meter's name.

1 Energy Meter for Headquarters (click table to edit)

<input type="checkbox"/>	Meter Name	Type	Other Type	Units	Date Meter became Active	In Use?	Date Meter became Inactive	Enter as Delivery?
<input type="checkbox"/>	Electric Grid Meter	Electric - Grid				<input checked="" type="checkbox"/>		<input type="checkbox"/>

[✖ Delete Selected Entries](#)

[+ Add Another Entry](#)

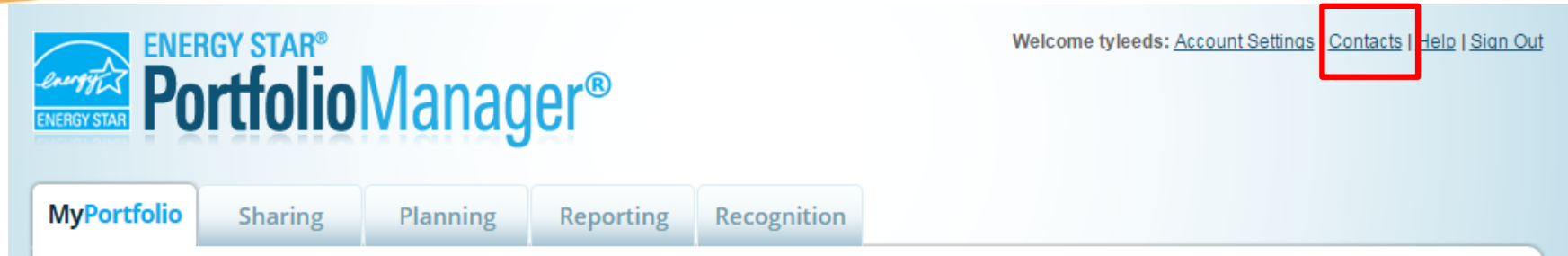
Back

Create Meters

[Cancel](#)

- Make sure to populate **Date Meter became Active** and **Units**
- Select "Create Meters"

Initiate Connection



ENERGY STAR®
ENERGY STAR PortfolioManager®

Welcome tyleeds: [Account Settings](#) **Contacts** | [Help](#) | [Sign Out](#)

MyPortfolio | Sharing | Planning | Reporting | Recognition

- Select “Contacts” in the upper right
- Add “DLC” or “Duquesne Light” in the “Search for new Contacts” Button

My Contacts

[Search for new contacts](#)

This is where you keep track of your contacts and/or organizations (i.e. people or companies associated with your properties such as Professional Engineers, Registered Architects, or others with whom you share information). You can add anyone as a contact, regardless of whether they have a Portfolio Manager account and you can share your properties & reports with any of your **connected** contacts. You can "connect" to other Portfolio Manager users by searching for their accounts and sending a connection request.

Initiate Connection

Duquesne Light Company ESPM with Duquesne	Connect
--	----------------

- Select “Connect” for “Duquesne Light Company”
- Connection takes ~2 minutes to be approved

Send a Connection Request to [Duquesne Light Company](#) to Begin Exchanging Data

[Duquesne Light Company](#) requires the following information in order to exchange data with your property(ies). If you have any questions about how to complete this information, please contact [Duquesne Light Company](#). Once your connection request has been accepted, you can share individual properties and/or meters with them to get started exchanging data.

Terms of Use: None Provided

Agreement: I agree to my provider's ([Duquesne Light Company](#)) Terms of Use.

Send Connection Request	Cancel
--------------------------------	------------------------

- Agree to the Terms of Use
- Select “Send Connection Request”

Complete Connection



Welcome tyleeds: [Account Settings](#) | [Notifications](#) ¹ | [Contacts](#) | [Help](#) | [Sign Out](#)

- In the Notifications section of “My Portfolio” there will be a message indicating that the request is sent.
- After ~2 minutes, a refreshed screen will indicate that the user is now connected to “Duquesne Light Company”

Incoming Requests (0) Outgoing Requests (1) **Notices (1)**

Type	Notification	Date	
✓	You are connected to Duquesne Light Company.	5/7/2019	<input type="checkbox"/>

Page 1 of 1 100 View 1 - 1 of 1

[Clear](#)

Select Properties for Sharing

- Select Property(ies) to be shared in step 1
- Select Duquesne Light Company for the Select People
- Selected “Personalized Sharing and Exchange Data” in Step 3



Select Properties

We'll get into the details of the level of access later. For now, which properties do you want to share and/or edit access to?

One Property Headquarters



Select People (Accounts)

Which people (accounts) do you want to share these properties with (or modify their current access to)? The access for each can be different and you'll be able to specify that on the next page.

Select contacts from my contacts book:

Duquesne Light Company (DLCWebservices)

To select multiple contacts, hold down your Control (CTRL) key and click on each selection. Only your [connected contacts](#) appear in this list.



Choose Permissions

If you only need to choose one permission (because you are doing a single share or you want to give the same permissions for all of your shares), select "Bulk Sharing." If you need to assign different permissions or share with Data Exchange providers, select the 2nd option.

Bulk Sharing ("One-Size-Fits-All") - I only need to choose one permission (either because I am doing a single share OR I want to choose the same permission for all of my share requests).

Personalized Sharing & Exchange Data ("Custom Orders") - I need to give different permissions for different share requests, and/or I need to give [Exchange Data](#) permission.

Continue

[Cancel](#)



Sharing with Accounts

In order to share properties with others (either individuals or organizations), you need to be "connected" with them. To make a connection, go to the "Add Contact" or "Add Organization" page and search for them within Portfolio Manager (they need to have a Portfolio Manager account). Once you find them, send a "Connection" request. After they accept your connection request, they will show up on the list to the left.



Exchanging Data

To get started, first [connect with an organization that exchanges data](#). Once you are connected, their name will appear on the selection list on the left. **Note: you can now share in bulk for exchanging data.**



Who gets to Share Forward?

Full Access - Automatically includes "Share Forward" rights

Read Only - Automatically does NOT include "Share Forward" rights

Custom - You decide, along with the individual permissions for property, meter, goals and recognition permissions.

Exchange Data - You decide, along with the individual permissions for property, meter, goals and recognition permissions.

Select Permissions

Share Your Property(ies)

To finish up, tell us what type of access the people you have selected should have for each of the properties that you have selected. The option to exchange data is only available for authorized accounts.

NEW Who gets to **Share Forward**?

Full Access - Automatically includes "Share Forward" rights

Read Only - Automatically does NOT include "Share Forward" rights

Custom - You decide, along with the individual permissions for property, meter, goals and recognition permissions.

Exchange Data - You decide, along with the individual permissions for property, meter, goals and recognition permissions.



Select Permissions for Each Contact



The access levels you select do not have to be the same for each property or each person.

Sort by: ↕

Name (ID)	No Access	Read Only Access	Full Access	Custom Access	Exchange Data
▼ Headquarters (4609745)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Duquesne Light Company	<input type="radio"/>				<input type="radio"/>

Share Property(ies)

[Cancel](#)

- Select "Exchange Data"

Finalize Sharing

Select Access Permissions to [Headquarters](#) for [Duquesne Light Company](#).

The following information is required by [Duquesne Light Company](#) in order to provide service to your property(ies). If you have any questions about how to complete this information, please contact them directly.

Property Confirmation Code: Example: ABC111234
Property confirmation code., 1 - 10 Characters

Select the permission level below that you would like to grant [Duquesne Light Company](#) for each category.

Item	None	Read Only Access	Full Access
Property Information	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
▼ All Meter Information			
▼ Energy Meters			
Electric Grid Meter	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Electric Grid Meter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goals, Improvements, & Checklists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Additional Options:

Item	Yes	No
* Share Forward Allow Duquesne Light Company to share this property with others and give them any permissions that he/she has, including the right to share with more people.	<input type="radio"/>	<input type="radio"/>

[Apply Selections & Authorize Exchange](#) [Cancel](#)

- Enter the **Confirmation Code** from the MyAccount and select “Full access”. No other information needs to be selected.
- Share Forward is not required in order to enable the data exchange.

Review Consumption Data

MyPortfolio
Sharing
Planning
Reporting
Recognition


Headquarters

420 Bedford St, Lexington, MA 02420 | [Map It](#)

Portfolio Manager Property ID: 4609745

Year Built: 1982

[Edit](#)



Not eligible to apply for
ENERGY STAR
Certification

Weather-Normalized Source EUI (kBtu/ft²) Why not score?

Current EUI: N/A

Baseline EUI: N/A

Summary
Details
! Meters
Goals
Design

Energy & Water Consumption

Manage/Enter My Bills

Energy Meters (1)

[View as a Diagram](#) Add Another Meter

Name	Energy Type	Most Recent Bill Date	Action
Electric Grid Meter	Electric - Grid	10/20/2015	I want to... ▼

! Meters for Performance Metrics

Select Meters

Manage Consumption Data



Manage Bills (Meter Entries) for [Headquarters](#)

You may select one of your meters to get started. Or, if you are coming here from your meter list, a meter may already be selected.

Electric Grid Meter Display Year(s): 2015 x

	Start Date	End Date	Usage kWh (thousand Watt-hours)	Cost (\$)	Estimation	Green Power	Last Updated
<input type="checkbox"/>	12/18/2014	1/21/2015	86	6.78	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	1/21/2015	2/19/2015	67	5.29	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	2/19/2015	3/19/2015	60	4.74	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	3/19/2015	4/20/2015	64	5.05	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	4/20/2015	5/19/2015	56	4.42	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	5/19/2015	6/19/2015	77	6.07	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	6/19/2015	7/21/2015	78	6.64	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	7/21/2015	8/20/2015	75	5.85	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	8/20/2015	9/21/2015	86	6.71	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu
<input type="checkbox"/>	9/21/2015	10/20/2015	93	7.25	<input type="checkbox"/>	<input type="checkbox"/>	10/30/2015 Tim Fu

[X Delete Selected Entries](#)
[+ Add Another Entry](#)

 [Download](#) to Green Button XML
 [Download](#) to Excel



Optional: Customers With Previously Reported Meter Consumption Data

Mark Legacy Meters as “Inactive”

Manage Bills (Meter Entries) for [Headquarters](#)

Meter Selection:

Basic Meter Information

Name:	<input type="text" value="Electric Grid Meter"/>	Delete Meter
Meter ID:	39104333	
Type:	Electric - Grid Need to change?	
Units:	<input type="text" value="MWh (million Watt-hours)"/>	
Date Meter became Active:	<input type="text" value="01/16/2017"/>	<input type="checkbox"/> Still In Use
Date Meter became Inactive:	<input type="text" value="10/16/2017"/>	

[Save Changes](#)

Monthly Entries

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- The existing meter in ENERGY STAR Portfolio Manager can be marked as “inactive”
- Typically, this would be marked inactive on the last bill date

Create and Activate a New Meter

Meter Summary

2 Energy Meters Total

2 - Not Used in Metrics

[Add A Meter](#)

Current Energy Date
Not Available

Enter Your Bills

Manage Bills (Meter Entries) for [Headquarters](#)

Meter Selection:


Basic Meter Information


Name: [Delete Meter](#)

Meter ID: 38903713

Type: Electric - Grid [Need to change?](#)

Units: ▾

Date Meter became Active: 
 Still In Use

Date Meter became Inactive: 

Save Changes

- Create a new meter, and list the Active date to be equal to the inactive date in the old meter
- Link the new meter to MyAccount following the instructions above
- Only data collected since the Active date will be automatically populated



Data Dictionary

Data Dictionary

DLC:

- **Account number** – The account number represents the master billing number for your accounts.
- **Meter number** – For purposes of creating a MyAccount with DLC, the meter number found on page 1 of your electric bill.
- **MyAccount** – MyAccount is an online account with DLC that allows and end user to view their bills, energy consumption, and other account specific information.
- **Supplier Agreement Number** – This supplier agreement identifies a specific meter. An account number can have multiple supplier agreements associated with it.

ENERGY STAR Portfolio Manager:

- **Account number** – For purposes of ENERGY STAR portfolio manager, the “Account Number” field should match 1:1 with the DLC Supplier Agreement Number defined above.
- **Contact** – A contact in ENERGY STAR Portfolio Manager is a third-party user to which an end-user can connect. Contacts can be used to enable the sharing of energy consumption data.
- **Data Exchange** – Once a user connects with a Contact and shares a Property and a Meter with that Contact, the user can initiate a Data Exchange automatically with MyAccount.
- **Meter** – A meter represents a unique measurement point for energy consumption.
- **Property** – A property represents a unique facility for which a user can report energy consumption. A property may consist of multiple meters (typically at least 1 each of water, electric, and thermal consumption).
- **Share** – Once a user connects with a contact, they must Share both the Property and the Meter with a Contact in order to complete the Data Exchange process.
- **User Confirmation Code** – In order to connect to a Contact, the user is prompted for a User Confirmation Code. This is found in MyAccount.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission,	:	
Office of Consumer Advocate, Office of Small	:	Docket No. R-2021-3024750
Business Advocate	:	C-2021-3025538
	:	C-2021-3025462
v.	:	C-2021-3026057
	:	
Duquesne Light Company	:	

CERTIFICATE OF SERVICE

I hereby certify that this day I served a copy of the foregoing document upon the persons listed below in the manner indicated in accordance with the requirements of 52 Pa. Code § 1.54.

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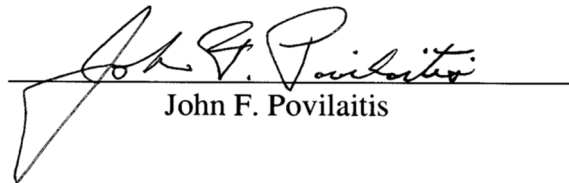
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Date: August 10, 2021


John F. Povilaitis

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

4. Identify, describe and explain all formal complaints, lawsuits or other disputes of which you are aware that have been filed or asserted against NEP that are associated with any of the issues or concerns you identify in your Rebuttal Testimony, CAUSE-PA St. No. 1-R in connection with NEP's existing and operating master and sub-metering programs. Provide all documents in support of your answer.

RESPONSE:

The extent of Mr. Geller's specific knowledge of formal complaints, lawsuits, or other disputes filed or asserted against NEP pertains to those provided by NEP in response to discovery. See CAUSE-PA to NEP I-4; DLC to NEP I-56.

See also CAUSE-PA St. 1, at 35-36 (explaining the informal and formal dispute rights of tenants who reside in a master and/or sub-metered multifamily building compared to tenants who reside in an individually metered multifamily building).

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 4

CAUSE-PA to NEP I-4. Please provide the jurisdiction and docket number for any lawsuits filed against NEP since January 2015, and indicate the status of those disputes.

RESPONSE:

i. Public Utilities Commission of Ohio, Case No. 15-697-EL-CSS, *Whitt v. Nationwide Energy Partners, LLC*. Filed April 10, 2015. Voluntarily dismissed by complainant; Commission granted complainant's motion to dismiss on October 20, 2017. Matter is resolved.

ii. Franklin County, Ohio Court of Common Pleas, Case No. 16-cv-000143, *Ronald and Michelle Weurth, et al., v. Nationwide Energy Partners, LLC*. Filed January 6, 2016. Matter is pending.

iii. Public Utilities Commission of Ohio, Case No. 116-2401-EL-CSS, *Wingo v. Nationwide Energy Partners, LLC*. Filed December 15, 2016. Commission granted NEP's motion to dismiss November 21, 2017. Applications for rehearing denied. Matter is resolved.

iv. Public Utilities Commission of Ohio, Case No. 17-2002-EL-CSS, *Wingo v. Nationwide Energy Partners, LLC*. Filed September 19, 2017. Voluntarily dismissed by complainant; Commission granted complainant's motion to dismiss on July 14, 2021. Matter is resolved.

v. U.S. District Court for the Southern District of Ohio, Case No. 2:17-cv-150, *Wingo v. Nationwide Energy Partners, LLC*. Filed February 21, 2017. Voluntarily dismissed by complainant on June 9, 2017. Matter is resolved.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 56

56. For each year 2017 through 2021 YTD, identify:

- a. The number of billing complaints or disputes that NEP has received from tenants.
- b. The number of billing complaints or disputes that have been resolved in the tenant's favor.

RESPONSE:

NEP receives many calls from residents with billing-related questions, which are generally resolved through explanation of NEP's practices and relationship with the property owner, and/or accommodation of residents' circumstances where appropriate. NEP does not consider routine inquiries to be either "complaints" or "disputes". For purposes of this response, we have interpreted "billing complaints or disputes" to mean matters unresolved by NEP or the property owner that were brought to the attention of the Better Business Bureau ("BBB"), Attorney General ("AG") or through legal action at a public utility commission or in a civil complaint filed with a court, in each case relating to the amount a resident was billed by NEP and not collections or other administrative matters. Further, we have interpreted "resolved in tenant's favor" to mean that NEP or an official fact-finder determined that NEP had been in error and that the resident was entitled to compensation.

NEP does not maintain a data set for complaints. The below figures have been compiled from multiple sources, include all states in which NEP operates, and are accurate to the best of NEP's knowledge.

2017: 1 BBB, 0 AG, all resolved, 0 in resident's favor; 1 legal action at PUCO dismissed by Complainant on 4/30/2021.

2018: 0 BBB, 0 AG, 0 legal actions

2019: 1 BBB, 1 AG, all resolved, 0 in resident's favor; 0 legal actions

2020: 3 BBB, 0 AG, all resolved, 0 in resident's favor; 0 legal actions

2021: 0 BBB, 0 AG, 0 legal actions

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

5. To your knowledge, has the operation of NEP’s existing and operational master and sub-metering program in PECO’s service territory eviscerated the rights of residential tenants in PECO’s service territory as suggest might occur in Duquesne Light’s service territory on page 5, line 5 of your Rebuttal testimony? Provide all documents in support of your answer.

RESPONSE:

Mr. Geller did not review PECO’s tariff provisions regarding multifamily metering in preparing his testimony in this proceeding. Mr. Geller’s testimony addressed the potential effect of NEP’s proposed tariff *in DLC service territory*, in which there is an existing tariff that ensures all new construction since 1981 must be single metered. In DLC service territory, those tenants who reside in single metered buildings are subject to and protected by the statutory and regulatory provisions of the Public Utility Code, including e.g. provisions governing billing, collections, terminations, confidentiality, dispute rights, and access to universal service and other safety net programs.

It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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6. Identify, describe and explain CAUSE-PA’s specific role in developing Duquesne Light’s proposal in this proceeding for master metering for new residential multifamily premises under the criteria specified on page 6, lines 16-20 of your Rebuttal testimony. Provide all documents that support your answer.

RESPONSE:

CAUSE-PA submitted expert testimony on the issue in DLC’s last rate case, and representatives for CAUSE-PA participated in the issue-specific collaborative meetings. Counsel for CAUSE-PA also had a brief call with DLC regarding the issue on March 16, 2021.

See NEP to CAUSE-PA, I-6, Attachment; see also NEP to CAUSE-PA I-7, Attachment and NEP to CAUSE-PA I-8, Attachment.

Response Provided By:
Elizabeth R. Marx, Esq.
Counsel for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

8. Provide all documents (including, without limitation, emails, etc.) Duquesne Light submitted to CAUSE-PA in connection with the collaborative process described on page 6, lines 9-12 of your Rebuttal testimony.

RESPONSE:

CAUSE-PA to NEP I-8, Attachment; see also CAUSE-PA to NEP I-6, Attachment

Response Provided By:

Elizabeth Marx, Esq.
Counsel for CAUSE-PA

Dated: August 6, 2021

Multifamily Master-meter Collaborative

February 24, 2021



Multifamily Master-meter Collaborative Objectives for Today's meeting

- Re-convene a collaborative to discuss the feasibility of revising the Company's retail tariff to permit master-metering of multifamily housing per the 2018 Rate Case Settlement.
- Review DLC's potential modifications to its current Master Metering Rule 41.
- Discussion
- Appendix References:
 - DLC Tariff Rule 41 – Prohibition of Master Metering
 - DLC Tariff Rule 18 – Redistribution

Multifamily Master-meter Collaborative

Potential revisions to tariff rule 41

- Consider permitting master metering for new residential service that meet all the following criteria:
 - New services only
 - Master-metering through entire building (i.e., no individual tenant meters)
 - Building served at applicable non-residential rate.
 - Buildings with a minimum of four dwelling units.
 - The Company has historically applied this four-unit threshold for “multifamily buildings” in each of its Act 129 Energy Efficiency & Conservation (“EE&C”) programs
 - Building is low-income housing, to be determined by:
 - (1) Builder/Developer (i) is qualified to receive Low Income Housing Tax Credits LIHTC; and (ii) the landlord certifies annually that all tenants are eligible for a Housing Choice Voucher. (HCV), available to residents who make 50% or less of the median family income; **or**
 - (2) The building is a Public Housing Authority development.
 - Customers may not resell electricity delivered to the building, such as through a sub-meter arrangement. (Rule 18 – Redistribution).
 - Customers must participate in the Company’s applicable EE&C and LIURP programs to ensure benefits to low-income tenants.
 - Company would retain customer’s security deposit for duration of master metering



Appendix

Multifamily Master-meter Collaborative

DLC Tariff Rules Today

Rule 41. PROHIBITION OF RESIDENTIAL MASTER METERING

- Each residential dwelling unit in a building must be individually metered by the Company for buildings connected after January 1, 1981. For the purposes of the Rule, a dwelling unit is defined as:
 - One or more rooms for the use of one or more persons as a housekeeping unit with space for eating, living, and sleeping, and permanent provisions for cooking and sanitation.
- This Rule does not preclude the use of a single meter for the common areas and common facilities of a multi-tenant building.
- This Rule shall not affect any practice undertaken prior to January 1, 1981.

Multifamily Master-meter Collaborative

DLC Tariff Rules Today

Rule 18. REDISTRIBUTION

- All electric energy shall be consumed by the customer to whom the Company supplies and delivers such energy, except that
 - 1) the customer owning and operating a separate office building,

and
 - 2) any other customer who, upon showing that special circumstances exist, obtains the written consent of the Company may redistribute electric energy to tenants of such customer, but only if such tenants are not required to make a specific payment for such energy.
- This Rule shall not affect any practice undertaken prior to June 1, 1965. See Rule No. 41 for special requirements for residential dwelling units in a building.

Multifamily Master-meter Collaborative

June 25, 2019



Multifamily Master-meter Collaborative

Agenda

- Objectives of collaborative
- Review existing tariff rules related to multifamily master-metering
- History of tariff changes that resulted in current rules
- Review of master-metering in DLC territory today
- Statewide Landscape of master-metering rules
- Discussion

Multifamily Master-meter Collaborative

Objectives

- Convene a non-confidential collaborative to discuss the feasibility of revising the Company's retail tariff to permit master-metering of multifamily housing.
- Parties to the collaborative will specifically consider:
 - Under what circumstances master-metering would be permitted, and the factors Duquesne Light would require a building owner to meet before approving a master-metering configuration.
 - The impact that any such tariff change would have on low income tenants' ability to continue to afford service.
 - The impact of individual customers not utilizing Advanced Metering Infrastructure ("AMI") meters.
 - The impact that any such change would have on the Company's revenue allocation and the ability to meet its projected revenue requirements.
- The parties to the collaborative will make a good faith effort, in coordination with the Company, to develop consensus on the scope of a tariff revision that permits master-metering, taking into account all of the foregoing factors.

Multifamily Master-meter Collaborative

DLC Tariff Rules Today

Rule 18. REDISTRIBUTION

- All electric energy shall be consumed by the customer to whom the Company supplies and delivers such energy, except that
 - 1) the customer owning and operating a separate office building,

and
 - 2) any other customer who, upon showing that special circumstances exist, obtains the written consent of the Company may redistribute electric energy to tenants of such customer, but only if such tenants are not required to make a specific payment for such energy.

- This Rule shall not affect any practice undertaken prior to June 1, 1965. See Rule No. 41 for special requirements for residential dwelling units in a building.

Multifamily Master-meter Collaborative

DLC Tariff Rules Today

Rule 41. PROHIBITION OF RESIDENTIAL MASTER METERING

- Each residential dwelling unit in a building must be individually metered by the Company for buildings connected after January 1, 1981. For the purposes of the Rule, a dwelling unit is defined as:
 - One or more rooms for the use of one or more persons as a housekeeping unit with space for eating, living, and sleeping, and permanent provisions for cooking and sanitation.
- This Rule does not preclude the use of a single meter for the common areas and common facilities of a multi-tenant building.
- This Rule shall not affect any practice undertaken prior to January 1, 1981.

Multifamily Master-meter Collaborative

How We Got Here

Public Utility Regulatory Policies Act (PURPA)

The Public Utility Regulatory Policies Act (“PURPA”) is a statute passed to promote greater use of renewable energy. It applies to each electric utility in any calendar year, and to each proceeding relating to each electric utility in such year^[i].

However, the requirements of the statute do not apply to the operations of an electric utility, or to proceedings respecting such operations, to the extent that such operations or proceedings relate to sales of electric energy for purposes of resale.

The purposes of PURPA are to encourage^[ii]:

- conservation of energy supplied by electric utilities;
- the optimization of the efficiency of use of facilities and resources by electric utilities; and
- equitable rates to electric consumers.

In particular, PURPA proposes the elimination of declining block rates, stating that the energy component of a rate, or the amount attributable to the energy component in a rate, charged by any electric utility for providing electric service during any period to any class of electric consumers may not decrease^[iii].

The PURPA, requires electric utilities to purchase all electric energy made available by cogenerators at rates^[iv]:

- that are just and reasonable to electric consumers,
- that do not discriminate against qualifying cogeneration facilities, and
- that do not exceed the incremental cost to the electric utility of alternative electric energy.

^[i] 16 USCS § 2612.

^[ii] 16 USCS § 2611.

^[iii] Citywide Coalition for Util. Reform v. Public Utils. Comm’n, 67 Ohio St. 3d 531 (Ohio 1993).

^[iv] Public Serv. Co. v. State ex rel. Okla. Corp. Comm’n, 2005 OK 47 (Okla. 2005).



Multifamily Master-meter Collaborative

How We Got Here

Public Utility Regulatory Policies Act (PURPA)

Further, the PURPA, requires each state regulatory authority and nonregulated utility to consider the use of six different approaches to structuring rates[v]:

Promulgation, for each class of electricity consumers, of rates that, to the maximum extent practicable, would reflect the costs of service to such class;

- elimination of declining block rates;
- adoption of time-of-day rates;
- promulgation of seasonal rates;
- adoption of interruptible rates; and
- use of load management techniques.

Similarly, the PURPA, requires each state regulatory authority and nonregulated utility to consider the adoption of a second set of standards relating to the terms and conditions of electricity service[vi]:

- prohibition of master-metering in new buildings;
- restrictions on the use of automatic adjustment clauses;
- disclosure to consumers of information regarding rate schedules;
- promulgation of procedural requirements relating to termination of service; and
- prohibition of the recovery of advertising costs from consumers.

[v] FERC v. Miss., 456 U.S. 742 (U.S. 1982).
[vi] 16 USCS § 2623.

Multifamily Master-meter Collaborative

Current State of Multifamily Master-metering in DLC Territory

Multifamily Master-metering in DLC Territory Today:

- Current known master-meter apartments – 20
 - all predate January 1, 1981
- Current number of customer commitments with Multifamily/Multi-metered projects – 14 which account for more than 1,800 residential customers.
 - One project is low-income housing comprising 38 apartments.
 - Two projects are senior living.

Multifamily Master-meter Collaborative

Statewide Landscape (Rules in Other Jurisdictions)

- See separate PDF handout



Discussion

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I

Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

11. Ref: CAUSE-PA St. 1-R, page 9, lines 13-14. Identify, describe and explain any and all instances of which Mr. Geller is aware that low income tenants have been cut off from crucial protections and sources of utility assistance in connection with NEP's existing and operational master and sub-metering program in PECO's service territory. Provide all documents in support of your answer.

RESPONSE:

Mr. Geller is not aware of specific consumers served by NEP in PECO's service territory who were unable to enroll in utility assistance programs. His review of NEP's policies, practices, and standards led him to the conclusion that NEP's services do not provide the level of consumer protections available to tenants in individually metered residential units, including the inability of those served by NEP to enroll in utility assistance programs available to low income tenants who reside in an individually metered building. See Response to NEP to CAUSE-PA I-5.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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Docket No. R-2021-3024750

5. To your knowledge, has the operation of NEP’s existing and operational master and sub-metering program in PECO’s service territory eviscerated the rights of residential tenants in PECO’s service territory as suggest might occur in Duquesne Light’s service territory on page 5, line 5 of your Rebuttal testimony? Provide all documents in support of your answer.

RESPONSE:

Mr. Geller did not review PECO’s tariff provisions regarding multifamily metering in preparing his testimony in this proceeding. Mr. Geller’s testimony addressed the potential effect of NEP’s proposed tariff *in DLC service territory*, in which there is an existing tariff that ensures all new construction since 1981 must be single metered. In DLC service territory, those tenants who reside in single metered buildings are subject to and protected by the statutory and regulatory provisions of the Public Utility Code, including e.g. provisions governing billing, collections, terminations, confidentiality, dispute rights, and access to universal service and other safety net programs.

It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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Docket No. R-2021-3024750

12. Ref: CAUSE-PA St. 1-R, page 9, lines 16-18. Identify, describe and explain any and all instances of which Mr. Geller is aware that landlords have circumvented applicable law, regulation and Public Utility Commission policy governing the rights of residential tenants to access and maintain service in their home based on just and reasonable terms, conditions and rates in connection with NEP's existing and operational master and sub-metering program in PECO's service territory. Provide all documents in support of your answer.

RESPONSE:

As Mr. Geller explained in his Rebuttal Testimony, any time a building is master and/or sub-metered, the tenants who reside in that building may lose access to legal rights, protections, and programs available to residential consumers who reside in an individually metered building. See NEP to CAUSE-PA I-5. Mr. Geller does not believe it is just or reasonable for a residential tenant to not have access to basic billing, collection, termination, dispute rights, confidentiality, and universal service protections contained in the Public Utility Code and the Commission's regulations, policies, and orders.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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RESPONSE:

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It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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Docket No. R-2021-3024750

14. Ref: CAUSE-PA St. 1-R, page 12, lines 9-11. Identify, describe and explain all instances of which Mr. Geller is aware in connection with NEP's existing and operational master and sub-metering program in PECO's service territory where the rights of tenants who reside in buildings that may be remetered have been eviscerated. Provide all documents that support your answer.

RESPONSE:

Mr. Geller is not aware of specific consumers served by NEP in PECO's service territory, or specific instances where a tenant served by NEP was unable to access the statutory and regulatory rights previously available to them prior to re-metering. His review of NEP's policies, practices, and standards led him to the conclusion that NEP's services do not provide tenants with the level of consumer protections available to tenants in individually metered residential units. See NEP to CAUSE-PA I-5, NEP to CAUSE-PA I-11, and NEP to CAUSE-PA I-12.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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RESPONSE:

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It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
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Pennsylvania Public Utility Commission v. Duquesne Light Company
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RESPONSE:

Mr. Geller is not aware of specific consumers served by NEP in PECO's service territory who were unable to enroll in utility assistance programs. His review of NEP's policies, practices, and standards led him to the conclusion that NEP's services do not provide the level of consumer protections available to tenants in individually metered residential units, including the inability of those served by NEP to enroll in utility assistance programs available to low income tenants who reside in an individually metered building. See Response to NEP to CAUSE-PA I-5.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
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RESPONSE:

As Mr. Geller explained in his Rebuttal Testimony, any time a building is master and/or sub-metered, the tenants who reside in that building may lose access to legal rights, protections, and programs available to residential consumers who reside in an individually metered building. See NEP to CAUSE-PA I-5. Mr. Geller does not believe it is just or reasonable for a residential tenant to not have access to basic billing, collection, termination, dispute rights, confidentiality, and universal service protections contained in the Public Utility Code and the Commission's regulations, policies, and orders.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

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16. Identify and describe all companies and entities of which Mr. Geller is aware that are presently providing master metering and sub-metering services like NEP in the PECO service territory. Provide all documents that support your answer.

RESPONSE:

Mr. Geller's testimony addresses NEP's proposed tariff in the DLC service territory. He is not specifically aware of other specific companies and entities, apart from NEP, operating in and providing master metering and sub-metering services like NEP in the PECO service territory.

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
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17. Identify, describe and explain any and all instances of which Mr. Geller is aware in which the failure of a tenant in a building receiving master and sub-metering services from any entity like that offered by NEP has lost rights otherwise available to a tenant that is considered a utility customer. Provide all documents that support your answer.

RESPONSE:

See NEP to CAUSE-PA, I-5; NEP to CAUSE-PA I-11; NEP to CAUSE-PA I-12; NEP to CAUSE-PA I-14.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
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RESPONSE:

Mr. Geller did not review PECO’s tariff provisions regarding multifamily metering in preparing his testimony in this proceeding. Mr. Geller’s testimony addressed the potential effect of NEP’s proposed tariff *in DLC service territory*, in which there is an existing tariff that ensures all new construction since 1981 must be single metered. In DLC service territory, those tenants who reside in single metered buildings are subject to and protected by the statutory and regulatory provisions of the Public Utility Code, including e.g. provisions governing billing, collections, terminations, confidentiality, dispute rights, and access to universal service and other safety net programs.

It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

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RESPONSE:

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Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
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12. Ref: CAUSE-PA St. 1-R, page 9, lines 16-18. Identify, describe and explain any and all instances of which Mr. Geller is aware that landlords have circumvented applicable law, regulation and Public Utility Commission policy governing the rights of residential tenants to access and maintain service in their home based on just and reasonable terms, conditions and rates in connection with NEP's existing and operational master and sub-metering program in PECO's service territory. Provide all documents in support of your answer.

RESPONSE:

As Mr. Geller explained in his Rebuttal Testimony, any time a building is master and/or sub-metered, the tenants who reside in that building may lose access to legal rights, protections, and programs available to residential consumers who reside in an individually metered building. See NEP to CAUSE-PA I-5. Mr. Geller does not believe it is just or reasonable for a residential tenant to not have access to basic billing, collection, termination, dispute rights, confidentiality, and universal service protections contained in the Public Utility Code and the Commission's regulations, policies, and orders.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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RESPONSE:

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Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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Docket No. R-2021-3024750

18. Ref: CAUSE-PA St. 1-R, page 17, lines 1-10. Identify, describe and explain any and all instances of which Mr. Geller is aware in which differences between a utility's bill and payment standards and protections for individually metered residential customers and those of NEP or any similar entity providing master metering and sub-metering services to multi-tenant buildings have resulted in material harm or cost to tenants who are receiving master and sub-metering services from NEP or a similar provider of such services. Provide all documents that support your answer.

RESPONSE:

In his Rebuttal Testimony Mr. Geller analyzed the effect of NEP's policies and procedures on tenants' bills and payment standards and protections. See CAUSE-PA St. 1-R at 52-53, 54-59. It is Mr. Geller's opinion that the inability to access statutory and regulatory billing, collections, and termination standards, confidentiality provisions, dispute rights, universal service programming, and other protections enjoyed by tenants residing in an individually metered tenant unit constitutes a material harm to those tenants and exposes those tenants to added costs and fees.

See also NEP to CAUSE-PA I-5.

Response Provided By:

Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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Docket No. R-2021-3024750

5. To your knowledge, has the operation of NEP’s existing and operational master and sub-metering program in PECO’s service territory eviscerated the rights of residential tenants in PECO’s service territory as suggest might occur in Duquesne Light’s service territory on page 5, line 5 of your Rebuttal testimony? Provide all documents in support of your answer.

RESPONSE:

Mr. Geller did not review PECO’s tariff provisions regarding multifamily metering in preparing his testimony in this proceeding. Mr. Geller’s testimony addressed the potential effect of NEP’s proposed tariff *in DLC service territory*, in which there is an existing tariff that ensures all new construction since 1981 must be single metered. In DLC service territory, those tenants who reside in single metered buildings are subject to and protected by the statutory and regulatory provisions of the Public Utility Code, including e.g. provisions governing billing, collections, terminations, confidentiality, dispute rights, and access to universal service and other safety net programs.

It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
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Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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19. Ref: CAUSE-PA St. 1-R, page 21, lines 10-15. Identify, describe and explain any and all instances of which Mr. Geller is aware in which any one has charged or claimed that NEP has treated tenants unjustly, inequitably and/or discriminatorily regarding NEP's security deposit policies and procedures in connection with its existing and operational master metering and sub-metering program in PECO's service territory. Provide all documents that support your answer.

RESPONSE:

See NEP to CAUSE-PA I-4; NEP to CAUSE-PA, I-5; CAUSE-PA to NEP I-4; DLC to NEP I-56.

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

4. Identify, describe and explain all formal complaints, lawsuits or other disputes of which you are aware that have been filed or asserted against NEP that are associated with any of the issues or concerns you identify in your Rebuttal Testimony, CAUSE-PA St. No. 1-R in connection with NEP's existing and operating master and sub-metering programs. Provide all documents in support of your answer.

RESPONSE:

The extent of Mr. Geller's specific knowledge of formal complaints, lawsuits, or other disputes filed or asserted against NEP pertains to those provided by NEP in response to discovery. See CAUSE-PA to NEP I-4; DLC to NEP I-56.

See also CAUSE-PA St. 1, at 35-36 (explaining the informal and formal dispute rights of tenants who reside in a master and/or sub-metered multifamily building compared to tenants who reside in an individually metered multifamily building).

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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Docket No. R-2021-3024750

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It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 4

CAUSE-PA to NEP I-4. Please provide the jurisdiction and docket number for any lawsuits filed against NEP since January 2015, and indicate the status of those disputes.

RESPONSE:

i. Public Utilities Commission of Ohio, Case No. 15-697-EL-CSS, *Whitt v. Nationwide Energy Partners, LLC*. Filed April 10, 2015. Voluntarily dismissed by complainant; Commission granted complainant's motion to dismiss on October 20, 2017. Matter is resolved.

ii. Franklin County, Ohio Court of Common Pleas, Case No. 16-cv-000143, *Ronald and Michelle Weurth, et al., v. Nationwide Energy Partners, LLC*. Filed January 6, 2016. Matter is pending.

iii. Public Utilities Commission of Ohio, Case No. 116-2401-EL-CSS, *Wingo v. Nationwide Energy Partners, LLC*. Filed December 15, 2016. Commission granted NEP's motion to dismiss November 21, 2017. Applications for rehearing denied. Matter is resolved.

iv. Public Utilities Commission of Ohio, Case No. 17-2002-EL-CSS, *Wingo v. Nationwide Energy Partners, LLC*. Filed September 19, 2017. Voluntarily dismissed by complainant; Commission granted complainant's motion to dismiss on July 14, 2021. Matter is resolved.

v. U.S. District Court for the Southern District of Ohio, Case No. 2:17-cv-150, *Wingo v. Nationwide Energy Partners, LLC*. Filed February 21, 2017. Voluntarily dismissed by complainant on June 9, 2017. Matter is resolved.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 56

56. For each year 2017 through 2021 YTD, identify:
- a. The number of billing complaints or disputes that NEP has received from tenants.
 - b. The number of billing complaints or disputes that have been resolved in the tenant's favor.

RESPONSE:

NEP receives many calls from residents with billing-related questions, which are generally resolved through explanation of NEP's practices and relationship with the property owner, and/or accommodation of residents' circumstances where appropriate. NEP does not consider routine inquiries to be either "complaints" or "disputes". For purposes of this response, we have interpreted "billing complaints or disputes" to mean matters unresolved by NEP or the property owner that were brought to the attention of the Better Business Bureau ("BBB"), Attorney General ("AG") or through legal action at a public utility commission or in a civil complaint filed with a court, in each case relating to the amount a resident was billed by NEP and not collections or other administrative matters. Further, we have interpreted "resolved in tenant's favor" to mean that NEP or an official fact-finder determined that NEP had been in error and that the resident was entitled to compensation.

NEP does not maintain a data set for complaints. The below figures have been compiled from multiple sources, include all states in which NEP operates, and are accurate to the best of NEP's knowledge.

2017: 1 BBB, 0 AG, all resolved, 0 in resident's favor; 1 legal action at PUCO dismissed by Complainant on 4/30/2021.

2018: 0 BBB, 0 AG, 0 legal actions

2019: 1 BBB, 1 AG, all resolved, 0 in resident's favor; 0 legal actions

2020: 3 BBB, 0 AG, all resolved, 0 in resident's favor; 0 legal actions

2021: 0 BBB, 0 AG, 0 legal actions

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

20. Identify, describe and explain any and all instances of which Mr. Geller is aware in which any company or entity like NEP providing master and sub-metering services in Pennsylvania has been charged with treating tenants unjustly, inequitably and/or discriminatorily in connection with their security deposit policies and procedures. Provide all documents that support your answer.

RESPONSE:

See NEP to CAUSE-PA, I-19.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

19. Ref: CAUSE-PA St. 1-R, page 21, lines 10-15. Identify, describe and explain any and all instances of which Mr. Geller is aware in which any one has charged or claimed that NEP has treated tenants unjustly, inequitably and/or discriminatorily regarding NEP's security deposit policies and procedures in connection with its existing and operational master metering and sub-metering program in PECO's service territory. Provide all documents that support your answer.

RESPONSE:

See NEP to CAUSE-PA I-4; NEP to CAUSE-PA, I-5; CAUSE-PA to NEP I-4; DLC to NEP I-56.

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

4. Identify, describe and explain all formal complaints, lawsuits or other disputes of which you are aware that have been filed or asserted against NEP that are associated with any of the issues or concerns you identify in your Rebuttal Testimony, CAUSE-PA St. No. 1-R in connection with NEP’s existing and operating master and sub-metering programs. Provide all documents in support of your answer.

RESPONSE:

The extent of Mr. Geller’s specific knowledge of formal complaints, lawsuits, or other disputes filed or asserted against NEP pertains to those provided by NEP in response to discovery. See CAUSE-PA to NEP I-4; DLC to NEP I-56.

See also CAUSE-PA St. 1, at 35-36 (explaining the informal and formal dispute rights of tenants who reside in a master and/or sub-metered multifamily building compared to tenants who reside in an individually metered multifamily building).

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

5. To your knowledge, has the operation of NEP’s existing and operational master and sub-metering program in PECO’s service territory eviscerated the rights of residential tenants in PECO’s service territory as suggest might occur in Duquesne Light’s service territory on page 5, line 5 of your Rebuttal testimony? Provide all documents in support of your answer.

RESPONSE:

Mr. Geller did not review PECO’s tariff provisions regarding multifamily metering in preparing his testimony in this proceeding. Mr. Geller’s testimony addressed the potential effect of NEP’s proposed tariff *in DLC service territory*, in which there is an existing tariff that ensures all new construction since 1981 must be single metered. In DLC service territory, those tenants who reside in single metered buildings are subject to and protected by the statutory and regulatory provisions of the Public Utility Code, including e.g. provisions governing billing, collections, terminations, confidentiality, dispute rights, and access to universal service and other safety net programs.

It is Mr. Geller’s position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 4

CAUSE-PA to NEP I-4. Please provide the jurisdiction and docket number for any lawsuits filed against NEP since January 2015, and indicate the status of those disputes.

RESPONSE:

i. Public Utilities Commission of Ohio, Case No. 15-697-EL-CSS, *Whitt v. Nationwide Energy Partners, LLC*. Filed April 10, 2015. Voluntarily dismissed by complainant; Commission granted complainant's motion to dismiss on October 20, 2017. Matter is resolved.

ii. Franklin County, Ohio Court of Common Pleas, Case No. 16-cv-000143, *Ronald and Michelle Weurth, et al., v. Nationwide Energy Partners, LLC*. Filed January 6, 2016. Matter is pending.

iii. Public Utilities Commission of Ohio, Case No. 116-2401-EL-CSS, *Wingo v. Nationwide Energy Partners, LLC*. Filed December 15, 2016. Commission granted NEP's motion to dismiss November 21, 2017. Applications for rehearing denied. Matter is resolved.

iv. Public Utilities Commission of Ohio, Case No. 17-2002-EL-CSS, *Wingo v. Nationwide Energy Partners, LLC*. Filed September 19, 2017. Voluntarily dismissed by complainant; Commission granted complainant's motion to dismiss on July 14, 2021. Matter is resolved.

v. U.S. District Court for the Southern District of Ohio, Case No. 2:17-cv-150, *Wingo v. Nationwide Energy Partners, LLC*. Filed February 21, 2017. Voluntarily dismissed by complainant on June 9, 2017. Matter is resolved.

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057
Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 56

56. For each year 2017 through 2021 YTD, identify:
- a. The number of billing complaints or disputes that NEP has received from tenants.
 - b. The number of billing complaints or disputes that have been resolved in the tenant's favor.

RESPONSE:

NEP receives many calls from residents with billing-related questions, which are generally resolved through explanation of NEP's practices and relationship with the property owner, and/or accommodation of residents' circumstances where appropriate. NEP does not consider routine inquiries to be either "complaints" or "disputes". For purposes of this response, we have interpreted "billing complaints or disputes" to mean matters unresolved by NEP or the property owner that were brought to the attention of the Better Business Bureau ("BBB"), Attorney General ("AG") or through legal action at a public utility commission or in a civil complaint filed with a court, in each case relating to the amount a resident was billed by NEP and not collections or other administrative matters. Further, we have interpreted "resolved in tenant's favor" to mean that NEP or an official fact-finder determined that NEP had been in error and that the resident was entitled to compensation.

NEP does not maintain a data set for complaints. The below figures have been compiled from multiple sources, include all states in which NEP operates, and are accurate to the best of NEP's knowledge.

2017: 1 BBB, 0 AG, all resolved, 0 in resident's favor; 1 legal action at PUCO dismissed by Complainant on 4/30/2021.

2018: 0 BBB, 0 AG, 0 legal actions

2019: 1 BBB, 1 AG, all resolved, 0 in resident's favor; 0 legal actions

2020: 3 BBB, 0 AG, all resolved, 0 in resident's favor; 0 legal actions

2021: 0 BBB, 0 AG, 0 legal actions

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

21. Identify, describe and explain any and all instances of which Mr. Geller is aware in which NEP, in connection with its existing master metering and sub-metering services in PECO's service territory, or any company or entity like NEP providing master and sub-metering services in Pennsylvania has:
- a. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate payment arrangements if they have difficulties in paying their bill for utility-type services;
 - b. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate termination standards and procedures for non-payment of bills for utility-type services;
 - c. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate policies and procedures related to winter protections from service termination;
 - d. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate protections from service termination due to identified medical conditions;
 - e. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate rights and protections regarding the notification and resolution of service and/or payment disputes;
 - f. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate arrangements to address protections from domestic violence with respect billing, payment and service contracted for by the domestic abuser;

- g. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate protections/arrangements if the property owner is unable to pay for utility service from the local utility provider for service at the master meter;
- h. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate protection from the voluntary discontinuance of utility services by the property owner at the master meter;
- i. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate pricing for services, including the lack of transparency of the local utility's residential rate for service and notification of proposed or upcoming changes in rates;
- j. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate confidential protection of tenant usage and other tenant information;
- k. Been challenged or charged with providing tenants in multi-family buildings unlawful fees and charges that over and above those that an individually metered residential customer would pay for similar service;
- l. Been challenged or charged with providing tenants in multi-family buildings unlawful or inadequate opportunities to conserve and obtain the benefits of energy efficiency;
- m. Been challenged or charged with providing tenants in multi-family buildings no access to energy efficiency programs like LIURP, CAP, etc.

RESPONSE:

(a) – (m): See NEP to CAUSE-PA, I-19.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I
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RESPONSE:

See NEP to CAUSE-PA I-4; NEP to CAUSE-PA, I-5; CAUSE-PA to NEP I-4; DLC to NEP I-56.

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
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Pennsylvania Public Utility Commission v. Duquesne Light Company
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RESPONSE:

The extent of Mr. Geller's specific knowledge of formal complaints, lawsuits, or other disputes filed or asserted against NEP pertains to those provided by NEP in response to discovery. See CAUSE-PA to NEP I-4; DLC to NEP I-56.

See also CAUSE-PA St. 1, at 35-36 (explaining the informal and formal dispute rights of tenants who reside in a master and/or sub-metered multifamily building compared to tenants who reside in an individually metered multifamily building).

Response Provided By:
Harry Geller, Esq.
Witness for CAUSE-PA

Dated: August 6, 2021

Nationwide Energy Partners, LLC
Interrogatories and Requests for Production of Documents to the
Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania – Set I

Pennsylvania Public Utility Commission v. Duquesne Light Company
Docket No. R-2021-3024750

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It is Mr. Geller's position that establishing tariff rules which prevent tenants from accessing protections they are otherwise currently entitled to in an individually metered unit, eviscerates the rights of those tenants. See CAUSE-PA St. 1-R.

Response Provided By:

Harry Geller, Esq.

Witness for CAUSE-PA

Dated: August 6, 2021

Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to The Coalition for Affordable Utility Services and Energy Efficiency in
Pennsylvania Interrogatories, Set I, No. 4

CAUSE-PA to NEP I-4. Please provide the jurisdiction and docket number for any lawsuits filed against NEP since January 2015, and indicate the status of those disputes.

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Docket Nos.: R-2021-3024750; C-2021-3025538
C-2021-3025462; C-2021-3026057

Sponsor: Drew Romig
Title: Corporate Counsel

Nationwide Energy Partners, LLC
Response to Duquesne Light Company Interrogatories and Requests for
Production of Documents, Set I, No. 56

56. For each year 2017 through 2021 YTD, identify:
- a. The number of billing complaints or disputes that NEP has received from tenants.
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RESPONSE:

NEP receives many calls from residents with billing-related questions, which are generally resolved through explanation of NEP's practices and relationship with the property owner, and/or accommodation of residents' circumstances where appropriate. NEP does not consider routine inquiries to be either "complaints" or "disputes". For purposes of this response, we have interpreted "billing complaints or disputes" to mean matters unresolved by NEP or the property owner that were brought to the attention of the Better Business Bureau ("BBB"), Attorney General ("AG") or through legal action at a public utility commission or in a civil complaint filed with a court, in each case relating to the amount a resident was billed by NEP and not collections or other administrative matters. Further, we have interpreted "resolved in tenant's favor" to mean that NEP or an official fact-finder determined that NEP had been in error and that the resident was entitled to compensation.

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2020: 3 BBB, 0 AG, all resolved, 0 in resident's favor; 0 legal actions

2021: 0 BBB, 0 AG, 0 legal actions

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of
Nationwide Energy Partners, LLC

Set III

Witness: Yvonne Phillips and David Defide

NEP-III-9

9. Please identify any non-Duquesne energy efficiency and conservation programs available to multi-family building owners in Duquesne's service territory that the Company is aware of.

Response:

Duquesne Light is not aware of all non-Duquesne programs available to multi-family building owners within Duquesne Light's service territory. The Company is aware of other entities that offer energy efficiency and conservation programming or services in the Company's service territory (including but not necessarily limited to the Green Building Alliance, Keystone Energy Efficiency Alliance); however, the Company is not familiar with the details of those other parties' services.

STEVENS & LEE
LAWYERS & CONSULTANTS

17 N. 2nd Street, 16th Fl.
Harrisburg, PA 17101
www.stevenslee.com

Direct Dial: (717) 255-7365
Email: mag@stevenslee.com

March 1, 2021

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

**RE: Petition of Duquesne Light Company for Approval of its Act 129 Phase IV Energy Efficiency and Conservation Plan
Docket No. M-2020-3020818**

Dear Secretary Chiavetta:

Enclosed for filing please find Duquesne Light Company's Revised Phase IV Energy Efficiency & Conservation Plan ("Revised Plan"). Please note that Tab 13 to the Revised Plan is identical to the Tab 13 that was included with Duquesne Light Company's Original Phase IV Energy Efficiency & Conservation Plan ("Original Plan") and which was marked as Confidential and filed via electronic mail under seal. As such, Confidential Tab 13 as filed with the Original Plan is incorporated into the Revised Plan by reference.

Copies of this filing have been served in accordance with the attached Certificate of Service. Thank you for your attention to this matter, and if you have any questions, please feel free to contact me.

Sincerely,
STEVENS & LEE



Michael A. Gruin

Enclosures

cc: Certificate of Service
Administrative Law Judges Mark Hoyer and Emily DeVoe (via electronic mail only)
Kathryn G. Sophy, Director, Office of Special Assistants (via electronic mail only)
Kim Hafner, Deputy Director Legal, Office of Special Assistants (via electronic mail only)

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of Duquesne Light Company for Approval :
of its Act 129 Phase IV Energy Efficiency and : Docket No. M-2020-3020818
Conservation Plan :
:

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the enclosed Revised Phase IV Energy Efficiency & Conservation Plan have been served upon the following persons, in the manner indicated, in accordance with the requirements of § 1.54 (relating to service by a participant):

VIA ELECTRONIC MAIL ONLY

Ria Pereira, Esq.
Elizabeth Marx, Esq.
CAUSE-PA
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Harrisburg, PA 17101
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michael.turzai@peoples-gas.com

A handwritten signature in blue ink that reads "Michael A. Gruin". The signature is written in a cursive style with a large initial 'M' and 'G'.

March 1, 2021

Michael A. Gruin

Duquesne Light Company – Revised Phase IV Energy Efficiency and Conservation Plan
March 1, 2021

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- Mapping of Program Years to Dates

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Table of Acronyms

Acronym	Definition
AMI	Advanced Metering Infrastructure
BRA	Base Residual Auction
CHP	Combined Heat and Power
CPM	Contract Program Manager
DOE	United States Department of Energy
EDC	Electric Distribution Company
EE&C	Energy Efficiency and Conservation
EEPDRMPSR	SWE's Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study Report
EM&V	Evaluation, Measurement, and Verification
HVAC	Heating, Ventilation, and Air Conditioning
IEAG	Income Eligible Advisory Group
LBS	Large Business Solutions
LI-BEEP	Low-Income Behavioral Energy Efficiency Program
LIHEAP	Low-Income Home Energy Assistance Program
LIURP	Low-Income Usage Reduction Program
LI-WHRP	Low-Income Whole House Retrofit Program
LVCx	Large Virtual Commissioning Program
NAICS	North American Industry Classification System
NGDC	Natural Gas Distribution Company
On-Peak Demand (kW)	Average grid level impact, in kilowatts, for a measure between 12:00 p.m. and 8:00 p.m. during weekday periods
PCPP	Project Commitment Progress Payment

Acronym	Definition
PDE	Pennsylvania Department of Education
Phase IV EE&C Plan	Duquesne Light's Energy Efficiency and Conservation Plan for Act 129 Phase IV submitted on November 30, 2020
PMP	Program Management Plan
PJM	Pennsylvania-Jersey-Maryland Interconnection LLC
PMRS	Program Management and Reporting System
POS	Point of Sale
PPUC	Pennsylvania Public Utility Commission
Program Year	June 1 st through May 31 st
RARP	Residential Appliance Recycling Program
R-BEEP	Residential Behavioral Energy Efficiency Program
RDIP	Residential Downstream Incentives Program
REEP	Residential Energy Efficiency Programs
RFP	Request for Proposal
RMIP	Residential Midstream Incentives Program
RUIP	Residential Upstream Incentives Program
SBDI	Small Business Direct Install
SBS	Small Business Solutions
SOW	Statement of Work
SVCx	Small Virtual Commissioning Program
SWE	Statewide Evaluator
TRM	Technical Reference Manual

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Note: If any of your answers require you to disclose what you believe to be privileged or confidential information, not otherwise available to the public, you should designate at each point in the EE&C Plan that the answer requires

you to disclose privileged and confidential information. Explain briefly why the information should be treated as confidential. You should then submit the information on documents stamped "CONFIDENTIAL" at the top in clear and conspicuous letters and submit one copy of the information under seal to the Secretary's Office along with the EE&C Plan. In addition, an expunged copy of the filing should also be included with the EE&C Plan. If someone requests to examine the information, or if Commission staff believes that the proprietary claim is frivolous or otherwise not justified, the Secretary's Bureau will issue a Secretarial Letter directing that the EDC file a petition for protective order pursuant to 52 Pa. Code § 5.423.

Energy Efficiency and Conservation Plan

A. Transmittal Letter - with reference to statutory and regulatory requirements and Electric Distribution Company (EDC) contact that PA PUC should contact for more information.

B. Table of Contents - including lists of tables and figures.

C. Table of Acronyms – include definitions of any acronyms used in the plan.

D. Mapping of Program Years to Dates – show table identifying the start and end dates of all program years.

Program Year	Start Date	End Date
PY13	6/1/2021	5/31/2022
PY14	6/1/2022	5/31/2023
PY15	6/1/2023	5/31/2024
PY16	6/1/2024	5/31/2025
PY17	6/1/2025	5/31/2026

1. Overview of Plan

(The objective of this section is to provide an overview of the entire plan)

1.1. Summary description of plan, plan objectives, and overall strategy to achieve energy efficiency and conservation goals.

Pursuant to Act 129 of 2008 (“Act 129”), the Pennsylvania General Assembly charged the Pennsylvania Public Utility Commission (“PUC” or “Commission”) with establishing an energy efficiency and conservation program. The energy efficiency and conservation program requires each electric distribution company (“EDC”) with at least 100,000 customers to adopt a plan to reduce energy demand and consumption within its service territory. In response to Act 129, on January 16, 2009, the Commission entered an Implementation Order at Docket No. M-2008-2069887 which was utilized in Phase I program planning. On August 3, 2012, the Commission entered an Implementation Order at Docket Nos. M-2012-2289411 and M-2008-2069887 for Phase II program planning. On June 11, 2015, the Commission entered an Implementation Order at Docket No. M-2014-2424864 for Phase III program planning along with a Clarification Order issued on August 20, 2015. On June 18, 2020, the Commission entered an Implementation Order at Docket No. M-2020-3015228 for Phase IV program planning. The Act requires that by November 30, 2013, and a least every five years thereafter, the Commission shall evaluate the costs and benefits of the program. Based upon findings of the Statewide Evaluator (SWE) contained in its Market Potential Study¹, the Commission determines that the benefits of a Phase IV Act 129 program will exceed the costs and therefore proposes to adopt additional required incremental reductions in consumption for another Energy Efficiency and Conservation Plan (“EE&C” or “Plan”) program term.

In the June 18, 2020 Implementation Order, the Commission adopted the percentage reduction targets recommended by the SWE. Duquesne Light Company’s (“Duquesne Light” or “Duquesne” or the “Company”), energy consumption reduction target for the Phase IV five-year energy efficiency consumption is 348,126 MWh and demand reduction target is 62 MW. In compliance with the requirements of Act 129 and PUC Orders, Duquesne has used the energy consumption and demand reductions established by the Commission to develop its energy efficiency and conservation plan, which is submitted herewith.

EE&C Plan savings projections for each sector are proportionally aligned with Pennsylvania Act 129 - Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study Report Table 11 at page 26. The forecast values themselves were changed to match the amount in the Commission’s Phase IV mandate. The potential study at page 26 totaled 340,000 MWh and the Commission target is 348,126 MWh. The EE&C Plan forecast measure detail is directly linked to CSP response to competitive solicitations, issued by Duquesne Light, for the design and implementation of the programs presented in this Plan. Accordingly, the measure mix was taken from proposals selected based on CSP expertise and innovation. Phase IV Plan measures (See Section 11, Table 7) were reconciled with content of the 2021 Technical Reference Manual (TRM) and information provided in the SWE saturation studies and potential forecast.²

¹ Energy Efficiency Potential Study for Pennsylvania, Optimal Energy, February 28, 2020

² Ibid

1.2. Summary description of process used to develop the EE&C plan and key assumptions used in preparing the plan. Included in this summary should be a description of the EDC's process for stakeholder engagement.

Duquesne Light developed the Phase IV Plan in partnership with implementation providers to leverage industry expertise and streamline the transition from Phase III. Following the release of the Phase IV Implementation Order, Duquesne Light issued competitive solicitations for the design and implementation of each of [five] programs: (1) Residential; (2) Residential Low-Income, (3) Nonresidential (i.e., Commercial & Industrial or C&I); (4) Behavioral; and (5) Evaluation, Measurement and Verification ("EM&V"). Duquesne Light's Phase IV EE&C Plan development process is summarized below:

1) Measure content and projected mix

The EE&C Plan forecast measure detail is directly linked to CSP responses to competitive solicitations, issued by Duquesne Light, for the design and implementation of the programs presented in this Plan. Accordingly, the measure mix was taken from proposals selected based on CSP expertise and innovation. The Plan measure content was reconciled with content of the 2021 Technical Reference Manual (TRM) and information provided in the SWE saturation studies and potential forecast (2021 Statewide EE Potential Study).³

2) Measure savings impact, cost and benefit

Measure deemed savings were updated consistent with the 2021 TRM. Measure costs were documented using the SWE incremental costs database⁴, contractor values, EDC research and specific measure cost web research. Incentive amounts were established starting with baseline assumptions applied in the 2021 Statewide EE Potential Study. These were adjusted based upon historic incentives provided by Duquesne Light, the other six Pennsylvania EDCs, escalated for the Phase IV performance period and adjusted as required to achieve budgetary requirements. Avoided cost assumptions were updated consistent with the Total Resource Cost Test (TRC) Order⁵ and applied to render measure, program, portfolio and Plan level cost-effectiveness as expressed by the TRC ratio.

3) Program definition

Programs were defined based upon delivery channels within each customer sector. Duquesne Light worked with CSPs to establish program definitions. Residential sector programs retain the successful downstream and upstream rebate offerings. The Commercial and Industrial portfolios retain proven customer market segment engagement channels. The Small Commercial Direct-Install Program and Multifamily Housing Retrofit Program were both successful in Phase III and are continued in Phase IV. Such programs demonstrate Duquesne Light's commitment to providing comprehensive measures to under-served market segments.

³ Ibid

⁴ Ibid.

⁵ PA PUC 2021 Total Resource Cost Test Order, December 19, 2019, at Docket No. M-2019-3006868

4) Portfolio/Program Goals and Funding

Program goal allocation and associated program budgets were designed based upon SWE Energy Efficiency Potential Study and adjusted to accommodate the Commission's Implementation Order, which required segment carve-outs for the low income segment and specified program comprehensiveness requirements.⁶ Goal allocation for the remaining customer segments was based on segment energy use, as well as requirements to achieve mandated reductions at authorized budgets.

1.3. Summary tables of portfolio savings goals, budget and cost-effectiveness (see Tables 1, 2, 3 and 4). Introduce Table 2 with high-level overview of Act 129 accounting (incremental annual, meter level savings vs. system level savings, weather-normalization of savings estimates, etc.).⁷

See Section 11, Tables 1, 2, 3, and 4.

1.4. Summary of program implementation schedule over five-year plan period (see Chart 1 Notes).

Residential Sector

Pursuant to the Commission's Implementation Order for Phase IV, Duquesne Light developed plans to launch programs targeting the residential sector: a low income program; a residential rebate program including upstream, midstream and downstream components; residential appliance recycling program; a residential behavioral program, and a low income residential behavioral program. Duquesne Light will competitively bid all implementation CSPs based upon Duquesne Light's approved Request for Proposal (RFP) process.

Non-Residential

Small/Medium C & I: Pursuant to the Commission's Implementation Order for Phase IV program planning Duquesne Light developed plans to launch programs targeting the small and medium commercial/industrial sector: The Small Commercial⁸ Direct-Install Program, Small Business Solutions Program, Small Midstream Lighting Program, and Small Virtual Commissioning Program. Duquesne Light will competitively bid all implementation CSPs based upon Duquesne Light's approved Request for Proposal (RFP) process.

Large C & I: Pursuant to the Commission's Implementation Order for Phase IV program planning Duquesne Light developed plans to launch programs targeting the large commercial/industrial sector: The Large Business Solutions Program, Large Midstream Lighting Program, and Large Virtual Commissioning Program. Duquesne Light will competitively bid all implementation CSPs based upon Duquesne Light's approved Request for Proposal (RFP) process.

⁶ Ibid.

⁷ Tables referenced in the template are found in Section 11.

⁸ Opportunities for Small Industrial Direct Install Program will be minimal but will also be covered by this program.

Governmental/Educational/Non-Profit Sector Programs: Pursuant to the Commission’s Implementation Order for Phase IV, Duquesne Light will not offer a specialized program, but will report the savings associated with the GNI customers participating in the Non-Residential programs.

1.5. Summary description of the EDC implementation strategy to acquire at least 15% of its consumption reduction and peak demand reduction target in each program year.

Duquesne Light’s Phase IV EE&C Plan includes programs that are being continued as previously implemented, modified based on previous years’ experience implementing them, and newly added programs. These programs have forecast “ramp-rates” projecting estimated saving impacts across the five-year Phase IV performance period as shown in Figure 1: Program Ramp-Rates. As shown the Plan provides for acquiring at least 15% of the consumption target in each of the Phase IV program years.

Figure 1: Program Ramp-Rates

Program Year	2021	2022	2023	2024	2025	Total
Residential						
Appliance Recycling	15%	21%	22%	21%	21%	100%
Downstream	20%	20%	20%	20%	20%	100%
Midstream	19%	20%	20%	20%	21%	100%
Upstream Products	19%	20%	20%	20%	21%	100%
LIEEP	20%	20%	20%	20%	20%	100%
R-BEEP	20%	20%	20%	20%	20%	100%
LI-BEEP	20%	20%	20%	20%	20%	100%
Sector	19%	20%	20%	20%	21%	100%
Small/Medium C&I						
Business Solutions	18%	22%	23%	22%	15%	100%
Midstream	17%	19%	20%	21%	23%	100%
Direct Install	18%	22%	23%	22%	15%	100%
Virtual Commissioning	14%	22%	22%	21%	21%	100%
Sector	17.4%	21.4%	22.4%	21.7%	17.1%	100%
Large C&I						
Business Solutions	18%	22%	23%	22%	15%	100%
Midstream	17%	19%	20%	21%	23%	100%
Virtual Commissioning	14%	22%	21%	21%	22%	100%
Sector	17.7%	21.8%	22.5%	21.5%	16.5%	100%

Program Year	2021	2022	2023	2024	2025	Total
Residential						
Appliance Recycling	15%	21%	22%	21%	21%	100%
Downstream	20%	20%	20%	20%	20%	100%
Midstream	19%	20%	20%	20%	21%	100%
Upstream Products	19%	20%	20%	20%	21%	100%
LIEEP	20%	20%	20%	20%	20%	100%
R-BEEP	16%	23%	21%	23%	17%	100%
LI-BEEP	15%	21%	22%	27%	15%	100%
Sector	19%	20%	20%	20%	21%	100%
Small/Medium C&I						
Business Solutions	18%	22%	23%	22%	15%	100%
Midstream	17%	19%	20%	21%	23%	100%
Direct Install	18%	22%	24%	23%	14%	101%
Virtual Commissioning	14%	22%	22%	22%	20%	100%
Sector	17.4%	21.4%	22.4%	21.7%	17.1%	100%
Large C&I						
Business Solutions	18%	22%	23%	22%	15%	100%
Midstream	17%	19%	20%	21%	23%	100%
Virtual Commissioning	14%	22%	22%	22%	20%	100%
Sector	17.7%	21.8%	22.5%	21.5%	16.5%	100%

1.6. Summary description of the programs or measure categories from which the EDC intends to nominate peak demand reductions (PDR) into PJM's Forward Capacity Market (FCM) along with a projected range of MW totals to be bid by year.

Duquesne Light plans to offer a portion of the peak demand reductions from its Phase IV Plan into PJM's Forward Capacity Market from the portfolio of programs and measures that are eligible for PJM as provided in PJM Manuals 18 and 18B or their successors.

Duquesne Light intends to nominate EE Resource demand reductions beginning with PJM's Base Residual Auction (BRA) for delivery year 2025/2026, which expected to occur in early 2023. This appears to be the earliest opportunity following the portfolio launch, orientation of new CSPs, refinement of tracking system interfaces and operational practices as well as developing and implementing marketing outreach strategies.

Duquesne Light intends to create a single EE Resource modeled in PJM's Capacity Exchange system representing commercial (office, retail or healthcare) interior lighting with the intent of employing partially measured retrofit isolation and/or stipulated measurement and verification. The measure type will render reliable summer and winter demand reductions and employ proxy variables in combination with well-established algorithms and/or stipulated factors, to provide an

accurate estimate of Nominated EE values.⁹ Duquesne Light will combine documented energy savings and demand reductions with modeled annual hourly load shapes to calculate demand reductions during summer and winter performance hours.

Additional EE Resources will be considered and modeled using PJM's Capacity Exchange system depending upon actual program activity and need to add isolated retrofit, whole facility regression or calibrated simulation measured EE Resources for differing types of measure end-uses. It is anticipated that all commercial and industrial sector programs may contribute to annual nominations. Based on projected savings impacts Duquesne Light currently plans to nominate up to 2 MW into PJM's Forward Capacity Market beginning with the BRA for delivery year 2025/2026, and continue in each successive BRA, applicable during Phase IV.

1.7. Summary description of the EDC implementation strategy to manage EE&C portfolios and engage customers and trade allies.

Duquesne Light implements programs in an effective and economical manner by balancing utility resources with contracted resources. More specifically, contractors and subcontractors with expertise and experience in program implementation and operations are deployed under agreements with Duquesne Light. Management responsibility for meeting goals still rests with Duquesne Light, working in concert with contractors and subcontractors.

Phase IV programs will be directly implemented by CSPs, with oversight and support by Duquesne Light. Phase IV program to be successfully implemented will require significant planning, coordination and integrated into an organized, cohesive operation. Program procedural guidelines are developed and followed. Documentation and electronic data structures are maintained and managed. The above coordination will be accomplished in partnership among CSP, contractors, trade allies and Duquesne Light.

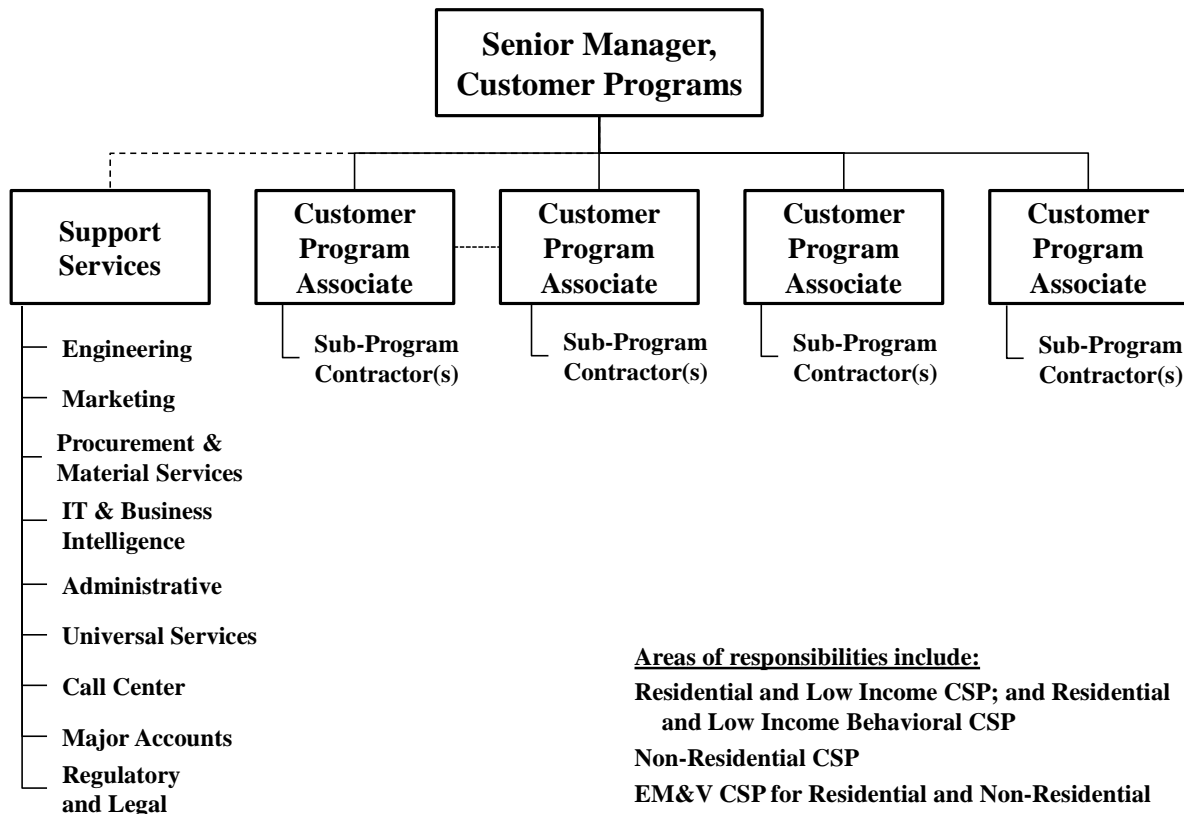
Customers will be engaged through at least three channels. First, Duquesne Light promotes the programs directly to its customers through marketing approaches such as mass media advertising, direct marketing, direct contact, events, conferences, account representatives and electronic media. Second, Duquesne Light will work with CSPs that have similar outreach responsibilities to ensure a consistent message with a specific focus on securing commitments for customers to participate in the programs. Third, Duquesne Light and its CSPs will provide information of its programs to trade allies, such as builders, architects, engineers, vendors, equipment installation contractors, retailers and others, with the objective of securing their willingness to participate and encourage their customers and clients to participate. Trade allies are engaged primarily through direct marketing, events, conferences and account representatives.

Energy efficiency is implemented under customer programs at Duquesne Light and is housed within the customer service department under the customer experience function. The department's size and function is driven by the portfolio of programs offered. The size and structure also reflect the use of contractors and subcontractors. The organization is headed by one senior manager who reports to the Director of Customer Experience and is responsible for the planning and implementation of the energy efficiency and conservation program. The senior

⁹ PJM Manual 18B: Energy Efficiency Measurement & Verification, Revision: 04, Effective August 22,2019 Section &: Measurement and Verification Methodologies subsection 7.1 Option A.

manager is supported by several sector or segment specific customer program associates. There also is support staff for functions to include engineering, marketing, data processing, regulatory and contract management. The organizational chart pictured below represents the structure of the organization to implement the energy efficiency and conservation plan.

Figure 2: Customer Programs Organizational Chart



1.8. Summary description of EDC’s data management, quality assurance and evaluation processes; include how EE&C plan, portfolios, and programs will be updated and refined based on evaluation results.

Data Management: All energy efficiency project activity is tracked and recorded in the Program Management and Reporting System (PMRS). When projects are established, PMRS assigns project numbers that are linked to the Duquesne Light’s customer information and billing system by customer service agreement identification number. Hard and electronic copy project files are organized and filed by PMRS project number. Data elements tracked in PMRS include customer data, project and measure data; energy and demand savings; as well as financial rebate and, as applicable, Conservation Service Provider (CSP) performance payment data. Measure level data contain applicable baselines, as well as proposed and installed measure definition to support claimed savings for measures listed in Section 11, Table 7. PMRS data extraction supports all program reporting as well as evaluation measurement and verification sampling.

Quality Assurance: (A more detailed description of quality assurance is provided under Section 6.) All CSPs under contract to implement Duquesne Light energy efficiency programs are required by contract statements of work to provide a Program Management Plan (“PMP”). The PMP presents the program rationale, assumptions, approach, processes to include policies and procedures, production plan, marketing plan, performance metrics and a quality assurance plan.

Procedures are in place to ensure prospective projects receive appropriate and consistent review prior to approval and incentive payment processing. This ranges from minimal residential measure rebate application processing to extensive commercial and industrial (C&I) project development and customer incentive processing. C&I incentive processing varies significantly depending on project type and size. A project review flow chart and project file content requirements are addressed in Section 6.

Evaluation Process: Projects and measure reported savings are verified pursuant to the Duquesne Light Evaluation Measurement and Verification (EM&V) Plan. The EM&V Plan ensures customer projects are verified using a systematic process that is consistent with the Statewide Evaluator’s (SWE) Audit Plan and Evaluator’s Framework for Pennsylvania Act 129 Energy Efficiency and Conservations Programs (Audit Plan). The Duquesne Light EM&V Plan specifies sample plans and applicable verification rigor consistent with the Audit Plan and is vetted with and approved by the SWE.

Program Refinements: Program refinement is continuous, resulting from experience gained through program implementation and adherence to quality assurance procedures described above. Augmenting internal process improvements, programs and processes are subject to program implementation process evaluations performed by an independent EM&V contractor.

Additionally, customer and stakeholder input are solicited during regularly scheduled Act 129 EE&C Program stakeholder meetings. Changes to programs will be requested through the applicable Commission process, if necessary. The Company will also monitor and report on all existing programs at its stakeholders’ meeting.

Duquesne Light will evaluate requests for custom measure rebates on the case-by-case basis to determine cost effectiveness and energy savings potential. Measures, including combined heat and power (“CHP”) projects, distributed energy resources, and microgrids may be considered and approved if found to be cost effective as indicated by the Total Resource Cost (“TRC”) score above 1.0, based upon project savings calculated in accordance with the PA Technical Reference Manual (“TRM”) standards and proof of positive fuel savings using the Department of Energy endorsed source fuel efficiency models.

1.9. Summary description of cost recovery mechanism.

The Act allows all EDCs to recover on a full and current basis from customers, through a reconcilable adjustment clause under 66 Pa. C.S. § 1307, all reasonable and prudent costs incurred in the provision or management of its plan. The Act also requires that each EDC's plan include a proposed cost-recovery tariff mechanism, in accordance with 66 Pa. C.S. § 1307, to fund all measures and to ensure full and current recovery of prudent and reasonable costs, including administrative costs, as approved by the Commission. To that end, Duquesne Light has designed a surcharge and reconciliation mechanism for all customer segments. The

surcharge has been designed in a manner that recovers costs of the programs from the customers who have an opportunity to participate in those programs.

The Company has successfully implemented in Phase I, Phase II, and Phase III five surcharges to recover the associated Act 129 costs. As part of the parties' settlement in Phase III,¹⁰ Duquesne Light agreed to combine the surcharges for Small and Medium Commercial and Industrial customers, reducing the total number of EE&C surcharges from five to four: Residential, Small and Medium C&I, Large Commercial, and Large Industrial. The revised plan was filed and approved by the PA PUC resulting in the new surcharge effective June 1, 2020.¹¹ This surcharge configuration is slated to remain for Phase IV. The Residential surcharge is designed to recover costs on a cents per kilowatt-hour basis with an annual reconciliation; the charges would be included in the overall distribution kWh rate. The Small and Medium Commercial and Industrial surcharges are also designed to recover costs on a cents per kilowatt-hour basis with an annual reconciliation. The Large Commercial and Industrial surcharges are each designed to recover costs through a combination of a fixed monthly surcharge and a demand-based surcharge with an annual reconciliation. All commercial and industrial customers will have a separate line item delineation of these charges on the bill.

¹⁰ Refer to the PaPUC Docket M-2015-2515375 Commission Order dated March 10, 2016 regarding the Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation Phase III Plan.

¹¹ Refer to the PaPUC Docket M-2015-2515375 Commission Order dated March 12, 2020 regarding the Petition of Duquesne Light Company for Approval of a Modification to its Revised Act 129 Phase III Energy Efficiency and Conservation Plan.

2. Energy Efficiency & Conservation Portfolio/Program Summary Tables & Charts

(The objective of this section is to provide a quantitative overview of the entire plan for the five-year period. The audience will be those who want to see the “numbers”, but not all the details.)

2.1. Residential (exclusive of Low-Income), Residential Low-Income, Commercial/Industrial Small, and Commercial/Industrial Large Portfolio Summaries (see Table 5).¹²

See Section 11 for Table 5.

2.2. Plan data: Costs, Cost-effectiveness and Savings by program, sector and portfolio (see Tables 1-5).

See Section 11 for Tables 1-5.

2.3. Budget and Parity Analysis (see Table 6). EDC total annual revenue is inclusive of collections on behalf of Electric Generation Suppliers.¹³ EDCs should use calendar year 2019 to compute the share of revenue and MWh sales by customer sector.

See Section 11 for Table 6.

¹² A *project* is an activity or course of action involving one or multiple energy efficiency measures, at a single facility or site. A *program* is a group of projects, with similar characteristics and installed in similar applications. Programs should be organized around a common customer class, technology, end-use, market, or delivery mechanism. The *portfolio* consists of all the programs in the residential, commercial/industrial small, commercial/industrial large or government/nonprofit/institutional sectors. Residential sector programs include participants with a residential rate schedule. Commercial/Industrial Small sector programs include participants with a small C/I rate schedule. Commercial/Industrial Large sector programs include participants with large C/I rate schedule. Government/Nonprofit/Institutional includes customers in any rate schedule who are Federal, State, Municipal, and Local Governments, as well as school districts, institutions of higher learning, and non-profit entities. The applicable EE&C sector designation is based on a customer’s rate schedule not the size of the energy efficiency project or the type of building.

¹³ Per the January 16, 2009 Implementation Order, “the Commission interprets ‘amounts paid to the [EDC] for generation, transmission, distribution and surcharges by retail customer,’ set forth as the definition of EDC total annual revenue in 66 Pa. C.S. § 2806.1(m), to include all amounts paid to the EDC for generation service, including generation revenues collected by an EDC for an EGS that uses consolidated billing.” See January 16, 2009 Implementation Order at 35.

3. Program Descriptions

(The objective of this section is to provide detailed descriptions of each proposed program and the background on why particular programs were selected and how they form balanced/integrated portfolios.)

3.1. Discussion of criteria and process used for selection of programs:

Duquesne Light is in its twelfth year successfully planning and implementing three prior portfolios of energy efficiency programs. The Phase I portfolio was built upon Duquesne Light's own Energy Efficiency and Demand Response Potential Study.¹⁴ Phase II planning benefitted by the SWE's 2012 Market potential Study; the Phase III EE&C Plan incorporated findings of SWE's 2015 Energy Efficiency Potential Study. In addition to 11 years of experience implementing programs having claimed savings independently verified at 97.6%, Duquesne Light was able to apply findings of SWE's Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study Report (EEPDRMPSR). EE&C Plan sector savings are in align with EEPDRMPSR projections.¹⁵

In addition to the planning depth of four potential studies and implementation experience Duquesne Light's Phase IV measure content reflects the 2021 Technical Reference Manual and its predecessors, where applicable. Phase IV EE&C Plan program measure mixes are updated to current codes and standards and reflect the measures of successful programs, nationally.

3.1.1. Describe portfolio objectives and metrics that define program success (e.g., energy and demand savings, customers served, number of units installed).

Portfolio objectives and metrics are taken from the EEPDRMPSR. The Commission's adoption of the study report, and incorporation of study report findings as compliance targets, supports Duquesne Light's application of study report findings as an initial planning basis. Adjustments were made based on Duquesne Light's experience with implementing similar programs but generally align with EEPDRMPSR projections as shown in the table below:

¹⁴ Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation and Demand Response Plan Docket No. M-2009-2093217, June 30, 2009; Part (3) Energy Efficiency and Demand Side Response Study, MCR Performance Solutions, LLC, June 26, 2009.

¹⁵ Pennsylvania Act 129 – Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study Report, PA Statewide Evaluation Team February 28, 2020, Optimal Energy, Table 11: Program Potential sector spending, savings and acquisition costs, 2021-2025

Figure 3: Budget

Sector	Energy Use	5-Year Savings MWh	Plan Savings %	EEPDRMPSR Savings Potential
Residential	32.1%	124,934	32.6%	30.0%
Small C&I	25.2%	106,891	27.9%	29.7%
Large Commercial	24.5%	103,753	27.0%	23.1%
Large Industrial	18.2%	48,155	12.5%	17.2%
Total EE	100.0%	383,733	100.0%	100.0%

Sector	Energy Use	5-Year Savings MWh	Plan Savings %	EEPDRMPSR Savings Potential
Residential	32.1%	111,379	30.1%	30.0%
Small C&I	25.2%	106,891	28.9%	29.7%
Large Commercial	24.5%	103,753	28.0%	23.1%
Large Industrial	18.2%	48,155	13.0%	17.2%
Total EE	100.0%	370,178	100.0%	100.0%

Given this foundation, the planning process imposed program budget limits consistent with the Act and the Commission’s Implementation Order of June 18, 2020. Available funding was first allocated to each major rate class in proportions approximating annual energy consumption, then adjusted based on requirements to achieve the Commission’s required reductions in the low income segment, as well as certain comprehensive program requirements of the Commission’s Implementation Order. Program goal allocations also incorporated demonstrated delivery channel strengths and weaknesses from Phase I, Phase II and Phase III in a balance to achieve reduction mandates given the Commission’s funding authorization.

The Act requires certain amounts of the mandated reductions be achieved through programs serving low income customers. In addition to mandated programs, a portfolio of programs was assembled to penetrate key markets, including hard-to-reach small C&I markets.

Figure 4: Projected Portfolio Savings

Residential Programs	Savings	Savings
	kWh	kW
Appliance Recycling	8,447,770	1,210
Downstream Incentives	23,698,780	2,595
Midstream Incentives	596,319	127
Upstream Incentives	13,605,083	1,426
Low Income Energy Efficiency	21,386,149	2,494
Residential Behavioral Energy Efficiency	49,700,000	6,740
Low Income Behavioral Efficiency	7,500,000	1,017
Total	124,934,102	15,609

Small C&I	Savings	Savings
	kWh	kW
Small Business Direct Install	23,133,399	4,475
Small Business Solutions	50,212,478	8,590
Small Business Midstream Solutions	27,491,056	6,756
Small Business Virtual Commissioning	6,053,739	2,228
Total	106,890,672	22,049

Large Commercial	Savings	Savings
	kWh	kW
Large Business Solutions	83,696,145	15,377
Large Business Midstream Solutions	17,300,344	4,783
Large Business Virtual Commissioning	2,756,458	1,014
Total	103,752,946	21,174

Large Industrial	Savings	Savings
	kWh	kW
Large Business Solutions	38,846,312	7,137
Large Business Midstream Solutions	8,029,695	2,220
Large Business Virtual Commissioning	1,279,369	471
Total	48,155,376	9,828

Grand Total	383,733,096	68,660
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Sector	Program	Savings kWh	Savings kW	
Residential	Appliance Recycling	12,439,431	1,782	
	Downstream Incentives	23,698,780	2,591	
	Midstream Incentives	596,319	127	
	Upstream Incentives	13,605,083	1,426	
	Residential Behavioral Energy Efficiency	39,797,494	5,397	
	Subtotal	90,137,107	11,323	
	Low Income Energy Efficiency	16,586,803	1,858	
	Low Income Behavioral Efficiency	4,655,160	631	
	Subtotal	21,241,964	2,489	
	Subtotal All Residential	111,379,071	13,812	
	Nonresidential			
Small Business Direct Install		23,133,399	4,475	
Small Business Solutions		50,212,478	8,590	
Small Business Midstream Solutions		27,491,056	6,756	
Small Business Virtual Commissioning		6,053,739	2,228	
Subtotal		106,890,672	22,049	
Large Business Solutions		83,696,145	15,377	
Large Business Midstream Solutions		17,300,344	4,783	
Large Business Virtual Commissioning		2,756,458	1,014	
Subtotal		103,752,946	21,174	
Large Business Solutions		38,846,312	7,137	
Large Business Midstream Solutions		8,029,695	2,220	
Large Business Virtual Commissioning		1,279,369	471	
Subtotal		48,155,376	9,828	
Subtotal All Nonresidential		258,798,995	53,051	
Portfolio Total	370,178,065	66,863		

3.1.2. Describe how programs were constructed for each portfolio to provide market coverage sufficient to reach overall energy and demand savings goals. Describe analyses and/or research that were performed (e.g., market, best-practices, market modeling).

Program Portfolio Structures:

Energy efficiency potential is forecast based on customer size and building type, along with

technology applications available for that type of customer and building. This approach is functional and consistent with industry standard practices. Programs are designed to (1) target identified efficiency gain potential (energy and demand), and (2) address market segment specific needs and barriers. The following chart shows customer sector building categories characterized by the EEPDRMPSR observed in the development of the energy efficiency programs described herein:

Figure 5: Customer Sector Building Stock Categories¹⁶

Residential	Small C&I¹⁷	Large C&I¹⁸
Single Family (SF)	Small Office	Large Office
SF Low-Income	Small Retail	Large Retail
Multifamily	Small Education – College/University	Large Education – College/University
	Small Education – Other	Large Education – Other
	Small Grocery	Large Grocery
	Small Health – Hospital	Large Health – Hospital
	Small Health – Other	Large Health – Other
	Small Industrial Manufacturing	Large Industrial Manufacturing
	Small Institutional/Public Services	Large Institutional/Public Services
	Small Lodging	Large Lodging
	Small Miscellaneous/Other	Large Miscellaneous/Other
	Small Restaurant	Large Restaurant
	Small Warehouse	Large Warehouse

The programs described in the following sections are developed to address specific market segments or delivery channels.

Residential Revenue Class

Duquesne Light's project team analyzed residential sector summary actual data for 2007–2008 and 2009–2013 as well as 2015–2025 forecast data for customer count, energy and demand statistics. Dwelling type and vintage definition was developed by analyzing American Community Survey data for Allegheny and Beaver counties, representative of housing characteristics in Duquesne Light's service area.¹⁹ The analysis supported a proportional allocation of percentages of regional housing stock into single-family, multi-family single-family low-income, and multi-family low-income. The EEPDRMPSR projects

¹⁶ Ibid, footnote 6

¹⁷ EEPDRMPSR Table 19: Program Potential small C&I incremental annual GWh savings

¹⁸ EEPDRMPSR Table 23: Program Potential large C&I incremental annual GWh savings

¹⁹ Ibid, footnote 6

potential annual GWh savings for Duquesne Light's residential customers by segment of customer and by program potential. The EEPDRMPSR found that single-family homes have the greatest potential with savings, specifically utilizing whole house programs; although the EEPDRMPSR admits that whole house programs may capture some of the savings achieved through space and water heater programs, along with Behavioral Energy Efficiency Reports.

Residential EE&C program planning incorporates energy and demand savings associated with implementing lighting, appliance, heating ventilation and air conditioning, building shell, water heating and other energy efficiency measures shown in Section 11, Table 7 Eligible Measures. Residential sector measures and their energy and demand savings estimates are consistent with the Pennsylvania 2021 Technical Reference Manual (TRM).

Small Commercial & Industrial Revenue Class

Duquesne Light's project team analyzed commercial sector summary actual data for 2007–2008 and 2009–2013 as well as forecast 2015–2025 customer counts, energy and demand statistics. The project team utilized Phase I, Phase II and Phase III research containing North American Industry Classification System (NAICS) codes for Duquesne Light's larger commercial customers, to identify market segments to assist in directing its marketing efforts within the broader commercial customer sector.

The EEPDRMPSR determined the benefits available to small commercial and industrial customers. The study determined that the greatest benefits can be found among retail, office, and institutional/public service building types. Unlike residential, the greatest potential savings for small C&I are found in interior lighting programs. That program potential was followed by cooling and whole building programs. Like residential, the EEPDRMPSR did find that whole building programs are likely to experience some overlap between interior lighting, cooling, and ventilation savings.

Small-Medium C&I Customer Sector:

Small commercial customers can receive EE&C incentives under the Small C&I downstream and midstream incentives programs. They can also receive the direct-installation of energy efficiency measures by specialized contractors through the Small Commercial Direct-Install program and Small Business Solutions Program.

Large Commercial & Industrial Revenue Classes:

Duquesne Light's project team analyzed industrial sector summary actual data for 2007–2008 and 2009–2013 as well as 2015–2025 forecast data for customer count, energy and demand statistics. The project team utilized Phase I, Phase II and Phase III research containing North American Industry Classification System (NAICS) codes for Duquesne Light's larger industrial customers, to identify market segments to assist in directing its marketing efforts within the broader industrial customer sector. This available information was considered the optimal level given the unique characteristics of Duquesne Light's industrial customer base.

As is typical in many states, the EEPDRMSPR discovered that the primary savings amongst large commercial and industrial customers came from large industrial manufacturing building types. This category offers potential savings more than twice as great as any other large C&I

building type, and almost 35% of the total potential savings for the class. Like small C&I, large C&I customers can achieve the most potential through interior lighting programs, following by cooling and whole building programs. Lighting programs can generate over 25% of the total potential GWh savings for the entire class.

The Large Business Solutions Program will employ specialized engagement channel CSPs to perform detailed energy audits, prepare feasibility studies and make energy efficiency recommendations to the primary metals and chemical products industrial segments. All industrial sector customers can receive EE&C incentives either under the Small C&I programs or Large C&I programs.

All large commercial customers are served under the Large Business Solutions Program. The program employs specialized contractors for the office building and retail²⁰ market engagement channels. Additionally, large commercial customers can receive lighting equipment distributor instant rebates provided under the Large Non-Residential Upstream Lighting Program.

3.1.3. Describe how energy efficiency, combined heat and power, renewables, and other measures are included in the portfolio of programs as applicable.

Duquesne Light will promote cost-effective technologies under its portfolio of programs.

In addition, during Phase IV, Duquesne Light will place increased emphasis on CHP installations while maintaining high standards for screening, qualification, and delivering projects. The objectives include increasing customers' awareness of and understanding the benefits from CHP, helping customers explore opportunities to deploy CHP technologies in their facilities, and providing technical assistance to help customers overcome financial and technical barriers to CHP deployment. Duquesne Light and its non-residential CSP(s) will continue to partner with NGDCs serving Duquesne Light's territory to jointly facilitate CHP opportunities.

3.1.4. Describe how the EDC defines 'comprehensive' in the context of EE&C plan design and delivery and the comprehensive program(s) to be offered to the residential and non-residential rate classes. Describe the measure mix or delivery mechanism that qualify each program as comprehensive consistent with the requirements of the Phase IV Implementation Order.

Refer to the Residential Programs described in Section 3.2, and Small Commercial Direct Install Program in Section 3.3.1, for the comprehensive measures to be offered.

3.2. Residential Sector (as defined by EDC Tariff) Programs – include formatted descriptions of each program organized under the following headings:

²⁰ The retail segment engagement channel includes the food stores, lodging, retail stores and restaurant market segments.

- Program title and Program years during which program will be implemented²¹
- Objective(s)
- Target market – including market size to help frame participation estimates (e.g., number of households, electric sales etc.)
- Program description
- If the program is an umbrella program (e.g., a wide-ranging residential program that includes upstream measures, home energy reports, appliance recycling, kits, efficient product rebates, and new construction), list and describe all program sub-components (or sub-programs, initiatives, solutions, etc.) that make up the program. Note that EDCs will be required to report impacts and financials separately for each program sub-component in their annual reports.
- Implementation strategy (including expected changes that may occur in different program years)
- Program issues and risks and risk management strategy
- Anticipated costs to participating customers
- Ramp up strategy
- Marketing strategy
- Eligible measures and incentive strategy showing incremental cost assumptions, gross measure-level TRC ratio, and incentive levels (e.g., \$ per measure, \$ per kWh or MW saved). See Table 7.
- The basis for the proposed level of incentives and the sharing of incremental measure costs between participants and the EDC.
- Maximum deadlines for rebates including clear and reasonable rationale for the any timeframe longer than 180 days.
- Program start date with key schedule milestones
- Assumed Evaluation, Measurement and Verification (EM&V) requirements required to document savings by the Commission’s statewide EE&C Plan Evaluator
- Administrative requirements – include internal and external staffing levels
- Savings targets and estimated participation – include tables with estimated total MWh/yr and MW goals per year and/or ranges per year and cumulative tables that document key assumptions of estimated savings ranges per measure as well as estimated participation. See Table 8.

²¹ It is assumed that there are five program years, each starting June 1 and ending May 31st. The first program year (PY) is PY13 (June 1, 2021 to May 31, 2022) and the final program year is PY17 (June 1, 2025 to May 31, 2026).

- Estimated program budget (total) by year – include table with budget per year. The table should also show what percentage of the budget goes to incentive costs and what percentage goes to non-incentive costs.²² See Table 9.
- Estimated percentage of sector budget attributed to program
- Cost-effectiveness – include gross and net TRC and net-to-gross (NTG) ratio²³ for each program. For gross tables, NTGR should be 1. See Table 13.
- Bidding strategy for peak demand reductions into PJM’s FCM. Include a description of the strategy and approach of offering resources into the PJM capacity market. The description should include an estimated range of MW and a trajectory of that MW total over time.
- Other information deemed appropriate.

3.2.1. Residential Energy Efficiency Program

The Residential Energy Efficiency Program (REEP) is an umbrella program overarching all market-rate residential customer program activities. REEP individual program components include appliance recycling: rebate programs with upstream, midstream and downstream delivery channels; and a residential behavioral program. The program delivery channels will deliver a broad range of appliance, plug load, space heating and cooling, lighting, water heating, refrigeration, shell and whole building measure end-use categories. REEP individual program components are described in more detail in Section 3.2.1.1 through 3.2.1.5 below.

3.2.1.1 Residential Appliance Recycling Program

Program Title and Program Years: The Residential Appliance Recycling Program (“RARP”) will be implemented during program years 2021 through 2026.

Objectives: To assist customers to become more energy efficient by educating them about the amount of energy consumed and the costs associated with operating inefficient refrigerators, freezers, dehumidifiers, and room air conditioners. Provide access to an easy-to-use, no-cost service to remove and recycle inefficient, working units. Customer motivation is increased by providing an incentive rebate for program participation.

Target Market: This program is available to Duquesne Light residential customers.

Program Description: The Residential Appliance Recycling offers customers no-cost pickup and disposal for refrigerators, freezers, dehumidifiers, and room air conditioners, as well as a small rebate for each appliance recycled. This is to encourage residential customers in Duquesne Light’s service territory to turn in their older, working refrigerators, freezers,

²² Per the June 18, 2020 Implementation Order, at least 50% of EE&C plan spending should come from incentives and less than 50% should be attributed to non-incentive cost categories. This requirement is at the portfolio level, not the program or sector level. See *June 18, 2020 Implementation Order* at 126.

²³ Per the June 18, 2020 Implementation Order, EDCs are required to provide NTG ratios in addition to standard TRC ratios, with language reiterating the speculative nature of NTG ratios. See *June 18, 2020 Implementation Order* at 107.

dehumidifiers, and room air conditioners to be recycled. Projected energy savings and peak demand reductions for removing an older, working unit are tied to unit energy savings specified in the 2021 TRM. To encourage participation in this program, an Incentive Rebate is offered for the removal of an older, working unit.

The program will consist of Duquesne Light contracting with a CSP to administer the program that would consist of the following services:

- Contracting an appliance recycling vendor to:
 - Handle questions
 - Schedule recycling appointments
 - Onsite verification that unit is in working condition
 - Unit collection/transportation
 - Recycling of units based on all local, state, and federal regulations (including CFC-11(foam) incineration or recycling)
 - Provide documented proof to CSP for Incentive Rebate processing
- Website (program details, reservation requests)
- Incentive rebate processing
- Reporting

Implementation Strategy: CSP will provide a comprehensive Marketing and Outreach Plan to include, but not limited to the following:

- 1) Targeted customer marketing to reach Duquesne Light's residential customer segment
- 2) Vehicle Branding
- 3) Promotional Materials
- 4) Digital and/or Social Media Ads
- 5) Website/Customer Online Portal
- 6) Images and copy provided to support additional Marketing efforts

CSP will also provide channels for customer enrollments and inquiries through phone, email, referrals, and online portal.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives, potential impacts and provides early warning regarding program under- or over-subscription.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2-years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to

promote program participation. The Phase IV Implementation Order²⁴ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

There is no cost to participating customers.

Ramp-up Strategy: See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Duquesne Light's CSP will provide a comprehensive Marketing and Outreach strategy that incorporates customer targeting, promotional materials, digital/social media ads, as well as a website with online customer portal.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions, and Incentive Levels: Eligible measures include refrigerators, freezers, dehumidifiers, and room air conditioners as shown in Section 11, Table 7.

Maximum Deadline for Rebates: Rebate deadlines do not apply to appliance recycling programs.

Program Start Date and Key Milestones: Program is set to start on June 1, 2021 and run throughout the duration of Phase IV ending on May 31, 2026.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs. The Residential Customer program associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Estimated Participation: See the following table.

Savings Targets and Estimated Participation:²⁵

²⁴ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

²⁵ Participation for this program are measured in units recycled.

	PY13	PY14	PY15	PY16	PY17	Total
MWh	1,605.1	1,689.6	1,689.6	1,689.6	1,774.0	8,447.8
MW	0.230	0.242	0.242	0.242	0.254	1.210
Participation	2,237.0	2,354.7	2,354.7	2,354.7	2,472.4	11,774

	PY13	PY14	PY15	PY16	PY17	Total
MWh	2,363.5	2,487.9	2,487.9	2,487.9	2,612.3	12,439.4
MW	0.339	0.356	0.356	0.356	0.374	1.782
Participation	3,294.0	3,467.3	3,467.3	3,467.3	3,640.7	17,337

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$333,749	\$351,315	\$351,315	\$351,315	\$368,881	\$1,756,575
Incentives	\$146,816	\$154,543	\$154,543	\$154,543	\$162,271	\$772,717
Percent Incentives	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%
Percent Non-Incentives	56.0%	56.0%	56.0%	56.0%	56.0%	56.0%

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$491,458	\$517,324	\$517,324	\$517,324	\$543,190	\$2,586,621
Incentives	\$216,189	\$227,567	\$227,567	\$227,567	\$238,945	\$1,137,835
Percent Incentives	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%
Percent Non-Incentives	56.0%	56.0%	56.0%	56.0%	56.0%	56.0%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,927,128	\$6,239,082	\$6,239,082	\$6,239,082	\$6,551,036	\$31,195,411
Appliance Recycling	\$333,749	\$351,315	\$351,315	\$351,315	\$368,881	\$1,756,575
Percent Sector Budget	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,927,128	\$6,239,082	\$6,239,082	\$6,239,082	\$6,551,036	\$31,195,411
Appliance Recycling	\$491,458	\$517,324	\$517,324	\$517,324	\$543,190	\$2,586,621
Percent Sector Budget	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%

Cost Effectiveness:

- Gross TRC: 1.06
- NTG Ratio: 0.46
- Net TRC: 0.49

Bidding Strategy: Duquesne Light does not anticipate nominating demand reductions associated with residential sector energy efficiency into the PJM FCM.

3.2.1.2 Residential Downstream Incentives Program

Program Title and Program Years: The Residential Downstream Incentives Program (RDIP) will be implemented during program years 2021 through 2026.

Objectives: The RDIP program is designed to mitigate primary cost and awareness barriers to residential customer adoption of energy efficiency measures and practices. To affect this outcome, RDIP provides access to both printed and internet based educational materials, as well as financial incentives in the form of energy efficient product rebates. The downstream rebate program model has been expanded to include market rate customer comprehensive audits, direct install measures and residential energy efficiency kits.

Target Market: This program is made available to Duquesne Light residential customers.

Program Description: The RDIP encourages customers to make an energy efficient choice when purchasing and installing household appliances and equipment measures by offering educational materials on energy efficiency options and energy efficiency rebates to offset the higher cost of energy efficient equipment. Program educational materials and rebates are provided in conjunction with the Duquesne Light online home energy audit. The online home energy audit will allow customers to obtain instant results by answering questions regarding their home energy use. A menu of approved measures and rebate amounts simplifies the audit process for the customer and provides a "per-widgit" rebate to reduce the cost of replacing outdated and inefficient equipment.

The RDIP also provides an avenue for participating customers to receive comprehensive in-home audits as well as incentives for air sealing; basement, exterior wall, floor and attic insulation, as well as direct-install water heating measures.

An additional delivery channel for residential customers is through student education. Student education challenges students to think about energy, learning where it comes from, why we need it, and how we can use it more efficiently. Key features are school presentations with hands-on activities for the students and teachers, Poster Contests, provisions for energy efficiency kits for participating students and teachers, and a data collection and tracking process used to compile, analyze, and report electric energy savings. If in-class presentations are not possible, CSP will provide virtual and/or pre-recorded presentations to be delivered at a designated date and time with the presenter joining remotely to answer any questions. The program will seek to supplement and enhance curriculum for teachers in an approachable way, giving them access to tools and resources about energy efficiency. The program reinforces positive energy efficiency lifestyle changes geared towards students, their families and teachers.

Implementation Strategy: The RDIP is implemented with assistance by a qualified CSP. Members of Duquesne Light's team will support ongoing planning activities, contract management and assist with program outreach and marketing, as well as internal tracking and reporting. The CSP program coordinator may perform marketing, rebate processing, verification and calculation of overall savings. Customers submit rebate applications online or by mail.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of

program budgets and impacts and provides early warning regarding program under- or over-subscription. The RDIP will employ audit tools most applicable to programmatic needs and opportunities, and also capable of migrating data to PMRS. This functionality has proven problematic in Phase III operations and is an area for improvement in Phase IV. Such data management and ramp-up delay risks will be mitigated through the process of selecting the CSP(s) with existing systems, processes and demonstrated capabilities to implement cost-effective residential audit programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers:

Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2 years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to promote program participation. The Phase IV Implementation Order²⁶ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

The program provides up to a \$250 home energy credit for installation of audit recommended measures. The credit amount was set to offset approximately one-half the audit cost. Direct installation measures are provided at no cost. Additional energy efficient product incentive payments are available as shown in Section 11 Table 7 Eligible Measures. Participating customers pay the remaining amounts.

Ramp-up Strategy: See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Residential customers will enter the program via the existing Duquesne Light online audit. Upon completion of the online audit, participants will be given an opportunity to pursue a comprehensive audit and follow links to the RDIP enrollment webpage. Duquesne Light will jointly market activities with support from the CSPs and subcontractors.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: See Section 11, Table 7.

Maximum Deadline for Rebates: Energy efficiency measure rebates are subject to an application deadline of 180 days from date of purchase or installation.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on

²⁶ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs. The Residential Customer program associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Savings Targets and Estimated Participation:²⁷

	PY13	PY14	PY15	PY16	PY17	Total
MWh	4,502.8	4,739.8	4,739.8	4,739.8	4,976.7	23,698.8
MW	0.493	0.519	0.519	0.519	0.545	2.595
Participation	36,791.0	38,727.4	38,727.4	38,727.4	40,663.8	193,637

	PY13	PY14	PY15	PY16	PY17	Total
MWh	4,502.8	4,739.8	4,739.8	4,739.8	4,976.7	23,698.8
MW	0.492	0.518	0.518	0.518	0.544	2.591
Participation	36,791.0	38,727.4	38,727.4	38,727.4	40,663.8	193,637

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$1,067,626	\$1,123,816	\$1,123,816	\$1,123,816	\$1,180,007	\$5,619,082
Incentives	\$523,268	\$550,809	\$550,809	\$550,809	\$578,349	\$2,754,043
Percent Incentives	49.0%	49.0%	49.0%	49.0%	49.0%	49.0%
Percent Non-Incentives	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,927,128	\$6,239,082	\$6,239,082	\$6,239,082	\$6,551,036	\$31,195,411
Downstream Incentives	\$1,067,626	\$1,123,816	\$1,123,816	\$1,123,816	\$1,180,007	\$5,619,082
Percent Sector Budget	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%

Cost Effectiveness:

- Gross TRC: 2.09
- NTG Ratio: 0.61

²⁷ Participation in this program is measure units delivered.

- Net TRC: 1.69

Bidding Strategy: Duquesne Light does not anticipate nominating demand reductions associated with residential sector energy efficiency into the PJM FCM.

3.2.1.3 Residential Midstream Incentives Program

Program Title and Program Years: The Residential Midstream Incentives Program (RMIP) will be implemented during program years 2021 through 2026.

Objectives: The Residential Midstream Products Rebate Program will result in increased purchases of select HVAC, hot water, and auxiliary equipment by Duquesne Light's residential customers by offering rebates through program participating distributors. For time-strapped residential customers, typical onerous rebate application requirements and lengthy rebate processing lead times present significant and growing barriers to energy efficiency program participation. Providing rebates, or customer incentives, directly to participating distributors addresses these significant barriers.

Target Market: This program is made available to Duquesne Light residential customers. Based on Total Residential Building Stock estimate of 527,951 (includes single-family ("SF"), multi-family ("MF"), and Mobile Homes).

Program Description: The Midstream Products Rebate Program will provide incentives for HVAC, hot water, and auxiliary equipment through participating distributors and to residential HVAC distributors to offset the higher cost, and thereby drive uptake of the most efficient HVAC, hot water and auxiliary equipment options. The residential customer receives the benefit of the rebate at the point of sale (POS) through the participating distributors or through installation of the equipment by a contractor. The rebates are to encourage residential customers in Duquesne Light's territory to purchase qualified energy efficient HVAC, hot water, and auxiliary equipment for installation at their homes through a seamless rebate process.

Implementation Strategy: The CSP will identify and enroll residential HVAC distributors expanding their existing distributor network, create a qualified product master list that will handle the regular submissions from the midstream partners, will present Duquesne Light with new eligible measures for the products master list, provide participating distributor in-depth training and on-going support, verify and process rebate submissions, track and report program activity, perform store visits, hold in store product promotion events, and provide program quality control.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives, potential impacts and provides early warning regarding program under- or over-subscription.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: Incentive levels have historically averaged approximately one-third of efficient product

incremental costs, initially set targeting a simple payback period of 2 years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to promote program participation. The Phase IV Implementation Order²⁸ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Program participating distributors rebates offset a portion of the incrementally greater cost of high-efficiency HVAC, hot water, and auxiliary equipment. Anticipated costs to participating customers would be the remaining portion after the rebate is applied.

Ramp up Strategy: See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Duquesne Light's CSP will recruit, train, and manage distributor partnerships, and continue to engage in distributor networks through targeted marketing approaches. CSP will coordinate annual kick-off meetings to introduce the program to residential HVAC distributors, facilitate education group meetings, provide distributor portal for ease of participation in the program and supply a newsletter on program updates, rebates, and recognition for high-performing participating distributors.

Eligible Measures and Incentive Strategy: A rebate will be granted by participating distributors at the point of sale on a pre-determined qualified products list, as indicated below. CSP will engage Duquesne Light with new high-efficiency products to keep the qualified product list current, fresh, and appealing to the consumers. See Table 7 Eligible Measures for a listing of measures and range for incentives. Measures eligible for incentives under this program include variable speed pool pumps, ductless mini-split heat pumps, central air conditioners and heat pumps.

Maximum Deadline for Rebates: The Midstream Products Rebate Program offers rebates at the point of sale at participating distributors. Rebate deadlines are not applicable.

Program Start Date and Key Milestones: Program is set to start on June 1, 2021 and run throughout the duration of Phase IV ending on May 31, 2026.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administration Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs. The Residential Customer program associates will administer the program on a shared basis with additional part-time support by engineering,

²⁸ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are processing incentive payments for the purchase of qualified energy efficiency HVAC, hot water and auxiliary equipment, rendering deemed savings estimates reflected in the Program Savings Targets table below.

Savings Targets and Estimated Participation:²⁹

	PY13	PY14	PY15	PY16	PY17	Total
MWh	113.3	119.3	119.3	119.3	125.2	596.3
MW	0.024	0.025	0.025	0.025	0.027	0.127
Participation	952.0	1,002.1	1,002.1	1,002.1	1,052.2	5,010

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$40,668	\$42,809	\$42,809	\$42,809	\$44,949	\$214,044
Incentives	\$27,473	\$28,919	\$28,919	\$28,919	\$30,365	\$144,594
Percent Incentives	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%
Percent Non-Incentives	32.4%	32.4%	32.4%	32.4%	32.4%	32.4%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,927,128	\$6,239,082	\$6,239,082	\$6,239,082	\$6,551,036	\$31,195,411
Midstream Incentives	\$40,668	\$42,809	\$42,809	\$42,809	\$44,949	\$214,044
Percent Sector Budget	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%

Cost Effectiveness:

- Gross TRC: 1.22
- NTG Ratio: 0.43
- Net TRC: 0.89

Bidding Strategy: Duquesne Light does not anticipate nominating demand reductions associated with residential sector energy efficiency into the PJM FCM.

²⁹ Participation in this program is measure units incented.

3.2.1.4 Residential Upstream Incentives Program

Program Title and Program Years: The Residential Upstream Incentives Program (RUIP) will be implemented during program years 2021 through 2026.

Objectives: The Residential Upstream Products Rebate Program will result in increased purchases of energy efficient lighting and appliances by Duquesne Light's residential customers by offering point of sale rebates on qualified energy efficient lighting products and appliances. For time-strapped residential customers, typical onerous rebate application requirements and lengthy rebate processing lead times present significant and growing barriers to energy efficiency program participation.

Providing rebates, or customer incentives, directly to manufacturers and retailers addresses these significant barriers, along with providing a centralized upstream manufacturer and retailer partnership through the CSP's delivery team to support the retailers and manufacturers throughout the product promotion and rebate processing journey.

Target Market: This program is made available to Duquesne Light residential customers. Based on Total Residential Building Stock estimate of 527,951 (includes SF, MF, and Mobile Homes).

Program Description: The Upstream Products Rebate Program will provide incentives for efficient lighting products and appliances directly to technology manufacturer and retailers to offset the higher cost, and thereby drive uptake of, the most efficient lighting and appliance options. The residential customer receives the benefit of the rebate at the point of sale (POS) through the participating retailers. The rebates are to encourage residential customers in Duquesne Light's territory to purchase qualified energy efficient lighting and appliances for installation at their homes through a seamless rebate process.

Implementation Strategy: The CSP will identify and enroll retailers, create a qualified product master list that will handle the regular submissions from the upstream partners, will present Duquesne Light with new eligible measures for the products master list, provide participating retailer training, verify and process rebate submissions, track and report program activity, perform store visits, hold at store product promotion events, and provide program quality control.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives, potential impacts and provides early warning regarding program under- or over-subscription.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2 years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to

promote program participation. The Phase IV Implementation Order³⁰ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Program participating retailer rebates offset a portion of the incrementally greater cost of high-efficiency lighting and appliances. Anticipated costs to participating customers would be the remaining portion at the point of sale after the rebate is applied.

Ramp up Strategy: See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Duquesne Light's CSP will recruit, train, manage, and continue to engage in partner networks, including the manufacturers and retailers through targeted marketing approaches, coordinate annual kick-off meetings to introduce the program to retailers and manufacturers, facilitate education group meetings, provide retailer portal for ease of participation in the program and supply a newsletter on program updates, rebates, and recognition for high-performing participating retailers.

Eligible Measures and Incentive Strategy: A rebate will be granted by participating retailers at the point of sale on a pre-determined qualified products list, as indicated below. CSP will engage Duquesne Light with new eligible products to keep the qualified product list current, fresh, and appealing to the consumers. See Section 11, Table 7 Eligible Measures for a listing of measures and range for incentives. Measures eligible for incentives under this program include reflector, globe and specialty lighting products.

Maximum Deadline for Rebates: The Upstream Products Rebate Program offers rebates at the point of sale at participating retail stores. Rebate deadlines are not applicable.

Program Start Date and Key Milestones: Program is set to start on June 1, 2021 and run throughout the duration of Phase IV ending on May 31, 2026.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs. The Residential Customer program associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as

³⁰ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are processing incentive payments for the purchase of qualified energy efficiency lighting and appliances, rendering deemed savings estimates reflected in the Program Savings Targets table below.

Savings Targets and Estimated Participation:³¹

	PY13	PY14	PY15	PY16	PY17	Total
MWh	2,585.0	2,721.0	2,721.0	2,721.0	2,857.1	13,605.1
MW	0.271	0.285	0.285	0.285	0.299	1.426
Participation	197,509.7	207,904.9	207,904.9	207,904.9	218,300.2	1,039,525

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$714,601	\$752,212	\$752,212	\$752,212	\$789,822	\$3,761,058
Incentives	\$413,547	\$435,312	\$435,312	\$435,312	\$457,078	\$2,176,562
Percent Incentives	57.9%	57.9%	57.9%	57.9%	57.9%	57.9%
Percent Non-Incentives	42.1%	42.1%	42.1%	42.1%	42.1%	42.1%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,927,128	\$6,239,082	\$6,239,082	\$6,239,082	\$6,551,036	\$31,195,411
Upstream Incentives	\$714,601	\$752,212	\$752,212	\$752,212	\$789,822	\$3,761,058
Percent Sector Budget	12.1%	12.1%	12.1%	12.1%	12.1%	12.1%

Cost Effectiveness:

- Gross TRC: 1.00
- NTG Ratio: 0.43
- Net TRC: 0.77

Bidding Strategy: Duquesne Light does not anticipate nominating demand reductions associated with residential sector energy efficiency into the PJM FCM.

3.2.1.5 Residential Behavioral Energy Efficiency

³¹ Participation in this program is measure units incented.

Program Title and Program Years: The Residential Behavioral Energy Efficiency Program (R-BEEP) will be implemented during program years 2021 through 2026.

Objectives: The objectives of the program are (1) to educate residential participants on electricity consumption using graphic information tools; (2) to change household behavior leading to less electricity usage; and (3) to deliver energy savings of more than 1% of average participant's electric usage.

Target Market: Over the five-year Phase IV performance period the average annual treatment group population is projected to be 183,940 residential customers.

Program Description: The program sends via direct mail R-BEEP reports that compare recipient customer's energy use to customers with similar home type and size. R-BEEP provides for comparison of the last two months of energy consumption by 1) the most efficient of the peer group, 2) the R-BEEP recipient, and 3) the entire peer group. The reports generate verifiable savings between 1.5%-3.5% of total home energy use.

Implementation Strategy: R-BEEP reports are provided targeted customer group in each year of Act 129 Phase IV, 2021-2025.

Program Issues, Risks and Risk Management Strategy: There is an attendant risk the program implementer cannot deliver the contracted R-BEEP reports and that consumers will not respond to the R-BEEP reports by changing energy use behavior. Duquesne Light will mitigate this risk by selecting an implementation contractor who has a proven track record. The selected CSP will have previously deployed R-BEEP reports on a national scale for leading energy efficiency programs. Energy savings results will be quantified using a PA PUC approved scientific measurement and verification approach previously used by most PA EDCs.

Anticipated Costs to Participating Customers: There is no cost to participating customers.

Ramp-up Strategy: See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Large-scale, individualized direct-mail campaign and provision of a customer service web portal are used. High-use customers are selected on an opt-out basis for enrollment in the multi-year pilot.

Eligible Measures and Incentives: The R-BEEP described above is the only program measure; there are no customer incentives. R-BEEP reports will also be utilized to promote other residential program offerings to help customers reduce consumption.

Maximum Deadline for Rebates: The program does not provide rebates and no rebate deadline is applicable.

Program Start Date and Key Milestones: Program is set to start on June 1, 2021 and run throughout the duration of Phase IV ending on May 31, 2026.

Assumed EM&V Requirements to Document Savings by the Commission’s Statewide EE&C Evaluator: Duquesne Light will rely on the same measurement and verification approach already provided to more than 65 utilities across the country, including utilities in Pennsylvania. The protocol includes clearly defined test and control groups and ex-post measurement of savings.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs. The Residential Customer program associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: Over the five-year Phase IV performance period the average annual treatment group population is projected to be 183,940 residential customers, rendering deemed savings estimates reflected in the Program Savings Targets table below.

Savings Targets and Estimated Participation:³²

	PY13	PY14	PY15	PY16	PY17	Total
MWh	8,100.0	11,500.0	10,400.0	11,400.0	8,300.0	49,700.0
MW	1.310	1.490	1.440	1.480	1.020	6.740
Participation	203,700	157,400	183,600	209,900	165,100	183,940

	PY13	PY14	PY15	PY16	PY17	Total
MWh	6,486.111	9,208.676	8,327.846	9,128.600	6,646.261	39,797.5
MW	0.880	1.249	1.129	1.238	0.901	5.397
Participation	203,700	157,400	183,600	209,900	165,100	183,940

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$678,919	\$963,897	\$871,698	\$955,516	\$695,682	\$4,165,713
Incentives	\$0	\$0	\$0	\$0	\$0	\$0
Percent Incentives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percent Non-Incentives	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

³² Estimated participation is customers within treatment cohorts.

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$543,640	\$771,834	\$698,007	\$765,123	\$557,063	\$3,335,667
Incentives	\$0	\$0	\$0	\$0	\$0	\$0
Percent Incentives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percent Non-Incentives	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$6,239,082	\$6,239,082	\$6,239,082	\$6,239,082	\$6,239,082	\$31,195,411
Residential Behavioral Efficiency	\$678,919	\$963,897	\$871,698	\$955,516	\$695,682	\$4,165,713
Percent Sector Budget	13.4%	13.4%	13.4%	13.4%	13.4%	13.4%

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,084,162	\$7,218,254	\$6,527,812	\$7,155,487	\$5,209,696	\$31,195,411
Residential Behavioral Energy Efficiency	\$543,640	\$771,834	\$698,007	\$765,123	\$557,063	\$3,335,667
Percent Sector Budget	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%

Cost Effectiveness:

- Gross TRC: 1.09
- NTG Ratio: 1.00
- Net TRC: 1.09

Bidding Strategy: Behavioral program demand reductions are not eligible for nomination into the PJM FCM.

3.2.2. The Residential Low Income Energy Efficiency

Residential Low Income Energy Efficiency is an umbrella program comprising two specific low income residential customer program activities. Individual program components include a low income comprehensive audit and direct install program and a tailored low income behavioral efficiency program. The program delivery channels will deliver a broad range of direct-install measures and behavioral education to assist low income customers reduce their electric bills. Individual program components are described in more detail in Sections 3.2.2.1 and 3.2.2.2 below.

3.2.2.1. Low Income Energy Efficiency Program

The Residential Low Income Energy Efficiency Program is a “direct-install” program where walk-through and comprehensive audits are performed, energy efficiency education is provided, and energy efficient products and equipment are installed at no cost to income qualified households.

Program Title and Program Years: Low Income Residential Energy Efficiency Program (“LIEEP”) will be implemented during Act 129 program years 2021 through 2026.

Objectives: The objective of LIEEP is to increase income-qualified customers’ comfort while reducing their energy consumption, costs, and economic burden.

Target Market: The LIEEP provides energy efficiency services to residential households that are at or below 150% of the federal poverty income guidelines and reside in single-family or multi-family housing.

Program Description: LIEEP is an income-qualified program providing services designed to assist low-income households in conserving energy and reducing electricity costs. LIEEP relies on several contributing subcomponents and engagement channels to deliver program services and achieve projected savings impacts.

- Income-qualified customers access to virtual or in-person walkthrough or comprehensive energy audits with no-cost direct install, appliance recycling/replacement, health & safety, HVAC, water heat, insulation, and air-sealing measures.
- Income-eligible multi-family buildings are provided virtual or in-person walkthrough assessments with no-cost direct install and appliance recycling/replacement measures. Multifamily property owners/managers are eligible for cost-share common area lighting and management-owned appliance recycling/replacement measures.

Implementation Strategy: (including expected changes that may occur in different program years).

Duquesne Light will track low-income customer participation through its Program Management and Reporting Systems (“PMRS”). Through linkage to Duquesne Light’s customer information system, PMRS confirms low income status and records savings achieved in low-income households.

Duquesne Light will refer confirmed low-income customers who participate in any of its general residential programs to its Act 129 low-income programs, its Universal Service programs, the Low-Income Home Energy Assistance Program (“LIHEAP”), low-income usage reduction program (“LIURP”); as well as coordinate with natural gas distribution companies (“NGDC”) and community based organizations as applicable to provide low-income services.

Duquesne Light will facilitate this coordination by inviting representatives from the NGDCs with overlapping service territories to its Act 129 Stakeholder meetings and will place the issue of Duquesne Light/NGDC coordination on the agenda of those meetings. Duquesne Light has actively participated in several stakeholder meetings with NGDCs throughout Phase III and plans to maintain and expand such efforts in Phase IV. Duquesne Light will also work with NGDCs to, where possible, provide joint rebates when the NGDC provides rebates to customers below 150% of the federal poverty level and to provide inter-utility audits to customers whose total household income is below 150% of the federal poverty level when available.

Duquesne Light will track the numbers of, and reasons for, LIEEP jobs that do not move forward and the total number of LIEEP baseload and heating jobs all separately tracked for low income single-family, master metered multifamily and individually metered multifamily tenants. In addition, the average LIEEP job costs and energy savings will be tracked. These data will be provided at the IEAG working group meetings.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are tracked and monitored through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets, potential impacts and provides early warning regarding program under- or over-subscription. The CSP will continue to transfer program data for review, verification, and submission into Duquesne Light's PMRS. All of these program elements have been operating during the previous Act 129 Phases. These activities are not new to Duquesne Light's implementation team. Implementation CSP contract statements of work are performance-based, include production schedules, and; performance payments are tied to independent measurement. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2 years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to promote program participation. The Phase IV Implementation Order³³ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

There is no cost to participants for the services described under this program.

Ramp-up Strategy: See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Residential customers will enter the program by calling a toll-free telephone number to qualify or applying online through Duquesne Light's online customer portal. Upon qualifying for the program, the customer will be scheduled for an in-home energy audit or a virtual assessment. The CSP marketing approach will primarily reach customers through direct marketing channels. A mix of email, direct mail, collateral, website/customer portal, educational assets, community events, and outreach will drive inbound customer enrollment. The program will be marketed to low-income customers living in master-metered multifamily residences, and those with individually-metered accounts. The CSP will employ a targeted marketing approach to help create awareness, educate, and drive program participation.

Eligible Measures and Incentive Strategy: LIEEP will provide a broad array of direct install measures, depending upon applicable dwelling space heating and water heating equipment.

³³ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

Eligible measures are described below. No customer incentives are provided under the LIEEP, all LIEEP measures are provided at no cost to income qualified customers. For more specific details on the measures, see Section 11, Table 7.

Under LIEEP, income qualified residential customers will be scheduled for a virtual assessment or in-home energy audit that will include direct install measures as indicated in the below, as well as energy education. For the virtual assessment, the direct install measures will be drop shipped to the customer in the form of an energy efficiency kit and customers may be referred for direct installation of eligible HVAC, water heat, health & safety, and insulation/air sealing measures.

Eligible Direct Install Measures:

LED Nightlights
LED Lighting
Advanced Power strips (Tier 1)
ENERGY STAR Dehumidifier
Refrigerator Replacement
Room AC Replacement
Freezer Replacement
Connected Thermostat- Electric Heat
HPWH
Ductless Mini-Split Heat Pump (16 SEER / 9.0 hspf) – Electric Heat
ENERGY STAR Central Air Conditioner (13 SEER to 16 SEER)
ENERGY STAR Air Source Heat Pump 16 SEER/9.0 HSPF or Higher
Air Sealing – Electric Heat
Ceiling Insulation - Electric Heat
Basement Wall Insulation – Electric Heat
Exterior Wall Insulation - Electric Heat

Floor Insulation - Electric Heat
Electric Hot Water Kit
H&S measures, Comprehensive

Basis for the Proposed Level of Incentives and the Sharing of Incremental Measure Costs between Participants and the EDC: Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2-years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to promote program participation. The Phase IV Implementation Order³⁴ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

LIEEP measures are provided at no cost to income qualified customers. Multifamily facility upgrade cost-shares are negotiated on a case-by-case basis depending upon the percentage of low income occupants in the facility, facility need and savings opportunity.

Maximum Deadline for Rebates: The LIEEP participation, consistent with Commission's June 18, 2020 Implementation Order, is mutually exclusive of program participation with program's serving non-low-income customer populations. As such, no standard, or other, prescriptive rebates are provided under this program and no "Maximum Deadline for Rebates" is applicable.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs. The Residential Customer program associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

LIEEP Savings Targets and Estimated Participation:³⁵

³⁴ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

³⁵ Participation is units of measures installed.

	PY13	PY14	PY15	PY16	PY17	Total
MWh	4,063.4	4,277.2	4,277.2	4,277.2	4,491.1	21,386.1
MW	0.474	0.499	0.499	0.499	0.524	2.494
Participation	42,890.7	45,148.1	45,148.1	45,148.1	47,405.5	225,740

	PY13	PY14	PY15	PY16	PY17	Total
MWh	3,151.5	3,317.4	3,317.4	3,317.4	3,483.2	16,586.8
MW	0.353	0.372	0.372	0.372	0.390	1.858
Participation	29,873.5	31,445.7	31,445.7	31,445.7	33,018.0	157,229

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$2,767,115	\$2,912,753	\$2,912,753	\$2,912,753	\$3,058,391	\$14,563,765
Incentives	\$1,755,230	\$1,847,611	\$1,847,611	\$1,847,611	\$1,939,991	\$9,238,054
Percent Incentives	63.4%	63.4%	63.4%	63.4%	63.4%	63.4%
Percent Non-Incentives	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$2,847,485	\$2,997,353	\$2,997,353	\$2,997,353	\$3,147,220	\$14,986,764
Incentives	\$1,685,858	\$1,774,587	\$1,774,587	\$1,774,587	\$1,863,317	\$8,872,937
Percent Incentives	59.2%	59.2%	59.2%	59.2%	59.2%	59.2%
Percent Non-Incentives	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,927,128	\$6,239,082	\$6,239,082	\$6,239,082	\$6,551,036	\$31,195,411
Low Income Efficiency	\$2,767,115	\$2,912,753	\$2,912,753	\$2,912,753	\$3,058,391	\$14,563,765
Percent Sector Budget	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$5,927,128	\$6,239,082	\$6,239,082	\$6,239,082	\$6,551,036	\$31,195,411
Low Income Energy Efficiency	\$2,847,485	\$2,997,353	\$2,997,353	\$2,997,353	\$3,147,220	\$14,986,764
Percent Sector Budget	48.0%	48.0%	48.0%	48.0%	48.0%	48.0%

Cost Effectiveness:

- Gross TRC: 0.75
- NTG Ratio: 1.00
- Net TRC: 0.75

Bidding Strategy: Duquesne Light does not anticipate nominating demand reductions associated with residential sector energy efficiency into the PJM FCM.

3.2.2.2. Low Income Behavioral Efficiency Program

Program Title and Program Years: Low Income Behavioral Energy Efficiency Program (“LI-BEEP”) will be implemented during program years 2021 through 2026.

Objectives: The objectives of the program are (1) provide income qualified participants education about electricity consumption, cost and potential energy efficiency bill savings using graphic information tools; (2) change household behavior leading to less electricity usage; and (3) deliver energy savings of more than 1% of average participant’s electric usage.

Target Market: Over the five-year Phase IV performance period the average annual participation is projected to be 15,600 income qualified residential customers.

Program Description: Specialized low income home energy reports are provided to a targeted income qualified customer population of approximately 15,600 customers each year of the Phase IV performance period. Savings impact measurement is based on documented savings comparing the program participant population energy use behavior to a low income non-participating control group. The remaining programmatic approaches and methodologies are consistent with Plan content described in the R-BEEP at Section 3.2.1.5.

Implementation Strategy: LI-BEEP reports are provided targeted customer group in each year of Act 129 Phase IV, 2021-2025.

Program Issues, Risks and Risk Management Strategy: There is an attendant risk the program implementer cannot deliver the contracted LI-BEEP reports and that consumers will not respond to the LI-BEEP reports by changing energy use behavior. Duquesne Light will mitigate this risk by selecting an implementation contractor who has a proven track record. Energy savings results will be quantified using a PA PUC approved scientific measurement and verification approach previously used by most PA EDCs.

Anticipated Costs to Participating Customers: There is no cost to participating customers.

Ramp-up Strategy: See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Large-scale, individualized direct-mail campaign and provision of a customer service web portal are used. High-use customers are selected on an opt-out basis for enrollment in the multi-year pilot.

Eligible Measures and Incentive Strategy: The LI-BEEP described above is the only program measure; there are no customer incentives. LI-BEEP reports will also be utilized to promote other residential program offerings to help customers reduce consumption.

Maximum Deadline for Rebates: The program does not provide rebates and no rebate deadline is applicable.

Program Start Date and Key Milestones: Program is set to start on June 1, 2021 and run throughout the duration of Phase IV ending on May 31, 2026.

Assumed EM&V Requirements to Document Savings by the Commission’s Statewide EE&C Evaluator: Duquesne Light will rely on the same measurement and verification approach already provided to more than 65 utilities across the country, including utilities in Pennsylvania. The protocol includes clearly defined test and control groups and ex-post measurement of savings.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs. The Residential Customer program associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: Over the five-year Phase IV performance period the average annual participation is projected to be 15,600 income qualified residential customers, rendering deemed savings estimates reflected in the Program Savings Targets table below.

Savings Targets and Estimated Participation:³⁶

	PY13	PY14	PY15	PY16	PY17	Total
MWh	1,091.4	1,567.2	1,679.1	2,042.9	1,119.4	7,500.0
MW	0.145	0.203	0.232	0.291	0.145	1.017
Participation	15,300	14,300	17,400	16,100	14,900	15,600

	PY13	PY14	PY15	PY16	PY17	Total
MWh	677.430	972.720	1,042.200	1,268.010	694.800	4,655.2
MW	0.092	0.132	0.141	0.172	0.094	0.631
Participation	15,300	14,300	17,400	16,100	14,900	15,600

Estimated Program Budget:

³⁶ Estimated participation is customers within treatment cohorts.

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$162,283	\$233,021	\$249,666	\$303,760	\$166,444	\$1,115,174
Incentives	\$0	\$0	\$0	\$0	\$0	\$0
Percent Incentives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percent Non-Incentives	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$100,727	\$144,634	\$154,965	\$188,540	\$103,310	\$692,175
Incentives	\$0	\$0	\$0	\$0	\$0	\$0
Percent Incentives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percent Non-Incentives	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$6,239,082	\$6,239,082	\$6,239,082	\$6,239,082	\$6,239,082	\$31,195,411
Low Income Behavioral Efficiency	\$162,283	\$233,021	\$249,666	\$303,760	\$166,444	\$1,115,174
Percent Sector Budget	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%

	PY13	PY14	PY15	PY16	PY17	Total
Residential Sector Budget	\$4,539,631	\$6,518,444	\$6,984,047	\$8,497,258	\$4,656,032	\$31,195,411
Low Income Behavioral Efficiency	\$100,727	\$144,634	\$154,965	\$188,540	\$103,310	\$692,175
Percent Sector Budget	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%

Cost Effectiveness:

- Gross TRC: 0.61
- NTG Ratio: 1.00
- Net TRC: 0.61

Bidding Strategy: Behavioral program demand reductions are not eligible for nomination into PJM FCMs.

3.3. Commercial/Industrial Small Sector (as defined by EDC Tariff) Programs – include formatted descriptions of each program organized under the same headings as listed above for residential programs. Additionally, include Tables 7, 8, 9, and 13.

Small Commercial/Industrial Sector (as defined by EDC Tariff) programs include formatted descriptions of each program organized under the same headings as listed previously for residential programs. Customers served under this sector are commercial and industrial customers having demands less than 300 kW. To best serve small- and medium-sized business customers, Duquesne Light offers a suite of solutions designed to influence customer behavior and purchasing decisions including the: Small Business Direct Install Program, Small Business

Solutions Program, Small Midstream Program, and Small Virtual Commissioning Program, as described in the following pages.

3.3.1. Small Business Direct Install Program

Program Title and Program Years: Small Business Direct Install (SBDI) Program will be implemented during program years 2021 through 2026.

Objectives: Small businesses are a vital part of the economy, and their success is essential to the region's economic growth and prosperity. When it comes to energy efficiency, small business owners face significant barriers when considering and implementing energy efficiency measures. Owners often have limited time, focus, and know-how to analyze options, and are averse to even short interruptions of business operations.

To overcome these barriers to participation, the SBDI Program is turnkey, offering customers a single source of information, technical assistance, and financial incentives. Turnkey programs incorporate an end-to-end approach, from initial marketing and the resulting audit process through final equipment installation conducted by a third-party implementation contractor.

Target Market: The program targets Duquesne Light's C&I customers with demand less than 300 kW. Small business customers include small offices, independent retail shops, gas stations, restaurants, shopping center stores, convenience stores, and many others. This group of customers is considered hard to engage for energy efficiency programs, because most small business owners struggle day-to-day to meet the current cash requirements of their businesses. Some small business owners are not native English speakers and do not understand the intricacies of energy efficiency. Furthermore, businesses that operate on daily cash flows, such as many small businesses, rarely budget for things like efficiency upgrades, they just fix things when they break.

Program Description: The SBDI Program is a direct install program that offers Duquesne Light's small business customers the opportunity to retrofit existing equipment with more energy-efficient technologies. The program's incentives are designed to encourage early equipment replacement and target discretionary retrofit opportunities. Energy-efficient lighting remains the focus of the program, along with refrigeration and electric water heater measures. The program is turnkey that offers customers a single source of information, technical assistance, and financial incentives. Turnkey programs incorporate an end-to-end approach, from initial marketing and the resulting audit process through to final equipment installation conducted by a third-party implementation contractor.

Face-to-face interaction and the opportunity for virtual meetings with customers is required to explain this program and to overcome objections regarding its validity.

The most common technologies for direct installation include:

- Screw-in LED lamps, reflector lamps and exit signs
- LED linear lighting

- Pump and fan variable frequency drives
- Refrigeration measures
 - LED refrigerated case lighting
 - Display case night covers
 - Walk-in cooler and freezer door closers
 - Electronically commutated evaporator motors
 - Display case anti-sweat heater controls
- Pre-rinse spray valves

Customers will continue to receive a free energy audit to identify cost-effective opportunities for saving energy. Current incentive levels with the program covering up to 80 percent of the total installed cost, requiring customers to pay 20 percent of the cost, will remain.

Implementation Strategy: The implementation contractor delivers the program via a turnkey solution and presents customers with a single point of contact. The approach consists of:

- No-cost energy assessments that can occur while the business maintains operations
- A simple-to-understand proposal with key opportunities and costs for energy retrofit upgrades
- A proposal with recommendations for efficiency measures and the direct installation of certain low-cost measures
- The implementer obtaining the customer's written approval and facilitating equipment installation by pre-selected contractors
- Incentives that cover up to 80 percent of equipment and installation costs
- Proper disposal of used equipment
- Quality assurance and quality control through randomized on-site project verification

The CSP utilizes a pre-qualified pool of local installation contractors selected through a competitive bid process to install the recommended energy efficiency measures.

Qualified customers participate by contacting the program implementation contractor who performs a complementary audit. Using the audit data, the CSP generates a proposal with estimated energy savings information, Duquesne Light's incentives, and the customer's share of the cost. This cost-share structure ensures customers are invested and committed to the project. Upon acceptance, the contractor schedules the work and installs the measures. Following installation, the installation contractor collects only the customer's share of the project's cost and Duquesne Light then pays the incentive directly to the implementation contractor.

During Phase IV, emphasis is being placed on very small businesses, sometimes referred to as micro-businesses; the classic "main street" businesses such as a small local bakery or hardware store are particularly challenging to reach because energy use is low while effort to engage customers is generally high; nevertheless, these businesses frequently have ample

opportunities to realize low-cost savings. It is imperative to increase the volume of projects to overcome the resource costs of labor, trucks, and other equipment needed to perform installations. The CSP will work collaboratively with cities and towns, through the community and economic development offices, with local chambers of commerce and other local business associations to create multiple touchpoints to encourage these customers to take part in the SBDI Program.

Program Issues, Risks and Risk Management Strategy: This program was implemented successfully in Phases II and III, and Phase IV program risk is mitigated by replicating proven approaches and processes. All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warnings regarding program under- or over-subscription. CSP implementation contract statements of work include pay-for-performance compensation. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: Participating customers receive a no-cost energy assessment and are eligible for incentives that cover up to 80% of the equipment and installation costs of the highly efficient equipment, which are paid directly to the installation contractors. Customers are also eligible to receive a limited quantity of energy-saving products at time of assessment at no cost.

Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2 years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to promote program participation. The Phase IV Implementation Order³⁷ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Ramp-up Strategy: This program was implemented in Phases II and III, so Phase IV program ramp-up will be minimized by replicating many of the proven approaches and processes. Implementation service RFPs will be issued, responses reviewed, and contract statements of work executed according to the implementation schedules provided in Section 12. See Figure 1: Program Ramp Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: The program is marketed primarily by the selected CSP. Studies show that the most successful hard-to-reach programs rely on cold call, walk-in contact or virtual contacts. The CSP identifies hard-to-reach customers by analyzing customer data and prioritizing these customers by geography, energy intensity, and business type. The CSP supplements door-to-door sales with direct mailings, telemarketing, and targeted efforts for hard-to-reach market segments and outreach through neighborhood business associations.

³⁷ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

For Phase IV, the CSP will introduce a paid media campaign to raise awareness before reaching the door. This campaign will “warm up” the audience and enable the CSP to approach small businesses more effectively. This campaign will also include print and digital media, such as paid search ads, social media ads, geo-targeted ads around targeted zip codes, and email campaigns.

Available services will be posted on Duquesne Light’s Act 129 website. Additionally, the CSP conducts outreach through participation in and memberships with selected key trade associations, attendance at key trade shows, and training event sponsorship. The CSP will craft program participation messages for key customer decision-makers by leveraging print collateral, including customer spotlights, brochures, and fact sheets. The CSP will work collaboratively with cities and towns, through the community and economic development offices, with local chambers of commerce and other local business associations to create multiple touchpoints to encourage these customers to take part in the SBDI Program.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: See Section 11, Table 7.

Maximum Deadline for Rebates: No customer rebates are provided by this program since measures are directly installed at no direct cost to the customer.

Program Start Date and Key Milestones: Refer to Section 12 Chart 2: Small Commercial and Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commissions Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on cost of the project (as no customer incentives are provided). Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs. The Customer Program Associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Savings Targets and Estimated Participation:³⁸

³⁸ Participation is units of measures installed.

	PY13	PY14	PY15	PY16	PY17	Total
MWh	4,020.7	4,949.4	5,174.2	5,031.5	3,957.6	23,133.4
MW	0.778	0.957	1.001	0.973	0.766	4.475
Participation	50,433.7	62,082.4	64,902.6	63,112.5	49,642.6	290,174

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$1,687,627	\$2,077,421	\$2,171,790	\$2,111,890	\$1,661,157	\$9,709,885
Incentives	\$1,407,903	\$1,733,088	\$1,811,815	\$1,761,844	\$1,385,820	\$8,100,470
Percent Incentives	83.4%	83.4%	83.4%	83.4%	83.4%	83.4%
Percent Non-Incentives	16.6%	16.6%	16.6%	16.6%	16.6%	16.6%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Small-Medium C&I Sector	\$4,685,502	\$5,767,718	\$6,029,722	\$5,863,419	\$4,612,008	\$26,958,369
Direct Install	\$1,687,627	\$2,077,421	\$2,171,790	\$2,111,890	\$1,661,157	\$9,709,885
Percent Sector Budget	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%

Cost Effectiveness:

- Gross TRC: 1.09
- NTG Ratio: 1.00
- Net TRC: 1.09

Bidding Strategy: Interior lighting measure savings from this Program may contribute to Duquesne Light's collective EE Resource for nomination into PJM forward Capacity Market RPM Base Residual Auction.

3.3.2. Small Business Solutions Program

Program Title and Program Years: Small Business Solutions (SBS) Program will be implemented during program years 2021 through 2026.

Objectives: The SBS Program provides a set of simple solutions for customers interested in reducing their energy consumption by installing highly efficient technologies and improving operational processes that produce verifiable energy and demand savings. This program influences the selection of high-efficiency equipment in retrofit, new construction, and end-of-life equipment replacement scenarios. The primary objective is to provide small and medium C&I customers an expedited, quantifiable, and simple-to-understand incentive offering that helps them save energy and money. The suite of offerings is designed to reduce

or bypass potential barriers to participation, such as lack of energy efficiency information, easy access to qualified vendors and installers, tools to quantify savings, and access to capital.

Target Market: The program targets Duquesne Light's C&I customers with demand less than 300 kW.

The SBS Program is designed for all small and medium C&I customers and targets all cost-effective energy efficiency retrofit and time-dependent opportunities. Program marketing has a sector-based focus, targeting specific energy efficiency opportunities within primary customer sectors, such as education, government, healthcare, hospitality, industrial, non-profit, property management, telecommunications, and retail.

The program continues to target partnerships within the trade ally community. These trade allies are true stakeholders in the process and typically have established relationships and contacts with customers. The selected CSP will continue to recruit trade allies and provide training and support to these key players that help spread the program's message and deliver solutions.

Program Description: The SBS Program helps Duquesne Light's small and medium C&I customers and/or their trade allies select the most efficient electric technologies when they consider purchasing new equipment or retrofitting existing inefficient technologies. The SBS Program offers two core participation tracks: prescriptive and custom.

The prescriptive component offers a simplified method to make efficient choices on pre-defined energy efficiency measures without requiring complex analysis or participation rules. The prescriptive component covers the majority of common energy-saving measures across most customers and end uses. Participants can choose from a menu of incentives for a wide range of pre-defined end uses, such as lighting, HVAC, variable frequency drives (VFD), commercial plug load, and kitchen and refrigeration equipment.

The custom component makes it possible to offer more complex and site-specific measures and projects. Custom incentives enable more comprehensive approaches to energy savings, which often occur in major renovation and new construction projects. The custom component is available for energy efficiency technologies or multi-measure projects that do not fall under the prescriptive component, ranging from complex commercial HVAC projects to industrial process improvements. Custom projects must be able to show specific and verifiable energy savings and costs utilizing approved TRM protocols.

Program components include energy use auditing, provision of targeted financing and incentives, project management and retrofit measure installation, training, and technical assistance. Energy audit results provide business customers a readily available, reliable source of information about their energy use and outline ways to save energy.

Implementation Strategy: The SBS Program will be delivered by a CSP selected through a competitive bid process. This CSP provides customers with ongoing, one-on-one guidance for identifying comprehensive energy efficiency opportunities, assisting with the application and implementation process, obtaining technical assistance, and coordinating with trade allies

on projects to create a cohesive program delivery. The CSP also recruits and engages trade allies, which are an important source of prospective projects. The implementation strategy includes:

- Account-based marketing that targets decision-makers to increase awareness, encourage enrollment, and move the best prospects toward participation
- One-on-one outreach to raise awareness, engage customers and trade allies, and deliver the highest quality customer experience
- Engaging and training trade allies to increase participation and contribute to market transformation
- Engineering support services, tools, and information provided to trade allies and customers
- Quality assurance and quality control through randomized on-site project verification and M&V

Pennsylvania's commercial lighting market has undergone drastic changes over the last several years. In the wake of increasing federal energy codes and coincident increases to baseline standard practices, the CSP focuses on controls savings and new technologies, such as networked lighting controls (NLC), to generate savings. NLC are controls that are networked, addressable, and utilize software or intelligent controllers to combine multiple lighting control strategies in a single space. The CSP will work with manufacturers and their regional representatives to build the local market by promoting NLC technologies and educating customers and local trade allies.

Program Issues, Risks and Risk Management Strategy: The SBS Program's core design mimics the Large Business Solutions Program, which was implemented successfully during Phase III, and Phase IV program risk is mitigated by replicating proven approaches and processes. All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives and impacts and provides early warnings regarding program under- or over-subscription. CSP implementation contract statements of work include pay-for-performance compensation. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: Rebates are intended to offset the incrementally higher cost of highly efficient equipment. The amount paid to participating customers for per unit of measure (lamp, motor HP, etc. for Prescriptive measures and annual per-kWh savings for Custom measures) is addressed as a percentage of that incrementally higher cost.

Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2 years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to promote program participation. The Phase IV Implementation Order³⁹ requirement for at

³⁹ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Ramp-up Strategy: Phase IV program ramp-up will be minimized by replicating many of the proven approaches and processes from Phase III. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Though a variety of marketing approaches are employed, experience has established that the most successful avenue for marketing comes from through one-on-one communication with customers using dedicated program field staff in partnership with local trade allies. Throughout past program cycles, trade allies have helped identify opportunities and gauge customer interest in pursuing individual efficiency upgrades or a comprehensive plan of upgrades, and field staff have leveraged their long-term relationships with customers, their knowledge, and their analysis of customer data to generate projects. Major account managers for Duquesne Light will also inform customers about the program.

To support one-on-one outreach, the marketing plan includes:

- **Targeting key market segments.** Using market segmentation research, including market verticals, the implementer allocates program personnel by subject-matter expertise to key markets for better penetration.
- **Participating in associations.** The CSP conducts outreach through participation in and memberships with selected key trade associations and attendance at key trade shows, reaching a large number of potential customers in one place. Market segmentation data helps refine which associations provide maximum benefits.
- **Supporting trade allies.** Engaging trade allies is another key way of raising awareness, improving participation rates, and contributing to market transformation. Trade allies are an extension of the program team and provide customers with expertise. The implementer supports trade allies with training, program staff to assist them, and marketing materials and enables them to provide continuous feedback on the program.
- **Delivering a paid media campaign.** For Phase IV, the CSP will introduce a paid media campaign to raise awareness before reaching the door. This campaign will “warm up” the audience and enable the CSP to approach small businesses more effectively. This campaign will also include print and digital media, such as paid search ads, social media ads, geo-targeted ads around targeted zip codes, and email campaigns.
- **Providing access to online marketing/website.** Available services are posted on Duquesne Light’s Act 129 website. Emails and digital tactics drive traffic to the site and emphasize how to participate in the program. Customers may also access incentive applications from Duquesne Light’s website.
- **Hosting events.** The CSP holds events throughout the year that cover all small business sectors to raise awareness and encourage greater program participation.

Event efforts focus on sponsorships, partnerships, speaking opportunities, and event attendance.

- **Distributing Collateral.** The CSP crafted program participation messages for key customer decision-makers by leveraging print collateral, including customer spotlights, brochures, and fact sheets.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: See Section 11, Table 7.

Maximum Deadlines for Rebates: The maximum deadline to pay rebates by the SBS Program is 180 days from the date of installation of eligible energy efficiency measures.

Program Start Date and Key Milestones: Refer to Section 12 Chart 2: Small Commercial and Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission’s Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs. The Customer Program Associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Savings Targets and Estimated Participation:⁴⁰

	PY13	PY14	PY15	PY16	PY17	Total
MWh	8,727.2	10,742.9	11,230.9	10,921.2	8,590.3	50,212.5
MW	1.493	1.838	1.921	1.868	1.470	8.590
Participation	52,677.1	64,844.0	67,789.6	65,919.9	51,850.9	303,081

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$1,620,671	\$1,994,999	\$2,085,624	\$2,028,101	\$1,595,250	\$9,324,644
Incentives	\$974,846	\$1,200,007	\$1,254,519	\$1,219,918	\$959,555	\$5,608,846
Percent Incentives	60.2%	60.2%	60.2%	60.2%	60.2%	60.2%
Percent Non-Incentives	39.8%	39.8%	39.8%	39.8%	39.8%	39.8%

Estimated Percentage of Sector Budget Attributed to Program:

⁴⁰ Participation is units of measures incented.

	PY13	PY14	PY15	PY16	PY17	Total
Small-Medium C&I Sector	\$4,685,502	\$5,767,718	\$6,029,722	\$5,863,419	\$4,612,008	\$26,958,369
Downstream Incentives Program	\$1,620,671	\$1,994,999	\$2,085,624	\$2,028,101	\$1,595,250	\$9,324,644
Percent Sector Budget	34.6%	34.6%	34.6%	34.6%	34.6%	34.6%

Cost Effectiveness:

- Gross TRC: 1.48
- NTG Ratio: 0.90
- Net TRC: 1.45

Bidding Strategy: Interior lighting measure savings from this Program may contribute to Duquesne Light's collective EE Resource for nomination into PJM forward Capacity Market RPM Base Residual Auction.

3.3.3. Small Business Midstream Solutions Program

Program Title and Program Years: The Small Midstream Program will be implemented during program years 2021 through 2026.

Objectives: The Small Midstream Program is designed to influence the equipment-purchasing decisions that customers and trade allies make every day. The program moves incentives up the supply chain to the distributors and manufacturers that have the greatest influence on equipment sales. By creating this profitable value proposition, midstream incentives can materially affect the majority of all equipment sales. This midstream program model can extend to the entirety of service territories, including underserved, remotely located, or otherwise hard-to-reach customers and communities.

Overall program goals and objectives include:

- Providing a mix of measures that deliver optimal energy savings in a cost-effective manner
- Increasing sales of qualifying products beyond what is typically achieved from the existing downstream prescriptive track
- Engaging a full range of industry distribution partners across multiple channels with particular emphasis on local partnerships when applicable

Providing rebates directly to distributors and manufacturers eases customers' participation burden, reduces customer costs, and provides broader market engagement delivery with fewer program partners.

Target Market: This program targets Duquesne Light's small C&I customers with demands less than 300 kW that would ordinarily obtain equipment through commercial business-to-business dealers, distributors, and contractors.

Program Description: The Small Midstream Program provides incentives directly to distributors and manufacturers, rather than to end users, for efficient products, offsetting the higher costs and effectively driving uptake of the most efficient equipment options. Incentives are structured to mitigate the price premium between conventional and high-efficiency products at the point of purchase, which places efficient products in direct competition with conventional products based on quality and efficiency alone. By working with market actors directly, equipment stocking patterns are altered over time to move inefficient products off the shelves and to enable faster adoption and decreased customer costs for efficient equipment.

The Phase IV Small Midstream Program expands upon the Phase III midstream lighting offer and intends to add additional end uses over time, including HVAC, refrigeration, and equipment for food service providers.

Implementation Strategy: The implementation contractor delivers the program as a turnkey solution and serves as a single point of contact for distributors and manufacturers. The CSP also issues and maintains participation agreements, identifies and enrolls targeted suppliers, provides training, processes applications, tracks and reports on program activity, performs customer site inspections (as required), and supports program EM&V.

Initial engagement targets organizational CEOs and sales managers to discuss opportunities for increasing inventories, by incorporating proven sales strategies, and to get full buy-in throughout an organization. The CSP uses industry events to engage and maintain manufacturer relationships with major manufacturers' designated account managers. Prior to signing a participation agreement, the CSP ensures that distributors meet program criteria, and then during the enrollment process, the CSP learns distributors' business models and challenges and engages staff across the entire organization.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives and impacts and provides early warnings regarding program under- or over-subscription. CSP implementation contract statements of work include pay-for-performance compensation. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: No direct incentives are provided to customers; discounts are taken at the point of sale in the form of a reduced cost. Instant rebates are structured to mitigate the price premium between conventional and high-efficiency products at the point of purchase, thereby placing efficient products in direct competition with conventional products based on quality and efficiency alone.

Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2-years. Incentive levels

were then adjusted to be approximately consistent with statewide treatment and as needed to promote program participation. The Phase IV Implementation Order⁴¹ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Ramp-up Strategy: A Midstream Lighting Program was implemented during Phase III, so Phase IV ramp-up will be minimized by replicating many of the proven approaches and relationships. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: The program is marketed primarily by the selected CSP. The CSP develops and delivers presentations to distributors and manufacturers through a combination of phone calls, personal emails, webinars, and in-person visits to maximize market share. Presentations demonstrate the financial benefits of promoting high-efficiency measures, from increased sales revenue and program incentives. Additionally, the CSP conducts outreach through participation in and memberships with selected key trade associations, attendance at key trade shows, and training event sponsorships. The CSP crafted program participation messages for key customer decision-makers by leveraging print collateral, including customer spotlights, brochures, and fact sheets. Available services are posted on Duquesne Light's Act 129 website.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: See Section 11, Table 7.

Maximum Deadline for Rebates: The Small Midstream Program facilitates rebates as program incentives paid to participating distributors and manufacturers for reducing the upfront cost of efficient products, which decreases program participation time and customer complexity. Program implementers provide monthly invoices to Duquesne Light for rebates, rendering rebate deadlines not applicable for this program.

Program Start Date and Key Milestones: Refer to Section 12 Chart 2: Small Commercial and Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on the cost of the project (as no customer incentives are provided). Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs. The Customer Program Associates

⁴¹ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Savings Targets and Estimated Participation:⁴²

	PY13	PY14	PY15	PY16	PY17	Total
MWh	4,778.1	5,881.7	6,148.9	5,979.3	4,703.1	27,491.1
MW	1.174	1.445	1.511	1.469	1.156	6.756
Participation	36,837.3	45,345.7	47,405.5	46,098.1	36,259.5	211,946

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$1,099,882	\$1,353,923	\$1,415,426	\$1,376,388	\$1,082,630	\$6,328,249
Incentives	\$767,465	\$944,728	\$987,643	\$960,403	\$755,427	\$4,415,667
Percent Incentives	69.8%	69.8%	69.8%	69.8%	69.8%	69.8%
Percent Non-Incentives	30.2%	30.2%	30.2%	30.2%	30.2%	30.2%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Small-Medium C&I Sector	\$4,685,502	\$5,767,718	\$6,029,722	\$5,863,419	\$4,612,008	\$26,958,369
Midstream Incentives Program	\$1,099,882	\$1,353,923	\$1,415,426	\$1,376,388	\$1,082,630	\$6,328,249
Percent Sector Budget	23.5%	23.5%	23.5%	23.5%	23.5%	23.5%

Cost Effectiveness:

- Gross TRC: 0.68
- NTG Ratio: 0.72
- Net TRC: 0.66

Bidding Strategy: Interior lighting measure savings from this Program may contribute to Duquesne Light's collective EE Resource for nomination into PJM Forward Capacity Market RPM Base Residual Auction.

3.3.4. Small Business Virtual Commissioning Program

Program Title and Program Years: The Small Virtual Commissioning Program (SVCx) will be implemented during the program years 2021 through 2026.

⁴² Participation is units of measures incented.

Objectives: The SVCx Program uses a turnkey approach that targets system-based no- to low-cost operational savings for small and medium commercial customers. This 100 percent pay-for-performance program does not fit a traditional model that uses trade allies, mass marketing, or standardized prescriptive retrofits; rather, it provides a targeted, data-driven approach to energy efficiency engagement that effectively eliminates the need for enrollment forms, incentives, or administrative costs.

Target Market: The program targets Duquesne Light's small and medium C&I customers with demand less than 300 kW. Traditionally hard-to-reach accounts such as businesses that lease facilities are high-value program candidates. These types of organizations are typically motivated by cash flow and are attracted to non-capital cost opportunities to reduce energy usage. Additionally, public institutions (e.g., schools and municipalities) are also excellent candidates for this program, considering its opportunities for immediate payback and no capital investment.

Program Description: The SVCx Program leverages advanced metering infrastructure's (AMI) advanced data analytics to identify and qualify customers with significant potential for energy savings. The prospect identification process uses data modeling techniques (e.g., weather normalization, etc.) to selectively, and without bias, pinpoint individual meters and accounts with energy usage conditions that indicate the potential for operational savings; this process does not exclude or diminish opportunities based on business industry, size, or location. Once identified, the program implementer offers customers personalized remote engagement by phone and email to help them understand their energy usage and provide instructions for self-correction. Upon successful program participation, the customer's electric usage at the meter is continuously monitored to ensure savings persistence; if predetermined level of savings drift is detected, customers are re-engaged. Participants are encouraged to take part in additional energy efficiency programs offered by Duquesne Light upon a successful SVCx Program engagement. This program provides for contactless delivery.

Implementation Strategy: The implementation contractor delivers the program as a turnkey solution and serves as a single point of contact for customers. Unlike traditional energy efficiency programs that require on-site customer interaction, the SVCx Program is delivered virtually with data and analytics serving to efficiently pinpoint accounts and opportunities, not as program deliverables. The implementation strategy includes:

- **Data analysis.** The SVCx Program prospecting process begins with running the data of eligible Duquesne Light small and medium C&I accounts through a series of advanced algorithms, which consider business interval energy usage and weather data, past program participation, NAICS code, and building information along other variables to determine program fit.
- **Recommendation identification.** Once a list of prospects is generated, the implementer reviews each account's energy usage data to further qualify the account. Before initiating outreach, the implementer may also review other public information or private tools to gather additional information to support the engagement approach. This pre-engagement research builds credibility with customers and helps establish trust and increased customer satisfaction.

- **Customer engagement.** The implementer presents customers with specific recommended actions to simplify their decision-making and to overcome limited energy efficiency knowledge and time and resource availability. Recommendations are not generic, such as being based on industry type or similar facility but focus on a business's unique operating conditions based on their own actual usage data. The SVCx participant outreach process averages seven to ten contacts from the first call to the end of engagement when operational recommendations have been implemented. On average, the entire engagement process typically lasts 31 days for accounts that implement changes and requires between 30 minutes and three hours of participant time.
- **Energy savings measurement and verification.** The implementer uses a data model to calculate the annualized savings and monitors customers' energy usage over time period as designated in M&V protocol to verify savings persistence.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives and impacts and provides early warnings regarding program under- or over-subscription. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers:

The Program uses building, weather, and interval meter data to remotely identify energy optimization opportunities which are directly shared virtually with participants. Customers receive direct personal engagement and technical expertise by phone and email to help customer understand their energy usage and instructions for self-correction. Participants also receive 1) real-time standalone energy monitoring equipment, 2) payments towards the installation costs for monitoring and control systems, and 3) energy management software. Incentives amount to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Ramp-up Strategy: The SVCx Program relies on a data-driven process; therefore, ramp-up efforts are focused on pre-launch activities to secure data, rather than achieving a steady state of operation as with traditional programs. The implementer will begin completing the IT Security and Data Transfer Process after the contract has been approved by the PUC. Once utility data are ingested, the implementer conducts analysis, prospect, and outreach activities and delivers initial results typically within 30 days. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Traditional energy efficiency program mass marketing campaigns designed to attract participants are unnecessary for the SVCx Program. Customers with identified savings opportunities are engaged through personalized outreach performed by trained energy advisors. Understanding the challenges with reaching commercial customers trying to manage their everyday business operations, the SVCx Program crafts a customized message, using businesses' own data, that is unique and specific to their operating conditions. Marketing collateral is limited and provides customers assurances about program validity, as found in informational flyers. Available services are posted on Duquesne Light's Act 129 website.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: Section 11, Table 7.

Maximum Deadline for Rebates: Not applicable

Program Start Date and Key Milestones: Refer to Section 12 Chart 2, Small and Medium Commercial and Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs. The Customer Program Associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Savings Targets and Estimated Participation:⁴³

	PY13	PY14	PY15	PY16	PY17	Total
MWh	1,052.2	1,295.2	1,354.0	1,316.7	1,035.7	6,053.7
MW	0.387	0.477	0.498	0.485	0.381	2.228
Participation	30	37	39	38	30	173

Estimated Program Budget:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$277,322	\$341,375	\$356,882	\$347,039	\$272,972	\$1,595,591
Incentives	\$204,121	\$251,267	\$262,681	\$255,436	\$200,919	\$1,174,425
Percent Incentives	73.6%	73.6%	73.6%	73.6%	73.6%	73.6%
Percent Non-Incentives	26.4%	26.4%	26.4%	26.4%	26.4%	26.4%

Estimated Percentage of Sector Budget Attributed to Program:

	PY13	PY14	PY15	PY16	PY17	Total
Small-Medium C&I Sector	\$4,685,502	\$5,767,718	\$6,029,722	\$5,863,419	\$4,612,008	\$26,958,369
Virtual Commissioning	\$277,322	\$341,375	\$356,882	\$347,039	\$272,972	\$1,595,591
Percent Sector Budget	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%

⁴³ Participation is measured in customers' projects.

Cost Effectiveness:

- Gross TRC: 3.41
- NTG Ratio: 0.72
- Net TRC: 3.09

Bidding Strategy: Savings from this program will not contribute to Duquesne Light's collective EE Resource for nomination into PJM Forward Capacity Market RPM Base Residual Auction.

- 3.4. Commercial/Industrial Large Sector (as defined by EDC Tariff) Programs – include formatted descriptions of each program organized under the same headings as listed above for residential programs. Additionally, include Tables 7, 8, 9, and 13.

Large Commercial/Industrial Sector Programs include formatted descriptions of each program organized under the same headings as listed previously for residential and small commercial and industrial sector programs. Customers served under this sector are commercial and industrial customers having demand equal to or greater than 300 kW. To best serve large business customers, Duquesne Light offers a suite of solutions designed to influence customer behavior and purchasing decisions including a: Large Business Solutions Program, Large Midstream Program, and Large Virtual Commissioning Program, as described in the following pages.

3.4.1. Large Business Solutions Program

Program Title and Program Years: Large Business Solutions (LBS) Program will be implemented during program years 2021 through 2026.

Objectives: The LBS program provides a set of simple solutions for customers interested in reducing their energy consumption by installing highly efficient technologies and improving operational processes that produce verifiable energy and demand savings. This program influences the selection of high-efficiency equipment in retrofit, new construction, and end-of-life equipment replacement scenarios. The program's primary objective is to provide large C&I customers an expedited, quantifiable, and simple-to-understand incentive offering that helps them save energy and money. The suite of offerings is designed to reduce or bypass potential barriers to participation, such as lack of energy efficiency information, easy access to qualified vendors and installers, tools to quantify savings, and access to capital. The program's design reflects the flexibility necessary to serve the different sectors within the large C&I market.

Target Market: The program targets Duquesne Light's C&I customers with demand equal to or greater than 300 kW. The LBS Program is designed for all large C&I customers and targets all cost-effective energy efficiency retrofit and time-dependent opportunities. Program marketing has a sector-based focus, targeting specific energy efficiency opportunities within primary customer sectors, such as education, government, healthcare, hospitality, industrial, non-profit, property management, telecommunications, and retail. The program continues to

target partnerships within the trade ally community. These trade allies are true stakeholders in the process and typically have established relationships and contacts with customers. The selected CSP will continue to recruit trade allies and provide training and support to these key players that help spread the program's message and deliver solutions to large C&I customers.

Program Description: The LBS Program helps Duquesne Light's large C&I customers and/or their trade allies select the most efficient electric technologies when they consider purchasing new equipment or retrofitting existing inefficient technologies. The LBS Program offers two core participation tracks: prescriptive and custom.

The prescriptive component offers a simplified method to make efficient choices on pre-defined energy efficiency measures without requiring complex analysis or participation rules. Incentives and claimed savings are based on a combination of predetermined technologies and encoded calculation methods for existing equipment. The prescriptive component covers the majority of common energy-saving measures across most customers and end uses. Participants can choose from a menu of incentives for a wide range of pre-defined end uses, such as lighting, HVAC, variable frequency drives (VFDs), commercial plug load, and kitchen and refrigeration equipment.

The custom component makes it possible to include more complex and site-specific measures and projects. Custom incentives enable more comprehensive approaches to energy savings, which often occur in major renovation and new construction projects. The custom component is available for energy efficiency technologies or multi-measure projects that do not fall under the prescriptive component, ranging from complex commercial HVAC projects to industrial process improvements. Custom projects must be able to show specific and verifiable energy savings and costs utilizing approved TRM protocols.

Program components include energy use auditing, provision of targeted financing and incentives, project management and retrofit measure installation, training, and technical assistance. Energy audits results provide business customers a readily available, reliable source of information about their energy use and outline ways to save energy that, when implemented, will result in energy savings.

Implementation Strategy: The LBS Program is delivered by a CSP selected through a competitive bid process. The CSP provides customers with ongoing, one-on-one guidance for identifying comprehensive energy efficiency opportunities, assisting with the application and implementation process, obtaining technical assistance, and coordinating with trade allies on projects to create a cohesive program delivery. The CSP also recruits and engages trade allies, which are an important source of prospective projects. The implementation strategy includes:

- Account-based marketing that targets decision-makers to increase awareness, encourage enrollment, and move the best prospects toward participation
- One-on-one outreach to raise awareness, engage customers and trade allies, and deliver the highest quality customer experience

- Engaging and training trade allies to increase participation and contribute to market transformation
- Engineering support services, tools, and information provided to trade allies and customers
- Quality assurance and quality control through randomized on-site project verification and M&V

Retrocommissioning (RCx) Solutions. RCx provides C&I customers with an additional layer of energy-saving opportunities beyond equipment solutions. RCx Solutions targets primarily existing commercial, industrial, government, and institutional facilities with energy savings opportunities related to facility or process operations and maintenance.

Combined Heat and Power (CHP) Solutions. During Phase IV, the CSP is working to identify opportunities for CHP installations while maintaining high standards for screening, qualification, and delivering projects. The solution's objectives include:

- Increasing customers' awareness of and understanding of the benefits from CHP and exploring opportunities to deploy CHP technologies in their facilities
- Promoting and supporting various types of CHP systems' installations by helping customers overcome financial and technical barriers

Other New Technologies. Pennsylvania's commercial lighting market has undergone drastic changes over the last several years. In the wake of increasing federal energy codes and coincident increases to baseline standard practices, the CSP focuses on controls savings and new technologies, such as networked lighting controls (NLC) to generate savings. NLC are controls that are networked, addressable, and utilize software or intelligent controllers to combine multiple lighting control strategies in a single space. The CSP works with manufacturers and their regional representatives to build the local market by promoting NLC technologies and educating customers and local trade allies.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives and impacts and provides early warnings regarding program under- or over-subscription. CSP implementation contract statements of work include pay-for-performance compensation. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: Rebates are intended to offset the incrementally higher cost of highly efficient equipment. The amount paid to participating customers for per unit of measure (lamp, motor HP, etc. for Prescriptive and per annual kWh savings for Custom) is addressed as a percentage of that incrementally higher cost. Service Providers also provide energy studies and recommendations for operational and capital improvements.

Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2-years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to

promote program participation. The Phase IV Implementation Order⁴⁴ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Ramp-up Strategy: Phase IV program ramp-up will be minimized by replicating many of the proven approaches and processes from Phase III. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Though a variety of marketing approaches are employed, experience has established that the most successful avenue for marketing comes from through one-on-one communication with customers using dedicated program field staff in partnership with local trade allies and internal Duquesne Light account managers. Throughout past program cycles, trade allies have helped identify opportunities and gauge customer interest in pursuing individual efficiency upgrades or a comprehensive plan of upgrades, and field staff have leveraged their long-term relationships with customers, their knowledge, and their analysis of customer data (e.g., energy use, demand, sector analysis) to generate projects. Trade allies, such as equipment vendors, consulting engineers, and energy service companies or channel partners, have been key participants in promoting, identifying, and delivering services to customers.

To support one-on-one outreach, the marketing plan includes:

- **Targeting key market segments.** Using market segmentation research, including market verticals, the implementer allocates program personnel by subject-matter expertise to key markets for better penetration.
- **Participating in associations.** The CSP conducts outreach through participation in and memberships with selected key trade associations and attendance at key trade shows, reaching a large number of potential customers in one place. Market segmentation data helps refine which associations provide maximum benefits.
- **Supporting trade allies.** Engaging trade allies is another key way of raising awareness, improving participation rates, and contributing to market transformation. Trade allies are an extension of the program team and provide customers with expertise. The implementer supports trade allies with training, program staff to assist them, and marketing materials and enables them to provide continuous feedback on the program.
- **Providing access to online marketing/website.** Available services are posted on Duquesne Light's Act 129 website. Emails and digital tactics drive traffic to the site and emphasize how to participate in the program. Customers may also access incentive applications from Duquesne Light's website.

⁴⁴ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

- **Hosting events.** The CSP will hold events throughout the year to raise awareness and encourage greater program participation. Event efforts focus on sponsorships, partnerships, speaking opportunities, and event attendance.
- **Distributing Collateral.** The CSP will craft program participation messages for key customer decision-makers by leveraging print collateral, including customer spotlights, brochures, and fact sheets.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: See Section 11, Table 7.

Maximum Deadline for Rebates: Duquesne Light will assess rebate deadlines on a case-by-case basis. The maximum deadline to pay rebates by the LBS Program will generally be 180 days from the date of installation of eligible energy efficiency measures. However, this time frame may not be appropriate for particularly large or complex projects, such as CHP projects, which may take 18 months or more between project commitment and final measurement.

Program Start Date and Key Milestones: Refer to Section 12 Chart 3: Large Commercial and Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission’s Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase IV EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs. The Customer Program Associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Savings Targets and Estimated Participation:⁴⁵

Large Commercial:

	PY13	PY14	PY15	PY16	PY17	Total
MWh	14,826.0	18,256.1	18,800.8	17,995.1	13,818.1	83,696.1
MW	2.724	3.354	3.454	3.306	2.539	15.377
Participation	54,016.0	66,513.1	68,497.5	65,562.2	50,344.1	304,933

Large Industrial:

⁴⁵ Participation for Large Commercial and Large Industrial Business Solutions programs is represented in projected measures delivered.

	PY13	PY14	PY15	PY16	PY17	Total
MWh	6,881.3	8,473.3	8,726.1	8,352.2	6,413.5	38,846.3
MW	1.264	1.557	1.603	1.534	1.178	7.137
Participation	25,071	30,871	31,792	30,430	23,366	141,530

Estimated Program Budget:**Large Commercial:**

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$3,442,687	\$4,239,188	\$4,365,661	\$4,178,579	\$3,208,659	\$19,434,773
Incentives	\$1,576,067	\$1,940,706	\$1,998,606	\$1,912,959	\$1,468,929	\$8,897,267
Percent Incentives	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%
Percent Non-Incentives	54.2%	54.2%	54.2%	54.2%	54.2%	54.2%

Large Industrial:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$1,523,119	\$1,875,508	\$1,931,462	\$1,848,693	\$1,419,580	\$8,598,362
Incentives	\$656,755	\$808,702	\$832,829	\$797,140	\$612,110	\$3,707,536
Percent Incentives	43.1%	43.1%	43.1%	43.1%	43.1%	43.1%
Percent Non-Incentives	56.9%	56.9%	56.9%	56.9%	56.9%	56.9%

Estimated Percentage of Sector Budget Attributed to Program:**Large Commercial**

	PY13	PY14	PY15	PY16	PY17	Total
Large Commercial Sector	\$4,644,450	\$5,718,991	\$5,889,613	\$5,637,225	\$4,328,728	\$26,219,006
Downstream Incentives	\$3,442,687	\$4,239,188	\$4,365,661	\$4,178,579	\$3,208,659	\$19,434,773
Percent Sector Budget	74.1%	74.1%	74.1%	74.1%	74.1%	74.1%

Large Industrial:

	PY13	PY14	PY15	PY16	PY17	Total
Large Industrial Sector	\$2,019,824	\$2,487,131	\$2,561,333	\$2,451,572	\$1,882,520	\$11,402,379
Downstream Incentives	\$1,523,119	\$1,875,508	\$1,931,462	\$1,848,693	\$1,419,580	\$8,598,362
Percent Sector Budget	75.4%	75.4%	75.4%	75.4%	75.4%	75.4%

Cost Effectiveness – Large Commercial:

- Gross TRC: 2.16
- NTG Ratio: 0.62
- Net TRC: 1.75

Cost Effectiveness – Large Industrial:

- Gross TRC: 2.16
- NTG Ratio: 0.61
- Net TRC: 1.74

Bidding Strategy: Interior lighting measure savings from these Programs may contribute to Duquesne Light's collective EE Resource for nomination into PJM Forward Capacity Market RPM Base Residual Auction.

3.4.2. Large Business Midstream Solutions Program

Program Title and Program Years: The Large Midstream Program will be implemented during program years 2021 through 2026.

Objectives: The Large Midstream Program is designed to influence equipment purchasing decisions that customers and trade allies make every day. The program moves incentives up the supply chain to the distributors and manufacturers that have the greatest influence on equipment sales. By creating profitable value proposition midstream incentives can materially affect the majority of all equipment sales. This midstream program model can extend to the entirety of service territories, including underserved, remotely located, or otherwise hard-to-reach customers and communities.

Overall program goals and objectives include:

- Providing a mix of measures that deliver optimal energy savings in a cost-effective manner
- Increasing sales of qualifying products beyond what is typically achieved from the existing downstream prescriptive track
- Engaging a full range of industry distribution partners across multiple channels with particular emphasis on local partnerships when applicable

Providing rebates directly to distributors and manufacturers eases customers' participation burden, reduces customer costs, and provides broader market engagement delivery with fewer program partners.

Target Market: This program targets Duquesne Light's large C&I customers with demand equal to or greater less than 300 kW and that would ordinarily obtain equipment through commercial business-to-business dealers, distributors, and contractors.

Program Description: The Large Midstream Program provides incentives directly to distributors or manufacturers, rather than to end users, for efficient products, offsetting the higher costs and effectively driving uptake of the most efficient equipment options. Incentives are structured to mitigate the price premium between conventional and high-efficiency products at the point of purchase, which places efficient products in direct competition with conventional products based on quality and efficiency alone. By working with market actors directly, equipment stocking patterns are altered over time to move inefficient products off the shelves and to enable faster adoption and decreased customer costs for efficient equipment.

Implementation Strategy: The implementation contractor delivers the program as a turnkey solution and serves as a single point of contact for distributors and manufacturers. The CSP also issues and maintains participation agreements, identifies and enrolls targeted suppliers, provides training, processes applications, tracks and reports on program activity, performs customer site inspections (as required), and supports program quality control.

Initial engagement targets organizational CEOs and sales managers to discuss opportunities for increasing inventories and to get full buy-in throughout an organization. The CSP uses industry events to engage and maintain manufacturer relationships with major manufacturers' designated account managers. Prior to signing a participation agreement, the CSP ensures that distributors meet program criteria, and then during the enrollment process, the CSP learns distributors' business models and challenges and engages staff across the entire organization.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives and impacts and provides early warnings regarding program under- or over-subscription. CSP implementation contract statements of work include pay-for-performance compensation. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: No direct incentives are provided to customers; discounts are taken at the point of sale in the form of a reduced cost. Instant rebates are structured to mitigate the price premium between conventional and high-efficiency products at the point of purchase, thereby placing efficient products in direct competition with conventional products based on quality and efficiency.

Incentive levels have historically averaged approximately one-third of efficient product incremental costs, initially set targeting a simple payback period of 2 years. Incentive levels were then adjusted to be approximately consistent with statewide treatment and as needed to

promote program participation. The Phase IV Implementation Order⁴⁶ requirement for at least 50% of EE&C Plan spending, at the Plan level, to come from incentives has caused incentive levels to increase to a portfolio average of 56.2% offsetting on average 41% of participant incremental costs.

Ramp-up Strategy: A Midstream Lighting Program was implemented during Phase III, so Phase IV ramp-up will be minimized by replicating many of the proven approaches and relationships. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: The program is marketed primarily by the selected CSP. The CSP develops and delivers presentations to distributors and manufacturers through a combination of phone calls, personal emails, webinars, and virtual or in-person visits to maximize market share. Presentations demonstrate the financial benefits of promoting high-efficiency measures, from increased sales revenue and program incentives. Additionally, the CSP conducts outreach through participation in and memberships with selected key trade associations, attendance at key trade shows, and training event sponsorships. The CSP crafted program participation messages for key customer decision-makers by leveraging print collateral, including customer spotlights, brochures, and fact sheets. Available services are posted on Duquesne Light's Act 129 website.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: See Section 11, Table 7.

Maximum Deadline for Rebates: The Large Midstream Program facilitates rebates as program incentives paid to participating market actors for reducing the upfront cost of efficient products, which decreases program participation time and customer complexity. Program implementers provide monthly invoices to Duquesne Light for rebates. Rebate deadlines as not applicable for this program.

Program Start Date and Key Milestones: Refer to Section 12 Chart 3: Large Commercial and Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs. The Customer Program Associates will administer the program on a shared basis with additional part-time support by

⁴⁶ PA Public Utility Commission Energy Efficiency and Conservation Program Implementation Order, Docket No. M-2020-3015228, June 18, 2020, Section I EDC Cost Recovery, subsection 1. Determination of Phase IV Allowable Costs, page 127.

engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Savings Targets and Estimated Participation:⁴⁷

Large Commercial:

	PY13	PY14	PY15	PY16	PY17	Total
MWh	3,064.6	3,773.6	3,886.2	3,719.7	2,856.3	17,300.3
MW	0.847	1.043	1.074	1.028	0.790	4.783
Participation	28,042.6	34,530.5	35,560.7	34,036.8	26,136.3	158,307

Large Industrial:

	PY13	PY14	PY15	PY16	PY17	Total
MWh	1,422.4	1,751.5	1,803.7	1,726.4	1,325.7	8,029.7
MW	0.393	0.484	0.499	0.477	0.366	2.220
Participation	13,015.5	16,026.8	16,505.0	15,797.7	12,130.8	73,476

Estimated Program Budget:

Large Commercial:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$1,047,725	\$1,290,126	\$1,328,616	\$1,271,681	\$976,502	\$5,914,649
Incentives	\$675,464	\$831,739	\$856,554	\$819,848	\$629,547	\$3,813,151
Percent Incentives	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%
Percent Non-Incentives	35.5%	35.5%	35.5%	35.5%	35.5%	35.5%

Large Industrial:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$425,211	\$523,587	\$539,208	\$516,101	\$396,305	\$2,400,413
Incentives	\$252,431	\$310,834	\$320,107	\$306,390	\$235,271	\$1,425,033
Percent Incentives	59.4%	59.4%	59.4%	59.4%	59.4%	59.4%
Percent Non-Incentives	40.6%	40.6%	40.6%	40.6%	40.6%	40.6%

Estimated Percentage of Sector Budget Attributed to Program:

⁴⁷ Participation for Large Commercial and Large Industrial Midstream programs is represented in projected measures delivered.

Large Commercial:

	PY13	PY14	PY15	PY16	PY17	Total
Large Commercial Sector	\$4,644,450	\$5,718,991	\$5,889,613	\$5,637,225	\$4,328,728	\$26,219,006
Midstream Incentives	\$1,047,725	\$1,290,126	\$1,328,616	\$1,271,681	\$976,502	\$5,914,649
Percent Sector Budget	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%

Large Industrial:

	PY13	PY14	PY15	PY16	PY17	Total
Large Industrial Sector	\$2,019,824	\$2,487,131	\$2,561,333	\$2,451,572	\$1,882,520	\$11,402,379
Midstream Incentives	\$425,211	\$523,587	\$539,208	\$516,101	\$396,305	\$2,400,413
Percent Sector Budget	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%

Cost Effectiveness – Large Commercial:

- Gross TRC: 0.63
- NTG Ratio: 0.72
- Net TRC: 0.60

Cost Effectiveness – Large Industrial:

- Gross TRC: 0.63
- NTG Ratio: 0.72
- Net TRC: 0.60

Bidding Strategy: Interior lighting measure savings from these Programs may contribute to Duquesne Light's collective EE Resource for nomination into PJM Forward Capacity Market RPM Base Residual Auction.

3.4.3. Large Business Virtual Commissioning Program

Program Title and Program Years: The Large Virtual Commissioning Program (LVCx) will be implemented during the program years 2021 through 2026.

Objectives: The LVCx Program uses a turnkey approach that targets system-based no- to low-cost operational savings for large commercial customers and public facilities. This 100 percent pay-for-performance program does not fit a traditional model that uses trade allies, mass marketing, or standardized prescriptive retrofits; rather, it provides a targeted, data-driven approach to energy efficiency engagement that effectively eliminates the need for enrollment forms, incentives, or administrative costs.

Target Market: The program targets Duquesne Light's large C&I customers with demand equal to or greater than 300 kW. Any non-residential account, including public institutions, are eligible for the program. Traditionally hard-to-reach accounts such as businesses that

lease facilities are high-value program candidates. These types of organizations are typically motivated by cash flow and are attracted to non-capital cost opportunities to reduce energy usage. Additionally, public institutions (e.g., schools and municipalities) are also excellent candidates for this program, considering its opportunities for immediate payback and no capital investment.

Program Description: The LVCx Program leverages advanced metering infrastructure's (AMI) advanced data analytics to identify and qualify customers with significant potential for energy savings. The prospect identification process uses data modeling techniques (e.g., weather normalization, etc.) to selectively, and without bias, pinpoint individual meters and accounts with energy usage conditions that indicate the potential for operational savings; this process does not exclude or diminish opportunities based on business industry, size, or location. Once identified, the program implementer offers customers personalized remote engagement by phone and email to help them understand their energy usage and provide instructions for self-correction. Upon successful program participation, facilities are continuously monitored to ensure savings persistence; if pre-specified savings drift is detected, customers are re-engaged. Participants are encouraged to take part in additional energy efficiency programs offered by Duquesne Light upon a successful LVCx Program engagement. This program provides for contactless delivery.

Implementation Strategy: The implementation contractor delivers the program as a turnkey solution and serves as a single point of contact for customers. Unlike traditional energy efficiency programs that require on-site customer interaction, the LVCx Program is delivered virtually with data and analytics serving to efficiently pinpoint accounts and opportunities, not as program deliverables. The implementation strategy includes:

- **Data analysis.** The LVCx Program prospecting process begins with running the data of eligible Duquesne Light large C&I accounts through a series of advanced algorithms, which consider business interval energy usage and weather data, past program participation, NAICS code, and building information along other variables to determine program fit.
- **Recommendation identification.** Once a list of prospects is generated, the implementer reviews each account's energy usage data to further qualify the account. Before initiating outreach, the implementer may also review other public information or private tools to gather additional information to support the engagement approach. This pre-engagement research builds credibility with customers and helps establish trust and increased customer satisfaction.
- **Customer engagement.** The implementer presents customers with specific recommended actions to simplify their decision-making and to overcome limited energy efficiency knowledge and time and resource availability. Recommendations are not generic, such as being based on industry type or similar facility but focus on a business's unique operating conditions based on their own actual usage data. The LVCx participant outreach process averages seven to ten contacts from the first call to the end of engagement when operational recommendations have been implemented. On average, the entire engagement process typically lasts 31 days for accounts that implement changes and requires between 30 minutes and three hours of participant time.

- **Energy savings measurement and verification.** The implementer uses a data model to calculate the annualized savings and monitors customers' energy usage over time to verify savings persistence.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program incentives and impacts and provides early warnings regarding program under- or over-subscription. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Basis for the Proposed Level of Incentives and Anticipated Cost to Participating Customers: The Program uses building, weather, and interval meter data to remotely identify energy optimization opportunities, which are directly shared virtually with participants. Customers receive direct personal engagement and technical expertise by phone and email to help customer understand their energy usage and instructions for self-correction. Customers also receive 1) real-time standalone energy monitoring equipment, 2) payments towards the installation costs for monitoring and control systems, 3) energy management software, and 4) control systems equipment tailored to large organizations and institutional accounts. These systems utilize secure, cellular data transmission, included with the equipment incentive, and provide real-time energy usage alert capability to empower participants with energy management tools to ensure savings persistence. Incentives amount to 56.2% of projected Portfolio costs offsetting on average 41% of participant incremental costs.

Ramp-up Strategy: The LVCx Program relies on a data-driven process; therefore, ramp-up efforts are focused on pre-launch activities to secure data, rather than achieving a steady state of operation as with traditional programs. The implementer began completing the IT Security and Data Transfer Process after the contract has been approved by the PUC. Once utility data are ingested, the implementer conducts analysis, prospect, and outreach activities and delivers initial results typically within 30 days. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase IV performance period.

Marketing Strategy: Traditional energy efficiency program mass marketing campaigns designed to attract participants are unnecessary for the LVCx Program. Customers with identified savings opportunities are engaged through personalized outreach performed by trained energy advisors. Understanding the challenges with reaching customers trying to manage their everyday business operations, the LVCx Program crafts a customized message, using businesses' own data, that is unique and specific to their operating conditions. Marketing collateral is limited and provides customers assurances about program validity, as found in informational flyers. Available services are posted on Duquesne Light's Act 129 website.

Eligible Measures and Incentive Strategy showing Incremental Cost Assumptions and Incentive Levels: See Section 11, Table 7.

Maximum Deadline for Rebates: Not applicable.

Program Start Date and Key Milestones: Refer to Section 12 Chart 3, Large Commercial / Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs. The Customer Program Associates will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, legal, data processing and clerical staff, as well as contracted CSP services.

Savings Targets and Estimated Participation:⁴⁸

Large Commercial:

	PY13	PY14	PY15	PY16	PY17	Total
MWh	488.3	601.2	619.2	592.7	455.1	2,756.5
MW	0.180	0.221	0.228	0.218	0.167	1.014
Participation	8	10	10	10	7	44

Large Industrial:

	PY13	PY14	PY15	PY16	PY17	Total
MWh	226.6	279.1	287.4	275.1	211.2	1,279.4
MW	0.083	0.103	0.106	0.101	0.078	0.471
Participation	4	5	5	4	3	21

Estimated Program Budget:

Large Commercial:

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$154,039	\$189,677	\$195,336	\$186,965	\$143,567	\$869,584
Incentives	\$94,726	\$116,642	\$120,122	\$114,975	\$88,287	\$534,753
Percent Incentives	61.5%	61.5%	61.5%	61.5%	61.5%	61.5%
Percent Non-Incentives	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%

Large Industrial:

⁴⁸ Participation is measured in customers' projects.

	PY13	PY14	PY15	PY16	PY17	Total
Program Cost	\$71,495	\$88,036	\$90,662	\$86,777	\$66,635	\$403,604
Incentives	\$43,966	\$54,138	\$55,753	\$53,364	\$40,977	\$248,197
Percent Incentives	61.5%	61.5%	61.5%	61.5%	61.5%	61.5%
Percent Non-Incentives	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%

Estimated Percentage of Sector Budget Attributed to Program:

Large Commercial:

	PY13	PY14	PY15	PY16	PY17	Total
Large Commercial Sector	\$4,644,450	\$5,718,991	\$5,889,613	\$5,637,225	\$4,328,728	\$26,219,006
Virtual Commissioning	\$154,039	\$189,677	\$195,336	\$186,965	\$143,567	\$869,584
Percent Sector Budget	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%

Large Industrial:

	PY13	PY14	PY15	PY16	PY17	Total
Large Industrial Sector	\$2,019,824	\$2,487,131	\$2,561,333	\$2,451,572	\$1,882,520	\$11,402,379
Virtual Commissioning	\$71,495	\$88,036	\$90,662	\$86,777	\$66,635	\$403,604
Percent Sector Budget	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%

Cost Effectiveness – Large Commercial:

- Gross TRC: 2.85
- NTG Ratio: 0.62
- Net TRC: 2.31

Cost Effectiveness – Large Industrial:

- Gross TRC: 2.85
- NTG Ratio: 0.62
- Net TRC: 2.31

Bidding Strategy: Savings from these programs will not contribute to Duquesne Light's collective EE Resource for nomination into PJM Forward Capacity Market RPM Base Residual Auction.

- 3.5. Government/Nonprofit/Institutional Sector (as defined by 66 Pa. C.S. § 2806.1) – Qualitatively describe how the Government/Nonprofit/Institutional Sector will be served.

This sector will be served via the programs designated in Sections 3.3 and 3.4. All reporting requirements designated by the PUC will be met in the prepared documents.

4. Program Management and Implementation Strategies

(The objective of this section is to provide detailed description of how EDC plans to manage and implement programs, including their approach to and use of Conservation Service Providers (CSPs).)

4.1. Overview of EDC Management and Implementation Strategies:

- 4.1.1. Describe the types of services to be provided by EDC as well as consultants, trade allies, and CSPs. Indicate which organizations will provide which services and the basis for such allocation. Reference reporting and EM&V information from Sections 5 and 6 below.⁴⁹

The delivery organization size and function is largely driven by the portfolio of programs fielded. The portfolio proposed by Duquesne Light is structured under three broad programs: residential, non-residential and behavioral.

The Programs provide incentives for a full range of measures to assist customers of all sizes and in all key market segments to overcome barriers to adopt energy efficiency measures. These programs put in place a baseline program design, with set incentive levels and measure content. The design provides an overarching programmatic structure with calculated incentives for customized projects or itemized incentives for standard measures. Under this structure, each program can promote specific technologies or target specific market segments incorporating specified savings impacts and incentive levels in a consistent and common offering.

Duquesne Light implements programs effectively and economically. To achieve this, it uses CSPs with expertise and experience in program implementation and operations. Success depends on special services offered by CSPs to implement and overcome market segment specific barriers. Duquesne Light works together with CSPs and contractors to provide the services for successful implementation of the plan.

Program implementation requires significant planning and operation management functions. In addition to initiating the contracting process, each contractor is managed and integrated into an organized and cohesive operation. Program procedural guidelines are developed and followed. Documentation is maintained and electronic data structures are developed and managed.

Customers are engaged through at least three channels. First, Duquesne Light promotes the programs to its customers, through marketing approaches such as mass media advertising, direct marketing, direct contact, events, conferences, account representatives and electronic media. Second, the Duquesne Light contractors and subcontractors have similar responsibilities, with specific focus on securing commitments for customers to participate in the programs. Third, trade allies, such as builders, architects, engineers, vendors, equipment

⁴⁹ Services to be offered by EDC or others may include marketing, customer recruiting, demonstration projects, audits and or installation of new efficiency measures, verification of installations and or baseline usage, response to customer concerns, program tracking and program evaluation.

installation contractors, retailers and others, are informed of the Duquesne Light programs, with the objective of securing their willingness to participate and secure their customers and clients to participate. Trade allies are also engaged, primarily through direct marketing, events, conferences and account representatives.

The programs are designed to overcome key barriers to customer participation. In general, the barriers to greater customer participation in energy efficiency are information, technical assistance, and financial assistance. The programs are also designed to encourage comprehensiveness in terms of including multiple measures, taking account of interactive savings between measures, and advancing new designs and technologies.

Depending on the specific program in the portfolio for Duquesne Light, available services are expected to include:

- Benchmarking of energy use based on utility bills
- Walk-through energy audits to pre-screen and qualify the facility to optimize measure selection and implementation
- Investment grade energy audits for specific measures and energy savings
- Life-cycle cost-benefit analysis
- Virtual commissioning
- Project and construction planning and management
- Project documentation and operator training
- Post installation quantification of savings
- Providing guidance about alternative financing assistance
- Quantifying environmental benefits
- Marketing to prospective customers based on leads from Duquesne Light as well as resources of the CSP
- Educating customers and recruiting participants
- Conducting walk-through or preliminary energy audits
- Securing customer approval to proceed with targeted or comprehensive investment grade energy audits
- Recommending measures with estimates of energy and demand savings
- Preparing benefit and cost analyses and identification of financing options
- Completing customer applications to reserve program incentive funds and submitting to Duquesne Light for approval
- Performing or assisting customer with equipment specification, vendor selection, bidding and project management
- Conducting post-installation inspections

- Verifying savings estimates
- Coordinating applications for incentive payments
- Conducting project completion and follow-up services
- Conducting customer satisfaction surveys

Reporting is conducted based on the requirements of the regulatory authorities, Duquesne Light management and CSPs. Section 5 below presents Duquesne Light's proposed reporting criteria and supporting information systems.

EM&V is conducted for each program. The scope and level will depend on the nature of the program and split of responsibilities between regulatory authorities, Duquesne Light management and CSPs. Section 6 below presents Duquesne Light's approach to EM&V.

4.1.2. Describe how the risk categories of performance, technology, market and evaluation can affect the programs and any risk management strategies that will be employed to mitigate those risks.⁵⁰

Performance risk refers to the ability of programs to achieve their individual goals in the context of overall corporate goals for Duquesne Light relating to energy efficiency programs. This risk will be mitigated by offering a variety of programs addressing key customer classes and market segments within the customer classes. There are programs for each customer class and subprograms for market segments within the customer class. The programs allow both itemized and customized solutions in terms of measures for commercial and industrial sectors. Comprehensive solutions are encouraged. Performance risk is further mitigated through regular reporting and timely management to identify and resolve issues through the PMRS as described in Section 5. CSP payments as well as incentive reservations and payments are facilitated through PMRS which provides for real-time management of program incentives and progress towards goals. Key performance indices will be created collaboratively between Duquesne Light and its selected CSP for tracking to occur no less than annually.

Technology risk refers to the possibilities that energy conservation measures will not perform as well as expected in achieving expected savings. The risk is mitigated by designing programs to foster the installation of proven technologies for the specific energy conservation measure. The program design allows for certain technologies and not others. However, advanced technologies will be encouraged where greater energy savings and cost-effectiveness are expected. The risk is further mitigated by QA/QC performed by Duquesne Light or its implementation contactor as well as activities in EM&V to identify and resolve technology performance concerns.

⁵⁰ Performance risk is the risk that, due to design or implementation flaws, the program does not deliver expected savings. Technology risk is the risk that technologies targeted by a program fail to deliver the savings expected. Market risk is the risk that customers, or other key market players (e.g., contractors), choose not to participate in a program. Evaluation risk is the risk that independent EM&V will, based on different assumptions, conclude that savings fall short of what the implementers have estimated.

Market risk refers to the ability to recruit sufficient participants for the programs. Mitigation of market risk is pursued through efforts by Duquesne Light, CSPs, and trade allies to encourage participation by end-use customers. Where barriers to information, technical assistance and financial incentives are identified as continuing issues, adjustments to program designs have been and will continue to be considered to improve participation levels. Market risk is being mitigated during this process of planning and filing for program approval. In Phase III dialogue with large customers continued and thoughts associated with the Phase IV design are included in the proposed programs.

Evaluation risk refers to the possibilities that energy savings results are open to question. Mitigation of this risk is achieved by an open and transparent planning process for EM&V. Programs are planned and implemented in a manner to support verification and ensure availability of required evaluation data. The plan should be based on policies and procedures that are widely accepted in the discipline. The risk is mitigated further by implementation of the plan in a collaborative manner and with careful documentation of significant deviations. Finally, issues will continue to be identified and solutions proposed where evaluation risks become real.

Duquesne Light will continue its past practice of sound QA/QC by encouraging participation of EM&V contractor early in the project process, particularly to gain support and alignment for projects that include new technology or are particularly large or complex.

- 4.1.3. Describe how EDC plans to address human resource and contractor resource constraints to ensure that adequate personnel and contractors are available to implement the EE&C plan successfully.

Human resource constraints refer to the ability of Duquesne Light to recruit and retain qualified personnel to manage and implement the proposed programs. Duquesne Light has involved individuals within the organization in the planning process for the energy efficiency program. Several programs were specifically designed to leverage the resources of external governmental agencies and community engagement channels. Currently five positions are filled in the department at Duquesne Light. These positions have been in effect since Phase I and the staffing of these positions has been consistent. From a transition from plan to plan standpoint that consistency has added value to the meeting of the mandated goals. Duquesne Light can also draw on employees from other functional groups (e.g., engineering, major accounts, rates, etc.) as needed to address specialized or technical inquiries from customers.

Contractor resource constraints refer to the ability of Duquesne Light to secure sufficient support from CSPs. Duquesne Light has recruited CSPs on a competitive basis by sending requests for proposals to a significant pool of potential contractors. Prior to selecting contractors and signing agreements, Duquesne Light will confirm the ability of the CSPs to fulfill their responsibilities while adhering to the Commission approved CSP contract. RFPs are sent to the CSPs currently listed on the Commission registry as well as interested parties and this process will continue for newly approved programs.

A broader issue could be the long-term availability of qualified technicians and professionals with skills such as energy auditing, energy savings analysis, project engineering and

measures installation. Duquesne Light continues to cooperate with educational institutions and training organizations to increase the supply of qualified personnel in the Pittsburgh job market. One unique strategy with long-run potential is to stimulate interest in the field for energy efficiency via programs targeted to achieving energy savings in educational facilities and in the homes of students and staff at those facilities.

4.1.4. Describe “early warning systems” that will be utilized to indicate progress towards the goals and whether they are likely to be met. Describe EDC’s approach and process for shifting goals and funds, as needed, between programs and adding new measures/programs.

As in prior Phases, progress toward goals will be reported on a regular basis rather than waiting until the end of the program cycle. The progress reporting process has been developed by Duquesne Light in consultation with regulatory authorities. Furthermore, CSPs are directly involved through regular reporting, documentation of issues, and development of plans to resolve issues in meeting goals.

Duquesne Light implements programs in a manner to facilitate adjustments of individual programs funds and goals in order to achieve corporate goals. Each program is managed with a total budget as well as a budget for each year of implementation. This approach allows for at least an annual review and decision on the budget for the subsequent year. Key performance indices will be created collaboratively between Duquesne Light and its selected CSP for tracking to occur no less than annually.

As further protection to help ensure funds are well managed, Duquesne Light pays for CSP performance in two steps. For applications submitted and approved by Duquesne Light, Thirty percent (30%) of the of the performance payment shall be a Project Commitment Progress Payment (PCPP) payable 30 days after a Project has progressed in PMRS system to “Pending Customer Acceptance”. The remaining up to seventy percent (70%) of the performance based budget payment shall be a Project Installation Progress Payment (PIPP) payable 30 days after Duquesne Light’s review and approval of Project documentation and project has progressed in PMRS system to “Project Complete.”

These plans provide flexibility to Duquesne Light to re-allocate program budgets. For example, some programs may be oversubscribed so that more funds could be added to meet customer demand for participation and shifted away from programs that are undersubscribed.

New programs may be added over time to reach underserved customers and market segments. In particular, CSPs with expertise and experience in certain market segments may be recruited to address specific opportunities.

Similarly, new technologies may be encouraged as programs are implemented. Duquesne Light is open to offering incentives for new technologies, whether as an existing program, new program or sub-program.

Finally, Duquesne Light expects to file as required with regulatory authorities when considering significant adjustments to programs or adding new programs and new technologies.

4.1.5. Provide implementation schedules with milestones.

See Section 12, Charts 1 through 4.

4.1.6. Provide a brief overview of how stakeholders will be engaged throughout Phase IV. Describe how low-income communities and other marginalized populations will be represented in stakeholder engagement.

During the planning process, individual stakeholder meetings were held to discuss Duquesne Light's program plans for Phase IV. Participants included and invitations were extended to regulatory parties such as Office of Consumer Advocate, Office of Small Business Advocate, Duquesne Industrial Intervenors, Duquesne Light's Income Eligible Advisory Group ("IEAG"), lighting vendors, Conservation Service Providers, EM&V contractor, gas distribution companies, KEEA, and CAUSE PA.

During Phase IV, Duquesne Light proposes to hold stakeholder meetings to update as needed and required as well as continuing the dialogue with partnerships developed as a result of the meetings held during the course of planning the Phase IV programs. For example, Duquesne Light and the gas distribution companies will continue to work together to encourage participation beyond the current Smart Comfort low income program by holding IEAG meetings in conjunction with other scheduled stakeholder group meetings to facilitate efficiency in time and travel. In addition, Duquesne Light agrees that it will seek input from IEAG on marketing material to income eligible or marginalized populations. Furthermore, DLC will conduct a stakeholder meeting with the Housing Alliance of Pennsylvania, PHFA, other interested affordable housing trade groups, and other interested stakeholders in Phase IV to coordinate and tailor the measures targeted in the development of affordable housing opportunities.

Opportunities for increased coordination with CBO's, other weatherization, energy efficiency, or housing remediation assistance programs will be discussed at IEAG meetings and IEAG recommendations will be considered in good faith.

Based upon input from NGDCs, Duquesne Light and its non-residential CSP(s) will hold additional stakeholder meetings after plan approval to discuss the logistics around continued partnership with the NGDCs to increase awareness of CHP rebate opportunities under the Phase IV plan.

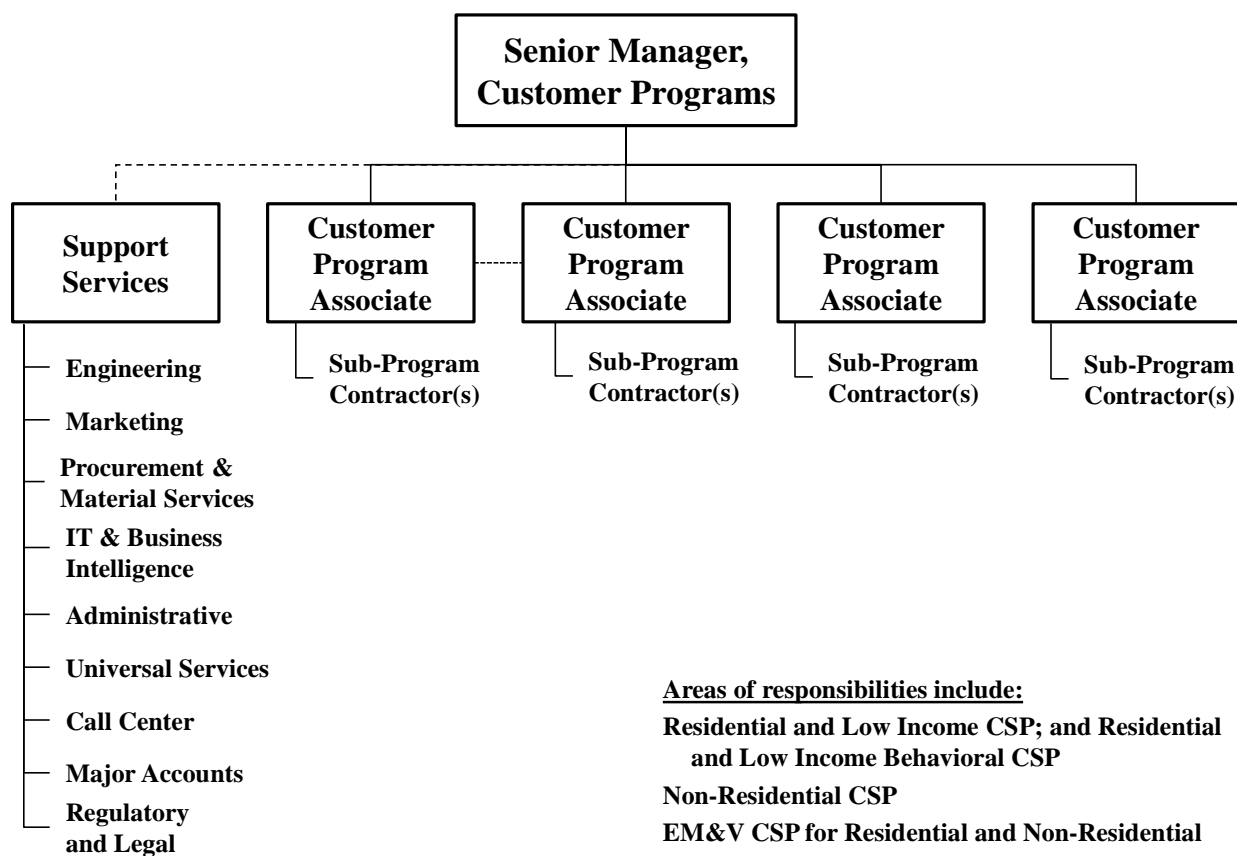
4.2. Executive management structure:

4.2.1. Describe EDC structure for addressing portfolio strategy, planning, review of program metrics, internal and external communications, budgeting and financial management, program implementation, procurement, program tracking and reporting, and Quality Assurance/Quality Control (QA/QC). Include EDC organization chart for management team responsible for implementing EE&C plan.

Energy efficiency is implemented under customer programs at Duquesne Light and is housed within the customer service department under the customer experience function. The

department’s size and function is driven by the portfolio of programs offered. The size and structure also reflect the use of contractors and subcontractors. The organization is headed by one senior manager who reports to the Director of Customer Experience and is responsible for the planning and implementation of the energy efficiency and conservation program. The senior manager is supported by several sector or segment specific customer program associates. There also is support staff for functions to include engineering, marketing, data processing, regulatory and contract management. The organizational chart pictured below represents the structure of the organization to implement the energy efficiency and conservation plan.

Figure 6: Customer Programs Organizational Chart



Each customer program associate is responsible for overall program management, including planning, reporting progress on program metrics, internal communication, external communication, budgeting and financial management. The customer program associate will call upon staff support for assistance within the energy efficiency program. Support for the programs is available for procurement and contract management, marketing, and data tracking and reporting. Additionally, quality assurance and quality control functions performed by engineering and other support staff will support the customer program associate.

CSPs are expected to provide a quality control plan. The plan provides for quality control on projects, regulatory compliance processes and performance auditing. The plan allows for Duquesne Light to access files, data and related program operating information. The plan is designed to minimize customer service issues, protect confidential information and prevent duplicate applications for incentive payments.

4.2.2. Describe approach to overseeing the performance of sub-contractors and implementers of programs and how they can be managed to achieve results, within budget, and ensure customer satisfaction.

Contractors and implementers of programs are subject to detailed planning requirements. The detailed plans include tasks, milestones, schedules, budgets, metrics of performance and personnel assignments. Regular reports on progress are required with sufficient information to allow the identification of issues and planning for improvements. Each contractor is subject to specific policies and procedures to guide their activities. Hard copy and/or electronic documentation methods may be required as appropriate. Regarding customer satisfaction, contractors and implementers are expected to foster and participate in obtaining feedback from their clients; results will be provided to Duquesne Light, whether directly or through a third party.

4.2.3. Describe basis for administrative budget.

The EE&C Plan budget may be defined broadly into two components: (1) incentive costs and (2) all other costs excluding incentives, termed administration costs or “Admin.” Admin may be broken into two parts, Program Admin and Portfolio Admin.

Program Admin: Program Admin includes those direct costs to program implementation. For programs implemented by CSPs, Program Admin is paid under the terms of discrete implementation contracts that may include minimal start-up costs and other fees but are primarily paid based on performance \$/annualized kWh savings. Program Admin performance payments are derived based on historical implementation costs and market-based responses to competitive solicitations.

Portfolio Admin: Portfolio Admin is comprised of cost to implement the EE&C Plan, generally referred to as a “Portfolio” of programs (a common industry term observed by most states). These costs are for cost elements that do not vary by program but are common to all programs. Portfolio Admin costs include EDC labor, overarching marketing costs; tracking system, data management and communication costs; program measurement costs, quality assurance, and other implementation services such as the cost to respond to requests by the Commission and its SWE. The basis for these costs was initially benchmarked to programs in other states, now based on historical activity within the Commonwealth. Portfolio Admin is estimated at 13.2% of the EE&C Plan budget.

4.3. Conservation Service Providers (CSPs):

4.3.1. List any selected CSPs, describe their qualifications and basis for selection (include contracts in Appendix).

Duquesne Light issued an RFP for Phase IV EM&V servicing residential, commercial and industrial customers. CSPs were asked to participate in a pre-bid meeting signifying their interest and were required to respond to the formal RFP. A team evaluated the responses and selection was made based upon the firm possessing substantial qualifications in energy efficiency as it related to the particular segment under review. The selected bidder, Guidehouse, scored highest on comprehensive and achievable work plan. They are a leader in the EM&V field and have worked previously with Duquesne Light and one other EDC in the Commonwealth. The Company's contract with this CSP is being filed contemporaneously with this Plan on a CONFIDENTIAL basis. Other CSPs will be selected through the same approved RFP process and will fulfill all regulatory requirements associated with the start of Phase IV program implementation.

4.3.2. Describe the work and measures being performed by CSPs.

Contracts for the CSPs described in Section 4.3.1. will be filed at the Commission for approval. These contracts include all the work, measures, and detailed requirements for each of the program segments for which they were selected. One such CSP agreement is included as Section 13, CSP Binder.

4.3.3. Describe any pending RFPs to be issued for additional CSPs.

It is anticipated that CSPs may be sought for the following segments:

- Residential programs
- Behavioral program
- Low income programs
- Comprehensive residential and nonresidential programs
- Commercial sector programs
- Industrial sector programs
- Implementation services

5. Reporting and Tracking Systems⁵¹

(Objective of this section is to provide detailed description of reporting and the critical data management and tracking systems that EDCs need in order to implement programs and which Commission, and its statewide EE&C Plan Evaluator, need to access.)

5.1. Indicate that the EDC will provide semiannual and annual reports as prescribed in the June 18, 2020 Implementation Order.

Duquesne Light's Program Management and Reporting System (PMRS) provides information reported to the Commission's appointed Act 129 EE&C Statewide Evaluator (SWE). Program activity reports are provided in form and format specified by the SWE pursuant to SWE semiannual, annual and numerous ad hoc data requests. Examples are provided below.

Figure 7: Data Elements for Residential Program Tracking Data

Data Point	Required Field Name	Format	Notes
Operating Company	EDC	Text	Name of EDC
Program Year	YEAR	Numeric	Program Year that savings will be claimed
Program Quarter	QUARTER	Numeric	Quarter that savings will be claimed
Project Number	PROJECTNUM	Text	Unique identifier for the program participant. A count of the distinct values of this field will generally equal the EDC reported participant count for the quarter
Measure Number	MEASURENUM	Text	Unique identifier for the record in database
Program Name	PROGRAM	Text	Name of program in EE&C plan that savings accrue to
Sub-Program Name	SUBPROGRAM	Text	Initiative within program that savings belong to
Sector Name	CUSTSEGMENT	Text	Residential or Residential Low-Income
Service Zip Code	SERVICEZIP	Numeric	Postal code of service address

⁵¹ This Section may be modified if the Commission's statewide EE&C Plan Evaluator develops further reporting and tracking systems that are approved by the Commission.

Data Point	Required Field Name	Format	Notes
Premise Type	PREMISETYPE	Text	SF-Attached, SF-Detached, MF, Manufactured, etc.
Measure Category	MEASURECATEGORY	Text	General category measure belongs to (End-use, technology etc.)
Measure Name	MEASURENAME	Text	Specific name of measure
Measure Lifetime	MEASURELIFE	Text	EUL of measure
TRM Measure	TRMMEASURE	Boolean	Equal to 1 if savings are calculated using a TRM protocol, zero otherwise
TRM Measure Number	TRMMEASURENUM	Text	Protocol in the 2016 PA TRM (e.g. Solar Water Heaters = 2.3.2). Null for non-TRM measures
Quantity	QTY	Numeric	Number of units installed or rebated
Quantity Units	QTYUNIT	Text	Description of the unit of measurement or the QTY field (lamps, tons, square feet, etc.)
Installation Date	INSTALLDATE	MM/DD/YYYY	When the measure was installed and operable
Recorded Date	RECORDDATE	MM/DD/YYYY	Date the savings were recorded in the system of record
Rebate Paid Date	REBATEDATE	MM/DD/YYYY	When the rebate check was issued to the participant
Reported Energy Savings	REPORTEDKWH	Numeric	Total reported energy savings for the measure (equal to per-unit savings multiplied by # units)
Reported Demand Savings	REPORTEDKW	Numeric	Total reported peak demand savings for measure
Rebate Amount	REBATEAMOUNT	Numeric	Total incentive payment associated with measure

Figure 8: Data Elements for Upstream Lighting Program Tracking Data

Data Point	Required Field Name	Format	Notes
Operating Company	EDC	Text	Name of EDC
Program Year	YEAR	Numeric	Program Year that savings will be claimed
Program Quarter	QUARTER	Numeric	Quarter that savings will be claimed
Measure Number	MEASURENUM	Text	Unique identifier for the record in database
Program Name	PROGRAM	Text	Name of program in EE&C plan that savings accrue to
Sub-Program Name	SUBPROGRAM	Text	Initiative within program that savings belong to
Manufacturer	MANUFACTURER	Text	Name of measure manufacturer
Distributor	DISTRIBUTOR	Text	Distributor name, address, telephone, email
Measure Lifetime	MEASURELIFE	Text	EUL of measure
Measure Name	MEASURENAME	Text	Specific name of measure (usually qualitative description such as “13W A-line CFL” or “10W BR30 Dimmable”)
Measure Shape	MEASURESHAPE	Text	Bulb shape (e.g., spiral, A-line, flood/reflector, candelabra, etc.)
Measure Type	MEASURETYPE	Text	Technology (i.e., CFL, LED, etc.)
Measure Wattage	MEASUREWATTS	Numeric	Bulb / fixture wattage
Measure Lumens	MEASURELUMENS	Numeric	Bulb lumen range
Measure Features	MEASUREFEATURE	Text	Other specialty features (e.g., color, non-medium screw base, Wi-Fi-enabled, etc.)
Model Number	MODELNUM	Alphanumeric	Model number
SKU Number	SKUNUM	Alphanumeric	SKU number

Data Point	Required Field Name	Format	Notes
TRM Measure	TRMMEASURE	Boolean	Equal to 1 if savings are calculated using a TRM protocol, zero otherwise
TRM Measure Number	TRMMEASURENUM	Text	Protocol in the 2016 PA TRM (e.g. 2.1.1 ENERGY STAR lighting = 2.1.1). Null for non-TRM measures
Quantity	QTY	Numeric	Total number of units of products sold
Quantity Units	QTYUNIT	Text	Description of the unit of measurement for the QTY field (e.g., packs, bulbs, watts, etc.)
Pack size	PACKSIZE	Numeric	Number of bulbs in pack
Recorded Date	RECORDDATE	MM/DD/YYYY	Date the savings were recorded in the system of record
Invoice Number	INVOICENUM	Numeric	Invoice number under which the product was charged to the EDC or implementation contractor
Invoice Submission Date	INVOICEDATE	MM/DD/YYYY	Date invoice submitted by partner
Rebate Paid Date	REBATEDATE	MM/DD/YYYY	When the rebate check was issued to the partner
Energy Savings Unit Basis	EESAVINGSUNITS	Text	Basis for energy savings, e.g., per bulb
Reported Energy Savings	REPORTEDKWH	Numeric	Total reported energy savings for the measure (equal to per-unit savings multiplied by # units)
Demand Savings Unit Basis	DRSAVINGSUNITS	Text	Basis for demand savings, e.g., per bulb
Reported Demand Savings	REPORTEDKW	Numeric	Total reported peak demand savings for measure
Retail Price	RETAILPRICE	Numeric	Original retail price or MSRP of product

Data Point	Required Field Name	Format	Notes
Rebate Amount	REBATEAMOUNT	Numeric	Total incentive payment associated with measure
Rebate Unit Basis	REBATEUNIT	Text	Basis for rebate, e.g., per bulb, per pack, etc.
Rebated Price	REBATEDPRICE	Numeric	Rebated price of product
Retailer Location	RETAILLOC	Text	Retailer location (address of store, not of headquarters)

Figure 9: Data Elements for Non-Residential Program Tracking Data

Data Point	Required Field Name	Format	Notes
Operating Company	EDC	Text	Name of EDC
Program Year	YEAR	Numeric	Program Year that savings will be claimed
Program Quarter	QUARTER	Numeric	Quarter that savings will be claimed
Project Number	PROJECTNUM	Text	Unique identifier for the program participant. A count of the distinct values of this field will generally equal the EDC reported participant count for the quarter
Measure Number	MEASURENUM	Text	Unique identifier for the record in database
Program Name	PROGRAM	Text	Name of program in EE&C plan that savings accrue to
Sub-Program Name	SUBPROGRAM	Text	Initiative within program that savings belong to
Sector Name	CUSTSEGMENT	Text	Small C&I, Large C&I, or GNI
Service Zip Code	SERVICEZIP	Numeric	Postal code of service address
Premise Type	PREMISETYPE	Text	Descriptor of type of business. Mapped to the HOU or EFLH tables where applicable.

Data Point	Required Field Name	Format	Notes
Measure Category	MEASURECATEGORY	Text	General category measure belongs to (end-use, technology, etc.)
Measure Name	MEASURENAME	Text	Specific name of measure
Measure Lifetime	MEASURELIFE	Text	EUL of measure
TRM Measure	TRMMEASURE	Boolean	Equal to 1 if savings are calculated using a TRM protocol, zero otherwise
TRM Measure Number	TRMMEASURENUM	Text	Protocol in the 2016 PA TRM (e.g. Traffic Lights = 3.1.4). Null for non-TRM measures
Quantity	QTY	Numeric	Number of units installed or rebated
Quantity Units	QTYUNIT	Text	Description of the unit of measurement for the QTY field (lamps, tons, square feet, etc.)
Installation Date	INSTALLDATE	MM/DD/YYYY	When the measure was installed and commercially operable
Recorded Date	RECORDDATE	MM/DD/YYYY	Date the savings were recorded in the system of record
Rebate Paid Date	REBATEDATE	MM/DD/YYYY	When the rebate check was issued to the participant
Reported Energy Savings	REPORTEDKWH	Numeric	Total reported energy savings for the measure (equal to per-unit savings multiplied by # units)
Reported Demand Savings	REPORTEDKW	Numeric	Total reported peak demand savings for measure
Rebate Amount	REBATEAMOUNT	Numeric	Total incentive payment associated with measure

5.2. Project Management Tracking Systems:

- 5.2.1. Provide brief overview of the data tracking system for managing and reporting measure, project, program and portfolio activities, status and performance as well as EDC and CSP performance and expenditures.

Duquesne Light has designed, developed, and updated a PMRS for tracking, managing and reporting measure, project, program and portfolio activities. The PMRS supports and facilitates program operation, management and reporting for use by program managers and sub-segment program managers. PMRS serves three primary purposes:

- 1) Enable CSPs and internal management to create and/or upload program activities
- 2) Provide the capability to review and approve activities
- 3) Provide comprehensive reporting to support Duquesne Light's internal and Commission reporting requirements, described above.

5.2.2. Describe the software format, data exchange format, and database structure you will use for tracking participant and savings data. Provide examples of data fields captured.

PMRS is a system using a web front-end which stores data in the back end via a relational MS SQL Server database engine. Duquesne Light customer information is captured via web service calls to Duquesne Light's customer care and billing system. Once a customer's data is captured in PMRS the data is managed within that system. The database is populated by uploading the measures and financial flat files from SSPMs/CSPs. The system accepts measure and financial files in "flat file" format, such as comma separated values ("CSV") files, or in structured formats like JSON or Excel. The PMRS reads and extracts the data from these files and stores the values in the PMRS database. There are currently more than 350 unique data elements within the database; this number has increased over time in order to capture additional customer-, measure-, and project-level attributes to meet program delivery needs, SWE reporting requests and functional changes needed for Phase IV. PMRS uses a custom reporting engine to produce reports from the database. Reports and supporting data for Commission review and audit are provided in hard copy as well as published for download through SharePoint and/or the system's reporting interface. Duquesne Light is updating its current PMRS based upon input from external and internal users and its current EM&V contractor. The updated system will modernize the user interface, improve upon the original functionality, and offer enhanced security measures to protect customer data.

5.2.3. Describe how CSPs will integrate with the tracking system and the procedures to ensure the upload and exchange of data from CSPs to the EDCs is sound.

SWE members have the opportunity for real-time, on-line access to Duquesne Light's PMRS where they can view program- and measure-level reports. Data elements tracked in PMRS address customer data, customer contact data, project and measure data; as well as financial rebate, CSP performance payment data, and measure/project (TRC) cost effectiveness screening. The following are illustrative screenshots of activity viewed from inside PMRS and SharePoint and are provided as an example of online project access:

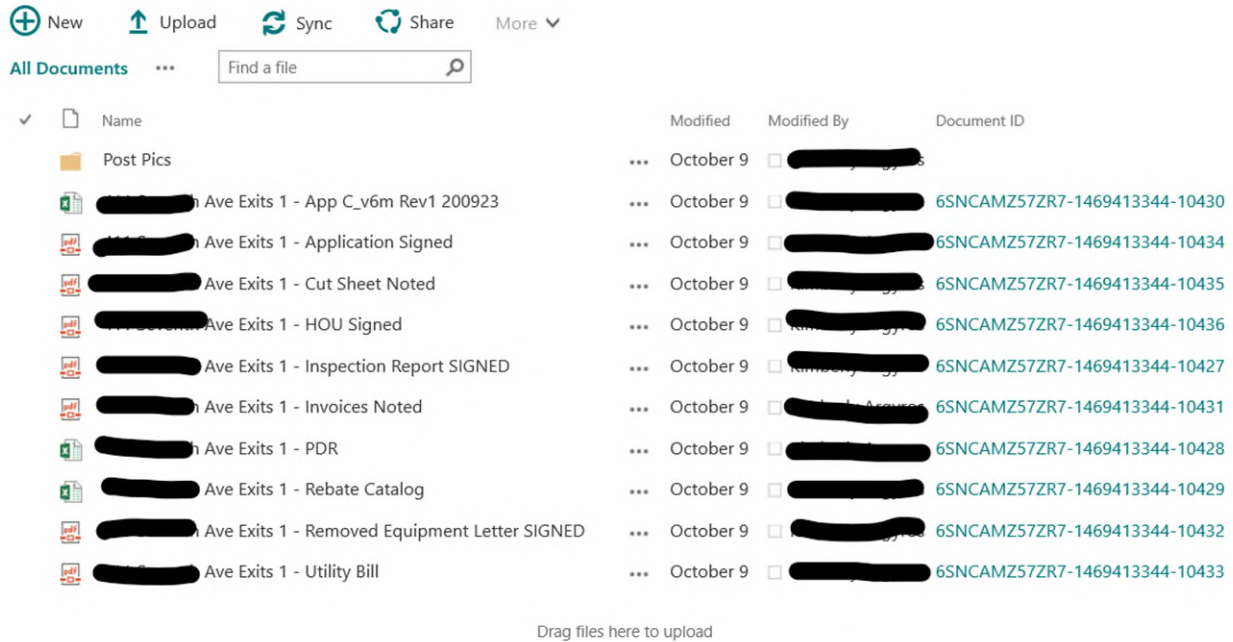
Figure 10: PMRS Screenshot - Project List View

PROJECT CODE	PROJECT COST	INCENTIVE ↓	CLAIM ID	CHECK NUMBERS	CHECK DATE
9673653063.57.01	\$156,720.18	\$141,048.16		783688	08/01/2019
0627651475.51.01	\$583,904.00	\$66,639.25		776002	06/28/2019
0679709097.51.01	\$690,000.00	\$51,450.26		776001	06/28/2019
2668559587.55.01	\$88,049.80	\$34,031.08		783707	08/01/2019
6957461035.51.01	\$43,533.01	\$31,731.01		787473	08/29/2019
8840240716.55.02	\$104,324.00	\$28,895.00		775961	06/28/2019
2602370454.53.01	\$46,128.50	\$26,938.00		783719	08/01/2019
2554550527.55.01	\$256,247.17	\$26,793.00		775965	06/28/2019

Figure 11: PMRS Screenshot – Program Summary Report

Program Name	Pending Projects					Completed Projects				
	(Project) Cost \$	Customer Incentives \$	Avoided Cost \$	kWh Savings	kW Reduction	(Project) Cost \$	Customer Incentives \$	Avoided Cost \$	kWh Savings	kW Reduction
Commercial Efficiency (Large Commercial)	\$138,746	\$80,973	\$1,142,236	1,625,111	110.7	\$12,626,177	\$2,883,987	\$34,160,069	47,962,660	6,497.7
Community Education	\$10,410	\$1,001	\$2,907	3,868	0.8	\$4,769,781	\$633,032	\$5,368,110	7,654,927	1,310.3
Customized Kit Programs	---	---	---	---	---	\$132,988	\$0	\$1,368,225	2,169,720	192.6
Demand Management Program	---	---	---	---	---	\$0	\$2,434,219	\$0	0	148,976.5
Express Efficiency (Small C&I)	\$71,148	\$18,976	\$239,801	337,687	85.6	\$9,728,665	\$2,206,076	\$24,476,120	35,688,659	5,303.2
Industrial Efficiency (Large Industrial)	\$1,556,677	\$260,151	\$2,635,330	4,276,202	80.3	\$9,253,615	\$3,151,875	\$46,172,463	66,689,384	8,004.9
LIEEP Low Income Residential	---	---	---	---	---	\$89	\$35	\$358	992	0.1
Large Nonresidential Upstream Lighting	---	---	---	---	---	\$580,383	\$473,736	\$0	6,393,220	1,152.7
Low Income Energy Efficiency Kits	---	---	---	---	---	\$227,505	\$0	\$2,433,833	3,829,017	302.6
Low Income Whole House Retrofit	---	---	---	---	---	\$1,697,453	\$12,770	\$1,581,463	3,628,617	388.3
Multifamily Housing Retrofit	---	---	---	---	---	\$3,466,821	\$1,003,427	\$2,685,407	4,036,947	369.8
Public Agency Partnership Program	---	---	---	---	---	\$14,680,637	\$3,164,786	\$29,788,302	42,744,859	6,049.3
REEP Residential Energy Efficiency	---	---	---	---	---	\$55,752,503	\$5,463,716	\$16,802,703	123,390,263	13,668.7
RRP Refrigerator Recycling	---	---	---	---	---	\$1,456,216	\$324,345	\$4,478,315	9,432,251	1,055.5
Small Commercial Direct Install	---	---	---	---	---	\$1,998,637	\$0	\$6,374,517	10,934,458	1,360.3
Small Nonresidential Upstream Lighting	---	---	---	---	---	\$753,807	\$613,540	\$0	8,305,119	1,449.8
Whole House Retrofit	---	---	---	---	---	\$11,148	\$1,657	\$87,030	134,179	14.3
Grand Total	\$1,776,981	\$361,100	\$4,020,275	6,242,868	277.4	\$117,136,425	\$22,367,200	\$175,776,914	372,995,272	196,096.6

Figure 12: SharePoint Screenshot – Project Support Files



5.2.4. Indicate that the EDC will fulfill all quarterly and annual data requests issued by the Commission and its statewide evaluator. Describe the level of access and mechanism for access for Commission and statewide evaluator.

Duquesne Light will fulfill all quarterly and annual data requests issued by the Commission and its statewide evaluator. Measure-level project data will be available on-demand through the PMRS reporting interface. Additional project supporting documentation will be supplied on request through a secure file exchange mechanism (SharePoint). The reporting tool can provide specialized reports if requested by SWE or the Commission’s Bureau of Technical Utility Services (“TUS”) once the phase begins. Access to SharePoint and reporting tool can be provided to TUS and SWE as requested.

6. Quality Assurance and Evaluation, Measurement and Verification

(Objective of this section is to provide detailed description of how the EDC's quality assurance/quality control, verification and internal evaluation process will be conducted and how this will integrate with the statewide evaluation activities)

6.1. Quality Assurance/Quality Control:

6.1.1. Describe overall approach to quality assurance and quality control.

EE&C program QA/QC is incorporated into program planning and implementation as described below:

Program Planning: Program target markets and measure content are based on an energy efficiency potential forecast that is a systematic and comprehensive inventory of regional efficiency gain opportunities. Program approaches to deliver identified energy efficiency services are developed using benchmarked program approaches and best practices, tailored to Duquesne Light regional needs and opportunities.

Program Implementation: All CSPs under contract to implement Duquesne Light energy efficiency programs are required by contract statements of work to provide a Program Management Plan ("PMP"). The PMP presents the program rationale, assumptions, approach, processes, and other key material in an integrated form. Duquesne Light staff will monitor the PMP as well as the KPI to hold the CSPs accountable for delivery.

The PMP addresses the following key sections:

- Program overview and assumptions
- Program policies and procedures
- Production plan
- Marketing plan
- Technical specifications
- Performance metrics and reporting
- Quality assurance plan
- Data management plan
- Invoice and measure reporting tools
- Appendices:
 - Program forms
 - Marketing materials
 - Subcontractor contracts

- 6.1.2. Describe procedures for measure and project installation verification, quality assurance and control, and savings documentation.

Procedures for Project Review, Approval and Processing

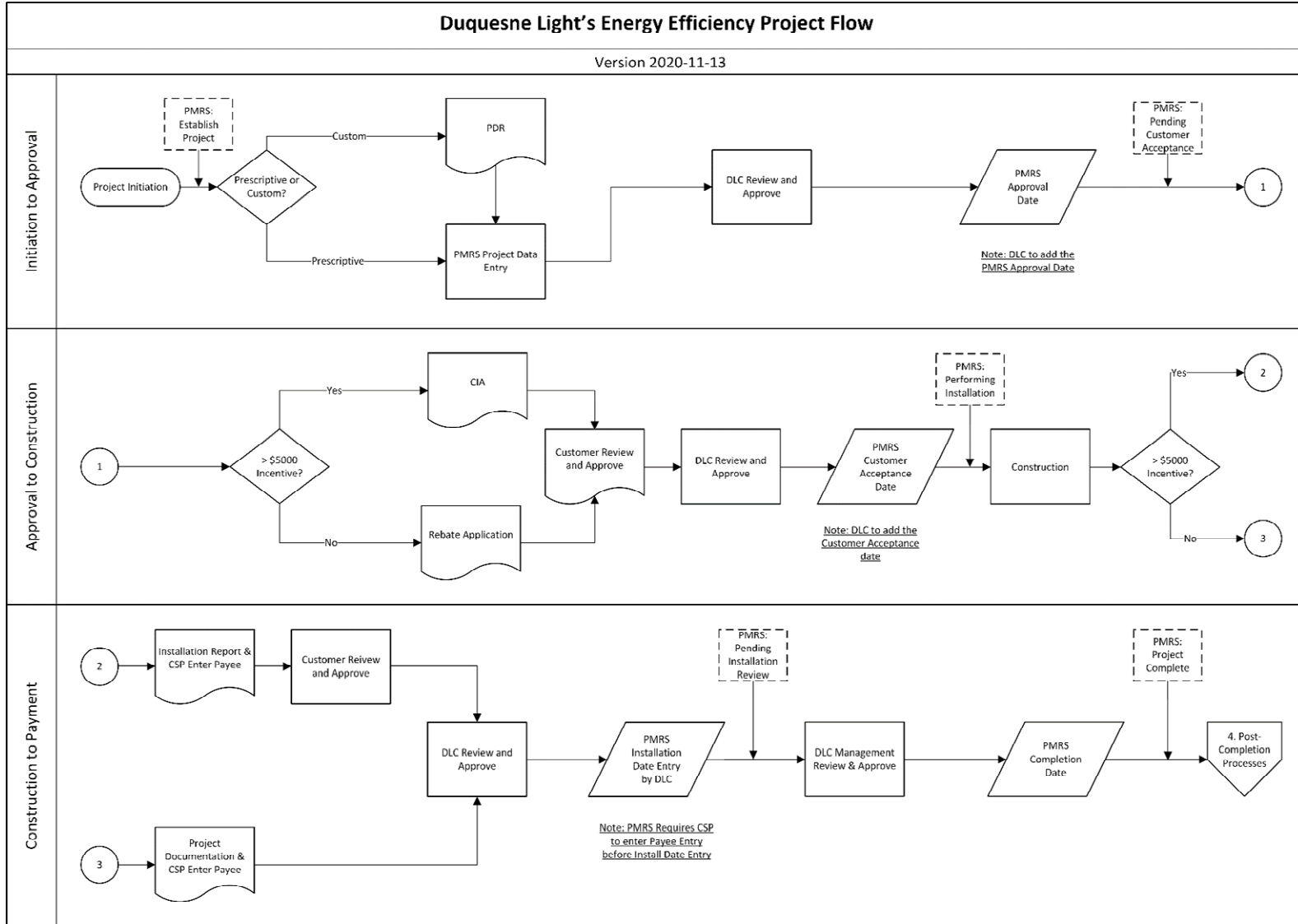
Procedures are in place to ensure prospective projects receive appropriate and consistent review prior to approval and incentive payment processing.

Residential incentive application processing is accomplished by a fulfillment contractor or a contracted CSP. This is comprised of verification to ensure the customer is a Duquesne Light customer, the product information is correct, and the product is eligible under the program to receive incentives; and that invoices corroborate product identification and are dated within the eligible program period.

Commercial and industrial (C&I) project and customer incentive processing varies depending upon the type and size of the project. Project development, review and approval processes are show below in the project review flow chart built upon the following three project phases:

- Initiation to Approval: Projects are established in PMRS. If the prospective project is a custom measure project, a Project Description Report (PDR) is required. If the project is approved for advancing, Duquesne Light approves the project in PMRS, and the project is advanced to the participating customer for acceptance.
- Approval to Construction: Depending upon project type (prescriptive or custom) and amount of the incentive payment a Customer Incentive Agreement (CIA) or Rebate Application is required. A CIA or Rebate Application is presented to the customer for approval. Duquesne Light or contracted CSP reviews and confirms customer acceptance and enters the Customer Acceptance Date into PMRS. The project is advanced in PMRS to “Performing Installation.”
- Construction to Payment: If the incentive amount is greater than \$5000, an installation report, customer review and approval is required; otherwise, project documentation is advanced to Duquesne Light and payee information is populated in PMRS. Duquesne Light reviews for approval submitted Installation Reports and other project documentation. Pending successful management review, the completion date is entered into PMRS and the customer incentive payment is prepared.

Figure 13: Project Review Process



Duquesne Light reviews project file content for completeness and accuracy. If the project is composed of prescriptive measures, savings calculations are verified to be consistent with current TRM requirements. If the project is comprised of custom measures, the project file is reviewed to ensure a measurement and verification plan has been developed and followed through project prosecution, and; the project file contains all applicable engineering reports, measurement and cost documentation. The following is a working document used is reviewing project file content:

Figure 14: Project File Review List

PROJECT FILE REVIEW LIST	
Program Name:	Project No:
<i>One of the following are required from each section below (varies by implementer and project scope):</i>	
Customer Enrollment	
• Rebate Application	<input type="checkbox"/>
• Customer Incentive Agreement	<input type="checkbox"/>
• Customer Signed Project Package	<input type="checkbox"/>
• Memorandum of Understanding	<input type="checkbox"/>
Project Definition	
• Project Description	<input type="checkbox"/>
• Electric bills/Audit Report/Studies	<input type="checkbox"/>
• Equipment Inventory (baseline)	<input type="checkbox"/>
• Equipment Inventory (retrofit)	<input type="checkbox"/>
• Savings calculations (Appendix C or Appendix D)	<input type="checkbox"/>
• Cost Estimates	<input type="checkbox"/>
• TRC Screening	<input type="checkbox"/>
Installation Report	
• Site inspection documentation (reports/pictures)	<input type="checkbox"/>
• Cost documentation (invoices/purchase orders/supplier quotations)	<input type="checkbox"/>
• Specification sheets	<input type="checkbox"/>
• Other (Vendor provided installation verification)	<input type="checkbox"/>
Measurement & Verification	
• PATRMA Algorithms & Inputs	<input type="checkbox"/>
• Pre- and Post-measurement	<input type="checkbox"/>
• Calibrated Simulation	<input type="checkbox"/>
• HOU (Measure Specific)	<input type="checkbox"/>
Memorandum & Correspondence	<input type="checkbox"/>

Notes:

Evaluation Measurement and Verification: Projects and measure reported savings are verified pursuant to the Duquesne Light Evaluation Measurement and Verification (EM&V) Plan. The EM&V Plan ensures customer projects are verified according to a consistent and systematic process that is consistent with the Statewide Evaluator's (SWE) Audit Plan and Evaluator's Framework for Pennsylvania Act 129 Energy Efficiency and Conservation Programs (Audit Plan). The Duquesne Light EM&V Plan specifies sample plans as well as applicable verification rigor consistent with the Audit Plan and is vetted with, and approved by the SWE.

6.1.3. Describe process for collecting and addressing participating customer, contractor and trade ally feedback (e.g., suggestions and complaints).

All CSPs under contract to implement Duquesne Light energy efficiency programs are required by contract statements of work to perform customer feedback surveys. The CSP contracts will be submitted to and approved by the Commission. For contractor implemented programs, customers are provided Duquesne Light direct contact information along with an open solicitation for feedback and comments.

Trade association engagement and leveraging that association is as element utilized by Duquesne Light for ranking CSP proposals to provide EE&C services to specific market segments. Active and direct engagement of customers, contractors and trade associations has and will continue to characterize Duquesne Light's EE&C program planning and implementation.

6.1.4. Describe any planned market and process evaluations and how results will be used to improve programs.

Process evaluation methods, research objectives, timing and frequency, quality control and evaluation components are provided under Section 3 of Duquesne Light's Phase III SWE approved EM&V Plan. The primary research issues center around assessing program design and operation. Specific researchable issues are briefly listed below:

- Document and review program operations (e.g. Program Management Plans) to provide baseline description of program operations and management to compare design and operational practices with the program theory.
- Design and utilize interview and survey techniques to describe and assess program operations, which can be compared to original design intent, and to measure participant satisfaction and program performance, which can be analyzed to identify gaps between program goals and results.
- Identify and recommend changes in a program's operational procedures or systems that can be expected to improve the program's efficiency or cost-effectiveness

Process evaluation content is incorporated into impact evaluation research activities; therefore, it is conducted in the same frequency and timing as impact evaluation activities.

The results of process evaluations are communicated with program planning and implementation team members on a semiannual basis.

6.1.5. Describe strategy for coordinating with the EM&V contractor and statewide evaluator.

As in prior Phases, Duquesne Light will continue periodic SWE conference calls, participation in scheduled Program Evaluation Group meetings, response to data requests and providing SWE pre-defined semiannual and annual program reporting. In addition, biweekly calls with the EM&V contractor occur for coordination.

7. Cost-Recovery Mechanism

(Objective of this section is to provide detailed description and estimated values for cost recovery mechanism.)

7.1. Provide the amount of total annual revenues as of December 31, 2006 and provide a calculation of the total allowable EE&C costs based on 2% of that annual revenue amount.⁵²

Figure 15: Total Revenues

	2006 Total	2% of Total
DLC Revenue	\$723,299,451	\$14,465,989
EGS G&T	\$253,998,128	\$5,079,963
Act 129 Annual Budget		\$19,545,952

7.2. Description of plan in accordance with 66 Pa. C.S. §§ 1307 and 2806.1 to fund the energy efficiency and conservation measures, to include administrative costs.

The Act allows all EDCs to recover on a full and current basis from customers, through a reconcilable adjustment clause under 66 Pa. C.S. § 1307, all reasonable and prudent costs incurred in the provision or management of its plan. The Act also requires that each EDC's plan include a proposed cost-recovery tariff mechanism, in accordance with 66 Pa. C.S. § 1307 to fund all measures and to ensure full and current recovery of prudent and reasonable costs, including administrative costs, as approved by the Commission. To that end, Duquesne Light has designed a surcharge and reconciliation mechanism for all customer segments. The surcharge has been designed in a manner that recovers costs of the programs from the customers who have an opportunity to participate in and receive the benefits of those programs.

7.3. Provide data tables (see Tables 10, 11 and 12).

See Section 11 for Tables 6A, 6B, and 6C.

7.4. Provide and describe tariffs and a Section 1307 cost recovery mechanism, pursuant to the requirements of the June 18, 2020 Implementation Order at 141, that will be specific to Phase IV Program costs. Provide all calculations and supporting cost documentation.

In compliance with the Phase IV Implementation Order, the Company will combine the Phase III and Phase IV surcharges into a single surcharge and tariff. Order page 142. The Company proposes to revise the Phase III Rider No. 15a, “Energy Efficiency and Conservation,” to its

⁵² See also Commissioner Pizzigrilli’s January 15, 2009 Motion at Docket no. M-2008-2069887, allowing Duquesne Light to include the EGS G & T.

tariff. The tariff sets forth the monthly surcharge rates by customer class to recover the program budgets. Since the proposed cost recovery method is different for residential, small/medium C&I and large C&I customer classes, a formula and description of the formula is defined for each customer class surcharge. Four surcharges are defined to recover costs as reasonably close as possible for each customer class and segment within the class, i.e. commercial or industrial customers. The formulas are in accordance with the provisions of a Section 1307 cost recovery surcharge and include reconciliation of over or under collections. Duquesne will not impose any interest on over or under collections, per the Commission's Phase IV Implementation Order at 141.

7.5. Describe how the cost recovery mechanism will ensure that measures approved are financed by the same customer class that will receive the direct energy and conservation benefits.

The Company proposes to implement four surcharges to recover costs as close as reasonably possible to the customer class receiving the benefit. The costs are first defined for the three specific customer classes – residential, commercial and industrial. Commercial and Industrial (“C&I”) customers were separated into small and medium C&I and large C&I customer segments because of the diversity in the size of C&I customers in the Company's service territory to allow for more reasonable cost recovery. Small and medium C&I customers are those customers with monthly metered billing demand 300 kW and less. Large C&I customers are those customers with monthly billing metered demand greater than 300 kW. This segmentation of customers is appropriate because it aligns programs and program costs with the current tariffed rates for distribution service. C&I program costs were then assigned for recovery first based on program description (e.g. Large C&I). Duquesne adopted the use of the Peak Load Contribution demand measure in the application of its cost recovery mechanism for Large C&I customers. The tariff modification for the Phase I Plan was filed with the Commission on November 9, 2009 and was approved by a Secretarial Letter issued on November 24, 2009, at Docket No. M-2009-2093217. The Commission proposed a modification to the Large Commercial Surcharge and the Large Industrial Surcharge in an Opinion and Order dated February 2, 2010, at Docket No. M-2009-2093217. As a result of this modification, Duquesne Light implemented the rate design using a fixed customer charge to recover the administrative costs and a demand charge, using Peak Load Contribution, to recover the incentive costs for Large Commercial and Large Industrial customers. Duquesne filed a revised tariff supplement on February 22, 2010 which became effective April 1, 2010. The fixed customer charge component of the surcharge and the demand charge component of the surcharge are set forth as two separate line item charges on the customer bill. Duquesne Light used this same surcharge structure in Phases II and III and will continue this same surcharge structure in Phase IV.

7.6. Describe how Phase IV costs will be accounted for separate from costs incurred in prior phases.

Phase I Plan costs were recovered and reconciled in December 2014 at which time the Phase I surcharge in Rider No. 15 of the tariff was set to zero. Phase II Plan costs were recovered and reconciled through May 31, 2016, when the Phase II Plan ended. The Phase III Plan will end May 31, 2021. The Company will transition from the Phase III cost recovery methodology to the Phase IV cost recovery methodology in compliance with the Phase IV Implementation Order

(Order page 142). By April 30, 2021, The Company will submit a 1307e reconciliation of actual Phase III expenses incurred with actual Phase III surcharge revenue received for the 12 months ending March 31, 2021. The net over- or under-recovered amount shall be reflected as a separate line item, without interest, as an e-factor adjustment of the EEC Phase IV rates effective June 1, 2021. In addition, as a separate line item, the Phase IV rates effective June 1, 2021, shall include projections of the: expenses to finalize any Phase III measures installed and commercially operable on or before May 31, 2021; expenses to finalize any contracts; and other Phase III administrative obligations. The reconciliation of actual Phase III expenses with actual EEC Phase III surcharge revenue for April and May 2021 shall be reconciled with EEC Phase IV revenue and expense for the 12 months ending March 31, 2022. Thereafter, the Company will reconcile actual Phase IV expenses incurred with actual Phase IV surcharge revenue received for the 12 months ending March 31 of each year for the term of the Phase IV Plan.

All costs associated with the Phase IV Plan will be identified and tracked in PMRS. On or about May 1 of each year, the Company will file with the Commission its proposed Phase IV surcharge rates effective June 1 of that year. The proposed Phase IV surcharge rates will be designed to recover the projected program costs for upcoming Plan year and include a provision for the net over- or under- collection for the previous Plan year.

7.7. Describe how proceeds from PJM FCM participation will be incorporated into the cost recovery mechanism.

The Company is proposing to create separate PJM billing subaccounts for each applicable EEC customer class (i.e. residential, small and medium commercial & industrial, large commercial, and large industrial). Individual PJM billing subaccounts will help ensure that resources that clear in the PJM FCM are bifurcated and tracked separately so that any applicable proceeds and/or penalties are captured by the relevant customer class.

For transparency purposes, the Company is proposing to modify its 1307(e) reconciliation statement to clearly identify PJM FCM proceeds as cost reductions and PJM FCM penalties as cost increases. The Company proposes to reflect the PJM FCM proceeds and/or penalties as a customer class expense adjustment in the over or under collection calculation with the 1307(e) reconciliation.

8. Cost Effectiveness

(Objective of this section is to provide detailed description of the cost-effectiveness criteria and analyses. It can refer to appendices with program data.)

8.1. Provide in table format the values contained in the Outputs tab of the Avoided Cost Calculator.⁵³ Additionally, a completed copy of the Avoided Cost Calculator should be provided with the filing. Discuss any sensitivities or key considerations associated with the forecast of avoided costs.

See Figure 16 and Attachment A. There are no sensitivities or key considerations to discuss.

Confirm use of a 3% real discount rate (5% nominal discount rate) called for in the 2021 TRC Order.⁵⁴

A 5% nominal discount rate was used in Attachment A, Avoided Cost Calculator, in the general input tab.

8.2. Explain and demonstrate how the proposed plan will be cost effective as defined by the Total Resource Cost Test (TRC) specified by the Commission.⁵⁵

Avoided electric energy and capacity costs are used for the purposes of determining the Phase IV EE&C Plan cost-effectiveness and are developed in compliance with the Commission's 2021 TRC Order⁵⁶. Duquesne Light developed the data inputs to support the avoided costs analysis and implemented the inputs in the Avoided Cost Calculator (ACC) as prescribed by the order and provided by the SWE. The following methodology was used to calculate energy and capacity price inputs to determine avoided costs:

Energy Prices: Forecast energy prices are provided for 20 years, in three multi-year periods consistent with the applicable TRC orders. Energy prices for each of the calendar years 2021-2025 were calculated using futures prices quoted by the New York Mercantile Exchange ("NYMEX") on the last trading day of the prompt month 3 months prior to the EE&C plan filing date. Prices for Real Time LMP Western Hub Futures contracts on July 31, 2020 are utilized in the ACC tool.⁵⁷ There are no traded futures contracts for the Duquesne Light Locational Marginal Pricing (LMP) zone, so costs are based on PJM Western Hub futures prices with an adjustment to the DLC zone based on the PJM State of the market report for 2017/2018 for annual cost differences between Western Hub and the DLC zone. Prices are separated into

⁵³ Available at

http://www.puc.state.pa.us/filing_resources/issues_laws_regulations/act_129_information/total_resource_cost_test.spdx

⁵⁴ See 2021 Total Resource Cost (TRC) Test Order, at Docket No. M-2019-3006868, entered December 19, 2019 at 21.

⁵⁵ *Id.* at 17.

⁵⁶ See *id.*

⁵⁷ CME NYMEX Data https://www.cmegroup.com/trading/energy/electricity/pjm-western-hub-peak-calendar-month-real-time-lmp_quotes_settlements_futures.html

Summer and Winter months and an average was calculated for the planning year (July – June, futures contract periods).

For calendar years 2026-2032, natural gas futures prices were used by applying the heat rates provided in the ACC for on peak of 11,176 BTU/kWh and for off peak of 7,649 BTU/kWh to the applicable the natural gas price. Gas prices are a blend of prices quoted from Henry Hub futures prices from CME Group based on the last trading date of the prompt month 3 months prior to the EE&C filing date and natural gas prices published in the EIA 2020 AEO. Prices in this filing are from 7/31/2020. The blended price phases in the EIA prices over a 7-year period with greater weight applied to the EIA price each year. Basis differentials were added to the gas price based on the average Tetco-M3 basis swap to Henry Hub futures as provide by the Intercontinental Exchange⁵⁸. Prices are separated into Summer and Winter months and an average was calculated for the planning year (July – June, futures contract periods).

Energy prices for calendar years 2033-2042 utilized EIA's Annual Energy Outlook 2020 forecast price for generation for the MAAC region.⁵⁹

Capacity Prices: Capacity (generation) prices are based on the PJM Reliability Pricing Model (RPM) Base Residual Auction results for the Duquesne Light Zone for planning periods from an average of the 2019/2020, 2020/2021 and 2021/2022 adjusted net zonal load price. The last planning period result was escalated through 2042 using the inflation rate of 2% as provided in the tool.⁶⁰

⁵⁸ TETCO M-3 basis data available at <https://www.theice.com/marketdata>

⁵⁹ Source: EIA AEO 2020 Support Table 3

⁶⁰ Ibid

Figure 16: Duquesne Light Act 129 EE&C Plan Phase IV Avoided Costs

PA ACT 129 Program Year	Year	DLC Zone Summer On-Peak (\$/MWh)	DLC Zone Summer Off-Peak (\$/MWh)	DLC Zone Winter On-Peak (\$/MWh)	DLC Zone Winter Off-Peak (\$/MWh)	DLC Zone Shoulder On-Peak (\$/MWh)	DLC Zone Shoulder Off-Peak (\$/MWh)	Generation Capacity (\$/kW/year)	Transmission Capacity (\$/kW/year)	Distribution Capacity (\$/kW/year)	Avoided Natural Gas Fuel Costs (\$/MMBTU)	
13	2022	\$32.09	\$22.24	\$41.63	\$33.74	\$31.39	\$24.29	\$53.13	\$31.27	\$16.29	\$2.70	Segment 1
14	2023	\$31.74	\$22.20	\$41.45	\$33.24	\$31.27	\$24.19	\$40.16	\$31.90	\$16.62	\$2.65	
15	2024	\$32.09	\$22.66	\$41.64	\$34.00	\$31.41	\$24.70	\$40.96	\$32.53	\$16.95	\$2.68	
16	2025	\$33.56	\$22.75	\$38.39	\$35.75	\$33.22	\$24.74	\$41.78	\$33.18	\$17.29	\$2.75	
17	2026	\$34.91	\$24.29	\$45.07	\$36.32	\$34.06	\$26.34	\$42.62	\$33.85	\$17.63	\$2.92	
18	2027	\$36.35	\$25.29	\$48.16	\$38.55	\$35.76	\$27.56	\$43.47	\$34.52	\$17.99	\$3.08	Segment 2
19	2028	\$38.15	\$26.53	\$51.50	\$40.94	\$37.78	\$29.01	\$44.34	\$35.22	\$18.35	\$3.28	
20	2029	\$40.03	\$27.83	\$54.57	\$43.16	\$39.78	\$30.44	\$45.23	\$35.92	\$18.71	\$3.47	
21	2030	\$41.46	\$28.81	\$57.19	\$45.07	\$41.42	\$31.62	\$46.13	\$36.64	\$19.09	\$3.62	
22	2031	\$43.29	\$30.07	\$60.35	\$47.35	\$43.38	\$33.03	\$47.05	\$37.37	\$19.47	\$3.81	
23	2032	\$45.53	\$31.62	\$65.03	\$50.45	\$45.86	\$34.80	\$47.99	\$38.12	\$19.86	\$4.05	Segment 3
24	2033	\$47.20	\$32.77	\$68.27	\$52.56	\$47.65	\$36.09	\$48.95	\$38.88	\$20.25	\$4.22	
25	2034	\$48.77	\$33.85	\$71.27	\$54.51	\$49.33	\$37.31	\$49.93	\$39.66	\$20.66	\$4.38	
26	2035	\$49.19	\$34.15	\$71.84	\$54.80	\$49.68	\$37.62	\$50.93	\$40.45	\$21.07	\$4.40	
27	2036	\$49.72	\$34.52	\$72.61	\$55.22	\$50.14	\$38.01	\$51.95	\$41.26	\$21.49	\$4.44	
28	2037	\$50.98	\$35.40	\$74.93	\$56.72	\$51.46	\$38.98	\$52.99	\$42.09	\$21.92	\$4.56	
29	2038	\$52.11	\$36.17	\$76.94	\$58.00	\$52.61	\$39.84	\$54.05	\$42.93	\$22.36	\$4.66	
30	2039	\$53.01	\$36.80	\$78.47	\$58.95	\$53.50	\$40.53	\$55.13	\$43.79	\$22.81	\$4.74	
31	2040	\$54.24	\$37.65	\$80.68	\$60.37	\$54.76	\$41.48	\$56.23	\$44.66	\$23.27	\$4.85	
32	2041	\$55.50	\$38.53	\$82.94	\$61.83	\$56.06	\$42.44	\$57.36	\$45.55	\$23.73	\$4.97	

Avoided costs are applied at the measure level and are based upon individual measure estimated useful life (EUL) and energy savings time-of-use and seasonal profiles. Measure EULs are taken from the 2021 TRM. Measure energy savings profiles were taken from the 2021 TRM, when available; referenced to other industry sources, or developed from annual hourly savings profiles aggregated into time-of-use periods announced in 2021 TRM. Life-cycle measure avoided cost “streams” are brought to present value by applying a 6.9% discount rate and are the basis of program benefits quantified in this Plan.

Assessment of measure, project, program and ultimately portfolio cost-effectiveness requires development of both benefits (described above) and costs. The Total Resource Cost (TRC) test used to determine cost-effectiveness incorporates utility program implementation or administration costs, as well as measure costs. Projected administration costs are provided in Tables 1, 6A, 6B, and, 6C; measure costs are included in TRC summarized in Tables 7A through 7E. Consistent with the TRC Order, measure costs are either referenced to the California Database of Energy Efficient Resources (DEER), the SWE incremental cost database, or identified measure cost studies.⁶¹ These costs are reported on an annual basis in compliance with SWE prescribed EDC annual reporting requirements.

8.3. Provide TRC data tables on a gross and net TRC basis.

See Section 11, Table 13.

⁶¹ Ibid.

9. Plan Compliance Information and Other Key Issues

(The objective of this section is to have specific areas in EE&C plan where the Commission can review miscellaneous compliance items required in legislation and address key issues in EE&C plan, portfolio, and program design.)

9.1. Plan Compliance Issues.⁶²

9.1.1. Describe how the plan provides a variety of energy efficiency and conservation measures and will provide the measures equitably to all classes of customers in accordance with the June 18, 2020 Implementation Order.

EE&C Plan savings projections for each sector proportionally aligned with Pennsylvania Act 129 - Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study Report Table 11 at page 26. The forecast values themselves were changed to match the amount in the Commission's Phase IV mandate. The potential study at page 26 totaled 340,000 MWh and the Commission target is 348,126 MWh. The EE&C Plan forecast measure detail is directly linked to CSP response to competitive solicitations, issued by Duquesne Light, for the design and implementation of the programs presented in this Plan. Accordingly, the measure mix was taken from proposals selected based on CSP expertise and innovation. Phase IV Plan measures (See Section 11, Table 7) were reconciled with content of the 2021 Technical Reference Manual (TRM) and information provided in the SWE saturation studies and potential forecast.⁶³

Residential sector programs retain the successful downstream and upstream rebate offerings. The Commercial and Industrial portfolios retain proven customer market segment engagement channels. The Small Commercial Direct-Install Program and Multifamily Housing Retrofit Program were both successful in Phase II and are continued in Phase IV. Such programs demonstrate Duquesne Light's commitment to providing comprehensive measures to under-served market segments.

Program goal allocation and associated program budgets were adjusted to accommodate the Commission's Implementation Order, which required segment carve-out for the low income residential segment. Reporting requirements will be met along with specified program comprehensiveness requirements.⁶⁴ Goal allocation for the remaining customer segments was based on segment energy use, previous delivery channel strengths and weaknesses, as well as requirements to achieve mandated reductions at authorized budgets.

9.1.2. Provide a statement delineating the manner in which the EE&C plan will achieve the requirements of the program under 66 Pa. C.S. §§ 2806.1(c) & (d).

⁶² These sub-sections may reference other chapters of the plan as they may restate what was included elsewhere in the plan and are collected here only for convenience of review.

⁶³ Ibid

⁶⁴ Ibid.

The following table shows the projected cumulative portfolio and program reductions in consumption (energy) and peak period demand reduction estimated for the program year ending May 31, 2026:

Figure 17: Cumulative Portfolio and Program Reductions in Consumption

Residential Programs	Savings	Savings
	kWh	kW
Appliance Recycling	8,447,770	1,210
Downstream Incentives	23,698,780	2,595
Midstream Incentives	596,319	127
Upstream Incentives	13,605,083	1,426
Low Income Energy Efficiency	21,386,149	2,494
Residential Behavioral Energy Efficiency	49,700,000	6,740
Low Income Behavioral Efficiency	7,500,000	1,017
Total	124,934,102	15,609

Small C&I	Savings	Savings
	kWh	kW
Small Business Direct Install	23,133,399	4,475
Small Business Solutions	50,212,478	8,590
Small Business Midstream Solutions	27,491,056	6,756
Small Business Virtual Commissioning	6,053,739	2,228
Total	106,890,672	22,049

Large Commercial	Savings	Savings
	kWh	kW
Large Business Solutions	83,696,145	15,377
Large Business Midstream Solutions	17,300,344	4,783
Large Business Virtual Commissioning	2,756,458	1,014
Total	103,752,946	21,174

Large Industrial	Savings	Savings
	kWh	kW
Large Business Solutions	38,846,312	7,137
Large Business Midstream Solutions	8,029,695	2,220
Large Business Virtual Commissioning	1,279,369	471
Total	48,155,376	9,828

Grand Total	383,733,096	68,660
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Sector	Program	Savings kWh	Savings kW
Residential	Appliance Recycling	12,439,431	1,782
	Downstream Incentives	23,698,780	2,591
	Midstream Incentives	596,319	127
	Upstream Incentives	13,605,083	1,426
	Residential Behavioral Energy Efficiency	39,797,494	5,397
	Subtotal	90,137,107	11,323
	Low Income Energy Efficiency	16,586,803	1,858
	Low Income Behavioral Efficiency	4,655,160	631
	Subtotal	21,241,964	2,489
	Subtotal All Residential	111,379,071	13,812
Nonresidential			
	Small Business Direct Install	23,133,399	4,475
	Small Business Solutions	50,212,478	8,590
	Small Business Midstream Solutions	27,491,056	6,756
	Small Business Virtual Commissioning	6,053,739	2,228
	Subtotal	106,890,672	22,049
	Large Business Solutions	83,696,145	15,377
	Large Business Midstream Solutions	17,300,344	4,783
	Large Business Virtual Commissioning	2,756,458	1,014
	Subtotal	103,752,946	21,174
	Large Business Solutions	38,846,312	7,137
	Large Business Midstream Solutions	8,029,695	2,220
	Large Business Virtual Commissioning	1,279,369	471
Subtotal	48,155,376	9,828	
Subtotal All Nonresidential	258,798,995	53,051	
Portfolio Total	370,178,065	66,863	

9.1.3. Provide a statement delineating the manner in which the EE&C plan will achieve the Low-Income requirements prescribed in the June 18, 2020 Implementation Order. Additionally, describe any EDC plans to harmonize Act 129 program delivery with Low Income Usage Reduction Programs and other external energy efficiency, conservation, and healthy housing programs (such as the Weatherization Assistance Program).

Consistent with Act 129 and the Commission’s Implementation Order, Duquesne Light’s Phase IV EE&C Plan contains two provisions to provide EE&C Plan services to households at or below 150% of the federal poverty income guidelines. These provisions are: 1) to obtain a minimum of 5.3% of the total EE&C Plan consumption reduction requirements, and 2) the 5.3% low income mandate must be achieved by programs that ONLY serve low income populations. The EE&C Plan is constructed to comply with the Commission’s requirements to omit programs capable of serving both income qualifying and non-income qualifying participants.

Duquesne Light plans to continue to utilize the same partner to administer both the Act 129 Low Income Energy Efficiency Program and Smart Comfort – Low Income Usage Reduction Program (LIURP). This has proven successful in Phase III. This practice ensures that low-income customers who need and want services are provided a seamless delivery of services. The Company will also continue to work closely with the local natural gas distribution companies, community based organizations, state weatherization agencies and other groups working to serve this group of hard to reach customers. The Company will continue to target those customers on the Customer Assistance Program (CAP) with high electric usage. The CAP representative will continue to refer all customers that enroll in CAP to the partner administering the Income Eligible programs offered within both ACT 129 and LIURP. Lastly, the Company will continue to partner with the Income Eligible Advisory Group to gain insight from their expertise. This guidance will help ensure that all customers get the service they need.

The target savings for the Phase based upon the mandated target is shown in Figure 18.

Figure 18: LIEEP Projected Energy Savings

	May 31, 2026
	kWh
Mandated Reductions	348,126,000
Low Income Requirement	18,566,000
Percentage	5.3%

9.1.4. Describe how the EDC will ensure that no more than two percent of funds available to implement the plan shall be allocated for experimental equipment or devices.

Funds to reach the goals associated with the Act are limited, such that experimental equipment or devices have been planned in the program designs. It is as a line item in Table

10, designated “Pilot Program,” independent of any customer class. In the event that customized projects within the proposed portfolio of programs are developed for customers that include such experimental equipment or devices, or a pilot project becomes an effective implementation tool, funding will be tracked by customer class to ensure that no more than two percent of funds are available for such equipment. As this is a line item within Table 10, it is easy to see the amount available as well as the amount remaining to ensure that no more than 2% spending requirement is not exceeded.

A portion of the two percent of funds will be used to explore measures for the residential sector that are reasonably cost-effective, achievable, implementable, and allowable under applicable law and Commission directives. At least one stakeholder meeting will be held in the first program year of Phase IV with additional meetings as warranted to discuss potential new measures and associated budgets. Duquesne Light shall identify measures to be implemented through the residential Pilot Program by the end of program year 14 and shall implement before the end of Phase IV, to the extent such measures are reasonably cost-effective, achievable, implementable, and allowable under applicable law and Commission directives.

9.1.5. Describe how the plan will be competitively neutral to all distribution customers even if they are receiving supply from an EGS.

The General Assembly intended Act 129 to be competitively neutral, and not disadvantage EDCs that had active retail electric markets. The Commission also notes that, in ascertaining legislative intent, the Commission is to presume that the General Assembly did not intend a result that was impossible to execute, unreasonable or unconstitutional.

Duquesne Light program designs for the customer segments, the implementation plans, and tracking mechanisms have been developed regardless of the generation supply for the individual customers. The Plan does not discriminate on the basis of generation supply nor does it provide additional opportunities based on the specifics of a customer’s generation supply.

9.2. Other Key Issues:

9.2.1. Describe how this EE&C plan will lead to long-term, sustainable energy efficiency savings in the EDC’s service territory and in Pennsylvania.

Previous sections of this plan describe in detail the specific manner in which the program is designed to address specific consumption profiles and respond to diverse customer needs. Since the early 1970s, utility-sponsored energy efficiency programs have developed and refined a series of approaches to effectively reduce energy consumption in the residential, commercial and industrial sectors. Critical elements to program success have been identified, tested, and replicated by utilities nationwide. All of the measures that make up the EE&C plan for Duquesne Light will draw upon the lessons learned in these other initiatives and will focus on reducing kWh and kW savings within each specific customer sector.

Duquesne Light believes that all residential approaches (mass market/rebates, home energy reports and whole home performance/retrofits) are appropriately focused on achieving long-term, sustainable energy efficiency savings. Likewise, programs focused on producing kWh and kW savings in the commercial sector will primarily achieve reductions through rebates and or other identified funding sources, education and upstream partnerships, and direct installation of measures in customer facilities. Programs serving the industrial sector will focus on producing kWh and kW savings through rebates and or other identified funding sources through incentives and upstream partnerships. Because the funding levels for each specific measure are evaluated on the level of savings that can be reasonably achieved over the useful life of the measure, the applicable screening methods strongly favor funding measures that provide longer-term savings.

The Plan will facilitate the selection and installation of energy efficient equipment, foster construction of energy efficient structures, and encourage and reward energy efficient behaviors.

9.2.2. Describe how this EE&C plan will leverage and utilize other financial resources, including funds from other public and private sector energy efficiency and solar energy programs.

Where funds are available to customers directly, the company will communicate the availability of other resources as part of the information it provides concerning its own program measures, and will facilitate customers qualifying for such funds, to the extent practicable. Finally, where other incentives are available to customers (such as tax deductions or credits), the company will provide customers with relevant information.

The multi-family housing audit/retrofit program provides services that include the administration of energy efficiency audits, technical assistance for measure level project review and bundling, property aggregation, contractor negotiation and equipment bulk purchasing. Additionally, funding sources will be integrated to include program and agency co-funding, performance contracting, grant funding and available financing options. Services also include processing rebate applications and other funding source documentary requirements.

9.2.3. Describe how the EDC will address consumer education for its programs.

Effective customer education is essential to successfully implementing this initiative. Indeed, comprehensive consumer marketing campaigns will generate increased understanding of energy efficiency benefits and demand for energy efficiency measures. Duquesne's customers are diverse. Because the available measures range from simple to comprehensive, no single means of customer communication is likely to succeed in isolation. The benefits of some measures (for instance, consumer-installed efficient lighting) are easily communicated and easily achieved by customers. Benefits of some other measures (for instance, the life-cycle benefits of industrial process measures) are considerably more complex to calculate and installation requires involvement of highly skilled contractors or vendors. Moreover, sustainable energy savings ultimately are best optimized by combining

state-of-the-art equipment and materials with modified personal behaviors. Consequently, Duquesne Light will use an extensive combination of means to ensure that appropriate customer education is achieved.

At the threshold level, customer education begins by raising general awareness of energy efficiency. Duquesne Light believes that this threshold goal is best accomplished by repeatedly exposing its customers to short, positive messages that emphasize the general benefits of embracing energy efficiency. The second step involves contemporaneously communicating the array of measures that are available to customers, coupled with messages encouraging customer participation. These customer education initiatives are best accomplished through repeated communications in mass media as well as through existing channels of customer contacts, such as billing messages, bill inserts, messages on hold, and other existing customer communications.

All communications designed to raise awareness and encourage participation should also provide a means for customers to learn more. As the assortment of available measures and the benefits of customer participation are effectively communicated, customers will want to learn more. A primary method of communicating the program details is interactive web-based communications. Websites offer one of the most cost-effective means of communicating the details in a manner that is easily accessible to a substantial portion of the customer base. In addition to the cost advantage, web-based information is easily updated, and can provide links to extensive existing information. Because a portion of customers are not web-active, printed materials will also be available to customers who request more information.

The School Energy Pledge (SEP) program, which ran in Phase I and Phase II, provided information about energy efficiency at school assemblies and classroom curricula linked to state curriculum standards. The SEP program targeted approximately 73,000 primary school students (grades K-5) and provides hands-on lessons linking scientific concepts with practical applications. Students take home what they've learned at school where families implement energy efficiency measures provided through the SEP program. For Phase III, the Community Education program was successfully implemented to prepare middle school and high school students to become energy efficiency auditors and provide hands-on training while they perform energy audits at their schools. The objective was to build the community capacity and early workforce development for the future goal for student energy auditors to "fan out" into their communities performing energy audits at small businesses and residential energy audits for income qualified populations. Phase IV student focus will build upon the previous phases' efforts.

Finally, dedicated energy efficiency customer service representatives and commercial and industrial major account representatives are trained to respond to customers who have become aware of the available measures and who respond positively to the participation opportunities.

As a supplement to communications between the company and its customers, it is essential that reliable customer information is available from material and equipment vendors, contractors, and installers. The company will work with suppliers, trade associations,

community based organization, faith based organizations, contractors, and vendors in the service territory to ensure that accurate, reliable program information is available from these sources as well.

9.2.4. Indicate that the EDC will provide a list of all eligible federal and state funding programs available to ratepayers for energy efficiency and conservation.

During Phase IV, Duquesne Light will list available funding sources on its website. The federal and state funding sources available to customers for energy efficiency and conservation have been, and are expected to be, changing rapidly. Listing the eligible programs on the website not only allows the list to be updated rapidly but can also provide links directly to the websites maintained by the federal and state programs for ease of use by customers.

9.2.5. Describe how the EDC will provide the public with information about the results from the programs.

Since the inception of the Phase I Act 129 Plan, Duquesne Light has posted all plans and reports to the Customer Programs Energy Efficiency website where any interested party can also see the results from the programs. Participation data will include (but not be limited to) information concerning the level of customer participation, the calculated energy savings, description of the associated environmental benefits and other significant program milestones and information.

10. Appendices

- A. Approved CSP contract(s).
- B. Program by program projections of costs and acquisition cost (\$/MWh and \$/MW) for each program and sector. Cost data should clearly separate incentive cost for non-incentive cost. See Example Tables 10, 11, and 12:
 - Program Cost Elements
 - Incentives
 - Program Design
 - Administrative
 - EDC Program Delivery Costs
 - CSP Program Delivery Fees
 - Marketing
 - EM&V
 - Other (include description)
 - Cost effectiveness calculations by program and by program year, indicating benefits by category (see Example Table 13).
- C. Calculation methods and assumptions. Describe methods used for estimating all program costs, including administrative, marketing, and incentives costs; include key assumptions. Describe assumptions and present all calculations, data and results in a consistent format. Reference Appendix C.

Appendix A

CSP SERVICES AGREEMENT

This CSP Services Agreement, dated _____2020 is made by and between Duquesne Light Company (“DLC” or “Company”) and _____. (“CSP”).

WHEREAS, CSP is in the business of providing information and technical assistance on measures to enable a person to increase energy efficiency or reduce energy consumption services in the utility industry; and

WHEREAS, DLC is an electric distribution company (“EDC”) in Pennsylvania; and

WHEREAS, Act 129 of House Bill 2200 (“Act 129”) was signed into law by Governor Rendell on October 15, 2008, requiring each EDC to create and submit an energy efficiency and conservation plan by July 1, 2009, and the Pennsylvania Public Utility Commission (“Commission”) has developed processes and procedures for the review of EDC filings; and

WHEREAS, the Commission issued an Order at Docket number M-2015-2515375 providing for Phase III energy efficiency and conservation plans from June 1, 2016 through May 31, 2021; and

WHEREAS, CSP will provide services regarding the implementation of DLC’s EE/Conservation Plan as required by Act 129 and the Commission’s Orders; and

WHEREAS, CSP certifies that it was approved by and is a member of the Commission’s Registry of Conservation Service Providers and will maintain such registration with the Commission for the term of this Agreement; and

WHEREAS, DLC is relying upon the skill and expertise of CSP to implement the Plan and to meet the needs of DLC and to provide the services necessary for the proper and effective energy efficiency and conservation plan compliance.

NOW, THEREFORE, in consideration of the premises and of the mutual benefits and covenants contained herein, the parties hereto, intending to be legally bound hereby, agree as follows:

1. DEFINITIONS

“**Applicable Law**” means any applicable constitution, charter, act, statute, law, ordinance, code, rule regulation, judgment, decree, writ, order, permit, approval or the like of any Governmental Authority.

“**Company**” shall mean Duquesne Light Company.

“**Company’s Site**” shall mean 411 Seventh Avenue, Pittsburgh, PA 15219.

“**Price**” shall mean the purchase price or prices stated in Exhibit D of the CSP Agreement.

Appendix A

“**PPUC Approval**” shall mean a final decision issued by the PPUC approving the Program for the years 2016-2021, consistent with Duquesne Light’s application for the Program filed with the PPUC on November 30, 2015 and authorized by the PPUC for implementation on March 10, 2016.

“**CSP Agreement**” shall mean this Agreement, along with Exhibits A, B, C and D.

“**Services**” shall mean CSP services, Work Product and any other work performed by CSP necessary to fulfill CSP’s obligations under the CSP Agreement.

“**Subcontractor**” shall mean vendors, suppliers and subcontractors of any tier and any other persons or entities contracting directly or indirectly with CSP for or in regard to the CSP Agreement.

“**Work**” shall mean CSP services, Work Product and other work performed by Contractor as necessary to fulfill CSP’s obligations under the CSP Agreement.

“**Work Product**” shall mean studies, reports, evaluations, designs, drawings, procedures, specifications, plans and all other documentation and deliverables which are prepared, produced or acquired by CSP for the Work or at the request or direction of Company in connection with the Plan’s requirements for reduction in demand and consumption.

2. CONDITION-PRECEDENT CLAUSE

This CSP Agreement is not effective until PPUC Approval is issued. Within three (3) Business Days following PPUC Approval, either party may notify the other, in writing, if the PPUC approves the Program with material changes from Duquesne Light’s filed program plan that are unacceptable to that party. This Purchase Order is effective five (5) Business Days following PPUC Approval if neither party has informed the other, in writing, of unacceptable PPUC-mandated material Program changes.

3. ENGAGEMENT OF CSP; CSP’S WORK

Subject to the terms and conditions of this CSP Agreement, DLC hereby engages CSP to properly and completely design, submit and assist with the implementation of an energy efficiency and conservation plan in compliance with Act 129 of House Bill 2200. CSP shall perform the Work in a professional and workmanlike manner and with accuracy and reasonable care and skill. Specifically, the Services to be provided are shown on Exhibit A.

4. CSP’S ACKNOWLEDGMENT

CSP, by performing the Work and/or delivering the Work Product, by any performance under this CSP Agreement and/or by written acknowledgement, accepts the offer contained in this Agreement and such acceptance of the offer is expressly limited to the terms and conditions as set forth herein. Any term or condition proposed by CSP, which is different from, conflicts with or adds to any of the provisions of this CSP Agreement, shall be deemed to materially alter the provisions of this CSP Agreement and is hereby objected to and rejected by DLC. Except as expressly provided herein, under no circumstances shall any term or condition of the CSP’s sales documents or otherwise become part of this CSP Agreement.

Appendix A

5. PROJECT SCHEDULE

(a) CSP shall design, submit and assist with the implementation of an energy efficiency and conservation plan to meet all the needs and requirements of DLC, applicable laws and applicable standards, and to allow DLC to properly and efficiently implement a Plan as defined in the Scope and Exhibit A. Company shall be entitled to implement reasonable provisions and procedures for monitoring performance quality and rate of progress. Such is set forth in more detail in Exhibit A.

(b) (i) Except as expressly set forth herein, CSP is authorized to commence the Work and shall perform the Work in accordance with and within the time schedule contained in the project schedule attached hereto as Exhibit B (the “Project Schedule”).

(ii) If at any time CSP determines that it is behind schedule or is unable to meet any milestone set forth in the Project Schedule, CSP shall, within five (5) days of its knowledge of such delay, promptly notify DLC, in writing, of any anticipated material departure from the Project Schedule and if CSP has reason to believe that a milestone or the Completion Date will not be met and shall specify in said notice corrective action planned by CSP to timely complete the Work or any portion thereof; provided, however, that such notice shall not relieve CSP of any of its obligations under the CSP Agreement or its obligations to take all actions necessary to achieve the timely and proper completion of the Work. At all times, CSP shall take such actions as may be necessary to facilitate the timely and proper completion of the Work on or prior to any applicable milestones set forth in the Project Schedule or by the Completion Date.

(iii) CSP understands and agrees that time is of the essence with respect to the dates and times set forth in the Project Schedule, including, but not limited to, the Completion Date, and for performance of the Work.

6. PRICE AND PAYMENT

The price or compensation to be paid to CSP is shown in Exhibit D. Compensation shall be performance based, and rewards are provided for achieving successful results and deductions are made for not achieving successful results, as agreed to in Exhibit D.

Unless otherwise agreed upon, statements must be submitted monthly, within 30 days after the end of a billing month. Itemized statements for services and expenses should be submitted directly to Dave Defide, Duquesne Light Company, 411 Seventh Avenue, Mail Drop 15-3, Pittsburgh, PA 15219. If any (portion) of the Work does not conform to the requirements of the CSP Agreement upon inspection by Company, a corresponding portion of the Price may be withheld by Company until the nonconformity is corrected. Invoices shall be paid within 45 days.

7. WARRANTIES

CSP represents warrants and guarantees that the Work provided under the CSP Agreement shall be: (a) provided in accordance with, and conform to, the requirements of the CSP Agreement; (b) provided in accordance with the standard of care consistent with generally accepted industry practices and procedures in CSP's particular area of expertise; and (c) suitable for the specified purposes.

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CSP represents, warrants and guarantees that it is not an affiliate of Duquesne or any other Pennsylvania EDC. If CSP should merge with a Pennsylvania EDC during the term of the CSP Agreement, then the CSP shall immediately notify Duquesne and provide for automatic termination of the CSP Agreement.

CSP represents, warrants and guarantees that it will conduct criminal background checks for all employees of the CSP that will have access to confidential customer information, enter a customer's premises or otherwise have personal contact with an EDC customer.

If, during the sixty-day period following completion of the Work, it is shown there is an error in the Work caused solely by CSP's failure to meet such standards and Company has notified CSP in writing of such error within that period, CSP shall re-perform, at no additional cost to Company, such Work as may be necessary to remedy such error.

Company shall have no liability for defects in the Work attributable to CSP's reliance upon or use of data, design criteria, drawings, specifications or other information furnished by Company.

8. OWNERSHIP RIGHTS

CSP warrants that the Work shall not infringe or misappropriate the intellectual property rights of any third parties. Company shall have exclusive use of and own title, rights and interests in and to all Work. All Work shall be considered "work made for hire."

At all times, each party shall retain all of its rights in its drawings details, designs, specifications, databases, computer software, copyrights, trade and service marks, patents, trade secrets, and any other proprietary property.

9. FACILITIES, SUPPLIES AND EQUIPMENT

To the extent that CSP's Work must be performed at Company's Site, Company shall furnish the facilities, supplies and equipment which Company determines are reasonably required for CSP to perform Work under the CSP Agreement.

10. TERMINATION

Company may terminate all or part of the CSP Agreement if CSP: performs below acceptable standards, abandons the work; becomes bankrupt or insolvent; is unable to obtain a bond, if required; assigns the CSP Agreement or subcontracts any portion thereof without Company's written consent; or otherwise breaches or fails to comply with the CSP Agreement; provided, however, that prior to such termination, Company must have notified CSP in writing of its intent to terminate the CSP Agreement and the reasons therefore, and CSP must have failed to cure such non-compliance within ten (10) days after receipt of such notice. If Company so terminates the CSP Agreement, Company may complete or contract with a third party to complete all or part of the Work, and CSP shall be liable to Company for the excess costs to complete all or such part of the Work and any other damage resulting from CSP's non-compliance or breach. Company may suspend all payments to CSP in order to protect ratepayer funds pursuant to Commission order.

Company may, at any time, also terminate by written notice all or part of the CSP Agreement due to modification of its Energy Efficiency/Conservation plan. Upon receipt of such notice, CSP shall bring the work to a prompt conclusion. Company shall pay CSP a proportionate amount of

Appendix A

the price due to CSP for the portion of the Work completed up to the effective date of the termination plus costs necessarily incurred directly as a result of the termination, subject to Company's right to audit CSP's books and records. Such payment by Company, however, shall not exceed the total price for the Work set forth in the CSP Agreement.

In all cases, Company may require CSP to transfer title and deliver to Company any contracts, rights, goods, equipment or Work Product produced, received or acquired by CSP for the performance of the CSP Agreement.

11. INDEMNIFICATION

CSP shall defend, indemnify and hold harmless Company, its directors, officers, employees, agents, successors and assigns and customers and users of the goods, equipment and services, from and against, and shall pay, all losses, damages (including consequential, indirect and punitive), costs, liabilities, suits, claims and actions, and all related expenses (including attorneys' fees and expenses and the actual costs of litigation) by reason of injury or death to any person or damage to any property or any accident or event arising or relating to the performance of the CSP Agreement or arising from or relating to the goods, equipment or services or from any other cause to the extent not attributable to the negligence or willful misconduct of Company.

12. INTELLECTUAL PROPERTY INDEMNIFICATION

CSP represents and warrants that all goods, equipment and services shall not and do not infringe upon any United States or foreign patent, trademark, copyright or other intellectual property right of any third party. CSP shall defend, indemnify and hold harmless Company and its directors, officers, employees, agents, successors and assigns from and against, and shall pay, all losses, damages (including consequential, indirect and punitive), costs, liabilities, suits, claims and actions, and all related expenses (including attorneys' fees and expenses and the actual costs of litigation) based on or arising from an allegation or claim that any goods, equipment or services or parts thereof furnished by CSP infringe or misappropriate the rights of others; and/or if their use by Company is enjoined, CSP shall at Company's option and CSP's expense either: (a) procure for Company the right to continue using the goods, equipment and services or parts thereof; (b) replace the same with substantially equivalent goods, equipment or services or parts thereof that do not infringe or misappropriate the rights of others; (c) modify the same so they no longer infringe or misappropriate the rights of others; or (iv) refund the price and the transportation and installation costs to Company.

CSP shall obtain from all Subcontractors similar indemnity protection for Company.

13. LIMITATION OF LIABILITY

Company shall not be liable to CSP for any indirect, incidental, special, liquidated, punitive or consequential damages or damages for delay in performance and/or failure to perform, irrespective of whether claims or actions for such damages are based upon contract, tort, negligence, strict liability, warranty or otherwise. CSP's liability for performance shall be limited as set forth in the compensation section except for acts of negligence, misconduct, or intentional acts.

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14. CHANGES

Company may, at any time by a written change order, make changes to the scope of the CSP Agreement (“Change Order”). If any change results in an increase or decrease in the quantity or cost of the goods, equipment or services or otherwise materially affects the CSP Agreement, the Change Order will include an equitable adjustment in the price, the schedule and/or any other affected provisions. Any objection by CSP to the equitable adjustment set forth in a Change Order must be asserted within seven (7) business days after receipt of the Change Order by CSP. Notwithstanding such objection, if directed by Company, CSP shall proceed with the change and performance of the Work.

15. SUSPENSION OR INTERRUPTION OF WORK

Company may direct CSP, in writing, to suspend or interrupt all or any part of the Work for such period of time as Company may determine to be appropriate. CSP shall mitigate the costs of such suspension or interruption. Company agrees to reimburse CSP for those expenses necessarily and directly incurred as a result of such suspension or interruption, subject to Company's right to audit CSP's books and records.

16. CONFLICTS, ERRORS AND OMISSIONS

In the event CSP becomes aware of any conflict, error or omission in the documents comprising the CSP Agreement, CSP shall promptly bring the discrepancy to the attention of Company. Such discrepancy shall be resolved by Company in its sole discretion.

17. INSPECTIONS, MONITORING PERFORMANCE QUALITY AND RATE OF PROGRESS

Company may inspect, at all reasonable times, the progress of the Work, including work performed at CSP's or Subcontractor's facilities. Also, if the CSP Agreement, laws, ordinances, rules, regulations or orders of any governmental authority require any portion of the Work to be inspected, tested or approved, CSP shall give Company reasonable notice to permit Company to observe such inspection, testing or approval. CSP shall provide Company with periodic status reports during the course of the Work.

18. COST ACCOUNTS, INFORMATION AND AUDITS

CSP shall maintain detailed separate cost data for each CSP Agreement in accordance with Generally Accepted Accounting Principles. CSP's records pertaining to the cost of the Work (other than fixed prices agreed to prior to performance of the Work) and CSP's tax records shall be open at all reasonable times for inspection or audit by Company or its representative(s). Company or its representative(s) shall, at all reasonable times, have access to the premises, materials, instructions, working papers, plans, drawings, specifications, memoranda and other information of CSP pertaining to the Work. All CSP's purchase orders or contracts with Subcontractors shall provide that Company or its representative(s) shall have the right to audit Subcontractors' charges to CSP. Company's rights under this Article shall terminate five (5) years after expiration of the warranty periods.

Appendix A

The CSP agrees to make data available to Duquesne Light's Independent EM&V CSP (CSP) and the Pennsylvania Act 129 Statewide Evaluator (SWE) regarding audits and interactions between these parties in regard to program data upon request by the SWE or CSP.

19. INSURANCE

Prior to commencing any portion of the Work, CSP shall properly maintain the following coverage: Statutory Workers' Compensation Insurance in full compliance with the Workers' Compensation and Occupational Disease Acts of each and every state in which Work is to be performed and U.S. Longshoremen's and Harbor Workers' Compensation Acts, if applicable; Employer's Liability Insurance with a limit of not less than \$500,000; Comprehensive General Liability Insurance including Premises-Operation Independent Contractor's Protective, Products, Completed Operation, and Blanket Contractual Liability coverages with a combined single limit of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate; Excess Umbrella Liability Insurance with a single limit of not less than \$2,000,000; and Automobile Liability Insurance covering all owned, hired and non-owned vehicles with a combined single limit of not less than \$1,000,000 per occurrence. CSP shall provide Company with a certificate of insurance specifically evidencing the coverages required above, naming the Company as an additional insured, except under the Workers' Compensation Policy, and stating the policy numbers and the inception and expiration dates of all policies. The certificate of insurance shall also provide for thirty (30) days' prior written notice to Company in the event of cancellation or any material alteration of any policy. The certificate of insurance shall be furnished to Company prior to commencement of any portion of the Work. The Property Damage Liability Insurance shall include the Broad Form Comprehensive General Liability coverage.

20. TAXES

The price set forth in the CSP Agreement shall include, unless otherwise expressly set forth in the CSP Agreement, all federal state and local sales and use taxes applicable to the manufacture and/or sale of the goods and equipment and/or the performance of the services.

Company will provide to CSP, upon CSP's request, a tax exemption certificate for taxes for the Work that are exempt under Pennsylvania's Sales and Use Tax laws.

Upon Company's request, CSP shall provide evidence satisfactory to Company of the payment of any taxes which CSP is required to pay. CSP shall also provide to Company such additional information as Company may request to facilitate the determination of taxes for which Company is responsible, if any.

21. CONFIDENTIAL/PROPRIETARY INFORMATION

CSP agrees to treat as confidential and proprietary any of Company and customer's information which is not generally known to the public and to exercise the same care to prevent the disclosure of such information as CSP exercises to prevent disclosure of its own proprietary and confidential information; however, CSP may disclose such information as required by law or court order upon written notice to the Company. Furthermore, Company's information shall be utilized by CSP only in connection with performance of CSP's obligations under the CSP Agreement.

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22. **PUBLICITY**

CSP shall not use Company's name nor issue any publicity releases, including but not limited to, news releases and advertising, relating to the CSP Agreement and Services without the prior written consent of Company.

23. **FORCE MAJEURE**

Neither party shall be liable for any failure or delay in performing its obligations under the CSP Agreement, or for any loss or damage resulting therefrom, due to causes beyond its reasonable control, including but not limited to, acts of God, public enemy or government, riots, fires, natural catastrophe, strikes or epidemics. In the event of such failure or delay, the date of delivery or performance shall be extended for a period not to exceed the time lost by reason of the failure or delay; provided that Company may terminate the CSP Agreement if the period of failure or delay exceeds fifteen (15) days. Company shall have no obligation to make any payments to CSP during the period of failure or delay. Each party shall notify the other promptly of any failure or delay in, and the effect on, its performance.

24. **ASSIGNMENT**

CSP shall not assign the CSP Agreement, in whole or in part, nor contract with any Subcontractor for the performance of the same or any of its parts, without first obtaining Company's written consent. Company's consent shall not be construed as discharging or releasing, nor shall it discharge or release, CSP in any way from the performance of the Work or the fulfillment of any obligation under the CSP Agreement.

25. **NOTICES**

Any notice required under the CSP Agreement shall be in writing and sent to the CSP and Company at their respective addresses identified below:

If to DLC: Dave Defide
 Duquesne Light Company
 411 Seventh Avenue, Mail Drop 15-3,
 Pittsburgh, PA 15219.
 Via e-mail: ddefide@duqlight.com

If to CSP:

26. **INDEPENDENT CONTRACTOR**

CSP shall operate as an independent contractor in the performance of the CSP Agreement and not as an agent or employee of Company. CSP shall ensure that neither it nor its agents or employees

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shall act or hold themselves out as agents or employees of Company. CSP shall have complete control of its agents and employees engaged in the performance of the Work.

27. PRIORITY OF DOCUMENTS

In the event of conflict among the various documents comprising the CSP Agreement, the conflict shall be resolved according to the priority given to the documents in the Purchase Order. If no priority is indicated in the Purchase Order, the conflict shall be resolved according to Article 16, Conflicts, Errors and Omissions.

28. SEVERABILITY

If any provision(s) of the CSP Agreement is prohibited by law or held to be invalid, illegal or unenforceable, the remaining provisions thereof shall not be affected, and the CSP Agreement shall continue in full force and effect as if such prohibited, illegal or invalid provisions had never constituted a part thereof, with the remaining provisions of the CSP Agreement being enforced to the fullest extent possible.

29. SURVIVAL

The obligations and rights of the parties pursuant to the Warranties, Liens, Indemnification, Intellectual Property Indemnification, Limitation of Liability, Cost Accountants and Information/Audits and Confidential/Proprietary Information shall survive the expiration or early termination of the CSP Agreement.

30. MBE/WBE

It is the policy of Company to stimulate the growth of Certified Minority, Women and Disabled Business Enterprises (MBEs, WBEs and DBEs) by encouraging their participation in Company's procurement activities and by affording them an equal opportunity to compete for Company's procurements. CSP agrees to carry out this policy to the fullest extent consistent with the requirements of the CSP Agreement (a) through the award of subcontracts to MBEs, WBEs and DBEs or (b) if CSP is a MBE, WBE or DBE, through the use of its own forces. CSP shall include this policy as a provision in all subcontracts.

31. LAWS, CODES, RULES, REGULATIONS

CSP and its Subcontractors, at their own expense, shall obtain all necessary licenses and permits and shall comply with all applicable federal, state and local laws, statutes, ordinances, codes, rules and regulations relating to performance of the Work and the CSP Agreement, including but not limited to, safety, products liability, environment, labor standards and workers' compensation laws.

All CSP subcontractors with an annual contract cost that equals or exceeds ten percent of the CSP's total annual contract cost to perform services pursuant to an electric distribution company energy efficiency and conservation plan must also be registered as CSPs. This is pursuant to Implementation of Act 129 of 2008 Phase II – Registry of Conservation Service Providers Order at Docket No. M-2008-2074154 (entered July 16, 2013).

CSP and its Subcontractors shall also comply with Company's policies, rules and procedures.

Appendix A

32. HAZARDOUS AND DANGEROUS GOODS

For any goods or equipment provided by CSP pursuant to the CSP Agreement which are defined as hazardous or dangerous under any applicable law, rule or regulation, CSP shall provide Company with hazardous warning and safety handling information, including Material Safety Data Sheets, and appropriate labeling for all such goods and equipment.

33. ELECTRONIC COMMERCE

At Company's request, Company and CSP may facilitate business transactions for the CSP Agreement by electronically transmitting data. Any data digitally signed pursuant to this Article and electronically transmitted shall be as legally sufficient as a written and signed paper document exchanged between the parties, notwithstanding any legal requirement that the document be in writing or signed.

34. GOVERNING LAW/JURISDICTION

The CSP Agreement shall be governed by and interpreted in accordance with the laws of the Commonwealth of Pennsylvania, excluding the choice of law and conflicts of law provisions. Any litigation arising from or relating to the CSP Agreement shall only be filed in state or federal court in and for Allegheny County, Pennsylvania and CSP hereby consents and submits to the exclusive jurisdiction of such courts.

35. ENTIRE AGREEMENT

The CSP Agreement contains the entire understanding and agreement of Company and CSP with respect to the subject matter hereof and supersedes and replaces all prior agreements and commitments with respect thereto. There are no oral understandings, terms or conditions and neither Company nor CSP has relied upon any representation, express or implied, not contained in the CSP Agreement.

36. AMENDMENT

Except as expressly set forth herein, no provision of the CSP Agreement may be changed, modified, waived, terminated or amended except by written instrument executed as appropriate by Company and/or CSP.

37. WAIVER

Any failure of Company to enforce any of the provisions of the CSP Agreement or to require compliance with any of its terms at any time during the term of the CSP Agreement shall in no way affect the validity of the CSP Agreement, or any part thereof, and shall not be deemed a waiver of the right of Company thereafter to enforce any and each such provision.

38. CAPTIONS

The captions contained in the CSP Agreement are for convenience and reference only and in no way define, describe, extend or limit the scope or intent of the CSP Agreement or the intent of any provision contained therein.

Appendix A

39. RECORD RETENTION

The CSP shall retain all electronic and hard copy project file documentation that it creates pursuant to the CSP agreement for a period not less than five (5) years.

IN WITNESS WHEREOF, the parties have executed this Agreement on the respective dates entered below.

DUQUESNE LIGHT COMPANY

CSP

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Appendix A

EXHIBIT A: BID MATERIALS

Bid materials Sent, Received and Accepted VIA POWERADVOCATE EVENT

Appendix A

EXHIBIT B: PROJECT SCHEDULE

The project schedule will be determined after RFP process is complete.

Appendix A

EXHIBIT C: SCOPE OF WORK

The scope of work will be determined after RFP process is complete.

Appendix A

EXHIBIT D: COMPENSATION

Appendix B

Program by program projections of costs and acquisition cost (\$/MWh and \$/MW) for each program and sector. Cost data should clearly separate incentive cost for non-incentive cost.

- Program Cost Elements
 - Incentives
 - Program Design
 - Administrative
 - EDC Program Delivery Costs
 - CSP Program Delivery Fees
 - Marketing
 - EM&V
 - Other (include description)

See Table 9.

- Cost effectiveness calculations by program and by program year, indicating benefits by category

See Table 13.

Appendix C

Calculation methods and assumptions. Describe methods used for estimating all program costs, including administrative, marketing, and incentives costs; include key assumptions. Describe assumptions and present all calculations, data and results in a consistent format. Reference Appendix C.

Administrative Costs: Administrative Costs are provided in detail for each of the 17 program delivery channels at Table 9: Program Budget. Table 9 Non-Incentive costs are disaggregated into the seven types of cost shown in the table below. Duquesne Light Portfolio Admin costs include EM&V and exclude CSP direct-implementation administrative costs. Portfolio admin includes administrative costs that can be tied to specific programs being implemented. Common costs are only those costs applicable to multiple customer sectors or are common across all sectors. Table 9 non-incentive admin cost components have Common Costs embedded in the budget values. Common costs are addressed at Table 11: Allocation of Common Costs. For visibility, the table below summarizes Portfolio and Common Costs.

Phase IV EE&C Plan Administrative Costs

Admin Cost Component (\$000)	Portfolio	Common	CSP	Total	
Program Design	\$303			\$303	0.7%
Administrative	\$3,520	\$865		\$4,385	10.3%
EDC Delivery Costs	\$1,909	\$2,500		\$2,264	5.3%
CSP Delivery Fees			\$28,993	\$28,993	67.8%
Marketing		\$1,177		\$1,194	2.8%
EM&V	\$1,718			\$3,907	9.1%
Implementation Services		\$1,778		\$1,718	4.0%
Total	\$7,450	\$6,321	\$28,993	\$42,764	100.0%
	17%	15%	68%		

The Admin Cost components are defined below:

1. Program Design: Technical support to develop and the Phase IV EE&C Plan, mid-course corrections and any required refileing.
2. Administrative: Means Duquesne Light Act 129 dedicated staff labor costs.
3. EDC Delivery Costs: Portfolio-level technical support, tracking system training and support, cost-effectiveness reporting and portfolio Q&A.
4. CSP Delivery Fees: Non-Incentive budget amounts paid to the implementing CSP.
5. Marketing: Portfolio Act 129 Marketing.
6. EM&V: Independent program evaluation and reporting.
7. Implementation Services: Project level support, transition tasks, DLC staff support on complex project engineering review and approvals.

Common Costs (addressed at Table 11) includes the following items:

Appendix C

1. Utility staff labor cost to support all programs.
2. Portfolio-wide marketing costs
3. Portfolio-level Delivery costs (tracking system training and support, technical support, cost-effectiveness reporting and QA/QC).
4. Tracking system hosting and maintenance.

Incentives:

Energy Efficiency programs: Incentive amounts are intended to offset the incrementally higher cost of highly efficient appliances and equipment. The amount paid to participating customers for per unit of measure (lamp, insulation square foot, motor HP, air conditioner ton, etc.) is addressed as a percentage of that incrementally higher cost. The Phase IV Implementation Order⁶⁵ and TRC Order⁶⁶ and Implementation Order defines directly installed equipment costs, as well as the labor cost to install the equipment, as incentives.

In previous Act 129 phases Duquesne Light's program incentives were established using national benchmarking and payback probability acceptance curves.⁶⁷ In Phase III Portfolio Incentives amounted to 42% of the Portfolio Budget, on average offsetting 39 percent of projected incremental measures costs. The Phase IV Implementation Order require at least 50% of EE&C Plan spending come from incentives. Accordingly, EE&C Plan incentive amounts were increased to 56 percent of the Portfolio Budget offsetting, on average, 41 percent of measure incremental costs. Incremental measure costs are documented, referenced to the SWE incremental costs database⁶⁸, California Public Utilities Commission Database of Energy Efficient Resources (DEER), invoice data from Phase III program operations and specific measure cost research.

Plan Development Methodology: As with the previous three Act 129 Phases, Duquesne Light's Phase IV EE&C Plan began at the measure level with forecast projections for more than 300 measures applied to prototypical applications in Duquesne Light specific building stock; measures savings are linked to 2021 TRM algorithms as well as historic custom measure savings impacts. As stated above, incremental measure costs are taken, primarily, from the SWE Incremental Cost Database v4.0. Savings were applied to seasonal and time-of-day measure-level savings profiles.⁶⁹

Avoided costs were applied taken from the Phase IV SWE Avoided Cost Calculator (ACC) with inputs specific to Duquesne Light, as specific in the Phase IV TRC Order and described in the avoided costs section of this Plan. The ACC avoided costs (for generation, capacity and T&D

⁶⁵ Energy Efficiency and Conservation Plan Implementation Order, June 18,2020, Docket No. M-2020-3015228 Section I, EDC Cost Recovery, subsection 1 Determination of Phase IV Allowable Costs, Pages 126-127.

⁶⁶ See 2021 TRC Test Order at pages 74-75.

⁶⁷ Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation and Demand Response Plan Docket No. M-2009-2093217, June 30, 2009; Part (3) Energy Efficiency and Demand Side Response Study, MCR Performance Solutions, LLC, June 26, 2009.

⁶⁸ SWE Incremental Cost Database version 4.0 July 1, 2020

⁶⁹ PA Act 129, Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study, Appendix F, pages F-1 through F-66 (PDF pages 135-201 of 598).

Appendix C

benefits) were expanded to include O&M benefits, as well as water and fossil fuel benefits (or penalties).

TRC administrative program costs were documented (described above) and combined with measure costs (also described above) to render TRC Cost. The present value of Measure level LIFE-CYCLE avoided costs divided by TRC Costs rendered a TRC Test cost-benefit ratio. The measure mix was optimized, to the extent possible, to achieve projected portfolio performance shown in the following Appendix C.

Appendix C

Residential Programs	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Appliance Recycling	8,447,770	1,210	\$309,251	\$674,606	\$772,717	\$1,756,575	\$983,857	\$772,717	\$1,756,575	\$1,865,568	\$237,395	\$282,444	\$0	\$1,345,729	1.06
Downstream Incentives	23,698,780	2,595	\$900,553	\$1,964,486	\$2,754,043	\$5,619,082	\$2,865,040	\$4,907,237	\$7,772,276	\$16,273,813	\$973,994	\$1,167,286	\$6,966,955	\$7,165,698	2.09
Midstream Incentives	596,319	127	\$21,830	\$47,620	\$144,594	\$214,044	\$69,449	\$178,058	\$247,508	\$300,839	\$49,931	\$59,862	-\$2,345	\$193,392	1.22
Upstream Incentives	13,605,083	1,426	\$498,047	\$1,086,450	\$2,176,562	\$3,761,058	\$1,584,496	\$5,763,398	\$7,347,894	\$7,319,317	\$771,025	\$925,280	-\$820,638	\$6,442,650	1.00
Low Income Energy Efficiency	21,386,149	2,494	\$1,521,190	\$3,804,521	\$9,238,054	\$14,563,765	\$5,325,711	\$4,285,160	\$9,610,871	\$9,781,240	\$869,217	\$1,041,077	\$1,741,888	\$6,129,057	1.02
Residential Behavioral Energy Efficiency	49,700,000	6,740	\$568,472	\$3,597,241	\$0	\$4,165,713	\$4,165,713	\$0	\$4,165,713	\$4,534,517	\$604,780	\$706,486	\$0	\$3,223,251	1.09
Low Income Behavioral Efficiency	7,500,000	1,017	\$572,331	\$542,843	\$0	\$1,115,174	\$1,115,174	\$0	\$1,115,174	\$684,283	\$91,265	\$106,613	\$0	\$486,406	0.61
Total	124,934,102	15,609	\$4,391,674	\$11,717,768	\$15,085,970	\$31,195,411	\$16,109,441	\$15,906,570	\$32,016,011	\$40,759,878	\$3,597,607	\$4,290,048	\$7,885,740	\$24,986,183	1.27
<hr/>															
Small C&I	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Small Business Direct Install	23,133,399	4,475	\$950,057	\$659,359	\$8,100,470	\$9,709,885	\$1,609,415	\$13,919,071	\$15,528,486	\$16,933,339	\$2,372,708	\$2,850,169	\$850,690	\$10,859,772	1.09
Small Business Solutions	50,212,478	8,590	\$2,193,479	\$1,522,319	\$5,608,846	\$9,324,644	\$3,715,799	\$26,186,517	\$23,902,316	\$35,355,306	\$4,612,182	\$5,540,682	\$1,679,285	\$23,523,157	1.48
Small Business Midstream Solutions	27,491,056	6,756	\$1,129,020	\$783,563	\$4,415,667	\$6,328,249	\$1,912,592	\$27,604,253	\$29,516,835	\$19,997,666	\$3,659,604	\$4,396,552	-\$1,208,394	\$13,149,904	0.68
Small Business Virtual Commissioning	6,053,739	2,228	\$248,619	\$172,546	\$1,174,425	\$1,595,591	\$421,165	\$1,174,425	\$1,595,591	\$5,435,133	\$1,216,759	\$1,461,848	\$0	\$2,756,525	3.41
Total	106,890,672	22,049	\$4,521,174	\$3,137,787	\$19,299,408	\$26,958,369	\$7,658,961	\$62,884,267	\$70,543,228	\$77,721,444	\$11,861,254	\$14,249,251	\$1,321,581	\$50,289,358	1.10
<hr/>															
Large Commercial	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Large Business Solutions	83,696,145	15,377	\$2,694,979	\$7,842,525	\$8,897,267	\$19,434,773	\$10,537,506	\$17,017,907	\$27,555,413	\$59,581,924	\$8,398,585	\$10,090,291	\$1,085,391	\$40,007,657	2.16
Large Business Midstream Solutions	17,300,344	4,783	\$537,461	\$1,564,038	\$3,813,151	\$5,914,649	\$2,101,499	\$18,979,045	\$21,080,544	\$13,190,686	\$2,609,330	\$3,134,902	-\$750,433	\$8,196,888	0.63
Large Business Virtual Commissioning	2,756,458	1,014	\$85,633	\$249,198	\$534,753	\$869,584	\$334,831	\$534,753	\$869,584	\$2,478,366	\$554,029	\$665,625	\$0	\$1,258,711	2.85
Total	103,752,946	21,174	\$3,318,074	\$9,655,762	\$13,245,171	\$26,219,006	\$12,973,835	\$36,531,705	\$49,505,540	\$75,250,976	\$11,561,943	\$13,890,819	\$334,957	\$49,463,256	1.52
<hr/>															
Large Industrial	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Large Business Solutions	38,846,342	7,137	\$1,250,834	\$3,639,991	\$3,707,536	\$8,598,362	\$4,890,825	\$7,898,607	\$12,789,432	\$27,654,058	\$3,898,077	\$4,683,258	\$503,768	\$18,568,955	2.16
Large Business Midstream Solutions	8,029,695	2,220	\$249,454	\$725,925	\$1,425,033	\$2,400,413	\$975,379	\$8,808,839	\$9,784,219	\$6,122,259	\$1,211,081	\$1,455,018	-\$348,302	\$3,804,463	0.63
Large Business Virtual Commissioning	1,279,369	471	\$39,745	\$115,661	\$248,197	\$403,604	\$155,407	\$248,197	\$403,604	\$1,150,296	\$257,144	\$308,940	\$0	\$584,212	2.85
Total	48,155,376	9,828	\$1,540,034	\$4,481,577	\$5,380,767	\$11,402,379	\$6,021,611	\$16,955,644	\$22,977,255	\$34,926,613	\$5,366,303	\$6,447,216	\$155,466	\$22,957,629	1.52
<hr/>															
Pilot Program (Experimental Equip.)			\$1,957,376		\$1,954,595	\$1,954,595									
<hr/>															
Grand Total	383,733,096	68,660	\$13,770,956	\$28,992,893	\$54,965,911	\$97,729,760	\$42,763,849	\$132,278,186	\$175,042,035	\$228,658,612	\$32,387,107	\$38,877,334	\$9,697,744	\$147,696,427	1.31

Appendix C

Residential Programs	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Appliance Recycling	12,439,431	1,782	\$455,390	\$993,396	\$1,137,835	\$2,586,621	\$1,448,786	\$1,137,834	\$2,586,620	\$2,747,069	\$349,567	\$415,902	\$0	\$1,981,600	1.06
Downstream Incentives	23,698,780	2,591	\$932,836	\$1,932,203	\$2,754,043	\$5,619,082	\$2,865,040	\$4,907,237	\$7,772,276	\$16,271,394	\$972,893	\$1,165,968	\$6,966,835	\$7,165,698	2.09
Midstream Incentives	596,319	127	\$21,830	\$47,620	\$144,594	\$214,044	\$69,449	\$178,058	\$247,508	\$300,839	\$49,931	\$59,862	-\$2,345	\$193,392	1.22
Upstream Incentives	13,605,083	1,426	\$498,047	\$1,086,450	\$2,176,562	\$3,761,058	\$1,584,496	\$5,763,398	\$7,347,894	\$7,319,317	\$771,025	\$926,280	-\$820,638	\$6,442,650	1.00
Low Income Energy Efficiency	16,586,803	1,858	\$1,674,004	\$4,439,824	\$8,872,937	\$14,986,764	\$6,113,827	\$4,495,298	\$10,609,125	\$7,904,928	\$647,896	\$776,003	\$1,627,072	\$4,853,958	0.75
Residential Behavioral Energy Efficiency	39,797,494	5,397	\$454,328	\$2,881,339	\$0	\$3,335,667	\$3,335,667	\$0	\$3,335,667	\$3,631,035	\$484,280	\$565,722	\$0	\$2,581,032	1.09
Low Income Behavioral Efficiency	4,655,160	631	\$355,239	\$336,936	\$0	\$692,175	\$692,175	\$0	\$692,175	\$424,726	\$56,647	\$66,173	\$0	\$301,906	0.61
Total	111,379,071	13,812	\$4,391,674	\$11,717,767	\$15,085,970	\$31,195,411	\$16,109,441	\$16,481,825	\$32,591,265	\$38,599,309	\$3,332,239	\$3,975,910	\$7,770,923	\$23,520,237	1.18
Small C&I															
Small C&I	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Small Business Direct Install	23,133,399	4,475	\$950,057	\$659,359	\$8,100,470	\$9,709,885	\$1,609,415	\$13,919,071	\$15,528,486	\$16,933,339	\$2,372,708	\$2,850,169	\$850,690	\$10,859,772	1.09
Small Business Solutions	50,212,478	8,590	\$2,193,479	\$1,522,319	\$5,608,846	\$9,324,644	\$3,715,799	\$20,186,517	\$23,902,316	\$35,355,306	\$4,612,182	\$5,540,682	\$1,679,285	\$23,523,157	1.48
Small Business Midstream Solutions	27,491,056	6,756	\$1,129,020	\$783,563	\$4,415,667	\$6,328,249	\$1,912,582	\$27,604,253	\$29,516,835	\$19,997,666	\$3,659,604	\$4,396,552	-\$1,208,394	\$13,149,904	0.68
Small Business Virtual Commissioning	6,053,739	2,228	\$248,619	\$172,546	\$1,174,425	\$1,595,591	\$421,165	\$1,174,425	\$1,595,591	\$5,435,133	\$1,216,759	\$1,461,848	\$0	\$2,756,525	3.41
Total	106,890,672	22,049	\$4,521,174	\$3,137,787	\$19,299,408	\$26,958,369	\$7,658,961	\$62,884,267	\$70,543,228	\$77,721,444	\$11,861,254	\$14,249,251	\$1,321,581	\$50,289,358	1.10
Large Commercial															
Large Commercial	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Large Business Solutions	83,696,145	15,377	\$2,694,979	\$7,842,526	\$8,897,267	\$19,434,773	\$10,537,506	\$17,017,907	\$27,555,413	\$59,581,924	\$8,398,585	\$10,090,291	\$1,085,391	\$40,007,657	2.16
Large Business Midstream Solutions	17,300,344	4,783	\$537,461	\$1,564,038	\$3,813,151	\$5,914,649	\$2,101,499	\$18,979,045	\$21,080,544	\$13,190,686	\$2,609,330	\$3,134,902	-\$750,433	\$8,196,888	0.63
Large Business Virtual Commissioning	2,756,458	1,014	\$85,633	\$249,198	\$534,753	\$869,584	\$334,831	\$534,753	\$869,584	\$2,478,366	\$554,029	\$665,625	\$0	\$1,258,711	2.85
Total	103,752,946	21,174	\$3,318,074	\$9,655,762	\$13,245,171	\$26,219,006	\$12,973,835	\$36,531,705	\$49,505,540	\$75,250,976	\$11,561,943	\$13,890,819	\$334,957	\$49,463,256	1.52
Large Industrial															
Large Industrial	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	Total Admin	Measure Cost	TRC Cost	Program Benefits	Demand Reduction Benefits		O&M/Fossil/Water	Energy Benefits	TRC
				Administration	Incentives						Capacity	Trans/Dist			
Large Business Solutions	38,846,312	7,137	\$1,250,834	\$3,639,991	\$3,707,536	\$8,598,362	\$4,890,825	\$7,898,607	\$12,789,432	\$27,654,058	\$3,898,077	\$4,683,258	\$503,768	\$18,568,955	2.16
Large Business Midstream Solutions	8,029,695	2,220	\$249,454	\$725,925	\$1,425,033	\$2,400,413	\$975,379	\$8,808,839	\$9,784,219	\$6,122,259	\$1,211,081	\$1,455,018	-\$348,302	\$3,804,463	0.63
Large Business Virtual Commissioning	1,279,369	471	\$39,745	\$115,661	\$248,197	\$403,604	\$155,407	\$248,197	\$403,604	\$1,150,296	\$257,144	\$308,940	\$0	\$584,212	2.85
Total	48,155,376	9,828	\$1,540,034	\$4,481,577	\$5,380,767	\$11,402,379	\$6,021,611	\$16,955,644	\$22,977,255	\$34,926,613	\$5,366,303	\$6,447,216	\$155,466	\$22,957,629	1.52
Pilot Program (Experimental Equip.)						\$1,954,595									
Grand Total	370,178,065	66,863	\$13,770,956	\$28,992,893	\$54,965,911	\$97,729,760	\$42,763,849	\$132,853,440	\$175,617,289	\$226,498,342	\$32,121,739	\$38,563,195	\$9,582,927	\$146,230,480	1.29

11. Tables for Pennsylvania EDC Energy Efficiency and Conservation Plan

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Table 1: Portfolio Summary of Lifetime Costs and Benefits of Energy Efficiency Measures

Program	Total Discounted Lifetime Costs (\$000)	Total Discounted Lifetime Benefits (\$000)	Total Discounted Net Lifetime Benefits (\$000)	Total Resource Cost Test Ratio (TRC)
Residential	\$17,124,253	\$25,759,538	\$8,635,285	1.50
Residential Low-Income	\$9,610,871	\$9,781,240	\$170,369	1.02
Residential Behavioral	\$4,165,713	\$4,534,517	\$368,804	1.09
Low-Income Behavioral	\$1,115,174	\$684,283	-\$430,891	0.61
Large Commercial (C)	\$49,505,540	\$75,250,976	\$25,745,435	1.52
Large Industrial (I)	\$22,977,255	\$34,926,613	\$11,949,358	1.52
Small C&I	\$70,543,228	\$77,721,444	\$7,178,216	1.10
Total	\$175,042,035	\$228,658,612	\$53,616,577	1.31

Program	Total Discounted Lifetime Costs (\$000)	Total Discounted Lifetime Benefits (\$000)	Total Discounted Net Lifetime Benefits (\$000)	Total Resource Cost Test Ratio (TRC)
Residential	\$17,954,298	\$26,638,619	\$8,684,321	1.48
Residential Low-Income	\$10,609,125	\$7,904,928	-\$2,704,197	0.75
Residential Behavioral	\$3,335,667	\$3,631,035	\$295,368	1.09
Low-Income Behavioral	\$692,175	\$424,726	-\$267,449	0.61
Large Commercial (C)	\$49,505,540	\$75,250,976	\$25,745,435	1.52
Large Industrial (I)	\$22,977,255	\$34,926,613	\$11,949,358	1.52
Small C&I	\$70,543,228	\$77,721,444	\$7,178,216	1.10
Total	\$175,617,289	\$226,498,342	\$50,881,053	1.29

Table 2: Summary of Portfolio Energy and Demand Savings (MWh)

MWh Saved for Consumption Reductions (Meter Level)	PY13		PY14		PY15		PY16		PY17		Total	
	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh
Baseline											14,085,512	
Residential Cumulative Savings	18,249	109,941	37,459	225,668	56,668	341,395	75,878	457,122	96,048	578,636	96,048	578,636
Low-Income Cumulative Savings	5,488	39,851	11,266	81,800	17,043	123,749	22,820	165,698	28,886	209,744	28,886	209,744
Commercial/Industrial, Small Cumulative	18,578	275,744	41,447	615,177	65,355	970,030	88,604	1,315,095	106,891	1,586,514	106,891	1,586,514
Commercial/Industrial, Large Cumulative	26,909	403,456	60,044	900,256	94,167	1,411,877	126,828	1,901,574	151,908	2,277,603	151,908	2,277,603
EE&C Plan Total Incremental Annual	72,909	828,992	76,747	993,909	76,747	1,024,150	76,747	992,438	80,584	813,009	383,733	4,652,497
Percent of Plan Total Annual	19.0%		20.0%		20.0%		20.0%		21.0%			
EE&C Plan Total Cumulative	72,909	828,992	149,656	1,822,901	226,403	2,847,051	303,149	3,839,489	383,733	4,652,497	383,733	4,652,497
Percent of Plan Total	19.0%		39.0%		59.0%		79.0%		100.0%			
Estimated Phase III Carryover Savings	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Plan + Carryover	72,909	828,992	149,656	1,822,901	226,403	2,847,051	303,149	3,839,489	383,733	4,652,497	383,733	4,652,497
Percent of Plan Total	19.0%		39.0%		59.0%		79.0%		100.0%			
Percent Reduction from Baseline	0.52%		1.06%		1.61%		2.15%		2.72%			
Phase IV Target ¹											348,126	
Portfolio Percent of Phase IV Target	20.9%		43.0%		65.0%		87.1%		110.2%		110.2%	

¹ Phase IV Implementation Order Table 2: Final Phase IV Targets, by EDC (page 8).

Revised Energy Efficiency and Conservation Plan

MWh Saved for Consumption Reductions (Meter Level)	PY13		PY14		PY15		PY16		PY17		Total	
	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh	1st-Year MWh	Lifetime MWh
Baseline											14,085,512	
Residential Cumulative Savings	17,126	109,985	35,153	225,759	53,181	341,533	71,208	457,307	90,137	578,870	90,137	578,870
Low-Income Cumulative Savings	4,036	30,888	8,284	63,402	12,533	95,916	16,781	128,429	21,242	162,569	21,242	162,569
Commercial/Industrial, Small Cumulative	18,578	275,744	41,447	615,177	65,355	970,030	88,604	1,315,095	106,891	1,586,514	106,891	1,586,514
Commercial/Industrial, Large Cumulative	26,909	403,456	60,044	900,256	94,167	1,411,877	126,828	1,901,574	151,908	2,277,603	151,908	2,277,603
EE&C Plan Total Incremental Annual	66,649	820,074	78,280	984,521	80,307	1,014,761	78,186	983,050	66,756	803,151	370,178	4,605,556
Percent of Plan Total Annual	18.0%		21.1%		21.7%		21.1%		18.0%			
EE&C Plan Total Cumulative	66,649	820,074	144,929	1,804,594	225,236	2,819,355	303,422	3,802,405	370,178	4,605,556	370,178	4,605,556
Percent of Plan Total	18.0%		39.2%		60.8%		82.0%		100.0%			
Estimated Phase III Carryover Savings	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Plan + Carryover	66,649	820,074	144,929	1,804,594	225,236	2,819,355	303,422	3,802,405	370,178	4,605,556	370,178	4,605,556
Percent of Plan Total	18.0%		39.2%		60.8%		82.0%		100.0%			
Percent Reduction from Baseline	0.47%		1.03%		1.60%		2.15%		2.63%			
Phase IV Target ¹											348,126	
Portfolio Percent of Phase IV Target	19.1%		41.6%		64.7%		87.2%		106.3%		106.3%	

¹ Phase IV Implementation Order Table 2: Final Phase IV Targets, by EDC (page 8).

Table 3: Summary of Portfolio Energy and Demand Savings (MW)

MWh Saved for Consumption Reductions (Meter Level)	PY13		PY14		PY15		PY16		PY17		Total	
	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW
Baseline												2,518.000
Residential Cumulative Savings	2.299	2.299	4.718	4.718	7.138	7.138	9.557	9.557	12.098	12.098	12.098	12.098
Low-Income Cumulative Savings	0.667	0.667	1.370	1.370	2.072	2.072	2.774	2.774	3.512	3.512	3.512	3.512
Commercial/Industrial, Small Cumulative	3.832	3.832	8.550	8.550	13.481	13.481	18.277	18.277	22.049	22.049	22.049	22.049
Commercial/Industrial, Large Cumulative	5.492	5.492	12.254	12.254	19.218	19.218	25.883	25.883	31.002	31.002	31.002	31.002
EE&C Plan Total Incremental Annual	13.045	12.290	13.732	14.601	13.732	15.017	13.732	14.583	14.419	12.168	68.660	68.660
Percent of Plan Total Annual	19.0%		20.0%		20.0%		20.0%		21.0%			
EE&C Plan Total Cumulative	13.045	12.290	26.777	26.891	40.509	41.909	54.241	56.492	68.660	68.660	68.660	68.660
Percent of Plan Total	19.0%		39.0%		59.0%		79.0%		100.0%			
Estimated Phase III Carryover Savings	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Plan + Carryover	13.045	12.290	26.777	26.891	40.509	41.909	54.241	56.492	68.660	68.660	68.660	68.660
Percent of Plan Total	19.0%		39.0%		59.0%		79.0%		100.0%			
Percent Reduction from Baseline	0.52%		1.06%		1.61%		2.15%		2.73%			
Phase IV Target ¹											62.000	
Portfolio Percent of Phase IV Target	21.0%		43.2%		65.3%		87.5%		110.7%		110.7%	

¹ Phase IV Implementation Order Table 2: Final Phase IV Targets, by EDC (page 8).

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MWh Saved for Consumption Reductions (Meter Level)	PY13		PY14		PY15		PY16		PY17		Total	
	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW	1st-Year MW	Lifetime MW
Baseline											2,518.000	
Residential Cumulative Savings	2.151	2.151	4.416	4.416	6.681	6.681	8.945	8.945	11.323	11.323	11.323	11.323
Low-Income Cumulative Savings	0.473	0.473	0.971	0.971	1.468	1.468	1.966	1.966	2.489	2.489	2.489	2.489
Commercial/Industrial, Small Cumulative	3.832	3.832	8.550	8.550	13.481	13.481	18.277	18.277	22.049	22.049	22.049	22.049
Commercial/Industrial, Large Cumulative	5.492	5.492	12.254	12.254	19.218	19.218	25.883	25.883	31.002	31.002	31.002	31.002
EE&C Plan Total Incremental Annual	11.948	11.948	14.242	14.242	14.658	14.658	14.224	14.224	11.791	11.791	66.863	66.863
Percent of Plan Total Annual	17.9%		21.3%		21.9%		21.3%		17.6%			
EE&C Plan Total Cumulative	11.948	11.948	26.190	26.190	40.848	40.848	55.072	55.072	66.863	66.863	66.863	66.863
Percent of Plan Total	17.9%		39.2%		61.1%		82.4%		100.0%			
Estimated Phase III Carryover Savings	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Plan + Carryover	11.948	11.948	26.190	26.190	40.848	40.848	55.072	55.072	66.863	66.863	66.863	66.863
Percent of Plan Total	17.9%		39.2%		61.1%		82.4%		100.0%			
Percent Reduction from Baseline	0.47%		1.04%		1.62%		2.19%		2.66%			
Phase IV Target ¹											62.000	
Portfolio Percent of Phase IV Target	19.3%		42.2%		65.9%		88.8%		107.8%		107.8%	

¹ Phase IV Implementation Order Table 2: Final Phase IV Targets, by EDC (page 8).

Table 4: Summary of Portfolio Costs

Sector	PY13		PY14		PY15		PY16		PY17	
	\$000	%	\$000	%	\$000	%	\$000	%	\$000	%
Residential Portfolio Budget	2,810	15.8%	2,958	14.4%	2,958	14.1%	2,958	14.4%	3,106	17.4%
Residential Low-Income Portfolio Budget	2,832	16.0%	2,981	14.5%	2,981	14.2%	2,981	14.5%	3,130	17.5%
Commercial/Industrial Small Portfolio Budget	4,503	25.4%	5,543	27.0%	5,795	27.5%	5,635	27.4%	4,433	24.8%
Commercial/Industrial Large Portfolio Budget	6,343	35.7%	7,810	38.0%	8,043	38.2%	7,698	37.5%	5,912	33.1%
Common Costs	1,264	7.1%	1,264	6.1%	1,264	6.0%	1,264	6.2%	1,264	7.1%
Total Portfolio Budget	17,752	100.0%	20,556	100.0%	21,041	100.0%	20,537	100.0%	17,844	100.0%

Sector	PY13		PY14		PY15		PY16		PY17	
	\$000	%	\$000	%	\$000	%	\$000	%	\$000	%
Residential Portfolio Budget	2,759	15.5%	2,905	14.1%	2,905	13.8%	2,905	14.1%	3,050	17.1%
Residential Low-Income Portfolio Budget	2,912	16.4%	3,065	14.9%	3,065	14.6%	3,065	14.9%	3,219	18.0%
Commercial/Industrial Small Portfolio Budget	4,492	25.3%	5,529	26.9%	5,781	27.5%	5,621	27.4%	4,422	24.8%
Commercial/Industrial Large Portfolio Budget	6,326	35.6%	7,790	37.9%	8,023	38.1%	7,679	37.4%	5,896	33.0%
Common Costs	1,264	7.1%	1,264	6.2%	1,264	6.0%	1,264	6.2%	1,264	7.1%
Total Portfolio Budget	17,754	100.0%	20,554	100.0%	21,037	100.0%	20,534	100.0%	17,851	100.0%

Table 5: Program Summaries

	Program Name	Program Market	Program Two Sentence Summary	Program Years Operated	Lifetime Savings MWh	Lifetime Savings MW	Portfolio Savings	
							MWh %	MW %
Residential Portfolio Programs (REEP)								
	REEP Appliance Recycling	Market Rate Residential	Provides customer incentives to recycle listed inefficient appliances in order to remove them from the electric grid.	5	42,409	1.210	0.9%	1.8%
	REEP Downstream Incentives	Market Rate Residential	Energy efficiency rebates to offset costs of more energy efficient consumer products. Customer engagement is mail-in or on-line form-based rebate applications.	5	227,950	2.595	4.9%	3.8%
	REEP Midstream Incentives	Market Rate Residential	Energy efficiency rebates to offset costs of more energy efficient consumer products. Customer engagement is retail point-of-purchase and on-line instant rebates.	5	6,106	0.127	0.1%	0.2%
	REEP Upstream Incentives	Market Rate Residential	Energy efficiency rebates to offset costs of more energy efficient consumer products. The program provides incentives to efficient product manufacturers, reduced costs are passed down to retailers and end-users.	5	202,771	1.426	4.4%	2.1%
	Residential Behavioral Energy Efficiency	Market Rate Residential	Educates participants on electricity consumption to change household behavior leading to less electricity use.	5	99,400	6.740	2.1%	9.8%
	Low Income Energy Efficiency Program	Low Income Residential	Comprised of energy efficiency audits and the direct-installation of energy efficiency equipment at no cost to program participants.	5	194,744	2.494	4.2%	3.6%
	Low Income Behavioral Energy Efficiency	Low Income Residential	Provides educational messaging via electronic and paper mail tailored to the low-income sector. Educates participants on electricity consumption to change household behavior leading to less electricity use.	5	15,000	1.017	0.3%	1.5%
	Subtotal				788,380	15.609	16.9%	22.7%

	Program Name	Program Market	Program Two Sentence Summary	Program Years Operated	Lifetime Savings MWh	Lifetime Savings MW	Portfolio Savings	
							MWh %	MW %
Residential Portfolio Programs (REEP)								
	REEP Appliance Recycling	Market Rate Residential	Provides customer incentives to recycle listed inefficient appliances in order to remove them from the electric grid.	5	62,448	1.782	1.4%	2.7%
	REEP Downstream Incentives	Market Rate Residential	Energy efficiency rebates to offset costs of more energy efficient consumer products. Customer engagement is mail-in or on-line form- based rebate applications.	5	227,950	2.591	4.9%	3.9%
	REEP Midstream Incentives	Market Rate Residential	Energy efficiency rebates to offset costs of more energy efficient consumer products. Customer engagement is retail point-of-purchase and on-line instant rebates.	5	6,106	0.127	0.1%	0.2%
	REEP Upstream Incentives	Market Rate Residential	Energy efficiency rebates to offset costs of more energy efficient consumer products. The program provides incentives to efficient product manufacturers, reduced costs are passed down to retailers and end-users.	5	202,771	1.426	4.4%	2.1%
	Residential Behavioral Energy Efficiency	Market Rate Residential	Educates participants on electricity consumption to change household behavior leading to less electricity use.	5	79,595	5.397	1.7%	8.1%
	Low Income Energy Efficiency Program	Low Income Residential	Comprised of energy efficiency audits and the direct-installation of energy efficiency equipment at no cost to program participants.	5	153,259	1.858	3.3%	2.8%
	Low Income Behavioral Energy Efficiency	Low Income Residential	Provides educational messaging via electronic and paper mail tailored to the low-income sector. Educates participants on electricity consumption to change household behavior leading to less electricity use.	5	9,310	0.631	0.2%	0.9%
	Subtotal				741,438	13.812	16.1%	20.7%

Table 5: Program Summaries (continued)

	Program Name	Program Market	Program Two Sentence Summary	Program Years Operated	Lifetime Savings MWh	Lifetime Savings MW	Portfolio Savings	
							MWh %	MW %
Commercial/Industrial (C&I) Small Portfolio								
	Small C&I Direct-Install Program	C&I Customer <300 kW	Provides no cost energy efficient equipment to small business customers. Installation contractors implement program measures and measure installation services.	5	339,636	4.475	7.3%	6.5%
	Small C&I Downstream Incentives	C&I Customer <300 kW	Energy efficiency rebates to offset costs of more energy efficient lighting, refrigeration and mechanical system products. Customer engagement is mail-in or on-line form-based rebate applications.	5	748,145	8.590	16.1%	12.5%
	Small C&I Midstream Incentives	C&I Customer <300 kW	Incentives buy down the cost of energy efficient equipment facilitating distributor point-of-purchase and on-line instant rebates.	5	407,927	6.756	8.8%	9.8%
	Small C&I Virtual Commissioning	C&I Customer <300 kW	Program leverages advanced metering infrastructure's (AMI) advanced data analytics to identify and qualify customers with significant potential for no- or low-cost energy savings.	5	90,806	2.228	2.0%	3.2%
	Subtotal				1,586,514	22.049	34.1%	32.1%

	Program Name	Program Market	Program Two Sentence Summary	Program Years Operated	Lifetime Savings MWh	Lifetime Savings MW	Portfolio Savings	
							MWh %	MW %
Commercial/Industrial (C&I) Small Portfolio								
	Small C&I Direct-Install Program	C&I Customer <300 kW	Provides no cost energy efficient equipment to small business customers. Installation contractors implement program measures and measure installation services.	5	339,636	4.475	7.4%	6.7%
	Small C&I Downstream Incentives	C&I Customer <300 kW	Energy efficiency rebates to offset costs of more energy efficient lighting, refrigeration and mechanical system products. Customer engagement is mail-in or on-line form-based rebate applications.	5	748,145	8.590	16.2%	12.8%
	Small C&I Midstream Incentives	C&I Customer <300 kW	Incentives buy down the cost of energy efficient equipment facilitating distributor point-of-purchase and on-line instant rebates.	5	407,927	6.756	8.9%	10.1%
	Small C&I Virtual Commissioning	C&I Customer <300 kW	Program leverages advanced metering infrastructure's (AMI) advanced data analytics to identify and qualify customers with significant potential for no- or low-cost energy savings.	5	90,806	2.228	2.0%	3.3%
	Subtotal				1,586,514	22.049	34.4%	33.0%

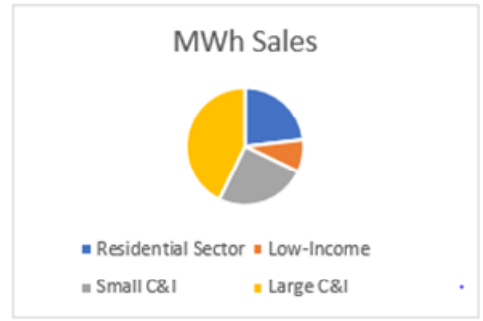
Table 5: Program Summaries (continued)

	Program Name	Program Market	Program Two Sentence Summary	Program Years Operated	Lifetime Savings MWh	Lifetime Savings MW	Portfolio Savings	
							MWh %	MW %
Commercial/Industrial Large Portfolio								
	Large C&I Downstream Incentives	C&I Customer ≥300 kW	Energy efficiency rebates to offset costs of more energy efficient lighting, refrigeration and mechanical system products. Customer engagement is mail-in or on-line form- based rebate applications.	5	1,838,137	22.514	39.5%	32.8%
	Large C&I Midstream	C&I Customer ≥300 kW	Incentives buy down the cost of energy	5	378,929	7.002	8.1%	10.2%
	Large C&I Virtual Commissioning	C&I Customer ≥300 kW	Program leverages advanced metering infrastructure's (AMI) advanced data analytics to identify and qualify customers with significant potential for no- or low-cost energy savings.	5	60,537	1.485	1.3%	2.2%
	Subtotal				2,277,603	31.002	49.0%	45.2%
Plan Total					4,652,497	68.660	100.0%	100.0%

	Program Name	Program Market	Program Two Sentence Summary	Program Years Operated	Lifetime Savings MWh	Lifetime Savings MW	Portfolio Savings	
							MWh %	MW %
Commercial/Industrial Large Portfolio								
	Large C&I Downstream Incentives	C&I Customer ≥300 kW	Energy efficiency rebates to offset costs of more energy efficient lighting, refrigeration and mechanical system products. Customer engagement is mail-in or on-line form- based rebate applications.	5	1,838,137	22.514	39.9%	33.7%
	Large C&I Midstream Incentives	C&I Customer ≥300 kW	Incentives buy down the cost of energy efficient equipment facilitating distributor point-of-purchase and on-line instant rebates.	5	378,929	7.002	8.2%	10.5%
	Large C&I Virtual Commissioning	C&I Customer ≥300 kW	Program leverages advanced metering infrastructure's (AMI) advanced data analytics to identify and qualify customers with significant potential for no- or low-cost energy savings.	5	60,537	1.485	1.3%	2.2%
	Subtotal				2,277,603	31.002	49.5%	46.4%
Plan Total					4,605,556	66.863	100.0%	100.0%

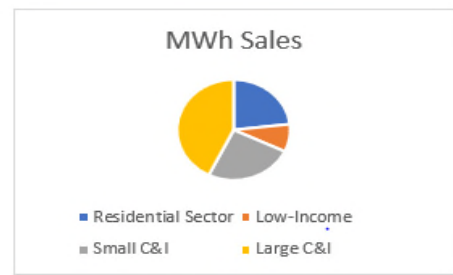
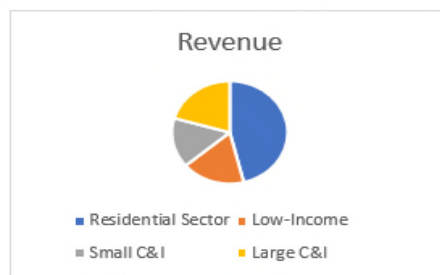
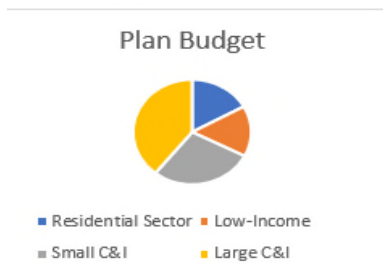
Table 6: Budget and Parity Analysis Summary

Customer Sector	Phase IV EE&C Budget	% of Total EE&C Budget	% EDC Annual Revenue	% EDC MWh Sales
Residential Sector	16,631,646	17.4%	46.1%	23.2%
Low-Income Sector	14,563,765	15.2%	17.7%	8.9%
Residential Subtotal	31,195,411	32.6%	63.8%	32.1%
Commercial/Industrial Small Sector	26,958,369	28.1%	15.6%	25.2%
Commercial/Industrial Large Sector	37,621,385	39.3%	20.5%	42.7%
Nonresidential Subtotal	64,579,754	67.4%	36.2%	67.9%
All Classes	95,775,165	100.0%	100.0%	100.0%
Other Expenditures				
Experimental Equipment Pilot ¹	1,954,595			
EDC Total	97,729,760			



¹ Per Phase IV EE&C Plan Template Section 9.1.4 no more than two percent of funds shall be allocated for experimental equipment or devices.

Customer Sector	Phase IV EE&C Budget	% of Total EE&C Budget	% EDC Annual Revenue	% EDC MWh Sales
Residential Sector	16,208,647	16.9%	46.1%	23.2%
Low-Income Sector	14,986,764	15.6%	17.7%	8.9%
Residential Subtotal	31,195,411	32.6%	63.8%	32.1%
Commercial/Industrial Small Sector	26,958,369	28.1%	15.6%	25.2%
Commercial/Industrial Large Sector	37,621,385	39.3%	20.5%	42.7%
Nonresidential Subtotal	64,579,754	67.4%	36.2%	67.9%
All Classes	95,775,165	100.0%	100.0%	100.0%
Other Expenditures				
Experimental Equipment Pilot ¹	1,954,595			
EDC Total	97,729,760			



¹ Per Phase IV EE&C Plan Template Section 9.1.4 no more than two percent of funds shall be allocated for experimental equipment or devices.

Table 7A: Eligible Measures – Residential

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
Advanced Power Strip (Tier 1)	Unit	N	APS master controlled TRM2.5.2	\$18.40	5	\$8.00	\$12.00
Air Sealing	Home	Y	Electric space heating TRM 2.6.1	\$888.00	15	\$710.00	\$1,065.60
Basement Wall Insulation - Electric Heat (800 sf - ASHP)	Home	Y	Electric Space Heating, R-19, TRM 2.6.4	\$1,632.00	15	\$1,700.00	\$2,550.00
Ceiling Insulation - Electric Heat (R19-R60 1000 st - Avg. Electric)	Home	Y	Electric Space Heating, R-60, TRM 2.6.3	\$2,610.00	15	\$2,100.00	\$3,125.00
Connected Thermostat - Electric Heat (Down Stream)	Unit	N	Electric Space Heating, ENERGY STAR Certified	\$176.75	11	\$80.00	\$120.00
Connected Thermostat- Electric Heat (Direct Install)	Unit	Y	Electric Space Heating, ENERGY STAR Certified	\$234.33	11	\$185.00	\$285.00
Furnace Circulation Fan - High Efficiency	Furnace	N	ECM Fan Motor, Variable Speed TRM 2.2.3	\$311.06	15	\$125.00	\$185.00
Dehumidifier Retirement	Unit	N	Running dehumidifier	\$35.00	4	\$25.00	\$42.00
Ductless Mini-Split Heat Pump (20 SEER / 9.6 hspf) Midstream	Unit	N	>20 SEER and 9.6 HSPF	\$529.62	15	\$125.00	\$190.00
Ductless Mini-Split Heat Pump (20 SEER / 9.6 hspf) Direct Install	Unit	Y	>20 SEER and 9.6 HSPF	\$2,856.64	15	\$2,285.00	\$3,425.00
Electric Hot Water Kit (SF or MF, Mail-Out)	Kit	Y	Program Provided	\$47.75	8	\$35.00	\$60.00
Electric Hot Water Kit (SF or MF, Verified Install)	Kit	Y	Program Provided	\$47.75	8	\$35.00	\$60.00
Air Source Heat Pump - 16 SEER / 9.0 HSPF (Base 14 SEER, 8.2 HSPF)	Unit	Y	≥16 SEER and ≥9.0 HSPF	\$1,619.15	15	\$1,295.00	\$1,945.00
Air Source Heat Pump - 17 SEER / 9.0 HSPF (Base 14 SEER, 8.2 HSPF)	Unit	Y	≥17 SEER and ≥9.0 HSPF	\$1,619.15	15	\$1,295.00	\$1,945.00
Air Source Heat Pump - 17.5 SEER / 9.7 HSPF (Base 14 SEER, 8.2 HSPF)	Unit	Y	≥17.5 SEER and ≥9.7 HSPF	\$1,619.15	15	\$1,295.00	\$1,945.00
Air Source Heat Pump - 18 SEER / 9.7 HSPF (Base 14 SEER, 8.2 HSPF)	Ton	N	≥18 SEER and ≥9.7 HSPF	\$474.41	15	\$120.00	\$180.00
Air Source Heat Pump - 19 SEER / 9.7 HSPF (Base 14 SEER, 8.2 HSPF)	Ton	N	≥19 SEER and ≥9.7 HSPF	\$474.41	15	\$120.00	\$180.00
Air Source Heat Pump - 20 SEER / 10 HSPF (Base 14 SEER, 8.2 HSPF)	Ton	N	≥20 SEER and ≥10.0 HSPF	\$503.81	15	\$140.00	\$210.00
Air Source Heat Pump - 21 SEER / 10 HSPF (Base 14 SEER, 8.2 HSPF)	Ton	N	≥21 SEER and ≥10.0 HSPF	\$533.21	15	\$140.00	\$210.00
Air Source Heat Pump - 22 SEER / 11 HSPF (Base 14 SEER, 8.2 HSPF)	Ton	N	≥22 SEER and ≥11.0 HSPF	\$614.03	15	\$160.00	\$240.00
Central Air Conditioner SEER 16 (Base 13 SEER)	Unit	Y	≥16 SEER	\$2,766.63	15	\$2,210.00	\$3,325.00
Central Air Conditioner SEER 17 (Base 13 SEER)	Unit	Y	≥17 SEER	\$2,766.63	15	\$2,210.00	\$3,325.00
Central Air Conditioner SEER 18 (Base 13 SEER)	Ton	N	≥18 SEER	\$233.59	15	\$100.00	\$150.00
Central Air Conditioner SEER 19 (Base 13 SEER)	Ton	N	≥19 SEER	\$308.38	15	\$100.00	\$150.00
Central Air Conditioner SEER 20 (Base 13 SEER)	Ton	N	≥20 SEER	\$358.46	15	\$120.00	\$180.00
Central Air Conditioner SEER 21 (Base 13 SEER)	Ton	N	≥21 SEER	\$408.54	15	\$120.00	\$180.00
Central Air Conditioner SEER 22 (Base 13 SEER)	Ton	N	≥22 SEER	\$458.63	15	\$120.00	\$180.00
Central Air Conditioner SEER 23 (Base 13 SEER)	Ton	N	≥23 SEER	\$508.71	15	\$120.00	\$180.00
ENERGY STAR Dehumidifiers	Ton	N	ENERGY STAR	\$10.70	12	\$20.00	\$30.00
ENERGY STAR Refrigerator Manual Defrost	Refrigerator	N	ENERGY STAR	\$67.69	14	\$28.00	\$42.00
ENERGY STAR Refrigerator Partial Automatic Defrost	Refrigerator	N	ENERGY STAR	\$67.69	14	\$28.00	\$42.00
ENERGY STAR Refrigerator Top mount freezer without door ice	Refrigerator	N	ENERGY STAR	\$41.56	14	\$28.00	\$42.00
ENERGY STAR Refrigerator Side mount freezer without door ice	Refrigerator	N	ENERGY STAR	\$56.63	14	\$28.00	\$42.00
ENERGY STAR Refrigerator Side mount freezer with door ice	Refrigerator	N	ENERGY STAR	\$165.46	14	\$35.00	\$60.00
ENERGY STAR Refrigerator bottom mount freezer without door ice	Refrigerator	N	ENERGY STAR	\$50.47	14	\$35.00	\$60.00
ENERGY STAR Refrigerator Bottom mount freezer with door ice	Refrigerator	N	ENERGY STAR	\$50.47	14	\$35.00	\$60.00
LED A-Line 11W (MF common area, exterior)	Lamp	Y	Replaces T8, Type A	\$2.89	15	\$1.50	\$2.25
LED A-Line 11W (MF interior, residential)	Lamp	Y	Base 45 lumens/Watt	\$2.89	15	\$1.50	\$2.25
Exterior Wall Insulation - Electric Heat (1000 sf R5- to R11)	Home	Y	R-11 Minimum, TRM 2.6.3	\$2,590.00	15	\$2,075.00	\$3,110.00
Floor Insulation - Electric Heat (R5 to R11, 1000 sf)	Home	Y	R-11 Minimum, TRM 2.6.3	\$1,180.00	15	\$945.00	\$1,415.00

Table 7A: Eligible Measures – Residential (continued)

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
Freezer Recycling	Freezer	N	Functioning freezer 10-30 cubic feet	\$50.00	4	\$35.00	\$60.00
Freezer Replacement	Freezer	Y	Functioning freezer 10-30 cubic feet	\$493.00	5	\$35.00	\$60.00
Gas Hot Water Kit (SF or MF, Mail-Out)	Kit	Y	Program Provided	\$29.77	8	\$22.00	\$35.00
Gas Hot Water Kit (SF or MF, Verified Install)	Kit	Y	Program Provided	\$29.77	8	\$22.00	\$35.00
Heat Pump Water Heater	Heater	Y	ENERGY STAR Criteria Version 3.2 TRM 2.3.1	\$650.96	10	\$240.00	\$360.00
Home Energy Report - Market Rate	Participant	N	Market Rate Treatment Group	\$74.25	2	\$0.00	\$0.00
Home Energy Report - Low Income	Participant	Y	Low Income Treatment Group	\$46.60	2	\$0.00	\$0.00
LED Parking Garage and Canopy Fixtures 45W	Fixture	Y	MF Common area - DesignLights QPL	\$157.52	15	\$125.00	\$200.00
LED Replacement Lamps (Tubes)-2' (Type A)	Lamp	Y	MF Common area - DesignLights QPL	\$10.06	7	\$7.00	\$10.75
LED Replacement Lamps (Tubes)-4' (Type A)	Lamp	Y	MF Common area - DesignLights QPL	\$10.06	7	\$7.00	\$10.75
LED Decorative 4.5W	Lamp	N	Base 45 lumens/Watt	\$2.25	15	\$1.25	\$2.40
LED Globe/Specialty 5W	Lamp	N	Base 45 lumens/Watt	\$2.50	15	\$1.25	\$2.40
LED Reflector 6.5W	Lamp	N	Base 45 lumens/Watt	\$3.50	15	\$1.25	\$2.40
LED Reflector 7.2W	Lamp	N	Base 45 lumens/Watt	\$3.50	15	\$1.25	\$2.40
LED Reflector 7.5	Lamp	N	Base 45 lumens/Watt	\$3.00	15	\$1.25	\$2.40
LED Reflector 9W	Lamp	N	Base 45 lumens/Watt	\$3.50	15	\$1.25	\$2.40
LED Reflector 9.5	Lamp	N	Base 45 lumens/Watt	\$3.62	15	\$1.25	\$2.40
LED Reflector 11W	Lamp	N	Base 45 lumens/Watt	\$3.50	15	\$1.25	\$2.40
LED Downlight Retrofit	Lamp	N	Base 45 lumens/Watt	\$5.00	15	\$1.25	\$2.40
Middle School Kit	Kit	Y	Program Provided	\$52.24	10	\$40.00	\$65.00
New Homes-15% or higher better than code-Electric Heat	Home	N	PA UCC and IECC 2015 + 15%	\$1,929.63	15	\$640.00	\$960.00
New Homes-15% or higher better than code-Gas Heat	Home	N	PA UCC and IECC 2015 + 15%	\$1,929.63	15	\$280.00	\$420.00
Primary School Kit	Kit	Y	Program Provided	\$22.99	5	\$18.00	\$28.00
Reflector Lamps (average) - Mini-Base 5.5W	Lamp	N	Base 45 lumens/Watt	\$5.48	15	\$1.60	\$2.40
Reflector Lamps (average) - Globe Average 4.5W	Lamp	N	Base 45 lumens/Watt	\$5.48	15	\$1.60	\$2.40
Reflector Lamps (average) - Reflectors Average 11.3W	Lamp	N	Base 45 lumens/Watt	\$5.48	15	\$1.60	\$2.40
Refrigerator Recycling - Retirement	Refrigerator	N	Functioning refrigerator 10-30 cubic feet	\$50.00	5	\$40.00	\$60.00
Refrigerator Recycling - Replacement	Refrigerator	N	Functioning refrigerator 10-30 cubic feet	\$50.00	6	\$40.00	\$60.00
Refrigerator Recycling - Replacement	Refrigerator	Y	Functioning refrigerator 10-30 cubic feet	\$641.00	6	\$510.00	\$770.00
Room AC Recycling - Retirement	Rm A/C	N	Functioning room AC	\$100.00	3	\$40.00	\$60.00
Room AC Recycling w/Replacement	Rm A/C	Y	Functioning room AC	\$479.00	9	\$385.00	\$575.00
Variable speed pool pump	Pump	N	Variable speed, qualifying products listed	\$420.76	10	\$200.00	\$420.00
Weatherstrip 10'	Roll	Y	Electric Space Heating	\$5.99	15	\$3.30	\$5.00
LED, A-Line 11W (MF Common Area, exterior)	Lamp	Y	Base 45 lumens/Watt	\$2.30	15	\$1.40	\$2.10

Table 7B: Eligible Measures – Nonresidential

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
> 1/6 and < 3/4 hp ECM Pump for DHW	Pump	No	ECM Circulator Pump	\$1,112.01	15	\$200.00
> 1/6 and < 3/4 hp ECM Pump for Heating	Pump	No	ECM Circulator Pump	\$385.57	15	\$200.00
≤ 1/6 hp ECM Pump for DHW	Pump	No	ECM Circulator Pump	\$711.98	15	\$110.00
≤ 1/6 hp ECM Pump for Heating	Pump	No	ECM Circulator Pump	\$292.94	15	\$110.00
≥ 3/4 and < 3 hp ECM Pump for DHW	Pump	No	ECM Circulator Pump	\$1,646.39	15	\$400.00
≥ 3/4 and < 3 hp ECM Pump for Heating	Pump	No	ECM Circulator Pump	\$627.31	15	\$400.00
Adding Doors to Existing Refrigerated Display Cases	Door	No	No Sweat Doors	\$104.20	12	\$50.00
Air Compressor VFD	Compressor HP	No	<200 HP	\$145.00	13	\$75.00
Air-Cooled Refrigeration Condenser	Ton	No	85 Btu/hr of heat rejection capacity per watt;	\$254.00	15	\$115.00
Air-Cooled Chillers >50 Tons, < 150 tons, Min 10.1 EER 15 IPLV	Ton	No	Air-Cooled Chillers >50 Tons, < 150 tons, Min	\$40.10	20	\$25.00
Air-Cooled Chillers >50 Tons, < 150 tons, Min 10.1 EER 16 IPLV	Ton	No	Air-Cooled Chillers >50 Tons, < 150 tons, Min	\$85.00	20	\$50.00
Air-Cooled Chillers >50 Tons, < 150 tons, Min 10.1 EER 18 IPLV	Ton	No	Air-Cooled Chillers >50 Tons, < 150 tons, Min	\$146.00	20	\$90.00
Air-Cooled Chillers Greater than 150 tons, Min 10.1 EER 15 IPLV	Ton	No	Air-Cooled Chillers Greater than 150 tons, Mi	\$36.49	20	\$25.00
Air-Cooled Chillers Greater than 150 tons, Min 10.1 EER 16 IPLV	Ton	No	Air-Cooled Chillers Greater than 150 tons, Mi	\$74.93	20	\$50.00
Air-Cooled Chillers Greater than 150 tons, Min 10.1 EER 18 IPLV	Ton	No	Air-Cooled Chillers Greater than 150 tons, Mi	\$131.72	20	\$90.00
Air-Cooled Chillers Less than 50 tons, Min 10.1 EER 15 IPLV	Ton	No	Air-Cooled Chillers Less than 50 tons, Min 10	\$55.11	20	\$25.00
Air-Cooled Chillers Less than 50 tons, Min 10.1 EER 16 IPLV	Ton	No	Air-Cooled Chillers Less than 50 tons, Min 10	\$146.29	20	\$50.00
Air-Cooled Chillers Less than 50 tons, Min 10.1 EER 18 IPLV	Ton	No	Air-Cooled Chillers Less than 50 tons, Min 10	\$207.41	20	\$90.00
Anti sweat heat controls	Controller	No	On/Off or Micro Pulse	\$1,051.00	12	\$137.78
Auto Closer for Coolers	Door	No	Close within 1"	\$260.00	8	\$247.00
Auto Closers	Closer	No	Close within 1"	\$260.00	8	\$50.00
Combined Heat and Power	kWh	No	N/A	\$798,367.50	15	\$408,000.00
Controls: Anti-Sweat Heater Controls	Controller	No	On/Off or Micro Pulse	\$1,051.00	12	\$200.00
Controls: Evaporator Coil Defrost Control	Controller	No	Frost detection	\$210.00	10	\$75.00
Controls: Evaporator Fan Controllers .	HP Controlled	No	On/Off Control tied to Refrigerant Flow	\$563.00	15	\$60.00
Controls: Floating Head Pressure Controls	HP	No	SCT Saturated Condensing Temperature ≤ 70	\$275.00	15	\$150.00
Custom Cooling - Downstream Small	kWh	No	Average Small Building Types	\$81,110.95	15	\$53,051.28
Custom Cooling - Downstream Large	kWh	No	Average Large Building Types	\$434,140.59	15	\$232,952.00
Custom Cooling - VCx Average Small	Project	No	VCx - Custom Average Small Cooling	\$6,790.00	15	\$6,790.00
Custom Cooling - VCx Average Large	Project	No	VCx - Custom Average LargeCooling	\$12,028.00	15	\$12,028.00
Custom Exterior Controls	kWh	No	N/A	\$1,142.90	15	\$716.12
Custom Exterior Controls	kWh	No	N/A	\$6,117.27	15	\$3,494.28
Custom Exterior New Construction	kWh	No	Above Code	\$10,286.06	15	\$6,445.07
Custom Exterior New Construction	kWh	No	N/A	\$55,055.41	15	\$31,448.52
Custom Interior Controls	kWh	No	N/A	\$68,037.54	15	\$74,104.23
Custom Interior New Construction	kWh	No	Above Code	\$114,403.74	15	\$167,084.75
Custom Interior New Construction	kWh	No	N/A	\$612,337.84	15	\$608,004.71
Custom Other - Downstream Small	kWh	No	N/A	\$93,830.47	15	\$35,542.90
Custom Other - Downstream Large	kWh	No	N/A	\$502,220.88	15	\$66,250.66

Table 7B: Eligible Measures – Nonresidential (continued)

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
Custom Process - Down Stream Small	kWh	No	N/A	\$21,818.00	15	\$7,161.19	
Custom Process - Downstream Large	kWh	No	N/A	\$116,779.30	15	\$25,261.23	
Custom Refrigeration - Downstream Small	kWh	No	N/A	\$25,688.07	15	\$9,548.26	
Custom Refrigeration - Downstream Large	kWh	No	N/A	\$137,493.58	15	\$34,004.35	
Custom Ventilation - Downstream Small	kWh	No	N/A	\$9,446.65	15	\$18,833.45	
Custom Ventilation - Downstream Large	kWh	No	N/A	\$50,562.54	15	\$81,533.20	
Decorative, Globe, Screw-based 1050-1300 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Globe, Screw-based 250-309 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Globe, Screw-based 310-349 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Globe, Screw-based 350-499 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Globe, Screw-based 500-574 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Globe, Screw-based 500-574 lumens	Lamp	No	ENERGYSTAR Listed Product	\$6.17	15	\$6.17	
Decorative, Globe, Screw-based 575-649 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Globe, Screw-based 650-749 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Globe, Screw-based 750-1049 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.05	15	\$1.00	
Decorative, Non-Globe, Screw-based 150-299 lumens	Lamp	No	ENERGYSTAR Listed Product	\$2.86	15	\$1.00	
Decorative, Non-Globe, Screw-based 300-309 lumens	Lamp	No	ENERGYSTAR Listed Product	\$2.86	15	\$1.00	
Decorative, Non-Globe, Screw-based 300-309 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.98	15	\$3.98	
Decorative, Non-Globe, Screw-based 310-499 lumens	Lamp	No	ENERGYSTAR Listed Product	\$2.86	15	\$1.00	
Decorative, Non-Globe, Screw-based 500-699 lumens	Lamp	No	ENERGYSTAR Listed Product	\$2.86	15	\$1.00	
Decorative, Non-Globe, Screw-based 90-149 lumens	Lamp	No	ENERGYSTAR Listed Product	\$2.86	15	\$1.00	
Door Gaskets for Walk-in and Reach-in Coolers and Freezers	Door	No	Must apply to entire perimeter	\$90.00	4	\$30.00	
Ductless Mini-Split Heat Pump - 16 SEER	Ton	No	Ductless Mini-Split Heat Pump - 16 SEER	\$90.52	15	\$50 - \$250	
Ductless Mini-Split Heat Pump - 19 SEER	Ton	No	Ductless Mini-Split Heat Pump - 19 SEER	\$189.28	15	\$50 - \$250	
Ductless Mini-Split Heat Pump - 22 SEER	Ton	No	Ductless Mini-Split Heat Pump - 22 SEER	\$366.33	15	\$50 - \$250	
ECM motor for walk in freezer or cooler	Motor	No	ECM motor	\$295.84	15	\$50.00	
ECM motor for walk in freezer or cooler	Motor	No	ECM motor	\$295.84	15	\$118.04	
ECM motor for walk in freezer or cooler	Motor	No	ECM Motor	\$295.84	15	\$145.00	
ECM motor of reach in cases	Motor	No	ECM motor	\$295.84	15	\$50.00	
ECM motor of reach in cases	Motor	No	ECM motor	\$295.84	15	\$102.89	
ECM motor of reach in cases	Motor	No	ECM Motor	\$295.84	15	\$145.00	
Efficient Combination Oven <15 pans	unit	No	Energy Star or FSTC Qualified	\$2,512.00	12	\$2,000.00	
Efficient Combination Oven ≥ 28 pans	unit	No	Energy Star or FSTC Qualified	\$2,512.00	12	\$2,000.00	
Efficient Combination Oven ≥15,<28 pans	unit	No	Energy Star or FSTC Qualified	\$2,512.00	12	\$2,000.00	
Efficient Commercial Convection Oven Full size	unit	No	Energy Star or FSTC Qualified	\$374.00	12	\$325.00	
Efficient Commercial Convection Oven Half size	unit	No	Energy Star or FSTC Qualified	\$559.00	12	\$325.00	
Efficient commercial dishwasher Multi Tank Conveyor High Temperature	unit	No	Energy Star or FSTC Qualified	\$1,159.00	10	\$1,850.00	
Efficient commercial dishwasher Multi Tank Conveyor Low Temperature	unit	No	Energy Star or FSTC Qualified	\$2,035.00	10	\$1,850.00	
Efficient commercial dishwasher Pot, Pan, and Utensil High Temperature	unit	No	Energy Star or FSTC Qualified	\$2,044.00	10	\$300.00	

Table 7B: Eligible Measures – Nonresidential (continued)

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
Efficient commercial dishwasher Single Tank Conveyor High Temperature	unit	No	Energy Star or FSTC Qualified	\$2,450.00	10	\$875.00	
Efficient commercial dishwasher Single Tank Conveyor Low Temperature	unit	No	Energy Star or FSTC Qualified	\$2,035.00	10	\$1,325.00	
Efficient commercial dishwasher Stationary Single Tank Door High Temperature	unit	No	Energy Star or FSTC Qualified	\$920.00	10	\$875.00	
Efficient commercial dishwasher Stationary Single Tank Door Low Temperature	unit	No	Energy Star or FSTC Qualified	\$2,035.00	10	\$750.00	
Efficient commercial dishwasher Stationary Single Tank Door Low Temperature	unit	No	Energy Star or FSTC Qualified	\$2,035.00	10	\$750.00	
Efficient commercial dishwasher Under Counter High Temperature	unit	No	Energy Star or FSTC Qualified	\$243.00	10	\$200.00	
Efficient commercial dishwasher Under Counter Low Temperature	unit	No	Energy Star or FSTC Qualified	\$220.00	10	\$200.00	
Efficient Commercial Fryer Large Vat	unit	No	Energy Star or FSTC Qualified	\$299.00	12	\$225.00	
Efficient Commercial Fryer Standard	unit	No	Energy Star or FSTC Qualified	\$1,777.00	12	\$225.00	
Efficient Commercial Glass Door Freezers less than 15 cu. ft.	unit	No	Energy Star or FSTC Qualified	\$150.00	12	\$100.00	
Efficient Commercial Glass Door Freezers 15 to 30 cu. ft.	unit	No	Energy Star or FSTC Qualified	\$400.00	12	\$125.00	
Efficient Commercial Glass Door Freezers 31 to 50 cu. ft.	unit	No	Energy Star or FSTC Qualified	\$550.00	12	\$200.00	
Efficient Commercial Glass Door Freezers more than 50 cu.ft.	unit	No	Energy Star or FSTC Qualified	\$700.00	12	\$250.00	
Efficient Commercial Glass Door Refrigerators less than 15 cu. ft.	unit	No	Energy Star or FSTC Qualified	\$250.00	12	\$100.00	
Efficient Commercial Glass Door Refrigerators 15 to 30 cu. ft.	unit	No	Energy Star or FSTC Qualified	\$500.00	12	\$125.00	
Efficient Commercial Glass Door Refrigerators 31 to 50 cu. ft.	unit	No	Energy Star or FSTC Qualified	\$750.00	12	\$175.00	
Efficient Commercial Glass Door Refrigerators more than 50 cu. ft	unit	No	Energy Star or FSTC Qualified	\$900.00	12	\$225.00	
Efficient Commercial Griddle	unit	No	Energy Star or FSTC Qualified	\$950.00	12	\$350.00	
Efficient Commercial Hot Food Holding Cabinet Full Size	unit	No	Energy Star or FSTC Qualified	\$895.00	12	\$675.00	
Efficient Commercial Hot Food Holding Cabinet Half Size	unit	No	Energy Star or FSTC Qualified	\$421.00	12	\$350.00	
Efficient Commercial Solid Door Freezers (< 15 cu ft)	unit	No	Energy Star or FSTC Qualified	\$150.00	12	\$100.00	
Efficient Commercial Solid Door Freezers (> 50 cu ft)	unit	No	Energy Star or FSTC Qualified	\$700.00	12	\$225.00	
Efficient Commercial Solid Door Freezers (15 - 30 cu ft)	unit	No	Energy Star or FSTC Qualified	\$400.00	12	\$125.00	
Efficient Commercial Solid Door Freezers (30 - 50 cu ft)	unit	No	Energy Star or FSTC Qualified	\$550.00	12	\$175.00	
Efficient Commercial Solid Door Refrigerators (< 15 cu ft)	unit	No	Energy Star or FSTC Qualified	\$250.00	12	\$100.00	
Efficient Commercial Solid Door Refrigerators (> 50 cu ft)	unit	No	Energy Star or FSTC Qualified	\$900.00	12	\$225.00	
Efficient Commercial Solid Door Refrigerators (15 - 30 cu ft)	unit	No	Energy Star or FSTC Qualified	\$500.00	12	\$125.00	
Efficient Commercial Solid Door Refrigerators (30 - 50 cu ft)	unit	No	Energy Star or FSTC Qualified	\$750.00	12	\$175.00	
Efficient Electric Steam Cooker	Unit	No	Energy Star or FSTC Qualified	\$2,630.10	12	\$2,000.00	
Efficient Ice Machines Batch Type - self contained	Unit	No	Energy Star or FSTC Qualified	\$186.11	8	\$350.00	
Efficient Ice Machines Batch Type - Ice making head	Unit	No	Energy Star or FSTC Qualified	\$311.25	8	\$350.00	
Efficient Ice Machines Batch Type - remote condensing	Unit	No	Energy Star or FSTC Qualified	\$476.72	8	\$350.00	
Efficient Ice Machines Continuous Type - ice making head	Unit	No	Energy Star or FSTC Qualified	\$467.05	8	\$350.00	
Efficient Ice Machines Continuous Type - remote condensing	Unit	No	Energy Star or FSTC Qualified	\$541.11	8	\$350.00	
Efficient Ice Machines Continuous Type - self contained	Unit	No	Energy Star or FSTC Qualified	\$285.43	8	\$350.00	
Exit Sign Retrofit	Sign	No	ENERGYSTAR Listed Product	\$55.25	15	\$55.25	
Heat Pump Water Heaters	Unit	No	Energy Star Qualified	\$650.96	10	\$500.00	
High Efficiency Pumps 1 ≤ HP < 3, Constant Speed	HP	No	PEI <0.96	\$119.88	13	\$25.00	
High Efficiency Pumps 1 ≤ HP < 3, Variable Speed	HP	No	PEI <0.49	\$127.09	13	\$25.00	

Table 7B: Eligible Measures – Nonresidential (continued)

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
High Efficiency Pumps 3 ≤ HP ≤ 50, Constant Speed	HP	No	PEI <0.96	\$29.50	13	\$25.00	
High Efficiency Pumps 3 ≤ HP ≤ 50, Variable Speed	HP	No	PEI <0.49	\$31.33	13	\$25.00	
High Efficiency Pumps 50 < HP ≤ 200, Constant Speed	HP	No	PEI <0.96	\$8.12	13	\$4.00	
High Efficiency Pumps 50 < HP ≤ 200, Variable Speed	HP	No	PEI <0.49	\$8.04	13	\$4.00	
High-Efficiency Evaporator Fan Motors for Walk-Ins/Reach-In Refrigerated Ca	Motor	No	ECM Motor	\$342.69	15	\$50.00	
High-Efficiency Refrigeration/Freezer Cases	Cubic Foot	No	ENERGYSTAR Listed Product	\$32.58	12	\$10.00	
Insulation on suction pipes	Linear Ft	No	Thickness of 3/4" for cooler, 1" for freezer	\$8.88	11	\$2.55	
LED 2' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$10.06	15	\$2.50	
LED 2' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$13.31	15	\$2.50	
LED 3' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$10.06	15	\$2.50	
LED 4' Interior Linear Strip Fixture or Retrofit Kit	Fixture	No	DesignLights Consortium Listed Product	\$122.27	15	\$30.24	
LED 4' Interior Linear Strip Fixture or Retrofit Kit	Fixture	No	DesignLights Consortium Listed Product	\$185.11	15	\$30.24	
LED 4' Interior Linear Strip Fixture or Retrofit Kit	Fixture	No	DesignLights Consortium Listed Product	\$122.27	15	\$18.00	
LED 4' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$10.06	15	\$3.50	
LED 4' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$13.31	15	\$9.30	
LED 4' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$13.31	15	\$3.50	
LED 8' Interior Linear Strip Fixture or Retrofit Kit	Fixture	No	DesignLights Consortium Listed Product	\$185.11	15	\$35.00	
LED 8' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$12.22	15	\$7.00	
LED 8' Linear Replacement Lamp	Lamp	No	DesignLights Consortium Listed Product	\$15.47	15	\$7.00	
LED Display Case Lighting	Door	No	DesignLights Consortium Listed Product	\$51.07	8	\$15.00	
LED Exit Sign	Sign	No	ENERGYSTAR Listed Product	\$55.25	15	\$20.00	
LED Exterior Area Lighting 0-49 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$340.65	15	\$72.52	
LED Exterior Area Lighting 0-49 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$340.65	15	\$35.00	
LED Exterior Area Lighting 1,000 watt HID lamp	Fixture	No	DesignLights Consortium Listed Product	\$432.77	15	\$50.00	
LED Exterior Area Lighting 100 watt HID lamp	Fixture	No	DesignLights Consortium Listed Product	\$193.27	15	\$70.00	
LED Exterior Area Lighting 110-149 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$497.77	15	\$230.18	
LED Exterior Area Lighting 110-149 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$497.77	15	\$70.00	
LED Exterior Area Lighting 150-191 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$497.77	15	\$80.00	
LED Exterior Area Lighting 175 watt HID lamp	Fixture	No	DesignLights Consortium Listed Product	\$380.05	15	\$80.00	
LED Exterior Area Lighting 192-224 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$497.77	15	\$100.00	
LED Exterior Area Lighting 225-264 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$497.77	15	\$125.00	
LED Exterior Area Lighting 250 watt HID lamp	Fixture	No	DesignLights Consortium Listed Product	\$380.05	15	\$100.00	
LED Exterior Area Lighting 265-499 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$497.77	15	\$150.00	
LED Exterior Area Lighting 400 watt HID lamp	Fixture	No	DesignLights Consortium Listed Product	\$432.77	15	\$125.00	
LED Exterior Area Lighting 50-69 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$428.80	15	\$120.87	
LED Exterior Area Lighting 50-69 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$428.80	15	\$50.00	
LED Exterior Area Lighting 70-109 Watt LED Fixture	Fixture	No	DesignLights Consortium Listed Product	\$497.77	15	\$65.00	
LED Exterior Area Lighting 750 watt HID lamp	Fixture	No	DesignLights Consortium Listed Product	\$432.77	15	\$150.00	
LED Interior 1' X 2'	Fixture	No	DesignLights Consortium Listed Product	\$140.93	15	\$15.00	

Table 7B: Eligible Measures – Nonresidential (continued)

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
LED Interior 1' X 4'	Fixture	No	DesignLights Consortium Listed Product	\$140.93	15	\$18.00	
LED Interior 2' X 2'	Fixture	No	DesignLights Consortium Listed Product	\$140.93	15	\$16.86	
LED Interior 2' X 2'	Fixture	No	DesignLights Consortium Listed Product	\$140.93	15	\$18.00	
LED Interior 2' X 2' Kit, Less than 3500 Lumens	Fixture	No	DesignLights Consortium Listed Product	\$108.43	15	\$18.00	
LED Interior 2' X 2' Kit, More than 3500 Lumens	Fixture	No	DesignLights Consortium Listed Product	\$108.43	15	\$18.00	
LED Interior 2' X 2', Less than 3500 Lumens	Fixture	No	DesignLights Consortium Listed Product	\$108.43	15	\$18.00	
LED Interior 2' X 4'	Fixture	No	DesignLights Consortium Listed Product	\$157.52	15	\$22.68	
LED Interior 2' X 4'	Fixture	No	DesignLights Consortium Listed Product	\$157.52	15	\$20.00	
LED Interior 2' X 4' Kit, Max 4261 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior 2' X 4' Kit, Max 6392 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior 2' X 4' Kit, Max 6392 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior 2' X 4' Kit, Max 9140 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior 2' X 4', Max 2132 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior 2' X 4', Max 4261 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior 2' X 4', Max 6392 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior 2' X 4', Max 9140 lumens	Fixture	No	DesignLights Consortium Listed Product	\$125.02	15	\$20.00	
LED Interior High-Bay Fixture 1,000 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$323.70	15	\$250.00	
LED Interior High-Bay Fixture 131-159W	Fixture	No	DesignLights Consortium Listed Product	\$363.25	15	\$60.00	
LED Interior High-Bay Fixture 150 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$276.90	15	\$60.00	
LED Interior High-Bay Fixture 160-186W	Fixture	No	DesignLights Consortium Listed Product	\$363.25	15	\$70.00	
LED Interior High-Bay Fixture 175 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$319.92	15	\$70.00	
LED Interior High-Bay Fixture 187-219W	Fixture	No	DesignLights Consortium Listed Product	\$367.03	15	\$80.00	
LED Interior High-Bay Fixture 200 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$319.92	15	\$80.00	
LED Interior High-Bay Fixture 220-261W	Fixture	No	DesignLights Consortium Listed Product	\$367.03	15	\$90.00	
LED Interior High-Bay Fixture 250 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$323.70	15	\$90.00	
LED Interior High-Bay Fixture 262-279W	Fixture	No	DesignLights Consortium Listed Product	\$367.03	15	\$100.00	
LED Interior High-Bay Fixture 280-319W	Fixture	No	DesignLights Consortium Listed Product	\$367.03	15	\$175.00	
LED Interior High-Bay Fixture 320 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$323.70	15	\$100.00	
LED Interior High-Bay Fixture 320-499W	Fixture	No	DesignLights Consortium Listed Product	\$367.03	15	\$200.00	
LED Interior High-Bay Fixture 400 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$323.70	15	\$175.00	
LED Interior High-Bay Fixture 40-130W	Fixture	No	DesignLights Consortium Listed Product	\$309.40	15	\$83.46	
LED Interior High-Bay Fixture 40-130W	Fixture	No	DesignLights Consortium Listed Product	\$309.40	15	\$45.00	
LED Interior High-Bay Fixture 500-750W	Fixture	No	DesignLights Consortium Listed Product	\$367.03	15	\$250.00	
LED Interior High-Bay Fixture 750 watt HID lamp/ T8 HLO	Fixture	No	DesignLights Consortium Listed Product	\$323.70	15	\$200.00	
Night Covers for Display Cases	Linear Ft.	No	Perforated	\$42.20	5	\$9.00	
Omnidirectional, General Service Lamp, Screw-based 1050-1489 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 1490-1999 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 2000-2600 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 250-309 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	

Table 7B: Eligible Measures – Nonresidential (continued)

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
Omnidirectional, General Service Lamp, Screw-based 2601-3000 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 3001-3300 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 310-449 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 3301-3999 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 4000-6000 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 450-749 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 750-1049 lumens	Lamp	No	ENERGYSTAR Listed Product	\$3.18	15	\$1.00	
Omnidirectional, General Service Lamp, Screw-based 750-1049 lumens	Lamp	No	ENERGYSTAR Listed Product	\$4.30	15	\$4.30	
Packaged Terminal AC or PTHP 11.0 EER	Ton	No	Packaged Terminal AC or PTHP 11.0 EER	\$106.62	15	\$30 - \$90	
Packaged Terminal AC or PTHP 12.0 EER	Ton	No	Packaged Terminal AC or PTHP 12.0 EER	\$178.85	15	\$30 - \$90	
Packaged Terminal AC or PTHP 13.0 or higher EER	Ton	No	Packaged Terminal AC or PTHP 13.0 or higher	\$300.03	15	\$30 - \$90	
Pre-Rinse Sprayers	Sprayer	No	Less than 1.6 GPM	\$124.23	8	\$124.23	
Reflector Lamp; PAR, MR, MRX 1260-1399 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.48	15	\$1.00	
Reflector Lamp; PAR, MR, MRX 400-472 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.48	15	\$1.00	
Reflector Lamp; PAR, MR, MRX 473-524 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.48	15	\$1.00	
Reflector Lamp; PAR, MR, MRX 525-714 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.48	15	\$1.00	
Reflector Lamp; PAR, MR, MRX 715-937 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.48	15	\$1.00	
Reflector Lamp; PAR, MR, MRX 938-1259 lumens	Lamp	No	ENERGYSTAR Listed Product	\$5.48	15	\$1.00	
Reflector Lamp; PAR, MR, MRX 938-1259 lumens	Lamp	No	ENERGYSTAR Listed Product	\$6.60	15	\$6.60	
Refrigerated Case Light Occupancy Controls	Watts Controlled	No	Dim or turn off lighting	\$3.00	8	\$0.25	
Refrigerated Display Cases with Doors Replacing Open Cases	Linear Ft.	No	No Sweat Doors	\$321.95	12	\$35.00	
Refrigeration Economizers	Compressor HP	No	Outside air required	\$100.00	15	\$50.00	
Replacement door w/ anti-sweat heater	Linear Ft.	No	Reflective Coating and Fiberglass frame	\$122.27	12	\$96.77	
Special Doors with Low or No Anti-Sweat Heat for Low Temp Case	Door	No	>57", either reflective coating or gas filled	\$255.31	12	\$45.00	
Strip Curtains for Walk-In Freezers and Coolers	Sq. Ft.	No	0.06 inches thick	\$10.22	4	\$3.00	
Suction Pipe Insulation for Walk-In Coolers and Freezers	Linear Ft.	No	Thickness of 3/4" for cooler, 1" for freezer	\$8.35	11	\$2.00	
Unitary HVAC <65k Packaged 3-phase AC unit, Min 15 SEER	Ton	No	Unitary HVAC <65k Packaged 3-phase AC unit	\$131.26	15	\$30.00	
Unitary HVAC <65k Packaged 3-phase AC unit, Min 16 SEER	Ton	No	Unitary HVAC <65k Packaged 3-phase AC unit	\$271.58	15	\$60.00	
Unitary HVAC <65k Packaged 3-phase AC unit, Min 18 SEER	Ton	No	Unitary HVAC <65k Packaged 3-phase AC unit	\$420.95	15	\$100.00	
Unitary HVAC <65k Split 3-phase AC unit, Min 15 SEER	Ton	No	Unitary HVAC <65k Split 3-phase AC unit, Min	\$131.26	15	\$40.00	
Unitary HVAC <65k Split 3-phase AC unit, Min 16 SEER	Ton	No	Unitary HVAC <65k Split 3-phase AC unit, Min	\$271.58	15	\$80.00	
Unitary HVAC <65k Split 3-phase AC unit, Min 18 SEER	Ton	No	Unitary HVAC <65k Split 3-phase AC unit, Min	\$420.95	15	\$100.00	
Unitary HVAC ≥760k AC unit, min 9.7 EER 13 IEER	Ton	No	Unitary HVAC ≥760k AC unit, min 9.7 EER 13	\$40.00	15	\$30.00	
Unitary HVAC ≥760k AC unit, min 9.7 EER 14 IEER	Ton	No	Unitary HVAC ≥760k AC unit, min 9.7 EER 14	\$80.00	15	\$60.00	
Unitary HVAC ≥760k AC unit, min 9.7 EER 16 IEER	Ton	No	Unitary HVAC ≥760k AC unit, min 9.7 EER 16	\$133.33	15	\$100.00	
Unitary HVAC 135-240k AC unit, Min 11.5 EER 13 IEER	Ton	No	Unitary HVAC 135-240k AC unit, Min 11.5 EE	\$43.41	15	\$30.00	
Unitary HVAC 135-240k AC unit, Min 11.5 EER 14 IEER	Ton	No	Unitary HVAC 135-240k AC unit, Min 11.5 EE	\$86.97	15	\$60.00	
Unitary HVAC 135-240k AC unit, min 11.5 EER 16 IEER	Ton	No	Unitary HVAC 135-240k AC unit, min 11.5 EE	\$147.88	15	\$100.00	
Unitary HVAC 240-760k AC unit, min 9.8 EER 12 IEER	Ton	No	Unitary HVAC 240-760k AC unit, min 9.8 EER	\$41.49	15	\$30.00	

Table 7B: Eligible Measures – Nonresidential (continued)

Measure	Unit	Low-Income Y/N	Eligibility	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive \$/Unit Range	
						Low	High
Unitary HVAC 240-760k AC unit, min 9.8 EER 13 IEER	Ton	No	Unitary HVAC 240-760k AC unit, min 9.8 EER	\$80.00	15	\$60.00	
Unitary HVAC 240-760k AC unit, min 9.8 EER 14 IEER	Ton	No	Unitary HVAC 240-760k AC unit, min 9.8 EER	\$133.33	15	\$100.00	
Unitary HVAC 65-135k AC unit, Min 11.5 EER 13.2 IEER	Ton	No	Unitary HVAC 65-135k AC unit, Min 11.5 EER	\$46.48	15	\$30.00	
Unitary HVAC 65-135k AC unit, Min 11.5 EER 14 IEER	Ton	No	Unitary HVAC 65-135k AC unit, Min 11.5 EER	\$93.25	15	\$60.00	
Unitary HVAC 65-135k AC unit, Min 11.5 EER 17.8 IEER	Ton	No	Unitary HVAC 65-135k AC unit, Min 11.5 EER	\$160.99	15	\$100.00	
Variable Speed Refrigeration Compressor	HP	No	VSD replacing slide valve	\$100.00	15	\$15.00	
VFD - HVAC Fan Motor - Midstream Small	HP	No	VFD	\$107.99	15	\$75.00	
VFD - HVAC Fan Motor - Downstream Large	HP	No	<200 HP	\$140.60	15	\$75.00	
Water Source and Geothermal Heat Pumps 14 EER	Ton	No	Water Source and Geothermal Heat Pumps 14	\$80.53	15	\$30 - \$150	
Water Source and Geothermal Heat Pumps 15 EER	Ton	No	Water Source and Geothermal Heat Pumps 15	\$167.63	15	\$30 - \$150	
Water Source and Geothermal Heat Pumps 16 EER	Ton	No	Water Source and Geothermal Heat Pumps 16	\$261.83	15	\$30 - \$150	
Water-Cooled Chiller (Centrifugal) ≥150 tons, < 300 tons	Ton	No	Water-Cooled Chiller (Centrifugal) ≥150 tons, <	\$91.23	20	\$15 - \$100	
Water-Cooled Chiller (Centrifugal) ≥300 tons, < 400 tons	Ton	No	Water-Cooled Chiller (Centrifugal) ≥300 tons, <	\$75.09	20	\$15 - \$100	
Water-Cooled Chiller (Centrifugal) ≥400 tons, < 600 tons	Ton	No	Water-Cooled Chiller (Centrifugal) ≥400 tons, <	\$82.30	20	\$15 - \$100	
Water-Cooled Chiller (Centrifugal) Greater than 600 tons	Ton	No	Water-Cooled Chiller (Centrifugal) Greater than	\$94.02	20	\$15 - \$100	
Water-Cooled Chiller (Centrifugal) Less than 150 tons	Ton	No	Water-Cooled Chiller (Centrifugal) Less than 15	\$163.73	20	\$15 - \$100	
Water-Cooled Chiller (Scroll) >150 tons, <300 Tons	Ton	No	Water-Cooled Chiller (Scroll) >150 tons, <300	\$63.91	21	\$15 - \$100	
Water-Cooled Chiller (Scroll) >300 tons, <600 Tons	Ton	No	Water-Cooled Chiller (Scroll) >300 tons, <600	\$50.58	22	\$15 - \$100	
Water-Cooled Chiller (Scroll) >75 tons, <150 tons	Ton	No	Water-Cooled Chiller (Scroll) >75 tons, <150 to	\$94.02	20	\$15 - \$100	
Water-Cooled Chiller (Scroll) Greater than 600 tons	Ton	No	Water-Cooled Chiller (Scroll) Greater than 600	\$48.65	23	\$15 - \$100	
Water-Cooled Chiller (Scroll) Less than 75 tons	Ton	No	Water-Cooled Chiller (Scroll) Less than 75 tons	\$82.30	20	\$15 - \$100	

Table 8A: Estimated Savings and Participants – Residential

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Advanced Power Strip (Tier 1)	MWh Savings	2.871	3.022	3.022	3.022	3.173
	MW Reduction	0.00029	0.00031	0.00031	0.00031	0.00032
	Participants	32.3	34.0	34.0	34.0	35.7
Air Sealing	MWh Savings	20.074	21.130	21.130	21.130	22.187
	MW Reduction	0.00026	0.00027	0.00027	0.00027	0.00028
	Participants	21.2	22.3	22.3	22.3	23.4
Air Source Heat Pump - 16 SEER / 9.0 HSPF	MWh Savings	13.877	14.608	14.608	14.608	15.338
	MW Reduction	0.00109	0.00115	0.00115	0.00115	0.00120
	Participants	20.7	21.8	21.8	21.8	22.9
Air Source Heat Pump - 16 SEER / 9.0 HSPF (Base 14 SEER, 8.2 HSPF)	MWh Savings	1.120	1.179	1.179	1.179	1.238
	MW Reduction	0.00009	0.00009	0.00009	0.00009	0.00010
	Participants	1.7	1.8	1.8	1.8	1.8
Air Source Heat Pump - 17 SEER / 9.0 HSPF	MWh Savings	15.368	16.177	16.177	16.177	16.986
	MW Reduction	0.00176	0.00185	0.00185	0.00185	0.00195
	Participants	20.7	21.8	21.8	21.8	22.9
Air Source Heat Pump - 17.5 SEER / 9.7 HSPF	MWh Savings	17.727	18.660	18.660	18.660	19.593
	MW Reduction	0.00154	0.00162	0.00162	0.00162	0.00170
	Participants	15.8	16.4	16.4	16.4	17.2
Air Source Heat Pump - 17.5 SEER / 9.7 HSPF (Base 14 SEER, 8.2 HSPF)	MWh Savings	1.908	2.009	2.009	2.009	2.109
	MW Reduction	0.00017	0.00017	0.00017	0.00017	0.00018
	Participants	1.7	1.8	1.8	1.8	1.8
Air Source Heat Pump - 18 SEER / 9.7 HSPF	MWh Savings	18.210	19.169	19.169	19.169	20.127
	MW Reduction	0.00174	0.00183	0.00183	0.00183	0.00192
	Participants	15.5	16.4	16.4	16.4	17.2
Air Source Heat Pump - 19 SEER / 9.7 HSPF	MWh Savings	12.733	13.403	13.403	13.403	14.073
	MW Reduction	0.00139	0.00147	0.00147	0.00147	0.00154
	Participants	10.4	10.9	10.9	10.9	11.4
Air Source Heat Pump - 20 SEER / 10 HSPF	MWh Savings	14.730	15.505	15.505	15.505	16.280
	MW Reduction	0.00158	0.00167	0.00167	0.00167	0.00175
	Participants	10.4	10.9	10.9	10.9	11.4
Air Source Heat Pump - 21 SEER / 10 HSPF	MWh Savings	7.606	8.007	8.007	8.007	8.407
	MW Reduction	0.00087	0.00091	0.00091	0.00091	0.00096
	Participants	5.2	5.5	5.5	5.5	5.7
Air Source Heat Pump - 22 SEER / 11 HSPF	MWh Savings	9.976	10.501	10.501	10.501	11.026
	MW Reduction	0.00093	0.00098	0.00098	0.00098	0.00102
	Participants	5.2	5.5	5.5	5.5	5.7
Basement Wall Insulation - Electric Heat	MWh Savings	15.653	16.477	16.477	16.477	17.300
	MW Reduction	0.00011	0.00011	0.00011	0.00011	0.00012
	Participants	10.9	11.4	11.4	11.4	12.0
Ceiling Insulation - Electric Heat	MWh Savings	20.907	22.008	22.008	22.008	23.108
	MW Reduction	0.00070	0.00073	0.00073	0.00073	0.00077
	Participants	21.2	22.3	22.3	22.3	23.4
Central Air Conditioner SEER 16, 3-Ton	MWh Savings	2.952	3.107	3.107	3.107	3.262
	MW Reduction	0.00127	0.00133	0.00133	0.00133	0.00140
	Participants	10.5	11.0	11.0	11.0	11.6
Central Air Conditioner SEER 16, 3-Ton (Base 13 SEER)	MWh Savings	8.775	9.236	9.236	9.236	9.698
	MW Reduction	0.00376	0.00396	0.00396	0.00396	0.00416
	Participants	31.1	32.7	32.7	32.7	34.3
Central Air Conditioner SEER 17, 3-Ton	MWh Savings	1.926	2.028	2.028	2.028	2.129
	MW Reduction	0.00083	0.00088	0.00088	0.00088	0.00092
	Participants	5.4	5.7	5.7	5.7	6.0
Central Air Conditioner SEER 17, 3-Ton (Base 13 SEER)	MWh Savings	11.011	11.591	11.591	11.591	12.170
	MW Reduction	0.00477	0.00502	0.00502	0.00502	0.00527
	Participants	31.1	32.7	32.7	32.7	34.3
Central Air Conditioner SEER 18, 3-Ton (Base 13 SEER)	MWh Savings	8.666	9.122	9.122	9.122	9.579
	MW Reduction	0.00374	0.00394	0.00394	0.00394	0.00414
	Participants	20.7	21.8	21.8	21.8	22.9
Central Air Conditioner SEER 19, 3-Ton (Base 13 SEER)	MWh Savings	9.852	10.371	10.371	10.371	10.889
	MW Reduction	0.00421	0.00443	0.00443	0.00443	0.00465
	Participants	20.7	21.8	21.8	21.8	22.9

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Advanced Power Strip (Tier 1)	MWh Savings	2.871	3.022	3.022	3.022	3.173
	MW Reduction	0.00029	0.00031	0.00031	0.00031	0.00032
	Participants	32.333	34.034	34.034	34.034	35.736
Air Sealing	MWh Savings	32.261	33.959	33.959	33.959	35.657
	MW Reduction	0.00041	0.00043	0.00043	0.00043	0.00046
	Participants	34.086	35.880	35.880	35.880	37.674
Air Source Heat Pump - 16 SEER / 9.0 HSPF	MWh Savings	13.877	14.608	14.608	14.608	15.338
	MW Reduction	0.00109	0.00115	0.00115	0.00115	0.00120
	Participants	20.710	21.800	21.800	21.800	22.890
Air Source Heat Pump - 16 SEER / 9.0 HSPF (Base 14 SEER, 8.2 HSPF)	MWh Savings	1.961	2.064	2.064	2.064	2.167
	MW Reduction	0.00015	0.00016	0.00016	0.00016	0.00017
	Participants	2.926	3.080	3.080	3.080	3.234
Air Source Heat Pump - 17 SEER / 9.0 HSPF	MWh Savings	15.368	16.177	16.177	16.177	16.986
	MW Reduction	0.00176	0.00185	0.00185	0.00185	0.00195
	Participants	20.710	21.800	21.800	21.800	22.890
Air Source Heat Pump - 17.5 SEER / 9.7 HSPF	MWh Savings	17.727	18.660	18.660	18.660	19.593
	MW Reduction	0.00154	0.00162	0.00162	0.00162	0.00170
	Participants	15.533	16.350	16.350	16.350	17.168
Air Source Heat Pump - 17.5 SEER / 9.7 HSPF (Base 14 SEER, 8.2 HSPF)	MWh Savings	3.339	3.515	3.515	3.515	3.691
	MW Reduction	0.00029	0.00031	0.00031	0.00031	0.00032
	Participants	2.926	3.080	3.080	3.080	3.234
Air Source Heat Pump - 18 SEER / 9.7 HSPF	MWh Savings	18.210	19.169	19.169	19.169	20.127
	MW Reduction	0.00174	0.00183	0.00183	0.00183	0.00192
	Participants	15.533	16.350	16.350	16.350	17.168
Air Source Heat Pump - 19 SEER / 9.7 HSPF	MWh Savings	12.733	13.403	13.403	13.403	14.073
	MW Reduction	0.00139	0.00147	0.00147	0.00147	0.00154
	Participants	10.355	10.900	10.900	10.900	11.445
Air Source Heat Pump - 20 SEER / 10 HSPF	MWh Savings	14.730	15.505	15.505	15.505	16.280
	MW Reduction	0.00158	0.00167	0.00167	0.00167	0.00175
	Participants	10.355	10.900	10.900	10.900	11.445
Air Source Heat Pump - 21 SEER / 10 HSPF	MWh Savings	7.606	8.007	8.007	8.007	8.407
	MW Reduction	0.00087	0.00091	0.00091	0.00091	0.00096
	Participants	5.178	5.450	5.450	5.450	5.723
Air Source Heat Pump - 22 SEER / 11 HSPF	MWh Savings	9.976	10.501	10.501	10.501	11.026
	MW Reduction	0.00093	0.00098	0.00098	0.00098	0.00102
	Participants	5.178	5.450	5.450	5.450	5.723
Basement Wall Insulation - Electric Heat	MWh Savings	25.156	26.480	26.480	26.480	27.804
	MW Reduction	0.00017	0.00018	0.00018	0.00018	0.00019
	Participants	17.480	18.400	18.400	18.400	19.320
Ceiling Insulation - Electric Heat	MWh Savings	33.600	35.369	35.369	35.369	37.137
	MW Reduction	0.00112	0.00118	0.00118	0.00118	0.00124
	Participants	34.086	35.880	35.880	35.880	37.674
Central Air Conditioner SEER 16, 3-Ton	MWh Savings	5.166	5.437	5.437	5.437	5.709
	MW Reduction	0.00222	0.00233	0.00233	0.00233	0.00245
	Participants	18.288	19.250	19.250	19.250	20.213
Central Air Conditioner SEER 16, 3-Ton (Base 13 SEER)	MWh Savings	8.775	9.236	9.236	9.236	9.698
	MW Reduction	0.00376	0.00396	0.00396	0.00396	0.00416
	Participants	31.065	32.700	32.700	32.700	34.335
Central Air Conditioner SEER 17, 3-Ton	MWh Savings	3.371	3.548	3.548	3.548	3.726
	MW Reduction	0.00146	0.00154	0.00154	0.00154	0.00161
	Participants	9.510	10.010	10.010	10.010	10.511
Central Air Conditioner SEER 17, 3-Ton (Base 13 SEER)	MWh Savings	11.011	11.591	11.591	11.591	12.170
	MW Reduction	0.00477	0.00502	0.00502	0.00502	0.00527
	Participants	31.065	32.700	32.700	32.700	34.335
Central Air Conditioner SEER 18, 3-Ton (Base 13 SEER)	MWh Savings	8.666	9.122	9.122	9.122	9.579
	MW Reduction	0.00374	0.00394	0.00394	0.00394	0.00414
	Participants	20.710	21.800	21.800	21.800	22.890
Central Air Conditioner SEER 19, 3-Ton (Base 13 SEER)	MWh Savings	9.852	10.371	10.371	10.371	10.889
	MW Reduction	0.00421	0.00443	0.00443	0.00443	0.00465
	Participants	20.710	21.800	21.800	21.800	22.890

Table 8A: Estimated Savings and Participants – Residential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Central Air Conditioner SEER 20, 3-Ton (Base 13 SEER)	MWh Savings	5.460	5.747	5.747	5.747	6.035
	MW Reduction	0.00229	0.00241	0.00241	0.00241	0.00254
	Participants	10.4	10.9	10.9	10.9	11.4
Central Air Conditioner SEER 21, 3-Ton (Base 13 SEER)	MWh Savings	5.943	6.255	6.255	6.255	6.568
	MW Reduction	0.00245	0.00257	0.00257	0.00257	0.00270
	Participants	10.4	10.9	10.9	10.9	11.4
Central Air Conditioner SEER 22, 3-Ton (Base 13 SEER)	MWh Savings	3.191	3.359	3.359	3.359	3.527
	MW Reduction	0.00128	0.00135	0.00135	0.00135	0.00142
	Participants	5.2	5.5	5.5	5.5	5.7
Central Air Conditioner SEER 23, 3-Ton (Base 13 SEER)	MWh Savings	3.391	3.570	3.570	3.570	3.748
	MW Reduction	0.00132	0.00139	0.00139	0.00139	0.00146
	Participants	5.2	5.5	5.5	5.5	5.7
Connected Thermostat - Electric Heat (Down Stream)	MWh Savings	13.177	13.871	13.871	13.871	14.564
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	21.0	22.1	22.1	22.1	23.2
Connected Thermostat- Electric Heat	MWh Savings	19.470	20.495	20.495	20.495	21.519
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	21.2	22.3	22.3	22.3	23.4
Dehumidifier Retirement	MWh Savings	116.620	116.442	116.442	116.442	122.264
	MW Reduction	0.02567	0.02702	0.02702	0.02702	0.02837
	Participants	148.3	156.1	156.1	156.1	163.9
Ductless Mini-Split Heat Pump (1.5-Ton, 20 SEER / 9.6 hspf) Midstream	MWh Savings	37.200	39.158	39.158	39.158	41.116
	MW Reduction	0.00409	0.00430	0.00430	0.00430	0.00452
	Participants	54.3	57.2	57.2	57.2	60.1
Electric Hot Water Kit (SF or MF, Mail-Out)	MWh Savings	14.065	14.805	14.805	14.805	15.545
	MW Reduction	0.00131	0.00137	0.00137	0.00137	0.00144
	Participants	58.5	61.5	61.5	61.5	64.6
Electric Hot Water Kit (SF or MF, Verified Install)	MWh Savings	66.696	70.207	70.207	70.207	73.717
	MW Reduction	0.00597	0.00628	0.00628	0.00628	0.00660
	Participants	222.8	234.5	234.5	234.5	246.3
ENERGY STAR Dehumidifiers (>25 to ≤ 50 pints/day)	MWh Savings	129.960	136.800	136.800	136.800	143.640
	MW Reduction	0.03226	0.03395	0.03395	0.03395	0.03565
	Participants	646.6	680.6	680.6	680.6	714.6
ENERGY STAR Refrigerator Bottom mount freezer with door ice	MWh Savings	12.322	12.971	12.971	12.971	13.619
	MW Reduction	0.00199	0.00210	0.00210	0.00210	0.00220
	Participants	181.2	190.7	190.7	190.7	200.3
ENERGY STAR Refrigerator bottom mount freezer without door ice	MWh Savings	8.372	8.812	8.812	8.812	9.253
	MW Reduction	0.00133	0.00140	0.00140	0.00140	0.00147
	Participants	155.0	163.2	163.2	163.2	171.4
ENERGY STAR Refrigerator Manual Defrost	MWh Savings	3.080	3.242	3.242	3.242	3.404
	MW Reduction	0.00049	0.00052	0.00052	0.00052	0.00054
	Participants	102.7	108.1	108.1	108.1	113.5
ENERGY STAR Refrigerator Partial Automatic Defrost	MWh Savings	0.959	1.010	1.010	1.010	1.060
	MW Reduction	0.00015	0.00016	0.00016	0.00016	0.00017
	Participants	27.4	28.8	28.8	28.8	30.3
ENERGY STAR Refrigerator Side mount freezer with door ice	MWh Savings	1.896	1.996	1.996	1.996	2.096
	MW Reduction	0.00030	0.00032	0.00032	0.00032	0.00034
	Participants	31.1	32.7	32.7	32.7	34.4
ENERGY STAR Refrigerator Side mount freezer without door ice	MWh Savings	0.265	0.279	0.279	0.279	0.293
	MW Reduction	0.00004	0.00004	0.00004	0.00004	0.00005
	Participants	4.9	5.2	5.2	5.2	5.4
ENERGY STAR Refrigerator Top mount freezer without door ice	MWh Savings	2.802	2.950	2.950	2.950	3.097
	MW Reduction	0.00045	0.00048	0.00048	0.00048	0.00050
	Participants	90.4	95.2	95.2	95.2	99.9
ENERGY STAR Screw-in LED Bulb (Standard)	MWh Savings	844.692	889.149	889.149	889.149	933.607
	MW Reduction	0.10355	0.10900	0.10900	0.10900	0.11445
	Participants	11,996.6	12,628.0	12,628.0	12,628.0	13,259.4

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Central Air Conditioner SEER 20, 3-Ton (Base 13 SEER)	MWh Savings	5.460	5.747	5.747	5.747	6.035
	MW Reduction	0.00229	0.00241	0.00241	0.00241	0.00254
	Participants	10.355	10.900	10.900	10.900	11.445
Central Air Conditioner SEER 21, 3-Ton (Base 13 SEER)	MWh Savings	5.943	6.255	6.255	6.255	6.568
	MW Reduction	0.00245	0.00257	0.00257	0.00257	0.00270
	Participants	10.355	10.900	10.900	10.900	11.445
Central Air Conditioner SEER 22, 3-Ton (Base 13 SEER)	MWh Savings	3.191	3.359	3.359	3.359	3.527
	MW Reduction	0.00128	0.00135	0.00135	0.00135	0.00142
	Participants	5.178	5.450	5.450	5.450	5.723
Central Air Conditioner SEER 23, 3-Ton (Base 13 SEER)	MWh Savings	3.391	3.570	3.570	3.570	3.748
	MW Reduction	0.00132	0.00139	0.00139	0.00139	0.00146
	Participants	5.178	5.450	5.450	5.450	5.723
Connected Thermostat - Electric Heat (Down Stream)	MWh Savings	13.177	13.871	13.871	13.871	14.564
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	21.016	22.122	22.122	22.122	23.228
Connected Thermostat- Electric Heat	MWh Savings	34.072	35.866	35.866	35.866	37.659
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	37.116	39.069	39.069	39.069	41.023
Dehumidifier Retirement	MWh Savings	162.888	171.462	171.462	171.462	180.035
	MW Reduction	0.03780	0.03979	0.03979	0.03979	0.04177
	Participants	218.349	229.841	229.841	229.841	241.333
Ductless Mini-Split Heat Pump (1.5-Ton, 20 SEER / 9.6 hspf) Midstream	MWh Savings	65.100	68.527	68.527	68.527	71.953
	MW Reduction	0.00715	0.00753	0.00753	0.00753	0.00791
	Participants	95.095	100.100	100.100	100.100	105.105
Electric Hot Water Kit (SF or MF, Mail-Out)	MWh Savings	17.597	18.523	18.523	18.523	19.449
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	73.149	76.999	76.999	76.999	80.849
Electric Hot Water Kit (SF or MF, Verified Install)	MWh Savings	83.446	87.838	87.838	87.838	92.230
	MW Reduction	0.00747	0.00786	0.00786	0.00786	0.00825
	Participants	278.779	293.452	293.452	293.452	308.124
ENERGY STAR Dehumidifiers (>25 to ≤ 50 pints/day)	MWh Savings	129.960	136.800	136.800	136.800	143.640
	MW Reduction	0.03226	0.03395	0.03395	0.03395	0.03565
	Participants	646.566	680.596	680.596	680.596	714.626
ENERGY STAR Refrigerator Bottom mount freezer with door ice	MWh Savings	12.322	12.971	12.971	12.971	13.619
	MW Reduction	0.00199	0.00210	0.00210	0.00210	0.00220
	Participants	181.211	190.749	190.749	190.749	200.286
ENERGY STAR Refrigerator bottom mount freezer without door ice	MWh Savings	8.372	8.812	8.812	8.812	9.253
	MW Reduction	0.00133	0.00140	0.00140	0.00140	0.00147
	Participants	155.032	163.191	163.191	163.191	171.351
ENERGY STAR Refrigerator Manual Defrost	MWh Savings	3.080	3.242	3.242	3.242	3.404
	MW Reduction	0.00049	0.00052	0.00052	0.00052	0.00054
	Participants	102.673	108.077	108.077	108.077	113.480
ENERGY STAR Refrigerator Partial Automatic Defrost	MWh Savings	0.959	1.010	1.010	1.010	1.060
	MW Reduction	0.00015	0.00016	0.00016	0.00016	0.00017
	Participants	27.407	28.849	28.849	28.849	30.292
ENERGY STAR Refrigerator Side mount freezer with door ice	MWh Savings	1.896	1.996	1.996	1.996	2.096
	MW Reduction	0.00030	0.00032	0.00032	0.00032	0.00034
	Participants	31.088	32.724	32.724	32.724	34.361
ENERGY STAR Refrigerator Side mount freezer without door ice	MWh Savings	0.265	0.279	0.279	0.279	0.293
	MW Reduction	0.00004	0.00004	0.00004	0.00004	0.00005
	Participants	4.909	5.167	5.167	5.167	5.425
ENERGY STAR Refrigerator Top mount freezer without door ice	MWh Savings	2.802	2.950	2.950	2.950	3.097
	MW Reduction	0.00045	0.00048	0.00048	0.00048	0.00050
	Participants	90.401	95.159	95.159	95.159	99.917
ENERGY STAR Screw-in LED Bulb (Standard)	MWh Savings	554.412	583.592	583.592	583.592	612.771
	MW Reduction	0.06794	0.07152	0.07152	0.07152	0.07509
	Participants	7,931.057	8,348.481	8,348.481	8,348.481	8,765.905

Table 8A: Estimated Savings and Participants – Residential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Exterior Wall Insulation - Electric Heat	MWh Savings	37.404	39.373	39.373	39.373	41.342
	MW Reduction	0.00134	0.00141	0.00141	0.00141	0.00148
	Participants	21.2	22.3	22.3	22.3	23.4
Floor Insulation - Electric Heat	MWh Savings	19.182	20.191	20.191	20.191	21.201
	MW Reduction	0.00069	0.00072	0.00072	0.00072	0.00076
	Participants	10.9	11.4	11.4	11.4	12.0
Freezer Recycling	MWh Savings	125.147	175.205	183.548	175.205	175.205
	MW Reduction	0.01400	0.01961	0.02054	0.01961	0.01961
	Participants	171.4	240.0	251.4	240.0	240.0
Freezer Replacement	MWh Savings	22.952	32.133	32.663	32.133	32.133
	MW Reduction	0.00257	0.00360	0.00377	0.00360	0.00360
	Participants	51.5	72.1	75.5	72.1	72.1
Furnace Circulation Fan - High Efficiency (ECM - Variable Speed)	MWh Savings	0.871	0.917	0.917	0.917	0.963
	MW Reduction	0.00018	0.00019	0.00019	0.00019	0.00020
	Participants	4.1	4.4	4.4	4.4	4.6
Gas Hot Water Kit (SF or MF, Mail-Out)	MWh Savings	34.362	36.171	36.171	36.171	37.980
	MW Reduction	0.00241	0.00253	0.00253	0.00253	0.00266
	Participants	264.3	278.2	278.2	278.2	292.1
Gas Hot Water Kit (SF or MF, Verified Install)	MWh Savings	136.959	137.852	137.852	137.852	144.744
	MW Reduction	0.00917	0.00965	0.00965	0.00965	0.01013
	Participants	1,007.3	1,060.3	1,060.3	1,060.3	1,113.3
H&S measures, Comprehensive	MWh Savings	0.000	0.000	0.000	0.000	0.000
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	49.8	52.4	52.4	52.4	55.0
H&S measures, Walkthrough	MWh Savings	0.000	0.000	0.000	0.000	0.000
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	83.6	88.0	88.0	88.0	92.4
Heat Pump Water Heater	MWh Savings	16.551	17.422	17.422	17.422	18.293
	MW Reduction	0.00133	0.00140	0.00140	0.00140	0.00147
	Participants	11.9	12.6	12.6	12.6	13.2
Heat Pump Water Heater (≥20 gal and ≤55 gal)	MWh Savings	80.544	84.783	84.783	84.783	89.023
	MW Reduction	0.00648	0.00682	0.00682	0.00682	0.00716
	Participants	58.1	61.1	61.1	61.1	64.2
Home Energy Reports - Market Rate	MWh Savings	9,940.000	9,940.000	9,940.000	9,940.000	9,940.000
	MW Reduction	1.34800	1.34800	1.34800	1.34800	1.34800
	Participants	203,700.0	157,400.0	183,600.0	209,900.0	165,100.0
Home Energy Reports - Low Income	MWh Savings	1,500.000	1,500.000	1,500.000	1,500.000	1,500.000
	MW Reduction	0.20342	0.20342	0.20342	0.20342	0.20342
	Participants	15,300.0	14,300.0	17,400.0	16,100.0	14,900.0
LED A-Line 11W (MF common area, exterior)	MWh Savings	625.488	658.408	658.408	658.408	691.328
	MW Reduction	0.07674	0.08078	0.08078	0.08078	0.08482
	Participants	8,760.3	9,221.4	9,221.4	9,221.4	9,682.5
LED A-Line 11W (MF interior, residential)	MWh Savings	2.779	2.925	2.925	2.925	3.072
	MW Reduction	0.00027	0.00028	0.00028	0.00028	0.00030
	Participants	190.0	200.0	200.0	200.0	210.0
LED Decorative 4.5W	MWh Savings	2.814	2.962	2.962	2.962	3.110
	MW Reduction	0.00027	0.00029	0.00029	0.00029	0.00030
	Participants	517.3	544.5	544.5	544.5	571.7
LED Downlight Retrofit	MWh Savings	0.936	0.985	0.985	0.985	1.035
	MW Reduction	0.00009	0.00010	0.00010	0.00010	0.00010
	Participants	103.4	108.9	108.9	108.9	114.3
LED Globe/Speciality 5W	MWh Savings	5.909	6.220	6.220	6.220	6.531
	MW Reduction	0.00057	0.00060	0.00060	0.00060	0.00063
	Participants	905.2	952.8	952.8	952.8	1,000.5
LED Parking Garage and Canopy Fixtures and Retrofit Kits	MWh Savings	51.220	53.916	53.916	53.916	56.612
	MW Reduction	0.00156	0.00165	0.00165	0.00165	0.00173
	Participants	83.6	88.0	88.0	88.0	92.4

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Exterior Wall Insulation - Electric Heat	MWh Savings	60.114	63.278	63.278	63.278	66.441
	MW Reduction	0.00215	0.00226	0.00226	0.00226	0.00237
	Participants	34.086	35.880	35.880	35.880	37.674
Floor Insulation - Electric Heat	MWh Savings	30.828	32.450	32.450	32.450	34.073
	MW Reduction	0.00110	0.00116	0.00116	0.00116	0.00122
	Participants	17.480	18.400	18.400	18.400	19.320
Freezer Recycling	MWh Savings	184.280	257.992	270.277	257.992	257.992
	MW Reduction	0.02062	0.02887	0.03024	0.02887	0.02887
	Participants	252.432	353.405	370.234	353.405	353.405
Freezer Replacement	MWh Savings	31.368	43.915	46.006	43.915	43.915
	MW Reduction	0.00351	0.00491	0.00515	0.00491	0.00491
	Participants	70.382	98.535	103.227	98.535	98.535
Furnace Circulation Fan - High Efficiency (ECM - Variable Speed)	MWh Savings	0.871	0.917	0.917	0.917	0.963
	MW Reduction	0.00018	0.00019	0.00019	0.00019	0.00020
	Participants	4,142	4,360	4,360	4,360	4,578
Gas Hot Water Kit (SF or MF, Mail-Out)	MWh Savings	51.544	54.256	54.256	54.256	56.969
	MW Reduction	0.00361	0.00380	0.00380	0.00380	0.00399
	Participants	396.446	417.312	417.312	417.312	438.178
Gas Hot Water Kit (SF or MF, Verified Install)	MWh Savings	196.439	206.777	206.777	206.777	217.116
	MW Reduction	0.01375	0.01447	0.01447	0.01447	0.01520
	Participants	1,510.901	1,590.422	1,590.422	1,590.422	1,669.943
H&S measures, Comprehensive	MWh Savings	0.000	0.000	0.000	0.000	0.000
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	49.763	52.382	52.382	52.382	55.001
H&S measures, Walkthrough	MWh Savings	0.000	0.000	0.000	0.000	0.000
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	83.600	88.000	88.000	88.000	92.400
Heat Pump Water Heater	MWh Savings	28.964	30.488	30.488	30.488	32.013
	MW Reduction	0.00233	0.00245	0.00245	0.00245	0.00258
	Participants	20.890	21.989	21.989	21.989	23.088
Heat Pump Water Heater (≥20 gal and ≤55 gal)	MWh Savings	80.544	84.783	84.783	84.783	89.023
	MW Reduction	0.00648	0.00682	0.00682	0.00682	0.00716
	Participants	58.091	61.149	61.149	61.149	64.206
LED A-Line 11W (MF common area, exterior)	MWh Savings	625.488	658.408	658.408	658.408	691.328
	MW Reduction	0.07674	0.08078	0.08078	0.08078	0.08482
	Participants	8,760.330	9,221.400	9,221.400	9,221.400	9,682.470
LED A-Line 11W (MF interior, residential)	MWh Savings	2.779	2.925	2.925	2.925	3.072
	MW Reduction	0.00027	0.00028	0.00028	0.00028	0.00030
	Participants	190.000	200.000	200.000	200.000	210.000
LED Decorative 4.5W	MWh Savings	2.814	2.962	2.962	2.962	3.110
	MW Reduction	0.00027	0.00029	0.00029	0.00029	0.00030
	Participants	517.256	544.480	544.480	544.480	571.704
LED Downlight Retrofit	MWh Savings	0.936	0.985	0.985	0.985	1.035
	MW Reduction	0.00009	0.00010	0.00010	0.00010	0.00010
	Participants	103.410	108.852	108.852	108.852	114.295
LED Globe/Speciality 5W	MWh Savings	5.909	6.220	6.220	6.220	6.531
	MW Reduction	0.00057	0.00060	0.00060	0.00060	0.00063
	Participants	905.199	952.841	952.841	952.841	1,000.483
LED Parking Garage and Canopy Fixtures and Retrofit Kits	MWh Savings	33.554	35.320	35.320	35.320	37.086
	MW Reduction	0.00102	0.00108	0.00108	0.00108	0.00113
	Participants	54.766	57.649	57.649	57.649	60.531

Table 8A: Estimated Savings and Participants – Residential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
LED Reflector 11W	MWh Savings	2.702	2.844	2.844	2.844	2.986
	MW Reduction	0.00026	0.00027	0.00027	0.00027	0.00029
	Participants	310.4	326.8	326.8	326.8	343.1
LED Reflector 6.5W	MWh Savings	2.532	2.666	2.666	2.666	2.799
	MW Reduction	0.00024	0.00026	0.00026	0.00026	0.00027
	Participants	517.3	544.5	544.5	544.5	571.7
LED Reflector 7.2W	MWh Savings	0.214	0.225	0.225	0.225	0.237
	MW Reduction	0.00002	0.00002	0.00002	0.00002	0.00002
	Participants	51.8	54.5	54.5	54.5	57.3
LED Reflector 7.5	MWh Savings	2.533	2.666	2.666	2.666	2.800
	MW Reduction	0.00024	0.00026	0.00026	0.00026	0.00027
	Participants	310.4	326.8	326.8	326.8	343.1
LED Reflector 9.5	MWh Savings	6.683	7.035	7.035	7.035	7.386
	MW Reduction	0.00064	0.00068	0.00068	0.00068	0.00071
	Participants	646.6	680.6	680.6	680.6	714.6
LED Reflector 9W	MWh Savings	1.970	2.073	2.073	2.073	2.177
	MW Reduction	0.00019	0.00020	0.00020	0.00020	0.00021
	Participants	258.6	272.2	272.2	272.2	285.9
LED Replacement Lamps (Tubes)-2'	MWh Savings	465.585	490.090	490.090	490.090	514.594
	MW Reduction	0.05712	0.06013	0.06013	0.06013	0.06314
	Participants	6,520.8	6,864.0	6,864.0	6,864.0	7,207.2
LED Replacement Lamps (Tubes)-2' (Type A)	MWh Savings	346.014	364.226	364.226	364.226	382.437
	MW Reduction	0.04245	0.04469	0.04469	0.04469	0.04692
	Participants	4,846.1	5,101.2	5,101.2	5,101.2	5,356.3
LED Replacement Lamps (Tubes)-4'	MWh Savings	2,109.061	2,220.064	2,220.064	2,220.064	2,331.067
	MW Reduction	0.25876	0.27238	0.27238	0.27238	0.28600
	Participants	22,154.0	23,320.0	23,320.0	23,320.0	24,486.0
LED Replacement Lamps (Tubes)-4' (Type A)	MWh Savings	1,567.416	1,649.911	1,649.911	1,649.911	1,732.407
	MW Reduction	0.19230	0.20243	0.20243	0.20243	0.21255
	Participants	16,464.5	17,331.0	17,331.0	17,331.0	18,197.6
Middle School Kit	MWh Savings	1,112.473	1,171.025	1,171.025	1,171.025	1,229.576
	MW Reduction	0.06367	0.06702	0.06702	0.06702	0.07037
	Participants	2,155.5	2,269.0	2,269.0	2,269.0	2,382.4
New Homes-15% or higher better than code-Electric Heat	MWh Savings	54.347	57.207	57.207	57.207	60.067
	MW Reduction	0.01200	0.01263	0.01263	0.01263	0.01326
	Participants	25.3	26.6	26.6	26.6	27.9
New Homes-15% or higher better than code-Gas Heat	MWh Savings	111.719	117.599	117.599	117.599	123.479
	MW Reduction	0.01106	0.01164	0.01164	0.01164	0.01222
	Participants	101.1	106.5	106.5	106.5	111.8
Primary School Kit	MWh Savings	304.251	320.264	320.264	320.264	336.277
	MW Reduction	0.02910	0.03063	0.03063	0.03063	0.03216
	Participants	3,233.3	3,403.4	3,403.4	3,403.4	3,573.6
Reflector Lamps (average) - Reflectors Average 11.3W	MWh Savings	2,483.151	2,613.843	2,613.843	2,613.843	2,744.535
	MW Reduction	0.25239	0.26567	0.26567	0.26567	0.27896
	Participants	193,996.2	204,206.5	204,206.5	204,206.5	214,416.8
Refrigerator Recycling - Replacement	MWh Savings	266.273	372.782	390.534	372.782	372.782
	MW Reduction	0.02980	0.04171	0.04370	0.04171	0.04171
	Participants	561.5	786.1	823.6	786.1	786.1
Refrigerator Recycling - Retirement	MWh Savings	762.817	1,067.944	1,118.799	1,067.944	1,067.944
	MW Reduction	0.08536	0.11950	0.12519	0.11950	0.11950
	Participants	781.0	1,093.3	1,145.4	1,093.3	1,093.3
Refrigerator Replacement	MWh Savings	138.517	193.924	203.159	193.924	193.924
	MW Reduction	0.01550	0.02170	0.02273	0.02170	0.02170
	Participants	247.5	346.5	363.0	346.5	346.5
Room AC Recycling - Retirement	MWh Savings	14.137	19.792	20.734	19.792	19.792
	MW Reduction	0.03083	0.04317	0.04522	0.04317	0.04317
	Participants	109.3	153.1	160.4	153.1	153.1

Measure	Metric	PY13	PY14	PY15	PY16	PY17
LED Reflector 11W	MWh Savings	2.702	2.844	2.844	2.844	2.986
	MW Reduction	0.00026	0.00027	0.00027	0.00027	0.00029
	Participants	310.437	326.775	326.775	326.775	343.114
LED Reflector 6.5W	MWh Savings	2.532	2.666	2.666	2.666	2.799
	MW Reduction	0.00024	0.00026	0.00026	0.00026	0.00027
	Participants	517.256	544.480	544.480	544.480	571.704
LED Reflector 7.2W	MWh Savings	0.214	0.225	0.225	0.225	0.237
	MW Reduction	0.00002	0.00002	0.00002	0.00002	0.00002
	Participants	51.808	54.535	54.535	54.535	57.262
LED Reflector 7.5	MWh Savings	2.533	2.666	2.666	2.666	2.800
	MW Reduction	0.00024	0.00026	0.00026	0.00026	0.00027
	Participants	310.437	326.775	326.775	326.775	343.114
LED Reflector 9.5	MWh Savings	6.683	7.035	7.035	7.035	7.386
	MW Reduction	0.00064	0.00068	0.00068	0.00068	0.00071
	Participants	646.570	680.600	680.600	680.600	714.630
LED Reflector 9W	MWh Savings	1.970	2.073	2.073	2.073	2.177
	MW Reduction	0.00019	0.00020	0.00020	0.00020	0.00021
	Participants	258.628	272.240	272.240	272.240	285.852
LED Replacement Lamps (Tubes)-2'	MWh Savings	305.005	321.058	321.058	321.058	337.111
	MW Reduction	0.03742	0.03939	0.03939	0.03939	0.04136
	Participants	4,271.776	4,496.606	4,496.606	4,496.606	4,721.437
LED Replacement Lamps (Tubes)-2' (Type A)	MWh Savings	346.014	364.226	364.226	364.226	382.437
	MW Reduction	0.04245	0.04469	0.04469	0.04469	0.04692
	Participants	4,846.140	5,101.200	5,101.200	5,101.200	5,356.260
LED Replacement Lamps (Tubes)-4'	MWh Savings	1,381.646	1,454.364	1,454.364	1,454.364	1,527.082
	MW Reduction	0.16951	0.17843	0.17843	0.17843	0.18736
	Participants	14,513.085	15,276.932	15,276.932	15,276.932	16,040.779
LED Replacement Lamps (Tubes)-4' (Type A)	MWh Savings	1,567.416	1,649.911	1,649.911	1,649.911	1,732.407
	MW Reduction	0.19230	0.20243	0.20243	0.20243	0.21255
	Participants	16,464.450	17,331.000	17,331.000	17,331.000	18,197.550
Middle School Kit	MWh Savings	1,112.473	1,171.025	1,171.025	1,171.025	1,229.576
	MW Reduction	0.06367	0.06702	0.06702	0.06702	0.07037
	Participants	2,155.513	2,268.962	2,268.962	2,268.962	2,382.410
New Homes-15% or higher better than code-Electric Heat	MWh Savings	54.347	57.207	57.207	57.207	60.067
	MW Reduction	0.01200	0.01263	0.01263	0.01263	0.01326
	Participants	25.287	26.618	26.618	26.618	27.949
New Homes-15% or higher better than code-Gas Heat	MWh Savings	111.719	117.599	117.599	117.599	123.479
	MW Reduction	0.01106	0.01164	0.01164	0.01164	0.01222
	Participants	101.149	106.473	106.473	106.473	111.797
Primary School Kit	MWh Savings	304.251	320.264	320.264	320.264	336.277
	MW Reduction	0.02910	0.03063	0.03063	0.03063	0.03216
	Participants	3,233.270	3,403.442	3,403.442	3,403.442	3,573.614
Reflector Lamps (average) - Reflectors Average 11.3W	MWh Savings	2,483.151	2,613.843	2,613.843	2,613.843	2,744.535
	MW Reduction	0.25239	0.26567	0.26567	0.26567	0.27896
	Participants	193,996.162	204,206.486	204,206.486	204,206.486	214,416.810
Refrigerator Recycling - Replacement	MWh Savings	392.090	548.926	575.065	548.926	548.926
	MW Reduction	0.04387	0.06142	0.06435	0.06142	0.06142
	Participants	826.855	1,157.598	1,212.721	1,157.598	1,157.598
Refrigerator Recycling - Retirement	MWh Savings	1,123.257	1,572.559	1,647.443	1,572.559	1,572.559
	MW Reduction	0.12569	0.17597	0.18435	0.17597	0.17597
	Participants	1,149.969	1,609.956	1,686.621	1,609.956	1,609.956
Refrigerator Replacement	MWh Savings	174.685	244.560	256.205	244.560	244.560
	MW Reduction	0.01955	0.02737	0.02867	0.02737	0.02737
	Participants	312.125	436.975	457.783	436.975	436.975
Room AC Recycling - Retirement	MWh Savings	20.817	29.143	30.531	29.143	29.143
	MW Reduction	0.04540	0.06356	0.06659	0.06356	0.06356
	Participants	160.996	225.394	236.127	225.394	225.394

Table 8A: Estimated Savings and Participants – Residential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Room AC Replacement	MWh Savings	2.025	2.836	2.971	2.836	2.836
	MW Reduction	0.00442	0.00619	0.00648	0.00619	0.00619
	Participants	40.4	56.6	59.3	56.6	56.6
Variable speed pool pump	MWh Savings	102.131	107.507	107.507	107.507	112.882
	MW Reduction	0.02316	0.02438	0.02438	0.02438	0.02560
	Participants	72.5	76.3	76.3	76.3	80.1
Weatherstrip 10'	MWh Savings	1.138	1.198	1.198	1.198	1.258
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	53.9	56.7	56.7	56.7	59.6

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Room AC Replacement	MWh Savings	3.545	4.962	5.199	4.962	4.962
	MW Reduction	0.00774	0.01083	0.01135	0.01083	0.01083
	Participants	70.751	99.051	103.768	99.051	99.051
Variable speed pool pump	MWh Savings	102.131	107.507	107.507	107.507	112.882
	MW Reduction	0.02316	0.02438	0.02438	0.02438	0.02560
	Participants	72.485	76.300	76.300	76.300	80.115
Weatherstrip 10'	MWh Savings	1.138	1.198	1.198	1.198	1.258
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	53.888	56.724	56.724	56.724	59.560
Home Energy Reports - Market Rate	MWh Savings	6,486.111	9,208.676	8,327.846	9,128.600	6,646.261
	MW Reduction	0.87961	1.24882	1.12937	1.23796	0.90132
	Participants	183,940.000	183,940.000	183,940.000	183,940.000	183,940.000
Home Energy Reports - Low Income	MWh Savings	677.430	972.720	1,042.200	1,268.010	694.800
	MW Reduction	0.09187	0.13191	0.14134	0.17196	0.09422
	Participants	15,600.000	15,600.000	15,600.000	15,600.000	15,600.000

Table 8B: Estimated Savings and Participants – Nonresidential

Measure	Metric	PY13	PY14	PY15	PY16	PY17
> 1/6 and < 3/4 hp ECM Pump for DHW	MWh Savings	30.986	38.149	39.530	38.085	29.541
	MW Reduction	0.00354	0.00435	0.00451	0.00435	0.00337
	Participants	9.2	11.3	11.7	11.3	8.8
> 1/6 and < 3/4 hp ECM Pump for Heating	MWh Savings	5.865	7.221	7.482	7.209	5.591
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	5.2	6.4	6.7	6.4	5.0
≤ 1/6 hp ECM Pump for DHW	MWh Savings	5.853	7.206	7.467	7.194	5.580
	MW Reduction	0.00067	0.00082	0.00085	0.00082	0.00064
	Participants	13.0	16.1	16.6	16.0	12.4
≤ 1/6 hp ECM Pump for Heating	MWh Savings	3.910	4.814	4.988	4.806	3.728
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	26.1	32.1	33.3	32.0	24.9
≥ 3/4 and < 3 hp ECM Pump for DHW	MWh Savings	30.986	38.149	39.530	38.085	29.541
	MW Reduction	0.00354	0.00435	0.00451	0.00435	0.00337
	Participants	2.3	2.8	2.9	2.8	2.2
≥ 3/4 and < 3 hp ECM Pump for Heating	MWh Savings	10.350	12.743	13.204	12.721	9.867
	MW Reduction	0.00000	0.00000	0.00000	0.00000	0.00000
	Participants	2.3	2.8	2.9	2.8	2.2
Adding Doors to Existing Refrigerated Display Cases	MWh Savings	18.013	22.178	22.981	22.140	17.173
	MW Reduction	0.00206	0.00253	0.00262	0.00253	0.00196
	Participants	32.2	39.7	41.1	39.6	30.7
Air Compressor VFD	MWh Savings	94.673	116.561	120.781	116.365	90.259
	MW Reduction	0.014	0.018	0.018	0.018	0.014
	Participants	112.7	138.8	143.8	138.6	107.5
Air Cooled Refrigeration Condenser	MWh Savings	42.128	51.869	53.746	51.781	40.164
	MW Reduction	0.004	0.005	0.005	0.005	0.004
	Participants	32.2	39.7	41.1	39.6	30.7
Air-Cooled Chillers >50 Tons, < 150 tons, Min 10.1 EER 15 IPLV	MWh Savings	11.394	14.028	14.536	14.005	10.863
	MW Reduction	0.002	0.003	0.003	0.003	0.002
	Participants	164.0	202.0	209.3	201.6	156.4
Air-Cooled Chillers >50 Tons, < 150 tons, Min 10.1 EER 16 IPLV	MWh Savings	13.215	16.270	16.859	16.243	12.599
	MW Reduction	0.003	0.003	0.003	0.003	0.002
	Participants	123.8	152.5	158.0	152.2	118.1
Air-Cooled Chillers >50 Tons, < 150 tons, Min 10.1 EER 18 IPLV	MWh Savings	46.703	57.501	59.583	57.404	44.526
	MW Reduction	0.019	0.023	0.024	0.023	0.018
	Participants	257.4	317.0	328.4	316.4	245.4
Air-Cooled Chillers Greater than 150 tons, Min 10.1 EER 15 IPLV	MWh Savings	12.442	15.318	15.873	15.292	11.862
	MW Reduction	0.005	0.006	0.006	0.006	0.005
	Participants	234.7	288.9	299.4	288.4	223.7
Air-Cooled Chillers Greater than 150 tons, Min 10.1 EER 16 IPLV	MWh Savings	21.021	25.881	26.818	25.837	20.041
	MW Reduction	0.004	0.006	0.006	0.006	0.004
	Participants	177.0	218.0	225.9	217.6	168.8
Air-Cooled Chillers Greater than 150 tons, Min 10.1 EER 18 IPLV	MWh Savings	104.872	129.119	133.793	128.901	99.983
	MW Reduction	0.050	0.062	0.064	0.062	0.048
	Participants	596.1	733.9	760.5	732.7	568.3
Air-Cooled Chillers Less than 50 tons, Min 10.1 EER 15 IPLV	MWh Savings	0.643	0.792	0.820	0.790	0.613
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	9.3	11.4	11.8	11.4	8.8
Air-Cooled Chillers Less than 50 tons, Min 10.1 EER 16 IPLV	MWh Savings	1.892	2.329	2.414	2.325	1.804
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	17.7	21.8	22.6	21.8	16.9
Air-Cooled Chillers Less than 50 tons, Min 10.1 EER 18 IPLV	MWh Savings	2.673	3.290	3.410	3.285	2.548
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	14.7	18.1	18.8	18.1	14.0
Anti sweat heat controls	MWh Savings	18.848	23.206	24.046	23.167	17.969
	MW Reduction	0.002	0.003	0.003	0.003	0.002
	Participants	41.3	50.9	52.7	50.8	39.4

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Auto Closer for Coolers	MWh Savings	52.905	65.137	67.495	65.027	50.439
	MW Reduction	0.033	0.041	0.042	0.041	0.032
	Participants	71.8	88.4	91.6	88.2	68.4
Auto Closers	MWh Savings	18.990	23.381	24.227	23.341	18.105
	MW Reduction	0.012	0.015	0.015	0.015	0.011
	Participants	25.8	31.7	32.9	31.7	24.6
Combined Heat and Power	MWh Savings	2,300.590	2,832.490	2,935.029	2,827.721	2,193.335
	MW Reduction	0.409	0.504	0.522	0.503	0.390
	Participants	1.0	1.2	1.2	1.2	0.9
Controls: Anti-Sweat Heater Controls	MWh Savings	0.580	0.714	0.740	0.713	0.553
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	1.3	1.6	1.6	1.6	1.2
Controls: Evaporator Coil Defrost Control	MWh Savings	27.528	33.892	35.119	33.835	26.245
	MW Reduction	0.057	0.070	0.072	0.069	0.054
	Participants	32.2	39.7	41.1	39.6	30.7
Controls: Evaporator Fan Controllers .	MWh Savings	1.708	2.103	2.179	2.100	1.629
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	6.4	7.8	8.1	7.8	6.1
Controls: Floating Head Pressure Controls	MWh Savings	36.034	44.365	45.971	44.290	34.354
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	20.9	25.8	26.7	25.7	20.0
Custom Cooling	MWh Savings	5,060.054	6,229.945	6,455.476	6,219.456	4,824.151
	MW Reduction	1.665	2.050	2.124	2.046	1.587
	Participants	3.8	4.7	4.9	4.7	3.7
Custom Exterior Controls	MWh Savings	48.452	59.654	61.814	59.554	46.193
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	1.9	2.4	2.4	2.4	1.8
Custom Exterior New Construction	MWh Savings	436.067	536.886	556.322	535.982	415.737
	MW Reduction	0.015	0.018	0.019	0.018	0.014
	Participants	1.9	2.4	2.4	2.4	1.8
Custom Interior Controls	MWh Savings	936.737	1,153.311	1,195.062	1,151.370	893.065
	MW Reduction	0.130	0.160	0.166	0.160	0.124
	Participants	1.9	2.4	2.4	2.4	1.8
Custom Interior New Construction	MWh Savings	8,883.078	10,936.857	11,332.784	10,918.444	8,468.943
	MW Reduction	1.170	1.440	1.492	1.438	1.115
	Participants	1.9	2.4	2.4	2.4	1.8
Custom Other	MWh Savings	1,152.587	1,419.067	1,470.438	1,416.677	1,098.853
	MW Reduction	0.251	0.309	0.320	0.309	0.239
	Participants	1.9	2.4	2.4	2.4	1.8
Custom Process	MWh Savings	371.407	457.276	473.830	456.506	354.091
	MW Reduction	0.117	0.145	0.150	0.144	0.112
	Participants	1.9	2.4	2.4	2.4	1.8
Custom Refrigeration	MWh Savings	498.979	614.344	636.584	613.309	475.716
	MW Reduction	0.076	0.094	0.097	0.094	0.073
	Participants	1.9	2.4	2.4	2.4	1.8
Custom Ventilation	MWh Savings	1,153.167	1,419.780	1,471.178	1,417.390	1,099.405
	MW Reduction	0.354	0.436	0.452	0.435	0.338
	Participants	1.9	2.4	2.4	2.4	1.8
Decorative, Globe, Screw-based 1050-1300 lumens	MWh Savings	5.296	6.520	6.756	6.509	5.049
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Decorative, Globe, Screw-based 250-309 lumens	MWh Savings	8.662	10.665	11.051	10.647	8.258
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	153.5	189.0	195.9	188.7	146.4
Decorative, Globe, Screw-based 310-349 lumens	MWh Savings	0.000	0.000	0.000	0.000	0.000
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.0	0.0	0.0	0.0	0.0

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Decorative, Globe, Screw-based 350-499 lumens	MWh Savings	0.795	0.978	1.014	0.977	0.757
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	80.3	98.9	102.5	98.7	76.6
Decorative, Globe, Screw-based 500-574 lumens	MWh Savings	47.978	59.071	61.209	58.971	45.741
	MW Reduction	0.010	0.012	0.013	0.012	0.010
	Participants	3,204.3	3,945.1	4,088.0	3,938.5	3,054.9
Decorative, Globe, Screw-based 575-649 lumens	MWh Savings	3.038	3.740	3.876	3.734	2.896
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Decorative, Globe, Screw-based 650-749 lumens	MWh Savings	3.695	4.549	4.714	4.541	3.522
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Decorative, Globe, Screw-based 750-1049 lumens	MWh Savings	3.695	4.549	4.714	4.541	3.522
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Decorative, Non-Globe, Screw-based 150-299 lumens	MWh Savings	9.072	11.170	11.574	11.151	8.650
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	153.5	189.0	195.9	188.7	146.4
Decorative, Non-Globe, Screw-based 300-309 lumens	MWh Savings	18.411	22.667	23.488	22.629	17.552
	MW Reduction	0.004	0.005	0.005	0.005	0.004
	Participants	281.0	346.0	358.6	345.4	267.9
Decorative, Non-Globe, Screw-based 310-499 lumens	MWh Savings	0.837	1.031	1.068	1.029	0.798
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	80.3	98.9	102.5	98.7	76.6
Decorative, Non-Globe, Screw-based 500-699 lumens	MWh Savings	2.915	3.589	3.718	3.583	2.779
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Decorative, Non-Globe, Screw-based 90-149 lumens	MWh Savings	5.542	6.823	7.070	6.812	5.284
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Door Gaskets for Walk-in and Reach-in Coolers and Freezers	MWh Savings	5.513	6.788	7.034	6.777	5.256
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	15.9	19.6	20.3	19.5	15.1
Ductless Mini-Split Heat Pump - 16 SEER	MWh Savings	2.456	3.024	3.134	3.019	2.342
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	17.5	21.5	22.3	21.5	16.7
Ductless Mini-Split Heat Pump - 19 SEER	MWh Savings	4.080	5.023	5.205	5.015	3.890
	MW Reduction	0.003	0.003	0.003	0.003	0.003
	Participants	17.5	21.5	22.3	21.5	16.7
Ductless Mini-Split Heat Pump - 22 SEER	MWh Savings	9.176	11.297	11.706	11.278	8.748
	MW Reduction	0.007	0.009	0.009	0.009	0.007
	Participants	25.8	31.8	32.9	31.7	24.6
ECM motor for walk in freezer or cooler	MWh Savings	124.475	153.254	158.802	152.996	118.672
	MW Reduction	0.014	0.017	0.018	0.017	0.014
	Participants	92.2	113.5	117.6	113.3	87.9
ECM motor of reach in cases	MWh Savings	460.760	567.288	587.825	566.333	439.279
	MW Reduction	0.053	0.065	0.067	0.065	0.050
	Participants	341.3	420.3	435.5	419.6	325.4
Efficient Combination Oven <15 pans	MWh Savings	2.037	2.508	2.599	2.504	1.942
	MW Reduction	0.001	0.001	0.001	0.001	0.000
	Participants	0.4	0.5	0.5	0.5	0.4
Efficient Combination Oven ≥ 15 pans	MWh Savings	7.363	9.065	9.393	9.050	7.020
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	0.5	0.6	0.6	0.6	0.4

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Efficient Commercial Convection Oven Full size	MWh Savings	2.228	2.743	2.843	2.739	2.124
	MW Reduction	0.000	0.001	0.001	0.001	0.000
	Participants	1.2	1.4	1.5	1.4	1.1
Efficient Commercial Convection Oven Half size	MWh Savings	0.200	0.247	0.255	0.246	0.191
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	1.0	1.3	1.3	1.3	1.0
Efficient commercial dishwasher Multi Tank Conveyor High Temperature	MWh Savings	12.611	15.527	16.089	15.500	12.023
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	0.5	0.6	0.6	0.6	0.4
Efficient commercial dishwasher Multi Tank Conveyor Low Temperature	MWh Savings	8.655	10.656	11.042	10.638	8.252
	MW Reduction	0.001	0.001	0.002	0.001	0.001
	Participants	0.5	0.6	0.6	0.6	0.4
Efficient commercial dishwasher Pot, Pan, and Utensil High Temperature	MWh Savings	2.590	3.189	3.304	3.183	2.469
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.8	1.0	1.0	1.0	0.7
Efficient commercial dishwasher Single Tank Conveyor High Temperature	MWh Savings	4.804	5.914	6.128	5.904	4.580
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	0.5	0.6	0.7	0.6	0.5
Efficient commercial dishwasher Single Tank Conveyor Low Temperature	MWh Savings	9.404	11.579	11.998	11.559	8.966
	MW Reduction	0.001	0.002	0.002	0.002	0.001
	Participants	0.7	0.8	0.9	0.8	0.7
Efficient commercial dishwasher Stationary Single Tank Door High Temperature	MWh Savings	8.188	10.081	10.445	10.064	7.806
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	0.7	0.8	0.9	0.8	0.7
Efficient commercial dishwasher Stationary Single Tank Door Low Temperature	MWh Savings	11.148	13.726	14.223	13.703	10.629
	MW Reduction	0.002	0.002	0.002	0.002	0.001
	Participants	0.7	0.8	0.9	0.8	0.7
Efficient commercial dishwasher Under Counter High Temperature	MWh Savings	2.189	2.695	2.792	2.690	2.087
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.7	0.8	0.9	0.8	0.7
Efficient commercial dishwasher Under Counter Low Temperature	MWh Savings	2.922	3.597	3.727	3.591	2.786
	MW Reduction	0.000	0.000	0.001	0.000	0.000
	Participants	1.2	1.4	1.5	1.4	1.1
Efficient Commercial Fryer Large Vat	MWh Savings	1.167	1.437	1.489	1.434	1.112
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.5	0.6	0.6	0.6	0.4
Efficient Commercial Fryer Standard	MWh Savings	0.620	0.763	0.790	0.761	0.591
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Commercial Glass Door Freezers less than 15 cu. ft.	MWh Savings	0.111	0.137	0.142	0.137	0.106
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Commercial Glass Door Freezers 15 to 30 cu. ft.	MWh Savings	0.183	0.225	0.234	0.225	0.175
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Commercial Glass Door Freezers 31 to 50 cu. ft.	MWh Savings	0.277	0.341	0.353	0.340	0.264
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Commercial Glass Door Freezers more than 50 cu.ft.	MWh Savings	0.404	0.497	0.515	0.496	0.385
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Commercial Glass Door Refrigerators less than 15 cu. ft.	MWh Savings	0.133	0.163	0.169	0.163	0.127
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.8	1.0	1.0	1.0	0.7
Efficient Commercial Glass Door Refrigerators 15 to 30 cu. ft.	MWh Savings	0.466	0.574	0.594	0.573	0.444
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	1.4	1.8	1.8	1.8	1.4

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Efficient Commercial Glass Door Refrigerators 31 to 50 cu. ft.	MWh Savings	0.141	0.173	0.180	0.173	0.134
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Commercial Glass Door Refrigerators more than 50 cu. ft	MWh Savings	0.237	0.292	0.302	0.291	0.226
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.4	0.5	0.5	0.5	0.4
Efficient Commercial Griddle	MWh Savings	1.354	1.667	1.727	1.664	1.291
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.5	0.6	0.7	0.6	0.5
Efficient Commercial Hot Food Holding Cabinet Full Size	MWh Savings	2.030	2.499	2.590	2.495	1.935
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	1.2	1.4	1.5	1.4	1.1
Efficient Commercial Solid Door Freezers (< 15 cu ft)	MWh Savings	0.055	0.068	0.070	0.068	0.053
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Commercial Solid Door Freezers (> 50 cu ft)	MWh Savings	2.903	3.575	3.704	3.569	2.768
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	4.3	5.3	5.5	5.3	4.1
Efficient Commercial Solid Door Freezers (15 - 30 cu ft)	MWh Savings	0.681	0.839	0.869	0.838	0.650
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	1.3	1.6	1.7	1.6	1.2
Efficient Commercial Solid Door Freezers (30 - 50 cu ft)	MWh Savings	1.905	2.346	2.431	2.342	1.816
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	3.5	4.3	4.5	4.3	3.4
Efficient Commercial Solid Door Refrigerators (< 15 cu ft)	MWh Savings	0.223	0.275	0.285	0.274	0.213
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.9	1.1	1.2	1.1	0.9
Efficient Commercial Solid Door Refrigerators (> 50 cu ft)	MWh Savings	2.780	3.423	3.547	3.417	2.651
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	7.0	8.7	9.0	8.7	6.7
Efficient Commercial Solid Door Refrigerators (15 - 30 cu ft)	MWh Savings	1.038	1.279	1.325	1.276	0.990
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	4.2	5.1	5.3	5.1	4.0
Efficient Commercial Solid Door Refrigerators (30 - 50 cu ft)	MWh Savings	1.020	1.256	1.302	1.254	0.973
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	4.2	5.1	5.3	5.1	4.0
Efficient Electric Steam Cooker	MWh Savings	14.541	17.902	18.551	17.872	13.863
	MW Reduction	0.003	0.004	0.004	0.004	0.003
	Participants	0.9	1.1	1.2	1.1	0.9
Efficient Ice Machines Batch Type - self contained	MWh Savings	2.106	2.593	2.687	2.589	2.008
	MW Reduction	0.000	0.000	0.001	0.000	0.000
	Participants	0.5	0.6	0.6	0.6	0.4
Efficient Ice Machines Batch Type - Ice making head	MWh Savings	1.063	1.308	1.356	1.306	1.013
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.5	0.6	0.6	0.6	0.4
Efficient Ice Machines Batch Type - remote condensing	MWh Savings	0.673	0.828	0.858	0.827	0.641
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Ice Machines Continuous Type - ice making head	MWh Savings	3.854	4.745	4.917	4.737	3.674
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	1.3	1.6	1.7	1.6	1.2
Efficient Ice Machines Continuous Type - remote condensing	MWh Savings	0.470	0.579	0.600	0.578	0.448
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.3	0.3	0.3	0.3	0.2
Efficient Ice Machines Continuous Type - self contained	MWh Savings	1.264	1.556	1.612	1.553	1.205
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.5	0.6	0.6	0.6	0.4

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Exit Sign Retrofit	MWh Savings	491.753	605.447	627.365	604.428	468.828
	MW Reduction	0.065	0.080	0.083	0.080	0.062
	Participants	1,701.5	2,094.9	2,170.7	2,091.4	1,622.2
Heat Pump Water Heaters	MWh Savings	22.875	28.164	29.183	28.116	21.809
	MW Reduction	0.005	0.007	0.007	0.007	0.005
	Participants	29.5	36.3	37.6	36.2	28.1
High Efficiency Pumps 1 ≤ HP < 3, Constant Speed	MWh Savings	14.253	17.548	18.183	17.518	13.588
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	69.6	85.7	88.8	85.6	66.4
High Efficiency Pumps 1 ≤ HP < 3, Variable Speed	MWh Savings	4.724	5.816	6.026	5.806	4.503
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	24.8	30.6	31.7	30.5	23.7
High Efficiency Pumps 3 ≤ HP ≤ 50, Constant Speed	MWh Savings	2.856	3.516	3.643	3.510	2.723
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	13.9	17.2	17.8	17.1	13.3
High Efficiency Pumps 3 ≤ HP ≤ 50, Variable Speed	MWh Savings	52.899	65.129	67.487	65.020	50.433
	MW Reduction	0.006	0.007	0.008	0.007	0.006
	Participants	245.2	301.9	312.9	301.4	233.8
High Efficiency Pumps 50 < HP ≤ 200, Constant Speed	MWh Savings	43.933	54.090	56.049	53.999	41.885
	MW Reduction	0.005	0.006	0.006	0.006	0.005
	Participants	245.2	301.9	312.9	301.4	233.8
High Efficiency Pumps 50 < HP ≤ 200, Variable Speed	MWh Savings	40.347	49.675	51.473	49.591	38.466
	MW Reduction	0.005	0.006	0.006	0.006	0.004
	Participants	245.2	301.9	312.9	301.4	233.8
High-Efficiency Evaporator Fan Motors for Walk-Ins/Reach-In Refrigerated Cases	MWh Savings	86.951	107.055	110.930	106.875	82.898
	MW Reduction	0.010	0.012	0.013	0.012	0.009
	Participants	64.4	79.3	82.2	79.2	61.4
High-Efficiency Refrigeration/Freezer Cases	MWh Savings	34.563	42.554	44.094	42.482	32.951
	MW Reduction	0.004	0.005	0.005	0.005	0.004
	Participants	225.5	277.6	287.6	277.1	214.9
Insulation on suction pipes	MWh Savings	55.420	68.233	70.703	68.118	52.836
	MW Reduction	0.011	0.014	0.014	0.014	0.011
	Participants	2,234.7	2,751.3	2,850.9	2,746.7	2,130.5
Kitchen Exhaust VFD	MWh Savings	1.730	2.130	2.207	2.126	1.649
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.4	0.5	0.5	0.5	0.4
LED 2' Linear Replacement Lamp	MWh Savings	100.660	123.933	128.419	123.724	95.967
	MW Reduction	0.019	0.024	0.024	0.023	0.018
	Participants	3,207.1	3,948.6	4,091.5	3,942.0	3,057.6
LED 3' Linear Replacement Lamp	MWh Savings	0.002	0.002	0.002	0.002	0.002
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.1	0.2	0.2	0.2	0.1
LED 4' Interior Linear Strip Fixture or Retrofit Kit	MWh Savings	152.487	187.742	194.538	187.426	145.378
	MW Reduction	0.028	0.035	0.036	0.035	0.027
	Participants	860.2	1,059.1	1,097.4	1,057.3	820.1
LED 4' Linear Replacement Lamp	MWh Savings	8,327.304	10,252.587	10,623.743	10,235.327	7,939.080
	MW Reduction	1.638	2.017	2.090	2.013	1.562
	Participants	188,164.6	231,668.6	240,055.2	231,278.5	179,392.3
LED 8' Interior Linear Strip Fixture or Retrofit Kit	MWh Savings	295.768	364.149	377.332	363.536	281.979
	MW Reduction	0.055	0.068	0.070	0.068	0.053
	Participants	3,567.1	4,391.8	4,550.8	4,384.4	3,400.8
LED 8' Linear Replacement Lamp	MWh Savings	126.130	155.291	160.913	155.030	120.250
	MW Reduction	0.025	0.031	0.032	0.031	0.024
	Participants	1,747.9	2,152.0	2,229.9	2,148.4	1,666.4
LED Display Case Lighting	MWh Savings	6.897	8.491	8.799	8.477	6.575
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	41.3	50.9	52.7	50.8	39.4

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
LED Exit Sign	MWh Savings	164.213	202.179	209.498	201.838	156.557
	MW Reduction	0.022	0.027	0.028	0.027	0.021
	Participants	568.2	699.6	724.9	698.4	541.7
LED Exterior Area Lighting 0-49 Watt LED Fixture	MWh Savings	257.312	316.802	328.271	316.269	245.316
	MW Reduction	0.059	0.072	0.075	0.072	0.056
	Participants	1,139.2	1,402.6	1,453.3	1,400.2	1,086.1
LED Exterior Area Lighting 1,000 watt HID lamp	MWh Savings	416.039	512.228	530.772	511.366	396.643
	MW Reduction	0.080	0.098	0.102	0.098	0.076
	Participants	191.8	236.1	244.7	235.7	182.8
LED Exterior Area Lighting 100 watt HID lamp	MWh Savings	36.332	44.732	46.352	44.657	34.638
	MW Reduction	0.007	0.009	0.009	0.009	0.007
	Participants	116.0	142.9	148.0	142.6	110.6
LED Exterior Area Lighting 110-149 Watt LED Fixture	MWh Savings	164.374	202.377	209.703	202.036	156.710
	MW Reduction	0.038	0.046	0.048	0.046	0.036
	Participants	692.7	852.8	883.7	851.4	660.4
LED Exterior Area Lighting 150-191 Watt LED Fixture	MWh Savings	49.402	60.824	63.026	60.722	47.099
	MW Reduction	0.011	0.014	0.014	0.014	0.011
	Participants	166.1	204.6	212.0	204.2	158.4
LED Exterior Area Lighting 175 watt HID lamp	MWh Savings	147.689	181.835	188.418	181.529	140.804
	MW Reduction	0.028	0.035	0.036	0.035	0.027
	Participants	304.2	374.6	388.1	374.0	290.1
LED Exterior Area Lighting 192-224 Watt LED Fixture	MWh Savings	20.921	25.759	26.691	25.715	19.946
	MW Reduction	0.005	0.006	0.006	0.006	0.005
	Participants	51.9	63.9	66.2	63.8	49.5
LED Exterior Area Lighting 225-264 Watt LED Fixture	MWh Savings	109.838	135.232	140.128	135.005	104.717
	MW Reduction	0.025	0.031	0.032	0.031	0.024
	Participants	282.5	347.8	360.4	347.2	269.3
LED Exterior Area Lighting 250 watt HID lamp	MWh Savings	204.533	251.821	260.937	251.397	194.997
	MW Reduction	0.039	0.048	0.050	0.048	0.037
	Participants	314.2	386.8	400.8	386.2	299.5
LED Exterior Area Lighting 265-499 Watt LED Fixture	MWh Savings	381.551	469.766	486.772	468.975	363.763
	MW Reduction	0.087	0.107	0.111	0.107	0.083
	Participants	380.2	468.1	485.0	467.3	362.5
LED Exterior Area Lighting 400 watt HID lamp	MWh Savings	150.194	184.919	191.613	184.607	143.192
	MW Reduction	0.029	0.035	0.037	0.035	0.027
	Participants	153.5	188.9	195.8	188.6	146.3
LED Exterior Area Lighting 50-69 Watt LED Fixture	MWh Savings	266.573	328.205	340.086	327.653	254.145
	MW Reduction	0.061	0.075	0.078	0.075	0.058
	Participants	770.5	948.7	983.0	947.1	734.6
LED Exterior Area Lighting 70-109 Watt LED Fixture	MWh Savings	65.870	81.099	84.035	80.962	62.799
	MW Reduction	0.015	0.019	0.019	0.019	0.014
	Participants	217.3	267.6	277.3	267.1	207.2
LED Exterior Area Lighting 750 watt HID lamp	MWh Savings	377.283	464.511	481.327	463.729	359.693
	MW Reduction	0.072	0.089	0.092	0.089	0.069
	Participants	213.3	262.6	272.1	262.1	203.3
LED Interior 1' X 2'	MWh Savings	0.993	1.223	1.267	1.220	0.947
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	19.3	23.8	24.6	23.7	18.4
LED Interior 1' X 4'	MWh Savings	1.021	1.258	1.303	1.256	0.974
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	12.3	15.2	15.7	15.1	11.7
LED Interior 2' X 2'	MWh Savings	206.080	253.725	262.910	253.298	196.472
	MW Reduction	0.047	0.058	0.060	0.058	0.045
	Participants	2,485.4	3,060.0	3,170.8	3,054.9	2,369.5
LED Interior 2' X 2' Kit, Less than 3500 Lumens	MWh Savings	0.004	0.005	0.005	0.005	0.004
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	0.1	0.2	0.2	0.2	0.1

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
LED Interior 2' X 2' Kit, More than 3500 Lumens	MWh Savings	11.968	14.735	15.269	14.710	11.410
	MW Reduction	0.003	0.003	0.003	0.003	0.003
	Participants	144.9	178.4	184.9	178.1	138.1
LED Interior 2' X 2', Less than 3500 Lumens	MWh Savings	2.994	3.686	3.820	3.680	2.854
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	105.3	129.7	134.4	129.5	100.4
LED Interior 2' X 2', More than 3500 Lumens	MWh Savings	111.892	137.762	142.749	137.530	106.676
	MW Reduction	0.026	0.032	0.033	0.031	0.024
	Participants	1,485.1	1,828.5	1,894.7	1,825.4	1,415.9
LED Interior 2' X 4'	MWh Savings	477.685	588.127	609.418	587.137	455.415
	MW Reduction	0.109	0.135	0.139	0.134	0.104
	Participants	3,797.1	4,675.0	4,844.2	4,667.1	3,620.1
LED Interior 2' X 4' Kit, Max 4261 lumens	MWh Savings	136.460	168.010	174.092	167.727	130.098
	MW Reduction	0.03121	0.03843	0.03982	0.03837	0.02976
	Participants	1,437.6	1,769.9	1,834.0	1,767.0	1,370.5
LED Interior 2' X 4' Kit, Max 6392 lumens	MWh Savings	50.126	61.715	63.949	61.611	47.789
	MW Reduction	0.01147	0.01412	0.01463	0.01409	0.01093
	Participants	346.1	426.1	441.5	425.4	329.9
LED Interior 2' X 4' Kit, Max 9140 lumens	MWh Savings	5.066	6.238	6.463	6.227	4.830
	MW Reduction	0.00116	0.00143	0.00148	0.00142	0.00110
	Participants	31.5	38.8	40.2	38.8	30.1
LED Interior 2' X 4', Max 2132 lumens	MWh Savings	6.665	8.206	8.503	8.192	6.355
	MW Reduction	0.00152	0.00188	0.00195	0.00187	0.00145
	Participants	151.9	187.0	193.8	186.7	144.8
LED Interior 2' X 4', Max 4261 lumens	MWh Savings	113.589	139.851	144.914	139.615	108.293
	MW Reduction	0.02598	0.03199	0.03315	0.03194	0.02477
	Participants	1,272.4	1,566.6	1,623.3	1,564.0	1,213.1
LED Interior 2' X 4', Max 6392 lumens	MWh Savings	214.150	263.662	273.206	263.218	204.166
	MW Reduction	0.04899	0.06031	0.06249	0.06021	0.04670
	Participants	1,547.7	1,905.5	1,974.5	1,902.3	1,475.5
LED Interior 2' X 4', Max 9140 lumens	MWh Savings	15.050	18.529	19.200	18.498	14.348
	MW Reduction	0.00344	0.00424	0.00439	0.00423	0.00328
	Participants	97.5	120.0	124.4	119.8	92.9
LED Interior High-Bay Fixture 1,000 watt HID lamp/ T8 HLO	MWh Savings	388.845	478.746	496.077	477.940	370.717
	MW Reduction	0.089	0.110	0.113	0.109	0.085
	Participants	177.6	218.7	226.6	218.3	169.3
LED Interior High-Bay Fixture 131-159W	MWh Savings	32.935	40.549	42.017	40.481	31.399
	MW Reduction	0.008	0.009	0.010	0.009	0.007
	Participants	160.0	197.0	204.1	196.6	152.5
LED Interior High-Bay Fixture 150 watt HID lamp/ T8 HLO	MWh Savings	46.358	57.077	59.143	56.980	44.197
	MW Reduction	0.011	0.013	0.014	0.013	0.010
	Participants	147.2	181.2	187.8	180.9	140.3
LED Interior High-Bay Fixture 160-186W	MWh Savings	38.424	47.308	49.020	47.228	36.633
	MW Reduction	0.009	0.011	0.011	0.011	0.008
	Participants	124.4	153.2	158.7	152.9	118.6
LED Interior High-Bay Fixture 175 watt HID lamp/ T8 HLO	MWh Savings	68.442	84.265	87.316	84.123	65.251
	MW Reduction	0.016	0.019	0.020	0.019	0.015
	Participants	178.0	219.2	227.1	218.8	169.7
LED Interior High-Bay Fixture 187-219W	MWh Savings	9.398	11.571	11.990	11.552	8.960
	MW Reduction	0.002	0.003	0.003	0.003	0.002
	Participants	22.7	27.9	28.9	27.9	21.6
LED Interior High-Bay Fixture 200 watt HID lamp/ T8 HLO	MWh Savings	77.531	95.457	98.912	95.296	73.917
	MW Reduction	0.018	0.022	0.023	0.022	0.017
	Participants	178.0	219.2	227.1	218.8	169.7
LED Interior High-Bay Fixture 220-261W	MWh Savings	6.265	7.714	7.993	7.701	5.973
	MW Reduction	0.001	0.002	0.002	0.002	0.001
	Participants	15.9	19.6	20.3	19.5	15.1

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
LED Interior High-Bay Fixture 250 watt HID lamp/ T8 HLO	MWh Savings	342.748	421.991	437.268	421.281	326.769
	MW Reduction	0.078	0.097	0.100	0.096	0.075
	Participants	644.7	793.8	822.5	792.5	614.7
LED Interior High-Bay Fixture 262-279W	MWh Savings	6.265	7.714	7.993	7.701	5.973
	MW Reduction	0.001	0.002	0.002	0.002	0.001
	Participants	12.3	15.2	15.7	15.1	11.7
LED Interior High-Bay Fixture 280-319W	MWh Savings	8.415	10.361	10.736	10.343	8.023
	MW Reduction	0.002	0.002	0.002	0.002	0.002
	Participants	15.7	19.3	20.0	19.2	14.9
LED Interior High-Bay Fixture 320 watt HID lamp/ T8 HLO	MWh Savings	943.375	1,161.484	1,203.531	1,159.529	899.394
	MW Reduction	0.216	0.266	0.275	0.265	0.206
	Participants	1,365.7	1,681.4	1,742.3	1,678.6	1,302.0
LED Interior High-Bay Fixture 320-499W	MWh Savings	669.721	824.561	854.411	823.173	638.498
	MW Reduction	0.153	0.189	0.195	0.188	0.146
	Participants	669.2	824.0	853.8	822.6	638.0
LED Interior High-Bay Fixture 400 watt HID lamp/ T8 HLO	MWh Savings	813.795	1,001.946	1,038.217	1,000.259	775.855
	MW Reduction	0.186	0.229	0.237	0.229	0.177
	Participants	934.3	1,150.3	1,192.0	1,148.4	890.8
LED Interior High-Bay Fixture 40-130W	MWh Savings	781.037	961.614	996.425	959.995	744.625
	MW Reduction	0.179	0.220	0.228	0.220	0.170
	Participants	3,252.0	4,003.9	4,148.8	3,997.2	3,100.4
LED Interior High-Bay Fixture 500-750W	MWh Savings	83.715	103.070	106.801	102.897	79.812
	MW Reduction	0.019	0.024	0.024	0.024	0.018
	Participants	88.7	109.2	113.2	109.1	84.6
LED Interior High-Bay Fixture 750 watt HID lamp/ T8 HLO	MWh Savings	455.863	561.259	581.577	560.314	434.610
	MW Reduction	0.104	0.128	0.133	0.128	0.099
	Participants	281.6	346.7	359.3	346.1	268.5
Night Covers for Display Cases	MWh Savings	2.088	2.570	2.663	2.566	1.990
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	31.8	39.1	40.5	39.1	30.3
Omnidirectional, General Service Lamp, Screw-based 1050-1489 lumens	MWh Savings	5.953	7.329	7.594	7.316	5.675
	MW Reduction	0.002	0.002	0.002	0.002	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 1490-1999 lumens	MWh Savings	9.524	11.726	12.151	11.706	9.080
	MW Reduction	0.002	0.003	0.003	0.003	0.002
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 2000-2600 lumens	MWh Savings	11.823	14.556	15.083	14.532	11.272
	MW Reduction	0.003	0.004	0.004	0.004	0.003
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 250-309 lumens	MWh Savings	8.826	10.867	11.260	10.849	8.415
	MW Reduction	0.002	0.003	0.003	0.003	0.002
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 2601-3000 lumens	MWh Savings	20.115	24.766	25.663	24.725	19.178
	MW Reduction	0.005	0.006	0.007	0.006	0.005
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 3001-3300 lumens	MWh Savings	18.145	22.340	23.149	22.303	17.299
	MW Reduction	0.005	0.006	0.006	0.006	0.004
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 310-449 lumens	MWh Savings	1.103	1.358	1.407	1.355	1.051
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	114.6	141.1	146.2	140.8	109.2
Omnidirectional, General Service Lamp, Screw-based 3301-3999 lumens	MWh Savings	69.049	85.014	88.091	84.871	65.830
	MW Reduction	0.018	0.022	0.023	0.022	0.017
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 4000-6000 lumens	MWh Savings	109.198	134.445	139.312	134.219	104.107
	MW Reduction	0.028	0.035	0.036	0.034	0.027
	Participants	153.5	189.0	195.9	188.7	146.4

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Omnidirectional, General Service Lamp, Screw-based 450-749 lumens	MWh Savings	2.709	3.336	3.457	3.330	2.583
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	153.5	189.0	195.9	188.7	146.4
Omnidirectional, General Service Lamp, Screw-based 750-1049 lumens	MWh Savings	153.262	188.697	195.528	188.379	146.117
	MW Reduction	0.039	0.048	0.050	0.048	0.038
	Participants	5,732.1	7,057.3	7,312.8	7,045.5	5,464.9
Packaged Terminal AC or PTHP 11.0 EER	MWh Savings	14.252	17.547	18.182	17.517	13.587
	MW Reduction	0.002	0.003	0.003	0.003	0.002
	Participants	63.4	78.0	80.8	77.9	60.4
Packaged Terminal AC or PTHP 12.0 EER	MWh Savings	22.347	27.513	28.509	27.467	21.305
	MW Reduction	0.007	0.009	0.009	0.009	0.007
	Participants	63.4	78.0	80.8	77.9	60.4
Packaged Terminal AC or PTHP 13.0 or higher EER	MWh Savings	56.841	69.983	72.516	69.865	54.191
	MW Reduction	0.021	0.026	0.027	0.026	0.020
	Participants	126.5	155.7	161.3	155.4	120.6
Pre-Rinse Sprayers	MWh Savings	75.823	93.353	96.733	93.196	72.288
	MW Reduction	0.014	0.017	0.018	0.017	0.013
	Participants	42.7	52.6	54.5	52.5	40.7
Reflector Lamp; PAR, MR, MRX 1260-1399 lumens	MWh Savings	10.954	13.487	13.975	13.464	10.443
	MW Reduction	0.003	0.003	0.004	0.003	0.003
	Participants	315.1	388.0	402.0	387.3	300.4
Reflector Lamp; PAR, MR, MRX 400-472 lumens	MWh Savings	1.587	1.954	2.024	1.950	1.513
	MW Reduction	0.000	0.001	0.001	0.001	0.000
	Participants	164.8	203.0	210.3	202.6	157.2
Reflector Lamp; PAR, MR, MRX 473-524 lumens	MWh Savings	1.543	1.899	1.968	1.896	1.471
	MW Reduction	0.000	0.000	0.001	0.000	0.000
	Participants	164.8	203.0	210.3	202.6	157.2
Reflector Lamp; PAR, MR, MRX 525-714 lumens	MWh Savings	2.689	3.310	3.430	3.305	2.563
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	164.8	203.0	210.3	202.6	157.2
Reflector Lamp; PAR, MR, MRX 715-937 lumens	MWh Savings	2.865	3.527	3.655	3.521	2.731
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	164.8	203.0	210.3	202.6	157.2
Reflector Lamp; PAR, MR, MRX 938-1259 lumens	MWh Savings	194.128	239.010	247.663	238.608	185.077
	MW Reduction	0.050	0.061	0.064	0.061	0.048
	Participants	5,951.2	7,327.1	7,592.4	7,314.8	5,673.7
Refrigerated Case Light Occupancy Controls	MWh Savings	0.992	1.221	1.266	1.219	0.946
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	317.8	391.2	405.4	390.6	303.0
Refrigerated Display Cases with Doors Replacing Open Cases	MWh Savings	7.068	8.702	9.017	8.687	6.738
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	17.5	21.5	22.3	21.5	16.7
Refrigeration Economizers	MWh Savings	22.733	27.989	29.002	27.942	21.673
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	38.6	47.6	49.3	47.5	36.8
Replacement door w/ anti-sweat heater	MWh Savings	38.388	47.263	48.974	47.183	36.598
	MW Reduction	0.004	0.005	0.006	0.005	0.004
	Participants	58.8	72.4	75.0	72.3	56.1
Special Doors with Low or No Anti-Sweat Heat for Low Temp Case	MWh Savings	2.074	2.554	2.646	2.549	1.977
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	3.2	3.9	4.1	3.9	3.0
Strip Curtains for Walk-In Freezers and Coolers	MWh Savings	7.035	8.662	8.976	8.647	6.707
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	57.2	70.4	73.0	70.3	54.5
Suction Pipe Insulation for Walk-In Coolers and Freezers	MWh Savings	6.305	7.762	8.043	7.749	6.011
	MW Reduction	0.001	0.002	0.002	0.002	0.001
	Participants	254.2	313.0	324.3	312.5	242.4

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
Unitary HVAC <65k Packaged 3-phase AC unit, Min 15 SEER (cooling mode only)	MWh Savings	2.907	3.579	3.709	3.573	2.772
	MW Reduction	0.005	0.006	0.006	0.006	0.005
	Participants	62.6	77.0	79.8	76.9	59.7
Unitary HVAC <65k Packaged 3-phase AC unit, Min 16 SEER (cooling mode only)	MWh Savings	1.405	1.730	1.793	1.727	1.340
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	13.9	17.2	17.8	17.1	13.3
Unitary HVAC <65k Packaged 3-phase AC unit, Min 18 SEER (cooling mode only)	MWh Savings	0.184	0.226	0.235	0.226	0.175
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	1.0	1.3	1.3	1.3	1.0
Unitary HVAC <65k Split 3-phase AC unit, Min 15 SEER (cooling mode only)	MWh Savings	24.818	30.556	31.662	30.505	23.661
	MW Reduction	0.040	0.049	0.051	0.049	0.038
	Participants	487.7	600.5	622.2	599.4	465.0
Unitary HVAC <65k Split 3-phase AC unit, Min 16 SEER (cooling mode only)	MWh Savings	20.591	25.352	26.270	25.309	19.631
	MW Reduction	0.017	0.021	0.022	0.021	0.016
	Participants	193.5	238.2	246.8	237.8	184.4
Unitary HVAC <65k Split 3-phase AC unit, Min 18 SEER (cooling mode only)	MWh Savings	0.563	0.693	0.718	0.692	0.537
	MW Reduction	0.000	0.001	0.001	0.000	0.000
	Participants	3.8	4.7	4.8	4.6	3.6
Unitary HVAC ≥760k AC unit, min 9.7 EER 13 IEER (cooling mode only)	MWh Savings	12.077	14.870	15.408	14.845	11.514
	MW Reduction	0.001	0.002	0.002	0.002	0.001
	Participants	101.2	124.6	129.1	124.4	96.5
Unitary HVAC ≥760k AC unit, min 9.7 EER 14 IEER (cooling mode only)	MWh Savings	31.494	38.776	40.179	38.710	30.026
	MW Reduction	0.008	0.009	0.010	0.009	0.007
	Participants	164.7	202.8	210.1	202.5	157.0
Unitary HVAC ≥760k AC unit, min 9.7 EER 16 IEER (cooling mode only)	MWh Savings	25.765	31.722	32.871	31.669	24.564
	MW Reduction	0.005	0.007	0.007	0.007	0.005
	Participants	105.4	129.7	134.4	129.5	100.5
Unitary HVAC 135-240k AC unit, Min 11.5 EER 13 IEER (cooling mode only)	MWh Savings	19.614	24.148	25.022	24.108	18.699
	MW Reduction	0.018	0.023	0.023	0.023	0.017
	Participants	384.0	472.7	489.9	471.9	366.1
Unitary HVAC 135-240k AC unit, Min 11.5 EER 14 IEER (cooling mode only)	MWh Savings	29.435	36.240	37.552	36.179	28.063
	MW Reduction	0.013	0.016	0.017	0.016	0.013
	Participants	256.5	315.8	327.3	315.3	244.6
Unitary HVAC 135-240k AC unit, min 11.5 EER 16 IEER (cooling mode only)	MWh Savings	10.657	13.121	13.596	13.099	10.160
	MW Reduction	0.003	0.003	0.003	0.003	0.002
	Participants	44.6	55.0	56.9	54.9	42.6
Unitary HVAC 240-760k AC unit, min 9.8 EER 12 IEER (cooling mode only)	MWh Savings	73.350	90.308	93.578	90.156	69.930
	MW Reduction	0.025	0.031	0.032	0.031	0.024
	Participants	967.4	1,191.1	1,234.2	1,189.1	922.3
Unitary HVAC 240-760k AC unit, min 9.8 EER 13 IEER (cooling mode only)	MWh Savings	33.320	41.024	42.509	40.955	31.767
	MW Reduction	0.013	0.016	0.016	0.015	0.012
	Participants	238.6	293.7	304.4	293.2	227.4
Unitary HVAC 240-760k AC unit, min 9.8 EER 14 IEER (cooling mode only)	MWh Savings	3.304	4.068	4.216	4.062	3.150
	MW Reduction	0.001	0.002	0.002	0.002	0.001
	Participants	16.6	20.4	21.1	20.4	15.8
Unitary HVAC 65-135k AC unit, Min 11.5 EER 13.2 IEER (cooling mode only)	MWh Savings	15.926	19.609	20.318	19.576	15.184
	MW Reduction	0.023	0.028	0.029	0.028	0.022
	Participants	312.0	384.1	398.0	383.4	297.4
Unitary HVAC 65-135k AC unit, Min 11.5 EER 14 IEER (cooling mode only)	MWh Savings	39.126	48.172	49.916	48.091	37.302
	MW Reduction	0.025	0.030	0.031	0.030	0.024
	Participants	464.5	571.9	592.6	570.9	442.8
Unitary HVAC 65-135k AC unit, Min 11.5 EER 17.8 IEER (cooling mode only)	MWh Savings	15.015	18.486	19.155	18.455	14.315
	MW Reduction	0.004	0.005	0.006	0.005	0.004
	Participants	63.5	78.2	81.0	78.0	60.5
Variable Speed Refrigeration Compressor	MWh Savings	7.057	8.688	9.003	8.674	6.728
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	40.0	49.3	51.1	49.2	38.2

Table 8B: Estimated Savings and Participants – Nonresidential (continued)

Measure	Metric	PY13	PY14	PY15	PY16	PY17
VCx Custom Cooling - Small C&I	MWh Savings	1,052.171	1,295.192	1,354.027	1,316.682	1,035.667
	MW Reduction	0.387	0.477	0.498	0.485	0.381
	Participants	30.1	37.0	38.7	37.6	29.6
VCx Custom Cooling - Large C&I	MWh Savings	714.909	880.310	906.573	867.724	666.310
	MW Reduction	0.263	0.324	0.334	0.319	0.245
	Participants	11.5	14.2	14.6	14.0	10.7
VFD - HVAC Fan Motor	MWh Savings	2,720.862	3,349.928	3,471.200	3,344.289	2,594.013
	MW Reduction	0.186	0.229	0.237	0.229	0.177
	Participants	1,375.6	1,693.7	1,755.0	1,690.8	1,311.5
Water Source and Geothermal Heat Pumps 14 EER	MWh Savings	12.050	14.835	15.373	14.811	11.488
	MW Reduction	0.006	0.007	0.007	0.007	0.005
	Participants	126.5	155.7	161.3	155.4	120.6
Water Source and Geothermal Heat Pumps 15 EER	MWh Savings	34.373	42.320	43.852	42.248	32.770
	MW Reduction	0.018	0.022	0.023	0.022	0.017
	Participants	252.9	311.4	322.7	310.9	241.1
Water Source and Geothermal Heat Pumps 16 EER	MWh Savings	84.914	104.547	108.331	104.371	80.956
	MW Reduction	0.035	0.043	0.044	0.043	0.033
	Participants	252.9	311.4	322.7	310.9	241.1
Water-Cooled Chiller (Centrifugal) ≥150 tons, < 300 tons	MWh Savings	18.122	22.312	23.120	22.274	17.277
	MW Reduction	0.004	0.005	0.005	0.005	0.004
	Participants	125.4	154.4	160.0	154.1	119.6
Water-Cooled Chiller (Centrifugal) ≥300 tons, < 400 tons	MWh Savings	47.773	58.818	60.947	58.719	45.546
	MW Reduction	0.024	0.030	0.031	0.030	0.023
	Participants	401.5	494.3	512.2	493.4	382.7
Water-Cooled Chiller (Centrifugal) ≥400 tons, < 600 tons	MWh Savings	41.910	51.600	53.468	51.513	39.956
	MW Reduction	0.041	0.051	0.052	0.051	0.039
	Participants	410.9	505.9	524.2	505.0	391.7
Water-Cooled Chiller (Centrifugal) Greater than 600 tons	MWh Savings	136.924	168.581	174.684	168.297	130.541
	MW Reduction	0.188	0.231	0.240	0.231	0.179
	Participants	1,342.4	1,652.8	1,712.6	1,650.0	1,279.8
Water-Cooled Chiller (Centrifugal) Less than 150 tons	MWh Savings	4.693	5.778	5.988	5.769	4.475
	MW Reduction	0.001	0.001	0.001	0.001	0.001
	Participants	30.5	37.6	38.9	37.5	29.1
Water-Cooled Chiller (Scroll) >150 tons, <300 Tons	MWh Savings	20.564	25.319	26.236	25.276	19.606
	MW Reduction	0.008	0.010	0.010	0.010	0.008
	Participants	133.9	164.9	170.8	164.6	127.7
Water-Cooled Chiller (Scroll) >300 tons, <600 Tons	MWh Savings	10.629	13.087	13.561	13.065	10.134
	MW Reduction	0.003	0.003	0.003	0.003	0.003
	Participants	78.2	96.3	99.8	96.1	74.6
Water-Cooled Chiller (Scroll) >75 tons, <150 tons	MWh Savings	6.492	7.993	8.283	7.980	6.190
	MW Reduction	0.003	0.004	0.004	0.004	0.003
	Participants	38.2	47.0	48.7	46.9	36.4
Water-Cooled Chiller (Scroll) Greater than 600 tons	MWh Savings	5.087	6.263	6.489	6.252	4.849
	MW Reduction	0.000	0.000	0.000	0.000	0.000
	Participants	41.7	51.4	53.2	51.3	39.8
Water-Cooled Chiller (Scroll) Less than 75 tons	MWh Savings	8.546	10.521	10.902	10.504	8.147
	MW Reduction	0.003	0.004	0.004	0.004	0.003
	Participants	43.7	53.8	55.8	53.7	41.7

Table 9: Program Budget (continued)

All Programs

Cost Element Total Budget (\$000)	Metric	PY13	PY14	PY15	PY16	PY17	Phase IV Total
Incentives	Rebates	\$6,665.85	\$8,054.37	\$8,311.06	\$8,042.80	\$6,553.31	\$37,627.39
	Upstream/Midstream Buydown	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Kits	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Direct-Install Materials and Labor	\$3,178.99	\$3,600.55	\$3,664.01	\$3,597.60	\$3,297.38	\$17,338.52
	Incentive Total	\$9,844.84	\$11,654.92	\$11,975.07	\$11,640.39	\$9,850.69	\$54,965.91
Non-Incentives	Program Design	\$45.25	\$63.35	\$66.37	\$63.35	\$63.35	\$301.67
	Administrative	\$786.16	\$922.08	\$946.34	\$921.00	\$786.33	\$4,361.92
	EDC Delivery Costs	\$405.97	\$476.16	\$488.68	\$475.60	\$406.05	\$2,252.46
	CSP Delivery Fees	\$5,277.12	\$6,088.63	\$6,230.71	\$6,082.34	\$5,314.10	\$28,992.89
	Marketing	\$214.01	\$251.01	\$257.61	\$250.72	\$214.06	\$1,187.41
	EM&V	\$713.37	\$836.71	\$858.72	\$835.73	\$713.53	\$3,958.05
	Implementation Services	\$308.10	\$361.37	\$370.87	\$360.94	\$308.17	\$1,709.45
Non-Incentive Total	\$7,759.11	\$8,999.73	\$9,218.38	\$8,990.02	\$7,796.62	\$42,763.85	
Percent Incentives		55.9%	56.4%	56.5%	56.4%	55.8%	56.2%

All Programs

Cost Element Total Budget (\$000)	Metric	PY13	PY14	PY15	PY16	PY17	Phase IV Total
Incentives	Rebates	\$6,720.62	\$8,131.05	\$8,391.38	\$8,119.47	\$6,629.98	\$37,992.50
	Upstream/Midstream Buydown	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Kits	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Direct-Install Materials and Labor	\$3,109.62	\$3,527.53	\$3,590.98	\$3,524.57	\$3,220.70	\$16,973.41
	Incentive Total	\$9,830.24	\$11,658.57	\$11,982.37	\$11,644.05	\$9,850.69	\$54,965.91
Non-Incentives	Program Design	\$45.49	\$63.68	\$66.71	\$63.68	\$63.68	\$303.24
	Administrative	\$777.39	\$931.97	\$955.17	\$936.01	\$784.09	\$4,384.62
	EDC Delivery Costs	\$401.44	\$481.26	\$493.24	\$483.34	\$404.90	\$2,264.18
	CSP Delivery Fees	\$5,130.12	\$6,185.27	\$6,271.80	\$6,194.56	\$5,211.14	\$28,992.89
	Marketing	\$211.62	\$253.70	\$260.02	\$254.80	\$213.45	\$1,193.60
	EM&V	\$687.78	\$833.37	\$854.46	\$842.50	\$688.86	\$3,906.96
	Implementation Services	\$304.66	\$365.24	\$374.33	\$366.82	\$307.29	\$1,718.35
Non-Incentive Total	\$7,566.78	\$9,115.28	\$9,275.08	\$9,142.76	\$7,663.95	\$42,763.85	
Percent Incentives		55.9%	56.4%	56.5%	56.4%	55.8%	56.2%

Table 10: Sector-Specific Summary of EE&C Costs

EE&C Program	Cost Elements (\$)								Total Cost \$	Acquisition Cost (\$/MWh)	Levelized Cost (\$/MWh)	Acquisition Cost (\$/MW)
	Incentives	Program Design	Administrative	EDC Delivery Costs	CSP Delivery Fees	Marketing	EM&V	Other				
Residential Portfolio												
Residential - Appliance Recycling	\$772,717.35	\$6,774.49	\$97,954.45	\$50,582.83	\$674,606.47	\$26,665.48	\$88,884.90	\$38,388.75	\$1,756,575	\$207.93	\$45.56	\$1,451,412
Residential - Down Stream Incentives	\$2,754,042.53	\$19,727.63	\$285,248.06	\$147,299.63	\$1,964,486.40	\$77,651.16	\$258,837.09	\$111,789.89	\$5,619,082	\$237.10	\$29.15	\$2,165,648
Residential - Midstream Incentives	\$144,594.08	\$478.20	\$6,914.50	\$3,570.59	\$47,619.78	\$1,882.29	\$6,274.29	\$2,709.82	\$214,044	\$358.94	\$38.68	\$1,684,399
Residential - Upstream Incentives	\$2,176,562.09	\$10,910.27	\$157,755.05	\$81,463.35	\$1,086,449.65	\$42,944.59	\$143,148.60	\$61,824.86	\$3,761,058	\$276.45	\$42.81	\$2,638,031
Residential - Low Income EE	\$9,238,053.79	\$33,323.35	\$481,832.90	\$248,814.34	\$3,804,521.00	\$131,166.12	\$437,221.00	\$188,832.30	\$14,563,765	\$680.99	\$28.23	\$5,838,493
Residential - Behavioral Efficiency	\$0.00	\$12,453.02	\$180,062.19	\$92,982.56	\$3,597,241.00	\$49,017.12	\$163,390.00	\$70,567.12	\$4,165,713	\$83.82	\$0.09	\$618,058
Low Income Behavioral Efficiency	\$0.00	\$12,537.56	\$181,284.59	\$93,613.79	\$542,843.21	\$49,349.88	\$164,499.00	\$71,046.18	\$1,115,174	\$148.69	\$0.15	\$1,096,423
Nonresidential Portfolio												
Small C&I Direct-Install	\$8,100,469.65	\$20,812.05	\$300,928.0	\$155,396.6	\$659,358.7	\$81,919.6	\$273,065.5	\$117,934.9	\$9,709,885	\$419.73	\$60.79	\$2,169,659
Small C&I Downstream	\$5,608,845.70	\$48,050.60	\$694,778.9	\$358,777.8	\$1,522,319.3	\$189,135.0	\$630,450.3	\$272,286.7	\$9,324,644	\$185.70	\$40.62	\$1,085,481
Small C&I Midstream	\$4,415,666.72	\$24,732.43	\$357,614.0	\$184,668.8	\$783,562.6	\$97,350.9	\$324,503.1	\$140,150.4	\$6,328,249	\$230.19	\$101.45	\$936,731
Small C&I VCX	\$1,174,425.44	\$5,446.27	\$78,749.3	\$40,665.5	\$172,546.4	\$21,437.4	\$71,458.0	\$30,862.2	\$1,595,591	\$263.57	\$19.61	\$716,226
Large Commercial - Downstream	\$8,897,267.46	\$59,036.52	\$853,627.9	\$440,806.1	\$7,842,526.1	\$232,377.4	\$774,591.3	\$334,540.3	\$19,434,773	\$232.21	\$20.55	\$1,263,882
Large Commercial - Midstream	\$3,813,150.72	\$11,773.68	\$170,239.3	\$87,910.1	\$1,564,037.9	\$46,343.1	\$154,477.0	\$66,717.5	\$5,914,649	\$341.88	\$110.84	\$1,236,681
Large Commercial VCx	\$534,752.79	\$1,875.90	\$27,124.2	\$14,006.7	\$249,197.6	\$7,383.8	\$24,612.8	\$10,630.1	\$869,584	\$315.47	\$19.61	\$857,260
Large Industrial - Downstream	\$3,707,536.48	\$27,400.92	\$396,198.6	\$204,593.5	\$3,639,991.0	\$107,854.5	\$359,515.0	\$155,271.9	\$8,598,362	\$221.34	\$20.55	\$1,204,754
Large Industrial - Midstream	\$1,425,033.44	\$5,464.58	\$79,014.0	\$40,802.2	\$725,924.8	\$21,509.5	\$71,698.2	\$30,965.9	\$2,400,413	\$298.94	\$110.84	\$1,081,360
Large Industrial - VCx	\$248,197.50	\$870.67	\$12,589.3	\$6,501.0	\$115,661.3	\$3,427.1	\$11,423.6	\$4,933.8	\$403,604	\$315.47	\$19.61	\$857,260
Pilot Program	\$1,954,595.00								\$1,954,595			
Portfolio Total	\$54,965,910.74								\$97,729,760	\$254.6816	\$42.80	\$1,423,386

EE&C Program	Residential Portfolio Cost Elements (\$)								Levelized Cost cost (per TRC Order)	Total Cost \$	Acquisition Cost (\$/MWh)	Levelized Cost (\$/MWh)	Acquisition Cost (\$/MW)
	Incentives	Program Design	Administrative	EDC Delivery Costs	CSP Delivery Fees	Marketing	EM&V	Other					
Residential - Appliance Recycling	\$1,137,834.49	\$10,647.28	\$153,952.49	\$79,499.73	\$993,396.44	\$41,909.45	\$109,045.77	\$60,334.61	\$2,575,972.97	\$2,586,620	\$207.94	\$47.83	\$1,451,437
Residential - Down Stream Incentives	\$2,754,042.53	\$22,290.69	\$322,308.17	\$166,437.15	\$1,932,203.40	\$87,739.78	\$207,746.77	\$126,313.90	\$4,910,079.29	\$5,619,082	\$237.10	\$29.15	\$2,168,508
Residential - Midstream Incentives	\$144,594.08	\$510.39	\$7,379.85	\$3,810.89	\$47,619.78	\$2,008.97	\$5,227.42	\$2,892.19	\$178,127.27	\$214,044	\$358.94	\$38.68	\$1,684,399
Residential - Upstream Incentives	\$2,176,562.09	\$11,644.53	\$168,371.93	\$86,945.81	\$1,086,449.65	\$45,834.76	\$119,264.04	\$65,985.66	\$5,764,970.49	\$3,761,058	\$276.45	\$42.81	\$2,638,031
Residential - Low Income EE	\$8,872,936.72	\$38,021.14	\$549,759.83	\$283,891.22	\$4,439,823.51	\$149,657.41	\$437,221.00	\$215,453.15	\$4,501,373.36	\$14,986,764	\$903.54	\$38.18	\$8,068,235
Residential - Behavioral Efficiency	\$0.00	\$8,944.02	\$129,324.48	\$66,782.04	\$2,881,338.53	\$35,205.13	\$163,390.00	\$50,682.80	\$3,326.72	\$3,335,667	\$83.82	\$0.09	\$618,058
Low Income Behavioral Efficiency	\$0.00	\$5,863.72	\$84,785.46	\$43,782.48	\$336,936.00	\$23,080.57	\$164,499.00	\$33,227.77	\$686.31	\$692,175	\$148.69	\$0.15	\$1,096,422
Nonresidential Portfolio													
Small C&I Direct-Install	\$8,100,469.65	\$20,763.11	\$300,220.4	\$155,031.2	\$659,358.7	\$81,727.0	\$274,657.3	\$117,657.6	\$13,920,659.50	\$9,709,885	\$419.73	\$60.79	\$2,169,659
Small C&I Downstream	\$5,608,845.70	\$48,050.60	\$694,778.9	\$358,777.8	\$1,522,319.3	\$189,135.0	\$630,450.3	\$272,286.7	\$20,190,185.23	\$9,324,644	\$185.70	\$40.62	\$1,085,481
Small C&I Midstream	\$4,415,666.72	\$24,732.43	\$357,614.0	\$184,668.8	\$783,562.6	\$97,350.9	\$324,503.1	\$140,150.4	\$27,606,140.63	\$6,328,249	\$230.19	\$101.45	\$936,731
Small C&I VCX	\$1,174,425.44	\$5,446.27	\$78,749.3	\$40,665.5	\$172,546.4	\$21,437.4	\$71,458.0	\$30,862.2	\$1,174,841.16	\$1,595,591	\$263.57	\$19.61	\$716,226
Large Commercial - Downstream	\$8,897,267.46	\$59,036.52	\$853,627.9	\$440,806.1	\$7,842,526.1	\$232,377.4	\$774,591.3	\$334,540.3	\$17,028,385.94	\$19,434,773	\$232.21	\$20.55	\$1,263,882
Large Commercial - Midstream	\$3,813,150.72	\$11,773.68	\$170,239.3	\$87,910.1	\$1,564,037.9	\$46,343.1	\$154,477.0	\$66,717.5	\$18,981,134.57	\$5,914,649	\$341.88	\$110.84	\$1,236,681
Large Commercial VCx	\$534,752.79	\$1,875.90	\$27,124.2	\$14,006.7	\$249,197.6	\$7,383.8	\$24,612.8	\$10,630.1	\$535,085.75	\$869,584	\$315.47	\$19.61	\$857,260
Large Industrial - Downstream	\$3,707,536.48	\$27,400.92	\$396,198.6	\$204,593.5	\$3,639,991.0	\$107,854.5	\$359,515.0	\$155,271.9	\$7,903,470.27	\$8,598,362	\$221.34	\$20.55	\$1,204,754
Large Industrial - Midstream	\$1,425,033.44	\$5,464.58	\$79,014.0	\$40,802.2	\$725,924.8	\$21,509.5	\$71,698.2	\$30,965.9	\$8,809,809.29	\$2,400,413	\$298.94	\$110.84	\$1,081,360
Large Industrial - VCx	\$248,197.50	\$870.67	\$12,589.3	\$6,501.0	\$115,661.3	\$3,427.1	\$11,423.6	\$4,933.8	\$248,352.03	\$403,604	\$315.47	\$19.61	\$857,260
Pilot Program	\$1,954,595.00	\$0.00							\$1,954,595				
Portfolio Total	\$54,965,910.81								\$134,332,600.80	\$97,729,759	\$264.0074	\$43.56	\$1,461,646

Table 11: Allocation of Common Costs to Applicable Customer Sector

Common Cost Element	Total Cost	Basis for Cost Allocation	Sector Cost Allocation (\$)		
			Residential (Including Low-Income)	Commercial/ Industrial Small	Commercial/ Industrial Large
Common Utility Staff	\$864,922	% Plan Savings	\$281,597	\$240,928	\$342,397
Marketing	\$1,177,260	% Plan Savings	\$383,287	\$327,931	\$466,041
Implementation Services	\$1,778,382	% Plan Savings	\$578,998	\$495,377	\$704,008
Tracking System Upgrade and Maintenance	\$2,500,000	% Plan Savings	\$813,939	\$696,387	\$989,674
Total	\$6,320,564		\$2,057,821	\$1,760,623	\$2,502,120

Common Cost Element	Total Cost	Basis for Cost Allocation	Sector Cost Allocation (\$)		
			Residential (Including Low-Income)	Commercial/ Industrial Small	Commercial/ Industrial Large
Common Utility Staff	\$864,922	% Plan Savings	\$260,238	\$249,750	\$354,934
Marketing	\$1,177,260	% Plan Savings	\$354,214	\$339,939	\$483,107
Implementation Services	\$1,778,382	% Plan Savings	\$535,079	\$513,516	\$729,787
Tracking System Upgrade and Maintenance	\$2,500,000	% Plan Savings	\$752,199	\$721,887	\$1,025,914
Total	\$6,320,564		\$1,901,729	\$1,825,093	\$2,593,741

Table 12: Summary of Portfolio EE&C Costs

Portfolio	Total Sector Portfolio-specific Costs¹	Total Common Costs²	Total of all Costs²
Residential (Including Low-Income)	\$29,137,590	\$2,057,821	\$31,195,411
Commercial/Industrial Small	\$25,197,746	\$1,760,623	\$26,958,369
Commercial/Industrial Large	\$35,119,265	\$2,502,120	\$37,621,385
Pilot Program (Experimental Equip.)	\$1,954,595		\$1,954,595
Totals	\$91,409,196	\$6,320,564	\$97,729,760

1-Cost figures are carried over from Table 10, Total Cost Column.

2-Cost figures are to be carried over from the bottom row of Table 11

Common or indirect cost are allocated based on savings contributions from each sector program.

Portfolio	Total Sector Portfolio-specific Costs¹	Total Common Costs²	Total of all Costs²
Residential (Including Low-Income)	\$29,293,681	\$1,901,729	\$31,195,411
Commercial/Industrial Small	\$25,133,276	\$1,825,093	\$26,958,369
Commercial/Industrial Large	\$35,027,644	\$2,593,741	\$37,621,385
Pilot Program (Experimental Equip.)	\$1,954,595		\$1,954,595
Totals	\$91,409,196	\$6,320,564	\$97,729,759

1-Cost figures are carried over from Table 10, Total Cost Column.

2-Cost figures are to be carried over from the bottom row of Table 11

Common or indirect cost will be allocated based on savings contributions from each sector program.

Table 13A: TRC Benefits Table (Gross)

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential Appliance Recycling	PY13	1	1.06	\$115.91	\$115.91	\$147.58	\$263.49	\$77.98	\$201.86	\$0.00	\$0.00	\$279.84
	PY14	1	1.06	\$162.27	\$162.27	\$206.61	\$368.88	\$109.17	\$282.60	\$0.00	\$0.00	\$391.77
	PY15	1	1.06	\$170.00	\$170.00	\$216.45	\$386.45	\$114.36	\$296.06	\$0.00	\$0.00	\$410.42
	PY16	1	1.06	\$162.27	\$162.27	\$206.61	\$368.88	\$109.17	\$282.60	\$0.00	\$0.00	\$391.77
	PY17	1	1.06	\$162.27	\$162.27	\$206.61	\$368.88	\$109.17	\$282.60	\$0.00	\$0.00	\$391.77
Program Total	1	1.06	\$772.72	\$772.72	\$983.86	\$1,756.57	\$519.84	\$1,345.73	\$0.00	\$0.00	\$1,865.57	
Residential Downstream Incentives	PY13	1	2.09	\$523.27	\$932.37	\$544.36	\$1,476.73	\$406.84	\$1,361.48	\$1,160.16	\$163.54	\$3,092.02
	PY14	1	2.09	\$550.81	\$981.45	\$573.01	\$1,554.46	\$428.26	\$1,433.14	\$1,221.22	\$172.14	\$3,254.76
	PY15	1	2.09	\$550.81	\$981.45	\$573.01	\$1,554.46	\$428.26	\$1,433.14	\$1,221.22	\$172.14	\$3,254.76
	PY16	1	2.09	\$550.81	\$981.45	\$573.01	\$1,554.46	\$428.26	\$1,433.14	\$1,221.22	\$172.14	\$3,254.76
	PY17	1	2.09	\$578.35	\$1,030.52	\$601.66	\$1,632.18	\$449.67	\$1,504.80	\$1,282.28	\$180.75	\$3,417.50
Program Total	1	2.09	\$2,754.04	\$4,907.24	\$2,865.04	\$7,772.28	\$2,141.28	\$7,165.70	\$6,106.12	\$860.72	\$16,273.81	
Residential Midstream Incentives	PY13	1	1.22	\$27.47	\$33.83	\$13.20	\$47.03	\$20.86	\$36.74	-\$0.45	\$0.00	\$57.16
	PY14	1	1.22	\$28.92	\$35.64	\$13.89	\$49.50	\$21.96	\$38.68	-\$0.47	\$0.00	\$60.17
	PY15	1	1.22	\$28.92	\$35.61	\$13.89	\$49.50	\$21.96	\$38.68	-\$0.47	\$0.00	\$60.17
	PY16	1	1.22	\$28.92	\$35.61	\$13.89	\$49.50	\$21.96	\$38.68	-\$0.47	\$0.00	\$60.17
	PY17	1	1.22	\$30.36	\$37.39	\$14.58	\$51.98	\$23.06	\$40.61	-\$0.49	\$0.00	\$63.18
Program Total	1	1.22	\$144.59	\$178.06	\$69.45	\$247.51	\$109.79	\$193.39	-\$2.35	\$0.00	\$300.84	
Residential Upstream Incentives	PY13	1	1.00	\$413.55	\$1,095.05	\$301.05	\$1,396.10	\$322.49	\$1,224.10	-\$155.92	\$0.00	\$1,390.67
	PY14	1	1.00	\$435.31	\$1,152.68	\$316.90	\$1,469.58	\$339.46	\$1,288.53	-\$164.13	\$0.00	\$1,463.86
	PY15	1	1.00	\$435.31	\$1,152.68	\$316.90	\$1,469.58	\$339.46	\$1,288.53	-\$164.13	\$0.00	\$1,463.86
	PY16	1	1.00	\$435.31	\$1,152.68	\$316.90	\$1,469.58	\$339.46	\$1,288.53	-\$164.13	\$0.00	\$1,463.86
	PY17	1	1.00	\$457.08	\$1,210.31	\$332.74	\$1,543.06	\$356.43	\$1,352.96	-\$172.33	\$0.00	\$1,537.06
Program Total	1	1.00	\$2,176.56	\$5,763.40	\$1,584.50	\$7,347.89	\$1,697.30	\$6,442.65	-\$820.64	\$0.00	\$7,319.32	
Low Income Energy Efficiency	PY13	1	1.02	\$1,755.23	\$814.18	\$1,011.89	\$1,826.07	\$362.96	\$1,164.52	\$109.17	\$221.79	\$1,858.44
	PY14	1	1.02	\$1,847.61	\$857.03	\$1,065.14	\$1,922.17	\$382.06	\$1,225.81	\$114.92	\$233.46	\$1,956.25
	PY15	1	1.02	\$1,847.61	\$857.03	\$1,065.14	\$1,922.17	\$382.06	\$1,225.81	\$114.92	\$233.46	\$1,956.25
	PY16	1	1.02	\$1,847.61	\$857.03	\$1,065.14	\$1,922.17	\$382.06	\$1,225.81	\$114.92	\$233.46	\$1,956.25
	PY17	1	1.02	\$1,939.99	\$899.88	\$1,118.40	\$2,018.28	\$401.16	\$1,287.10	\$120.66	\$245.14	\$2,054.06
Program Total	1	1.02	\$9,238.05	\$4,285.16	\$5,325.71	\$9,610.87	\$1,910.29	\$6,129.06	\$574.58	\$1,167.31	\$9,781.24	

Revised Energy Efficiency and Conservation Plan

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)					TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits	
				Paid by EDC	Paid by Participants								
Residential Appliance Recycling	PY13	1	1.06	\$170.68	\$170.68	\$217.32	\$387.99	\$114.82	\$297.24	\$0.00	\$0.00	\$412.06	
	PY14	1	1.06	\$238.95	\$238.95	\$304.25	\$543.19	\$160.75	\$416.14	\$0.00	\$0.00	\$576.88	
	PY15	1	1.06	\$250.32	\$250.32	\$318.73	\$569.06	\$168.40	\$435.95	\$0.00	\$0.00	\$604.36	
	PY16	1	1.06	\$238.95	\$238.95	\$304.25	\$543.19	\$160.75	\$416.14	\$0.00	\$0.00	\$576.88	
	PY17	1	1.06	\$238.95	\$238.95	\$304.25	\$543.19	\$160.75	\$416.14	\$0.00	\$0.00	\$576.88	
	Program Total	1	1.06	\$1,137.83	\$1,137.83	\$1,448.79	\$2,586.62	\$765.47	\$1,981.60	\$0.00	\$0.00	\$2,747.07	
Residential Downstream Incentives	PY13	1	2.09	\$523.27	\$932.37	\$544.36	\$1,476.73	\$406.38	\$1,361.48	\$1,160.16	\$163.54	\$3,091.56	
	PY14	1	2.09	\$550.81	\$981.45	\$573.01	\$1,554.46	\$427.77	\$1,433.14	\$1,221.22	\$172.14	\$3,254.28	
	PY15	1	2.09	\$550.81	\$981.45	\$573.01	\$1,554.46	\$427.77	\$1,433.14	\$1,221.22	\$172.14	\$3,254.28	
	PY16	1	2.09	\$550.81	\$981.45	\$573.01	\$1,554.46	\$427.77	\$1,433.14	\$1,221.22	\$172.14	\$3,254.28	
	PY17	1	2.09	\$578.35	\$1,030.52	\$601.66	\$1,632.18	\$449.16	\$1,504.80	\$1,282.28	\$180.75	\$3,416.99	
	Program Total	1	2.09	\$2,754.04	\$4,907.24	\$2,865.04	\$7,772.28	\$2,138.86	\$7,165.70	\$6,106.12	\$860.72	\$16,271.39	
Residential Midstream Incentives	PY13	1	1.22	\$27.47	\$33.83	\$13.20	\$47.03	\$20.86	\$36.74	-\$0.45	\$0.00	\$57.16	
	PY14	1	1.22	\$28.92	\$35.61	\$13.89	\$49.50	\$21.96	\$38.68	-\$0.47	\$0.00	\$60.17	
	PY15	1	1.22	\$28.92	\$35.61	\$13.89	\$49.50	\$21.96	\$38.68	-\$0.47	\$0.00	\$60.17	
	PY16	1	1.22	\$28.92	\$35.61	\$13.89	\$49.50	\$21.96	\$38.68	-\$0.47	\$0.00	\$60.17	
	PY17	1	1.22	\$30.36	\$37.39	\$14.58	\$51.98	\$23.06	\$40.61	-\$0.49	\$0.00	\$63.18	
	Program Total	1	1.22	\$144.59	\$178.06	\$69.45	\$247.51	\$109.79	\$193.39	-\$2.35	\$0.00	\$300.84	
Residential Upstream Incentives	PY13	1	1.00	\$413.55	\$1,095.05	\$301.05	\$1,396.10	\$322.49	\$1,224.10	-\$155.92	\$0.00	\$1,390.67	
	PY14	1	1.00	\$435.31	\$1,152.68	\$316.90	\$1,469.58	\$339.46	\$1,288.53	-\$164.13	\$0.00	\$1,463.86	
	PY15	1	1.00	\$435.31	\$1,152.68	\$316.90	\$1,469.58	\$339.46	\$1,288.53	-\$164.13	\$0.00	\$1,463.86	
	PY16	1	1.00	\$435.31	\$1,152.68	\$316.90	\$1,469.58	\$339.46	\$1,288.53	-\$164.13	\$0.00	\$1,463.86	
	PY17	1	1.00	\$457.08	\$1,210.31	\$332.74	\$1,543.06	\$356.43	\$1,352.96	-\$172.33	\$0.00	\$1,537.06	
	Program Total	1	1.00	\$2,176.56	\$5,763.40	\$1,584.50	\$7,347.89	\$1,697.30	\$6,442.65	-\$820.64	\$0.00	\$7,319.32	
Low Income Energy Efficiency	PY13	1	0.75	\$1,685.86	\$854.11	\$1,161.63	\$2,015.73	\$270.54	\$922.25	\$163.85	\$145.29	\$1,501.94	
	PY14	1	0.75	\$1,774.59	\$899.06	\$1,222.77	\$2,121.82	\$284.78	\$970.79	\$172.47	\$152.94	\$1,580.99	
	PY15	1	0.75	\$1,774.59	\$899.06	\$1,222.77	\$2,121.82	\$284.78	\$970.79	\$172.47	\$152.94	\$1,580.99	
	PY16	1	0.75	\$1,774.59	\$899.06	\$1,222.77	\$2,121.82	\$284.78	\$970.79	\$172.47	\$152.94	\$1,580.99	
	PY17	1	0.75	\$1,863.32	\$944.01	\$1,283.90	\$2,227.92	\$299.02	\$1,019.33	\$181.10	\$160.59	\$1,660.03	
	Program Total	1	0.75	\$8,872.94	\$4,495.30	\$6,113.83	\$10,609.12	\$1,423.90	\$4,853.96	\$862.37	\$764.71	\$7,904.93	

Table 13A: TRC Benefits Table (Gross) - continued

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential Behavioral Efficiency	PY13	1	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY14	1	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY15	1	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY16	1	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY17	1	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	Program Total	1	1.09	\$0.00	\$0.00	\$4,165.71	\$4,165.71	\$1,311.27	\$3,223.25	\$0.00	\$0.00	\$4,534.52
Low Income Behavioral Efficiency	PY13	1	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY14	1	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY15	1	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY16	1	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY17	1	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	Program Total	1	0.61	\$0.00	\$0.00	\$1,115.17	\$1,115.17	\$197.88	\$486.41	\$0.00	\$0.00	\$684.28
Small C&I Direct-Install	PY13	1	1.09	\$1,423.76	\$2,446.46	\$282.88	\$2,729.33	\$917.99	\$1,908.75	-\$190.79	\$340.31	\$2,976.25
	PY14	1	1.09	\$1,752.94	\$3,012.08	\$348.28	\$3,360.36	\$1,130.23	\$2,350.05	-\$234.91	\$419.00	\$3,664.37
	PY15	1	1.09	\$1,816.40	\$3,121.12	\$360.88	\$3,482.01	\$1,171.14	\$2,435.12	-\$243.41	\$434.16	\$3,797.02
	PY16	1	1.09	\$1,749.99	\$3,007.01	\$347.69	\$3,354.70	\$1,128.33	\$2,346.09	-\$234.51	\$418.29	\$3,658.20
	PY17	1	1.09	\$1,357.39	\$2,332.40	\$269.69	\$2,602.09	\$875.19	\$1,819.76	-\$181.90	\$324.45	\$2,837.50
	Program Total	1	1.09	\$8,100.47	\$13,919.07	\$1,609.42	\$15,528.49	\$5,222.88	\$10,859.77	-\$1,085.52	\$1,936.21	\$16,933.34
Small C&I Downstream Incentives	PY13	1	1.48	\$985.83	\$3,548.04	\$653.10	\$4,201.14	\$1,784.50	\$4,134.50	-\$228.71	\$523.87	\$6,214.15
	PY14	1	1.48	\$1,213.75	\$4,368.35	\$804.10	\$5,172.45	\$2,197.08	\$5,090.40	-\$281.59	\$644.98	\$7,650.87
	PY15	1	1.48	\$1,257.69	\$4,526.49	\$833.21	\$5,359.70	\$2,276.61	\$5,274.68	-\$291.78	\$668.33	\$7,927.84
	PY16	1	1.48	\$1,211.71	\$4,361.00	\$802.74	\$5,163.74	\$2,193.38	\$5,081.83	-\$281.11	\$643.90	\$7,637.99
	PY17	1	1.48	\$939.87	\$3,382.63	\$622.65	\$4,005.28	\$1,701.30	\$3,941.75	-\$218.05	\$499.44	\$5,924.45
	Program Total	1	1.48	\$5,608.85	\$20,186.52	\$3,715.80	\$23,902.32	\$10,152.86	\$23,523.16	-\$1,301.24	\$2,980.53	\$35,355.31
Small C&I Midstream Incentives	PY13	1	0.68	\$776.11	\$4,851.80	\$336.16	\$5,187.97	\$1,415.97	\$2,311.27	-\$212.39	\$0.00	\$3,514.85
	PY14	1	0.68	\$955.55	\$5,973.55	\$413.88	\$6,387.43	\$1,743.35	\$2,845.63	-\$261.50	\$0.00	\$4,327.49
	PY15	1	0.68	\$990.14	\$6,189.80	\$428.86	\$6,618.66	\$1,806.46	\$2,948.65	-\$270.96	\$0.00	\$4,484.15
	PY16	1	0.68	\$953.94	\$5,963.49	\$413.19	\$6,376.68	\$1,740.41	\$2,840.84	-\$261.06	\$0.00	\$4,320.20
	PY17	1	0.68	\$739.93	\$4,625.61	\$320.49	\$4,946.10	\$1,349.96	\$2,203.51	-\$202.49	\$0.00	\$3,350.98
	Program Total	1	0.68	\$4,415.67	\$27,604.25	\$1,912.58	\$29,516.83	\$8,056.16	\$13,149.90	-\$1,208.39	\$0.00	\$19,997.67

Revised Energy Efficiency and Conservation Plan

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)					TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits	
				Paid by EDC	Paid by Participants								
Residential Behavioral Efficiency	PY13	1	1.09	\$0.00	\$0.00	\$543.64	\$543.64	\$171.13	\$420.65	\$0.00	\$0.00	\$591.78	
	PY14	1	1.09	\$0.00	\$0.00	\$771.83	\$771.83	\$242.96	\$597.22	\$0.00	\$0.00	\$840.18	
	PY15	1	1.09	\$0.00	\$0.00	\$698.01	\$698.01	\$219.72	\$540.10	\$0.00	\$0.00	\$759.81	
	PY16	1	1.09	\$0.00	\$0.00	\$765.12	\$765.12	\$240.85	\$592.03	\$0.00	\$0.00	\$832.87	
	PY17	1	1.09	\$0.00	\$0.00	\$557.06	\$557.06	\$175.35	\$431.04	\$0.00	\$0.00	\$606.39	
	Program Total		1	1.09	\$0.00	\$0.00	\$3,335.67	\$3,335.67	\$1,050.00	\$2,581.03	\$0.00	\$0.00	\$3,631.03
Low Income Behavioral Efficiency	PY13	1	0.61	\$0.00	\$0.00	\$100.73	\$100.73	\$17.87	\$43.93	\$0.00	\$0.00	\$61.81	
	PY14	1	0.61	\$0.00	\$0.00	\$144.63	\$144.63	\$25.66	\$63.08	\$0.00	\$0.00	\$88.75	
	PY15	1	0.61	\$0.00	\$0.00	\$154.96	\$154.96	\$27.50	\$67.59	\$0.00	\$0.00	\$95.09	
	PY16	1	0.61	\$0.00	\$0.00	\$188.54	\$188.54	\$33.45	\$82.24	\$0.00	\$0.00	\$115.69	
	PY17	1	0.61	\$0.00	\$0.00	\$103.31	\$103.31	\$18.33	\$45.06	\$0.00	\$0.00	\$63.39	
	Program Total		1	0.61	\$0.00	\$0.00	\$692.17	\$692.17	\$122.82	\$301.91	\$0.00	\$0.00	\$424.73
Small C&I Direct-Install	PY13	1	1.09	\$1,423.76	\$2,446.46	\$282.88	\$2,729.33	\$917.99	\$1,908.75	-\$190.79	\$340.31	\$2,976.25	
	PY14	1	1.09	\$1,752.94	\$3,012.08	\$348.28	\$3,360.36	\$1,130.23	\$2,350.05	-\$234.91	\$419.00	\$3,664.37	
	PY15	1	1.09	\$1,816.40	\$3,121.12	\$360.88	\$3,482.01	\$1,171.14	\$2,435.12	-\$243.41	\$434.16	\$3,797.02	
	PY16	1	1.09	\$1,749.99	\$3,007.01	\$347.69	\$3,354.70	\$1,128.33	\$2,346.09	-\$234.51	\$418.29	\$3,658.20	
	PY17	1	1.09	\$1,357.39	\$2,332.40	\$269.69	\$2,602.09	\$875.19	\$1,819.76	-\$181.90	\$324.45	\$2,837.50	
	Program Total		1	1.09	\$8,100.47	\$13,919.07	\$1,609.42	\$15,528.49	\$5,222.88	\$10,859.77	-\$1,085.52	\$1,936.21	\$16,933.34
Small C&I Downstream Incentives	PY13	1	1.48	\$985.83	\$3,548.04	\$653.10	\$4,201.14	\$1,784.50	\$4,134.50	-\$228.71	\$523.87	\$6,214.15	
	PY14	1	1.48	\$1,213.75	\$4,368.35	\$804.10	\$5,172.45	\$2,197.08	\$5,090.40	-\$281.59	\$644.98	\$7,650.87	
	PY15	1	1.48	\$1,257.69	\$4,526.49	\$833.21	\$5,359.70	\$2,276.61	\$5,274.68	-\$291.78	\$668.33	\$7,927.84	
	PY16	1	1.48	\$1,211.71	\$4,361.00	\$802.74	\$5,163.74	\$2,193.38	\$5,081.83	-\$281.11	\$643.90	\$7,637.99	
	PY17	1	1.48	\$939.87	\$3,382.63	\$622.65	\$4,005.28	\$1,701.30	\$3,941.75	-\$218.05	\$499.44	\$5,924.45	
	Program Total		1	1.48	\$5,608.85	\$20,186.52	\$3,715.80	\$23,902.32	\$10,152.86	\$23,523.16	-\$1,301.24	\$2,980.53	\$35,355.31
Small C&I Midstream Incentives	PY13	1	0.68	\$776.11	\$4,851.80	\$336.16	\$5,187.97	\$1,415.97	\$2,311.27	-\$212.39	\$0.00	\$3,514.85	
	PY14	1	0.68	\$955.55	\$5,973.55	\$413.88	\$6,387.43	\$1,743.35	\$2,845.63	-\$261.50	\$0.00	\$4,327.49	
	PY15	1	0.68	\$990.14	\$6,189.80	\$428.86	\$6,618.66	\$1,806.46	\$2,948.65	-\$270.96	\$0.00	\$4,484.15	
	PY16	1	0.68	\$953.94	\$5,963.49	\$413.19	\$6,376.68	\$1,740.41	\$2,840.84	-\$261.06	\$0.00	\$4,320.20	
	PY17	1	0.68	\$739.93	\$4,625.61	\$320.49	\$4,946.10	\$1,349.96	\$2,203.51	-\$202.49	\$0.00	\$3,350.98	
	Program Total		1	0.68	\$4,415.67	\$27,604.25	\$1,912.58	\$29,516.83	\$8,056.16	\$13,149.90	-\$1,208.39	\$0.00	\$19,997.67

Table 13A: TRC Benefits Table (Gross) - continued

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Small C&I Virtual Commissioning (VCx)	PY13	1	3.41	\$206.42	\$206.42	\$74.03	\$280.45	\$470.80	\$484.49	\$0.00	\$0.00	\$955.29
	PY14	1	3.41	\$254.15	\$254.15	\$91.14	\$345.29	\$579.65	\$596.51	\$0.00	\$0.00	\$1,176.16
	PY15	1	3.41	\$263.35	\$263.35	\$94.44	\$357.78	\$600.63	\$618.11	\$0.00	\$0.00	\$1,218.74
	PY16	1	3.41	\$253.72	\$253.72	\$90.99	\$344.70	\$578.67	\$595.51	\$0.00	\$0.00	\$1,174.18
	PY17	1	3.41	\$196.80	\$196.80	\$70.57	\$267.37	\$448.85	\$461.91	\$0.00	\$0.00	\$910.76
	Program Total	1	3.41	\$1,174.43	\$1,174.43	\$421.17	\$1,595.59	\$2,678.61	\$2,756.52	\$0.00	\$0.00	\$5,435.13
Large Commercial Downstream Incentives	PY13	1	2.16	\$1,563.81	\$2,991.12	\$1,852.10	\$4,843.22	\$3,249.66	\$7,031.86	-\$201.86	\$392.63	\$10,472.29
	PY14	1	2.16	\$1,925.36	\$3,682.67	\$2,280.31	\$5,962.98	\$4,000.98	\$8,657.64	-\$248.52	\$483.40	\$12,893.50
	PY15	1	2.16	\$1,995.07	\$3,815.98	\$2,362.86	\$6,178.85	\$4,145.82	\$8,971.06	-\$257.52	\$500.90	\$13,360.26
	PY16	1	2.16	\$1,922.12	\$3,676.47	\$2,276.47	\$5,952.94	\$3,994.25	\$8,643.06	-\$248.11	\$482.59	\$12,871.80
	PY17	1	2.16	\$1,490.90	\$2,851.67	\$1,765.76	\$4,617.43	\$3,098.16	\$6,704.03	-\$192.44	\$374.32	\$9,984.07
	Program Total	1	2.16	\$8,897.27	\$17,017.91	\$10,537.51	\$27,555.41	\$18,488.88	\$40,007.66	-\$1,148.45	\$2,233.84	\$59,581.92
Large Commercial Midstream Incentives	PY13	1	0.63	\$670.21	\$3,335.81	\$369.37	\$3,705.18	\$1,009.62	\$1,440.71	-\$131.90	\$0.00	\$2,318.43
	PY14	1	0.63	\$825.16	\$4,107.06	\$454.76	\$4,561.82	\$1,243.05	\$1,773.80	-\$162.39	\$0.00	\$2,854.46
	PY15	1	0.63	\$855.04	\$4,255.74	\$471.23	\$4,726.96	\$1,288.05	\$1,838.02	-\$168.27	\$0.00	\$2,957.79
	PY16	1	0.63	\$823.77	\$4,100.14	\$454.00	\$4,554.14	\$1,240.96	\$1,770.82	-\$162.12	\$0.00	\$2,849.65
	PY17	1	0.63	\$638.96	\$3,180.30	\$352.15	\$3,532.44	\$962.55	\$1,373.54	-\$125.75	\$0.00	\$2,210.35
	Program Total	1	0.63	\$3,813.15	\$18,979.04	\$2,101.50	\$21,080.54	\$5,744.23	\$8,196.89	-\$750.43	\$0.00	\$13,190.69
Large Commercial VCx	PY13	1	2.85	\$93.99	\$93.99	\$58.85	\$152.84	\$214.37	\$221.23	\$0.00	\$0.00	\$435.60
	PY14	1	2.85	\$115.72	\$115.72	\$72.46	\$188.18	\$263.93	\$272.38	\$0.00	\$0.00	\$536.32
	PY15	1	2.85	\$119.91	\$119.91	\$75.08	\$194.99	\$273.49	\$282.25	\$0.00	\$0.00	\$555.73
	PY16	1	2.85	\$115.53	\$115.53	\$72.34	\$187.86	\$263.49	\$271.93	\$0.00	\$0.00	\$535.41
	PY17	1	2.85	\$89.61	\$89.61	\$56.11	\$145.72	\$204.38	\$210.92	\$0.00	\$0.00	\$415.30
	Program Total	1	2.85	\$534.75	\$534.75	\$334.83	\$869.58	\$1,219.65	\$1,258.71	\$0.00	\$0.00	\$2,478.37
Large Industrial Downstream Incentives	PY13	1	2.16	\$651.65	\$1,388.28	\$859.63	\$2,247.91	\$1,508.28	\$3,263.73	-\$93.69	\$182.23	\$4,860.56
	PY14	1	2.16	\$802.31	\$1,709.26	\$1,058.37	\$2,767.63	\$1,857.00	\$4,018.31	-\$115.35	\$224.36	\$5,984.33
	PY15	1	2.16	\$831.35	\$1,771.13	\$1,096.69	\$2,867.82	\$1,924.22	\$4,163.78	-\$119.52	\$232.49	\$6,200.97
	PY16	1	2.16	\$800.96	\$1,706.38	\$1,056.59	\$2,762.97	\$1,853.87	\$4,011.55	-\$115.15	\$223.99	\$5,974.25
	PY17	1	2.16	\$621.27	\$1,323.56	\$819.55	\$2,143.11	\$1,437.96	\$3,111.58	-\$89.32	\$173.74	\$4,633.96
	Program Total	1	2.16	\$3,707.54	\$7,898.61	\$4,890.83	\$12,789.43	\$8,581.33	\$18,568.95	-\$533.04	\$1,036.81	\$27,654.06

Table 13A: TRC Benefits Table (Gross) - continued

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Large Industrial Midstream Incentives	PY13	1	0.63	\$250.47	\$1,548.27	\$171.44	\$1,719.70	\$468.60	\$668.68	-\$61.22	\$0.00	\$1,076.07
	PY14	1	0.63	\$308.38	\$1,906.23	\$211.07	\$2,117.30	\$576.94	\$823.28	-\$75.37	\$0.00	\$1,324.85
	PY15	1	0.63	\$319.54	\$1,975.24	\$218.71	\$2,193.95	\$597.83	\$853.09	-\$78.10	\$0.00	\$1,372.82
	PY16	1	0.63	\$307.86	\$1,903.02	\$210.72	\$2,113.74	\$575.97	\$821.90	-\$75.25	\$0.00	\$1,322.62
	PY17	1	0.63	\$238.79	\$1,476.09	\$163.44	\$1,639.53	\$446.75	\$637.51	-\$58.36	\$0.00	\$1,025.90
	Program Total		1	0.63	\$1,425.03	\$8,808.84	\$975.38	\$9,784.22	\$2,666.10	\$3,804.46	-\$348.30	\$0.00
Large Industrial VCx	PY13	1	2.85	\$43.62	\$43.62	\$27.31	\$70.94	\$99.50	\$102.68	\$0.00	\$0.00	\$202.18
	PY14	1	2.85	\$53.71	\$53.71	\$33.63	\$87.34	\$122.50	\$126.42	\$0.00	\$0.00	\$248.92
	PY15	1	2.85	\$55.65	\$55.65	\$34.85	\$90.50	\$126.94	\$131.00	\$0.00	\$0.00	\$257.93
	PY16	1	2.85	\$53.62	\$53.62	\$33.57	\$87.19	\$122.29	\$126.21	\$0.00	\$0.00	\$248.50
	PY17	1	2.85	\$41.59	\$41.59	\$26.04	\$67.63	\$94.86	\$97.90	\$0.00	\$0.00	\$192.75
	Program Total		1	2.85	\$248.20	\$248.20	\$155.41	\$403.60	\$566.08	\$584.21	\$0.00	\$0.00
Pilot/Experimental	PY13	1		\$348.31								
	PY14	1		\$417.42								
	PY15	1		\$430.16								
	PY16	1		\$416.83								
	PY17	1		\$341.87								
	Program Total				\$1,954.60							
All Programs	PY13	1	1.31	\$9,501.30	\$23,445.16	\$7,759.11	\$31,204.26	\$12,632.24	\$26,298.56	-\$7.59	\$1,824.37	\$40,747.57
	PY14	1	1.31	\$11,231.95	\$28,371.81	\$8,999.73	\$37,371.54	\$15,297.44	\$31,565.14	-\$208.09	\$2,177.35	\$48,831.84
	PY15	1	1.31	\$11,536.78	\$29,291.18	\$9,218.38	\$38,509.56	\$15,799.12	\$32,539.90	-\$258.03	\$2,241.49	\$50,322.48
	PY16	1	1.31	\$11,218.13	\$28,329.41	\$8,990.02	\$37,319.43	\$15,274.35	\$31,520.43	-\$205.77	\$2,174.37	\$48,763.39
	PY17	1	1.31	\$9,523.16	\$22,840.63	\$7,796.62	\$30,637.25	\$12,261.29	\$25,772.41	\$161.80	\$1,797.84	\$39,993.33
	Portfolio Total		1.31	\$54,965.91	\$132,278.19	\$42,763.85	\$175,042.03	\$71,264.44	\$147,696.43	-\$517.67	\$10,215.42	\$228,658.61

Revised Energy Efficiency and Conservation Plan

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Large Industrial Midstream Incentives	PY13	1	0.63	\$250.47	\$1,548.27	\$171.44	\$1,719.70	\$468.60	\$668.68	-\$61.22	\$0.00	\$1,076.07
	PY14	1	0.63	\$308.38	\$1,906.23	\$211.07	\$2,117.30	\$576.94	\$823.28	-\$75.37	\$0.00	\$1,324.85
	PY15	1	0.63	\$319.54	\$1,975.24	\$218.71	\$2,193.95	\$597.83	\$853.09	-\$78.10	\$0.00	\$1,372.82
	PY16	1	0.63	\$307.86	\$1,903.02	\$210.72	\$2,113.74	\$575.97	\$821.90	-\$75.25	\$0.00	\$1,322.62
	PY17	1	0.63	\$238.79	\$1,476.09	\$163.44	\$1,639.53	\$446.75	\$637.51	-\$58.36	\$0.00	\$1,025.90
	Program Total		1	0.63	\$1,425.03	\$8,808.84	\$975.38	\$9,784.22	\$2,666.10	\$3,804.46	-\$348.30	\$0.00
Large Industrial VCx	PY13	1	2.85	\$43.62	\$43.62	\$27.31	\$70.94	\$99.50	\$102.68	\$0.00	\$0.00	\$202.18
	PY14	1	2.85	\$53.71	\$53.71	\$33.63	\$87.34	\$122.50	\$126.42	\$0.00	\$0.00	\$248.92
	PY15	1	2.85	\$55.65	\$55.65	\$34.85	\$90.50	\$126.94	\$131.00	\$0.00	\$0.00	\$257.93
	PY16	1	2.85	\$53.62	\$53.62	\$33.57	\$87.19	\$122.29	\$126.21	\$0.00	\$0.00	\$248.50
	PY17	1	2.85	\$41.59	\$41.59	\$26.04	\$67.63	\$94.86	\$97.90	\$0.00	\$0.00	\$192.75
	Program Total		1	2.85	\$248.20	\$248.20	\$155.41	\$403.60	\$566.08	\$584.21	\$0.00	\$0.00
Pilot/Experimental	PY13	1		\$346.33								
	PY14	1		\$418.76								
	PY15	1		\$431.07								
	PY16	1		\$418.34								
	PY17	1		\$340.09								
	Program Total				\$1,954.60							
All Programs	PY13	1	1.29	\$9,486.69	\$23,539.85	\$7,566.78	\$31,106.63	\$12,463.38	\$25,874.32	\$47.09	\$1,747.87	\$40,132.66
	PY14	1	1.29	\$11,235.60	\$28,490.51	\$9,115.28	\$37,605.79	\$15,218.05	\$31,362.02	-\$150.53	\$2,096.83	\$48,526.38
	PY15	1	1.29	\$11,544.08	\$29,413.53	\$9,275.08	\$38,688.61	\$15,700.79	\$32,290.52	-\$200.47	\$2,160.97	\$49,951.81
	PY16	1	1.29	\$11,221.78	\$28,448.11	\$9,142.76	\$37,590.88	\$15,200.64	\$31,331.28	-\$148.21	\$2,093.85	\$48,477.56
	PY17	1	1.29	\$9,523.16	\$22,961.43	\$7,663.95	\$30,625.39	\$12,102.07	\$25,372.34	\$222.24	\$1,713.29	\$39,409.94
	Portfolio Total			1.29	\$54,965.91	\$132,853.44	\$42,763.849	\$175,617.289	\$70,684.93	\$146,230.48	-\$229.89	\$9,812.81

Table 13B: TRC Benefits Table (Net)

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential Appliance Recycling	PY13	0.46	0.49	\$115.91	\$115.91	\$147.58	\$263.49	\$35.87	\$92.86	\$0.00	\$0.00	\$128.72
	PY14	0.46	0.49	\$162.27	\$162.27	\$206.61	\$368.88	\$50.22	\$130.00	\$0.00	\$0.00	\$180.21
	PY15	0.46	0.49	\$170.00	\$170.00	\$216.45	\$386.45	\$52.61	\$136.19	\$0.00	\$0.00	\$188.80
	PY16	0.46	0.49	\$162.27	\$162.27	\$206.61	\$368.88	\$50.22	\$130.00	\$0.00	\$0.00	\$180.21
	PY17	0.46	0.49	\$162.27	\$162.27	\$206.61	\$368.88	\$50.22	\$130.00	\$0.00	\$0.00	\$180.21
	Program Total	0.46	0.49	\$772.72	\$772.72	\$983.86	\$1,756.57	\$239.13	\$619.04	\$0.00	\$0.00	\$858.16
Residential Downstream Incentives	PY13	0.61	1.69	\$523.27	\$568.75	\$544.36	\$1,113.11	\$248.17	\$830.50	\$707.70	\$99.76	\$1,886.13
	PY14	0.61	1.69	\$550.81	\$598.68	\$573.01	\$1,171.69	\$261.24	\$874.22	\$744.95	\$105.01	\$1,985.41
	PY15	0.61	1.69	\$550.81	\$598.68	\$573.01	\$1,171.69	\$261.24	\$874.22	\$744.95	\$105.01	\$1,985.41
	PY16	0.61	1.69	\$550.81	\$598.68	\$573.01	\$1,171.69	\$261.24	\$874.22	\$744.95	\$105.01	\$1,985.41
	PY17	0.61	1.69	\$578.35	\$628.62	\$601.66	\$1,230.28	\$274.30	\$917.93	\$782.19	\$110.26	\$2,084.68
	Program Total	0.61	1.69	\$2,754.04	\$2,993.41	\$2,865.04	\$5,858.45	\$1,306.18	\$4,371.08	\$3,724.73	\$525.04	\$9,927.03
Residential Midstream Incentives	PY13	0.43	0.89	\$27.47	\$14.55	\$13.20	\$27.74	\$8.97	\$15.80	-\$0.19	\$0.00	\$24.58
	PY14	0.43	0.89	\$28.92	\$15.31	\$13.89	\$29.20	\$9.44	\$16.63	-\$0.20	\$0.00	\$25.87
	PY15	0.43	0.89	\$28.92	\$15.31	\$13.89	\$29.20	\$9.44	\$16.63	-\$0.20	\$0.00	\$25.87
	PY16	0.43	0.89	\$28.92	\$15.31	\$13.89	\$29.20	\$9.44	\$16.63	-\$0.20	\$0.00	\$25.87
	PY17	0.43	0.89	\$30.36	\$16.08	\$14.58	\$30.66	\$9.91	\$17.46	-\$0.21	\$0.00	\$27.17
	Program Total	0.43	0.89	\$144.59	\$76.57	\$69.45	\$146.01	\$47.21	\$83.16	-\$1.01	\$0.00	\$129.36
Residential Upstream Incentives	PY13	0.43	0.77	\$413.55	\$470.87	\$301.05	\$771.92	\$138.67	\$526.36	-\$67.05	\$0.00	\$597.99
	PY14	0.43	0.77	\$435.31	\$495.65	\$316.90	\$812.55	\$145.97	\$554.07	-\$70.57	\$0.00	\$629.46
	PY15	0.43	0.77	\$435.31	\$495.65	\$316.90	\$812.55	\$145.97	\$554.07	-\$70.57	\$0.00	\$629.46
	PY16	0.43	0.77	\$435.31	\$495.65	\$316.90	\$812.55	\$145.97	\$554.07	-\$70.57	\$0.00	\$629.46
	PY17	0.43	0.77	\$457.08	\$520.43	\$332.74	\$853.18	\$153.27	\$581.77	-\$74.10	\$0.00	\$660.93
	Program Total	0.43	0.77	\$2,176.56	\$2,478.26	\$1,584.50	\$4,062.76	\$729.84	\$2,770.34	-\$352.87	\$0.00	\$3,147.31
Low Income Energy Efficiency	PY13	1.00	1.02	\$1,755.23	\$814.18	\$1,011.89	\$1,826.07	\$362.96	\$1,164.52	\$109.17	\$221.79	\$1,858.44
	PY14	1.00	1.02	\$1,847.61	\$857.03	\$1,065.14	\$1,922.17	\$382.06	\$1,225.81	\$114.92	\$233.46	\$1,956.25
	PY15	1.00	1.02	\$1,847.61	\$857.03	\$1,065.14	\$1,922.17	\$382.06	\$1,225.81	\$114.92	\$233.46	\$1,956.25
	PY16	1.00	1.02	\$1,847.61	\$857.03	\$1,065.14	\$1,922.17	\$382.06	\$1,225.81	\$114.92	\$233.46	\$1,956.25
	PY17	1.00	1.02	\$1,939.99	\$899.88	\$1,118.40	\$2,018.28	\$401.16	\$1,287.10	\$120.66	\$245.14	\$2,054.06
	Program Total	1.00	1.02	\$9,238.05	\$4,285.16	\$5,325.71	\$9,610.87	\$1,910.29	\$6,129.06	\$574.58	\$1,167.31	\$9,781.24

Revised Energy Efficiency and Conservation Plan

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential Appliance Recycling	PY13	0.46	0.49	\$170.68	\$170.68	\$217.32	\$387.99	\$52.82	\$136.73	\$0.00	\$0.00	\$189.55
	PY14	0.46	0.49	\$238.95	\$238.95	\$304.25	\$543.19	\$73.94	\$191.42	\$0.00	\$0.00	\$265.37
	PY15	0.46	0.49	\$250.32	\$250.32	\$318.73	\$569.06	\$77.47	\$200.54	\$0.00	\$0.00	\$278.00
	PY16	0.46	0.49	\$238.95	\$238.95	\$304.25	\$543.19	\$73.94	\$191.42	\$0.00	\$0.00	\$265.37
	PY17	0.46	0.49	\$238.95	\$238.95	\$304.25	\$543.19	\$73.94	\$191.42	\$0.00	\$0.00	\$265.37
	Program Total	0.46	0.49	\$1,137.83	\$1,137.83	\$1,448.79	\$2,586.62	\$352.12	\$911.54	\$0.00	\$0.00	\$1,263.65
Residential Downstream Incentives	PY13	0.61	1.69	\$523.27	\$568.75	\$544.36	\$1,113.11	\$247.89	\$830.50	\$707.70	\$99.76	\$1,885.85
	PY14	0.61	1.69	\$550.81	\$598.68	\$573.01	\$1,171.69	\$260.94	\$874.22	\$744.95	\$105.01	\$1,985.11
	PY15	0.61	1.69	\$550.81	\$598.68	\$573.01	\$1,171.69	\$260.94	\$874.22	\$744.95	\$105.01	\$1,985.11
	PY16	0.61	1.69	\$550.81	\$598.68	\$573.01	\$1,171.69	\$260.94	\$874.22	\$744.95	\$105.01	\$1,985.11
	PY17	0.61	1.69	\$578.35	\$628.62	\$601.66	\$1,230.28	\$273.99	\$917.93	\$782.19	\$110.26	\$2,084.37
	Program Total	0.61	1.69	\$2,754.04	\$2,993.41	\$2,865.04	\$5,858.45	\$1,304.71	\$4,371.08	\$3,724.73	\$525.04	\$9,925.55
Residential Midstream Incentives	PY13	0.43	0.89	\$27.47	\$14.55	\$13.20	\$27.74	\$8.97	\$15.80	-\$0.19	\$0.00	\$24.58
	PY14	0.43	0.89	\$28.92	\$15.31	\$13.89	\$29.20	\$9.44	\$16.63	-\$0.20	\$0.00	\$25.87
	PY15	0.43	0.89	\$28.92	\$15.31	\$13.89	\$29.20	\$9.44	\$16.63	-\$0.20	\$0.00	\$25.87
	PY16	0.43	0.89	\$28.92	\$15.31	\$13.89	\$29.20	\$9.44	\$16.63	-\$0.20	\$0.00	\$25.87
	PY17	0.43	0.89	\$30.36	\$16.08	\$14.58	\$30.66	\$9.91	\$17.46	-\$0.21	\$0.00	\$27.17
	Program Total	0.43	0.89	\$144.59	\$76.57	\$69.45	\$146.01	\$47.21	\$83.16	-\$1.01	\$0.00	\$129.36
Residential Upstream Incentives	PY13	0.43	0.77	\$413.55	\$470.87	\$301.05	\$771.92	\$138.67	\$526.36	-\$67.05	\$0.00	\$597.99
	PY14	0.43	0.77	\$435.31	\$495.65	\$316.90	\$812.55	\$145.97	\$554.07	-\$70.57	\$0.00	\$629.46
	PY15	0.43	0.77	\$435.31	\$495.65	\$316.90	\$812.55	\$145.97	\$554.07	-\$70.57	\$0.00	\$629.46
	PY16	0.43	0.77	\$435.31	\$495.65	\$316.90	\$812.55	\$145.97	\$554.07	-\$70.57	\$0.00	\$629.46
	PY17	0.43	0.77	\$457.08	\$520.43	\$332.74	\$853.18	\$153.27	\$581.77	-\$74.10	\$0.00	\$660.93
	Program Total	0.43	0.77	\$2,176.56	\$2,478.26	\$1,584.50	\$4,062.76	\$729.84	\$2,770.34	-\$352.87	\$0.00	\$3,147.31
Low Income Energy Efficiency	PY13	1	0.75	\$1,685.86	\$854.11	\$1,161.63	\$2,015.73	\$270.54	\$922.25	\$163.85	\$145.29	\$1,501.94
	PY14	1	0.75	\$1,774.59	\$899.06	\$1,222.77	\$2,121.82	\$284.78	\$970.79	\$172.47	\$152.94	\$1,580.99
	PY15	1	0.75	\$1,774.59	\$899.06	\$1,222.77	\$2,121.82	\$284.78	\$970.79	\$172.47	\$152.94	\$1,580.99
	PY16	1	0.75	\$1,774.59	\$899.06	\$1,222.77	\$2,121.82	\$284.78	\$970.79	\$172.47	\$152.94	\$1,580.99
	PY17	1	0.75	\$1,863.32	\$944.01	\$1,283.90	\$2,227.92	\$299.02	\$1,019.33	\$181.10	\$160.59	\$1,660.03
	Program Total	1	0.75	\$8,872.94	\$4,495.30	\$6,113.83	\$10,609.12	\$1,423.90	\$4,853.96	\$862.37	\$764.71	\$7,904.93

Table 13B: TRC Benefits Table (Net) -- continued

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential Behavioral Efficiency	PY13	1.00	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY14	1.00	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY15	1.00	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY16	1.00	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	PY17	1.00	1.09	\$0.00	\$0.00	\$833.14	\$833.14	\$262.25	\$644.65	\$0.00	\$0.00	\$906.90
	Program Total	1.00	1.09	\$0.00	\$0.00	\$4,165.71	\$4,165.71	\$1,311.27	\$3,223.25	\$0.00	\$0.00	\$4,534.52
Low Income Behavioral Efficiency	PY13	1.00	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY14	1.00	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY15	1.00	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY16	1.00	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	PY17	1.00	0.61	\$0.00	\$0.00	\$223.03	\$223.03	\$39.58	\$97.28	\$0.00	\$0.00	\$136.86
	Program Total	1.00	0.61	\$0.00	\$0.00	\$1,115.17	\$1,115.17	\$197.88	\$486.41	\$0.00	\$0.00	\$684.28
Small C&I Direct-Install	PY13	1.00	1.09	\$1,423.76	\$2,446.46	\$282.88	\$2,729.33	\$917.99	\$1,908.75	-\$190.79	\$340.31	\$2,976.25
	PY14	1.00	1.09	\$1,752.94	\$3,012.08	\$348.28	\$3,360.36	\$1,130.23	\$2,350.05	-\$234.91	\$419.00	\$3,664.37
	PY15	1.00	1.09	\$1,816.40	\$3,121.12	\$360.88	\$3,482.01	\$1,171.14	\$2,435.12	-\$243.41	\$434.16	\$3,797.02
	PY16	1.00	1.09	\$1,749.99	\$3,007.01	\$347.69	\$3,354.70	\$1,128.33	\$2,346.09	-\$234.51	\$418.29	\$3,658.20
	PY17	1.00	1.09	\$1,357.39	\$2,332.40	\$269.69	\$2,602.09	\$875.19	\$1,819.76	-\$181.90	\$324.45	\$2,837.50
	Program Total	1.00	1.09	\$8,100.47	\$13,919.07	\$1,609.42	\$15,528.49	\$5,222.88	\$10,859.77	-\$1,085.52	\$1,936.21	\$16,933.34
Small C&I Downstream Incentives	PY13	0.90	1.45	\$985.83	\$3,193.24	\$653.10	\$3,846.34	\$1,606.05	\$3,721.05	-\$205.84	\$471.48	\$5,592.74
	PY14	0.90	1.45	\$1,213.75	\$3,931.52	\$804.10	\$4,735.62	\$1,977.37	\$4,581.36	-\$253.43	\$580.49	\$6,885.79
	PY15	0.90	1.45	\$1,257.69	\$4,073.84	\$833.21	\$4,907.05	\$2,048.95	\$4,747.21	-\$262.60	\$601.50	\$7,135.06
	PY16	0.90	1.45	\$1,211.71	\$3,924.90	\$802.74	\$4,727.64	\$1,974.04	\$4,573.65	-\$253.00	\$579.51	\$6,874.19
	PY17	0.90	1.45	\$939.87	\$3,044.37	\$622.65	\$3,667.02	\$1,531.17	\$3,547.57	-\$196.24	\$449.50	\$5,332.00
	Program Total	0.90	1.45	\$5,608.85	\$18,167.87	\$3,715.80	\$21,883.66	\$9,137.58	\$21,170.84	-\$1,171.12	\$2,682.48	\$31,819.78
Small C&I Midstream Incentives	PY13	0.72	0.66	\$776.11	\$3,493.30	\$336.16	\$3,829.46	\$1,019.50	\$1,664.11	-\$152.92	\$0.00	\$2,530.69
	PY14	0.72	0.66	\$955.55	\$4,300.95	\$413.88	\$4,714.84	\$1,255.21	\$2,048.86	-\$188.28	\$0.00	\$3,115.79
	PY15	0.72	0.66	\$990.14	\$4,456.65	\$428.86	\$4,885.52	\$1,300.65	\$2,123.03	-\$195.09	\$0.00	\$3,228.59
	PY16	0.72	0.66	\$953.94	\$4,293.71	\$413.19	\$4,706.90	\$1,253.10	\$2,045.41	-\$187.96	\$0.00	\$3,110.54
	PY17	0.72	0.66	\$739.93	\$3,330.44	\$320.49	\$3,650.93	\$971.97	\$1,586.53	-\$145.79	\$0.00	\$2,412.71
	Program Total	0.72	0.66	\$4,415.67	\$19,875.06	\$1,912.58	\$21,787.64	\$5,800.43	\$9,467.93	-\$870.04	\$0.00	\$14,398.32
Small C&I Virtual Commissioning (VCx)	PY13	0.72	3.09	\$206.42	\$148.62	\$74.03	\$222.65	\$338.98	\$348.84	\$0.00	\$0.00	\$687.81
	PY14	0.72	3.09	\$254.15	\$182.98	\$91.14	\$274.12	\$417.35	\$429.49	\$0.00	\$0.00	\$846.84
	PY15	0.72	3.09	\$263.35	\$189.61	\$94.44	\$284.05	\$432.46	\$445.04	\$0.00	\$0.00	\$877.49
	PY16	0.72	3.09	\$253.72	\$182.68	\$90.99	\$273.66	\$416.65	\$428.76	\$0.00	\$0.00	\$845.41
	PY17	0.72	3.09	\$196.80	\$141.69	\$70.57	\$212.27	\$323.17	\$332.57	\$0.00	\$0.00	\$655.75
	Program Total	0.72	3.09	\$1,174.43	\$845.59	\$421.17	\$1,266.75	\$1,928.60	\$1,984.70	\$0.00	\$0.00	\$3,913.30

Revised Energy Efficiency and Conservation Plan

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)					TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits	
				Paid by EDC	Paid by Participants								
Residential Behavioral Efficiency	PY13	1	1.09	\$0.00	\$0.00	\$543.64	\$543.64	\$171.13	\$420.65	\$0.00	\$0.00	\$591.78	
	PY14	1	1.09	\$0.00	\$0.00	\$771.83	\$771.83	\$242.96	\$597.22	\$0.00	\$0.00	\$840.18	
	PY15	1	1.09	\$0.00	\$0.00	\$698.01	\$698.01	\$219.72	\$540.10	\$0.00	\$0.00	\$759.81	
	PY16	1	1.09	\$0.00	\$0.00	\$765.12	\$765.12	\$240.85	\$592.03	\$0.00	\$0.00	\$832.87	
	PY17	1	1.09	\$0.00	\$0.00	\$557.06	\$557.06	\$175.35	\$431.04	\$0.00	\$0.00	\$606.39	
	Program Total	1	1.09	\$0.00	\$0.00	\$3,335.67	\$3,335.67	\$1,050.00	\$2,581.03	\$0.00	\$0.00	\$3,631.03	
Low Income Behavioral Efficiency	PY13	1	0.61	\$0.00	\$0.00	\$100.73	\$100.73	\$17.87	\$43.93	\$0.00	\$0.00	\$61.81	
	PY14	1	0.61	\$0.00	\$0.00	\$144.63	\$144.63	\$25.66	\$63.08	\$0.00	\$0.00	\$88.75	
	PY15	1	0.61	\$0.00	\$0.00	\$154.96	\$154.96	\$27.50	\$67.59	\$0.00	\$0.00	\$95.09	
	PY16	1	0.61	\$0.00	\$0.00	\$188.54	\$188.54	\$33.45	\$82.24	\$0.00	\$0.00	\$115.69	
	PY17	1	0.61	\$0.00	\$0.00	\$103.31	\$103.31	\$18.33	\$45.06	\$0.00	\$0.00	\$63.39	
	Program Total	1	0.61	\$0.00	\$0.00	\$692.17	\$692.17	\$122.82	\$301.91	\$0.00	\$0.00	\$424.73	
Small C&I Direct-Install	PY13	1	1.09	\$1,423.76	\$2,446.46	\$282.88	\$2,729.33	\$917.99	\$1,908.75	-\$190.79	\$340.31	\$2,976.25	
	PY14	1	1.09	\$1,752.94	\$3,012.08	\$348.28	\$3,360.36	\$1,130.23	\$2,350.05	-\$234.91	\$419.00	\$3,664.37	
	PY15	1	1.09	\$1,816.40	\$3,121.12	\$360.88	\$3,482.01	\$1,171.14	\$2,435.12	-\$243.41	\$434.16	\$3,797.02	
	PY16	1	1.09	\$1,749.99	\$3,007.01	\$347.69	\$3,354.70	\$1,128.33	\$2,346.09	-\$234.51	\$418.29	\$3,658.20	
	PY17	1	1.09	\$1,357.39	\$2,332.40	\$269.69	\$2,602.09	\$875.19	\$1,819.76	-\$181.90	\$324.45	\$2,837.50	
	Program Total	1	1.09	\$8,100.47	\$13,919.07	\$1,609.42	\$15,528.49	\$5,222.88	\$10,859.77	-\$1,085.52	\$1,936.21	\$16,933.34	
Small C&I Downstream Incentives	PY13	0.9	1.45	\$985.83	\$3,193.24	\$653.10	\$3,846.34	\$1,606.05	\$3,721.05	-\$205.84	\$471.48	\$5,592.74	
	PY14	0.9	1.45	\$1,213.75	\$3,931.52	\$804.10	\$4,735.62	\$1,977.37	\$4,581.36	-\$253.43	\$580.49	\$6,885.79	
	PY15	0.9	1.45	\$1,257.69	\$4,073.84	\$833.21	\$4,907.05	\$2,048.95	\$4,747.21	-\$262.60	\$601.50	\$7,135.06	
	PY16	0.9	1.45	\$1,211.71	\$3,924.90	\$802.74	\$4,727.64	\$1,974.04	\$4,573.65	-\$253.00	\$579.51	\$6,874.19	
	PY17	0.9	1.45	\$939.87	\$3,044.37	\$622.65	\$3,667.02	\$1,531.17	\$3,547.57	-\$196.24	\$449.50	\$5,332.00	
	Program Total	0.9	1.45	\$5,608.85	\$18,167.87	\$3,715.80	\$21,883.66	\$9,137.58	\$21,170.84	-\$1,171.12	\$2,682.48	\$31,819.78	
Small C&I Midstream Incentives	PY13	0.72	0.66	\$776.11	\$3,493.30	\$336.16	\$3,829.46	\$1,019.50	\$1,664.11	-\$152.92	\$0.00	\$2,530.69	
	PY14	0.72	0.66	\$955.55	\$4,300.95	\$413.88	\$4,714.84	\$1,255.21	\$2,048.86	-\$188.28	\$0.00	\$3,115.79	
	PY15	0.72	0.66	\$990.14	\$4,456.65	\$428.86	\$4,885.52	\$1,300.65	\$2,123.03	-\$195.09	\$0.00	\$3,228.59	
	PY16	0.72	0.66	\$953.94	\$4,293.71	\$413.19	\$4,706.90	\$1,253.10	\$2,045.41	-\$187.96	\$0.00	\$3,110.54	
	PY17	0.72	0.66	\$739.93	\$3,330.44	\$320.49	\$3,650.93	\$971.97	\$1,586.53	-\$145.79	\$0.00	\$2,412.71	
	Program Total	0.72	0.66	\$4,415.67	\$19,875.06	\$1,912.58	\$21,787.64	\$5,800.43	\$9,467.93	-\$870.04	\$0.00	\$14,398.32	
Small C&I Virtual Commissioning (VCx)	PY13	0.72	3.09	\$206.42	\$148.62	\$74.03	\$222.65	\$338.98	\$348.84	\$0.00	\$0.00	\$687.81	
	PY14	0.72	3.09	\$254.15	\$182.98	\$91.14	\$274.12	\$417.35	\$429.49	\$0.00	\$0.00	\$846.84	
	PY15	0.72	3.09	\$263.35	\$189.61	\$94.44	\$284.05	\$432.46	\$445.04	\$0.00	\$0.00	\$877.49	
	PY16	0.72	3.09	\$253.72	\$182.68	\$90.99	\$273.66	\$416.65	\$428.76	\$0.00	\$0.00	\$845.41	
	PY17	0.72	3.09	\$196.80	\$141.69	\$70.57	\$212.27	\$323.17	\$332.57	\$0.00	\$0.00	\$655.75	
	Program Total	0.72	3.09	\$1,174.43	\$845.59	\$421.17	\$1,266.75	\$1,928.60	\$1,984.70	\$0.00	\$0.00	\$3,913.30	

Table 13B: TRC Benefits Table (Net) -- continued

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
All Programs	PY13	0.90	1.17	\$9,501.30	\$17,569.07	\$7,759.11	\$25,328.18	\$9,172.74	\$19,084.94	-\$121.27	\$1,487.93	\$29,624.35
	PY14	0.90	1.17	\$11,231.95	\$21,317.00	\$8,999.73	\$30,316.73	\$11,094.27	\$22,888.48	-\$283.17	\$1,774.52	\$35,474.10
	PY15	0.90	1.17	\$11,536.78	\$22,019.36	\$9,218.38	\$31,237.73	\$11,456.62	\$23,595.01	-\$321.98	\$1,826.51	\$36,556.16
	PY16	0.90	1.17	\$11,218.13	\$21,284.70	\$8,990.02	\$30,274.72	\$11,077.53	\$22,855.91	-\$281.36	\$1,772.11	\$35,424.18
	PY17	0.89	1.17	\$9,523.16	\$17,085.53	\$7,796.62	\$24,882.15	\$8,890.44	\$18,656.61	-\$1.76	\$1,467.40	\$29,012.69
Portfolio Total		0.90	1.17	\$54,965.91	\$99,275.66	\$42,763.85	\$142,039.51	\$51,691.60	\$107,080.96	-\$1,009.54	\$8,328.47	\$166,091.48

Portfolio	NTGR & TRC			TRC Costs by Program Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC	Incremental Measure Cost		Program Admin Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel / Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
All Programs	PY13	0.89	1.15	\$9,486.69	\$17,663.77	\$7,566.78	\$25,230.54	\$8,984.16	\$18,609.20	-\$66.59	\$1,411.44	\$28,938.22
	PY14	0.89	1.15	\$11,235.60	\$21,435.70	\$9,115.28	\$30,550.98	\$10,987.21	\$22,613.26	-\$225.61	\$1,694.00	\$35,068.87
	PY15	0.89	1.15	\$11,544.08	\$22,141.71	\$9,275.08	\$31,416.79	\$11,329.30	\$23,270.10	-\$264.43	\$1,745.99	\$36,080.96
	PY16	0.89	1.15	\$11,221.78	\$21,403.40	\$9,142.76	\$30,546.16	\$10,976.15	\$22,594.65	-\$223.80	\$1,691.58	\$35,038.58
	PY17	0.887	1.14	\$9,523.16	\$17,206.33	\$7,663.95	\$24,870.29	\$8,703.57	\$18,184.43	\$58.68	\$1,382.85	\$28,329.53
Portfolio Total		0.889	1.15	\$54,965.91	\$99,850.92	\$42,763.849	\$142,614.765	\$50,980.39	\$105,271.64	-\$721.75	\$7,925.86	\$163,456.148

12. Gantt Charts of Program Schedule Summary

Chart 1: Gantt Chart of Program Schedule Summary (For Section 1.4)

Chart will be formatted to fit on one 8½ - 11 page

It will use color to differentiate schedule items

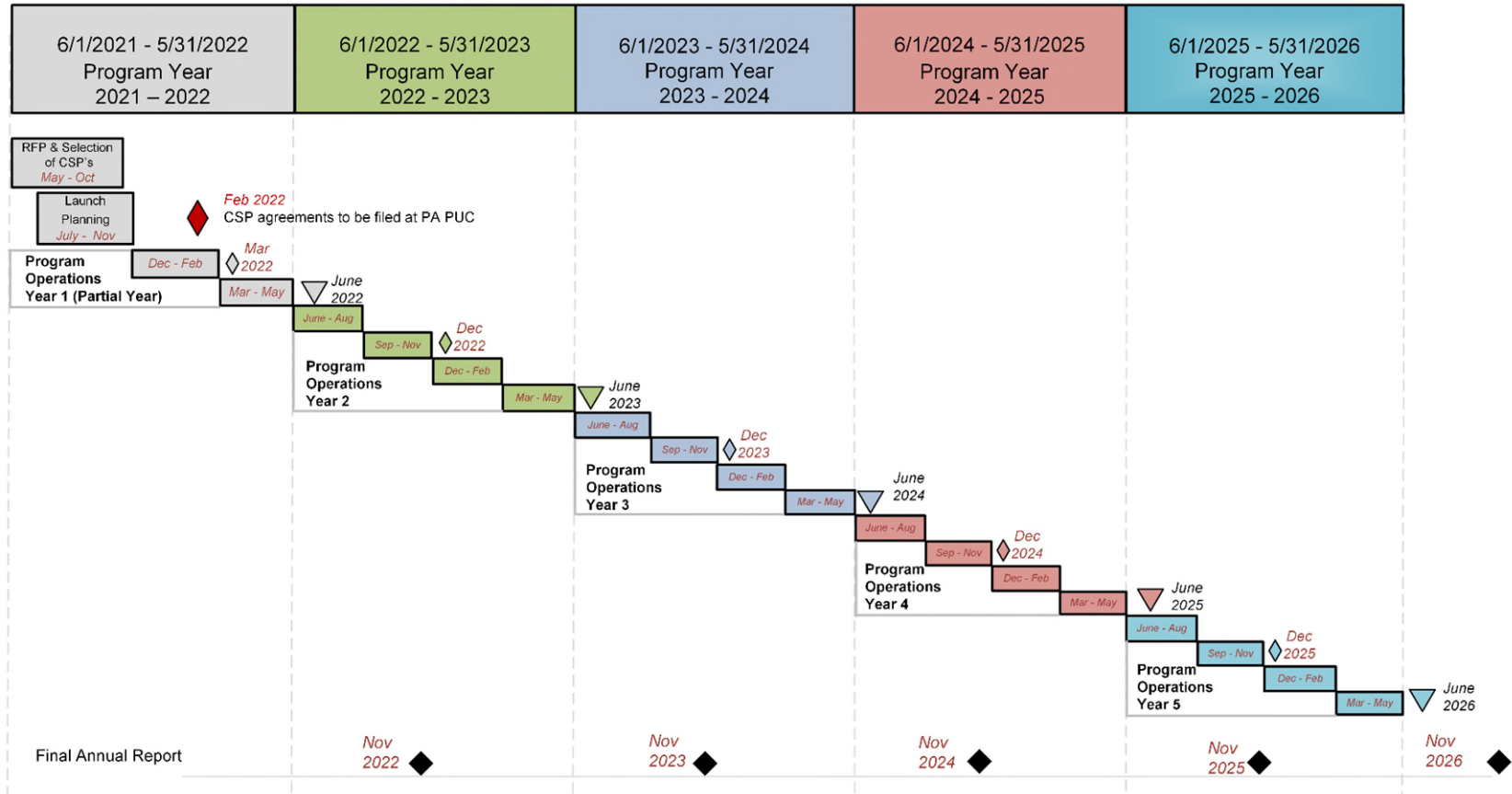
Provide a separate chart for each Portfolio that includes:

- Start and completion dates for the launch and close of Residential Portfolio programs for Program Years 2021, 2022, 2023, 2024 and 2025
- Start and completion dates for the launch and close of Commercial/Industrial Small portfolio programs for Program Years 2021, 2022, 2023, 2024 and 2025
- Start and completion dates for the launch and close of Commercial/Industrial Large portfolio programs for Program Years 2021, 2022, 2023, 2024 and 2025
- Start and completion dates for the launch and close of Residential and Low Income Behavioral programs for Program Years 2021, 2022, 2023, 2024 and 2025

As well, include the following for each chart:

- Start and completion dates for design of each Program Year
- Dates at which CSPs will be selected and placed under contract for each portfolio

**Chart 1:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Residential Portfolio Programs**



Assumptions:

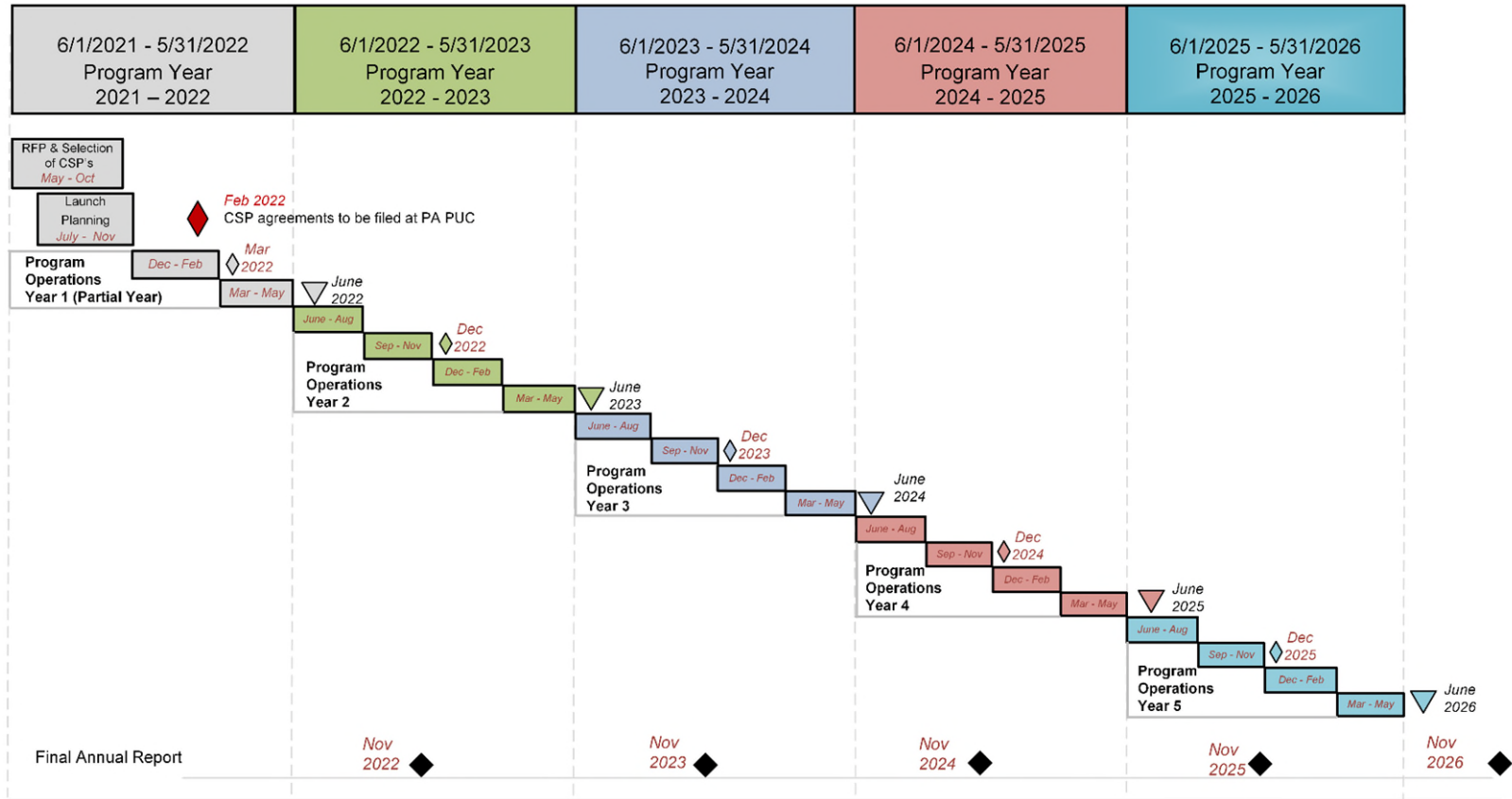
Duquesne Light will file the Act 129 Phase IV EE&C Plan by November 30, 2020
PA PUC approval by March 2021

Key

- ◇ Semi-Annual Report
- ▽ Annual Report PUC
- ◆ Final Annual Report

Note: Program Year Ending May 31

Chart 2:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Small Commercial and Industrial Portfolio Programs



Assumptions:

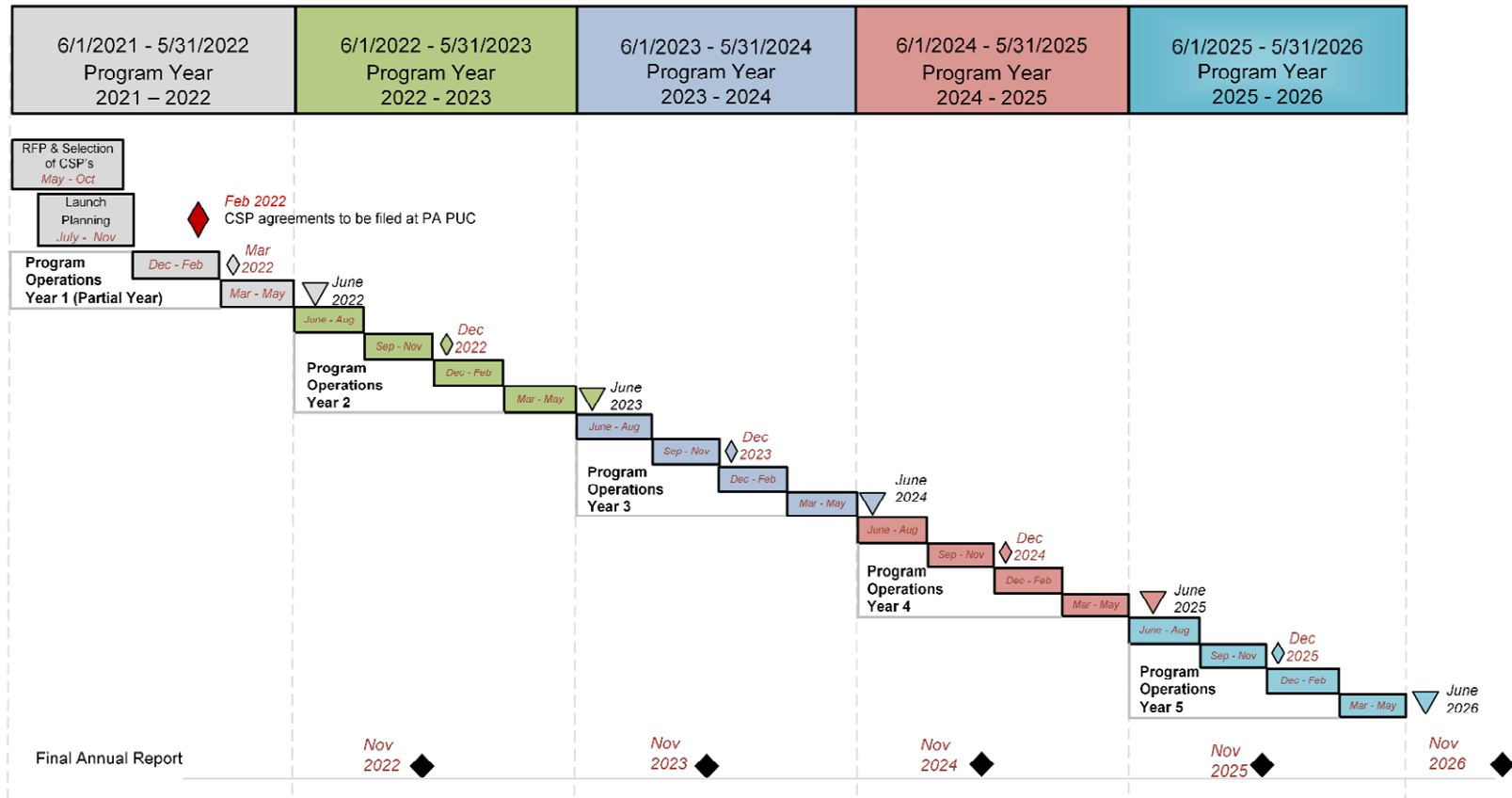
Duquesne Light will file the Act 129 Phase IV EE&C Plan by November 30, 2020
PA PUC approval by March 2021

Key

- ◆ Semi-Annual Report
- ▽ Annual Report PUC
- ◆ Final Annual Report

Note: Program Year Ending May 31

Chart 3:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Large Commercial and Industrial Portfolio Programs



Assumptions:

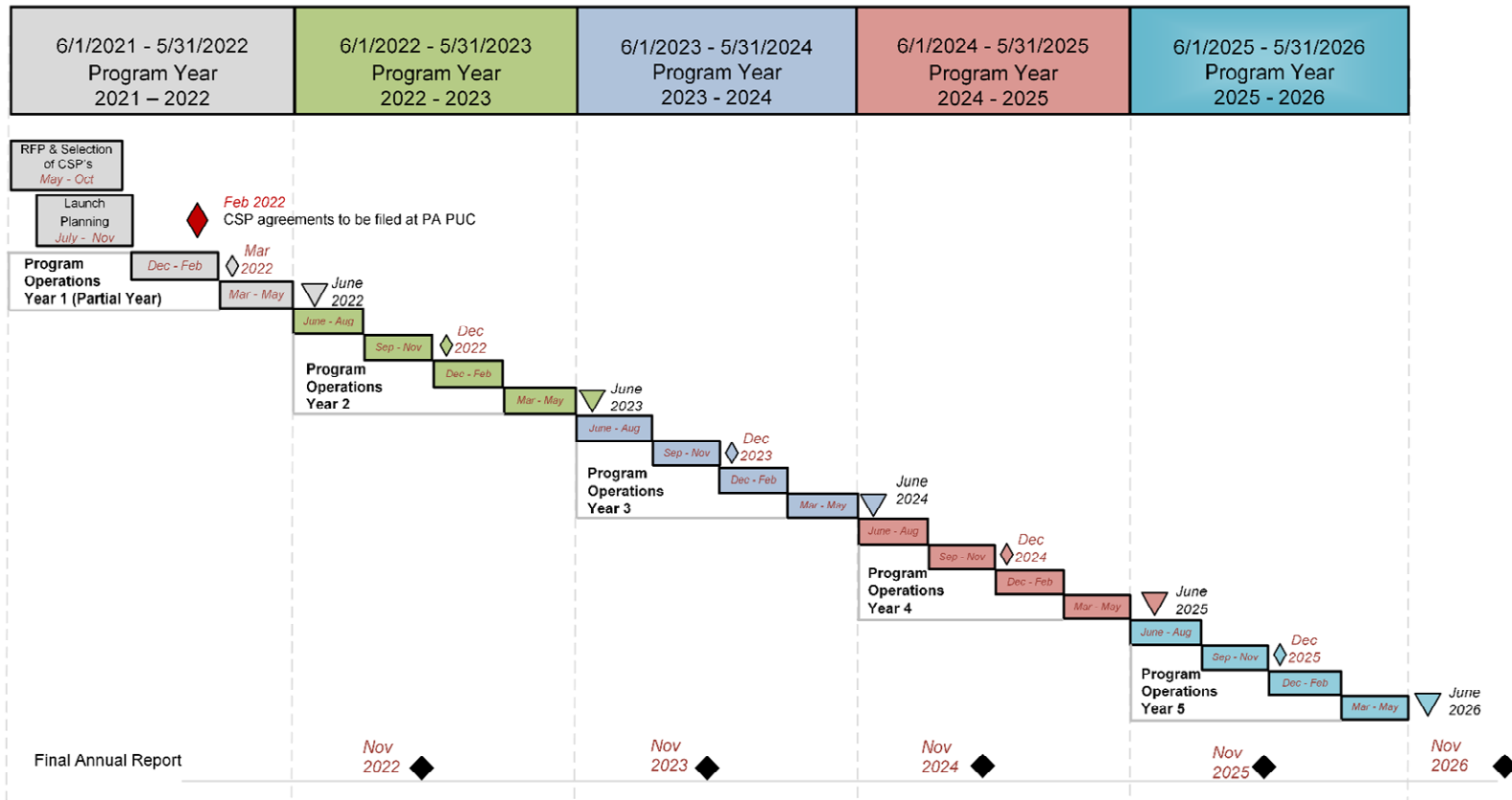
Duquesne Light will file the Act 129 Phase IV EE&C Plan by November 30, 2020
PA PUC approval by March 2021

Key

- ◇ Semi-Annual Report
- ▽ Annual Report PUC
- ◆ Final Annual Report

Note: Program Year Ending May 31

**Chart 4:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Residential and Low Income Behavioral Programs**



Assumptions:

Duquesne Light will file the Act 129 Phase IV EE&C Plan by November 30, 2020
PA PUC approval by March 2021

Key

- ◇ Semi-Annual Report
- ▽ Annual Report PUC
- ◆ Final Annual Report

Note: Program Year Ending May 31

13. CSP Agreement (CONFIDENTIAL)

Guidehouse's Phase IV CSP Agreement filed separately due to confidentiality.

14. Avoided Cost Calculator

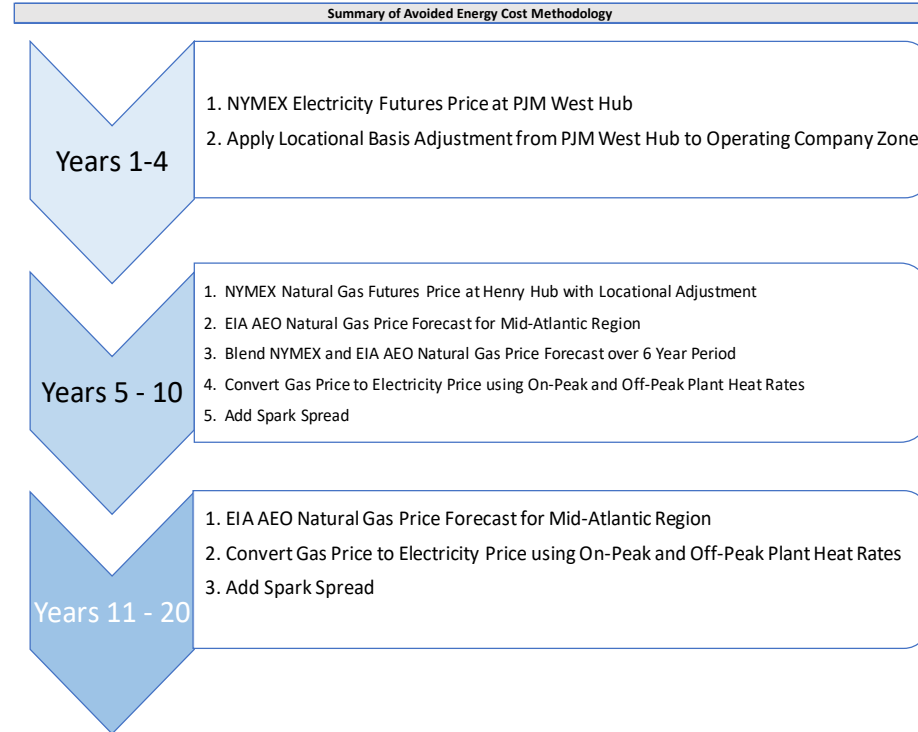
Pennsylvania Act 129 IV Avoided Energy and Capacity Cost Calculator
 This calculator is to be utilized with the Pennsylvania Act 129 Phase IV Total Resource Cost (TRC) test Order. This calculator, developed by the State Wide Evaluator (SWE), executes the methodology outlined within the TRC Order to develop avoided energy and capacity costs for TRC calculations. Please refer to the Phase IV TRC Order for additional methodology narrative and source references.
 For Phase IV, the start year shall be set to program year 13 (2021/2022). The user shall gather publicly available data sets as inputs.
 This calculator includes the costs of compliance with the Pennsylvania Alternative Energy Portfolio Standard (AEPS) within the avoided energy cost calculations.

Legend	
	Inputs - where no value is available, utilize text "No Value" and not a zero or null value
	Calculation Cell - do not edit
	Results for Segment 1 - Years 1 through 4
	Results for Segment 2 - Years 5 through 10
	Results for Segment 3 - Years 11 through 20

Data Needed	TRC Order Section	Input Tab
EDC Name		General Inputs
Start Year		General Inputs
Inflation Rate	A.7 Page 8	General Inputs
Plant Heat Rates	B.2.b.v Page 15	General Inputs
NYMEX Electric Futures at PJM Western Hub	B.2.a Page 13	Elec Futures
PJM State of Market EDC Zone Locational Adjustment	B.2.a Page 13	Elec Futures
NYMEX Natural Gas Futures at Henry Hub	B.2.b.i Page 14	NG Futures
EIA AEO Mid Atlantic Natural Gas Price Forecast in Real Dollars	B.2.b.iii Page 15	NG Futures
NYMEX Natural Gas Adjustments at Transco 6 (Non-NY) or Tetco M-3	B.2.b.ii Page 14	Adjustments
PJM Base Residual Auction Results	B.6 Page 17	Generation Capacity
Transmission and Distribution Capacity Costs	B.7 Page 18	T&D Capacity
AEPS Avoided Costs	B.8 Page 20	AEPS

Monetary Issues: All output dollars are nominal

Calendarization Issues: The PA Act 129 calendar follows the PJM calendar, which starts in the month of June and ends in the month of May. For a measure installed within a PA Act 129 program year, the avoided energy costs are based on the calendar year of the last months in the PJM calendar. For instance, a measure installed in PA Act 129 program year 13 (6/1/2021-5/31/2022), the avoided energy costs will be calculated based on 12 months of data from the calendar year 2022.

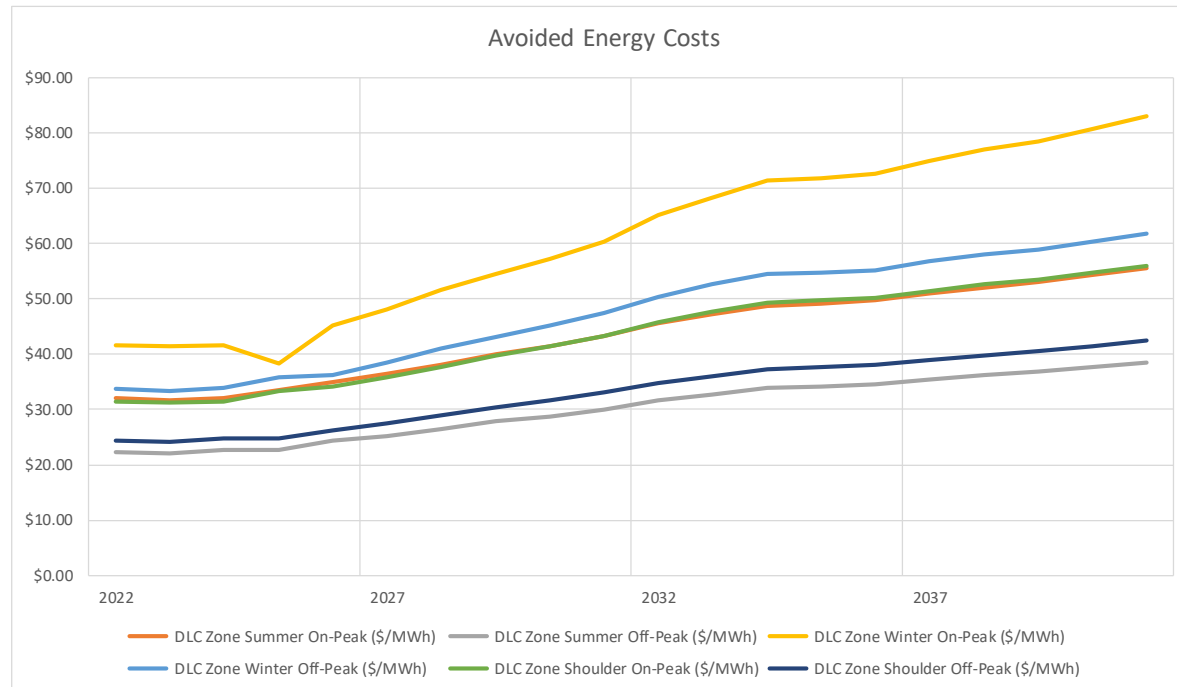


Revised Energy Efficiency and Conservation Plan

General			Calendar				
Company Name	DLC		Act 129 PY	PY Start	PY End	Avoided Energy YR	AEPS Cost
Start Year (Program)	13	2022	13	2021	2022	2022	\$0.83
Discount Rate	5%	TRC Order A.4 page 8	14	2022	2023	2023	\$0.85
Inflation Rate	2%	TRC Order A.4 page 8	15	2023	2024	2024	\$0.87
AEPS Avoided Cost (\$/MWh)	\$0.83	TRC Order B.8 page 20	16	2024	2025	2025	\$0.89
Plant Specifications			17	2025	2026	2026	\$0.90
	Heat Rate (Btu/kWh)		18	2026	2027	2027	\$0.92
Low Efficiency Plant	11,176	TRC Order B.2.b.v page 15	19	2027	2028	2028	\$0.94
High Efficiency Plant	7,649	TRC Order B.2.b.v page 15	20	2028	2029	2029	\$0.96
Electric Distribution Companies			21	2029	2030	2030	\$0.98
		NYMEX NG Futures Source	22	2030	2031	2031	\$1.00
Duquesne Light Co	DLC	Tetco M-3	23	2031	2032	2032	\$1.02
Metropolitan Edison Co	Met-Ed	Transco 6 (Non-NY)	24	2032	2033	2033	\$1.04
PECO Energy Co	PECO	Transco 6 (Non-NY)	25	2033	2034	2034	\$1.06
Pennsylvania Electric Co	Penelec	Tetco M-3	26	2034	2035	2035	\$1.08
Pennsylvania Power Co	Penn Power	Tetco M-3	27	2035	2036	2036	\$1.10
PPL Utilities	PPL	Transco 6 (Non-NY)	28	2036	2037	2037	\$1.12
West Penn Power Co	West Penn	Tetco M-3	29	2037	2038	2038	\$1.14
Seasonal Definitions			30	2038	2039	2039	\$1.17
Jan	Winter		31	2039	2040	2040	\$1.19
Feb	Winter		32	2040	2041	2041	\$1.21
Mar	Shoulder		33	2041	2042	2042	\$1.24
Apr	Shoulder		34	2042	2043	2043	\$1.26
May	Summer		35	2043	2044	2044	\$1.29
Jun	Summer		36	2044	2045	2045	\$1.32
Jul	Summer		37	2045	2046	2046	\$1.34
Aug	Summer		38	2046	2047	2047	\$1.37
Sep	Summer		39	2047	2048	2048	\$1.40
Oct	Shoulder		40	2048	2049	2049	\$1.42
Nov	Shoulder		41	2049	2050	2050	\$1.45
Dec	Winter		42	2050	2051	2051	\$1.48

Revised Energy Efficiency and Conservation Plan

PA ACT 129 Program Year	Year	DLC Zone Summer On-Peak (\$/MWh)	DLC Zone Summer Off-Peak (\$/MWh)	DLC Zone Winter On-Peak (\$/MWh)	DLC Zone Winter Off-Peak (\$/MWh)	DLC Zone Shoulder On-Peak (\$/MWh)	DLC Zone Shoulder Off-Peak (\$/MWh)	Generation Capacity (\$/kW/year)	Transmission Capacity (\$/kW/year)	Distribution Capacity (\$/kW/year)	Avoided Natural Gas Fuel Costs (\$/MMBTU)	
13	2022	\$32.09	\$22.24	\$41.63	\$33.74	\$31.39	\$24.29	\$53.13	\$31.27	\$16.29	\$2.70	Segment 1
14	2023	\$31.74	\$22.20	\$41.45	\$33.24	\$31.27	\$24.19	\$40.16	\$31.90	\$16.62	\$2.65	
15	2024	\$32.09	\$22.66	\$41.64	\$34.00	\$31.41	\$24.70	\$40.96	\$32.53	\$16.95	\$2.68	
16	2025	\$33.56	\$22.75	\$38.39	\$35.75	\$33.22	\$24.74	\$41.78	\$33.18	\$17.29	\$2.75	
17	2026	\$34.91	\$24.29	\$45.07	\$36.32	\$34.06	\$26.34	\$42.62	\$33.85	\$17.63	\$2.92	Segment 2
18	2027	\$36.35	\$25.29	\$48.16	\$38.55	\$35.76	\$27.56	\$43.47	\$34.52	\$17.99	\$3.08	
19	2028	\$38.15	\$26.53	\$51.50	\$40.94	\$37.78	\$29.01	\$44.34	\$35.22	\$18.35	\$3.28	
20	2029	\$40.03	\$27.83	\$54.57	\$43.16	\$39.78	\$30.44	\$45.23	\$35.92	\$18.71	\$3.47	
21	2030	\$41.46	\$28.81	\$57.19	\$45.07	\$41.42	\$31.62	\$46.13	\$36.64	\$19.09	\$3.62	Segment 3
22	2031	\$43.29	\$30.07	\$60.35	\$47.35	\$43.38	\$33.03	\$47.05	\$37.37	\$19.47	\$3.81	
23	2032	\$45.53	\$31.62	\$65.03	\$50.45	\$45.86	\$34.80	\$47.99	\$38.12	\$19.86	\$4.05	
24	2033	\$47.20	\$32.77	\$68.27	\$52.56	\$47.65	\$36.09	\$48.95	\$38.88	\$20.25	\$4.22	
25	2034	\$48.77	\$33.85	\$71.27	\$54.51	\$49.33	\$37.31	\$49.93	\$39.66	\$20.66	\$4.38	
26	2035	\$49.19	\$34.15	\$71.84	\$54.80	\$49.68	\$37.62	\$50.93	\$40.45	\$21.07	\$4.40	
27	2036	\$49.72	\$34.52	\$72.61	\$55.22	\$50.14	\$38.01	\$51.95	\$41.26	\$21.49	\$4.44	
28	2037	\$50.98	\$35.40	\$74.93	\$56.72	\$51.46	\$38.98	\$52.99	\$42.09	\$21.92	\$4.56	
29	2038	\$52.11	\$36.17	\$76.94	\$58.00	\$52.61	\$39.84	\$54.05	\$42.93	\$22.36	\$4.66	
30	2039	\$53.01	\$36.80	\$78.47	\$58.95	\$53.50	\$40.53	\$55.13	\$43.79	\$22.81	\$4.74	
31	2040	\$54.24	\$37.65	\$80.68	\$60.37	\$54.76	\$41.48	\$56.23	\$44.66	\$23.27	\$4.85	
32	2041	\$55.50	\$38.53	\$82.94	\$61.83	\$56.06	\$42.44	\$57.36	\$45.55	\$23.73	\$4.97	



Revised Energy Efficiency and Conservation Plan

Period	NYMEX: PJM Western Hub On-peak (\$/MWh)	NYMEX: PJM Western Hub Off-peak (\$/MWh)	DLC Zone Adjusted On- Peak (\$/MWh)	DLC Zone Adjusted Off- Peak (\$/MWh)
Aug-23	\$29.65	\$20.30	\$31.46	\$21.54
Sep-23	\$28.65	\$19.60	\$30.39	\$20.79
Oct-23	\$27.20	\$19.85	\$28.86	\$21.06
Nov-23	\$27.50	\$20.40	\$29.17	\$21.64
Dec-23	\$30.30	\$23.50	\$32.14	\$24.93
Jan-24	\$43.90	\$36.25	\$46.57	\$38.46
Feb-24	\$41.30	\$33.40	\$43.81	\$35.43
Mar-24	\$31.30	\$26.45	\$33.21	\$28.06
Apr-24	\$28.55	\$22.15	\$30.29	\$23.50
May-24	\$28.15	\$19.75	\$29.86	\$20.95
Jun-24	\$27.90	\$19.65	\$29.60	\$20.85
Jul-24	\$32.75	\$22.35	\$34.74	\$23.71
Aug-24	\$30.00	\$20.90	\$31.83	\$22.17
Sep-24	\$28.35	\$20.05	\$30.08	\$21.27
Oct-24	\$27.55	\$20.35	\$29.23	\$21.59
Nov-24	\$27.75	\$20.90	\$29.44	\$22.17
Dec-24	\$30.10	\$24.05	\$31.93	\$25.51
Jan-25	\$38.10	\$38.75	\$40.42	\$41.11
Feb-25	\$36.80	\$35.75	\$39.04	\$37.93
Mar-25	\$31.75	\$26.50	\$33.68	\$28.11
Apr-25	\$30.35	\$22.15	\$32.20	\$23.50
May-25	\$30.15	\$19.90	\$31.99	\$21.11
Jun-25	\$30.00	\$19.90	\$31.83	\$21.11
Jul-25	\$32.50	\$22.30	\$34.48	\$23.66
Aug-25	\$31.10	\$20.90	\$32.99	\$22.17
Sep-25	\$30.25	\$20.05	\$32.09	\$21.27
Oct-25	\$29.85	\$20.40	\$31.67	\$21.64
Nov-25	\$29.95	\$20.90	\$31.77	\$22.17
Dec-25	\$31.15	\$24.10	\$33.05	\$25.57
End of Segment I				

EIA AEO Mid-Atlantic Data																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Real	\$2.89	\$2.91	\$3.03	\$3.22	\$3.27	\$3.34	\$3.35	\$3.30	\$3.24	\$3.22	\$3.26	\$3.33	\$3.39	\$3.34	\$3.30	\$3.32	\$3.33	\$3.32	\$3.33	\$3.35	\$3.37
Nominal	\$2.95	\$3.03	\$3.21	\$3.49	\$3.61	\$3.76	\$3.85	\$3.87	\$3.87	\$3.92	\$4.05	\$4.22	\$4.38	\$4.40	\$4.44	\$4.56	\$4.66	\$4.74	\$4.85	\$4.97	\$5.10

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price	NYMEX: DLC Natural Gas Price \$/MMBTU	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Jan-21	\$3.01	\$4.94	\$0.00	\$4.94
Feb-21	\$2.98	\$4.82	\$0.00	\$4.82
Mar-21	\$2.87	\$2.99	\$0.00	\$2.99
Apr-21	\$2.61	\$2.40	\$0.00	\$2.40
May-21	\$2.58	\$2.25	\$0.00	\$2.25
Jun-21	\$2.62	\$2.28	\$0.00	\$2.28
Jul-21	\$2.66	\$2.36	\$0.00	\$2.36
Aug-21	\$2.67	\$2.35	\$0.00	\$2.35
Sep-21	\$2.66	\$2.10	\$0.00	\$2.10
Oct-21	\$2.67	\$2.14	\$0.00	\$2.14
Nov-21	\$2.72	\$2.66	\$0.00	\$2.66
Dec-21	\$2.84	\$3.42	\$0.00	\$3.42
Jan-22	\$2.94	\$4.87	\$5.32	\$4.87
Feb-22	\$2.90	\$4.74	\$5.18	\$4.74
Mar-22	\$2.75	\$2.87	\$3.10	\$2.87
Apr-22	\$2.37	\$2.17	\$2.37	\$2.17
May-22	\$2.34	\$2.01	\$2.20	\$2.01
Jun-22	\$2.38	\$2.04	\$2.23	\$2.04
Jul-22	\$2.42	\$2.12	\$2.31	\$2.12
Aug-22	\$2.43	\$2.10	\$2.30	\$2.10
Sep-22	\$2.42	\$1.87	\$2.04	\$1.87
Oct-22	\$2.44	\$1.91	\$2.09	\$1.91
Nov-22	\$2.51	\$2.45	\$2.69	\$2.45
Dec-22	\$2.68	\$3.26	\$3.60	\$3.26
Jan-23	\$2.80	\$4.77	\$5.45	\$4.77
Feb-23	\$2.77	\$4.64	\$5.31	\$4.64
Mar-23	\$2.62	\$2.74	\$3.17	\$2.74
Apr-23	\$2.33	\$2.12	\$2.43	\$2.12
May-23	\$2.30	\$1.97	\$2.26	\$1.97
Jun-23	\$2.34	\$2.00	\$2.28	\$2.00
Jul-23	\$2.38	\$2.07	\$2.37	\$2.07

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Aug-23	\$2.39	\$2.06	\$2.36	\$2.06
Sep-23	\$2.39	\$1.82	\$2.09	\$1.82
Oct-23	\$2.42	\$1.88	\$2.15	\$1.88
Nov-23	\$2.50	\$2.43	\$2.76	\$2.43
Dec-23	\$2.68	\$3.27	\$3.69	\$3.27
Jan-24	\$2.81	\$4.82	\$5.79	\$4.82
Feb-24	\$2.77	\$4.69	\$5.63	\$4.69
Mar-24	\$2.64	\$2.77	\$3.37	\$2.77
Apr-24	\$2.37	\$2.16	\$2.57	\$2.16
May-24	\$2.35	\$2.01	\$2.39	\$2.01
Jun-24	\$2.38	\$2.03	\$2.42	\$2.03
Jul-24	\$2.43	\$2.11	\$2.51	\$2.11
Aug-24	\$2.43	\$2.09	\$2.50	\$2.09
Sep-24	\$2.43	\$1.85	\$2.22	\$1.85
Oct-24	\$2.45	\$1.91	\$2.28	\$1.91
Nov-24	\$2.53	\$2.47	\$2.93	\$2.47
Dec-24	\$2.71	\$3.31	\$3.92	\$3.31
Jan-25	\$2.84	\$4.89	\$6.29	\$4.89
Feb-25	\$2.81	\$4.76	\$6.12	\$4.76
Mar-25	\$2.69	\$2.81	\$3.66	\$2.81
Apr-25	\$2.44	\$2.21	\$2.80	\$2.21
May-25	\$2.42	\$2.07	\$2.60	\$2.07
Jun-25	\$2.45	\$2.09	\$2.63	\$2.09
Jul-25	\$2.49	\$2.17	\$2.73	\$2.17
Aug-25	\$2.50	\$2.15	\$2.72	\$2.15
Sep-25	\$2.49	\$1.91	\$2.41	\$1.91
Oct-25	\$2.53	\$1.97	\$2.47	\$1.97
Nov-25	\$2.60	\$2.54	\$3.19	\$2.54
Dec-25	\$2.78	\$3.39	\$4.26	\$3.39
Jan-26	\$2.91	\$5.00	\$6.51	\$5.21
Feb-26	\$2.88	\$4.87	\$6.34	\$5.08

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price \$/MMBTU	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Mar-26	\$2.75	\$2.88	\$3.79	\$3.01
Apr-26	\$2.49	\$2.27	\$2.90	\$2.36
May-26	\$2.47	\$2.12	\$2.69	\$2.20
Jun-26	\$2.50	\$2.14	\$2.73	\$2.23
Jul-26	\$2.54	\$2.21	\$2.83	\$2.30
Aug-26	\$2.55	\$2.19	\$2.81	\$2.28
Sep-26	\$2.54	\$1.94	\$2.49	\$2.02
Oct-26	\$2.56	\$1.99	\$2.56	\$2.07
Nov-26	\$2.63	\$2.56	\$3.30	\$2.67
Dec-26	\$2.80	\$3.42	\$4.41	\$3.57
Jan-27	\$2.92	\$5.05	\$6.78	\$5.55
Feb-27	\$2.89	\$4.92	\$6.60	\$5.40
Mar-27	\$2.76	\$2.89	\$3.95	\$3.20
Apr-27	\$2.49	\$2.26	\$3.02	\$2.47
May-27	\$2.47	\$2.11	\$2.81	\$2.31
Jun-27	\$2.50	\$2.13	\$2.84	\$2.33
Jul-27	\$2.54	\$2.20	\$2.95	\$2.41
Aug-27	\$2.54	\$2.18	\$2.93	\$2.39
Sep-27	\$2.55	\$1.93	\$2.60	\$2.12
Oct-27	\$2.57	\$1.99	\$2.67	\$2.19
Nov-27	\$2.64	\$2.57	\$3.44	\$2.82
Dec-27	\$2.81	\$3.45	\$4.59	\$3.77
Jan-28	\$2.93	\$5.10	\$6.94	\$5.89
Feb-28	\$2.90	\$4.97	\$6.75	\$5.73
Mar-28	\$2.78	\$2.91	\$4.04	\$3.40
Apr-28	\$2.50	\$2.26	\$3.09	\$2.62
May-28	\$2.48	\$2.12	\$2.87	\$2.44
Jun-28	\$2.52	\$2.15	\$2.91	\$2.47
Jul-28	\$2.57	\$2.22	\$3.01	\$2.56
Aug-28	\$2.58	\$2.21	\$3.00	\$2.55
Sep-28	\$2.59	\$1.97	\$2.66	\$2.26

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Oct-28	\$2.63	\$2.04	\$2.73	\$2.33
Nov-28	\$2.70	\$2.63	\$3.52	\$3.01
Dec-28	\$2.88	\$3.53	\$4.70	\$4.03
Jan-29	\$3.01	\$5.23	\$6.97	\$6.23
Feb-29	\$2.98	\$5.10	\$6.78	\$6.06
Mar-29	\$2.88	\$3.01	\$4.06	\$3.61
Apr-29	\$2.60	\$2.36	\$3.10	\$2.78
May-29	\$2.58	\$2.21	\$2.88	\$2.59
Jun-29	\$2.62	\$2.23	\$2.92	\$2.63
Jul-29	\$2.66	\$2.31	\$3.03	\$2.72
Aug-29	\$2.67	\$2.29	\$3.01	\$2.70
Sep-29	\$2.67	\$2.04	\$2.67	\$2.40
Oct-29	\$2.69	\$2.09	\$2.74	\$2.46
Nov-29	\$2.76	\$2.69	\$3.53	\$3.17
Dec-29	\$2.92	\$3.58	\$4.72	\$4.23
Jan-30	\$3.05	\$5.31	\$6.98	\$6.50
Feb-30	\$3.01	\$5.17	\$6.79	\$6.33
Mar-30	\$2.92	\$3.06	\$4.06	\$3.78
Apr-30	\$2.62	\$2.38	\$3.10	\$2.90
May-30	\$2.60	\$2.22	\$2.89	\$2.70
Jun-30	\$2.64	\$2.24	\$2.92	\$2.73
Jul-30	\$2.68	\$2.32	\$3.03	\$2.83
Aug-30	\$2.72	\$2.33	\$3.01	\$2.82
Sep-30	\$2.73	\$2.08	\$2.67	\$2.50
Oct-30	\$2.78	\$2.16	\$2.75	\$2.58
Nov-30	\$2.85	\$2.78	\$3.54	\$3.32
Dec-30	\$3.00	\$3.68	\$4.73	\$4.43
Jan-31	\$3.13	\$5.44	\$7.07	\$6.84
Feb-31	\$3.10	\$5.30	\$6.88	\$6.66
Mar-31	\$3.03	\$3.18	\$4.12	\$3.98
Apr-31	\$2.74	\$2.49	\$3.15	\$3.05

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
May-31	\$2.72	\$2.33	\$2.92	\$2.84
Jun-31	\$2.75	\$2.35	\$2.96	\$2.88
Jul-31	\$2.79	\$2.43	\$3.07	\$2.98
Aug-31	\$2.83	\$2.44	\$3.06	\$2.97
Sep-31	\$2.85	\$2.19	\$2.71	\$2.63
Oct-31	\$2.89	\$2.26	\$2.78	\$2.71
Nov-31	\$2.96	\$2.89	\$3.58	\$3.48
Dec-31	\$3.12	\$3.81	\$4.79	\$4.65
Jan-32	\$3.25	\$5.60	\$7.30	\$7.30
Feb-32	\$3.21	\$5.45	\$7.10	\$7.10
Mar-32	\$3.15	\$3.29	\$4.25	\$4.25
Apr-32	\$2.84	\$2.59	\$3.25	\$3.25
May-32	\$2.82	\$2.43	\$3.02	\$3.02
Jun-32	\$2.86	\$2.45	\$3.06	\$3.06
Jul-32	\$2.90	\$2.53	\$3.17	\$3.17
Aug-32	\$2.94	\$2.54	\$3.15	\$3.15
Sep-32	\$2.95	\$2.28	\$2.80	\$2.80
Oct-32	\$3.00	\$2.36	\$2.87	\$2.87
Nov-32	\$3.07	\$3.00	\$3.70	\$3.70
Dec-32	\$3.22	\$3.93	\$4.94	\$4.94
Jan-33	No Value	No Value	\$7.61	\$7.61
Feb-33			\$7.41	\$7.41
Mar-33			\$4.43	\$4.43
Apr-33			\$3.39	\$3.39
May-33			\$3.15	\$3.15
Jun-33			\$3.19	\$3.19
Jul-33			\$3.31	\$3.31
Aug-33			\$3.29	\$3.29
Sep-33			\$2.91	\$2.91
Oct-33			\$2.99	\$2.99
Nov-33			\$3.86	\$3.86

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Dec-33	No Value	No Value	\$5.15	\$5.15
Jan-34			\$7.90	\$7.90
Feb-34			\$7.68	\$7.68
Mar-34			\$4.60	\$4.60
Apr-34			\$3.51	\$3.51
May-34			\$3.27	\$3.27
Jun-34			\$3.31	\$3.31
Jul-34			\$3.43	\$3.43
Aug-34			\$3.41	\$3.41
Sep-34			\$3.02	\$3.02
Oct-34			\$3.11	\$3.11
Nov-34			\$4.00	\$4.00
Dec-34			\$5.35	\$5.35
Jan-35			\$7.94	\$7.94
Feb-35			\$7.72	\$7.72
Mar-35			\$4.62	\$4.62
Apr-35			\$3.53	\$3.53
May-35			\$3.28	\$3.28
Jun-35			\$3.33	\$3.33
Jul-35			\$3.45	\$3.45
Aug-35			\$3.43	\$3.43
Sep-35			\$3.04	\$3.04
Oct-35			\$3.12	\$3.12
Nov-35			\$4.02	\$4.02
Dec-35			\$5.37	\$5.37
Jan-36			\$8.00	\$8.00
Feb-36			\$7.78	\$7.78
Mar-36			\$4.65	\$4.65
Apr-36			\$3.56	\$3.56
May-36			\$3.31	\$3.31
Jun-36			\$3.35	\$3.35

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Jul-36	No Value	No Value	\$3.47	\$3.47
Aug-36			\$3.45	\$3.45
Sep-36			\$3.06	\$3.06
Oct-36			\$3.15	\$3.15
Nov-36			\$4.05	\$4.05
Dec-36			\$5.41	\$5.41
Jan-37			\$8.22	\$8.22
Feb-37			\$7.99	\$7.99
Mar-37			\$4.78	\$4.78
Apr-37			\$3.65	\$3.65
May-37			\$3.40	\$3.40
Jun-37			\$3.44	\$3.44
Jul-37			\$3.57	\$3.57
Aug-37			\$3.55	\$3.55
Sep-37			\$3.15	\$3.15
Oct-37			\$3.23	\$3.23
Nov-37			\$4.16	\$4.16
Dec-37			\$5.56	\$5.56
Jan-38			\$8.40	\$8.40
Feb-38			\$8.17	\$8.17
Mar-38			\$4.89	\$4.89
Apr-38			\$3.74	\$3.74
May-38			\$3.47	\$3.47
Jun-38			\$3.52	\$3.52
Jul-38			\$3.65	\$3.65
Aug-38			\$3.63	\$3.63
Sep-38			\$3.22	\$3.22
Oct-38			\$3.31	\$3.31
Nov-38			\$4.26	\$4.26
Dec-38			\$5.69	\$5.69
Jan-39			\$8.54	\$8.54

Revised Energy Efficiency and Conservation Plan

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Feb-39	No Value	No Value	\$8.31	\$8.31
Mar-39			\$4.97	\$4.97
Apr-39			\$3.80	\$3.80
May-39			\$3.53	\$3.53
Jun-39			\$3.58	\$3.58
Jul-39			\$3.71	\$3.71
Aug-39			\$3.69	\$3.69
Sep-39			\$3.27	\$3.27
Oct-39			\$3.36	\$3.36
Nov-39			\$4.33	\$4.33
Dec-39			\$5.78	\$5.78
Jan-40			\$8.75	\$8.75
Feb-40			\$8.51	\$8.51
Mar-40			\$5.09	\$5.09
Apr-40			\$3.89	\$3.89
May-40			\$3.62	\$3.62
Jun-40			\$3.67	\$3.67
Jul-40			\$3.80	\$3.80
Aug-40			\$3.78	\$3.78
Sep-40			\$3.35	\$3.35
Oct-40			\$3.44	\$3.44
Nov-40			\$4.43	\$4.43
Dec-40			\$5.92	\$5.92
Jan-41			\$8.96	\$8.96
Feb-41			\$8.72	\$8.72
Mar-41			\$5.21	\$5.21
Apr-41			\$3.99	\$3.99
May-41			\$3.71	\$3.71
Jun-41			\$3.75	\$3.75
Jul-41			\$3.89	\$3.89
Aug-41			\$3.87	\$3.87

Period	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: DLC Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	DLC Natural Gas Price (\$/MMBTU)
Sep-41	No Value	No Value	\$3.43	\$3.43
Oct-41			\$3.53	\$3.53
Nov-41			\$4.54	\$4.54
Dec-41			\$6.07	\$6.07
Jan-42			\$9.20	\$9.20
Feb-42			\$8.95	\$8.95
Mar-42			\$5.35	\$5.35
Apr-42			\$4.09	\$4.09
May-42			\$3.80	\$3.80
Jun-42			\$3.85	\$3.85
Jul-42			\$3.99	\$3.99
Aug-42			\$3.97	\$3.97
Sep-42			\$3.52	\$3.52
Oct-42			\$3.62	\$3.62
Nov-42			\$4.66	\$4.66
Dec-42			\$6.23	\$6.23

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
Jan-21	Winter	\$47.47	\$36.76	\$55.21	\$37.79	n/a	n/a	\$47.47	\$36.76
Feb-21	Winter	\$44.08	\$33.95	\$53.81	\$36.83	n/a	n/a	\$44.08	\$33.95
Mar-21	Shoulder	\$35.06	\$28.06	\$33.44	\$22.89	n/a	n/a	\$35.06	\$28.06
Apr-21	Shoulder	\$31.24	\$23.23	\$26.84	\$18.37	n/a	n/a	\$31.24	\$23.23
May-21	Summer	\$31.19	\$20.63	\$25.19	\$17.24	n/a	n/a	\$31.19	\$20.63
Jun-21	Summer	\$30.34	\$20.74	\$25.48	\$17.44	n/a	n/a	\$30.34	\$20.74
Jul-21	Summer	\$35.17	\$23.45	\$26.36	\$18.04	n/a	n/a	\$35.17	\$23.45
Aug-21	Summer	\$32.73	\$22.07	\$26.23	\$17.95	n/a	n/a	\$32.73	\$22.07
Sep-21	Summer	\$32.89	\$21.27	\$23.51	\$16.09	n/a	n/a	\$32.89	\$21.27
Oct-21	Shoulder	\$31.24	\$22.12	\$23.97	\$16.41	n/a	n/a	\$31.24	\$22.12
Nov-21	Shoulder	\$32.04	\$22.97	\$29.69	\$20.32	n/a	n/a	\$32.04	\$22.97
Dec-21	Winter	\$33.63	\$26.52	\$38.17	\$26.12	n/a	n/a	\$33.63	\$26.52
Jan-22	Winter	\$46.36	\$37.77	\$54.40	\$37.24	-\$8.04	\$0.53	\$46.36	\$37.77
Feb-22	Winter	\$43.18	\$34.80	\$52.94	\$36.23	-\$9.76	-\$1.44	\$43.18	\$34.80
Mar-22	Shoulder	\$34.05	\$27.69	\$32.07	\$21.95	\$1.99	\$5.74	\$34.05	\$27.69
Apr-22	Shoulder	\$29.39	\$22.23	\$24.20	\$16.56	\$5.18	\$5.66	\$29.39	\$22.23
May-22	Summer	\$29.60	\$20.79	\$22.51	\$15.41	\$7.08	\$5.38	\$29.60	\$20.79
Jun-22	Summer	\$28.91	\$20.85	\$22.80	\$15.60	\$6.11	\$5.24	\$28.91	\$20.85
Jul-22	Summer	\$34.74	\$23.50	\$23.64	\$16.18	\$11.10	\$7.32	\$34.74	\$23.50
Aug-22	Summer	\$32.09	\$21.48	\$23.52	\$16.10	\$8.57	\$5.38	\$32.09	\$21.48
Sep-22	Summer	\$30.92	\$20.42	\$20.87	\$14.28	\$10.05	\$6.14	\$30.92	\$20.42
Oct-22	Shoulder	\$29.23	\$21.54	\$21.40	\$14.65	\$7.83	\$6.89	\$29.23	\$21.54
Nov-22	Shoulder	\$29.55	\$22.38	\$27.38	\$18.74	\$2.16	\$3.64	\$29.55	\$22.38
Dec-22	Winter	\$32.83	\$26.15	\$36.41	\$24.92	-\$3.58	\$1.23	\$32.83	\$26.15
Jan-23	Winter	\$46.25	\$37.61	\$53.34	\$36.51	-\$7.08	\$1.10	\$46.25	\$37.61
Feb-23	Winter	\$43.39	\$34.64	\$51.89	\$35.51	-\$8.50	-\$0.87	\$43.39	\$34.64
Mar-23	Shoulder	\$33.79	\$27.53	\$30.64	\$20.97	\$3.15	\$6.56	\$33.79	\$27.53
Apr-23	Shoulder	\$29.86	\$23.13	\$23.72	\$16.23	\$6.14	\$6.89	\$29.86	\$23.13
May-23	Summer	\$29.65	\$20.63	\$22.04	\$15.08	\$7.61	\$5.55	\$29.65	\$20.63
Jun-23	Summer	\$28.70	\$20.58	\$22.34	\$15.29	\$6.35	\$5.29	\$28.70	\$20.58
Jul-23	Summer	\$34.27	\$23.18	\$23.15	\$15.84	\$11.12	\$7.34	\$34.27	\$23.18
Aug-23	Summer	\$31.46	\$21.54	\$23.01	\$15.75	\$8.44	\$5.79	\$31.46	\$21.54
Sep-23	Summer	\$30.39	\$20.79	\$20.38	\$13.95	\$10.02	\$6.85	\$30.39	\$20.79
Oct-23	Shoulder	\$28.86	\$21.06	\$20.99	\$14.37	\$7.87	\$6.69	\$28.86	\$21.06

Revised Energy Efficiency and Conservation Plan

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
Nov-23	Shoulder	\$29.17	\$21.64	\$27.20	\$18.62	\$1.97	\$3.03	\$29.17	\$21.64
Dec-23	Winter	\$32.14	\$24.93	\$36.53	\$25.00	-\$4.39	-\$0.07	\$32.14	\$24.93
Jan-24	Winter	\$46.57	\$38.46	\$53.85	\$36.85	-\$7.27	\$1.60	\$46.57	\$38.46
Feb-24	Winter	\$43.81	\$35.43	\$52.36	\$35.84	-\$8.55	-\$0.40	\$43.81	\$35.43
Mar-24	Shoulder	\$33.21	\$28.06	\$30.93	\$21.17	\$2.28	\$6.89	\$33.21	\$28.06
Apr-24	Shoulder	\$30.29	\$23.50	\$24.09	\$16.48	\$6.20	\$7.01	\$30.29	\$23.50
May-24	Summer	\$29.86	\$20.95	\$22.48	\$15.39	\$7.38	\$5.57	\$29.86	\$20.95
Jun-24	Summer	\$29.60	\$20.85	\$22.71	\$15.55	\$6.88	\$5.30	\$29.60	\$20.85
Jul-24	Summer	\$34.74	\$23.71	\$23.64	\$16.18	\$11.11	\$7.53	\$34.74	\$23.71
Aug-24	Summer	\$31.83	\$22.17	\$23.39	\$16.01	\$8.44	\$6.17	\$31.83	\$22.17
Sep-24	Summer	\$30.08	\$21.27	\$20.70	\$14.17	\$9.38	\$7.10	\$30.08	\$21.27
Oct-24	Shoulder	\$29.23	\$21.59	\$21.31	\$14.58	\$7.92	\$7.01	\$29.23	\$21.59
Nov-24	Shoulder	\$29.44	\$22.17	\$27.60	\$18.89	\$1.84	\$3.28	\$29.44	\$22.17
Dec-24	Winter	\$31.93	\$25.51	\$37.03	\$25.35	-\$5.10	\$0.17	\$31.93	\$25.51
Jan-25	Winter	\$40.42	\$41.11	\$54.63	\$37.39	-\$14.21	\$3.72	\$40.42	\$41.11
Feb-25	Winter	\$39.04	\$37.93	\$53.20	\$36.41	-\$14.16	\$1.51	\$39.04	\$37.93
Mar-25	Shoulder	\$33.68	\$28.11	\$31.45	\$21.52	\$2.24	\$6.59	\$33.68	\$28.11
Apr-25	Shoulder	\$32.20	\$23.50	\$24.75	\$16.94	\$7.45	\$6.56	\$32.20	\$23.50
May-25	Summer	\$31.99	\$21.11	\$23.19	\$15.87	\$8.80	\$5.24	\$31.99	\$21.11
Jun-25	Summer	\$31.83	\$21.11	\$23.41	\$16.02	\$8.42	\$5.09	\$31.83	\$21.11
Jul-25	Summer	\$34.48	\$23.66	\$24.20	\$16.57	\$10.28	\$7.09	\$34.48	\$23.66
Aug-25	Summer	\$32.99	\$22.17	\$24.04	\$16.45	\$8.96	\$5.72	\$32.99	\$22.17
Sep-25	Summer	\$32.09	\$21.27	\$21.32	\$14.59	\$10.77	\$6.68	\$32.09	\$21.27
Oct-25	Shoulder	\$31.67	\$21.64	\$21.99	\$15.05	\$9.68	\$6.59	\$31.67	\$21.64
Nov-25	Shoulder	\$31.77	\$22.17	\$28.35	\$19.40	\$3.43	\$2.77	\$31.77	\$22.17
Dec-25	Winter	\$33.05	\$25.57	\$37.94	\$25.96	-\$4.89	-\$0.40	\$33.05	\$25.57
Jan-26	Winter			\$58.28	\$39.89	-\$8.19	\$0.88	\$50.09	\$40.77
Feb-26	Winter			\$56.76	\$38.84	-\$9.88	-\$1.25	\$46.87	\$37.59
Mar-26	Shoulder			\$33.66	\$23.04	\$2.78	\$6.66	\$36.44	\$29.70
Apr-26	Shoulder			\$26.35	\$18.03	\$6.13	\$6.80	\$32.48	\$24.83
May-26	Summer			\$24.63	\$16.85	\$7.95	\$5.92	\$32.58	\$22.77
Jun-26	Summer			\$24.87	\$17.02	\$6.75	\$5.70	\$31.62	\$22.72
Jul-26	Summer			\$25.68	\$17.57	\$12.03	\$7.93	\$37.71	\$25.51
Aug-26	Summer			\$25.50	\$17.45	\$9.21	\$6.04	\$34.70	\$23.50
Sep-26	Summer			\$22.56	\$15.44	\$10.86	\$7.03	\$33.42	\$22.46

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
Oct-26	Shoulder			\$23.16	\$15.85	\$8.49	\$7.35	\$31.65	\$23.20
Nov-26	Shoulder			\$29.82	\$20.41	\$2.24	\$3.61	\$32.06	\$24.02
Dec-26	Winter			\$39.85	\$27.27	-\$4.31	\$0.63	\$35.54	\$27.90
Jan-27	Winter			\$62.01	\$42.44	-\$8.35	\$0.90	\$53.65	\$43.34
Feb-27	Winter			\$60.35	\$41.30	-\$10.08	-\$1.28	\$50.27	\$40.03
Mar-27	Shoulder			\$35.71	\$24.44	\$2.84	\$6.79	\$38.54	\$31.23
Apr-27	Shoulder			\$27.65	\$18.92	\$6.25	\$6.93	\$33.91	\$25.86
May-27	Summer			\$25.84	\$17.69	\$8.11	\$6.04	\$33.95	\$23.72
Jun-27	Summer			\$26.09	\$17.86	\$6.88	\$5.81	\$32.97	\$23.67
Jul-27	Summer			\$26.97	\$18.46	\$12.27	\$8.09	\$39.23	\$26.55
Aug-27	Summer			\$26.76	\$18.32	\$9.39	\$6.17	\$36.16	\$24.48
Sep-27	Summer			\$23.74	\$16.25	\$11.08	\$7.17	\$34.82	\$23.42
Oct-27	Shoulder			\$24.42	\$16.72	\$8.66	\$7.50	\$33.09	\$24.21
Nov-27	Shoulder			\$31.53	\$21.58	\$2.28	\$3.68	\$33.81	\$25.26
Dec-27	Winter			\$42.18	\$28.87	-\$4.40	\$0.64	\$37.79	\$29.51
Jan-28	Winter			\$65.84	\$45.06	-\$8.52	\$0.92	\$57.32	\$45.98
Feb-28	Winter			\$64.07	\$43.85	-\$10.28	-\$1.30	\$53.78	\$42.55
Mar-28	Shoulder			\$37.95	\$25.97	\$2.89	\$6.93	\$40.84	\$32.90
Apr-28	Shoulder			\$29.23	\$20.01	\$6.38	\$7.07	\$35.61	\$27.08
May-28	Summer			\$27.29	\$18.68	\$8.28	\$6.16	\$35.57	\$24.84
Jun-28	Summer			\$27.64	\$18.92	\$7.02	\$5.93	\$34.66	\$24.85
Jul-28	Summer			\$28.63	\$19.60	\$12.51	\$8.25	\$41.15	\$27.85
Aug-28	Summer			\$28.49	\$19.50	\$9.58	\$6.29	\$38.07	\$25.79
Sep-28	Summer			\$25.31	\$17.32	\$11.30	\$7.31	\$36.61	\$24.63
Oct-28	Shoulder			\$26.08	\$17.85	\$8.84	\$7.65	\$34.91	\$25.50
Nov-28	Shoulder			\$33.66	\$23.04	\$2.33	\$3.76	\$35.99	\$26.79
Dec-28	Winter			\$45.05	\$30.83	-\$4.49	\$0.65	\$40.56	\$31.48
Jan-29	Winter			\$69.57	\$47.62	-\$8.69	\$0.94	\$60.89	\$48.56
Feb-29	Winter			\$67.74	\$46.36	-\$10.49	-\$1.33	\$57.25	\$45.03
Mar-29	Shoulder			\$40.35	\$27.62	\$2.95	\$7.07	\$43.30	\$34.68
Apr-29	Shoulder			\$31.12	\$21.30	\$6.51	\$7.21	\$37.62	\$28.51
May-29	Summer			\$29.00	\$19.85	\$8.44	\$6.28	\$37.44	\$26.13
Jun-29	Summer			\$29.34	\$20.08	\$7.16	\$6.05	\$36.50	\$26.13
Jul-29	Summer			\$30.38	\$20.79	\$12.76	\$8.42	\$43.15	\$29.21
Aug-29	Summer			\$30.20	\$20.67	\$9.77	\$6.41	\$39.97	\$27.09

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
Sep-29	Summer			\$26.80	\$18.34	\$11.53	\$7.46	\$38.32	\$25.80
Oct-29	Shoulder			\$27.51	\$18.83	\$9.01	\$7.80	\$36.52	\$26.63
Nov-29	Shoulder			\$35.46	\$24.27	\$2.38	\$3.83	\$37.83	\$28.10
Dec-29	Winter			\$47.29	\$32.37	-\$4.58	\$0.66	\$42.71	\$33.03
Jan-30	Winter			\$72.67	\$49.74	-\$8.86	\$0.96	\$63.81	\$50.70
Feb-30	Winter			\$70.72	\$48.40	-\$10.70	-\$1.35	\$60.02	\$47.05
Mar-30	Shoulder			\$42.20	\$28.88	\$3.01	\$7.21	\$45.21	\$36.09
Apr-30	Shoulder			\$32.38	\$22.16	\$6.64	\$7.36	\$39.02	\$29.52
May-30	Summer			\$30.14	\$20.63	\$8.61	\$6.41	\$38.75	\$27.03
Jun-30	Summer			\$30.51	\$20.88	\$7.30	\$6.17	\$37.81	\$27.05
Jul-30	Summer			\$31.60	\$21.63	\$13.02	\$8.59	\$44.62	\$30.22
Aug-30	Summer			\$31.52	\$21.57	\$9.97	\$6.54	\$41.48	\$28.11
Sep-30	Summer			\$27.98	\$19.15	\$11.76	\$7.61	\$39.74	\$26.76
Oct-30	Shoulder			\$28.82	\$19.72	\$9.19	\$7.96	\$38.01	\$27.68
Nov-30	Shoulder			\$37.10	\$25.39	\$2.42	\$3.91	\$39.52	\$29.30
Dec-30	Winter			\$49.47	\$33.86	-\$4.67	\$0.68	\$44.80	\$34.54
Jan-31	Winter			\$76.44	\$52.32	-\$9.04	\$0.98	\$67.40	\$53.30
Feb-31	Winter			\$74.38	\$50.91	-\$10.91	-\$1.38	\$63.47	\$49.53
Mar-31	Shoulder			\$44.51	\$30.46	\$3.07	\$7.35	\$47.58	\$37.81
Apr-31	Shoulder			\$34.11	\$23.35	\$6.77	\$7.50	\$40.88	\$30.85
May-31	Summer			\$31.74	\$21.72	\$8.78	\$6.53	\$40.52	\$28.26
Jun-31	Summer			\$32.14	\$22.00	\$7.45	\$6.29	\$39.59	\$28.29
Jul-31	Summer			\$33.30	\$22.79	\$13.28	\$8.76	\$46.58	\$31.55
Aug-31	Summer			\$33.16	\$22.70	\$10.16	\$6.67	\$43.33	\$29.37
Sep-31	Summer			\$29.43	\$20.14	\$11.99	\$7.76	\$41.42	\$27.90
Oct-31	Shoulder			\$30.27	\$20.72	\$9.38	\$8.12	\$39.65	\$28.83
Nov-31	Shoulder			\$38.94	\$26.65	\$2.47	\$3.99	\$41.42	\$30.64
Dec-31	Winter			\$51.95	\$35.56	-\$4.76	\$0.69	\$47.19	\$36.25
Jan-32	Winter			\$81.61	\$55.86	-\$8.86	\$0.96	\$72.75	\$56.81
Feb-32	Winter			\$79.40	\$54.35	-\$10.69	-\$1.35	\$68.71	\$52.99
Mar-32	Shoulder			\$47.50	\$32.51	\$3.13	\$7.50	\$50.63	\$40.01
Apr-32	Shoulder			\$36.30	\$24.84	\$6.91	\$7.65	\$43.20	\$32.50
May-32	Summer			\$33.75	\$23.10	\$8.96	\$6.66	\$42.71	\$29.76
Jun-32	Summer			\$34.19	\$23.40	\$7.60	\$6.42	\$41.79	\$29.82
Jul-32	Summer			\$35.44	\$24.26	\$13.55	\$8.93	\$48.98	\$33.19

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
Aug-32	Summer			\$35.25	\$24.13	\$10.37	\$6.81	\$45.62	\$30.93
Sep-32	Summer			\$31.25	\$21.38	\$12.23	\$7.91	\$43.48	\$29.30
Oct-32	Shoulder			\$32.11	\$21.98	\$9.57	\$8.28	\$41.67	\$30.25
Nov-32	Shoulder			\$41.34	\$28.30	\$2.52	\$4.07	\$43.87	\$32.36
Dec-32	Winter			\$55.25	\$37.82	-\$4.67	\$0.68	\$50.59	\$38.49
Jan-33	Winter			\$85.07	\$58.22	-\$8.68	\$0.94	\$76.38	\$59.16
Feb-33	Winter			\$82.76	\$56.65	-\$10.48	-\$1.33	\$72.29	\$55.32
Mar-33	Shoulder			\$49.51	\$33.88	\$3.19	\$7.65	\$52.70	\$41.53
Apr-33	Shoulder			\$37.83	\$25.89	\$7.04	\$7.81	\$44.88	\$33.70
May-33	Summer			\$35.18	\$24.07	\$9.14	\$6.80	\$44.31	\$30.87
Jun-33	Summer			\$35.64	\$24.39	\$7.75	\$6.55	\$43.39	\$30.94
Jul-33	Summer			\$36.94	\$25.28	\$13.82	\$9.11	\$50.76	\$34.39
Aug-33	Summer			\$36.74	\$25.15	\$10.58	\$6.94	\$47.32	\$32.09
Sep-33	Summer			\$32.57	\$22.29	\$12.48	\$8.07	\$45.04	\$30.36
Oct-33	Shoulder			\$33.47	\$22.91	\$9.76	\$8.44	\$43.22	\$31.35
Nov-33	Shoulder			\$43.09	\$29.49	\$2.57	\$4.15	\$45.67	\$33.64
Dec-33	Winter			\$57.59	\$39.42	-\$4.57	\$0.66	\$53.02	\$40.08
Jan-34	Winter			\$88.26	\$60.41	-\$8.51	\$0.92	\$79.75	\$61.33
Feb-34	Winter			\$85.87	\$58.77	-\$10.27	-\$1.30	\$75.60	\$57.47
Mar-34	Shoulder			\$51.37	\$35.16	\$3.26	\$7.80	\$54.63	\$42.96
Apr-34	Shoulder			\$39.26	\$26.87	\$7.18	\$7.96	\$46.44	\$34.83
May-34	Summer			\$36.50	\$24.98	\$9.32	\$6.93	\$45.82	\$31.91
Jun-34	Summer			\$36.98	\$25.31	\$7.90	\$6.68	\$44.88	\$31.99
Jul-34	Summer			\$38.33	\$26.23	\$14.09	\$9.29	\$52.42	\$35.53
Aug-34	Summer			\$38.12	\$26.09	\$10.79	\$7.08	\$48.91	\$33.17
Sep-34	Summer			\$33.79	\$23.13	\$12.73	\$8.23	\$46.52	\$31.36
Oct-34	Shoulder			\$34.73	\$23.77	\$9.95	\$8.61	\$44.68	\$32.38
Nov-34	Shoulder			\$44.71	\$30.60	\$2.62	\$4.23	\$47.34	\$34.83
Dec-34	Winter			\$59.76	\$40.90	-\$4.48	\$0.65	\$55.28	\$41.55
Jan-35	Winter			\$88.71	\$60.71	-\$8.34	\$0.90	\$80.37	\$61.61
Feb-35	Winter			\$86.31	\$59.07	-\$10.06	-\$1.27	\$76.24	\$57.80
Mar-35	Shoulder			\$51.63	\$35.34	\$3.32	\$7.96	\$54.95	\$43.29
Apr-35	Shoulder			\$39.45	\$27.00	\$7.33	\$8.12	\$46.78	\$35.12
May-35	Summer			\$36.68	\$25.11	\$9.51	\$7.07	\$46.19	\$32.18
Jun-35	Summer			\$37.17	\$25.44	\$8.06	\$6.81	\$45.23	\$32.25

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
Jul-35	Summer			\$38.52	\$26.36	\$14.37	\$9.48	\$52.90	\$35.84
Aug-35	Summer			\$38.31	\$26.22	\$11.00	\$7.22	\$49.32	\$33.45
Sep-35	Summer			\$33.96	\$23.24	\$12.98	\$8.40	\$46.94	\$31.64
Oct-35	Shoulder			\$34.90	\$23.89	\$10.15	\$8.79	\$45.05	\$32.67
Nov-35	Shoulder			\$44.94	\$30.76	\$2.68	\$4.31	\$47.61	\$35.07
Dec-35	Winter			\$60.06	\$41.10	-\$4.39	\$0.64	\$55.67	\$41.74
Jan-36	Winter			\$89.38	\$61.17	-\$8.17	\$0.88	\$81.21	\$62.06
Feb-36	Winter			\$86.96	\$59.52	-\$9.86	-\$1.25	\$77.10	\$58.27
Mar-36	Shoulder			\$52.02	\$35.60	\$3.39	\$8.12	\$55.41	\$43.72
Apr-36	Shoulder			\$39.75	\$27.21	\$7.47	\$8.28	\$47.23	\$35.49
May-36	Summer			\$36.96	\$25.30	\$9.70	\$7.21	\$46.66	\$32.51
Jun-36	Summer			\$37.45	\$25.63	\$8.22	\$6.95	\$45.67	\$32.58
Jul-36	Summer			\$38.81	\$26.56	\$14.66	\$9.67	\$53.48	\$36.23
Aug-36	Summer			\$38.61	\$26.42	\$11.22	\$7.37	\$49.83	\$33.79
Sep-36	Summer			\$34.22	\$23.42	\$13.24	\$8.57	\$47.46	\$31.99
Oct-36	Shoulder			\$35.17	\$24.07	\$10.35	\$8.96	\$45.52	\$33.03
Nov-36	Shoulder			\$45.28	\$30.99	\$2.73	\$4.40	\$48.01	\$35.39
Dec-36	Winter			\$60.51	\$41.42	-\$4.30	\$0.62	\$56.21	\$42.04
Jan-37	Winter			\$91.82	\$62.84	-\$8.01	\$0.87	\$83.81	\$63.71
Feb-37	Winter			\$89.34	\$61.14	-\$9.67	-\$1.22	\$79.67	\$59.92
Mar-37	Shoulder			\$53.44	\$36.57	\$3.46	\$8.28	\$56.90	\$44.85
Apr-37	Shoulder			\$40.84	\$27.95	\$7.62	\$8.45	\$48.46	\$36.40
May-37	Summer			\$37.97	\$25.99	\$9.89	\$7.36	\$47.86	\$33.34
Jun-37	Summer			\$38.47	\$26.33	\$8.39	\$7.09	\$46.86	\$33.42
Jul-37	Summer			\$39.87	\$27.29	\$14.95	\$9.86	\$54.83	\$37.15
Aug-37	Summer			\$39.66	\$27.14	\$11.45	\$7.52	\$51.11	\$34.66
Sep-37	Summer			\$35.15	\$24.06	\$13.51	\$8.74	\$48.66	\$32.80
Oct-37	Shoulder			\$36.13	\$24.72	\$10.56	\$9.14	\$46.69	\$33.86
Nov-37	Shoulder			\$46.51	\$31.84	\$2.79	\$4.49	\$49.30	\$36.32
Dec-37	Winter			\$62.16	\$42.55	-\$4.22	\$0.61	\$57.95	\$43.16
Jan-38	Winter			\$93.90	\$64.27	-\$7.85	\$0.85	\$86.05	\$65.12
Feb-38	Winter			\$91.36	\$62.53	-\$9.47	-\$1.20	\$81.89	\$61.33
Mar-38	Shoulder			\$54.65	\$37.40	\$3.53	\$8.44	\$58.18	\$45.85
Apr-38	Shoulder			\$41.76	\$28.58	\$7.78	\$8.62	\$49.54	\$37.20
May-38	Summer			\$38.83	\$26.58	\$10.09	\$7.51	\$48.92	\$34.08

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
Jun-38	Summer			\$39.34	\$26.93	\$8.55	\$7.23	\$47.90	\$34.16
Jul-38	Summer			\$40.78	\$27.91	\$15.25	\$10.06	\$56.03	\$37.97
Aug-38	Summer			\$40.56	\$27.76	\$11.68	\$7.67	\$52.23	\$35.42
Sep-38	Summer			\$35.95	\$24.61	\$13.78	\$8.91	\$49.73	\$33.52
Oct-38	Shoulder			\$36.94	\$25.29	\$10.77	\$9.32	\$47.72	\$34.61
Nov-38	Shoulder			\$47.57	\$32.56	\$2.84	\$4.58	\$50.41	\$37.14
Dec-38	Winter			\$63.57	\$43.51	-\$4.13	\$0.60	\$59.44	\$44.11
Jan-39	Winter			\$95.45	\$65.32	-\$7.69	\$0.83	\$87.76	\$66.16
Feb-39	Winter			\$92.86	\$63.56	-\$9.28	-\$1.17	\$83.58	\$62.38
Mar-39	Shoulder			\$55.55	\$38.02	\$3.60	\$8.61	\$59.15	\$46.63
Apr-39	Shoulder			\$42.45	\$29.05	\$7.93	\$8.79	\$50.38	\$37.84
May-39	Summer			\$39.47	\$27.01	\$10.29	\$7.66	\$49.76	\$34.67
Jun-39	Summer			\$39.99	\$27.37	\$8.73	\$7.37	\$48.72	\$34.74
Jul-39	Summer			\$41.45	\$28.37	\$15.56	\$10.26	\$57.01	\$38.63
Aug-39	Summer			\$41.23	\$28.22	\$11.91	\$7.82	\$53.13	\$36.03
Sep-39	Summer			\$36.54	\$25.01	\$14.05	\$9.09	\$50.59	\$34.10
Oct-39	Shoulder			\$37.55	\$25.70	\$10.99	\$9.51	\$48.54	\$35.21
Nov-39	Shoulder			\$48.35	\$33.09	\$2.90	\$4.67	\$51.25	\$37.76
Dec-39	Winter			\$64.62	\$44.23	-\$4.05	\$0.59	\$60.57	\$44.82
Jan-40	Winter			\$97.76	\$66.91	-\$7.54	\$0.81	\$90.23	\$67.72
Feb-40	Winter			\$95.12	\$65.10	-\$9.10	-\$1.15	\$86.02	\$63.95
Mar-40	Shoulder			\$56.90	\$38.94	\$3.67	\$8.78	\$60.57	\$47.73
Apr-40	Shoulder			\$43.48	\$29.76	\$8.09	\$8.97	\$51.57	\$38.73
May-40	Summer			\$40.43	\$27.67	\$10.50	\$7.81	\$50.92	\$35.48
Jun-40	Summer			\$40.96	\$28.03	\$8.90	\$7.52	\$49.86	\$35.55
Jul-40	Summer			\$42.45	\$29.06	\$15.87	\$10.47	\$58.32	\$39.52
Aug-40	Summer			\$42.23	\$28.90	\$12.15	\$7.98	\$54.37	\$36.88
Sep-40	Summer			\$37.43	\$25.62	\$14.33	\$9.27	\$51.76	\$34.89
Oct-40	Shoulder			\$38.46	\$26.32	\$11.21	\$9.70	\$49.67	\$36.02
Nov-40	Shoulder			\$49.53	\$33.90	\$2.96	\$4.76	\$52.48	\$38.66
Dec-40	Winter			\$66.19	\$45.30	-\$3.97	\$0.58	\$62.22	\$45.88
Jan-41	Winter			\$100.13	\$68.53	-\$7.39	\$0.80	\$92.75	\$69.33
Feb-41	Winter			\$97.43	\$66.68	-\$8.92	-\$1.13	\$88.51	\$65.55
Mar-41	Shoulder			\$58.28	\$39.89	\$3.74	\$8.96	\$62.02	\$48.85
Apr-41	Shoulder			\$44.54	\$30.48	\$8.25	\$9.15	\$52.79	\$39.63

Period	Season	DLC Zone Adjusted On-Peak (\$/MWh)	DLC Zone Adjusted Off-Peak (\$/MWh)	DLC Zone NG Converted On-Peak (\$/MWh)	DLC Zone NG Converted Off-Peak (\$/MWh)	DLC Zone Spark Spread On-Peak (\$/MWh)	DLC Zone Spark Spread Off-Peak (\$/MWh)	DLC Zone On-Peak (\$/MWh)	DLC Zone Off-Peak (\$/MWh)
May-41	Summer			\$41.41	\$28.34	\$10.71	\$7.96	\$52.11	\$36.30
Jun-41	Summer			\$41.96	\$28.71	\$9.08	\$7.67	\$51.03	\$36.39
Jul-41	Summer			\$43.48	\$29.76	\$16.19	\$10.68	\$59.67	\$40.44
Aug-41	Summer			\$43.25	\$29.60	\$12.39	\$8.14	\$55.64	\$37.74
Sep-41	Summer			\$38.34	\$26.24	\$14.62	\$9.46	\$52.96	\$35.70
Oct-41	Shoulder			\$39.40	\$26.96	\$11.43	\$9.89	\$50.83	\$36.86
Nov-41	Shoulder			\$50.73	\$34.72	\$3.01	\$4.86	\$53.74	\$39.58
Dec-41	Winter			\$67.79	\$46.40	-\$3.89	\$0.56	\$63.90	\$46.96
Jan-42	Winter			\$102.77	\$70.34	-\$7.24	\$0.78	\$95.54	\$71.12
Feb-42	Winter			\$99.99	\$68.44	-\$8.74	-\$1.11	\$91.26	\$67.33
Mar-42	Shoulder			\$59.82	\$40.94	\$3.82	\$9.14	\$63.63	\$50.08
Apr-42	Shoulder			\$45.71	\$31.28	\$8.42	\$9.33	\$54.13	\$40.61
May-42	Summer			\$42.50	\$29.09	\$10.92	\$8.12	\$53.42	\$37.21
Jun-42	Summer			\$43.06	\$29.47	\$9.26	\$7.82	\$52.32	\$37.30
Jul-42	Summer			\$44.63	\$30.54	\$16.51	\$10.89	\$61.14	\$41.43
Aug-42	Summer			\$44.39	\$30.38	\$12.64	\$8.30	\$57.03	\$38.68
Sep-42	Summer			\$39.35	\$26.93	\$14.91	\$9.65	\$54.26	\$36.58
Oct-42	Shoulder			\$40.44	\$27.67	\$11.66	\$10.09	\$52.09	\$37.77
Nov-42	Shoulder			\$52.06	\$35.63	\$3.08	\$4.96	\$55.14	\$40.59
Dec-42	Winter			\$69.58	\$47.62	-\$3.81	\$0.55	\$65.77	\$48.18

Revised Energy Efficiency and Conservation Plan

PJM BRA Results			
PJM BRA \$/MW-day			
EDC	2019/2020	2020/2021	2021/2022
DLC	\$98.07	\$77.31	\$142.71
Met-Ed			
PECO			
Penelec			
Penn Power			
PPL			
West Penn			

Commentary: At the time of the final TRC Order, the schedule of PJM Base Residential Auctions (BRAs) is unknown. The input data field to the left assumes the 2022/2023 BRA is completed prior to use of this tool. If no BRA is completed beyond the already completed 2021/2022 BRA, the 2021/2022 would be the last BRA used. In this event, the application of inflation to the 3-year average (in rows 14 through 20) and the application of inflation in row 26.

\$/kW-year				
EDC	2019/2020	2020/2021	2021/2022	3 year average
DLC	\$37.99	\$29.36	\$53.13	\$40.16
Met-Ed	\$0.00	\$0.00	\$0.00	\$0.00
PECO	\$0.00	\$0.00	\$0.00	\$0.00
Penelec	\$0.00	\$0.00	\$0.00	\$0.00
Penn Power	\$0.00	\$0.00	\$0.00	\$0.00
PPL	\$0.00	\$0.00	\$0.00	\$0.00
West Penn	\$0.00	\$0.00	\$0.00	\$0.00

Note: Utilized 2019/2020, 2020/2021 and 2021/2022 for inputs since 2022/2023 was not available
Entered data in \$/MW-day in row 4 as the label in row 2 was incorrect as \$/kw-day
Changed the headers in row 3 and 13 to reflect the changed data
Changed the formula in E24 to = E14 as that is the inflation adjusted result
Changed the formula in E25 to equal the 3 year average as the first year of the forecast

Avoided Generation Capacity Forecast in Nominal Dollars (\$/kW-year)									
Act 129 PY	DY/PY Start	DY/PY End	DLC	Met-Ed	PECO	Penelec	Penn Power	PPL	West Penn
13	2021	2022	\$53.13	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	2022	2023	\$40.16	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	2023	2024	\$40.96	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	2024	2025	\$41.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	2025	2026	\$42.62	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	2026	2027	\$43.47	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	2027	2028	\$44.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	2028	2029	\$45.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	2029	2030	\$46.13	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22	2030	2031	\$47.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	2031	2032	\$47.99	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24	2032	2033	\$48.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	2033	2034	\$49.93	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	2034	2035	\$50.93	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
27	2035	2036	\$51.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
28	2036	2037	\$52.99	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
29	2037	2038	\$54.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
30	2038	2039	\$55.13	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
31	2039	2040	\$56.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
32	2040	2041	\$57.36	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
33	2041	2042	\$58.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
34	2042	2043	\$59.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Avoided Transmission Capacity Forecast in Nominal Dollars (\$/kW-year)									
Act 129 PY	DY/PY Start	DY/PY End	DLC	Met-Ed	PECO	Penelec	Penn Power	PPL	West Penn
13	2021	2022	\$31.27						
14	2022	2023	\$31.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	2023	2024	\$32.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	2024	2025	\$33.18	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	2025	2026	\$33.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	2026	2027	\$34.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	2027	2028	\$35.22	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	2028	2029	\$35.92	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	2029	2030	\$36.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22	2030	2031	\$37.37	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	2031	2032	\$38.12	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24	2032	2033	\$38.88	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	2033	2034	\$39.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	2034	2035	\$40.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
27	2035	2036	\$41.26	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
28	2036	2037	\$42.09	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
29	2037	2038	\$42.93	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
30	2038	2039	\$43.79	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
31	2039	2040	\$44.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
32	2040	2041	\$45.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Avoided Distribution Capacity Forecast in Nominal Dollars (\$/kW-year)						
DLC	Met-Ed	PECO	Penelec	Penn Power	PPL	West Penn
\$16.29						
\$16.62	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$16.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$17.29	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$17.63	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$17.99	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$18.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$18.71	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$19.09	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$19.47	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$19.86	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$20.25	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$20.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$21.07	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$21.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$21.92	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$22.36	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$22.81	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$23.27	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$23.73	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Revised Energy Efficiency and Conservation Plan

Period	Tetco M-3		Locational Adjustment	Load Shape	Spark Spread On-Peak (\$/MWh)	Spark Spread Off-Peak (\$/MWh)
Jan-21	\$2.24	Jan	\$1.93	180.2%	-\$7.56	\$0.82
Feb-21	\$2.15	Feb	\$1.84	175.4%	-\$9.13	-\$1.16
Mar-21	\$0.41	Mar	\$0.12	104.9%	\$2.57	\$6.15
Apr-21	-\$0.22	Apr	-\$0.21	80.2%	\$5.66	\$6.28
May-21	-\$0.33	May	-\$0.32	74.5%	\$7.35	\$5.47
Jun-21	-\$0.35	Jun	-\$0.34	75.5%	\$6.23	\$5.27
Jul-21	-\$0.27	Jul	-\$0.30	78.3%	\$11.11	\$7.33
Aug-21	-\$0.28	Aug	-\$0.33	77.8%	\$8.51	\$5.58
Sep-21	-\$0.60	Sep	-\$0.55	69.0%	\$10.03	\$6.49
Oct-21	-\$0.53	Oct	-\$0.53	70.9%	\$7.85	\$6.79
Nov-21	-\$0.05	Nov	-\$0.06	91.3%	\$2.07	\$3.34
Dec-21	\$0.63	Dec	\$0.58	122.0%	-\$3.98	\$0.58
Jan-22	\$1.99					
Feb-22	\$1.89					
Mar-22	\$0.22					
Apr-22	-\$0.21					
May-22	-\$0.33					
Jun-22	-\$0.33					
Jul-22	-\$0.28					
Aug-22	-\$0.30					
Sep-22	-\$0.56					
Oct-22	-\$0.59					
Nov-22	-\$0.06					
Dec-22	\$0.57					
Jan-23	\$1.87					
Feb-23	\$1.79					
Mar-23	\$0.02					
Apr-23	-\$0.21					
May-23	-\$0.32					
Jun-23	-\$0.34					
Jul-23	-\$0.33					
Aug-23	-\$0.35					
Sep-23	-\$0.55					
Oct-23	-\$0.46					
Nov-23	-\$0.06					
Dec-23	\$0.59					
Jan-24	\$1.97					
Feb-24	\$1.89					
Mar-24	-\$0.03					
Apr-24	-\$0.30					
May-24	-\$0.41					
Jun-24	-\$0.43					
Jul-24	-\$0.42					
Aug-24	-\$0.45					
Sep-24	-\$0.64					
Oct-24	-\$0.56					
Nov-24	-\$0.07					
Dec-24	\$0.61					

Commentary: In some cases, the spark spread may be a negative monetary value. In the marketplace, this may occur for a short period, but usually for an entire month. However, this factor accounts for differences in the heat rate assumptions and the real market values. Escalation is later applied in a positive manner as not to over devalue future spark spreads.

Revised Energy Efficiency and Conservation Plan

Load (MWh) 1000

Credit	Tier Req (weight)	Price	Required Credits	Cost
Solar	0.5%	\$55.00	5	\$275
Tier I	8.0%	\$6.30	80	\$504
Tier II	10.0%	\$0.55	100	\$55
Total			185	\$834

Weighted Avg. Price (Per Credit)
\$4.51

Weighted Avg. Price (Per MWh)
\$0.83

Alternative Energy Credit Prices as of 06/20/19			
Tier	Reporting Year	Marex Spectron (Bid price)	Marex Spectron (Offer price)
Solar	2018	\$32.50	\$40.00
	2019	\$38.00	\$45.00
	2020	\$47.50	\$55.00
	2021	\$50.00	\$60.00
	2022	\$50.00	\$60.00
Tier I	2019	\$5.55	\$5.70
	2020	\$5.90	\$6.15
	2021	\$6.10	\$6.50
	2022	\$6.40	\$6.90
Tier II	2019	\$0.45	\$0.65
	2020	\$0.45	\$0.65
	2021	\$0.45	\$0.65
	2022	\$0.40	\$0.60

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

**DIRECT TESTIMONY
OF**

AMANDA LEVIN

FOR THE NATURAL RESOURCES DEFENSE COUNCIL

June 30, 2021

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Exhibit List

Exhibit AML-001: Qualifications of Amanda Levin

1 **I. Background and Qualifications**

2 **Q. Please state your name, address and employment.**

3 **A.** My name is Amanda Levin. I am a Senior Policy Analyst for the Natural Resources
4 Defense Council (“NRDC”). My business address is 1152 15th Street NW, Suite 300,
5 Washington, DC, 20005.

6 **Q. Have you prepared an exhibit describing your education, relevant employment
7 experience, and other professional qualifications?**

8 **A.** Yes, I have. My professional and educational background is provided in the attached
9 Exhibit AML-001.

10 Briefly though, in my current position at the Natural Resources Defense Council ,
11 I focus on analysis and advocacy around energy, energy efficiency, decarbonization, retail
12 market design, and wholesale market reform. Over the last year, I have also focused on
13 utility-related issues arising from or exacerbated by the COVID-19 pandemic (“COVID-
14 19” or “COVID”), including moratoriums on service disconnections, utility debt relief
15 measures and other customer protections, and cost recovery of COVID-related utility
16 expenses.

17 As part of my responsibilities I serve as an expert witness for NRDC and partner
18 organizations before state utility commissions, legislatures, and federal agencies on issues
19 related to utility regulation and long-term planning. I have served as an expert witness
20 before the Idaho Public Utilities Commission, the Montana Public Service Commission,
21 the New Mexico Public Regulation Commission, the New Jersey Board of Public Utilities,
22 the Virginia State Corporation Commission, and the Washington Utilities and

1 Transportation Commission.

2 My research on decarbonization strategy and modeling, the impact of various
3 environmental regulations, electric restructuring, utility business model design, and energy
4 efficiency program design has also been published in a variety of academic journals.

5 **Q. On whose behalf are you testifying?**

6 **A.** I am testifying as a witness for NRDC.

7 **Q. Have you previously testified before the Pennsylvania Public Utility Commission?**

8 **A.** No, I have not previously testified in front of the Pennsylvania Public Utility Commission.

9 **Q. What is the purpose of your direct testimony in this proceeding?**

10 **A.** My testimony concerns the proposal of Duquesne Light Company (“the Company”) for
11 cost recovery of COVID-related costs net of savings and the Company’s proposed
12 temporary residential COVID debt relief program. My testimony will first provide a brief
13 overview of COVID-related utility cost recovery approaches, the growing utility debt
14 crisis, and debt relief measures taken across the country, as well as specific steps already
15 taken in the State of Pennsylvania (Section III). I then discuss the Company’s proposed
16 recovery of incremental uncollectible costs and other extraordinary, nonrecurring
17 incremental COVID- related expenses in more detail (Section IV), outlining a few issues
18 and recommendations to ensure that costs are recovered in a prudent and reasonable
19 manner. Lastly, I discuss the Company’s proposed residential COVID debt relief program
20 (Section V) and offer a few modifications that I believe will enhance the benefits of the
21 program for customers.

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II. Summary of Conclusions and Recommendations

Q. Please summarize your conclusions and recommendations.

A. The COVID-19 pandemic has drastically altered the lives of many Americans, robbing them of loved ones, their own health, their jobs, economic and financial security, and sense of normalcy. Recovery will take time and require new support, protections, and programs to help those who have faced increased financial burdens and struggles over the last year. The Company’s rate case filing seeks to address some of the impacts from COVID-19 on both customers and the utility. This includes both requesting recovery of incremental utility costs associated with COVID-19 and new temporary bill assistance programs to address the significant past due balances many customers and businesses are facing as a result of the economic fallout and job loss that followed the start of the pandemic.

My testimony discusses both the Company’s proposal to recover these COVID-related incremental costs already incurred and tracked, as well as the proposed temporary Residential COVID-19 Bill Relief program. I recognize that measures taken to protect customers and utility employees have come with reasonable costs that should be eligible for recovery. At the same time, the Commission should ensure that customers are given adequate support and protected from unreasonable costs or rate shock, with priority given to those most vulnerable to service terminations and the financial and health impacts of COVID. The recommendations laid out in this testimony are designed to strike this necessary balance between customers’ interests and needs with those of the utility.

Specifically, as relates to the Company’s proposal to recover costs associated with

1 incremental COVID-19 related expenses and uncollectable expenses I recommend that:

2 1) The Commission should not approve the Company's request for extraordinary,
3 non-recurring incremental COVID-19 related costs as proposed in its filings
4 without further review of actual versus expected 2020 expenses. While recovery of
5 these types of costs is generally allowed, further scrutiny of the particular budget
6 items included and excluded from the Company's proposed schedule D-12 is
7 warranted before the approval of any cost recovery. This is necessary to ensure that
8 the process is transparent and equitable, allowing utilities to recover prudent net
9 costs while also protecting customers from overpaying and helping to mitigate rate
10 shock during this still fragile period of recovery.

11 2) I also recommend that the Commission consider whether any approved amounts
12 related to either incremental uncollectable expenses or extraordinary, non-
13 recurring expenses be amortized over a longer period than 3 years as proposed
14 in this filing. It may be best to amortize these amounts over a longer period to
15 further mitigate the rate impact to customers, especially given the significant
16 amount of customer debt and financial struggles customers are still dealing with
17 from the pandemic and associated economic downturn,

18 I support the implementation of a Residential COVID-19 Debt Relief Program,
19 which I believe will serve a critical need to address the significant arrears held not only by
20 those who have historically struggled to pay, but also those who only recently became
21 unable to pay due to changes in employment, financial, and other situational circumstances.
22 However, I offer a few recommendations to further enhance the customer benefits from

1 this program and ensure that the program and its impacts are transparently and fully
2 reported to the Commission and the public. Specifically:

3 1) I recommend that the Commission defer the approval of cost recovery associated
4 with the administrative costs of the program. The Company is proposing to recover
5 \$500,000 for administrative expenses or 14 percent of the total amount to be
6 recovered for this program, which is substantially higher than administrative caps
7 placed on similar debt relief programs in other states. I recommend that the
8 Commission instead authorize the recovery of \$3 million, associated with the full
9 forgiveness anticipated under the program, in this proceeding and allow the
10 company to track and record the actual administrative costs of the program for
11 future rate recovery, as will be done for other incremental COVID-19 related
12 expenses.

13 2) I recommend the Commission require the Company to continue to waive any and
14 all late fees and reconnection fees, at least through the end of the year, irrespective
15 of a customer's ability to pay 25 percent of the outstanding balance.

16 3) Lastly, I recommend that the Commission require the utility to report additional
17 data in the required quarterly reports already required by the Commission.. This
18 includes geographical and income data, which will be important to track due to
19 known historical and recent racial and ethnic disparities in utility insecurity, arrears,
20 and COVID-related health and economic impacts.

21

1 **III. The Impact of COVID-19 on Customers, Utility Debt, and Utility Expenses**

2 **Q. How has the COVID-19 pandemic impacted households' ability to pay for utility**
3 **services and other expenses?**

4 **A.** In Pennsylvania and across the United States, the COVID-19 pandemic radically
5 changed the way we lived and spent our time, and in some respects continues to do so.
6 Limiting the spread of the disease has required millions of people across the United
7 States to stay home much of the time. Consequentially, residential utility service became
8 even more vital than it usually is, as many Americans were working and/or learning
9 from home, receiving medical care at home via telehealth appointments, and more.
10 Unsurprisingly, residential energy consumption rose as people spent much more time at
11 home. Between April and June 2020, in the early stages of the pandemic, the Company's
12 residential customers used about 14 percent more energy than they did in the same three-
13 month period in 2019. In June alone, average residential energy consumption were
14 approximately 20 percent greater in 2020 than in 2019.

15 In the Company's territory, low-income customers (whether enrolled in CAP or
16 not) consume more electricity than non-low-income customers. These confirmed low-
17 income customers, especially those not enrolled in CAP, generally saw greater increases
18 in electricity use year-over-year between 2019 and 2020. For customers enrolled in the
19 Company's Customer Assistance Program (CAP), electricity use increased by around 4
20 to 5 percent year-over-year. For low-income customers not enrolled in CAP, average
21 electricity use increased by 6 percent year-over-year. This higher energy consumption, a
22 direct result of stay-at-home and other quarantine measures, meant that energy bills also

1 increased in 2020.

2 Increased electricity usage and utility bills not only placed more strain on low-
3 income residential customers, many of whom already struggled to pay their utility bills.
4 It also caused residential customers who were previously able to pay their bills to fall
5 behind. Unemployment skyrocketed during the pandemic as many businesses were
6 forced to close their doors, potentially laying off or furloughing employees. Nationwide,
7 unemployment reached a peak in April 2020 at 14.7 percent and has remained above
8 pre-pandemic, at 5.8 percent as of May 2021. This is true for Pennsylvania as well:
9 unemployment rose to 16.2 percent in April 2020, declining to 6.9 percent as of May
10 2021.¹ In Duquesne's territory, unemployment hit a high of 18.4 percent and 15.9
11 percent in Beaver and Allegheny County, respectively, in April 2020.²

12 While unemployment has decreased from these peaks, large racial disparities in
13 the labor market and economic recovery exist. The nationwide unemployment rate of
14 5.8 percent obscures significant racial inequities: the unemployment rate in May among
15 white workers was 5.1 percent, while the unemployment rate for Black workers was still
16 at 9.1 percent and at 7.3 percent for Hispanic workers. Throughout the pandemic, Black,
17 Indigenous, Hispanic, and Asian-American Pennsylvanians were more likely to be

¹ U.S. Bureau of Labor Statistics, United States Department of Labor, *Pennsylvania Economy at a Glance*, (June 23, 2021), <https://www.bls.gov/eag/eag.pa.htm>.

² U.S. Bureau of Labor Statistics, United States Department of Labor, *Unemployment in the Pittsburgh Area by County—June 2020*, (August 10, 2020), https://www.bls.gov/regions/mid-atlantic/news-release/unemployment_pittsburgh.htm.

1 unemployed than white Pennsylvanians.³ At the end of 2020, nearly one in five Black
2 Pennsylvanians was unemployed, as compared to fewer than one in eleven white
3 Pennsylvanians. This was the highest unemployment rate for Black Americans in the
4 nation.⁴

5 The pandemic has also resulted in a sharp uptick in long-term unemployed
6 Americans: 3.8 million Americans had been unemployed for at least 27 weeks in May
7 2021, up from 1.2 million in May 2020. In Pennsylvania, the numbers were 131,400 and
8 57,400, respectively.⁵

9 The confluence of mass unemployment and an abrupt switch to working and
10 learning from home for many, among other factors, has resulted in both significant
11 changes in energy consumption and customers' ability to pay. While shut-off
12 moratoriums were in place, utility bill debts accumulated as families – who may have
13 lost jobs, seen reduced work hours, or all the sudden needed to take care of or house
14 additional family members – could not afford to pay their bills. As a result, millions of
15 customers have accrued hundreds and even thousands of dollars in unpaid utility bills.
16 Some have estimated that customers owed up to \$40 billion nationwide in past-due

³ Penn State Center for Economic and Community Development, *Unemployment Claims under COVID-19 by Race, Sex, and Age: Pennsylvania, February through October 10, 2020*, page 9, (March 2021), <https://aese.psu.edu/research/centers/cccd/publications>.

⁴ Economic Policy Institute, *State Unemployment By Race and Ethnicity* (March 2021), <https://www.epi.org/indicators/state-unemployment-race-ethnicity/>.

⁵ Pennsylvania Department of Labor & Industry, Center for Workforce Information & Analysis, *PA Monthly Workstats, April 2021 Big Numbers*, page 4. <https://www.workstats.dli.pa.gov/Documents/PAMW/PAMW.pdf>.

1 electric bills by the end of 2020.⁶ This estimate does not include other utility services,
2 like water and gas, which likely have similarly high past due amounts. By one estimate,
3 Pennsylvania's largest electric and gas utilities have up to \$743 million in unpaid bills, up
4 about 76% from a year ago.⁷

5 In Duquesne's territory, 68,231 residential accounts are in arrears (as of May
6 2021).⁸ This is about 13 percent of all residential customers.⁹ Of these 68,231 accounts
7 in arrears, 12,995 are confirmed low-income accounts that are not on CAP. In total, these
8 residential accounts have almost \$33 million in unpaid bills (as of May 2021), with
9 confirmed low-income customers holding a little less than \$3 million of this debt.¹⁰

10 **Q. Are Duquesne's customers with arrears currently protected by a shut-off**
11 **moratorium?**

12 **A.** No. Like many state utility commissions, the Pennsylvania PUC adopted a utility shut-
13 off moratorium at the start of the pandemic in 2020. However, the PUC subsequently
14 modified and ultimately lifted the moratorium, allowing utilities to resume normal
15 service shutoffs for nonpaying customers after March 31, 2021, consistent with the end

⁶ Herman K. Trabish, *Utility customers owe up to \$40B in COVID-19 debt, but who will pay for it*, Utility Dive, December 3, 2020, <https://www.utilitydive.com/news/customers-owe-billions-in-covid-debt-to-their-utilities-and-somebody-has-to/589525/>.

⁷ Andrew Maykuth, *Pa. lifts moratorium on pandemic shutoffs and allows utilities to resume terminations March 31*, The Philadelphia Inquirer, March 11, 2021, <https://www.inquirer.com/business/pennsylvania-utilities-lift-shutoff-ban-coronavirus-covid-new-jersey-20210311.html>.

⁸ DLC Response to OCA-II-12 – Attachment OCA-II-1.

⁹ DLC Response to WPTF Q- I-12.

¹⁰ DLC OCA-II-11— Attachment 1; *See also* DLC Response to OCA-II-10— Attachment 1.

1 of the state's annual winter moratorium.

2 The end of the shut-off moratoriums has meant that Duquesne's customers are
3 now receiving termination notices, with some already being shut off for non-payment in
4 the midst of this crisis. As will be discussed later in my testimony, there is evidence to
5 suggest that these disconnections are hitting Black and Brown communities the hardest.

6 **Q. Apart from the shut-off moratorium, what other steps have Duquesne and the**
7 **Commonwealth of Pennsylvania taken to help customers facing economic**
8 **hardships during the COVID-19 pandemic?**

9 A. Earlier in the pandemic, the Company implemented a variety of measures to financially
10 support customers impacted by the COVID-19 pandemic, including the elimination of
11 late payment charges from March 18, 2020, through May 1, 2021.¹¹ Duquesne also
12 contributed \$500,000 to the Pittsburgh Emergency Action Fund and \$375,000 (matched
13 by the Office of Consumer Advocate) to the Dollar Energy Fund. Duquesne also
14 reported the distribution of new online resources for residential and small and medium-
15 sized businesses in June 2020, as well as increased marketing of available resources.

16 In January 2021, Pennsylvania used funds received through the federal
17 Consolidated Appropriations Act of 2020 and the American Rescue Plan Act of 2021 to
18 establish a Rental and Utility Assistance Grant Program.¹² Under this program,
19 customers with utility arrears can apply to their respective counties for grants to be paid

¹¹ DLC Response to OCA-VI-15.

¹² See Senate Bill 109 Fiscal Code- Omnibus Amendments, General Assembly of the Commonwealth of Pennsylvania (2021) <https://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2021&sessInd=0&act=1>.

1 directly to their utilities.

2 **Q. Generally speaking, how has the COVID-19 pandemic impacted utilities' operating**
3 **expenses and revenues?**

4 **A.** The COVID-19 pandemic has had a significant impact on utilities' expenses and revenue
5 streams. Utilities have seen a broad array of effects, with COVID driving both new costs
6 and cost savings in different operational areas.

7 Most obviously, the pandemic has greatly altered energy consumption and revenue
8 for each customer class. Commercial and industrial customers have generally seen stark
9 reductions in usage, as business and manufacturing shut down or declined – especially in
10 the early days. As noted earlier, the residential class has instead generally seen much higher
11 levels of sales due to stay-at-home measures coupled with weather events. Utility revenues
12 have also decreased due to lost revenue from disconnection moratoriums, waived fees and
13 interest payments, and other customer protection measures taken at the start of the
14 pandemic. Increased uncollectible accounts, a symptom the utility debt crisis facing many
15 households today, also impact a utility's cost of service.

16 Beyond revenues, labor costs have changed, both up and down. Utilities had
17 unexpected expenses related to cleaning, purchasing hand sanitizer and other health and
18 safety equipment for employees, and programs and budget items related to work-from-
19 home employee support (e.g., enhanced or expanded cellphone or internet reimbursement).
20 Costs for outside services may also have increased as a result of COVID. However, other
21 costs – such as employee training, travel, conference and meeting expenses, and building
22 operating costs – have decreased due to work-from-home measures. Other changes in

1 utility programs may offer additional net reductions in overall utility operational and
2 maintenance expense.

3 Lastly, the pandemic also had a significant impact on interest rates and capital
4 markets. To help support the economy during the pandemic, the Federal Reserve Bank
5 reduced federal funds rates to near-zero to stabilize financial markets, which has brought
6 down the cost of debt and equity for utilities in the last year. This allows utilities to realize
7 significant cost savings, both on short-term debt, as well as opportunities to reduce the cost
8 of longer-term debt through refinancing of outstanding debt.¹³

9 **Q. What steps has the Pennsylvania Public Utility Commission taken to address utility**
10 **cost recovery issues related to the COVID-19 pandemic?**

11 **A.** Many state utility commissions, including the Pennsylvania PUC, have authorized
12 utilities to track incremental costs, net of savings, for future recovery from ratepayers
13 through a regulatory asset.

14 In Pennsylvania, the PUC issued a Secretarial Letter on May 13, 2020 titled
15 “COVID-19 Cost Tracking and Creation of Regulatory Asset Docket No. M-2020-
16 3019775.” The letter directs all regulated utilities to “track extraordinary, nonrecurring
17 incremental COVID-19 related expenses and to maintain detailed accounting records of
18 such expenses” and “create a regulatory asset for any incremental uncollectible expenses
19 incurred above those embedded in rates since the issuance of the Emergency Order.”

20 The letter further states that the Commission will consider any request for recovery of

¹³ National Association of State Utility Consumer Advocates, *NASUCA Recommendations Concerning the Accounting and Revenue Requirement Issues Arising from COVID-19 and Requests for Accounting Order Deferral*, <https://nasuca.org/wp-content/uploads/2020/08/NASUCA-Draft-Accounting-and-Ratemaking-Treatments-v6.docx>.

1 the incremental expenses made in future proceedings, such as the present proceeding.
2 The Commission has maintained the ability to review these cost recovery requests to
3 ensure that the recovery sought is just and reasonable, as well as the ability to consider
4 the appropriate period of recovery for any approved amounts, the carrying costs on these
5 assets, and other related matters.

6 **Q. Is there anything else you wish to highlight to the Commission about the impacts**
7 **of COVID-19 on customers, energy affordability, and utility operations?**

8 **A.** Yes. I want to recognize and emphasize the racial and ethnic disparities in reliable and
9 constant energy service, and the ways in which the pandemic and resulting actions taken
10 by utilities and states have exacerbated existing disparities. Black, Hispanic, and
11 Indigenous households have been disproportionately impacted by the COVID-19
12 pandemic from a health and economic perspective.¹⁴ These households were at greater
13 risk of losing their jobs or income to the crisis and have seen a slower economic recovery
14 than white households. People of color were also more likely to be considered essential
15 workers, which increased their risk to exposure, and have also faced a disproportionate
16 share of COVID-19 related deaths, especially when adjusted for age.¹⁵ In Pennsylvania,
17 as of mid-September 2020, Black residents represented 20 percent of the state's COVID-
18 19 cases and 18 percent of all COVID-19 deaths, but only 11 percent of its population.¹⁶

¹⁴ Centers for Disease Control and Prevention, *COVID-10 Racial and Ethnic Health Disparities (2021)*, <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/racial-ethnic-disparities/index.html>.

¹⁵ *Id.*

¹⁶ University of Pennsylvania, *Understanding Racial and Ethnic Disparities in Health Outcomes and Utility Insecurity Resulting from COVID-19*, <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/racial-ethnic-disparities/index.html> at 37.

1 Furthermore, BIPOC households have been and continue to be systemically excluded
2 from accumulating wealth. This means that they often have less of a safety net to draw
3 on during challenging financial times, such as the times we find ourselves in today.

4 Even before the COVID-19 recession, energy bills strained many family budgets
5 – with Black, Hispanic, and Indigenous families facing significantly higher energy
6 burdens than the average household.¹⁷ The COVID-19 pandemic has only added to the
7 financial burdens and challenges for many of these households. A recent study by
8 researchers at the University of Pennsylvania investigated the racial disparities in health
9 outcomes and utility insecurity resulting from COVID-19 in Pennsylvania. The study
10 found that 69 percent of Black and 74 percent of Latinx respondents reported falling
11 behind on utility bill payments since March 2021, with only half of white respondents
12 reporting the same.¹⁸ One in five Black respondents had “delayed payment of utility bills
13 in order to pay other necessary expenses most or all of the time” and about 30 percent
14 of Black residents reported being either formally or informally evicted since March
15 2020, as compared to only 13 percent of white respondents. Black respondents also
16 reported significantly more concern about future evictions and utility shutoffs than other
17 racial and ethnic groups surveyed.

18 It is crucial for the Commission and the Company to consider and account for
19 these racial and ethnic inequalities in service, energy burdens, and financial situations

¹⁷ American Council for an Energy Efficient Economy, *Energy Burden Report: Low-Income, Black, Hispanic, and Native American Households Face High Energy Burdens*. (September 10, 2020), <https://www.aceee.org/energy-burden>.

¹⁸ *Understanding Racial and Ethnic Disparities in Health Outcomes*, *supra*, page 57, Appendix E at Table E3.

1 as disconnections and fees are once again being allowed and as solutions to help address
2 customer debt are being developed.

3
4 **IV. The Company's Proposed Recovery of Incremental COVID-19 Related Costs**

5 **Q. Please detail the Company's proposal to recover costs related to increased**
6 **uncollectable amounts and other extraordinary, non-recurring incremental**
7 **expenses related to COVID-19.**

8 **A.** The Company is seeking to recover the costs of two different types of expenses related
9 to the COVID-19 pandemic.

10 The first is the recovery of incremental uncollectable amounts, related to
11 increased levels of customer delinquencies during the pandemic. The Company recorded
12 these costs totaling \$4,186,575 in a regulatory asset. These costs represent the
13 incremental costs, over and above the uncollectable expense in its prior rate case of
14 \$10,471,000, through the end of 2020. The Company estimates that incremental
15 uncollectable amounts for the first three months of 2021 amount to another \$2.1 million,
16 which have also been included.¹⁹ The costs would be amortized and recovered over three
17 years. The Company is also proposing to continue to record the incremental
18 uncollectable expenses incurred for recovery via a regulatory asset in future
19 proceedings.

20 The second type of costs recorded are other extraordinary, nonrecurring incremental
21 COVID-19 related costs net of savings associated with the pandemic. The costs tracked

¹⁹ DLC Exhibit 2, Schedule D-12, Column 5.

1 and proposed to be recovered relate to waived late payment charges and reconnect fees,
2 outside services and materials, as well as overtime, labor expenses, new employee
3 support programs, and services and goods performed and purchased directly in support
4 of COVID-19 preparations.²⁰ Duquesne has calculated that these incremental costs total
5 \$5.95 million through December 31,2020. The Company has netted these costs out with
6 two sources of cost savings: employee training and parking, estimating cost savings of
7 \$750,000 (\$634,000 from cancelled training events and opportunities, with another
8 \$116,000 from parking-related expenses). The total, net of related savings, being
9 proposed to be recovered in this proceeding is \$5.2 million.

10 Like with uncollectable expenses, the Company is proposing to amortize these
11 incremental costs over three years and continue to record additional incremental costs
12 to be collected in a future rate case.

13 Utilities are authorized to track and recover these costs as a regulatory asset in the
14 Secretarial Letter. The Commission still has the right to consider whether the request is
15 just and reasonable and to consider other issues, such as the appropriate period of
16 recovery and carrying costs.

17 **Q. Are you supportive of the recovery of incremental costs, net of savings, related to**
18 **COVID-19?**

19 **A.** Yes. I am supportive of the recovery of prudent and reasonable costs, if it is shown that
20 COVID-19 resulted in real *net* incremental expenses for a utility. However, I believe
21 that any proposed recovery must meet a few standards in order to be approved.

²⁰ DLC Response to OCA-VI-22.

1 Most importantly, any net costs recorded for recovery should take into account
2 any and all related costs and cost reductions incurred due to the pandemic. It is critical
3 to consider all of the impacts – up and down – together, so that those putting upward
4 pressure on rates and bills can be offset to the extent feasible by those providing
5 downward pressure. As noted in the previous section, COVID-19 has put significant
6 financial pressure on many households – both on those who were and were not able to
7 afford electricity prior to the pandemic – and has resulted in growing past due bills for
8 many customers. Not only is transparent and full accounting of all costs and savings
9 necessary to ensure that any recovery covers only prudent and related *net* incremental
10 costs, but given the precarious financial position many still find themselves in,
11 minimizing the near-term rate impact on customers is an equally important
12 consideration.

13 In addition, any approved recovery of incremental utility expenses should be
14 linked in some way to the provision of customer assistance, strengthened energy
15 efficiency programs, and/or debt relief. We know that the pandemic has only added to
16 the financial burdens those already struggling with high energy burdens and
17 unaffordable bills, and that it has also resulted in a new class of customers – those who
18 used to be able to pay their bills, but now, due to the pandemic, are no longer able to
19 afford electricity service. Constant, reliable electricity service is important, and only
20 more vital today as some services, employment, and learning opportunities to continue
21 to rely on virtual, at-home options to continue to mitigate the spread of the coronavirus,
22 especially more infectious variants. These customers need immediate assistance,

1 including full or partial debt relief and more flexible, extended repayment terms for any
2 remaining debt, for the debts that have grown during the last year. The Commission and
3 the utility also need to focus on measures to ensure long-term energy affordability for
4 all, implementing or enhancing programs such as the Company's Percent of Income
5 Payment Plan (PIPP) offerings and also avoiding rate designs or changes to rate
6 structures that harm low-use, low-income and fixed income households (e.g., increases
7 to or the use of high fixed charges).

8 **Q. Does the Company's proposal in this case meet these requirements you have**
9 **outlined?**

10 **A.** No. The Company's proposal does not appear to consider all cost savings that have been
11 realized due to COVID when determining the net incremental costs to be recovered from
12 customers in this case. As one example, Duquesne noted in discovery "the decrease of
13 \$399,000 (\$1,931,000 - \$1,532,000) from 2019 to HTY 2020 [for utilities expenses] is
14 primarily driven by the COVID-19 pandemic impact on operations."²¹ There is no
15 corresponding reduction reflected in DLC Exhibit 2 – Fully Projected Future Test Year,
16 Schedule D-12." When further pressed as to why these savings "primarily driven by the
17 COVID-19 pandemic" were not reflected in any way in the calculated cost savings, the
18 Company responded "the Company does not believe that the entire decrease of \$399,000
19 in utilities expense is attributed to COVID and therefore, they are not included."²² Just
20 because not all \$399,000 in realized savings may be fully attributable to COVID-19 does

²¹ DLC Response to I&E-RE-61.

²² DLC Response to NRDC-II-1.

1 not mean that the Company can or should ignore these savings. The Company does note
2 that it “is currently reviewing these costs in more detail to determine what amount, if
3 any should be included.” However, this review and the determination of any and all cost
4 savings should have occurred before the filing and before any approval of cost recovery.

5 Reduced utility expenses are not the only savings that may not have been
6 accurately or appropriately included in the recorded cost savings. The Company’s filings
7 show that there was a \$1,528,000 decrease in employee expenses between 2019 and
8 2020. \$750,000 of these savings are reflected in the reported COVID-19 related cost
9 savings, related to employee trainings and parking only.²³ It seems unlikely that these
10 two sources of savings (representing less than half of the total reduction in employee
11 expenses) are the only sources of savings fully *or* partially related to the pandemic. This
12 could include reduced employee travel expenses (like flights) and changes in meeting
13 expenses (e.g., food) and other business travel expenses (e.g., business meals) as people
14 worked and took meetings from home, none of which appear to be reflected in the
15 COVID-19 cost savings recorded.

16 The need for more transparent and detailed reporting of all cost savings seen in
17 2021, and the portion attributable COVID-19, is even clearer when considering the
18 amount of detail and scope of incremental costs recorded and tracked. Incremental costs
19 included the time spent on COVID-19 planning efforts, including incidental command
20 team (ICT) time and any time taken by those supporting the ICT on direct requests, as
21 well as time spent by staff on COVID-19 return to work efforts. This is not to suggest

²³ DLC Response to I&E-RE-65.

1 that these mentioned recorded costs are not prudent or related to COVID-19, but rather
2 that both incremental costs and cost savings should be given equal care and
3 consideration, which does not appear to be the case.

4 **Q. What are your recommendations to the Commission?**

5 **A.** While the Secretarial Letter provides the Company the right and opportunity to track
6 and recover incremental costs, net of savings, associated with COVID-19 as a regulatory
7 asset in proceedings, the Commission has the right and duty to ensure that the proposal
8 is just and reasonable. The Commission should not approve Duquesne's request for cost
9 recovery as proposed in its' filings without further review of actual versus expected 2020
10 expenses. This is necessary to ensure that all costs and savings from COVID, even those
11 savings that are only "partially" attributed to the pandemic, are properly accounted for
12 and that costs to be recovered from customers are indeed prudent. Further scrutiny of
13 the budget items included and excluded from the company's proposed schedule D-12 is
14 warranted to ensure that the process is transparent and equitable, allowing utilities to
15 recover prudent net costs while also protecting customers from overpaying and helping
16 to mitigate rate shock during this still fragile period of recovery.

17 This is especially important to do in this proceeding as the Company has already
18 indicated its intention to file for further cost recovery of those expenses incurred after
19 the filings of this case and thus not reflected in the proposed regulatory asset. Setting
20 clear requirements that create a more transparent and full accounting process here in this
21 case will establish better procedures for any and all future requests.

22 I would also recommend that the Commission consider whether any approved

1 amounts be amortized over a longer period than proposed here. The Company is
2 proposing to amortize these costs over the next three years to match their expected future
3 rate case schedule. However, it may be best to amortize these amounts over a longer
4 period to further mitigate the rate impact to customers. As detailed above and in the
5 Company's filings, many customers are still struggling and are burdened with new and
6 growing past due balances. The economic recovery is only beginning, vaccination rates
7 are still below what is required to achieve herd immunity, and the rise of new variants
8 may complicate the fragile re-openings seen in recent months. Higher electricity rates,
9 which will increase current bills on top of any past due balances, can further threaten
10 customers' ability to pay and energy affordability in Duquesne's territory. Amortizing
11 these COVID-19 related expenses, including both incremental uncollectable expenses
12 and other incremental extraordinary expenses, over a longer period – such as 6 years (or
13 over two expected rate case periods) could be warranted to mitigate the near-term impact
14 of this cost recovery on customers.

15 **V. The Company's Proposed Residential COVID-19 Debt Relief Program**

16 **Q. Please detail the Company's proposed Residential COVID-19 Debt Relief Program.**

17 **A.** Duquesne is proposing to implement a new temporary residential COVID-19 debt relief
18 program, on top of its existing universal service programs and bill assistance offerings.
19 Unlike the Company's existing universal service programs, the COVID-19 debt relief
20 program is a short-term program designed to provide targeted assistance to low- and
21 moderate-income customers with delinquencies as a result of the pandemic.

1 The residential COVID-19 debt relief program will be available to non-CAP
2 customer earning between 151 percent – 300 percent of the FPL with a delinquent balance
3 of at least \$100. Those eligible for other programs (e.g., LIURP, CAP) will be offered those
4 services.

5 Under the program, customers who make a payment will receive matching
6 forgiveness up to \$300 and a payment arrangement up to 36 months on the remaining unpaid
7 balance. For customers or applicants who were disconnected for non-payment and are
8 seeking restoration, the Company will also waive the reconnection fee and restore service
9 if 25 percent of outstanding balance is paid.

10 The Company is asking to recover \$3.5 million dollars associated with the new
11 program. This includes \$3 million for the matching forgiveness offered plus another
12 \$500,000 for administrative expenses associated with the program.

13 **Q. Do you support the implementation of a Residential COVID-19 Debt Relief Program?**

14 **A.** Yes. The debt crisis precipitated by COVID-19 requires new and expanded bill assistance
15 and debt forgiveness programs. The Company’s proposed program is warranted and can
16 serve as a critical support for families struggling during the pandemic. I am supportive of
17 many of the elements in the Company’s proposed Debt Relief Program, but do have a few
18 recommendations, outlined in more detail later on in this section, that I believe will enhance
19 the program.

20 First, I want to highlight some of the strengths of the proposed program. Offering
21 supplemental support with partial debt forgiveness, specifically for those who may be
22 higher-income than those targeted by other bill assistance programs, such as CAP, is

1 important and necessary given the wide-spread impacts of COVID on the financial health
2 of many families. The proposed income levels, up to 300 percent FPL, will help the
3 company address the debts held by customers not typically considered low-income or
4 eligible for other existing programs but who have faced financial hardships due to the
5 pandemic that have resulted in a struggle to pay their utility bills. The proposed program
6 also includes extended payment terms of up to 36 months, which is in line with the
7 requirements set by the Commission's recent motion and represent substantially more
8 generous terms that many other states.²⁴ These extended terms will reduce the monthly
9 burden for many households with past due bills and provides customers with options that
10 are more affordable and less likely to strain household incomes and cash flow limitations.

11 **Q. Do you have any concerns with the Company's proposed program?**

12 **A.** Yes. Specifically, I am concerned with the very high ratio of the total budget going towards
13 administrative expenses for this program.²⁵ The Company is proposing to recover \$500,000
14 for administrative expense or 14 percent of the total amount to be recovered (\$500k of
15 \$3.5 million). This is substantially higher than some of the allowed amounts in other states.
16 For example, California's budget bill currently caps administrative expenses related to bill
17 forgiveness programs to 5 percent. The Commission should consider the reasonableness of
18 the administrative expenses being proposed for recovery here, at least for the scale of relief
19 to be provided.

20 There will be administrative costs associated with implementing this new program,

²⁴ Public Utility Service Termination Moratorium, 3019244-CMR, Docket No. M-2020-3019244.

²⁵ DLC Response to OCA-VI-59.

1 but the ratio in the Company's proposal seems inappropriate. The objective here is to
2 provide much-needed relief for customers suffering due to the sustained economic hardship
3 from the pandemic. For almost 15 percent of the recovery sought to go towards
4 administrative costs rather than bill relief seems unreasonable. I would recommend that the
5 Commission instead authorize the recovery of \$3 million, associated with the full
6 forgiveness anticipated under the program, in this proceeding and instead allow the
7 company to track and record the actual administrative costs of the program for future rate
8 recovery, as will be done for other incremental COVID-19 related expenses. This is
9 consistent with the approach taken in Oregon, where utilities are implementing similar
10 temporary debt relief offerings for customers and will file to recover implementation costs
11 in future proceedings.²⁶

12 The Commission should require the utility to report on program activities, including
13 marketing and outreach efforts, customers reached and served, relief funds expended and
14 remaining, and any internal training and system needs identified and expenses incurred to
15 implement the program, as part of the existing quarterly reporting requirements already
16 required as part of prior Commission motions. The Commission should also urge the
17 Company to utilize existing resources, staff, and partnerships to the extent feasible to
18 minimize the amount of costs that will be recovered for expenses not directly related to bill
19 relief and forgiveness.

20 **Q. Do you have any other recommendations to offer?**

21 **A.** Yes, I have two additional recommendations. First, the company is currently proposing to

²⁶ Oregon Public Utility Commission Order No. 20-401, Docket No. UM 2114, entered Nov. 5, 2020.

1 reinstate reconnection fees for households disconnected for non-payment, if the household
2 cannot pay 25 percent of the outstanding balance upfront. I would recommend the
3 Commission require the Company to continue to waive any and all late fees and
4 reconnection fees, at least through the end of the year, no matter if the customer is able to
5 pay 25 percent of the outstanding balance. This is important to minimize the financial stress
6 placed on already suffering customers with significant past due bills. These waived late
7 fees and reconnection fees could be tracked and eligible for future cost recovery by the
8 utility, consistent with the treatment of these foregone fees during the last year.

9 Secondly, regular and public communication and data reporting are essential to
10 understand the progress and impact of these temporary programs and customers' evolving
11 financial and economic situations. Therefore, upon approval of this new program, the
12 Company should file additional data in its quarterly reports already required by the
13 Commission. One additional requirement was mentioned above, namely requiring the
14 utility to file details on the marketing and outreach taken, customers reached, relief funds
15 expended and remaining, and any actual administrative costs incurred to help support a
16 request for cost recovery of these expenses in a future proceeding.

17 I would also suggest that the Commission require the utility to provide additional
18 geographic and income data, which should be publicly-reported due to known historical
19 and recent racial and ethnic disparities in utility insecurity, arrears, and COVID-19 related
20 health and economic impacts. This includes requiring utilities to report in their quarterly
21 filings:

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

EXHIBIT TO ACCOMPANY

THE

DIRECT TESTIMONY

OF

AMANDA LEVIN

FOR THE NATURAL RESOURCES DEFENSE COUNCIL

June 30, 2021

Qualifications of Amanda Marie Levin

1152 15th St NW, Suite 300

Washington, DC 20005

507-269-0554

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CURRENT POSITION

Senior Policy Analyst, Climate & Clean Energy, Natural Resources Defense Council, July 2014 – Present

- Serve as lead analyst for NRDC’s Climate & Clean Energy Eastern Advocacy. Develop, conduct, and oversee energy-related modeling, analysis, and research for NRDC’s state advocates in the Northeast, Mid-Atlantic, and Southeast.
- Manage multi-group efforts to develop, model, and understand the energy, economic, and health impacts of potential future federal administrative and legislative actions.
- Work on the development, testing, and modification of economy-wide and power-sector specific modeling platforms and analytical tools.
- Work with federal policymakers to model and develop legislation and other federal policies. Prepare policy briefs, tools, comments, and presentations to assist with NRDC’s or others’ advocacy at the federal level.
- Represent NRDC and partner organizations in front of state regulatory and legislative bodies, including utility commissions and environmental/air quality agencies. Submit both written and oral testimony, assist with the development of legal briefs, and serve as an expert resource and witness. Areas of expertise include utility rate design and regulatory process, cost-of-service study development, alternative rate mechanisms, the valuation of distributed energy resources, retail choice, and non-traditional utility regulatory models.
- Publish research and other analyses related to economy-wide decarbonization strategy and clean energy policy, including materials related to building, vehicle, and industrial electrification, industrial efficiency programs and energy management, demand response, carbon regulations and markets, and renewable energy grid integration.

EDUCATION

Stanford University, 2010 – 2014, Stanford, CA

MA in Public Policy, Concentration: Resources, Environment, and Energy

Relevant coursework: Natural Resource and Energy Economics; Environmental Economics; Advanced Econometrics; Energy and Environmental Policy Analysis; Introduction to American Law; Environmental Law (through Stanford Law School).

BA in Public Policy, Minor in Biology, Concentration: Environmental Policy

Relevant coursework: Econometrics; Macroeconomics; Microeconomics; Statistics; Politics and Public Policy; Organizations; Chemistry and Biology core curriculums.

Continuing Education Programs

Institute of Public Utilities (IPU) at Michigan State University, *Annual Advanced Regulatory Studies Program: Ratemaking, Accounting, Finance, and Evaluation*, September 30 – October 4, 2019. <http://ipu.msu.edu/advanced>.

PUBLICATIONS

Swanson, T. and **Levin A.** Sailing to Nowhere: Liquefied Natural Gas is Not an Effective Strategy. *NRDC Report R-20-08-A*. 2020.

Levin, A and Ptacek, S. NRDC's Eight Annual Energy Report: Slow and Steady Will Not Win the Climate Race. Interactive [Web Resource](#). 2020.

Mui, S. and **Levin, A.** Clearing the Air: The Benefits of the Clean Air Act. *NRDC Issue Brief 20-04-A*. 2020.

Levin, A. NRDC's Seventh Annual Energy Report: America's Energy Progress: Dueling Clean and Dirty Infrastructure. *NRDC Report R-19-10-B*. 2019.

Levin, A and Cavanagh, R. NRDC's Sixth Annual Energy Report: America's Climate Crossroads: Pushing Clean Energy Higher and Faster. *NRDC Report R-18-10-A*. 2018.

Levin, A and Cavanagh, R. NRDC's Fifth Annual Energy Report: America's Clean Energy Revolution. *NRDC Report R-17-09-A*. 2017.

Gowrishankar, V and **Levin, A.** America's Clean Energy Frontier: The Pathway to a Safer Climate Future. *NRDC Report R-16-06-A*. 2017.

Goldstein, D and **Levin, A.** The Strategic Value of SEM in Limiting Climate Pollution. *ACEEE Summer Study on Energy Efficiency in Industry*. 2017.

Levin, A, Carlisle, G and Benzak, J. Opportunity Lost: How Rolling Back the Clean Power Plan Hurts America's Economy. *Environmental Entrepreneurs*. 2017.

Levin, A and Cavanagh, R. Rehabilitating Retail Markets: Pitfalls and Opportunities. In: *Future of the Utility: Utilities of the Future*. Ed. Sioshansi, F. Menlo Park: Academic Press, 2016.

Williams, S, Gowrishankar, V, and **Levin, A.** Stemming the Tide of Industrial Opt-Outs: A Flexible, Attractive and Effective Option for Utility-Sponsored Industrial Energy Efficiency. *ACEEE Summer Study on Energy Efficiency in Industry*. 2015.

Levin, A. Customer Incentives and Potential Customer Savings in Retail Markets: A Texas Case Study. *The Electricity Journal*. 2015; 28(3): 51-64.

Sheikh, P, Stern, C, and **Levin, A.** Overview of Management and Restoration Activities in Lake Tahoe Basin. *Congressional Research Service, R43224.* released September 13, 2013.

Sheikh, P, Stern, C, and **Levin, A.** Overview of Management and Restoration Efforts in the Salton Sea. *Congressional Research Service, R43211.* released September 5, 2013.

EXPERT TESTIMONY AND INVITED TALKS

Southeast Renewable Energy Summit: "North Carolina Carbon Policy," session panelist, April 2021.

"Carbon Accountability Today, Tomorrow and Into the Future": Invited Talk, APOGEE Webinar, April 2021.

NorthWestern Energy (NWE), MT PSC Docket No. 2019.12.101(CU4): Testimony concerning a proposed deal between PSE and NorthWestern Energy to transfer ownership of Colstrip Unit 4, on behalf of NRDC. 2020.

Public Service of New Mexico (PNM), NM PRC Case No. 20-00121-UT: Testimony supporting the approval of a decoupling mechanism, with modifications, for PNM. 2020.

Virginia Electric and Power Company, Virginia SCC Case No. PUR-2020-00035: Testimony concerning VEPCo's Integrated Resource Plan, evaluating the Company's approach and assumptions for modeling the state's core environmental statute, the Virginia Clean Economy Act, among other things.

NARUC Summer Policy Summit: "The Role of Natural Gas in the Energy Transition Part 2," session panelist, July 2020.

Puget Sound Energy (PSE), WUTC Docket No. UE-200115: Testimony concerning a proposed deal between PSE and NorthWestern Energy to transfer ownership of Colstrip Unit 4, on behalf of NRDC. 2020.

Avista Energy, WUTC Docket Nos. UE-190334, UG-190335, UE-190222: Testimony supporting the continuation of the Company's decoupling mechanism, with proposed modifications to energy efficiency programs, on behalf of NW Energy Coalition (NWEC), 2019.

Ice on Fire (HBO Documentary), DC Premiere: Panelist on the after-movie panel on climate action and politics, Warner Theatre, October 2019.

North Carolina Department of Environmental Quality, Clean Energy Plan Development Process, Facilitated Workshop 5: Presentation to NC Clean Energy Plan stakeholders as part of the "Clean Energy Plan Modeling and Other Collaborative Efforts" dialogue on behalf of the Natural Resources Defense Council (NRDC), June 2019.

Northwestern Energy, MT PSC Docket No. D2018.2.12: Testimony detailing a fixed cost recovery mechanism pilot and accompanying conditions for consideration and approval on behalf of Human Resource Council, District XI, and NRDC, 2019.

Public Service Electric & Gas, BPU Docket GO18101112 & EO121113: Testimony on PSE&G's Clean Energy Filing – Energy Efficiency Plan on behalf of Sierra Club, NJ League of Conservation Voters, Environment New Jersey, NRDC & Environmental Defense Fund (EDF), 2019.

PLMA Load Management Leadership: 39th Conference: “Beneficial Electrification’s Role in Meeting New Load Management Challenges – From Products & Programs to Public Awareness & Market Transformation,” session co-moderator, May 2019.

“A Fixed Cost Recovery Mechanism Proposal,”: Presentation to the Northwestern Energy Customer Vision Stakeholders Group, Butte, MT, November 2018.

Electrify Minnesota! The Future is Electric!: “Stakeholder Dialogue 2: Public Policy,” session panelist, November 2018.

Pembina Institute, 2018 Alberta Climate Summit: “The Future of Natural Gas in a Decarbonizing World,” session panelist, September 2018.

“Securing A Clean Energy Future: Just Transition & Equity Considerations”: Invited talk hosted by the Climate Calgary Hub, Canadian Association of Physicians for the Environment, Climate Action Network Canada, and the Alberta Wilderness Association, September 2018.

Electric Power Research Institute, *Electrification 2018: International Conference & Expo*: “Country-Level Electrification Analysis,” session panelist, August 2018.

PNM, PRC Docket 18-00043-UT: Testimony supporting the approval of a decoupling mechanism and the need for a disincentive removal mechanism for PNM on behalf of the New Mexico Coalition for Clean Affordable Energy (CCAEE), 2018.

Public Service Electric & Gas, BPU Docket ER18010029 & GR18010030: Testimony supporting a Green Enabling Mechanism on behalf of NRDC & EDF, 2018.

Idaho Power, Idaho PUC Case No. IPC-E-I7-13: Testimony opposing Idaho Power’s application to create new customer classes for residential and general service customers who have customer-side generation on behalf of the NWECA and Snake River Alliance, 2017-2018.

Stanford University, “When Science is Not Enough: How Leading NGOs are Making Progress on Climate Policy”: Panelist on behalf of NRDC, February 2018.

Maryland Office of the Attorney General, Hearing on the Repeal of the Clean Power Plan: Testimony concerning the EPA’s proposed repeal of the Clean Power Plan on behalf of the NRDC, January 2018.

Puget Sound Energy, WUTC Docket No. UE-170033 and UG-170034: Testimony supporting the continuation of the Company’s decoupling mechanism and in opposition to the company’s requested increase to the basic customer charge on behalf of NWECA, Renewable Northwest, and NRDC, 2017.

New York University, Environmental Law Clinic, “Meeting Carbon Reduction Goals – Persuading Different Audiences”: Guest instructor, with co-author Vignesh Gowrishankar, on *America’s Clean Energy Frontier: The Pathway to a Safer Climate Future*, November 2017.

Nevada Governor’s Office of Energy, Committee on Electric Choice: Presentation to the Technical Working Group on Innovation, Technology, & Renewable Energy, “Renewable Standards: Clean Energy Development & Other Impacts,” August 2017.

OP-EDS AND LETTERS

Amanda Levin, “Opinion: Liquefied natural gas is a bridge to nowhere,” *Houston Chronicle*, Op-Ed, [January 13, 2021](#).

Miles Farmer and **Amanda Levin**, “Comparing America's grid operators on clean energy progress: PJM is headed for a climate disaster,” *Utility Dive*, Op-Ed, [July 2, 2019](#).

OTHER MEDIA APPEARANCES

NPR. *Marketplace*. Radio interview: “Can batteries help get the U.S. off the natural gas ‘bridge?’,” [June 17, 2019](#).

New York Public News Service. Radio interview: “Clean-Energy Growth Outpacing Predictions,” [October 5, 2017](#).

ADDITIONAL INFORMATION

Skills: R, STATA, Advanced Excel, ArcGIS, Microsoft Office, Data Analysis. Experience with power sector modeling (IPM, AuroraXMP, PROMOD, WIS:dom), gas markets modeling (GMM), economy-wide energy modeling (EnergyPATHWAYS +RIO, PATHWAYS, NEMS), economic and jobs modeling (REMI, JEDI, IMPLAN).

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of Duquesne Light Company for)
Approval of the Transportation)
Electrification Programs)
_____)

Docket No. R-2021-3024750

DIRECT TESTIMONY OF KATHLEEN HARRIS

JUNE 30, 2021

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1 **I. INTRODUCTION & QUALIFICATIONS**

2 **Q. Please state for the record your name, position, and business address.**

3 A. My name is Kathleen Harris. I am employed by Natural Resources Defense Council
4 (“NRDC”) as a Clean Vehicles and Fuels Advocate. My business address is 40 W 20th Street,
5 New York, New York 10025.

6 **Q. Please describe your current work duties, work experience, and educational**
7 **background.**

8 A. My current position at NRDC is Eastern Clean Vehicles and Fuels Advocate. I manage the
9 organization's legislative, regulatory, and administrative efforts to expand transportation
10 electrification in the Mid-Atlantic and Eastern region of the United States. In this position, I
11 am also personally familiar with NRDC’s efforts on transportation electrification around the
12 country.

13 I hold a Bachelor of Science in Environmental Science with a concentration in marine
14 science and a minor in Political Science and a Master of Marine Policy, both from the
15 University of Delaware. At the University of Delaware, I worked as a research assistant at the
16 Center for Carbon-free Power Integration and served as project manager for a study around
17 off-shore wind integration into the PJM grid. Additionally, I led a program to install electric
18 vehicle charging stations throughout the state of Delaware to ensure no electric vehicle driver
19 was more than 50 miles from a charging station anywhere in the state. For my Master’s thesis,

1 “Improving the Electric Vehicle Drivers Experience,” I interviewed electric vehicle drivers to
2 understand the challenges of using public electric vehicle charging stations.

3 Prior to working for NRDC, I was the Clean Transportation Planner for four years at the
4 Delaware Department of Natural Resources and Environmental Control’s Division of Climate,
5 Coastal, and Energy. During my tenure there, I managed the state’s Clean Vehicle Rebate and
6 Electric Vehicle Charging Equipment Rebate Programs, which provided rebates for alternative
7 fuel vehicles, including electric vehicles, and electric vehicle charging stations. Additionally,
8 I helped the Department intervene in matters with the Delaware Public Service Commission,
9 as well as developed and supported legislation related to transportation electrification. I also
10 served as Delaware’s Clean Cities Coordinator, which brought together over 50 stakeholders
11 from around the state to promote clean transportation efforts. My work experience is
12 summarized in my resume, provided as Exhibit KAH-100.

13 **Q. Have you previously testified before this Commission or as an expert in any other**
14 **proceeding?**

15 A. Yes. I testified in front of the Pennsylvania Utility Commission in Duquesne Light Company’s
16 2020 Default Service Plan proceeding (P-2020-3019522). I am also serving as an expert witness
17 in PECO’s Rate Case to testify on the Approval of the Company’s Electric Vehicle Charging Pilot
18 (R-2021-3024601) on behalf of the Clean Energy Advocates.

19 **Q. Have you served as an expert witness in any other utility filings?**

20 A. Yes. I have served as an expert witness in the following proceedings:

- 1 - Delaware Public Service Commission: Docket No. 17-1094;
- 2 - New York Public Service Commission: Case No. 20-E-0380; and
- 3 - New Jersey Board of Public Utilities: Docket Nos. EO18020190 and EO18101111.

4 **Q. What is the purpose of your testimony?**

5 A. I am testifying regarding the request for approval of Duquesne Light Company's ("DLC"
6 or "Company") Transportation Electrification Programs ("TE Programs") as part of the
7 Company's 2021 Rate Case. The purpose of my testimony is to recommend modifications on
8 the Company's TE Programs that will make them more likely to identify the benefits from
9 widespread transportation electrification.

10 **Q. Are you sponsoring any exhibits?**

11 A. Yes. I am sponsoring the following exhibits:

- 12 KAH-001: Resume of Kathleen Harris.
- 13 KAH-002: Response of Company to Interrogatories of the Office of the
14 Consumer Advocate, OCA-IV-1, Attachment 10.
- 15 KAH-003: Response of Company to Interrogatories of the Office of the
16 Consumer Advocate, OCA-XI-7.

17 **Q. Please summarize DLC's proposed EV programs.**

18 A. The Company's proposed TE Programs consist of two Portfolios:

- 19 1) The Charging Infrastructure Portfolio, which is designed to increase the number of electric
20 vehicle ("EV") charging stations in the Company's service territory. This portfolio includes
21 three pilot programs: i) public, workplace, and multi-unit dwelling make ready; ii) fleet and

1 transit charging; and iii) home charging. The 2022 budget for this portfolio is approximately
2 \$3.6 million.¹

3 2) The Customer Portfolio which includes education and outreach, fleet advisory services, and
4 registration incentives and is designed to increase customer awareness about TE, the
5 Company's offerings, and help to reduce barriers for fleets to switch to clean fuel vehicles. The
6 2022 budget for this portfolio is approximately \$685,000.²

7 **II. SUMMARY OF RECOMMENDED MODIFICATIONS AND ADDITIONAL**
8 **ACTIONS**

9 **Q. How should the Company modify its TE Programs to advance transportation**
10 **electrification and maximize benefits to customers in its service territory?**

11 The Company's TE Programs take a holistic, portfolio approach to support the growing EV
12 market in its service territory. However, it is modest and will only support a small
13 percentage of the charging infrastructure in its service territory that will be needed as EV
14 deployments increase. The pilot program can, with modifications, help to maximize benefits
15 to all customers and the electric grid, while also collecting important data and informing
16 future transportation electrification efforts. My specific recommendations, which are
17 discussed in detail throughout my testimony, include:

- 18 • For the Charging Infrastructure Portfolio:
- 19 ○ The Company should expand its "turn-key solution" of utility ownership of

¹ Olexsak Direct Testimony Table 1 at 5.

² *Id.*

- 1 charging stations and make-ready infrastructure to include multi-unit
2 dwellings.
- 3 ○ For Transit charging support, the Company should ensure that the charging
4 stations support buses that mainly serve environmental justice (“EJ”)
5 communities.
 - 6 ○ For other fleets, the Company should commit to dedicating at least 35% of
7 investments from this program to support school buses, fleets, and municipal
8 governments that are located in and/or serve EJ communities.
 - 9 ○ The Company should increase program funds to support additional medium-
10 and heavy-duty vehicle fleets.
 - 11 ○ The Company should ensure that time-variant price signals are passed through
12 to EV drivers as a default arrangement.
- 13 • For the Customer Portfolio:
 - 14 ○ The Company should prioritize fleets (including medium-and heavy-duty
15 fleets) that serve EJ communities for the Fleet Electrification Advisory
16 Service.
 - 17 ○ As part of the Fleet Advisory Service, the Company should analyze the
18 potential fueling costs for fleets charging their EVs on current electric
19 rates, and how that fueling cost would change if the customer switched to
20 the EV-TOU rate (as a whole-premises rate or as a separately metered
21 rate) or other rate.

- 1 • For the TE Programs generally:
 - 2 ○ The Company should improve its data collection by:
 - 3 ■ Ensuring certain metrics, discussed in detail below, are included to
 - 4 help evaluate the success of the program;

5 **III. STATE OF THE ELECTRIC VEHICLE MARKET**

6 **Q. What is the state of the electric vehicle market?**

7 A. Challenges were felt across the auto industry as vehicle production ground to halt and auto
8 purchases fell considerably at the outset of the COVID-19 pandemic. However, the U.S. EV
9 market has shown signs of resilience and is expected to emerge stronger on the other side of
10 the global health crisis. While overall auto sales fell by 15.6 percent in 2020 relative to 2019,
11 EV sales only fell by three percent.³ And EV sales in January and February of 2021 resulted
12 in all-time records for those months, exceeding the respective monthly totals from 2020 by 43
13 percent and 100 percent, respectively.⁴

14 Despite the pandemic, leading EV markets continued to show strong support for
15 transportation electrification throughout 2020. Utilities in California and New York invested
16 more than \$1.1 billion in EV programs in 2020.⁵ And in 2021, Colorado and New Jersey
17 approved \$336 million in new utility programs.⁶ Meanwhile, fifteen states, including

³ Sales data from the Atlas EV Hub Automakers Dashboard: <https://www.atlasevhub.com/materials/automakers-dashboard/>.

⁴ *Id.*

⁵ Utility investment data from the Atlas EV Hub Utility Filings Dashboard: <https://www.atlasevhub.com/materials/electric-utility-filings/>.

⁶ Utility investment data from the Atlas EV Hub Utility Filings Dashboard: <https://www.atlasevhub.com/materials/electric-utility-filings/>

1 Pennsylvania, signed a memorandum of understanding committing to 100 percent zero
2 emission bus and truck sales by 2050.⁷ Commitments such as these from very large vehicle
3 markets will continue to drive investment in EV technology and demand for EVs elsewhere in
4 the country.

5 More than 60 new passenger EV models are expected to reach the market before the end
6 of 2022.⁸ New models, including the Ford Mustang Mach-E and Volkswagen ID.4, are priced
7 competitively at or just above the average new vehicle purchase price seen in the 2020.⁹ The
8 cost of EVs is expected to fall further with advances in battery technology and an expansion
9 of domestic manufacturing. In December 2020, Bloomberg New Energy Finance reported that
10 average battery prices declined by more than 90 percent from 2010 levels and now average
11 \$135 per kilowatt hour.¹⁰ New models are also expected in the medium- and heavy-duty
12 vehicle market with major manufacturers, including Volvo, Mack, Daimler, Peterbilt, and Ford
13 promising to produce new electric vans and trucks in 2021.

14 Commitments across all vehicle sectors have surged with automakers and manufacturers
15 pledging more than \$85 billion to their EV research, manufacturing, and distribution operations
16 in the United States since the start of the year.¹¹ This almost doubles the amount of investment
17 committed or specified in past years. All of these factors have led to strong projections for the

⁷ Patricio Portillo, *15 States Take Historic Action on Transportation Pollution*, July 14, 2020:
<https://www.nrdc.org/experts/patricio-portillo/15-states-take-historic-action-transportation-pollution>.

⁸ Model data from the Atlas EV Hub Automakers Dashboard: <https://www.atlasevhub.com/materials/automakers-dashboard/>.

⁹ Average new vehicle price in 2020: <https://www.cnet.com/roadshow/news/average-new-car-price-2020/>.

¹⁰ Battery price data from Bloomberg New Energy Finance: <https://www.bloomberg.com/news/articles/2020-12-16/electric-cars-are-about-to-be-as-cheap-as-gas-powered-models>.

¹¹ Investment data from the Atlas EV Hub Global Private Investments Dashboard:
<https://www.atlasevhub.com/materials/private-investment/>.

1 global EV market in 2021, with analysts expecting global passenger EV sales to increase by
2 50 percent.¹² With the increasing number of available EVs, a growing used EV market, and
3 auto manufacturers commitment to 100% EVs, it is clear that these vehicles are coming to
4 Pennsylvania, and soon the majority of drivers will drive EVs.

5 **Q. Given the state of the electric vehicle market, will there be demand for the charging**
6 **stations the Company proposes to help install?**

7 A. Yes, given the expanding EV market, there will likely be significant demand for the number
8 of charging stations in the Company's service territory and across the U.S. Due to this trend,
9 utilities already have authorization to invest \$3 billion in programs to expand transportation
10 electrification, nationwide.¹³ Several of these programs are significant. For example, utilities in
11 California and New York were approved to invest more than \$1.1 billion in EV programs in
12 2020. Virginia approved a \$50 million utility investment in EV charging in 2020, and opened a
13 statewide investigation docket to consider EV related issues.¹⁴ The North Carolina Utility
14 Commission recently approved \$24 million dollars of investments by Duke Energy to support
15 charging stations and electric school buses throughout its service territory.¹⁵ In New Jersey, the
16 Board of Public Utilities has approved over \$225 million dollars in programs from Atlantic City

¹² Claudia Assis, *Electric vehicle sales expected to grow 50% in 2021*, December 12, 2020, Market growth projections from Morgan Stanley: <https://www.marketwatch.com/story/electric-vehicle-sales-expected-to-grow-50-in-2021-11607710053>

¹³ Utility investment data from the Atlas EV Hub Utility Filings Dashboard:
<https://www.atlasevhub.com/materials/electric-utility-filings/>

¹⁴ Final Order, Case No. PUR-2019-00154 (Va. State Corp. Comm'n Mar. 26, 2020),
<https://scc.virginia.gov/docketsearch/DOCS/4m1j01!.PDF>.

¹⁵ Atlas Public Policy, EV Hub, Utility Filings, accessed on June 23, 2021. Available at
<https://www.atlasevhub.com/materials/electric-utility-filings/>

1 Electric and PSEG.¹⁶ Meanwhile, fifteen states, including Pennsylvania, signed a memorandum
2 of understanding committing to 100 percent zero emission bus and truck sales by 2050.¹⁷
3 Commitments, such as these, from very large vehicle markets will continue to drive investment
4 in EV technology and demand for EVs elsewhere in the country.

5 For comparison—Pennsylvania has only approved \$2.5 million of utility EV investments thus
6 far.¹⁸

7

8 **Q. What are the air quality benefits of transportation electrification?**

9 A. EVs emit zero tailpipe emissions, thereby reducing ground level ozone and improving air
10 quality. Electric vehicles are cleaner than internal combustion engine vehicles today and will
11 become even cleaner as the electric grid transitions to renewable resources like renewable solar
12 and wind power. While it is true that the scale of overall emissions reductions depends on the
13 electricity mix on the regional grid, this does not eradicate the tangible local emissions
14 reductions that occur when zero-emission vehicles are driven. Even in Pennsylvania, where
15 approximately 52.1% of the electricity in the state is produced from natural gas, EVs still emit
16 significantly less greenhouse gas emissions than gasoline vehicles.¹⁹ Driving a Chevy Bolt in

¹⁶ *Ibid.*

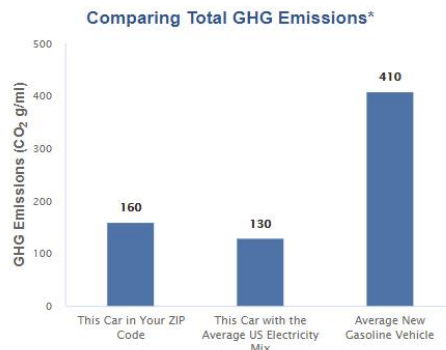
¹⁷ Portillo, *supra* note 5.

¹⁸ *Id.*

¹⁹ U.S. Department of Energy, *Emissions from Hybrid and Plug-in Electric Vehicles: State Averages for Pennsylvania*. Accessed on June 29, 2021, https://afdc.energy.gov/vehicles/electric_emissions.html.

1 Pittsburgh, Pennsylvania emits about 61% less carbon pollution per mile than the average
2 conventional vehicle.²⁰

3 Figure 1: Greenhouse gas emissions from a 2022 Chevy Bolt Compared to the Average New
4 Gasoline Vehicle



5
6 **IV. HOW WIDESPREAD TRANSPORTATION ELECTRIFICATION BENEFITS**
7 **EVERYONE**

8 **Q. Can EVs provide benefits to other utility customers—including those who do not own an**
9 **EV?**

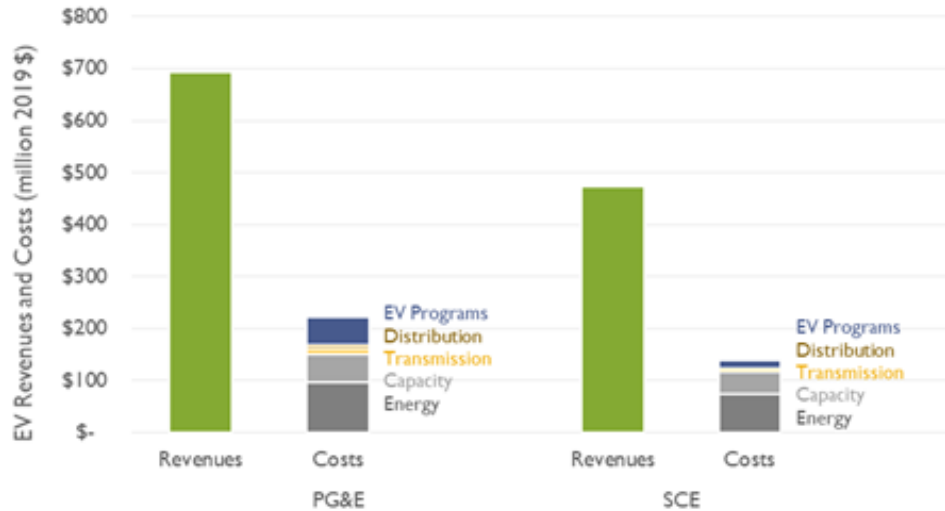
10 A. Yes. EV investments, including those by utilities, can put downward pressure on rates for all
11 utility customers—regardless of whether they own an EV. A recent analysis by Synapse

²⁰ United States Department of Energy's FuelEconomy.Gov, *Beyond Tailpipe Emissions: Greenhouse Gas Emissions for Electric and Plug-in Hybrid Electric Vehicles.*

1 Energy Economics entitled “Electric Vehicles are Driving Electric Rates Down” analyzed real
2 world data from the two utility service territories with the highest number of EVs in the
3 country, Pacific Gas & Electric (“PG&E”) and Southern California Edison (“SCE”), and found
4 that EVs are already putting downward pressure on rates.²¹

5 Synapse evaluated the revenues and costs associated with EVs from 2012 through 2019 in
6 PG&E and SCE service territories. They compared the new revenue the utilities collected from
7 EV drivers to the cost of the energy required to charge those vehicles, plus the costs of any
8 associated upgrades to the distribution and transmission grid and the costs of utility EV
9 programs that are deploying charging stations for all types of EVs. In total, EV drivers
10 contributed an estimated \$806 million more than the associated costs.

11 Figure 2: PG&E and SCE Revenues and Costs of EV Charging, 2012-2019



12

²¹ Jason Frost et al, *Electric Vehicles Are Driving Electric Rates Down* (June 2020 Update), https://www.synapse-energy.com/sites/default/files/EV_Impacts_June_2020_18-122.pdf.

1 Accordingly, the benefits of EVs are not just environmental; as that study appropriately
2 concluded: “EVs offer a key opportunity to reduce harmful emissions and save customers
3 money at the same time.”²²

4 Another study completed by M.J. Bradley & Associates projects similar benefits in
5 Pennsylvania. The study found that the widespread EV adoption would provide more than \$8
6 billion in net benefits by 2050, including \$1.3 billion in reduced utility bills for all utility
7 customers stemming from the same effect already observed in the real world by the Synapse
8 study. The Pennsylvania analysis also estimates that drivers in the state could realize \$4.6
9 billion in reduced fuel and maintenance costs. Transportation electrification programs that use
10 price signals to encourage drivers to shift charging to off-peak hours will make it more likely
11 that Pennsylvania will realize these benefits and accelerate their realization.

12 Given real world data and MJ Bradley’s projections, it’s likely that EV drivers are already
13 putting downward pressure on utility rates in Pennsylvania to the benefit of all customers. And
14 those benefits will continue to grow in the future as additional vehicles are added to the grid

15 **V. THE ROLE OF UTILITIES IN SUPPORTING TRANSPORTATION**
16 **ELECTRIFICATION**

17 **Q. What are utilities’ roles in supporting transportation electrification?**

18 A. Regulated electric utilities have several characteristics that make them well-suited to play a
19 central role in EV infrastructure buildout.

²² *Id.*

1 To address the main barriers to EV adoption—cost, charging infrastructure, and lack of
2 awareness—utilities should take a portfolio approach to address these concerns across the
3 board for all on-road vehicle classes and types. NRDC has published an issue brief, “Guiding
4 Principles for Utility Transportation Electrification Programs,” which explores these
5 opportunities further.²³ The brief recommends that utilities:

- 6 • Deploy Charging Infrastructure Strategically—a lack of access to charging stations is
7 a critical barrier to the expansion of the EV market and utilities should prioritize
8 charging investments in areas that will grow the market. This includes residences,
9 workplaces, public fast-charging stations, and public long dwell times.
- 10 • Increase Access for an Equitable EV Market and Improve Local Air Quality—this is
11 especially important in communities where residents are disproportionately burdened
12 by air pollution and transportation fuel costs.
- 13 • Manage Load and Maximize Fuel Cost Savings—to ensure that the benefits upon
14 which proposed utility transportation electrification investments will materialize, load
15 management practices and innovate rate design is essential. This will ensure that EV
16 drivers realize fuel costs savings, which is one of the most important motivators for EV
17 purchase decisions. Additionally, proper load management, rate design, and ensuring
18 that drivers see these price signals will put downward pressure on rates for all utility
19 customers.

²³ *Guiding Principles for Utility Programs to Accelerate Transportation Electrification*, NRDC (August, 2017),
<https://www.nrdc.org/resources/guiding-principles-utility-programs-accelerate-transportation-electrification>.

- 1 • Foster Competition—utilities should leverage the experience of third-party charging
2 equipment and service providers in the development of charging infrastructure
3 programs.
- 4 • Educate Customers—a comprehensive strategy to engage customers is a necessary
5 component of a successful program. To expand the EV market, a general lack of
6 consumer awareness must be overcome, and misconceptions about EVs, must be
7 corrected. Luckily, utilities are uniquely positioned to conduct this type of broad
8 customer education effort, as they have at least monthly communications with their
9 customers.

10 **VI. THE NEED TO ELECTRIFY PENNSYLVANIA’S TRANSPORTATION**
11 **SECTOR**

12 **Q. Why is transportation electrification vital for Pennsylvania?**

13 A. The transportation sector accounts for 24 percent of greenhouse gas emissions in Pennsylvania²⁴
14 and pollution from transportation, especially medium-and-heavy duty vehicles that drive
15 through communities (such as transit buses), have detrimental effects on human health,
16 particularly in communities near ports, highways, and in densely populated urban areas.
17 Exposure to significant amounts of diesel exhaust can lead to devastating health impacts,
18 including asthma and respiratory impacts.²⁵ Further, combustion of fossil fuels emits large

²⁴ Pennsylvania Department of Environmental Protection, Pennsylvania Greenhouse Gas (GHG) Inventory, July 2020, <https://www.dep.pa.gov/Citizens/climate/Pages/GHG-Inventory.aspx>.

²⁵ Mohammad Hashem Askariyeh et al., *Assessment of Traffic-Related Air Pollution: Case Study of Pregnant Women in South Texas*, 16 International Journal of Environmental Research and Public Health 2433 (2019), <https://doi.org/10.3390/ijerph16132433>; See also Stephanie Lovinsky-Desir et al., *Air pollution, urgent asthma medical visits and the modifying effect of neighborhood asthma prevalence*, 85 Pediatric Research, 36–42 (2019):

1 amounts of nitrogen oxide, which forms particulate matter pollution and ozone (smog).²⁶
2 Transitioning to zero-emission vehicles (including electric vehicles) will help to reduce
3 emissions from the transportations sector.

4 **Q. Why does Pennsylvania need to electrify its transportation sector to improve the health**
5 **of low-income communities?**

6 A. The combustion of fossil fuels by vehicles emit large quantities of nitrogen oxide (NOx)
7 pollution, which contributes to the formation of both particulate matter pollution and ozone
8 (i.e., smog).²⁷ Diesel emissions, largely from medium and heavy-duty vehicles, are toxic and
9 dangerous to those breathing closest to the source of pollution; exposure to significant amounts
10 of diesel exhaust can lead to premature death and other devastating health impacts including
11 asthma and respiratory impacts,²⁸ pregnancy complications and adverse reproductive

<https://doi.org/10.1038/s41390-018-0189-3>; and Gayan Bowatte et al., *Traffic related air pollution and development and persistence of asthma and low lung function*, 113 *Environment International* 170, 170–176 (2018), <https://www.sciencedirect.com/ezp-prod1.hul.harvard.edu/science/article/pii/S0160412017319037>.

²⁶ Nitrogen Dioxide, U.S. Env'tl. Protection Agency: <https://www.epa.gov/no2-pollution>.

²⁷ *Id.*

²⁸ Stephanie Lovinsky-Desir et al., *Air Pollution, Urgent Asthma Medical Visits and the Modifying Effect of Neighborhood Asthma Prevalence*, 85 *PEDIATRIC RESEARCH*, 36-42 (2019): <https://doi.org/10.1038/s41390-018-0189-3>; Gayan Bowatte et al., *Traffic related air pollution and development and persistence of asthma and low lung function*, 113 *Environment International* 170, 170–176 (2018): <https://www.sciencedirect.com/science/article/pii/S0160412017319037>.

1 outcomes,²⁹ cardiac and vascular impairments,³⁰ and heightened cancer risk.³¹ And these
2 detrimental effects are felt in Pennsylvania as well: a recent study by Harvard and the
3 University of North Carolina found that emissions from Pennsylvania’s trucks, cars, and buses
4 lead to 1,270 premature deaths—the second highest in the country.³² These emissions
5 disproportionately impact low-income communities and communities of color that often live
6 near freeways, ports, railyards, warehouses and other facilities that generate significant levels
7 of localized diesel exhaust.³³

8 **Q. Are electric vehicles needed to improve the livelihood of low-income households?**

9 A. Yes. Low-income households spend a disproportionate share of their income at the pump and
10 are particularly vulnerable to unpredictable fluctuations in gasoline prices. Electricity prices

²⁹ Jun Wu et al, *Association Between Local Traffic-Generated Air Pollution and Preeclampsia and Preterm Delivery in the South Coast Air Basin*, 117 *Envtl. Health Persp.* 1773, 1773-1779 (2009):

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2801174/>; Qi Yan et al., *Maternal serum metabolome and traffic-related air pollution exposure in pregnancy*, 130 *Environment International* 104872 (2019):

<https://doi.org/10.1016/j.envint.2019.05.066>; Li Fu et al., *The associations of air pollution exposure during pregnancy with fetal growth and anthropometric measurements at birth: a systematic review and meta-analysis*, 26 *Environmental Science and Pollution Research* 20137 (2019): <https://doi.org/10.1007/s11356-019-05338-0>.

³⁰ Kimberly Berger et al., *Associations of Source-apportioned Fine Particles with Cause-specific Mortality in California*, 29 *Epidemiology* 639 (2018): <https://pubmed.ncbi.nlm.nih.gov/29889687/>; Stacey Alexeef et al., *High-resolution mapping of traffic related air pollution with Google street view cars and incidence of cardiovascular events within neighborhoods in Oakland, CA*, 17 *Environmental Health* 38 (2018):

<https://doi.org/10.1186/s12940-018-0382-1>; J.E. Hart et al, *Ischaemic Heart Disease Mortality and Years of Work in Trucking Industry Workers*, 70 *Occupational and Envtl. Medicine* 523–528 (2013).

³¹ *Air Res. Bd., Supplement to the June 2010 Staff Report on Proposed Actions to Further Reduce Diesel Particulate Matter at High-Priority California Railyards* (2010):

<http://www.arb.ca.gov/railyard/commitments/supcomceqa070511.pdf>; International Agency for Research on Cancer, *Diesel Engine Exhaust Carcinogenic*, 20 *Cent. Eur. J. Public Health* 120, 138 (2012); L. Benbrahim-Tallaa et al, *Carcinogenicity of Diesel-Engine and Gasoline-Engine Exhausts and Some Nitroarenes*, 13 *The Lancet Oncology* 663–664 (2012): [http://doi.org/10.1016/S1470-2045\(12\)70280-2](http://doi.org/10.1016/S1470-2045(12)70280-2).

³² Calvin A Arter et al., 2021 *Environ. Res. Lett.* 16 065008, Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/abf60b/pdf>.

³³ Arlene Rosenbaum et al, *Analysis of Diesel Particulate Matter Health Risk Disparities in Selected US Harbor Areas*, *Am. J. Pub. Health* S217, S221 (2011): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222501/>; Michelle Bell, and Keita Ebisu, *Environmental inequality in exposures to airborne particulate matter components in the United States*, *Environmental Health Perspectives* 120.12 (2012): 1699-1704.

1 are inherently more stable. Driving on electricity therefore has the potential to provide
2 households in need with significant fuel and maintenance cost savings.

3 **Q. What is the largest barrier to EV deployment in Pennsylvania?**

4 A. One of the largest barriers to greater EV adoption is range anxiety, exacerbated by a “chicken-
5 and-egg” problem—where the private sector has not made a business case to install charging
6 infrastructure without a critical mass of EVs on the road, and there will not be a critical mass
7 of EVs on the road until there is sufficient charging infrastructure to eliminate range anxiety.

8 **Q. How many charging stations are needed in DLC’s Service Territory to support
9 transportation electrification?**

10 A. According to the Company, almost 950 Level 2 charging stations and 78 DCFC stations are
11 needed in DLC’s service territory to support even just 10% of passenger vehicles in the service
12 territory being electric.³⁴

13 **Q. Do you agree with DLC’s projection of the number of charging stations needed?**

14 A. The Company’s estimates focus on light-duty passenger vehicles and do not consider the needs
15 for medium-and heavy-duty vehicle electrification (both en-route and depot charging). For this
16 reason, I believe that the DLC service territory will likely need a higher number of charging
17 stations than the Company projects.

18 **Q. Are the proposed EV programs from DLC in this rate-case sufficient to support the EV
19 market in Southwestern Pennsylvania?**

³⁴ OCA-IV-1 (Attachment 10). *See also* KAH-101.

1 A. No. The Company is only proposing to support approximately 68 for public Level 2 charging
2 stations and 4 DC Fast Charging stations annually (with an additional 6 DCFC for the Port
3 Authority of Allegheny County buses), far below the estimates of what is needed in the
4 Company's service territory.

5 **VII. THE COMPANY SHOULD MODIFY ITS CHARGING INFRASTRUCTURE**
6 **PORTFOLIO**

7 **Q. Under the Charging Infrastructure Portfolio, the Company is proposing a make-ready**
8 **program to support the growing EV market in its service territory. Do you support this?**

9 A. Yes. Utility-side make-ready³⁵ is a core utility function that has been repeatedly authorized by
10 regulatory commissions across the country. EV charging infrastructure is expensive to install and
11 when electric utilities install and own all of the behind-the-meter portions of charging
12 infrastructure, costs to developers can be significantly reduced. Utility provision of this
13 necessary infrastructure can increase the speed of installation of charging stations, while also
14 reducing costs for site hosts and EV charging station developers. Over \$3 billion has already
15 been approved by commissions across the nation for the provision of such infrastructure for
16 light, medium, and heavy-duty vehicles, including many states on the East Coast.³⁶ For example,
17 in New York, the Public Service Commission released a \$701 million make-ready infrastructure

³⁵ EV Make-Ready infrastructure is enhancements and upgrades needed to support electric vehicle charging stations, which may include conduit, wiring, and other "behind the meter" infrastructure. *See* Olexsak Direct Testimony Figure 1: Public, Workplace, and MUD Make-Ready Pilot Example Ownership Structure.

³⁶ Atlas Public Policy, EV Hub, Utility Filings, accessed on June 23, 2021. Available at <https://www.atlasevhub.com/materials/electric-utility-filings/>.

1 program that would help the state achieve its 2025 zero-emission vehicle goals by installing over
2 50,000 EV charging stations.³⁷

3 **Q. Should the make-ready programs be pilots?**

4 A. No. Currently in Pennsylvania, the Company and other electric distribution companies seek
5 repeated, individual authorizations for the provision of utility-side electrical infrastructure. But
6 because utility-side make-ready infrastructure should be considered a core utility function, as I
7 stated above, it should be a part of standard utility distribution system planning and recognized
8 by the Commission as such. Pending such recognition, I believe that it is more appropriate to
9 characterize make-ready proposals such as the Company's as miniature versions of what utilities
10 should be doing on a large scale, rather than as "pilots" in the conventional sense of the term.

11 **Q. Does the Company's proposed programs support investments in EJ communities?**

12 A. Yes. The public and home programs provide additional incentive amounts for charging
13 stations in EJ communities. Additionally, the Company has set specific investment targets for EJ
14 communities.

15 **Q. Should the Company do more to increase TE in EJ Communities?**

16 A. Yes. While the Company's efforts to increase public charging stations in EJ communities is
17 important, it is important to recognize that while the used EV market is expanding, at this stage

³⁷ New York Department of Public Service Case 18-E-0138, *Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs*, July 16, 2020.

1 of the EV market, relatively few EJ community members are purchasing EVs, and many lack
2 access to personal vehicles. The needs of these customers, too, is vital. Therefore, as I describe in
3 more detail below, the Company should make modifications to the fleet and transit programs to
4 increase TE in environmental justice and underserved communities.

5 *The Company Should Provide Turn-Key Solutions for MUDs and Consider Other*
6 *Modifications to support the EV Market*

7 **Q. Why is the addition of Direct Current Fast Charging (“DCFC”) and Multi-Unit**
8 **Dwellings (“MUD”) to the Company’s TE programs important?**

9 A. DCFC are a vital part of a robust and healthy EV charging network, as they support drivers
10 who may not have access to home charging or who may need to charge relatively quickly, while
11 also helping to extend the range of the EVs on longer distance trips. Further, as DCFC are much
12 more expensive to install than Level 2 charging,³⁸ the Company’s support for make-ready
13 infrastructure will help to alleviate these costs for site-hosts and customers.

14 According to the Company, 26% of households in the Company’s service territory live in
15 MUDs.³⁹ At home-charging should not be limited to just residents who have access to a garage
16 in a single-family home. Providing charging at MUD’s will allow these customers to charge their
17 vehicles overnight at their place of residence. According to the Company, drivers across all
18 income levels are interested in or potentially interested in an EV as their next vehicle,⁴⁰ and as

³⁸ See Exhibit SO-1 Tables 1 and 2.

³⁹ Olexsak Direct Testimony at 25 (lines 3-4).

⁴⁰ *Id.* at Table 9.

1 many residents of MUD's are lower income, increasing charging infrastructure at these locations
2 will remove a potential barrier for EV adoption by lower-income Pennsylvanians.

3 **Q. Regarding the MUD program, do you recommend any modifications?**

4 A. Yes. I recommend the Company provide an option for utility ownership of the charging
5 station and make-ready infrastructure at MUDs. While the private market providers have a key
6 role to play in the buildout of infrastructure across the state, utilities' expertise and status as
7 regulated entities make them uniquely well-positioned to play a central role in EV infrastructure
8 buildout both statewide as well as in the MUD space in particular. Landlords at MUDs are not
9 generally in the business of procuring, operating, and maintaining charging stations and,
10 therefore, may be deterred from participating in programs without utility involvement. This has
11 been clearly evidenced by previous pilots implemented by SCE and SDG&E. In SCE's Charge
12 Ready pilot, which included no ownership option and provided a rebate to cover 100% of the
13 make-ready costs for participating sites, only three percent of all deployments were in MUDs. In
14 the SDG&E Power Your Drive pilot, which included utility ownership of charging stations, over
15 forty percent of all deployments were in MUDs— suggesting that landlords would rather have
16 the utility procure, operate, and maintain charging stations. Incorporating the lessons learned in
17 those pilots and building upon the success of SDG&E's pilot, SCE redesigned its successor
18 Charge Ready 2 Program to include a turnkey utility-ownership solution, providing MUDs with

1 both the make-ready infrastructure and the electric vehicle charging station.⁴¹ DLC should use
2 the lessons learned and best practices from other utilities as guidelines when designing its
3 programs to improve participation at MUDs and support more equitable and widespread
4 transportation electrification.

5 **Q. The Company suggests that they may reject proposals in locations that may be**
6 **underutilized. Do you agree with this approach?**

7 A. No. While I can appreciate the desire to first and foremost support charging stations that may
8 get the most initial use, it is vital that the Company also support charging stations in locations
9 that may be deemed “underutilized.” Instead, the Company should consider how each station
10 may help to fill the charging station gaps in its service territory and prioritize those stations that
11 fill a need that is not being currently met by other charging stations.

12 *The Company Should Expand its Transit and Fleet Charging Program*
13

14 **Q. Why is it important that the Company support medium and heavy-duty (M&HD)**
15 **vehicle electrification?**

16 A. Although light-duty vehicles are the largest source of pollution on the roads, electrifying
17 M&HD vehicles provides vital opportunities for clean transportation of goods and people –
18 especially those who may not have access to a personal vehicle – as well as measurable

⁴¹ M. Baumhefner, *Opening Testimony on Application of Southern California Edison Company for Approval of its Charge Ready 2 Infrastructure and Market Education Programs* (Nov. 30, 2018), <https://docs.cpuc.ca.gov/PublishedDocs/SupDoc/A1806015/1826/247318458.pdf>.

1 environmental and health benefits for EJ and LMI Communities. Consequently, it will not be
2 possible to achieve deep or equitable decarbonization without aggressive action to address
3 M&HD vehicles. The technology is market-ready for most fleet applications and, over the
4 coming years, vehicle manufacturers will continue to increase the number of electrified models
5 available for medium- and heavy-duty fleet uses. Moreover, electrification of such vehicles will
6 reduce transportation-related air pollution, including toxic pollutants, nitrogen oxide (NOx), and
7 greenhouse gases.

8 Electrifying the buses and vehicles that run through and service EJs will help to improve
9 air quality and overall quality of life. Furthermore, as many low-income community members
10 may not have access to a personal vehicle, it is vital that we ensure residents have access to clean
11 transportation opportunities, regardless if they have access to a personal vehicle.

12 In 2020, Governor Wolf acknowledged the importance of electrifying the
13 Commonwealth’s M&HD vehicles by signing onto the bi-partisan, “Multi-State Medium- and
14 Heavy-Duty Zero Emission Vehicle” Memorandum of Understanding, which aims to achieve
15 100% electric truck and bus sales by 2050.⁴² With the increase of M&HD vehicles on
16 Pennsylvania’s roads over the coming roads, it is even more crucial that utilities help to support
17 these vehicles, and work to maximize the benefits to the electric grid by this new load.

18 **Q. How can the Company ensure that overburdened communities experience the benefits**
19 **of transportation electrification?**

⁴² <https://www.nescaum.org/documents/multistate-truck-zev-governors-mou-20200714.pdf>.

1 A. Utilities around the country have invested over \$690 million in EV investments in
2 underserved and disadvantaged communities.⁴³ To ensure that communities historically
3 overburdened with transportation pollution feel the benefits of transportation electrification—and
4 that all DLC’s customers have access to clean transportation, regardless if they utilize a personal
5 vehicle, DLC should design their programs in a way that directly benefits environmental justice
6 communities. Therefore, for the Transit charging support, the Company should ensure that the
7 charging stations support buses that mainly serve EJ and low-income communities.

8 For other fleets, the Company should commit to dedicating at least 35% of investments
9 from this program to support school buses, fleets, and municipal governments that are located in
10 and/or serve EJ communities.

11 **Q. Do you have any additional recommendations for the Fleet and Transit Charging Pilot?**

12 A. The Company’s proposal will only support a small number of fleets and vehicles in DLC’s
13 service territory. As previously discussed, increasing access to electrified transit and electrifying
14 fleets that drive through communities is vital to improve health and air quality in communities
15 historically overburdened with transportation pollution. Therefore, the Company should increase
16 the program funds to support additional M&HD vehicles and fleets.

17 **VIII. TO MAXIMIZE BENEFITS, REQUIRE DEFAULT ARRANGEMENT OF PASS-**
18 **THROUGH PRICE SIGNALS**

19 **Q. Is it important that the Company encourage charging during off-peak hours?**

⁴³ Atlas EV-Hub Equity Dashboard, available at <https://www.atlasevhub.com/materials/electric-utility-filings/>.

1 A. Yes. Shifting charging to off-peak hours when there is excess load on the grid will help to
2 maximize the benefits not only to EV drivers but put downward pressure on rates for all
3 customers (as previously discussed).

4 **Q. Does the Company offer rates that would encourage off-peak charging?**

5 A. For some use cases. In 2020, DLC obtained approval as part of their 2020 Default Service Plan
6 to develop an EV-TOU rate for customers, with the goal of encouraging charging during off-
7 peak hours.⁴⁴ However, transit customers participating in the transit charging program are not
8 eligible to participate in this time-of-use program, as their load is over the 200-kW maximum
9 required to take service on the rate.

10 **Q. How can DLC encourage off-peak charging?**

11 A. To help shift charging to off-peak hours, and increase uptake on the TOU rate, DLC should
12 make taking service on this rate a default requirement for participation in the TE Charging
13 Infrastructure programs, utilizing an “opt-out” model to allow site-host flexibility if the TOU
14 rate does not suit their charging or energy needs. Further, it should be the default arrangement
15 that price signals are seen by the end-users.⁴⁵

16 As some fleets may be over the 200-kW load maximum requirement, DLC should develop
17 a rate that allows for larger customers to shift charging to off-peak hours and maximizes the
18 benefits to fleets and the grid.⁴⁶

⁴⁴ See R-2020-3019522 Order and Opinion, January 14, 2021.

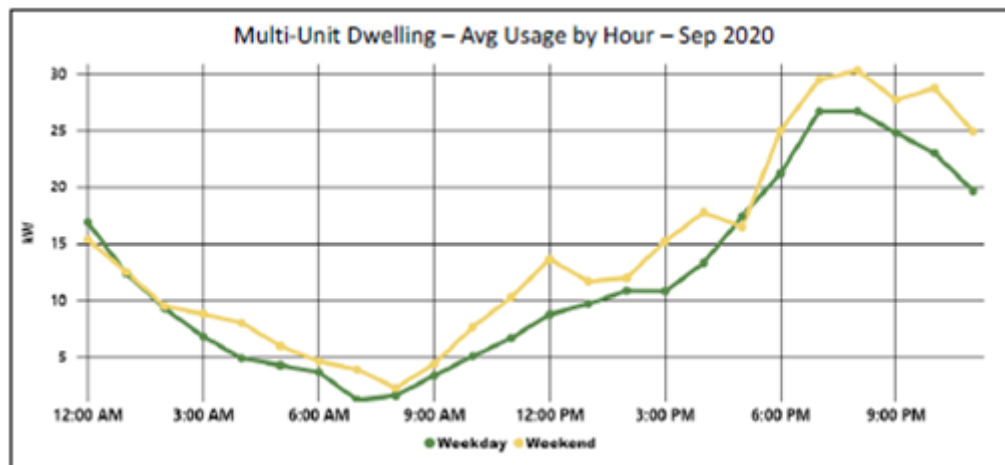
⁴⁵ Miles Muller, Price Signals Only Work if People See Them, NRDC, January 25, 2021,
<https://www.nrdc.org/experts/miles-muller/price-signals-only-work-if-people-see-them>.

⁴⁶ Miles Muller, *Reforming Rates for Electric Trucks, Buses & Fast Chargers*, NRDC, July 2020,
<https://www.nrdc.org/experts/miles-muller/reforming-rates-electric-trucks-buses-fast-chargers>.

1 **Q. Can you further explain the importance of price signals to shift charging to off-peak**
2 **hours?**

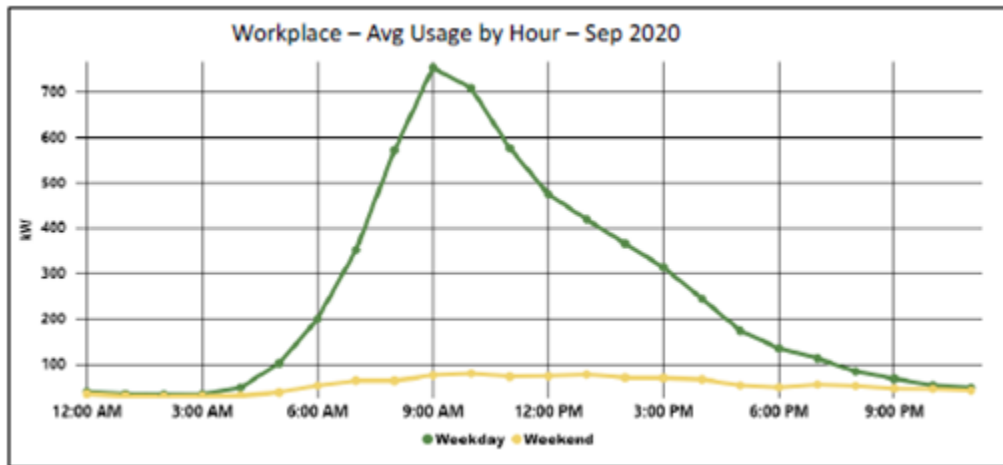
3 A. Yes. On November 30, 2020, SCE released the latest quarterly report for its Charge Ready
4 Pilot Program.⁴⁷ Data in that report shows that that, unless incented otherwise, drivers will
5 plug-in and charge when they reach their destination, which puts strain on the electric grid.

6 Figure 2: Charging Load Profiles at Workplaces and Multi-Unit Dwellings in SCE's Charge Ready
7 Pilot



8

⁴⁷ Southern California Edison Company's Charge Ready Pilot Quarterly Report, 3rd Quarter 2020, November 30, 2020.

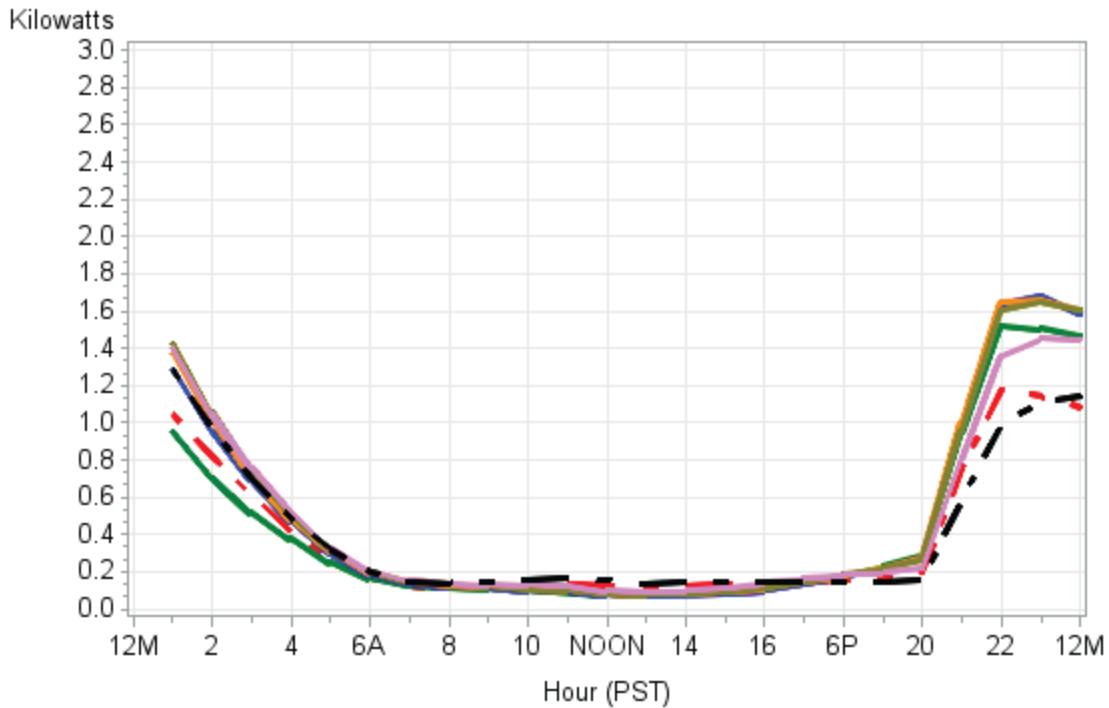


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At workplaces, drivers charge as soon as they arrive at work, with demand peaking at 9 a.m., with the bulk of charging complete before the afternoon, which means those vehicles are not available to absorb solar generation that peaks during afternoon hours. At multi-unit dwellings (MUDs), drivers charge as soon as they arrive at home in the evening, with demand peaking at 7 p.m. (exacerbating system-wide peak demand), the bulk of charging complete before 1 a.m., and very little charging occurring in the early morning hours when the system is significantly underutilized.

These charging patterns are unfortunate, but entirely predictable; if given no reason to do otherwise, drivers will charge whenever they arrive at their destination. It is also entirely avoidable; residential customers taking service on SCE’s “TOU-EV-1” rate almost certainly arrive home at the same hour as do the drivers participating in the Charge Ready Pilot, but as SCE notes, they do not charge upon arrival, instead they “commence charging promptly at the beginning of the off-peak interval at 10:00 p.m.,” as illustrated in Figure 3.

Figure 2: Average Hourly Load Profile for Each Day of the Week on SCE's "TOU-EV-1" Rate



- - - Sunday — Monday — Tuesday — Wednesday
— Thursday — Friday - - - Saturday

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A simple nudge in the form of a TOU price signal seen by EV drivers is sufficient to push EV charging to hours of the day when it benefits the grid and when fuel cost savings can be maximized. This is clear from the results of a pilot done in a neighboring service territory by San Diego Gas & Electric (“SDG&E”). The SDG&E’s Power Your Drive workplace and MUD charging station deployment program, site hosts are given the choice to have the utility’s dynamic time-variant rate passed through directly to EV drivers or to take service on that dynamic rate but implement alternative end-use pricing to drivers. The vast majority have

1 chosen to pass through the dynamic price signals to EV drivers, and, as result, 90 percent of
2 kWh delivered in the program occur during off-peak and super-off-peak hours.⁴⁸

3 **Q. In addition to encouraging charging that supports the grid, why else should the Company**
4 **ensure that time-variant price signals be generally passed on to EV drivers?**

5 A. The Company should ensure that time-variant price signals are passed through to EV drivers
6 to increase the fuel cost savings that motivate EV purchases. As illustrated in Table 1, SCE's
7 inventory of site host fee schedules in its pilot illustrates that site hosts are not passing TOU
8 rates through to drivers and that at sites where fees are being charged, those fees are extremely
9 variable and are often more expensive than the equivalent gasoline price.⁴⁹ The average price
10 for a driver of a 2018 Chevy Volt plug-in hybrid or a 2018 Nissan LEAF pure-battery electric
11 vehicle to charge for four hours at Charge Ready Pilot locations is \$0.28/kWh and \$0.24/kWh
12 respectively, which is the equivalent of driving the Volt on gasoline at \$3.70/gallon and the
13 equivalent of driving a Toyota Prius (a car a LEAF driver would likely drive if he or she did
14 not drive an EV) on gasoline at \$3.67/gallon.⁵⁰ The average price for gasoline in California
15 between January 2016 (when the Commission authorized the pilot program) and October 2018
16 (most recent data available) was \$3.12/gallon.⁵¹ Accordingly, the average price paid for
17 electricity as a transportation fuel in the program significantly exceeds the average price of

⁴⁸ San Diego Gas & Electric, *Electric Vehicle-Grid Integration Pilot Program ("Power Your Drive") Fourth Semi-Annual Report of San Diego Gas & Electric Company (U902-E)* (March 20, 2018), https://www.sdge.com/sites/default/files/documents/FINAL_Power_Your_Drive_Semi_Annual_Rpt.pdf).

⁴⁹ See Data Request Set A.18-06-015 NRDC-SCE-001, Response to Question 06.

⁵⁰ NRDC calculations based on Data Request Set A.18-06-015 NRDC-SCE-001, Response to Question 06, assuming the EPA-rated efficiencies of the 2018 Chevy Volt, 2018 Nissan LEAF, and 2018 Toyota Prius.

⁵¹ U.S. Energy Information Administration, *Weekly Retail Gasoline and Diesel Prices*.

1 gasoline. Furthermore, at the locations where fees are based on time, a driver of a vehicle that
2 charges at 3.6 kW (such as the Volt) will generally pay almost twice as much per kWh than a
3 driver of a vehicle that can charge at 6.6 kW (such as the LEAF), which is inherently
4 inequitable; a Volt driver at the workplace with a \$2/hr fee will pay \$0.56/kWh, which is the
5 equivalent of driving his or her plug-in hybrid on gasoline at \$7.23/gallon, whereas a LEAF
6 driver would pay \$0.30/kWh, which is the equivalent of driving a Prius on \$4.73/gallon
7 gasoline.⁵² In sum, at Charge Ready Pilot sites where fees are levied, the program did not
8 deliver the fuel cost savings that motivate EV purchase decisions.

9 Table 1: Charge Ready Pilot Site Host Fees as of July/August 2018

Type of Site(s)*	Number of Sites*	Customer's Fee Schedule	Description of Fees	Fee Amount (if applicable)	Penalty Fee Charged for not moving their vehicles after charging is completed
Workplace	1	Fee based on amount of time it takes to charge		1.50/hr	1.50/hr
Workplace	1	Fee based on amount of time it takes to charge		.25 per kwh/hr	4. per hour
Workplace	1	Fee based on amount of time it takes to charge		1.50/hr	None
Workplace	2	Fee based on energy used (kWh)		na	None
Destination Center	2	Fee based on energy used (kWh)		\$.30/KWH	None
Destination Center	1	Fee based on energy used (kWh)		0.32/kWh	None
MultiUnit Dwelling	1	Fee based on energy used (kWh)		1.50 per hour+energy fee	None
Workplace	1	Fee based on energy used (kWh)		0.17/kWh	2.00
Workplace	5	Fee based on energy used (kWh)		0.25 per kWh	0.25 per hour
Destination Center and Workplace	2	Fee based on energy used (kWh)		NA	None
Workplace	1	Flat fee per period (hour, day, week, month, etc.)		\$2.00/hr	None
Workplace	1	No fee (free of charge)			None
Fleet	1	No fee (free of charge)			None
Workplace	1	No fee (free of charge)			None
Fleet	1	No fee (free of charge)			None
Workplace	1	No fee (free of charge)			None
Workplace	1	No fee (free of charge)			None
Workplace	1	No fee (free of charge)			None
MultiUnit Dwelling	1	No fee (free of charge)			None
Destination Center	1	Not sure			None
Workplace	1	Other (please specify)	fee based per hour used - increases when use more hours: first hour free, 2-5=\$1.5 on is \$2 and capes at \$30	1st hour free, 2-5 =\$1 and 5+=\$2 to cap at \$30	None
Workplace	1	Other (please specify)	Free right now will charge next year	.10 KwH	None
Destination Center	1	Other (please specify)	Flat fee for the first 4 hours, then price increases	1.25	2.50

*Type and number of sites corresponds to the type and number of sites the customer participant/survey respondent is hosting as part of the Charge Ready Pilot. One survey was sent to per customer participant (not per project/site) with completed sites as of July 2018.

10

⁵² NRDC calculations based on Data Request Set A.18-06-015 NRDC-SCE-001, Response to Question 06, assuming the EPA-rated efficiencies of the 2018 Chevy Volt, 2018 Nissan LEAF, and 2018 Toyota Prius.

1 Of course, many sites are not charging fees at all. Free charging can be a strong motivator of
2 EV purchases that is helpful at this stage in the development of the EV market. However,
3 “zero” is not an effective price signal to encourage charging that corresponds to grid
4 conditions, nor is it an effective way to allocate a scarce resource (access to EV charging
5 stations). Researchers from UC Davis estimate that providing “free” charging results in the
6 need for four times as many charging stations than would otherwise be necessary if reasonable
7 fees were charged for charging because drivers who could charge elsewhere (e.g., at home
8 overnight) are encouraged to charge for free at work or other locations (meaning those stations
9 are not available for the drivers who really need them).⁵³ That is not an efficient way to allocate
10 utility-customer-funded charging stations relied upon for daily driving needs, nor is it an
11 effective way to encourage charging patterns that correspond to grid conditions.

12 **Q. What did SCE do to address these problems and what should the Company do?**

13 A. Thankfully, SCE recognized the deficiency in its pilot resulting from the fact that EV drivers
14 did not see TOU prices, and has stated that in its Charge Ready 2, it will “encourage
15 participating customers to pass SCE’s TOU rate through directly to drivers, but participating
16 customers may elect to implement their own pricing plans.”⁵⁴ Likewise, the utility states: “SCE
17 will work to educate participating customers to ensure that end-use pricing is easy for drivers
18 to understand and provides the opportunity for drivers to access electricity that is less costly

⁵³ See *Charging for Charging: The Paradox of Free Charging and Its Detrimental Effect on the Use of Electric Vehicles* (available at http://old.sacog.org/complete-streets/toolkit/files/docs/Charging%20for%20Charging%20The%20Paradox%20of%20Free%20Charging_2013__P EV%20Resource.pdf).

⁵⁴ SCE Charge Ready 2 Amended Testimony at 33.

1 than gasoline... while meeting the needs of participating customers.”⁵⁵ And in its final decision
2 authorizing the \$436 million Charge Ready 2 program, the California Public Utilities
3 Commission including the following “Finding of Fact:”

4 *Establishing a default arrangement that site hosts pass through TOU price signals*
5 *to drivers would promote charging in a manner that is consistent with grid*
6 *conditions, offer the opportunity for drivers to realize fuel cost savings, and*
7 *preserve flexibility to accommodate site host operational needs.*⁵⁶

8 The Minnesota Public Utilities Commission also saw the necessity of adopting such an
9 arrangement in approving an Xcel Energy EV charging program.⁵⁷ The Company and the
10 Commission should incorporate the same lesson learned, and make the default arrangement be
11 that TOU price signals are passed onto EV drivers to encourage charging that supports the grid
12 and provide the fuel cost savings that motivate EV purchases.

13 **IX. CUSTOMER PORTFOLIO**

14 *Awareness, Education, and Engagement (“AEE”)*

15 **Q. Why is customer education and outreach important?**

16 A. People do not buy vehicles they are not familiar with. Consumer research shows that, when
17 asked to name a BEV that is for sale in the US, “three-fourths of respondents either simply

⁵⁵ SCE Charge Ready 2 Amended Testimony at 33.

⁵⁶ California Public Utilities Commission, *Decision 20-08-045*, Issued September 2, 2020, p. 139.

⁵⁷ Minnesota Public Utilities Commission, Docket No. E-002/M-18-643, *Order Approving Pilots With Modifications, Authorizing Deferred Accounting, and Setting Reporting Requirements*, issued July 17, 2019, at 22; (“The Commission hereby modifies the Public Charging tariff to condition participation in the pilot program on agreement by site hosts to have a default time-differentiated rate structure that reflects the on-peak and off-peak time periods of Xcel’s Pilot tariff and an energy rate differential ratio of at least 2:1. However, site hosts may opt out of the default arrangement at their discretion to set pricing that reflects other considerations or needs, provided that such prices are reported to the utility for purposes of Xcel’s annual reporting.”).

1 state they can't name a BEV or attempt to name one but provide an answer that is clearly
2 wrong.”⁵⁸ Utilities have a critical role to play in broad marketing, education, and outreach
3 activities and increasing customer awareness of the benefits of EVs. In many ways, utilities
4 are better positioned to do this than automakers seeking to promote specific vehicles or
5 charging providers seeking to promote specific business models. Accordingly, the “Education
6 & Outreach” section is an important element of the Company’s EV programs.

7 **Q. Do you recommend the Company’s Outreach and Education program be approved?**

8 A. Yes.

9 *The Fleet Electrification Advisory Service Should Prioritize Fleets that Serve EJ*
10 *Communities*

11 **Q. Do you have any recommendations to improve the Company’s proposed Fleet**
12 **Electrification Advisory Service?**

13 A. Yes. The Company has stated that it will target non-profit organizations in EJ communities for
14 this service.⁵⁹ However, the Company should also target other fleets that are located in (or
15 serve) EJ communities, including medium-and heavy-duty fleets. Right now, the Company
16 anticipates that at least two EJ non-profits will be served each year. As the Company anticipates
17 that a total of 36 fleets will be participated between 2022-2024, the Company should commit
18 that at least 10 fleets that service EJ communities participate in the fleet advisory service by
19 2024.

⁵⁸ Kurani, K. S. (2018). State of the Plug-In Electric Vehicle Market: Report I. UC Davis: National Center for Sustainable Transportation: <https://escholarship.org/uc/item/4gn9x59z>.

⁵⁹ Olexsak at 60 (lines 4-6).

1 Additionally, as part of the Advisory Service, the Company should analyze the potential
2 fueling costs for fleets charging their EVs on current electric rates, and how that fueling cost
3 would change if the customer switched to the EV-TOU rate (as a whole-premises rate or as a
4 separately metered rate) or other rate. The Company should also provide information on the
5 benefits and challenges of installing a second meter for their EV charging needs.

6 **X. DLC SHOULD USE THE PILOT PROGRAM TO GENERATE AND SHARE**
7 **DATA TO INFORM FUTURE DECISION MAKING**

8 **Q. Does DLC’s proposed program require any data collection or evaluation measures to**
9 **monitor the success of the pilot program?**

10 A. As part of the TE programs, customers are required to install charging stations that can collect
11 charging pattern and other data. This information will then be shared with the Company.

12 **Q. What modifications to you recommend to DLC’s Data Collection Plans?**

13 A. Transparency is vital for utility programs using customer funds. Publicly available data will
14 allow the Company, interested stakeholders, and the PUC to evaluate the success of the pilot
15 program and consider opportunities for program modifications moving forward. And this
16 transparent data collection has proven to be successful: the data collected from the Company’s
17 ChargeUp Pilot Program, was used to consider lessons learned and design the TE Programs.⁶⁰

18 Therefore, we request that the Company continue to post non-sensitive data on a semi-
19 annually (or sooner) to a public facing and easily accessible website. The Company should
20 include, at a minimum:

⁶⁰ See Response to OCA-XI-7 (KAH-102)

- 1 • kWh utilized
- 2 • Site host type (such as MUD, workplace, parking garage, etc.)
- 3 • Load profiles by site
- 4 • Number of charging sessions
- 5 • Costs to drivers to utilize each station
- 6 • Charging station location
- 7 • Cost for installation and equipment
- 8 • How EJ communities are being served by the pilot.

9 **XI. CONCLUSION**

10 **Q. Does this conclude your testimony?**

11 A. Yes.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

EXHIBITS TO ACCOMPANY

THE

DIRECT TESTIMONY

OF

KATHY HARRIS

FOR THE NATURAL RESOURCES DEFENSE COUNCIL

June 30, 2021

EXHIBIT KAH-001

Kathleen Harris

www.linkedin.com/in/kathleen-harris

EDUCATION

Master of Marine Policy
University of Delaware, 2017
Newark Delaware

Bachelor of Science,
Environmental Science
University of Delaware, 2013
Newark, Delaware

SKILLS

- Stakeholder Engagement
- Spanish intermediate/conversant
- Microsoft Office Suite
- ArcGIS
- QGIS
- Python
- R
- Project Management
- Communication
- Problem Solving
- Data Analysis

TRAININGS

- Moving Into Supervision; 2019, State of Delaware
- Planning Effective Projects for Coastal Communities; 2017, NOAA
- Planning and Facilitating Collaborative Meetings; 2017, NOAA

AWARDS

Delaware Department of Natural Resources and Environmental Control:

- Distinguished Employee Award-Innovator (2017)
- Distinguished Employee Award-Motivator (2016)
- Distinguished Employee Award-Outstanding Team (2016, 2017)

University of Delaware:

- Elevator Pitch competition "Pitch 90", 2nd place (2014)

PROFESSIONAL EXPERIENCE

Natural Resources Defense Council

Eastern Clean Vehicles and Fuels Advocate 2019-present

State of Delaware, Department of Natural Resources and Environmental Control, Division of Climate, Coastal, and Energy

Clean Transportation Planner 2015-2019

- Managed \$2.7 million Delaware Clean Transportation Incentive Program for electric, propane, and natural gas vehicle rebates; commercial, residential, and workplace electric vehicle charger rebates; and large-scale infrastructure grants— processing over 1,100 rebate applications
- Researched, analyzed, and developed policies and programs to expand clean transportation and in disadvantaged communities
- Provided written testimony in regulatory hearings related to clean transportation
- Lead the Delaware Clean Cities Coalition, serve as Coordinator, and act as key liaison between the state and the US Department of Energy; responsible for annual and quarterly reporting on fuel usage and vehicle deployment; represent the state at national meetings; manage the budget and contracting process for the state's participation in the Clean Cities Program
- Engaged stakeholders and community groups at workshops and public hearings
- Served as the primary point of contact for national and state reporting on the status and deployment of alternative fuel vehicles in the state of Delaware
- Worked with the Public Service Commission, large-scale public utilities, and private businesses to develop legislation to promote widespread electric vehicle deployment
- Represented Delaware on regional and national working groups and Coalitions— including the NESCAUM Charging Station Infrastructure Steering Committee, the US Climate Alliance's Transportation Working Group, and the Transportation and Climate Initiative
- Collaborated across departments to create, develop, and implement comprehensive environmental and transportation policies for the state— including work on the Volkswagen Settlement and Regional Greenhouse Gas Initiative
- Briefed Senators, Legislators, and Department Secretary on Delaware's clean transportation efforts and programs
- Coordinated, organized, and conducted research for the Delaware Offshore Wind Working Group

University of Delaware, School of Marine Science and Policy

Research Assistant 2013-2015

- Served as liaison to the US Department of Energy, researching and compiling data and reports for the project
- Presented program results at conferences and meetings
- Consulted with site owners and municipalities to facilitate installation of electric vehicle charging stations across the state of Delaware

NRDC-I-4 - Attachment 1

Regional Charging Infrastructure Projections

Vehicle Projections

Year	2021 Median Scenario	2021 High Scenario
2021	5,750	6,073
2022	7,915	9,169
2023	10,469	13,959
2024	14,078	20,958
2025	18,909	30,324

Source: Electric Power Research Institute (2021, January). Duquesne Light Company Service Territory EV Sa

Charging Infrastructure Projections

Charging Station Type	Current	Median Scenario	High Scenario
Public L2	389	947	1,292
Workplace L2		1,202	1,716
Level 2 Total	389	2,149	3,008
DCFC	62	78	125
Total	451	2,227	3,133

Source: EVI-Pro Lite Tool. U.S. Department of Energy. <https://afdc.energy.gov/evi-pro-lite>.

EVI - Pro Lite Scenarios

<https://afdc.energy.gov/evi-pro-lite>

Median Scenario

Your Results

In the Pittsburgh area, to support 18,900 plug-in electric vehicles you would need:

1,202

Workplace Level 2 Charging Plugs

947

Public Level 2 Charging Plugs

There are currently 389 plugs with an average of 2.2 plugs per charging station per the Department of Energy's Alternative Fuels Data Center Station Locator.

78

Public DC Fast Charging Plugs

There are currently 62 plugs with an average of 2.6 plugs per charging station per the Department of Energy's Alternative Fuels Data Center Station Locator.

Change Assumptions

Plug-in Electric Vehicles (as of 2016): 1,400

Light Duty Vehicles (as of 2016): 1,823,800

Number of vehicles to support

Vehicle Mix

Plug-in Hybrids 20-mile electric range	17.8 %
Plug-in Hybrids 50-mile electric range	17.7 %
All-Electric Vehicles 100-mile electric range	2.4 %
All-Electric Vehicles 250-mile electric range	62.1 %
Total	100%

Where Do I Start?

Planners may want to prioritize installation of fast charging infrastructure above Level 2 charging.

Build DC Fast First: Establishing fast charging networks that enable long-distance travel, serve as charging safety nets, and provide charging for drivers without home charging is critical to support all-electric vehicles that have no other alternative for quickly extending their driving range.

Build Level 2 Second: EVI-Pro typically simulates the majority of Level 2 charging demand coming from plug-in hybrid electric vehicles, which have the ability to use gasoline as necessary for quickly extending driving range.

How much support do you want to provide for plug-in hybrid electric vehicles (PHEVs)?

- Full Support**
 Most PHEV drivers wouldn't need to use gasoline on a typical day.
- Partial Support**
Calculate using half of full support assumption.
- Do not count PHEVs in charging demand estimates.**

Percent of drivers with access to home charging %

Recalculate

[See all assumptions.](#)

Additional Notes:

Vehicle Mix breakouts came from EPRI medium and high scenarios.

EVI-Pro Projections prepared March 1, 2021.

ales Projections as of 2020.

High Scenario

In the Pittsburgh area, to support 30,325 plug-in electric vehicles you would need:

- 1,716** Workplace Level 2 Charging Plugs
- 1,292** Public Level 2 Charging Plugs
There are currently 389 plugs with an average of 2.2 plugs per charging station per the Department of Energy's [Alternative Fuels Data Center Station Locator](#).
- 125** Public DC Fast Charging Plugs
There are currently 62 plugs with an average of 2.6 plugs per charging station per the Department of Energy's [Alternative Fuels Data Center Station Locator](#).

Where Do I Start?

Light Duty Vehicles (as of 2016): 1,823,800

Number of vehicles to support

Vehicle Mix		
Plug-in Hybrids 20-mile electric range	<input type="text" value="14.7"/>	%
Plug-in Hybrids 50-mile electric range	<input type="text" value="15.5"/>	%
All-Electric Vehicles 100-mile electric range	<input type="text" value="1.5"/>	%
All-Electric Vehicles 250-mile electric range	<input type="text" value="68.3"/>	%
Total	100%	

How much support do you want to provide for plug-in hybrid electric vehicles (PHEVs)?

Planners may want to prioritize installation of fast charging infrastructure above Level 2 charging.

Build DC Fast First: Establishing fast charging networks that enable long-distance travel, serve as charging safety nets, and provide charging for drivers without home charging is critical to support all-electric vehicles that have no other alternative for quickly extending their driving range.

Build Level 2 Second: EVI-Pro typically simulates the majority of Level 2 charging demand coming from plug-in hybrid electric vehicles, which have the ability to use gasoline as necessary for quickly extending driving range.

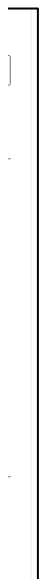
Full Support

- Most PHEV drivers wouldn't need to use gasoline on a typical day.*
- Partial Support**
Calculate using half of full support assumption.
- Do not count PHEVs in charging demand estimates.**

Percent of drivers with access to home charging %

Recalculate

[See all assumptions.](#)





PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

DUQUESNE LIGHT COMPANY

Docket No. R-2021-3024750

EXHIBITS TO ACCOMPANY

THE

DIRECT TESTIMONY

OF

KATHY HARRIS

FOR THE NATURAL RESOURCES DEFENSE COUNCIL

June 30, 2021

EXHIBIT KAH-003

Duquesne Light Company
Docket No. R-2021-3024750

Interrogatories of the
Office of Consumer Advocate

Set XI

Witness: Sarah Oleksak

OCA-XI-7

7. Reference Oleksak Direct at page 29, lines 11-18. Explain how the Company utilized charging data to from the EV ChargeUp Pilot to inform is current proposals.

Response:

While most charging stations deployed as part of the EV ChargeUp Pilot were activated for only 16 months at the time of filing the Company's current proposal, the bulk of which was significantly impacted due to the pandemic, valuable insights were gained from the charging data collected. These insights, and those gathered through the EV Registration Incentive, have been used to inform the proposed Transportation Electrification Program (TE Program).

As discussed in Exhibit SO-3, Level 2 Charging Station Evaluation data indicated that the top two sites with the greatest usage during the pandemic were public sites accessible to multi-unit dwelling residential customers, reflecting the importance of charging accessibility at such locations regardless of pandemic conditions. This finding informed the inclusion of multi-unit dwellings in the proposed TE Program.

As described in my testimony beginning on page 25, line 16, the proposed Make-Ready Pilot requires only 4 Level 2 charging station ports. Data collected in the Level 2 Charging Station Evaluation indicated infrequent concurrent utilization of most ports at a site required in that program. This reflects a finding from the charging station data that requiring customers to install 8 ports per site may result in an over-build for current market needs.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**Petition of Duquesne Light Company for
Approval of the Transportation
Electrification Programs**

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)

Docket No. R-2021-3024750

REBUTTAL TESTIMONY OF KATHLEEN HARRIS

NRDC Statement No. 2-R

July 26, 2021

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1 **I. INTRODUCTION**

2 **Q. Please state for the record your name, position, and business address.**

3 A. My name is Kathleen Harris. I am employed by Natural Resources Defense Council
4 (“NRDC”) as a Clean Vehicles and Fuels Advocate. My business address is 40 W 20th Street,
5 New York, New York 10011.

6 **Q. What is the purpose of your testimony?**

7 A. I am responding to certain issues raised in direct testimony filed by other witnesses in this
8 case on June 30, 2021 regarding the Transportation Electrification Programs (“TE Programs”)
9 proposed as part of Duquesne Light Company’s (“DLC” or “Company”) Rate Case.
10 Specifically, I respond to:

- 11 • The testimony of the Office of Consumer Advocate (“OCA”) witness Ron
12 Nelson concerning the role of utilities to support the electric vehicle (“EV”)
13 market.

14 **Q. Please summarize NRDC’s recommendations.**

15 A. As I stated in my opening testimony, the TE Programs should be approved, with
16 modifications¹

17 Concerns raised by OCA’s Witness Nelson regarding the company’s proposed make-ready
18 and fleet advisory program should be rejected, as there is no evidence that the programs will
19 stifle competition. In addition, rejection of the programs would be contrary to utility best
20 practices from around the country. Utility support for make-ready infrastructure and other
21 investments can and should play a role in growing the EV market and optimizing the electric

¹ *Id.* at 5-6.

1 grid for EVs. I do agree with Mr. Nelson’s recommendation that the Company develop a load
2 management proposal, but suggest this proposal also include rate design and be conducted
3 within a shorter timeframe than Mr. Nelson has recommended.

4 **II. UTILITY OWNERSHIP OF MAKE-READY INFRASTRUCTURE**

5 **Q. Based on best practices from around the country, what is the Company’s role in**
6 **supporting and growing the electric vehicle market?**

7 A. As I stated in my direct testimony², utilities’ specific and expert knowledge of the
8 distribution system and the potential impact of vehicle charging on load shape and shifting, as
9 well as their strong relationships with customers, make it vital that they have a unique and
10 central role to play in the EV infrastructure buildout.

11 **Q. Should utilities support EV infrastructure beyond load management?**

12 A. Yes. Utilities need to take a holistic and portfolio approach to support the nascent EV market,
13 including designing sustainable, long-term rate design and load management. Load management,
14 on one hand, and support for make-ready infrastructure, on the other, help utilities combat two
15 distinct barriers for EV deployment that should not be conflated. In short, load management
16 helps to maximize benefits and optimize the electric grid while also helping to put downward
17 pressure on electricity rates for all customers,³ and make-ready support helps to defray costs for
18 the installation of charging stations.

² Harris Direct Testimony pg. 12-14

³ *Id.* at 11, *Figure 2*.

1 **Q. Do you have concerns with any modifications recommended by other parties in Direct**
2 **Testimony to the Company’s proposal for ownership of EV Make-Ready Infrastructure?**

3 Yes. Mr. Nelson incorrectly states that “large transportation electrification efforts by a utility
4 should not be authorized until a comprehensive load management plan has been developed and
5 implemented.” To the contrary, while the EV market is relatively nascent, these efforts can and
6 should happen in tandem to prepare DLC and its grid for the anticipated number of clean
7 vehicles in DLC’s service territory. To improve air quality and address climate change, it is
8 critical that we rapidly accelerate transportation electrification, which requires charging
9 infrastructure. At the same time, DLC should consider and propose load management and other
10 long-term sustainable rate designs that help to maximize the benefits to EV drivers, all utility
11 customers, and the electric grid. Mr. Nelson’s recommendation is unsupported by utility best
12 practices, would inhibit the success of the program, and would run counter to the treatment of
13 make-ready infrastructure in other jurisdictions. Further, as DLC’s proposed transportation
14 electrification efforts are modest compared to most other utility programs throughout the
15 country, it is inaccurate to construe the TE programs as “large transportation electrification
16 efforts” that should not be approved.

17 I also reject OCA’s arguments that utility ownership of make-ready infrastructure would stifle
18 competition or disrupt the private market for the provision of make-ready infrastructure.⁴ On the
19 contrary, ChargePoint witness Matt Deal states in his direct testimony that utility support for
20 make-ready infrastructure will *encourage* the build out of EV charging stations as “the cost of
21 make-ready infrastructure is often one of the largest cost categories of installing and hosting EV

⁴ OCA Witness Nelson at 19-20.

1 charging stations. Duquesne Light’s proposal to own make-ready infrastructure through the
2 Make-Ready Pilot will reduce the cost of installing EV charging equipment for site hosts.”⁵
3 Without the Company’s investment in make-ready infrastructure to help offset the total costs of
4 charging station installation, many of the site hosts would likely not install charging stations at
5 all. ChargePoint, as a private market actor,⁶ is well suited to opine on how make-ready
6 infrastructure impacts the competitive environment.

7 **Q. Do you agree with OCA’s assertion that load management is the main role of utilities to**
8 **support the electric vehicle market?**

9 A. No. While I agree that load management is one of *many* important roles that a utility can play
10 to support the EV market, the proposition that this is the *main* role of a utility during the nascent
11 EV market is inconsistent with our need to rapidly accelerate transportation electrification to
12 address climate change and the best practices from other jurisdictions around the country. In his
13 direct testimony, OCA witness Nelson states that “load management is the utility’s central
14 responsibility—allowing them to rate base behind-the-meter and other EV-related infrastructure
15 would not be an appropriate signal at this time.”⁷ I urge the Commission to reject this argument.
16 While I agree that load management and sustainable rate design is critical,⁸ it does not diminish
17 the importance of utility support for the buildout of EV charging stations. Indeed, Mr. Nelson
18 himself acknowledges that “[b]uilding infrastructure to support TE is permissible and
19 necessary.”⁹ Given the nascent stage of the current EV market, prescribing limitations on what a

⁵ ChargePoint Witness Deal at 6.

⁶ ChargePoint Witness Deal at 3-4.

⁷ OCA Witness Nelson Direct Testimony page 20 lines 14-17- page 21 lines 1-2

⁸ *Ibid.*

⁹ OCA Witness Nelson at 27 lines 5-6.

1 utility can propose to support clean vehicles sets a dangerous precedent and would be a
2 divergence of utility EV programs from around the country.

3 **Q. Does OCA’s proposal to prohibit utility provision of make-ready infrastructure conflict**
4 **with standard practice in other utility EV programs across the country?**

5 A. Yes. As discussed in detail in my direct testimony, utilities throughout the country have
6 already invested billions of dollars in investments to support EV charging stations throughout the
7 country.¹⁰ Utility provision of make-ready infrastructure is common practice in utility programs
8 across the country, programs which have been repeatedly authorized by utility commissions and
9 frequently embraced by both commissions and stakeholders as a critical component of
10 supporting the EV market, including in New Jersey,¹¹ Massachusetts,¹² and California.¹³ In
11 approving these programs, commissions have explicitly concluded that such ownership “does not
12 hinder the development of the competitive EV charging market.”¹⁴ For example, the California
13 Public Utilities Commission recently summarized its longstanding history of approving such
14 make-ready ready proposals in its decision authorizing Southern California Edison’s Charge

¹⁰ Harris Direct Testimony at pg. 18 lines 14-15.

¹¹ New Jersey Public Utilities Commission, Docket No. QO20050357, In The Matter Of Straw Proposal On Electric Vehicle Infrastructure Build Out, Order Adopting The Minimum Filing Requirements For Light-Duty, Publicly-Accessible Electric Vehicle Charging, issued September 30, 2020, at 18. “The [utilities] would then develop and own the traditional utility infrastructure, such as transformers, utility services, and meters necessary for the charging stations, which are largely, but not necessarily, located on land owned or controlled by the utility, as well as the panels, conduits, and wiring which would support the charging station, which may often be located on land not generally owned by the utility and available for use through easement.” (available at <https://www.nj.gov/bpu/pdf/boardorders/2020/20200923/8F%20-%20ORDER%20Electric%20Vehicle%20MFRs.pdf>).

¹² Massachusetts Department of Public Utilities, D.P.U. 17-05, Order Establishing Eversource’s Revenue Requirement, issued November 30, 2017 at 472, 487 (also finding that the utility proposal in this proceeding “does not hinder the development of the competitive EV charging market”) (available at [https://www.eversource.com/content/docs/default-source/investors/d-p-u-17-05-final-order-\(revenue-requirement\)-11-30-17.pdf?sfvrsn=5e61c562_1](https://www.eversource.com/content/docs/default-source/investors/d-p-u-17-05-final-order-(revenue-requirement)-11-30-17.pdf?sfvrsn=5e61c562_1)).

¹³ See e.g. California Public Utilities Commission, Decision 18-05-040, Decision On The Transportation Electrification Standard Review Projects, issued on May 31, 2018 (available at <https://www.cpuc.ca.gov/sb350te/>).

¹⁴ Massachusetts D.P.U. 17-05, Order Establishing Eversource’s Revenue Requirement, at 472, 487.

1 Ready 2 Infrastructure Program.¹⁵ That Decision provides a summary of the California
2 commission’s historical treatment of utility ownership of make-ready infrastructure—explicitly
3 rejecting similar recommendations to prohibit capitalization of customer-side make-ready
4 infrastructure and noting that the commission has repeatedly authorized ownership of make-
5 ready infrastructure.¹⁶ Going beyond this, the California legislature recently passed legislation
6 establishing utility ownership and provision of utility-side make-ready infrastructure as simply
7 part of the utilities’ normal course of business—removing it from individually litigated utility
8 applications and moving into the utilities’ general rate cases.¹⁷ In sum, utility commissions have
9 consistently recognized and highlighted the benefits of leveraging utilities’ core competencies in
10 the provision of this infrastructure when evaluating such proposals.

11 **III. RATE DESIGN AND LOAD MANAGEMENT**

12 **Q. Do you support OCA Witness Nelson’s recommendation that the Company propose a**
13 **comprehensive EV load management proposal?**

14 A. Yes. In his direct testimony, Witness Nelson highlights the importance of load management
15 (both passive and active) to maximize the benefits to the electric grid.¹⁸ He further recommends
16 that within “18 months of the final order, Duquesne should file a comprehensive EV load
17 management proposal.”¹⁹ I agree with this recommendation, but recommend the proposal be
18 either included in this filing, or that the Company file a new load management proposal within 6-

¹⁵ See California Public Utilities Commission, Decision 20-08-045, Decision Authorizing Southern California Edison Company’s Charge Ready 2 Infrastructure And Market Education Programs, issued September 4, 2020, at 16, 65 (available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K230/346230115.PDF>).

¹⁶ *Id.*

¹⁷ Energy: transportation electrification: energy efficiency programs: School Energy Efficiency Stimulus Program, California A.B. 841 (available at https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201920200AB841).

¹⁸ OCA Witness Nelson at 28-34.

¹⁹ OCA Witness Nelson at 33 lines 15-16.

1 12 months.. I further agree with Mr. Nelson’s recommendation that the Company should
2 “Discuss opt-out offerings for passive managed charging.”²⁰

3 **Q. Do you have any other recommendations for the load management proposal?**

4 A. Yes. I also request that the Company include proposals for long-term, sustainable rate design,
5 particularly for commercial and industrial customer use cases in their proposal.

6 **IV. THE FLEET ADVISORY SERVICES SHOULD BE APPROVED**

7 **Q. Witness Nelson states that the “fleet electrification advisory service would be inadequate**
8 **without a comprehensive analysis of the customer’s needs and the Company’s load**
9 **management offerings.”²¹ Do you agree?**

10 A. No. On the contrary, the fleet electrification advisory can itself be used to conduct a
11 comprehensive analysis of the customer’s needs. While DLC has not explicitly stated that such
12 an analysis will be part of their Fleet Electrification Advisory Service,²² the additional
13 information and data collected from the service can subsequently be used to help the Company
14 develop a robust load management and rate design proposal. To reiterate the recommendation
15 from my direct testimony, the Company should also “analyze the potential fueling costs for fleets
16 charging their EVs on current electric rates, and how that fueling cost would change if the
17 customer switched to the EV-TOU rate (as a whole-premises rate or as a separately metered rate)
18 or other rate.”²³ Providing these additional tools to the fleet assessment service, I believe, will
19 help alleviate some of Witness Nelson’s concerns.

²⁰ *Id.* at 34 lines 3-4.

²¹ *Id.* at 35 lines 11-13.

²² Olexsak Direct Testimony at 57-58.

²³ Harris testimony at 33 lines 1-5.

1 **V. CONCLUSION**

2 **Q. Does this complete your rebuttal testimony?**

3 A. Yes.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**Petition of Duquesne Light Company for)
Cost Recovery of COVID-19 Related)
Expenses and for Approval of a Temporary)
Debt Relief Program)**

Docket No. R-2021-3024750

SURREBUTTAL TESTIMONY OF AMANDA LEVIN

NRDC Statement No. 1-SR

August 10, 2021

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1 **I. Introduction**

2 **Q. Please state your name, address and employment.**

3 **A.** My name is Amanda Levin. I am a Senior Policy Analyst for the Natural Resources
4 Defense Council. My business address is 1152 15th Street NW, Suite 300, Washington,
5 DC, 20005.

6 **Q. Have you previously submitted testimony in this proceeding on behalf of NRDC?**

7 **A.** Yes, I have. On June 30, 2021, I submitted direct testimony that discussed the Company's
8 request to recover uncollectable expenses and extraordinary, non-recurring expenses
9 related to COVID-19 and the Company's proposed temporary residential COVID-19 debt
10 relief program.

11 **Q. What is the purpose of your surrebuttal testimony?**

12 **A.** I respond to the rebuttal testimonies submitted by the Pennsylvania Public Utility
13 Commission's Bureau of Investigation & Enforcement (I&E) Witness Wilson, the Office
14 of Consumer Advocate's (OCA) Witness Morgan, the Company's Witnesses O'Brien and
15 Scholl.

16 **Q. What is the structure of your surrebuttal testimony?**

17 **A.** Section II responds to the Company's and I&E's rebuttal testimony concerning the
18 Company's proposal to recover incremental uncollectable expenses and extraordinary,
19 non-recurring expenses related to the COVID-19 pandemic. Section III responds to the
20 same parties' rebuttal testimony concerning the Company's proposed temporary residential
21 COVID-19 debt relief program. This includes a response to testimony from I&E, OCA,
22 and the Company regarding NRDC's proposed recommendation to continue to waive late

1 payment and reconnection fees, as well as a response to the Company's testimony
2 concerning NRDC's recommendation to report additional data at the zip code level and
3 with further granularity by income.

4 **Q. Are you sponsoring any exhibits?**

5 **A.** Yes. I am sponsoring AML-002, consisting of NRDC's discovery response to Interrogatory
6 DLC-I-4, as well as AML-003, consisting of NRDC's discovery response to Interrogatory
7 DLC-I-8.

8
9 **II. Response to Rebuttal Testimony Regarding the Company's Proposal to Recover**
10 **Expenses Related to COVID-19**

11 **Q. Company Witness O'Brien took issue with both your recommendation and OCA**
12 **Witness Morgan's recommendation to amortize uncollectable expenses over a**
13 **period longer than the proposed 36-month recovery period (see pg. 51 of O'Brien's**
14 **Rebuttal testimony). What is your response?**

15 **A.** In his rebuttal, Witness O'Brien laid out a number of reasons for why a 36-month recovery
16 period was appropriate. He states that customers will not begin to be charged until the
17 beginning of 2022, and that the Company has proposed programs to provide additional
18 assistance for customers in 2022, which he believes will sufficiently address concerns
19 raised about the customer impact of the Company's cost recovery proposal (O'Brien pg.
20 51, Lines 8 – 16). However, I would still recommend these costs be amortized over a period
21 longer than 36 months, as I believe that it is wise to err on the side of being cautious about
22 and attentive to the financial impact and stress that increased rates may have on customers.

1 The Company's proposal to recover these specific costs needs to be considered in the
2 context of the entire rate request and the current economic and public health situation.
3 While the data and knowledge around variants and the effectiveness of current vaccines
4 against emerging variants is still evolving, there is no certainty that the disruption caused
5 by the pandemic will have abated by 2022.

6 I would also note that while my direct testimony recommended only that the
7 Commission consider requiring the Company to amortize these costs over period longer
8 than 3 years and did not recommend a specific amortization period, I support OCA Witness
9 Morgan's proposal to use a 5-year or 60-month recovery period.

10 **III. Response to Rebuttal Testimony Regarding the Company's Proposed**
11 **Temporary Residential COVID-19 Debt Relief Program**

12 **Q. Both Company Witness Scholl and I&E Witness Wilson took issue with your**
13 **recommendation to continue to waive certain fees related to late payments and**
14 **reconnections. What is your response?**

15 **A.** Phase 2 of the Commission's Termination Moratorium, established in October 2020,
16 required utilities to waive all connection, reconnection, and deposit fees otherwise required
17 for service for protected customers, and to waive late payment charges for protected
18 customers. In March 2021, the Commission lifted the Moratorium effective April 1, 2021.
19 Both Witness Wilson and Scholl argue that the lifting of the Moratorium forecloses further
20 debate about the reasonableness of waiving late fees and reconnection fees in later
21 proceedings. (Wilson Pg. 12, Lines 2 – 4; Scholl Pg. 27, Lines 1 – 4). However, the
22 Commission has the ability to require that late and other fees be once again waived through

1 the end of the year, if it finds doing so to be reasonable and in the public interest, especially
2 given the continuing impacts of the pandemic.

3 I believe that waiving these fees, at least through the end of the year, is good policy.
4 As I noted in my discovery to the Company, “continuing to wave disconnect and late fees,
5 at least for the next few months, will help families who are or were struggling financially
6 due to pressures from the pandemic get reconnected more quickly if they lose service and
7 work towards addressing their arrears and/or get on a workable payment plan without
8 adding to their existing debt loads with additional fees.” The concern that these fees, when
9 reinstated, could act as a barrier to reconnection of service has led other utility commissions
10 to decide that continuing to waive late fees and reconnections fees is warranted, even if
11 shutoff moratoriums are lifted.¹

12 As Witness Scholl notes herself, “customers and the community continue to endure
13 the effects of a deadly health pandemic” and “new and more contagious variants of the
14 COVID-19 virus continue to penetrate communities causing illness and hospitalizations,
15 particularly among unvaccinated populations.” (Scholl Pg. 7, Lines 4 – 7). Loss of utility
16 services can pose a significant health and safety concern, especially during the pandemic
17 we still find ourselves in. Eliminating barriers to getting utility services restored, such as
18 by reinstating the waiving of reconnection and late fees, can help these customers – and
19 the public as a whole – stay safer and healthier during this time.

20 **Q. Company Witness Scholl also disagreed with your recommendation that Duquesne**

¹ See AML-002 (NRDC response to Interrogatory DLC-I-4, pages), summarizing actions taken by other utility commissions).

1 **Light be required to track and report certain geographic and income data to the**
2 **Commission. What is your response?**

3 A. I appreciate that “equity is critically important to Duquesne Light” and that the Company
4 wants to demonstrate “a tireless commitment to diversity, equity and inclusion within our
5 organization, and the communities we serve.” In response to my recommendation, Witness
6 Scholl notes that the Company “is not aware of any other Pennsylvania electric distribution
7 company that reports this data to the PUC.” In my view, this is not a reason for the
8 Company not to track and report the data I have suggested, but an opportunity to further its
9 commitment to equity in the communities it serves and to be a leader on this issue in the
10 state.

11 While this may be a first for an electric distribution utility in the state, my
12 recommendation is in line with actions other utilities and commissions in the country have
13 taken. It is also consistent with recommendations and resolutions passed by national
14 consumer organizations. There is a record on how the Commission, utility, and
15 stakeholders could use this data and the value this data can provide. As discussed in my
16 discovery response to the Company, a recent brief by the National Consumer Law Center
17 notes that:

18 “some national and regional data sets show disparities by race in disconnections
19 and other important energy security metrics — even after controlling for income.
20 These disparities raise profound racial justice concerns and highlight the
21 importance of obtaining utility-specific credit and collections data at the zip code,
22 or even census tract level. Geographically granular data is needed to flag any
23 disparities, but also to inform targeting of effective energy efficiency and other
24 affordable energy programming.”

1 While the discussion of disparities in my direct testimony was not specific to
2 Duquesne Light, and was instead speaking more broadly, I do continue to think it is
3 important for the Company to monitor for disparities by reporting data, much of which the
4 Commission is already requiring utilities to report for their territories, at a zip code level.

5 The Company also argues that this is not the appropriate forum to raise this, and
6 that this should instead have been part of a “generic rulemaking similar to the recent
7 Diversity Rulemaking” that would “ensure consistency in the data being reported.” I want
8 to note that this recommendation about data reporting was specifically tied to the
9 Company’s proposed temporary residential COVID-19 debt relief program. I am not aware
10 of any utility in the state, besides the Company, which has yet filed for Commission
11 approval of a similar program. Several other commissions, as noted in my discovery
12 responses to the Company, have implemented similar data reporting requirements as part
13 of utility relief agreements and in tandem with the approval of bill relief programs designed
14 to address rising debts due to COVID-19 and related moratoriums.² Some utilities and
15 commissions are using this newly required, more granular data to develop sophisticated
16 outreach plans for these temporary debt relief programs and to more transparently track
17 where bill relief funding is flowing to ensure that it is going to all communities in need.
18 Thus, my recommendation to require additional data reporting is tied specifically to an
19 action proposed in this docket, where this more granular data has already been found to be
20 particularly valuable and important for utilities beginning to implement similar debt relief
21 programs in other states.

² See AML-002, AML-003 (NRDC responses to Interrogatories DLC-I-4, DLCI-8).

1

IV. Conclusion

2 **Q. Does this conclude your surrebuttal testimony?**

3 **A. Yes.**

Exhibit AML-002: NRDC Responses to
Interrogatory DLC-I-4

Natural Resource Defense Council (NRDC) Response to Interrogatories and Requests for Production of Documents of Duquesne Light Company (DLC)

Set I

Witness: Amanda Levin

DLC I-4

4. Reference Direct Testimony of Amanda Levin at p. 5, lines 19-20; p. 13, lines 8-10. To the extent not provided in another discovery response, please identify each action that Ms. Levin believes Duquesne Light should take to address “known historical and recent racial and ethnic disparities in utility insecurity, arrears, and COVID-related health and economic impacts.” For each action so identified, please:
 - a. Explain how the action will address such disparities
 - b. Identify and explain Ms. Levin’s estimated costs of the action, including all associated analyses, workpapers, or other supporting information.
 - c. Identify any explain how Ms. Levin recommends the costs of the action should be recovered, including all associated analyses, workpapers, or other supporting information.
 - d. Identify each other instance in which Ms. Levin has recommended that a public utility take the action. Provide all associated docket numbers, copies of testimony, and other related supporting documentation.

Response:

- a. Two actions were identified in the testimony.

First, the Company should include additional data on disconnections, arrears, payment behaviors, etc. at the zip code level and by income status in its already-required quarterly filings to the PA PUC from the PUC Order-3019244 LAW- 31120 PM- Termination Moratorium, dated March 18, 202. This action would be consistent with reporting recommendations developed by the National Consumer Law Center (NCLC) at the start of the pandemic and resolutions previously adopted by the National Associations of State Utility Consumer Advocates (NASUCA) and the National Association of Regulatory Utility Commissions (NARUC).¹

¹ (See NCLC’s “The Need for Utility Reporting of Key Credit and Collections Data Now and After the Covid-19 Crisis,” April 2020, https://www.nclc.org/images/pdf/special_projects/covid-19/IB_Data_Reporting.pdf; NASUCA’s Resolution 2018-04 available at <https://nasuca.org/wp-content/uploads/2018/01/2018-04-NASUCA-Data-Collection-Resolution-Final-11-11-2018.pdf>; and NARUC’s “Resolution on Best Practices in Data Collection and Reporting for Utility Services Delinquencies in Payments and Disconnections of Service,” available at <https://pubs.naruc.org/pub/9392BD1E-D055-4A2C-9677-AAD00FEA7527>.)

Natural Resource Defense Council (NRDC) Response to Interrogatories and Requests for Production of Documents of Duquesne Light Company (DLC)

Set I

NCLC's issue brief cited above explains the importance of reporting at the zip code level:

“Some national and regional data sets show disparities by race in disconnections and other important energy security metrics — even after controlling for income. These disparities raise profound racial justice concerns and highlight the importance of obtaining utility-specific credit and collections data at the zip code, or even census tract level. Geographically granular data is needed to flag any disparities, but also to inform targeting of effective energy efficiency and other affordable energy programming. There are currently no utilities that report regularly on a geographically granular level. But asking for and obtaining such information in regulatory proceedings, co-op meetings, or municipal utility meetings is required to ensure equity.”

Second, the Company should continue to waive late fees and reconnection fees for residential customers through the end of the year. As discussed in Ms. Levin's testimony and in NRDC's Response to DLC-I-2, there is evidence, both in Pennsylvania and across the U.S., that the COVID-19 pandemic has exacerbated racial disparities in energy security. Black and Brown residents of the Commonwealth represented a disproportionate share of COVID-19 cases and deaths, have seen higher rates of unemployment during the pandemic, and report higher levels of housing and energy insecurity than white residents. And evidence from other states would suggest that Black and Brown communities and households may see higher rates of disconnection notices and disconnections as the moratorium expires in the Commonwealth. Continuing to waive disconnect and late fees, at least for the next few months, will help families who are or were struggling financially due to pressures from the pandemic get reconnected more quickly if they lose service and work towards addressing their arrears and/or get on a workable payment plan without adding to their existing debt loads with additional fees.

- b. Ms. Levin has not estimated the costs of either action.
- c. As noted in her testimony, Ms. Levin would support the recovery of any waived fees through a regulatory asset that recovers the *net* incremental costs associated with COVID-19. This is consistent with the approach directed by the Secretarial letter from May 2020 authorizing utilities to track incremental costs and cost savings for future recovery via a regulatory asset.

If including the additional zip code level data in the reports that the Company is already filing results in prudent incremental costs to the utility, the Company could track and include those costs in the regulatory asset as well.

Natural Resource Defense Council (NRDC) Response to Interrogatories and Requests for Production of Documents of Duquesne Light Company (DLC)

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- d. The current docket represents the first instance in which Ms. Levin has testified concerning COVID-19 cost recovery and debt relief in a state utility commission proceeding. Accordingly, she has not previously recommended the actions in question.

However, her recommendations are consistent with guidance from other consumer organizations and actions taken by other states in response to the pandemic and transition to a post-moratorium period.

Specifically:

- Washington state regulators directed investor-owned utilities to report data on the number and amount of customer arrearages. This data will be reported at the zip code and census tract level. The same order also requires the utilities to continue to waive late fees, reconnection fees, and deposit requirements for new or existing residential and small commercial customers; Commission staff will also investigate whether to permanently eliminate “of late fees, disconnection and reconnection fees, and deposits with particular attention to the experience of those limited English proficiency and customers of color as soon as reasonably possible.” (See Order 4 and Appendix A in WUTC Docket U-200281, <https://www.utc.wa.gov/casedocket/2020/200281/orders>).
- Illinois regulators approved a relief settlement between customers and utilities which requires utilities to report disconnection information by zip code to identify impacted communities. (See Illinois Commerce Commission, “ICC Approves Landmark COVID-19 Utility Relief Agreements”, *Press Release*, June 18, 2020, <https://www.icc.illinois.gov/home/covid-19>).
- In Oregon, utilities must report service disconnection data aggregated at the zip code level on a quarterly basis, “unless a different unit is pre-approved by the Commission’s Consumer Services Section.” (See Chapter 860-021-0408, “Disconnect Reporting Rule,” <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=246811>). Utilities are also required to waive new deposit requirements, cannot apply service disconnection and reconnection fees to residential customers, or collect late payment fees, interest, and penalties from residential customers through October 1, 2022. (See Oregon Public Utility Commission, Docket UM2114, Order 20-401, <https://apps.puc.state.or.us/orders/2020ords/20-401.pdf>).
- The California Public Utility Commission requires each of the four major energy IOUs to report arrears and disconnections by zip code. (See Resolution M-4849, <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M366/K625/366625011.PDF>.) The CPUC in June 2020 also now permanently “prohibits the IOUs from requiring an establishment of service deposit or reestablishment of service deposit, as deposits can adversely impact a household’s ability to meet its financial obligations. Additionally, utilities are precluded from charging customers reconnection fees.” (See Decision 20-06-003, Rulemaking 18-07-005,

Natural Resource Defense Council (NRDC) Response to Interrogatories and Requests for Production of Documents of Duquesne Light Company (DLC)

Set I

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M340/K648/340648092.PDF>.

- The Commission noted, when approving the elimination of fees, “Reconnection fees can be an additional barrier to receiving essential utility service. They have the potential of adding additional debt that customers may have difficulty paying.” And “The record establishes that a loss of utility services causes a significant health and safety concern. As noted in the intervenor’s testimony, reconnection fees should be eliminated as they can be an obstacle to getting utility services restored.” (See pg. 48, 50 – 51 of Decision 20-06-003)
- The Commission first used zip code level data to summarize utility disconnections in 2016, explaining: “Zip code level data allows for more detailed review of regional, demographic, and other factors that may influence the number and frequency of disconnections.” (Available at [https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Divisions/Policy_and_Planning/PPD_Work/PPD_Work_Products_\(2014_forward\)/Disconnection%20Report.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Divisions/Policy_and_Planning/PPD_Work/PPD_Work_Products_(2014_forward)/Disconnection%20Report.pdf).)
- In New Jersey, the moratorium on utility service shutoffs ended as of July 1, 2021. However, an Executive Order from the governor establishes a six-month grace period (through December 31, 2021) in which no gas, energy, or water utility shall collect any fee or charge imposed for late or untimely payments or service reconnections that were accrued during the moratorium or the grace period. (See Executive Order No. 246, <https://www.nj.gov/infobank/eo/056murphy/pdf/EO-246.pdf>)
 - The New Jersey Division of Rate Counsel has also petitioned the New Jersey Board of Public Utilities to record and report data which includes “the number of customers in arrears, number facing disconnection, total amount of arrears, distribution of arrearage amounts among customers in arrears, and distribution of customers in arrears by zip code.” (Petition available at https://www.nj.gov/rpa/docs/COVID-19_Arreages_Petition_10-2-20.pdf).

Exhibit AML-003: NRDC Responses to
Interrogatory DLC-I-8

Natural Resource Defense Council (NRDC) Response to Interrogatories and Requests for Production of
Documents of Duquesne Light Company (DLC)

Set I

Witness: Amanda Levin

DLC-I-8

8. Reference Direct Testimony of Amanda Levin at p. 25, line 17 – p. 26, line 13. For each “known historical and recent racial and ethnic disparit[y] in utility insecurity” in Duquesne Light’s service territory, explain how the data that Ms. Levin alleges the Company should be required to report will remedy or mitigate such “disparit[y].”

Response:

The data that Ms. Levin asks the utility to report will not, in and of itself, remedy the disparity. Rather, as discussed in NRDC’s Response to DLC-I-4-a, “[g]eographically granular data is needed to flag any disparities, but also to inform targeting of effective energy efficiency and other affordable energy programming.” Without this data, it will be much harder, if not impossible, for the Company, Commission, and other stakeholders to identify any disparities in those eligible for and receiving notice of disconnection; those being disconnected and/or reconnected due to payment issues; arrears; and arrearage management, COVID-19 debt relief, and other bill assistance program participation. Adjustments, such as increased targeted outreach or changes to payment terms, can then be made to remedy or mitigate the disparities the more geographically granular data points may identify.

As one example of how zip code data could be used to mitigate or remedy disparities, the Oregon PUC’s Arrearage Management Plan Principles—developed ahead of new bill forgiveness, arrearage management, and extended payment plan offerings for all utilities—opens with “A well-defined, sophisticated Outreach Plan that reaches as many customers as possible and that includes: Priority to communities (zip codes) with the highest number of customers in arrears.” (See Oregon Public Utility Commission, “Arrearage Management Plan Principles,” <https://www.oregon.gov/puc/utilities/Documents/COVID-19-Arrearage-Management-Plan-Principles.pdf>, Accessed July 9, 2021.)

Zip code data is both important and fundamental to the develop of Outreach plans in Oregon, with the Commission recognizing that the proposed COVID-19 related arrearage management plans should prioritize the disbursement of funds to those communities with the highest levels of arrears.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**Petition of Duquesne Light Company for
Approval of the Transportation
Electrification Programs**

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Docket No. R-2021-3024750

SURREBUTTAL TESTIMONY OF KATHLEEN HARRIS

NRDC Statement No. 2-SR

August 10, 2021

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1 **I. INTRODUCTION**

2 **Q. Please state for the record your name, position, and business address.**

3 A. My name is Kathleen Harris. I am employed by Natural Resources Defense Council
4 (“NRDC”) as a Clean Vehicles and Fuels Advocate. My business address is 40 W 20th Street,
5 New York, New York 10011.

6 **Q. What is the purpose of your testimony?**

7 A. I am responding to certain issues raised in rebuttal testimony filed by other witnesses in
8 this case regarding the Transportation Electrification Programs (“TE Programs”) proposed as
9 part of Duquesne Light Company’s (“DLC” or “Company”) Rate Case. Specifically, I respond
10 to:

- 11 • The rebuttal testimonies of ChargePoint Witness Deal¹ and DLC Witness
12 Olexsak² regarding utility ownership of charging stations at multi-unit
13 dwellings and default arrangements for pass-through price signals.

14 **Q. Are you sponsoring any exhibits?**

15 A. Yes. I am sponsoring the following exhibits.

- 16 • KAH-004: Response of the Company to Interrogatories of NRDC, NRDC-I-2
17 (c), Attachment 1.
18

¹ Rebuttal Testimony of Matthew Deal on Behalf of ChargePoint, Inc., July 26, 2021 (hereafter “ChargePoint Witness Deal Rebuttal Testimony”)

² Rebuttal Testimony of Sarah Olexsak on Behalf of Duquesne Light Company, July 26, 2021 (hereafter “DLC Witness Olexsak Rebuttal Testimony”)

1 **II. RESPONSE TO COMMENTS REGARDING TURN-KEY SOLUTIONS FOR**
2 **MULTI-UNIT DWELLINGS**

3 **Q. In his rebuttal testimony, Witness Deal states that he disagrees that the Company**
4 **should expand its turn-key solution of utility ownership to multi-unit dwellings.³ How do**
5 **you respond?**

6 A. Mr. Deal implies that I argue that utilities are the only entity that can provide turn-key
7 solutions for charging stations at multi-unit dwellings. That is not what my direct testimony says.
8 One of my recommendations was for the Company to expand its turn-key solution program for
9 single-family homes to multi-unit dwellings as well to “provide an option for utility ownership of
10 the charging station and make-ready infrastructure at MUDs.”⁴ As I describe, this approach is
11 aligned with best practices from around the country.⁵ It does not preclude any private sector
12 company from also offering this service beyond DLC’s pilot program.

13 **Q. In her rebuttal testimony, DLC Witness Olexsak disagrees with your recommendation**
14 **for utility ownership of charging stations at this time.⁶ How do your respond?**

15 A. Ms. Olexsak acknowledges that the Company chose not to include a utility ownership option
16 for multi-unit dwellings as “many building owners and managers are experimenting with the best
17 ways to install and operate these stations and charging station ownership flexibility is
18 important.”⁷ This, though, supports my direct testimony recommendation that multi-unit
19 dwellings be given the option of utility turn-key solutions.⁸ Allowing for this ownership model

³ ChargePoint Witness Deal Rebuttal Testimony at 10 (10-22)-11 (1-7).

⁴ Witness Harris Direct Testimony at 21-22.

⁵ *Ibid.*

⁶ DLC Witness Olexsak at 38 (16-24).

⁷ DLC Witness Olexsak Rebuttal Testimony at 38 (22-24).

⁸ Witness Harris Direct Testimony at 21 (4-6) and 22 (1-4).

1 will provide the flexibility that DLC is looking for at this nascent stage of the EV market.
2 Further, recent data from Pacific Gas and Electric (one of the utilities with the largest number of
3 EVs in its service area) shows that 60% of EV program applicants at multi-unit dwellings
4 requested utility ownership of charging stations, while 100% of multi-unit dwellings located in
5 disadvantaged communities opted for utility ownership of charging stations.⁹

6 **III. RESPONSE TO COMMENTS REGARDING PASS THROUGH PRICE**
7 **SIGNALS.**

8 **Q. In their rebuttal testimonies, DLC Witness Oleksak¹⁰ and ChargePoint Witness Deal¹¹**
9 **disagree with your recommendation that participation in the Company’s EV-TOU rate**
10 **should be the default arrangement for participation in the TE program, utilizing an “opt-**
11 **out” model. How do you respond?**

12 A. First, I would like to reiterate that in my direct testimony, I state that participants in the
13 program should automatically enrolled in the EV-TOU rate unless they opt-out, and that pass-
14 through price signals should also be the default arrangement for program participants (again with
15 an opt-out option).¹² Ms. Oleksak states that “requiring participating customers to enroll in the
16 EV TOU rate and to pass those price signals along to end-users could be detrimental to customer
17 participation in these programs,”¹³ while Mr. Deal states that “it would not be appropriate to
18 impose any requirements with respect to the prices or pricing structures that EV charging station
19 site hosts charge EV drivers.”¹⁴ Both Ms. Oleksak and Mr. Deal fail to acknowledge that the

⁹ PG&G Program Advisory Council Meeting Q4 2020, January 27, 2021. Available at:
https://www.pge.com/pge_global/common/pdfs/solar-and-vehicles/your-options/clean-vehicles/charging-stations/program-participants/EVCN-PAC-2020-Q4.pdf

¹⁰ DLC Witness Oleksak Rebuttal Testimony at 15 (11-22).

¹¹ ChargePoint Witness Deal Rebuttal Testimony at 8-9.

¹² Witness Harris Direct Testimony at 25 (11-15).

¹³ DLC Witness Oleksak Rebuttal Testimony at 15 (14-16).

¹⁴ ChargePoint Witness Deal Rebuttal Testimony at 10 (4-8).

1 pass-through price signal recommendation also utilizes an “opt-out” model to allow site-host
2 flexibility if the TOU rate does not suit their charging or energy needs.¹⁵ The utility can develop
3 the program so that the site host has the option to opt-out of the program during enrollment.
4 Further in his rebuttal testimony, ChargePoint witness Deal attempts to assert that this default
5 arrangement would be excessively burdensome for participating commercial customers who may
6 wish to implement other pricing arrangements or implement managed charging capabilities¹⁶, but
7 fails to provide any explanation for why. Assuming for the sake of argument that the EV TOU
8 rate or pass-through price signals could be burdensome, a customer can simply opt out.

9 In fact, in establishing a similar default arrangement for Southern California Edison’s
10 (SCE) Charge Ready 2 Program, the California Public Utilities Commission has already
11 explicitly noted that such a default arrangement would “preserve flexibility to accommodate site
12 host operational needs.”¹⁷ SCE and the Commission established this default arrangement because
13 data from their own Charge Ready Pilot (where TOU prices were not passed through to drivers
14 by default) showed that sites were consistently not passing price signals through to drivers and
15 that the lack of time-variant price signals resulted in those drivers charging immediately upon
16 arrival at their destination—with no correlation to grid conditions or time-of-use periods. As a
17 result, in the absence of those signals, the pilot was not delivering the fuel cost savings that
18 motivate EV purchase decisions or the grid benefits that justify the investment of customer
19 funds. DLC should simply mirror that recognition and programmatic modification here, as based

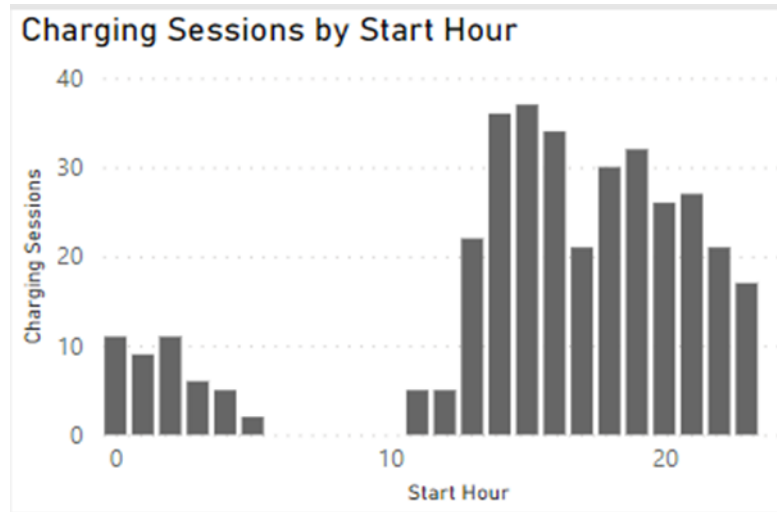
¹⁵ Witness Harris Direct Testimony at 25 (11-15).

¹⁶ ChargePoint Witness Deal at 9.

¹⁷ *Application of Southern California Edison Co. (U388E) for Approval of its Charge Ready 2 Infrastructure Program*, Decision 20-08-045, Application 18-06-015, at 139 (Ca. P.U.C. Aug. 27, 2020); available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K230/346230115.PDF>

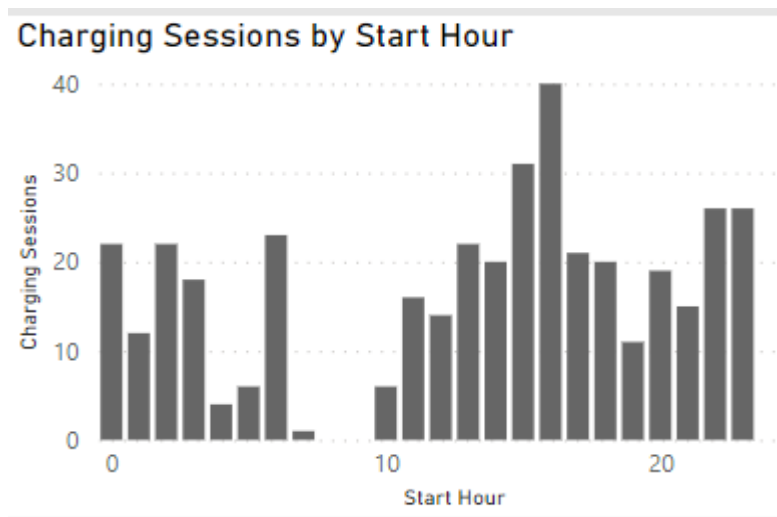
1 on data collected from the EV ChargeUp Pilot¹⁸, it appears that drivers in DLC’s territory are
2 also charging as soon as they reach their destination and that charging start times vary depending
3 on the site (see Figures 1, 2, and 3).

4 Figure 1: DLC ChargeUp Pilot Charging Data from Site #2.¹⁹



5

6 Figure 2: DLC ChargeUp Pilot Charging Data from Site #5.²⁰



7

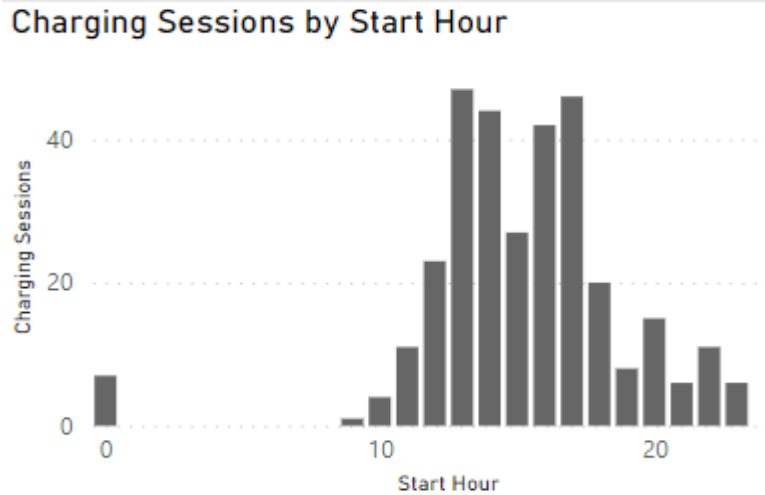
¹⁸ Discovery Response NRDC-I-2 (c), Attachment 1 (See KAH-004).

¹⁹ *Id.*

²⁰ *Id.*

1

Figure 3: DLC ChargeUp Pilot Data Site #7.²¹



2

3 Establishing the pass-through of TOU rates as the default arrangement would ensure that
4 a greater number of drivers see price signals that encourage load shifting in line with grid
5 conditions, help deliver the grid benefits and fuel cost savings the investment of utility customer
6 funds is premised on, all while avoiding any of the site host operational constraints raised by the
7 Company and ChargePoint. In short, there is strong evidence that making pass-through price
8 signals the default has value, while the Company and ChargePoint have presented no evidence
9 that this arrangement, together with an opt-out option, would be burdensome. Consequently, the
10 changes outlined in my Direct Testimony should be approved.

11 **IV. CONCLUSION**

12 **Q. Does this complete your rebuttal testimony?**

13 A. Yes.

²¹ *Id.*

PENNSYLVANIA WEATHERIZATION PROVIDERS TASK FORCE

PWPTF Statement No. 1

Direct Testimony of Eugene M. Brady

In Re: Duquesne Light Company
Request for a Rate Increase

Docket Number: R-2021-3024750

1 **Q. Please state your full name and business address.**

2 A. Eugene M. Brady, 165 Amber Lane, PO Box 1127, Wilkes-Barre, Pennsylvania
3 18703-1127.

4
5 **Q. By whom are you employed and in what capacity?**

6 A. I am employed by the Commission on Economic Opportunity (CEO) as Executive
7 Director. I am submitting this testimony on behalf of the Pennsylvania Weatherization
8 Providers Task Force as Chair of the Task Force.

9
10 **Q. What are the interests of the Task Force in this rate case?**

11 A. The Pennsylvania Weatherization Providers Task Force, Inc., is a Pennsylvania
12 non-profit corporation and a statewide association of thirty-seven (37) organizations
13 providing utility assistance and energy conservation services in each of the
14 Commonwealth's sixty-seven counties. The Task Force, through its member agencies, a
15 number of which are Pennsylvania community-based organizations, administers universal
16 service programs for a number of utility companies, including Duquesne Light. The Task
17 Force members serve low-income ratepayers and it is part of our responsibility to our
18 constituency to advocate for their interests in regulatory proceedings and this proposed
19 request will certainly have an impact upon those low-income ratepayers. In addition to
20 the affordability of transmission and distribution rates, the Task Force is particularly
21 interested in the adequacy and operation of a company's universal service program.

22

1 **Q. What background and experience in energy issues qualify you to submit**
2 **testimony in this case?**

3 **A.** I have served as the Executive Director of the Commission on Economic
4 Opportunity since 1978. During my tenure, CEO's experience and the expertise of its
5 staff in energy programs has been recognized on state and national levels. CEO's energy
6 related programs have been acknowledged by receipt of a Superior Achievement Award
7 from the United States Department of Energy. CEO has weatherized more than 25,000
8 homes under the U.S. Department of Energy Weatherization Assistance Program. CEO,
9 like a number of Task Force members, also serves as a subcontractor for universal
10 programs operated by a number of Pennsylvania gas and electric utility companies.

11 CEO is also the PA Department of Public Welfare's contracted operator of the
12 crisis component of the Low Income Home Energy Assistance Program (LIHEAP) in
13 Luzerne and Wyoming Counties. CEO was also a major contractor for PPL in the Low
14 Income Renewable Energy Pilot, and secured funding and installed several solar thermal
15 water heating systems for the former PG Energy and UGI Gas Division.

16 Throughout my career I have served on numerous Boards, Committees and Task
17 Forces in the energy field under the auspices of the US Department of Energy, The PA
18 Department of Community & Economic Development and the PA Public Utility
19 Commission. Presently, I serve on the Board of Directors of the National Center for
20 Appropriate Technology; I am on the Board of the National Community Action
21 Foundation, Chair of the Department of Community & Economic Development
22 Weatherization Policy Advisory Council and, as indicated above, I am the Chair of the
23 Pennsylvania Weatherization Providers Task Force.

1 **Q. Before addressing the specifics of your testimony, does the Task Force take a**
2 **position on whether the Company’s rate increase should be granted?**

3 **A.** Our main focus is on the funding and availability of universal service programs
4 and opposing rate designs that discourage conservation. In this case, we do not
5 necessarily oppose a rate increase, but we do oppose the rate increase requested and
6 would oppose any rate increase unless it is accompanied by measures that would provide
7 additional relief to the Company’s customers, particularly low-income customers, from
8 the effects of a rate increase, especially in light of the fact that we are still dealing with
9 the economic difficulties caused by the COVID-19 crisis.

10
11 **Q. Please describe the areas of your testimony.**

12 **A.** My testimony will address the Company’s proposal to increase the fixed monthly
13 charge for residential customers as well as proposals to help low-income customers deal
14 with any resulting rate increase.

15 In its request for a rate increase the Company does not propose any additional
16 increase in funding or measures that would help low-income customers deal with the
17 proposed rate increase. Further, an increase in the fixed monthly charge, as requested by
18 the Company, would negatively impact a customer’s motive and ability to conserve
19 energy. The company’s proposal if granted would increase rates, discourage
20 conservation and leave a customer with less ability to conserve energy and less ability to
21 reduce their bills.

22 Despite these difficult financial times for all, including ratepayers, the Company
23 is requesting an increase in annual distribution revenues of \$85.8 million. A residential

1 customer using an average of 600kWh per month would see an increase from \$100.12 to
2 \$107.85 per month, or 7.72 percent.

3

4 **Q. What rate design issue would you like to address?**

5 **A.** In this case the Company is proposing to increase its fixed monthly charge, from
6 \$12.50 to \$16.00, an increase of 28%. I am concerned about this proposal and I oppose
7 any increase to the fixed monthly customer charge.

8 Part of the proposed increase to residential customer's rates will be due to this
9 increase in the fixed monthly customer charge. This increase in the monthly fixed charge
10 concerns me, as it has the Commission in recent, because it discourages conservation and
11 impacts a customer's ability to save money through conservation; as the Company moves
12 towards charging customers based upon the Company's fixed costs and away from a
13 customer's consumption there is less incentive, and ability, to conserve. One of the only
14 defenses a family, particularly a poor family, has against the sharp increases in energy
15 costs is to conserve – lower the thermostat, seal air leaks, change filters regularly, add
16 more insulation, get a more efficient heating unit, etc. The Company's proposal to
17 increase the fixed costs greatly impacts a customer's motive to conserve and the ability to
18 lessen the impact of any rate increase. The combined effect of an increase in rates and an
19 increase in fixed monthly charges, without any changes to universal service funding or
20 other measures to help low-income customers, not only results in higher rates but also
21 lessens the ability of customers to deal with those increases. In particular, the negative
22 impact would be particularly harsh on the Company's low-income customers and the
23 Company's proposed request ignores the interests of its low-income customers.

1 In prior cases, PUC Commissioner Cawley has expressed concerns about
2 proposals to increase the fixed portion of a customer's bill or any proposal that would
3 impact a customer's motive and ability to conserve. In a National Fuel Gas case (No. R-
4 00061493) Commissioner Cawley issued a statement while the case was pending
5 concerning NFG's proposal to increase its fixed monthly customer charge. That
6 statement read in relevant part:

7 "This proposed change raises important policy issues that affect this Commission's goals
8 of promotion and encouragement of conservation of natural resources, including natural
9 gas. Given the extremely volatile and currently high natural gas prices facing this nation,
10 a policy that does not optimally reward consumers for conservation efforts, but instead
11 charges fixed fees regardless of usage, should, I feel, be addressed by the parties to this
12 case."

13 We share Commissioner Cawley's concerns and believe that fixed monthly
14 charges should be held in check.

15
16 **Q. How does the effect of the Company's requests impact upon your testimony**
17 **in this case?**

18 A. I believe that should a rate increase be granted there should be relief offered in the
19 form of increases to universal funding programs and other relief that would help low-
20 income customers deal with any increase granted. For a typical residential customer, a
21 7.72% increase is substantial, but for a low-income customer, the effects can be dramatic,
22 especially in this economic climate. High utility costs are not the only challenge for a
23 poor person. Our agencies have been helping low-income people for years and know

1 firsthand that they face financial challenges on many fronts -- housing, energy costs, food
2 and health care -- and a dramatic increase in any of those areas can have a devastating
3 impact. The increase in the number of unemployed Pennsylvanians during the COVID-19
4 crisis is beyond dispute and most believe the economic downturn will last beyond the
5 ending of the COVID-19 emergency.

6 It is for these reasons that if an increase is granted it should be conditioned upon
7 an increase in funding and relief to the Company's low-income customers.

8

9 **Q. Should a request for a rate increase be granted what type of measures would**
10 **you suggest be implemented for low-income customers?**

11 A. I believe that LIURP and Hardship funding should be increased.

12 In discovery responses in this case the Company indicated as of May 2021 it had
13 34,832 confirmed low-income customers in its Customer Assistance Program. The
14 Company estimates that it has, based on 2019 Census data, 86,834 low-income
15 individuals in its service territory. I believe it is fair to assume that the number of low-
16 income customers in the Company's service territory is greater than as indicated above;
17 the Census data is from 2019 and the economic crisis brought about by the COVID-19
18 pandemic has likely increased the number of low-income customers. Further, with rates
19 likely to increase as a result of this case along with a customer's ability to conserve
20 decreasing (if the fixed monthly charge is increased), I believe that there is a need for
21 additional universal service funding

22

1 **Q. Turning now to universal service programs what issues would you like to**
2 **address?**

3 **A.** I want to address the Company's low-income usage reduction program (LIURP),
4 Smart Comfort. Current annual funding for Smart Comfort is set at \$2,409,000 and the
5 Company proposes annual LIURP spending of \$3,053,500 for the years 2020-2025 in its
6 pending Universal Service and Energy Conservation Plan filed to docket No. M-2019-
7 3008227.

8 The Company estimates that it would take more than eleven years at the current
9 funding level to serve all customers eligible for LIURP services. We are proposing
10 increased funding for LIURP because there is a large unmet need for LIURP services.

11

12 **Q: Do you have any recommendations regarding the funding level for LIURP?**

13 **A:** With annual funding as proposed in its pending USECP at \$3,053,500 the
14 Company anticipates providing LIURP services to 3,100 homes per year which equates
15 spending of \$985 per LIURP customer. I am recommending that should a rate increase be
16 granted then the number of customers served annually be increased by 700. That would
17 begin to meet the unmet need for LIURP services. With an average LIURP spending of
18 \$985 per recipient , I am recommending additional annual LIURP funding of \$689,500
19 beginning in the 2022 program year.

20

21 **Q: Do you have any other recommendations regarding the LIURP program?**

22 **A:** Yes. The increased funding for LIURP and the increased number of households
23 targeted represents a need to 'ramp up' the LIURP program. Additionally, the number of

1 homes weatherized in 2020 was reduced due to COVID restrictions which represents an
2 additional need to ramp up services.

3 The Task Force believes that there will be a need for more partnerships with
4 agencies experienced in the providing of services to poor people, including
5 weatherization services. Our member agencies have the expertise in developing and
6 operating programs that benefit people and communities. These organizations serve
7 thousands of low income and disadvantaged members of the community; they have direct
8 knowledge of the barriers and impediments to self-sufficiency, and continually innovate
9 and evolve the service delivery system to better meet the needs of the population they
10 serve. Community based organizations are governed by volunteer Boards of Directors;
11 accountable to the communities they serve, and are not conflicted by a duty to
12 shareholders and investors. The focus and active experience of community-based
13 organizations make them singularly suited to speak for the needs of the community. As
14 such, the development and evolution of these programs should occur on a community
15 level, by organizations that are experienced in these programs not on a utility staff level.
16 These are “people” programs and community-based organizations are best qualified to
17 implement them. I am recommending that the Company partner with our member
18 agencies in the administration and implementation of its LIURP program. Our member
19 agencies are located throughout the Company’s service territory, have experience in the
20 administration and implementation of LIURP programs and are needed because of the
21 expansion of the Company’s LIURP funding.

22

23 **Q. Are there any other universal service topics that you want to address?**

1 **A.** Yes. The Task Force recommends that the Company’s contribution to its hardship
2 fund be increased. Currently, the Company matches contributions from customers up to
3 \$375,000. I am recommending that the Company match customer contributions with a
4 minimum annual contribution from the Company of \$500,000. Although modest in
5 comparison to other universal service funding, the proposal will help customers deal with
6 a rate increase in these difficult economic times.

7 I also recommend that hardship funding be distributed in accordance with the
8 percentage of low-income customers in the counties served by the Company.

9
10
11

12 **Q. Can you please summarize your recommendations?**

13 **A.** Yes. The Task Force is recommending the following:

14 1. That the Company’s request to increase its fixed residential monthly
15 customer charge be denied;

16 3. That annual funding for LIURP be increased beginning in program year
17 2022 to \$3,743,000 annually and that any unused funds be carried over and added to the
18 following year’s funding;

19 4. That the Company partner with member agencies of the Task Force in the
20 development, implementation and administration of its LIURP program;

21 5. That the Company’s contribution to its hardship fund be increased to a
22 minimum annual contribution of \$500,000;

23 6. That Hardship funds be distributed in accordance with the percentage of
24 low-income customers in the counties served by the Company.

1

2 **Q. Does this conclude your testimony?**

3 A. Yes

4

5

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Providers Task Force

1 **I. Introduction and Summary of Recommendations.**

2 **Q: Please state your name.**

3 A: My name is Matthew Deal.

4 **Q: By whom are you employed and in what position?**

5 A: I am Manager of Utility Policy at ChargePoint, Inc (ChargePoint).

6 **Q: Please describe your qualifications, including your background, experience, and**
7 **expertise.**

8 A: In my current role, I lead ChargePoint’s regulatory activity before state public utility
9 commissions regarding the development of policies and programs that expand electric
10 vehicle (EV) infrastructure and advance best practices within the electric vehicle charging
11 industry. I have drafted stakeholder comments regarding the design of electric vehicle
12 programs in Pennsylvania and other states.

13 My relevant professional experience appears in my CV, which is attached as
14 Attachment MJD-1.

15 **Q: Have you previously provided testimony in any formal hearings before regulatory**
16 **commissions?**

17 A: Yes. I have testified before this Commission in Docket Nos. R-2021-3023618 (UGI
18 Electric) and R-2021-3024601 (PECO Energy Company) in which I evaluated and made
19 recommendations to ensure that the EV charging programs proposed by each utility
20 company complemented the competitive EV charging market. I have also submitted
21 comments and appeared as a witness regarding EV issues before the Connecticut Public
22 Utilities Regulatory Authority (PURA) in Docket No. 17-12-03RE04: Public Utilities

1 Regulatory Authority Investigation into Distribution System Planning of the Electric
2 Distribution Companies – Zero Emission Vehicles.

3 **Q: Please describe ChargePoint.**

4 A: ChargePoint is a world leading electric vehicle (EV) charging network, providing scalable
5 solutions for every charging scenario from home and multifamily to workplace, parking,
6 hospitality, retail, and transport fleets of all types. ChargePoint’s cloud subscription
7 platform and software-defined charging hardware is designed to enable businesses to
8 support drivers, add the latest software features and expand fleet needs with minimal
9 disruption to overall business.

10 ChargePoint’s hardware offerings include Level 2 (L2) and DC fast charging
11 (DCFC) products, and ChargePoint provides a range of options across those charging levels
12 for specific use cases including light duty, medium duty, and transit fleets, multi-unit
13 dwellings, residential (multi-family and single family), destination, workplace, and more.
14 ChargePoint’s software and cloud services enable EV charging station site hosts to manage
15 charging onsite with features like Waitlist, access control, charging analytics, and real-time
16 availability. With modular design to help minimize downtime and make maintenance and
17 repair more seamless, all products are also UL-listed and CE (EU) certified, and Level 2
18 solutions are ENERGY STAR® certified.

19 ChargePoint’s primary business model consists of selling smart charging solutions
20 directly to businesses and organizations while offering tools that empower station owners
21 to deploy EV charging designed for their individual application and use case. ChargePoint
22 provides charging network services and data-driven, cloud-enabled capabilities that enable
23 site hosts to better manage their charging assets and optimize services. For example, with

1 those network capabilities, site hosts can view data on charging station utilization,
2 frequency and duration of charging sessions, set access controls to the stations, and set
3 pricing for charging services. These features are designed to maximize utilization and align
4 the EV driver experience with the specific use case associated with the specific site host.
5 Additionally, ChargePoint has designed its network to allow other parties, such as electric
6 utilities, the ability to access charging data and conduct load management to enable
7 efficient EV load integration onto the electric grid.

8 **Q: What is the purpose of your Direct Testimony?**

9 A: The purpose of my testimony is to address the EV charging-related proposals made by
10 Duquesne Light Company (Duquesne Light or the Company) in this proceeding.

11 **Q: Please summarize your positions and recommendations for the Commission.**

12 A: I recommend that the Commission:

- 13 • Approve the Make-Ready Pilot with the following modifications:
 - 14 ○ Direct Duquesne Light to require EV chargers installed through its Make-Ready
15 Pilot to meet the following eligibility requirements:
 - 16 ▪ Smart and capable of connecting to a charging network;
 - 17 ▪ Managed charging capabilities;
 - 18 ▪ ENERGY STAR certified (for Level 2);
 - 19 ▪ Certified for safety by UL or another Nationally Recognized Testing
20 Laboratory.
 - 21 ○ For customers that wish to install both DCFCs and Level 2 chargers at a single
22 site, direct Duquesne Light to require two Level 2 ports and two DCFC ports;

- 1 ○ Direct Duquesne Light to establish 50 kW as the minimum DCFC per-port
2 power level, instead of 150 kW;
- 3 ○ Direct Duquesne Light to ensure that its outreach and education efforts are
4 vendor neutral and direct Duquesne Light to file all marketing materials with
5 the Commission as an informational filing at least annually.
- 6 • Approve the Fleet and Transit Charging Pilot and the Fleet Electrification Advisory
7 Service with the following modifications:
- 8 ○ Direct Duquesne Light to require EV chargers installed through its Fleet and
9 Transit Charging Pilot to meet the following eligibility requirements:
- 10 ▪ Smart and capable of connecting to a charging network;
- 11 ▪ Managed charging capabilities;
- 12 ▪ ENERGY STAR certified (for Level 2);
- 13 ▪ Certified for safety by UL or another Nationally Recognized Testing
14 Laboratory.
- 15 ○ Direct Duquesne Light to ensure that all communications with fleet customers
16 through the Fleet Electrification Advisory Service are vendor neutral.
- 17 • Approve the Home Charging Pilot with the following modifications to the program:
- 18 ○ Direct Duquesne Light to require EV chargers installed through its Home
19 Charging Pilot to meet the following eligibility requirements:
- 20 ▪ Smart and capable of connecting to a charging network;
- 21 ▪ Managed charging capabilities;
- 22 ▪ ENERGY STAR certified;

1 ▪ Certified for safety by UL or another Nationally Recognized Testing
2 Laboratory.

3 ○ Direct Duquesne Light to allow residential customers to purchase their own
4 charger from the pre-approved list or another charger that meets the above
5 requirements and receive up to \$500 to cover standard installation costs (or
6 \$2,000 for qualifying low-income customers).

7 **II. Make-Ready Pilot.**

8 **Q: What will you address in this section of your testimony?**

9 A: In this section of my testimony, I will address Duquesne Light’s proposed Public,
10 Workplace, and Multi-Unit Dwelling Make-Ready Pilot (Make-Ready Pilot). Duquesne
11 Light proposes “to provide all necessary supply infrastructure, including service
12 connections and EV make-ready behind the meter for L2 and DCFC stations in public,
13 workplace, and MUD settings.”¹ Customers participating in the Make-Ready Pilot will
14 own the EV charging station and will be able to choose equipment from a list of pre-
15 qualified vendors and equipment.²

16 **Q: Will Duquesne Light’s proposal to own make-ready infrastructure encourage the
17 deployment of EV charging stations?**

18 A: Yes, I believe that it will. The cost of make-ready infrastructure is often one of the largest
19 cost categories of installing and hosting EV charging stations. Duquesne Light’s proposal
20 to own make-ready infrastructure through the Make-Ready Pilot will reduce the cost of
21 installing EV charging equipment for site hosts. (I use the term “site host” to refer to the
22 owner or lessor of the property on which an EV charging station is located. Site hosts

¹ Duquesne Light Statement No. 8, Direct Testimony of Sarah J. Olexsak, p. 21.

² Olexsak, p. 28.

1 include residential customers; owners of multifamily housing units (MFH); commercial
2 customers that offer charging to the public, their customers, and/or their employees; fleet
3 owners; and government entities.) Under Duquesne Light's Make-Ready Pilot proposal,
4 site hosts will still be responsible for the cost of the EV charging equipment itself and the
5 cost of network services used to operate the chargers.

6 **Q: In addition to reducing the cost of installing EV charging stations for site hosts, are**
7 **there other benefits to Duquesne Light's proposal to own make-ready infrastructure?**

8 A: Yes, Duquesne Light's Make-Ready Pilot will allow charging station site hosts to choose
9 the EV charging equipment and network service provider that best meets their needs from
10 a list of qualified equipment, which supports the existing competitive market for EV
11 charging station hardware and network services. By leveraging the utility's access to
12 capital and expertise managing construction projects to install panels, conduit, wiring, and
13 other make-ready infrastructure, customers will enjoy a lower total cost for installing
14 charging equipment and the utility will be able to generate additional kWh sales by
15 increasing charging station deployment and encouraging EV adoption. By leveraging the
16 competitive market for EV charging hardware and services, customers will be able to
17 choose the charging equipment and network services that best fit their needs at a reasonable
18 price. In short, by promoting customer choice in charging equipment and services and
19 reducing the cost of installing EV charging stations, I believe Duquesne Light's proposal
20 to own make-ready infrastructure through the Make-Ready Pilot will effectively support
21 transportation electrification.

1 **Q: Please elaborate on why it is important for Duquesne Light to provide site hosts with**
2 **multiple choices of charging equipment and network service providers.**

3 A: Protecting customers’ ability to choose their preferred solution – rather than providing a
4 “one-size, fits-all” solution – is essential to protecting the competitive market for EV
5 charging stations in Pennsylvania and the EV drivers that benefit from that competitive
6 market. When customers can choose the charging station that works best for them, charging
7 station vendors will compete to make high-quality, innovative products that customers
8 want. Creating ongoing competition between vendors through customer choice within
9 utility programs is essential to ensuring that a competitive market can thrive within utility
10 programs and sustainably continue after they cease. In doing so, market forces will be in
11 play, private market actors will be encouraged to invest their own capital, and site hosts
12 will be able to maximize station utilization and optimize the EV driver experience.

13 **Q: Do you recommend any modifications to Duquesne Light’s proposed Make-Ready**
14 **Pilot?**

15 A: Yes, I recommend that Duquesne Light establish several specific eligibility criteria for EV
16 charging stations that the Make-Ready Pilot will support. Duquesne Light witness Ms.
17 Olexsak states that EV charging stations supported by the Make-Ready Pilot

18 will be required to, among other things, provide interoperability and managed
19 charging capabilities that would enable customers [to] participate in possible future
20 managed charging programs, and to share usage data with the Company. Customers
21 will choose their charging station hardware and networking service from this
22 qualified vendor list, or will have the option to select their own stations so long as
23 they meet the Company’s safety and technical standards.³

24 However, Duquesne Light does not specify what “other things” Duquesne Light will
25 require of chargers in order for them to qualify for the program. I recommend that the

³ Olexsak, pp. 28-29.

1 Commission direct Duquesne Light to explicitly identify the criteria that chargers will need
2 to meet to be included on the list of qualifying equipment.

3 First, I recommend that Duquesne Light and the Commission require any EV
4 chargers installed through the Make-Ready Pilot be networked. Networked or smart
5 charging equipment has the ability to communicate with the cloud and manage the charging
6 of the electric vehicle. Smart chargers also enable drivers to locate publicly accessible
7 chargers and determine if the station is in use in real-time. As EV adoption increases, the
8 Company also may seek to offer additional programs or incentives for customers that
9 leverage the capability of smart chargers. Encouraging the installation of smart chargers is
10 a way to ensure customers will be able to participate in such programs in the future.

11 Duquesne Light proposes to require that charging stations “provide interoperability
12 and managed charging capabilities.”⁴ I support requiring chargers to have managed
13 charging capabilities because one of the capabilities of smart chargers is to allow customers
14 to participate in potential future managed charging programs. However, the term
15 “interoperability” is vague and ambiguous and can be used to refer to many different types
16 of interoperability. Rather than require chargers to provide “interoperability,” I recommend
17 that the Commission direct Duquesne Light to require that chargers be smart and
18 networked.

19 Second, I recommend that all Level 2 charging equipment be ENERGY STAR
20 certified. The US Environmental Protection Agency awards ENERGY STAR certification
21 to EV charging equipment that meets specific efficiency standards in standby mode,
22 meaning that a charger conserves energy when not actively charging. ENERGY STAR

⁴ Olexsak, p. 28.

1 certified chargers can use up to 40% less energy than standard chargers while not in active
2 use.⁵ To fully achieve the benefits of electrifying the transportation sector, the Commission
3 should require that all Level 2 charging equipment that is installed under Duquesne Light's
4 make-ready program be ENERGY STAR certified.⁶

5 Third, I recommend that the Commission require that charging equipment be
6 certified for safety by a third-party Nationally Recognized Testing Laboratory. Requiring
7 products to be certified by a third-party Nationally Recognized Testing Laboratory, such
8 as Underwriters Laboratories or UL, gives customers and regulators confidence that they
9 are purchasing or incentivizing products that have been rigorously tested to ensure safety
10 and reliability.

11 **Q: Do you support Duquesne Light's proposal to allow customers either to choose their**
12 **equipment and network service from a list of qualified vendors and equipment, or to**
13 **choose their own stations as long as they meet Duquesne Light's safety and technical**
14 **standards?**⁷

15 A: Yes, I believe this is a reasonable approach. The fact that customers will be able to choose
16 charging equipment that is not on the list of qualified vendors and equipment makes it all
17 the more important that the Commission establish clear safety and technical standards, as
18 I have recommended.

⁵ https://www.energystar.gov/products/other/ev_chargers.

⁶ ENERGY STAR certification is not yet available for DCFCs.

⁷ Olexsak, p. 29.

1 **Q: Do you support Duquesne Light’s proposal not to require Make-Ready Pilot**
2 **participants to separately meter their charging stations?**

3 A: Yes, I appreciate that Duquesne Light has not proposed to require separate meters. While
4 some customers may prefer to establish separate services for their charging stations with
5 separate meters, many site hosts will prefer to install charging stations behind their existing
6 meter. I believe the flexibility that the Company proposes to provide by not requiring
7 separate meters will make it easier for customers to participate and will encourage the
8 deployment of more charging stations.

9 **Q: Do you support Duquesne Light’s proposal to require a minimum of four Level 2**
10 **charging ports (or two ports for customers in EJ areas) or two DCFC charging ports?**

11 A: Yes, I believe these are appropriate minimums for sites dedicated solely to either Level 2
12 chargers or to DCFCs. However, these minimums do not account for the fact that some site
13 hosts might want to host both Level 2 chargers and DCFCs at the same site. For customers
14 that install both DCFCs and Level 2 chargers, I recommend that the Commission direct
15 Duquesne Light to require two Level 2 ports and two DCFC ports.

16 **Q: Do you support Duquesne Light’s proposal to require DCFC ports to have charging**
17 **capacities of at least 150 kW?**

18 A: No. ChargePoint appreciates Duquesne Light’s interest in right-sizing EV infrastructure to
19 meet EV charging needs today and tomorrow. However, a requirement to install a
20 minimum 150 kW power level for all DCFC ports deployed under the Make-Ready Pilot
21 is an unnecessary restriction at this stage in Pennsylvania’s EV market. Requiring 150 kW
22 per DCFC port, could result in needlessly over-sizing EV charging station deployments,
23 subjects site hosts to increased equipment costs and demand charges, and fails to fully

1 recognize that actual EV charging needs can vary in terms of ports and power level (*i.e.*,
2 kW level) depending on use case. Instead, I recommend that the Commission direct
3 Duquesne Light to establish 50 kW as the minimum DCFC per-port power level and
4 include the concept of “future-proofing” to allow site hosts to size ports in accordance with
5 current and prospective need depending on use case.⁸

6 **Q: Do you have any recommendations regarding Duquesne Light’s proposal to conduct**
7 **outreach and education to promote the Make-Ready Pilot?**

8 A: I appreciate and support Duquesne Light’s proposal to undertake outreach and education
9 efforts to spread the word about the Make-Ready Pilot. Promoting customer programs like
10 the Make-Ready Pilot is an important and appropriate role for the utility. However, to
11 protect the competitive market for EV charging station equipment and network services, it
12 is important that Duquesne Light’s outreach and education efforts not promote any specific
13 charging vendors. If Duquesne Light’s marketing materials promoted any particular
14 vendor, it would provide that vendor with an unfair advantage when it came time for
15 customers to choose their preferred charging equipment. Accordingly, I recommend that
16 the Commission direct Duquesne Light to ensure that its outreach and education efforts are
17 vendor neutral. Further, to verify vendor neutrality, the Commission should direct
18 Duquesne Light to file all marketing materials with the Commission as an informational
19 filing at least annually.

⁸ Future proofing refers to the practice of sizing the power feed for charging stations to allow for 1) the addition of more ports at a site as demand for EV charging increases, or 2) higher voltage charging as the market evolves to permit the use of faster charging methods.

1 **Q: What do you recommend with respect to the Make-Ready Pilot?**

2 A: I recommend that the Commission approve the Make-Ready Pilot with the following
3 modifications:

4 • Direct Duquesne Light to require EV chargers installed through its Make-Ready Pilot
5 to meet the following eligibility requirements:

6 ○ Smart and capable of connecting to a charging network;

7 ○ Managed charging capabilities;

8 ○ ENERGY STAR certified (for Level 2);

9 ○ Certified for safety by UL or another Nationally Recognized Testing
10 Laboratory.

11 • For customers that wish to install both DCFCs and Level 2 chargers at a single site,
12 direct Duquesne Light to require two Level 2 ports and two DCFC ports;

13 • Direct Duquesne Light to establish 50 kW as the minimum DCFC per-port power level,
14 instead of 150 kW;

15 • Direct Duquesne Light to ensure that its outreach and education efforts are vendor
16 neutral and direct Duquesne Light to file all marketing materials with the Commission
17 as an informational filing at least annually.

18 **III. Fleet and Transit Charging Pilot and Fleet Electrification Advisory Service.**

19 **Q: What will you discuss in this section of your testimony?**

20 A: In this section of my testimony, I will discuss Duquesne Light’s proposed Fleet and Transit
21 Charging Pilot, as well as the Fleet Electrification Advisory Service, which is directly
22 related to the Fleet and Transit Charging Program. Through the Fleet and Transit Charging
23 program, Duquesne Light is proposing to “install, own, and maintain EV infrastructure,

1 including make-ready infrastructure and charging stations on behalf of fleet customers,
2 including the Port Authority of Allegheny County.”⁹ Duquesne Light proposes to offer
3 three options: a Bundled Option, in which Duquesne Light will own EV charging stations
4 and customers will pay a monthly fee to cover the cost of chargers and on-going data
5 management and maintenance; a Pre-Pay Option, in which Duquesne Light will own EV
6 charging stations and customers will pay an upfront fee for the cost of the chargers and a
7 monthly fee to cover the cost of on-going data management and maintenance; and a
8 Customer-Supplied Charging Stations option, in which Duquesne Light will provide make-
9 ready infrastructure and customers will not be assessed any additional fees.¹⁰

10 **Q: Will fleet customers that select the Bundled Option or the Pre-Pay Option be able to**
11 **choose the EV charging equipment and network service provider for the chargers**
12 **that are deployed on their property?**

13 A: Yes, and this customer choice feature is key to ChargePoint supporting approval of this
14 program. Duquesne Light proposes to issue a competitive solicitation to identify charging
15 stations and network options for a pre-approved list from which fleet customers will be
16 able to choose when they sign up for the program.¹¹ For the same reasons I discussed above
17 with respect to the Make-Ready Pilot, providing site hosts with multiple choices is crucial
18 to protect the competitive market for EV charging services and the benefits that
19 competition brings to customers (including both site hosts and EV drivers). I therefore
20 support Duquesne Light’s proposal to allow fleet customers to choose their preferred
21 charging equipment and network service provider from a pre-approved list. I also support

⁹ Olexsak, p. 33.

¹⁰ Olexsak, p. 36.

¹¹ Olexsak, p. 37.

1 Duquesne Light's proposal to allow customers to choose their own customer-owned
2 charging equipment and network service provider through the Customer-Supplied
3 Charging Stations option, as long as the equipment meets Duquesne Light's safety and
4 technical standards, which will also promote customer choice and the benefits of
5 competition.

6 **Q: Do you recommend any modifications to Duquesne Light's proposal to issue a**
7 **competitive solicitation to identify charging station and network service provider**
8 **options?**

9 A: I support this proposed process, but I recommend that the Commission direct Duquesne
10 Light to clarify the technical specifications that charging equipment will need to meet in
11 order to participate in the competitive solicitation. Specifically, I recommend that the
12 Commission direct Duquesne Light to adopt the same minimum standards for the Fleet and
13 Transit Charging Pilot as I recommended for the Make-Ready Pilot. Specifically, the
14 Commission should direct Duquesne Light to require chargers to meet the following
15 requirements in order to qualify for the Fleet and Transit Charging Pilot: smart and capable
16 of connecting to a charging network; managed charging capabilities; ENERGY STAR
17 certified (for Level 2); and certified for safety by UL or another Nationally Recognized
18 Testing Laboratory.

1 **Q: Do you support Duquesne Light’s proposal not to require fleet customers to**
2 **separately meter their EV charging stations?¹²**

3 A: Yes. As I discussed above with respect to the Make-Ready Pilot, I believe providing this
4 flexibility will encourage participation from customers who would prefer not to separately
5 meter their chargers.

6 **Q: Duquesne Light proposes to work with fleet customers through the proposed Fleet**
7 **Electrification Advisory Service to conduct a fleet assessment prior to enrolling**
8 **customers in the Fleet and Transit Pilot.¹³ Do you have any recommendations**
9 **regarding the Fleet Electrification Advisory Service?**

10 A: Yes. It makes sense that Duquesne Light would propose to conduct an electrification
11 evaluation for fleet customers prior to enrolling them in the Fleet and Transit Pilot.
12 However, to protect the benefits of customer choice and competition that are built into the
13 design of the Fleet and Transit Pilot service, it is crucial that the advice that Duquesne
14 Light provides to customers through the Fleet Electrification Advisory Service be vendor
15 neutral. Based on the list of activities that Duquesne Light states it plans to undertake
16 through the Fleet Electrification Advisory Service, such as identifying which vehicles are
17 the best candidates for electrification and calculating costs, I believe Duquesne Light will
18 be able to provide an effective advisory service for fleet customers without favoring any
19 particular charging station equipment vendors or network service providers. However,
20 given the importance of customer choice and vendor neutrality, as well as the risk of market
21 distortions that could occur if Duquesne Light recommended any particular vendors, I

¹² Olexsak, pp. 38-39.

¹³ Olexsak, p. 38.

1 recommend that the Commission direct Duquesne Light to ensure that all communications
2 with fleet customers through the Fleet Electrification Advisory Service are vendor neutral.

3 **Q: Duquesne Light proposes to leverage its relationships with community-based**
4 **organizations and participating charging station vendors to conduct outreach to**
5 **prospective customers for the Fleet and Transit Charging Pilot. Do you support this**
6 **proposal?**

7 A: Yes, I appreciate that Duquesne Light has proposed to leverage these relationships for its
8 program. ChargePoint looks forward to working with Duquesne Light to implement the
9 Fleet and Transit Pilot (as well as the other proposed programs).

10 **Q: Please summarize your recommendations with respect to the Fleet and Transit**
11 **Charging Pilot and the Fleet Electrification Advisory Service.**

12 A: I recommend that the Commission approve the Fleet and Transit Charging Pilot and the
13 Fleet Electrification Advisory Service with the following modifications:

- 14 • Direct Duquesne Light to require EV chargers installed through its Fleet and Transit
15 Charging Pilot to meet the following eligibility requirements:
 - 16 ○ Smart and capable of connecting to a charging network;
 - 17 ○ Managed charging capabilities;
 - 18 ○ ENERGY STAR certified (for Level 2);
 - 19 ○ Certified for safety by UL or another Nationally Recognized Testing
20 Laboratory.
- 21 • Direct Duquesne Light to ensure that all communications with fleet customers through
22 the Fleet Electrification Advisory Service are vendor neutral.

1 **IV. Home Charging Pilot.**

2 **Q: What will you discuss in this section of your testimony?**

3 A: In this section of my testimony, I will address Duquesne Light’s proposed Home Charging
4 Pilot. Duquesne Light has proposed to install, own, and maintain Level 2 charging stations
5 for residential customers, as well as pay for installation costs up to \$500.¹⁴

6 **Q: Will residential customers be able to choose the charging station that is installed at
7 their home?**

8 A: Yes. Though Ms. Olexsak does not discuss customer choice for the Home Charging Pilot
9 in her testimony, Exhibit SO-5 indicates that residential customers will be permitted to
10 choose a charging station from Duquesne Light’s approved vendor list.

11 **Q: Do you have any recommendations regarding Duquesne Light’s proposal to develop
12 an approved vendor list?**

13 A: Yes, I recommend that the Commission direct Duquesne Light to adopt the same minimum
14 standards for the Home Charging Pilot as I recommended for the Make-Ready Pilot and
15 Fleet and Transit Charging Pilot. Specifically, the Commission should direct Duquesne
16 Light to require chargers to meet the following requirements in order to qualify for the
17 Fleet and Transit Charging Pilot: smart and capable of connecting to a charging network;
18 managed charging capabilities; ENERGY STAR certified; and certified for safety by UL
19 or another Nationally Recognized Testing Laboratory.

¹⁴ Olexsak, p. 47.

1 **Q: Do you support Duquesne Light’s proposal to provide up to \$2,000 to cover**
2 **installation costs and any required home electrical upgrades for low-income**
3 **customers?**¹⁵

4 A: Yes, I believe this proposal will encourage and enable more low-income customers to enjoy
5 the many benefits of driving an EV.

6 **Q: Do you support Duquesne Light’s proposal to conduct outreach and education about**
7 **the Home Charging Pilot proposal by engaging with local auto dealerships and**
8 **charging station vendors (among other outreach methods)?**

9 A: Yes. I appreciate that Duquesne Light has proposed to leverage these relationships for its
10 program.

11 **Q: Do you support Duquesne Light’s Home Charging Pilot proposal?**

12 A: Conditionally. Notably absent from Duquesne Light’s proposal is an option for customers
13 to own their own charging stations, which is a feature in both the Make-Ready Pilot and
14 the Fleet and Transit Charging Pilot. While some customers will likely appreciate the
15 option to have a charging station installed for a monthly fee with no upfront cost, many
16 residential customers will also prefer to purchase their charger directly. Since most
17 customers will have some installation costs, Duquesne Light’s proposed \$500 Standard
18 Installation Costs incentive would likely encourage many customers interested in
19 purchasing their own charging stations to do so. These customers would incur a larger
20 upfront cost to purchase their own charger, but would avoid the \$21.17 monthly fee that
21 Duquesne Light has proposed for the program.

¹⁵ Olexsak, p. 51.

1 I believe that providing a “bring-your-own-charger” option is essential to
2 promoting customer choice and protecting the competitive market for EV charging stations
3 and EV charging services. Without a “bring-your-own” option, customers may come to
4 expect that only the utility provides EV chargers, creating a significant disadvantage to
5 other vendors that sell chargers directly to customers. Similar to its approach with the
6 Make-Ready Pilot and the Fleet and Transit Charging Pilot, Duquesne Light should allow
7 residential customers that select the “bring-your-own” option to install a charger from its
8 pre-approved list or another charger that meets the minimum requirements I have
9 recommended above. Xcel Energy in Colorado recently received approval for both a
10 utility-provided charger subscription program similar to Duquesne Light’s proposal and a
11 “bring-your-own” charger rebate of \$500 meant to cover installation costs for residential
12 customers.¹⁶

13 **Q: What do you recommend with respect to the Home Charging Pilot?**

14 **A:** I recommend that the Commission approve the Home Charging Pilot with the following
15 modifications to the program:

- 16 • Direct Duquesne Light to require EV chargers installed through its Home Charging
17 Pilot to meet the following eligibility requirements:
 - 18 ○ Smart and capable of connecting to a charging network;
 - 19 ○ Managed charging capabilities;
 - 20 ○ ENERGY STAR certified;
 - 21 ○ Certified for safety by UL or another Nationally Recognized Testing
22 Laboratory.

¹⁶ Colorado Public Utilities Commission Proceeding No. 20A-0204E, Decision No. C21-0017, ¶¶ 193-195.

- 1 • Direct Duquesne Light to allow residential customers to purchase their own charger
2 from the pre-approved list or another charger that meets the above requirements and
3 receive up to \$500 to cover standard installation costs (or \$2,000 for qualifying low-
4 income customers).

5 **V. Conclusion and Recommendations**

6 **Q: Please summarize your recommendations for the Commission.**

7 A: I recommend that the Commission:

- 8 • Approve the Make-Ready Pilot with the following modifications:
- 9 ○ Direct Duquesne Light to require EV chargers installed through its Make-Ready
10 Pilot to meet the following eligibility requirements:
- 11 ▪ Smart and capable of connecting to a charging network;
- 12 ▪ Managed charging capabilities;
- 13 ▪ ENERGY STAR certified (for Level 2);
- 14 ▪ Certified for safety by UL or another Nationally Recognized Testing
15 Laboratory.
- 16 ○ For customers that wish to install both DCFCs and Level 2 chargers at a single
17 site, direct Duquesne Light to require two Level 2 ports and two DCFC ports;
- 18 ○ Direct Duquesne Light to establish 50 kW as the minimum DCFC per-port
19 power level, instead of 150 kW;
- 20 ○ Direct Duquesne Light to ensure that its outreach and education efforts are
21 vendor neutral and direct Duquesne Light to file all marketing materials with
22 the Commission as an informational filing at least annually.

- 1 • Approve the Fleet and Transit Charging Pilot and the Fleet Electrification Advisory
2 Service with the following modifications:
- 3 ○ Direct Duquesne Light to require EV chargers installed through its Fleet and
4 Transit Charging Pilot to meet the following eligibility requirements:
- 5 ▪ Smart and capable of connecting to a charging network;
6 ▪ Managed charging capabilities;
7 ▪ ENERGY STAR certified (for Level 2);
8 ▪ Certified for safety by UL or another Nationally Recognized Testing
9 Laboratory.
- 10 ○ Direct Duquesne Light to ensure that all communications with fleet customers
11 through the Fleet Electrification Advisory Service are vendor neutral.
- 12 • Approve the Home Charging Pilot with the following modifications to the program:
- 13 ○ Direct Duquesne Light to require EV chargers installed through its Home
14 Charging Pilot to meet the following eligibility requirements:
- 15 ▪ Smart and capable of connecting to a charging network;
16 ▪ Managed charging capabilities;
17 ▪ ENERGY STAR certified;
18 ▪ Certified for safety by UL or another Nationally Recognized Testing
19 Laboratory.
- 20 ○ Direct Duquesne Light to allow residential customers to purchase their own
21 charger from the pre-approved list or another charger that meets the above
22 requirements and receive up to \$500 to cover standard installation costs (or
23 \$2,000 for qualifying low-income customers).

1 Q: Does this conclude your testimony at this time?

2 A: Yes.

MATTHEW DEAL

PROFESSIONAL EXPERIENCE

ChargePoint, Inc

Manager, Utility Policy

2020 – Present

Lead the development and execution of ChargePoint's regulatory strategies to promote electric vehicle charging solutions for site hosts, businesses, utilities and electric vehicle drivers.

SIERRA CLUB

Clean Energy Program Manager

2019 – 2020

Responsible for implementation of approved clean energy objectives through the design and implementation of campaign strategies for the N.C. Chapter. Work with N.C. Sierra Club local groups around the state on campaigns related to clean energy. Represent the Sierra Club to partner organizations, the media, policymakers and executive branch agencies.

EXELON

Senior Manager, Strategic Environmental Initiatives

2013 – 2017

Led renewable policy and supported commercial development activities. Tracked and analyzed renewable/environmental intelligence nationwide for internal stakeholders, including solar, wind, efficiency, load response and origination.

Manager, Policy Analysis

2011 – 2013

Analyzed corporate policy positions on federal, state, retail and wholesale market issues.

CALIFORNIA PUBLIC UTILITIES COMMISSION, San Francisco, CA

Director, Policy and Planning Division

2010 – 2011

Developed independent research on comprehensive long and medium-term regulatory strategies. Represented Commission programs & policies at Legislature, Governor's office, national policy forums and conferences.

Advisor, Office of the President

2007 – 2010

Facilitated success of gubernatorial appointee working in high-stakes, fast-paced political environment by counseling Commission President on major state-wide initiatives, including resource adequacy, long-term procurement, wholesale market structure, smart grid, demand response, renewable portfolio standards, transmission, greenhouse gas reductions and retail market design.

Senior Analyst

2006 – 2007

Provided technical research and analysis on electric procurement, including resource adequacy, long-term planning, compliance, load forecasting and risk mitigation.

FEDERAL ENERGY REGULATORY COMMISSION, Washington, DC

Energy Analyst

2002 – 2006

Provided expert consultation to Commissioners and top management on energy policy issues. Served as Energy Specialist on demand response, California wholesale market design and renewable energy issues.

EDUCATION

Master of Science (MS), Economics (2002)

Illinois State University, Normal, IL

Bachelor of Science (BS), Economics (2000)

Illinois State University, Normal, IL

PUBLICATIONS

Electric Energy Storage: An Assessment of Potential Barriers and Opportunities. July 2010. Available at <https://jointventure.org/images/stories/pdf/cpuc.storagewhitepaper7910.pdf>

Assessing the State of Wind Energy in Wholesale Electricity Markets. November 2004. Available at <https://www.ferc.gov/sites/default/files/2020-05/11-04-wind-report.pdf>

1 **I. Introduction and Summary of Recommendations.**

2 **Q: Please state your name.**

3 A: My name is Matthew Deal.

4 **Q: By whom are you employed and in what position?**

5 A: I am Manager of Utility Policy at ChargePoint, Inc (ChargePoint).

6 **Q: Are you the same Matthew Deal who submitted Direct Testimony on behalf of**
7 **ChargePoint in this proceeding on June 30, 2021?**

8 A: Yes, I am.

9 **Q: What is the purpose of your rebuttal testimony?**

10 A: The purpose of my rebuttal testimony is to respond to the Direct Testimony filed by the
11 Pennsylvania Office of Small Business Advocate (OSBA), the Coalition for Affordable
12 Utility Services and Energy Efficiency in Pennsylvania (CAUSE-PA), the Natural
13 Resources Defense Council (NRDC), the Office of Consumer Advocate (OCA), and the
14 Bureau of Investigation & Enforcement (I&E).

15 **Q: Please summarize your positions and recommendations for the Commission.**

16 A: I continue to support the recommendations I made in my Direct Testimony. For
17 convenience, these recommendations are as follows:

- 18 • Approve the Make-Ready Pilot with the following modifications:
- 19 ○ Direct Duquesne Light to require EV chargers installed through its Make-Ready
20 Pilot to meet the following eligibility requirements:
- 21 ▪ Smart and capable of connecting to a charging network;
- 22 ▪ Managed charging capabilities;
- 23 ▪ ENERGY STAR certified (for Level 2);

- 1 ▪ Certified for safety by UL or another Nationally Recognized Testing
2 Laboratory.
- 3 ○ For customers that wish to install both DCFCs and Level 2 chargers at a single
4 site, direct Duquesne Light to require two Level 2 ports and two DCFC ports;
5 ○ Direct Duquesne Light to establish 50 kW as the minimum DCFC per-port
6 power level, instead of 150 kW;
7 ○ Direct Duquesne Light to ensure that its outreach and education efforts are
8 vendor neutral and direct Duquesne Light to file all marketing materials with
9 the Commission as an informational filing at least annually.
- 10 • Approve the Fleet and Transit Charging Pilot and the Fleet Electrification Advisory
11 Service with the following modifications:
- 12 ○ Direct Duquesne Light to require EV chargers installed through its Fleet and
13 Transit Charging Pilot to meet the following eligibility requirements:
- 14 ▪ Smart and capable of connecting to a charging network;
15 ▪ Managed charging capabilities;
16 ▪ ENERGY STAR certified (for Level 2);
17 ▪ Certified for safety by UL or another Nationally Recognized Testing
18 Laboratory.
- 19 ○ Direct Duquesne Light to ensure that all communications with fleet customers
20 through the Fleet Electrification Advisory Service are vendor neutral.
- 21 • Approve the Home Charging Pilot with the following modifications to the program:
- 22 ○ Direct Duquesne Light to require EV chargers installed through its Home
23 Charging Pilot to meet the following eligibility requirements:

- 1 ▪ Smart and capable of connecting to a charging network;
- 2 ▪ Managed charging capabilities;
- 3 ▪ ENERGY STAR certified;
- 4 ▪ Certified for safety by UL or another Nationally Recognized Testing
- 5 Laboratory.
- 6 ○ Direct Duquesne Light to allow residential customers to purchase their own
- 7 charger from the pre-approved list or another charger that meets the above
- 8 requirements and receive up to \$500 to cover standard installation costs (or
- 9 \$2,000 for qualifying low-income customers).

10 In my Rebuttal Testimony, I further recommend that the Commission:

- 11 • Reject NRDC’s recommendation to require that TOU rates be passed onto EV drivers;
- 12 • Reject NRDC’s recommendation to allow Duquesne Light to own and operate charging
- 13 stations located at MUDs; and,
- 14 • Reject CAUSE-PA’s recommendation to devote 100% of the Fleet and Transit Pilot
- 15 budget to projects serving EJ areas.

16 **II. Response to Bureau of Investigation and Enforcement.**

17 **Q. What will you address in this section of your testimony?**

18 A. In this section of my testimony, I will respond to recommendations made by Mr. Ethan H.
19 Cline witness for I&E.

20 **Q. Mr. Cline states that the Company’s “TE Programs are a reasonable step forward in**
21 **the process of understanding the demand for and effect of transportation**
22 **electrification within Duquesne’s service territory.”¹ Do you agree?**

¹ Cline at 4.

1 A. Yes, I agree with Mr. Cline that the proposed programs are a reasonable step that will
2 enable the Company to better understand how increased transportation electrification may
3 impact its local distribution grid.

4 **Q. Mr. Cline recommends that all charging stations deployed through the home charging
5 pilot be transferred to customers at the conclusion of the pilot.² Do you agree with
6 Mr. Cline’s recommendation?**

7 A. Yes, I agree with Mr. Cline’s recommendation that the home charging pilot be modified to
8 provide an option for ownership and operation of installed stations to be transferred to the
9 customer.

10 **III. Response to OCA.**

11 **Q: What will you address in this section of your testimony?**

12 A: In this section of my testimony, I will respond to recommendations made by Mr. Ron
13 Nelson, witness for OCA.

14 **Q: Mr. Nelson recommends that the Commission reject the Home Charging Pilot
15 because “residential charging stations are not publicly accessible or shared, and thus
16 do not expand access to EV charging as much as publicly accessible or shared sites
17 such as multi-unit dwellings, workplaces, or other public locations.”³ How do you
18 respond?**

19 A: ChargePoint supports the Home Charging Pilot for several reasons. First, we believe that
20 facilitating faster home charging with a Level 2 (L2) charging station is an effective means
21 of encouraging EV adoption. Increasingly, residential customers are finding L2 chargers
22 to be an essential part of EV ownership. As EV battery size and range increases, the basic

² *Id.* at 5.

³ OCA Statement No. 6, Direct Testimony of Ron Nelson, at 19, ll. 8-11.

1 110 V charging cord (Level 1 or L1) that comes with most EVs will not sufficiently charge
2 a vehicle overnight. Drivers appreciate the faster charging times, added convenience, and
3 features that smart L2 chargers offer, such as the ability to program charging times or
4 remotely control charging with a smartphone to take advantage of TOU rates or other
5 managed charging programs, which I discuss in more detail below.

6 In ChargePoint’s experience, a customer’s ability or inability to install an L2
7 charger at home is a significant part of the decision-making process as to whether to
8 purchase an EV or not. By reducing the cost of Level 2 charging infrastructure for
9 residential customers, Duquesne Light will facilitate widespread adoption of electric
10 vehicles by ensuring residential customers have the ability to charge their EVs at home
11 where they are parked for long periods of time.

12 Finally, a smart and networked residential L2 charging station with managed
13 charging capabilities can provide significant benefits to Duquesne Light and its ratepayers
14 by allowing Duquesne Light to include these chargers in managed charging programs
15 and/or demand response programs. EV drivers charge their vehicles at home over 80% of
16 the time, making them perfectly suited for load management programs due to the long
17 dwell times available for charging and the ability to shift charging within the time period
18 they are parked.⁴ Residential charging load is flexible, responsive to price signals and
19 ensuring increased EV load is effectively integrated into the utility distribution grid
20 provides significant benefits to all customers.

⁴ See, U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, available at:
<https://www.energy.gov/eere/electricvehicles/charging-home>.

1 For these reasons, I believe that Duquesne Light's Home Charging Pilot will both
2 encourage EV adoption and, if the Commission adopts my recommendation to require
3 customers to install smart chargers with managed charging capabilities, will provide all
4 customers with additional benefits by facilitating data collection and off-peak charging.

5 **Q: Mr. Nelson recommends that the Commission direct Duquesne Light to file a**
6 **comprehensive EV load management proposal within 18 months of the final order in**
7 **this case.⁵ How do you respond?**

8 A: I would support this proposal. I agree with Mr. Nelson that EV charging load provides even
9 more benefits to the distribution system and other customers when the utility implements
10 effective load management programs. However, I do not believe this fact means that the
11 Commission should deny some or all of Duquesne Light's investment proposals until load
12 management programs are in place. It is also not a reason to eliminate Duquesne Light's
13 proposed spending budget for 2024. If the Commission approves my recommendation to
14 require all EV charging stations deployed through the programs to be smart, capable of
15 connecting to a network, and have managed charging capabilities, customers that
16 participate in Duquesne Light's programs now will be able to participate in any load
17 management programs that may be developed in the future.

18 **IV. Response to NRDC.**

19 **Q: What will you address in this section of your testimony?**

20 A: In this section of my testimony, I will respond to recommendations made by Ms. Kathleen
21 Harris, witness for NRDC.

⁵ OCA Statement No. 6, Direct Testimony of Ron Nelson, at 33, l. 14 – p. 34, l. 2.

1 **Q: Ms. Harris states that “the default arrangement [should] be that TOU price signals**
2 **are passed onto EV drivers.”⁶ How do you respond?**

3 A: I disagree with this recommendation. While ChargePoint is supportive of time-varying
4 rates for the customers of record (i.e., site hosts), we do not support any requirements that
5 would dictate a specific price or price structure that site hosts must charge EV drivers. The
6 Commission has previously established that “It shall be the policy of the Commission that
7 a person, corporation or other entity, not a public utility, electric cooperative corporation,
8 municipal authority or municipal corporation, owning and operating an electric vehicle
9 charging facility that is open to the public for the sole purpose of recharging an electric
10 vehicle battery should not be construed to be a sale to a residential consumer and should
11 therefore not fall under the pricing requirements of 66 Pa. C.S. § 1313.”⁷

12 While the Commission sets the rates that utilities charge customers (including site
13 hosts), I do not believe that it would be appropriate for the Commission to set the price or
14 general price structure charged by entities that are not public utilities. Charging station site
15 hosts provide a distinct service that uses electricity – namely, charging the battery of an
16 EV – and does not provide a utility service that falls within the Commission’s jurisdiction.

17 Further, Ms. Harris’s recommendation overlooks the fact that site hosts install EV
18 charging stations for a number of different reasons. Site hosts should be free and
19 empowered to price charging in a manner that best supports their own goals for installing
20 charging stations. Notably, when site hosts pay time-varying rates, they will likely be

⁶ Direct Testimony of Kathleen Harris at 32.

⁷ 52 Pa. Code § 69.3501.

1 motivated to pass along those price signals to customers, but it is not appropriate to require
2 them to do so or to create a “default arrangement” that they do so.

3 ChargePoint supports optimal use of the grid and supports time varying rates for
4 site hosts, but believes that site hosts need flexibility to implement charging solutions for
5 their customers, and believes site hosts are in the best position to decide how to price
6 charging for their specific needs. As an alternative to a requirement that site host pass along
7 a default pricing structure to drivers, I recommend that Duquesne Light, in collaboration
8 with EV charging service providers, provide guidance and education to site hosts to inform
9 them about time-varying prices and support optimal grid use for EV charging stations.

10 **Q. Is it necessary for EV drivers to “see” TOU price signals in order to shift charging**
11 **behavior to times that are most beneficial to the grid?**

12 A. No, passing through time-varying prices to drivers is only one way, and not always the best
13 way, to support grid management objectives. Managed charging capabilities allow site
14 hosts to manage charging loads using software provided by a network service provider in
15 response to a price signal from the utility. While some site hosts may choose to pass along
16 time-varying price signals to drivers, if a managed charging schedule is employed by a site
17 host, the driver may not need to be involved at all. In fact, a defining value of software-
18 enabled managed charging is to leverage the technical capabilities of the networked
19 charging solution in order to provide as minimal a disruption as possible, if any, to the
20 driver in the charging process. It is critically important to remember that from the
21 perspective of the driver the primary use of the charger is to fuel their vehicle, not to act as
22 a distributed energy resource for the electricity grid. It is because of this that site hosts need
23 the flexibility to leverage the managed charging capabilities of the EVSE through their

1 network service provider to be able to balance grid needs while still serving the primary
2 needs of EV drivers.

3 **Q. Based on this discussion what do you recommend?**

4 A. I recommend the Commission find that it would not be appropriate to impose any
5 requirements with respect to the prices or pricing structures that EV charging station site
6 hosts charge EV drivers. The Commission can direct Duquesne Light to encourage site
7 hosts to charge time-varying prices, but any specific pricing arrangement by site hosts
8 should be strictly voluntary.

9 **Q. Ms. Harris recommends that the Company should expand its turn-key solution of**
10 **utility ownership of EV charging stations to include multi-unit dwellings.⁸ Is the**
11 **utility the only entity that can provide customers with a turnkey solution?**

12 A. No. There may be instances where a site host would like to have charging options on their
13 property but cannot or does not want to own or operate the charging infrastructure, such as
14 landlords at MUDs. In these cases, utility ownership is not the only solution. The private
15 sector offers many different business models and products to provide turnkey solutions for
16 site hosts, coordinating all aspects of the charging experience from installation to operation
17 and maintenance, including solutions for site hosts that are not seeking to own or operate
18 their own charging equipment. For example, ChargePoint offers customers a subscription
19 solution for EV charging, “ChargePoint as a Service” (CPaaS) that is similar to “Software
20 as a Service” (SaaS) models, which offer access to smart solutions at a reduced cost through
21 subscription pricing. Under the CPaaS option, ChargePoint coordinates the installation,
22 operation, and any needed maintenance of the charging infrastructure, providing a single

⁸ Harris at 4-5.

1 point of contact for site hosts and drivers using the station(s). Make ready programs, and/or
2 customer rebates for charging equipment, can enable this type of third-party ownership
3 offering by reducing installation costs and helping to reduce the subscription cost to site
4 hosts.

5 Should the Company consider expanding turnkey options for EV charger deployed
6 at MUDs, the Commission should expressly require the Company to enable third party
7 turnkey solutions.

8 **V. Response to CAUSE -PA.**

9 **Q: What will you address in this section of your testimony?**

10 A: In this section of my testimony, I will respond to recommendations made by Mr. Harry
11 Geller, witness for CAUSE-PA.

12 **Q. Mr. Geller recommends that the Company be required to devote 100% of the Fleet
13 and Transit Pilot budget to support projects site in or that directly serve EJ areas.
14 How do you respond?**

15 A. I believe it is important for the program to support the deployment of EV charging stations
16 that directly serve EJ areas; however, limiting the program to one market component is
17 poor pilot design. To maximize the usefulness of the pilot program, the Company should
18 gather information from diverse charging site locations within Duquesne Light's service
19 territory. Including diversity in charging station deployment will provide the Company
20 with information that is representative of the entire service territory, not just one market
21 component. I would not be opposed to reserving some portion of the budget to EJ
22 communities in the first or second year of the program, provided that any unspent funds
23 can be reallocated to non-EJ areas if there is not significant demand.

1 **VI. Response to OSBA**

2 **Q: What will you address in this section of your testimony?**

3 A: In this section of my testimony, I will respond to recommendations made by Mr. Robert
4 D. Knecht, witness for OSBA.

5 **Q: How do you respond to OSBA witness Mr. Knecht’s recommendation to deny
6 Duquesne Light’s EV charging programs?**

7 A: I find it disappointing that OSBA would recommend rejecting programs that would provide
8 significant benefits to many small businesses who may be interested in hosting EV
9 charging stations or electrifying their fleets. Mr. Knecht acknowledges that the benefits of
10 increased electric loads from EV charging “may eventually offset future rates,” but
11 apparently disregards these benefits in recommending the programs be denied.

12 **Q: Mr. Knecht argues that, “as a general rule, on-site ‘behind-the-meter’ investments in
13 electrical equipment at the customer site are the responsibility of the customer.”⁹ How
14 do you respond?**

15 A: I am not an attorney, but it is my understanding that this “general rule” is a matter of
16 tradition and not any particular law. Even though make-ready infrastructure is typically
17 behind a customer’s meter, the type of work involved in make-ready infrastructure –
18 trenching, wiring, conduit, and civil construction work – is within the utility’s core
19 competency. Since the cost of make-ready infrastructure is one of the key barriers to
20 deploying EV charging stations, it is both appropriate and effective for the utility to invest
21 in such infrastructure to support transportation electrification.

⁹ OSBA Statement No. 1 at 35, ll. 4-5.

1 **Q: Mr. Knecht questions Duquesne Light’s claims that the Make-Ready Pilot is**
2 **competitively neutral.¹⁰ How do you respond?**

3 A: I disagree. One reason ChargePoint largely supports Duquesne Light’s proposed Make-
4 Ready Pilot is that it is competitively neutral. Duquesne Light has proposed to allow EV
5 charging station site hosts to choose the equipment and network service provider of the EV
6 charging stations installed on their property (subject to some reasonable minimum quality
7 and functionality standards that I recommend). Ensuring that site hosts have choices will
8 ensure that the Make-Ready Program supports, and does not distort, the competitive market
9 for EV charging hardware and network services.

10 **VII. Conclusion and Recommendations**

11 **Q: Please summarize your recommendations for the Commission.**

12 A: I continue to support the recommendations I made in my Direct Testimony. For
13 convenience, these recommendations are as follows:

- 14 • Approve the Make-Ready Pilot with the following modifications:
 - 15 ○ Direct Duquesne Light to require EV chargers installed through its Make-Ready
16 Pilot to meet the following eligibility requirements:
 - 17 ▪ Smart and capable of connecting to a charging network;
 - 18 ▪ Managed charging capabilities;
 - 19 ▪ ENERGY STAR certified (for Level 2);
 - 20 ▪ Certified for safety by UL or another Nationally Recognized Testing
21 Laboratory.

¹⁰ *Id.* at 36, ll. 1-4.

- 1 ○ For customers that wish to install both DCFCs and Level 2 chargers at a single
2 site, direct Duquesne Light to require two Level 2 ports and two DCFC ports;
3 ○ Direct Duquesne Light to establish 50 kW as the minimum DCFC per-port
4 power level, instead of 150 kW;
5 ○ Direct Duquesne Light to ensure that its outreach and education efforts are
6 vendor neutral and direct Duquesne Light to file all marketing materials with
7 the Commission as an informational filing at least annually.
- 8 • Approve the Fleet and Transit Charging Pilot and the Fleet Electrification Advisory
9 Service with the following modifications:
- 10 ○ Direct Duquesne Light to require EV chargers installed through its Fleet and
11 Transit Charging Pilot to meet the following eligibility requirements:
- 12 ▪ Smart and capable of connecting to a charging network;
13 ▪ Managed charging capabilities;
14 ▪ ENERGY STAR certified (for Level 2);
15 ▪ Certified for safety by UL or another Nationally Recognized Testing
16 Laboratory.
- 17 ○ Direct Duquesne Light to ensure that all communications with fleet customers
18 through the Fleet Electrification Advisory Service are vendor neutral.
- 19 • Approve the Home Charging Pilot with the following modifications to the program:
- 20 ○ Direct Duquesne Light to require EV chargers installed through its Home
21 Charging Pilot to meet the following eligibility requirements:
- 22 ▪ Smart and capable of connecting to a charging network;
23 ▪ Managed charging capabilities;

- 1 ▪ ENERGY STAR certified;
- 2 ▪ Certified for safety by UL or another Nationally Recognized Testing
- 3 Laboratory.
- 4 ○ Direct Duquesne Light to allow residential customers to purchase their own
- 5 charger from the pre-approved list or another charger that meets the above
- 6 requirements and receive up to \$500 to cover standard installation costs (or
- 7 \$2,000 for qualifying low-income customers).

8 In my Rebuttal Testimony, I further recommend that the Commission:

- 9 • Reject NRDC’s recommendation to require that TOU rates be passed onto EV drivers;
- 10 • Reject NRDC’s recommendation to allow Duquesne Light to own and operate charging
- 11 stations located at MUDs; and,
- 12 • Reject CAUSE-PA’s recommendation to devote 100% of the Fleet and Transit Pilot
- 13 budget to projects serving EJ areas.

14 **Q: Does this conclude your testimony at this time?**

15 **A: Yes.**