

Jack R. Garfinkle
Associate General Counsel
2301 Market Street / S23-1
Philadelphia, PA 19103

Direct Dial: 215-841-4608
Email: Jack.Garfinkle@exeloncorp.com

November 30, 2020

VIA eFILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

**Re: Petition of PECO Energy Company for Approval of Its
Act 129 Phase IV Energy Efficiency and Conservation Plan
Docket No. M-2020-3020830**

Dear Secretary Chiavetta:

Pursuant to Act 129 of 2008 and the Commission's Phase IV Implementation Order¹, enclosed for filing please find the **Petition of PECO Energy Company for Approval of Its Act 129 Phase IV Energy Efficiency and Conservation Plan**.²

PECO's filing is organized as follows:

- **PECO's Petition**
- **PECO Statement No. 1 - Direct Testimony of Doreen L. Masalta**
- **PECO Statement No. 2 - Direct Testimony of Nicholas DeDominicis**
- **PECO Statement No. 3 - Direct Testimony of William R. Supple**
- **PECO Statement No. 4 - Direct Testimony of Richard A. Schlesinger**
- **PECO Exhibit No. 1 - PECO Phase IV Energy Efficiency and Conservation Plan (Program Years 13-17)**

¹ *Energy Efficiency and Conservation Program*, Docket No. M-2020-3015228 (Order entered June 18, 2020).

² Consistent with 66 Pa.C.S. § 2806.1(b)(1)(i)(E), the Company has made a separate, contemporaneous filing seeking Commission approval of a confidential Phase IV conservation service provider contract.

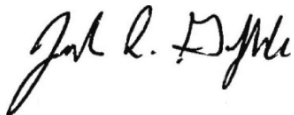
Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
November 30, 2020
Page 2

A copy of this filing will be served as indicated on the attached Certificate of Service.

As per the stay-at-home orders issued by the Governor and Philadelphia's Mayor due to the ongoing COVID-19 pandemic, PECO's office personnel are working remotely until these restrictions are lifted. Accordingly, PECO will not have its usual access to photocopying and U.S. mail, among other services. Further, per the PUC's directive to forgo mailing hard copies, PECO is making this submission by e-file and requests that all communications with PECO, likewise, be transmitted by email.

If you have any questions regarding this filing, please do not hesitate to contact me at 856-912-4738.

Very truly yours,



Jack R. Garfinkle

Enclosures

c: Per the Certificate of Service (w/encls.)

DB1/ 117177756.2

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PETITION OF PECO ENERGY :
COMPANY FOR APPROVAL OF ITS :
ACT 129 PHASE IV ENERGY : **Docket No. M-2020-3020830**
EFFICIENCY AND CONSERVATION :
PLAN :

CERTIFICATE OF SERVICE

I hereby certify that I have this date served true and correct copies of the **Petition of PECO Energy Company for Approval of Its Act 129 Phase IV Energy Efficiency and Conservation Plan** on the following individuals in the matter specified in accordance with the requirements of 52 Pa. Code § 1.54:

VIA ELECTRONIC MAIL

Tanya J. McCloskey
Acting Consumer Advocate
Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923
tmccloskey@paoca.org

John R. Evans
Small Business Advocate
Office of Small Business Advocate
555 Walnut Street
1st Floor, Forum Place
Harrisburg, PA 17101
jorevan@pa.gov

Richard Kanaskie
Director & Chief Prosecutor
Bureau of Investigation & Enforcement
Pennsylvania Public Utility Commission
Commerce Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17105-3265
rkanaskie@pa.gov

Patrick M. Cicero
Elizabeth R. Marx
Joline Price
Pennsylvania Utility Law Project
118 Locust Street
Harrisburg, PA 17101
pulp@palegalaid.net
Counsel for CAUSE-PA

Daniel Clearfield
Deanne M. O'Dell
Sarah C. Stoner
Eckert Seamans Cherin & Mellott, LLC
213 Market Street, 8th Floor
Harrisburg, PA 17101
dclearfield@eckertseamans.com
dodell@eckertseamans.com
sstoner@eckertseamans.com
*Counsel for Retail Energy Supply
Association*

Charis Mincavage
Adeolu A. Bakare
McNees Wallace & Nurick LLC
100 Pine Street
Harrisburg, PA 17108-1166
cmincavage@mwn.com
abakare@mwn.com
*Counsel for the Philadelphia Area
Industrial Energy Users Group*

Mr. Rick Counihan
Global Lead for Energy Product Policy
Regulation
717 Kennebec Avenue
Takoma Park, MD 20912
rcounihan@google.com
*Counsel for Nest Labs, Inc. successor entity,
Google LLC*

Derrick Price Williamson
Barry A. Naum
Spilman Thomas & Battle, PLLC
1100 Bent Creek Boulevard, Suite 101
Mechanicsburg, PA 17050
dwilliamson@spilmanlaw.com
bnaum@spilmanlaw.com
*Counsel for Wal-Mart Stores East, LP
and Sam's East, Inc.*

Jinjue Allen
General Counsel
Enel North America - USA
One Marina Park Drive, Suite 400
Boston, MA 02210
generalcounsel.enelX@enel.com
*Counsel for EnerNOC, Inc. successor entity,
Enel X North America, Inc.*



Kenneth M. Kulak (Pa. No. 75509)
Catherine G. Vasudevan (Pa. No. 210254)
Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, PA 19103-2921
215.963.5384 (office)
215.963.5001 (fax)
ken.kulak@morganlewis.com
catherine.vasudevan@morganlewis.com

Dated: November 30, 2020

Counsel for PECO Energy Company

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PETITION OF PECO ENERGY :
COMPANY FOR APPROVAL OF :
ITS ACT 129 PHASE IV ENERGY : DOCKET NO. M-2020-3020830
EFFICIENCY AND :
CONSERVATION PLAN :**

**PETITION OF PECO ENERGY COMPANY
FOR APPROVAL OF ITS ACT 129
PHASE IV ENERGY EFFICIENCY AND CONSERVATION PLAN**

NOVEMBER 30, 2020

TABLE OF CONTENTS

Petition Of PECO Energy Company For Approval Of Its Act 129 Phase IV Energy Efficiency And Conservation Plan

PECO Statement No. 1	Direct Testimony of Doreen L. Masalta, PECO’s Director of Energy and Marketing Services
PECO Statement No. 2	Direct Testimony of Nicholas DeDominicis, PECO’s Manager of Evaluation, Measurement and Verification
PECO Statement No. 3	Direct Testimony of William R. Supple, Managing Consultant in the Energy, Sustainability and Infrastructure practice at Guidehouse, Inc.
Exhibit WRS-1	Resume of William Supple
PECO Statement No. 4	Direct Testimony of Richard A. Schlesinger, PECO’s Manager of Retail Rates
Exhibit RAS-1	Proposed Supplement Setting Forth Revisions to PECO’s Electric Service Tariff (Clean and Redline)
Exhibit RAS-2	Program Costs by Rate Class
Exhibit RAS-3	Calculation of the Cost Recovery Charges by Rate Class for the First Year of PECO’s Phase IV EE&C Plan
Exhibit RAS-4	Responses to the Commission’s Filing Requirements at 52 Pa. Code § 53.52
PECO Exhibit No. 1	PECO Phase IV Energy Efficiency and Conservation Plan (Program Years 13-17)
Appendix A	CSP Contracts
Appendix B	Program by Program Savings and Costs for Each Program Year
Appendix C	Calculation Methods and Assumptions
Appendix D	Glossary of Terms and Definitions
Appendix E	Avoided Cost Calculator

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PETITION OF PECO ENERGY :
COMPANY FOR APPROVAL OF ITS :
ACT 129 PHASE IV ENERGY : **DOCKET NO. M-2020-3020830**
EFFICIENCY AND CONSERVATION :
PLAN :

**PETITION OF PECO ENERGY COMPANY FOR APPROVAL OF
ITS ACT 129 PHASE IV ENERGY EFFICIENCY AND CONSERVATION PLAN**

I. INTRODUCTION

PECO Energy Company (“PECO” or “Company”) petitions the Pennsylvania Public Utility Commission (“Commission”) for approval of the Company’s Phase IV Energy Efficiency and Conservation Plan (“Phase IV Plan” or “Plan”) to achieve energy and peak demand reductions in accordance with the requirements of Act 129 of 2008, 66 Pa.C.S. § 2806.1 (“Act 129” or “Act”) and the Commission’s Implementation Order entered June 18, 2020 at Docket No. M-2020-3015228 (“*Phase IV Implementation Order*”).¹ Specifically, PECO requests that the Commission: (1) find that the Phase IV Plan satisfies the requirements of 66 Pa.C.S. § 2806.1(b)(1) and the *Phase IV Implementation Order*, including those provisions mandating the implementation of programs designed to achieve the peak demand reduction (“PDR”) and consumption reduction targets established for PECO and the energy savings carve-out for the low-income customer sector; and (2) approve a supplement to PECO’s Electric Service Tariff to implement a Section 1307 surcharge to recover Phase IV Plan costs.²

¹ The proposed Phase IV Plan is attached to this Petition as PECO Exhibit No. 1.

² Consistent with 66 Pa.C.S. § 2806.1(b)(1)(i)(E), the Company has made a separate, contemporaneous filing seeking Commission approval of a confidential Phase IV conservation service provider contract.

The Company employed a market-based approach in order to design Phase IV programs that will satisfy the Company's Phase IV energy savings and PDR targets, stay within applicable cost limitations, and provide meaningful opportunities for customers to save energy and money. PECO's Phase IV Plan has five energy efficiency ("EE") programs: (1) Residential (excluding low-income); (2) Income-Eligible; (3) Residential Home Energy Reports; (4) Income-Eligible Home Energy Reports; and (5) Non-Residential. The Plan describes each program in detail, consistent with the content and formatting requirements of the filing template issued by the Commission (the "*Filing Template Letter*").³ In keeping with PECO's practice for its Phase I, Phase II, and Phase III plans, PECO met with key stakeholders to discuss the design framework for the Phase IV Plan proposed in this Petition.

Over the course of the five year Phase IV Plan (June 1, 2021, through May 31, 2026), the Company estimates that its Phase IV programs will produce: (1) 1,605,107 MWh in energy savings, or 116% of PECO's overall energy savings target; and (2) 327 MW of PDR, or 128% of its overall PDR target.

II. BACKGROUND

1. PECO is a corporation duly incorporated and validly subsisting under the laws of the Commonwealth of Pennsylvania with its principal office in Philadelphia, Pennsylvania. PECO provides electric delivery service to approximately 1.6 million customers and natural gas delivery service to more than 534,000 customers in Pennsylvania.

2. On October 15, 2008, then Governor Edward G. Rendell signed into law Act 129, which, among other things, added Section 2806.1 to the Pennsylvania Public Utility Code. The

³ *Implementation of Act 129 of 2008 – Phase IV Energy Efficiency and Conservation Plan Template*, Docket No. M-2020-3015228 (Issued September 9, 2020).

applicable provisions of Act 129 required Pennsylvania electric distribution companies (“EDCs”) to file energy efficiency and conservation (“EE&C”) plans by July 1, 2009, containing the plan elements specified in Section 2806.1(b) (“Phase I EE&C Program”).⁴ 66 Pa.C.S. § 2806.1(b). In addition, Sections 2806.1(c) and (d) required that EDCs’ Phase I EE&C plans be designed: (1) to reduce retail energy consumption by a minimum of 1% by May 31, 2011, and a minimum of 3% by May 31, 2013; and (2) to reduce peak demand, measured by reference to the 100 highest hours of demand, by a minimum of 4.5% no later than May 31, 2013. 66 Pa.C.S. § 2806.1(c) and (d).

3. The EE&C plan filing requirements in Section 2806.1(b) mandated that energy savings be derived from certain customer segments during Phase I. For instance, a minimum of 10% of an EDC’s consumption reductions had to be obtained from the governmental, educational and nonprofit sector. 66 Pa.C.S. § 2806.1(b)(1)(i)(B). In addition, each EDC’s Phase I plan was to include specific energy efficiency programs for households with income at or below 150% of the Federal Poverty Income Guidelines (“low-income sector”) that are proportionate to such households’ share of the total energy usage in the EDC’s service territory. *Id.* § 2806.1(b)(1)(i)(G). Finally, an EDC’s plan had to pass a “total resource cost” or “TRC” test to determine whether the avoided cost of supplying electricity is greater than the cost of a plan’s energy efficiency and conservation measures. 66 Pa.C.S. § 2806.1(b)(1)(i)(I); *2016 Total Resource Cost (TRC) Test*, Docket No. M-2015-2468992 (Order entered June 22, 2015).

4. Pursuant to the Act, EDCs are entitled to full and current cost recovery of prudent and reasonable costs, including administrative costs, but annual plan expenditures are limited to

⁴ 66 Pa.C.S. § 2806.1(l) exempts EDCs with fewer than 100,000 customers from this requirement.

2% of the EDC's total annual revenue as of December 31, 2006. 66 Pa.C.S. §§ 2806.1(g), (k). For PECO, this annual spending amount is approximately \$85.5 million.

5. In compliance with Section 2806.1 and the Commission's Order entered January 15, 2009, at Docket No. M-2008-2069887, PECO submitted its EE&C plan for the Phase I EE&C Program on July 1, 2009. The Commission approved PECO's Phase I Plan, with modifications, on October 28, 2009.⁵ PECO met its Phase I consumption reduction target, consumption reduction carve-outs, and PDR target.

6. Act 129 further required the Commission, by November 30, 2013, to evaluate the costs and benefits of the Phase I EE&C Program. If the benefits of the Program were found to exceed its costs, the Commission was directed to adopt "additional required incremental reductions in consumption" and "additional incremental requirements for reduction in peak demand." 66 Pa.C.S. §§ 2806.1(c)(3) and (d)(2). The Commission did so and has issued implementation orders for Phase II⁶, Phase III,⁷ and Phase IV⁸ of the EE&C program.

7. PECO submitted its Phase II Plan consistent with the *Phase II Implementation Order*, which the Commission approved on February 28, 2013. A voluntary DR program was

⁵ See *Petition of PECO Energy Company for Approval of its Act 129 Energy Efficiency and Conservation Plan and Expedited Approval of its Compact Fluorescent Lamp Program*, Docket No. M-2009-2093215. Certain revisions were adopted in subsequent orders.

⁶ *Energy Efficiency and Conservation Program*, Docket Nos. M-2012-2289411 and M-2008-2069887 (Order entered August 3, 2012) ("*Phase II Implementation Order*"),

⁷ *Energy Efficiency and Conservation Program*, Docket No. M-2014-2424864 (Order entered June 19, 2015) ("*Phase III Implementation Order*")

⁸ See *Phase IV Implementation Order*.

added to the Phase II Plan on May 9, 2013.⁹ PECO met its Phase II consumption reduction target and carve-outs.

8. PECO submitted its Phase III Plan consistent with the *Phase III Implementation Order*, which the Commission approved on May 19, 2016.¹⁰ PECO expects to meet its Phase III targets by the end of the phase (May 31, 2021).

9. In its *Phase IV Implementation Order*, the Commission established both consumption reduction and PDR targets for the five-year plan period of June 1, 2021, through May 31, 2026. PECO's total Phase IV MWh savings target is 1,380,837 MWh. The Company's total Phase IV PDR target is 256 MW and must be achieved exclusively with EE measures. The Commission also established a savings carve-out for the low-income sector. Under this carve-out, PECO must obtain 80,089 MWh of savings from programs solely directed at low-income customers or low-income-verified participants in multifamily housing programs.

10. The *Phase IV Implementation Order* also includes four plan design requirements: (1) plans must be designed to achieve at least 15% of the MWh savings target and PDR target each program year; (2) plans must include at least one comprehensive program for residential customers and one comprehensive program for non-residential customers; (3) plans must allocate at least 50% of all spending to incentives, with less than 50% allocated to non-incentive categories; and (4) EDCs must describe their strategy to nominate a portion of the projected PDRs into PJM's forward capacity markets ("FCM").

⁹ See *Petition of PECO Energy Company for Approval of its Act 129 Phase II Energy Efficiency and Conservation Plan*, Docket No. M-2012 2333992.

¹⁰ *Petition of PECO Energy Company for Approval of its Act 129 Phase III Energy Efficiency and Conservation Plan*, Docket No. M-2015-2515691 (Order entered May 19, 2016) (further revisions to PECO's Phase III Plan were adopted in later orders in the same docket).

11. On September 9, 2020, the Commission issued the *Filing Template Letter*, which included an EE&C plan template for use by EDCs in preparing and filing their EE&C Plans for Phase IV.

12. This Petition describes PECO's Phase IV Plan and the proposed mechanism for recovery of Plan costs and includes the following statements and exhibits, which are attached to this Petition and incorporated by reference:

PECO Statement No. 1	Direct Testimony of Doreen L. Masalta, PECO's Director of Energy and Marketing Services
PECO Statement No. 2	Direct Testimony of Nicholas DeDominicis, PECO's Manager of Evaluation, Measurement and Verification
PECO Statement No. 3	Direct Testimony of William R. Supple, Managing Consultant in the Energy, Sustainability and Infrastructure practice at Guidehouse, Inc.
Exhibit WRS-1	Resume of William Supple
PECO Statement No. 4	Direct Testimony of Richard A. Schlesinger, PECO's Manager of Retail Rates
Exhibit RAS-1	Proposed Supplement Setting Forth Revisions to PECO's Electric Service Tariff (Clean and Redline)
Exhibit RAS-2	Program Costs by Rate Class
Exhibit RAS-3	Calculation of the Cost Recovery Charges by Rate Class for the First Year of PECO's Phase IV EE&C Plan
Exhibit RAS-4	Responses to the Commission's Filing Requirements at 52 Pa. Code § 53.52
PECO Exhibit No. 1	PECO Phase IV Energy Efficiency and Conservation Plan (Program Years 13-17)
Appendix A	CSP Contracts
Appendix B	Program by Program Savings and Costs for Each Program Year
Appendix C	Calculation Methods and Assumptions
Appendix D	Glossary of Terms and Definitions

III. MARKET-BASED PLAN DESIGN PROCESS

13. As explained in the testimony of Ms. Masalta, Mr. DeDominicis, and Mr. Supple, PECO employed a market-based approach to design its Phase IV Plan. The Company established high-level requirements for each program in the Phase IV Plan and then solicited and assessed bids from experienced conservation service providers (“CSPs”) that were consistent with those requirements.

14. PECO first determined the appropriate division of the Company’s mandated EE savings and PDRs between its five Phase IV programs. Next, the Company established a budget for each program based on the acquisition cost findings in the statewide evaluator’s (“SWE’s”) Energy Efficiency and Peak Demand Reduction (“EEPDR”) Potential Study. Finally, and consistent with the Commission’s requirement in the *Phase IV Implementation Order*, the Company established a requirement that each program must be designed to meet and achieve a minimum of 15% of its total EE savings and PDRs each year. In addition, the non-behavioral programs must strive to: (1) allow customers to access all applicable measures in the Commission’s Technical Reference Manual (“TRM”); and (2) engage a variety of market players (e.g., trade allies).

15. PECO then issued requests for proposals (“RFPs”) for different program groupings in a manner consistent with the Company’s Commission-approved Phase IV RFP process.¹¹ Bidders were instructed to propose program designs that met each of the Company’s

¹¹ PECO’s Phase IV RFP process was approved by Secretarial Letter issued August 27, 2020 at Docket No. M-2020-3020830.

high-level program requirements and to identify any sub-contractors they would employ.

Bidders were also asked to propose a “pay for performance” contract pricing structure so that the CSP’s compensation would depend on the achievement of verified EE savings.

16. The Company scrutinized each bid in accordance with its Phase IV RFP process and selected the winning bidders. The Company’s Phase IV Plan reflects the program designs proposed by the winning CSPs.

17. There are several benefits to PECO’s market-based approach:

- **Incorporates diverse market expertise.** By letting CSPs design programs to meet the Company’s key requirements, PECO’s Phase IV Plan reflects the expertise and experience of multiple market actors in the EE space.
- **Provides greater flexibility to respond to market changes.** By having a single CSP administer an entire program instead of certain portions of a program, the CSP can take a flexible and market-responsive approach, with PECO’s approval, to achieving the required EE savings and PDRs.
- **Incentivizes innovative and cost-effective CSP activity.** Because CSPs are compensated based on their ability to drive EE savings, they are incentivized to design innovative, achievable and cost effective programs.
- **Engages an array of market actors to drive a positive customer experience.** By requiring CSPs to engage a variety of market actors during program implementation, PECO is ensuring that customers have access to comprehensive savings opportunities. The CSP compensation structure also incentivizes CSPs to

carefully monitor subcontractor performance to ensure a positive customer experience.

IV. PECO'S PROPOSED PHASE IV PROGRAMS

18. The Company's Phase IV programs are designed to produce: (1) 1,605,107 MWh in energy savings, or 116% of PECO's overall energy savings target; and (2) 327 MW of PDR, or 128% of its PDR target. The total Plan budget is approximately \$427.4 million.¹²

19. Consistent with the *Phase IV Implementation Order*, at least 5.8% of PECO's total consumption reduction target will be obtained from the low-income sector and the Plan is designed to obtain at least 15% of the total MWh savings target and PDR target each program year. Also consistent with the *Phase IV Implementation Order*, the Plan includes at least one comprehensive program for residential customers and one comprehensive program for non-residential customers; allocates at least 50% of all spending to incentives; and describes the Company's strategy for bidding a portion of the projected PDRs into PJM's FCM.

20. Below is a summary of the EE programs, which are detailed in Section 3 of PECO's Plan and described in the testimony of Mr. DeDominicis.

- A. **The Residential (excluding low-income) Program** is designed to offer customers opportunities to save energy across all their electric end-uses. The Program has multiple objectives including incentives for purchases of efficient lighting, appliances, HVAC upgrades, energy saving devices, and other energy savings technologies. The Program will offer appliance recycling services to remove old, inefficient refrigerators, freezers, and window AC units. Finally, the Program will include a new construction component that will drive the construction of energy-efficient homes and also have offerings for the customer premises and common areas of multifamily buildings (both individually-metered and master-metered).

¹² See, e.g., *Phase IV Implementation Order*, p. 120 (identifying PECO's Phase IV 5-year budget limit of \$427,385,830).

- B. The Income-Eligible Program** is available to customers in the low-income sector. The foundational element of the Program is a direct install whole home solution, which provides in-home audits and education as well as the direct installation of EE measures at no charge to the participant. The Program also includes appliance recycling services to remove old, inefficient refrigerators, freezers, and window AC units. Finally, the Program will provide opportunities for income-eligible families living in multifamily buildings, including measures for the customer premise and common areas.
- C. The Residential Home Energy Reports Program** involves regularly delivering direct mail or digital home energy reports that motivate customers to act through contextualized energy-usage information, personal and neighborhood comparisons, and energy savings recommendations. The Program is designed to influence participant behaviors and influence energy management in their homes.
- D. Income-Eligible Home Energy Reports Program** is similar to the Residential Home Energy Reports Program, but is targeted to customers in the low-income sector.
- E. The Non-Residential Program** is a single, comprehensive program for both large and small commercial and industrial customers with rebates for a wide range of energy conservation measures. The Program includes a prescriptive component containing measures in the TRM and a custom component that can capture the interactive effects of multiple TRM measures. Both components are available for retrofit and new construction and will employ a market-driven approach in which customers are free to choose where they buy the EE measures and who installs them.

21. Section 1.6 of the Plan describes the Company's strategy to nominate up to 50 MW of PDRs from its portfolio of EE programs into the PJM FCM in the later years of Phase IV.

22. As required by Act 129, PECO has applied the TRC test to the Phase IV Plan as a whole. It also applied the TRC test to each proposed program. PECO's Plan has an overall TRC score of 1.14, demonstrating significant benefits to PECO's customers compared to the total

costs of the proposed EE and PDR measures. The projected energy savings, PDRs, costs, and TRC calculations are detailed in PECO's Plan and accompanying appendices.

23. Consistent with Act 129 and the Company's Phase I, Phase II, and Phase III Plans, CSPs will be responsible for program implementation, staffing, training and the tracking of programs and measures pursuant to CSP contracts.

24. PECO's Phase IV RFPs have followed the process approved by the Commission in a Secretarial Letter issued August 27, 2020 at Docket M-2020-3020830. All future RFPs will follow this approved process.

25. As required by Act 129 (*see* 66 Pa.C.S. § 2806.1(b)(1)(i)(K)), PECO's Plan includes an analysis of its expected administrative costs as shown in Section 7.3, Table 10, of the Plan. Additionally, consistent with PECO's Act 129 obligations, the Plan includes an extensive set of quality assurance and performance mechanisms for evaluating the Plan on a continual basis. Each of PECO's proposed programs has detailed evaluation, measurement and verification ("EM&V") requirements tailored to the program. PECO will be retaining the services of an experienced CSP to provide EM&V services, as well as a separate CSP to manage the Company's data tracking system for maintaining data and generating reports on each program. A description of PECO's overall approach to quality assurance and the anticipated tracking system functions are set forth in Sections 6 and 5 of the Plan.

V. THE PHASE IV ENERGY EFFICIENCY AND CONSERVATION RECOVERY CHARGE

26. Act 129 provides that PECO has a right to recover all reasonable and prudent EE&C plan costs, on a full and current basis, through a Section 1307 cost-recovery mechanism. 66 Pa.C.S. § 2806.1(k). The Commission has previously directed that EDCs develop a separate

cost recovery mechanism for each EE&C plan phase and that such mechanism be non-bypassable and not affect the EDCs' prices-to-compare. *See, e.g., Phase II Implementation Order*, p. 118. For Phase IV, the Commission also directed that: (1) Phase IV charges should be calculated to recover projected program costs and be adjusted annually to reflect over- or under-recoveries; (2) an EDC's charges for Phase III and Phase IV should be combined into a single surcharge; (3) EDCs must account for Phase IV costs and revenues separately from Phase III costs and revenues; and (4) EDC reconciliation statements should clearly identify PJM FCM proceeds as cost reductions and PJM FCM deficiency charges as cost increases. *See Phase IV Implementation Order*, pp. 142-143.

27. In accordance with the foregoing directives, PECO is proposing to implement a Phase IV Energy Efficiency & Conservation Program Charge ("Phase IV EEPC") to recover Plan costs. The mechanism follows the same format as the Company's existing EEPC, which recovers costs associated with PECO's Phase III Plan, but also reflects the new requirement to identify PJM FCM proceeds and deficiency charges. The Phase IV EEPC would be a fully reconcilable, non-bypassable charge in accordance with the Act and previous Commission orders.

28. The Phase IV EEPC will recover any fixed capital costs (depreciation and pre-tax return) and operating expenses, not otherwise recovered in base rates, to design and implement the EE programs incorporated in PECO's Phase IV Plan. These costs include, among others, the cost of information technology ("IT") needed to design and implement the programs; the costs of customer outreach and program promotion; incremental labor costs incurred to manage and administer the programs on an ongoing basis; the cost to measure and verify program results; and

the cost of incentives offered to customers to participate in the approved programs. PECO also proposes to recover its Phase IV Statewide Evaluator costs through the Phase IV EEPC.

29. A separate recovery charge will be established for each customer class, corresponding to the costs of the programs or program components that target that class. This ensures that the classes that receive the direct benefits of particular EE measures finance those same measures. For programs that provide benefits to more than one class, costs will be allocated using reasonable and generally accepted cost-of-service principles. Common costs will be allocated to each rate class in proportion to the energy savings (MWh) that each rate class is projected to deliver under the Phase IV Plan. Mr. Schlesinger's testimony includes an estimate of the proposed charges for each customer class.

30. Consistent with the *Phase IV Implementation Order* (p. 142), the Phase IV EEPC will be developed based on projected plan costs for the coming year. Thereafter, PECO will reset the charge annually to recover the projected Plan costs for the then-upcoming plan year and make the appropriate adjustment to reconcile and true-up revenues and the previous program year's actual costs. No interest will accrue with respect to either over- or under-recoveries, consistent with the Commission's directive in the *Phase IV Implementation Order*. PECO also proposes to combine its Phase III EEPC and Phase IV EEPC into a single surcharge and a single tariff provision with the implementation of its Phase IV EEPC, as also directed by the Commission.

31. Finally, PECO will comply with the Commission's directive to separately account for Phase IV costs and revenues by setting up new general ledger accounts for Phase IV costs and revenues. Phase III costs and revenues are currently tracked through similar, separate accounting measures. Thus, there will be no comingling of Phase IV and prior Phase costs or

revenues in PECO's accounting records. Phase III costs and revenues will also be clearly identified and tracked separately for purposes of the EEPC. This will allow Phase IV costs to be reconciled against Phase IV revenues billed under the EEPC.

VI. PROPOSED SCHEDULE

32. The Company proposes the following schedule for review of its Phase IV Plan, which is consistent with the *Phase IV Implementation Order*:

November 30, 2020	Petition Filing
December 12, 2020	Publication of Notice of Filing in <i>Pennsylvania Bulletin</i>
January 4, 2021	Due Date for Answers/Comments/Recommendations
February 2, 2021	Evidentiary Hearing
February 12, 2021	Initial Briefs
February 22, 2021	PECO Reply Comments and/or Revised Plan
March 25, 2021	Commission Order

VII. NOTICE

33. PECO is serving copies of this filing on the Office of Consumer Advocate, the Office of Small Business Advocate, the Commission's Bureau of Investigation and Enforcement, and all parties to the Company's Phase III EE&C Plan proceeding.

34. In addition, consistent with the *Filing Template Letter*, the Company will post a copy of its proposed Phase IV Plan on PECO's website at:

<https://www.peco.com/MyAccount/MyBillUsage/Pages/Filings.aspx>.

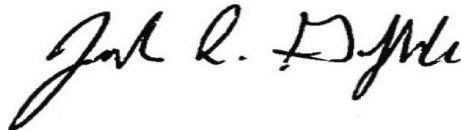
35. Should the Commission conclude that further notice of this filing is appropriate, PECO will provide such additional notice as directed by the Commission.

VIII. CONCLUSION

Based on the above, including the attached testimony and exhibits, PECO respectfully requests that the Commission grant this Petition and enter an Order:

- (1) Approving PECO's Phase IV Plan and finding that the Plan satisfies the requirements of 66 Pa.C.S. § 2806.1(b)(1) and the *Phase IV Implementation Order*; and
- (2) Approving the supplement to PECO's Electric Service Tariff to implement a Section 1307 surcharge to recover Phase IV Plan costs.

Respectfully submitted,



Anthony E. Gay (Pa. No. 74624)
Jack R. Garfinkle (Pa. No. 81892)
PECO Energy Company
2301 Market Street
P.O. Box 8699
Philadelphia, PA 19101-8699
Phone: 215.841.4608
Fax: 215.568.3389
anthony.gay@exeloncorp.com
jack.garfinkle@exeloncorp.com

Kenneth M. Kulak (Pa. No. 75509)
Catherine G. Vasudevan (Pa. No. 210254)
Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, PA 19103-2921
Phone: 215.963.5952
Fax: 215.963.5001
ken.kulak@morganlewis.com
catherine.vasudevan@morganlewis.com

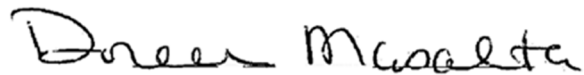
Counsel for PECO Energy Company

November 30, 2020

VERIFICATION

I, Doreen L. Masalta, hereby declare that I am the Director of Energy and Marketing Services for PECO Energy Company; that, as such, I am authorized to make this verification on its behalf; that the facts set forth in the foregoing Petition are true and correct to the best of my knowledge, information and belief; and that I make this verification subject to the penalties of 18 Pa.C.S. § 4904 pertaining to false statements to authorities.

Date: November 30, 2020

A handwritten signature in black ink that reads "Doreen Masalta". The signature is written in a cursive style with a large initial 'D'.

DB1/ 116835322.9

**PECO ENERGY COMPANY
STATEMENT NO. 1**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ENERGY EFFICIENCY AND CONSERVATION PROGRAM

DOCKET NO. M-2020-3020830

DIRECT TESTIMONY
SUPPORTING PECO'S PETITION FOR APPROVAL
OF ITS PHASE IV EE&C PLAN

WITNESS: DOREEN L. MASALTA

SUBJECT: OVERVIEW OF PECO'S FILING, ACT 129
AND PHASE IV OBLIGATIONS, AND
OVERVIEW OF PECO'S PHASE IV PLAN

DATED: NOVEMBER 30, 2020

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE OF TESTIMONY	1
II. OVERVIEW OF PECO’S FILING	2
III. BACKGROUND OF PECO’S OBLIGATIONS TO ACHIEVE ENERGY CONSUMPTION AND PEAK DEMAND REDUCTIONS UNDER ACT 129	3
IV. OVERVIEW OF PECO’S PHASE IV PLAN	7
V. CONCLUSION	9

1 Management Programs at both PECO and one of the Company’s utility affiliates,
2 Commonwealth Edison Company. In 2007, I was named Director of PECO’s Project,
3 Contract & Vegetation Management Department. In late 2009, I became the Director
4 of Operations in the Bucks & Montgomery County Regions and then transitioned in
5 2013 to the City of Philadelphia and PECO Underground. Finally, in 2019, I was
6 promoted to my current position of Director of Energy and Marketing Services.

7 **4. Q. What is the purpose of your testimony?**

8 A. The purpose of my testimony is to: (1) summarize PECO’s Phase IV Energy
9 Efficiency and Conservation Plan (“Phase IV Plan” or “Plan”) filing; (2) describe
10 PECO’s obligations to achieve consumption and peak demand reductions under Act
11 129, the Pennsylvania Public Utility Commission’s (“Commission”) prior
12 implementation orders, and the Commission’s Phase IV Implementation Order;¹ and,
13 (3) provide an overview of PECO’s Phase IV Plan.

14 **II. OVERVIEW OF PECO’S FILING**

15 **5. Q. Please explain how PECO’s filing is organized.**

- 16 A. PECO’s filing is comprised of the following documents and testimony:
- 17 i. PECO’s Petition for Approval of its Phase IV Energy Efficiency and
18 Conservation Plan;
 - 19 ii. my Direct Testimony;
 - 20 iii. the Direct Testimony of Nicholas DeDominicis, PECO’s Manager of
21 Evaluation, Measurement and Verification, describing PECO’s market-based

¹ Implementation Order, *Energy Efficiency and Conservation Program*, Docket No. M-2020-3015228 (Order entered June 18, 2020) (“Phase IV Implementation Order”).

1 Plan design process, the programs comprising the Plan, and expected research
2 and development efforts during Phase IV;

- 3 iv. the Direct Testimony of William R. Supple, Managing Consultant in the
4 Energy, Sustainability and Infrastructure Practice at Guidehouse, Inc.,
5 summarizing PECO's Phase IV projected energy and demand savings, program
6 expenditures, and Total Resource Cost ("TRC") net benefits
- 7 v. the Direct Testimony of Richard A. Schlesinger, PECO's Manager of Retail
8 Rates, discussing the Plan's cost recovery mechanism and tariff; and,
- 9 vi. PECO's Phase IV Plan, filed in the template format approved by the
10 Commission.²

11 **III. BACKGROUND OF PECO'S OBLIGATIONS TO ACHIEVE ENERGY**
12 **CONSUMPTION AND PEAK DEMAND REDUCTIONS**
13 **UNDER ACT 129**

14 **6. Q. Please describe Act 129's consumption reduction and peak demand reduction**
15 **requirements.**

16 A. Act 129 directed electric distribution companies ("EDCs") with greater than 100,000
17 customers to file with the Commission, by July 1, 2009, an energy efficiency and
18 conservation plan ("Phase I EE&C Program").³ The EE&C plans were to reduce
19 retail energy consumption by at least 1% by May 31, 2011 and at least 3% by May
20 31, 2013. These reductions were to be measured against the EDC's forecasted
21 customer consumption for the period June 1, 2009 through May 31, 2010. For PECO,
22 this 2009/2010 baseline is 39,385,000 megawatt-hours ("MWh").

23 Act 129 also required that each EDC with at least 100,000 customers reduce the
24 average system peak demand for its retail customers in the 100 hours of highest

² *Implementation of Act 129 of 2008 – Phase IV Energy Efficiency and Conservation Plan Template*, Docket No. M-2020-3015228 (Issued September 9, 2020).

³ 66 Pa.C.S. § 2806.1(b).

1 demand by a minimum of 4.5% no later than May 31, 2013. For the Phase I EE&C
2 Program, this demand reduction was to be measured against the EDC's average peak
3 demand for the 100 hours of highest demand over the period of June 1, 2007 through
4 September 30, 2007.⁴

5 In addition to these overall targets, the Act mandated that energy savings be obtained
6 from certain designated customer segments during Phase I. Specifically, a minimum
7 of 10% of an EDC's consumption reduction target had to be obtained from the
8 governmental, educational, and non-profit sector.⁵ In addition, each EDC's Phase I
9 plan was to include specific energy efficiency programs for households with income
10 at or below 150% of the Federal Poverty Income Guidelines ("FPIG") that are
11 proportionate to such households' share of the total energy usage in the EDC's
12 service territory.⁶ Finally, an EDC's plan had to pass a "total resource cost" or
13 "TRC" test, which is a test that establishes whether the avoided cost of supplying
14 electricity is greater than the cost of a plan's energy efficiency and conservation
15 measures.⁷

16 Pursuant to Act 129, EDCs are entitled to full and current cost recovery of prudent
17 and reasonable costs, including administrative costs, but annual plan expenditures

⁴ See Implementation Order, *Energy Efficiency and Conservation Program*, Docket No. M-2008-2069887, at 20-21 (Order entered January 16, 2009) ("*Phase I Implementation Order*").

⁵ 66 Pa.C.S. § 2806.1(b)(1)(i)(B).

⁶ *Id.* § 2806.1(b)(1)(i)(G).

⁷ *Id.* § 2806.1(b)(1)(i)(I); 2016 Total Resource Cost (TRC) Test, Docket No. M-2015-2468992 (Order entered June 22, 2015).

1 were limited to 2% of the EDC’s total annual revenue as of December 31, 2006.⁸ For
2 PECO, this annual spending amount is approximately \$85.5 million.

3 **7. Q. Did Act 129 contemplate future EE&C programs beyond the Phase I EE&C**
4 **Program?**

5 A. Yes. Act 129 provides that by November 30, 2013, and every five years thereafter,
6 the Commission must assess the cost-effectiveness of the EE&C Program and adopt
7 additional incremental consumption reduction targets if the EE&C Program’s benefits
8 exceed its costs. As for peak demand reduction programs, the Act directed the
9 Commission to complete a cost benefit analysis by November 30, 2013 and, if the
10 benefits exceed the costs, establish additional incremental requirements for reduction
11 in peak demand.⁹ The Commission has issued implementation orders for a Phase II,¹⁰
12 Phase III,¹¹ and Phase IV¹² of the EE&C program. Phase III of the EE&C program is
13 ongoing and will be complete on May 31, 2021.

⁸ *Id.* § 2806.1(g), (k).

⁹ *Id.* § 2806.1(c)(3), (d)(2).

¹⁰ Implementation Order, *Energy Efficiency and Conservation Program*, Docket No. M-2012-2289411 (Order entered August 3, 2012).

¹¹ Implementation Order, *Energy Efficiency and Conservation Program*, Docket No. M-2014-2424864 (Order entered June 19, 2015).

¹² *Phase IV Implementation Order.*

1 **8. Q. Has PECO met its compliance obligations for the completed phases of the EE&C**
2 **program?**

3 A. Yes. The Commission approved PECO's Phase I Plan on October 28, 2009,¹³ and the
4 Company met its Phase I consumption reduction target, consumption reduction carve-
5 outs, and peak demand reduction target. The Commission approved PECO's Phase II
6 Plan on February 28, 2013, and the Company's addition of a voluntary demand
7 response program to the Phase II Plan was approved on May 9, 2013.¹⁴ PECO met its
8 Phase II consumption reduction target and carve-outs. The Commission approved
9 PECO's Phase III Plan on May 19, 2016,¹⁵ and the Company is expecting to meet its
10 Phase III targets by the end of the phase (May 31, 2021).

11 **9. Q. What targets did the Commission set for the reduction of consumption and peak**
12 **demand for Phase IV?**

13 A. In its Phase IV Implementation Order, the Commission established both consumption
14 reduction and peak demand reduction targets for a five-year plan period of June 1,
15 2021, through May 31, 2026. PECO's total Phase IV MWh consumption reduction
16 target is 1,380,837 MWh. The Company's total Phase IV peak demand reduction
17 target is 256 MW and must be achieved exclusively with energy efficiency measures.

¹³ See *Petition of PECO Energy Company for Approval of its Act 129 Energy Efficiency and Conservation Plan and Expedited Approval of its Compact Fluorescent Lamp Program*, Docket No. M-2009-2093215 (Order entered October 28, 2009). Further revisions to PECO's Phase I Plan were adopted in various subsequent orders in the same docket.

¹⁴ See *Petition of PECO Energy Company for Approval of its Act 129 Phase II Energy Efficiency and Conservation Plan*, Docket No. M-2012-2333992.

¹⁵ See *Petition of PECO Energy Company for Approval of its Act 129 Phase III Energy Efficiency and Conservation Plan*, Docket No. M-2015-2515691 (Order entered May 19, 2016). Further revisions to PECO's Phase III Plan were adopted in various subsequent orders in the same docket.

1 The Commission also established a savings carve-out for customers at or below 150%
2 of the FPIG. Under this carve-out, PECO must obtain 80,089 MWh of consumption
3 reductions from programs solely directed at low-income customers or low-income-
4 verified participants in multifamily housing programs.

5 The Phase IV Implementation Order also included a number of plan design
6 requirements: (1) plans must be designed to achieve at least 15% of the MWh
7 consumption reduction target and peak demand reduction target each program year;
8 (2) plans must include at least one comprehensive program for residential customers
9 and one comprehensive program for non-residential customers; (3) plans must
10 allocate at least 50% of all spending to incentives, with less than 50% allocated to
11 non-incentive categories; and (4) EDCs must describe their strategy to nominate a
12 portion of the projected peak demand reductions into PJM's forward capacity
13 markets.

14 IV. OVERVIEW OF PECO'S PHASE IV PLAN

15 **10. Q. Please describe the Company's approach to developing the Phase IV Plan.**

16 A. As discussed in detail by Mr. DeDominicis, PECO employed a market-based
17 approach to design its Phase IV Plan. Instead of internally developing a detailed
18 design for each program, the Company established high-level program design
19 requirements and invited conservation service providers ("CSPs") to submit program
20 design bids reflecting their expertise and experience. Selected CSPs will be
21 responsible for managing program implementation and achieving the required
22 consumption and peak demand reductions within the program budget.

1 The Company believes that the market-based approach has resulted in programs that
2 are well positioned to meet PECO's Phase IV obligations and to provide meaningful
3 opportunities for customers to save energy and money. There was rigorous
4 competition among CSPs to design each program, and the winning "prime" CSPs had
5 to demonstrate their ability to employ market-leading strategies to meet the
6 Company's requirements and to proactively engage with customers through a variety
7 of delivery channels. In addition, because prime CSPs will be responsible for
8 administering an entire program, they will, in collaboration with PECO, have the
9 flexibility to directly adjust program offerings based on performance and market
10 response. For example, PECO and the CSP may agree that it is appropriate to adjust
11 incentive values within approved Plan ranges, modify marketing strategies or even
12 change subcontractors in order to ensure that the necessary consumption and peak
13 demand reductions are achieved. Finally, as discussed by Mr. DeDominicis, the
14 performance-based compensation structure for CSPs provides further assurance that
15 each program will meet expectations.

16 **11. Q. Please describe the Phase IV Plan.**

17 A. PECO's Phase IV Plan has a five-year term (June 1, 2021, through May 31, 2026)
18 and five programs: (1) Residential (excluding low-income); (2) Income-Eligible; (3)
19 Residential Home Energy Reports; (4) Income-Eligible Home Energy Reports; and
20 (5) Non-Residential. PECO's goal is to achieve compliance targets with a
21 comprehensive set of energy solutions offering the broadest measure mix possible

1 across all electric end-uses and with processes that make participation easy for both
2 customers and market actors.

3 **12. Q. Has the Company reached out to stakeholders about its Phase IV Plan?**

4 A. Yes. On November 12, 2020, PECO met with a number of key stakeholders to
5 provide an overview of the Phase IV Plan design process and the Phase IV programs.

6 **13. Q. How is PECO preparing for the potential impact of disruptive events, like the
7 COVID-19 pandemic, on the delivery and implementation of the Phase IV
8 programs?**

9 A. As a result of the COVID-19 pandemic, the Company has become more agile in
10 responding to changing events. PECO worked very closely with its Phase III CSPs to
11 develop innovative alternatives to in-person activities, such as virtual energy
12 assessments, in order to keep customers and vendors safe. In Phase IV, the Company
13 will work with prime CSPs to monitor evolving conditions and ensure that programs
14 provide safe and appropriate savings opportunities for customers.

15 **V. CONCLUSION**

16 **14. Q. Does this conclude your direct testimony?**

17 A. Yes, it does.

18

**PECO ENERGY COMPANY
STATEMENT NO. 2**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ENERGY EFFICIENCY AND CONSERVATION PROGRAM

DOCKET NO. M-2020-3020830

DIRECT TESTIMONY
SUPPORTING PECO'S PETITION FOR APPROVAL
OF ITS PHASE IV EE&C PLAN

WITNESS: NICHOLAS DEDOMINICIS

SUBJECT: PECO'S MARKET-BASED PLAN DESIGN
PROCESS, PECO'S PHASE IV PROGRAMS,
RESEARCH AND DEVELOPMENT EFFORTS

DATED: NOVEMBER 30, 2020

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE OF TESTIMONY	1
II. PECO'S MARKET-BASED PLAN DESIGN PROCESS.....	2
III. PECO'S EE PROGRAMS	6
IV. RESEARCH AND DEVELOPMENT EFFORTS.....	10
V. CONCLUSION	11

1 example, from 2000-2003, as Vice President of Energy Conservation and Load
2 Management for the New Hampshire Electric Cooperative, I managed a team of over
3 25 individuals to develop and implement successful DSM programming.
4 Immediately before joining PECO in 2010, I was the Director of Energy Strategies
5 and Solutions for Clean Energy Exchange, a clean energy consulting company. In
6 that role, I led efforts to develop new market-based products and service offerings and
7 create strategic partnerships with governmental entities, service providers,
8 manufacturers, and equipment suppliers.

9 **4. Q. What is the purpose of your direct testimony?**

10 A. The purpose of my direct testimony is to: (1) describe the market-based process used
11 to determine the details of the Company's proposed energy efficiency ("EE")
12 programs in its Phase IV EE&C Plan ("Phase IV Plan" or "Plan"); (2) describe the
13 EE programs and how they will meet the requirements of Act 129 and the
14 Commission's Phase IV Implementation Order;¹ and (3) discuss the expected
15 research and development efforts during Phase IV.

16 **II. PECO'S MARKET-BASED PLAN DESIGN PROCESS**

17 **5. Q. Please describe the key differences in how PECO developed its Phase IV Plan as**
18 **compared to its Phase III Plan.**

19 A. In Phase III, the Company established the design of each program and then sought
20 bids from conservation service providers ("CSPs") to implement all or a portion of

¹ Implementation Order, *Energy Efficiency and Conservation Program*, Docket No. M-2020-3015228 (Order entered June 18, 2020) ("Phase IV Implementation Order").

1 each PECO-designed program. In Phase IV, the Company established high-level
2 requirements for each program in the Phase IV Plan and then solicited and assessed
3 bids from experienced CSPs for program designs that were consistent with those
4 requirements. PECO's Phase IV process is intended to harness the power and
5 creativity of the marketplace to meet the Company's mandated EE savings and peak
6 demand reductions ("PDRs") and support programs that offer customers meaningful
7 opportunities to save energy and money.

8 **6. Q. How did the Company develop its Phase IV program requirements?**

9 A. First, the Company used the results of the SWE's Energy Efficiency and Peak
10 Demand Reduction ("EEPDR") Potential Study, which served as the basis for the EE
11 and PDR targets in the Phase IV Implementation Order, to divide EE saving and
12 PDRs between the residential, low-income, and commercial and industrial ("C&I")
13 sectors. The SWE performed electric distribution company ("EDC")-specific studies
14 which presented the technical, economic, and achievable potential over ten years and
15 program potential over five years beginning June 1, 2021 for each of those customer
16 sectors.

17 PECO then determined the appropriate division of the Company's mandated EE
18 savings and PDRs between its five Phase IV programs: (1) Residential (excluding
19 low-income); (2) Income-Eligible; (3) Residential Home Energy Reports; (4) Income-
20 Eligible Home Energy Reports; and (5) Non-Residential. As part of that process,
21 PECO determined what portion of the assigned residential and residential low-income
22 EE savings and PDRs could reasonably come from behavioral programs by analyzing
23 Phase III behavioral program data and reviewing the most recent Technical Reference

1 Manual (“TRM”). To account for program implementation risks, the Company
2 multiplied the EE savings and PDRs assigned to each program by 105%.

3 After the EE savings and PDRs were assigned to each program, the Company relied
4 upon the SWE’s acquisition cost findings in the EEPDR to establish the budget for
5 each program.

6 **7. Q. Did the Company develop additional program design requirements?**

7 A. Yes. Consistent with the Commission’s requirement in the Phase IV Implementation
8 Order, each program must be designed to achieve a minimum of 15% of its total EE
9 savings and PDRs each year. In addition, the non-behavioral programs must: (1)
10 allow customers to access all applicable measures in the TRM; and (2) engage a
11 variety of market players (e.g., trade allies).

12 **8. Q. How did the Company solicit and assess bids for Phase IV programs?**

13 A. The Company issued requests for proposals (“RFPs”) for different program groupings
14 in a manner consistent with the Company’s Commission-approved Phase IV RFP
15 process.² Bidders were instructed to propose program designs (including measures,
16 rebates, trade ally engagement, etc.) that met each of the Company’s high-level
17 program requirements and to identify any sub-contractors they would employ.

18 Bidders were also asked to propose a “pay for performance” contract pricing structure
19 whereby the CSP’s compensation would be based on the achievement of verified EE

² PECO’s Phase IV RFP process was approved by Secretarial Letter issued August 27, 2020 at Docket No. M-2020-3020830.

1 savings. Program design submissions were made on specialized workbooks
2 developed by Guidehouse, our outside consultant, to ensure that each CSP provided
3 an appropriate level of information.

4 The Company carefully reviewed each bid in accordance with its Phase IV RFP
5 process and selected the winning bidders. The Company's Phase IV Plan reflects the
6 program designs proposed by the winning CSPs.

7 **9. Q. What are the benefits of using the market-based plan design process that you**
8 **have described?**

9 A. There are numerous benefits to the Company's approach:

10 *Incorporates diverse market expertise.* By letting CSPs design programs to meet the
11 Company's key requirements, PECO's Phase IV Plan reflects the expertise and
12 experience of multiple market actors in the EE space.

13 *Provides greater flexibility to respond to market changes.* By having a single CSP
14 manage an entire program instead of certain portions of a program, the CSP can take
15 a flexible and market-responsive approach to achieving the required EE savings and
16 PDRs. If, for example, a certain component of the program is underperforming, the
17 CSP and PECO can agree to promptly increase incentive levels, employ a new
18 marketing strategy, or even shift emphasis to other program components to stay on
19 track.

1 *Incentivizes innovative and cost-effective CSP activity.* Because CSPs are
2 compensated based on their ability to drive EE savings, they are incentivized to
3 design innovative, achievable and cost-effective programs. The flexibility provided
4 to CSPs will further promote creative responses to challenges that occur during
5 program implementation.

6 *Engages an array of market actors to drive a positive customer experience.* By
7 requiring CSPs to engage a variety of market actors during program implementation,
8 PECO is ensuring that customers have access to comprehensive savings
9 opportunities. The CSP compensation structure also incentivizes CSPs to carefully
10 monitor subcontractor performance to ensure a positive customer experience.

11 **10. Q. Will the Company be engaging CSPs to implement other elements of the Phase**
12 **IV Plan that are not specific to a particular program?**

13 A. Yes. Separate from the program-specific process I described above, the Company
14 will be using its Phase IV RFP process to engage CSPs for a variety of other Phase IV
15 Plan matters, such as EM&V.

16 **III. PECO'S EE PROGRAMS**

17 **11. Q. Please provide an overview of the EE programs in PECO's Phase IV Plan.**

18 A. The Company is proposing five EE programs: (1) Residential (excluding low-
19 income); (2) Residential Home Energy Reports; (3) Income-Eligible; (4) Income-
20 Eligible Home Energy Reports; and (5) Non-Residential. As I previously explained,
21 the Company identified the key requirements for each program and then CSPs were

1 given the opportunity to compete with one another and propose the design details for
2 each program. Each winning program design is consistent with the requirements I
3 previously described.

4 **12. Q. What programs will be offered to residential customers?**

5 A. The **Residential Program** is designed to offer customers opportunities to save energy
6 across all their electric end-uses and to make participation in the program a pleasant
7 experience. The Program has multiple objectives, including incentives for purchases
8 of efficient lighting, appliances, HVAC upgrades, energy saving devices, and other
9 energy savings technologies. The Program will offer appliance recycling services to
10 remove old, inefficient refrigerators, freezers, and window AC units. Additionally,
11 the Program will include a new construction component that will drive the
12 construction of energy-efficient homes and demonstrate their value to the
13 marketplace. Finally, the Program will have offerings for the customer premises and
14 common areas of multifamily buildings (both individually-metered and master-
15 metered).

16 PECO will also offer a **Residential Home Energy Reports (“HER”) Program** that
17 involves regularly delivering direct mail or digital HERs that motivate customers to
18 act through contextualized energy-usage information, personal and neighborhood
19 comparisons, and energy savings recommendations. The Program is designed to
20 influence participant behaviors and influence energy management in their homes.

1 13. Q. What programs will be offered to low-income customers?

2 A. The **Income-Eligible Program** is available to customers with a household income at
3 or below 150% of the Federal Poverty Income Guidelines (“FPIG”). The Program
4 builds upon the Company’s successful Phase III low-income program. The
5 foundational element of the Income-Eligible Program is a direct install whole home
6 solution, which provides in-home audits and education as well as the direct
7 installation of EE measures at no charge to the participant. The Program also
8 includes appliance recycling services to remove old, inefficient refrigerators, freezers,
9 and window AC units. Finally, the Program will provide opportunities for income-
10 eligible families living in multifamily buildings, including measures for the customer
11 premise and common areas.

12 The Phase IV Plan also includes an **Income-Eligible HER Program** that is similar to
13 the Residential HER Program described above but targeted only to customers in the
14 low-income sector.

15 Taken together, the programs offered to low-income customers are designed to
16 exceed the requirement that PECO obtain 5.8% (80,089 MWh) of the Company’s
17 overall energy savings target from customers with a household income of 150% or
18 less of the FPIG.

19 14. Q. Please describe the Non-Residential Program.

20 A. PECO Plan’s includes a single, comprehensive program for both large and small C&I
21 customers. The **Non-Residential Program** will provide customers with easy access

1 to technical support and rebates through multiple engagement options and offer
2 comprehensive EE solutions by providing rebates for a wide range of energy
3 conservation measures. The Program includes a prescriptive component containing
4 measures in the TRM and a custom component that can capture the interactive effects
5 of multiple TRM measures. Both components are available for retrofit and new
6 construction and will employ a market-driven approach in which customers are free
7 to choose where they buy the EE measures and who installs them.

8 **15. Q. Does the Company’s Plan provide at least one comprehensive program for**
9 **residential customers and one for non-residential customers as required by the**
10 **Phase IV Implementation Order?**

11 A. Yes. The Residential, Income-Eligible, and Non-Residential Programs each provide
12 customers with comprehensive opportunities to save energy across all electric end-
13 uses.

14 **16. Q. Is the Company’s Plan designed to achieve at least 15% of the required EE**
15 **savings and PDRs each program year as required by the Phase IV**
16 **Implementation Order?**

17 A. Yes. The Plan is designed to achieve over 15% of the total EE savings and PDR
18 targets in each of the five program years (PY 13-17) as illustrated in Tables 2 and 3 of
19 the Plan.

1 17. Q. Is the Company’s Plan designed to allocate at least 50% of all spending to
2 incentives, with less than 50% allocated to non-incentive categories, as required
3 by the Phase IV Implementation Order?

4 A. Yes. As shown in Figure 6 of the Plan, over 50% of all spending has been allocated
5 to incentives in each of the five program years (PY 13-17).

6 18. Q. Does the Plan address the Phase IV Implementation Order requirement that
7 EDCs describe their strategy to nominate a portion of the projected PDRs into
8 PJM’s forward capacity markets (“FCM”)?

9 A. Yes. PECO will nominate up to 50 MW of peak demand reductions from its portfolio
10 of EE programs into the PJM forward capacity market in the later years of Phase IV.
11 PECO will issue an RFP to select an experienced vendor to review the performance
12 of the Phase IV portfolio and bid into PJM’s FCM.

13 **IV. RESEARCH AND DEVELOPMENT EFFORTS**

14 19. Q. Is PECO taking any steps to stay current with emerging technologies and
15 implementation strategies during Plan implementation?

16 A. Yes. The Company expects that over the course of the Phase IV Plan, new
17 technologies and market engagement strategies will emerge. PECO has therefore
18 dedicated 5% of its annual Phase IV Plan budget towards “Research and
19 Development” to: (1) investigate and possibly pilot new and promising technologies;
20 and (2) perform market research to identify and respond to market transformations
21 over the course of the five-year Plan term. In accordance with Act 129, the Company

1 will not use more than 2% of its Plan budget to investigate and/or pilot experimental
2 equipment or devices.³

3 **V. CONCLUSION**

4 **20. Q. Does this conclude your direct testimony?**

5 A. Yes.

6

DB1/ 116635744.11

³ See 66 Pa.C.S. § 2806.1(b)(1)(iii).

**PECO ENERGY COMPANY
STATEMENT NO. 3**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ENERGY EFFICIENCY AND CONSERVATION PROGRAM

DOCKET NO. M-2020-3020830

DIRECT TESTIMONY
SUPPORTING PECO'S PETITION FOR APPROVAL
OF ITS PHASE IV EE&C PLAN

WITNESS: WILLIAM R. SUPPLE

SUBJECT: GUIDEHOUSE ROLE IN SUPPORTING PLAN
DEVELOPMENT, PROGRAM SAVINGS,
EXPENDITURES AND COST-EFFECTIVENESS

DATED: NOVEMBER 30, 2020

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE OF TESTIMONY	1
II. GUIDEHOUSE’S ROLE IN SUPPORTING THE DEVELOPMENT OF THE PHASE IV PLAN.....	2
III. PROGRAM SAVINGS, EXPENDITURES AND COST- EFFECTIVENESS.....	3
IV. CONCLUSION	8

1 specialized in assisting electric and natural gas utilities with portfolio resource
2 assessment, design planning, and cost-effectiveness analysis to meet EE resource
3 standards in Pennsylvania, Massachusetts, Maryland, Ohio, Illinois, and Nova Scotia.

4 **5. Q. What is the purpose of your testimony in this case?**

5 A. Guidehouse was retained by PECO Energy Company (“PECO” or the “Company”) to
6 assist in the development of the Company’s Act 129 Phase IV Energy Efficiency and
7 Conservation Plan (“Phase IV Plan” or “Plan”) for the period June 1, 2021 to May 31,
8 2026. The purpose of my testimony is: (1) to describe how Guidehouse supported
9 the development of the Phase IV Plan; and (2) to summarize PECO’s Phase IV Plan
10 projected energy and demand savings, program expenditures, and Total Resource
11 Cost (“TRC”) benefits.

12 **II. GUIDEHOUSE’S ROLE IN SUPPORTING THE DEVELOPMENT OF**
13 **THE PHASE IV PLAN**

14 **6. Q. Please describe how Guidehouse assisted with development of the Phase IV Plan.**

15 A. As detailed in the direct testimony of Mr. DeDominicis, PECO employed a market-
16 based process to determine the details of its proposed Phase IV EE programs.
17 Guidehouse supported PECO’s process by: (1) documenting Phase III learnings to
18 inform the Phase IV Plan design; (2) facilitating workshops with PECO to determine
19 the appropriate division of PECO’s mandated EE savings, budget, and peak demand
20 reductions (“PDRs”) between its five Phase IV programs; and (3) drafting requests
21 for proposals (“RFPs”) seeking bids from conservation service providers (“CSPs”) to
22 implement programs consistent with PECO’s high-level program requirements.

1 **III. PROGRAM SAVINGS, EXPENDITURES, AND COST-EFFECTIVENESS**

2 **7. Q. How were the projected energy savings and PDRs for each Phase IV program**
3 **determined?**

4 A. The projected energy savings and PDRs for each program were provided by the CSP
5 who successfully bid to design and implement that program. As part of the RFP
6 process, Guidehouse developed a workbook that incorporated 2021 Technical
7 Resource Manual (“TRM”)¹ measure characterizations as well as savings and PDR
8 achievable program targets from the Statewide Evaluator’s (“SWE”) energy
9 efficiency and peak demand reduction potential study. CSPs were required to input
10 program details into the workbook to calculate the reasonably achievable energy
11 savings and PDRs from their program design.

12 **8. Q. Please summarize the total energy savings and PDRs projected for the Plan.**

13 A. Overall, PECO anticipates saving a total of 1,605,107 MWh and achieving 327 MW
14 of PDRs in Phase IV, which represent approximately 116% and 128% of PECO’s
15 mandated targets, respectively. Tables 1 and 2 present the forecasted gross annual
16 energy and demand savings by program for each year of the Phase IV Plan.
17 Approximately 26% of MWh and 28% of MW savings come from the residential
18 sector, and 74% of MWh and 72% of MW savings from the commercial and
19 industrial sector. PECO anticipates that 97,421 MWh of the overall forecasted

¹ *Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual 2021 Update*, Docket No. M-2019-3006867 (Order entered Aug. 8, 2019).

savings will come from low-income targeted programs or low-income verified participants in multifamily housing programs. This represents roughly 7.1% of PECO’s Phase IV target and exceeds the required 5.8% of savings for the low-income carve-out. Note that Tables 1 and 2 provide totals by program rather than sector and table totals may not add due to rounding.

Table 1. Annual Gross Energy Savings by Program

Programs	Annual Energy Savings (MWh)					5-Year Total
	PY13	PY14	PY15	PY16	PY17	
Residential	44,174	45,513	46,914	48,389	49,939	234,929
Income-Eligible	16,967	16,969	16,967	16,969	16,967	84,841
Non-Residential	174,863	233,474	291,873	291,873	174,864	1,166,947
Residential Home Energy Reports	21,507	25,447	22,234	22,012	21,456	112,656
Income-Eligible Home Energy Reports	938	1,413	938	1,413	1,032	5,734
Grand Total – All Phase IV Programs	258,449	322,816	378,927	380,657	264,258	1,605,107

Table 2. Annual Demand Savings by Program

Programs	Peak Demand Reductions (MW)					5-Year Total
	PY13	PY14	PY15	PY16	PY17	
Residential	6.7	6.9	7.1	7.3	7.5	35.6
Income-Eligible	2.5	2.5	2.5	2.5	2.5	12.6
Non-Residential	34.9	46.7	58.4	58.4	34.9	233.3
Residential Home Energy Reports	8.4	9.9	8.7	8.6	8.4	44.0
Income-Eligible Home Energy Reports	0.2	0.3	0.2	0.3	0.2	1.2
Grand Total – All Phase IV Programs	52.8	66.4	76.9	77.1	53.6	326.6

9. Q. What are the annual and cumulative program expenditures projected for the Plan?

A. PECO expects to spend \$427.4 million over the five-year Plan period in order to achieve the projected energy savings and PDRs. This represents 100% of PECO’s spending cap under Act 129 Phase IV. Of that total, PECO expects to spend 29% of the program delivery budget for residential EE programming, 59% on non-residential

EE programming, and 12% for cross-cutting common costs. Table 3 lists the anticipated annual and total expenditures by program. Projected costs by program represent all anticipated costs to be incurred by PECO and competitively-selected CSPs for program implementation. The common costs category includes all PECO staff and material costs and third party contractor costs to be incurred by PECO for overall portfolio and program management, data tracking, education and awareness, various technical support and program design needs, research and development, and third party evaluation, measurement, and verification.

Table 3. Annual and Total Expenditures by Program

Program	Budget (Million \$)						Average Annual
	PY13	PY14	PY15	PY16	PY17	5-Year Total	
Residential	\$14.45	\$14.82	\$15.21	\$15.62	\$16.06	\$76.16	\$15.23
Income-Eligible	\$8.29	\$8.29	\$8.29	\$8.29	\$8.29	\$41.45	\$8.29
Residential Home Energy Reports	\$1.85	\$2.19	\$1.91	\$1.89	\$1.85	\$9.69	\$1.94
Income-Eligible Home Energy Reports	\$0.08	\$0.12	\$0.08	\$0.12	\$0.09	\$0.49	\$0.10
Subtotal Residential Programs	\$24.67	\$25.43	\$25.49	\$25.93	\$26.28	\$127.79	\$25.56
Non-Residential	\$39.59	\$49.23	\$61.32	\$61.32	\$37.11	\$248.57	\$49.71
Subtotal Commercial & Industrial Programs	\$39.59	\$49.23	\$61.32	\$61.32	\$37.11	\$248.57	\$49.71
Common Costs	\$10.20	\$10.20	\$10.20	\$10.20	\$10.20	\$51.02	\$10.20
Grand Total – All Programs & Common Costs	\$74.46	\$84.86	\$97.02	\$97.46	\$73.59	\$427.39	\$85.48

10. Q. What portion of the projected expenditures are for incentives?

A. PECO’s incentive budget is 57% of the total Phase IV plan. Incentives are rebates offered to program participants, CSPs, and trade allies to deliver the program, including direct installation measure costs and labor. Table 4 presents PECO’s incentive budget and portfolio incentive percent.

1

Table 4. Incentive Budget and Portfolio Incentive Percent

Program	Incentive Budget (Million \$)						Average Annual
	PY13	PY14	PY15	PY16	PY17	5-Year Total	
Residential	\$6.55	\$6.77	\$6.99	\$7.23	\$7.47	\$35.01	\$7.00
Income-Eligible	\$5.65	\$5.66	\$5.65	\$5.66	\$5.65	\$28.28	\$5.66
Residential Home Energy Reports	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Income-Eligible Home Energy Reports	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subtotal Residential Programs	\$12.21	\$12.43	\$12.64	\$12.89	\$13.13	\$63.29	\$12.66
Non-Residential	\$27.32	\$36.47	\$45.59	\$45.59	\$27.32	\$182.31	\$36.46
Subtotal Commercial & Industrial Programs	\$27.32	\$36.47	\$45.59	\$45.59	\$27.32	\$182.31	\$36.46
Total Portfolio Budget (Incentive, Admin & Common Costs)	\$74.46	\$84.86	\$97.02	\$97.46	\$73.59	\$427.39	\$85.48
Incentive Budget as Percent of Total	53%	58%	60%	60%	55%	57%	N/A

2

3

4

11. Q. How did you determine cost-effectiveness?

5

A. Guidehouse followed the Commission’s guidance in the 2021 TRC Test Final Order² on how to calculate the TRC test as the basis for judging the economic viability of the Phase IV Plan. To this end, Guidehouse worked with PECO to complete the SWE Phase IV Avoided Cost Calculator yielding avoided costs for energy, capacity, and natural gas reductions. The avoided cost of water as well as other important drivers including system loss factors, discount rates, maximum economic lifetime, and inflation rates were sourced from the 2021 TRC Order, the TRM, and other SWE resources. Where appropriate, costs for avoided operations, maintenance, and future equipment replacement in the cases of early replacement measures were estimated. Plan measure characterizations were largely developed using the 2021 TRM, Phase III evaluation results, the Phase IV SWE Incremental Cost Database, and CSP implementation experience. The TRC test was calculated and reviewed using both

6

7

8

9

10

11

12

13

14

15

16

² 2021 Total Resource Cost (TRC) Test, Docket No. M-2019-3006868 (Order entered Dec. 19, 2019).

1 gross savings estimates and net savings estimates. Guidehouse incorporated the
2 following specific modifications to the TRC test to comply with Commission
3 guidance:

- 4 a) Measure lifetime was capped at 15 years;
- 5 b) Energy savings were calculated at the meter, without line losses, while
6 demand savings were calculated at the generator, with line losses;
- 7 c) Estimated net-to-gross ratios from previous PECO Phase III evaluation
8 findings were applied as appropriate to similar programs; and
- 9 d) Costs associated with the free provision of efficient equipment and
10 installation labor costs (e.g., low income, multifamily and single family
11 direct install, small business direct install) are all treated as incentive costs.

12 **12. Q. Is PECO's Phase IV Plan cost-effective?**

13 A. Yes. For the Plan as a whole over Phase IV, the gross TRC benefit-to-cost ratio is
14 1.14 and the net TRC benefit-to-cost ratio is 1.06, yielding total net benefits based on
15 gross savings of \$93.47 million. Table 5 shows the TRC results and discounted
16 benefits and costs for the Phase IV Plan by program.

1

Table 5. Phase Total TRC Results by Program

Program	TRC Analysis				
	Discounted Benefits (Million \$) ¹	Discounted Costs (Million \$) ¹	Net Benefits (Million \$)	B/C Ratio (Gross)	B/C Ratio (Net)
Residential	\$154.32	\$130.89	\$23.43	1.18	1.04
Income-Eligible	\$40.89	\$37.68	\$3.20	1.09	1.09
Residential Home Energy Reports	\$17.20	\$8.82	\$8.38	1.95	1.95
Income-Eligible Home Energy Reports	\$0.55	\$0.45	\$0.11	1.24	1.24
Subtotal Residential Programs	\$212.96	\$177.84	\$35.12	1.20	1.11
Non-Residential	\$562.71	\$458.09	\$104.62	1.23	1.18
Subtotal Commercial & Industrial Programs	\$562.71	\$458.09	\$104.62	1.23	1.18
Common Costs		\$46.27			
Grand Total – All EE/DR Programs	\$775.67	\$682.20	\$93.47	1.14	1.06

¹ Cost and benefits discounted to PY13.

2
3
4
5

IV. CONCLUSION

6 **13. Q. Does this conclude your direct testimony?**

7 A. Yes.

8

William Supple

Senior Consultant

William.Supple@navigant.com
Burlington, VT
Direct: 802.526.5121

Professional Summary

William Supple is a Managing Consultant in the Energy practice at Navigant. William has experience in energy efficiency and conservation program design, benefit-cost analysis, potential study analysis, energy efficiency program evaluation, grid modernization investment modeling, and custom utility research and reporting. William's expertise is in data analytics, cost-effectiveness analysis, system dynamics and optimization, and custom economic model development. These skills, complimented by his outstanding academic qualifications in economics, energy engineering and energy management, have enabled William to become a successful leader in program and cost-effectiveness modelling on a variety of projects core to utility energy efficiency and business activities.

Areas of Expertise

- **DSM Program Design & Regulatory Support:** Assisting electric utilities with residential, commercial, and industrial energy efficiency and demand response program design and benefit-cost analysis.
- **EE Potential Study Analysis:** Forecasting energy efficiency measure technical, economic, and achievable savings potential across a utility service territory.
- **DSM Evaluation, Measurement & Verification:** Conducting independent third party evaluations of DSM program savings, costs, and processes to validate reported savings and identify process improvements.

Professional Experience

DSM Program Design & Regulatory Support

- *National Grid MA & RI 2019-2021 Potential Studies.* William was a member of the potential study modeling team developing custom calculations and model outputs for National Grid MA's 2019-2021 potential study. Subsequently, William was the lead modeler for the National Grid RI 2019-2021 potential study which heavily leveraged the Rhode Island updated BCA framework to determine achievable potential. William studied and replicated the updated BCA framework in Navigant's potential study model and delivered updated results to inform RI specific potential. (2017-2019)
- *PECO, 2016-2020 Electric Efficiency Portfolio Plan Development and Continued Improvement.* Utilizing the ProCESS model, assisted in the design and development of PECO's phase III portfolio of energy efficiency and demand response programs for Act 129 compliance. Conducted extensive measure characterization in both the residential and commercial sector for measures feeding into the plan model. Managed Public Utility Commission required table outputs and metrics from the model to ensure compliance.

William Supple

Senior Consultant

Continued support developing ad hoc model result analysis for client and stakeholder interrogatories and continuous improvement of design. (2015-Present)

- *EEA 2019-2021 Program Design.* Led the ProCESS model program design for EEA's 2019-2021 Portfolio. Coordinated inputs sourced from potential model results, successfully linking results between related EEA studies. Worked with client to develop comprehensive and cost-effective programs to expand EE-DSM offerings. Customized model logic and algorithms to meet specific client and regulatory needs, including the addition of a novel emissions reduction cost test. (2018)
- *Washington Gas, 2018-2020 Gas EE Portfolio Development.* Led Excel-based portfolio cost effectiveness model development. Updated benefit-cost model to comply with Maryland specific inputs and managed the uploading of measure characterizations. Aided in the formulation of Washington Gas' suite of program offerings reaching yearly savings targets at the desired budgets while maintaining a positive program and portfolio TRC. (2016-2018)
- *AEP Ohio, 2017-2019 EE & PDR Plan Design.* Led the residential measure characterization effort and ensured product quality for import in the ELRAM potential study/plan design model. Coordinated with the rest of the modelling team to QC benefit-cost outputs and adjust global economic inputs to represent AEP Ohio's service territory. Managed plan table development and responded to interrogatories from regulators and other stakeholders. (2016)
- *EE Potential Study Analysis.* William has played an integral role on potential study teams for ENS, PSE, Xcel Energy, National Grid, AEP Ohio, and ConEd. William has developed measure characterizations for the residential and commercial sectors as well as led modelling of technical, economic, and achievable market potential.
- *EE/DR Evaluation Measurement & Verification (EM&V).* William is experienced in leading utility EM&V cost-effectiveness analyses. William has coordinated inputs, customized modelling tools, and managed cost-effectiveness regulatory reporting for PECO, KCP&L, and Washington Gas. William has also aided in impact and process evaluation activities for a variety of clients and efficiency program types.

Work History

- Managing Consultant, Guidehouse Inc.
- Clean Energy Market Analyst, North Carolina Sustainable Energy Association
- Institute Fellow, Green Plus Institute for Sustainable Development
- Environmental Scientist, Environmental Compliance Services, Inc.

Education

- Master of Environmental Management, Energy and Environment, Duke University
- Bachelor of Arts, Environmental Science, Biology, Geology, Colby College

**PECO ENERGY COMPANY
STATEMENT NO. 4**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ENERGY EFFICIENCY AND CONSERVATION PROGRAM

DOCKET NO. M-2020-3020830

DIRECT TESTIMONY
SUPPORTING PECO'S PETITION FOR APPROVAL
OF ITS PHASE IV EE&C PLAN

WITNESS: RICHARD A. SCHLESINGER

SUBJECT: COST RECOVERY

DATED: NOVEMBER 30, 2020

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE OF TESTIMONY	1
II. PECO'S PROPOSED METHOD OF COST RECOVERY.....	4
III. SEPARATE ACCOUNTING FOR COSTS INCURRED AND EEPC REVENUES BILLED FOR PHASE IV AND PREVIOUS PHASES	14
IV. CONCLUSION	15

**DIRECT TESTIMONY
OF
RICHARD A. SCHLESINGER**

1 **I. INTRODUCTION AND PURPOSE OF TESTIMONY**

2 **1. Q. Please state your full name, professional position, and business address.**

3 A. My name is Richard A. Schlesinger. I am Manager of Retail Rates in the
4 Regulatory Policy and Strategy Department for PECO Energy Company
5 (“PECO” or the “Company”). My business address is PECO Energy Company,
6 2301 Market Street, Philadelphia, Pennsylvania 19103.

7 **2. Q. Please describe your educational background.**

8 A. I have a Bachelor of Science Degree in Engineering from Widener University. In
9 addition, I have a Master’s Degree in Business Administration from Saint
10 Joseph’s University.

11 **3. Q. Please describe your work experience in the energy industry.**

12 A. I was hired in 1986 by PECO as a System Engineer in the Plant Operations group
13 supporting the Limerick Nuclear Generating Station. From 1988 to 1991, I held
14 several positions of increasing responsibility supporting plant operations,
15 management, and quality assurance. In 1992, I transferred into the position of
16 Rate Engineer in the Rates and Regulatory Affairs Group. In 1997, I was
17 appointed to the position of Project Manager, Customer Choice Implementation,
18 and was responsible for many regulatory activities related to the phase-in of
19 electric and gas retail choice for all of PECO’s two million electric and gas

1 distribution customers. In 2000, I transferred to the Company's Customer and
2 Marketing Services Department and served as e-Commerce Manager and then as
3 Project Manager, overseeing various Business/Information Technology system
4 implementations. In 2004, I returned to the Regulatory and External Affairs
5 Department, where I served as Principal Rate Administrator. In 2009, I was
6 promoted to my current position – Manager of Retail Rates. In this role, I have
7 primary management and oversight responsibility for PECO's electric and gas
8 service tariffs, as well as overseeing numerous filings with the Pennsylvania
9 Public Utility Commission (the "Commission").

10 **4. Q. Mr. Schlesinger, have you submitted testimony previously before the**
11 **Commission?**

12 A. Yes. I submitted testimony in support of PECO's Phase I Energy Efficiency and
13 Conservation ("EE&C") Plan,¹ PECO's Phase II EE&C Plan,² and PECO's Phase
14 III EE&C Plan.³ In addition, I submitted testimony in support of the Company's
15 Market Rate Transition Energy Efficiency Package⁴ and its Residential Real-Time
16 Pricing Program.⁵ Finally, I have also submitted testimony in support of several

¹ *Petition of PECO Energy Company for Approval of its Act 129 Energy Efficiency and Conservation Plan and Expedited Approval of its Compact Fluorescent Lamp Program*, Docket No. M-2009-2093215.

² *Petition of PECO Energy Company for Approval of its Act 129 Phase II Energy Efficiency and Conservation Plan*, Docket No. M-2012-2333992.

³ *Petition of PECO Energy Company for Approval of its Act 129 Phase III Energy Efficiency and Conservation Plan*, Docket No. M-2015-2515691.

⁴ *Petition of PECO Energy Company for Approval of its Market Rate Transition Energy Efficiency Package*, Docket No. P-2008-2062740.

⁵ *Petition of PECO Energy Company for Approval of Phase I of its Residential Real-Time Pricing Program*, Docket No. P-2008-2032333.

1 of PECO's Distribution Rate Cases. These include PECO's 2015 Electric
2 Distribution Rate Case,⁶ PECO's 2018 Electric Distribution Rate Case,⁷ and
3 PECO's recently filed 2020 Gas Distribution Rate Case.⁸

4 **5. Q. What is the purpose of your direct testimony?**

5 A. I am sponsoring a supplement to PECO's Electric Service Tariff bearing a
6 proposed effective date of June 1, 2021, which contains provisions designed to
7 implement PECO's proposed Phase IV EE&C Plan Charge ("Phase IV EEPC").
8 Accordingly, my testimony: (1) describes PECO's Phase IV EEPC, which is the
9 rate adjustment mechanism the Company proposes to establish under Section
10 1307 of the Pennsylvania Public Utility Code⁹ to recover the costs associated with
11 the Company's Phase IV EE&C Plan; (2) identifies the categories of PECO's
12 Phase IV EE&C Plan costs that the Phase IV EEPC will recover; and (3) provides
13 the Company's current estimates of its Phase IV Plan costs. In addition, I will
14 describe how PECO's rates will be adjusted annually over the term of its Phase IV
15 EE&C Plan to reflect over- or under-recoveries. Finally, I will describe how the
16 Company will separate costs incurred and EEPC revenues billed with respect to
17 its Phase IV EE&C Plan from costs incurred and EEPC revenues billed with
18 respect to its Phase III EE&C Plan.

⁶ *Pa. P.U.C. v. PECO Energy Company – Electric Division*, Docket No. R-2015-2468981.

⁷ *Pa. P.U.C. v. PECO Energy Company – Electric Division*, Docket No. R-2018-3000164.

⁸ *Pa. P.U.C. v. PECO Energy Company – Gas Division*, Docket No. R-2020-3018929.

⁹ Hereafter, unless specifically stated otherwise, all section references are to the Pennsylvania Public Utility Code.

1 recovery mechanism be non-bypassable and that it not affect the EDCs' prices-to-
2 compare.¹³

3 **8. Q. Please explain the mechanism that PECO is proposing to recover Phase IV**
4 **Plan costs.**

5 A. Consistent with the authority granted by Section 2806.1(k) and the *Phase IV*
6 *Implementation Order*, PECO's Phase IV EEPC will be a fully reconcilable, non-
7 bypassable charge. The Phase IV EEPC is designed to adjust customers'
8 distribution rates by the amount of the charge calculated for each rate class and, as
9 a result, PECO's price-to-compare will not be affected by the recovery of Phase
10 IV EE&C Plan costs. The Phase IV EEPC follows the same format the Company
11 used for its currently-effective, Commission-approved Phase III EEPC, which, as
12 previously noted, recovers costs associated with PECO's Phase III EE&C Plan.

13 Exhibit RAS-1 is a pro forma supplement, in both clean and redlined versions, to
14 PECO's Electric Service Tariff that sets forth the revisions to PECO's currently
15 effective Electric Service Tariff needed to implement PECO's Phase IV EEPC
16 and, therefore, reflects changes with respect to the cost recovery method, the
17 formula for calculating the Phase IV EEPC charge and the Phase IV EEPC
18 charges specific to each rate class. All of the rate schedules setting forth
19 distribution rates that would have to be adjusted to reflect the Phase IV EEPC are
20 also included in the proposed tariff supplement provided as Exhibit RAS-1.

¹³ See Implementation Order, *Energy Efficiency and Conservation Program*, Docket No. M-2012-2289411 (Order entered August 3, 2012) ("*Phase II Implementation Order*")

1 However, PECO will submit the final distribution rates in a compliance filing
2 after its Phase IV EE&C Plan and Phase IV EEPC are approved.

3 **9. Q. What categories of costs will be recovered under the Phase IV EEPC?**

4 A. The Phase IV EEPC will recover any of the fixed capital costs (depreciation and
5 pre-tax return) and operating expenses, not otherwise recovered in base rates, to
6 design and implement the EE&C programs incorporated in its Phase IV EE&C
7 Plan. These costs include, among others, the cost of information technology
8 (“IT”) needed to design and implement the EE&C programs; the costs of
9 customer outreach and program promotion; incremental labor costs incurred to
10 manage and administer the EE&C programs on an ongoing basis; the cost to
11 measure and verify EE&C program results; and the cost of incentives offered to
12 customers to participate in the approved EE&C programs.¹⁴

13 **10. Q. Will the Phase IV EEPC recover any capital expenditures?**

14 A. If the Company incurs IT costs to implement the Phase IV Plan, these costs would
15 be capitalized for financial accounting purposes and depreciated over the service
16 life of the property, which would correspond to the five-year term of PECO’s
17 Phase IV EE&C Plan. Accordingly, PECO would include as recoverable costs in
18 its Phase IV EEPC the annual depreciation of this property and a pre-tax return on

¹⁴ See *Phase IV Implementation Order*, p. 121.

1 the depreciated original cost at PECO’s weighted cost of capital, as permitted by
2 the *Phase IV Implementation Order* (p. 121).¹⁵

3 **11. Q. What are the Company’s budgeted expenditures for its Phase IV Plan?**

4 A. As explained in Section 7 of PECO’s Phase IV EE&C Plan, which is being
5 submitted as PECO Exhibit 1 accompanying the Petition of PECO Energy
6 Company For Approval of Its Phase IV Energy Efficiency and Conservation Plan,
7 consistent with the cost limitation imposed by Section 2806.1(g), the Company’s
8 budgeted Phase IV expenditures total \$427.4 million for the five-year term of the
9 Plan. The Company projects that its budgeted expenditures by rate class will be
10 as follows:

Residential	\$136.9 million
Small Commercial and Industrial (“SC&I”)	\$122.8 million
Large Commercial and Industrial (“LC&I”)	\$165.9 million
<u>Municipal Lighting (“ML”)</u>	<u>\$1.8 million</u>
Total	\$427.4 million

11 Exhibit RAS-2 contains a summary of the projected expenditures by class for all
12 of the programs in the Phase IV EE&C Plan.

13 **12. Q. How will Statewide Evaluator (“SWE”) costs be handled?**

14 A. The *Phase IV Implementation Order* (p. 123) requires PECO to remove the SWE
15 costs from its EE&C Phase IV budget. (The same requirement was imposed for

¹⁵ PECO proposes to calculate its weighted average cost of capital in the same manner specified by the Commission in the Final Implementation Order, *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (Order entered August 2, 2012), pp. 30-31 and Appendix A, Section 2.B.2.

1 purposes of EDCs’ Phase III EE&C Plans, as well.)¹⁶ Accordingly, PECO has not
2 included SWE costs in its Phase IV Plan budget. PECO will track Phase IV SWE
3 costs separately from its Phase IV EE&C Plan costs and, as permitted by the
4 *Phase IV Implementation Order*,¹⁷ will recover both categories of costs through
5 its Phase IV EEPC. Because the Phase IV SWE has not yet been selected, the
6 Company is using estimated SWE costs for the five-year term of the Phase IV
7 EE&C Plan (approximately \$2.1 million) as a placeholder for the actual Phase IV
8 SWE costs. More up-to-date projected Phase IV SWE costs will be included in a
9 compliance filing after the Phase IV Plan is approved.

10 **13. Q. What is the cost recovery period and when will it begin?**

11 A. The cost recovery period will begin when bills are sent to customers during July
12 2021 for June 2021 usage and will continue through bills sent to customers in
13 June 2026 for May 2026 usage. There will be a final “true-up” to the actual
14 EE&C Plan costs at the end of the recovery period, and any over- or under-
15 collection will then be refunded or recouped, as applicable, without interest, over
16 a twelve-month period following the completion of Phase IV.

¹⁶ See Implementation Order, Energy Efficiency and Conservation Program, Docket Nos. M-2014-2424864 (Order entered June 19, 2015) (“*Phase III Implementation Order*”)

¹⁷ See *Phase IV Implementation Order*, p. 123.

1 **14. Q. How will the Company ensure that its Phase IV EEPC recovers the cost of**
2 **particular programs from the classes of customers that will receive the**
3 **benefits those programs provide?¹⁸**

4 A. The programs included in PECO's Phase IV EE&C Plan are designed such that
5 the cost of each program is directly assigned to the customer class that will
6 receive the benefits of that program. For programs that provide benefits to more
7 than one class, costs will be allocated using reasonable and generally accepted
8 cost-of-service principles. Common costs will be allocated to each rate class in
9 proportion to the energy savings (MWh) that each rate class is projected to deliver
10 under the Phase IV Plan.

11 The total projected costs of each program for the five-year Phase IV EE&C Plan
12 term, by rate class, are shown in Exhibit RAS-2, page 1 of 2.

13 **15. Q. Have you developed proposed charges for the Phase IV EEPC for each**
14 **customer class?**

15 A. Yes, I have developed charges under the Phase IV EEPC based on the total
16 projected program costs to be incurred for each rate class for the first year of the
17 Phase IV EE&C Plan ("Program Year 13" or "PY13"). To develop the charge for
18 each rate class, the total projected program costs to be incurred for that class for
19 PY 13 (see Exhibit RAS-2, pages 2 of 2) was divided by the appropriate projected
20 class billing units (e.g. kilowatt hours of energy use or kilowatts of demand) for

¹⁸ See *Phase IV Implementation Order*, pp. 133-134.

1 the period from June 1, 2021 through May 31, 2022. In addition, as described
2 previously, although the Phase IV SWE costs will be tracked separately from the
3 Phase IV Plan costs, they are included for recovery under the Phase IV EEPC.
4 The resulting charges were then grossed up to provide for recovery of
5 Pennsylvania Gross Receipts Tax. This calculation produces a charge designed to
6 recover the total program costs for PY 13. Exhibit RAS-3 contains the detailed
7 calculations for the development of the charges for each class.

8 **16. Q. Are there any differences between the Phase III and Phase IV EEPCs?**

9 A. Yes. The *Phase IV Implementation Order* requires that the revenue from Peak
10 Demand Reduction (“PDR”) resources that are bid into and clear the PJM
11 Forward Capacity Market (“FCM”) are to be used to reduce EE&C Phase IV Plan
12 surcharges and collections from the customer classes from which the savings were
13 acquired. In addition, these must be clearly identified in the 66 Pa. 1307(e) cost
14 recovery reconciliation statement as cost reductions while any deficiency charges
15 will be identified as cost increases. FCM proceeds or penalties will not be treated
16 as “de facto” increases or reductions in the EE&C Phase IV budget and thus will
17 not to be included in the 2% spending cap.¹⁹ As result, the Phase IV EEPC has
18 been revised to reflect these changes.

19 **17. Q. Please explain the annual calculation and adjustment of Phase IV EEPC**
20 **charges.**

¹⁹ EE&C Phase IV Implementation Order, pp.138,141,142.

1 A. In the *Phase IV Implementation Order* (p. 142), the Commission required the
2 charge to be developed using “projected program costs” and not “the authorized
3 budget amount” because “[t]he development of the surcharge using the projected
4 program costs rather than the authorized budget amount would mitigate over- or
5 under-recoveries of costs during the surcharge application period.” Additionally,
6 in that Order (p. 142), the Commission required “each EDC to annually reconcile
7 (i.e., 1307(e) Statement) actual expenses incurred with actual revenues received
8 for the reconciliation period.” Accordingly, for the first year of the Phase IV
9 EE&C Plan (PY13), which runs from June 1, 2021 through May 31, 2022, PECO
10 will develop EEPC-adjusted rates based on projected Plan costs that PECO
11 anticipates will be incurred over that year. Thereafter, PECO will reset the EEPC
12 annually to recover the projected Plan costs for the then-upcoming plan year and
13 the appropriate adjustment to reconcile and true-up revenues and the previous
14 program years’ actual costs.

15 **18. Q. How does PECO propose to combine the Phase III and IV EEPCs into a**
16 **single charge?**

17 A. Similar to what the Commission ordered in prior Phases, the *Phase IV*
18 *Implementation Order* states “...that surcharges should be combined into a single
19 surcharge and tariff with the implementation of Phase IV.” (p. 142-143).
20 Accordingly, PECO proposes to combine its Phase III EEPC and Phase IV EEPC
21 into a single surcharge and a single tariff provision with the implementation of its
22 Phase IV EEPC.

1 **19. Q. What does the Phase IV Implementation Order provide with regard to the**
2 **transition from the Phase III EEPC to Phase IV EEPC?**

3 A. In the *Phase IV Implementation Order* (pages 142-143) the Commission adopted
4 a plan for the transition from the cost recovery methodology utilized during Phase
5 III, ending May 31, 2021, to the cost recovery methodology to be utilized during
6 Phase IV, beginning on June 1, 2021. The plan requires that each EDC reconcile
7 its total actual recoverable EE&C Plan expenditures incurred through March 31,
8 2021, with its actual EE&C Plan revenues received through March 31, 2021. In
9 addition, each EDC should include, as part of the calculation of the Phase IV rates
10 to become effective June 1, 2021, as clearly identified separate line items,
11 projections of the expenses to finalize any measures installed and commercially
12 operable on or before May 31, 2021, expenses to finalize any contracts, and other
13 Phase III administrative obligations. The Phase III rate that became effective
14 June 1, 2020 will remain effective through May 31, 2021. Consistent with the
15 transition requirements, for PY13 (June 1, 2021 through May 31, 2022), PECO's
16 cost recovery rates will be calculated based on the projected total program
17 expenditures for each rate class for PY13 plus the reconciliation amount for PY12
18 (June 1, 2020 through March 31, 2021) and any costs remaining from previous
19 periods. As previously explained, for each subsequent Plan year, PECO will
20 develop annual Phase IV recovery rates based on its projected program
21 expenditures for that plan year plus amounts necessary for the reconciliation of
22 costs and revenues from prior periods.

1 **20. Q. What has the Commission directed regarding the application of interest to**
2 **any Phase III and Phase IV over- and under-recoveries?**

3 A. In the *Phase IV Implementation Order* (page 142), the Commission addresses the
4 application of interest to Phase III and to Phase IV over- and under- recovered
5 amounts. They concluded that interest should not be included on any Phase III or
6 Phase IV net over- or under-recovery amounts. The Phase IV EEPC as described
7 in Exhibit RAS-1 does not include the application of interest. In addition, the
8 EEPC reflects the other provisions that I previously explained (i.e., annual
9 calculation and adjustment, exclusion of SWE costs from the 2% spending cap,
10 the identification of PJM FCM proceeds, the application of a single charge and
11 the transition plan) in order to ensure that the EEPC complies with the
12 Commission’s directives on cost recovery.

13 **21. Q. Is the Company proposing any additional tariff changes to transition from**
14 **the Phase III Plan to the Phase IV Plan?**

15 A. Yes. The Company is proposing to remove the riders associated with PECO’s
16 direct load control (“DLC”) programs because the Phase IV Plan does not contain
17 any DLC programs. Specifically, the DLC programs are dispatchable demand
18 response programs and, in accordance with the *Phase IV Implementation Order*,
19 such programs cannot be used to meet Phase IV peak demand reduction targets.
20 In Phase IV, the peak demand reductions associated with the Company’s energy
21 efficiency programs will be used to meet PECO’s peak demand reduction target.

1 **III. SEPARATE ACCOUNTING FOR COSTS INCURRED AND EEPC**
2 **REVENUES BILLED FOR PHASE IV AND PREVIOUS PHASES**

3 **22. Q. What has the Commission directed regarding accounting for costs to be**
4 **incurred and EEPC revenues to be billed for Phase IV and such costs and**
5 **revenues associated with prior Phases?**

6 A. On September 9, 2020, the Commission issued a Secretarial letter captioned *Re:*
7 *Implementation of Act 129 of 2008 – Phase IV Energy Efficiency and*
8 *Conservation Plan Template* at Docket No. M-2020-3015228. In that Secretarial
9 letter, the Commission stated that EDCs must account for Phase IV costs and
10 revenues separately from the costs and revenues associated with prior Phases.

11 **23. Q. Please explain how the Company intends to comply with the Commission’s**
12 **accounting requirements.**

13 A. PECO will comply with the Commission’s directive to separately account for
14 Phase IV costs and revenues by setting up new general ledger accounts for Phase
15 IV costs and revenues. Phase III costs and revenues are currently tracked through
16 similar, separate accounting measures. Thus, there will be no comingling of
17 Phase IV and prior Phase costs or revenues in PECO’s accounting records. Phase
18 III costs and revenues will also be clearly identified and tracked separately for
19 purposes of the EEPC. This will allow Phase IV costs to be reconciled against
20 Phase IV revenues billed under the EEPC as explained in the pro forma tariff
21 supplement provided as Exhibit RAS-1.

IV. CONCLUSION

1

2 24. Q. Does this conclude your direct testimony?

3 A. Yes, it does.

4

DB1/ 117212368.5

PECO Energy Company

Electric Service Tariff

COMPANY OFFICE LOCATION

2301 Market Street

Philadelphia, Pennsylvania 19103

For List of Communities Served, See Page 4.

Issued November 30, 2020

Effective June 1, 2021

**ISSUED BY: M. A. Innocenzo – President & CEO
PECO Energy Distribution Company
2301 MARKET STREET
PHILADELPHIA, PA. 19103**

NOTICE

LIST OF CHANGES MADE BY THIS SUPPLEMENT**PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS (EEPC) xx Revised Page No. 45 and Original Page No. 45A**

Changes as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE R RESIDENCE SERVICE – xx Revised Page No. 49

Change to the Variable Distribution Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE R-H RESIDENTIAL HEATING SERVICE – xx Revised Page No. 50

Change to the Variable Distribution Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE-GS GENERAL SERVICE – xx Revised Page No. 54

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE-PD PRIMARY-DISTRIBUTION POWER – xx Revised Page No. 56

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE-HT HIGH-TENSION POWER – xx Revised Page No. 57

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE EP ELECTRIC PROPULSION – xx Revised Page No. 58

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program

RATE SL-E STREET LIGHTING CUSTOMER-OWNED FACILITIES – xx Revised Page No. 63

Changes as a result of Phase IV of the Energy Efficiency and Conservation Program.

Rate SL-C SMART LIGHTING CONTROL CUSTOMER OWNED FACILITIES - xx Revised Page No. 65

Change as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE TLCL TRAFFIC LIGHTING CONSTANT LOAD SERVICE – xx Revised Page No. 68

Change as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE AL - ALLEY LIGHTING IN CITY OF PHILADELPHIA - xx Revised Page No. 70

Change as a result of Phase IV of the Energy Efficiency and Conservation Program.

APPLICABILITY INDEX OF RIDERS – x Revised Page No. 71

Removal of the Commercial/Industrial Direct Load Control Program (DLC) Rider and Residential Direct Load Control Program (DLC) Rider.

COMMERCIAL/INDUSTRIAL DIRECT LOAD CONTROL PROGRAM (DLC) RIDER - Original Page No. 79 and Original Page No. 80

Rider being eliminated in accordance with PECO's Phase IV Energy Efficiency and Conservation Program. Thus, this page intentionally left blank.

RESIDENTIAL DIRECT LOAD CONTROL PROGRAM (DLC) RIDER - Original Page No. 92, Original Page No. 93, and Original Page No. 94

Rider being eliminated in accordance with PECO's Phase IV Energy Efficiency and Conservation Program. Thus, this page intentionally left blank.

TABLE OF CONTENTS

List of Communities Served.....	4
How to Use Loose-Leaf Tariff	5
Definition of Terms and Explanation of Abbreviations	6,7,8,9
RULES AND REGULATIONS:	
1. The Tariff	10
2. Service Limitations	10
3. Customer's Installation	11
4. Application for Service.....	12
5. Credit	13
6. Private-Property Construction.....	14, 15
7. Extensions	16,17
8. Rights-of-Way	18
9. Introduction of Service.....	19
10. Company Equipment	19
11. Tariff and Contract Options.....	21
12. Service Continuity	22
13. Customer's Use of Service	23 ¹
14. Metering.....	23
15. Demand Determination.....	24
16. Meter Tests	25
17. Billing and Standard Payment Options.....	26
18. Payment Terms & Termination of Service.....	27 ¹ , 27A, 28
19. Unfulfilled Contracts	29
20. Cancellation by Customer.....	29
21. General	30
22. Rules For Designation of Procurement Class.....	30
23. EGS Switching	31
24. Load Data Exchange.....	31
STATE TAX ADJUSTMENT CLAUSE	32 ¹
FEDERAL TAX ADJUSTMENT CREDIT (FTAC).....	33 ⁵
GENERATION SUPPLY ADJUSTMENT FOR PROCUREMENT CLASS 1 AND 2.....	34 ⁸ , 35 ⁹
GENERATION SUPPLY ADJUSTMENT FOR PROCUREMENT CLASS 3/4	36 ⁸
RECONCILIATION	37, 38
NUCLEAR DECOMMISSIONING COST ADJUSTMENT CLAUSE (NDCA).....	39 ¹
PROVISIONS FOR RECOVERY OF UNIVERSAL SERVICE FUND CHARGE (USFC).....	40 ²
PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS	41 ²
TRANSMISSION SERVICE CHARGE	42 ⁴
NON-BYPASSABLE TRANSMISSION CHARGE (NBT).....	43 ⁴
PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT (TARC)	44 ⁴
PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS PHASE IV.....	45 ^x , 45A
DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC)	46 ⁵ , 47, 48
RATES:	
Rate R Residence Service	49 ^x
Rate R-H Residential Heating Service	50 ^x
Rate RS-2 Net Metering	51, 52, 53
Rate GS General Service	54 ^x , 55
Rate PD Primary-Distribution Power	56 ^x
Rate HT High-Tension Power.....	57 ^x
Rate EP Electric Propulsion.....	58 ^x
Rate POL Private Outdoor Lighting.....	59 ^x , 60
Rate SL-S Street Lighting-Suburban Counties	61 ^x , 62
Rate SL-E Street Lighting Customer-Owned Facilities	63 ^x , 64
Rate SL-C Smart Lighting Control Customer Owned Facilities	65 ^x , 66, 67
Rate TLCL Traffic Lighting Constant Load Service.....	68 ^x
Rate BLI Borderline Interchange Service	69
Rate AL Alley Lighting in City of Philadelphia.....	70 ^x
RIDERS:	
Applicability Index of Riders.....	71 ^x
Capacity Reservation Rider.....	72, 73, 74 ¹ , 75 ¹ , 76
CAP Rider - Customer Assistance Program.....	77
Casualty Rider	78
Commercial/Industrial Direct Load Control Program Rider	79 ^x , 80 ^x
Construction Rider	81

PECO Energy Company

Economic Development Rider.....	82, 83
Electric Vehicle DCFC Pilot Rider (EV-FC)	84 ¹ , 85
Emergency Energy Conservation Rider	86
Investment Return Guarantee Rider	87
Night Service GS Rider.....	88
Night Service HT Rider	89
Night Service PD Rider	90
Receivership Rider	91
Residential Direct Load Control Program Rider.....	92 ^x , 93 ^x , 94 ^x
Temporary Service Rider	95

PECO Energy Company

PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS (EEPC)

Purpose: The purpose of this surcharge is to provide for full and current cost recovery of expenditures associated with the Company's Phase IV Energy Efficiency and Conservation Program Costs (EEPC).

Applicability: The surcharge shall be calculated for billing purposes for all customers. The EEPC shall be charged to each rate schedule using the following units:

Phase IV

Rates R, RS, RH:	\$x.xxxxx/kWh
Rates GS:	\$x.xxxxx/kWh
Rate SL-E, SL-C	\$x.xx/location
Rate AL:	\$x.xx/location
Rate TLCL:	\$x.xx/kWh
Rates HT, PD, EP:	\$x.xx/kW based on PJM Peak Load Contribution (PLC)

The Variable Distribution Service charges, for the residential rate schedules shall include the above listed EEPC surcharge. For the municipal lighting rate schedules, the applicable variable or fixed distribution service charges shall include the EEPC surcharge.

For Rate GS, the EEPC shall be recovered through a separate variable distribution charge listed on customer's bills. For Rates PD, HT and EP, a PJM PLC shall be determined in accordance with PJM rules and used to calculate the EEPC. Customer's PLC will be computed to the nearest kilowatt. The EEPC shall be recovered through a separate variable distribution charge listed on customer bills.

Calculation of EEPC Surcharge and the Over/Under Recovery:

Billing Provisions: The surcharge and over/under recovery shall be calculated by rate schedule on an annual basis using the following formulas:

$$\text{EEPC}(n) = \frac{(\text{C-E}) + (\text{SWE}) + (\text{PDR}) \times (1)}{(\text{BU}) \quad (1-\text{T})} \quad (\text{C})$$

C – The cost of the Energy Efficiency and Conservation Program includes: all expenditures, of the individual programs such as materials, equipment, installation, custom programs, evaluation measurement/verification, educating customers about availability to the extent not included in Consumer Education cost, not recovered through any separate recovery mechanism, and any other cost associated with implementation of the programs. Costs that relate to measures that are applicable to more than one rate class or that are shown to provide system-wide benefits, will be allocated to each class based on the ratio of class-specific projected program costs to the total projected program costs. The program costs are those approved by the PAPUC and audit costs for the Phase IV program ending May 31, 2026 (C)

E – The over or (under) recovery from the applicable reconciliation period. Interest will not be applied to any over/under collections.

SWE – The cost in dollars of the PaPUC's Statewide Evaluator. These costs will be reconciled separately and added to the EEPC and will not be subject to the 2% spending limit of the EE&C Plan.

PDR – The savings/costs from the portion of projected EE Peak Demand Resources (PDR) nominated into PJM's Forward Capacity Market (FCM). The Company will apply any proceeds/deficiencies from nominated PDR to the appropriate customer classes. These costs will be reconciled separately and added to the EEPC and will not be subject to the 2% spending limit of the EE&C Plan. (C)

BU – The total Billing Units for the applicable recovery period.

T – The current Pennsylvania gross receipts tax rate included in base rates.

n - The rate class for which the EEPC is being calculated: 1 = Residential, 2 = Small C&I, 3 = LC&I, 4 = Street lighting

Residential - Rates R, RH

Small C&I – Rate GS

Large C&I – Rates HT, PD, EP

Street Lighting – Rates SLE, SLC, AL, TLCL

Filings and Reconciliations: The estimated EEPC shall be filed by May 1 each year to be effective June 1 through May 31. (C)

The first surcharge, effective June 1, 2021 will contain "C" and "E" factors calculated as follows: The "C-factor" will have two components; one including Phase III costs and the other including Phase IV costs. The Phase IV component will be set using projected costs for the 12 month period from June 1, 2021 through May 31, 2022. The Phase III component will be set using any Phase III costs from projects started prior to the end of Phase III, but not yet billed as of June 1, 2021. For the "E-factor" over/under rate will include the Phase III costs for the 10 month period from June 1, 2020 through March 31, 2021.

The second EEPC, effective June 1, 2022, will be calculated as follows: the "C-factor" will include Phase IV costs for the period June 1, 2022 through May 31, 2023 and the "E-factor" will include costs for 12 months comprising Phase III costs for the 2 months of April and May 2021 and Phase III costs for the 10 months of June 1, 2021 through March 31, 2022. Subsequent EEPC's, effective June 1 each year will be calculated using a 12 month "C factor" for the period June 1 through May 31 and an "E factor" for the period of April 1 through March 31.

(C) Denotes Change

PECO Energy Company

A reconciliation statement filing, in accordance with C.S. Title 66 §1307(e), will be made by April 30 of each year. The last Phase III only reconciliation statement will be for the 10 month period from June 1, 2020 through March 31, 2021. Phase IV reconciliation statements will be for the 12 month period April 1 through March 31 of each plan year. The first Phase IV reconciliation statement will cover the period April 1, 2021 through March 31, 2022 and include 2 months (April and May) of Phase III revenues and expenses and 10 months of Phase IV revenues and expenses (June through March). The EEPC mechanism is subject to annual audit review by the Bureau of Audits. (C)

(C) Denotes Change

RATE R RESIDENCE SERVICE

AVAILABILITY.

Single phase service in the entire territory of the Company to the dwelling and appurtenances of a single private family (or to a multiple dwelling unit building consisting of two to five dwelling units, whether occupied or not), for the domestic requirements of its members when such service is supplied through one meter. Service is also available for related farm purposes when such service is supplied through one meter in conjunction with the farmhouse domestic requirements.

Each dwelling unit 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 for their basic service supply. Centrally supplied master metered heating, cooling or water heating service may be provided if such supply will result in energy conservation.

The term "residence service" includes service to: (a) the separate dwelling unit in an apartment house or condominium, but not the halls, basement, or other portions of such building common to more than one such unit; (b) the premises occupied as the living quarters of five persons or less who unite to establish a common dwelling place for their own personal comfort and convenience on a cost sharing basis; (c) the premises owned by a church, and primarily designated or set aside for, and actually occupied and used as, the dwelling place of a priest, rabbi, pastor, rector, nun or other functioning Church Divine, and the resident associates; (d) private dwellings in which a portion of the space is used for the conduct of business by a person residing therein; (e) A detached garage, located on the same premises as the customer's dwelling unit, that is utilized solely for the domestic requirements of the dwelling unit's members and is served through the same meter as the dwelling unit; (g) A detached garage, located on the same premises as the customer's dwelling unit, that is utilized solely for the domestic requirements of the dwelling unit's members and requires separate metering service as a result of wiring restrictions or legal requirements.

The term does NOT include service to: (a) Premises institutional in character including Clubs, Fraternities, Orphanages or Homes; (b) premises defined as a rooming house or boarding house in the Municipal Code for Cities of the First Class enacted by Act of General Assembly; (c) a premises containing a residence unit but primarily devoted to a professional or other office, studio, or other gainful pursuit; (d) electric furnaces or welding apparatus other than a transformer type "limited input" arc welder with an input not to exceed 37 1/2 amperes at 240 volts.

CURRENT CHARACTERISTICS. Standard single phase secondary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$9.98

FIXED DISTRIBUTION SERVICE CHARGE FOR FORMER OFF-PEAK METERS: \$1.94

VARIABLE DISTRIBUTION SERVICE CHARGE:

All kWhs \$x.xxxxx per kWh

ENERGY SUPPLY CHARGE:

Refer to the Generation Supply Adjustment Procurement Class 1.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

MINIMUM CHARGE: The minimum charge per month will be the Fixed Distribution Service Charge.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT, UNIVERSAL SERVICE FUND CHARGE, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

PAYMENT TERMS. Standard.

PECO Energy Company

RATE R H RESIDENTIAL HEATING SERVICE**AVAILABILITY.**

Single phase service to the dwelling and appurtenances of a single private family (or to a multiple dwelling unit building consisting of two to five dwelling units, whether occupied or not), for domestic requirements when such service is provided through one meter and where the dwelling is heated by specified types of electric space heating systems. The systems eligible for this rate are (a) permanently connected electric resistance heaters where such heaters supply all of the heating requirements of the dwelling, (b) heat pump installations where the heat pump serves as the heating system for the dwelling and all of the supplementary heating required is supplied by electric resistance heaters, and (c) heat pump installations where the heat pump serves as the heating system for the dwelling and all of the supplementary heating required is supplied by non electric energy sources. All space heating installations must meet Company requirements. This rate schedule is not available for commercial, institutional or industrial establishments.

Each dwelling unit 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.

CURRENT CHARACTERISTICS. Standard single phase secondary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$9.98

FIXED DISTRIBUTION SERVICE CHARGE FOR FORMER OFF-PEAK METERS: \$1.94

VARIABLE DISTRIBUTION SERVICE CHARGE:

SUMMER MONTHS. (June through September)

\$x.xxxxx per kWh for all kWh.

WINTER MONTHS. (October through May)

\$x.xxxxx per kWh for all kWh

ENERGY SUPPLY CHARGE:

Refer to the Generation Supply Adjustment Procurement Class 1.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

MINIMUM CHARGE. The minimum charge per month will be the Fixed Distribution Service Charge.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT, UNIVERSAL SERVICE FUND CHARGE NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

COMBINED RESIDENTIAL AND COMMERCIAL SERVICE. Where a portion of the service provided is used for commercial purposes, the appropriate general service rate is applicable to all service; or, at the option of the customer, the wiring may be so arranged that the residential service may be separately metered and this rate is then applicable to the residential service only.

PAYMENT TERMS. Standard.

RATE-GS GENERAL SERVICE

AVAILABILITY.

Service through a single metering installation for offices, professional, commercial or industrial establishments, governmental agencies, farms and other applications outside the scope of the Residence Service rate schedules.

For service configurations that are nominally 120/208 volts, 3 phase, 4 wires - If either the service capacity or the parallel-generating capacity exceeds 750 kVA for transformers located inside the building, the only rate option available to the customer will be Rate HT. If either the service capacity or the parallel-generating capacity exceeds 750 kVA but remains at or below 1,500 kVA for transformers outside the building, the customer may request service at 277/480 volts, 3-phase 4-wires from transformers located outside the building. Otherwise the only rate option available to the customer will be Rate HT.

For service configurations that are nominally 277/480 volts, 3 phase, 4 wires - If either the service capacity or the parallel-generating capacity exceeds either 750 kVA for transformers located inside the building or 1,500 kVA for transformers located outside the building, the only rate option available to the customer will be Rate HT.

CURRENT CHARACTERISTICS.

Standard single-phase or polyphase secondary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE:

\$ 14.49 for single-phase service without demand measurement, or
\$ 18.47 for single-phase service with demand measurement, or
\$ 44.21 for polyphase service.

VARIABLE DISTRIBUTION SERVICE CHARGE:

\$8.57 per kW of billed demand
(\$0.00068) per kWh for all kWh

ENERGY EFFICIENCY CHARGE: \$x.xxxxx per kWh

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Classes 2 and 3/4.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

DETERMINATION OF DEMAND.

The billing demand may be measured where consumption exceeds 1,100 kilowatt-hours per month for three consecutive months; or where load tests indicate a demand of five or more kilowatts; or where the customer requests demand measurement. Measured demands will be determined to the nearest 0.1 of a kilowatt but will not be less than 1.2 kilowatts, and will be adjusted for power factor in accordance with the Rules and Regulations.

For those customers with demand measurement the billing demand will be determined as follows:

- (a) For customers with demand up to 500 kW, the billing demand shall be the measured demand, with a minimum billing demand of 1.2 kW.

For customers with demand greater than 500 kW, the billing demand shall be the greater of (i) the measured demand, (ii) 40% of the maximum contract demand; or (iii) the maximum measured demand from the prior year.

If a measured demand customer has less than 1,100 monthly kilowatt-hours of use, the monthly billing demand will be the measured demand or the metered monthly kilowatt-hours divided by 175 hours, whichever is less, but not less than 1.2 kilowatts.

For those customers without demand measurement, the monthly billing demand will be computed by dividing the metered monthly kilowatt-hours by 175 hours. The computed demand will be determined to the nearest 0.1 of a kilowatt, but will not be less than 1.2 kilowatts.

MINIMUM CHARGE.

The monthly minimum charge for customers without demand measurement will be the Fixed Distribution Service Charge. The monthly minimum charge for customers with demand measurement will be the Fixed Distribution Service Charge, plus a charge of \$7.10 per KW of billing demand. In addition to the above, for customers in Procurement Class 3/4 charges will be assessed on PJM's reliability pricing model.

PECO Energy Company

RATE-PD PRIMARY DISTRIBUTION POWER

AVAILABILITY.

Untransformed service from the primary supply lines of the Company's distribution system where the customer installs, owns, and maintains any transforming, switching and other receiving equipment required. However, standard primary service is not available in areas where the distribution voltage has been changed to either 13 kV or 33 kV unless the customer was served with standard primary service before the conversion of the area to either 13 kV or 33 kV. This rate is available only for service locations served on this rate on July 6, 1987 as long as the original primary service has not been removed. PECO Energy may refuse to increase the load supplied to a customer served under this rate when, in PECO Energy's sole judgment, any transmission or distribution capacity limitations exist. If a customer changes the billing rate of a location being served on this rate, PECO Energy may refuse to change that location back to Rate PD when, in PECO Energy's sole judgment, any transmission or distribution capacity limitations exist.

CURRENT CHARACTERISTICS.

Standard primary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$295.86

VARIABLE DISTRIBUTION SERVICE CHARGE:

\$7.26 per kW of billing demand

(\$0.00062) per kWh for all kWh

ENERGY EFFICIENCY CHARGE: \$x.xx per kW of Peak Load Contribution

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Classes 2 and 3/4.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 25 kilowatts. The 25kW minimum shall apply to the Energy Supply Charge and the Transmission Supply Charge. Additionally, the billing demand will not be less than 40% of the maximum demand specified in the contract.

MINIMUM CHARGE.

The monthly minimum charge shall be the Fixed Distribution Service Charge, plus the charge per kW component of the Variable Distribution Service Charge, plus in the case of Procurement Class 3/4 customers, charges assessed under PJM's reliability pricing model.

TERM OF CONTRACT.

The initial contract term shall be for at least three years.

PAYMENT TERMS.

Standard.

PECO Energy Company

RATE-HT HIGH TENSION POWER

AVAILABILITY.

Untransformed service from the Company's standard high tension lines, where the customer installs, owns, and maintains, any transforming, switching and other receiving equipment required.

CURRENT CHARACTERISTICS.

Standard high tension service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$353.76

VARIABLE DISTRIBUTION SERVICE CHARGE:

\$4.89 per kW of billing demand
(\$0.00062) per kWh for all kWh

HIGH VOLTAGE DISTRIBUTION DISCOUNT:

For customers supplied at 33,000 volts: \$0.15 per kW of measured demand.
For customers supplied at 69,000 volts: \$1.21 per kW of measured demand.
For customers supplied over 69,000 volts: \$1.21 per kW of measured demand.

ENERGY EFFICIENCY CHARGE: \$x.xx per kW of Peak Load Contribution

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Classes 2 and 3/4.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 25 kilowatts. Additionally, the billing demand will not be less than 40% of the maximum demand specified in the contract. The 25 kW minimum shall apply to the Energy Supply Charge and the Transmission Supply Charge.

CONJUNCTIVE BILLING OF MULTIPLE DELIVERY POINTS.

If the load of a customer located at a delivery point becomes greater than the capacity of the standard circuit or circuits established by the Company to supply the customer at that delivery point, upon the written request of the customer, the Company will establish a new delivery point and bill the customer as if it were delivering and metering the two services at a single point, as long as installation of the new service is, in the Company's opinion, less costly for the Company than upgrading the service to the first delivery point and provided that such multi-point delivery is not disadvantageous to the Company.

MINIMUM CHARGE.

The monthly minimum charge shall be the Fixed Distribution Service Charge, plus the charge per kW component of the Variable Distribution Service Charge, and modify less the high voltage discount where applicable plus in the case of Procurement Class 3/4 customers, charges assessed on PJM's reliability pricing model.

TERM OF CONTRACT.

The initial contract term shall be for at least three years.

PAYMENT TERMS.

Standard.

RATE EP ELECTRIC PROPULSION**AVAILABILITY.**

This rate is available only to the National Rail Passenger Corporation (AMTRAK) and to the Southeastern Pennsylvania Transportation Authority (SEPTA) for untransformed service from the Company's standard high tension lines, where the customer installs, owns, and maintains any transforming, switching and other receiving equipment required and where the service is provided for the operation of electrified transit and railroad systems and appurtenances.

CURRENT CHARACTERISTICS.

Standard sixty hertz (60 Hz) high tension service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$1,292.35 per delivery point

VARIABLE DISTRIBUTION SERVICE CHARGE:

\$4.44 per kW of billing demand

(\$0.00062) per kWh for all kWh

HIGH VOLTAGE DISTRIBUTION DISCOUNT:

For delivery points supplied at 33,000 volts: \$0.15 per kW.

For delivery points supplied at 69,000 volts: \$1.21 per kW for first 10,000 kW of measured demand.

For delivery points supplied over 69,000 volts \$1.21 per kW for first 100,000 kW of measured demand.

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 3/4.

ENERGY EFFICIENCY CHARGE: \$x.xx per kW of Peak Load Contribution

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 5,000 kilowatts. Additionally, the billing demand will not be less than 40% of the maximum demand specified in the contract.

CONJUNCTIVE BILLING OF MULTIPLE DELIVERY POINTS.

If the load of a customer located at a delivery point becomes greater than the capacity of the standard circuit or circuits established by the Company to supply the customer at that delivery point, upon the written request of the customer, the Company will establish a new delivery point and bill the customer as if it were delivering and metering the two services at a single point, as long as installation of the new service is, in the Company's opinion, less costly for the Company than upgrading the service to the first delivery point and provided that such multi-point delivery is not disadvantageous to the Company.

PECO Energy Company

RATE SL-E STREET LIGHTING CUSTOMER OWNED FACILITIES

AVAILABILITY.

To any governmental agency for outdoor lighting provided for the safety and convenience of the public of streets, highways, bridges, parks or similar places, including directional highway signs at locations where other outdoor lighting service is established hereunder only if all of the Utilization Facilities, as defined in Terms and Conditions in this Base Rate, are installed, owned and maintained by a governmental agency.

This rate is also available to community associations of residential property owners both inside and outside the City of Philadelphia for the lighting of streets that are not dedicated. This rate is not available to commercial or industrial customers. All facilities and their installation shall be approved by the Company.

MONTHLY RATE TABLE.

SERVICE LOCATION DISTRIBUTION CHARGE: \$x.xx per Service Location (as defined below) *
 VARIABLE DISTRIBUTION CHARGE: \$0.01742 per kWh

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

* The service location charge includes an Energy Efficiency Program Surcharge of \$x.xx per location

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

SERVICE LOCATION.

A Service Location is the Point of Delivery on the Company's secondary circuit. that connects to one or more Utilization Facilities. A customer may connect multiple Utilization Facilities to a single Service Location in accordance with Paragraph 2c and approval by the Company.

DETERMINATION OF ENERGY BILLED.

The energy use for a month of a Service Location shall be computed to the nearest kilowatt hour as the product of one thousandth of its wattage and the effective hours of use of such wattage during the calendar month under the established operation schedules as set forth under Terms and Conditions, Paragraph 1 Service. The wattage, expressed to the nearest tenth of a watt, of a Service Location shall be composed of manufacturer's rating of its lamps, ballasts, transformers, individual controls and other load components required for its operation. The aggregate of the kilowatt hours thus computed for all Active Service Locations shall constitute the energy billed for the month.

TERMS AND CONDITIONS.

1. Service. Lighting service will be operated on all-night, every-night lighting schedules, under which lights normally are turned on after sunset and off before sunrise with approximately 4,100 annual operating hours (average monthly burning hours = 341.11 hours). Extended lighting service during all daylight hours will be supplied for lamps specified by the customer
2. Ownership of Utilization Facilities.
 - a. Service Locations Supplied from Aerial Circuits: customer shall provide, own and maintain the Utilization Facilities defined as the brackets, hangers, luminaires, lamps/LED array(s), ballasts/drivers, transformers, individual controls, conductors, molding and supporting insulators between the lamp receptacles and line wires of the Company's distribution facilities and any other components as required for the operation of each Service Location.
 The Company shall provide the supporting pole or post for such aerially supplied Service Location and will issue authorization to permit the customer to install thereon the said Utilization Facilities.
 - b. Service Locations Supplied from Underground Circuits: customer shall provide, own and maintain the Utilization Facilities defined as brackets or hangers, luminaires, lamps/LED array(s), ballasts/drivers, transformers, individual controls, and conductors and shall assume all costs of installing such Utilization Facilities. Customer shall also provide, own, and maintain the supporting pole or post foundation with 90 degree pipe bend, and conduits from the luminaires to sidewalk level, or in special cases, such as Federally and State financed limited access highways, to a Service Location designated by the Company on its secondary voltage circuit.
 Except as provided in Paragraph 5 Supply Facilities, the Company shall own conduit from the distribution circuit to the 90 degree pipe bend, shall own conductors from its distribution system to the designated Service Location and shall provide sufficient length of conductors for splicing at the designated Service Location or in the post base where sidewalk level access is provided.
 - c. Service to Group of Utilization Facilities:

AERIAL SUPPLY

When the customer requests service to a group of Utilization Facilities supplied from aerial distribution facilities, the customer is responsible for providing the support poles or posts for the Utilization Facilities. The Company will provide a service, nominally 100 feet, to the customer's first supporting structure. The customer is responsible for installing supply conductors from the first supporting structure to all Utilization Facilities.

UNDERGROUND SUPPLY

When groups of Utilization Facilities are supplied from underground distribution facilities, the customer is responsible for the supporting poles or posts and the supply conductors to each Utilization Facility from the designated Service Location. If the customer requests an underground supply to a group of Utilization Facilities and the designated Service Location is a secondary terminal pole, the customer will install, own, maintain all cable, including the cable on the pole.

3. Standards of Construction for Utilization Facilities. Customer construction shall meet the Company's standards which are based upon the National Electrical Safety Code. Designs of proposed construction deviating from such standards shall be submitted to the Company for approval before proceeding with any work.

PECO Energy Company

RATE SL-C SMART LIGHTING CONTROL LIGHTING CUSTOMER OWNED FACILITIES

AVAILABILITY.

Any governmental agency for outdoor lighting, provided for the safety and convenience of the public of streets, highways, bridges, parks or similar places, that complies with each of the following conditions:

- (A) Installs a Smart Lighting Control Module approved by the Company that has capabilities including but not necessarily limited to:
 - a. Measurement of energy usage at the individual Utilization Facility level.
 - b. Customer control of the lamp's burning hours.
 - c. Data showing failure of the lamp to burn, such as customer notification, that customer can provide to Company upon request.
 - d. Ability of customer to dim the lights (LED only).
- (B) Provides energy usage to the Company as described below under Data Requirements.
- (C) Installs, owns, and maintains all Utilization Facilities, as defined in the Terms and Conditions of this Base Rate. (All facilities and their installation shall be approved by the Company.)

This rate is also available to community associations of residential property owners both inside and outside the City of Philadelphia for the lighting of streets that are not dedicated. This rate is not available to commercial or industrial customers.

Customers may take service under the rate beginning on July 1, 2019. The below listed pricing will be revised, as needed, based on applicable surcharge adjustments prior to the SL-C effective service date of July 1, 2019.

MONTHLY RATE TABLE.

SERVICE LOCATION DISTRIBUTION CHARGE: \$x.xx per Service Location (as defined below)
VARIABLE DISTRIBUTION CHARGE: \$0.03259 per kWh

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

The service location charge includes an Energy Efficiency Program Surcharge of \$x.xx per location

(C)

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

SERVICE LOCATION.

A Service Location is the Point of Delivery on the Company's secondary circuit that connects to one or more Utilization Facilities. A customer may connect multiple Utilization Facilities to a single Service Location in accordance with Paragraph 2c and approval by the Company.

DATA REQUIREMENTS.

The customer must notify the Company of its intent to enroll or modify lights under this rate at least 30 days prior to the start of the regularly scheduled billing cycle during which the enrollment or modification will become effective.

The customer must provide the following data to the Company from its Company-approved Smart Lighting Control Module for each light added or modified:

- (A) Manufacturer-rated wattage
- (B) Annual burning hours, if different than the standard 4,100 burning hours as defined below under paragraph 1 Service of Terms and Conditions
- (C) Dimming percentage/factor

The Company also requires the customer to provide the Global Positioning System (GPS) coordinates for each light.

DETERMINATION OF ENERGY BILLED.

Upon acceptance of the required data, the Company shall modify the energy billed going forward for a period of up to twelve months or at another frequency as required by the Company. The energy use for a month of a Service Location shall be computed to the nearest kilowatt hour as the product of one thousandth of its wattage, adjusted based on the provided dimming percentage/factor, and the provided burning hours during the calendar month.

The Company may, at any time and without prior notice, request that the customer provide updates to the above data or provide actual energy consumption data and burning hours for each light, by calendar month, for up to the past 12 months to verify the continued accuracy of Company billing.

For any regularly scheduled billing cycle in which the customer has not provided acceptable information from its Company-approved Smart Lighting Control Module, the Company shall modify the energy billed going forward by changing the burning hours used to the standard 4,100 burning hours as defined below under Paragraph 1 Service of Terms and Conditions.

The Company reserves the right to modify the customer's rate to SL-E in the continued absence of required data from the customer.

TERMS AND CONDITIONS.

1. Service. For any regularly scheduled billing cycle in which the customer has not provided acceptable information from its Company-approved Smart Lighting Control Module, lighting service will be operated on all-night, every-night lighting schedules, under which lights normally are turned on after sunset and off before sunrise with approximately 4,100 annual operating hours (average monthly burning hours = 341.11 hours). Extended lighting service during all daylight hours will be supplied for lamps specified by the customer.
If the customer provides information from the Smart Lighting Control Module as described above to justify a different billing usage, the burning hours provided by the customer will be used instead of the standard 4,100 annual operating hours.

RATE TLCL TRAFFIC LIGHTING CONSTANT LOAD SERVICE**AVAILABILITY.**

To any municipality using the Company's standard service for (a) electric traffic signal lights installed, owned and maintained by the municipality, and/or (b) unmetered traffic control cameras or other small constant load electronic devices with a demand of less than 1.2 kW, owned and maintained by the municipality.

To any non-municipal non-residential customer using the Company's standard service for unmetered small constant load electronic devices with a demand of less than 1.2 kW, owned and maintained by the non-municipal customer, which are electrically separate from any other facilities, whether municipally-owned or non-municipally-owned, that are receiving service from PECO as a separate account.

To any non-municipal non-residential customer using the Company's standard service for unmetered small constant load electronic devices with a demand of less than 1.2 kW, owned and maintained by the non-municipal customer, which are electrically integrated with any other facilities, whether municipally-owned or non-municipally-owned, that are receiving service from PECO as a separate account, but only if the non-municipal customer meets the conditions of the Special Termination Rights provision of this Rate.

CURRENT CHARACTERISTICS.

Standard single phase secondary service.

RATE TABLE.

SERVICE LOCATION CHARGE: \$3.63 PER LOCATION

VARIABLE DISTRIBUTION SERVICE CHARGE: \$x.xxxxx per kWh (as defined below)*

*The Variable Distribution charge includes an Energy Efficiency Program Surcharge of \$x.xxxxx per kWh

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY, NON-BYPASSABLE TRANSMISSION CHARGE, CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

SPECIAL RULES AND REGULATIONS.

The use of energy will be estimated by the Company on the basis of the size of lamps and controlling apparatus and the burning hours. The customer shall immediately notify the Company whenever any change is made in the equipment or the burning hours or constant load devices, so that the Company may forthwith revise its estimate of the energy used.

The Company shall not be liable for damage to person or property arising, accruing or resulting from the attachment of the signal equipment to its poles, wires, or fixtures. The customer shall be responsible to determine the amount, location and sufficiency of illumination, including conducting all studies of luminosity, lighting location, and traffic.

SPECIAL TERMINATION RIGHTS

Some facilities that receive service under Rate TLCL may be electrically configured such that it is not possible to terminate service to the Rate TLCL facility without also terminating service to a facility that is receiving service under a separate account, Rate or Rider. In the event of non-payment of bills for service to such a Rate TLCL facility, PECO will provide a termination notice to the customer. The customer may then, at its discretion, notify PECO that it intends to engage in self-termination by removing its facilities from the PECO system within 30 days. If the customer has not removed its facilities within 30 days, then PECO may, at its sole discretion and upon 72-hour notice, physically remove the customer facility as a means of terminating service to that facility. Taking service under Rate TLCL constitutes full customer permission for PECO to engage in such removals. Notwithstanding any removal of such facilities by either the customer or PECO, the customer shall remain fully obligated to PECO for payment of all charges incurred under Rate TLCL. In addition, the customer shall pay to PECO its full cost of removing the facilities, including direct and indirect labor costs, use of truck or other equipment, fuel costs, and costs of storing the customer equipment, all at PECO's normal rates for such work at such time as it may perform such removals. PECO shall not be liable for damage, if any, to the customer equipment that occurs during removal or storage.

TERM OF CONTRACT.

The initial contract term for each signal light installation and constant load device shall be for at least one year.

PAYMENT TERMS.

Standard.

RATE AL - ALLEY LIGHTING IN CITY OF PHILADELPHIA

APPLICABILITY. To multiple, unmetered lighting service supplied the City of Philadelphia to operate lamps and appurtenances for all night outdoor lighting of alleys and courts that are installed, owned and maintained by the City, which assumes the cost involved in making the connections to the Company's facilities. This rate shall no longer be available to new lighting installations effective January 1, 2011.

LIGHTING DISTRIBUTION SERVICE DEFINED. All night outdoor lighting of alleys and courts by lights installed on poles or supports supplied by the City.

NOTICE TO COMPANY. The City shall give advance notice to the Company of all proposed new installations or of the replacement, removal or reconstruction of existing installations. The City shall advise the Company as to each new installation or change in the equipment or connected load of an existing installation, including any change in burning hours and the date on which such new or changed operation took effect.

MONTHLY RATE TABLE.

SERVICE LOCATION CHARGE: \$x.xx Per Location (as defined below)*

*The service location charge includes an Energy Efficiency Program Surcharge of \$x.xx

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT CLAUSE APPLY TO THIS RATE.

PLAN OF MONTHLY BILLING.

Bills may be rendered in equal monthly installments, computed from the calculated annual use of energy, adjusted each month to give effect to any new or changed rate of annual use, by reason of changes in the City's installation, with charge or credit for fractional parts of the month during which a change occurred.

LIABILITY PROVISION.

The Company shall not be liable for damage, or for claims for damage, to persons or property, arising, accruing or resulting from, installation, location or use of lamps, wires, fixtures and appurtenances; or resulting from failure of any light, or lights, to burn for any cause whatsoever. The customer shall be responsible to determine the amount, location and sufficiency of illumination, including conducting all studies of luminosity, lighting location, and traffic.

APPLICABILITY INDEX OF RIDERS
Introductory Statement

Customers under different rates of this Tariff frequently desire services or present situations and conditions of supply which require special supply terms, charges or guarantees or which warrant modification of the amount or method of charge from the prices set forth in the Base Rate under which they are provided service. Modifications for such conditions are defined by rider provisions included as a part of this Tariff. Riders may be employed when applicable, with or without signed agreement between the customer and the Company as the case may require, notwithstanding anything to the contrary contained in the Base Rate to which the rider is applied.

	Page No.	R	RH	RS	GS	PD	HT	POL	SL-S	SL-E	SL-C	EP	BLI	AL
Riders														
Capacity Reservation Rider	72-76			X	X	X	X					X		
CAP Rider	77	X	X											
Casualty	78			X	X	X	X					X		
Construction	81					X	X					X		
Economic Development	82-83				X	X	X							
Electric Vehicle DCFC Pilot Rider (EV-FC)	84-85				X	X	X							
Emergency Energy Conservation	86						X					X		
Investment Return Guarantee	87				X	X	X							
Night Service GS	88				X									
Night Service HT	89						X					X		
Night Service PD	90					X								
Receivership Rider	91				X	X	X	X	X	X	X	X		X
Temporary Service	95	X	X	X	X	X	X							

(THIS PAGE INTENTIONALLY LEFT BLANK)

(THIS PAGE INTENTIONALLY LEFT BLANK)

(THIS PAGE INTENTIONALLY LEFT BLANK)

(THIS PAGE INTENTIONALLY LEFT BLANK)

(THIS PAGE INTENTIONALLY LEFT BLANK)

Supplement No. **XX** to
ELECTRIC PA P.U.C NO. 6

Deleted: 39

PECO Energy Company

Electric Service Tariff

COMPANY OFFICE LOCATION

2301 Market Street
Philadelphia, Pennsylvania 19103

For List of Communities Served, See Page 4.

Issued **November 30, 2020**

Effective **June 1, 2021**

Deleted: October 15

Deleted: December xxxx

Deleted: x1

Deleted: 0

ISSUED BY: M. A. Innocenzo – President & CEO
PECO Energy Distribution Company
2301 MARKET STREET
PHILADELPHIA, PA. 19103

NOTICE

Supplement No. ~~XX~~ to
Tariff Electric Pa. P.U.C. No. 6
~~XX~~ Revised Page No. 1
Supersedes ~~XX~~ Revised Page No. 1

PECO Energy Company

- Deleted: 39to
- Deleted: Thirty-Ninth
- Deleted: ____
- Deleted: Thirty-Eighth

LIST OF CHANGES MADE BY THIS SUPPLEMENT

PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS (EEPC) ~~xx~~ Revised Page No. 45 and Original Page No. 45A

Changes as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE R RESIDENCE SERVICE – ~~xx~~ Revised Page No. 49

Change to the Variable Distribution Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE R-H RESIDENTIAL HEATING SERVICE – ~~xx~~ Revised Page No. 50

Change to the Variable Distribution Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE-GS GENERAL SERVICE – ~~xx~~ Revised Page No. 54

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE-PD PRIMARY-DISTRIBUTION POWER – ~~xx~~ Revised Page No. 56

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE-HT HIGH-TENSION POWER – ~~xx~~ Revised Page No. 57

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE EP ELECTRIC PROPULSION – ~~xx~~ Revised Page No. 58

Change to the Energy Efficiency Charge as a result of Phase IV of the Energy Efficiency and Conservation Program

RATE SL-E STREET LIGHTING CUSTOMER-OWNED FACILITIES – ~~xx~~ Revised Page No. 63

Changes as a result of Phase IV of the Energy Efficiency and Conservation Program.

Rate SL-C SMART LIGHTING CONTROL CUSTOMER OWNED FACILITIES - ~~xx~~ Revised Page No. 65

Change as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE TLCL TRAFFIC LIGHTING CONSTANT LOAD SERVICE – ~~xx~~ Revised Page No. 68

Change as a result of Phase IV of the Energy Efficiency and Conservation Program.

RATE AL - ALLEY LIGHTING IN CITY OF PHILADELPHIA - ~~xx~~ Revised Page No. 70

Change as a result of Phase IV of the Energy Efficiency and Conservation Program.

APPLICABILITY INDEX OF RIDERS – ~~x~~ Revised Page No. 71

Removal of the Commercial/Industrial Direct Load Control Program (DLC) Rider and Residential Direct Load Control Program (DLC) Rider.

COMMERCIAL/INDUSTRIAL DIRECT LOAD CONTROL PROGRAM (DLC) RIDER - Original Page No. 79 and Original Page No. 80

Rider being eliminated in accordance with PECO's Phase IV Energy Efficiency and Conservation Program. Thus, this page intentionally left blank.

RESIDENTIAL DIRECT LOAD CONTROL PROGRAM (DLC) RIDER - Original Page No. 92, Original Page No. 93, and Original Page No. 94

Rider being eliminated in accordance with PECO's Phase IV Energy Efficiency and Conservation Program. Thus, this page intentionally left blank.

- Deleted: ¶
¶
¶

Issued ~~November 30, 2020~~

Effective ~~June 1, 2021~~

- Deleted: October 15
- Deleted:
- Deleted: December xxx
- Deleted: 1,x
- Deleted: 0

Supplement No. ~~XX~~ to
 Tariff Electric Pa. P.U.C. No. 6
~~XX~~ Revised Page No. 2
 Supersedes ~~XX~~ Revised Page No. 2

PECO Energy Company

TABLE OF CONTENTS

List of Communities Served.....4
 How to Use Loose-Leaf Tariff.....5
 Definition of Terms and Explanation of Abbreviations 6,7,8,9
RULES AND REGULATIONS:
 1. The Tariff10
 2. Service Limitations10
 3. Customer's Installation11
 4. Application for Service.....12
 5. Credit.....13
 6. Private-Property Construction..... 14, 15
 7. Extensions16, 17
 8. Rights-of-Way 18
 9. Introduction of Service.....19
 10. Company Equipment19
 11. Tariff and Contract Options.....21
 12. Service Continuity22
 13. Customer's Use of Service23¹
 14. Metering.....23
 15. Demand Determination.....24
 16. Meter Tests25
 17. Billing and Standard Payment Options.....26
 18. Payment Terms & Termination of Service.....27¹, 27A, 28
 19. Unfulfilled Contracts29
 20. Cancellation by Customer.....29
 21. General.....30
 22. Rules For Designation of Procurement Class.....30
 23. EGS Switching31
 24. Load Data Exchange.....31
STATE TAX ADJUSTMENT CLAUSE.....32¹
FEDERAL TAX ADJUSTMENT CREDIT (FTAC).....33⁵
GENERATION SUPPLY ADJUSTMENT FOR PROCUREMENT CLASS 1 AND 2.....34⁸, 35⁹
GENERATION SUPPLY ADJUSTMENT FOR PROCUREMENT CLASS 3/436⁸
RECONCILIATION37, 38
NUCLEAR DECOMMISSIONING COST ADJUSTMENT CLAUSE (NDCA).....39¹
PROVISIONS FOR RECOVERY OF UNIVERSAL SERVICE FUND CHARGE (USFC).....40²
PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS41²
TRANSMISSION SERVICE CHARGE42⁴
NON-BYPASSABLE TRANSMISSION CHARGE (NBT).....43⁴
PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT (TARC)44⁴
PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS PHASE W.....45³, 45A
DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC)46⁵, 47, 48
RATES:
 Rate R Residence Service49³
 Rate R-H Residential Heating Service50¹
 Rate RS-2 Net Metering51, 52, 53
 Rate GS General Service54¹, 55
 Rate PD Primary-Distribution Power.....56¹
 Rate HT High-Tension Power.....57¹
 Rate EP Electric Propulsion.....58¹
 Rate POL Private Outdoor Lighting.....59¹, 60
 Rate SL-S Street Lighting-Suburban Counties.....61¹, 62
 Rate SL-E Street Lighting Customer-Owned Facilities63¹, 64
 Rate SL-C Smart Lighting Control Customer Owned Facilities65¹, 66, 67
 Rate TLCL Traffic Lighting Constant Load Service.....68¹
 Rate BLI Borderline Interchange Service69
 Rate AL Alley Lighting in City of Philadelphia.....70¹
RIDERS:
 Applicability Index of Riders.....71¹
 Capacity Reservation Rider.....72, 73, 74¹, 75¹, 76
 CAP Rider - Customer Assistance Program.....77
 Casualty Rider78
 Commercial/Industrial Direct Load Control Program Rider79¹, 80¹
 Construction Rider81

Deleted: 39
 Deleted: Thirty-Ninth
 Deleted:
 Deleted: ___
 Deleted: Thirty-Eighth

Deleted: II
 Deleted: 3
 Deleted: 13
 Deleted: 13
 Deleted: 9
 Deleted: 7
 Deleted: 7
 Deleted: 5
 Deleted: 3
 Deleted: 3
 Deleted: 8
 Deleted: 8
 Deleted: 9
 Deleted: 4

Deleted: October 15
 Deleted:
 Deleted: December xxxx
 Deleted: 1x
 Deleted: 0

Supplement No. ~~x~~ to
Tariff Electric PA. P.U.C. No. 6
~~XX~~ Revised Page No. 3
Supersedes ~~x~~ Revised Page No. 3

- Deleted: 4
- Deleted: First
- Deleted:
- Deleted: Original

PECO Energy Company

Economic Development Rider.....	82, 83
Electric Vehicle DCFC Pilot Rider (EV-FC)	84 ¹ , 85
Emergency Energy Conservation Rider	86
Investment Return Guarantee Rider	87
Night Service GS Rider.....	88
Night Service HT Rider.....	89
Night Service PD Rider.....	90
Receivership Rider	91
Residential Direct Load Control Program Rider.....	92 ¹ , 93 ¹ , 94 ¹
Temporary Service Rider.....	95

Issued ~~November 30, 2020~~

Effective ~~June 1, 2021~~

- Deleted: February 22
- Deleted: 19
- Deleted: March 29XXX
- Deleted: X
- Deleted: 19

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
XX Revised Page No. 45
Supersedes XX Revised Page No. 45

PECO Energy Company

PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS (EEPC)

Purpose: The purpose of this surcharge is to provide for full and current cost recovery of expenditures associated with the Company's Phase IV Energy Efficiency and Conservation Program Costs (EEPC).

Applicability: The surcharge shall be calculated for billing purposes for all customers. The EEPC shall be charged to each rate schedule using the following units:

- Phase IV
- Rates R, RS, RH: \$x.xxxxx/kWh
- Rates GS: \$x.xxxxx/kWh
- Rate SL-E, SL-C \$x.xx/location
- Rate AL: \$x.xx/location
- Rate TLCL: \$x.xx/kWh
- Rates HT, PD, EP: \$x.xx/kW based on PJM Peak Load Contribution (PLC)

The Variable Distribution Service charges, for the residential rate schedules shall include the above listed EEPC surcharge. For the municipal lighting rate schedules, the applicable variable or fixed distribution service charges shall include the EEPC surcharge.

For Rate GS, the EEPC shall be recovered through a separate variable distribution charge listed on customer's bills. For Rates PD, HT and EP, a PJM PLC shall be determined in accordance with PJM rules and used to calculate the EEPC. Customer's PLC will be computed to the nearest kilowatt. The EEPC shall be recovered through a separate variable distribution charge listed on customer bills.

Calculation of EEPC Surcharge and the Over/Under Recovery:
Billing Provisions: The surcharge and over/under recovery shall be calculated by rate schedule on an annual basis using the following formulas:

$$EEPC(n) = \frac{(C-E)+(SWE) + (PDR) \times (1)}{(BU) (1-T)}$$

C – The cost of the Energy Efficiency and Conservation Program includes: all expenditures, of the individual programs such as materials, equipment, installation, custom programs, evaluation measurement/verification, educating customers about availability to the extent not included in Consumer Education cost, not recovered through any separate recovery mechanism, and any other cost associated with implementation of the programs. Costs that relate to measures that are applicable to more than one rate class or that are shown to provide system-wide benefits, will be allocated to each class based on the ratio of class-specific projected program costs to the total projected program costs. The program costs are those approved by the PAPUC and audit costs for the Phase IV program ending May 31, 2026.

E - The over or (under) recovery from the applicable reconciliation period. Interest will not be applied to any over/under collections.

SWE – The cost in dollars of the PaPUC's Statewide Evaluator. These costs will be reconciled separately and added to the EEPC and will not be subject to the 2% spending limit of the EE&C Plan.

PDR – The savings/costs from the portion of projected EE Peak Demand Resources (PDR) nominated into PJM's Forward Capacity Market (FCM). The Company will apply any proceeds/deficiencies from nominated PDR to the appropriate customer classes. These costs will be reconciled separately and added to the EEPC and will not be subject to the 2% spending limit of the EE&C Plan.

BU – The total Billing Units for the applicable recovery period.

T – The current Pennsylvania gross receipts tax rate included in base rates.

- n** - The rate class for which the EEPC is being calculated: 1 = Residential, 2 = Small C&I, 3 = LC&I, 4 = Street lighting
- Residential - Rates R, RH
- Small C&I – Rate GS
- Large C&I – Rates HT, PD, EP
- Street Lighting – Rates SLE, SLC, AL, TLCL

Filings and Reconciliations: The estimated EEPC shall be filed by May 1 each year to be effective June 1 through May 31.

The first surcharge, effective June 1, 2021 will contain "C" and "E" factors calculated as follows: The "C-factor" will have two components: one including Phase III costs and the other including Phase IV costs. The Phase IV component will be set using projected costs for the 12 month period from June 1, 2021 through May 31, 2022. The Phase III component will be set using any Phase III costs from projects started prior to the end of Phase III, but not yet billed as of June 1, 2021. For the "E-factor" over/under rate will include the Phase III costs for the 10 month period from June 1, 2020 through March 31, 2021.

The second EEPC, effective June 1, 2022, will be calculated as follows: the "C-factor" will include Phase IV costs for the period June 1, 2022 through May 31, 2023 and the "E-factor" will include costs for 12 months comprising Phase III costs for the 2 months of April and May 2021 and Phase III costs for the 10 months of June 1, 2021 through March 31, 2022. Subsequent EEPC's, effective June 1 each year will be calculated using a 12 month "C factor" for the period June 1 through May 31 and an "E factor" for the period of April 1 through March 31.

(C) Denotes Change

Issued November 30, 2020

Effective June 1, 2021

Deleted: ¶

Deleted: 30

Deleted: Third

Deleted: ... Supersedes Second

Deleted: ¶
Company's Phase III

Deleted: II

Deleted: 0...00286...xxxx/kWh (D)

Deleted: 0...00271...xxxx/kWh (ID)

Deleted: 0...00...x/location (DI)

Deleted: 0...00...x/location (DI)

Deleted: (...0...00...x003)...kWh (DI)

Deleted: 1...20...x/kW based on PJM Peak Load Contribution (PLC) (ID)

Deleted: ¶
For the municipal lighting rate schedules, the applicable variable or fixed distribution service charges shall include the EEPC ¶

Deleted: ¶

Deleted: F...DR) ...x(1)

Deleted: Any direct load control benefits to the Company from the programs shall be credited against the cost...he ¶ program costs are those approved by the PAPUC and audit costs for the Phase III... program ending May 31, 2026

Deleted: F

Deleted:

(C) Deleted: ¶
effective June 1, 20216

Deleted: ¶
Phase III costs and the other including Phase IV...costs. The Phase III... component will be set using projected costs for the 12 month period from June 1, 2016...1 through May 31, 2017...2. The Phase III component will be set using any Phase III costs from projects started prior to the end of Phase III, but not yet billed as of June 1, 2016...1. For the "E-factor" over/under rate will include the Phase III costs for the 10 month period from June 1, 2015 ...020 through March 31, 2016

Deleted: 2017...022, will be calculated as follows: the "C-factor" will include Phase III... costs for the period June 1, 2017...2 through May 31, 2018...3 and the "E-factor" will include costs for 12 months comprising Phase III costs for the 2 months of April and May 2016 ...021 and Phase III costs for the 10 months of June 1, 2021...through March 31, 2017

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
Original Page No. 45A

PECO Energy Company

A reconciliation statement filing, in accordance with C.S. Title 66 §1307(e), will be made by April 30 of each year. The last Phase III only reconciliation statement will be for the 10 month period from June 1, 2020 through March 31, 2021. Phase IV reconciliation statements will be for the 12 month period April 1 through March 31 of each plan year. The first Phase IV reconciliation statement will cover the period April 1, 2021 through March 31, 2022 and include 2 months (April and May) of Phase III revenues and expenses and 10 months of Phase IV revenues and expenses (June through March). The EEPC mechanism is subject to annual audit review by the Bureau of Audits.

(C)

- Deleted: XX Revised Page No. 45A ¶
- Deleted: Supersedes XX Revised...
- Deleted: ¶
- Deleted: ¶
- Deleted: 2015
- Deleted: 2016
- Deleted: II
- Deleted: III
- Deleted: 2016
- Deleted: 2017
- Deleted: II
- Deleted:

(C) Denotes Change

Issued November 30, 2020

Effective June 1, 2021

- Deleted: ¶
- Deleted: D
- Deleted: Decrease
- Deleted: I) – Denotes Increase
- Deleted: April 17
- Deleted:
- Deleted: June 1xxx
- Deleted: x
- Deleted: 0

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
XX Revised Page No. 49
Supersedes XX Revised Page No 49

PECO Energy Company

RATE R RESIDENCE SERVICE

AVAILABILITY.

Single phase service in the entire territory of the Company to the dwelling and appurtenances of a single private family (or to a multiple dwelling unit building consisting of two to five dwelling units, whether occupied or not), for the domestic requirements of its members when such service is supplied through one meter. Service is also available for related farm purposes when such service is supplied through one meter in conjunction with the farmhouse domestic requirements.

Each dwelling unit 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 for their basic service supply. Centrally supplied master metered heating, cooling or water heating service may be provided if such supply will result in energy conservation.

The term "residence service" includes service to: (a) the separate dwelling unit in an apartment house or condominium, but not the halls, basement, or other portions of such building common to more than one such unit; (b) the premises occupied as the living quarters of five persons or less who unite to establish a common dwelling place for their own personal comfort and convenience on a cost sharing basis; (c) the premises owned by a church, and primarily designated or set aside for, and actually occupied and used as, the dwelling place of a priest, rabbi, pastor, rector, nun or other functioning Church Divine, and the resident associates; (d) private dwellings in which a portion of the space is used for the conduct of business by a person residing therein; (e) A detached garage, located on the same premises as the customer's dwelling unit, that is utilized solely for the domestic requirements of the dwelling unit's members and is served through the same meter as the dwelling unit; (g) A detached garage, located on the same premises as the customer's dwelling unit, that is utilized solely for the domestic requirements of the dwelling unit's members and requires separate metering service as a result of wiring restrictions or legal requirements.

The term does NOT include service to: (a) Premises institutional in character including Clubs, Fraternities, Orphanages or Homes; (b) premises defined as a rooming house or boarding house in the Municipal Code for Cities of the First Class enacted by Act of General Assembly; (c) a premises containing a residence unit but primarily devoted to a professional or other office, studio, or other gainful pursuit; (d) electric furnaces or welding apparatus other than a transformer type "limited input" arc welder with an input not to exceed 37 1/2 amperes at 240 volts.

CURRENT CHARACTERISTICS. Standard single phase secondary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$9.98
FIXED DISTRIBUTION SERVICE CHARGE FOR FORMER OFF-PEAK METERS: \$1.94

VARIABLE DISTRIBUTION SERVICE CHARGE:

All kWhs \$~~x,xxxxx~~ per kWh

ENERGY SUPPLY CHARGE:

Refer to the Generation Supply Adjustment Procurement Class 1.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

MINIMUM CHARGE: The minimum charge per month will be the Fixed Distribution Service Charge.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT, UNIVERSAL SERVICE FUND CHARGE, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

PAYMENT TERMS. Standard.

Deleted: 38
Deleted: Thirteenth
Deleted: ___
Deleted: Twelfth

Deleted: 0
Deleted: (ID)

Deleted: (ID) Denotes Increase/Decrease
Deleted: October 14
Deleted:
Deleted: January 1xxx
Deleted: x

Issued November 30, 2020

Effective June 1, 2021

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
XX Revised Page No. 50
Supersedes XX Revised Page No. 50

PECO Energy Company

RATE R H RESIDENTIAL HEATING SERVICE

AVAILABILITY.

Single phase service to the dwelling and appurtenances of a single private family (or to a multiple dwelling unit building consisting of two to five dwelling units, whether occupied or not), for domestic requirements when such service is provided through one meter and where the dwelling is heated by specified types of electric space heating systems. The systems eligible for this rate are (a) permanently connected electric resistance heaters where such heaters supply all of the heating requirements of the dwelling, (b) heat pump installations where the heat pump serves as the heating system for the dwelling and all of the supplementary heating required is supplied by electric resistance heaters, and (c) heat pump installations where the heat pump serves as the heating system for the dwelling and all of the supplementary heating required is supplied by non electric energy sources. All space heating installations must meet Company requirements. This rate schedule is not available for commercial, institutional or industrial establishments.

Each dwelling unit 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.

CURRENT CHARACTERISTICS. Standard single phase secondary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$9.98
FIXED DISTRIBUTION SERVICE CHARGE FOR FORMER OFF-PEAK METERS: \$1.94

VARIABLE DISTRIBUTION SERVICE CHARGE:

SUMMER MONTHS. (June through September)

\$x.xxxxx per kWh for all kWh.

WINTER MONTHS. (October through May)

\$x.xxxxx per kWh for all kWh

ENERGY SUPPLY CHARGE:

Refer to the Generation Supply Adjustment Procurement Class 1.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

MINIMUM CHARGE. The minimum charge per month will be the Fixed Distribution Service Charge.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT, UNIVERSAL SERVICE FUND CHARGE NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

COMBINED RESIDENTIAL AND COMMERCIAL SERVICE. Where a portion of the service provided is used for commercial purposes, the appropriate general service rate is applicable to all service; or, at the option of the customer, the wiring may be so arranged that the residential service may be separately metered and this rate is then applicable to the residential service only.

PAYMENT TERMS. Standard.

- Deleted: 38
- Deleted: Thirteenth
- Deleted: __
- Deleted: Twelfth

- Deleted: 0
- Deleted: 06620
- Deleted: (ID)
- Deleted: 0
- Deleted: 04943
- Deleted: (ID)

- Deleted: (ID) Denotes IncreaseDecrease
- Deleted: October 14
- Deleted:
- Deleted: January 1,xxxXXX
- Deleted: xX
- Deleted:

Issued November 30, 2020

Effective June 1, 2021

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
XX Revised Page No. 54
Supersedes XX Revised Page No. 54

PECO Energy Company

RATE-GS GENERAL SERVICE

AVAILABILITY.

Service through a single metering installation for offices, professional, commercial or industrial establishments, governmental agencies, farms and other applications outside the scope of the Residence Service rate schedules.

For service configurations that are nominally 120/208 volts, 3 phase, 4 wires - If either the service capacity or the parallel-generating capacity exceeds 750 kVA for transformers located inside the building, the only rate option available to the customer will be Rate HT. If either the service capacity or the parallel-generating capacity exceeds 750 kVA but remains at or below 1,500 kVA for transformers outside the building, the customer may request service at 277/480 volts, 3-phase 4-wires from transformers located outside the building. Otherwise the only rate option available to the customer will be Rate HT.

For service configurations that are nominally 277/480 volts, 3 phase, 4 wires - If either the service capacity or the parallel-generating capacity exceeds either 750 kVA for transformers located inside the building or 1,500 kVA for transformers located outside the building, the only rate option available to the customer will be Rate HT.

CURRENT CHARACTERISTICS.

Standard single-phase or polyphase secondary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE:

- \$ 14.49 for single-phase service without demand measurement, or
- \$ 18.47 for single-phase service with demand measurement, or
- \$ 44.21 for polyphase service.

VARIABLE DISTRIBUTION SERVICE CHARGE:

- \$8.57 per kW of billed demand
- (\$0.00068) per kWh for all kWh

ENERGY EFFICIENCY CHARGE: \$x,xxxx per kWh

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Classes 2 and 3/4.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

DETERMINATION OF DEMAND.

The billing demand may be measured where consumption exceeds 1,100 kilowatt-hours per month for three consecutive months; or where load tests indicate a demand of five or more kilowatts; or where the customer requests demand measurement. Measured demands will be determined to the nearest 0.1 of a kilowatt but will not be less than 1.2 kilowatts, and will be adjusted for power factor in accordance with the Rules and Regulations.

For those customers with demand measurement the billing demand will be determined as follows:

- (a) For customers with demand up to 500 kW, the billing demand shall be the measured demand, with a minimum billing demand of 1.2 kW.

For customers with demand greater than 500 kW, the billing demand shall be the greater of (i) the measured demand, (ii) 40% of the maximum contract demand; or (iii) the maximum measured demand from the prior year.

If a measured demand customer has less than 1,100 monthly kilowatt-hours of use, the monthly billing demand will be the measured demand or the metered monthly kilowatt-hours divided by 175 hours, whichever is less, but not less than 1.2 kilowatts.

For those customers without demand measurement, the monthly billing demand will be computed by dividing the metered monthly kilowatt-hours by 175 hours. The computed demand will be determined to the nearest 0.1 of a kilowatt, but will not be less than 1.2 kilowatts.

MINIMUM CHARGE.

The monthly minimum charge for customers without demand measurement will be the Fixed Distribution Service Charge. The monthly minimum charge for customers with demand measurement will be the Fixed Distribution Service Charge, plus a charge of \$7.10 per KW of billing demand. In addition to the above, for customers in Procurement Class 3/4 charges will be assessed on PJM's reliability pricing model.

Issued November 30, 2020

Effective June 1, 2021

Deleted: ¶

Deleted: 35

Deleted: Ninth

Deleted: _

Deleted: Eighth

Deleted: (D)

Deleted: 0

Deleted: 00271

Deleted: (D)

Deleted: (D) Denotes Decrease¶

Deleted: August 14

Deleted:

Deleted: September 1xxx x,XXX

Deleted: X

Deleted: 0

Supplement No. ~~XX~~ to
Tariff Electric PA. P.U.C. No. 6
~~XX~~ Revised Page No. 56
Supersedes ~~XX~~ Revised Page No. 56

PECO Energy Company

RATE-PD PRIMARY DISTRIBUTION POWER

AVAILABILITY.

Untransformed service from the primary supply lines of the Company's distribution system where the customer installs, owns, and maintains any transforming, switching and other receiving equipment required. However, standard primary service is not available in areas where the distribution voltage has been changed to either 13 kV or 33 kV unless the customer was served with standard primary service before the conversion of the area to either 13 kV or 33 kV. This rate is available only for service locations served on this rate on July 6, 1987 as long as the original primary service has not been removed. PECO Energy may refuse to increase the load supplied to a customer served under this rate when, in PECO Energy's sole judgment, any transmission or distribution capacity limitations exist. If a customer changes the billing rate of a location being served on this rate, PECO Energy may refuse to change that location back to Rate PD when, in PECO Energy's sole judgment, any transmission or distribution capacity limitations exist.

CURRENT CHARACTERISTICS.

Standard primary service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$295.86

VARIABLE DISTRIBUTION SERVICE CHARGE:

\$7.26 per kW of billing demand
(\$0.00062) per kWh for all kWh

ENERGY EFFICIENCY CHARGE: ~~\$x.xx~~ per kW of Peak Load Contribution

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Classes 2 and 3/4.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), NUCLEAR DECOMMISSIONING COST ADJUSTMENT PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS APPLY TO THIS RATE.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 25 kilowatts. The 25kW minimum shall apply to the Energy Supply Charge and the Transmission Supply Charge. Additionally, the billing demand will not be less than 40% of the maximum demand specified in the contract.

MINIMUM CHARGE.

The monthly minimum charge shall be the Fixed Distribution Service Charge, plus the charge per kW component of the Variable Distribution Service Charge, plus in the case of Procurement Class 3/4 customers, charges assessed under PJM's reliability pricing model.

TERM OF CONTRACT.

The initial contract term shall be for at least three years.

PAYMENT TERMS.

Standard.

- Deleted: 35
- Deleted: Seventh
- Deleted: __
- Deleted: Sixth

- Deleted: (D)
- Deleted: 1
- Deleted: 20
- Deleted: (D)

- Deleted: (D) Denotes Decrease
- Deleted: August 14
- Deleted:
- Deleted: September xxx xXXX
- Deleted: X1
- Deleted: 0

Issued November 30, 2020

Effective June 1, 2021

Supplement No. ~~xx~~ to
Tariff Electric, Pa. P.U.C. No. 6
~~xx~~ Revised Page No. 57
Supersedes ~~xx~~ Revised Page No. 57

PECO Energy Company

RATE-HT HIGH TENSION POWER

AVAILABILITY.

Untransformed service from the Company's standard high tension lines, where the customer installs, owns, and maintains, any transforming, switching and other receiving equipment required.

CURRENT CHARACTERISTICS.

Standard high tension service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$353.76

VARIABLE DISTRIBUTION SERVICE CHARGE:

\$4.89 per kW of billing demand
(\$0.00062) per kWh for all kWh

HIGH VOLTAGE DISTRIBUTION DISCOUNT:

For customers supplied at 33,000 volts: \$0.15 per kW of measured demand.
For customers supplied at 69,000 volts: \$1.21 per kW of measured demand.
For customers supplied over 69,000 volts: \$1.21 per kW of measured demand.

ENERGY EFFICIENCY CHARGE: ~~\$x.xx~~ per kW of Peak Load Contribution

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Classes 2 and 3/4.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 25 kilowatts. Additionally, the billing demand will not be less than 40% of the maximum demand specified in the contract. The 25 kW minimum shall apply to the Energy Supply Charge and the Transmission Supply Charge.

CONJUNCTIVE BILLING OF MULTIPLE DELIVERY POINTS.

If the load of a customer located at a delivery point becomes greater than the capacity of the standard circuit or circuits established by the Company to supply the customer at that delivery point, upon the written request of the customer, the Company will establish a new delivery point and bill the customer as if it were delivering and metering the two services at a single point, as long as installation of the new service is, in the Company's opinion, less costly for the Company than upgrading the service to the first delivery point and provided that such multi-point delivery is not disadvantageous to the Company.

MINIMUM CHARGE.

The monthly minimum charge shall be the Fixed Distribution Service Charge, plus the charge per kW component of the Variable Distribution Service Charge, and modify less the high voltage discount where applicable plus in the case of Procurement Class 3/4 customers, charges assessed on PJM's reliability pricing model.

TERM OF CONTRACT.

The initial contract term shall be for at least three years.

PAYMENT TERMS.

Standard.

Issued ~~November 30, 2020~~

Effective ~~June 1, 2021~~

Deleted: 35

Deleted: Seventh

Deleted: __

Deleted: Sixth

Deleted: (D)

Deleted: 1

Deleted: 20

Deleted: (D)

Deleted: (D) Denotes Decrease

Deleted: August 14

Deleted:

Deleted: September 1XXX

Deleted: X

Deleted: 0

Supplement No. ~~XX~~ to
Tariff Electric Pa. P.U.C. No. 6
~~XX~~ Revised Page No 58
Supersedes ~~XX~~ Revised Page No. 58

PECO Energy Company

RATE EP ELECTRIC PROPULSION

AVAILABILITY.

This rate is available only to the National Rail Passenger Corporation (AMTRAK) and to the Southeastern Pennsylvania Transportation Authority (SEPTA) for untransformed service from the Company's standard high tension lines, where the customer installs, owns, and maintains any transforming, switching and other receiving equipment required and where the service is provided for the operation of electrified transit and railroad systems and appurtenances.

CURRENT CHARACTERISTICS.

Standard sixty hertz (60 Hz) high tension service.

MONTHLY RATE TABLE.

FIXED DISTRIBUTION SERVICE CHARGE: \$1,292.35 per delivery point

VARIABLE DISTRIBUTION SERVICE CHARGE:

\$4.44 per kW of billing demand
(\$0.00062) per kWh for all kWh

HIGH VOLTAGE DISTRIBUTION DISCOUNT:

For delivery points supplied at 33,000 volts: \$0.15 per kW.
For delivery points supplied at 69,000 volts: \$1.21 per kW for first 10,000 kW of measured demand.
For delivery points supplied over 69,000 volts \$1.21 per kW for first 100,000 kW of measured demand.

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 3/4.

ENERGY EFFICIENCY CHARGE: ~~\$y.yy~~ per kW of Peak Load Contribution

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 5,000 kilowatts. Additionally, the billing demand will not be less than 40% of the maximum demand specified in the contract.

CONJUNCTIVE BILLING OF MULTIPLE DELIVERY POINTS.

If the load of a customer located at a delivery point becomes greater than the capacity of the standard circuit or circuits established by the Company to supply the customer at that delivery point, upon the written request of the customer, the Company will establish a new delivery point and bill the customer as if it were delivering and metering the two services at a single point, as long as installation of the new service is, in the Company's opinion, less costly for the Company than upgrading the service to the first delivery point and provided that such multi-point delivery is not disadvantageous to the Company.

Deleted: 35
Deleted: Fifth
Deleted: _
Deleted: Fourth

Deleted: (D)

Deleted: 1
Deleted: 2
Deleted: 0
Deleted: (D)

Deleted: (D) Denotes Decrease
Deleted: XXX
Deleted: X
Deleted:
Deleted: Issued August 14, 2020
Effective September 1, 2020
Section Break (Continuous)

Issued November 30, 2020

Effective June 1, 2021

Supplement No. XX to
 Tariff Electric Pa. P.U.C. No. 6
 XX Revised Page No. 63
 Supersedes XX Revised Page No. 63

PECO Energy Company

RATE SL-E STREET LIGHTING CUSTOMER OWNED FACILITIES

AVAILABILITY.

To any governmental agency for outdoor lighting provided for the safety and convenience of the public of streets, highways, bridges, parks or similar places, including directional highway signs at locations where other outdoor lighting service is established hereunder only if all of the Utilization Facilities, as defined in Terms and Conditions in this Base Rate, are installed, owned and maintained by a governmental agency.

This rate is also available to community associations of residential property owners both inside and outside the City of Philadelphia for the lighting of streets that are not dedicated. This rate is not available to commercial or industrial customers. All facilities and their installation shall be approved by the Company.

MONTHLY RATE TABLE.

SERVICE LOCATION DISTRIBUTION CHARGE: \$x.xx per Service Location (as defined below) *
 VARIABLE DISTRIBUTION CHARGE: \$0.01742 per kWh

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

* The service location charge includes an Energy Efficiency Program Surcharge of \$x.xx per location

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

SERVICE LOCATION.

A Service Location is the Point of Delivery on the Company's secondary circuit, that connects to one or more Utilization Facilities. A customer may connect multiple Utilization Facilities to a single Service Location in accordance with Paragraph 2c and approval by the Company.

DETERMINATION OF ENERGY BILLED.

The energy use for a month of a Service Location shall be computed to the nearest kilowatt hour as the product of one thousandth of its wattage and the effective hours of use of such wattage during the calendar month under the established operation schedules as set forth under Terms and Conditions, Paragraph 1 Service. The wattage, expressed to the nearest tenth of a watt, of a Service Location shall be composed of manufacturer's rating of its lamps, ballasts, transformers, individual controls and other load components required for its operation. The aggregate of the kilowatt hours thus computed for all Active Service Locations shall constitute the energy billed for the month.

TERMS AND CONDITIONS.

1. **Service.** Lighting service will be operated on all-night, every-night lighting schedules, under which lights normally are turned on after sunset and off before sunrise with approximately 4,100 annual operating hours (average monthly burning hours = 341.11 hours). Extended lighting service during all daylight hours will be supplied for lamps specified by the customer
2. **Ownership of Utilization Facilities.**
 - a. **Service Locations Supplied from Aerial Circuits:** customer shall provide, own and maintain the Utilization Facilities defined as the brackets, hangers, luminaires, lamps/LED array(s), ballasts/drivers, transformers, individual controls, conductors, molding and supporting insulators between the lamp receptacles and line wires of the Company's distribution facilities and any other components as required for the operation of each Service Location.
 The Company shall provide the supporting pole or post for such aerially supplied Service Location and will issue authorization to permit the customer to install thereon the said Utilization Facilities.
 - b. **Service Locations Supplied from Underground Circuits:** customer shall provide, own and maintain the Utilization Facilities defined as brackets or hangers, luminaires, lamps/LED array(s), ballasts/drivers, transformers, individual controls, and conductors and shall assume all costs of installing such Utilization Facilities. Customer shall also provide, own, and maintain the supporting pole or post foundation with 90 degree pipe bend, and conduits from the luminaires to sidewalk level, or in special cases, such as Federally and State financed limited access highways, to a Service Location designated by the Company on its secondary voltage circuit.
 Except as provided in Paragraph 5 Supply Facilities, the Company shall own conduit from the distribution circuit to the 90 degree pipe bend, shall own conductors from its distribution system to the designated Service Location and shall provide sufficient length of conductors for splicing at the designated Service Location or in the post base where sidewalk level access is provided.

c. **Service to Group of Utilization Facilities:**

AERIAL SUPPLY

When the customer requests service to a group of Utilization Facilities supplied from aerial distribution facilities, the customer is responsible for providing the support poles or posts for the Utilization Facilities. The Company will provide a service, nominally 100 feet, to the customer's first supporting structure. The customer is responsible for installing supply conductors from the first supporting structure to all Utilization Facilities.

UNDERGROUND SUPPLY

When groups of Utilization Facilities are supplied from underground distribution facilities, the customer is responsible for the supporting poles or posts and the supply conductors to each Utilization Facility from the designated Service Location. If the customer requests an underground supply to a group of Utilization Facilities and the designated Service Location is a secondary terminal pole, the customer will install, own, maintain all cable, including the cable on the pole.

3. **Standards of Construction for Utilization Facilities.** Customer construction shall meet the Company's standards which are based upon the National Electrical Safety Code. Designs of proposed construction deviating from such standards shall be submitted to the Company for approval before proceeding with any work.

Issued November 30, 2020

Effective June 1, 2021

Deleted: 35
 Deleted: Eighth
 Deleted: __
 Deleted: Seventh

Deleted: 6
 Deleted: 61
 Deleted: ((DI))
 Deleted: 0
 Deleted: 00
 Deleted: (I)

Deleted: (DI) Denotes Decrease/increase
 Deleted:
 Deleted: XXX
 Deleted: X
 Deleted:
 Deleted: Issued August 14, 2020
 Effective September 1, 2020

Supplement No. XX to
Tariff Electric PA. P.U.C. No. 6
XX Revised Page No. 65
Supersedes XX Revised Page No. 65

Deleted: 35

Deleted: Eighth

Deleted: Seventh

PECO Energy Company

RATE SL-C SMART LIGHTING CONTROL LIGHTING CUSTOMER OWNED FACILITIES

AVAILABILITY.

Any governmental agency for outdoor lighting, provided for the safety and convenience of the public of streets, highways, bridges, parks or similar places, that complies with each of the following conditions:

- (A) Installs a Smart Lighting Control Module approved by the Company that has capabilities including but not necessarily limited to:
 - a. Measurement of energy usage at the individual Utilization Facility level.
 - b. Customer control of the lamp's burning hours.
 - c. Data showing failure of the lamp to burn, such as customer notification, that customer can provide to Company upon request.
 - d. Ability of customer to dim the lights (LED only).
- (B) Provides energy usage to the Company as described below under Data Requirements.
- (C) Installs, owns, and maintains all Utilization Facilities, as defined in the Terms and Conditions of this Base Rate. (All facilities and their installation shall be approved by the Company.)

This rate is also available to community associations of residential property owners both inside and outside the City of Philadelphia for the lighting of streets that are not dedicated. This rate is not available to commercial or industrial customers.

Customers may take service under the rate beginning on July 1, 2019. The below listed pricing will be revised, as needed, based on applicable surcharge adjustments prior to the SL-C effective service date of July 1, 2019.

MONTHLY RATE TABLE.

SERVICE LOCATION DISTRIBUTION CHARGE: \$x.xx per Service Location (as defined below)
VARIABLE DISTRIBUTION CHARGE: \$0.03259 per kWh

Deleted: 5

Deleted: 59

Deleted: (DI)

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

The service location charge includes an Energy Efficiency Program Surcharge of \$x.xx per location (C)

Deleted: 0

Deleted: 10

Deleted: I

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

SERVICE LOCATION.

A Service Location is the Point of Delivery on the Company's secondary circuit that connects to one or more Utilization Facilities. A customer may connect multiple Utilization Facilities to a single Service Location in accordance with Paragraph 2c and approval by the Company

Deleted:

DATA REQUIREMENTS.

The customer must notify the Company of its intent to enroll or modify lights under this rate at least 30 days prior to the start of the regularly scheduled billing cycle during which the enrollment or modification will become effective.

The customer must provide the following data to the Company from its Company-approved Smart Lighting Control Module for each light added or modified:

- (A) Manufacturer-rated wattage
- (B) Annual burning hours, if different than the standard 4,100 burning hours as defined below under paragraph 1 Service of Terms and Conditions
- (C) Dimming percentage/factor

The Company also requires the customer to provide the Global Positioning System (GPS) coordinates for each light.

DETERMINATION OF ENERGY BILLED.

Upon acceptance of the required data, the Company shall modify the energy billed going forward for a period of up to twelve months or at another frequency as required by the Company. The energy use for a month of a Service Location shall be computed to the nearest kilowatt hour as the product of one thousandth of its wattage, adjusted based on the provided dimming percentage/factor, and the provided burning hours during the calendar month.

The Company may, at any time and without prior notice, request that the customer provide updates to the above data or provide actual energy consumption data and burning hours for each light, by calendar month, for up to the past 12 months to verify the continued accuracy of Company billing.

For any regularly scheduled billing cycle in which the customer has not provided acceptable information from its Company-approved Smart Lighting Control Module, the Company shall modify the energy billed going forward by changing the burning hours used to the standard 4,100 burning hours as defined below under Paragraph 1 Service of Terms and Conditions.

The Company reserves the right to modify the customer's rate to SL-E in the continued absence of required data from the customer.

TERMS AND CONDITIONS.

1. **Service.** For any regularly scheduled billing cycle in which the customer has not provided acceptable information from its Company-approved Smart Lighting Control Module, lighting service will be operated on all-night, every-night lighting schedules, under which lights normally are turned on after sunset and off before sunrise with approximately 4,100 annual operating hours (average monthly burning hours = 341.11 hours). Extended lighting service during all daylight hours will be supplied for lamps specified by the customer.
If the customer provides information from the Smart Lighting Control Module as described above to justify a different billing usage, the burning hours provided by the customer will be used instead of the standard 4,100 annual operating hours.

Deleted: 1
(DI) Denotes Decrease/Increase

Deleted:

Deleted: XXX

Deleted: X

Deleted:

Deleted: Issued August 14, 2020
Effective September 1, 2020

Issued November 30, 2020

Effective June 1, 2021

Supplement No. ~~XX~~ to
Tariff Electric Pa. P.U.C. No. 6
~~XX~~ Revised Page no. 68
Supersedes ~~XX~~ Revised Page No. 68

PECO Energy Company

RATE TLCL TRAFFIC LIGHTING CONSTANT LOAD SERVICE

AVAILABILITY.

To any municipality using the Company's standard service for (a) electric traffic signal lights installed, owned and maintained by the municipality, and/or (b) unmetered traffic control cameras or other small constant load electronic devices with a demand of less than 1.2 kW, owned and maintained by the municipality.

To any non-municipal non-residential customer using the Company's standard service for unmetered small constant load electronic devices with a demand of less than 1.2 kW, owned and maintained by the non-municipal customer, which are electrically separate from any other facilities, whether municipally-owned or non-municipally-owned, that are receiving service from PECO as a separate account.

To any non-municipal non-residential customer using the Company's standard service for unmetered small constant load electronic devices with a demand of less than 1.2 kW, owned and maintained by the non-municipal customer, which are electrically integrated with any other facilities, whether municipally-owned or non-municipally-owned, that are receiving service from PECO as a separate account, but only if the non-municipal customer meets the conditions of the Special Termination Rights provision of this Rate.

CURRENT CHARACTERISTICS.

Standard single phase secondary service.

RATE TABLE.

SERVICE LOCATION CHARGE: \$3.63 PER LOCATION

VARIABLE DISTRIBUTION SERVICE CHARGE: ~~\$x,xxxx~~ per kWh (as defined below)*

*The Variable Distribution charge includes an Energy Efficiency Program Surcharge of ~~\$x,xxxx~~ per kWh

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS, PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY, NON-BYPASSABLE TRANSMISSION CHARGE, CONSERVATION PROGRAM COSTS, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT APPLY TO THIS RATE.

SPECIAL RULES AND REGULATIONS.

The use of energy will be estimated by the Company on the basis of the size of lamps and controlling apparatus and the burning hours. The customer shall immediately notify the Company whenever any change is made in the equipment or the burning hours or constant load devices, so that the Company may forthwith revise its estimate of the energy used.

The Company shall not be liable for damage to person or property arising, accruing or resulting from the attachment of the signal equipment to its poles, wires, or fixtures. The customer shall be responsible to determine the amount, location and sufficiency of illumination, including conducting all studies of luminosity, lighting location, and traffic.

SPECIAL TERMINATION RIGHTS

Some facilities that receive service under Rate TLCL may be electrically configured such that it is not possible to terminate service to the Rate TLCL facility without also terminating service to a facility that is receiving service under a separate account, Rate or Rider. In the event of non-payment of bills for service to such a Rate TLCL facility, PECO will provide a termination notice to the customer. The customer may then, at its discretion, notify PECO that it intends to engage in self-termination by removing its facilities from the PECO system within 30 days. If the customer has not removed its facilities within 30 days, then PECO may, at its sole discretion and upon 72-hour notice, physically remove the customer facility as a means of terminating service to that facility. Taking service under Rate TLCL constitutes full customer permission for PECO to engage in such removals. Notwithstanding any removal of such facilities by either the customer of PECO, the customer shall remain fully obligated to PECO for payment of all charges incurred under Rate TLCL. In addition, the customer shall pay to PECO its full cost of removing the facilities, including direct and indirect labor costs, use of truck or other equipment, fuel costs, and costs of storing the customer equipment, all at PECO's normal rates for such work at such time as it may perform such removals. PECO shall not be liable for damage, if any, to the customer equipment that occurs during removal or storage.

TERM OF CONTRACT.

The initial contract term for each signal light installation and constant load device shall be for at least one year.

PAYMENT TERMS.

Standard.

Issued November 30, 2020

Effective June 1, 2021

Deleted: 35
Deleted: Ninth
Deleted: _
Deleted: Eighth

Deleted: (D)
Deleted: 0
Deleted: 01605
Deleted: (I)
Deleted: (
Deleted: 0
Deleted: 00003
Deleted: 00115)
Deleted: (I)

Deleted: (ID) Denotes DeIncrease
Deleted:
Deleted: XXX
Deleted: X
Deleted:
Deleted: Issued August 14, 2020
Effective September 1, 2020
Section Break (Continuous)

Supplement No. ~~XX~~ to
Tariff Electric Pa. P.U.C. No. 6
~~XX~~ Revised Page No. 70
Supersedes ~~XX~~ Revised Page No. 70

Deleted: 35
Deleted: Fourth
Deleted: __
Deleted: Third

PECO Energy Company

RATE AL - ALLEY LIGHTING IN CITY OF PHILADELPHIA

APPLICABILITY. To multiple, unmetered lighting service supplied the City of Philadelphia to operate lamps and appurtenances for all night outdoor lighting of alleys and courts that are installed, owned and maintained by the City, which assumes the cost involved in making the connections to the Company's facilities. This rate shall no longer be available to new lighting installations effective January 1, 2011.

LIGHTING DISTRIBUTION SERVICE DEFINED. All night outdoor lighting of alleys and courts by lights installed on poles or supports supplied by the City.

NOTICE TO COMPANY. The City shall give advance notice to the Company of all proposed new installations or of the replacement, removal or reconstruction of existing installations. The City shall advise the Company as to each new installation or change in the equipment or connected load of an existing installation, including any change in burning hours and the date on which such new or changed operation took effect.

MONTHLY RATE TABLE

SERVICE LOCATION CHARGE: ~~\$x.xx~~ Per Location (as defined below)*

*The service location charge includes an Energy Efficiency Program Surcharge of ~~\$x.xx~~

Deleted: 2
Deleted: 30
Deleted: (DI)
Deleted: 0
Deleted: 00
Deleted: (!)

ENERGY SUPPLY CHARGE: Refer to the Generation Supply Adjustment Procurement Class 2.

TRANSMISSION SERVICE FOR CUSTOMERS RECEIVING DEFAULT SERVICE: The Transmission Service Charge shall apply.

STATE TAX ADJUSTMENT CLAUSE, DISTRIBUTION SYSTEM IMPROVEMENT CHARGE (DSIC), FEDERAL TAX ADJUSTMENT CREDIT (FTAC), PROVISION FOR THE RECOVERY OF CONSUMER EDUCATION PLAN COSTS PROVISION FOR THE RECOVERY OF ENERGY EFFICIENCY AND CONSERVATION PROGRAM COSTS, NON-BYPASSABLE TRANSMISSION CHARGE, PROVISION FOR THE TAX ACCOUNTING REPAIR CREDIT AND NUCLEAR DECOMMISSIONING COST ADJUSTMENT CLAUSE APPLY TO THIS RATE.

PLAN OF MONTHLY BILLING.

Bills may be rendered in equal monthly installments, computed from the calculated annual use of energy, adjusted each month to give effect to any new or changed rate of annual use, by reason of changes in the City's installation, with charge or credit for fractional parts of the month during which a change occurred.

LIABILITY PROVISION.

The Company shall not be liable for damage, or for claims for damage, to persons or property, arising, accruing or resulting from, installation, location or use of lamps, wires, fixtures and appurtenances; or resulting from failure of any light, or lights, to burn for any cause whatsoever. The customer shall be responsible to determine the amount, location and sufficiency of illumination, including conducting all studies of luminosity, lighting location, and traffic.

Issued November 30, 2020

Effective June 1, 2021

Deleted: (DI) Denotes Decrease/Increase
Deleted:
Deleted: XXX
Deleted: X
Deleted:

Supplement No. XX to
 Tariff Electric Pa. P.U.C. No. 6
 X Revised Page No. 71
 Supersedes Original Page No. 71

PECO Energy Company

Deleted: Issued August 14, 2020 Effective September 1, 2020

Deleted: _____

Deleted: _

APPLICABILITY INDEX OF RIDERS
Introductory Statement

Customers under different rates of this Tariff frequently desire services or present situations and conditions of supply which require special supply terms, charges or guarantees or which warrant modification of the amount or method of charge from the prices set forth in the Base Rate under which they are provided service. Modifications for such conditions are defined by rider provisions included as a part of this Tariff. Riders may be employed when applicable, with or without signed agreement between the customer and the Company as the case may require, notwithstanding anything to the contrary contained in the Base Rate to which the rider is applied.

Riders	Page No.	R	RH	RS	GS	PD	HT	POL	SL-S	SL-E	SL-C	EP	BLI	AL
Capacity Reservation Rider	72-76			X	X	X	X					X		
CAP Rider	77	X	X											
Casualty	78			X	X	X	X					X		
Construction	81					X	X					X		
Economic Development	82-83				X	X	X							
Electric Vehicle DCFC Pilot Rider (EV-FC)	84-85				X	X	X							
Emergency Energy Conservation	86						X					X		
Investment Return Guarantee	87				X	X	X							
Night Service GS	88				X									
Night Service HT	89						X					X		
Night Service PD	90					X								
Receivership Rider	91				X	X	X	X	X	X	X	X		X
Temporary Service	95	X	X	X	X	X	X							

Deleted: Commercial/ Industrial Direct Load Control Program Rider 79-80

Deleted: Residential Direct Load Control Rider

Issued November 30, 2020

Effective June 1, 2021

Deleted: XXX

Deleted: X

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
X Revised Page No. 79
~~Supersedes~~ Original Page No. 79

PECO Energy Company

(THIS PAGE INTENTIONALLY LEFT BLANK)

Deleted: _____

Deleted: _____

Deleted: **COMMERCIAL/INDUSTRIAL DIRECT LOAD CONTROL PROGRAM (DLC) RIDER**

AVAILABILITY.
This rider is available to any small commercial or industrial retail customer with peak measured demands less than or equal to 100kW served under rates GS, PD, or HT that (a) is the owner of the premises at which service hereunder is to be provided; (b) is provided with electric service at such premises through a separate meter; (c) has a fully functional electric central air conditioning system(s) as the principal and dedicated source of air conditioning for such premises, the electric service for which is delivered by the Company through such separate meter and is (are) capable of accepting a programmable communicating thermostat(s) (PCT), as determined by the Company or its agent; (d) allows the Company to periodically control the PCT(s); and (e) is located at a premises where the Company's control signal can reach the connected unit.

For determining the initial eligibility of existing small commercial/industrial retail customers under this rider, the peak measured demand level will be calculated by a process similar to that as described in PECO's Default Service Program pursuant to Docket No. P-2008-2062739. For new customers, the peak measured demand level shall be based upon an engineering estimate of their diversified peak demand for a new facility or an existing facility with a substantially different use. A new customer in an existing facility shall be assigned the same peak measured demand level as the last customer in that facility.

Service hereunder is not restricted to commercial/industrial customers that obtain electric power and energy supply from the Company under Default Service.

Notwithstanding the previous provisions of this Availability section, the availability of this rider is limited by the ability of the Company and its agent to purchase and install the necessary controls needed to implement and administer the Commercial and Industrial Direct Load Control program (DLCP).

PROGRAM PROVISIONS.
The (DLCP) allows the Company to obtain temporary reductions in the electric power and energy demands on the electric delivery system located in its service territory through reductions in the commercial/industrial customers' electric power and energy usage requirements. The Company reserves the right to activate the DLCP for any reason, including (a) response to shortages of available capacity on the Company's distribution system; (b) response to shortages of available capacity on the transmission system located in the Company's service territory; (c) preservation of the availability of other load response resources; or (d) reduction of peak load. A commercial/industrial customer to which this rider is available that elects service hereunder is defined as a participant. An activation of the (DLCP) is defined as an event.

During an event, a participant in the (DLCP) allows the Company to remotely control the PCT(s). The Company is allowed to exercise such control without notice at any time. Control events will be limited to the period beginning June 1 and extending through September 30 of each year, except holidays.

Deleted: _____

Deleted: ¶

Deleted: _____

Deleted: XXX X

Deleted: _____

PECO Energy Company

Supplement No. XX to
Tariff Electric Pa P.U.C. No. 6
X Revised Page No. 80
Supersedes Original Page No. 80

(THIS PAGE INTENTIONALLY LEFT BLANK)

Deleted: December 21, 2018
Effective January 1, 2019
Page Break

Deleted: _____

Deleted: _____

Deleted: **COMMERCIAL/INDUSTRIAL DIRECT LOAD CONTROL PROGRAM (DLC) RIDER (continued)**

INSTALLATION.
The PCT(s) is (are) an enabling technology necessary to participate in the (DLCP). The PCT(s) will be installed by the Company at its' sole expense (not to exceed the scope necessary to remove the old thermostat(s), and install the new PCT(s)). The Company will warrant the PCT(s) and installation for a period of one year from the date of original installation. After such time, the customer is responsible for any maintenance of the device and battery replacement, when (if required) to ensure the unit continues to operate. The participant is responsible for maintaining a safe operating environment for such device(s).

TESTING & VERIFICATION.
The Company is allowed to inspect the PCT(s) at any time during normal business hours and without notice to insure such device(s) is (are) fully operational, and the participant grants the Company permission to enter upon its premises to conduct such inspections. If, in the course of such inspection, the Company determines that the participant interfered with the functionality of the device(s) in any way, (a) the participant is immediately removed from the (DLCP) and service hereunder is terminated, with such termination effective as of the date of the installation of such device(s) or of the most recent passing inspection, whichever is more recent; (b) all credits previously given to such participant since such effective termination date are immediately reimbursed by such participant to the Company; and (c) such participant is not eligible to take service hereunder or participate in the (DLCP) for a period of not less three (3) calendar years following such effective termination date.

For a situation in which the Company performs excessive maintenance or replacement of any remote control device(s) due to vandalism or other cause, the Company may remove the participant for which such device(s) is (are) provided from the (DLCP) and terminate service hereunder to such participant. In such situation, the Company may deny future participation in the (DLCP) to such participant.

COMPENSATION.
The Company provides a credit to the participant on each bill issued for the Summer Period (June through September for a total of 4 monthly credits), as defined in the Definitions part of the General Terms and Conditions of the Company's Schedule of Rates. The credit applied to such participant's bill corresponds with the Program option selected by such participant.

Programmable Communicating Thermostat Option: \$10.00 per bill per installed device for the summer billing period

The participant shall begin receiving the bill credit on the next appropriate bill cycle following a complete enrollment in the program. The total annual credit shall not exceed \$40.00 per PCT installed. Consistent with the terms in this tariff, incentives will be paid through October 31, 2020.

The credit provided in accordance with this rider is separately stated on the participant's bill.

Deleted: ¶
¶
¶

Deleted: XXX

Deleted: X

Deleted: _____

PECO Energy Company

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
X Revised Page No. 92
Supersedes Original Page No. 92

(THIS PAGE INTENTIONALLY LEFT BLANK)

Deleted:

Deleted: _____

Deleted: _____

Deleted: **RESIDENTIAL DIRECT LOAD CONTROL PROGRAM (DLC RIDER)**

AVAILABILITY.
Central Air Conditioning Cycling Control Option:
This rider is available to any residential retail customer under rates R, RH, RS-2, and CAP that (a) is the owner of the premises at which service hereunder is to be provided (or can provide an authorization form from the owner); (b) is provided with electric service at such premises through a separate meter; (c) has a fully functional electric central air conditioning system (AC) as the principal and dedicated source of air conditioning for such premises, the electric service for which is delivered by the Company through such separate meter and is (are) capable of accepting a Company control device(s), as determined by the Company or its agent; (d) allows the Company to periodically cycle such AC compressor(s); and (e) is located at a premises where the Company's control signal can reach a control unit mounted near such connected unit.

Electric Water Heater Control Option:
This rider is available to any residential retail customer under rates R, RH, RS-2, and CAP that (a) is the owner of the premises at which service hereunder is to be provided (or can provide an authorization form from the owner); (b) is provided with electric service at such premises through a separate meter; (c) has a fully functional electric water heater, the electric service for which is delivered by the Company through such separate meter and is (are) capable of accepting a Company control device(s), as determined by the Company or its agent; (d) allows the Company to periodically control such electric water heater(s); and (e) is located at a premises where the Company's control signal can reach a control unit mounted near such connected unit.

Service hereunder is not restricted to residential retail customers that obtain full requirements electric supply from the Company under Default Service.

Notwithstanding the previous provisions of this Availability section, the availability of this rider is limited by the ability of the Company and its agent to purchase and install the necessary controls needed to implement and administer the Residential Direct Load Control Program (DLCP).

PROGRAM PROVISIONS.
The DLCP allows the Company to obtain temporary reductions in the electric power and energy demands on the electric delivery system located in its service territory through reductions in residential retail customers' electric power and energy usage requirements. The Company reserves the right to activate the DLCP for any reason, including (a) response to shortages of available capacity on the Company's distribution system; (b) response to shortages of available capacity on the transmission system located in the Company's service territory; (c) preservation of the availability of other load response resources or (d) reduction of peak load. A residential retail customer to which this rider is available that elects service hereunder is defined as a participant. An activation of the DLCP is defined as an event.

During an event, a participant in the DLCP allows the Company to remotely control the duty cycle of such participant's AC compressor(s) and/or control such participant's electric water heater(s). The Company is allowed to exercise such control without notice at any time. Control events will be limited to the period beginning June 1 and ...

Deleted: XXX

Deleted: X

Deleted:

Deleted: Issued December 21, 2018
Effective January 1, 2019

Section Break (Continuous)

Issued November 30, 2020

Effective June 1, 2021

Supplement No. XX to
Tariff Electric Pa. P.U.C. No. 6
X Revised Page No. 92
Supersedes Original Page No. 93

PECO Energy Company

(THIS PAGE INTENTIONALLY LEFT BLANK)

Deleted: _____

Deleted: _

Deleted: **RESIDENTIAL DIRECT LOAD CONTROL PROGRAM (RDLC) RIDER (continued)**

Deleted: During an event under the electric water heater control option, the Company is allowed to control the participant's electric water heater for the full duration of the event.

Deleted: ¶
A participant commences service hereunder on the date the Company inspects and approves the functionality of the participant's AC compressor(s) and/or electric water heater and installs the remote control device(s).¶

¶
INSTALLATION.¶
The Company or its agent installs the remote control device(s) used to cycle the AC compressor(s) and/or electric water heater(s), and the Company owns, operates, and maintains such device(s). The participant is responsible for maintaining a safe operating environment for such device(s). For a situation in which the participant replaces its AC compressor(s) and/or water heaters, the participant is responsible for providing the Company with adequate notice so that the Company has time to schedule the removal of such device(s) from the AC compressor(s) and/or water heater(s) being removed and the installation of such device(s) on the replacement AC compressor(s) and/or electric water heater(s).¶

¶
TESTING & VERIFICATION.¶
The Company is allowed to inspect the remote control device(s) at any time and without notice to insure such device(s) is (are) fully operational, and the participant grants the Company permission to enter upon its premises to conduct such inspections. If, in the course of such inspection, the Company determines that the participant interfered with the functionality of the device(s) in any way, (a) the participant is immediately removed from the (DLCP) and service hereunder is terminated, with such termination effective as of the date of the installation of such device(s) or of the most recent passing inspection, whichever is more recent; (b) all credits previously given to such participant since such effective termination date are immediately reimbursed by such participant to the Company; and (c) such participant is not eligible to take service hereunder or participate in the (DLCP) for a period of not less three (3) calendar years following such effective termination date.¶

¶
For a situation in which the Company performs excessive maintenance or replacement of any remote control device(s) due to vandalism or other cause, the Company may remove the participant for which such device(s) is (are) provided from the (DLCP) and terminate service hereunder to such participant. In such situation, the Company may deny future participation in the (DLCP) to such participant.¶

¶
COMPENSATION.¶
The Company provides a credit to the participant on each bill issued for the Summer Period (June 1 through September 30) for a total of 4 monthly credits. The credit applied to such participant's bill corresponds with the Program option selected by such participant.¶

¶
Central AC Compressor Cycling Credit: \$10.00 per bill per installed device for the summer billing period¶

¶
Electric Water Heater Control Credit: \$10.00 per bill per installed device for the summer billing period¶

Deleted:

Deleted: XXX

Deleted: X

Deleted:

Deleted: Issued December 21, 2018 Effective January 1, 2019¶

**PHASE IV ENERGY EFFICIENCY AND CONSERVATION PLAN
PROGRAM COST BY RATE CLASS (PY13 -PY17)**

Cost	Residential (Includes Low Income)	Small C&I	Large C&I	Municipal	Total
Residential					
1. Incentives	\$61,709,560	\$0	\$0	\$0	\$61,709,560
2. CPS Delivery Fees	\$44,557,197	\$0	\$0	\$0	\$44,557,197
3. Marketing	\$17,189,365	\$0	\$0	\$0	\$17,189,365
4. Common Costs	\$13,428,243	\$0	\$0	\$0	\$13,428,243
Subtotal Residential Programs	\$136,884,365	\$0	\$0	\$0	\$136,884,365
Small Commercial					
5. Incentives	\$0	\$82,011,637	\$0	\$0	\$82,011,637
6. CPS Delivery Fees	\$0	\$24,394,048	\$0	\$0	\$24,394,048
7. Marketing	\$0	\$2,339,579	\$0	\$0	\$2,339,579
8. Common Costs	\$0	\$14,152,584	\$0	\$0	\$14,152,584
Subtotal C&I Small Programs	\$0	\$122,897,847	\$0	\$0	\$122,897,847
Large Commercial					
9. Incentives	\$0	\$0	\$100,889,615	\$0	\$100,889,615
10. CPS Delivery Fees	\$0	\$0	\$38,801,943	\$0	\$38,801,943
11. Marketing	\$0	\$0	\$3,071,056	\$0	\$3,071,056
12. Common Costs	\$0	\$0	\$23,091,004	\$0	\$23,091,004
Subtotal C&I Large Programs	\$0	\$0	\$165,853,618	\$0	\$165,853,618
Municipal					
13. Incentives	\$0	\$0	\$0	\$985,194	\$985,194
14. CPS Delivery Fees	\$0	\$0	\$0	\$412,661	\$412,661
15. Marketing	\$0	\$0	\$0	\$0	\$0
16. Common Costs	\$0	\$0	\$0	\$352,145	\$352,145
Subtotal Municipal Programs	\$0	\$0	\$0	\$1,750,000	\$1,750,000
Subtotal Com., Ind. & Muni. Programs	\$0	\$122,897,847	\$165,853,618	\$1,750,000	\$290,501,465
Grand Total	\$136,884,365	\$122,897,847	\$165,853,618	\$1,750,000	\$427,385,830

**PHASE IV ENERGY EFFICIENCY AND CONSERVATION PLAN
PROGRAM COST BY RATE CLASS (PY13)**

Cost	Residential (Includes Low Income)	Small C&I	Large C&I	Municipal	Total
Residential					
1. Incentives	\$11,889,478	\$0	\$0	\$0	\$11,889,478
2. CPS Delivery Fees	\$8,494,131	\$0	\$0	\$0	\$8,494,131
3. Marketing	\$3,429,727	\$0	\$0	\$0	\$3,429,727
4. Common Costs	\$2,685,649	\$0	\$0	\$0	\$2,685,649
Subtotal Residential Programs	\$26,498,985	\$0	\$0	\$0	\$26,498,985
Small Commercial					
5. Incentives	\$0	\$12,345,431	\$0	\$0	\$12,345,431
6. CPS Delivery Fees	\$0	\$4,495,821	\$0	\$0	\$4,495,821
7. Marketing	\$0	\$473,611	\$0	\$0	\$473,611
8. Common Costs	\$0	\$2,832,939	\$0	\$0	\$2,832,939
Subtotal C&I Small Programs	\$0	\$20,147,801	\$0	\$0	\$20,147,801
Large Commercial					
9. Incentives	\$0	\$0	\$15,145,496	\$0	\$15,145,496
10. CPS Delivery Fees	\$0	\$0	\$7,145,119	\$0	\$7,145,119
11. Marketing	\$0	\$0	\$616,663	\$0	\$616,663
12. Common Costs	\$0	\$0	\$4,619,840	\$0	\$4,619,840
Subtotal C&I Large Programs	\$0	\$0	\$27,527,118	\$0	\$27,527,118
Municipal					
13. Incentives	\$0	\$0	\$0	\$147,922	\$147,922
14. CPS Delivery Fees	\$0	\$0	\$0	\$76,117	\$76,117
15. Marketing	\$0	\$0	\$0	\$0	\$0
16. Common Costs	\$0	\$0	\$0	\$66,368	\$66,368
Subtotal Municipal Programs	\$0	\$0	\$0	\$290,406	\$290,406
Subtotal Com., Ind. & Muni. Programs	\$0	\$20,147,801	\$27,527,118	\$290,406	\$47,965,325
Grand Total	\$26,498,985	\$20,147,801	\$27,527,118	\$290,406	\$74,464,311

PECO - Electric
Calculation of EEPC Phase IV Rate Effective June 1, 2021
Residential

	<u>Amount</u>	<u>\$/KWH</u>	
(1) C = Projected Recoverable EEPC Costs	\$ 26,026,794	\$0.00192	p. 2 of 12
(2) E = Experienced & Estimated Net Over/(Under) Over/(Under) - Phase III - Year 5 PJM FCM Cost Reductions/Increases Net Over/(Under)	\$ 4,299,644	\$0.00032	p. 3 of 12
	<u>\$ 4,299,644</u>	<u>\$0.00032</u>	
(3) Net Recoverable (C - E)	\$ 21,727,150	\$0.00161	
(4) BU = Projected R, RH Sales for Computation Period	13,528,086,996		
(5) T = Pennsylvania gross receipts tax rate	5.90%		
(6) EEPC = [(C-E)/BU]/(1-T)^(a)	\$0.00171		

(a) Includes SWE costs

PECO
Phase IV Energy Efficiency and Conservation Plan
C-Factor Calculation

Residential - C-Factor	
	Expenditures
EE&C Recovery - Phase III (2021-2022)	\$ 26,498,985
Less Embedded EE&C Labor⁽¹⁾	\$ 589,783
Plus Statewide Evaluator⁽²⁾	\$ 117,592
Total EE&C and Statewide Evaluator	<u>\$ 26,026,794</u>
Estimated Sales - kWh	13,528,086,996

⁽¹⁾Adjustment for the costs of embedded employees working on Phase IV EE&C

⁽²⁾ Statewide Evaluator costs based on estimated Phase III spend prorated to 5 years for Phase IV

PECO - Electric
Phase III Energy Efficiency and Conservation Program Costs (EEPC)
Residential Class
(Rates R, RH, CAP)
E-Factor Calculation

Phase III Balance Y4 \$ 1,972,870

E-Factor Period	Phase II Expenditures (1)	Phase III Expenditures (2)	Residential Sales - kWh (3)	C-Factor Rate (4)	C-Factor Revenue (5)	C-Factor Over/(Under) Recovery (6) = (5) - (1) - (2)	E-Factor Rate (7)	E-Factor Revenue (8)	SWE Revenues (9)	Total E-Factor Revenues (a) (10) = (8) - (9)	Total Revenues (E + C) Recovery (11) = (10) + (5)	Over/(Under) Recovery (12) = (11) - (1) - (2)	Cumulative Over/(Under) (13)
Apr-20	\$ -	\$ 1,850,042	930,865,256	0.00310	\$ 2,888,472	\$ 1,038,430	(0.00017)	\$ (155,526)	\$ 23,996	\$ (179,522)	\$ 2,708,950	\$ 858,908	\$ 2,831,778
May-20	\$ -	\$ 2,462,812	886,621,783	0.00310	\$ 2,751,184	\$ 288,372	(0.00017)	\$ (148,134)	\$ 22,855	\$ (170,989)	\$ 2,580,195	\$ 117,383	\$ 2,949,161
Jun-20	\$ -	\$ 2,271,597	1,052,830,869	0.00284	\$ 3,123,121	\$ 851,524	(0.00015)	\$ (160,886)	\$ 26,009	\$ (186,895)	\$ 2,936,225	\$ 664,628	\$ 3,613,790
Jul-20	\$ -	\$ 3,116,716	1,540,105,213	0.00284	\$ 4,369,939	\$ 1,253,223	(0.00015)	\$ (225,116)	\$ 36,392	\$ (261,508)	\$ 4,108,431	\$ 991,715	\$ 4,605,504
Aug-20	\$ -	\$ 3,305,498	1,696,114,134	0.00284	\$ 4,812,603	\$ 1,507,105	(0.00015)	\$ (247,919)	\$ 40,079	\$ (287,998)	\$ 4,524,605	\$ 1,219,107	\$ 5,824,612
Sep-20	\$ -	\$ 3,369,203	1,395,068,956	0.00284	\$ 3,958,409	\$ 589,206	(0.00015)	\$ (203,916)	\$ 32,965	\$ (236,881)	\$ 3,721,528	\$ 352,325	\$ 6,176,937
Oct-20	\$ -	\$ 4,068,405	927,979,931	0.00284	\$ 2,633,077	\$ (1,435,328)	(0.00015)	\$ (135,642)	\$ 21,928	\$ (157,570)	\$ 2,475,507	\$ (1,592,898)	\$ 4,584,039
Nov-20 (est)	\$ -	\$ 3,067,256	1,004,270,927	0.00284	\$ 2,852,129	\$ (215,127)	(0.00015)	\$ (150,641)	\$ 26,358	\$ (176,999)	\$ 2,675,131	\$ (392,125)	\$ 4,191,914
Dec-20 (est)	\$ -	\$ 3,744,746	1,296,609,682	0.00284	\$ 3,682,371	\$ (62,375)	(0.00015)	\$ (194,491)	\$ 36,359	\$ (230,850)	\$ 3,451,521	\$ (293,225)	\$ 3,898,689
Jan-21 (est)	\$ -	\$ 2,794,412	1,402,606,692	0.00284	\$ 3,983,403	\$ 1,188,991	(0.00015)	\$ (210,391)	\$ 40,472	\$ (250,863)	\$ 3,732,540	\$ 938,128	\$ 4,836,817
Feb-21 (est)	\$ -	\$ 3,882,339	1,170,368,819	0.00284	\$ 3,323,847	\$ (558,492)	(0.00015)	\$ (175,555)	\$ 37,318	\$ (212,873)	\$ 3,110,974	\$ (771,365)	\$ 4,065,452
Mar-21 (est)	\$ -	\$ 3,382,410	1,067,527,679	0.00284	\$ 3,031,779	\$ (350,631)	(0.00015)	\$ (160,129)	\$ 32,487	\$ (192,616)	\$ 2,839,162	\$ (543,248)	\$ 3,522,204
Total	\$ -	\$ 37,315,436	14,370,969,941		\$ 41,410,335	\$ 4,094,899		\$ (2,168,345)	\$ 377,219	\$ (2,545,564)	\$ 38,864,771	\$ 1,549,334	\$ 777,440
													\$ 4,299,644

(a) Revenues do not include GRT and rounding

PECO - Electric
Calculation of EEPC Phase IV Rate Effective June 1, 2021
Commercial

	<u>Amount</u>	<u>\$/KWH</u>	
(1) C = Projected Recoverable EEPC Costs	\$ 20,021,972	\$0.00255	p. 5 of 12
(2) E = Experienced & Estimated Net Over/(Under) Over/(Under) - Phase III - Year 5 PJM FCM Cost Reductions/Increases Net Over/(Under)	\$ 6,369,263	\$0.00081	p. 6 of 12
	<u>\$ 6,369,263</u>	<u>\$0.00081</u>	
(3) Net Recoverable (C - E)	\$ 13,652,709	\$0.00174	
(4) BU = Projected SCI Sales for Computation Period	7,838,120,638		
(5) T = Pennsylvania gross receipts tax rate	5.90%		
(6) EEPC = [(C-E)/BU]/(1-T)^(a)	\$0.00185		

(a) Includes SWE costs

PECO
Phase IV Energy Efficiency and Conservation Plan
C-Factor Calculation

Commercial - C-Factor	
	Expenditures
EE&C Recovery - Phase III (2021-2022)	\$ 20,147,801
Less Embedded EE&C Labor⁽¹⁾	\$ 244,617
Plus Statewide Evaluator⁽²⁾	\$ 118,788
Total EE&C and Statewide Evaluator	\$ 20,021,972
Estimated Sales - kWh	7,838,120,638

⁽¹⁾Adjustment for the costs of embedded employees working on Phase IV EE&C

⁽²⁾ Statewide Evaluator costs based on estimated Phase III spend prorated to 5 years for Phase IV

PECO - Electric
Phase III Energy Efficiency and Conservation Program costs (EEPC)
Commercial Class
(Rate GS)
E Factor Calculation

Phase III Balance Y4 \$ 1,434,611

E-Factor Period	Phase II	Phase III	Commercial Sales - kWh	C-Factor Rate	C-Factor Revenue	C-Factor	E-Factor Rate	E-Factor Revenue	SWE Revenues	Total E-Factor Revenues (a)	Total E-Factor	Over/(Under) Recovery	Cumulative Over/(Under)
	Expenditures	Expenditures				Over/(Under) Recovery					Revenues (E + C) Recovery		
	(1)	(2)	(3)	(4)	(5)	(6) = (5) - (1) - (2)	(7)	(8)	(9)	(10) = (8) - (9)	(11) = (10) + (5)	(12) = (11) - (1) - (2)	(13)
Apr-20	\$ -	\$ 864,400	490,993,523	0.00193	\$ 944,095	\$ 79,695	\$ 0.00017	\$ 83,945	\$ 7,631	\$ 76,314	\$ 1,020,409	\$ 156,009	\$ 1,590,620
May-20	\$ -	\$ 805,146	463,454,127	0.00193	\$ 891,761	\$ 86,615	\$ 0.00017	\$ 79,292	\$ 7,208	\$ 72,084	\$ 963,844	\$ 158,698	\$ 1,749,318
Jun-20	\$ -	\$ 831,667	524,172,586	0.00237	\$ 1,112,907	\$ 281,241	\$ 0.00018	\$ 86,788	\$ 8,906	\$ 77,882	\$ 1,190,790	\$ 359,123	\$ 2,108,441
Jul-20	\$ -	\$ 1,236,735	669,531,816	0.00237	\$ 1,577,009	\$ 340,273	\$ 0.00018	\$ 122,980	\$ 12,619	\$ 110,361	\$ 1,687,369	\$ 450,634	\$ 2,559,075
Aug-20	\$ -	\$ 1,175,609	706,205,158	0.00237	\$ 1,669,008	\$ 493,399	\$ 0.00018	\$ 130,155	\$ 13,356	\$ 116,799	\$ 1,785,807	\$ 610,198	\$ 3,169,273
Sep-20	\$ -	\$ 1,390,887	673,759,749	0.00237	\$ 1,592,299	\$ 201,412	\$ 0.00018	\$ 124,173	\$ 12,742	\$ 111,431	\$ 1,703,730	\$ 312,843	\$ 3,482,116
Oct-20	\$ -	\$ 1,188,821	568,915,980	0.00237	\$ 1,343,583	\$ 154,762	\$ 0.00018	\$ 104,777	\$ 10,752	\$ 94,025	\$ 1,437,608	\$ 248,787	\$ 3,730,904
Nov-20 (est)	\$ -	\$ 973,857	566,561,201	0.00237	\$ 1,342,750	\$ 368,893	\$ 0.00018	\$ 101,981	\$ 11,263	\$ 90,718	\$ 1,433,468	\$ 459,611	\$ 4,190,515
Dec-20 (est)	\$ -	\$ 1,215,223	653,489,058	0.00237	\$ 1,548,769	\$ 333,546	\$ 0.00018	\$ 117,628	\$ 12,013	\$ 105,615	\$ 1,654,384	\$ 439,161	\$ 4,629,676
Jan-21 (est)	\$ -	\$ 976,856	682,884,595	0.00237	\$ 1,618,436	\$ 641,580	\$ 0.00018	\$ 122,919	\$ 11,853	\$ 111,066	\$ 1,729,503	\$ 752,647	\$ 5,382,322
Feb-21 (est)	\$ -	\$ 1,085,678	621,430,711	0.00237	\$ 1,472,791	\$ 387,113	\$ 0.00018	\$ 111,858	\$ 11,424	\$ 100,434	\$ 1,573,224	\$ 487,546	\$ 5,869,869
Mar-21 (est)	\$ -	\$ 1,012,373	628,881,133	0.00237	\$ 1,490,448	\$ 478,075	\$ 0.00018	\$ 113,199	\$ 12,439	\$ 100,760	\$ 1,591,208	\$ 578,835	\$ 6,448,704
Net Total	\$ -	\$ 12,757,252	7,250,279,637		\$ 16,603,856	\$ 3,846,604		\$ 1,299,694	\$ 132,206	\$ 1,167,488	\$ 17,771,345	\$ 5,014,093	
													SWE Over/Under \$ (79,441)
													Total Over/(Under) \$ 6,369,263

(a) Revenues do not include GRT and rounding

PECO - Electric
Calculation of EEPC Phase IV Rate Effective June 1, 2021
Industrial

	<u>Amount</u>	<u>\$/KW</u>	
(1) C = Projected Recoverable EEPC Costs	\$ 27,160,077	\$0.86	p. 8 of 12
(2) E = Experienced & Estimated Net Over/(Under) Over/(Under) - Phase III - Year 5 PJM FCM Cost Reductions/Increases Net Over/(Under)	\$ 1,948,185	\$0.06	p. 9 of 12
	<u>\$ 1,948,185</u>	<u>\$0.06</u>	
(3) Net Recoverable (C - E)	\$ 25,211,892	\$0.80	
(4) BU = Projected Industrial Sales for Computation Period	31,549,876		
(5) T = Pennsylvania gross receipts tax rate	5.90%		
(6) EEPC = [(C-E)/BU]/(1-T)^(a)	\$0.85		

(a) Includes SWE costs

PECO
Phase IV Energy Efficiency and Conservation Plan
C-Factor Calculation

Industrial - C-Factor	
	Expenditures
EE&C Recovery - Phase III (2021-2022)	\$ 27,527,117
Less Embedded EE&C Labor⁽¹⁾	\$ 529,023
Plus Statewide Evaluator⁽²⁾	\$ 161,983
Total EE&C and Statewide Evaluator	\$ 27,160,077
Estimated Sales - kW	31,549,876

⁽¹⁾ Adjustment for the costs of embedded employees working on Phase IV EE&C

⁽²⁾ Statewide Evaluator costs based on estimated Phase III spend prorated to 5 years for Phase IV

PECO - Electric
Phase III Energy Efficiency and Conservation Program Costs (EEPC)
Industrial Class
(Rates PD, HT, EP)
E-Factor Calculation

Phase III Balance Y4 \$ 373,740

E-Factor Period	Phase II	Phase III	Commercial	C-Factor	C-Factor	C-Factor	E-Factor	E-Factor	SWE	Total E-Factor	Total Revenues (E + C)	Over/(Under)	Cumulative
	Expenditures	Expenditures	Sales - PLC	Rate	Revenue	Over/(Under)	Rate	Revenue	Revenues	Revenues (a)	Recovery	Recovery	Over/(Under)
	(1)	(2)	(3)	(4)	(5)	(6) = (5) - (1) - (2)	(7)	(8)	(9)	(10) = (8) - (9)	(11) = (10) + (5)	(12) = (11) - (1) - (2)	(13)
Apr-20	\$ -	\$ 1,140,778	2,564,109	0.82	\$ 2,123,334	\$ 982,556	\$ 0.02	\$ 48,209	\$ 17,151	\$ 31,058	\$ 2,154,393	\$ 1,013,614	\$ 1,387,354
May-20	\$ -	\$ 1,159,701	2,557,785	0.82	\$ 2,118,098	\$ 958,396	\$ 0.02	\$ 48,090	\$ 17,109	\$ 30,981	\$ 2,149,079	\$ 989,378	\$ 2,376,732
Jun-20	\$ -	\$ 2,281,430	1,975,118	1.14	\$ 2,254,038	\$ (27,391)	\$ (0.01)	\$ (23,735)	\$ 17,615	\$ (41,350)	\$ 2,212,688	\$ (68,741)	\$ 2,307,991
Jul-20	\$ -	\$ 3,027,126	2,527,196	1.14	\$ 2,884,078	\$ (143,048)	\$ (0.01)	\$ (30,369)	\$ 22,539	\$ (52,908)	\$ 2,831,170	\$ (195,956)	\$ 2,112,035
Aug-20	\$ -	\$ 3,288,966	2,391,523	1.14	\$ 2,729,246	\$ (559,720)	\$ (0.01)	\$ (28,739)	\$ 21,329	\$ (50,068)	\$ 2,679,178	\$ (609,788)	\$ 1,502,247
Sep-20	\$ -	\$ 3,328,470	2,516,721	1.14	\$ 2,872,124	\$ (456,346)	\$ (0.01)	\$ (30,243)	\$ 22,446	\$ (52,689)	\$ 2,819,435	\$ (509,035)	\$ 993,212
Oct-20	\$ -	\$ 1,173,374	2,382,011	1.14	\$ 2,718,391	\$ 1,545,017	\$ (0.01)	\$ (28,624)	\$ 21,244	\$ (49,869)	\$ 2,668,523	\$ 1,495,149	\$ 2,488,361
Nov-20 (est)	\$ -	\$ 2,981,555	2,480,395	1.14	\$ 2,827,650	\$ (153,905)	\$ (0.01)	\$ (24,804)	\$ 19,574	\$ (44,378)	\$ 2,783,272	\$ (198,283)	\$ 2,290,077
Dec-20 (est)	\$ -	\$ 2,525,244	2,617,608	1.14	\$ 2,984,073	\$ 458,829	\$ (0.01)	\$ (26,176)	\$ 21,022	\$ (47,198)	\$ 2,936,875	\$ 411,631	\$ 2,701,708
Jan-21 (est)	\$ -	\$ 3,214,845	2,420,870	1.14	\$ 2,759,792	\$ (455,053)	\$ (0.01)	\$ (24,209)	\$ 21,152	\$ (45,361)	\$ 2,714,431	\$ (500,414)	\$ 2,201,294
Feb-21 (est)	\$ -	\$ 2,745,656	2,561,892	1.14	\$ 2,920,556	\$ 174,900	\$ (0.01)	\$ (25,619)	\$ 21,394	\$ (47,013)	\$ 2,873,543	\$ 127,887	\$ 2,329,182
Mar-21 (est)	\$ -	\$ 3,007,898	2,412,118	1.14	\$ 2,749,814	\$ (258,084)	\$ (0.01)	\$ (24,121)	\$ 21,531	\$ (45,652)	\$ 2,704,162	\$ (303,736)	\$ 2,025,446
Total	\$ -	\$ 29,875,044	2,614,282		\$ 31,941,196	\$ 2,066,152		\$ (170,340)	\$ 244,106	\$ (414,446)	\$ 31,526,750	\$ 1,651,706	\$ (77,261)
												SWE Over/Under	\$ (77,261)
												Total Over/(Under)	\$ 1,948,185

(a) Revenues do not include GRT and rounding

PECO - Electric
Calculation of EEPC Phase IV Rate Effective June 1, 2021
Municipal Lighting

	<u>Amount</u>	<u>\$/KWH</u>	
(1) C = Projected Recoverable EEPC Costs	\$ 287,298	\$0.00168	p. 11 of 12
(2) E = Experienced & Estimated Net Over/(Under) Over/(Under) - Phase III - Year 5 PJM FCM Cost Reductions/Increases Net Over/(Under)	\$ 15,529	\$0.00009	p. 12 of 12
	<u>\$ 15,529</u>	<u>\$0.00000</u>	
(3) Net Recoverable (C - E)	\$ 271,769	\$0.00159	
(4) S = Projected Municipal Sales for Computation Period	170,603,382		
(5) T = Pennsylvania gross receipts tax rate	5.90%		
(6) EEPC = [(C-E)/BU]/(1-T)^(a)	\$0.00169		

(a) Includes SWE costs

PECO
Phase IV Energy Efficiency and Conservation Plan
C-Factor Calculation

Municipal Lighting - C-Factor	
	Expenditures
EE&C Recovery - Phase III (2021-2022)	\$ 290,406
Less Embedded EE&C Labor⁽¹⁾	\$ 4,746
Plus Statewide Evaluator⁽²⁾	\$ 1,638
Total EE&C and Statewide Evaluator	\$ 287,298
Estimated Sales - kWh	170,603,382

⁽¹⁾Adjustment for the costs of embedded employees working on Phase IV EE&C

⁽²⁾ Statewide Evaluator costs based on estimated Phase III spend prorated to 5 years for Phase IV

PECO - Electric
Phase III Energy Efficiency and Conservation Program Costs
Municipal Lighting Rates
E-Factor Calculation

E-Factor Period														Previous Balance		
												Phase III Balance Y4	\$ 28,890			
	Locations	SLE Rate	Revenues	Location	AL Rate	Revenues	kWh	TLCL Rate	Revenues	E Factor Revenues (a)	SWE Revenues	Total Revenues	Phase II Expenditures	Phase III Expenditures	Over/(Under) Recovery	Over/(Under) Cumulative
Apr-20	190,179	\$ 0.03	\$ 5,995	16,028	\$ 0.01	\$ 150	3,833,481	\$ 0.00044	\$ 1,677	\$ 7,821	\$ 85	\$ 7,736	\$ -	\$ 2,219	\$ 5,518	\$ 34,408
May-20	190,179	\$ 0.03	\$ 5,995	16,028	\$ 0.01	\$ 150	3,519,386	\$ 0.00044	\$ 1,539	\$ 7,684	\$ 84	\$ 7,600	\$ -	\$ 1,863	\$ 5,737	\$ 40,144
Jun-20	190,179	\$ 0.01	\$ 2,684	16,028	\$ 0.00	\$ 75	3,533,322	\$ 0.00024	\$ 831	\$ 3,591	\$ 27	\$ 3,564	\$ -	\$ 894	\$ 2,670	\$ 42,814
Jul-20	190,179	0.00	\$ -	16,028	0.00	\$ -	3,541,334	\$ (0.00003)	\$ (106)	\$ (106)	\$ (1)	\$ (105)	\$ -	\$ 3,491	\$ (3,597)	\$ 39,217
Aug-20	190,179	0.00	\$ -	16,028	0.00	\$ -	3,537,751	\$ (0.00003)	\$ (106)	\$ (106)	\$ (1)	\$ (105)	\$ -	\$ 2,086	\$ (2,191)	\$ 37,026
Sep-20	190,179	0.00	\$ -	16,028	0.00	\$ -	3,534,224	\$ (0.00003)	\$ (106)	\$ (106)	\$ (1)	\$ (105)	\$ -	\$ 2,475	\$ (2,580)	\$ 34,446
Oct-20	190,179	0.00	\$ -	16,028	0.00	\$ -	3,535,363	\$ (0.00003)	\$ (106)	\$ (106)	\$ (1)	\$ (105)	\$ -	\$ 2,139	\$ (2,244)	\$ 32,202
Nov-20 (est)	190,179	0.00	\$ -	16,028	0.00	\$ -	3,583,250	\$ (0.00003)	\$ (107)	\$ (107)	\$ (1)	\$ (106)	\$ -	\$ 1,961	\$ (2,067)	\$ 30,134
Dec-20 (est)	190,179	0.00	\$ -	16,028	0.00	\$ -	3,520,475	\$ (0.00003)	\$ (106)	\$ (106)	\$ (1)	\$ (105)	\$ -	\$ 2,008	\$ (2,113)	\$ 28,022
Jan-21 (est)	190,179	0.00	\$ -	16,028	0.00	\$ -	3,575,043	\$ (0.00003)	\$ (107)	\$ (107)	\$ (1)	\$ (106)	\$ -	\$ 1,887	\$ (1,993)	\$ 26,028
Feb-21 (est)	190,179	0.00	\$ -	16,028	0.00	\$ -	3,533,104	\$ (0.00003)	\$ (106)	\$ (106)	\$ (1)	\$ (105)	\$ -	\$ 1,871	\$ (1,976)	\$ 24,052
Mar-21 (est)	190,179	0.00	\$ -	16,028	0.00	\$ -	3,518,250	\$ (0.00003)	\$ (106)	\$ (106)	\$ (1)	\$ (105)	\$ -	\$ 2,284	\$ (2,389)	\$ 21,664
Total	2,282,148	\$	14,673	192,336	\$	375	42,764,983	\$	3,091	\$	18,140	\$	17,952	\$	25,178	\$ (7,226)
															SWE Over/Under	\$ (6,135)
															Total Over/(Under)	\$ 15,529

Responses to the Questions in 52 Pa. Code, Section 53.52(a)

(a)(1) The specific reason for each change

PECO is proposing to revise its Electric Service Tariff to implement its Phase IV Energy Efficiency and Conservation Plan (EE&C) Plan, as required by the Commission's Implementation Order at Docket No. M-2020-3015228.

(a)(2) The total number of customers served by the utility.

As of September 3, 2020, PECO Energy served 1,672,517 electric customers.

(a)(3) A calculation of the number of customers, by tariff subdivision, whose bills will be affected by the change.

The bills of 1,672,517 of PECO customers will be affected by the tariff revisions proposed in connection with the implementation of PECO's Phase IV EE&C Plan. By rate class, the number of affected customers breaks down as follows:

Residential:	1,505,080
Commercial:	154,183
Industrial:	3,110
Lighting:	10,144

(a)(4) The effect of the change on the utility's customers.

The applicable variable distribution charges of residential customers (which currently contain the energy efficiency charge), the existing, separately stated energy efficiency charges for small commercial and industrial customers, and the applicable distribution charges for lighting customers will be revised to reflect Phase IV EE&C Plan costs consistent with the terms of the Company's Phase IV Provision for Recovery of Energy Efficiency and Conservation Program Costs (EEPC) established under Section 1307 of the Public Utility Code and the revisions to the EEPC proposed in this filing.

(a)(5) The effect, whether direct or indirect, of the proposed change on the utility's revenue and expenses.

PECO will incur additional, incremental administrative and infrastructure costs and operating expenses associated with developing and implementing its Phase IV EE&C Plan. Revenues are projected to decrease over the five-year term of the Phase IV Plan (June 1, 2021 through May 31, 2026) due to decreased demand and energy sales.

(a)(6) The effect of the change on the service rendered by the utility.

None.

(a)(7) A list of factors considered by the utility in its determination to make a change. The list shall include a comprehensive statement as to why these factors were chosen

and the relative importance of each. This subsection does not apply to a portion of a tariff change seeking a general rate increase as defined in 66 Pa. CS 1308.

PECO is required to submit a Phase IV EE&C by the Commission's Implementation Order entered at Docket No. M-2020-3015228.

- (a)(8) Studies undertaken by the utility in order to draft its proposed change. This paragraph does not apply to a portion of the tariff change seeking a general rate increase as defined in 66 Pa. C.S. 1308.**

PECO did not perform any studies in order to develop the proposed Phase IV EE&C Plan. Instead PECO challenged the Conservation Service Providers bidding under PECO's Act 129 RFP to leverage their market expertise in the design and delivery of programs to achieve the energy savings goals while delivering a premium customer and market participant experience.

- (a)(9) Customer polls taken and other documents, which indicate customer acceptance and desire for the proposed change. If the poll or other documents reveal discernable public opposition, an explanation of why the change is in the public interest shall be provided.**

See the above response to (a)(8).

- (a)(10) Plans the utility has for introducing or implementing the changes with respect to ratepayers.**

PECO plans to communicate to customers in a multi-faceted way. PECO will issue a press release explaining that it has filed its Phase IV Plan for PUC approval. The current PECO Smart Ideas campaign will be amended to include information about the enhanced features of PECO's existing EE&C programs and to introduce the new programs in PECO's Phase IV Plan. In addition, the Company will continue to maintain robust relationships with contractors, retailers, design firms, and distributors across the energy efficiency value chain. PECO will expand and innovate its grassroots customer education and enrollment efforts to inform customers about how the programs in its Phase IV Plan can help them save money by reducing their energy use. PECO will use a multi-channeled approach to communicate existing program changes well in advance of implementing those changes in order to avoid customer confusion and to promote customer satisfaction. The communication channels will vary by program and may include, but not be limited to, bill inserts, newsletters (energy@home for residential customers), energy@work for commercial customers), web communications, direct mail (USPS) and email, community outreach initiatives, earned and paid media including social channels and digital ad placements.

(a)(11) F.C.C., FERC, or Commission orders or ruling applicable to the filing.

The following Act 129 Phase IV orders at Docket M-2020-3015228 are applicable to the filing:

- Energy Efficiency and Conservation (EEC) Program Implementation Order
- Final EEC Plan Template Secretarial Letter

The following orders are also applicable:

- Docket No. M-2019-3006868 – 2019 Total Resource Cost Final Order
- Docket No. M-2019-3006867– 2021 Technical Reference Manual Final Order and Associated Errata
- Docket No. M-2019-3006866 – SWE Baseline Studies
- Docket No. M-2008-2074154 – Final Order - Registry of Conservation Service Providers

PECO Program Years 13 to 17

Act 129 – Phase IV Energy Efficiency and Conservation Plan

Submitted to:



Pennsylvania Public Utility Commission

Submitted by:



November 30, 2020

Table of Contents

1. Overview of Plan	1
1.1 Summary Description of Plan, Objectives, and Overall Strategy.....	2
1.2 Summary Description of Process Used to Develop the Phase IV Plan	5
1.3 Summary Tables of Portfolio Savings Goals, Budget and Cost-Effectiveness	6
1.4 Summary of Program Implementation	11
1.5 Summary Description of PECO's Strategy to Acquire at Least 15% of Its Consumption Reduction and Peak Demand Reduction Target Each Year	11
1.6 Summary Description of the Program or Measure Categories from which PECO Intends to Nominate Peak Demand Reductions into PJM's Forward Capacity Market	11
1.7 Summary Descriptions of PECO's Implementation Strategy to Manage the EE&C Portfolio and Engage Customers and Trade Allies	11
1.8 Summary Description of PECO's Data Management, Quality Assurance, and Evaluation Processes	13
1.9 Summary Description of Cost Recovery Mechanism	13
2. Energy Efficiency Portfolio/Program Summary Tables and Charts.....	14
2.1 Residential, Small C&I, Large C&I and G/E/NP Portfolio Summaries	14
2.2 Plan Data: Costs, Cost-Effectiveness and Savings by Program, Sector and Portfolio	15
2.3 Budget and Parity Analysis.....	15
3. Program Descriptions	16
3.1 Discussion of Criteria and Process Used for Selection of Programs.....	16
3.2 Residential Sector	19
3.3 Commercial/Industrial Small Sector.....	73
3.4 Commercial/Industrial Large Sector.....	73
3.5 Government/Nonprofit/Institutional Sector	108
4. Program Management and Implementation Strategies.....	109
4.1 Overview of PECO Management and Implementation Strategies.....	109
4.2 Executive Management Structure.....	115
4.3 Conservation Service Providers (CSPs)	119
5. Reporting and Tracking Systems	121
5.1 Reporting.....	121
5.2 Project Management Tracking Systems	122
6. Quality Assurance and Evaluation, Measurement and Verification.....	125
6.1 Quality Assurance/Quality Control.....	125
7. Cost Recovery Mechanism.....	128
7.1 Total Annual Revenues for Phase IV.....	128

7.2 Description of Phase IV Plan in Accordance with 66 Pa. C.S. § 1307 and 2806.1 ...	129
7.3 Data Tables.....	130
7.4 Tariffs and Section 1307 Cost Recovery Mechanism for Phase IV Plan	136
7.5 Tariffs	136
7.6 Accounting for Phase IV Costs versus Prior Phase Costs	138
7.7 Proceeds from PJM FCM and Cost Recovery	138
8. Cost-Effectiveness	139
8.1 Avoided Costs	139
8.2 Confirm Use of 3% Real Discount Rate.....	139
8.3 Cost-Effectiveness Analysis Approach	139
8.4 Data Tables.....	140
9. Plan Compliance Information and Other Key Issues	142
9.1 Plan Compliance Issues	142
9.2 Other Key Issues.....	143
Appendix A. CSP Contracts	A-1
Appendix B. Program by Program Savings, Costs, and TRC Results.....	B-1
Appendix C. Calculation Methods and Assumptions	C-1
Appendix D. Glossary of Terms and Definitions	D-1
Appendix E. Avoided Cost Calculator	E-1

Table of Figures

Figure 1. PECO's Phase IV Program Structure	1
Figure 2. Summary of PECO's Phase IV Plan: Annual Energy Savings (MWh) by Program	3
Figure 3. Summary of PECO's Phase IV Plan: Peak Demand Savings (MW) by Program	3
Figure 4. Summary of PECO's Phase IV Plan: Budget by Program, Common Costs, and Total 4	
Figure 5. Summary of PECO's Phase IV Plan: TRC Analysis (including common costs)	4
Figure 6. Summary of PECO's Phase IV Plan: Incentive Budget Percentage	5
Figure 7. PECO's Phase IV Budget and Savings Targets	16
Figure 8. PECO Proposed EE&C Organization	117
Figure 9. Program Documentation and EM&V	123
Figure 10. Calculation of 2006 Annual Revenue	129
Figure 11. Cost Recovery Summary	133

Table of Tables

Table 1. Portfolio Summary of Lifetime Costs and Benefits of Energy Efficiency Measures	7
Table 2. Summary of Portfolio Energy and Demand Savings	8
Table 3. Summary of Portfolio Energy and Demand Savings	9
Table 4. Summary of Portfolio Costs	10
Table 5. Program Summaries	14
Table 6. Budget and Parity Analysis Summary	15
Table 7A. Residential Program: Eligible Measures	25
Table 8A. Residential Program: Estimate Savings and Participation	34
Table 9A. Residential Program: Program Budget	41
Table 13A. Residential Program: TRC Benefits Table	43
Table 7B. Residential HER Program: Eligible Measures	46
Table 8B. Residential HER Program: Estimated Savings and Participation	47
Table 9B. Residential HER Program: Program Budget	48
Table 13B. Residential HER Program: TRC Benefits Table	49
Table 7C. Income-Eligible Program: Eligible Measures	54
Table 8C. Income-Eligible Program: Estimated Savings and Participation	59
Table 9C. Income-Eligible Program: Program Budget	65
Table 13C. Income-Eligible Program: TRC Benefits Table	66
Table 7D. Income-Eligible HER Program: Eligible Measures	69
Table 8D. Income-Eligible HER Program: Estimated Savings and Participation	70
Table 9D. Income-Eligible HER Program: Program Budget	71
Table 13D. Income-Eligible HER Program: TRC Benefits Table	72
Table 7E. Non-Residential Program: Eligible Measures	77
Table 8E. Non-Residential Program: Estimated Savings and Participation	87
Table 9E. Non-Residential Program: Program Budget	106
Table 13E. Non-Residential Program: TRC Benefits Table	107
Table 10. Sector-Specific Summary of EE&C Costs	130
Table 11. Allocation of Common Costs to Applicable Customer Sector	134
Table 12. Summary of Portfolio EE&C Costs	135
Table 13. TRC Benefits Table	140
Table 10. Sector-Specific Summary of EE&C Costs	B-1
Table 11. Allocation of Common Costs to Applicable Customer Sector	B-4

Table 12. Summary of Portfolio EE&C Costs	B-5
Table 13. TRC Benefits Table	B-6

Transmittal Letter



An Exelon Company

Jack R. Garfinkle
Associate General Counsel
2301 Market Street / S23-1
Philadelphia, PA 19103

Direct Dial: 215-841-4608
Email: Jack.Garfinkle@exeloncorp.com

November 30, 2020

VIA eFILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

**Re: Petition of PECO Energy Company for Approval of Its
Act 129 Phase IV Energy Efficiency and Conservation Plan
Docket No. M-2020-3020830**

Dear Secretary Chiavetta:

Pursuant to Act 129 of 2008 and the Commission's Phase IV Implementation Order¹, enclosed for filing please find the **Petition of PECO Energy Company for Approval of Its Act 129 Phase IV Energy Efficiency and Conservation Plan**.²

PECO's filing is organized as follows:

- **PECO's Petition**
- **PECO Statement No. 1 - Direct Testimony of Doreen L. Masalta**
- **PECO Statement No. 2 - Direct Testimony of Nicholas DeDominicis**
- **PECO Statement No. 3 - Direct Testimony of William R. Supple**
- **PECO Statement No. 4 - Direct Testimony of Richard A. Schlesinger**
- **PECO Exhibit No. 1 - PECO Phase IV Energy Efficiency and Conservation Plan (Program Years 13-17)**

¹ *Energy Efficiency and Conservation Program*, Docket No. M-2020-3015228 (Order entered June 18, 2020).

² Consistent with 66 Pa.C.S. § 2806.1(b)(1)(i)(E), the Company has made a separate, contemporaneous filing seeking Commission approval of a confidential Phase IV conservation service provider contract.

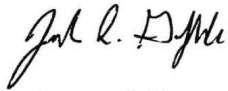
Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
November 30, 2020
Page 2

A copy of this filing will be served as indicated on the attached Certificate of Service.

As per the stay-at-home orders issued by the Governor and Philadelphia's Mayor due to the ongoing COVID-19 pandemic, PECO's office personnel are working remotely until these restrictions are lifted. Accordingly, PECO will not have its usual access to photocopying and U.S. mail, among other services. Further, per the PUC's directive to forgo mailing hard copies, PECO is making this submission by e-file and requests that all communications with PECO, likewise, be transmitted by email.

If you have any questions regarding this filing, please do not hesitate to contact me at 856-912-4738.

Very truly yours,

A handwritten signature in black ink that reads "Jack R. Garfinkle".

Jack R. Garfinkle

Enclosures

c: Per the Certificate of Service (w/encls.)

DB1/ 117177756.2

Table of Acronyms

AC	Air Conditioning
BPI	Building Performance Indicator
C&I	Commercial and Industrial
CERP	Customized Energy Reduction Package
CFL	Compact Fluorescent Lamp
CRM	Customer Relationship Management
CSP	Conservation Service Provider
DOE	US Department of Energy
ECM	Electronically Commutated Motors
EDC	Electric Distribution Company
EE&C	Energy Efficiency and Conservation
EEPC	Energy Efficiency and Conservation Program Charge
EGS	Electric Generation Supplier
EM&V	Evaluation, Measurement, and Verification
FCM	Forward Capacity Market
FERC	Federal Energy Regulatory Commission
FTE	Full Time Equivalent
G/E/NP	Government, Educational, and Nonprofit
HER	Home Energy Report
HERS	Home Energy Rating System
HVAC	Heating, Ventilating, and Air Conditioning
IT	Information Technology
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light-Emitting Diode
LIURP	Low-Income Usage Reduction Program
M&V	Measurement and Verification
MW	Megawatt
MWh	Megawatt-hour
NTG	Net-to-Gross Ratio
PDR	Peak Demand Reduction
POP	Point of Purchase
PUC	Public Utility Commission
PJM Interconnection	Pennsylvania Jersey and Maryland
PY	Program Year
QA	Quality Assurance
QC	Quality Control
R&D	Research and Development
RFP	Request for Proposal
TRC	Total Resource Cost
TRM	Technical Reference Manual

1. Overview of Plan

PECO’s Phase IV Energy Efficiency Plan (EE&C plan or plan) is a customer-centric portfolio of offerings to meet its customers’ energy saving needs, regardless of customer class. PECO’s plan has five comprehensive customer programs:

- Residential
- Residential Home Energy Reports
- Income-Eligible
- Income-Eligible Home Energy Reports
- Non-Residential

PECO is competitively contracting with Conservation Service Providers (CSPs) to implement the Phase IV programs. A prime CSP for each program will manage a team of subcontractors to implement various program components. Additionally, PECO will hire an independent evaluation contractor to evaluate all of PECO’s Phase IV programs.

Figure 1 shows the three prime CSPs, the five programs, and the programs that will contribute to the low income carve-out. The Home Energy Reports (HER) CSP will implement the Residential HER and Income-Eligible HER programs, the Residential Prime CSP and their team will implement the Income-Eligible and Residential programs, and the Non-Residential Prime CSP and their team will implement the Non-Residential program. Three programs will contribute to the low income carve-out savings: Income-Eligible HER, Income-Eligible, and Residential programs. Figure 1 does not show cross cutting portfolio costs but does include program allocated direct costs for marketing.

Figure 1. PECO’s Phase IV Program Structure, Program Savings, and Program Budget

CSP	PROGRAMS	LOW INCOME CARVE-OUT
Home Energy Reports CSP	Residential Home Energy Reports (HER) Energy (MWh): 112,656 Demand (MW): 44.0 Budget (\$): \$9,688,416	
	Income-Eligible (IE) Home Energy Reports Energy (MWh): 5,734 Demand (MW): 1.2 Budget (\$): \$493,124	IE HER Energy (MWh): 5,734
Residential Prime CSP + Team	Income-Eligible Energy (MWh): 84,841 Demand (MW): 12.6 Budget (\$): \$41,447,976	IE Energy (MWh): 84,841
	Residential Energy (MWh): 234,929 Demand (MW): 35.6 Budget (\$): \$76,163,800	IE Multifamily Energy (MWh): 6,845
Non-Residential Prime CSP + Team	Non-Residential Energy (MWh): 1,166,947 Demand (MW): 233.3 Budget (\$): \$248,568,539	

1.1 Summary Description of Plan, Objectives, and Overall Strategy

Phase IV covers five program years, starting June 1, 2021 and ending on May 31, 2026:

- **Program Year (PY) 13:** June 1, 2021 – May 31, 2022
- **PY 14:** June 1, 2022 – May 31, 2023
- **PY 15:** June 1, 2023 – May 31, 2024
- **PY 16:** June 1, 2024 – May 31, 2025
- **PY 17:** June 1, 2025 – May 31, 2026

The savings achieved under this plan will meet the energy and demand savings targets specified in the Public Utilities Commission (PUC) Implementation Order.¹ From June 1, 2021 through May 31, 2026, PECO shall achieve at least 1,380,837 MWh of energy savings and 256 MW of peak demand reduction with a budget of \$427.4 million. The plan is designed to achieve a minimum of 15% of its total Phase IV savings targets each year.

The EE&C plan's objectives include:

- Delivering required energy savings and peak demand reduction with the broadest mix of cost-effective technologies
- Generating energy savings through streamlined processes that make participation easy for customers and market actors, striving to continuously provide customers with a positive experience and help them save energy in their homes and businesses
- Meeting data and documentation needs of evaluators and regulators
- Responsible use of Act 129 dollars on behalf of PECO's customers

PECO developed its program portfolio to offer a holistic, easy customer experience across its service territory. Programs are designed based on proven, tested, and commercially viable approaches. Aside from the HER programs, each program includes a mix of measures and treatments for customers and is structured to include interactions with multiple market actors across the value chain.

Key features of PECO's plan include:

- **Program Components:** Programs tailor service delivery to the needs of each customer class through program components. Section 3 details each program's components.
- **Customer and Market Actor Engagement:** The Residential, Income-Eligible, and Non-Residential programs will each use a customer relationship management (CRM) system to ensure all customers receive a comprehensive experience (Section 3.1.4 describes the meaning of comprehensive). The CRM system will contain all interactions CSPs and subcontractors have with customers. In addition, CSPs will provide support for when a customer, at any point in their energy efficiency journey, requires assistance to participate. Assistance includes appointment scheduling, application status, rebate status, completing

¹ Implementation Order, Energy Efficiency and Conservation Program, Docket No. M-2020-3015228 (Order entered June 18, 2020) ("Final Implementation Order").

an application, and responding to questions on eligibility. CSPs will provide customer assistance through outreach methods such as a call center, online chat, email, social media, texting, and apps.

- Education and Outreach:** PECO will educate customers on energy efficiency by conducting outreach to schools, speaking with groups, hosting tables at events, and reaching diverse communities. PECO will also send customers emails, distribute program materials, and canvas neighborhoods. Additionally, PECO will leverage its strong relationships with community organizations, which, through annual sponsorships and other partner specific programs, will help spread the word to their constituents about energy efficiency.
- Measure Mix:** PECO’s goal is to achieve compliance targets with the broadest measure mix possible and with processes that make participation easy for customers and market actors. When CSPs review all the technologies and occupant behaviors in a home or building, they will arrive at the most comprehensive treatments or plans to adjust the behavior of occupants to use less energy.
- Rebate Structure:** Per the Final Implementation Order, a minimum of 50% of the total phase budget is allocated to customer incentives (including direct installation measure costs and labor).

Figure 2, Figure 3, Figure 4, Figure 5, and Figure 6 provide a summary of PECO’s expected energy savings (MWh), peak demand savings (MW), budget (\$), Total Resource Costs (TRC), and incentive budget by program and in total for Phase IV.

Figure 2. Summary of PECO’s Phase IV Plan: Annual Energy Savings (MWh) by Program

Programs	Annual Energy Savings (MWh)					5-Year Total
	PY13	PY14	PY15	PY16	PY17	
Residential	44,174	45,513	46,914	48,389	49,939	234,929
Income-Eligible	16,967	16,969	16,967	16,969	16,967	84,841
Non-Residential	174,863	233,474	291,873	291,873	174,864	1,166,947
Residential Home Energy Reports	21,507	25,447	22,234	22,012	21,456	112,656
Income-Eligible Home Energy Reports	938	1,413	938	1,413	1,032	5,734
Grand Total – All Phase IV Programs	258,449	322,816	378,927	380,657	264,258	1,605,107

Figure 3. Summary of PECO’s Phase IV Plan: Peak Demand Savings (MW) by Program

Programs	Peak Demand Savings (MW)					5-Year Total
	PY 2016	PY 2017	PY 2018	PY 2019	PY 2020	
Residential	6.7	6.9	7.1	7.3	7.5	35.6
Income-Eligible	2.5	2.5	2.5	2.5	2.5	12.6
Non-Residential	34.9	46.7	58.4	58.4	34.9	233.3
Residential Home Energy Reports	8.4	9.9	8.7	8.6	8.4	44.0
Income-Eligible Home Energy Reports	0.2	0.3	0.2	0.3	0.2	1.2
Grand Total – All Phase IV Programs	52.8	66.4	76.9	77.1	53.6	326.6

Figure 4. Summary of PECO’s Phase IV Plan: Budget by Program, Common Costs, and Total

Program	Budget (Million \$)						Average Annual
	PY13	PY14	PY15	PY16	PY17	5-Year Total	
Residential	\$14.45	\$14.82	\$15.21	\$15.62	\$16.06	\$76.16	\$15.23
Income-Eligible	\$8.29	\$8.29	\$8.29	\$8.29	\$8.29	\$41.45	\$8.29
Residential Home Energy Reports	\$1.85	\$2.19	\$1.91	\$1.89	\$1.85	\$9.69	\$1.94
Income-Eligible Home Energy Reports	\$0.08	\$0.12	\$0.08	\$0.12	\$0.09	\$0.49	\$0.10
Subtotal Residential Programs	\$24.67	\$25.43	\$25.49	\$25.93	\$26.28	\$127.79	\$25.56
Non-Residential	\$39.59	\$49.23	\$61.32	\$61.32	\$37.11	\$248.57	\$49.71
Subtotal Commercial & Industrial Programs	\$39.59	\$49.23	\$61.32	\$61.32	\$37.11	\$248.57	\$49.71
Common Costs	\$10.20	\$10.20	\$10.20	\$10.20	\$10.20	\$51.02	\$10.20
Grand Total – All Programs & Common Costs	\$74.46	\$84.86	\$97.02	\$97.46	\$73.59	\$427.39	\$85.48

Figure 5. Summary of PECO’s Phase IV Plan: TRC Analysis (including common costs)

Program	TRC Analysis				
	Discounted Benefits (Million \$) ¹	Discounted Costs (Million \$) ¹	Net Benefits (Million \$)	B/C Ratio (Gross)	B/C Ratio (Net)
Residential	\$154.32	\$130.89	\$23.43	1.18	1.04
Income-Eligible	\$40.89	\$37.68	\$3.20	1.09	1.09
Residential Home Energy Reports	\$17.20	\$8.82	\$8.38	1.95	1.95
Income-Eligible Home Energy Reports	\$0.55	\$0.45	\$0.11	1.24	1.24
Subtotal Residential Programs	\$212.96	\$177.84	\$35.12	1.20	1.11
Non-Residential	\$562.71	\$458.09	\$104.62	1.23	1.18
Subtotal Commercial & Industrial Programs	\$562.71	\$458.09	\$104.62	1.23	1.18
Common Costs		\$46.27			
Grand Total – All EE/DR Programs	\$775.67	\$682.20	\$93.47	1.14	1.06

¹ Cost and benefits discounted to PY13.

Figure 6. Summary of PECO’s Phase IV Plan: Incentive Budget Percentage

Program	Incentive Budget (Million \$)						Average Annual
	PY 2016	PY 2017	PY 2018	PY 2019	PY 2020	5-Year Total	
Residential	\$6.55	\$6.77	\$6.99	\$7.23	\$7.47	\$35.01	\$7.00
Income-Eligible	\$5.65	\$5.66	\$5.65	\$5.66	\$5.65	\$28.28	\$5.66
Residential Home Energy Reports	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Income-Eligible Home Energy Reports	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subtotal Residential Programs	\$12.21	\$12.43	\$12.64	\$12.89	\$13.13	\$63.29	\$12.66
Non-Residential	\$27.32	\$36.47	\$45.59	\$45.59	\$27.32	\$182.31	\$36.46
Subtotal Commercial & Industrial Programs	\$27.32	\$36.47	\$45.59	\$45.59	\$27.32	\$182.31	\$36.46
Total Portfolio Budget (Incentive, Admin & Common Costs)	\$74.46	\$84.86	\$97.02	\$97.46	\$73.59	\$427.39	\$85.48
Incentive Budget as Percent of Total	53%	58%	60%	60%	55%	57%	N/A

1.2 Summary Description of Process Used to Develop the Phase IV Plan

PECO implemented a process in Phase III to observe program and portfolio performance, record learnings, and adjust programs as needed to improve outcomes. The learnings gained from this continuous improvement process and our knowledge of the regulatory environment in Pennsylvania helped inform the Phase IV plan.

First, we developed and set the structure of the programs, defined the payment structure for CSPs, and detailed how CSPs should approach the program development. We then created a Scope of Work defining specific program design elements and requested bidding CSPs to design programs that meet the Scope of Work’s criteria.

We referenced the Pennsylvania Statewide Evaluator (SWE) Baseline² and Potential Studies³ to determine savings and budget by program, the Tentative⁴ and Final⁵ Implementation Orders to identify specific regulatory requirements to incorporate into the Scope of Work, and the lessons learned from the Phase III evaluation and research to ensure the Scope of Work meets the needs of customers and other market actors.

Key elements of the CSP Scope of Work include:

² 2018 Pennsylvania Statewide Act 129 Residential Baseline Study, February 12, 2019. http://www.puc.pa.gov/Electric/pdf/Act129/SWE-Phase3_Res_Baseline_Study_Rpt021219.pdf

2018 Non-Residential Baseline Study, February 2019. http://www.puc.pa.gov/Electric/pdf/Act129/SWE-Phase3_NonRes_Baseline_Study_Rpt021219.pdf

³ Pennsylvania Act 129 - Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study Report, February 28, 2020. <http://www.puc.pa.gov/pcdocs/1656474.pdf>

Phase IV Demand Response Potential Study, February 2020. <http://www.puc.pa.gov/pcdocs/1656475.pdf>

⁴ Phase IV Tentative Implementation Order The Act 129 Phase IV EE&C Program Tentative Implementation Order. From the Public Meeting of March 12, 2020. Docket No. M-2020-3015228.

⁵ Phase IV Final Implementation Order – The Act 129 Phase IV EE&C Program Implementation Order. From the Public Meeting of June 18, 2020. Docket No. M-2020-3015228.

- **Program savings and budget targets are derived from the Statewide Evaluator Phase IV Potential Study**

The SWE conducted an energy efficiency and peak demand reduction potential study to support the development of electric distribution company (EDC) Phase IV portfolio designs. This study contains the best available data to guide PECO's planning and is the basis for compliance targets as defined in the Phase IV Final Implementation Order. Program savings targets are mapped from customer segment results in the potential study to ensure achievable goals for CSPs. The SWE Phase IV Potential Study includes expected budgets to achieve savings targets required for compliance. Program budget allocations are derived based on the potential study similarly to savings targets.

- **Program details are defined by the market**

PECO released the CSP Requests for Proposals (RFPs) in August 2020, in accordance with the Company's PUC approved Phase IV RFP process. With this approach, CSPs contributed to the plan's design. This schedule also allows the CSPs time to start planning for Phase IV in early 2021 before Phase IV begins, providing a streamlined flow from Phase III to Phase IV.

PECO developed a rigorous approach for CSPs to propose program implementation plans. The CSPs reviewed the Final Implementation Order and the SWE Potential Study. The CSPs developed the program structure, delivery channels, and eligible measures using historical PECO participation and savings data, evaluation reports, and interviews with market actors. They also calibrated the savings estimates to the 2021 Technical Reference Manual (TRM) and forecasted measure level adoption through 2026.

- **The CSP payment structure is a pay-for-savings model**

PECO must meet megawatt-hour and megawatt goals. PECO will pay CSPs for megawatt-hours that meet those goals (\$/verified MWh). This protects ratepayer funding by only paying CSPs for verified savings.

PECO met with stakeholders, presented the EE&C plan, and incorporated recommendations into the plan.

1.3 Summary Tables of Portfolio Savings Goals, Budget and Cost-Effectiveness

PECO will invest up to \$427.4 million in energy efficiency and peak demand reduction programs over a 5-year program period (PY 13 through PY 17). It plans to achieve approximately 116% of the energy savings target established in the Final Implementation Order. Consistent with Phase IV requirements, PECO developed this plan to meet or exceed the required 5.8% of the overall energy savings target from the low-income sector. PECO plans to achieve approximately 128% of the PY 13–PY 17 peak demand reduction (PDR) target of 256 MW.

Error! Reference source not found. presents the Phase IV portfolio structure. Section 3 provides full descriptions of each program.

Table 1 through Table 4 summarize PECO’s lifetime costs and benefits of energy efficiency measures, portfolio energy and demand savings by program year, and portfolio costs by program year. Note these tables provide data at the sector level and sector level breakouts do not directly map to programs. Therefore, these tables should not be directly compared to Figure 1.

Table 1. Portfolio Summary of Lifetime Costs and Benefits of Energy Efficiency Measures

Notes:

o Net Lifetime Benefits and TRC per the December 19, 2019 TRC Test Order.

o Includes only savings from measures installed and operable between June 1, 2021, and May 31, 2026, and excludes carryover of Phase III savings.

Portfolio ¹	Total Discounted Lifetime Costs (\$000) ²	Total Discounted Lifetime Benefits (\$000)	Total Discounted Net ³ Lifetime Benefits (\$000)	Cost-Benefit Ratio (TRC)
Residential (<i>exclusive of Low-Income</i>) ⁴	\$129,036	\$160,171	\$31,134	1.24
Residential Low-Income	\$39,873	\$45,401	\$5,528	1.14
Commercial/Industrial Small	\$168,178	\$232,843	\$64,665	1.38
Commercial/Industrial Large	\$298,845	\$337,255	\$38,410	1.13
Total	\$635,932	\$775,669	\$139,737	1.22

¹ Portfolio sector breakouts do not map directly to programs. Multifamily master-metered and common space measures are attributed to the small and large commercial sectors and delivered through the Residential Energy Efficiency program.

² Sector portfolio costs do not include portfolio level cross-cutting allocations.

³ “Net” refers to the arithmetic difference between the previous two columns. It does not refer to net verified savings.

⁴ The June 18, 2020 Implementation Order disallowed the inclusion of low-income participation in standard, non-low-income-specific residential programs in the calculation of savings towards the low-income carve-out. See June 18, 2020 Implementation Order at 28.

Table 2. Summary of Portfolio Energy Savings

Notes:
 o Program Year (PY) is June 1 – May 31. For example, PY13 represents the program year beginning June 1, 2021, and ending May 31, 2022.
 o MWh saved are on a gross-verified basis.

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	Sum of 1st-Year MWh	Lifetime MWh
Baseline ¹	39,386,000	N/A ⁴	39,386,000	N/A ⁴	39,386,000	N/A ⁴	39,386,000	N/A ⁴	39,386,000	N/A ⁴	39,386,000	N/A ⁴
Residential Sector (exclusive of Low-Income) – Cumulative Projected Portfolio Savings	61,162	479,288	66,441	535,038	64,633	545,145	65,887	563,926	66,880	582,809	325,004	2,706,205
Residential Low-Income Sub-Sector – Cumulative Projected Portfolio Savings	19,275	186,276	19,751	189,029	19,275	186,276	19,751	189,029	19,369	188,012	97,421	938,622
Commercial/Industrial Small Sector – Cumulative Projected Portfolio Savings ⁵	68,250	765,282	90,439	1,015,305	112,456	1,262,901	112,456	1,262,901	68,249	765,246	451,850	5,071,636
Commercial/Industrial Large Sector – Cumulative Projected Portfolio Savings ⁵	109,762	1,360,228	146,185	1,812,073	182,563	2,263,664	182,563	2,263,664	109,761	1,360,211	730,833	9,059,841
EE&C Plan Total – Cumulative Projected Savings	258,449	2,791,073	581,265	6,342,518	960,191	10,600,505	1,340,849	14,880,026	1,605,107	17,776,303	1,605,107	17,776,303
EE&C Plan Total – Percentage of Target to be Met	19%	N/A ⁴	23%	N/A ⁴	27%	N/A ⁴	28%	N/A ⁴	19%	N/A ⁴	116%	N/A ⁴
Estimated Phase III Carryover Savings	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Projected Savings Phase IV + Estimated Phase III Carryover Savings	258,449	2,791,073	581,265	6,342,518	960,191	10,600,505	1,340,849	14,880,026	1,605,107	17,776,303	1,605,107	17,776,303
EE&C Plan Total – Percentage of Target to be Met ²	19%	N/A ⁴	23%	N/A ⁴	27%	N/A ⁴	28%	N/A ⁴	19%	N/A ⁴	116%	N/A ⁴
Percent Reduction from Baseline	0.7%	N/A ⁴	0.8%	N/A ⁴	1.0%	N/A ⁴	1.0%	N/A ⁴	0.7%	N/A ⁴	4.1%	N/A ⁴
Commission-Identified Goal ¹	1,380,837	N/A ⁴	1,380,837	N/A ⁴	1,380,837	N/A ⁴	1,380,837	N/A ⁴	1,380,837	N/A ⁴	1,380,837	N/A ⁴
Percent Savings due to Portfolio Above or Below Commission-Identified Goal ³	4%	N/A ⁴	8%	N/A ⁴	12%	N/A ⁴	13%	N/A ⁴	4%	N/A ⁴	16%	N/A ⁴

¹ As defined in the June 18, 2020 Implementation Order.
² The June 18, 2020 Implementation Order directed that EDCs achieve at least 15 percent of the target amount in each program year.
³ Percent savings based on 15 percent annual goal per year and Phase goal for total.
⁴ Baseline for lifetime saving and goal not applicable.
⁵ The small and large commercial/industrial sectors include municipal lighting savings. The small CI and large CI sector phase total sum of 1st-Year energy savings is 4,647 MWh and 3,106 MWh respectively.

Table 3. Summary of Portfolio Demand Savings

Notes:

- o Program Year (PY) is June 1 – May 31. For example, PY13 represents the program year beginning June 1, 2021, and ending May 31, 2022.
- o MW saved are on a gross-verified basis.

MW Saved for Consumption Reductions (System-Level)	PY13		PY14		PY15		PY16		PY17		Total	
	Ist-Year MW	Lifetime MW	Ist-Year MW	Lifetime MW	Ist-Year MW	Lifetime MW	Ist-Year MW	Lifetime MW	Ist-Year MW	Lifetime MW	Ist-Year MW	Lifetime MW
Baseline¹	7,899	N/A ⁴	7,899	N/A ⁴	7,899	N/A ⁴	7,899	N/A ⁴	7,899	N/A ⁴	7,899	N/A ⁴
Residential Sector (exclusive of Low-Income) – Cumulative Projected Portfolio Savings	15	N/A ⁴	16	N/A ⁴	15	N/A ⁴	15	N/A ⁴	15	N/A ⁴	77	N/A ⁴
Residential Low-Income Sub-Sector – Cumulative Projected Portfolio Savings	3	N/A ⁴	3	N/A ⁴	3	N/A ⁴	3	N/A ⁴	3	N/A ⁴	15	N/A ⁴
Commercial/Industrial Small Sector – Cumulative Projected Portfolio Savings⁵	12	N/A ⁴	16	N/A ⁴	20	N/A ⁴	20	N/A ⁴	12	N/A ⁴	82	N/A ⁴
Commercial/Industrial Large Sector – Cumulative Projected Portfolio Savings⁵	23	N/A ⁴	31	N/A ⁴	38	N/A ⁴	38	N/A ⁴	23	N/A ⁴	154	N/A ⁴
EE&C Plan Total – Cumulative Projected Savings	53	N/A ⁴	119	N/A ⁴	196	N/A ⁴	273	N/A ⁴	327	N/A ⁴	327	N/A ⁴
EE&C Plan Total – Percentage of Target to be Met²	21%	N/A ⁴	26%	N/A ⁴	30%	N/A ⁴	30%	N/A ⁴	21%	N/A ⁴	128%	N/A ⁴
Percent Reduction from Baseline	0.7%	N/A ⁴	0.8%	N/A ⁴	1.0%	N/A ⁴	1.0%	N/A ⁴	0.7%	N/A ⁴	4.1%	N/A ⁴
Commission-Identified Goal¹	256	N/A ⁴	256	N/A ⁴	256	N/A ⁴	256	N/A ⁴	256	N/A ⁴	256	N/A ⁴
Percent Savings due to Portfolio Above or Below Commission-Identified Goal	6%	N/A ⁴	11%	N/A ⁴	15%	N/A ⁴	15%	N/A ⁴	6%	N/A ⁴	28%	N/A ⁴

¹ As defined in the June 18, 2020 Implementation Order.

² The June 18, 2020 Implementation Order directed that EDCs achieve at least 15 percent of the target amount in each program year.

³ Percent savings based on 15 percent annual goal per year and Phase goal for total.

⁴ Baseline for lifetime saving and goal not applicable.

⁵ The small and large commercial/industrial sectors include municipal lighting savings. These measures have exterior lighting loadshapes and therefore do not contribute to peak demand reductions.

Table 4. Summary of Portfolio Costs

Sector	PY13		PY14		PY15		PY16		PY17	
	\$000	%	\$000	%	\$000	%	\$000	%	\$000	%
Residential Portfolio Annual Budget	\$15,060	20%	\$15,797	19%	\$15,938	16%	\$16,355	17%	\$16,764	23%
Residential Low-Income Portfolio Annual Budget	\$8,731	12%	\$8,758	10%	\$8,688	9%	\$8,715	9%	\$8,652	12%
Commercial/Industrial Small Portfolio Annual Budget	\$17,468	23%	\$21,748	26%	\$26,939	28%	\$26,936	28%	\$16,518	22%
Commercial/Industrial Large Portfolio Annual Budget	\$23,001	31%	\$28,355	33%	\$35,247	36%	\$35,246	36%	\$21,448	29%
Common Costs	\$10,205	14%	\$10,205	12%	\$10,205	11%	\$10,205	10%	\$10,205	14%
Total Portfolio Annual Budget	\$74,464	100%	\$84,862	100%	\$97,016	100%	\$97,456	100%	\$73,587	100%

1.4 Summary of Program Implementation

Program implementation from Phase III to Phase IV will be as seamless as possible based on PECO's planning for Phase IV. In March 2021, PECO and CSPs will kick-off the program pre-launch process. During pre-launch, CSPs will assign key staff and ensure all customer support systems and marketing and outreach is in place. The programs will launch on June 1, 2021 and implementation will occur from June 1, 2021 through May 31, 2026.

1.5 Summary Description of PECO's Strategy to Acquire at Least 15% of Its Consumption Reduction and Peak Demand Reduction Target Each Year

PECO's program portfolio is designed to produce significant savings in each of the five program years. As Table 2 and Table 3 show (above), PECO projects that no less than 19% of the 5-year savings and PDR targets will be achieved in each program year.

1.6 Summary Description of the Program or Measure Categories from which PECO Intends to Nominate Peak Demand Reductions into PJM's Forward Capacity Market

PECO will nominate up to 50 MW of PDRs from its portfolio of energy-efficiency programs into the PJM forward capacity market no earlier than PY 16. The programs and measures selected for bidding will meet the eligibility requirements for energy efficiency resources as outlined in PJM Manual 18b.⁶ PECO recognizes that revenue from PJM can contribute to a reduced ratepayer burden for energy efficiency programs and intends to balance this benefit to its customers against the risk posed to customers by the potential for deficiency charges from PJM. To meet the order requirement for Phase IV, PECO will issue an RFP for a vendor to supply PJM bidding services. The RFP will be a competitive solicitation for a turnkey provider of these services. PECO expects the provider to handle all details of bidding into the Reliability Pricing Model, including the selection of measures and programs, submitting documentation as required by PJM, and the actual bidding services. PECO further expects the provider will assume all risk associated with bidding (to include potential deficiency charges, audit risk, and M&V compliance risk) in return for some portion of the revenues generated by bidding into the PJM capacity market.

1.7 Summary Descriptions of PECO's Implementation Strategy to Manage the EE&C Portfolio and Engage Customers and Trade Allies

PECO will take several steps to ensure the effective Act 129-compliant implementation of this EE&C plan. These steps include:

⁶ PJM Manual 18B: Energy Efficiency Measurement and Verification. <https://www.pjm.com/-/media/documents/manuals/m18b.ashx>

- **Close Coordination Between PECO and the CSPs:** PECO will oversee the performance and service obligations of CSPs and make sure the CSP's delivery is aligned with the approved EE&C plan.
- **Customer and Market Actor Experience:** A positive customer and market actor experience is essential. CSPs will work closely with customers throughout Phase IV to help incorporate energy efficiency into their long-term planning projects. Customers will be offered innovative options to engage with the program and market actors will be supported for their program participation.
- **Awareness and Education:** PECO will maintain its general education campaign to inform customers and other stakeholders about the programs, PECO's commitment to reducing customer electricity use, and the benefits of energy efficiency and demand reductions. These activities may include, but are not limited to:
 - Raise awareness and familiarity of PECO's energy efficiency programs
 - Create new innovative ways to engage the community
 - Provide interactive energy efficiency displays, fun educational games, attractive table/booth décor, program flyers, and promotional giveaway items as appropriate for each event
 - Develop a strategy to leverage existing community partnerships in delivering educational outreach
 - Raise awareness and use of PECO's educational tools and calculators offered on peco.com and My Account
 - Manage the Energy Force Ambassador program, which empowers people with disabilities to become energy efficiency educators and ambassadors in the greater Philadelphia region
- **Data tracking system:** A third-party database vendor will maintain PECO's tracking database. Database protocols ensure accurate data entry through proper field definitions and input validations. Program activity tracking queries facilitate program tracking and reporting for PECO and the PUC. The implementation CSPs upload program data into the database at defined intervals and according to the data protocols. The independent evaluation contractor can access the information in the database.
- **Pre-launch period:** The implementation schedule for each program includes a pre-launch period to properly prepare for the program launch. This time will be used to refine the program, develop protocols and training materials, recruit trade allies, conduct educational activities, and develop and print incentive applications. The elements will be in place prior to full program operation. They will also be reviewed during process evaluations so that improvements may be incorporated during this plan cycle.
- **Continuous improvement:** PECO and its independent evaluation contractor will review program protocols, procedures, participant and market actor satisfaction, savings, and spending to identify and address issues that arise during program operation and to facilitate ongoing program improvement.

1.8 Summary Description of PECO's Data Management, Quality Assurance, and Evaluation Processes

PECO's data tracking system collects and stores program and invoice data from CSPs. CSPs will input projects and determine incentives on behalf of program participants. The data management system will track metrics that facilitate effective project tracking and regulatory reporting. This data will support PECO's Quality Assurance process and evaluation, management, and verification (EM&V) requirements.

1.9 Summary Description of Cost Recovery Mechanism

As Act 129 requires, PECO's EE&C plan costs are recoverable through a 66 Pa.C.S. §1307 cost-recovery mechanism. In its Phase IV Implementation Order, the PUC provided direction on the cost recovery tariff mechanism. The Commission described a Phase IV mechanism like the Phase I through Phase III mechanisms. The mechanism will be designed to recover (on a full and current basis, without interest, from each customer class) all prudent and reasonable EE&C plan costs assigned to each class. In addition, the PUC required that the mechanism be reconciled annually with revised rates effective June 1 of each program year. PECO proposes to use a cost recovery mechanism similar to those used in prior Phases but modified to meet the additional Phase IV requirements.

As with Phases I through III, PECO's proposed Phase IV cost recovery mechanism includes four separate recovery charges, one for the Residential rate class (which includes low-income customers), one for the Small Commercial and Industrial (C&I) rate class, one for the Large C&I rate class, and one for the Municipal Lighting rate class (streetlights and traffic lights). For the government, educational, and nonprofit (G/E/NP) customers defined in Act 129, PECO does not have a separate recovery mechanism because its electric accounts are included in the Small C&I and the Large C&I rate classes. Four separate charges were developed to ensure that the rate classes financing the measures are those receiving the direct energy and conservation benefits.

Section 7 includes a detailed description of and estimated values for the cost recovery mechanisms.

2. Energy Efficiency Portfolio/Program Summary Tables and Charts

This section provides a quantitative overview of the entire plan for the 5-year period.

2.1 Residential, Small C&I, Large C&I and G/E/NP Portfolio Summaries

Table 5. Program Summaries

Notes:
o Includes only savings from measures installed and operable between June 1, 2021, and May 31, 2026, and excludes carryover of Phase III savings.

	Program Name	Program Market	Program Two-Sentence Summary	Program Years Operated	Lifetime MWh Savings	Lifetime MW Savings ¹	Percentage of Portfolio Resource Savings (MWh% and MW%)	
Residential Portfolio Programs <i>(exclusive of Low-Income)</i>	Residential	PECO residential electric customers that do not qualify as income-eligible in single family (one and two unit buildings) and multifamily buildings (3 or more units) - existing and new construction	The program goal is to increase the energy efficiency in residential spaces through a variety of incentive mechanisms, in home assessments, and appliance recycling.	PY13-PY17	2,442,241	32.9	13.7%	10.1%
	Residential Home Energy Reports	PECO residential electric customers that do not qualify as income-eligible	The program involves regularly delivering direct mail or digital HERs that motivate customers to act through contextualized energy-usage information, personal and neighborhood comparisons, and energy savings recommendations.	PY13-PY17	263,965	44.0	1.5%	13.5%
Totals for Residential Sector					2,706,205	76.9	15.2%	23.5%
Residential Low-Income Sub-Sector Programs	Income-Eligible	PECO residential electric customers with a household income of less than or equal to 150% of the federal poverty level. This program includes income-eligible customers only in single-family housing	The program goal is to improve the energy efficiency of single-family homes for income-eligible customers to help make their homes more affordable.	PY13-PY17	865,461	12.6	4.9%	3.9%
	Residential	PECO residential electric customers with a household income of less than or equal to 150% of the federal poverty level in multifamily buildings - existing and new construction	The program goal is to improve the energy efficiency of individual units of multifamily buildings for income-eligible customers to help make their homes more affordable.	PY13-PY17	61,287	0.8	0.3%	0.2%
	Income-Eligible Home Energy Reports	PECO residential electric customers with a household income of less than or equal to 150% of the federal poverty level	The program involves regularly delivering direct mail or digital HERs that motivate customers to act through contextualized energy-usage information, personal and neighborhood comparisons, and energy savings recommendations.	PY13-PY17	11,874	1.2	0.1%	0.4%
Totals for Low-Income Sector					938,622	14.5	5.3%	4.5%
Commercial Industrial Small Portfolio Programs	Non-residential Energy Efficiency	All non-residential customer classes, business types, and building types throughout PECO's service territory - existing buildings and new construction.	The program offers a comprehensive and cross-cutting array of opportunities so non-residential customers can reduce their energy consumption and costs.	PY13-PY17	4,956,793	80.4	27.9%	24.6%
	Residential	Multifamily buildings and areas that are connected to a commercial meter	The program will increase the efficiency in multifamily spaces (including common areas) connected to a commercial meter.	PY13-PY17	114,842	1.3	0.6%	0.4%
Totals for C&I Small Sector					5,071,636	81.7	28.5%	25.0%
Commercial Industrial Large Portfolio Programs	Non-Residential	All non-residential customer classes, business types, and building types throughout PECO's service territory - existing buildings and new construction.	The program offers a comprehensive and cross-cutting array of opportunities so non-residential customers can reduce their energy consumption and costs.	PY13-PY17	9,013,296	153.0	50.7%	46.8%
	Residential	Multifamily buildings and areas that are connected to a commercial meter	The program will increase the efficiency in multifamily spaces (including common areas) connected to a commercial meter.	PY13-PY17	46,545	0.5	0.3%	0.2%
Totals for C&I Large Sector					9,059,841	153.5	51.0%	47.0%
Totals for Plan					17,776,303	327	100.0%	100.0%

¹ Lifetime MW are equivalent to the sum of first year MW.

2.2 Plan Data: Costs, Cost-Effectiveness and Savings by Program, Sector and Portfolio

Various sections of this report contain the following data tables, as required by the PUC's Plan IV template:

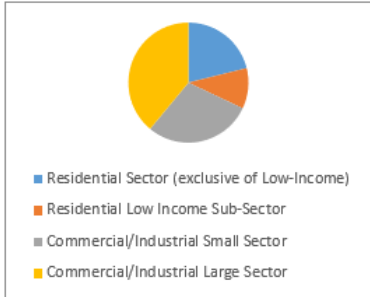
- **Section 1.3:** Table 1. Portfolio Summary of Lifetime Costs and Benefits of Energy Efficiency Measures
- **Section 1.3:** Table 2. Portfolio Summary of Energy and Demand Savings
- **Section 1.3:** Table 3. Summary of Portfolio Energy and Demand Savings
- **Section 1.3:** Table 4. Summary of Portfolio Costs
- **Section 2.1:** Table 5. Program Summaries

2.3 Budget and Parity Analysis

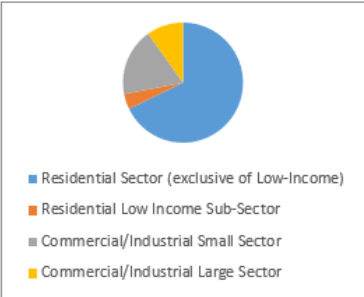
Table 6. Budget and Parity Analysis Summary

Customer Sector	Phase IV EE&C Budget \$000 (inclusive of allocated common cost)	% of Total EDC EE&C Budget	% of EDC Total Annual Revenue	% of EDC Total MWh Sales
Residential Sector (<i>exclusive of Low-Income</i>)	\$90,245	21%	68%	35%
Residential Low Income Sub-Sector	\$46,640	11%	4%	3%
Residential Subtotal	\$136,884	32%	72%	37%
Commercial/Industrial Small Sector	\$123,973	29%	18%	22%
Commercial/Industrial Large Sector	\$166,529	39%	10%	41%
Non-Residential Subtotal	\$290,501	68%	28%	63%
EDC TOTAL	\$427,386	100%	100%	100%

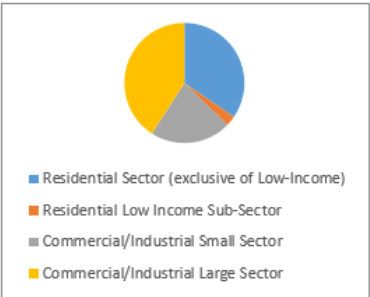
% Budget by Customer Sector



% Revenue by Customer Sector



% MWh Sales by Customer Sector



3. Program Descriptions

This section describes each proposed program, PECO’s selection process, and how the programs form balanced/integrated portfolios.

3.1 Discussion of Criteria and Process Used for Selection of Programs

This section contains portfolio objectives and metrics, the process for program development, how measures were included, and a discussion of the meaning of comprehensive programs in the context of the plan.

3.1.1 Portfolio Objectives and Metrics that Define Program Success

PECO’s portfolio objectives are to achieve the requirements set forth in the Phase IV Final Implementation Order. The plan will be implemented by delivering the required energy savings and peak demand reduction in a cost-effective manner, on pace, and with a reasonable mix of cost-effective technologies. Figure 7 outlines PECO’s Phase IV budget and savings targets. These metrics will define Phase IV’s success.

Figure 7. PECO’s Phase IV Budget and Savings Targets

Overall Budget	Regulatory Energy Savings Target	Energy Savings Carve Outs	Pace of Savings	Peak Demand Reduction Target
<p>The total Phase IV budget is not to exceed \$427.4 million.</p> <p>The total annual budget will be \$85.5 million.</p>	<p>The total Phase IV MWh savings target (sum of first year annual savings) is 1,380,837 MWh over 5 years.</p> <p>This represents an average of 276,167 MWh/year (or 3.5% of 2009/2010 sales on an annual basis).</p>	<p>Low income carve out as defined in the Final Implementation Order (<=150% FPL):</p> <ul style="list-style-type: none"> 80,089 MWh for Phase IV 16,018 average annual MWh/year 	<p>The portfolio must plan to achieve at least 15% of MWh savings target each year (207,125 MWh).</p>	<p>The total Phase IV peak demand reduction target is 256 MW. The programs should achieve at least 15% of their peak demand reduction target in each program year.</p> <p>The peak demand period for Act 129 programs is non-holiday weekdays June through August from 2:00 p.m. to 6:00 p.m. EDT. Dispatchable demand response is not eligible to contribute to 256 MW target.</p>

PECO will monitor portfolio performance and make mid-course corrections as necessary to:

- Generate the energy savings through streamlined processes that make participation easy for customers and market actors
- Continuously improve or maintain customer satisfaction
- Monitor the marketplace for additional measures and solutions that could be offered in the future
- Maintain a comprehensive set of energy solution offerings across all end-uses to its customers

- Represent all customer segments
- Present a comprehensive and appropriate set of participation channels (e.g. retail vs. contractor) through which customers can access energy efficiency solutions

3.1.2 Process for Program Development

PECO's detailed program development process resulted in a Phase IV Plan with five energy efficiency programs. PECO took the following steps to develop the program structure:

- Reviewed Phase III learnings. This step involved compiling all research findings and determining which findings could lead to improvements for Phase IV.
- Reviewed the SWE Phase IV Potential Study to understand potential by customer segment and measure category.
- Identified program structure options based on the Phase III learnings and the potential study.
- Developed preferred design elements for an ideal program structure and selected the program structure that met most of the design elements, resulting in a program structure that:
 - Offers energy efficiency options to all customer classes, including residential, with a focus on income-eligible and multifamily and non-residential with a focus on small business
 - Provides a single CSP for the residential customer class and a single CSP for the non-residential class
 - Allows for market response flexibility to be nimble and responsive to customers' demand for measures and services to best meet the needs of customers
 - Offers consistent measures across customer classes (residential, non-residential)
 - Contains all multifamily measures (in unit and common area) within one program so there is a dedicated focus to acquire all possible savings from this building type
 - Provides one call center for residential customers and one call center for non-residential customers
- Identified program components within each program based on historical programs in PECO's territory, market research, other market factors in PECO's territory, and research in other jurisdictions into best practices.

3.1.3 How Energy Efficiency and Demand Reduction Measures Were Included in the Portfolio

Per Sections 1.3 and 3.1.2, bidding CSPs recommended program designs based on PECO's program design criteria and chose measures to include in the programs. CSPs used a data-driven approach and model to estimate the measures, participation levels, and incentive ranges using PECO's design workbook provided as part of the RFP process. This data-driven approach created space for a number of less cost-effective but still important measures to be layered into the measure mix, including key HVAC measures such as heat pump water heaters and ductless mini-split heat pumps. Data inputs included the following:

- 2021 Technical Reference Manual
- US Census
- North American Industry Classification System code data analysis
- Commercial Buildings Energy Consumption Survey and Manufacturing Energy Consumption Survey data analysis
- US Energy Information Administration consumption data
- Subject matter expert interviews
- Historical participation and savings analysis
- SWE market potential
- Evaluation reports
- Manufacturer and distributor interviews

In addition, PECO completed an economic screen of the proposed measure mix. The economic screen uses the TRC test to compare the lifetime benefits of each applicable measure (avoided cost times energy savings) with each measure's lifetime costs (incremental capital and installation costs and operations and maintenance [O&M] costs). The lifetime benefits are obtained by multiplying the annual energy, demand, gas, and water savings for each measure by the avoided cost for each year, discounting the dollar savings to a present value equivalent basis and adding present value O&M benefits where applicable. The measure savings, costs and lifetimes are obtained as part of the measure characterization.

Not all measures are required to pass the TRC test for inclusion in the program, but the overall portfolio must pass this screening test. If too many measures were included that do not pass the TRC test, it would push the overall portfolio out of compliance. Therefore, the goal was a measure mix that provides comprehensive energy and demand savings measures to be offered through the programs to all customers while maintaining portfolio cost-effectiveness.

3.1.4 Describe How the EDC Defines 'Comprehensive' in the Context of EE&C Plan Design and Delivery

PECO's Phase IV programs were designed to be comprehensive for all customer classes. For PECO, comprehensive means:

- The portfolio is designed to allow customers to make a wide range of energy efficiency upgrades
- The Residential, Income-Eligible, and Non-Residential programs include a range of delivery channels such as downstream, midstream, upstream, marketplace, instant rebates, in-home assessments, no cost measures to income-eligible customers, small business direct-install, retro-commissioning, and a combination of custom measures
- During in-home or in-business assessments (or virtual assessments), programs offer a variety of efficiency upgrade recommendations leading to deeper retrofits
- Having one Residential program and one Non-Residential program (with a separate prime CSP leading each) encourages deeper retrofits, rather than asking customers to cross-reference many programs and apply through various channels

3.2 Residential Sector

Program #1 Title and Program Years During Which Program Will Be Implemented

Residential program (2021-2026)

Objective(s)

The Residential program has multiple objectives:

- Provide incentives for customer purchases of efficient lighting, appliances, HVAC upgrades, energy saving devices, and other energy savings technologies.
- Remove old, inefficient refrigerators, freezers, and window AC units from the PECO service area. Window ACs are picked up at the time of large appliance collection.
- Increase efficiency in-unit and in common areas of multifamily buildings⁷ for both market-rate households and income-eligible households⁸.
- Drive the construction of energy-efficient homes and demonstrate their value to the marketplace.

Target Market

The eligible population and target market for the Residential program includes single-family and multifamily customers. This program includes all existing buildings and new construction for single-family and multifamily customers.

- **Single Family:** Includes PECO residential electric customers in one- or two-unit buildings that do not qualify as income-eligible.
- **Multifamily (defined as a building with three or more units):** Includes all PECO multifamily building customers and all areas of a multifamily building (units and common

⁷ Defined as a building with three or more units.

⁸ Income-eligible defined as household income less than or equal to 150% of federal poverty level.

areas): multifamily buildings with income-eligible customers (household income of less than or equal to 150% of the federal poverty level), market rate customers, and common areas, regardless of the meter type. The costs of commercially metered multifamily buildings and common area measures are recovered through the small commercial sector and the large commercial sector cost recovery mechanisms.

Program Description

The Residential program offers residential customers in single-family and multifamily buildings opportunities to save energy across all of their electric end-uses. The customer-friendly approach will enable participants to make comprehensive energy efficiency upgrades to a variety of equipment types while working with a single PECO program, leading to deeper retrofits. The following section describes program components.

Program Sub-Components

The Residential program contains five components:

- **Rebates and Marketplace:** This component includes customer rebates for lighting, HVAC, appliances, and energy saving devices. There are multiple channels to receive a rebate for products:
 - Downstream: Customers receive the downstream rebate by applying through an online portal, fax, or mail-in application.
 - Trade Ally and Distributor Network: Trade allies can submit downstream applications on behalf of their customers. PECO may also choose to engage the distributor and trade ally network to provide incentives directly on a contractor's invoice to the customer.
 - Point of Purchase (POP): Customers can also engage with the program through brick-and-mortar retailer POP materials on qualified appliances and lighting products, including instant rebates to PECO customers at the POP using a mobile- and desktop-enabled platform to deliver single-use coupon barcodes to validated customers.
 - Marketplace: Customers can enter their energy efficiency journey via PECO's online Marketplace. The Marketplace presents a one-stop shopping experience for instant rebates on efficient products with the opportunity to increase customer awareness of products and programs.
- **In-Home Assessments (Single Family):** This component provides in-home or virtual assessments and comprehensive audits to educate customers, install energy efficient measures, identify additional, potentially larger energy efficiency opportunities (such as insulation and air sealing), and encourage greater participation in other Residential program sub-components. In-home assessments will be performed by Building Performance Institute (BPI)-certified Energy Advisors when possible.
- **Multifamily:** This component will provide analysis, direct-install measures, and larger, investment-level upgrades to improve the energy efficiency of multifamily buildings, both in-unit and in common areas. The component will serve buildings with market rate customers,

income-eligible customers, and a mix of customer types. This component is focused on all aspects and types of multifamily buildings to promote a strategic and thoughtful approach to multifamily buildings as a whole. The program will:

- Collaborate with program managers, building owners and building management to identify and implement energy efficiency solutions
 - Provide complimentary direct-install measures to multifamily residents and provide residents with educational materials including a pathway to participate in other residential programs
 - Target high-impact, income-eligible multifamily sites for complimentary direct-installation projects and comprehensive retrofits with more favorable incentives
- **Appliance Recycling:** This component focuses on recycling refrigerators, freezers, dehumidifiers, and window AC units responsibly. This can be many customers' first introduction to energy efficiency—and it comes with a cash-back offer that can help encourage participation in other programs. For example, the CSP will deliver marketing materials for other programs, such as the in-home assessment, when they pick up a refrigerator for recycling or refer customers to the Marketplace to find other energy efficiency measures.
 - **New Construction:** The Residential program's new construction component supports the construction of more comfortable, durable, and energy efficient homes compared to those simply built to code. This component will work with Home Energy Rating System (HERS) raters and builders to create more energy efficient homes during the design and construction phases.

Incentive spend is tied directly to achieved savings while bonus incentives highlight and support the installation of leading-edge technology. The program's performance-based incentive design rewards builders for higher performing homes and establishes predictable acquisition costs.

Implementation Strategy

The Residential program will be administered by a prime CSP and a team of partners with a proven record of providing the services offered in this program.

The implementation strategy will vary by program component:

- **Rebates and Marketplace:** The strategy will include market analysis that informs the marketing approach to connect with returning and new utility customers on program opportunities through advertisements, as well as assessment referrals. PECO will leverage trade ally relationships and retail to promote energy efficient product offerings and incentives to eligible utility customers.
- **In-Home Assessments (Single Family):** The CSP will offer three assessments to customers:

- **Quick Assessment:** Offered to all residentially metered PECO electric customers. The Quick Assessment provides customers with an in-person, in-depth energy evaluation of their home, recommendations for whole-house improvements, recommendations on other ways to save within the PECO energy efficiency portfolio, and the installation of numerous energy-saving products.
- **Comprehensive Assessment:** Offered to residentially metered customers whose primary fuel for heating is electricity. Comprehensive Assessments are in-depth, in-person energy audits performed for electrically heated homes in accordance with BPI standards. They provide the same services as the Quick Assessment and add depth and detail by using a variety of diagnostic equipment and inspection techniques such as building tightness testing and infrared thermography. Customers receive more specific information to help them move forward with recommendations, including the estimated cost to fulfill the recommendations, estimated savings, and applicable incentives. The Comprehensive Assessment also includes the installation of numerous energy-saving products.
- **Virtual Energy Checkup:** A new offering to all residentially metered PECO electric customers. Much like an in-home assessment, the virtual energy checkup will have our skilled Energy Advisors connect with customers virtually via a tablet or cell phone, lead customers through their home to explore energy-savings opportunities, create a personalized analysis of each customer's home and provide a Customized Energy Reduction Package (CERP) to help customers self-install and start saving energy immediately. This grants another entry point for the energy efficiency journey for customers who do not want visitors in their home, while allowing them to take advantage of the energy efficiency measures PECO provides. All CERPs include easy-to-follow instructions for the measures included, and our team is available if a customer needs help.
- **Multifamily:** The CSP will conduct direct outreach with a focus on tenants and trade allies to deliver more comprehensive projects and will market across property portfolios of affordable housing and larger property management firms. The CSP will offer an integrated solution of in-unit projects supported by rebated deeper installations (i.e., multiple measures) that will be built upon a network of stakeholders with portfolios of residential real estate holdings. This approach makes a wide-array of building configurations accessible, both master and individually metered. Many ownership groups provide housing for both market rate and income-eligible residents; the CSP will present analysis of portfolio wide upgrade potential to decision makers to reduce the risk of split incentives. The CSP will also leverage connections to the Philadelphia Housing Authority, Philadelphia Energy Authority, and other regional stakeholders.
- **Appliance Recycling:** The strategy will be a continuation of the Phase III program delivery strategy. Recycling services can be scheduled by telephone or online. Appliance recycling is performed using state-of-the-art recycling services designed to guarantee that all appliances are fully de-manufactured, stripped of hazardous materials and components, stored, transported, and disposed of in a safe and an environmentally responsible manner following federal, state, and local laws and regulations.
- **New Construction:** The new construction component will be implemented similar to Phase III, working through new home builders and Home Energy Raters. Additionally, the

component will add multifamily new construction options and smart thermostats as a bridge to energy efficiency actions by new home buyers.

Program Issues and Risks and Risk Management Strategy

The Residential program will manage risks by implementing a continuous improvement process such that PECO closely monitors program results and adjusts implementation tactics (including marketing approaches, participation guidelines, incentives, and program resource allocation) to meet the portfolio level targets.

One risk is the transition from Phase III to Phase IV. PECO is managing this risk by contracting with an experienced implementation CSP with extensive regulatory and market knowledge in Pennsylvania and prior extensive experience with PECO's energy efficiency programs.

An additional risk is an increase in COVID-19 cases and/or market resistance to in-person activities during the COVID-19 crisis. PECO will work with the CSP to offer virtual, no-contact services (e.g., assessments, appliance pickups, inspections) that have proven successful in PECO's territory and to develop a virtual heating test to support the virtual assessment. The CSP will have safety protocols to guide customer contact and employee safety issues. In addition, customers of the In-Home Assessments component will be able to view appointments using the online scheduling portal and pick a time that is best for them. To accommodate nontraditional schedules, customers may choose an evening or Saturday appointment. Customized energy kits may also be delivered directly to customers to ensure that energy savings continue—even remotely.

Anticipated Costs to Participating Customers

Customers participating in the Residential program have anticipated costs of \$68,249,214 for the purchase of appliances and other materials after PECO incentives.

Ramp-Up Strategy

Minimal ramp-up will be needed for the Appliance Recycling, In-Home Assessments (Single Family), and New Construction components because similar components are already operating in Phase III.

For the Rebates and Marketplace component, minimal ramp-up is required for rebates. Marketplace will require platform setup and data integration for POP submissions for savings extracts to PECO's database.

For the Multifamily component, market analysis and an outreach plan need to be fine-tuned. The CSP will engage with low- to moderate-income advocates and community-based organizations to inform the outreach plan. Interested parties and trade allies will be recruited before component launch to develop the pipeline and assure a jumpstart to program participation.

Marketing Strategy

The prime CSP will be responsible for program marketing, coordinating with PECO's Marketing and Promotions team and the PECO brand advertising agency of record for messaging design and consistency.

Marketing strategies include bill inserts, TV and radio ads, website activity, marketplace advertising, and promotion by midstream and downstream market actors. They also include digital strategies such as social media and email, outreach to building owners, property managers, tenants, and tenant groups at multifamily buildings, engaging community influencers and advocates for low-income customers in multifamily buildings, outreach to builders, raters and home buyers, promotion and events through home builder associations, other industry groups, and trade publications.

Eligible Measures and Incentive Strategy

The measure mix includes a comprehensive mix of end-use technologies such as lighting, HVAC, appliances, shell, water heating, and plug loads. Incentives are based on previous experience and knowledge of the market in PECO's territory.

Table 7A. Residential Program: Eligible Measures

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential ENERGY STAR Air Purifier	Air Purifier	No	Phase IV TRM	\$70.00	9	\$0 - \$25
Residential ENERGY STAR Room Air Conditioner	Unit	No	Phase IV TRM	\$40.00	15	\$0 - \$15
Residential ENERGY STAR Bathroom Ventilation Fan	Unit	No	Phase IV TRM	\$43.50	15	\$0 - \$20
Residential ENERGY STAR Dehumidifier	Dehumidifier	No	Phase IV TRM	\$20.21	12	\$0 - \$50
Residential Variable Speed Pool Pump	Pump	No	Phase IV TRM	\$454.23	10	\$0 - \$200
Residential ENERGY STAR Heat Pump Water Heater	Water Heater	No	Phase IV TRM	\$1,045.00	10	\$0 - \$700
Residential ENERGY STAR Most Efficient Refrigerator	Refrigerator	No	Phase IV TRM	\$100.00	14	\$0 - \$20
Residential ENERGY STAR Most Efficient Clothes Washer	Clothes Washer	No	Phase IV TRM	\$50.00	11	\$0 - \$25
Residential ENERGY STAR Clothes Dryer	Clothes Dryer	No	Phase IV TRM	\$111.73	12	\$0 - \$15
Residential Heat Pump Clothes Dryer	Clothes Dryer	No	Phase IV TRM	\$350.00	12	\$0 - \$175
Residential ENERGY STAR Most Efficient Air Source Heat Pump: Cold Climate	Outdoor unit	No	Phase IV TRM	\$1,636.75	15	\$0 - \$700

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential ENERGY STAR Central A/C	Outdoor unit	No	Phase IV TRM	\$507.78	15	\$0 - \$300
Residential ENERGY STAR Most Efficient Ductless Mini-Split Heat Pump (per Outdoor Unit)	Outdoor unit	No	Phase IV TRM	\$783.50	15	\$0 - \$500
Residential ECM Furnace Fan	Unit	No	Phase IV TRM	\$200.00	15	\$0 - \$50
Residential Smart/Learning Thermostat	Thermostat	Yes	Phase IV TRM	\$234.33	11	\$0 - \$50
Residential ENERGY STAR Integral LED fixture: Indoor	Fixture	No	Phase IV TRM	\$32.00	15	\$0 - \$10
Residential Duct Insulation	System	No	Phase IV TRM	\$540.00	15	\$0 - \$50
Residential ENERGY STAR Integral LED fixture: Outdoor	Fixture	No	Phase IV TRM	\$20.00	15	\$0 - \$10
Residential ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight Retrofit Module	Fixture	No	Phase IV TRM	\$20.00	15	\$0 - \$10
Residential ENERGY STAR Screw-in LED Bulb (Decorative: Globe)	Bulb	Yes	Phase IV TRM	\$5.52	15	\$0 - \$1.5

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential ENERGY STAR Screw-in LED Bulb (Decorative: non-globe (e.g., candelabra))	Bulb	Yes	Phase IV TRM	\$2.59	15	\$0 - \$1.25
Residential ENERGY STAR Screw-in LED Bulb (Directional/ Reflector)	Bulb	Yes	Phase IV TRM	\$4.42	15	\$0 - \$1.25
Residential LED Nightlight	Nightlight	No	Phase IV TRM	\$2.51	8	\$0 - \$2.51
Residential Advanced Power Strips	Power Strip	Yes	Phase IV TRM	\$32.35	5	\$0 - \$21
Residential Low Flow Faucet Aerator	Aerator	Yes	Phase IV TRM	\$1.61	10	\$0 - \$1.61
Residential Low Flow Showerhead	Showerhead	Yes	Phase IV TRM	\$6.00	9	\$0 - \$6
Residential Duct Air Sealing	Home	No	Phase IV TRM	\$744.00	15	\$0 - \$200
Residential Attic/Ceiling/Roof Insulation	100 Square Feet	No	Phase IV TRM	\$264.00	15	\$0 - \$150
Residential Insulation/Wrap for Hot Water Pipe	Foot of Insulated Pipe	No	Phase IV TRM	\$3.00	13	\$0 - \$3
Residential Home Air Sealing/ Weatherization	Home	No	Phase IV TRM	\$440.00	15	\$0 - \$200

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential ENERGY STAR Screw-in LED Bulb (Standard)	Bulb	Yes	Phase IV TRM	\$3.07	15	\$0 - \$3.07
Residential A/R: Removal of Existing Freezer with Replacement	Freezer	Yes	Phase IV TRM	\$0.00	5	\$0 - \$75
Residential A/R: Removal of Existing Refrigerator with Replacement	Refrigerator	Yes	Phase IV TRM	\$0.00	6	\$0 - \$75
Residential Thermostatic Restrictor Shower Valve	Shower Valve	Yes	Phase IV TRM	\$35.00	15	\$0 - \$35
Residential Heat Pump Water Heater	Water heater	No	Phase IV TRM	\$854.00	10	\$0 - \$100
C&I ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight Retrofit Module	Fixture	No	Phase IV TRM	\$93.00	15	\$0 - \$18
C&I Interior Daylighting Controls	Sensor	No	Phase IV TRM	\$378.95	8	\$0 - \$20
C&I Interior Occupancy Controls	Sensor	No	Phase IV TRM	\$150.00	8	\$0 - \$20
C&I LED Exit Sign	Lamp	No	Phase IV TRM	\$30.00	15	\$0 - \$5
C&I LED Parking Garage and Canopy Fixtures and Retrofit Kits	Fixture	No	Phase IV TRM	\$125.00	6	\$0 - \$60

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I LED Outdoor Flood Light Fixtures	Fixture	No	Phase IV TRM	\$268.31	6	\$0 - \$35
C&I ECM Circulation Pump	Pump	No	Phase IV TRM	\$150.00	13	\$0 - \$25
Residential ENERGY STAR Most Efficient Ductless Mini-Split Heat Pump (per Ton)	Ton	Yes	Phase IV TRM	\$522.33	15	\$0 - \$30
C&I Air Cooled Heat Pump	Ton	No	Phase IV TRM	\$172.00	15	\$0 - \$35
C&I Air Cooled Air Conditioner	Ton	No	Phase IV TRM	\$113.00	15	\$0 - \$0
Residential Attic/Ceiling/Roof Insulation - IE Direct Install with Heat Pump	100 Square Feet	No	Phase IV TRM	\$325.00	15	\$0 - \$35
C&I LED Replacement Lamps (Tubes)	Fixture	No	Phase IV TRM	\$13.31	15	\$0 - \$0
C&I LED Pole/Arm Mounted Parking and Roadway Fixtures and Retrofit Kits	Fixture	No	Phase IV TRM	\$405.61	6	\$0 - \$0
C&I Air Cooled Chiller	Ton	No	Phase IV TRM	\$124.00	15	\$0 - \$35
C&I LED Troffer Fixtures and Retrofit Kits	Fixture	No	Phase IV TRM	\$185.95	15	\$0 - \$20

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential ENERGY STAR Screw-in LED Bulb (Standard: 3-Way)	Bulb	Yes	Phase IV TRM	\$3.07	15	\$0 - \$3.07
Residential PTAC	Ton	Yes	Phase IV TRM	\$84.00	15	\$0 - \$100
C&I VSD retrofit on HVAC Pump	HP	No	Phase IV TRM	\$214.00	13	\$0 - \$15
C&I LED Wall Mount Fixtures and Retrofit Kits	Fixture	No	Phase IV TRM	\$86.15	6	\$0 - \$45
Residential Code Plus Home - Multifamily	Home	No	Phase IV TRM	\$864.00	15	\$0 - \$2,500
Residential Code Plus Home – Single-family	Home	No	Phase IV TRM	\$1,152.00	15	\$0 - \$2,500
Residential ENERGY STAR 3.0 Home	Home	No	Phase IV TRM	\$2,561.00	15	\$0 - \$4,500
Residential ENERGY STAR 3.0 Home - Multifamily	Home	No	Phase IV TRM	\$1,537.00	15	\$0 - \$4,500
Residential Net Zero Energy Home	Home	No	Phase IV TRM	\$8,964.00	15	\$0 - \$4,500
Residential Midrise Multifamily Common and Commercial Space	Building	No	Phase IV TRM	\$5,000.00	15	\$0 - \$60,000
Residential Mid-rise Multifamily Common and Commercial Space	Building	No	Phase IV TRM	\$10,000.00	15	\$0 - \$60000

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential A/R: Freezer Recycling	Freezer	No	Phase IV TRM	\$0.00	4	\$0 - \$75
Residential A/R: Refrigerator Recycling	Refrigerator	No	Phase IV TRM	\$0.00	5	\$0 - \$75
Residential A/R: Room AC Retirement	Unit	No	Phase IV TRM	\$0.00	3	\$0 - \$10

To maximize opportunities for customer energy savings, PECO reserves the right to offer an incentive of \$0.05/first year kWh for any measure that is not listed in Table 7A but is identified in the TRM.

Basis for the Proposed Level of Incentives

Incentives are based on previous experience and knowledge of the market in PECO's territory. Incentives will be provided per unit. Upstream lighting incentives are managed based on lighting manufacturer and retailer partner agreements. Multifamily resident spaces and common spaces are also eligible for standard and income-eligible incentives.

Maximum Deadlines for Rebates

PECO requires 180 days as a maximum length of time for an application to be submitted. Any longer may affect reporting and reconciliation timeframes.

Program Start Date with Key Schedule Milestones

The planned implementation schedule is as follows:

- March 2021: PECO and the CSPs will kick-off the program pre-launch process. During pre-launch, CSPs will assign key staff and ensure all customer support systems and marketing and outreach is in place.
- June 1, 2021: The programs will launch with some components on a ramp-up period for the first 6 months.
- June 2021–May 2026: Programs will operate and adjust to market changes. Savings and budget compared to goals will be reviewed on a regular basis.
- May 31, 2026: Last day of the Phase IV programs.

Assumed Evaluation, Measurement, and Verification (EM&V) Requirements

The Residential program's proposed evaluation methodology and data collection are consistent with current EM&V practices for PECO's Phase III programs. The EM&V requirements for this program conform to all applicable state protocols, including the SWE Evaluation Framework and the Pennsylvania TRM. Metrics for monitoring program success include, but are not limited to:

- Customer satisfaction with the program and participation trends
- Energy savings and PDRs associated with installed efficient equipment or removed equipment
- Program implementation costs and program cost-effectiveness

Data for evaluating the program will come from some of the following sources:

- Tracking system data
- Engineering or TRM estimates of measure savings

-
- Follow-up surveys of customers, retailers, trade allies, and service providers who participate in the program
 - Program implementer and PECO staff surveys or interviews
 - Evaluation of billing data
 - Local weather data

Program impacts will be determined using a variety of data sources and tested techniques. These strategies may include:

- Field and phone verification, review of program records and incentive applications
- Project reviews referencing per-unit deemed or default energy savings
- Billing analysis
- Installation follow-up phone interviews with program participants to identify: Rebated measures installed and persistence (e.g., are the measures still installed?), and other changes to the business that affect energy usage, such as changes in occupancy or changes in building size

Evaluating program process success and efficiency across program delivery, administration, implementation, and customer response includes the following strategies:

- Assessment of marketing and promotional efforts
- Monitoring contractor data-tracking system and implementation procedures to ensure that the program is being implemented as designed
- Interviews with utility staff, contractors, equipment vendors, and customers
- Survey of program participants
- Assess customer understanding, satisfaction, and attitudes about the program

See Section 6.1.4 for more details about market and process evaluations.

Administrative Requirements

PECO will administer the Residential program through a CSP. PECO will ensure that major milestones are met and that the program is delivered according to the program design. Requested external staffing levels will be provided upon the completion of the CSP selection and contracting process. PECO will have 4.5 full time equivalents (FTEs) dedicated to the residential sector.

Savings Targets and Estimated Participation

Table 8A Residential Program: Estimate Savings and Participation

Notes:

- o Energy Savings and Demand Reduction should be aggregate (not per-unit)
- o Each measure should receive its own row in the table
- o Projected participation should use the same basis as the units shown in Table 7

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential ENERGY STAR Air Purifier	Energy Savings (MWh/year)	732.50	769.13	807.58	847.96	890.36	4,047.52
	Demand Reduction (MW)	0.0907	0.0952	0.1000	0.1050	0.1103	0.5012
	Projected Participation	2,500	2,625	2,756	2,894	3,039	13,814
Residential ENERGY STAR Room Air Conditioner	Energy Savings (MWh/year)	5.78	6.06	6.37	6.69	7.02	31.91
	Demand Reduction (MW)	0.0109	0.0115	0.0120	0.0126	0.0133	0.0604
	Projected Participation	385	404	424	446	468	2,127
Residential ENERGY STAR Bathroom Ventilation Fan	Energy Savings (MWh/year)	20.88	21.93	23.02	24.17	25.38	115.39
	Demand Reduction (MW)	0.0026	0.0027	0.0029	0.0030	0.0032	0.0144
	Projected Participation	231	243	255	267	281	1,276
Residential ENERGY STAR Dehumidifier	Energy Savings (MWh/year)	281.40	295.47	310.24	325.76	342.04	1,554.91
	Demand Reduction (MW)	0.0754	0.0792	0.0832	0.0873	0.0917	0.4168
	Projected Participation	1,400	1,470	1,544	1,621	1,702	7,736
Residential Variable Speed Pool Pump	Energy Savings (MWh/year)	1,197.69	1,257.58	1,320.46	1,386.48	1,455.80	6,618.01
	Demand Reduction (MW)	0.2933	0.3079	0.3233	0.3395	0.3565	1.6206
	Projected Participation	850	893	937	984	1,033	4,697
Residential ENERGY STAR Heat Pump Water Heater	Energy Savings (MWh/year)	877.72	921.61	967.69	1,016.07	1,066.88	4,849.98
	Demand Reduction (MW)	0.0712	0.0748	0.0785	0.0824	0.0866	0.3935
	Projected Participation	500	525	551	579	608	2,763
Residential ENERGY STAR Most Efficient Refrigerator	Energy Savings (MWh/year)	146.55	153.88	161.57	169.65	178.14	809.79
	Demand Reduction (MW)	0.0255	0.0267	0.0281	0.0295	0.0309	0.1407
	Projected Participation	2,500	2,625	2,756	2,894	3,039	13,814
Residential ENERGY STAR Most Efficient Clothes Washer	Energy Savings (MWh/year)	142.47	149.60	157.08	164.93	173.18	787.25
	Demand Reduction (MW)	0.0167	0.0175	0.0184	0.0193	0.0203	0.0922
	Projected Participation	2,100	2,205	2,315	2,431	2,553	11,604
Residential ENERGY STAR Clothes Dryer	Energy Savings (MWh/year)	33.36	35.03	36.78	38.62	40.55	184.34
	Demand Reduction (MW)	0.0043	0.0045	0.0047	0.0050	0.0052	0.0236

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential Heat Pump Clothes Dryer	Projected Participation	1,200	1,260	1,323	1,389	1,459	6,631
	Energy Savings (MWh/year)	0.47	0.49	0.51	0.54	0.57	2.58
	Demand Reduction (MW)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0006
	Projected Participation	5	5	6	6	6	28
Residential ENERGY STAR Most Efficient Air Source Heat Pump: Cold Climate	Energy Savings (MWh/year)	3,350.63	3,518.16	3,694.07	3,878.77	4,072.71	18,514.33
	Demand Reduction (MW)	0.4649	0.4882	0.5126	0.5382	0.5651	2.5690
	Projected Participation	2,750	2,888	3,032	3,183	3,343	15,195
Residential ENERGY STAR Central A/C	Energy Savings (MWh/year)	1,356.80	1,424.64	1,495.87	1,570.67	1,649.20	7,497.18
	Demand Reduction (MW)	0.6989	0.7339	0.7706	0.8091	0.8496	3.8621
	Projected Participation	2,750	2,888	3,032	3,183	3,343	15,195
Residential ENERGY STAR Most Efficient Ductless Mini-Split Heat Pump (per Outdoor Unit)	Energy Savings (MWh/year)	6,701.37	7,036.44	7,388.26	7,757.68	8,145.56	37,029.31
	Demand Reduction (MW)	0.4596	0.4826	0.5068	0.5321	0.5587	2.5398
	Projected Participation	3,000	3,150	3,308	3,473	3,647	16,577
Residential ECM Furnace Fan	Energy Savings (MWh/year)	1,081.70	1,135.79	1,192.57	1,252.20	1,314.81	5,977.08
	Demand Reduction (MW)	0.2656	0.2789	0.2928	0.3074	0.3228	1.4675
	Projected Participation	5,000	5,250	5,513	5,788	6,078	27,628
Residential Smart/Learning Thermostat	Energy Savings (MWh/year)	1,988.05	2,058.86	2,133.21	2,211.28	2,293.25	10,684.65
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	7,246	7,496	7,759	8,034	8,324	38,858
Residential ENERGY STAR Integral LED fixture: Indoor	Energy Savings (MWh/year)	613.45	644.12	676.33	710.14	745.65	3,389.69
	Demand Reduction (MW)	0.0621	0.0652	0.0685	0.0719	0.0755	0.3431
	Projected Participation	12,500	13,125	13,781	14,470	15,194	69,070
Residential Duct Insulation	Energy Savings (MWh/year)	14.59	15.32	16.09	16.89	17.74	80.63
	Demand Reduction (MW)	0.0039	0.0041	0.0043	0.0045	0.0047	0.0216
	Projected Participation	100	105	110	116	122	553
Residential ENERGY STAR Integral LED fixture: Outdoor	Energy Savings (MWh/year)	7.24	7.61	7.99	8.39	8.81	40.03
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	100	105	110	116	122	553
Residential ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight Retrofit Module	Energy Savings (MWh/year)	5.50	5.78	6.06	6.37	6.69	30.39
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	100	105	110	116	122	553
	Energy Savings (MWh/year)	1,509.88	1,583.33	1,660.47	1,741.46	1,826.49	8,321.63

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential ENERGY STAR Screw-in LED Bulb (Decorative: Globe)	Demand Reduction (MW)	0.1922	0.2016	0.2114	0.2217	0.2325	1.0594
	Projected Participation	66,800	70,050	73,463	77,046	80,808	368,166
Residential ENERGY STAR Screw-in LED Bulb (Decorative: non-globe (e.g., candelabra))	Energy Savings (MWh/year)	2,213.84	2,318.36	2,428.11	2,543.34	2,664.34	12,167.98
	Demand Reduction (MW)	0.2818	0.2952	0.3091	0.3238	0.3392	1.5491
	Projected Participation	94,784	99,259	103,958	108,891	114,072	520,964
Residential ENERGY STAR Screw-in LED Bulb (Directional/Reflector)	Energy Savings (MWh/year)	38.51	40.14	41.86	43.65	45.54	209.71
	Demand Reduction (MW)	0.0049	0.0051	0.0053	0.0056	0.0058	0.0267
	Projected Participation	5,900	6,150	6,413	6,688	6,978	32,128
Residential LED Nightlight	Energy Savings (MWh/year)	113.53	119.21	125.17	131.42	138.00	627.32
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	21,600	22,680	23,814	25,005	26,255	119,354
Residential Advanced Power Strips	Energy Savings (MWh/year)	1,780.68	1,839.74	1,901.76	1,966.87	2,035.24	9,524.30
	Demand Reduction (MW)	0.1840	0.1901	0.1965	0.2032	0.2103	0.9840
	Projected Participation	20,050	20,715	21,413	22,146	22,916	107,241
Residential Low Flow Faucet Aerator	Energy Savings (MWh/year)	1,344.31	1,404.41	1,467.51	1,533.77	1,603.34	7,353.35
	Demand Reduction (MW)	0.1945	0.2032	0.2124	0.2219	0.2320	1.0641
	Projected Participation	29,750	31,080	32,477	33,943	35,482	162,732
Residential Low Flow Showerhead	Energy Savings (MWh/year)	1,884.63	1,965.22	2,049.85	2,138.71	2,232.01	10,270.41
	Demand Reduction (MW)	0.1631	0.1701	0.1774	0.1851	0.1932	0.8888
	Projected Participation	15,550	16,215	16,913	17,646	18,416	84,741
Residential Duct Air Sealing	Energy Savings (MWh/year)	51.69	54.28	56.99	59.84	62.83	285.63
	Demand Reduction (MW)	0.0170	0.0179	0.0187	0.0197	0.0207	0.0939
	Projected Participation	100	105	110	116	122	553
Residential Attic/Ceiling/Roof Insulation	Energy Savings (MWh/year)	3.70	3.89	4.08	4.28	4.50	20.44
	Demand Reduction (MW)	0.0010	0.0010	0.0011	0.0011	0.0012	0.0053
	Projected Participation	100	105	110	116	122	553
Residential Insulation/Wrap for Hot Water Pipe	Energy Savings (MWh/year)	8.82	9.26	9.72	10.21	10.72	48.72
	Demand Reduction (MW)	0.0008	0.0008	0.0008	0.0009	0.0009	0.0042
	Projected Participation	1,000	1,050	1,103	1,158	1,216	5,526
Residential Home Air Sealing/Weatherization	Energy Savings (MWh/year)	315.14	330.90	347.44	364.81	383.05	1,741.34
	Demand Reduction (MW)	0.0155	0.0163	0.0171	0.0180	0.0188	0.0857
	Projected Participation	500	525	551	579	608	2,763
	Energy Savings (MWh/year)	1,085.32	1,120.43	1,157.30	1,196.01	1,236.66	5,795.72

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential ENERGY STAR Screw-in LED Bulb (Standard)	Demand Reduction (MW)	0.1382	0.1426	0.1473	0.1523	0.1574	0.7379
	Projected Participation	34,000	35,100	36,255	37,468	38,741	181,564
Residential A/R: Removal of Existing Freezer with Replacement	Energy Savings (MWh/year)	660.25	660.25	660.25	660.25	660.25	3,301.26
	Demand Reduction (MW)	0.0798	0.0798	0.0798	0.0798	0.0798	0.3989
	Projected Participation	1,125	1,125	1,125	1,125	1,125	5,625
Residential A/R: Removal of Existing Refrigerator with Replacement	Energy Savings (MWh/year)	936.70	936.70	936.70	936.70	936.70	4,683.48
	Demand Reduction (MW)	0.1132	0.1132	0.1132	0.1132	0.1132	0.5659
	Projected Participation	1,200	1,200	1,200	1,200	1,200	6,000
Residential Thermostatic Restrictor Shower Valve	Energy Savings (MWh/year)	87.15	87.15	87.15	87.15	87.15	435.77
	Demand Reduction (MW)	0.0075	0.0075	0.0075	0.0075	0.0075	0.0377
	Projected Participation	2,150	2,150	2,150	2,150	2,150	10,750
Residential Heat Pump Water Heater	Energy Savings (MWh/year)	107.96	107.96	107.96	107.96	107.96	539.79
	Demand Reduction (MW)	0.0094	0.0094	0.0094	0.0094	0.0094	0.0469
	Projected Participation	38	38	38	38	38	190
C&I ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight Retrofit Module	Energy Savings (MWh/year)	45.57	45.57	45.57	45.57	45.57	227.86
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	240	240	240	240	240	1,200
C&I Interior Daylighting Controls	Energy Savings (MWh/year)	26.95	26.95	26.95	26.95	26.95	134.75
	Demand Reduction (MW)	0.0053	0.0053	0.0053	0.0053	0.0053	0.0265
	Projected Participation	70	70	70	70	70	350
C&I Interior Occupancy Controls	Energy Savings (MWh/year)	532.00	532.00	532.00	532.00	532.00	2,660.00
	Demand Reduction (MW)	0.1046	0.1046	0.1046	0.1046	0.1046	0.5231
	Projected Participation	2,800	2,800	2,800	2,800	2,800	14,000
C&I LED Exit Sign	Energy Savings (MWh/year)	518.91	518.91	518.91	518.91	518.91	2,594.56
	Demand Reduction (MW)	0.0806	0.0806	0.0806	0.0806	0.0806	0.4030
	Projected Participation	2,100	2,100	2,100	2,100	2,100	10,500
C&I LED Parking Garage and Canopy Fixtures and Retrofit Kits	Energy Savings (MWh/year)	403.20	403.20	403.20	403.20	403.20	2,016.00
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	840	840	840	840	840	4,200
C&I LED Outdoor Flood Light Fixtures	Energy Savings (MWh/year)	422.53	422.53	422.53	422.53	422.53	2,112.65
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	467	467	467	467	467	2,335
	Energy Savings (MWh/year)	271.66	271.66	271.66	271.66	271.66	1,358.30

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I ECM Circulation Pump	Demand Reduction (MW)	0.0335	0.0335	0.0335	0.0335	0.0335	0.1675
	Projected Participation	235	235	235	235	235	1,175
Residential ENERGY STAR Most Efficient Ductless Mini-Split Heat Pump (Per Ton)	Energy Savings (MWh/year)	402.63	402.63	402.63	402.63	402.63	2,013.16
	Demand Reduction (MW)	0.0267	0.0267	0.0267	0.0267	0.0267	0.1333
	Projected Participation	261	261	261	261	261	1,305
C&I Air Cooled Heat Pump	Energy Savings (MWh/year)	13.89	13.89	9.81	9.81	9.81	57.22
	Demand Reduction (MW)	0.0013	0.0013	0.0018	0.0018	0.0018	0.0079
	Projected Participation	21	21	21	21	21	105
C&I Air Cooled Air Conditioner	Energy Savings (MWh/year)	0.00	0.00	0.00	0.00	0.00	0.00
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	0	0	0	0	0	0
Residential Attic/Ceiling/Roof Insulation - IE Direct Install with Heat Pump	Energy Savings (MWh/year)	10.49	10.49	10.49	10.49	10.49	52.44
	Demand Reduction (MW)	0.0006	0.0006	0.0006	0.0006	0.0006	0.0031
	Projected Participation	20	20	20	20	20	100
C&I LED Replacement Lamps (Tubes)	Energy Savings (MWh/year)	24.10	24.10	24.10	24.10	24.10	120.52
	Demand Reduction (MW)	0.0057	0.0057	0.0057	0.0057	0.0057	0.0284
	Projected Participation	334	334	334	334	334	1,670
C&I LED Pole/Arm Mounted Parking and Roadway Fixtures and Retrofit Kits	Energy Savings (MWh/year)	110.00	110.00	110.00	110.00	110.00	550.00
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	100	100	100	100	100	500
C&I Air Cooled Chiller	Energy Savings (MWh/year)	0.64	0.64	0.64	0.64	0.64	3.22
	Demand Reduction (MW)	0.0017	0.0017	0.0017	0.0017	0.0017	0.0087
	Projected Participation	7	7	7	7	7	35
C&I LED Troffer Fixtures and Retrofit Kits	Energy Savings (MWh/year)	524.88	524.88	524.88	524.88	524.88	2,624.38
	Demand Reduction (MW)	0.1264	0.1264	0.1264	0.1264	0.1264	0.6319
	Projected Participation	2,800	2,800	2,800	2,800	2,800	14,000
Residential ENERGY STAR Screw-in LED Bulb (Standard: 3-Way)	Energy Savings (MWh/year)	21.55	21.55	21.55	21.55	21.55	107.73
	Demand Reduction (MW)	0.0027	0.0027	0.0027	0.0027	0.0027	0.0137
	Projected Participation	675	675	675	675	675	3,375
Residential PTAC	Energy Savings (MWh/year)	16.16	16.16	16.16	16.16	16.16	80.82
	Demand Reduction (MW)	0.0067	0.0067	0.0067	0.0067	0.0067	0.0335
	Projected Participation	28	28	28	28	28	140

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I VSD retrofit on HVAC Pump	Energy Savings (MWh/year)	39.38	39.38	39.38	39.38	39.38	196.92
	Demand Reduction (MW)	0.0012	0.0012	0.0012	0.0012	0.0012	0.0059
	Projected Participation	36	36	36	36	36	180
C&I LED Wall Mount Fixtures and Retrofit Kits	Energy Savings (MWh/year)	148.40	148.40	148.40	148.40	148.40	742.00
	Demand Reduction (MW)	0.0068	0.0068	0.0068	0.0068	0.0068	0.0340
	Projected Participation	280	280	280	280	280	1,400
Residential Code Plus Home - Multifamily	Energy Savings (MWh/year)	0.00	0.00	0.00	0.00	0.00	0.00
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	0	0	0	0	0	0
Residential Code Plus Home – Single-family	Energy Savings (MWh/year)	903.50	903.50	903.50	903.50	903.50	4,517.50
	Demand Reduction (MW)	0.6490	0.6490	0.6490	0.6490	0.6490	3.2451
	Projected Participation	601	601	601	601	601	3,005
Residential ENERGY STAR 3.0 Home	Energy Savings (MWh/year)	400.00	400.00	400.00	400.00	400.00	2,000.00
	Demand Reduction (MW)	0.2160	0.2160	0.2160	0.2160	0.2160	1.0799
	Projected Participation	200	200	200	200	200	1,000
Residential ENERGY STAR 3.0 Home - Multifamily	Energy Savings (MWh/year)	1,120.00	1,120.00	1,120.00	1,120.00	1,120.00	5,600.00
	Demand Reduction (MW)	0.3456	0.3456	0.3456	0.3456	0.3456	1.7279
	Projected Participation	800	800	800	800	800	4,000
Residential Net Zero Energy Home	Energy Savings (MWh/year)	100.00	100.00	100.00	100.00	100.00	500.00
	Demand Reduction (MW)	0.0151	0.0151	0.0151	0.0151	0.0151	0.0756
	Projected Participation	10	10	10	10	10	50
Residential Midrise Multifamily Common and Commercial Space	Energy Savings (MWh/year)	7.00	7.00	7.00	7.00	7.00	35.00
	Demand Reduction (MW)	0.0022	0.0022	0.0022	0.0022	0.0022	0.0108
	Projected Participation	1	1	1	1	1	5
Residential Mid-rise Multifamily Common and Commercial Space	Energy Savings (MWh/year)	15.00	15.00	15.00	15.00	15.00	75.00
	Demand Reduction (MW)	0.0022	0.0022	0.0022	0.0022	0.0022	0.0108
	Projected Participation	1	1	1	1	1	5
Residential A/R: Freezer Recycling	Energy Savings (MWh/year)	1,029.86	1,029.86	1,029.86	1,029.86	1,029.86	5,149.31
	Demand Reduction (MW)	0.1244	0.1244	0.1244	0.1244	0.1244	0.6222
	Projected Participation	1,250	1,250	1,250	1,250	1,250	6,250
Residential A/R: Refrigerator Recycling	Energy Savings (MWh/year)	6,217.39	6,217.39	6,217.39	6,217.39	6,217.39	31,086.94
	Demand Reduction (MW)	0.7513	0.7513	0.7513	0.7513	0.7513	3.7566
	Projected Participation	5,935	5,935	5,935	5,935	5,935	29,675

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential A/R: Room AC Retirement	Energy Savings (MWh/year)	148.16	148.16	148.16	148.16	148.16	740.82
	Demand Reduction (MW)	0.2803	0.2803	0.2803	0.2803	0.2803	1.4017
	Projected Participation	800	800	800	800	800	4,000

Estimated Program Budget (Total) by Year

Table 9A. Residential Program: Program Budget

Cost Element	PY13	PY14	PY15	PY16	PY17	Phase IV Total ²	
Total Budget (\$000)							
Incentives (\$000)	Rebates	\$3,964	\$4,161	\$4,368	\$4,586	\$4,814	\$21,893
	Upstream/Midstream Buydown	\$1,392	\$1,392	\$1,392	\$1,392	\$1,392	\$6,962
	Kits	\$0	\$0	\$0	\$0	\$0	\$0
	Direct Install Materials & Labor	\$1,197	\$1,213	\$1,231	\$1,249	\$1,268	\$6,157
	Incentive Total	\$6,553	\$6,767	\$6,991	\$7,227	\$7,474	\$35,012
Non-Incentives (\$000)¹	Program Design	\$73	\$73	\$73	\$73	\$73	\$366
	Administrative	\$439	\$439	\$439	\$439	\$439	\$2,195
	EDC Delivery Costs	\$0	\$0	\$0	\$0	\$0	\$0
	CSP Delivery Fees	\$5,240	\$5,399	\$5,565	\$5,740	\$5,924	\$27,868
	Marketing	\$2,657	\$2,657	\$2,657	\$2,657	\$2,657	\$13,283
	EM&V	\$585	\$585	\$585	\$585	\$585	\$2,927
	Other (See Section 4.2.3)	\$396	\$396	\$396	\$396	\$396	\$1,979
	Non-Incentive Total	\$9,390	\$9,549	\$9,715	\$9,890	\$10,074	\$48,620
Percent Incentives	41%	41%	42%	42%	43%	42%	
Notes:							
1 Program design, administrative, EM&V, and "other" are allocated to programs from cross-cutting based on methods described in Table 11. Figure 4 shows program-specific budgets without allocated costs.							
2 The residential program offers incentives to customers in the residential, small commercial, and large commercial sectors. Therefore, in order to compare budgets from Table 9 to Table 12, it should be noted that \$4,837,414 of the Residential program budget is attributed to the commercial sectors for cost recovery.							

Estimated Percentage of Sector Budget Attributed to the Program

The Residential program offers incentives to customers in the residential, small commercial, and large commercial sectors. The Residential program accounts for 58.2% of the residential sector, 2.8% of the small commercial sector and 0.9% of the large commercial sector spending exclusive of common cost allocation. Small and Large commercial attributions represent commercially metered multifamily building and common area measures rebated through the Residential program. The costs of commercially metered multifamily buildings and common area measures are recovered through the small commercial sector and the large commercial sector cost recovery mechanisms.

Cost-Effectiveness

Table 13A. Residential Program: TRC Benefits Table

Gross Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential	PY13	1.00	1.11	\$6,553	\$12,611	\$7,897	\$27,061	\$7,179	\$14,104	\$7,549	\$1,102	\$29,934
Residential	PY14	1.00	1.14	\$6,767	\$13,105	\$8,056	\$27,927	\$7,534	\$15,137	\$8,033	\$1,143	\$31,847
Residential	PY15	1.00	1.18	\$6,991	\$13,624	\$8,222	\$28,837	\$7,921	\$16,309	\$8,547	\$1,186	\$33,963
Residential	PY16	1.00	1.22	\$7,227	\$14,169	\$8,397	\$29,792	\$8,331	\$17,602	\$9,120	\$1,232	\$36,285
Residential	PY17	1.00	1.26	\$7,474	\$14,741	\$8,581	\$30,796	\$8,767	\$19,022	\$9,708	\$1,280	\$38,777
Residential Total		1.00	1.18	\$31,731	\$61,816	\$37,339	\$130,886	\$35,949	\$74,168	\$38,816	\$5,383	\$154,317

Net Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential	PY13	0.68	0.97	\$6,553	\$6,478	\$7,897	\$20,928	\$4,882	\$9,591	\$5,133	\$749	\$20,355
Residential	PY14	0.68	1.00	\$6,767	\$6,746	\$8,056	\$21,568	\$5,123	\$10,293	\$5,462	\$777	\$21,656
Residential	PY15	0.68	1.04	\$6,991	\$7,027	\$8,222	\$22,240	\$5,386	\$11,090	\$5,812	\$807	\$23,095
Residential	PY16	0.68	1.08	\$7,227	\$7,322	\$8,397	\$22,946	\$5,665	\$11,969	\$6,202	\$838	\$24,674
Residential	PY17	0.68	1.11	\$7,474	\$7,632	\$8,581	\$23,687	\$5,962	\$12,935	\$6,601	\$870	\$26,368
Residential Total		0.68	1.04	\$31,731	\$31,881	\$37,339	\$100,951	\$24,445	\$50,435	\$26,395	\$3,661	\$104,935

Bidding Strategy for Peak Demand Reductions into PJM's FCM

PECO will hire a turnkey service provider to handle the strategy and details for bidding into PJM's forward capacity market (FCM). This approach will balance the benefits of bidding to PECO customers against the risk posed to customers by the potential for deficiency charges from PJM.

Other Information Deemed Appropriate

None.

Program #2 Title and Program Years During Which Program Will Be Implemented

Residential Home Energy Reports (HERs) program (2021-2026)

Objective(s)

The Residential Home Energy Reports program's objective is to reduce a home's energy use through HERs and online access where customers can view their home energy usage. This program leverages the power of social norming to drive persistent energy savings through smart energy practices.

Target Market

The eligible population and target market include PECO residential electric customers that do not qualify as income-eligible.

Program Description

The Residential Home Energy Reports program involves regularly delivering direct mail or digital HERs that motivate customers to act through contextualized energy-usage information, personal and neighborhood comparisons, and energy savings recommendations based on customers' specific energy-usage patterns and characteristics. HERs will include marketing opportunities for cross-selling other Phase IV energy efficiency programs.

In addition to the information presented on the mailed or emailed HERs, all customers can log onto PECO's website to view their energy usage (energy costs, energy use, neighbor comparison). The website will also help customers determine what technologies use the most energy in their homes, provide information on how to save energy, and enable sign up for energy usage alerts and notifications. The purpose of the website is to encourage customers to learn more about PECO's energy efficiency programs and help them take action to save energy.

Program Sub-Components

The Residential Home Energy Reports program does not contain any sub-components.

Implementation Strategy

The Residential Home Energy Reports program will be implemented by a CSP. The CSP will deliver and manage the website platform and direct mail or digital HERs to customers. Home Energy Reports program participants are grouped in waves, or cohorts. The CSP will launch new waves in addition to maintaining the legacy waves launched prior to Phase IV. In Phase IV, HER waves will have a multi-year measure life after the first year of deployment. Savings will persist with a prescribed decay rate during the second year of deployment or later. The CSP will manage participation waves throughout Phase IV to address measure life and persistence in accordance with the multiyear measure life framework and PECO's goals.

Program Issues and Risks and Risk Management Strategy

The Residential Home Energy Reports program will manage risks by implementing a continuous improvement process such that PECO closely monitors program results and adjusts implementation tactics (including marketing approaches, participation guidelines, incentives, and program resource allocation) to meet the portfolio level targets.

One program risk is COVID-19-related impacts on customer behavior. With more residential customers working and spending more time at home due to the pandemic, the ability for customers to reduce their energy consumption may decrease. The CSP and PECO will manage this risk by tracking savings on a monthly basis, and the CSP can adjust report content and cadence if savings are under target.

Anticipated Costs to Participating Customers

Customers participating in the Residential Home Energy Reports program have anticipated costs of \$0 for Phase IV.

Ramp-Up Strategy

Minimal ramp up will be needed for the Residential Home Energy Reports program because this program is already operating in Phase III.

Marketing Strategy

The Residential Home Energy Reports program participants are selected by PECO; customers cannot subscribe themselves. Therefore, there is no marketing of the program to encourage participation.

Eligible Measures and Incentive Strategy

The program measure is the delivery of direct mail or digital HERs to customers. Customers are selected for the program and can choose to opt-out at any time. No incentives are paid to the customers.

Table 7B. Residential HER Program: Eligible Measures

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost	Estimated Useful Life	Incentive Amount or Incentive Range
Home Energy Reports	Household	No	Phase IV TRM	\$0/unit	1 or 4 based on Wave Year	\$0/unit

Basis for the Proposed Level of Incentives

Rebates are not applicable to the Residential Home Energy Reports program.

Maximum Deadlines for Rebates

Rebates are not applicable to the Residential Home Energy Reports program.

Program Start Date with Key Schedule Milestones

The planned implementation schedule follows:

- March 2021: PECO and the CSPs will kick-off the program pre-launch process. During pre-launch, CSPs will assign key staff and ensure all customer support systems and marketing and outreach is in place.
- June 1, 2021: The program will launch.
- June 2021–May 2026: Programs will operate and adjust to market changes. Savings and budget compared to goals will be reviewed on a regular basis.
- May 31, 2026: Last day of the Phase IV programs.

Assumed Evaluation, Measurement, and Verification (EM&V) Requirements

The evaluation methodology and data collection proposed for the program are consistent with current EM&V practices for PECO’s Phase III programs. The EM&V requirements for this program conform to all applicable state protocols, including the SWE Evaluation Framework and the Pennsylvania TRM. Metrics for monitoring program success include, but are not limited to:

- Customer satisfaction with the program
- Energy savings associated with customer behavior change
- Program implementation costs

Data for evaluating the program will come from the following sources:

- Tracking system data
- TRM estimates of measure savings persistence
- Surveys of customers who participate in the program
- Program implementer and PECO staff surveys or interviews
- Evaluation of billing data

Program impacts will be determined using a customer billing data and billing regression analysis.

Evaluating program process success and efficiency across program delivery, administration, implementation, and customer response, includes the following strategies:

- Interviews with utility staff, implementation staff, and customers
- Survey of program participants
- Assess customer understanding, satisfaction, and attitudes about the program

See Section 6.1.4 for more details about market and process evaluations.

Administrative Requirements

PECO will administer the program through a CSP. PECO will ensure major milestones are met and that the program is delivered according to the program design. Requested external staffing levels will be provided upon the completion of the CSP selection and contracting process. PECO will have 4.5 FTEs dedicated to the residential sector.

Savings Targets and Estimated Participation

Table 8B. Residential HER Program: Estimated Savings and Participation

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Home Energy Reports	Energy Savings (MWh/year)	21,507	25,447	22,234	22,012	21,456	112,656
	Demand Reduction (MW)	8.39	9.93	8.67	8.59	8.37	43.95
	Projected Participation ¹	542,200	379,200	326,400	531,400	488,400	2,267,600

¹Per Table 7B, the unit basis is "per household".

Estimated Program Budget (Total) by Year

Table 9B. Residential HER Program: Program Budget

Cost Element		PY13	PY14	PY15	PY16	PY17	Phase IV Total
Total Budget (\$000)							
Incentives (\$000)	Rebates	\$0	\$0	\$0	\$0	\$0	\$0
	Upstream/Midstream Buydown	\$0	\$0	\$0	\$0	\$0	\$0
	Kits	\$0	\$0	\$0	\$0	\$0	\$0
	Direct Install Materials & Labor	\$0	\$0	\$0	\$0	\$0	\$0
	Incentive Total	\$0	\$0	\$0	\$0	\$0	\$0
Non-Incentives (\$000)	Program Design	\$35	\$35	\$35	\$35	\$35	\$175
	Administrative	\$211	\$211	\$211	\$211	\$211	\$1,053
	EDC Delivery Costs	\$0	\$0	\$0	\$0	\$0	\$0
	CSP Delivery Fees	\$1,850	\$2,188	\$1,912	\$1,893	\$1,845	\$9,688
	Marketing	\$0	\$0	\$0	\$0	\$0	\$0
	EM&V	\$281	\$281	\$281	\$281	\$281	\$1,404
	Other (See Section 4.2.3)	\$190	\$190	\$190	\$190	\$190	\$949
	Non-Incentive Total	\$2,566	\$2,905	\$2,628	\$2,609	\$2,561	\$13,270
Percent Incentives		0%	0%	0%	0%	0%	0%
Notes:							
1 Program design, administrative, marketing, EM&V, and "other" are allocated to programs from cross-cutting based on methods described in Table 11. Figure 4 shows program-specific budgets without allocated costs.							

Estimated Percentage of Sector Budget Attributed to the Program

The Residential Home Energy Reports program serves the residential sector. The Residential Home Energy Reports program accounts for 7.8% of residential sector spending exclusive of common cost allocation.

Cost-Effectiveness

Table 13B. Residential HER Program: TRC Benefits Table

Gross Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by Participants	Paid by EDC							
<i>Residential Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>1.07</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,850</i>	<i>\$1,850</i>	<i>\$1,165</i>	<i>\$804</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,970</i>
<i>Residential Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>2.12</i>	<i>\$0</i>	<i>\$0</i>	<i>\$2,188</i>	<i>\$2,188</i>	<i>\$2,751</i>	<i>\$1,885</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,636</i>
<i>Residential Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>2.16</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,912</i>	<i>\$1,912</i>	<i>\$2,452</i>	<i>\$1,680</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,132</i>
<i>Residential Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>2.21</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,893</i>	<i>\$1,893</i>	<i>\$2,476</i>	<i>\$1,709</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,185</i>
<i>Residential Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>2.28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,845</i>	<i>\$1,845</i>	<i>\$2,462</i>	<i>\$1,737</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,198</i>
<i>Residential Home Energy Reports Total</i>		<i>1.00</i>	<i>1.95</i>	<i>\$0</i>	<i>\$0</i>	<i>\$8,822</i>	<i>\$8,822</i>	<i>\$10,174</i>	<i>\$7,028</i>	<i>\$0</i>	<i>\$0</i>	<i>\$17,202</i>

Net Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by Participants	Paid by EDC							
<i>Residential Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>1.07</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,850</i>	<i>\$1,850</i>	<i>\$1,165</i>	<i>\$804</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,970</i>
<i>Residential Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>2.12</i>	<i>\$0</i>	<i>\$0</i>	<i>\$2,188</i>	<i>\$2,188</i>	<i>\$2,751</i>	<i>\$1,885</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,636</i>
<i>Residential Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>2.16</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,912</i>	<i>\$1,912</i>	<i>\$2,452</i>	<i>\$1,680</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,132</i>
<i>Residential Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>2.21</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,893</i>	<i>\$1,893</i>	<i>\$2,476</i>	<i>\$1,709</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,185</i>
<i>Residential Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>2.28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,845</i>	<i>\$1,845</i>	<i>\$2,462</i>	<i>\$1,737</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,198</i>
<i>Residential Home Energy Reports Total</i>		<i>1.00</i>	<i>1.95</i>	<i>\$0</i>	<i>\$0</i>	<i>\$8,822</i>	<i>\$8,822</i>	<i>\$10,174</i>	<i>\$7,028</i>	<i>\$0</i>	<i>\$0</i>	<i>\$17,202</i>

Bidding Strategy for Peak Demand Reductions into PJM's FCM

PECO will hire a turnkey service provider to handle the strategy and details for bidding into PJM's FCM. This approach will balance the benefits of bidding to PECO customers against the risk posed to customers by the potential for deficiency charges from PJM. PECO will provide more detail once the EE&C plan is final and the bidder is selected.

Other Information Deemed Appropriate

None.

3.2.1 Low-Income Sub-Sector

Program #1 Title and Program Years During Which Program Will Be Implemented

Income-Eligible program (2021–2026)

Objective(s)

The Income-Eligible program has multiple objectives:

- Increase efficiency and reduce household energy costs for residential customers with a household income less than or equal to 150% of federal poverty level
- Remove old, inefficient refrigerators, freezers, and window AC units from the PECO service area. Window ACs are picked up at the time of large appliance collection

Target Market

The eligible population and target market for the Income-Eligible program includes all PECO residential electric customers with a household income of less than or equal to 150% of the federal poverty level. This program includes income-eligible customers only in single-family housing (one and two unit buildings).

Program Description

The Income-Eligible program is designed to offer PECO's income-eligible customers meaningful opportunities to save energy. The program focuses on customers only in single-family housing (one and two unit buildings). The Residential program contains the Multifamily component, which includes income-eligible customers in multifamily buildings (defined as a building with three or more units), as previously discussed. The customer-friendly direct-installation approach will enable participants to benefit from comprehensive energy efficiency upgrades to a variety of equipment types while working with a single program, leading to deeper retrofits. The program will provide no-cost upgrades and rebates for equipment. The following section contains detailed descriptions of program components.

Program Sub-Components

The Income-Eligible program contains two components:

- **Single-Family Income-Eligible:** This component will improve the energy efficiency of single-family homes for income-eligible customers to help reduce their electric bills and make their homes more comfortable. All measures will be 100% subsidized.

To meet each customer's needs, the CSP will offer in-person or virtual free energy checkups. These appointments feature an in-depth inspection of the home, energy usage analysis and recommendations, direct install measures and an energy education session, followed by a custom report and education materials.

The CSP will also offer free electric heating assessments. These assessments will include all elements of the free energy checkup in addition to combustion safety checks and air flow diagnostics (like blower door testing) and feature building analysis. Comprehensive services will be delivered via an expanded trade ally network.

The CSP will continue collaborating with other programs to coordinate and deliver comprehensive efficiency services. Complementary programs include the Low Income Usage Reduction program (LIURP), Philadelphia Gas Works, and Philadelphia Water Department.

- **Appliance Recycling:** This component focuses on recycling refrigerators, freezers, and window AC units responsibly. This can be the first introduction to energy efficiency for many people, and the component comes with a cash-back offer, which can encourage customers to participate in other programs. In addition, the Single-Family Income-Eligible component will also identify appliances in need of recycling and will refer them to the Appliance Recycling component. The Appliance Recycling component also can serve as an entry point to other energy efficiency programs. For example, the CSP will be able to deliver marketing materials for other programs, such as the in-home assessment when they pick up a refrigerator for recycling or refer customers to the Marketplace to find other energy efficiency measures.

Implementation Strategy

A prime CSP will administer the Income-Eligible program with a team of partners that have a proven record of providing the services offered in this program.

The implementation strategy will vary by program component:

- **Single-Family Income-Eligible:** Free energy checkups (including a virtual option with a CERP) and directly installed measures. Provide HERs and education. Customers with electric heating will be identified and offered a free Electric Heating Assessments, including additional home analysis and energy efficiency measures.
- **Appliance Recycling:** The strategy will be a continuation of the program delivery strategy from Phase III. Recycling services can be scheduled through the telephone or online. Appliance recycling is performed using state-of-the-art recycling services designed to guarantee that all appliances are fully de-manufactured, stripped of hazardous materials and

components, stored, transported, and disposed of in a safe and environmentally responsible manner following federal, state, and local laws and regulations.

Program Issues and Risks and Risk Management Strategy

The Income-Eligible program will manage risks by implementing a continuous improvement process such that PECO closely monitors program results and adjusts implementation tactics (including marketing approaches, participation guidelines, incentives, and program resource allocation) to meet the portfolio level targets.

One risk is the transition from Phase III to Phase IV. PECO is managing this risk by contracting with an experienced implementation CSP with extensive regulatory and market knowledge in Pennsylvania and prior extensive experience with PECO's energy efficiency programs.

Another risk is an increase in COVID-19 cases and/or market resistance to in-home audits during the COVID-19 crisis. PECO will work with the CSP to offer virtual, no-contact services (e.g., assessments, appliance pickups, inspections) that have proven successful in PECO's territory and to develop a virtual heating test to support the virtual assessment. The CSP will have safety protocols to guide customer contact and employee safety issues. In addition, customers of the In-Home Assessments component will be able to view appointments using the online scheduling portal and pick a time that is best for them. To accommodate nontraditional schedules, customers may choose an evening or Saturday appointment. Customized energy kits may also be delivered directly to customers to ensure that energy savings continue—even remotely.

Anticipated Costs to Participating Customers

Customers participating in the Income-Eligible program have anticipated costs of \$0 for Phase IV after incentives.

Ramp-Up Strategy

Minimal ramp up will be needed for the Income-Eligible program because the Single-Family Income-Eligible and Appliance Recycling components are already operating in Phase III.

Marketing Strategy

The prime CSP will be responsible will program marketing, coordinating with PECO's Marketing and Promotions team and the PECO brand advertising agency of record for messaging design and consistency.

Marketing strategies include outbound recruiting calls based on proven processes driven by PECO customer data combined with other purchased marketing data (Data Driven Outreach model), bill inserts, website, marketplace promotion, and digital strategies including social media and email.

Eligible Measures and Incentive Strategy

The measure mix includes a comprehensive mix of end-use technologies such as lighting, HVAC (heat pump, ductless mini-splits, central ACs), appliances, shell (attic insulation, air sealing), duct sealing and insulation, water heating (heat pump water heaters), and plug loads. Homes will be assessed and offered direct-installed no-cost measures.

Table 7C. Income-Eligible Program: Eligible Measures

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential A/R: Freezer Recycling	Freezer	Yes	Phase IV TRM	\$0.00	4	\$0 - \$75
Residential A/R: Refrigerator Recycling	Refrigerator	Yes	Phase IV TRM	\$0.00	5	\$0 - \$75
Residential A/R: Room AC Retirement	Unit	Yes	Phase IV TRM	\$0.00	3	\$0 - \$10
Residential Low Flow Faucet Aerator - IE Direct Install	Aerator	Yes	Phase IV TRM	\$1.61	10	\$0 - \$1.61
Residential Low Flow Showerhead - IE Direct Install	Showerhead	Yes	Phase IV TRM	\$6.00	9	\$0 - \$6
Residential Water Heater Temperature Setback	Water Heater Controlled	Yes	Phase IV TRM	\$0.00	2	\$0 - \$0
Residential Insulation/Wrap for Hot Water Pipe	Foot of Insulated Pipe	Yes	Phase IV TRM	\$3.00	13	\$0 - \$2
Residential Thermostatic Restrictor Shower Valve	Shower Valve	Yes	Phase IV TRM	\$35.00	15	\$0 - \$35
Residential Attic/Ceiling/Roof Insulation - IE Direct Install with Heat Pump	100 Square Feet	Yes	Phase IV TRM	\$325.00	15	\$0 - \$325
Residential Furnace Whistle	Whistle	Yes	Phase IV TRM	\$1.00	14	\$0 - \$1
Residential Floor Insulation	100 Square Feet	Yes	Phase IV TRM	\$185.00	15	\$0 - \$185
Residential Rim Joist Insulation	100 Square Feet	Yes	Phase IV TRM	\$67.20	15	\$0 - \$67.2
Residential ENERGY STAR Most Efficient Central A/C	Ton	Yes	Phase IV TRM	\$1,357.00	15	\$0 - \$1357

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
Residential ENERGY STAR Most Efficient Ductless Mini-Split Heat Pump - IE Direct Install	Ton	Yes	Phase IV TRM	\$1,500.00	15	\$0 - \$1500
Residential ECM Furnace Fan	Unit	Yes	Phase IV TRM	\$200.00	15	\$0 - \$200
Residential Heat Pump Water Heater - IE Direct Install	Water heater	Yes	Phase IV TRM	\$2,000.00	10	\$0 - \$2000
Residential ENERGY STAR Most Efficient Air Source Heat Pump: Cold Climate - IE Direct Install	Ton	Yes	Phase IV TRM	\$1,650.00	15	\$0 - \$1650
Residential Duct Air Sealing	Home	Yes	Phase IV TRM	\$744.00	15	\$0 - \$744
Residential Home Air Sealing/Weatherization	Home	Yes	Phase IV TRM	\$440.00	15	\$0 - \$440
Residential ENERGY STAR Air Purifier	Air Purifier	Yes	Phase IV TRM	\$70.00	9	\$0 - \$70
Residential ENERGY STAR Bathroom Ventilation Fan	Unit	Yes	Phase IV TRM	\$200.00	15	\$0 - \$200
Residential Maintenance: ASHP	ASHP Unit	Yes	Phase IV TRM	\$175.00	3	\$0 - \$175
Residential Window repair	Window	Yes	Phase IV TRM	\$10.00	11	\$0 - \$10
Residential High Efficiency Solar Water Heater	Water Heater	Yes	Phase IV TRM	\$7,414.00	15	\$0 - \$7414
Residential Advanced Power Strips	Power Strip	Yes	Phase IV TRM	\$32.35	5	\$0 - \$21
Residential ENERGY STAR Screw-in LED Bulb (Decorative: non-globe (e.g., candelabra)) - IE Direct Install	Bulb	Yes	Phase IV TRM	\$2.59	15	\$0 - \$2.59
Residential ENERGY STAR Screw-in LED Bulb	Bulb	Yes	Phase IV TRM	\$4.42	15	\$0 - \$4.42

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
(Directional/Reflector) - IE Direct Install						
Residential ENERGY STAR Screw-in LED Bulb (Standard) - IE Direct Install	Bulb	Yes	Phase IV TRM	\$3.07	15	\$0 - \$3.07
Residential ENERGY STAR Screw-in LED Bulb (Decorative: Globe)	Bulb	Yes	Phase IV TRM	\$5.52	15	\$0 - \$5.52
Residential ENERGY STAR Screw-in LED Bulb (Standard: 3-Way)	Bulb	Yes	Phase IV TRM	\$3.07	15	\$0 - \$3.07
Residential Smart/Learning Thermostat	Thermostat	Yes	Phase IV TRM	\$234.33	11	\$0 - \$300

To maximize opportunities for customer energy savings, PECO reserves the right to offer no-cost installation of additional measures that are not listed in Table 7C but are identified in the TRM.

Basis for the Proposed Level of Incentives

All measures will be 100% subsidized and equitably provided to homeowners and tenants with landlord approval.

Maximum Deadlines for Rebates

As Income-Eligible program direct-installation measures are provided at no charge, an application deadline is not applicable to this program.

Program Start Date with Key Schedule Milestones

The planned implementation schedule is as follows:

- March 2021: PECO and the CSPs will kick-off the program pre-launch process. During pre-launch, CSPs will assign key staff and ensure all customer support systems and marketing and outreach is in place.
- June 1, 2021: The programs will launch with some components on a ramp-up period for the first 6 months.
- June 2021–May 2026: Programs will operate and adjust to market changes. Savings and budget compared to goals will be reviewed on a regular basis.
- May 31, 2026: Last day of the Phase IV programs.

Assumed Evaluation, Measurement, and Verification (EM&V) Requirements

The evaluation methodology and data collection proposed for the Income-Eligible program are consistent with current EM&V practices for PECO's Phase III programs. The EM&V requirements for this program conform to all applicable state protocols, including the SWE Evaluation Framework and the Pennsylvania TRM. Metrics for monitoring program success may include but are not limited to:

- Customer satisfaction with the program and participation trends
- Energy savings associated with installed efficient equipment or removed equipment
- Program implementation costs
- Increase in customer awareness and receptivity to efficiency measures

Data for evaluating the program will come from some or all of the following sources:

- Tracking system data
- Engineering or TRM estimates of measure savings

- Follow-up surveys of customers, retailers, trade allies, and service providers who participate in the program
- Program implementer and PECO staff surveys or interviews
- Evaluation of billing data
- Local weather data

Program impacts will be determined using a variety of data sources and tested techniques, as deemed appropriate for the program and sub-component. These strategies include:

- Field and phone verification, review of program records and incentive applications
- Project reviews referencing per-unit deemed or default energy savings
- Billing analysis
- Installation follow-up phone interviews with program participants to identify: Rebated measures installed and persistence (e.g., are the measures still installed?) and other changes to the business that affect energy usage, such as changes in occupancy or changes in building size

Evaluating program process success and efficiency across program delivery, administration, implementation, and customer response, includes the following strategies. See Section 6.1.4 for more details about market and process evaluations:

- Assessment of marketing and promotional efforts
- Monitoring contractor data-tracking system and implementation procedures to ensure that the program is implemented as designed
- Interviews with utility staff, contractors, equipment vendors, and customers
- Survey of program participants
- Assess customer understanding, satisfaction, and attitudes about the program

Administrative Requirements

PECO will administer the Income-Eligible program through a CSP. PECO will ensure major milestones are met and that the program is delivered according to the program design. Requested external staffing levels will be provided upon the completion of the CSP selection and contracting process. PECO will have 4.5 FTEs dedicated to the residential sector.

Savings Targets and Estimated Participation

Table 8C. Income-Eligible Program: Estimated Savings and Participation

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential A/R: Freezer Recycling	Energy Savings (MWh/year)	164.78	164.78	164.78	164.78	164.78	823.89
	Demand Reduction (MW)	0.0199	0.0199	0.0199	0.0199	0.0199	0.0996
	Projected Participation	200	200	200	200	200	1,000
Residential A/R: Refrigerator Recycling	Energy Savings (MWh/year)	2,095.16	2,095.16	2,095.16	2,095.16	2,095.16	10,475.80
	Demand Reduction (MW)	0.2532	0.2532	0.2532	0.2532	0.2532	1.2659
	Projected Participation	2,000	2,000	2,000	2,000	2,000	10,000
Residential A/R: Room AC Retirement	Energy Savings (MWh/year)	66.67	66.67	66.67	66.67	66.67	333.37
	Demand Reduction (MW)	0.1262	0.1262	0.1262	0.1262	0.1262	0.6308
	Projected Participation	360	360	360	360	360	1,800
Residential Low Flow Faucet Aerator - IE Direct Install	Energy Savings (MWh/year)	456.20	456.20	456.20	456.20	456.20	2,280.98
	Demand Reduction (MW)	0.0660	0.0660	0.0660	0.0660	0.0660	0.3301
	Projected Participation	3,510	3,510	3,510	3,510	3,510	17,550
Residential Low Flow Showerhead - IE Direct Install	Energy Savings (MWh/year)	596.03	596.03	596.03	596.03	596.03	2,980.17
	Demand Reduction (MW)	0.0516	0.0516	0.0516	0.0516	0.0516	0.2579
	Projected Participation	1,836	1,836	1,836	1,836	1,836	9,180

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential Water Heater Temperature Setback	Energy Savings (MWh/year)	73.46	73.46	73.46	73.46	73.46	367.28
	Demand Reduction (MW)	0.0064	0.0064	0.0064	0.0064	0.0064	0.0319
	Projected Participation	1,224	1,224	1,224	1,224	1,224	6,120
Residential Insulation/Wrap for Hot Water Pipe	Energy Savings (MWh/year)	35.97	35.97	35.97	35.97	35.97	179.87
	Demand Reduction (MW)	0.0031	0.0031	0.0031	0.0031	0.0031	0.0156
	Projected Participation	4,080	4,080	4,080	4,080	4,080	20,400
Residential Thermostatic Restrictor Shower Valve	Energy Savings (MWh/year)	142.28	142.28	142.28	142.28	142.28	711.42
	Demand Reduction (MW)	0.0123	0.0123	0.0123	0.0123	0.0123	0.0616
	Projected Participation	3,510	3,510	3,510	3,510	3,510	17,550
Residential Attic/Ceiling/Roof Insulation - IE Direct Install with Heat Pump	Energy Savings (MWh/year)	560.81	560.81	560.81	560.81	560.81	2,804.03
	Demand Reduction (MW)	0.0331	0.0331	0.0331	0.0331	0.0331	0.1653
	Projected Participation	1,069	1,069	1,069	1,069	1,069	5,347
Residential Furnace Whistle	Energy Savings (MWh/year)	153.70	153.70	153.70	153.70	153.70	768.50
	Demand Reduction (MW)	0.0649	0.0649	0.0649	0.0649	0.0649	0.3243
	Projected Participation	1,420	1,420	1,420	1,420	1,420	7,100
Residential Floor Insulation	Energy Savings (MWh/year)	23.12	23.12	23.12	23.12	23.12	115.60
	Demand Reduction (MW)	0.0060	0.0060	0.0060	0.0060	0.0060	0.0299
	Projected Participation	680	680	680	680	680	3,400

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential Rim Joist Insulation	Energy Savings (MWh/year)	133.42	133.42	133.42	133.42	133.42	667.08
	Demand Reduction (MW)	0.0410	0.0410	0.0410	0.0410	0.0410	0.2049
	Projected Participation	1,224	1,224	1,224	1,224	1,224	6,120
Residential ENERGY STAR Most Efficient Central A/C	Energy Savings (MWh/year)	4.30	4.30	4.30	4.30	4.30	21.50
	Demand Reduction (MW)	0.0016	0.0016	0.0016	0.0016	0.0016	0.0080
	Projected Participation	19	19	19	19	19	95
Residential ENERGY STAR Most Efficient Ductless Mini-Split Heat Pump - IE Direct Install	Energy Savings (MWh/year)	552.27	552.27	552.27	552.27	552.27	2,761.34
	Demand Reduction (MW)	0.0366	0.0366	0.0366	0.0366	0.0366	0.1828
	Projected Participation	358	358	358	358	358	1,790
Residential ECM Furnace Fan	Energy Savings (MWh/year)	12.12	12.12	12.12	12.12	12.12	60.58
	Demand Reduction (MW)	0.0030	0.0030	0.0030	0.0030	0.0030	0.0149
	Projected Participation	56	56	56	56	56	280
Residential Heat Pump Water Heater - IE Direct Install	Energy Savings (MWh/year)	255.69	255.69	255.69	255.69	255.69	1,278.45
	Demand Reduction (MW)	0.0222	0.0222	0.0222	0.0222	0.0222	0.1111
	Projected Participation	90	90	90	90	90	450
Residential ENERGY STAR Most Efficient Air Source Heat Pump: Cold Climate - IE Direct Install	Energy Savings (MWh/year)	110.48	110.48	110.48	110.48	110.48	552.40
	Demand Reduction (MW)	0.0135	0.0135	0.0135	0.0135	0.0135	0.0676
	Projected Participation	240	240	240	240	240	1,200

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential Duct Air Sealing	Energy Savings (MWh/year)	593.30	593.30	593.30	593.30	593.30	2,966.50
	Demand Reduction (MW)	0.1777	0.1777	0.1777	0.1777	0.1777	0.8884
	Projected Participation	1,034	1,034	1,034	1,034	1,034	5,170
Residential Home Air Sealing/ Weatherization	Energy Savings (MWh/year)	472.71	472.71	472.71	472.71	472.71	2,363.54
	Demand Reduction (MW)	0.0233	0.0233	0.0233	0.0233	0.0233	0.1163
	Projected Participation	750	750	750	750	750	3,750
Residential ENERGY STAR Air Purifier	Energy Savings (MWh/year)	6.74	6.74	6.74	6.74	6.74	33.70
	Demand Reduction (MW)	0.0008	0.0008	0.0008	0.0008	0.0008	0.0042
	Projected Participation	23	23	23	23	23	115
Residential ENERGY STAR Bathroom Ventilation Fan	Energy Savings (MWh/year)	7.41	7.41	7.41	7.41	7.41	37.07
	Demand Reduction (MW)	0.0009	0.0009	0.0009	0.0009	0.0009	0.0046
	Projected Participation	82	82	82	82	82	410
Residential Maintenance: ASHP	Energy Savings (MWh/year)	123.17	123.17	123.17	123.17	123.17	615.83
	Demand Reduction (MW)	0.0250	0.0250	0.0250	0.0250	0.0250	0.1250
	Projected Participation	1,092	1,092	1,092	1,092	1,092	5,460
Residential Window repair	Energy Savings (MWh/year)	81.60	81.60	81.60	81.60	81.60	408.00
	Demand Reduction (MW)	0.1645	0.1645	0.1645	0.1645	0.1645	0.8225
	Projected Participation	2,720	2,720	2,720	2,720	2,720	13,600

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential High Efficiency Solar Water Heater	Energy Savings (MWh/year)	11.85	13.82	11.85	13.82	11.85	63.18
	Demand Reduction (MW)	0.0016	0.0018	0.0016	0.0018	0.0016	0.0084
	Projected Participation	6	7	6	7	6	32
Residential Advanced Power Strips	Energy Savings (MWh/year)	4,530.36	4,530.36	4,530.36	4,530.36	4,530.36	22,651.78
	Demand Reduction (MW)	0.5885	0.5885	0.5885	0.5885	0.5885	2.9423
	Projected Participation	35,000	35,000	35,000	35,000	35,000	175,000
Residential ENERGY STAR Screw-in LED Bulb (Decorative: non-globe (e.g., candelabra)) - IE Direct Install	Energy Savings (MWh/year)	952.87	952.87	952.87	952.87	952.87	4,764.34
	Demand Reduction (MW)	0.1456	0.1456	0.1456	0.1456	0.1456	0.7279
	Projected Participation	29,540	29,540	29,540	29,540	29,540	147,700
Residential ENERGY STAR Screw-in LED Bulb (Directional/Reflector) - IE Direct Install	Energy Savings (MWh/year)	316.30	316.30	316.30	316.30	316.30	1,581.51
	Demand Reduction (MW)	0.0483	0.0483	0.0483	0.0483	0.0483	0.2416
	Projected Participation	7,800	7,800	7,800	7,800	7,800	39,000
Residential ENERGY STAR Screw-in LED Bulb (Standard) - IE Direct Install	Energy Savings (MWh/year)	3,583.03	3,583.03	3,583.03	3,583.03	3,583.03	17,915.15
	Demand Reduction (MW)	0.5528	0.5528	0.5528	0.5528	0.5528	2.7638
	Projected Participation	76,230	76,230	76,230	76,230	76,230	381,150
Residential ENERGY STAR Screw-in LED Bulb (Decorative: Globe)	Energy Savings (MWh/year)	176.30	176.30	176.30	176.30	176.30	881.51
	Demand Reduction (MW)	0.0224	0.0224	0.0224	0.0224	0.0224	0.1122
	Projected Participation	7,800	7,800	7,800	7,800	7,800	39,000

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Residential ENERGY STAR Screw-in LED Bulb (Standard: 3-Way)	Energy Savings (MWh/year)	74.70	74.70	74.70	74.70	74.70	373.48
	Demand Reduction (MW)	0.0095	0.0095	0.0095	0.0095	0.0095	0.0475
	Projected Participation	2,340	2,340	2,340	2,340	2,340	11,700
Residential Smart/Learning Thermostat	Energy Savings (MWh/year)	600.68	600.68	600.68	600.68	600.68	3,003.42
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	1,100	1,100	1,100	1,100	1,100	5,500

Estimated Program Budget (Total) by Year

Table 9C. Income-Eligible Program: Program Budget

Cost Element		PY13	PY14	PY15	PY16	PY17	Phase IV Total
Total Budget (\$000)							
Incentives (\$000)	Rebates	\$169	\$169	\$169	\$169	\$169	\$843
	Upstream/Midstream Buydown	\$0	\$0	\$0	\$0	\$0	\$0
	Kits	\$0	\$0	\$0	\$0	\$0	\$0
	Direct Install Materials & Labor	\$5,484	\$5,491	\$5,484	\$5,491	\$5,484	\$27,434
	Incentive Total	\$5,652	\$5,660	\$5,652	\$5,660	\$5,652	\$28,277
Non-Incentives (\$000)¹	Program Design	\$26	\$26	\$26	\$26	\$26	\$132
	Administrative	\$159	\$159	\$159	\$159	\$159	\$793
	EDC Delivery Costs	\$0	\$0	\$0	\$0	\$0	\$0
	CSP Delivery Fees	\$1,675	\$1,675	\$1,675	\$1,675	\$1,675	\$8,374
	Marketing	\$959	\$959	\$959	\$959	\$959	\$4,797
	EM&V	\$211	\$211	\$211	\$211	\$211	\$1,057
	Other (See Section 4.2.3)	\$143	\$143	\$143	\$143	\$143	\$715
	Non-Incentive Total	\$3,173	\$3,174	\$3,173	\$3,174	\$3,173	\$15,868
Percent Incentives		64%	64%	64%	64%	64%	64%
Notes:							
<small>¹ Program design, administrative, marketing, EM&V, and "other" are allocated to programs from cross-cutting based on methods described in Table 11. Figure 4 shows program-specific budgets without allocated costs.</small>							

Estimated Percentage of Sector Budget Attributed to the Program

The Income-Eligible program offers incentives to customers in the residential sector. The Income-Eligible program accounts for 33.6% of residential sector spending exclusive of common cost allocation.

Cost-Effectiveness

Table 13C. Income-Eligible Program: TRC Benefits Table

Gross Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
<i>Income-Eligible</i>	<i>PY13</i>	<i>1.00</i>	<i>1.03</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,375</i>	<i>\$4,802</i>	<i>\$688</i>	<i>\$662</i>	<i>\$8,527</i>
<i>Income-Eligible</i>	<i>PY14</i>	<i>1.00</i>	<i>1.05</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,420</i>	<i>\$4,965</i>	<i>\$699</i>	<i>\$662</i>	<i>\$8,746</i>
<i>Income-Eligible</i>	<i>PY15</i>	<i>1.00</i>	<i>1.09</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,468</i>	<i>\$5,155</i>	<i>\$708</i>	<i>\$662</i>	<i>\$8,994</i>
<i>Income-Eligible</i>	<i>PY16</i>	<i>1.00</i>	<i>1.12</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,518</i>	<i>\$5,363</i>	<i>\$731</i>	<i>\$662</i>	<i>\$9,274</i>
<i>Income-Eligible</i>	<i>PY17</i>	<i>1.00</i>	<i>1.15</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,568</i>	<i>\$5,586</i>	<i>\$741</i>	<i>\$662</i>	<i>\$9,557</i>
<i>Income-Eligible Total</i>		<i>1.00</i>	<i>1.09</i>	<i>\$25,709</i>	<i>\$0</i>	<i>\$11,975</i>	<i>\$37,684</i>	<i>\$11,207</i>	<i>\$23,435</i>	<i>\$3,237</i>	<i>\$3,009</i>	<i>\$40,887</i>

Net Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
<i>Income-Eligible</i>	<i>PY13</i>	<i>1.00</i>	<i>1.03</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,375</i>	<i>\$4,802</i>	<i>\$688</i>	<i>\$662</i>	<i>\$8,527</i>
<i>Income-Eligible</i>	<i>PY14</i>	<i>1.00</i>	<i>1.05</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,420</i>	<i>\$4,965</i>	<i>\$699</i>	<i>\$662</i>	<i>\$8,746</i>
<i>Income-Eligible</i>	<i>PY15</i>	<i>1.00</i>	<i>1.09</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,468</i>	<i>\$5,155</i>	<i>\$708</i>	<i>\$662</i>	<i>\$8,994</i>
<i>Income-Eligible</i>	<i>PY16</i>	<i>1.00</i>	<i>1.12</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,518</i>	<i>\$5,363</i>	<i>\$731</i>	<i>\$662</i>	<i>\$9,274</i>
<i>Income-Eligible</i>	<i>PY17</i>	<i>1.00</i>	<i>1.15</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,568</i>	<i>\$5,586</i>	<i>\$741</i>	<i>\$662</i>	<i>\$9,557</i>
<i>Income-Eligible Total</i>		<i>1.00</i>	<i>1.09</i>	<i>\$25,709</i>	<i>\$0</i>	<i>\$11,975</i>	<i>\$37,684</i>	<i>\$11,207</i>	<i>\$23,435</i>	<i>\$3,237</i>	<i>\$3,009</i>	<i>\$40,887</i>

Bidding Strategy for Peak Demand Reductions into PJM's FCM

PECO will hire a turnkey service provider to handle the strategy and details for bidding into PJM's FCM. This approach will balance the benefits of bidding to PECO customers against the risk posed to customers by the potential for deficiency charges from PJM. PECO will provide more detail once the EE&C plan is final and the bidder is selected.

Other Information Deemed Appropriate

None.

Program #2 Title and Program Years During Which Program Will Be Implemented

Income-Eligible Home Energy Reports program (2021–2026)

Objective(s)

The Income-Eligible Home Energy Reports program's objective is to reduce a home's energy use through HERs and online access where customers can view their home energy usage. This program leverages the power of social norming to drive persistent energy savings through smart energy practices.

Target Market

The eligible population and target market for the Income-Eligible Home Energy Reports program includes all PECO residential electric customers with a household income of less than or equal to 150% of the federal poverty level.

Program Description

The Income-Eligible Home Energy Reports program involves regularly delivering direct mail or digital HERs that motivate customers to act through contextualized energy-usage information, personal and neighborhood comparisons, and energy savings recommendations (including low- or no-cost tips) based on customers' specific energy-usage patterns and characteristics. HERs will include marketing opportunities for cross-selling other energy efficiency programs.

In addition to the information presented on the mailed or emailed HERs, customers can log onto PECO's website to view their energy usage (energy costs, energy use, neighbor comparison). The website will also help customers determine what technologies use the most energy in their homes, provide information on how to save energy, and enable sign up for energy usage alerts and notifications. The website's purpose is to encourage customers to learn more about PECO's energy efficiency programs and help them take action to save energy.

Program Sub-Components

The Income-Eligible Home Energy Reports program does not contain any components.

Implementation Strategy

A CSP will implement the Income-Eligible Home Energy Reports program. The CSP will deliver direct mail or digital HERs to customers. It will also manage the website platform.

Program Issues and Risks and Risk Management Strategy

The Income-Eligible Home Energy Reports program will manage risks by implementing a continuous improvement process such that PECO closely monitors program results and adjusts implementation tactics (including marketing approaches, participation guidelines, incentives, and program resource allocation) to meet the portfolio level targets.

One program risk is COVID-19-related impacts on customer behavior. With more residential customers working and spending more time at home due to the pandemic, the ability for customers to reduce their energy consumption may decrease. The CSP and PECO will manage this risk by tracking savings on a monthly basis, and the CSP can adjust report content and cadence if savings are under target.

Anticipated Costs to Participating Customers

Customers participating in the Income-Eligible Home Energy Reports program have anticipated costs of \$0 for Phase IV.

Ramp-Up Strategy

Minimal ramp up will be needed for the Income-Eligible Home Energy Reports program because this program is already operating in Phase III.

Marketing Strategy

The Income-Eligible Home Energy Reports program participants are selected by PECO; customers can not subscribe themselves. Therefore, there is no marketing of the program to encourage participation.

Eligible Measures and Incentive Strategy

The program measure is the delivery of direct mail or digital HERs to customers. Customers are selected for the program and can choose to opt-out at any time. No incentives are paid to the customers.

Table 7D. Income-Eligible HER Program: Eligible Measures

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost	Estimated Useful Life	Incentive Amount or Incentive Range
Home Energy Reports	Household	Yes	Phase IV TRM	\$0/unit	1 or 4 based on Wave Year	\$0/unit

Basis for the Proposed Level of Incentives

Rebates are not applicable to the Residential Home Energy Reports program.

Maximum Deadlines for Rebates

PECO requires 180 days as a maximum length of time for an application to be submitted as any longer period may affect reporting and reconciliation timeframes.

Program Start Date with Key Schedule Milestones

The planned implementation schedule is as follows:

- March 2021: PECO and the CSPs will kick-off the program pre-launch process. During pre-launch, CSPs will assign key staff and ensure all customer support systems and marketing and outreach is in place.
- June 1, 2021: The program will launch.
- June 2021–May 2026: Programs will operate and adjust to market changes. Savings and budget compared to goals will be reviewed on a regular basis.
- May 31, 2026: Last day of the Phase IV programs.

Assumed Evaluation, Measurement, and Verification (EM&V) Requirements

The evaluation methodology and data collection proposed for the Income-Eligible Home Energy Reports program are consistent with current EM&V practices for PECO’s Phase III programs. The EM&V requirements for this program conform to all applicable state protocols. Metrics for monitoring program success include, but are not limited to:

- Customer satisfaction with the program
- Energy savings associated with customer behavior change
- Program implementation costs

Data for evaluating the program will come from the following sources:

- Tracking system data
- TRM estimates of measure savings persistence
- Surveys of customers who participate in the program
- Program implementer and PECO staff surveys or interviews
- Evaluation of billing data

Program impacts will be determined using customer billing data and billing regression analysis.

Evaluating program process success and efficiency across program delivery, administration, implementation, and customer response includes the following strategies:

- Interviews with utility staff, implementation staff, and customers
- Survey of program participants
- Assess customer understanding, satisfaction, and attitudes about the program

See Section 6.1.4 for details about market and process evaluations.

Administrative Requirements

PECO will administer the Income-Eligible HER program through a CSP. PECO will ensure major milestones are met and that the program is delivered according to the program design. Requested external staffing levels will be provided upon the completion of the CSP selection and contracting process. PECO will have 4.5 FTEs dedicated to the residential sector.

Savings Targets and Estimated Participation

Table 8D. Income-Eligible HER Program: Estimated Savings and Participation

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
Home Energy Reports	Energy Savings (MWh/year)	938.00	1,413.00	938.00	1,413.00	1,032.00	5,734.00
	Demand Reduction (MW)	0.1908	0.2874	0.1908	0.2874	0.2099	1.1663
	Projected Participation ¹	21,000	18,900	21,000	18,900	30,800	110,600

¹Per Table 7D, the unit basis is "per Household".

Estimated Program Budget (Total) by Year

Table 9D. Income-Eligible HER Program: Program Budget

Cost Element		PY13	PY14	PY15	PY16	PY17	Phase IV Total
Total Budget (\$000)							
Incentives (\$000)	Rebates	\$0	\$0	\$0	\$0	\$0	\$0
	Upstream/Midstream Buydown	\$0	\$0	\$0	\$0	\$0	\$0
	Kits	\$0	\$0	\$0	\$0	\$0	\$0
	Direct Install Materials & Labor	\$0	\$0	\$0	\$0	\$0	\$0
	Incentive Total	\$0	\$0	\$0	\$0	\$0	\$0
Non-Incentives (\$000)¹	Program Design	\$2	\$2	\$2	\$2	\$2	\$9
	Administrative	\$11	\$11	\$11	\$11	\$11	\$54
	EDC Delivery Costs	\$0	\$0	\$0	\$0	\$0	\$0
	CSP Delivery Fees	\$81	\$122	\$81	\$122	\$89	\$493
	Marketing	\$0	\$0	\$0	\$0	\$0	\$0
	EM&V	\$14	\$14	\$14	\$14	\$14	\$71
	Other (See Section 4.2.3)	\$10	\$10	\$10	\$10	\$10	\$48
	Non-Incentive Total	\$117	\$158	\$117	\$158	\$125	\$675
Percent Incentives		0%	0%	0%	0%	0%	0%
Notes:							
1 Program design, administrative, EM&V, and "other" are allocated to programs from cross-cutting based on methods described in Table 11. Figure 4 shows program-specific budgets without allocated costs.							

Estimated Percentage of Sector Budget Attributed to the Program

The Income-Eligible Home Energy Reports program serves the residential sector. The Income-Eligible Home Energy Reports program accounts for 0.4% of residential sector spending exclusive of common cost allocation.

Cost-Effectiveness

Table 13D. Income-Eligible HER Program: TRC Benefits Table

Gross Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by Participants	Paid by EDC							
<i>Income-Eligible Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>0.60</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$48</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>1.52</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$80</i>	<i>\$105</i>	<i>\$0</i>	<i>\$0</i>	<i>\$184</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>0.61</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$50</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>1.58</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$83</i>	<i>\$110</i>	<i>\$0</i>	<i>\$0</i>	<i>\$193</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>1.64</i>	<i>\$0</i>	<i>\$0</i>	<i>\$89</i>	<i>\$89</i>	<i>\$62</i>	<i>\$84</i>	<i>\$0</i>	<i>\$0</i>	<i>\$145</i>
<i>Income-Eligible Home Energy Reports Total</i>		<i>1.00</i>	<i>1.24</i>	<i>\$0</i>	<i>\$0</i>	<i>\$448</i>	<i>\$448</i>	<i>\$238</i>	<i>\$316</i>	<i>\$0</i>	<i>\$0</i>	<i>\$555</i>

Net Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by Participants	Paid by EDC							
<i>Income-Eligible Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>0.60</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$48</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>1.52</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$80</i>	<i>\$105</i>	<i>\$0</i>	<i>\$0</i>	<i>\$184</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>0.61</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$50</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>1.58</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$83</i>	<i>\$110</i>	<i>\$0</i>	<i>\$0</i>	<i>\$193</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>1.64</i>	<i>\$0</i>	<i>\$0</i>	<i>\$89</i>	<i>\$89</i>	<i>\$62</i>	<i>\$84</i>	<i>\$0</i>	<i>\$0</i>	<i>\$145</i>
<i>Income-Eligible Home Energy Reports Total</i>		<i>1.00</i>	<i>1.24</i>	<i>\$0</i>	<i>\$0</i>	<i>\$448</i>	<i>\$448</i>	<i>\$238</i>	<i>\$316</i>	<i>\$0</i>	<i>\$0</i>	<i>\$555</i>

Bidding Strategy for Peak Demand Reductions into PJM's FCM

PECO will hire a turnkey service provider to handle the strategy and details for bidding into PJM's FCM. This approach will balance the benefits of bidding to PECO customers against the risk posed to customers by the potential for deficiency charges from PJM. PECO will provide more detail once the EE&C plan is final and the bidder is selected.

Other Information Deemed Appropriate

None.

3.3 Commercial/Industrial Small Sector

While the SWE separated the C&I sector into small (Section 3.3) and large (Section 3.4) in the plan template, PECO's plan has one Non-Residential program in the C&I sector. The Non-Residential program is eligible for small and large customers. Section 3.4 includes formatted descriptions of the Non-Residential program components.

3.4 Commercial/Industrial Large Sector

Program Title and Program Years During Which Program Will Be Implemented

Non-Residential program (2021-2026)

Objective(s)

The Non-Residential program has multiple objectives:

- Provide customers with easy access to technical support and rebates through multiple engagement options
- Allow small businesses to realize the economic benefits of energy efficiency through comprehensive energy efficiency solutions
- Encourage Non-Residential program customers to make upgrades where they need them most by providing rebates for a wide range of measures

Target Market

All non-residential customer classes,⁹ business types, and building types throughout PECO's service territory.

⁹ Multifamily master-metered and common space measures are attributed to the small and large commercial sectors and delivered through the Residential program.

Program Description

The Non-Residential program offers a comprehensive and cross-cutting array of opportunities so non-residential customers can reduce their energy consumption and costs. The following section contains detailed descriptions of program components.

Program Sub-Components

The non-residential program will have two core components (prescriptive and custom), each with multiple delivery channels. Both program components employ a market-driven approach in which customers are free to choose where they buy measures and who installs the measures. Both components are available for retrofit and new construction and both components will be offered to all non-residential customer classes throughout PECO's service area.

- **Prescriptive:** The prescriptive component includes measures defined in the Pennsylvania TRM. Many of these measures provide participants both PDRs and energy savings. Incentives will be based on a fixed dollar amount per measure (such as \$5 per 4' LED retrofit tube) or based on project savings (such as \$0.24/annual kWh saved for direct install lighting). Eligible measures may be available through multiple delivery channels (downstream, midstream, upstream, small business direct install), giving all customers the ability to receive incentives based on their preferred delivery channel. Customers can implement a comprehensive solution by selecting multiple types of prescriptive measures in a single project.
- **Custom:** Custom projects comprise a singular energy/peak reduction measure or combinations of measures that are not covered in the 2021 Pennsylvania TRM and not offered in the prescriptive component. The custom project could also include multiple TRM measures with interactive effects. The custom component meets the Pennsylvania PUC's definition of comprehensive program because it includes large projects (such as combined heat and power, industrial processes, networked lighting controls, new construction, retro-commissioning, and data center projects) that combine many measures with different end uses and whole building approaches. This is a market-driven program component where customers choose their own contractor (or their own staff) to perform the work.

Implementation Strategy

A prime CSP will implement the Non-Residential program. The strategy is to provide a market-driven approach, providing customers with a broad selection of measures, meaningful incentives, and multiple delivery channels. The focus is high value, personalized support to customers as the CSP grows and strengthens a robust and effective trade ally network.

Program Issues and Risks and Risk Management Strategy

The Non-Residential program will manage risks by implementing a continuous improvement process such that PECO closely monitors program results and adjusts implementation tactics (including marketing approaches, participation guidelines, incentives, and program resource allocation) to meet the portfolio level targets.

One program risk is market disruptions related to COVID-19 and others. No face-to-face customer interaction and no site walk-throughs limit the full customer experience and the personal services that PECO can provide. Depending on the market disruption, PECO will adjust incentives and delivery models as necessary. We can also use remote inspection, virtual assistance, and video-enabled tools and systems.

Anticipated Costs to Participating Customers

Customers participating in the Non-Residential program have anticipated costs of \$256,451,344 for the purchase of equipment and other materials after PECO incentives.

Ramp-Up Strategy

The primary objective is to ensure a smooth, quick, and seamless transition from Phase III to Phase IV, especially from the perspective of customers and market actors. CSPs will align outreach staff with appropriate customer segments and will capitalize on existing relationships to build on success.

Marketing Strategy

PECO will tailor its communications to the needs, motivations, and desires of different industries and stakeholders to help them see the value of implementing energy efficiency measures in their business. The outreach team will employ a multi-channel strategy aligned with marketing and uses robust analytics to reach PECO's customer market segments and trade allies with services and measures to meet their specific needs.

- **National Accounts:** National accounts have portfolios of facilities spread throughout PECO's territory, which enables us to leverage a campaign or initiative for a single customer across multiple facilities. Through already-established customer relationships, we will help guide the organization to the PECO program components where incentives for energy efficiency are easy to navigate and high in value. We will continue to expand our national accounts network by attending industry-specific events for relationship building and networking to promote PECO's programs.
- **Small Business:** We will incentivize trade allies to promote and install high efficiency measures in small businesses to help them achieve savings. We will provide exposure to new technologies, capacity-building opportunities through training and certification, and a targeted coaching initiative aimed at specific market segments such as convenience store businesses or leased retail spaces.
- **Trade Allies:** There are many motivations that drive trade professionals to participate in energy efficiency programs. While financial motivators work well for most, recognition, competition, and providing customers with high value, quality work motivates others to maintain high levels of engagement. To ensure that trade allies remain motivated to continue their high participation levels, PECO will help trade allies and contractors build their business skills with trainings focused on segment- and technology-specific education, and support materials. Highlighting top performers in a variety of categories on a monthly, quarterly, and annual basis will provide large and small trade allies the opportunity to stand out from competitors when marketing their services to customers. Contractors will want to

participate in the programs for the financial benefits brought to their customers and for the additional support, business acumen, and firsthand program knowledge our team has to offer to help them stand out from the competition.

Business messaging will be tailored by the industry vertical and informed by COVID-19-related impacts, highlighting the value of participation for business type while reflecting the realities of the unique situation and opportunity. Messaging will be tiered to support every phase of a customers' journey, with benefit messaging evolving as customers become more familiar with the opportunities available to their business.

Eligible Measures and Incentive Strategy

The measure mix includes a comprehensive mix of end-use technologies such as lighting, HVAC, water heating, plug load, refrigeration, motors, and others that span all customer classes and building types. Incentives are based on previous experience and knowledge of the market in PECO's territory.

Table 7E. Non-Residential Program: Eligible Measures

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I Add Doors to Open Refrigerated Cases	Door	No	Phase IV TRM	\$92.69	8	\$0 - \$55
C&I Advanced Power Strips	Per Strip	No	Phase IV TRM	\$64.71	5	\$0 - \$25
C&I Air Cooled Air Conditioner (per Ton)	Ton	No	Phase IV TRM	\$393.87	15	\$0 - \$80
C&I Air Cooled Air Conditioner (per AC)	Per AC	No	Phase IV TRM	\$5,086.03	15	\$0 - \$1085
C&I Air Cooled Chiller	Per Chiller	No	Phase IV TRM	\$5,596.67	15	\$0 - \$4105
C&I Air Cooled Heat Pump (per Ton)	Ton	No	Phase IV TRM	\$995.41	15	\$0 - \$110
C&I Air Cooled Heat Pump (per Pump)	Per Pump	No	Phase IV TRM	\$3,856.80	15	\$0 - \$1840
C&I Air Cooled Refrigeration Condenser	Per Condenser	No	Phase IV TRM	\$910.17	15	\$0 - \$540
C&I Anti-Sweat Heater Controls	Door	No	Phase IV TRM	\$76.75	12	\$0 - \$90
C&I Automatic Door Closers	Door	No	Phase IV TRM	\$205.27	8	\$0 - \$135
C&I Beverage Machine Occupancy Controls	Per Controller	No	Phase IV TRM	\$180.13	5	\$0 - \$120
C&I CHP	kWh Saved	No	Phase IV TRM	\$0.50	15	\$0 - \$0.180
C&I Code Plus Building	kWh Saved	No	Phase IV TRM	\$0.44	15	\$0 - \$0.180
C&I Computer Room Air Conditioner	Per CRAC	No	Phase IV TRM	\$1,586.69	15	\$0 - \$785

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I Computer Room Air Handler	Per Ton	No	Phase IV TRM	\$46,899.33	15	\$0 - \$630
C&I Interior Controls Combination	sensor	No	Phase IV TRM	\$92.90	8	\$0 - \$30
C&I Custom Compressed Air	kWh Saved	No	Phase IV TRM	\$0.15	15	\$0 - \$0.180
C&I Custom Data Center	kWh Saved	No	Phase IV TRM	\$0.57	15	\$0 - \$0.180
C&I Custom HVAC	kWh Saved	No	Phase IV TRM	\$0.44	15	\$0 - \$0.180
C&I Custom Lighting	kWh Saved	No	Phase IV TRM	\$0.23	15	\$0 - \$0.180
C&I Custom Motors and Drives	kWh Saved	No	Phase IV TRM	\$0.54	13	\$0 - \$0.180
C&I Custom Other	kWh Saved	No	Phase IV TRM	\$0.54	15	\$0 - \$0.180
C&I Custom Process	kWh Saved	No	Phase IV TRM	\$0.57	15	\$0 - \$0.180
C&I Custom Refrigeration	kWh Saved	No	Phase IV TRM	\$0.50	15	\$0 - \$0.180
C&I Custom Strategic Energy Management	kWh Saved	No	Phase IV TRM	\$0.57	15	\$0 - \$0.180
C&I Cycling Refrigerated Thermal Mass Dryer	Compress or HP	No	Phase IV TRM	\$1,158.54	10	\$0 - \$95
C&I Demand Control Ventilation	kWh Saved	No	Phase IV TRM	\$1.33	10	\$0 - \$0.180
C&I Door Gaskets	Door	No	Phase IV TRM	\$254.73	4	\$0 - \$110

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I ENERGY STAR Ductless Mini-Split Heat Pump	Ton	No	Phase IV TRM	\$57.63	15	\$0 - \$45
C&I Early Motor Replacement with Premium Motor	Per Motor	No	Phase IV TRM	\$2,137.14	15	\$0 - \$460
C&I ECM Circulation Fan	Fan	No	Phase IV TRM	\$110.51	13	\$0 - \$50
C&I Economizer	Per Economizer	No	Phase IV TRM	\$3,266.37	10	\$0 - \$370
C&I EMS	kWh Saved	No	Phase IV TRM	\$0.27	10	\$0 - \$0.180
C&I ENERGY STAR Commercial Convection Oven	Unit	No	Phase IV TRM	\$1,022.36	12	\$0 - \$485
C&I ENERGY STAR Commercial Fryers	Unit	No	Phase IV TRM	\$317.06	12	\$0 - \$245
C&I ENERGY STAR Commercial Hot Holding Cabinet	Unit	No	Phase IV TRM	\$4,409.45	12	\$0 - \$585
C&I ENERGY STAR Commercial Steam Cookers	Unit	No	Phase IV TRM	\$827.01	12	\$0 - \$810
C&I Combination Oven	Per Oven	No	Phase IV TRM	\$1,081.78	12	\$0 - \$485
C&I ENERGY STAR Commercial Solid Door Freezer	Unit	No	Phase IV TRM	\$327.99	12	\$0 - \$195
C&I ENERGY STAR Griddle	Per Griddle	No	Phase IV TRM	\$389.55	12	\$0 - \$215

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I ENERGY STAR Integral LED fixture: Indoor Portable Lamp/Torchiere	fixture	No	Phase IV TRM	\$51.25	15	\$0 - \$10
C&I ENERGY STAR Integral LED fixture: Indoor Recessed Downlight	fixture	No	Phase IV TRM	\$128.49	15	\$0 - \$25
C&I ENERGY STAR Integral LED fixture: Indoor Recessed Downlight Retrofit Module	fixture	No	Phase IV TRM	\$45.19	15	\$0 - \$30
C&I ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight	fixture	No	Phase IV TRM	\$74.58	15	\$0 - \$25
C&I ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight Retrofit Module	module	No	Phase IV TRM	\$179.29	15	\$0 - \$30
C&I ENERGY STAR Commercial Solid Door Refrigerator	Unit	No	Phase IV TRM	\$348.31	12	\$0 - \$100
C&I ENERGY STAR Screw- in LED Bulb (Decorative: Globe; Smart Bulb)	lamp	No	Phase IV TRM	\$111.64	15	\$0 - \$20
C&I ENERGY STAR Screw- in LED Bulb (Decorative: non-globe (e.g., candelabra); Smart Bulb)	lamp	No	Phase IV TRM	\$8.28	15	\$0 - \$15
C&I Evaporator Fan Controls	Controller	No	Phase IV TRM	\$120.50	15	\$0 - \$130

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I Evaporator Coil Defrost Controls	Controller	No	Phase IV TRM	\$2,329.17	10	\$0 - \$155
C&I Evaporator Fan EC Motor for Reach-in Cases	Motor	No	Phase IV TRM	\$47.42	15	\$0 - \$50
C&I Evaporator Fan EC Motor for Walk-in Cases	Motor	No	Phase IV TRM	\$89.06	15	\$0 - \$85
C&I Floating-head Pressure Controls	Per Control	No	Phase IV TRM	\$3,339.19	10	\$0 - \$1260
C&I Heat Pump Water Heater	Per Heater	No	Phase IV TRM	\$601.20	10	\$0 - \$370
C&I Hotel Guest Room Occupancy Sensor	Per Room	No	Phase IV TRM	\$94.69	10	\$0 - \$55
C&I LED Channel Signage	letter	No	Phase IV TRM	\$35.62	15	\$0 - \$25
C&I LED Accent/Track Lighting Fixtures	head	No	Phase IV TRM	\$66.19	15	\$0 - \$5
C&I LED Exit Sign	sign	No	Phase IV TRM	\$28.89	15	\$0 - \$25
C&I LED High-Bay Fixtures	fixture	No	Phase IV TRM	\$413.22	6	\$0 - \$170
C&I LED High-Bay Retrofit Kits	fixture	No	Phase IV TRM	\$1,866.88	4	\$0 - \$175
C&I LED Low-Bay Fixtures	fixture	No	Phase IV TRM	\$283.18	6	\$0 - \$100
C&I LED Low-Bay Retrofit Kits	fixture	No	Phase IV TRM	\$196.82	4	\$0 - \$95
C&I LED Outdoor Flood Light Fixtures	fixture	No	Phase IV TRM	\$338.16	6	\$0 - \$55
C&I LED Parking Garage and Canopy Fixtures and Retrofit Kits	fixture	No	Phase IV TRM	\$133.53	6	\$0 - \$65

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I LED Pole/Arm Mounted Parking and Roadway Fixtures and Retrofit Kits	fixture	No	Phase IV TRM	\$215.10	6	\$0 - \$55
C&I LED Refrigeration Case Lighting	Per Door	No	Phase IV TRM	\$88.66	8	\$0 - \$50
C&I LED Replacement Lamps (Tubes)	lamp	No	Phase IV TRM	\$15.47	15	\$0 - \$10
C&I LED Surface and Suspended Linear Fixtures	fixture	No	Phase IV TRM	\$42.76	6	\$0 - \$30
C&I LED Troffer Fixtures and Retrofit Kits	fixture	No	Phase IV TRM	\$278.28	15	\$0 - \$45
C&I LED Wall Mount Fixtures and Retrofit Kits	fixture	No	Phase IV TRM	\$279.31	6	\$0 - \$75
C&I Low-Flow Pre-rinse Spray Valve	Per Spray Valve	No	Phase IV TRM	\$13.20	5	\$0 - \$20
C&I Network Lighting Controls	kWh Saved	No	Phase IV TRM	\$0.20	15	\$0 - \$0.180
C&I New Construction Child	kWh Saved	No	Phase IV TRM	\$0.34	15	\$0 - \$0.180
C&I Night Cover	Per Case	No	Phase IV TRM	\$26.02	5	\$0 - \$30
C&I No-loss Condensate Drains	Drain	No	Phase IV TRM	\$493.99	5	\$0 - \$100
C&I Oversized Condenser with VFD	Ton	No	Phase IV TRM	\$40.58	15	\$0 - \$40
C&I PTAC	Ton	No	Phase IV TRM	\$87.06	15	\$0 - \$55
C&I PC Power Management System	PC Controlled	No	Phase IV TRM	\$30.00	5	\$0 - \$10
C&I Permanent Fixture Removal	watt reduced	No	Phase IV TRM	\$132.34	11	\$0 - \$135

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I Retrocommissioning	kWh Saved	No	Phase IV TRM	\$0.31	8	\$0 - \$0.180
C&I Storage Tanks for Load/No Load Screw Compressors	Per Compressor	No	Phase IV TRM	\$2,621.33	15	\$0 - \$2040
C&I Suction Pipe Insulation	Per Refrigeration System	No	Phase IV TRM	\$396.92	11	\$0 - \$205
C&I Uninterruptible Power Supply	Per Unit	No	Phase IV TRM	\$16,668.54	15	\$0 - \$3000
C&I Interior Occupancy Controls	sensor	No	Phase IV TRM	\$36.05	8	\$0 - \$30
C&I Variable Speed Air Compressor	Compressor	No	Phase IV TRM	\$49,644.44	10	\$0 - \$6420
C&I Variable Speed Refrigeration Compressor	Compressor	No	Phase IV TRM	\$37,648.74	11	\$0 - \$2075
C&I VSD retrofit on HVAC Pump	Hot Water Pump	No	Phase IV TRM	\$5,602.63	13	\$0 - \$2520
C&I VSD retrofit on HVAC Fan	Fan	No	Phase IV TRM	\$6,940.39	13	\$0 - \$2150
C&I VSD retrofit on Process Motor	Per Motor	No	Phase IV TRM	\$18,044.02	13	\$0 - \$5800
C&I Water Cooled Centrifugal Chiller	Ton	No	Phase IV TRM	\$254.96	15	\$0 - \$50
C&I Water Cooled Heat Pump	Pump	No	Phase IV TRM	\$4,648.47	15	\$0 - \$600
C&I Water Cooled Positive Displacement or Reciprocating Chiller	Ton	No	Phase IV TRM	\$66.47	15	\$0 - \$55

Measure	Unit	Low-Income Measure (Yes/No)	Eligibility Requirements	Incremental Cost (\$/unit)	Estimated Useful Life	Incentive Amount or Incentive Range (\$/unit)
C&I Web-Enabled Thermostat	1000 Sq Feet	No	Phase IV TRM	\$9,635.64	15	\$0 - \$1225
C&I Zero Energy Doors	Door	No	Phase IV TRM	\$286.88	10	\$0 - \$100

To maximize opportunities for customer energy savings, PECO reserves the right to offer an incentive of \$0.05/first year kWh for any measure that is not listed in Table 7E but is identified in the TRM.

Basis for the Proposed Level of Incentives

The Non-Residential program was designed to allocate at least 50% of all spending to incentives. Incentives for prescriptive measures will generally be based on a fixed dollar amount per measure (such as dollars per 4' linear LED lamp). This approach is intended to be simple to understand and meaningful for end-use customers and also align with the typical distributor pricing structure.

Incentives for the custom component will be based on savings (such as \$0.12/annual kWh saved for industrial process changes in the custom component) because savings are project-based, not widget-based, and savings-based incentives should encourage more savings.

Maximum Deadlines for Rebates

PECO requires 180 days as a maximum length of time for an application to be submitted as any longer period may affect reporting and reconciliation timeframes.

Program Start Date with Key Schedule Milestones

The planned implementation schedule is as follows:

- March 2021: PECO and the CSPs will kick-off the program pre-launch process. During pre-launch, CSPs will assign key staff and ensure all customer support systems and marketing and outreach is in place.
- June 1, 2021: The programs will launch with some components on a ramp-up period for the first 6 months.
- June 2021–May 2026: Programs will operate and adjust to market changes. Savings and budget compared to goals will be reviewed on a regular basis.
- May 31, 2026: Last day of the Phase IV programs.

Assumed Evaluation, Measurement, and Verification (EM&V) Requirements

The evaluation methodology and data collection proposed for the Non-Residential program are consistent with current EM&V practices for PECO's Phase III programs. The EM&V requirements for this program conform to all applicable state protocols. Metrics for monitoring program success include, but are not limited to:

- Customer satisfaction with the program, and participation trends
- Energy savings associated with installed efficient equipment or removed equipment
- Program implementation costs
- Increase in customer awareness and receptivity to efficiency measures

Data for evaluating the program will come from the following sources:

- Tracking system data

- Engineering or TRM estimates of measure savings
- Follow-up surveys of customers, retailers, trade allies, and service providers who participate in the program
- Program implementer and PECO staff surveys or interviews
- Evaluation of billing data
- Local weather data

Program impacts will be determined using a variety of data sources and tested techniques. These strategies include:

- Field and phone verification, review of program records and incentive applications
- Project reviews referencing per-unit deemed or default energy savings
- Billing analysis
- Installation follow-up phone interviews with program participants to identify: Rebated measures installed and persistence (e.g., are the measures still installed?) and other changes to the business that affect energy usage, such as changes in occupancy or changes in building size

Evaluating program process success and efficiency across program delivery, administration, implementation, and customer response includes the following strategies.

- Assessment of marketing and promotional efforts
- Monitoring contractor data-tracking system and implementation procedures to ensure that the program is being implemented as designed
- Interviews with utility staff, contractors, equipment vendors, and customers
- Survey of program participants
- Assess customer understanding, satisfaction, and attitudes about the program

See Section 6.1.4 for more details about market and process evaluations.

Administrative Requirements

PECO will administer the program through a CSP. PECO will ensure major milestones are met and that the program is delivered according to the program design. Requested external staffing levels will be provided upon the completion of the CSP selection and contracting process. PECO will have 5 FTEs dedicated to the non-residential sector.

Savings Targets and Estimated Participation

Table 8E. Non-Residential Program: Estimated Savings and Participation

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Add Doors to Open Refrigerated Cases	Energy Savings (MWh/year)	15.49	20.14	24.79	24.79	15.49	100.70
	Demand Reduction (MW)	0.0015	0.0019	0.0023	0.0023	0.0015	0.0095
	Projected Participation	20	26	32	32	20	130
C&I Advanced Power Strips	Energy Savings (MWh/year)	33.43	44.58	55.72	55.72	33.43	222.88
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	84	112	140	140	84	560
C&I Air Cooled Air Conditioner (per Ton)	Energy Savings (MWh/year)	742.56	991.33	1,242.33	1,242.33	742.56	4,961.10
	Demand Reduction (MW)	0.4179	0.5581	0.6991	0.6991	0.4179	2.7922
	Projected Participation	548	731	918	918	548	3,663
C&I Air Cooled Air Conditioner (per AC)	Energy Savings (MWh/year)	1,248.58	1,746.25	2,131.55	2,131.55	1,248.58	8,506.51
	Demand Reduction (MW)	0.3542	0.4925	0.6025	0.6025	0.3542	2.4058
	Projected Participation	144	195	241	241	144	965
C&I Air Cooled Chiller	Energy Savings (MWh/year)	352.97	529.45	705.94	705.94	352.97	2,647.27

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
	Demand Reduction (MW)	0.0442	0.0663	0.0884	0.0884	0.0442	0.3315
	Projected Participation	16	24	32	32	16	120
C&I Air Cooled Heat Pump	Energy Savings (MWh/year)	349.47	447.32	579.33	579.33	349.47	2,304.92
	Demand Reduction (MW)	0.0405	0.0518	0.0670	0.0670	0.0405	0.2669
	Projected Participation	78	100	130	130	78	516
C&I Air Cooled Heat Pump	Energy Savings (MWh/year)	83.44	166.89	194.70	194.70	83.44	723.18
	Demand Reduction (MW)	0.0095	0.0191	0.0223	0.0223	0.0095	0.0827
	Projected Participation	6	12	14	14	6	52
C&I Air Cooled Refrigeration Condenser	Energy Savings (MWh/year)	91.86	122.48	146.97	146.97	91.86	600.13
	Demand Reduction (MW)	0.0094	0.0126	0.0151	0.0151	0.0094	0.0617
	Projected Participation	15	20	24	24	15	98
C&I Anti-Sweat Heater Controls	Energy Savings (MWh/year)	2,866.60	3,825.74	4,780.82	4,780.82	2,866.60	19,120.58
	Demand Reduction (MW)	0.3465	0.4624	0.5779	0.5779	0.3465	2.3112
	Projected Participation	2,116	2,824	3,529	3,529	2,116	14,114
C&I Automatic Door Closers	Energy Savings (MWh/year)	177.70	236.53	296.56	296.56	177.70	1,185.04
	Demand Reduction (MW)	0.1211	0.1612	0.2021	0.2021	0.1211	0.8076

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
	Projected Participation	148	197	247	247	148	987
C&I Beverage Machine Occupancy Controls	Energy Savings (MWh/year)	54.84	74.20	91.94	91.94	54.84	367.76
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	34	46	57	57	34	228
C&I CHP	Energy Savings (MWh/year)	3,480.00	4,640.00	5,800.00	5,800.00	3,480.00	23,200.00
	Demand Reduction (MW)	0.4435	0.5913	0.7391	0.7391	0.4435	2.9564
	Projected Participation	3,480,000	4,640,000	5,800,000	5,800,000	3,480,000	23,200,000
C&I Code Plus Building	Energy Savings (MWh/year)	9,599.34	12,799.12	15,998.90	15,998.90	9,599.34	63,995.60
	Demand Reduction (MW)	2.8158	3.7544	4.6931	4.6931	2.8158	18.7722
	Projected Participation	9,599,340	12,799,119	15,998,901	15,998,901	9,599,340	63,995,601
C&I Computer Room Air Conditioner	Energy Savings (MWh/year)	84.75	105.94	148.32	148.32	84.75	572.09
	Demand Reduction (MW)	0.0064	0.0080	0.0112	0.0112	0.0064	0.0431
	Projected Participation	4	5	7	7	4	27
C&I Computer Room Air Handler	Energy Savings (MWh/year)	17.00	34.00	34.00	34.00	17.00	136.01
	Demand Reduction (MW)	0.0099	0.0198	0.0198	0.0198	0.0099	0.0794
	Projected Participation	1	2	2	2	1	8

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Interior Controls Combination	Energy Savings (MWh/year)	46.82	62.09	77.86	77.86	46.82	311.45
	Demand Reduction (MW)	0.0104	0.0138	0.0173	0.0173	0.0104	0.0693
	Projected Participation	564	748	938	938	564	3,752
C&I Custom Compressed Air	Energy Savings (MWh/year)	1,189.32	1,585.76	1,982.20	1,982.20	1,189.32	7,928.81
	Demand Reduction (MW)	0.1543	0.2057	0.2571	0.2571	0.1543	1.0285
	Projected Participation	1,189,322	1,585,762	1,982,204	1,982,204	1,189,322	7,928,814
C&I Custom Data Center	Energy Savings (MWh/year)	349.17	465.55	581.94	581.94	349.17	2,327.77
	Demand Reduction (MW)	0.0345	0.0460	0.0575	0.0575	0.0345	0.2302
	Projected Participation	349,165	465,553	581,941	581,941	349,165	2,327,765
C&I Custom HVAC	Energy Savings (MWh/year)	6,076.98	8,102.64	10,128.30	10,128.30	6,076.98	40,513.21
	Demand Reduction (MW)	2.4173	3.2231	4.0289	4.0289	2.4173	16.1154
	Projected Participation	6,076,982	8,102,643	10,128,303	10,128,303	6,076,982	40,513,213
C&I Custom Lighting	Energy Savings (MWh/year)	2,818.73	3,758.30	4,697.88	4,697.88	2,818.73	18,791.51
	Demand Reduction (MW)	0.2579	0.3438	0.4298	0.4298	0.2579	1.7191
	Projected Participation	2,818,727	3,758,303	4,697,878	4,697,878	2,818,727	18,791,513

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Custom Motors and Drives	Energy Savings (MWh/year)	2,981.81	3,975.75	4,969.69	4,969.69	2,981.81	19,878.76
	Demand Reduction (MW)	0.6943	0.9258	1.1572	1.1572	0.6943	4.6288
	Projected Participation	2,981,814	3,975,752	4,969,690	4,969,690	2,981,814	19,878,760
C&I Custom Other	Energy Savings (MWh/year)	18,580.67	24,774.22	30,967.78	30,967.78	18,580.67	123,871.12
	Demand Reduction (MW)	2.6294	3.5059	4.3824	4.3824	2.6294	17.5296
	Projected Participation	18,580,668	24,774,223	30,967,780	30,967,780	18,580,668	123,871,119
C&I Custom Process	Energy Savings (MWh/year)	300.00	400.00	500.00	500.00	300.00	2,000.00
	Demand Reduction (MW)	0.0925	0.1234	0.1542	0.1542	0.0925	0.6170
	Projected Participation	300,000	400,000	500,000	500,000	300,000	2,000,000
C&I Custom Refrigeration	Energy Savings (MWh/year)	1,795.28	2,393.71	2,992.13	2,992.13	1,795.28	11,968.53
	Demand Reduction (MW)	0.2690	0.3587	0.4484	0.4484	0.2690	1.7934
	Projected Participation	1,795,280	2,393,707	2,992,133	2,992,133	1,795,280	11,968,533
C&I Custom Strategic Energy Management	Energy Savings (MWh/year)	494.28	659.03	823.79	823.79	494.28	3,295.17
	Demand Reduction (MW)	0.0631	0.0842	0.1052	0.1052	0.0631	0.4209
	Projected Participation	494,275	659,034	823,793	823,793	494,275	3,295,170

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Cycling Refrigerated Thermal Mass Dryer	Energy Savings (MWh/year)	2.55	2.55	2.55	2.55	2.55	12.74
	Demand Reduction (MW)	0.0005	0.0005	0.0005	0.0005	0.0005	0.0023
	Projected Participation	1	1	1	1	1	5
C&I Demand Control Ventilation	Energy Savings (MWh/year)	191.04	254.71	318.39	318.39	191.04	1,273.57
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	191,035	254,713	318,392	318,392	191,035	1,273,567
C&I Door Gaskets	Energy Savings (MWh/year)	27.89	37.19	46.49	46.49	27.89	185.95
	Demand Reduction (MW)	0.0010	0.0013	0.0016	0.0016	0.0010	0.0065
	Projected Participation	6	8	10	10	6	40
C&I ENERGY STAR Ductless Mini-Split Heat Pump	Energy Savings (MWh/year)	34.02	46.44	57.24	57.24	34.02	228.96
	Demand Reduction (MW)	0.0078	0.0107	0.0132	0.0132	0.0078	0.0528
	Projected Participation	126	172	212	212	126	848
C&I Early Motor Replacement with Premium Motor	Energy Savings (MWh/year)	41.41	51.76	72.47	72.47	41.41	279.52
	Demand Reduction (MW)	0.0042	0.0053	0.0074	0.0074	0.0042	0.0287
	Projected Participation	8	10	14	14	8	54

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I ECM Circulation Fan	Energy Savings (MWh/year)	18.34	25.35	31.28	31.28	18.34	124.58
	Demand Reduction (MW)	0.0058	0.0080	0.0098	0.0098	0.0058	0.0392
	Projected Participation	34	47	58	58	34	231
C&I Economizer	Energy Savings (MWh/year)	136.10	163.32	217.76	217.76	136.10	871.03
	Demand Reduction (MW)	0.0337	0.0405	0.0539	0.0539	0.0337	0.2158
	Projected Participation	10	12	16	16	10	64
C&I EMS	Energy Savings (MWh/year)	791.63	1,055.50	1,319.38	1,319.38	791.63	5,277.51
	Demand Reduction (MW)	0.0405	0.0540	0.0675	0.0675	0.0405	0.2700
	Projected Participation	791,627	1,055,501	1,319,377	1,319,377	791,627	5,277,509
C&I ENERGY STAR Commercial Convection Oven	Energy Savings (MWh/year)	6.60	11.00	15.40	15.40	6.60	55.01
	Demand Reduction (MW)	0.0017	0.0028	0.0040	0.0040	0.0017	0.0141
	Projected Participation	3	5	7	7	3	25
C&I ENERGY STAR Commercial Fryers	Energy Savings (MWh/year)	3.01	3.01	3.01	3.01	3.01	15.07
	Demand Reduction (MW)	0.0007	0.0007	0.0007	0.0007	0.0007	0.0035
	Projected Participation	2	2	2	2	2	10

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I ENERGY STAR Commercial Hot Holding Cabinet	Energy Savings (MWh/year)	25.43	38.14	50.86	50.86	25.43	190.71
	Demand Reduction (MW)	0.0046	0.0069	0.0093	0.0093	0.0046	0.0347
	Projected Participation	4	6	8	8	4	30
C&I ENERGY STAR Commercial Steam Cookers	Energy Savings (MWh/year)	12.99	25.98	25.98	25.98	12.99	103.92
	Demand Reduction (MW)	0.0040	0.0081	0.0081	0.0081	0.0040	0.0322
	Projected Participation	1	2	2	2	1	8
C&I Combination Oven	Energy Savings (MWh/year)	17.62	24.23	30.84	30.84	17.62	121.15
	Demand Reduction (MW)	0.0039	0.0054	0.0068	0.0068	0.0039	0.0269
	Projected Participation	8	11	14	14	8	55
C&I ENERGY STAR Commercial Solid Door Freezer	Energy Savings (MWh/year)	70.67	95.49	118.41	118.41	70.67	473.65
	Demand Reduction (MW)	0.0072	0.0097	0.0120	0.0120	0.0072	0.0482
	Projected Participation	37	50	62	62	37	248
C&I ENERGY STAR Griddle	Energy Savings (MWh/year)	49.34	64.93	80.51	80.51	49.34	324.63
	Demand Reduction (MW)	0.0109	0.0144	0.0179	0.0179	0.0109	0.0720
	Projected Participation	19	25	31	31	19	125

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I ENERGY STAR Integral LED fixture: Indoor Portable Lamp/Torchiere	Energy Savings (MWh/year)	9.94	13.66	17.39	17.39	9.94	68.32
	Demand Reduction (MW)	0.0010	0.0014	0.0018	0.0018	0.0010	0.0069
	Projected Participation	48	66	84	84	48	330
C&I ENERGY STAR Integral LED fixture: Indoor Recessed Downlight	Energy Savings (MWh/year)	1,673.33	2,232.05	2,789.36	2,789.36	1,673.33	11,157.43
	Demand Reduction (MW)	0.1497	0.1997	0.2495	0.2495	0.1497	0.9980
	Projected Participation	5,918	7,894	9,865	9,865	5,918	39,460
C&I ENERGY STAR Integral LED fixture: Indoor Recessed Downlight Retrofit Module	Energy Savings (MWh/year)	1,139.48	1,519.95	1,899.78	1,899.78	1,139.48	7,598.48
	Demand Reduction (MW)	0.1019	0.1359	0.1699	0.1699	0.1019	0.6796
	Projected Participation	3,531	4,710	5,887	5,887	3,531	23,546
C&I ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight	Energy Savings (MWh/year)	49.53	65.95	82.63	82.63	49.53	330.26
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	193	257	322	322	193	1,287
C&I ENERGY STAR Integral LED fixture: Outdoor Recessed Downlight Retrofit Module	Energy Savings (MWh/year)	80.90	107.99	135.44	135.44	80.90	540.67
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	221	295	370	370	221	1,477

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I ENERGY STAR Commercial Solid Door Refrigerator	Energy Savings (MWh/year)	47.65	61.95	78.28	78.28	47.65	313.82
	Demand Reduction (MW)	0.0061	0.0080	0.0101	0.0101	0.0061	0.0404
	Projected Participation	70	91	115	115	70	461
C&I ENERGY STAR Screw-in LED Bulb (Decorative: Globe; Smart Bulb)	Energy Savings (MWh/year)	139.07	185.04	231.70	231.70	139.07	926.58
	Demand Reduction (MW)	0.0237	0.0316	0.0395	0.0395	0.0237	0.1581
	Projected Participation	602	801	1,003	1,003	602	4,011
C&I ENERGY STAR Screw-in LED Bulb (Decorative: non-globe (e.g., candelabra); Smart Bulb)	Energy Savings (MWh/year)	948.84	1,264.89	1,581.45	1,581.45	948.84	6,325.47
	Demand Reduction (MW)	0.1789	0.2385	0.2982	0.2982	0.1789	1.1926
	Projected Participation	5,596	7,460	9,327	9,327	5,596	37,306
C&I Evaporator Fan Controls	Energy Savings (MWh/year)	13.32	17.76	22.20	22.20	13.32	88.78
	Demand Reduction (MW)	0.0018	0.0024	0.0030	0.0030	0.0018	0.0120
	Projected Participation	3	4	5	5	3	20
C&I Evaporator Coil Defrost Controls	Energy Savings (MWh/year)	16.40	20.50	25.62	25.62	16.40	104.53
	Demand Reduction (MW)	0.0396	0.0494	0.0618	0.0618	0.0396	0.2522
	Projected Participation	16	20	25	25	16	102

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Evaporator Fan EC Motor for Reach-in Cases	Energy Savings (MWh/year)	4.35	6.17	7.62	7.62	4.35	30.11
	Demand Reduction (MW)	0.0006	0.0008	0.0010	0.0010	0.0006	0.0040
	Projected Participation	12	17	21	21	12	83
C&I Evaporator Fan EC Motor for Walk-in Cases	Energy Savings (MWh/year)	24.91	33.57	42.23	42.23	24.91	167.84
	Demand Reduction (MW)	0.0356	0.0480	0.0604	0.0604	0.0356	0.2402
	Projected Participation	46	62	78	78	46	310
C&I Floating-head Pressure Controls	Energy Savings (MWh/year)	17.59	17.59	17.59	17.59	17.59	87.95
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	1	1	1	1	1	5
C&I Heat Pump Water Heater	Energy Savings (MWh/year)	376.00	500.00	624.00	624.00	376.00	2,500.00
	Demand Reduction (MW)	0.0327	0.0434	0.0542	0.0542	0.0327	0.2172
	Projected Participation	188	250	312	312	188	1,250
C&I Hotel Guest Room Occupancy Sensor	Energy Savings (MWh/year)	1,036.02	1,383.59	1,728.93	1,728.93	1,036.02	6,913.48
	Demand Reduction (MW)	1.1194	1.4949	1.8680	1.8680	1.1194	7.4697
	Projected Participation	930	1,242	1,552	1,552	930	6,206

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I LED Channel Signage	Energy Savings (MWh/year)	2.70	3.91	4.51	4.51	2.70	18.33
	Demand Reduction (MW)	0.0008	0.0012	0.0014	0.0014	0.0008	0.0056
	Projected Participation	9	13	15	15	9	61
C&I LED Accent/Track Lighting Fixtures	Energy Savings (MWh/year)	119.59	159.30	199.02	199.02	119.59	796.51
	Demand Reduction (MW)	0.0229	0.0305	0.0381	0.0381	0.0229	0.1525
	Projected Participation	533	710	887	887	533	3,550
C&I LED Exit Sign	Energy Savings (MWh/year)	251.28	334.80	418.56	418.56	251.28	1,674.49
	Demand Reduction (MW)	0.0391	0.0520	0.0651	0.0651	0.0391	0.2603
	Projected Participation	1,056	1,407	1,759	1,759	1,056	7,037
C&I LED High-Bay Fixtures	Energy Savings (MWh/year)	13,482.29	17,980.66	22,476.46	22,476.46	13,482.29	89,898.15
	Demand Reduction (MW)	3.0800	4.1076	5.1346	5.1346	3.0800	20.5368
	Projected Participation	10,511	14,018	17,523	17,523	10,511	70,086
C&I LED High-Bay Retrofit Kits	Energy Savings (MWh/year)	1,751.70	2,335.13	2,918.57	2,918.57	1,751.70	11,675.66
	Demand Reduction (MW)	0.4102	0.5468	0.6834	0.6834	0.4102	2.7339
	Projected Participation	1,255	1,673	2,091	2,091	1,255	8,365

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I LED Low-Bay Fixtures	Energy Savings (MWh/year)	133.39	178.13	222.87	222.87	133.39	890.64
	Demand Reduction (MW)	0.0212	0.0283	0.0354	0.0354	0.0212	0.1414
	Projected Participation	161	215	269	269	161	1,075
C&I LED Low-Bay Retrofit Kits	Energy Savings (MWh/year)	3.11	4.15	6.22	6.22	3.11	22.82
	Demand Reduction (MW)	0.0009	0.0012	0.0018	0.0018	0.0009	0.0066
	Projected Participation	6	8	12	12	6	44
C&I LED Outdoor Flood Light Fixtures	Energy Savings (MWh/year)	1,859.94	2,478.51	3,100.11	3,100.11	1,859.94	12,398.61
	Demand Reduction (MW)	0.0131	0.0174	0.0219	0.0219	0.0131	0.0875
	Projected Participation	1,687	2,247	2,812	2,812	1,687	11,245
C&I LED Parking Garage and Canopy Fixtures and Retrofit Kits	Energy Savings (MWh/year)	2,112.92	2,813.49	3,527.01	3,527.01	2,112.92	14,093.35
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	2,471	3,289	4,121	4,121	2,471	16,473
C&I LED Pole/Arm Mounted Parking and Roadway Fixtures and Retrofit Kits	Energy Savings (MWh/year)	17,101.37	22,795.45	28,500.14	28,500.14	17,102.77	113,999.86
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	17,877	23,825	29,791	29,791	17,878	119,162

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I LED Refrigeration Case Lighting	Energy Savings (MWh/year)	744.28	992.19	1,242.72	1,242.72	744.28	4,966.21
	Demand Reduction (MW)	0.2003	0.2667	0.3341	0.3341	0.2003	1.3356
	Projected Participation	2,073	2,763	3,459	3,459	2,073	13,827
C&I LED Replacement Lamps (Tubes)	Energy Savings (MWh/year)	31,343.57	41,791.22	52,239.08	52,239.08	31,343.57	208,956.52
	Demand Reduction (MW)	7.3736	9.8314	12.2893	12.2893	7.3736	49.1572
	Projected Participation	389,060	518,744	648,430	648,430	389,060	2,593,724
C&I LED Surface and Suspended Linear Fixtures	Energy Savings (MWh/year)	4,385.70	5,846.93	7,309.05	7,309.05	4,385.70	29,236.43
	Demand Reduction (MW)	0.7581	1.0107	1.2634	1.2634	0.7581	5.0537
	Projected Participation	19,917	26,553	33,193	33,193	19,917	132,773
C&I LED Troffer Fixtures and Retrofit Kits	Energy Savings (MWh/year)	10,003.70	13,337.24	16,671.34	16,671.34	10,003.70	66,687.32
	Demand Reduction (MW)	2.4086	3.2112	4.0140	4.0140	2.4086	16.0563
	Projected Participation	35,660	47,543	59,428	59,428	35,660	237,719
C&I LED Wall Mount Fixtures and Retrofit Kits	Energy Savings (MWh/year)	2,963.66	3,950.94	4,938.33	4,938.33	2,963.66	19,754.92
	Demand Reduction (MW)	0.1160	0.1547	0.1933	0.1933	0.1160	0.7733
	Projected Participation	4,139	5,519	6,897	6,897	4,139	27,591

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Low-Flow Pre-rinse Spray Valve	Energy Savings (MWh/year)	49.29	65.72	82.15	82.15	49.29	328.60
	Demand Reduction (MW)	0.0096	0.0128	0.0160	0.0160	0.0096	0.0640
	Projected Participation	318	424	530	530	318	2,120
C&I Network Lighting Controls	Energy Savings (MWh/year)	3,750.00	5,000.00	6,250.00	6,250.00	3,750.00	25,000.00
	Demand Reduction (MW)	0.8566	1.1422	1.4277	1.4277	0.8566	5.7110
	Projected Participation	3,750,000	5,000,000	6,250,000	6,250,000	3,750,000	25,000,000
C&I New Construction Child	Energy Savings (MWh/year)	6,357.78	8,477.04	10,596.30	10,596.30	6,357.78	42,385.18
	Demand Reduction (MW)	0.0687	0.0915	0.1144	0.1144	0.0687	0.4577
	Projected Participation	6,357,778	8,477,037	10,596,295	10,596,295	6,357,778	42,385,183
C&I Night Cover	Energy Savings (MWh/year)	2.84	3.78	4.73	4.73	2.84	18.92
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	9	12	15	15	9	60
C&I No-loss Condensate Drains	Energy Savings (MWh/year)	6.66	6.66	8.88	8.88	6.66	37.72
	Demand Reduction (MW)	0.0018	0.0018	0.0024	0.0024	0.0018	0.0102
	Projected Participation	3	3	4	4	3	17

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Oversized Condenser with VFD	Energy Savings (MWh/year)	0.72	0.72	0.72	0.72	0.72	3.59
	Demand Reduction (MW)	0.0002	0.0002	0.0002	0.0002	0.0002	0.0009
	Projected Participation	1	1	1	1	1	5
C&I PTAC	Energy Savings (MWh/year)	256.09	342.25	426.02	426.02	256.09	1,706.47
	Demand Reduction (MW)	0.1065	0.1424	0.1772	0.1772	0.1065	0.7099
	Projected Participation	428	572	712	712	428	2,852
C&I PC Power Management System	Energy Savings (MWh/year)	97.20	129.60	162.00	162.00	97.20	648.00
	Demand Reduction (MW)	0.0049	0.0065	0.0081	0.0081	0.0049	0.0324
	Projected Participation	720	960	1,200	1,200	720	4,800
C&I Permanent Fixture Removal	Energy Savings (MWh/year)	3,364.00	4,486.00	5,607.00	5,607.00	3,364.00	22,428.00
	Demand Reduction (MW)	0.5155	0.6874	0.8591	0.8591	0.5155	3.4365
	Projected Participation	3,364	4,486	5,607	5,607	3,364	22,428
C&I Retrocommissioning	Energy Savings (MWh/year)	6,470.46	8,627.29	10,784.11	10,784.11	6,470.46	43,136.43
	Demand Reduction (MW)	3.8700	5.1600	6.4500	6.4500	3.8700	25.8002
	Projected Participation	6,470,464	8,627,286	10,784,108	10,784,108	6,470,464	43,136,430

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Storage Tanks for Load/No Load Screw Compressors	Energy Savings (MWh/year)	23.16	46.32	46.32	46.32	23.16	185.28
	Demand Reduction (MW)	0.0047	0.0093	0.0093	0.0093	0.0047	0.0373
	Projected Participation	1	2	2	2	1	8
C&I Suction Pipe Insulation	Energy Savings (MWh/year)	7.66	12.25	12.25	12.25	7.66	52.07
	Demand Reduction (MW)	0.0019	0.0030	0.0030	0.0030	0.0019	0.0126
	Projected Participation	5	8	8	8	5	34
C&I Uninterruptible Power Supply	Energy Savings (MWh/year)	36.06	36.06	36.06	36.06	36.06	180.28
	Demand Reduction (MW)	0.0093	0.0093	0.0093	0.0093	0.0093	0.0464
	Projected Participation	1	1	1	1	1	5
C&I Interior Occupancy Controls	Energy Savings (MWh/year)	1,933.49	2,577.92	3,222.90	3,222.90	1,933.49	12,890.70
	Demand Reduction (MW)	0.6477	0.8636	1.0797	1.0797	0.6477	4.3185
	Projected Participation	10,582	14,109	17,639	17,639	10,582	70,551
C&I Variable Speed Air Compressor	Energy Savings (MWh/year)	948.27	1,458.88	1,750.65	1,750.65	948.27	6,856.72
	Demand Reduction (MW)	0.2133	0.3281	0.3937	0.3937	0.2133	1.5422
	Projected Participation	13	20	24	24	13	94

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Variable Speed Refrigeration Compressor	Energy Savings (MWh/year)	18.87	18.87	18.87	18.87	18.87	94.34
	Demand Reduction (MW)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Projected Participation	1	1	1	1	1	5
C&I VSD retrofit on HVAC Pump	Energy Savings (MWh/year)	200.49	257.77	343.70	343.70	200.49	1,346.15
	Demand Reduction (MW)	0.0088	0.0114	0.0146	0.0146	0.0088	0.0581
	Projected Participation	7	9	12	12	7	47
C&I VSD retrofit on HVAC Fan	Energy Savings (MWh/year)	2,173.36	2,832.70	3,565.29	3,565.29	2,173.36	14,310.00
	Demand Reduction (MW)	0.1415	0.1845	0.2322	0.2322	0.1415	0.9320
	Projected Participation	89	116	146	146	89	586
C&I VSD retrofit on Process Motor	Energy Savings (MWh/year)	1,054.28	1,449.63	1,844.99	1,844.99	1,054.28	7,248.17
	Demand Reduction (MW)	0.8204	1.1145	1.4195	1.4195	0.8204	5.5943
	Projected Participation	16	22	28	28	16	110
C&I Water Cooled Centrifugal Chiller	Energy Savings (MWh/year)	117.36	156.73	195.86	195.86	117.36	783.15
	Demand Reduction (MW)	0.0271	0.0362	0.0452	0.0452	0.0271	0.1809
	Projected Participation	561	749	936	936	561	3,743

Measure	Metric	PY13	PY14	PY15	PY16	PY17	Total
C&I Water Cooled Heat Pump	Energy Savings (MWh/year)	637.04	853.90	1,070.77	1,070.77	637.04	4,269.51
	Demand Reduction (MW)	0.1053	0.1411	0.1769	0.1769	0.1053	0.7054
	Projected Participation	94	126	158	158	94	630
C&I Water Cooled Positive Displacement or Reciprocating Chiller	Energy Savings (MWh/year)	73.28	96.93	121.80	121.80	73.28	487.09
	Demand Reduction (MW)	0.0171	0.0226	0.0284	0.0284	0.0171	0.1135
	Projected Participation	195	258	324	324	195	1,296
C&I Web-Enabled Thermostat	Energy Savings (MWh/year)	155.66	200.14	266.85	266.85	155.66	1,045.16
	Demand Reduction (MW)	0.0082	0.0106	0.0141	0.0141	0.0082	0.0553
	Projected Participation	14	18	24	24	14	94
C&I Zero Energy Doors	Energy Savings (MWh/year)	32.29	43.30	52.84	52.84	32.29	213.54
	Demand Reduction (MW)	0.0045	0.0060	0.0073	0.0073	0.0045	0.0296
	Projected Participation	44	59	72	72	44	291

Estimated Program Budget (Total) by Year

Table 9E. Non-Residential Program: Program Budget

Cost Element		PY13	PY14	PY15	PY16	PY17	Phase IV Total ²
Total Budget (\$000)							
Incentives (\$000)	Rebates	\$13,035	\$17,411	\$21,765	\$21,765	\$13,035	\$87,011
	Upstream/Midstream Buydown	\$6,640	\$8,866	\$11,081	\$11,081	\$6,640	\$44,309
	Kits	\$0	\$0	\$0	\$0	\$0	\$0
	Direct Install Materials & Labor	\$7,648	\$10,194	\$12,748	\$12,748	\$7,648	\$50,986
	Incentive Total	\$27,323	\$36,472	\$45,594	\$45,594	\$27,323	\$182,307
Non-Incentives (\$000)¹	Program Design	\$364	\$364	\$364	\$364	\$364	\$1,818
	Administrative	\$2,181	\$2,181	\$2,181	\$2,181	\$2,181	\$10,905
	EDC Delivery Costs	\$0	\$0	\$0	\$0	\$0	\$0
	CSP Delivery Fees	\$11,366	\$11,855	\$14,821	\$14,821	\$8,879	\$61,742
	Marketing	\$904	\$904	\$904	\$904	\$904	\$4,520
	EM&V	\$2,908	\$2,908	\$2,908	\$2,908	\$2,908	\$14,540
	Other (See Section 4.2.3)	\$1,966	\$1,966	\$1,966	\$1,966	\$1,966	\$9,832
Non-Incentive Total	\$19,689	\$20,178	\$23,144	\$23,144	\$17,202	\$103,357	
Percent Incentives		58%	64%	66%	66%	61%	64%
Notes:							
¹ Program design, administrative, EM&V, and "other" are allocated to programs from cross-cutting based on methods described in Table 11. Figure 4 shows program-specific budgets without allocated costs.							
² The residential program offers incentives to customers in the residential, small commercial, and large commercial sectors. Therefore, in order to compare budgets from Table 9 to Table 12, it should be noted that \$3,440,595 of the Residential program budget is attributed to the small commercial sector and \$1,396,818 is attributed to the large commercial sector for cost recovery.							

Estimated Percentage of Sector Budget Attributed to the Program

The Non-Residential program offers incentives to customers in the small commercial and large commercial sectors. The Non-Residential program accounts for 97.2% of small commercial and 99.1% of large commercial sector spending exclusive of common cost allocation.

Cost-effectiveness

Table 13E. Non-Residential Program: TRC Benefits Table

Gross Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
<i>Non-residential</i>	<i>PY13</i>	<i>1.00</i>	<i>1.12</i>	<i>\$27,323</i>	<i>\$38,377</i>	<i>\$12,270</i>	<i>\$77,970</i>	<i>\$28,818</i>	<i>\$57,651</i>	<i>-\$3,271</i>	<i>\$4,485</i>	<i>\$87,684</i>
<i>Non-residential</i>	<i>PY14</i>	<i>1.00</i>	<i>1.20</i>	<i>\$36,472</i>	<i>\$51,359</i>	<i>\$12,759</i>	<i>\$100,590</i>	<i>\$39,236</i>	<i>\$79,663</i>	<i>-\$4,508</i>	<i>\$5,980</i>	<i>\$120,372</i>
<i>Non-residential</i>	<i>PY15</i>	<i>1.00</i>	<i>1.24</i>	<i>\$45,594</i>	<i>\$64,169</i>	<i>\$15,725</i>	<i>\$125,488</i>	<i>\$50,012</i>	<i>\$103,400</i>	<i>-\$5,866</i>	<i>\$7,476</i>	<i>\$155,022</i>
<i>Non-residential</i>	<i>PY16</i>	<i>1.00</i>	<i>1.28</i>	<i>\$45,594</i>	<i>\$64,169</i>	<i>\$15,725</i>	<i>\$125,488</i>	<i>\$51,012</i>	<i>\$107,458</i>	<i>-\$5,793</i>	<i>\$7,476</i>	<i>\$160,153</i>
<i>Non-residential</i>	<i>PY17</i>	<i>1.00</i>	<i>1.31</i>	<i>\$27,323</i>	<i>\$38,377</i>	<i>\$9,783</i>	<i>\$75,484</i>	<i>\$31,149</i>	<i>\$66,975</i>	<i>-\$3,633</i>	<i>\$4,485</i>	<i>\$98,977</i>
<i>Non-residential Total</i>		<i>1.00</i>	<i>1.23</i>	<i>\$165,278</i>	<i>\$232,498</i>	<i>\$60,317</i>	<i>\$458,093</i>	<i>\$181,241</i>	<i>\$375,235</i>	<i>-\$20,878</i>	<i>\$27,110</i>	<i>\$562,708</i>

Net Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
<i>Non-residential</i>	<i>PY13</i>	<i>0.76</i>	<i>1.07</i>	<i>\$27,323</i>	<i>\$22,609</i>	<i>\$12,270</i>	<i>\$62,202</i>	<i>\$21,902</i>	<i>\$43,815</i>	<i>-\$2,486</i>	<i>\$3,409</i>	<i>\$66,640</i>
<i>Non-residential</i>	<i>PY14</i>	<i>0.76</i>	<i>1.15</i>	<i>\$36,472</i>	<i>\$30,280</i>	<i>\$12,759</i>	<i>\$79,511</i>	<i>\$29,820</i>	<i>\$60,544</i>	<i>-\$3,426</i>	<i>\$4,545</i>	<i>\$91,483</i>
<i>Non-residential</i>	<i>PY15</i>	<i>0.76</i>	<i>1.19</i>	<i>\$45,594</i>	<i>\$37,826</i>	<i>\$15,725</i>	<i>\$99,145</i>	<i>\$38,009</i>	<i>\$78,584</i>	<i>-\$4,458</i>	<i>\$5,682</i>	<i>\$117,817</i>
<i>Non-residential</i>	<i>PY16</i>	<i>0.76</i>	<i>1.23</i>	<i>\$45,594</i>	<i>\$37,826</i>	<i>\$15,725</i>	<i>\$99,145</i>	<i>\$38,769</i>	<i>\$81,668</i>	<i>-\$4,403</i>	<i>\$5,682</i>	<i>\$121,716</i>
<i>Non-residential</i>	<i>PY17</i>	<i>0.76</i>	<i>1.26</i>	<i>\$27,323</i>	<i>\$22,609</i>	<i>\$9,783</i>	<i>\$59,716</i>	<i>\$23,673</i>	<i>\$50,901</i>	<i>-\$2,761</i>	<i>\$3,409</i>	<i>\$75,223</i>
<i>Non-residential Total</i>		<i>0.76</i>	<i>1.18</i>	<i>\$165,278</i>	<i>\$137,032</i>	<i>\$60,317</i>	<i>\$362,627</i>	<i>\$137,743</i>	<i>\$285,179</i>	<i>-\$15,867</i>	<i>\$20,603</i>	<i>\$427,658</i>

Bidding Strategy for Peak Demand Reductions into PJM's FCM

PECO will hire a turnkey service provider to handle the strategy and details for bidding into PJM's FCM. This approach will balance the benefits of bidding to PECO customers against the risk posed to customers by the potential for deficiency charges from PJM. PECO will provide more detail once the EE&C plan is final and the bidder is selected.

Other Information Deemed Appropriate

None.

3.5 Government/Nonprofit/Institutional Sector

Municipal government, nonprofits, and institutions will have a specific assigned outreach representative for engagement in the prescriptive and custom components of the Non-Residential program. Outreach will coordinate with PECO's economic development, large customer services team and government affairs to work collaboratively to engage and educate these customers on the value of energy efficiency and participation in PECO programs. Many municipal governments use energy master planning to better understand how they use and manage energy. PECO's outreach team will directly support implementation of those plans using its Non-Residential program incentives.

4. Program Management and Implementation Strategies

This section provides a detailed description of how PECO plans to manage and implement programs, including its approach to and use of CSPs.

4.1 Overview of PECO Management and Implementation Strategies

Led by the PECO's program management team, each CSP will work closely with PECO senior marketing specialists and the PECO brand advertising agency of record to make PECO's energy efficiency programs successful. The responsibilities of each role follow.

4.1.1 Services to Be Provided by EDC, Consultants, Trade Allies, and CSPs

This section describes the services to be provided by key program stakeholders, including PECO Program Managers, PECO's Marketing Team, CSPs, Data Vendors, Evaluators, Trade Allies, and Market Actors.

PECO Program Managers

- Oversee the Prime CSP's performance and service obligations and make sure the Prime CSP's delivery aligns with the approved EE&C plan.
- Oversee and actively manage the Prime CSP's performance.
- Approve Prime CSP payments (non-incentive payments) on a monthly and annual basis and incentive payments on a weekly or otherwise basis.
- Manage the overall CSP contract.
- Oversee program-level marketing with the CSP in coordination with the PECO marketing and promotions team.
- Work with Prime CSPs to manage and direct the sales process and approach.
- Engage with customers as needed when issues are escalated by the customer, trade ally, and/or CSP.

PECO Marketing and Promotions Team/PECO Senior Marketing Specialists

- Manage the portfolio's broad awareness campaign with the advertising agency and coordinate the CSPs and PECO brand advertising agency on advertising and marketing participant engagement strategies.
- Coordinate the education outreach strategy, content, and community event participation.
- Manage and track customer awareness and satisfaction studies.
- Ensure delivery of premium customer/participant experiences by providing oversight of customer support infrastructure.

PECO Brand Agency of Record

The PECO brand advertising agency of record will design and lead the overall advertising plan for all programs. This will include the programs' look and feel, messaging, and advertising channels. The PECO brand agency of record will coordinate through the PECO senior marketing specialists and CSPs on program-specific materials. (Note: The advertising agency will not be responsible for identifying and tracking leads. CSPs will identify, follow up with, and track leads.)

CSPs

- Deliver energy efficiency savings and associated PDRs on time and on budget while making it easy for customers to participate.
- Maintain high customer satisfaction.
- Develop and adjust program implementation strategies in collaboration with PECO program managers.
- Develop and maintain market actor networks (retailers, distributors, manufacturers, project developers).
- Develop program marketing and coordinate with the PECO Marketing and Promotions team and PECO brand advertising agency of record for design and consistency in messaging.
- Program outreach and lead generation (including development and distribution of program materials, neighborhood canvassing, trade ally and association networking, customer support infrastructure/lead conversion).
- Manage audits (including customer screening, hiring, training and monitoring of auditors and contractors, measure direct installation, and customer audit reports).
- Distribute efficient measure giveaways or energy kits, if applicable.
- Pick up and recycle appliances (and other equipment), if applicable.
- Process incentives (receive, review, and verify applications and pay rebates).
- Track program performance and implement continuous improvement.
- Report program activities while adhering to PECO and regulatory data reporting requirements and responding to internal or external requests.
- Continuously improve forecasting accuracy.
- Achieve income-eligible carve-out targets.
- Coordinate with other related activities and partnerships (e.g., Marketplace).
- Support market actors (e.g., trade allies, contractors).
- Support any program amendment process should program goals or budget need adjustment to suit the portfolio.
- Provide weekly transactional data to PECO for execution of customer satisfaction survey tools.
- Adapt program implementation strategies to continue program operations and achieve program goals through market disruptions such as COVID-19, economic recovery, etc.

Data Vendor

The database vendor will develop and maintain an appropriate tracking system for the programs to compile and aggregate data from PECO and CSPs using generally accepted data input and validation techniques. The data vendor will also collaborate with PECO, CSPs, and evaluators to develop and provide summary and detailed reports.

Evaluators

The independent evaluation contractor is responsible for the portfolio's EM&V and will verify that programs meet goals and are operated consistently with the approved plan. They will interface with the SWE to ensure measurement and verification protocols are aligned with the state's requirements and periodically provide PECO feedback on the identified areas where delivery performance could be improved. Independent evaluation contractors will also support PECO with semiannual and annual compliance reports.

Trade Allies

Through the right combination of trade ally management, marketing, education, data analytics, and outreach, trade ally networks will be motivated to increase performance and provide valuable feedback for program design and implementation. CSPs will engage existing trade allies and reach out to potential new trade ally participants prior to the start of Phase IV to provide a portfolio-wide trade ally database focused on:

- Maintaining active trade ally participation requirement status
- Identifying underperformers to focus campaigns for increased production
- Engaging contractors to participate
- Providing all participating trade allies with program information and announcements

Trade ally outreach may also include monthly program newsletters with updates, quarterly trade ally report cards with metrics, and annual trade ally events to provide education on programs and technologies, sales training, and networking opportunities for those with complementary business models.

Market Actors

The CSPs will engage market actors as partners in program outreach and marketing. Specific market actors and their roles include:

- **Influencers:** Community organizations, associations, and individuals that customers follow, join, or rely on for advice. They are trusted partners with unique connections to their constituents. Examples include condominium boards for multifamily tenants and property managers, home care services, community Weatherization Assistance program agencies and food banks serving income-eligible customers, and HERS Raters and Home Builders Associations for new construction.
- **Contractors and design firms:** Professionals who specify energy and demand savings equipment, and/or sell and install planned or emergency replacement high-efficiency equipment.

- **Distributors and manufacturers:** Stakeholders who stock and price-to-move high-efficiency equipment as well as participants in a residential and non-residential midstream or upstream program component. CSPs will build relationships through national distribution and manufacturer networks, associations, and organizations.
- **Multicultural alliances and neighborhood associations:** Partners that can assist with reaching customers with English as a second language; access to neighborhood meetings to present the value proposition of multiple programs; potential workforce development partners to recruit local contractors and individual program staff.
- **Government agencies:** Local township sponsored community events enabling direct customer engagement for cross promotion of multiple programs; recycling centers and township websites encouraging PECO refrigerator and freezer recycling programs; and financial assistance programs that can aid customers along the energy efficiency continuum.

4.1.2 Risk Categories and Risk Mitigation Strategies

Section 3 includes risks for individual programs. There are also risks inherent in the delivery of any energy efficiency portfolio. PECO is taking several key steps to manage those risks:

- Selecting programs that are diversified in design and implementation strategy including some program components that are relatively simple, flexible, and have a history of delivering results in Pennsylvania and other states (e.g., upstream and midstream retail programs) combined with comprehensive program offerings that strive for deeper energy savings.
- Developing a plan with multiple program components and a broad mix of measures to avoid over reliance on any single measure.
- Forecasting to exceed the overall energy and demand savings targets to hedge unknown performance across the entire portfolio.

4.1.2.1 Performance Risk

PECO managed performance risk by using a robust CSP RFP process for selecting CSPs with proven experience to implement the Plan. PECO used a disciplined RFP evaluation and selection process to ensure we engage experienced CSPs in the delivery of the programs (requiring CSP proposals to demonstrate a proven track record of performance). CSP contracts, where possible, will include performance clauses to ensure CSPs have a strong financial incentive to succeed.

PECO program managers will be responsible for continual oversight of CSP performance against the Plan and will promptly implement corrective actions if goals are not being met. Lastly, PECO will continue to meet with stakeholders and other Pennsylvania EDCs to share learnings and draw on program experience across the state to continuously improve the programs in its portfolio.

4.1.2.2 Technology Risk

The EE&C plan incentivizes customers for purchasing and installing known technologies and products with established TRM energy and demand savings. The TRM provides the standards for determining the prescriptive or deemed energy savings. Using this approach removes much of the technology risk from the Plan's prescriptive energy efficiency measures and results in a more cost-effective measurement and verification process.

PECO's CSPs will calculate custom project savings on an individual project basis, using the existing (or code-required) equipment as the baseline of energy use. CSPs will conduct pre- and post-inspections, where appropriate, to verify equipment and operating conditions. Incentive payment estimates will be based on standard engineering and energy calculation principles and final payments will be based on the confirmed savings.

4.1.2.3 Market Risk

PECO worked diligently to develop a strong portfolio of programs, benchmarked for success in comparable jurisdictions, and developed with input from key stakeholders. Uncovering barriers to participation and developing approaches that address these barriers facilitates program success. PECO has gained significant experience and market connections in the process of delivering its Phase I, II, and III programs. Informed by this experience, some of PECO's strategies to reduce market risk include the following:

1. **CSP Collaboration:** PECO developed the plan collaboratively with CSPs to ensure it is market-grounded, reducing the risk that the plan is not achievable in the market environment.
2. **Customer Education:** Education and awareness is an integral component of every program. This will include program awareness and the benefits of becoming more energy efficient.
3. **Trade Ally Coordination:** All trade allies will be offered training opportunities and provided appropriate materials and technical support. The intent will be to ensure program awareness and knowledge, to provide strategies for selling energy efficiency and peak demand reduction to their customers, and to educate the trade allies on the how these programs will help them further their business goals.
4. **Program Promotion:** PECO and its contractors will implement a strong promotional advertising campaign to drive awareness and call on customers to act.
5. **Product Promotion:** POP material will be placed in participating retail stores, customers will be able to easily participate using instant rebates.
6. **Streamlined Participation:** Program eligibility and streamlined application processes will make participation as easy as possible for customers.

4.1.2.4 Evaluation Risk

PECO will use several strategies to minimize evaluation risk. Eliminating evaluation risk begins with program design to ensure all assumptions and EM&V protocols are agreed upon in advance. PECO will work closely with the SWE to ensure consistent assumptions and processes are used.

The TRM provides a known set of assumptions for most prescriptive measures. PECO's independent EM&V contractor will conduct a disciplined verification activity for each program to ensure measures that customers received incentives for have been installed. PECO and its EM&V contractor will use industry standards and state-approved methods to perform the measurement and verification process.

4.1.3 Human Resource and Contractor Resource Constraints

Flexibility in resource staffing is needed to effectively implement the EE&C plan. PECO will manage human resource and contractor resource constraints through deliberate staffing and training. CSP staff that will implement the programs are primarily located in PECO's service area. Each CSP has laid out a succession plan in the event of staff changes, including backups for staff roles.

Internally, the organization will be overseen by PECO's Energy and Marketing Services team and will be further broken out in the marketing department by the following groups: Residential Energy Efficiency programs, C&I programs, Measurement and Verification, Business Planning and Promotions.

4.1.4 Early Warning Systems to Indicate Progress Toward Goals and Process for Adjustment

PECO has several methods for monitoring progress toward goals and ensuring that corrective actions are taken:

- Program managers will closely monitor the programs through direct interface with the CSPs and through the demand side management program tracking database. PECO will develop and monitor performance indicators for each program on a monthly basis. Regular review of performance metrics and feedback from CSPs will allow program managers to identify potential issues and take prompt corrective actions.
- Regular program evaluation will identify issues that may impede a program's ability to effectively reach its goals. The EM&V contractor will conduct evaluations to make sure that issues are identified early in the program cycle. It will be PECO's EM&V team's responsibility to ensure program managers consider recommended improvements and incorporate them into the program design as warranted.
- PECO will monitor efforts to update building and appliance codes that may affect the building or equipment baselines and develop strategies to adapt these changes into any affected program's design. In the event of code or standard changes or actionable evaluation results, PECO will take prompt action to ensure that programs are claiming appropriate energy savings.

4.1.5 Implementation Schedules with Milestones

The planned implementation schedule follows:

- March 2021: PECO and the CSPs will kick-off the program pre-launch process. During pre-launch, CSPs will assign key staff and ensure all customer support systems and marketing and outreach is in place.
- June 1, 2021: The programs will launch with some components on a ramp-up period for the first 6 months.
- June 2021–May 2026: Programs will operate and adjust to market changes. Savings and budget compared to goals will be reviewed on a regular basis.
- May 31, 2026: Last day of the Phase IV programs.

4.1.6 Stakeholder Engagement

PECO plans to regularly engage with stakeholders, including community organizations, groups, and individuals serving income-eligible populations to help ensure the plan design is implemented consistently with the vision presented in this plan. PECO will continue to be an active and engaged participant in PUC-sponsored meetings and activities and will initiate stakeholder input sessions with PECO's customer groups and partners.

The CSPs will also engage:

- **Multicultural alliances and neighborhood associations:** Partners that can assist with reaching customers with English as a second language; access to neighborhood meetings to present the value proposition of multiple programs; potential workforce development partners to recruit local contractors and individual program staff.
- **Local community-based organizations:** Bucks County Opportunity Council, Delaware and Philadelphia County Housing Authorities, government organizations like Philadelphia Energy Authority, and advocates such as the Housing Alliance.

4.2 Executive Management Structure

This section describes PECO's 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). Figure 8 includes the management team responsible for implementing PECO's EE&C plan.

4.2.1 PECO Structure for Addressing Portfolio Strategy

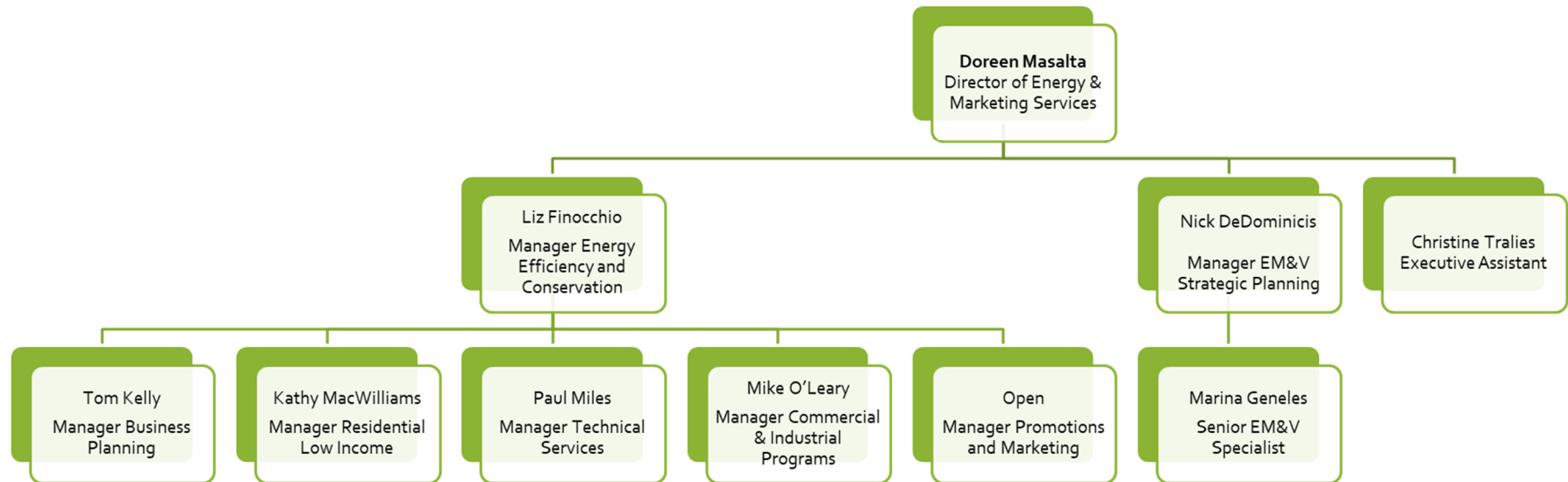
Responsibility for the entire portfolio of programs resides within a single organization, with executive-level leadership provided by the Director of Energy and Marketing Services. Individual Managers are assigned responsibility for each market sector and key functional support areas. This executive team is responsible for overall portfolio strategy and planning.

Primary program management is organized by market sector: commercial and industrial, residential and low-income. Individual Program Managers are assigned to each program and have overall responsibility for the programs with support from the functional support groups:

promotions and marketing, technical services, business planning, and EM&V. They provide specialized support services to the program managers in the following areas:

- Promotions and marketing coordinates all internal and external communications.
- Business planning is responsible for all financial aspects of the portfolio. This includes budget and financial management as well as maintaining the portfolio tracking database to provide performance tracking and reporting.
- EM&V oversees the evaluation contractor and interfaces with the SWE.

Figure 8. PECO Proposed EE&C Organization



4.2.2 Approach for Overseeing the Performance of CSPs and Other Providers

PECO will compensate CSPs for what has compliance value. PECO must meet MWh and MW savings goals. Therefore, PECO will compensate CSPs for MWh and MW savings that achieve those goals (\$/verified MWh). Each CSP's goal is to meet 105% of the regulatory target annually and for the phase.

In addition to paying CSPs based on their performance, PECO will incorporate key performance metrics into its contracts with the CSPs. Individual program managers will monitor performance closely through the tracking system that will measure key indicators such as participation, costs, savings, adherence to plan, participant experience, and other indicators. The program manager will work closely with the CSP to understand how the program is performing and if changes may be needed to make the program more successful.

PECO will also assess customer and market actor satisfaction with programs through each program's EM&V process. Independent evaluation contractors will provide each PECO program manager with feedback on this dimension of each CSPs' performance.

4.2.3 Basis for Administrative Budget (non-incentive costs)

Administrative costs (non-incentive costs) in PY 13–PY 17 will be factored into the overall portfolio benefit-cost analysis. These costs include all non-incentive costs and are aligned with the budget categories in Table 9 for each program. To determine the administrative budget, PECO followed the PUC's Implementation Order to have a minimum of 50% of the total budget go to incentives. PECO then benchmarked the Phase III budget to determine PECO and non-PECO administrative budget. Administrative cost categories include:

- **Program Design:** Includes all costs related to designing the Phase V program, assuming there will be a Phase V, including updating avoided costs or load shape research.
- **Administrative:** Represents PECO employees required to develop, oversee, and execute all programs in the portfolio. This cost category also includes expenses associated for PECO staff energy efficiency and peak demand reduction training, industry conference sponsorships, and participation.
- **CSP Delivery Fees:** Includes all costs to implement the plan, including program implementation and database management. this category includes a customer service call center to support Phase IV implementation.
- **Marketing:** Represents broad marketing, education, and outreach efforts to promote the overall portfolio of energy efficiency and peak demand reduction programs as well as specific and targeted marketing strategies for specific programs and solutions. This will include expenditures on radio, newspaper, social media, and sponsorships promoting the program portfolio.
- **EM&V:** Represents costs associated with third-party independent EM&V for the full portfolio process and impact evaluation activities, including continuous improvement activities.
- **Other:** Includes technical support, research and development (R&D), and unforeseen circumstances which cannot be predicted during this period of plan development. Technical support includes updating and expanding the data tracking system for overall tracking and

reporting of energy efficiency and PDR savings, EM&V research activities, and benchmarking studies. R&D includes market research in response to market transformations. PECO expects that new technologies will emerge and may warrant pilots. This pilot work will be capped at 2% of the total Plan budget in accordance with the statute put forth by the PUC that states no more than 2% of funds shall be allocated for experimental equipment or devices.

Like non-incentive costs, incentive costs are aligned with the budget categories in Table 9 for each program. Incentive costs include rebates, midstream and upstream buydown, kits, and direct install materials and labor.

4.3 Conservation Service Providers (CSPs)

4.3.1 Selected CSPs

PECO issued RFPs and is in the process of selecting and contracting CSPs for implementing and evaluating the Phase IV programs. The selected implementation CSPs and independent evaluator, their qualifications, and basis for selection will be shared with the PUC. Each CSP and evaluation contract is deemed confidential and proprietary, and each contract will be filed with the PUC separately. No CSP contract will be effective until approved by the PUC.

PECO has selected ANB as the data vendor to collect and manage all program data and enable PECO to responsively model and forecast participation, monitor and adjust its energy efficiency and PDR portfolio, track key program indicators, develop market intelligence reports, and seamlessly transmit up-to-date, accurate portfolio data for compliance requirements. Since ANB was PECO's data vendor in Phase III, the use of ANB will avoid additional training and onboarding. Additionally,

- ANB's upgraded system, eTrack+, has robust reporting functionality enabling PECO to fully access and manipulate our data without creating a support ticket
- ANB's data quality assurance has been unmatched and indispensable previously.

4.3.2 Describe the Work and Measures Being Performed by CSPs

CSPs will implement the energy efficiency programs using their experience and capabilities from implementing previous PECO programs and other programs across the country. Each of the selected CSPs will be responsible for implementation services detailed in the individual program descriptions in Section 3.

4.3.3 Describe Any Pending RFPs to Be Issued for Additional CSPs

PECO is planning to issue at a minimum the following RFP:

PECO will issue a RFP for a vendor to supply PJM bidding services. The RFP will be a competitive solicitation for a turnkey provider of these services. PECO expects the provider to handle all details of bidding into the Reliability Pricing Model, including the selection of measures and programs, submitting documentation as required by PJM, and the actual bidding

services. PECO further expects the provider will assume all risk associated with bidding (to include potential deficiency charges, audit risk, and M&V compliance risk) in return for some portion of the revenues generated by bidding into the PJM capacity market.

5. Reporting and Tracking Systems

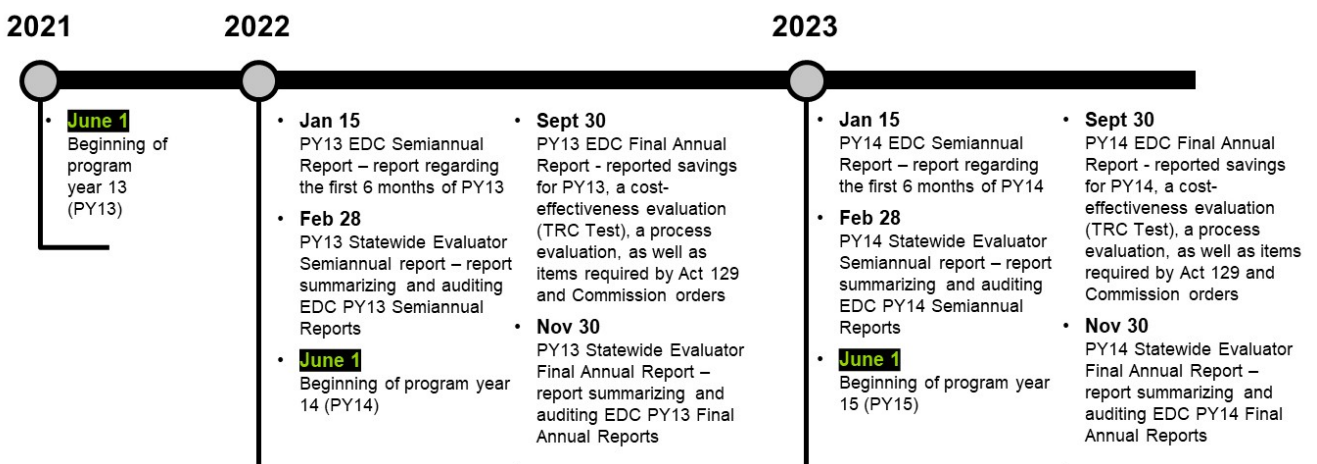
This section describes the reporting and critical data management and tracking systems PECO will use to implement programs, and which the PUC and PECO’s evaluation contractor will be able to access.

5.1 Reporting

The evaluation contractor will be responsible for interfacing with the SWE to determine the required data collection and reporting requirements and ensure that all data collection and reporting requirements are satisfied by the data vendor and CSPs.

The evaluation contractor will support development of PECO’s semiannual and annual reports as prescribed in the SWE’s Final Implementation Order for each program year of Phase IV.

1. **Semiannual Reports:** These reports capture program activity for the first half of each program year and are filed by January 15 of each year.
2. **Annual Reports:** These final annual reports will be filed no later than September 30th, 120 days after the end of each full program year. Final annual reports for each program year will include reported and verified savings, a cost-effectiveness evaluation (TRC test), process evaluation results, and items required by Act 129 and PUC orders.
3. **Reporting Schedule:** All PECO Act 129 EE&C Phase IV reports will be filed with the PUC’s Secretary’s Bureau, with a copy provided to the SWE. Further, all reports will be posted to the PECO website. Reporting for each program year of Phase IV will follow the example proposed schedule for PY13 and PY14 outlined in the Final Implementation Order:



5.2 Project Management Tracking Systems

This section presents the data management system requirements that PECO anticipates will meet internal and external (SWE) needs.

5.2.1 Data Tracking System Overview

PECO's data tracking system collects and stores comprehensive and consistent program and invoice data from CSPs. The data management system will track metrics that facilitate effective project tracking and regulatory reporting. This data will also support PECO's Quality Assurance process and EM&V requirements. Protecting sensitive data, personally identifiable information, personal information, intellectual property, and data from theft and damage is integrated into PECO's data management process.

The data tracking system includes a user interface for entering, reviewing, and extracting program and invoice data. The data tracking system will support PECO's tracking of:

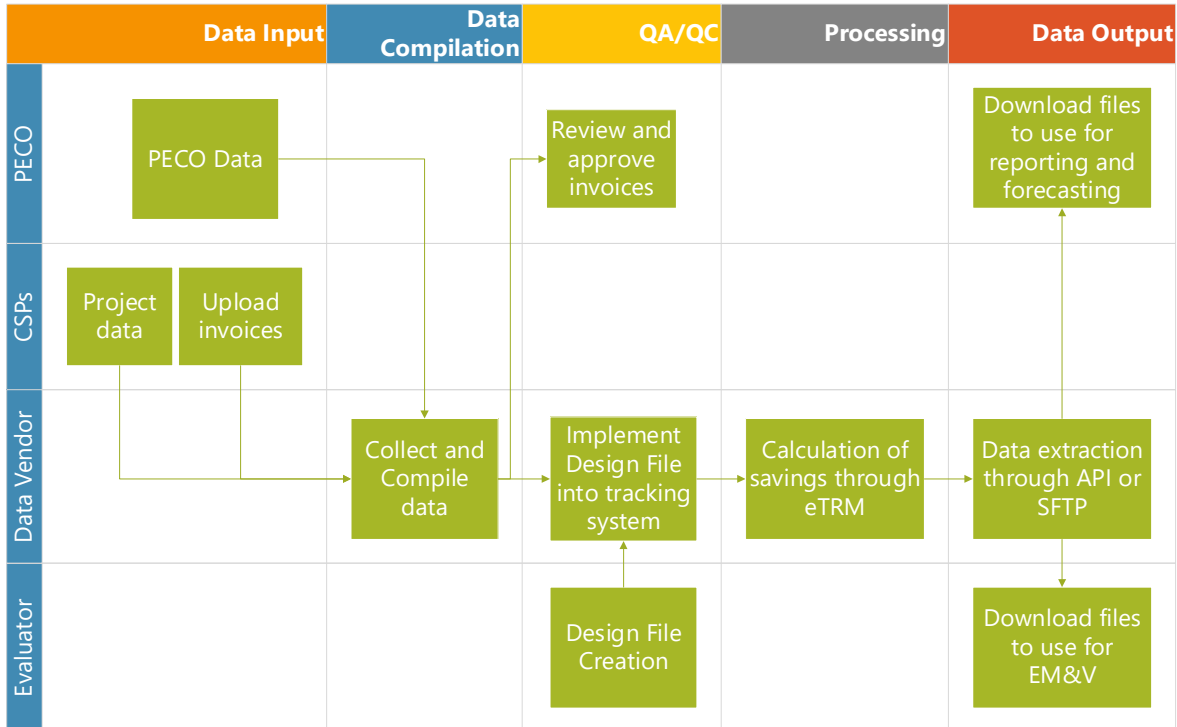
- Incentive commitments
- Incentives paid
- Reported kilowatt-hours and kilowatts achieved
- Implementation costs
- Administrative costs
- Cost forecasts

PECO's data management tracking system and approach to data management will ensure consistent data inputs across the different CSPs throughout Phase IV. There are four key contributors/users involved with data tracking, each with an important role in ensuring tracking data quality:

- **Database Vendor:** The database vendor will develop and maintain an appropriate tracking system for the programs to compile and aggregate data from PECO and CSPs, using generally accepted data input and validation techniques.
- **CSPs:** CSPs will be responsible for inputting program data into the tracking database in accordance with the data protocols.
- **PECO Program Managers:** PECO program managers will track and review data for their individual programs.
- **Evaluator:** The independent evaluation contractor will conduct process and impact evaluations for each program. These evaluations will review the tracking data inputs for accuracy and adherence to data protocols produce verified savings estimates and provide recommendations for program improvement. The independent evaluation contractor will provide a design file to the data vendor ahead of Phase IV with data completeness, consistency, and accuracy checks. CSPs are required to update data that does not pass the design file criteria.

Figure 9 depicts the data management, QA, and evaluation processes that PECO, the data vendor, CSPs, and independent evaluation contractor will use to ensure accurate data tracking.

Figure 9. Program Documentation and EM&V



PECO’s approach addresses five areas critical to ensuring program implementation quality:

- 1. Selection of CSPs that implement programs:** PECO is in the process of selecting and contracting CSPs with demonstrated experience implementing data management protocols and a commitment to maintaining data quality and integrity. Contracts will be awarded based on a pay for performance contracting mechanism.
- 2. Program implementation and documentation protocols:** PECO and the CSPs will develop specific protocols and procedures for each program. These will govern all aspects of the program implementation, from procedures for conducting site visits to data input.
- 3. Verification and documentation of activities and savings:** Verification of project eligibility and actual installation of measures is important. Documentation of purchases and installations will ensure that programs are implemented in top quality fashion and will provide the basis for defensible program evaluations.
- 4. Program evaluation:** PECO will contract an experienced EM&V vendor to conduct an independent assessment of each program’s performance. This contractor will develop a comprehensive evaluation plan for conducting process and impact evaluations. The EM&V contractor will work with the SWE to ensure that the evaluations are conducted according to state requirements.

5. **Evaluation-based program adjustments:** PECO will use the findings and recommendations resulting from the impact and process evaluations to adjust program implementation as necessary to ensure that the programs are implemented in accordance with recognized best practices, maintain participant satisfaction, and contribute to PECO's successful attainment of its portfolio savings goals.

5.2.2 Software Format, Data Exchange Format, and Database Structure

The data tracking system will interact with PECO's existing systems. PECO will provide an initial population of customer, premise, and account data that will be used to qualify customers for programs. Additional data will be entered by the CSP or PECO to complete the application process. In addition to any pertinent data, the data tracking system will likely also track application status, so PECO will be able to identify progress at each point from initiation to completion. PECO will provide a full set of customer data information on a regular basis to update CSP records.

5.2.3 Describe How CSPs Will Integrate with the Tracking System

CSPs will have a secure log-in to access the tracking system. After logging in, the CSP can enter and submit projects (with required data) for PECO's review, approval, or request for additional information or modifications. Following any required revisions and PECO's approval of a submitted project, projects are maintained within the tracking system. Approved projects are then processed within the tracking system to generate reported savings.

CSPs can also enter project data for in-process or incomplete projects. Prior to seeking PECO's review and approval, the CSP will have ongoing access to the tracking system to make necessary updates if inconsistencies are found or update the status of projects once completed and once omissions are resolved.

CSPs will enter information into the tracking system for individual projects and through batch-methods for several projects. Project batches will typically be associated with monthly invoices. CSPs will interact with the tracking system on a monthly basis or more frequently.

The project data submitted and updated by CSPs includes but is not limited to:

- Measure information and equipment specifications
- Inputs for deemed or partially TRM calculations
- Project status
- Invoices, including project costs and incentives
- Other project details stored in files and not directly entered into tracking system (e.g., PDFs for custom C&I projects)
- Customer data from PECO's internal customer system

5.2.4 Access for Commission and Statewide Plan Evaluator

PECO's energy efficiency information will be available for review by the PUC and SWE upon request. As part of the customer validation process for application enrollment, PECO will provide select customer account data to the data management system vendor. This data is highly confidential and must be protected against unauthorized access or disclosure. In addition, all data collected from CSPs related to PECO's programs will be considered confidential and subject to the same protections. Security processes and protocols will be established to secure all data from unauthorized access. PECO and the data management system vendor will jointly develop processes for data backup and disaster recovery.

6. Quality Assurance and Evaluation, Measurement and Verification

This section describes how PECO's QA/QC and verification and internal evaluation process will be conducted and how this will be integrated with SWE activities.

6.1 Quality Assurance/Quality Control

PECO will incorporate QA/QC into the implementation of this EE&C plan. The plan proposes an infrastructure for monitoring program activity that identifies key components and explicitly identifies the relationships among them. It is important to establish the role that each contributor will have and to facilitate communication between the implementation CSPs, the database vendor, the independent evaluation contractor, and the SWE.

6.1.1 Overall Approach to Quality Assurance/Quality Control

To implement the programs and solutions in this plan, PECO will leverage the experience of program implementation professionals by selecting CSPs with the following qualifications:

- Demonstrated experience implementing programs for the specific target market associated with the program.
- Demonstrated understanding of the measures and features of the program and solutions the CSP will implement.
- Existing relationships and experience establishing relationships with upstream equipment suppliers and contractors, as appropriate for the program.
- Experience in providing or coordinating training by other qualified providers about the program, solutions, and measures to delivery channels (e.g., equipment suppliers, contractors, auditors) and the target participant market.
- Capabilities for processing incentives.

The CSPs' approach to quality control and continuous improvement will include:

- **Program tracking:** Scorecards, weekly and monthly forecasting reports, and operations meetings to monitor and track program progress against program goals and metrics. The

scorecards will be reviewed monthly to provide updates and identify action items to keep the program on track.

- **Responding to customer:** Contractor and trade ally feedback is important. CSPs will have a tiered response procedure to ensure the highest level of customer support is delivered. Any suggestions or complaints will be logged into each CSP's customer contact log and resolved at the appropriate level. Complaints are escalated as required following a deliberate and documented process.
- **Equipment installation inspections:** CSPs will conduct random in-process and post inspections while ensuring the quantity of inspections are distributed fairly among the program segments according to their most recent performance. Post inspections will include client interviews and a methodical visual inspection (where possible and feasible) to verify that measures have been installed correctly and as reported. Post inspections will also confirm that measures comply with program specifications and that those measures are serving their intended function. This enables personnel to understand and comply with program requirements and provides an opportunity to address any deficiencies early on. Post inspections will be performed as soon as possible after completion of work in a home or building. Prompt QA/QC follow-up creates a greater likelihood of customer cooperation and reinforces the importance of quality and customer satisfaction in the programs. Finally, inspectors will review the appropriateness and accuracy of recommendations made by energy advisors and others.

PECO will also leverage the experience of an independent EM&V contractor who will conduct unbiased estimations of verified gross energy impacts on all programs. Estimations of verified gross energy impacts will be based on statistically significant verified savings measured as described in the EM&V contractor's EM&V plan, developed prior to Phase IV program implementation.

The contractor's EM&V plan will contain a detailed evaluation methodology for each program, including definition of the impact and process evaluation methods, and the data needed to support them (design file). The EM&V Plan will provide the implementation CSP with the data to track and the Database Vendor with the data to house. Having the evaluation Plan completed and available to PECO and CSP staff for each program will help ensure that the implementers maintain appropriate and high-quality records so that savings can be verified.

6.1.2 Procedures for Measure and Project Installation Verification, QA/QC and Savings Documentation

Although the procedures for measure and project installation verification, quality assurance and control, and savings documentation will vary by program and measures, PECO anticipates independent evaluation contractors applying the following process to impact evaluations:

- Choose a random sample of participants for evaluations, using statistical methods consistent with established state protocols.
- Verifications will be either onsite, by phone, or online survey instrument, tailored to the measure and program type.
- Gather pre-evaluation data and prepare data collection documents.

- Verify measure and project installation and collect pertinent data such as equipment nameplate.
- Cross-reference equipment data with customer application data contained in the data management system for accuracy.
- Observe and note equipment operational tests and quality of the equipment installation.
- For prescriptive measures, calculate measure savings using the methodologies and algorithms detailed in the TRM.
- For custom measures, use energy simulation modeling (such as eQuest or DOE-2) or pre/post-measure metering to determine measure savings.

6.1.3 Process for Collecting and Addressing Participant, Contractor and Trade Ally Feedback

PECO anticipates applying the following general process to collect participant, contractor, and trade ally feedback:

- Independent evaluation contractors will interview contractors, trade allies, and other market actors to gauge their satisfaction with PECO's programs and identify areas for improvement.
- Independent evaluation contractors will identify the appropriate survey mode (e.g., telephone, in-person, or online) for capturing participant feedback.
- Independent evaluation contractors will survey a random sample of participants to gather fast program feedback and assess satisfaction with the program.
- Independent evaluation contractors will follow all guidelines outlined in the SWE's Evaluation Framework.¹⁰

6.1.4 Market and Process Evaluations

PECO's prime CSPs will regularly evaluate their programs to help maintain best practices and continually improve. Additionally, PECO's independent evaluation contractors will conduct annual market and process evaluations for each program throughout the program's entirety. Market and process evaluations may include program materials review, tracking database analysis, implementation team interviews, surveys or interviews with participating and nonparticipating customers, contractors, and trade allies.

Market and process evaluations will examine:

- Program design
- Implementation protocols and procedures

¹⁰ Guidelines will be sourced from the most relevant Framework document posted to the PA PUC's website (<https://www.puc.pa.gov/filing-resources/issues-laws-regulations/act-129/act-129-statewide-evaluator-swe/>). PECO expects the SWE to publish an update to the Phase III Evaluation Framework (the most recent Framework at the time of this plan's drafting) for Phase IV. Guidance will draw from that document when available.

- Marketing materials and strategies
- Outreach and recruitment activities
- Documentation and compliance with incentive eligibility requirements
- Processing and timely payment of incentives
- Market characteristics
- Net energy and demand savings

PECO will use process evaluation results to improve program design (e.g., modify measures offered, eligibility requirements) and implementation procedures (e.g., modify recruitment, advertising methods, monitoring, database maintenance). The frequency and schedule of the process evaluations will be determined for each program individually.

6.1.5 Strategy for Coordinating with Statewide Evaluator

PECO's EM&V manager and its independent evaluation contractor will engage with the SWE through scheduled working group meetings and through ad hoc meetings and communications. Throughout Phases I, II, and III, PECO worked with the SWE to ensure its program evaluations aligned with PUC requirements, clarified policy questions, and contributed data and recommendations to assist the SWE and the PUC to establish policy. PECO anticipates extending this productive relationship in Phase IV.

To the extent feasible and appropriate, PECO will consult with the SWE to ensure its data management system contains information relevant and needed for evaluation of the programs. It also will ensure that PECO's EM&V contractor uses the most appropriate methods for determining the impacts of the EE&C plan's programs.

7. Cost Recovery Mechanism

This section provides descriptions and estimated values for PECO's cost recovery mechanism.

7.1 Total Annual Revenues for Phase IV

PECO's annual retail revenue as of December 31, 2006, totals \$4,273,858,275. Applying the 2% annual limit set forth in Act 129 to this amount produces a total allowable annual level of expenditures of \$85,477,166 per year or \$427,385,828 over the five program years of the Phase IV Plan.

Figure 10 details how the total 2006 annual retail revenues were derived.¹¹ The electricity sales from all of PECO's customers (FERC Accounts 440.0 through 446.0) and other operating income (FERC Accounts 450.0 through 456.1) were summed. In addition, as required by the Implementation Order, the total annual retail revenue was adjusted to include "...generation revenues collected by an EDC for an electric generation supplier (EGS) that use consolidated billing." The revenues thus derived were then adjusted to remove several "non-retail" (i.e.,

¹¹ The calculation is based on Schedule 400 - Income Statement contained in PECO's 2006 Electric Annual Revenue Report to the PUC.

wholesale) revenue items, which include, sales for resales (447.0), other electric revenues (456.0) and revenues from wholesale transmission (456.1).

Figure 10. Calculation of 2006 Annual Revenue

Amount	Description
\$4,371,215,020*	Total revenue as of 12/31/06
\$92,390,366†	Adjustment for “shopping” customers
\$(189,747,111)‡	Wholesale revenue adjustment
\$4,273,858,275§	Total retail revenue
\$85,477,166	Annual spend (2% of revenue)
\$427,385,828#	Five-year total spend

*Source: PUC Annual Report-400 Income Statement

† Source: PECO records

‡ Source: PUC AR Accounts 447, 456.0, 456.1

§ Sum of total revenue, adjustment for “shopping” customers, and wholesale revenue adjustment

|| Total retail revenue times 0.02

Annual spend times five program years

7.2 Description of Phase IV Plan in Accordance with 66 Pa. C.S. § 1307 and 2806.1

Act 129 requires that the EE&C plan include a cost recovery mechanism to fund EE&C measures and to ensure the recovery of prudent and reasonable costs, including administrative costs. See 66 Pa.C.S. § 2806.1(b)(1)(i)(H). Act 129 also requires an analysis of administrative costs. See 66 Pa.C.S. § 2806.1(b)(1)(i)(K). The Phase IV Implementation Order defines administrative costs as including “but not... limited to, costs relating to plan and program development, CSP non-incentive program delivery fees, cost-benefit analysis, measurement and verification and reporting.”¹² Based on this definition, PECO’s EE&C Phase IV administrative costs (e.g., non-incentive costs) include those costs described in Section 4.2.3.

¹² EE&C Phase IV Final Implementation Order, p. 121.

7.3 Data Tables

Table 10. Sector-Specific Summary of EE&C Costs

Residential Portfolio (including Low-Income)							
EE&C Program ²	Cost Elements (\$) ³			Total Cost	Expected Acquisition Cost ⁴ (\$/MWh)	Levelized Cost ⁵ (\$/MWh)	Expected Acquisition Cost (\$/MW)
	<i>Incentives</i>	<i>CSP Delivery Fees</i>	<i>Marketing</i>				
<i>Residential</i>	\$33,432,441	\$26,001,775	\$12,387,520	\$71,821,736	\$338	\$39	\$2,181,633
<i>Income-Eligible</i>	\$28,277,119	\$8,373,881	\$4,801,845	\$41,452,845	\$452	\$58	\$3,097,864
<i>Residential Home Energy Reports</i>	\$0	\$9,688,416	\$0	\$9,688,416	\$86	\$26	\$220,429
<i>Income-Eligible Home Energy Reports</i>	\$0	\$493,124	\$0	\$493,124	\$86	\$30	\$422,808
Sector Total	\$61,709,560	\$44,557,197	\$17,189,365	\$123,456,122	\$292	\$42	\$1,350,413

Notes:

¹ Prepare and submit a separate table for *each* customer sector.

² List each EE&C program by name. Add rows as necessary.

³ List all cost elements for each program that can be directly identified as relating exclusively to the specific customer sector addressed in this table. Any cost elements that are applicable to multiple sectors, or are common across all sectors, are to be listed in Table 11 (relating to Common Costs). Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.

⁴ The numerator in the acquisition cost calculation is the full EDC cost, free of any allocation. Acquisition costs are first-year.

⁵ Levelized costs should be lifetime. Appendix A of the 2021 TRC Test Order provides formulas to calculate levelized cost. See 2021 TRC Test Final Order, at Docket No. M-2019-3006868, entered December 19, 2019. <http://www.puc.pa.gov/pcdocs/1648126.docx>



An Exelon Company

Commercial/Industrial Small Portfolio							
EE&C Program ²	Cost Elements (\$) ³			Total Cost	Expected Acquisition Cost ⁴ (\$/MWh)	Levelized Cost ⁵ (\$/MWh)	Expected Acquisition Cost (\$/MW)
	Incentives	CSP Delivery Fees	Marketing				
<i>Non-residential</i>	\$81,502,080	\$23,315,422	\$1,706,818	\$106,524,320	\$242	\$28	\$1,325,441
<i>Residential (Commercailly metered MF buildings)</i>	\$1,126,266	\$1,326,194	\$632,761	\$3,085,220	\$276	\$34	\$2,332,262
Sector Total	\$82,628,346	\$24,641,616	\$2,339,579	\$109,609,541	\$243	\$28	\$1,341,744
Notes:							
¹ Prepare and submit a separate table for <i>each</i> customer sector.							
² List each EE&C program by name. Add rows as necessary.							
³ List all cost elements for each program that can be directly identified as relating exclusively to the specific customer sector addressed in this table. Any cost elements that are applicable to multiple sectors, or are common across all sectors, are to be listed in Table 11 (relating to Common Costs). Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.							
⁴ The numerator in the acquisition cost calculation is the full EDC cost, free of any allocation. Acquisition costs are first-year.							
⁵ Levelized costs should be lifetime. Appendix A of the 2021 TRC Test Order provides formulas to calculate levelized cost. See 2021 TRC Test Final Order, at Docket No. M-2019-3006868, entered December 19, 2019. http://www.puc.pa.gov/pdocs/1648126.docx							



An Exelon Company

Commercial/Industrial Large Portfolio							
EE&C Program ²	Cost Elements (\$) ³			Total Cost	Expected Acquisition Cost ⁴ (\$/MWh)	Levelized Cost ⁵ (\$/MWh)	Expected Acquisition Cost (\$/MW)
	Incentives	CSP Delivery Fees	Marketing				
<i>Non-residential</i>	\$100,804,475	\$38,426,562	\$2,813,182	\$142,044,219	\$196	\$21	\$928,572
<i>Residential (Commercailly metered MF buildings)</i>	\$453,625	\$540,474	\$257,874	\$1,251,973	\$275	\$34	\$2,281,953
Sector Total	\$101,258,100	\$38,967,036	\$3,071,056	\$143,296,192	\$196	\$21	\$933,408
Notes:							
¹ Prepare and submit a separate table for <i>each</i> customer sector.							
² List each EE&C program by name. Add rows as necessary.							
³ List all cost elements for each program that can be directly identified as relating exclusively to the specific customer sector addressed in this table. Any cost elements that are applicable to multiple sectors, or are common across all sectors, are to be listed in Table 11 (relating to Common Costs). Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.							
⁴ The numerator in the acquisition cost calculation is the full EDC cost, free of any allocation. Acquisition costs are first-year.							
⁵ Levelized costs should be lifetime. Appendix A of the 2021 TRC Test Order provides formulas to calculate levelized cost. See 2021 TRC Test Final Order, at Docket No. M-2019-3006868, entered December 19, 2019. http://www.puc.pa.gov/pdocs/1648126.docx							

Figure 11. Cost Recovery Summary

Cost Recovery Sector	Budget (\$)				
	Incentives	CSP Delivery Fees	Common Costs	Marketing	Total
Residential (Including Low-Income)	\$11,889,478	\$8,494,131	\$2,685,649	\$3,429,727	\$26,498,985
Commercial/Industrial – Small	\$12,345,431	\$4,495,821	\$2,832,939	\$473,611	\$20,147,801
Commercial/Industrial – Large	\$15,145,496	\$7,145,119	\$4,619,840	\$616,663	\$27,527,118
Municipal Lighting	\$147,922	\$76,117	\$66,368	\$0	\$290,406
PY13 Total	\$39,528,327	\$20,211,189	\$10,204,795	\$4,520,000	\$74,464,311
Residential (Including Low-Income)	\$12,110,668	\$9,022,154	\$2,685,649	\$3,433,723	\$27,252,193
Commercial/Industrial – Small	\$16,409,744	\$4,686,280	\$2,830,359	\$471,011	\$24,397,394
Commercial/Industrial – Large	\$20,180,911	\$7,451,424	\$4,618,074	\$615,266	\$32,865,676
Municipal Lighting	\$196,976	\$79,224	\$70,713	\$0	\$346,914
PY14 Total	\$48,898,299	\$21,239,083	\$10,204,795	\$4,520,000	\$84,862,177
Residential (Including Low-Income)	\$12,327,718	\$8,859,884	\$2,685,649	\$3,437,947	\$27,311,197
Commercial/Industrial – Small	\$20,455,340	\$5,802,249	\$2,827,637	\$467,881	\$29,553,107
Commercial/Industrial – Large	\$25,208,856	\$9,292,384	\$4,616,264	\$614,173	\$39,731,676
Municipal Lighting	\$246,174	\$98,830	\$75,246	\$0	\$420,250
PY15 Total	\$58,238,088	\$24,053,347	\$10,204,795	\$4,520,000	\$97,016,230
Residential (Including Low-Income)	\$12,570,819	\$9,045,158	\$2,685,649	\$3,441,972	\$27,743,598
Commercial/Industrial – Small	\$20,455,340	\$5,810,579	\$2,827,842	\$465,021	\$29,558,782
Commercial/Industrial – Large	\$25,208,856	\$9,295,779	\$4,616,401	\$613,007	\$39,734,043
Municipal Lighting	\$246,174	\$98,830	\$74,904	\$0	\$419,908
PY16 Total	\$58,481,190	\$24,250,346	\$10,204,795	\$4,520,000	\$97,456,331
Residential (Including Low-Income)	\$12,810,877	\$9,135,869	\$2,685,649	\$3,445,997	\$28,078,392
Commercial/Industrial – Small	\$12,345,782	\$3,599,117	\$2,833,808	\$462,055	\$19,240,763
Commercial/Industrial – Large	\$15,145,496	\$5,617,237	\$4,620,424	\$611,948	\$25,995,105
Municipal Lighting	\$147,947	\$59,660	\$64,914	\$0	\$272,522
PY17 Total	\$40,450,102	\$18,411,884	\$10,204,795	\$4,520,000	\$73,586,781
5-Year Total	\$245,596,006	\$108,165,848	\$51,023,976	\$22,600,000	\$427,385,830

Table 11. Allocation of Common Costs to Applicable Customer Sector

Common Cost Element ¹	Total Cost (\$)	Basis for Cost Allocation ²	Sector Cost Allocation (\$)		
			Residential (Including Low-Income)	Commercial/Industrial -- Small (Including Municipal Lighting)	Commercial/Industrial -- Large (Including Municipal Lighting)
Program Design	\$2,500,000	1st-Year MWh	\$657,938	\$703,769	\$1,138,293
Administrative	\$15,000,000	1st-Year MWh	\$3,947,628	\$4,222,616	\$6,829,757
EM&V	\$20,000,000	1st-Year MWh	\$5,263,503	\$5,630,154	\$9,106,342
Other (See Section 4.2.3)	\$13,523,976	1st-Year MWh	\$3,559,175	\$3,807,103	\$6,157,698
Totals	\$51,023,976		\$13,428,243	\$14,363,643	\$23,232,089

Notes:

¹ List all identified cost elements that are determined to be applicable to multiple customer sectors, or are common across all sectors. Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.

² Provide a brief explanation of the methodology used to allocate each common cost element to the applicable customer sectors.

Table 12. Summary of Portfolio EE&C Costs

Portfolio	Total Sector Portfolio-specific Costs ¹	Total Common Costs ²	Total of All Costs
Residential (Including Low-Income)	\$123,456,122	\$13,428,243	\$136,884,365
Commercial/Industrial -- Small (Including Municipal Lighting)	\$109,609,541	\$14,363,643	\$123,973,183
Commercial/Industrial -- Large (Including Municipal Lighting)	\$143,296,192	\$23,232,089	\$166,528,281
Totals	\$376,361,854	\$51,023,976	\$427,385,830
Notes:			
¹ Cost figures are to be carried over from the last column ("Totals") of Table 10.			
² Cost figures are to be carried over from the bottom row ("Totals") of Table 11.			

7.4 Tariffs and Section 1307 Cost Recovery Mechanism for Phase IV Plan

7.5 Tariffs

As part of the implementation of PECO's Phase IV EE&C Plan, PECO proposes to use a cost recovery mechanism similar to the mechanism it used to recover the cost of its Phase III Plan. See PECO Statement No. 3, Exhibit RAS-1, for a copy of the proposed supplement to PECO's Electric Service Tariff that contains the tariff provisions designed to implement the cost recovery mechanism for PECO's proposed EE&C Phase IV Plan.

A high-level summary description of the Phase IV cost recovery mechanism was provided in Section 1.9. Additional details on the Phase IV cost recovery mechanism, calculations of the charge and supporting cost documentation are provided in this section.

7.5.1 Cost Recovery Mechanism

PECO proposes to recover the cost of its EE&C Phase IV Plan through an Energy Efficiency & Conservation Program Charge (EEPC) similar to the one used in Phase III. The Phase III EEPC was designed to comply with Section 1307 of the Public Utility Code and, as the Commission required, was reconcilable and non-by passable. As required by the Commission in PECO's EE&C Phase III Final Implementation Orders, Docket Nos. M-2015-2515691, the EEPC was not a separate line item on residential customers' bills and was not included in the price to compare. Instead, residential customers' distribution rates were adjusted by the amount of the charge calculated for each rate class. For small commercial customers, the EEPC was based on energy use or kWh. For large commercial customers, the charge was based on a PJM Peak Load Contribution. The EEPC was listed as a separate item on small and large commercial customers' bills and was not included in the price to compare. For EE&C Phase IV Plan, PECO proposes to follow the same format used in Phase III .

The cost recovery mechanism proposed for Phase IV is shown at page 45 of the proposed supplement to PECO's Electric Service Tariff submitted as PECO Exhibit RAS-1. The tariff language describes the cost recovery method, the formula for calculating the charge and the charges specific to each rate class.

The Phase IV EEPC will recover all of the fixed capital costs (depreciation and pre-tax return) and operating expenses, not otherwise recovered in base rates, to design and implement the EE&C programs incorporated in its Phase IV EE&C plan. These costs include, among others, the cost of information technology (IT) needed to design and implement the EE&C programs; the costs of customer outreach and program promotion; incremental labor costs incurred to manage and administer the EE&C programs on an ongoing basis; the cost to measure and verify EE&C program results; and the cost of incentives offered to customers to participate in the approved EE&C programs.

PECO Exhibit RAS-2 contains a summary of the projected expenditures for each of the Programs across these rate classes.

In accordance with the Final Phase IV Final Implementation Order, PECO is required to establish a cost recovery methodology for Phase IV that is designed to recover, on an annual basis, projected program costs that it anticipates will be incurred over each surcharge application year. In addition, PECO is required to reconcile actual expenses incurred with actual revenues received for the reconciliation period. For PY 13, the cost recovery rates are being calculated based on the projected total program expenditures allocated to each rate class for that program year plus the reconciliation amount for PY 2020 and any costs remaining from previous periods.¹³ To develop the recovery charge for each rate class for PY 13, the total expenditure for that class was divided by the appropriate projected class billing units for the period from June 1, 2021 through May 31, 2022. Subsequently, PECO will develop Phase IV recovery rates annually based on the projected program expenditures for that program year plus reconciliation amounts for previous periods. The charge that was calculated per billing unit for each rate class was grossed up to provide for recovery of Pennsylvania Gross Receipts Tax. This calculation produces a charge that, net of Pennsylvania Gross Receipts Tax, will recover the projected total expenditures over the recovery period.

The Phase IV Implementation Order also requires PECO to remove the SWE costs from the EE&C Phase IV budget in the same manner as was done in Phase III.¹⁴ PECO will, therefore, track the Phase IV SWE costs separately from its EE&C costs but will still recover such costs through its Phase IV EEPC.

The Phase IV SWE costs will be determined through an RFP bidding process. Until the final SWE costs are known, PECO has included an estimate.

PECO Exhibit RAS-3 contains the detailed calculations for the development of the EEPC charges for each class as well as the SWE costs, which are reflected as a separate line item.

7.5.2 True-Up

As noted above, PECO's Phase IV EEPC will be reconciled on an annual basis to account for any under- or over-recovery from the prior year. As the Phase IV Order specifies,¹⁵ PECO will reconcile its total actual recoverable EE&C Plan expenditures incurred through March 31, 2021, with its actual EE&C Plan revenues received through March 31, 2021. The net over- or under-recovery shall be reflected (without interest) as a separate line item of the E factor calculation of the Phase IV rates to become effective June 1, 2021. These rates will also include, as a separate line item, PECO's projection of its expenses related to Phase III program implementation incurred in April and May 2021, including projected expenses to finalize any measures installed and commercially operable on or before May 31, 2021; projected expenses to finalize any contracts; and other Phase III administrative obligations. The difference between PECO's projected and actual expenses and EEPC revenue for the months of April and May 2021 will be presented as clearly identified, separate line items in the reconciliation statement for the period April 1, 2021 through March 31, 2022.

¹³ EE&C Phase IV Final Implementation Order, p.142 and 143.

¹⁴ EE&C Phase IV Implementation Order, p. 123.

¹⁵ EE&C Phase IV Implementation Order, p. 143.

7.5.3 Cost Allocation and Recovery Period

PECO's cost recovery mechanism for its EE&C Plan is designed to ensure that measures are paid for by the same customer class(es) that receive the associated measures' EE&C benefits. This is accomplished by creating separate EE&C charges for the residential class, the Small C&I class, the Large C&I class, and the Municipal Lighting class that are based on only the cost of the measures that apply to each class.

See PECO Exhibits RAS-2 and RAS-3, which list the program costs by rate class and for the spreadsheet that shows how the EEPC was developed for each customer class according to the method just described.

PECO proposes to start the recovery period for Phase IV with bills sent to customers during July 2021 (June usage) and will continue through bills sent to customers in June 2026 (May usage).

7.6 Accounting for Phase IV Costs versus Prior Phase Costs

In accordance with the Phase IV Filing Template provided with the Commission's Secretarial Letter dated September 9, 2020 at Docket No. M-2020-3015228, PECO must provide a description of how it will account for Phase IV costs separately from costs incurred in prior phases.¹⁶ To satisfy this requirement, PECO will do the following:

- Account for the Phase IV costs and revenues on its books separately from prior phases, by setting up new general ledger accounts for Phase IV costs and revenues so that there will be no comingling of prior phase costs and Phase IV costs or funds in PECO's accounting records.
- Clearly and separately identify and track prior phase costs and revenues in the EEPC cost recovery and reconciliation mechanism so that Phase IV costs will be reconciled against the Phase IV funds collected. See the description of the cost recovery mechanism in the proposed supplement to PECO's Electric Service Tariff provided as PECO Exhibit RAS-1.

7.7 Proceeds from PJM FCM and Cost Recovery

Per the Phase IV Implementation Order, the revenue from PDR resources that are bid into and clear in the PJM FCM will be used to reduce EE&C Phase IV Plan surcharges and collections from the customer classes from which the savings were acquired. These will be clearly identified in the 66 Pa. § 1307(e) cost recovery reconciliation statement as cost reductions while any deficiency charges will be identified as cost increases. FCM proceeds or penalties will not be treated as "de facto" increases or reductions in the EE&C Phase IV budget and will not to be included in the 2% spending cap.¹⁷

¹⁶ EE&C Phase IV Filing Template Secretarial Letter, issued September 9, 2020.

¹⁷ EE&C Phase IV Implementation Order, pp.138,141,142.

8. Cost-Effectiveness

PECO evaluated its Phase IV program portfolio for cost-effectiveness. Overall, the portfolio is cost-effective over the 5-year Phase IV period. This section describes the cost-effectiveness criteria and analyses undertaken.

8.1 Avoided Costs

The following sections report on the avoided capacity and energy costs that were used to conduct the cost-effectiveness analysis. PECO developed data inputs to support the avoided cost analysis based on direction from the PUC in the TRC Order.

PECO used the SWE's Avoided Cost Calculator to develop avoided cost inputs as directed in the PUC TRC Order. The final PECO Avoided Cost Calculator is included in [Appendix E](#).

8.2 Confirm Use of 3% Real Discount Rate

PECO used a real discount of 3% for cost test modeling as directed in the PUC TRC Order.

8.3 Cost-Effectiveness Analysis Approach

The cost-effectiveness results reported in this plan adhere to the PUC specifications as defined in the 2021 TRC Order¹⁸ issued on December 19, 2019. PECO calculated the TRC result for each program and for the portfolio. Notable elements of the TRC Order applied here include the following:

- Measure life is constrained to a maximum of 15 years
- Gross and net energy and demand savings are used for benefit-cost purposes
- Quantifiable savings in fossil fuels, water consumption, and O&M benefits are included as benefits in the TRC calculation,¹⁹ in addition to energy and demand savings

At the measure level, the TRC test compares the lifetime benefits of each applicable measure (avoided cost times savings) with each measure's lifetime costs (incremental capital and installation costs and O&M costs). PECO calculates lifetime benefits by multiplying each measure's annual savings by the avoided cost for each year and discounting the dollar savings to present value equivalent basis. Measure savings, costs, and lifetimes are obtained as part of the measure characterization. At the program level, the TRC test factors in the measure level benefit-cost components, plus the CSP and PECO common and delivery costs. The TRC test at the portfolio level includes the costs and benefits at the measure and program level, plus the added portfolio-wide common costs. The total present value of benefits is divided by the total present value of costs. Where the ratio is greater than or equal to 1, the measure, program, or portfolio is deemed cost-effective.

¹⁸ [2021 TRC Test Final Order](#) - Final order on the TRC Test for Phase IV of Act 129. From the Public Meeting of December 19, 2019, at Docket No. [M-2019-3006868](#). Entered December 19, 2019.

¹⁹ 2021 Total Resource Cost (TRC) Test, Docket No. M-2019-3006868 (Public Meeting held December 19, 2019)

8.4 Data Tables

Table 13A contains data tables as required by the PUC's EE&C plan template.

Table 13. TRC Benefits Table

Gross Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
<i>Residential</i>	<i>PY13</i>	<i>1.00</i>	<i>1.11</i>	<i>\$6,553</i>	<i>\$12,611</i>	<i>\$7,897</i>	<i>\$27,061</i>	<i>\$7,179</i>	<i>\$14,104</i>	<i>\$7,549</i>	<i>\$1,102</i>	<i>\$29,934</i>
<i>Residential</i>	<i>PY14</i>	<i>1.00</i>	<i>1.14</i>	<i>\$6,767</i>	<i>\$13,105</i>	<i>\$8,056</i>	<i>\$27,927</i>	<i>\$7,534</i>	<i>\$15,137</i>	<i>\$8,033</i>	<i>\$1,143</i>	<i>\$31,847</i>
<i>Residential</i>	<i>PY15</i>	<i>1.00</i>	<i>1.18</i>	<i>\$6,991</i>	<i>\$13,624</i>	<i>\$8,222</i>	<i>\$28,837</i>	<i>\$7,921</i>	<i>\$16,309</i>	<i>\$8,547</i>	<i>\$1,186</i>	<i>\$33,963</i>
<i>Residential</i>	<i>PY16</i>	<i>1.00</i>	<i>1.22</i>	<i>\$7,227</i>	<i>\$14,169</i>	<i>\$8,397</i>	<i>\$29,792</i>	<i>\$8,331</i>	<i>\$17,602</i>	<i>\$9,120</i>	<i>\$1,232</i>	<i>\$36,285</i>
<i>Residential</i>	<i>PY17</i>	<i>1.00</i>	<i>1.26</i>	<i>\$7,474</i>	<i>\$14,741</i>	<i>\$8,581</i>	<i>\$30,796</i>	<i>\$8,767</i>	<i>\$19,022</i>	<i>\$9,708</i>	<i>\$1,280</i>	<i>\$38,777</i>
<i>Residential Total</i>		<i>1.00</i>	<i>1.18</i>	<i>\$31,731</i>	<i>\$61,816</i>	<i>\$37,339</i>	<i>\$130,886</i>	<i>\$35,949</i>	<i>\$74,168</i>	<i>\$38,816</i>	<i>\$5,383</i>	<i>\$154,317</i>
<i>Income-Eligible</i>	<i>PY13</i>	<i>1.00</i>	<i>1.03</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,375</i>	<i>\$4,802</i>	<i>\$688</i>	<i>\$662</i>	<i>\$8,527</i>
<i>Income-Eligible</i>	<i>PY14</i>	<i>1.00</i>	<i>1.05</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,420</i>	<i>\$4,965</i>	<i>\$699</i>	<i>\$662</i>	<i>\$8,746</i>
<i>Income-Eligible</i>	<i>PY15</i>	<i>1.00</i>	<i>1.09</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,468</i>	<i>\$5,155</i>	<i>\$708</i>	<i>\$662</i>	<i>\$8,994</i>
<i>Income-Eligible</i>	<i>PY16</i>	<i>1.00</i>	<i>1.12</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,518</i>	<i>\$5,363</i>	<i>\$731</i>	<i>\$662</i>	<i>\$9,274</i>
<i>Income-Eligible</i>	<i>PY17</i>	<i>1.00</i>	<i>1.15</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,568</i>	<i>\$5,586</i>	<i>\$741</i>	<i>\$662</i>	<i>\$9,557</i>
<i>Income-Eligible Total</i>		<i>1.00</i>	<i>1.09</i>	<i>\$25,709</i>	<i>\$0</i>	<i>\$11,975</i>	<i>\$37,684</i>	<i>\$11,207</i>	<i>\$23,435</i>	<i>\$3,237</i>	<i>\$3,009</i>	<i>\$40,887</i>
<i>Non-residential</i>	<i>PY13</i>	<i>1.00</i>	<i>1.12</i>	<i>\$27,323</i>	<i>\$38,377</i>	<i>\$12,270</i>	<i>\$77,970</i>	<i>\$28,818</i>	<i>\$57,651</i>	<i>-\$3,271</i>	<i>\$4,485</i>	<i>\$87,684</i>
<i>Non-residential</i>	<i>PY14</i>	<i>1.00</i>	<i>1.20</i>	<i>\$36,472</i>	<i>\$51,359</i>	<i>\$12,759</i>	<i>\$100,590</i>	<i>\$39,236</i>	<i>\$79,663</i>	<i>-\$4,508</i>	<i>\$5,980</i>	<i>\$120,372</i>
<i>Non-residential</i>	<i>PY15</i>	<i>1.00</i>	<i>1.24</i>	<i>\$45,594</i>	<i>\$64,169</i>	<i>\$15,725</i>	<i>\$125,488</i>	<i>\$50,012</i>	<i>\$103,400</i>	<i>-\$5,866</i>	<i>\$7,476</i>	<i>\$155,022</i>
<i>Non-residential</i>	<i>PY16</i>	<i>1.00</i>	<i>1.28</i>	<i>\$45,594</i>	<i>\$64,169</i>	<i>\$15,725</i>	<i>\$125,488</i>	<i>\$51,012</i>	<i>\$107,458</i>	<i>-\$5,793</i>	<i>\$7,476</i>	<i>\$160,153</i>
<i>Non-residential</i>	<i>PY17</i>	<i>1.00</i>	<i>1.31</i>	<i>\$27,323</i>	<i>\$38,377</i>	<i>\$9,783</i>	<i>\$75,484</i>	<i>\$31,149</i>	<i>\$66,975</i>	<i>-\$3,633</i>	<i>\$4,485</i>	<i>\$98,977</i>
<i>Non-residential Total</i>		<i>1.00</i>	<i>1.23</i>	<i>\$165,278</i>	<i>\$232,498</i>	<i>\$60,317</i>	<i>\$458,093</i>	<i>\$181,241</i>	<i>\$375,235</i>	<i>-\$20,878</i>	<i>\$27,110</i>	<i>\$562,708</i>
<i>Residential Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>1.07</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,850</i>	<i>\$1,850</i>	<i>\$1,165</i>	<i>\$804</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,970</i>
<i>Residential Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>2.12</i>	<i>\$0</i>	<i>\$0</i>	<i>\$2,188</i>	<i>\$2,188</i>	<i>\$2,751</i>	<i>\$1,885</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,636</i>
<i>Residential Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>2.16</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,912</i>	<i>\$1,912</i>	<i>\$2,452</i>	<i>\$1,680</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,132</i>
<i>Residential Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>2.21</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,893</i>	<i>\$1,893</i>	<i>\$2,476</i>	<i>\$1,709</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,185</i>
<i>Residential Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>2.28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,845</i>	<i>\$1,845</i>	<i>\$2,462</i>	<i>\$1,737</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,198</i>
<i>Residential Home Energy Reports Total</i>		<i>1.00</i>	<i>1.95</i>	<i>\$0</i>	<i>\$0</i>	<i>\$8,822</i>	<i>\$8,822</i>	<i>\$10,174</i>	<i>\$7,028</i>	<i>\$0</i>	<i>\$0</i>	<i>\$17,202</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>0.60</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$48</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>1.52</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$80</i>	<i>\$105</i>	<i>\$0</i>	<i>\$0</i>	<i>\$184</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>0.61</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$50</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>1.58</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$83</i>	<i>\$110</i>	<i>\$0</i>	<i>\$0</i>	<i>\$193</i>
<i>Income-Eligible Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>1.64</i>	<i>\$0</i>	<i>\$0</i>	<i>\$89</i>	<i>\$89</i>	<i>\$62</i>	<i>\$84</i>	<i>\$0</i>	<i>\$0</i>	<i>\$145</i>
<i>Income-Eligible Home Energy Reports Total</i>		<i>1.00</i>	<i>1.24</i>	<i>\$0</i>	<i>\$0</i>	<i>\$448</i>	<i>\$448</i>	<i>\$238</i>	<i>\$316</i>	<i>\$0</i>	<i>\$0</i>	<i>\$555</i>
Total²		1.00	1.22	\$222,718	\$294,314	\$118,900	\$635,932	\$238,810	\$480,183	\$21,175	\$35,502	\$775,669

Notes:
¹ The TRC ratio will reflect the lifetime TRC, not an annual TRC ratio.
² Total TRC ratio for programs does not include common costs. See Figure 5 for portfolio total TRC analysis.



An Exelon Company

Net Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential	PY13	0.68	0.97	\$6,553	\$6,478	\$7,897	\$20,928	\$4,882	\$9,591	\$5,133	\$749	\$20,355
Residential	PY14	0.68	1.00	\$6,767	\$6,746	\$8,056	\$21,568	\$5,123	\$10,293	\$5,462	\$777	\$21,656
Residential	PY15	0.68	1.04	\$6,991	\$7,027	\$8,222	\$22,240	\$5,386	\$11,090	\$5,812	\$807	\$23,095
Residential	PY16	0.68	1.08	\$7,227	\$7,322	\$8,397	\$22,946	\$5,665	\$11,969	\$6,202	\$838	\$24,674
Residential	PY17	0.68	1.11	\$7,474	\$7,632	\$8,581	\$23,687	\$5,962	\$12,935	\$6,601	\$870	\$26,368
Residential Total		0.68	1.04	\$31,731	\$31,881	\$37,339	\$100,951	\$24,445	\$50,435	\$26,395	\$3,661	\$104,935
Income-Eligible	PY13	1.00	1.03	\$5,652	\$0	\$2,634	\$8,287	\$2,375	\$4,802	\$688	\$662	\$8,527
Income-Eligible	PY14	1.00	1.05	\$5,660	\$0	\$2,634	\$8,294	\$2,420	\$4,965	\$699	\$662	\$8,746
Income-Eligible	PY15	1.00	1.09	\$5,652	\$0	\$2,634	\$8,287	\$2,468	\$5,155	\$708	\$662	\$8,994
Income-Eligible	PY16	1.00	1.12	\$5,660	\$0	\$2,634	\$8,294	\$2,518	\$5,363	\$731	\$662	\$9,274
Income-Eligible	PY17	1.00	1.15	\$5,652	\$0	\$2,634	\$8,287	\$2,568	\$5,586	\$741	\$662	\$9,557
Income-Eligible Total		1.00	1.09	\$25,709	\$0	\$11,975	\$37,684	\$11,207	\$23,435	\$3,237	\$3,009	\$40,887
Non-residential	PY13	0.76	1.07	\$27,323	\$22,609	\$12,270	\$62,202	\$21,902	\$43,815	-\$2,486	\$3,409	\$66,640
Non-residential	PY14	0.76	1.15	\$36,472	\$30,280	\$12,759	\$79,511	\$29,820	\$60,544	-\$3,426	\$4,545	\$91,483
Non-residential	PY15	0.76	1.19	\$45,594	\$37,826	\$15,725	\$99,145	\$38,009	\$78,584	-\$4,458	\$5,682	\$117,817
Non-residential	PY16	0.76	1.23	\$45,594	\$37,826	\$15,725	\$99,145	\$38,769	\$81,668	-\$4,403	\$5,682	\$121,716
Non-residential	PY17	0.76	1.26	\$27,323	\$22,609	\$9,783	\$59,716	\$23,673	\$50,901	-\$2,761	\$3,409	\$75,223
Non-residential Total		0.76	1.18	\$165,278	\$137,032	\$60,317	\$362,627	\$137,743	\$285,179	-\$15,867	\$20,603	\$427,658
Residential Home Energy Reports	PY13	1.00	1.07	\$0	\$0	\$1,850	\$1,850	\$1,165	\$804	\$0	\$0	\$1,970
Residential Home Energy Reports	PY14	1.00	2.12	\$0	\$0	\$2,188	\$2,188	\$2,751	\$1,885	\$0	\$0	\$4,636
Residential Home Energy Reports	PY15	1.00	2.16	\$0	\$0	\$1,912	\$1,912	\$2,452	\$1,680	\$0	\$0	\$4,132
Residential Home Energy Reports	PY16	1.00	2.21	\$0	\$0	\$1,893	\$1,893	\$2,476	\$1,709	\$0	\$0	\$4,185
Residential Home Energy Reports	PY17	1.00	2.28	\$0	\$0	\$1,845	\$1,845	\$2,462	\$1,737	\$0	\$0	\$4,198
Residential Home Energy Reports Total		1.00	1.95	\$0	\$0	\$8,822	\$8,822	\$10,174	\$7,028	\$0	\$0	\$17,202
Income-Eligible Home Energy Reports	PY13	1.00	0.60	\$0	\$0	\$81	\$81	\$21	\$28	\$0	\$0	\$48
Income-Eligible Home Energy Reports	PY14	1.00	1.52	\$0	\$0	\$122	\$122	\$80	\$105	\$0	\$0	\$184
Income-Eligible Home Energy Reports	PY15	1.00	0.61	\$0	\$0	\$81	\$81	\$21	\$28	\$0	\$0	\$50
Income-Eligible Home Energy Reports	PY16	1.00	1.58	\$0	\$0	\$122	\$122	\$83	\$110	\$0	\$0	\$193
Income-Eligible Home Energy Reports	PY17	1.00	1.64	\$0	\$0	\$89	\$89	\$62	\$84	\$0	\$0	\$145
Income-Eligible Home Energy Reports Total		1.00	1.24	\$0	\$0	\$448	\$448	\$238	\$316	\$0	\$0	\$555
Total²		0.76	1.16	\$222,718	\$168,913	\$118,900	\$510,531	\$183,808	\$366,392	\$13,764	\$27,273	\$591,238

Notes:
¹ The TRC ratio will reflect the lifetime TRC, not an annual TRC ratio.
² Total TRC ratio for programs does not include common costs. See Figure 5 for portfolio total TRC analysis.

9. Plan Compliance Information and Other Key Issues

This section contains miscellaneous compliance items required in legislation and addresses key issues in EE&C plan, portfolio, and program design.

9.1 Plan Compliance Issues

9.1.1 *Description of Plan*

As Section 3 of this document details, PECO's EE&C plan provides energy efficiency programs to each of its customer classes, including two specific programs for income-eligible households.²⁰ PECO's programs are equitably provided across its customer classes consistent with the PUC's Implementation Order.

9.1.2 *Statement Delineating the EE&C Plan*

PECO's plan (Section 3), is projected to achieve at least 1,380,837 MWh and 256 MW by the end of Phase IV. The Phase's total energy and demand savings will be calculated as the sum of the five implementation years' first year measure savings, per the Final Implementation Order.

The EE&C plan is projected to achieve Phase IV's energy and demand savings requirements through the use of a broad array of financial incentives. These incentives will be provided to PECO's customers through CSPs, installation companies, and trade allies (e.g., HVAC contractors and retail stores).

9.1.3 *Low-Income Requirements*

PECO's plan will meet the low-income requirements by building upon its Income-Eligible programs in Phase III. The Final Implementation Order highlights the importance of collaboration between LIURP and Act 129 for all utilities. The prime CSP for the Residential Program will continue its existing partnerships with the LIURP, Philadelphia Gas Works, and Philadelphia Water Department. To meet the required demand reduction targets, PECO envisions a much higher participation level of electrically heated homes in Phase IV. The plan includes free energy checkups with no cost install measures and free electric heat assessments with no cost measures. PECO's plan is designed to exceed the minimum requirement that 80,089 MWh come from the two dedicated Income-Eligible programs and the income-eligible portion of multifamily through the Residential program.²¹

9.1.4 *Spending on Experimental Equipment or Devices Limited to 2%*

Technology is constantly changing. Given the 5-year length of Phase IV, it is impossible to predict with 100% accuracy all the viable equipment and devices that may come to market. New

²⁰ Consistent with Act 129, PECO's income-eligible household definition is households at or below 150% of the Federal poverty income guidelines. See 66 Pa.C.S. 2806.1(b)(1)(i)(B).

²¹ See PECO's discussion in Sections 3 and 4 of this document for a detailed description of its EE&C programs and its implementation strategy.

implementation offerings are developed in the industry every year, some of which may be viable for PECO's customers. The plan reserves some funds under R&D (within the "Other" budget category) to enable inclusion of viable technologies or implementation strategies that may come to market during the phase. Spending on experimental equipment or devices will be limited to no more than 2% of the budget per the Final Implementation Order. The remaining R&D funds may be used for adding approaches or nonexperimental measures to the plan as appropriate.

9.1.5 Competitively Neutral to All Electric Distribution Customers

PECO's energy efficiency program suite will be available to all PECO customers, regardless of whether they receive generation supply from PECO as a default service provider or from an EGS.

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

PECO's EE&C plan was developed to meet or exceed the requirements of Act 129 and the Final Implementation Order. In developing the Phase IV EE&C Plan, PECO combined its own experience implementing programs in Phases I, II, and III with lessons learned from utility demand side management programs in other jurisdictions around the country and worked with CSPs to design the programs. The proposed plan includes a variety of proven programs and components effective across all customer classes. PECO believes that providing programs along with comprehensive education will lead to long-term sustainability through ongoing customer participation.

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

PECO's website provides information and web links on a variety of third-party resources, such as the Database of State Incentives for Renewables & Efficiency, Federal Housing Administration and Veterans Administration Energy Efficient Mortgage programs, and state and federal tax incentives for efficiency improvements and renewable energy projects.

9.2.3 Describe How the EDC Will Address Customer Education for Its Programs

To educate customers on energy efficiency, PECO will conduct outreach to schools, work with community partners, speak with groups, staff tables at events, and reach diverse communities. It also will send emails to customers, distribute program materials, and canvas neighborhoods. PECO has strong relationships with numerous community organizations who, through annual sponsorships and other partner specific programs, help spread word to their constituents about energy efficiency.

9.2.4 Indicate How the EDC Will Provide a List of All Eligible Federal and State Funding Programs Available to Ratepayers for Energy Efficiency and Conservation

PECO includes information regarding all known federal and state funding programs available to ratepayers on its company website. PECO will continue to provide this information via the website in Phase IV.

9.2.5 Describe How the EDC Will Provide the Public with Information About the Results from the Programs

PECO will periodically issue press releases to inform the public of the progress of its EE&C plan and refer the public to where reports about PECO's Act 129 results are posted on the PUC's website. PECO will only provide information to the public after the SWE completes its review and approves PECO's annual reports.

Appendix A. CSP Contracts

PECO has bid out most CSP contracts. See Section 4.3.3 for a list of pending RFPs to be issued for additional CSPs. Each winning CSP resulting in a signed contract will be filed with the PUC as required. No CSP contract will be effective until it is approved by the PUC.

Appendix B. Program by Program Savings, Costs, and TRC Results

Table 10 Sector-Specific Summary of EE&C Costs

Residential Portfolio (including Low-Income)							
EE&C Program ²	Cost Elements (\$) ³			Total Cost	Expected Acquisition Cost ⁴ (\$/MWh)	Levelized Cost ⁵ (\$/MWh)	Expected Acquisition Cost (\$/MW)
	Incentives	CSP Delivery Fees	Marketing				
<i>Residential</i>	\$33,432,441	\$26,001,775	\$12,387,520	\$71,821,736	\$338	\$39	\$2,181,633
<i>Income-Eligible</i>	\$28,277,119	\$8,373,881	\$4,801,845	\$41,452,845	\$452	\$58	\$3,097,864
<i>Residential Home Energy Reports</i>	\$0	\$9,688,416	\$0	\$9,688,416	\$86	\$26	\$220,429
<i>Income-Eligible Home Energy Reports</i>	\$0	\$493,124	\$0	\$493,124	\$86	\$30	\$422,808
Sector Total	\$61,709,560	\$44,557,197	\$17,189,365	\$123,456,122	\$292	\$42	\$1,350,413
Notes:							
¹ Prepare and submit a separate table for <i>each</i> customer sector.							
² List each EE&C program by name. Add rows as necessary.							
³ List all cost elements for each program that can be directly identified as relating exclusively to the specific customer sector addressed in this table. Any cost elements that are applicable to multiple sectors, or are common across all sectors, are to be listed in Table 11 (relating to Common Costs). Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.							
⁴ The numerator in the acquisition cost calculation is the full EDC cost, free of any allocation. Acquisition costs are first-year.							
⁵ Levelized costs should be lifetime. Appendix A of the 2021 TRC Test Order provides formulas to calculate levelized cost. See 2021 TRC Test Final Order, at Docket No. M-2019-3006868, entered December 19, 2019. http://www.puc.pa.gov/pdocs/1648126.docx							



An Exelon Company

Commercial/Industrial Small Portfolio							
EE&C Program ²	Cost Elements (\$) ³			Total Cost	Expected Acquisition Cost ⁴ (\$/MWh)	Levelized Cost ⁵ (\$/MWh)	Expected Acquisition Cost (\$/MW)
	Incentives	CSP Delivery Fees	Marketing				
<i>Non-residential</i>	\$81,502,080	\$23,315,422	\$1,706,818	\$106,524,320	\$242	\$28	\$1,325,441
<i>Residential (Commercailly metered MF buildings)</i>	\$1,126,266	\$1,326,194	\$632,761	\$3,085,220	\$276	\$34	\$2,332,262
Sector Total	\$82,628,346	\$24,641,616	\$2,339,579	\$109,609,541	\$243	\$28	\$1,341,744
Notes:							
¹ Prepare and submit a separate table for <i>each</i> customer sector.							
² List each EE&C program by name. Add rows as necessary.							
³ List all cost elements for each program that can be directly identified as relating exclusively to the specific customer sector addressed in this table. Any cost elements that are applicable to multiple sectors, or are common across all sectors, are to be listed in Table 11 (relating to Common Costs). Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.							
⁴ The numerator in the acquisition cost calculation is the full EDC cost, free of any allocation. Acquisition costs are first-year.							
⁵ Levelized costs should be lifetime. Appendix A of the 2021 TRC Test Order provides formulas to calculate levelized cost. See 2021 TRC Test Final Order, at Docket No. M-2019-3006868, entered December 19, 2019. http://www.puc.pa.gov/pdocs/1648126.docx							



An Exelon Company

Commercial/Industrial Large Portfolio							
EE&C Program ²	Cost Elements (\$) ³			Total Cost	Expected Acquisition Cost ⁴ (\$/MWh)	Levelized Cost ⁵ (\$/MWh)	Expected Acquisition Cost (\$/MW)
	Incentives	CSP Delivery Fees	Marketing				
<i>Non-residential</i>	\$100,804,475	\$38,426,562	\$2,813,182	\$142,044,219	\$196	\$21	\$928,572
<i>Residential (Commercailly metered MF buildings)</i>	\$453,625	\$540,474	\$257,874	\$1,251,973	\$275	\$34	\$2,281,953
Sector Total	\$101,258,100	\$38,967,036	\$3,071,056	\$143,296,192	\$196	\$21	\$933,408
Notes:							
¹ Prepare and submit a separate table for <i>each</i> customer sector.							
² List each EE&C program by name. Add rows as necessary.							
³ List all cost elements for each program that can be directly identified as relating exclusively to the specific customer sector addressed in this table. Any cost elements that are applicable to multiple sectors, or are common across all sectors, are to be listed in Table 11 (relating to Common Costs). Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.							
⁴ The numerator in the acquisition cost calculation is the full EDC cost, free of any allocation. Acquisition costs are first-year.							
⁵ Levelized costs should be lifetime. Appendix A of the 2021 TRC Test Order provides formulas to calculate levelized cost. See 2021 TRC Test Final Order, at Docket No. M-2019-3006868, entered December 19, 2019. http://www.puc.pa.gov/pcdocs/1648126.docx							

Table 11 Allocation of Common Costs to Applicable Customer Sector

Common Cost Element ¹	Total Cost (\$)	Basis for Cost Allocation ²	Sector Cost Allocation (\$)		
			Residential (Including Low-Income)	Commercial/Industrial -- Small (Including Municipal Lighting)	Commercial/Industrial -- Large (Including Municipal Lighting)
Program Design	\$2,500,000	1st-Year MWh	\$657,938	\$703,769	\$1,138,293
Administrative	\$15,000,000	1st-Year MWh	\$3,947,628	\$4,222,616	\$6,829,757
EM&V	\$20,000,000	1st-Year MWh	\$5,263,503	\$5,630,154	\$9,106,342
Other (See Section 4.2.3)	\$13,523,976	1st-Year MWh	\$3,559,175	\$3,807,103	\$6,157,698
Totals	\$51,023,976		\$13,428,243	\$14,363,643	\$23,232,089
Notes:					
¹ List all identified cost elements that are determined to be applicable to multiple customer sectors, or are common across all sectors. Because cost elements may vary for each EDC and program, the EDC should designate cost elements at its discretion, and the Commission will review and evaluate the prudence and reasonableness of all costs shown.					
² Provide a brief explanation of the methodology used to allocate each common cost element to the applicable customer sectors.					

Table 12. Summary of Portfolio EE&C Costs

Portfolio	Total Sector Portfolio-specific Costs ¹	Total Common Costs ²	Total of All Costs
Residential (Including Low-Income)	\$123,456,122	\$13,428,243	\$136,884,365
Commercial/Industrial -- Small (Including Municipal Lighting)	\$109,609,541	\$14,363,643	\$123,973,183
Commercial/Industrial -- Large (Including Municipal Lighting)	\$143,296,192	\$23,232,089	\$166,528,281
Totals	\$376,361,854	\$51,023,976	\$427,385,830
Notes:			
¹ Cost figures are to be carried over from the last column ("Totals") of Table 10.			
² Cost figures are to be carried over from the bottom row ("Totals") of Table 11.			



An Exelon Company

Table 13 TRC Benefits Table by Year

Gross Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)					
	Program	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
					Paid by EDC	Paid by Participants							
<i>Residential</i>	<i>PY13</i>	<i>1.00</i>	<i>1.11</i>	<i>\$6,553</i>	<i>\$12,611</i>	<i>\$7,897</i>	<i>\$27,061</i>	<i>\$7,179</i>	<i>\$14,104</i>	<i>\$7,549</i>	<i>\$1,102</i>	<i>\$29,934</i>	
<i>Residential</i>	<i>PY14</i>	<i>1.00</i>	<i>1.14</i>	<i>\$6,767</i>	<i>\$13,105</i>	<i>\$8,056</i>	<i>\$27,927</i>	<i>\$7,534</i>	<i>\$15,137</i>	<i>\$8,033</i>	<i>\$1,143</i>	<i>\$31,847</i>	
<i>Residential</i>	<i>PY15</i>	<i>1.00</i>	<i>1.18</i>	<i>\$6,991</i>	<i>\$13,624</i>	<i>\$8,222</i>	<i>\$28,837</i>	<i>\$7,921</i>	<i>\$16,309</i>	<i>\$8,547</i>	<i>\$1,186</i>	<i>\$33,963</i>	
<i>Residential</i>	<i>PY16</i>	<i>1.00</i>	<i>1.22</i>	<i>\$7,227</i>	<i>\$14,169</i>	<i>\$8,397</i>	<i>\$29,792</i>	<i>\$8,331</i>	<i>\$17,602</i>	<i>\$9,120</i>	<i>\$1,232</i>	<i>\$36,285</i>	
<i>Residential</i>	<i>PY17</i>	<i>1.00</i>	<i>1.26</i>	<i>\$7,474</i>	<i>\$14,741</i>	<i>\$8,581</i>	<i>\$30,796</i>	<i>\$8,767</i>	<i>\$19,022</i>	<i>\$9,708</i>	<i>\$1,280</i>	<i>\$38,777</i>	
<i>Residential Total</i>		<i>1.00</i>	<i>1.18</i>	<i>\$31,731</i>	<i>\$61,816</i>	<i>\$37,339</i>	<i>\$130,886</i>	<i>\$35,949</i>	<i>\$74,168</i>	<i>\$38,816</i>	<i>\$5,383</i>	<i>\$154,317</i>	
<i>Income-Eligible</i>	<i>PY13</i>	<i>1.00</i>	<i>1.03</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,375</i>	<i>\$4,802</i>	<i>\$688</i>	<i>\$662</i>	<i>\$8,527</i>	
<i>Income-Eligible</i>	<i>PY14</i>	<i>1.00</i>	<i>1.05</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,420</i>	<i>\$4,965</i>	<i>\$699</i>	<i>\$662</i>	<i>\$8,746</i>	
<i>Income-Eligible</i>	<i>PY15</i>	<i>1.00</i>	<i>1.09</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,468</i>	<i>\$5,155</i>	<i>\$708</i>	<i>\$662</i>	<i>\$8,994</i>	
<i>Income-Eligible</i>	<i>PY16</i>	<i>1.00</i>	<i>1.12</i>	<i>\$5,660</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,294</i>	<i>\$2,518</i>	<i>\$5,363</i>	<i>\$731</i>	<i>\$662</i>	<i>\$9,274</i>	
<i>Income-Eligible</i>	<i>PY17</i>	<i>1.00</i>	<i>1.15</i>	<i>\$5,652</i>	<i>\$0</i>	<i>\$2,634</i>	<i>\$8,287</i>	<i>\$2,568</i>	<i>\$5,586</i>	<i>\$741</i>	<i>\$662</i>	<i>\$9,557</i>	
<i>Income-Eligible Total</i>		<i>1.00</i>	<i>1.09</i>	<i>\$25,709</i>	<i>\$0</i>	<i>\$11,975</i>	<i>\$37,684</i>	<i>\$11,207</i>	<i>\$23,435</i>	<i>\$3,237</i>	<i>\$3,009</i>	<i>\$40,887</i>	
<i>Non-residential</i>	<i>PY13</i>	<i>1.00</i>	<i>1.12</i>	<i>\$27,323</i>	<i>\$38,377</i>	<i>\$12,270</i>	<i>\$77,970</i>	<i>\$28,818</i>	<i>\$57,651</i>	<i>-\$3,271</i>	<i>\$4,485</i>	<i>\$87,684</i>	
<i>Non-residential</i>	<i>PY14</i>	<i>1.00</i>	<i>1.20</i>	<i>\$36,472</i>	<i>\$51,359</i>	<i>\$12,759</i>	<i>\$100,590</i>	<i>\$39,236</i>	<i>\$79,663</i>	<i>-\$4,508</i>	<i>\$5,980</i>	<i>\$120,372</i>	
<i>Non-residential</i>	<i>PY15</i>	<i>1.00</i>	<i>1.24</i>	<i>\$45,594</i>	<i>\$64,169</i>	<i>\$15,725</i>	<i>\$125,488</i>	<i>\$50,012</i>	<i>\$103,400</i>	<i>-\$5,866</i>	<i>\$7,476</i>	<i>\$155,022</i>	
<i>Non-residential</i>	<i>PY16</i>	<i>1.00</i>	<i>1.28</i>	<i>\$45,594</i>	<i>\$64,169</i>	<i>\$15,725</i>	<i>\$125,488</i>	<i>\$51,012</i>	<i>\$107,458</i>	<i>-\$5,793</i>	<i>\$7,476</i>	<i>\$160,153</i>	
<i>Non-residential</i>	<i>PY17</i>	<i>1.00</i>	<i>1.31</i>	<i>\$27,323</i>	<i>\$38,377</i>	<i>\$9,783</i>	<i>\$75,484</i>	<i>\$31,149</i>	<i>\$66,975</i>	<i>-\$3,633</i>	<i>\$4,485</i>	<i>\$98,977</i>	
<i>Non-residential Total</i>		<i>1.00</i>	<i>1.23</i>	<i>\$165,278</i>	<i>\$232,498</i>	<i>\$60,317</i>	<i>\$458,093</i>	<i>\$181,241</i>	<i>\$375,235</i>	<i>-\$20,878</i>	<i>\$27,110</i>	<i>\$562,708</i>	
<i>Residential Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>1.07</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,850</i>	<i>\$1,850</i>	<i>\$1,165</i>	<i>\$804</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,970</i>	
<i>Residential Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>2.12</i>	<i>\$0</i>	<i>\$0</i>	<i>\$2,188</i>	<i>\$2,188</i>	<i>\$2,751</i>	<i>\$1,885</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,636</i>	
<i>Residential Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>2.16</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,912</i>	<i>\$1,912</i>	<i>\$2,452</i>	<i>\$1,680</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,132</i>	
<i>Residential Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>2.21</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,893</i>	<i>\$1,893</i>	<i>\$2,476</i>	<i>\$1,709</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,185</i>	
<i>Residential Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>2.28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$1,845</i>	<i>\$1,845</i>	<i>\$2,462</i>	<i>\$1,737</i>	<i>\$0</i>	<i>\$0</i>	<i>\$4,198</i>	
<i>Residential Home Energy Reports Total</i>		<i>1.00</i>	<i>1.95</i>	<i>\$0</i>	<i>\$0</i>	<i>\$8,822</i>	<i>\$8,822</i>	<i>\$10,174</i>	<i>\$7,028</i>	<i>\$0</i>	<i>\$0</i>	<i>\$17,202</i>	
<i>Income-Eligible Home Energy Reports</i>	<i>PY13</i>	<i>1.00</i>	<i>0.60</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$48</i>	
<i>Income-Eligible Home Energy Reports</i>	<i>PY14</i>	<i>1.00</i>	<i>1.52</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$80</i>	<i>\$105</i>	<i>\$0</i>	<i>\$0</i>	<i>\$184</i>	
<i>Income-Eligible Home Energy Reports</i>	<i>PY15</i>	<i>1.00</i>	<i>0.61</i>	<i>\$0</i>	<i>\$0</i>	<i>\$81</i>	<i>\$81</i>	<i>\$21</i>	<i>\$28</i>	<i>\$0</i>	<i>\$0</i>	<i>\$50</i>	
<i>Income-Eligible Home Energy Reports</i>	<i>PY16</i>	<i>1.00</i>	<i>1.58</i>	<i>\$0</i>	<i>\$0</i>	<i>\$122</i>	<i>\$122</i>	<i>\$83</i>	<i>\$110</i>	<i>\$0</i>	<i>\$0</i>	<i>\$193</i>	
<i>Income-Eligible Home Energy Reports</i>	<i>PY17</i>	<i>1.00</i>	<i>1.64</i>	<i>\$0</i>	<i>\$0</i>	<i>\$89</i>	<i>\$89</i>	<i>\$62</i>	<i>\$84</i>	<i>\$0</i>	<i>\$0</i>	<i>\$145</i>	
<i>Income-Eligible Home Energy Reports Total</i>		<i>1.00</i>	<i>1.24</i>	<i>\$0</i>	<i>\$0</i>	<i>\$448</i>	<i>\$448</i>	<i>\$238</i>	<i>\$316</i>	<i>\$0</i>	<i>\$0</i>	<i>\$555</i>	
Total²		1.00	1.22	\$222,718	\$294,314	\$118,900	\$635,932	\$238,810	\$480,183	\$21,175	\$35,502	\$775,669	

Notes:

¹ The TRC ratio will reflect the lifetime TRC, not an annual TRC ratio.

² Total TRC ratio for programs does not include common costs. See Figure 5 for portfolio total TRC analysis.



An Exelon Company

Net Portfolio	NTGR & TRC Ratio			TRC Costs By Program Per Year (\$000)				TRC Benefits By Program Per Year (\$000)				
	Program Year	NTGR	TRC ¹	Incremental Measure Cost		Program Administration Cost	Total TRC Costs	Capacity Benefits	Energy Benefits	Fossil Fuel and Water Benefits	O&M Benefits	Total TRC Benefits
				Paid by EDC	Paid by Participants							
Residential	PY13	0.68	0.97	\$6,553	\$6,478	\$7,897	\$20,928	\$4,882	\$9,591	\$5,133	\$749	\$20,355
Residential	PY14	0.68	1.00	\$6,767	\$6,746	\$8,056	\$21,568	\$5,123	\$10,293	\$5,462	\$777	\$21,656
Residential	PY15	0.68	1.04	\$6,991	\$7,027	\$8,222	\$22,240	\$5,386	\$11,090	\$5,812	\$807	\$23,095
Residential	PY16	0.68	1.08	\$7,227	\$7,322	\$8,397	\$22,946	\$5,665	\$11,969	\$6,202	\$838	\$24,674
Residential	PY17	0.68	1.11	\$7,474	\$7,632	\$8,581	\$23,687	\$5,962	\$12,935	\$6,601	\$870	\$26,368
Residential Total		0.68	1.04	\$31,731	\$31,881	\$37,339	\$100,951	\$24,445	\$50,435	\$26,395	\$3,661	\$104,935
Income-Eligible	PY13	1.00	1.03	\$5,652	\$0	\$2,634	\$8,287	\$2,375	\$4,802	\$688	\$662	\$8,527
Income-Eligible	PY14	1.00	1.05	\$5,660	\$0	\$2,634	\$8,294	\$2,420	\$4,965	\$699	\$662	\$8,746
Income-Eligible	PY15	1.00	1.09	\$5,652	\$0	\$2,634	\$8,287	\$2,468	\$5,155	\$708	\$662	\$8,994
Income-Eligible	PY16	1.00	1.12	\$5,660	\$0	\$2,634	\$8,294	\$2,518	\$5,363	\$731	\$662	\$9,274
Income-Eligible	PY17	1.00	1.15	\$5,652	\$0	\$2,634	\$8,287	\$2,568	\$5,586	\$741	\$662	\$9,557
Income-Eligible Total		1.00	1.09	\$25,709	\$0	\$11,975	\$37,684	\$11,207	\$23,435	\$3,237	\$3,009	\$40,887
Non-residential	PY13	0.76	1.07	\$27,323	\$22,609	\$12,270	\$62,202	\$21,902	\$43,815	-\$2,486	\$3,409	\$66,640
Non-residential	PY14	0.76	1.15	\$36,472	\$30,280	\$12,759	\$79,511	\$29,820	\$60,544	-\$3,426	\$4,545	\$91,483
Non-residential	PY15	0.76	1.19	\$45,594	\$37,826	\$15,725	\$99,145	\$38,009	\$78,584	-\$4,458	\$5,682	\$117,817
Non-residential	PY16	0.76	1.23	\$45,594	\$37,826	\$15,725	\$99,145	\$38,769	\$81,668	-\$4,403	\$5,682	\$121,716
Non-residential	PY17	0.76	1.26	\$27,323	\$22,609	\$9,783	\$59,716	\$23,673	\$50,901	-\$2,761	\$3,409	\$75,223
Non-residential Total		0.76	1.18	\$165,278	\$137,032	\$60,317	\$362,627	\$137,743	\$285,179	-\$15,867	\$20,603	\$427,658
Residential Home Energy Reports	PY13	1.00	1.07	\$0	\$0	\$1,850	\$1,850	\$1,165	\$804	\$0	\$0	\$1,970
Residential Home Energy Reports	PY14	1.00	2.12	\$0	\$0	\$2,188	\$2,188	\$2,751	\$1,885	\$0	\$0	\$4,636
Residential Home Energy Reports	PY15	1.00	2.16	\$0	\$0	\$1,912	\$1,912	\$2,452	\$1,680	\$0	\$0	\$4,132
Residential Home Energy Reports	PY16	1.00	2.21	\$0	\$0	\$1,893	\$1,893	\$2,476	\$1,709	\$0	\$0	\$4,185
Residential Home Energy Reports	PY17	1.00	2.28	\$0	\$0	\$1,845	\$1,845	\$2,462	\$1,737	\$0	\$0	\$4,198
Residential Home Energy Reports Total		1.00	1.95	\$0	\$0	\$8,822	\$8,822	\$10,174	\$7,028	\$0	\$0	\$17,202
Income-Eligible Home Energy Reports	PY13	1.00	0.60	\$0	\$0	\$81	\$81	\$21	\$28	\$0	\$0	\$48
Income-Eligible Home Energy Reports	PY14	1.00	1.52	\$0	\$0	\$122	\$122	\$80	\$105	\$0	\$0	\$184
Income-Eligible Home Energy Reports	PY15	1.00	0.61	\$0	\$0	\$81	\$81	\$21	\$28	\$0	\$0	\$50
Income-Eligible Home Energy Reports	PY16	1.00	1.58	\$0	\$0	\$122	\$122	\$83	\$110	\$0	\$0	\$193
Income-Eligible Home Energy Reports	PY17	1.00	1.64	\$0	\$0	\$89	\$89	\$62	\$84	\$0	\$0	\$145
Income-Eligible Home Energy Reports Total		1.00	1.24	\$0	\$0	\$448	\$448	\$238	\$316	\$0	\$0	\$555
Total²		0.76	1.16	\$222,718	\$168,913	\$118,900	\$510,531	\$183,808	\$366,392	\$13,764	\$27,273	\$591,238

Notes:
¹ The TRC ratio will reflect the lifetime TRC, not an annual TRC ratio.
² Total TRC ratio for programs does not include common costs. See Figure 5 for portfolio total TRC analysis.

Appendix C. Calculation Methods and Assumptions

Total Resource Cost Test Calculation Methods

Benefit-cost analysis of PECO's portfolio of energy efficiency programs was conducted through the use of a comprehensive benefit-cost screening tool. The tool utilizes the most recent savings values and inputs from the Pennsylvania TRM when available, supplemented by inputs gathered from other Technical Reference Manuals and industry literature as necessary for those measures that are not in the Pennsylvania TRM. The tool uses inputs at the individual measure level (electric savings, incremental cost, participation levels, avoided costs, and energy costs) to calculate measure level savings and cost-effectiveness. The savings at the measure level are subtotaled for each program and sector and finally for the utility as a whole. At the program and sector level the model also calculates program level cost-effectiveness, program incentive and non-incentive costs, total program costs, and cost of conserved energy. The outputs are compared against target savings goals, spending caps, and cost-effectiveness limits.

The TRC test was the primary test used to analyze the cost-effectiveness of PECO's energy efficiency portfolio. The TRC test measures the total net resource expenditures of an energy efficiency program from the point of view of the utility and its customers. Resource costs include changes in supply and participant costs. A program that passes this test (i.e., a ratio greater than 1) is viewed as beneficial to the utility and its customers because the savings in electric costs outweigh the costs incurred by the utility and its customers. Of particular note, per the PA PUC guidelines, measure lifetime is capped at 15 years, and non-electric benefits are included in the savings calculations (e.g. complementary natural gas savings from an electric efficiency measure). The following section outlines Guidehouse's methodology for conducting the cost-effectiveness analysis including an explanation of inputs and assumptions.

Incremental Measure Costs

Estimates of incremental measure costs were developed using the Pennsylvania TRM and a number of secondary sources including, Database for Energy Efficient Resources, Mid-Atlantic TRM, Efficiency Vermont TRM, other measure databases for other utilities and municipalities and databases of emerging technologies. Additionally, expert judgement from PECO's implementation contractors was used to refine saving and cost estimates where appropriate, such as for direct install measures where actual costs may be used.

Incentive Costs

Incentive amounts for each measure were initially determined using industry standard benchmarks of portion of incremental measure cost covered by the incentive, typically in the range of 20%-50%, but at times up to 100%. These initial estimates were further refined based on careful consideration of the market for each measure or set of measures.

Utility Administrative Costs

Program administrative non-incentive costs were estimated for each program. Initial estimates were developed using industry standard benchmarks of admin costs per kWh saved and per incentive. These initial estimates were refined through discussion with implementation

contractors, incorporating considerations of each programs' unique market conditions. Common costs such as EM&V, technical support, and tracking system costs were estimated for each program portfolio using industry standard benchmarks, supplemented by past experience.

Measure Level Total Resource Cost Test Calculation

= Measure Level TRC Benefits / Measure Level TRC Costs

Where:

Measure Level TRC Benefits

= -PV (Discount Rate, Measure Life, (AVCOS Demand * Coincident Demand Savings * LLF) + [(Summer-On kWh Savings * Summer-On kWh AVCOS) + (Summer-Off kWh Savings * Summer-Off kWh AVCOS) + (Winter-On kWh Savings * Winter-On kWh AVCOS) + (Winter-Off kWh Savings * Winter-Off kWh AVCOS)* LLF] + (Natural Gas Savings * Natural Gas AVCOS *LLF) + (Water Savings * Water AVCOS) + O&M Savings) * NTG

Where:

PV = Present value Discount Rate

Measure Life = variable (15 year max)

LLF = Line Loss Factor

O&M = Operation and Maintenance

Measure Level TRC Cost

= Incremental Measure Cost * NTG

Program Level Total Resource Cost Test Calculation

= Program Level TRC Benefits / Program Level TRC Costs

Where:

Program Level TRC Benefits = sum (Measure Level TRC Benefits)

Program Level TRC Costs = sum (Measure Level TRC Costs) + Program Admin Costs

Where:

Program Admin Costs = Sum of Annual Program Costs

Including:

- Program Delivery Costs
- Program Marketing Costs

Portfolio Level Total Resource Cost Test Calculation

= Portfolio Level TRC Benefits / Portfolio Level TRC Costs

Where:

Portfolio Level TRC Benefit = sum (Program Level TRC Benefits)

Portfolio Level TRC Costs = sum (Program Level TRC Costs) + Common Costs

Where:

Common Cost:

- General Ed & Awareness
- Utility Administration
- Technical Support
- EM&V
- Contingency

Appendix D. Glossary of Terms and Definitions

ACT 129: House Bill 2200 signed into law by Governor Rendell which created an Energy Efficiency and Conservation program requiring utilities with at least 100,000 customers to reduce their electric consumption and demand in their service territories.

Achievable Potential: The amount of energy consumption that efficiency can realistically be expected to displace assuming the most aggressive program scenario possible (such as providing end-users with payments for the entire incremental cost of more efficient equipment). This is often referred to as maximum achievable potential. Achievable potential takes into account real-world barriers to convincing end-users to adopt efficiency measures, the non-measure costs of delivering programs (for administration, marketing, tracking systems, monitoring and evaluation, etc.), and the capability of programs and administrators to ramp up program activity over time.

Applicability Factor: The fraction of the applicable dwelling units that are technically feasible for conversion to the efficient technology from an engineering perspective (e.g., it may not be possible to install CFL bulbs in all light sockets in a home because the CFL bulbs may not fit in every socket in a home).

Annual Report: The Annual report includes all activity associated with energy efficiency and demand response energy reduction programs for a given year and is filed no later than October 30th, following the last day of a full program year.

Base Case Equipment End-Use Intensity: The electricity used per customer per year by each base-case technology in each market segment. This is the consumption of the electric energy using equipment that the efficient technology replaces or affects. For example, purposes only, if the efficient measure were a high efficiency lamp (CFL), the base end-use intensity would be the annual kWh use per bulb per household associated with an incandescent light bulb that provides equivalent lumens to the CFL.

Base Case Factor: The fraction of the end-use electric energy that is applicable for the efficient technology in a given market segment. For example, for residential lighting, this would be the fraction of all residential electric customers that have electric lighting in their household.

Baseline: Condition that would have occurred without implementation of the subject project or program.

Common Costs: Overhead costs shared by all programs associated with plan implementation such as IT, legal, mass marketing, etc.

Coincidence Factor: The fraction of connected load expected to be “on” and using electricity coincident with the system peak period.

Cost-Effectiveness: A measure of the relevant economic effects resulting from the implementation of an energy efficiency measure. If the present value of lifetime benefits outweighs the present value of lifetime costs, the measure is said to be cost-effective.

Cumulative Annual: Refers to the overall savings occurring in a given year from both new participants and savings continuing to result from past participation with measures that are still in place. Cumulative annual does not always equal the sum of all prior year incremental values as some measures have relatively short measure lives and, as a result, their savings drop off over time.

Conservation Service Provider (CSP): Is an entity that provides services to PECO on behalf of its Energy Efficiency and Conservation Plan and will have an overall responsibility for the implementation of the contracted programs.

Demand Response: The ability to provide peak load capacity through demand management (load control) programs. This methodology focuses on curtailment of loads during peak demand times thus avoiding the requirement to find new sources of generation capacity.

Deemed Savings: An estimate of an energy savings or energy-demand savings outcome (gross savings) for a single unit of an installed energy efficiency measure

Early Replacement: Refers to an efficiency measure or efficiency program that seeks to encourage the replacement of functional equipment before the end of its operating life with higher-efficiency units

Economic Potential: The subset of the technical potential screen that is economically cost-effective as compared to conventional supply-side energy resources. Both technical and economic potential screens are theoretical numbers that assume immediate implementation of efficiency measures, with no regard for the gradual “ramping up” process of real-life programs. In addition, they ignore market barriers to ensuring actual implementation of efficiency. Finally, they only consider the costs of efficiency measures themselves, ignoring any programmatic costs (such as marketing, analysis, administration) that would be necessary to capture them.

End-Use: A category of equipment or service that consumes energy (e.g., lighting, refrigeration, heating, process heat).

Evaluation Measurement & Verification Contractor: Qualified energy efficiency program evaluation entity that provides evaluation services to PECO’s Energy Efficiency and Conservation Plan.

Energy Efficiency & Conservation Plan: A collection of similar programs addressing the same market, technology, or mechanisms; or the set of all programs conducted by one organization.

Energy Efficiency: Using less energy to provide the same or an improved level of service to the energy consumer in an economically efficient way. Sometimes “conservation” is used as a synonym, but that term is usually taken to mean using less of a resource even if this results in a lower service level (e.g., setting a thermostat lower or reducing lighting levels). This recognizes that energy efficiency includes using less energy at any time, including at times of peak demand through demand response and peak shaving efforts.

Eligible Measures: Types of measures that qualify for program incentives and include a summary of efficiency specifications (e.g., ENERGY STAR qualified products).

ENERGY STAR: A minimum standard for high quality and efficiency measures such as lighting and equipment.

Free Driver: Individuals or businesses that adopt an energy efficient product or service because of an EE/DR program but are difficult to identify either because they do not receive an incentive or are not aware of exposure to the program.

Free Rider: Participants in an EE/PDR program who would have adopted an EE/PDR technology or improvement in the absence of a program of financial incentive.

Incremental: Savings or costs in a given year associated only with new installations happening in year.

Impact Evaluation: Is the estimation of effects from the implementation of one or more EE/PDR programs. Most program impact projections contain ex-ante estimates of savings. These estimates are what the program is expected to save as a result of its implementation efforts and are often used for program planning and contracting purposes and for prioritizing program funding choices. In contrast, the impact evaluation focuses on identifying and estimating the amount of energy and demand the program actually provides.

Implementation Strategy: Activities involved in program delivery education and training. Some programs primarily work downstream at the customer level, where others involve upstream partnerships with trade allies.

Incentives: Rebates offered to program participants, CSPs and trade allies to deliver the program.

Incremental Costs: Non-incentive costs that are associated with delivering savings

Lost-Opportunity: Refers to an efficiency measure or efficiency program that seeks to encourage the selection of higher-efficiency equipment or building practices than would typically be chosen at the time of a purchase or design decision.

Load Shapes: Energy forecasting in effort to understand how more efficient products like air conditioning and lighting can help control overall and peak demand.

Market Transformation: An approach in which a program attempts to influence “upstream” service and equipment provider market channels and what they offer end customers, along with educating and informing end customers directly. The emphasis is on influencing market channels and key market factors other than end customers.

Marketing Strategy: Identifies the way a program will be marketed to customers; via a trade ally outreach component targeting retailers/contractors/home builders.

Measure: Any action taken to increase efficiency, whether through changes in equipment, control strategies, or behavior. Examples are higher-efficiency central air conditioners, occupancy sensor control of lighting, and retro-commissioning. In some cases, bundles of technologies or practices may be modeled as single measures. For example, an ENERGY STAR™ home package may be treated as a single measure.

Measure Life: The number of years (or hours) that the new energy efficient equipment is expected to function. Measure life is also commonly referred to as useful life.

Megawatt (MW): A unit of electrical output, equal to one million watts or one thousand kilowatts. It is typically used to refer to the output of a power plant.

Megawatt-hour (MWh): One thousand kilowatt-hours, or one million watt-hours. One MWh is equal to the use of 1,000,000 watts of power in one hour.

Net-to-gross (NTG) Ratio: A factor representing net program savings divided by gross program savings that is applied to gross program impacts to convert them into net program load impacts

Non-Incentive Costs: Administrative costs associated with program delivery and overhead.

Quarterly Report: Reports that capture program activity for the quarter and are filed 45 days after the close of each quarter.

Peak Demand Reduction: Reductions in peak electricity demand due to the installation of equipment or behavior changes. The peak demand period for Act 129 programs is non-holiday weekdays June through September from 2:00 p.m. to 6:00 p.m. Eastern Daylight Time.

Portfolio: A combination of programs among all customer classes targeted for energy efficiency and Demand reduction plans by a utility.

Process Evaluation: Is a systematic assessment of an EE/PDR program for the purposes of documenting program operations at the time of the examination and identifying improvements that can be made to increase the program's efficiency or effectiveness for acquiring energy resources.

Program: A mechanism for encouraging EE/DR. May be funded by a variety of sources and pursued by a wide range of approaches. Typically includes multiple measures.

Program Year: Defined as a year commencing June 1 of the named year and concluding on May 31st of the following year. For example, Program Year 2016 commences on June 1, 2016 and concludes on May 31, 2017.

Program Potential: The efficiency potential possible given specific program funding levels and designs. Often, program potential studies are referred to as "achievable" in contrast to "maximum achievable."

Program Budget: Annual budget and allocations for major budget categories (e.g., incentives, administration, marketing, delivery, evaluation).

Persistence: Is the measure still in place; are the savings persisting/continuing.

Remaining Factor: The fraction of applicable units that have not yet been converted to the electric EE/PDR measure; that is, one minus the fraction of units that already have the EE/PDR measure installed.

Realization Rate: Ratio of evaluated to forecasted savings.

Resource Acquisition: An approach in which end customers are the primary target of program offerings (e.g., using rebates to influence customers' purchases of end-use equipment).

Retrofit: Refers to an efficiency measure or efficiency program that seeks to encourage the replacement of functional equipment before the end of its operating life with higher-efficiency units (also called "early retirement") or the installation of additional controls, equipment, or materials in existing facilities for purposes of reducing energy consumption (e.g., increased insulation, low flow devices, lighting occupancy controls, economizer ventilation systems).

Recovery Mechanism: Recovering Act 129 costs via ratepayer surcharges.

Savings Factor: The percentage reduction in electricity consumption resulting from application of the efficient technology used in the formulas for technical potential screens.

Statewide Evaluator: A state appointed evaluation agency that performs measurement and verification analysis of cost-effectiveness on the work done by and with the contracted EM&V provider on behalf of the utility as well as develops measurement and evaluation protocol.

Spillover: Types of actions participants and non-participants have taken on their own.

Target Market: Types of customers the program is looking to reach. The target market can be defined broadly (e.g., residential/C&I) or narrowly (e.g., single family homes at least 20 years old) depending on the scope of the program.

Technical Potential: The theoretical maximum amount of energy use that could be displaced by efficiency, disregarding all non-engineering constraints such as cost-effectiveness and the willingness of end-users to adopt the efficiency measures. It is often estimated as a "snapshot" in time assuming immediate implementation of all technologically feasible energy saving measures, with additional efficiency opportunities assumed as they arise from activities such as new construction.

Technical Reference Manual (TRM): Standards used to measure and verify applicable Demand Side Management/Energy Efficiency measures used by the utility to meet the ACT 129 consumption and peak demand reduction targets.

Total Resource Test (TRC): Is the cost-effectiveness test defined by the PUC in order to evaluate the effectiveness of all programs that are part of PECO's Energy Efficiency and Conservation Plan.

Trade Ally: Any third-party who promotes the sale of and/or installs qualifying high-efficiency equipment for the customer is considered a trade ally. Participating trade allies include equipment contractors, equipment trade allies, equipment manufacturers and distributors, energy service companies, and engineering or architectural firms.

Tracking System: Is defined as a database system that tracks a number of items that facilitate effective project tracking and regulatory reporting. The data also supports PECO's Quality Assurance process as well as EM&V requirements as part of the EE&C Plan.

Utility Cost Test: Compares the utility costs and benefits of energy efficiency.

Appendix E. Avoided Cost Calculator

PECO created the avoided costs on September 30, 2020 after gathering publicly available data sets as inputs to support the avoided cost analysis. PECO followed direction from the PUC in the TRC Order. We have organized the information according to the tabs in the PUC’s Excel avoided cost calculator.

General Instructions

Pennsylvania Act 129 IV Avoided Energy and Capacity Cost Calculator
<p>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.</p> <p>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.</p> <p>This calculator includes the costs of compliance with the Pennsylvania Alternative Energy Portfolio Standard (AEPS) within the avoided energy cost calculations.</p>

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.
--------------------------------	---

General Inputs

General			Calendar				
Company Name	PECO		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

Outputs

PA ACT 129 Program Year	Year	PECO Zone Summer On-Peak (\$/MWh)	PECO Zone Summer Off-Peak (\$/MWh)	PECO Zone Winter On-Peak (\$/MWh)	PECO Zone Winter Off-Peak (\$/MWh)	PECO Zone Shoulder On-Peak (\$/MWh)	PECO 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	\$28.79	\$20.49	\$38.37	\$30.71	\$28.39	\$22.37	\$60.70	\$4.00	\$44.30	\$2.72	Segment 1
14	2023	\$28.53	\$20.90	\$37.89	\$31.33	\$27.93	\$22.81	\$60.73	\$4.08	\$45.19	\$2.57	
15	2024	\$29.10	\$21.32	\$38.64	\$31.95	\$28.49	\$23.27	\$61.94	\$4.16	\$46.09	\$2.56	
16	2025	\$29.69	\$21.74	\$39.42	\$32.59	\$29.06	\$23.74	\$63.18	\$4.24	\$47.01	\$2.59	
17	2026	\$29.95	\$21.66	\$39.64	\$32.46	\$29.06	\$23.48	\$64.44	\$4.33	\$47.95	\$2.75	
18	2027	\$31.87	\$23.00	\$43.09	\$34.93	\$31.25	\$25.05	\$65.73	\$4.42	\$48.91	\$2.96	Segment 2
19	2028	\$33.91	\$24.42	\$46.85	\$37.61	\$33.57	\$26.71	\$67.05	\$4.50	\$49.89	\$3.18	
20	2029	\$35.78	\$25.72	\$50.17	\$39.99	\$35.65	\$28.21	\$68.39	\$4.59	\$50.89	\$3.39	
21	2030	\$37.46	\$26.90	\$53.11	\$42.12	\$37.56	\$29.59	\$69.76	\$4.69	\$51.90	\$3.57	
22	2031	\$39.33	\$28.21	\$56.52	\$44.57	\$39.64	\$31.09	\$71.15	\$4.78	\$52.94	\$3.77	
23	2032	\$41.78	\$29.91	\$61.25	\$47.92	\$42.41	\$33.06	\$72.57	\$4.88	\$54.00	\$4.05	Segment 3
24	2033	\$43.36	\$31.02	\$64.09	\$49.99	\$44.14	\$34.33	\$74.03	\$4.97	\$55.08	\$4.22	
25	2034	\$44.85	\$32.06	\$66.70	\$51.89	\$45.75	\$35.51	\$75.51	\$5.07	\$56.18	\$4.38	
26	2035	\$45.20	\$32.33	\$66.86	\$52.13	\$46.02	\$35.79	\$77.02	\$5.17	\$57.31	\$4.40	
27	2036	\$45.65	\$32.67	\$67.23	\$52.51	\$46.41	\$36.14	\$78.56	\$5.28	\$58.45	\$4.44	
28	2037	\$46.83	\$33.50	\$69.15	\$53.95	\$47.65	\$37.08	\$80.13	\$5.38	\$59.62	\$4.56	Segment 3
29	2038	\$47.87	\$34.24	\$70.75	\$55.18	\$48.72	\$37.90	\$81.73	\$5.49	\$60.81	\$4.66	
30	2039	\$48.69	\$34.83	\$71.87	\$56.08	\$49.54	\$38.55	\$83.37	\$5.60	\$62.03	\$4.74	
31	2040	\$49.83	\$35.64	\$73.67	\$57.45	\$50.73	\$39.45	\$85.03	\$5.71	\$63.27	\$4.85	
32	2041	\$51.00	\$36.47	\$75.51	\$58.85	\$51.94	\$40.38	\$86.73	\$5.83	\$64.54	\$4.97	

Elec Futures

Prices as of 9/30/20 (NYMEX, provided by Ventyx Velocity Suite).
 Prices as of 9/30/20 (NYMEX, provided by Ventyx Velocity Suite).

Record Field	Period	Month	Year	NYMEX: PJM Western Hub On-peak (\$/MWh)	NYMEX: PJM Western Hub Off-peak (\$/MWh)	PECO Zone Adjusted On-Peak (\$/MWh)	PECO Zone Adjusted Off-Peak (\$/MWh)
1	Jan-21	Jan	2021	\$44.03	\$34.35	\$42.07	\$32.82
2	Feb-21	Feb	2021	\$41.15	\$32.15	\$39.32	\$30.72
3	Mar-21	Mar	2021	\$34.35	\$27.11	\$32.82	\$25.90
4	Apr-21	Apr	2021	\$30.30	\$22.89	\$28.95	\$21.87
5	May-21	May	2021	\$30.58	\$21.73	\$29.22	\$20.76
6	Jun-21	Jun	2021	\$29.55	\$20.40	\$28.24	\$19.49
7	Jul-21	Jul	2021	\$34.36	\$22.51	\$32.83	\$21.51
8	Aug-21	Aug	2021	\$31.82	\$21.21	\$30.40	\$20.27
9	Sep-21	Sep	2021	\$30.79	\$21.25	\$29.42	\$20.30
10	Oct-21	Oct	2021	\$30.10	\$22.52	\$28.76	\$21.52
11	Nov-21	Nov	2021	\$30.85	\$22.52	\$29.48	\$21.52
12	Dec-21	Dec	2021	\$33.09	\$26.06	\$31.62	\$24.90
13	Jan-22	Jan	2022	\$45.00	\$35.72	\$43.00	\$34.13
14	Feb-22	Feb	2022	\$42.00	\$32.98	\$40.13	\$31.51
15	Mar-22	Mar	2022	\$31.71	\$26.54	\$30.30	\$25.36
16	Apr-22	Apr	2022	\$27.65	\$21.36	\$26.42	\$20.41
17	May-22	May	2022	\$27.25	\$20.07	\$26.04	\$19.18
18	Jun-22	Jun	2022	\$27.20	\$20.02	\$25.99	\$19.13
19	Jul-22	Jul	2022	\$32.75	\$22.56	\$31.29	\$21.56
20	Aug-22	Aug	2022	\$30.15	\$20.64	\$28.81	\$19.72
21	Sep-22	Sep	2022	\$28.94	\$19.57	\$27.65	\$18.70
22	Oct-22	Oct	2022	\$27.95	\$20.72	\$26.71	\$19.80
23	Nov-22	Nov	2022	\$28.05	\$21.52	\$26.80	\$20.56
24	Dec-22	Dec	2022	\$30.85	\$25.11	\$29.48	\$23.99
25	Jan-23	Jan	2023	\$44.35		\$42.38	\$34.81
26	Feb-23	Feb	2023	\$41.60		\$39.75	\$32.14
27	Mar-23	Mar	2023	\$31.33		\$29.94	\$25.87
28	Apr-23	Apr	2023	\$27.49		\$26.27	\$20.82
29	May-23	May	2023	\$27.44		\$26.22	\$19.56
30	Jun-23	Jun	2023	\$26.79		\$25.60	\$19.51
31	Jul-23	Jul	2023	\$32.37		\$30.93	\$21.99
32	Aug-23	Aug	2023	\$29.63		\$28.31	\$20.12
33	Sep-23	Sep	2023	\$28.63		\$27.36	\$19.07
34	Oct-23	Oct	2023	\$27.14		\$25.93	\$20.19
35	Nov-23	Nov	2023	\$27.39		\$26.17	\$20.97
36	Dec-23	Dec	2023	\$30.33		\$28.98	\$24.47
37	Jan-24	Jan	2024			\$43.22	\$35.51
38	Feb-24	Feb	2024			\$40.54	\$32.79
39	Mar-24	Mar	2024			\$30.53	\$26.38
40	Apr-24	Apr	2024			\$26.79	\$21.23
41	May-24	May	2024			\$26.74	\$19.95
42	Jun-24	Jun	2024			\$26.11	\$19.90
43	Jul-24	Jul	2024			\$31.55	\$22.43
44	Aug-24	Aug	2024			\$28.88	\$20.52
45	Sep-24	Sep	2024			\$27.90	\$19.45
46	Oct-24	Oct	2024			\$26.45	\$20.60
47	Nov-24	Nov	2024			\$26.69	\$21.39
48	Dec-24	Dec	2024			\$29.56	\$24.96
49	Jan-25	Jan	2025			\$44.09	\$36.22
50	Feb-25	Feb	2025			\$41.35	\$33.44
51	Mar-25	Mar	2025			\$31.15	\$26.91
52	Apr-25	Apr	2025			\$27.33	\$21.66
53	May-25	May	2025			\$27.28	\$20.35
54	Jun-25	Jun	2025			\$26.63	\$20.30
55	Jul-25	Jul	2025			\$32.18	\$22.88
56	Aug-25	Aug	2025			\$29.46	\$20.93
57	Sep-25	Sep	2025			\$28.46	\$19.84
58	Oct-25	Oct	2025			\$26.98	\$21.01
59	Nov-25	Nov	2025			\$27.23	\$21.82
60	Dec-25	Dec	2025			\$30.15	\$25.46

End of Segment I

Real-Time, Load-Weighted LMPs (\$/MWH) [see footnote, as the reported Western Hub price is not load-weighted]

	Western Hub	PECO Zone	Basis Factor
2018	\$36.95	\$36.36	98%
2019	\$26.70	\$24.75	93%
Average			96%
Source: State of the Market Report for PJM			

2018 should be used, per 10/5/20 email from Patrick Burns. Source: 2019 PJM State of the Market Report (https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2019/2019-som-pjm-volume2.pdf).

2019 should be used, per 10/5/20 email from Patrick Burns. Source: 2019 PJM State of the Market Report (https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2019/2019-som-pjm-volume2.pdf).

Footnote: As stated in the 2019 PJM State of the Market Report, load-weighted hub prices are no longer reported: "The real-time components of LMP are the simple average of the hourly components for each hub. Some hubs include only generation buses and do not include load buses. The real-time components of LMP were previously reported as the real-time load-weighted average of the hourly components of LMP." Per a 10/9/20 call with Patrick Burns, for this iteration of the ACC, we can use the ratio of the reported load-weighted PECO Zone price to the reported simple average Western Hub price. It is recognized that this is apples-to-oranges, and this can be addressed in the next iteration of the ACC.

NG Futures

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
2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
\$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
\$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

Source: https://www.eia.gov/outlooks/aeo/supplement/excel/suptab_3.2.xlsx

Prices as of 9/30/20 (NYMEX, provided by Ventyx Velocity Suite).

Record Field	Period	Month	Year	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: PECO Natural Gas Price \$/MMBTU	EIA AEO Gas Prices	PECO Natural Gas Price (\$/MMBTU)
1	Jan-21	Jan	2021	\$3.27	\$5.13	\$0.00	\$5.13
2	Feb-21	Feb	2021	\$3.22	\$4.97	\$0.00	\$4.97
3	Mar-21	Mar	2021	\$3.10	\$3.19	\$0.00	\$3.19
4	Apr-21	Apr	2021	\$2.79	\$2.61	\$0.00	\$2.61
5	May-21	May	2021	\$2.75	\$2.33	\$0.00	\$2.33
6	Jun-21	Jun	2021	\$2.77	\$2.38	\$0.00	\$2.38
7	Jul-21	Jul	2021	\$2.81	\$2.46	\$0.00	\$2.46
8	Aug-21	Aug	2021	\$2.82	\$2.47	\$0.00	\$2.47
9	Sep-21	Sep	2021	\$2.80	\$2.21	\$0.00	\$2.21
10	Oct-21	Oct	2021	\$2.83	\$2.32	\$0.00	\$2.32
11	Nov-21	Nov	2021	\$2.89	\$2.67	\$0.00	\$2.67
12	Dec-21	Dec	2021	\$3.03	\$3.44	\$0.00	\$3.44
13	Jan-22	Jan	2022	\$3.13	\$4.99	\$5.43	\$4.99
14	Feb-22	Feb	2022	\$3.08	\$4.83	\$5.25	\$4.83
15	Mar-22	Mar	2022	\$2.90	\$2.99	\$3.20	\$2.99
16	Apr-22	Apr	2022	\$2.46	\$2.28	\$2.46	\$2.28
17	May-22	May	2022	\$2.40	\$1.98	\$2.14	\$1.98
18	Jun-22	Jun	2022	\$2.42	\$2.03	\$2.20	\$2.03
19	Jul-22	Jul	2022	\$2.45	\$2.11	\$2.29	\$2.11
20	Aug-22	Aug	2022	\$2.46	\$2.11	\$2.30	\$2.11
21	Sep-22	Sep	2022	\$2.45	\$1.85	\$2.01	\$1.85
22	Oct-22	Oct	2022	\$2.47	\$1.95	\$2.12	\$1.95
23	Nov-22	Nov	2022	\$2.55	\$2.33	\$2.55	\$2.33
24	Dec-22	Dec	2022	\$2.73	\$3.14	\$3.47	\$3.14
25	Jan-23	Jan	2023	\$2.85	\$4.75	\$5.57	\$4.75
26	Feb-23	Feb	2023	\$2.81	\$4.59	\$5.39	\$4.59
27	Mar-23	Mar	2023	\$2.65	\$2.74	\$3.28	\$2.74
28	Apr-23	Apr	2023	\$2.32	\$2.14	\$2.52	\$2.14
29	May-23	May	2023	\$2.28	\$1.86	\$2.19	\$1.86
30	Jun-23	Jun	2023	\$2.32	\$1.92	\$2.26	\$1.92
31	Jul-23	Jul	2023	\$2.35	\$2.00	\$2.35	\$2.00
32	Aug-23	Aug	2023	\$2.36	\$2.00	\$2.35	\$2.00
33	Sep-23	Sep	2023	\$2.35	\$1.74	\$2.06	\$1.74
34	Oct-23	Oct	2023	\$2.37	\$1.85	\$2.18	\$1.85
35	Nov-23	Nov	2023	\$2.46	\$2.24	\$2.61	\$2.24
36	Dec-23	Dec	2023	\$2.66	\$3.08	\$3.56	\$3.08
37	Jan-24	Jan	2024	\$2.79	\$4.72	\$5.91	\$4.72
38	Feb-24	Feb	2024	\$2.75	\$4.57	\$5.72	\$4.57
39	Mar-24	Mar	2024	\$2.60	\$2.69	\$3.48	\$2.69
40	Apr-24	Apr	2024	\$2.30	\$2.11	\$2.68	\$2.11
41	May-24	May	2024	\$2.27	\$1.84	\$2.33	\$1.84
42	Jun-24	Jun	2024	\$2.31	\$1.90	\$2.40	\$1.90
43	Jul-24	Jul	2024	\$2.35	\$1.99	\$2.49	\$1.99
44	Aug-24	Aug	2024	\$2.36	\$2.00	\$2.50	\$2.00
45	Sep-24	Sep	2024	\$2.36	\$1.74	\$2.18	\$1.74
46	Oct-24	Oct	2024	\$2.39	\$1.86	\$2.31	\$1.86
47	Nov-24	Nov	2024	\$2.48	\$2.25	\$2.77	\$2.25
48	Dec-24	Dec	2024	\$2.68	\$3.11	\$3.78	\$3.11
49	Jan-25	Jan	2025	\$2.81	\$4.79	\$6.42	\$4.79
50	Feb-25	Feb	2025	\$2.78	\$4.63	\$6.21	\$4.63

Prices as of 9/30/20 (NYMEX, provided by Ventyx Velocity Suite).

Record Field	Period	Month	Year	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: PECO Natural Gas Price \$/MMBTU	EIA AEO Gas Prices	PECO Natural Gas Price (\$/MMBTU)
51	Mar-25	Mar	2025	\$2.64	\$2.73	\$3.78	\$2.73
52	Apr-25	Apr	2025	\$2.33	\$2.14	\$2.91	\$2.14
53	May-25	May	2025	\$2.31	\$1.87	\$2.53	\$1.87
54	Jun-25	Jun	2025	\$2.34	\$1.93	\$2.60	\$1.93
55	Jul-25	Jul	2025	\$2.38	\$2.01	\$2.71	\$2.01
56	Aug-25	Aug	2025	\$2.39	\$2.02	\$2.71	\$2.02
57	Sep-25	Sep	2025	\$2.38	\$1.75	\$2.37	\$1.75
58	Oct-25	Oct	2025	\$2.41	\$1.86	\$2.51	\$1.86
59	Nov-25	Nov	2025	\$2.49	\$2.26	\$3.01	\$2.26
60	Dec-25	Dec	2025	\$2.68	\$3.12	\$4.10	\$3.12
61	Jan-26	Jan	2026	\$2.81	\$4.82	\$6.65	\$5.08
62	Feb-26	Feb	2026	\$2.77	\$4.66	\$6.43	\$4.92
63	Mar-26	Mar	2026	\$2.64	\$2.74	\$3.91	\$2.90
64	Apr-26	Apr	2026	\$2.34	\$2.14	\$3.02	\$2.27
65	May-26	May	2026	\$2.32	\$1.87	\$2.62	\$1.98
66	Jun-26	Jun	2026	\$2.36	\$1.93	\$2.70	\$2.04
67	Jul-26	Jul	2026	\$2.39	\$2.02	\$2.80	\$2.13
68	Aug-26	Aug	2026	\$2.39	\$2.02	\$2.81	\$2.13
69	Sep-26	Sep	2026	\$2.39	\$1.75	\$2.46	\$1.85
70	Oct-26	Oct	2026	\$2.41	\$1.85	\$2.60	\$1.96
71	Nov-26	Nov	2026	\$2.49	\$2.26	\$3.12	\$2.38
72	Dec-26	Dec	2026	\$2.70	\$3.14	\$4.25	\$3.30
73	Jan-27	Jan	2027	\$2.82	\$4.87	\$6.92	\$5.46
74	Feb-27	Feb	2027	\$2.78	\$4.71	\$6.70	\$5.28
75	Mar-27	Mar	2027	\$2.66	\$2.76	\$4.08	\$3.13
76	Apr-27	Apr	2027	\$2.36	\$2.16	\$3.14	\$2.44
77	May-27	May	2027	\$2.35	\$1.89	\$2.73	\$2.13
78	Jun-27	Jun	2027	\$2.39	\$1.96	\$2.81	\$2.20
79	Jul-27	Jul	2027	\$2.42	\$2.04	\$2.92	\$2.29
80	Aug-27	Aug	2027	\$2.43	\$2.05	\$2.93	\$2.30
81	Sep-27	Sep	2027	\$2.43	\$1.78	\$2.56	\$2.00
82	Oct-27	Oct	2027	\$2.47	\$1.90	\$2.71	\$2.13
83	Nov-27	Nov	2027	\$2.55	\$2.31	\$3.25	\$2.58
84	Dec-27	Dec	2027	\$2.73	\$3.18	\$4.43	\$3.54
85	Jan-28	Jan	2028	\$2.86	\$4.95	\$7.09	\$5.86
86	Feb-28	Feb	2028	\$2.82	\$4.78	\$6.86	\$5.67
87	Mar-28	Mar	2028	\$2.70	\$2.79	\$4.17	\$3.38
88	Apr-28	Apr	2028	\$2.40	\$2.19	\$3.21	\$2.63
89	May-28	May	2028	\$2.38	\$1.92	\$2.79	\$2.29
90	Jun-28	Jun	2028	\$2.42	\$1.98	\$2.87	\$2.37
91	Jul-28	Jul	2028	\$2.47	\$2.08	\$2.99	\$2.47
92	Aug-28	Aug	2028	\$2.48	\$2.09	\$3.00	\$2.48
93	Sep-28	Sep	2028	\$2.49	\$1.83	\$2.62	\$2.17
94	Oct-28	Oct	2028	\$2.53	\$1.95	\$2.77	\$2.30
95	Nov-28	Nov	2028	\$2.61	\$2.37	\$3.32	\$2.78
96	Dec-28	Dec	2028	\$2.79	\$3.26	\$4.53	\$3.80
97	Jan-29	Jan	2029	\$2.92	\$5.05	\$7.12	\$6.23
98	Feb-29	Feb	2029	\$2.88	\$4.89	\$6.89	\$6.03
99	Mar-29	Mar	2029	\$2.77	\$2.87	\$4.19	\$3.63
100	Apr-29	Apr	2029	\$2.47	\$2.26	\$3.23	\$2.81
101	May-29	May	2029	\$2.45	\$1.97	\$2.81	\$2.45
102	Jun-29	Jun	2029	\$2.49	\$2.04	\$2.89	\$2.52
103	Jul-29	Jul	2029	\$2.53	\$2.13	\$3.00	\$2.63
104	Aug-29	Aug	2029	\$2.54	\$2.14	\$3.01	\$2.64
105	Sep-29	Sep	2029	\$2.54	\$1.86	\$2.63	\$2.30
106	Oct-29	Oct	2029	\$2.58	\$1.99	\$2.78	\$2.44
107	Nov-29	Nov	2029	\$2.66	\$2.41	\$3.34	\$2.94
108	Dec-29	Dec	2029	\$2.85	\$3.32	\$4.55	\$4.02
109	Jan-30	Jan	2030	\$2.98	\$5.15	\$7.13	\$6.56
110	Feb-30	Feb	2030	\$2.94	\$4.98	\$6.89	\$6.35

Prices as of 9/30/20 (NYMEX, provided by Ventyx Velocity Suite).

Record Field	Period	Month	Year	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: PECO Natural Gas Price \$/MMBTU	EIA AEO Gas Prices	PECO Natural Gas Price (\$/MMBTU)
111	Mar-30	Mar	2030	\$2.83	\$2.93	\$4.20	\$3.83
112	Apr-30	Apr	2030	\$2.52	\$2.31	\$3.23	\$2.97
113	May-30	May	2030	\$2.50	\$2.01	\$2.81	\$2.58
114	Jun-30	Jun	2030	\$2.53	\$2.08	\$2.89	\$2.66
115	Jul-30	Jul	2030	\$2.57	\$2.17	\$3.00	\$2.76
116	Aug-30	Aug	2030	\$2.61	\$2.21	\$3.01	\$2.78
117	Sep-30	Sep	2030	\$2.63	\$1.94	\$2.63	\$2.43
118	Oct-30	Oct	2030	\$2.68	\$2.08	\$2.79	\$2.58
119	Nov-30	Nov	2030	\$2.75	\$2.49	\$3.34	\$3.10
120	Dec-30	Dec	2030	\$2.90	\$3.39	\$4.56	\$4.22
121	Jan-31	Jan	2031	\$3.03	\$5.25	\$7.22	\$6.94
122	Feb-31	Feb	2031	\$2.99	\$5.08	\$6.99	\$6.71
123	Mar-31	Mar	2031	\$2.89	\$2.99	\$4.25	\$4.07
124	Apr-31	Apr	2031	\$2.59	\$2.37	\$3.27	\$3.15
125	May-31	May	2031	\$2.57	\$2.07	\$2.85	\$2.74
126	Jun-31	Jun	2031	\$2.60	\$2.13	\$2.93	\$2.81
127	Jul-31	Jul	2031	\$2.64	\$2.23	\$3.04	\$2.93
128	Aug-31	Aug	2031	\$2.68	\$2.27	\$3.05	\$2.94
129	Sep-31	Sep	2031	\$2.70	\$1.99	\$2.67	\$2.57
130	Oct-31	Oct	2031	\$2.74	\$2.13	\$2.82	\$2.72
131	Nov-31	Nov	2031	\$2.81	\$2.55	\$3.39	\$3.27
132	Dec-31	Dec	2031	\$2.97	\$3.46	\$4.62	\$4.45
133	Jan-32	Jan	2032	\$3.09	\$5.36	\$7.45	\$7.45
134	Feb-32	Feb	2032	\$3.05	\$5.18	\$7.21	\$7.21
135	Mar-32	Mar	2032	\$2.95	\$3.06	\$4.39	\$4.39
136	Apr-32	Apr	2032	\$2.65	\$2.43	\$3.38	\$3.38
137	May-32	May	2032	\$2.63	\$2.12	\$2.94	\$2.94
138	Jun-32	Jun	2032	\$2.67	\$2.19	\$3.02	\$3.02
139	Jul-32	Jul	2032	\$2.71	\$2.28	\$3.14	\$3.14
140	Aug-32	Aug	2032	\$2.75	\$2.32	\$3.15	\$3.15
141	Sep-32	Sep	2032	\$2.76	\$2.04	\$2.75	\$2.75
142	Oct-32	Oct	2032	\$2.81	\$2.18	\$2.91	\$2.91
143	Nov-32	Nov	2032	\$2.88	\$2.61	\$3.50	\$3.50
144	Dec-32	Dec	2032	\$3.03	\$3.54	\$4.77	\$4.77
145	Jan-33	Jan	2033	No Value	No Value	\$7.77	\$7.77
146	Feb-33	Feb	2033	No Value	No Value	\$7.52	\$7.52
147	Mar-33	Mar	2033	No Value	No Value	\$4.57	\$4.57
148	Apr-33	Apr	2033	No Value	No Value	\$3.52	\$3.52
149	May-33	May	2033	No Value	No Value	\$3.06	\$3.06
150	Jun-33	Jun	2033	No Value	No Value	\$3.15	\$3.15
151	Jul-33	Jul	2033	No Value	No Value	\$3.27	\$3.27
152	Aug-33	Aug	2033	No Value	No Value	\$3.28	\$3.28
153	Sep-33	Sep	2033	No Value	No Value	\$2.87	\$2.87
154	Oct-33	Oct	2033	No Value	No Value	\$3.04	\$3.04
155	Nov-33	Nov	2033	No Value	No Value	\$3.64	\$3.64
156	Dec-33	Dec	2033	No Value	No Value	\$4.97	\$4.97
157	Jan-34	Jan	2034	No Value	No Value	\$8.06	\$8.06
158	Feb-34	Feb	2034	No Value	No Value	\$7.80	\$7.80
159	Mar-34	Mar	2034	No Value	No Value	\$4.75	\$4.75
160	Apr-34	Apr	2034	No Value	No Value	\$3.66	\$3.66
161	May-34	May	2034	No Value	No Value	\$3.18	\$3.18
162	Jun-34	Jun	2034	No Value	No Value	\$3.27	\$3.27
163	Jul-34	Jul	2034	No Value	No Value	\$3.40	\$3.40
164	Aug-34	Aug	2034	No Value	No Value	\$3.41	\$3.41
165	Sep-34	Sep	2034	No Value	No Value	\$2.98	\$2.98

Prices as of 9/30/20 (NYMEX, provided by Ventyx Velocity Suite).

Record Field	Period	Month	Year	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: PECO Natural Gas Price (\$/MMBTU)	EIA AEO Gas Prices	PECO Natural Gas Price (\$/MMBTU)
166	Oct-34	Oct	2034			\$3.15	\$3.15
167	Nov-34	Nov	2034			\$3.78	\$3.78
168	Dec-34	Dec	2034			\$5.15	\$5.15
169	Jan-35	Jan	2035			\$8.10	\$8.10
170	Feb-35	Feb	2035			\$7.84	\$7.84
171	Mar-35	Mar	2035			\$4.77	\$4.77
172	Apr-35	Apr	2035			\$3.68	\$3.68
173	May-35	May	2035			\$3.19	\$3.19
174	Jun-35	Jun	2035			\$3.29	\$3.29
175	Jul-35	Jul	2035			\$3.41	\$3.41
176	Aug-35	Aug	2035			\$3.43	\$3.43
177	Sep-35	Sep	2035			\$2.99	\$2.99
178	Oct-35	Oct	2035			\$3.17	\$3.17
179	Nov-35	Nov	2035			\$3.80	\$3.80
180	Dec-35	Dec	2035			\$5.18	\$5.18
181	Jan-36	Jan	2036			\$8.16	\$8.16
182	Feb-36	Feb	2036			\$7.90	\$7.90
183	Mar-36	Mar	2036			\$4.81	\$4.81
184	Apr-36	Apr	2036			\$3.70	\$3.70
185	May-36	May	2036			\$3.22	\$3.22
186	Jun-36	Jun	2036			\$3.31	\$3.31
187	Jul-36	Jul	2036			\$3.44	\$3.44
188	Aug-36	Aug	2036			\$3.45	\$3.45
189	Sep-36	Sep	2036			\$3.02	\$3.02
190	Oct-36	Oct	2036			\$3.19	\$3.19
191	Nov-36	Nov	2036			\$3.83	\$3.83
192	Dec-36	Dec	2036			\$5.22	\$5.22
193	Jan-37	Jan	2037			\$8.39	\$8.39
194	Feb-37	Feb	2037			\$8.11	\$8.11
195	Mar-37	Mar	2037			\$4.94	\$4.94
196	Apr-37	Apr	2037			\$3.80	\$3.80
197	May-37	May	2037			\$3.31	\$3.31
198	Jun-37	Jun	2037			\$3.40	\$3.40
199	Jul-37	Jul	2037			\$3.53	\$3.53
200	Aug-37	Aug	2037			\$3.55	\$3.55
201	Sep-37	Sep	2037			\$3.10	\$3.10
202	Oct-37	Oct	2037			\$3.28	\$3.28
203	Nov-37	Nov	2037			\$3.93	\$3.93
204	Dec-37	Dec	2037			\$5.36	\$5.36
205	Jan-38	Jan	2038			\$8.58	\$8.58
206	Feb-38	Feb	2038			\$8.30	\$8.30
207	Mar-38	Mar	2038			\$5.05	\$5.05
208	Apr-38	Apr	2038			\$3.89	\$3.89
209	May-38	May	2038			\$3.38	\$3.38
210	Jun-38	Jun	2038			\$3.48	\$3.48
211	Jul-38	Jul	2038			\$3.61	\$3.61
212	Aug-38	Aug	2038			\$3.63	\$3.63
213	Sep-38	Sep	2038			\$3.17	\$3.17
214	Oct-38	Oct	2038			\$3.35	\$3.35
215	Nov-38	Nov	2038			\$4.02	\$4.02
216	Dec-38	Dec	2038			\$5.48	\$5.48
217	Jan-39	Jan	2039			\$8.72	\$8.72
218	Feb-39	Feb	2039			\$8.44	\$8.44
219	Mar-39	Mar	2039			\$5.13	\$5.13
220	Apr-39	Apr	2039			\$3.95	\$3.95
221	May-39	May	2039			\$3.44	\$3.44
222	Jun-39	Jun	2039			\$3.54	\$3.54
223	Jul-39	Jul	2039			\$3.67	\$3.67
224	Aug-39	Aug	2039			\$3.69	\$3.69
225	Sep-39	Sep	2039			\$3.22	\$3.22

Prices as of 9/30/20 (NYMEX, provided by Ventyx Velocity Suite).

Record Field	Period	Month	Year	NYMEX: Henry Hub Natural Gas Price (\$/MMBTU)	NYMEX: PECO Natural Gas Price \$/MMBTU	EIA AEO Gas Prices	PECO Natural Gas Price (\$/MMBTU)
226	Oct-39	Oct	2039			\$3.41	\$3.41
227	Nov-39	Nov	2039			\$4.09	\$4.09
228	Dec-39	Dec	2039			\$5.57	\$5.57
229	Jan-40	Jan	2040			\$8.93	\$8.93
230	Feb-40	Feb	2040			\$8.64	\$8.64
231	Mar-40	Mar	2040			\$5.26	\$5.26
232	Apr-40	Apr	2040			\$4.05	\$4.05
233	May-40	May	2040			\$3.52	\$3.52
234	Jun-40	Jun	2040			\$3.62	\$3.62
235	Jul-40	Jul	2040			\$3.76	\$3.76
236	Aug-40	Aug	2040			\$3.78	\$3.78
237	Sep-40	Sep	2040			\$3.30	\$3.30
238	Oct-40	Oct	2040			\$3.49	\$3.49
239	Nov-40	Nov	2040			\$4.19	\$4.19
240	Dec-40	Dec	2040			\$5.71	\$5.71
241	Jan-41	Jan	2041			\$9.15	\$9.15
242	Feb-41	Feb	2041			\$8.85	\$8.85
243	Mar-41	Mar	2041			\$5.38	\$5.38
244	Apr-41	Apr	2041			\$4.15	\$4.15
245	May-41	May	2041			\$3.61	\$3.61
246	Jun-41	Jun	2041			\$3.71	\$3.71
247	Jul-41	Jul	2041			\$3.85	\$3.85
248	Aug-41	Aug	2041			\$3.87	\$3.87
249	Sep-41	Sep	2041			\$3.38	\$3.38
250	Oct-41	Oct	2041			\$3.58	\$3.58
251	Nov-41	Nov	2041			\$4.29	\$4.29
252	Dec-41	Dec	2041			\$5.85	\$5.85
253	Jan-42	Jan	2042			\$9.39	\$9.39
254	Feb-42	Feb	2042			\$9.08	\$9.08
255	Mar-42	Mar	2042			\$5.53	\$5.53
256	Apr-42	Apr	2042			\$4.26	\$4.26
257	May-42	May	2042			\$3.70	\$3.70
258	Jun-42	Jun	2042			\$3.81	\$3.81
259	Jul-42	Jul	2042			\$3.96	\$3.96
260	Aug-42	Aug	2042			\$3.97	\$3.97
261	Sep-42	Sep	2042			\$3.47	\$3.47
262	Oct-42	Oct	2042			\$3.67	\$3.67
263	Nov-42	Nov	2042			\$4.40	\$4.40
264	Dec-42	Dec	2042			\$6.00	\$6.00

Avoided AC

Record Field	Period	Month	Year	Season	PECO Zone Adjusted On-Peak (\$/MWh)	PECO Zone Adjusted Off-Peak (\$/MWh)	PECO Zone NG Converted On-Peak (\$/MWh)	PECO Zone NG Converted Off-Peak (\$/MWh)	PECO Zone Spark Spread On-Peak (\$/MWh)	PECO Zone Spark Spread Off-Peak (\$/MWh)	PECO Zone On-Peak (\$/MWh)	PECO Zone Off-Peak (\$/MWh)
1	Jan-21	Jan	2021	Winter	\$42.07	\$32.82	\$57.29	\$39.21	n/a	n/a	\$42.07	\$32.82
2	Feb-21	Feb	2021	Winter	\$39.32	\$30.72	\$55.53	\$38.00	n/a	n/a	\$39.32	\$30.72
3	Mar-21	Mar	2021	Shoulder	\$32.82	\$25.90	\$35.61	\$24.37	n/a	n/a	\$32.82	\$25.90
4	Apr-21	Apr	2021	Shoulder	\$28.95	\$21.87	\$29.19	\$19.98	n/a	n/a	\$28.95	\$21.87
5	May-21	May	2021	Summer	\$29.22	\$20.76	\$26.06	\$17.84	n/a	n/a	\$29.22	\$20.76
6	Jun-21	Jun	2021	Summer	\$28.24	\$19.49	\$26.64	\$18.24	n/a	n/a	\$28.24	\$19.49
7	Jul-21	Jul	2021	Summer	\$32.83	\$21.51	\$27.54	\$18.85	n/a	n/a	\$32.83	\$21.51
8	Aug-21	Aug	2021	Summer	\$30.40	\$20.27	\$27.60	\$18.89	n/a	n/a	\$30.40	\$20.27
9	Sep-21	Sep	2021	Summer	\$29.42	\$20.30	\$24.72	\$16.92	n/a	n/a	\$29.42	\$20.30
10	Oct-21	Oct	2021	Shoulder	\$28.76	\$21.52	\$25.95	\$17.76	n/a	n/a	\$28.76	\$21.52
11	Nov-21	Nov	2021	Shoulder	\$29.48	\$21.52	\$29.87	\$20.44	n/a	n/a	\$29.48	\$21.52
12	Dec-21	Dec	2021	Winter	\$31.62	\$24.90	\$38.42	\$26.29	n/a	n/a	\$31.62	\$24.90
13	Jan-22	Jan	2022	Winter	\$43.00	\$34.13	\$55.73	\$38.14	-\$12.73	-\$4.01	\$43.00	\$34.13
14	Feb-22	Feb	2022	Winter	\$40.13	\$31.51	\$53.95	\$36.93	-\$13.82	-\$5.41	\$40.13	\$31.51
15	Mar-22	Mar	2022	Shoulder	\$30.30	\$25.36	\$33.39	\$22.85	-\$3.09	\$2.51	\$30.30	\$25.36
16	Apr-22	Apr	2022	Shoulder	\$26.42	\$20.41	\$25.46	\$17.43	\$0.96	\$2.98	\$26.42	\$20.41
17	May-22	May	2022	Summer	\$26.04	\$19.18	\$22.13	\$15.14	\$3.91	\$4.03	\$26.04	\$19.18
18	Jun-22	Jun	2022	Summer	\$25.99	\$19.13	\$22.69	\$15.53	\$3.30	\$3.60	\$25.99	\$19.13
19	Jul-22	Jul	2022	Summer	\$31.29	\$21.56	\$23.53	\$16.10	\$7.77	\$5.45	\$31.29	\$21.56
20	Aug-22	Aug	2022	Summer	\$28.81	\$19.72	\$23.60	\$16.15	\$5.21	\$3.57	\$28.81	\$19.72
21	Sep-22	Sep	2022	Summer	\$27.65	\$18.70	\$20.72	\$14.18	\$6.93	\$4.52	\$27.65	\$18.70
22	Oct-22	Oct	2022	Shoulder	\$26.71	\$19.80	\$21.85	\$14.95	\$4.86	\$4.85	\$26.71	\$19.80
23	Nov-22	Nov	2022	Shoulder	\$26.80	\$20.56	\$26.03	\$17.81	\$0.78	\$2.75	\$26.80	\$20.56
24	Dec-22	Dec	2022	Winter	\$29.48	\$23.99	\$35.11	\$24.03	-\$5.63	-\$0.04	\$29.48	\$23.99
25	Jan-23	Jan	2023	Winter	\$42.38	\$34.81	\$53.04	\$36.30	-\$10.66	-\$1.49	\$42.38	\$34.81
26	Feb-23	Feb	2023	Winter	\$39.75	\$32.14	\$51.29	\$35.10	-\$11.54	-\$2.96	\$39.75	\$32.14
27	Mar-23	Mar	2023	Shoulder	\$29.94	\$25.87	\$30.65	\$20.98	-\$0.71	\$4.89	\$29.94	\$25.87
28	Apr-23	Apr	2023	Shoulder	\$26.27	\$20.82	\$23.87	\$16.34	\$2.40	\$4.48	\$26.27	\$20.82
29	May-23	May	2023	Summer	\$26.22	\$19.56	\$20.76	\$14.21	\$5.46	\$5.35	\$26.22	\$19.56
30	Jun-23	Jun	2023	Summer	\$25.60	\$19.51	\$21.43	\$14.66	\$4.17	\$4.85	\$25.60	\$19.51
31	Jul-23	Jul	2023	Summer	\$30.93	\$21.99	\$22.31	\$15.27	\$8.62	\$6.72	\$30.93	\$21.99
32	Aug-23	Aug	2023	Summer	\$28.31	\$20.12	\$22.38	\$15.32	\$5.93	\$4.80	\$28.31	\$20.12
33	Sep-23	Sep	2023	Summer	\$27.36	\$19.07	\$19.47	\$13.32	\$7.89	\$5.75	\$27.36	\$19.07
34	Oct-23	Oct	2023	Shoulder	\$25.93	\$20.19	\$20.67	\$14.15	\$5.26	\$6.05	\$25.93	\$20.19
35	Nov-23	Nov	2023	Shoulder	\$26.17	\$20.97	\$24.99	\$17.11	\$1.18	\$3.87	\$26.17	\$20.97
36	Dec-23	Dec	2023	Winter	\$28.98	\$24.47	\$34.43	\$23.56	-\$5.45	\$0.91	\$28.98	\$24.47
37	Jan-24	Jan	2024	Winter	\$43.22	\$35.51	\$52.74	\$36.09	-\$9.51	-\$0.59	\$43.22	\$35.51
38	Feb-24	Feb	2024	Winter	\$40.54	\$32.79	\$51.02	\$34.92	-\$10.48	-\$2.13	\$40.54	\$32.79
39	Mar-24	Mar	2024	Shoulder	\$30.53	\$26.38	\$30.11	\$20.61	\$0.43	\$5.78	\$30.53	\$26.38
40	Apr-24	Apr	2024	Shoulder	\$26.79	\$21.23	\$23.56	\$16.13	\$3.23	\$5.11	\$26.79	\$21.23
41	May-24	May	2024	Summer	\$26.74	\$19.95	\$20.56	\$14.07	\$6.18	\$5.88	\$26.74	\$19.95
42	Jun-24	Jun	2024	Summer	\$26.11	\$19.90	\$21.28	\$14.57	\$4.83	\$5.34	\$26.11	\$19.90
43	Jul-24	Jul	2024	Summer	\$31.55	\$22.43	\$22.27	\$15.24	\$9.27	\$7.18	\$31.55	\$22.43
44	Aug-24	Aug	2024	Summer	\$28.88	\$20.52	\$22.35	\$15.30	\$6.53	\$5.22	\$28.88	\$20.52
45	Sep-24	Sep	2024	Summer	\$27.90	\$19.45	\$19.46	\$13.32	\$8.45	\$6.14	\$27.90	\$19.45
46	Oct-24	Oct	2024	Shoulder	\$26.45	\$20.60	\$20.74	\$14.20	\$5.71	\$6.40	\$26.45	\$20.60
47	Nov-24	Nov	2024	Shoulder	\$26.69	\$21.39	\$25.16	\$17.22	\$1.54	\$4.18	\$26.69	\$21.39
48	Dec-24	Dec	2024	Winter	\$29.56	\$24.96	\$34.73	\$23.77	-\$5.17	\$1.20	\$29.56	\$24.96
49	Jan-25	Jan	2025	Winter	\$44.09	\$36.22	\$53.48	\$36.60	-\$9.39	-\$0.38	\$44.09	\$36.22
50	Feb-25	Feb	2025	Winter	\$41.35	\$33.44	\$51.77	\$35.43	-\$10.42	-\$1.99	\$41.35	\$33.44
51	Mar-25	Mar	2025	Shoulder	\$31.15	\$26.91	\$30.52	\$20.89	\$0.63	\$6.02	\$31.15	\$26.91
52	Apr-25	Apr	2025	Shoulder	\$27.33	\$21.66	\$23.91	\$16.36	\$3.42	\$5.29	\$27.33	\$21.66
53	May-25	May	2025	Summer	\$27.28	\$20.35	\$20.87	\$14.28	\$6.41	\$6.07	\$27.28	\$20.35
54	Jun-25	Jun	2025	Summer	\$26.63	\$20.30	\$21.56	\$14.76	\$5.07	\$5.54	\$26.63	\$20.30
55	Jul-25	Jul	2025	Summer	\$32.18	\$22.88	\$22.52	\$15.41	\$9.66	\$7.46	\$32.18	\$22.88
56	Aug-25	Aug	2025	Summer	\$29.46	\$20.93	\$22.56	\$15.44	\$6.90	\$5.49	\$29.46	\$20.93
57	Sep-25	Sep	2025	Summer	\$28.46	\$19.84	\$19.56	\$13.39	\$8.90	\$6.45	\$28.46	\$19.84
58	Oct-25	Oct	2025	Shoulder	\$26.98	\$21.01	\$20.81	\$14.25	\$6.17	\$6.76	\$26.98	\$21.01
59	Nov-25	Nov	2025	Shoulder	\$27.23	\$21.82	\$25.21	\$17.25	\$2.02	\$4.57	\$27.23	\$21.82
60	Dec-25	Dec	2025	Winter	\$30.15	\$25.46	\$34.87	\$23.86	-\$4.72	\$1.60	\$30.15	\$25.46

Record Field	Period	Month	Year	Season	PECO Zone Adjusted On-Peak (\$/MWh)	PECO Zone Adjusted Off-Peak (\$/MWh)	PECO Zone NG Converted On-Peak (\$/MWh)	PECO Zone NG Converted Off-Peak (\$/MWh)	PECO Zone Spark Spread On-Peak (\$/MWh)	PECO Zone Spark Spread Off-Peak (\$/MWh)	PECO Zone On-Peak (\$/MWh)	PECO Zone Off-Peak (\$/MWh)
61	Jan-26	Jan	2026	Winter			\$56.78	\$38.86	-\$12.66	-\$2.98	\$44.11	\$35.88
62	Feb-26	Feb	2026	Winter			\$54.94	\$37.60	-\$13.73	-\$4.53	\$41.22	\$33.07
63	Mar-26	Mar	2026	Shoulder			\$32.47	\$22.22	-\$2.06	\$4.00	\$30.41	\$26.22
64	Apr-26	Apr	2026	Shoulder			\$25.36	\$17.35	\$1.81	\$4.04	\$27.17	\$21.39
65	May-26	May	2026	Summer			\$22.11	\$15.13	\$5.07	\$5.08	\$27.18	\$20.21
66	Jun-26	Jun	2026	Summer			\$22.84	\$15.63	\$4.04	\$4.57	\$26.88	\$20.20
67	Jul-26	Jul	2026	Summer			\$23.78	\$16.28	\$8.87	\$6.59	\$32.65	\$22.86
68	Aug-26	Aug	2026	Summer			\$23.83	\$16.31	\$6.03	\$4.53	\$29.86	\$20.84
69	Sep-26	Sep	2026	Summer			\$20.64	\$14.12	\$8.02	\$5.56	\$28.66	\$19.68
70	Oct-26	Oct	2026	Shoulder			\$21.92	\$15.00	\$5.48	\$5.90	\$27.39	\$20.89
71	Nov-26	Nov	2026	Shoulder			\$26.62	\$18.22	\$1.06	\$3.58	\$27.67	\$21.80
72	Dec-26	Dec	2026	Winter			\$36.88	\$25.24	-\$6.00	\$0.47	\$30.88	\$25.71
73	Jan-27	Jan	2027	Winter			\$61.01	\$41.75	-\$12.92	-\$3.04	\$48.09	\$38.72
74	Feb-27	Feb	2027	Winter			\$58.99	\$40.37	-\$14.00	-\$4.62	\$44.99	\$35.75
75	Mar-27	Mar	2027	Shoulder			\$35.02	\$23.97	-\$2.10	\$4.08	\$32.92	\$28.05
76	Apr-27	Apr	2027	Shoulder			\$27.25	\$18.65	\$1.85	\$4.12	\$29.10	\$22.77
77	May-27	May	2027	Summer			\$23.80	\$16.29	\$5.17	\$5.18	\$28.97	\$21.47
78	Jun-27	Jun	2027	Summer			\$24.60	\$16.84	\$4.13	\$4.66	\$28.73	\$21.50
79	Jul-27	Jul	2027	Summer			\$25.62	\$17.53	\$9.05	\$6.72	\$34.67	\$24.25
80	Aug-27	Aug	2027	Summer			\$25.69	\$17.58	\$6.15	\$4.62	\$31.83	\$22.20
81	Sep-27	Sep	2027	Summer			\$22.38	\$15.32	\$8.18	\$5.67	\$30.56	\$20.99
82	Oct-27	Oct	2027	Shoulder			\$23.85	\$16.32	\$5.59	\$6.01	\$29.43	\$22.33
83	Nov-27	Nov	2027	Shoulder			\$28.79	\$19.70	\$1.08	\$3.65	\$29.87	\$23.36
84	Dec-27	Dec	2027	Winter			\$39.55	\$27.07	-\$6.12	\$0.48	\$33.43	\$27.55
85	Jan-28	Jan	2028	Winter			\$65.54	\$44.85	-\$13.18	-\$3.10	\$52.36	\$41.76
86	Feb-28	Feb	2028	Winter			\$63.38	\$43.38	-\$14.28	-\$4.72	\$49.10	\$38.66
87	Mar-28	Mar	2028	Shoulder			\$37.83	\$25.89	-\$2.14	\$4.17	\$35.69	\$30.05
88	Apr-28	Apr	2028	Shoulder			\$29.38	\$20.11	\$1.89	\$4.20	\$31.27	\$24.31
89	May-28	May	2028	Summer			\$25.61	\$17.53	\$5.28	\$5.29	\$30.89	\$22.81
90	Jun-28	Jun	2028	Summer			\$26.44	\$18.10	\$4.21	\$4.76	\$30.65	\$22.85
91	Jul-28	Jul	2028	Summer			\$27.57	\$18.87	\$9.23	\$6.85	\$36.80	\$25.72
92	Aug-28	Aug	2028	Summer			\$27.70	\$18.96	\$6.27	\$4.71	\$33.97	\$23.67
93	Sep-28	Sep	2028	Summer			\$24.21	\$16.57	\$8.35	\$5.78	\$32.55	\$22.35
94	Oct-28	Oct	2028	Shoulder			\$25.74	\$17.62	\$5.70	\$6.13	\$31.44	\$23.75
95	Nov-28	Nov	2028	Shoulder			\$31.02	\$21.23	\$1.10	\$3.73	\$32.12	\$24.96
96	Dec-28	Dec	2028	Winter			\$42.51	\$29.09	-\$6.24	\$0.49	\$36.27	\$29.58
97	Jan-29	Jan	2029	Winter			\$69.66	\$47.68	-\$13.44	-\$3.16	\$56.23	\$44.52
98	Feb-29	Feb	2029	Winter			\$67.39	\$46.12	-\$14.57	-\$4.81	\$52.82	\$41.31
99	Mar-29	Mar	2029	Shoulder			\$40.51	\$27.73	-\$2.18	\$4.25	\$38.33	\$31.98
100	Apr-29	Apr	2029	Shoulder			\$31.45	\$21.52	\$1.92	\$4.29	\$33.37	\$25.81
101	May-29	May	2029	Summer			\$27.37	\$18.73	\$5.38	\$5.39	\$32.75	\$24.12
102	Jun-29	Jun	2029	Summer			\$28.20	\$19.30	\$4.29	\$4.85	\$32.49	\$24.15
103	Jul-29	Jul	2029	Summer			\$29.35	\$20.09	\$9.41	\$6.99	\$38.77	\$27.08
104	Aug-29	Aug	2029	Summer			\$29.46	\$20.16	\$6.40	\$4.80	\$35.85	\$24.97
105	Sep-29	Sep	2029	Summer			\$25.71	\$17.60	\$8.51	\$5.90	\$34.22	\$23.49
106	Oct-29	Oct	2029	Shoulder			\$27.29	\$18.68	\$5.81	\$6.26	\$33.11	\$24.94
107	Nov-29	Nov	2029	Shoulder			\$32.85	\$22.49	\$1.12	\$3.80	\$33.97	\$26.29
108	Dec-29	Dec	2029	Winter			\$44.96	\$30.77	-\$6.37	\$0.50	\$38.60	\$31.27
109	Jan-30	Jan	2030	Winter			\$73.34	\$50.20	-\$13.71	-\$3.22	\$59.63	\$46.97
110	Feb-30	Feb	2030	Winter			\$70.95	\$48.56	-\$14.86	-\$4.91	\$56.09	\$43.65
111	Mar-30	Mar	2030	Shoulder			\$42.86	\$29.33	-\$2.23	\$4.33	\$40.63	\$33.66
112	Apr-30	Apr	2030	Shoulder			\$33.17	\$22.70	\$1.96	\$4.37	\$35.13	\$27.07
113	May-30	May	2030	Summer			\$28.85	\$19.74	\$5.49	\$5.50	\$34.34	\$25.24
114	Jun-30	Jun	2030	Summer			\$29.70	\$20.33	\$4.38	\$4.95	\$34.08	\$25.28
115	Jul-30	Jul	2030	Summer			\$30.90	\$21.15	\$9.60	\$7.13	\$40.50	\$28.28
116	Aug-30	Aug	2030	Summer			\$31.10	\$21.28	\$6.52	\$4.90	\$37.62	\$26.19
117	Sep-30	Sep	2030	Summer			\$27.20	\$18.61	\$8.68	\$6.02	\$35.88	\$24.63
118	Oct-30	Oct	2030	Shoulder			\$28.86	\$19.75	\$5.93	\$6.38	\$34.79	\$26.14
119	Nov-30	Nov	2030	Shoulder			\$34.64	\$23.71	\$1.14	\$3.88	\$35.79	\$27.59
120	Dec-30	Dec	2030	Winter			\$47.18	\$32.29	-\$6.49	\$0.51	\$40.68	\$32.80

Record Field	Period	Month	Year	Season	PECO Zone Adjusted On-Peak (\$/MWh)	PECO Zone Adjusted Off-Peak (\$/MWh)	PECO Zone NG Converted On-Peak (\$/MWh)	PECO Zone NG Converted Off-Peak (\$/MWh)	PECO Zone Spark Spread On-Peak (\$/MWh)	PECO Zone Spark Spread Off-Peak (\$/MWh)	PECO Zone On-Peak (\$/MWh)	PECO Zone Off-Peak (\$/MWh)
121	Jan-31	Jan	2031	Winter			\$77.56	\$53.08	-\$13.98	-\$3.29	\$63.57	\$49.79
122	Feb-31	Feb	2031	Winter			\$75.04	\$51.36	-\$15.16	-\$5.00	\$59.88	\$46.35
123	Mar-31	Mar	2031	Shoulder			\$45.50	\$31.14	-\$2.27	\$4.42	\$43.23	\$35.56
124	Apr-31	Apr	2031	Shoulder			\$35.15	\$24.06	\$2.00	\$4.46	\$37.16	\$28.52
125	May-31	May	2031	Summer			\$30.57	\$20.92	\$5.60	\$5.61	\$36.17	\$26.53
126	Jun-31	Jun	2031	Summer			\$31.46	\$21.53	\$4.47	\$5.05	\$35.92	\$26.58
127	Jul-31	Jul	2031	Summer			\$32.70	\$22.38	\$9.79	\$7.27	\$42.50	\$29.66
128	Aug-31	Aug	2031	Summer			\$32.86	\$22.49	\$6.65	\$5.00	\$39.51	\$27.49
129	Sep-31	Sep	2031	Summer			\$28.73	\$19.66	\$8.86	\$6.14	\$37.59	\$25.80
130	Oct-31	Oct	2031	Shoulder			\$30.44	\$20.83	\$6.05	\$6.51	\$36.49	\$27.34
131	Nov-31	Nov	2031	Shoulder			\$36.52	\$25.00	\$1.17	\$3.95	\$37.69	\$28.95
132	Dec-31	Dec	2031	Winter			\$49.75	\$34.05	-\$6.62	\$0.52	\$43.12	\$34.57
133	Jan-32	Jan	2032	Winter			\$83.31	\$57.02	-\$14.26	-\$3.35	\$69.05	\$53.67
134	Feb-32	Feb	2032	Winter			\$80.61	\$55.17	-\$15.46	-\$5.10	\$65.15	\$50.06
135	Mar-32	Mar	2032	Shoulder			\$49.05	\$33.57	-\$2.32	\$4.51	\$46.73	\$38.08
136	Apr-32	Apr	2032	Shoulder			\$37.79	\$25.86	\$2.04	\$4.55	\$39.83	\$30.41
137	May-32	May	2032	Summer			\$32.85	\$22.48	\$5.71	\$5.72	\$38.56	\$28.20
138	Jun-32	Jun	2032	Summer			\$33.79	\$23.12	\$4.56	\$5.15	\$38.34	\$28.27
139	Jul-32	Jul	2032	Summer			\$35.11	\$24.03	\$9.99	\$7.42	\$45.09	\$31.45
140	Aug-32	Aug	2032	Summer			\$35.22	\$24.11	\$6.79	\$5.10	\$42.01	\$29.20
141	Sep-32	Sep	2032	Summer			\$30.78	\$21.07	\$9.03	\$6.26	\$39.81	\$27.32
142	Oct-32	Oct	2032	Shoulder			\$32.56	\$22.29	\$6.17	\$6.64	\$38.73	\$28.93
143	Nov-32	Nov	2032	Shoulder			\$39.08	\$26.75	\$1.19	\$4.03	\$40.27	\$30.78
144	Dec-32	Dec	2032	Winter			\$53.26	\$36.45	-\$6.75	\$0.53	\$46.51	\$36.98
145	Jan-33	Jan	2033	Winter			\$86.84	\$59.43	-\$14.55	-\$3.42	\$72.29	\$56.01
146	Feb-33	Feb	2033	Winter			\$84.02	\$57.50	-\$15.77	-\$5.21	\$68.25	\$52.30
147	Mar-33	Mar	2033	Shoulder			\$51.12	\$34.99	-\$2.36	\$4.60	\$48.76	\$39.59
148	Apr-33	Apr	2033	Shoulder			\$39.39	\$26.96	\$2.08	\$4.64	\$41.47	\$31.60
149	May-33	May	2033	Summer			\$34.24	\$23.43	\$5.83	\$5.84	\$40.06	\$29.27
150	Jun-33	Jun	2033	Summer			\$35.22	\$24.10	\$4.65	\$5.25	\$39.86	\$29.36
151	Jul-33	Jul	2033	Summer			\$36.59	\$25.04	\$10.19	\$7.57	\$46.78	\$32.61
152	Aug-33	Aug	2033	Summer			\$36.71	\$25.13	\$6.92	\$5.20	\$43.63	\$30.33
153	Sep-33	Sep	2033	Summer			\$32.08	\$21.96	\$9.22	\$6.38	\$41.30	\$28.34
154	Oct-33	Oct	2033	Shoulder			\$33.94	\$23.23	\$6.29	\$6.77	\$40.24	\$30.00
155	Nov-33	Nov	2033	Shoulder			\$40.73	\$27.88	\$1.21	\$4.11	\$41.95	\$31.99
156	Dec-33	Dec	2033	Winter			\$55.52	\$38.00	-\$6.89	\$0.54	\$48.63	\$38.54
157	Jan-34	Jan	2034	Winter			\$90.10	\$61.66	-\$14.84	-\$3.49	\$75.26	\$58.18
158	Feb-34	Feb	2034	Winter			\$87.18	\$59.66	-\$16.08	-\$5.31	\$71.09	\$54.35
159	Mar-34	Mar	2034	Shoulder			\$53.04	\$36.30	-\$2.41	\$4.69	\$50.63	\$40.99
160	Apr-34	Apr	2034	Shoulder			\$40.87	\$27.97	\$2.13	\$4.73	\$42.99	\$32.70
161	May-34	May	2034	Summer			\$35.52	\$24.31	\$5.94	\$5.95	\$41.47	\$30.26
162	Jun-34	Jun	2034	Summer			\$36.54	\$25.01	\$4.74	\$5.36	\$41.28	\$30.37
163	Jul-34	Jul	2034	Summer			\$37.97	\$25.98	\$10.39	\$7.72	\$48.36	\$33.70
164	Aug-34	Aug	2034	Summer			\$38.09	\$26.07	\$7.06	\$5.30	\$45.15	\$31.37
165	Sep-34	Sep	2034	Summer			\$33.29	\$22.78	\$9.40	\$6.51	\$42.69	\$29.29
166	Oct-34	Oct	2034	Shoulder			\$35.22	\$24.10	\$6.42	\$6.91	\$41.64	\$31.01
167	Nov-34	Nov	2034	Shoulder			\$42.26	\$28.92	\$1.24	\$4.20	\$43.50	\$33.12
168	Dec-34	Dec	2034	Winter			\$57.60	\$39.42	-\$7.03	\$0.55	\$50.57	\$39.98
169	Jan-35	Jan	2035	Winter			\$90.55	\$61.98	-\$15.13	-\$3.56	\$75.42	\$58.42
170	Feb-35	Feb	2035	Winter			\$87.62	\$59.97	-\$16.41	-\$5.42	\$71.21	\$54.55
171	Mar-35	Mar	2035	Shoulder			\$53.31	\$36.49	-\$2.46	\$4.79	\$50.85	\$41.27
172	Apr-35	Apr	2035	Shoulder			\$41.07	\$28.11	\$2.17	\$4.83	\$43.24	\$32.94
173	May-35	May	2035	Summer			\$35.70	\$24.43	\$6.06	\$6.07	\$41.76	\$30.51
174	Jun-35	Jun	2035	Summer			\$36.73	\$25.14	\$4.83	\$5.46	\$41.56	\$30.60
175	Jul-35	Jul	2035	Summer			\$38.16	\$26.12	\$10.60	\$7.87	\$48.76	\$33.99
176	Aug-35	Aug	2035	Summer			\$38.28	\$26.20	\$7.20	\$5.41	\$45.49	\$31.61
177	Sep-35	Sep	2035	Summer			\$33.45	\$22.90	\$9.59	\$6.64	\$43.04	\$29.54
178	Oct-35	Oct	2035	Shoulder			\$35.40	\$24.23	\$6.55	\$7.05	\$41.94	\$31.27
179	Nov-35	Nov	2035	Shoulder			\$42.48	\$29.07	\$1.26	\$4.28	\$43.74	\$33.35
180	Dec-35	Dec	2035	Winter			\$57.89	\$39.62	-\$7.17	\$0.56	\$50.73	\$40.19

Record Field	Period	Month	Year	Season	PECO Zone Adjusted On-Peak (\$/MWh)	PECO Zone Adjusted Off-Peak (\$/MWh)	PECO Zone NG Converted On-Peak (\$/MWh)	PECO Zone NG Converted Off-Peak (\$/MWh)	PECO Zone Spark Spread On-Peak (\$/MWh)	PECO Zone Spark Spread Off-Peak (\$/MWh)	PECO Zone On-Peak (\$/MWh)	PECO Zone Off-Peak (\$/MWh)
181	Jan-36	Jan	2036	Winter			\$91.24	\$62.45	-\$15.44	-\$3.63	\$75.81	\$58.82
182	Feb-36	Feb	2036	Winter			\$88.28	\$60.42	-\$16.73	-\$5.53	\$71.55	\$54.90
183	Mar-36	Mar	2036	Shoulder			\$53.72	\$36.76	-\$2.51	\$4.88	\$51.21	\$41.64
184	Apr-36	Apr	2036	Shoulder			\$41.38	\$28.32	\$2.21	\$4.92	\$43.60	\$33.25
185	May-36	May	2036	Summer			\$35.97	\$24.62	\$6.18	\$6.19	\$42.16	\$30.81
186	Jun-36	Jun	2036	Summer			\$37.00	\$25.33	\$4.93	\$5.57	\$41.94	\$30.90
187	Jul-36	Jul	2036	Summer			\$38.45	\$26.31	\$10.81	\$8.03	\$49.26	\$34.35
188	Aug-36	Aug	2036	Summer			\$38.57	\$26.40	\$7.35	\$5.52	\$45.92	\$31.92
189	Sep-36	Sep	2036	Summer			\$33.71	\$23.07	\$9.78	\$6.77	\$43.49	\$29.85
190	Oct-36	Oct	2036	Shoulder			\$35.66	\$24.41	\$6.68	\$7.19	\$42.34	\$31.60
191	Nov-36	Nov	2036	Shoulder			\$42.80	\$29.29	\$1.29	\$4.37	\$44.09	\$33.66
192	Dec-36	Dec	2036	Winter			\$58.33	\$39.92	-\$7.31	\$0.57	\$51.02	\$40.50
193	Jan-37	Jan	2037	Winter			\$93.73	\$64.15	-\$15.75	-\$3.70	\$77.99	\$60.45
194	Feb-37	Feb	2037	Winter			\$90.69	\$62.07	-\$17.07	-\$5.64	\$73.62	\$56.43
195	Mar-37	Mar	2037	Shoulder			\$55.18	\$37.77	-\$2.56	\$4.98	\$52.62	\$42.75
196	Apr-37	Apr	2037	Shoulder			\$42.51	\$29.10	\$2.26	\$5.02	\$44.77	\$34.12
197	May-37	May	2037	Summer			\$36.95	\$25.29	\$6.31	\$6.32	\$43.26	\$31.61
198	Jun-37	Jun	2037	Summer			\$38.01	\$26.02	\$5.03	\$5.69	\$43.04	\$31.70
199	Jul-37	Jul	2037	Summer			\$39.50	\$27.03	\$11.03	\$8.19	\$50.52	\$35.22
200	Aug-37	Aug	2037	Summer			\$39.63	\$27.12	\$7.49	\$5.63	\$47.12	\$32.75
201	Sep-37	Sep	2037	Summer			\$34.63	\$23.70	\$9.97	\$6.91	\$44.60	\$30.61
202	Oct-37	Oct	2037	Shoulder			\$36.64	\$25.08	\$6.81	\$7.33	\$43.45	\$32.41
203	Nov-37	Nov	2037	Shoulder			\$43.97	\$30.09	\$1.31	\$4.45	\$45.28	\$34.54
204	Dec-37	Dec	2037	Winter			\$59.92	\$41.01	-\$7.46	\$0.59	\$52.47	\$41.60
205	Jan-38	Jan	2038	Winter			\$95.86	\$65.61	-\$16.06	-\$3.78	\$79.80	\$61.83
206	Feb-38	Feb	2038	Winter			\$92.75	\$63.48	-\$17.41	-\$5.75	\$75.34	\$57.73
207	Mar-38	Mar	2038	Shoulder			\$56.43	\$38.62	-\$2.61	\$5.08	\$53.82	\$43.70
208	Apr-38	Apr	2038	Shoulder			\$43.48	\$29.76	\$2.30	\$5.12	\$45.78	\$34.88
209	May-38	May	2038	Summer			\$37.79	\$25.87	\$6.43	\$6.44	\$44.23	\$32.31
210	Jun-38	Jun	2038	Summer			\$38.88	\$26.61	\$5.13	\$5.80	\$44.01	\$32.41
211	Jul-38	Jul	2038	Summer			\$40.39	\$27.64	\$11.25	\$8.36	\$51.64	\$36.00
212	Aug-38	Aug	2038	Summer			\$40.52	\$27.74	\$7.64	\$5.74	\$48.17	\$33.48
213	Sep-38	Sep	2038	Summer			\$35.41	\$24.24	\$10.17	\$7.05	\$45.59	\$31.29
214	Oct-38	Oct	2038	Shoulder			\$37.47	\$25.64	\$6.95	\$7.48	\$44.42	\$33.12
215	Nov-38	Nov	2038	Shoulder			\$44.96	\$30.77	\$1.34	\$4.54	\$46.30	\$35.31
216	Dec-38	Dec	2038	Winter			\$61.28	\$41.94	-\$7.61	\$0.60	\$53.68	\$42.54
217	Jan-39	Jan	2039	Winter			\$97.43	\$66.69	-\$16.38	-\$3.85	\$81.05	\$62.83
218	Feb-39	Feb	2039	Winter			\$94.27	\$64.52	-\$17.76	-\$5.86	\$76.52	\$58.66
219	Mar-39	Mar	2039	Shoulder			\$57.36	\$39.26	-\$2.66	\$5.18	\$54.70	\$44.44
220	Apr-39	Apr	2039	Shoulder			\$44.19	\$30.25	\$2.35	\$5.22	\$46.54	\$35.47
221	May-39	May	2039	Summer			\$38.41	\$26.29	\$6.56	\$6.57	\$44.98	\$32.86
222	Jun-39	Jun	2039	Summer			\$39.52	\$27.05	\$5.23	\$5.92	\$44.75	\$32.96
223	Jul-39	Jul	2039	Summer			\$41.06	\$28.10	\$11.47	\$8.52	\$52.53	\$36.62
224	Aug-39	Aug	2039	Summer			\$41.19	\$28.19	\$7.80	\$5.86	\$48.99	\$34.05
225	Sep-39	Sep	2039	Summer			\$36.00	\$24.64	\$10.38	\$7.19	\$46.37	\$31.83
226	Oct-39	Oct	2039	Shoulder			\$38.08	\$26.07	\$7.09	\$7.63	\$45.17	\$33.69
227	Nov-39	Nov	2039	Shoulder			\$45.70	\$31.28	\$1.37	\$4.63	\$47.07	\$35.91
228	Dec-39	Dec	2039	Winter			\$62.29	\$42.63	-\$7.76	\$0.61	\$54.53	\$43.24
229	Jan-40	Jan	2040	Winter			\$99.80	\$68.30	-\$16.71	-\$3.93	\$83.09	\$64.37
230	Feb-40	Feb	2040	Winter			\$96.56	\$66.09	-\$18.11	-\$5.98	\$78.45	\$60.11
231	Mar-40	Mar	2040	Shoulder			\$58.75	\$40.21	-\$2.71	\$5.28	\$56.04	\$45.49
232	Apr-40	Apr	2040	Shoulder			\$45.26	\$30.98	\$2.39	\$5.33	\$47.66	\$36.31
233	May-40	May	2040	Summer			\$39.35	\$26.93	\$6.69	\$6.70	\$46.04	\$33.63
234	Jun-40	Jun	2040	Summer			\$40.47	\$27.70	\$5.34	\$6.03	\$45.81	\$33.73
235	Jul-40	Jul	2040	Summer			\$42.05	\$28.78	\$11.70	\$8.69	\$53.76	\$37.47
236	Aug-40	Aug	2040	Summer			\$42.19	\$28.88	\$7.95	\$5.97	\$50.14	\$34.85
237	Sep-40	Sep	2040	Summer			\$36.87	\$25.23	\$10.59	\$7.33	\$47.46	\$32.57
238	Oct-40	Oct	2040	Shoulder			\$39.01	\$26.70	\$7.23	\$7.78	\$46.24	\$34.48
239	Nov-40	Nov	2040	Shoulder			\$46.81	\$32.04	\$1.39	\$4.73	\$48.21	\$36.76
240	Dec-40	Dec	2040	Winter			\$63.80	\$43.67	-\$7.91	\$0.62	\$55.89	\$44.29

Record Field	Period	Month	Year	Season	PECO Zone Adjusted On-Peak (\$/MWh)	PECO Zone Adjusted Off-Peak (\$/MWh)	PECO Zone NG Converted On-Peak (\$/MWh)	PECO Zone NG Converted Off-Peak (\$/MWh)	PECO Zone Spark Spread On-Peak (\$/MWh)	PECO Zone Spark Spread Off-Peak (\$/MWh)	PECO Zone On-Peak (\$/MWh)	PECO Zone Off-Peak (\$/MWh)
241	Jan-41	Jan	2041	Winter			\$102.22	\$69.96	-\$17.04	-\$4.01	\$85.18	\$65.95
242	Feb-41	Feb	2041	Winter			\$98.90	\$67.69	-\$18.48	-\$6.10	\$80.43	\$61.59
243	Mar-41	Mar	2041	Shoulder			\$60.18	\$41.19	-\$2.77	\$5.39	\$57.41	\$46.58
244	Apr-41	Apr	2041	Shoulder			\$46.36	\$31.73	\$2.44	\$5.44	\$48.80	\$37.17
245	May-41	May	2041	Summer			\$40.30	\$27.58	\$6.83	\$6.84	\$47.13	\$34.42
246	Jun-41	Jun	2041	Summer			\$41.46	\$28.37	\$5.44	\$6.15	\$46.90	\$34.53
247	Jul-41	Jul	2041	Summer			\$43.07	\$29.48	\$11.94	\$8.87	\$55.01	\$38.35
248	Aug-41	Aug	2041	Summer			\$43.21	\$29.58	\$8.11	\$6.09	\$51.33	\$35.67
249	Sep-41	Sep	2041	Summer			\$37.76	\$25.85	\$10.80	\$7.48	\$48.56	\$33.33
250	Oct-41	Oct	2041	Shoulder			\$39.96	\$27.35	\$7.37	\$7.93	\$47.33	\$35.28
251	Nov-41	Nov	2041	Shoulder			\$47.95	\$32.82	\$1.42	\$4.82	\$49.37	\$37.64
252	Dec-41	Dec	2041	Winter			\$65.35	\$44.73	-\$8.07	\$0.63	\$57.28	\$45.36
253	Jan-42	Jan	2042	Winter			\$104.91	\$71.80	-\$17.38	-\$4.09	\$87.53	\$67.72
254	Feb-42	Feb	2042	Winter			\$101.51	\$69.48	-\$18.84	-\$6.22	\$82.67	\$63.25
255	Mar-42	Mar	2042	Shoulder			\$61.76	\$42.27	-\$2.82	\$5.50	\$58.94	\$47.77
256	Apr-42	Apr	2042	Shoulder			\$47.58	\$32.57	\$2.49	\$5.54	\$50.07	\$38.11
257	May-42	May	2042	Summer			\$41.36	\$28.31	\$6.96	\$6.97	\$48.33	\$35.28
258	Jun-42	Jun	2042	Summer			\$42.55	\$29.12	\$5.55	\$6.28	\$48.10	\$35.40
259	Jul-42	Jul	2042	Summer			\$44.21	\$30.26	\$12.18	\$9.04	\$56.38	\$39.30
260	Aug-42	Aug	2042	Summer			\$44.35	\$30.36	\$8.27	\$6.22	\$52.63	\$36.57
261	Sep-42	Sep	2042	Summer			\$38.76	\$26.53	\$11.01	\$7.63	\$49.77	\$34.16
262	Oct-42	Oct	2042	Shoulder			\$41.01	\$28.07	\$7.52	\$8.09	\$48.53	\$36.16
263	Nov-42	Nov	2042	Shoulder			\$49.21	\$33.68	\$1.45	\$4.92	\$50.66	\$38.60
264	Dec-42	Dec	2042	Winter			\$67.07	\$45.91	-\$8.23	\$0.65	\$58.84	\$46.55

The changes here are acceptable per 10/6/20 email from Patrick Burns.

Generation Capacity

PJM BRA Results				
PJM BRA \$/MW-day				Change made per 6/25/20 email from Patrick Burns.
EDC	2019/2020	2020/2021	2021/2022	
DLC				Changes made per 6/25/20 email from Patrick Burns.
Met-Ed				
	\$116.5	\$188.4	\$166.3	
PECO	4	1	1	
Penelec				
Penn Power				
PPL				
West Penn				

\$/kW-year					
EDC	2019/2020	2020/2021	2021/2022	3 year average	Change made per 6/25/20 email from Patrick Burns.
DLC	\$0.00	\$0.00	\$0.00	\$0.00	
Met-Ed	\$0.00	\$0.00	\$0.00	\$0.00	
PECO	\$45.14	\$71.55	\$61.92	\$59.54	
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	

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	\$0.00	\$0.00	\$60.70	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns, and per 10/6/20 email from Patrick Burns.
14	2022	2023	\$0.00	\$0.00	\$60.73	\$0.00	\$0.00	\$0.00	\$0.00	
15	2023	2024	\$0.00	\$0.00	\$61.94	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
16	2024	2025	\$0.00	\$0.00	\$63.18	\$0.00	\$0.00	\$0.00	\$0.00	
17	2025	2026	\$0.00	\$0.00	\$64.44	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
18	2026	2027	\$0.00	\$0.00	\$65.73	\$0.00	\$0.00	\$0.00	\$0.00	
19	2027	2028	\$0.00	\$0.00	\$67.05	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
20	2028	2029	\$0.00	\$0.00	\$68.39	\$0.00	\$0.00	\$0.00	\$0.00	
21	2029	2030	\$0.00	\$0.00	\$69.76	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
22	2030	2031	\$0.00	\$0.00	\$71.15	\$0.00	\$0.00	\$0.00	\$0.00	
23	2031	2032	\$0.00	\$0.00	\$72.57	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
24	2032	2033	\$0.00	\$0.00	\$74.03	\$0.00	\$0.00	\$0.00	\$0.00	
25	2033	2034	\$0.00	\$0.00	\$75.51	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
26	2034	2035	\$0.00	\$0.00	\$77.02	\$0.00	\$0.00	\$0.00	\$0.00	
27	2035	2036	\$0.00	\$0.00	\$78.56	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
28	2036	2037	\$0.00	\$0.00	\$80.13	\$0.00	\$0.00	\$0.00	\$0.00	
29	2037	2038	\$0.00	\$0.00	\$81.73	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
30	2038	2039	\$0.00	\$0.00	\$83.37	\$0.00	\$0.00	\$0.00	\$0.00	
31	2039	2040	\$0.00	\$0.00	\$85.03	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
32	2040	2041	\$0.00	\$0.00	\$86.73	\$0.00	\$0.00	\$0.00	\$0.00	
33	2041	2042	\$0.00	\$0.00	\$88.47	\$0.00	\$0.00	\$0.00	\$0.00	Changes made per 6/25/20 email from Patrick Burns.
34	2042	2043	\$0.00	\$0.00	\$90.24	\$0.00	\$0.00	\$0.00	\$0.00	

T&D Capacity

Avoided Transmission Capacity Forecast in Nominal Dollars (\$/kW-year)										Avoided Distribution 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	DLC	Met-Ed	PECO	Penelec	Penn Power	PPL	West Penn
13	2021	2022			\$4.00							\$44.30				
14	2022	2023	\$0.00	\$0.00	\$4.08	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.19	\$0.00	\$0.00	\$0.00	\$0.00
15	2023	2024	\$0.00	\$0.00	\$4.16	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.09	\$0.00	\$0.00	\$0.00	\$0.00
16	2024	2025	\$0.00	\$0.00	\$4.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.01	\$0.00	\$0.00	\$0.00	\$0.00
17	2025	2026	\$0.00	\$0.00	\$4.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.95	\$0.00	\$0.00	\$0.00	\$0.00
18	2026	2027	\$0.00	\$0.00	\$4.42	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.91	\$0.00	\$0.00	\$0.00	\$0.00
19	2027	2028	\$0.00	\$0.00	\$4.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.89	\$0.00	\$0.00	\$0.00	\$0.00
20	2028	2029	\$0.00	\$0.00	\$4.59	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.89	\$0.00	\$0.00	\$0.00	\$0.00
21	2029	2030	\$0.00	\$0.00	\$4.69	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.90	\$0.00	\$0.00	\$0.00	\$0.00
22	2030	2031	\$0.00	\$0.00	\$4.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.94	\$0.00	\$0.00	\$0.00	\$0.00
23	2031	2032	\$0.00	\$0.00	\$4.88	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.00	\$0.00	\$0.00	\$0.00	\$0.00
24	2032	2033	\$0.00	\$0.00	\$4.97	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$55.08	\$0.00	\$0.00	\$0.00	\$0.00
25	2033	2034	\$0.00	\$0.00	\$5.07	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$56.18	\$0.00	\$0.00	\$0.00	\$0.00
26	2034	2035	\$0.00	\$0.00	\$5.17	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$57.31	\$0.00	\$0.00	\$0.00	\$0.00
27	2035	2036	\$0.00	\$0.00	\$5.28	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$58.45	\$0.00	\$0.00	\$0.00	\$0.00
28	2036	2037	\$0.00	\$0.00	\$5.38	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$59.62	\$0.00	\$0.00	\$0.00	\$0.00
29	2037	2038	\$0.00	\$0.00	\$5.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$60.81	\$0.00	\$0.00	\$0.00	\$0.00
30	2038	2039	\$0.00	\$0.00	\$5.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$62.03	\$0.00	\$0.00	\$0.00	\$0.00
31	2039	2040	\$0.00	\$0.00	\$5.71	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$63.27	\$0.00	\$0.00	\$0.00	\$0.00
32	2040	2041	\$0.00	\$0.00	\$5.83	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$64.54	\$0.00	\$0.00	\$0.00	\$0.00

Transmission and Distribution Cost Study (November 4, 2014)

Based on its review of transmission and distribution plans and load forecast data used to develop avoided costs in Table 3, Navigant expects avoided costs for the years 2019 through 2023 will follow a similar trend, and therefore assume \$48/kW-Year accurately represent PECO's total avoided cost for the entire 10-year forecast (2014 through 2023.)

Table 3. Total Avoided Costs

Year	Coincident Peak	Annual Increase CP (MW)	Growth Rate	Non-Coincident Peak	Annual Increase NCP (MW)	Distribution Avoided Cost (\$/kW-Yr)	Transmission Avoided Cost (\$/kW-Yr)	Total Avoided Cost (\$/kW-Yr)
2013	8720			9279				
2014	8843	123	1.014	9410	131	\$ 51.8	\$ 7.6	\$ 59.3
2015	9032	189	1.021	9611	201	\$ 29.1	\$ 3.2	\$ 32.3
2016	9147	115	1.013	9733	122	\$ 37.9	\$ 5.4	\$ 43.3
2017	9237	90	1.010	9829	96	\$ 66.1	\$ 3.1	\$ 69.1
2018	9330	93	1.010	9928	99	\$ 36.7	\$ 0.6	\$ 37.2
5-Year Ave		122	1.014		130	\$ 44.3	\$ 4.0	\$ 48.3

Source: PECO data, inflation data from U.S. Bureau of Labor Statistics Electric Power Distribution Produce Price Index 2008-2013, Navigant analysis.

Adjustments

Prices as of 9/30/20. Price data from Intercontinental Exchange per 9/21/20 email from Patrick Burns.

Record Field	Period	Month	Year	Transco 6 (Non-NY)	Locational Adjustment	Load Shape	Spark Spread On-Peak (\$/MWh)	Spark Spread Off-Peak (\$/MWh)	
1	Jan-21	Jan	2021	\$1.8400	Jan	\$1.86	184.0%	-\$11.70	-\$2.75
2	Feb-21	Feb	2021	\$1.8450	Feb	\$1.75	178.0%	-\$12.68	-\$4.19
3	Mar-21	Mar	2021	\$0.2900	Mar	\$0.09	108.3%	-\$1.90	\$3.70
4	Apr-21	Apr	2021	-\$0.2750	Apr	-\$0.18	83.4%	\$1.68	\$3.73
5	May-21	May	2021	-\$0.4275	May	-\$0.42	72.5%	\$4.69	\$4.69
6	Jun-21	Jun	2021	-\$0.4675	Jun	-\$0.39	74.6%	\$3.74	\$4.22
7	Jul-21	Jul	2021	-\$0.3475	Jul	-\$0.35	77.5%	\$8.19	\$6.09
8	Aug-21	Aug	2021	-\$0.4175	Aug	-\$0.35	77.8%	\$5.57	\$4.18
9	Sep-21	Sep	2021	-\$0.5675	Sep	-\$0.59	68.0%	\$7.41	\$5.13
10	Oct-21	Oct	2021	-\$0.5850	Oct	-\$0.51	71.9%	\$5.06	\$5.45
11	Nov-21	Nov	2021	-\$0.2200	Nov	-\$0.22	86.3%	\$0.98	\$3.31
12	Dec-21	Dec	2021	\$0.4825	Dec	\$0.41	117.6%	-\$5.54	\$0.44
13	Jan-22	Jan	2022	\$1.9175					
14	Feb-22	Feb	2022	\$1.7700					
15	Mar-22	Mar	2022	\$0.2600					
16	Apr-22	Apr	2022	-\$0.2200					
17	May-22	May	2022	-\$0.3625					
18	Jun-22	Jun	2022	-\$0.3750					
19	Jul-22	Jul	2022	-\$0.3025					
20	Aug-22	Aug	2022	-\$0.3200					
21	Sep-22	Sep	2022	-\$0.6075					
22	Oct-22	Oct	2022	-\$0.5575					
23	Nov-22	Nov	2022	-\$0.1750					
24	Dec-22	Dec	2022	\$0.5050					
25	Jan-23	Jan	2023	\$1.8000					
26	Feb-23	Feb	2023	\$1.7250					
27	Mar-23	Mar	2023	-\$0.0850					
28	Apr-23	Apr	2023	-\$0.1450					
29	May-23	May	2023	-\$0.4700					
30	Jun-23	Jun	2023	-\$0.4050					
31	Jul-23	Jul	2023	-\$0.3875					
32	Aug-23	Aug	2023	-\$0.3725					
33	Sep-23	Sep	2023	-\$0.5750					
34	Oct-23	Oct	2023	-\$0.4650					
35	Nov-23	Nov	2023	-\$0.2575					
36	Dec-23	Dec	2023	\$0.3200					
37	Jan-24	Jan	2024	\$1.9850					
38	Feb-24	Feb	2024	\$1.8850					
39	Mar-24	Mar	2024	\$0.0925					
40	Apr-24	Apr	2024	-\$0.1425					
41	May-24	May	2024	-\$0.5125					
42	Jun-24	Jun	2024	-\$0.4625					
43	Jul-24	Jul	2024	-\$0.4425					
44	Aug-24	Aug	2024	-\$0.4275					
45	Sep-24	Sep	2024	-\$0.6450					
46	Oct-24	Oct	2024	-\$0.5125					
47	Nov-24	Nov	2024	\$0.1600					
48	Dec-24	Dec	2024	\$0.5350					

Futures Daily Market Report for Financial Gas
30-Sep-2020

COMMODITY NAME	CONTRACT MONTH	DAILY PRICE RANGE				SETTLE		VOLUME AND OI TOTALS						
		OPEN#	HIGH	LOW	CLOSE#	PRICE	CHANGE	TOTAL VOLUME	OI	CHANGE	EFP	EFS	BLOCK VOLUME	SPREAD VOLUME
TPB-Transco Zone 6 (non NY) Basis Future														
TPB	Oct20					-0.9700	0.0000	0	14,432	0	0	0	0	0
TPB	Nov20	-0.2900	-0.2900	-0.2900	-0.2900	-0.2750	0.0100	150	9,598	0	0	0	0	60
TPB	Dec20					0.4275	-0.0100	434	9,883	372	0	0	0	372
TPB	Jan21					1.8400	-0.0050	62	10,172	-31	0	0	0	0

AEPS

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

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