

OCA Statement No. 4

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC
UTILITY COMMISSION

v.

Docket No. R-2020-3017206

PHILADELPHIA GAS WORKS

DIRECT TESTIMONY OF
JEROME D. MIERZWA

ON BEHALF OF THE
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

June 15, 2020

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1 **I. INTRODUCTION**

2 Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS
3 ADDRESS?

4 A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter
5 Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway,
6 Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-
7 related consulting services.

8 Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
9 EXPERIENCE.

10 A. I graduated from Canisius College in Buffalo, New York in 1981 with a Bachelor of
11 Science Degree in Marketing. In 1985, I received a Master's Degree in Business
12 Administration with a concentration in finance, also from Canisius College. In July
13 1986, I joined National Fuel Gas Distribution Corporation ("NFGD") as a
14 Management Trainee in the Research and Statistical Services ("RSS") Department. I
15 was promoted to Supervisor RSS in January 1987. While employed with NFGD, I
16 conducted various financial and statistical analyses related to the company's market
17 research activity and state regulatory affairs. In April 1987, as part of a corporate
18 reorganization, I was transferred to National Fuel Gas Supply Corporation's (NFG
19 Supply's) rate department where my responsibilities included utility cost-of-service
20 and rate design analysis, expense and revenue requirement forecasting, and activities
21 related to federal regulation. I was also responsible for preparing NFG Supply's
22 Purchased Gas Adjustment ("PGA") filings and developing interstate pipeline and
23 spot market supply gas price projections. These forecasts were utilized for internal
24 planning purposes as well as in NFGD's 1307(f) proceedings.

1 In April 1990, I accepted a position as a Utility Analyst with Exeter. In
2 December 1992, I was promoted to Senior Regulatory Analyst. Effective April 1996,
3 I became a Principal of Exeter. Since joining Exeter, I have specialized in evaluating
4 the gas purchasing practices and policies of natural gas utilities, utility class cost-of-
5 service and rate design analyses, sales and rate forecasting, performance-based
6 incentive regulation, revenue requirement analysis, the unbundling of utility services,
7 and evaluation of natural gas customer choice transportation programs.

8 Q. HAVE YOU PREVIOUSLY TESTIFIED ON UTILITY RATES IN
9 REGULATORY PROCEEDINGS?

10 A. Yes. I have provided testimony on more than 350 occasions in proceedings before
11 the Federal Energy Regulatory Commission (“FERC”), utility regulatory
12 commissions in Arkansas, Delaware, Georgia, Illinois, Indiana, Louisiana, Maine,
13 Massachusetts, Montana, Nevada, New Jersey, Ohio, Rhode Island, South Carolina,
14 Texas, Utah, and Virginia, as well as before the Pennsylvania Public Utility
15 Commission (“Commission”).

16 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

17 A. On February 28, 2020, Philadelphia Gas Works (“PGW” or “Company”) filed an
18 application with the Commission to increase its distribution base rates by \$70.0
19 million, or 10.5 percent. Exeter was retained by the Pennsylvania Office of
20 Consumer Advocate (“OCA”) to review the class cost-of-service study (“CCOSS”)
21 and rate design proposals included in PGW’s application, as well as several new
22 service offerings initially approved in PGW’s most recent prior base rate proceeding
23 in Docket No. R-2017-2586783, and several supplier tariff modifications. My
24 testimony addresses PGW’s CCOSS and rate design proposals, as well as PGW’s
25 new service offerings and supplier tariff modifications.

1 Q. SHOULD PGW BE GRANTED A RATE INCREASE BY THE
2 COMMISSION IN THIS PROCEEDING?

3 A. No. As explained in the Direct Testimony of Scott J. Rubin in OCA Statement No. 1,
4 as a consequence of the coronavirus (“COVID-19”) pandemic devastating the health
5 and economy of the Commonwealth and the world, the Commission cannot rely on
6 many of the Fully Projected Future Test Year (“FPFTY”) projections included in
7 PGW’s Application. In addition, as a result of the COVID-19 pandemic, it would not
8 be just or reasonable to impose a rate increase at this time when unemployment
9 numbers are close to record-highs and the economic effects of the pandemic will not
10 be fully known for some time. Therefore, the Commission should deny PGW any
11 rate increase in this proceeding.

12 Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

13 A. If the Commission agrees that no increase is appropriate in this proceeding, PGW’s
14 existing base rates and charges should remain unchanged. If the Commission
15 determines that a base rate increase for PGW is warranted, that increase should be
16 assigned to each customer class through proportionate system average increases to the
17 base rates applicable for each customer class. If the Commission determines,
18 however, that the traditional base rate setting process should be followed in this
19 proceeding, wherein rates are based on cost of service and other generally accepted
20 rate design principles, I have reached the following conclusions:

- 21 • Typical of a natural gas distribution company (“NGDC”), a significant
22 percentage of PGW’s plant, approximately 50 percent, is comprised of
23 distribution mains investment;
- 24 • PGW’s class cost of service study misallocates its mains plant investment and
25 related costs, producing study results that do not reasonably reveal an accurate
26 indication of class allocated cost responsibilities. PGW’s study also
27 misallocates several other cost items including those costs reflected in

1 Operation and Maintenance (“O&M”) Accounts 890, 893, 903, and 908, and
2 misallocates late payment revenues;

3 • The Peak & Average Study presented by the OCA in this proceeding reflects
4 an allocation of mains investment that is more consistent with established
5 Commission precedent and cost-of-service principles and corrects other
6 misallocations of costs in the Company’s study;

7 • The revenue distribution in this proceeding should be guided by the results of
8 the OCA’s Peak & Average Study;

9 • PGW’s current monthly Residential customer charge is \$14.60. The
10 Company is proposing to increase this charge to \$19.95, or by 30 percent.
11 PGW’s proposal to increase the Residential customer charge to \$19.95 should
12 be rejected. The charge should initially be established at \$16.00, and
13 proportionately reduced to reflect in the increase actually authorized by the
14 Commission in this proceeding; and

15 • PGW’s Gas Procurement Charge (“GPC”) should be revised to \$0.0214 per
16 Mcf.

17 Irrespective of what the Commission decides in this proceeding with respect
18 to the base rate increase, which should not be authorized, and the allocation of that
19 increase to the various customer classes served by PGW, I recommend the following
20 concerning other issues raised by the Company’s application:

21 • PGW’s Daily Imbalance Surcharge which is assessed on the imbalances of
22 suppliers serving interruptible transportation (“IT”) customers should be
23 modified to be consistent with the charges assessed on the imbalances of
24 suppliers serving firm transportation customers;

25 • PGW’s proposed modifications to the capacity assignment provisions to the
26 resolution of supplier pool balances provisions of its gas supplier tariff appear
27 reasonable;

28 • The Technology and Economic Development (“TED”) Rider should be
29 continued subject to the reporting requirements discussed in my testimony;

30 • The proposed clarifications to the Pilot Micro-Combined Heat and Power
31 (“Micro-CHP”) Incentive Program should be approved; and

32 • PGW should continue to provide service under Back-Up Service-Rate BUS,
33 and continue to provide the information currently provided in its annual gas
34 cost rate (“GCR”) filings concerning Rate BUS.

1 Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

2 A. Including this introductory section, my testimony is divided into six sections, and,
3 except where indicated, is based on the assumption that the Commission has
4 determined that the traditional base rate setting proceeding should be followed in this
5 proceeding. However, as indicated previously in my testimony and addressed by Mr.
6 Rubin, due to the COVID-19 pandemic, the traditional base rate setting process
7 should not be followed in this proceeding. In the section following the introduction
8 section, I detail the reasons that support a finding that PGW’s cost of service study
9 produces an inaccurate indication of the allocated costs of serving the Company’s
10 various customer classes. The next section addresses class revenue requirement
11 allocations. The fourth section of my testimony addresses PGW’s proposed
12 Residential rate design and Gas Procurement Charge (“GPC”). The next section of
13 my testimony addresses the modifications proposed by PGW to its gas supplier tariff.
14 The final section of my testimony addresses the new service programs proposed by
15 PGW in its last base rate proceeding in Docket No. R-2017-2586783.

16

17 **II. COST ALLOCATION**

18 Q. PLEASE DESCRIBE THE COST OF SERVICE STUDY SUBMITTED BY
19 PGW IN THIS PROCEEDING.

20 A. PGW’s cost of service study is presented by Ms. Constance E. Heppenstall of Gannett
21 Fleming Valuation & Rate Consultants, LLC. In a cost of service study, costs are
22 assigned to the various customer classes based on, to the best ability of the cost
23 practitioner performing the study to determine, the classes that have “caused” the
24 utility to incur such costs. Customers cause the utility to incur costs by demanding
25 the services for which the Company incurs costs.

1 PGW's study uses the Average and Excess Demand Method ("A&E method")
2 of allocating costs to service classifications (customer classes). The A&E method is
3 identified in *Gas Rate Fundamentals* (published in 1987 by the American Gas
4 Association's Rate Committee), in which it is described. The three basic categories
5 of cost responsibility identified in PGW's study are commodity, capacity and
6 customer costs.

7 Commodity costs are the costs that tend to vary with the quantity of gas used.
8 In PGW's study, commodity costs include production investment and operation and
9 maintenance costs. Commodity costs were allocated to customer classes on the basis
10 of average daily sales volumes.

11 Capacity costs are costs associated with meeting the peak demands of the
12 PGW system. Capacity costs include distribution expenses, and capital costs not
13 associated with the customer cost category. Capacity costs were allocated to the
14 customer classes on a combined basis of average use and excess demand (demand in
15 excess of average use).

16 Customer costs are costs associated with serving customers regardless of their
17 usage or demand characteristics. Customer costs include the expenses and capital
18 costs related to meters, services, and expenses related to meter reading and billing.
19 Customer costs were allocated to the customer classes on the bases of the numbers of
20 meters, services and customers.

21 Q. PLEASE IDENTIFY THE CUSTOMER RATE CLASSES INCLUDED IN
22 PGW'S COST OF SERVICE STUDY.

23 A. The Company's cost of service study includes eight rate classes:

- 24 • Residential;
- 25 • Commercial;

- 1 • Industrial;
- 2 • Municipal;
- 3 • Philadelphia Housing Authority (“PHA”) General Service (“GS”);
- 4 • PHA-Rate 8;
- 5 • Natural Gas Vehicle Service (“NGVS”); and
- 6 • Interruptible.

7 Q. HOW DID PGW ALLOCATE ITS DISTRIBUTION MAINS PLANT
8 INVESTMENT, ITS SINGLE LARGEST RATE BASE ITEM?

9 A. Mains investment was allocated using the A&E method. Under the A&E method
10 described in *Gas Rate Fundamentals*, the average daily demand and the total system
11 coincident peak demand of each customer class are determined. The ratio developed
12 by dividing average demands by total system coincident peak demand is referred to as
13 the system average load factor. Under the A&E method described in *Gas Rates*
14 *Fundamentals*, a portion of main investment equal to the system average load factor
15 is classified as commodity-related and is allocated to class based on average daily
16 demands. The balance, or the difference between total system coincident peak
17 demand and average daily demands (i.e., 1 minus system average load factor), is
18 considered Excess Demand. Excess Demand is allocated to each class based on each
19 class’ relative contribution to the total non-coincident peak demand of all the classes
20 served.¹

21 In summary, the A&E method claims to separately identify those costs
22 associated with meeting average demands and allocates those costs to customer class
23 based on average demands. It also separately identifies the costs associated with

¹ The coincident peak demand of a customer class is that class’ demand at the time of system peak. The non-coincident peak demand of a customer class is that class’ maximum demand, regardless of whether that maximum demand occurred at the time of system peak.

1 meeting demands in excess of average demands and allocates those costs to customer
 2 classes based on the non-coincident peak demands of each class. The A&E method
 3 presented in *Gas Rates Fundamentals* assumes a significant difference between each
 4 customer class' demand at the time of system peak (coincident peak demand), and
 5 each customer class' non-coincident peak demand. For illustrative purposes, shown
 6 below are the coincident and non-coincident peak demands of the customer classes
 7 included in the A&E method example presented in *Gas Rates Fundamentals*.

Table 1. Class Demands Reflected in *Gas Rates Fundamentals* - A&E Method

Class of Service	Peak Demand (Mcf)	
	Coincident	Non-Coincident
Residential	1,570	3,000
Commercial	714	1,250
Industrial	599	1,100
Interruptible	1,284	3,000
Total	4,167	8,350

8

9 Q. DOES THE A&E METHOD PRODUCE A REASONABLE ALLOCATION
 10 OF MAINS COSTS ON THE PGW SYSTEM?

11 A. No, it does not. In *Gas Rate Fundamentals*, the A&E method is described as an
 12 approach that captures the cost responsibility related to both the average annual
 13 volumetric use of capacity and to the additional capacity required to meet maximum
 14 system loads (peak demand). As explained later in my testimony, the A&E method,
 15 while claiming to recognize the importance of average annual volumetric use,
 16 actually assigns excessive cost responsibility to peak demands on the PGW system.
 17 In addition, on systems such as PGW's with little or no customer class load diversity,
 18 the A&E method collapses into a pure peak allocation method. That is, 100 percent

1 of mains investment would be allocated based on each class' contribution to the total
2 system peak under the A&E method, and no costs would be allocated on average
3 demands.

4 Q. WHAT DO YOU MEAN BY LOAD DIVERSITY?

5 A. Load diversity refers to the difference between the total system demand at the time of
6 peak and the sum of the total non-coincident peak demands of each of the customer
7 classes. The greater this difference, the greater the load diversity. Diversity can be
8 captured in the concept of a load diversity ratio. A load diversity ratio can be
9 calculated by dividing non-coincident peak demand by total system demand at the
10 time of peak. Since the system peak demand cannot be greater than the sum of all
11 class non-coincident peaks, the load diversity factor cannot be less than 1.0.

12 Q. PLEASE DEMONSTRATE HOW THE A&E METHOD COLLAPSES
13 INTO A PURE PEAK METHOD WHEN NO SYSTEM LOAD DIVERSITY
14 EXISTS.

15 A. There are several ways to demonstrate that the A&E method, while purporting to give
16 significant weight to average demands, in fact, does not. One way is simply to
17 examine the algebraic logic of the A&E formula. In algebraic terms, peak demands
18 can be stated as the sum of average demands and excess demands:

19 (1) Peak Demand = Average Demand + Excess Demand.

20 Excess Demand, however, is simply Peak Demand less the
21 Average Demand:

22 (2) Excess Demand = Peak Demand - Average Demand.

23 Substituting equation (2) for the Excess Demand term of
24 equation (1) yields:

1 (3) Peak Demand = Average Demand + Peak Demand - Average
2 Demand.

3 Equation (3) collapses into a useless identity:

4 (4) Peak Demand = Peak Demand

5 The algebra above holds true when there is no system diversity and average
6 demands are weighted by system load factor and peak demands are weighted by one-
7 minus-system load factor, as the *Gas Rate Fundamentals* description requires. Stated
8 differently, the formula used by Ms. Heppenstall is:

9 Allocation = Average Demand + (Peak Demand - Average Demand)

10 The term in the parentheses is Excess Demand, but the whole right-hand side
11 of the equation is simply the definition of peak demand. Thus, the algebra
12 underpinning of the A&E allocation methodology is shown to be identical to the
13 allocation of costs on a pure peak demand basis.

14 A second way to show that the A&E method appears to give substantial
15 weight to average demands but, in fact, does not, is through an arithmetic example
16 utilizing PGW's customer classes. Table 2 below shows the resulting pure peak
17 allocation factors and the resulting A&E allocation factors reflected in the study filed
18 by PGW with its application when the factors are developed consistent with the *Gas*
19 *Rate Fundamentals* description.

Table 2. Comparison of Average & Excess and Peak Factors

Rate Class	Average Demand	Peak Demand	Excess Demand	A&E Factor	Peak Factor
Residential	95,087	429,513	334,426	67.236	67.236
Commercial	29,515	107,276	77,761	16.793	16.739
Industrial	2,387	9,559	7,172	1.496	1.496
Municipal	2,744	11,394	8,650	1.784	1.784
PHA GS	487	2,119	1,632	0.332	0.332
PHA-Rate 8	1,245	5,251	4,006	0.822	0.822
NGVS	2	6	4	0.001	0.001
Interruptible	37,849	73,696	35,847	11.536	11.536
Total	169,316	638,814	469,498	100.0%	100.0%

Notes:

Load Factor = 26.505 percent.

A&E Factor = (Class Average Demand / Total Average Demand) x Load Factor + (Class Excess Demand / Total Excess Demand) x (1 – Load Factor).

1 This table shows that when average demands are weighted by the system load
2 factor and when peak demands are based on the maximum system load, the resulting
3 A&E allocation factors are identical to the pure peak allocation factors. As shown
4 above, the A&E method, while appearing to arithmetically consider class average
5 demands in the allocation of demand related costs, effectively provides no weight to
6 average demands.

7 Q. HAS MS. HEPPENSTALL ACKNOWLEDGED THAT A&E
8 ALLOCATION FACTOR FOR DISTRIBUTION MAINS IS IDENTICAL
9 TO A PURE PEAK?

10 A. Yes, Ms. Heppenstall made this acknowledgement in the response to the Office of
11 Small Business Administration (“OSBA”) discovery request OSBA-01-06(b).

12 Q. WHAT IS THE IMPORTANCE OF THIS FINDING THAT THE
13 AVERAGE AND EXCESS ALLOCATION METHOD DOES NOT GIVE
14 SIGNIFICANT WEIGHT TO ANNUAL OR AVERAGE DEMANDS?

1 A. Ms. Heppenstall apparently believes, as I strongly believe, that a significant portion
2 of PGW's mains plant and related expenses are properly allocated on average
3 demands. Ms. Heppenstall shows that she intended to weight average demands 26.5
4 percent, but in actuality, Ms. Heppenstall's mains allocation factors are identical to
5 the results obtained when average demand allocation factors are weighted at zero, and
6 pure peak allocation factors are weighted at 100 percent. I agree with Ms.
7 Heppenstall that a significant portion of mains costs should be allocated on average
8 demands and I will further address this subject later in my testimony when I present a
9 class cost of service study that does, in fact, allocate a portion of mains costs on the
10 basis of average demands.

11 Q. IS IT APPROPRIATE FOR PGW TO ALLOCATE ITS DISTRIBUTION
12 SYSTEM COSTS ON CLASS PEAK DEMANDS ONLY?

13 A. No. If Ms. Heppenstall's allocation of PGW's mains costs on the basis of peak
14 demands were in accord with the principle of cost-causality, then demands for natural
15 gas deliveries only under peak day weather conditions would have to be the only
16 cause for the existence and customer utilization of PGW's mains for gas delivery
17 service. Peak day demands represent the maximum annual demands that are
18 experienced under extreme weather conditions. While a portion of PGW's mains
19 costs are associated with, and hence, should be allocated on peak demands, it is
20 obviously wrong to claim that most mains costs are caused by end-use consumer
21 demands on the coldest days which are experienced in PGW's service territory. Quite
22 simply, if PGW's customers had a demand for gas only on the annual peak day, there
23 wouldn't be a PGW distribution system. The costs of delivered gas supplies on that
24 one peak day would be prohibitively high, and the cost of delivering gas through

1 PGW's distribution system on that one day simply could not compete with alternative
2 energy costs.

3 Q. IF LOCAL GAS DISTRIBUTION SYSTEMS ARE NOT BUILT SOLELY
4 TO MEET THE MOST SEVERE DAY WHICH MAY BE EXPERIENCED,
5 WHY DO NGDCS INCUR DISTRIBUTION MAINS INVESTMENT
6 COSTS?

7 A. The basic reason, of course, why NGDCs like PGW invest in their distribution
8 systems is to meet the annual demands for gas by end-use customers. This is the
9 reason for the existence of the NGDC in the first place. Without sufficient annual gas
10 usage over which to amortize the annual costs of providing service, there would be no
11 gas distribution system. Additionally, as I will describe later, a small amount of the
12 total cost of distribution service is related to installing a system with enough
13 throughput capacity to meet peak demands as well as annual demands. Because
14 mains exist and are related to both annual demands and peak demands, both annual
15 and peak demands must be recognized in the allocation of mains costs, if the
16 allocation is to be in accordance with the principle of cost-causality.

17 Q. HOW DOES PGW DETERMINE WHETHER TO INVEST IN ITS
18 DISTRIBUTION SYSTEM AND EXTEND ITS MAINS TO CONNECT
19 CUSTOMERS?

20 A. PGW's decisions to extend its mains are guided by its Extension and Rights-of-Way
21 Policy set forth in Section 10.1 of the Company's tariff.

22 Q. DOES THE COMPANY'S EXTENSION AND RIGHTS-OF-WAY POLICY
23 CONSIDER PEAK DAY DEMANDS?

24 A. No. For Residential customers, annual delivery charge revenues are considered in
25 PGW's mains extension decision making process. For Commercial and Industrial

1 customers, annual base rate revenues (delivery and customer charges) are considered
2 in PGW's mains extension decision making process. Without sufficient annual
3 demands, PGW has no obligation to extend its system to potential customers, and
4 would not incur the costs to meet customer demands for gas only on one day. PGW
5 may require a contribution-in-aid-of-construction ("CIAC") if the base rate revenues
6 associated with a mains extension are insufficient to justify the investment.

7 Q. WHY IS IT PROPER TO ALLOCATE MAINS INVESTMENT ON THE
8 BASIS OF ANNUAL AS WELL AS PEAK DEMANDS?

9 A. The allocation of mains investment costs on the basis of both annual and peak
10 demands is in accord with the principle of allocating costs on the basis of
11 costcausality. Natural gas is of little or no value to an end user if that gas cannot be
12 delivered to the location of the gas burning equipment. PGW's distribution system
13 imparts locational value to the natural gas delivered across that system by allowing
14 for the movement of that gas from its acquisition source to each customer's location.
15 PGW's distribution system exists, and related costs are incurred, to deliver gas to its
16 customers whenever, over the course of each year, its customers demand gas. In
17 other words, PGW's system was built and costs were incurred to deliver gas both at
18 the time of peak system demand and generally throughout the year. Because costs are
19 incurred to deliver gas generally throughout the year, and additional costs are
20 incurred to meet peak demands, PGW's mains costs must be allocated on the basis of
21 both annual and peak demands if those costs are to be allocated in accord with the
22 principle of cost causality. PGW's failure to properly allocate its mains costs
23 associated with average demands, and its allocation of its mains system investment
24 costs on peak demands, violates the principle of cost-causality.

1 Q. PLEASE EXPLAIN YOUR STATEMENT THAT COSTS ARE INCURRED
2 TO DELIVER BOTH ANNUAL AND PEAK VOLUMES ACROSS PGW'S
3 SYSTEM.

4 A. PGW's customers are projected to move approximately 61,800,000 Mcf across PGW's
5 system during the cost of service study annual test period. This equates to an average
6 demand of about 169,000 Mcf each day. PGW's peak demand is about 639,000 Mcf.
7 PGW could not meet its customers' annual gas demands with a system capability any
8 smaller than 169,000 Mcf. In other words, if there were no variance in the daily
9 demands on PGW's system, the capacity of that system would have to be designed to
10 accommodate the daily movement of 169,000 Mcf just to meet annual demands. To
11 meet peak demands, PGW's system capacity must be roughly 3.8 times greater than
12 169,000 Mcf. Thus, some costs are related to the average deliveries each day on the
13 PGW's system, and some costs are related to the movement of gas when demands are
14 above the average demand.

15 Rational investment decision analysis requires the consideration of annual
16 volumes delivered across a NGDC's system. A gas distribution system would not
17 exist if all demand related costs were the responsibility of peak demands. A viable
18 gas market is dependent upon the ability to amortize delivery costs over a sufficient
19 volume of service so as to result in a unit cost that can be recovered at a price at
20 which gas can be sold and still compete with other energy sources. The association of
21 costs with annual as well as peak demands, and the allocation of costs on the basis of
22 both annual and peak demands for gas are absolutely essential to the economic
23 feasibility of a gas delivery system. To largely ignore annual demands and allocate
24 total mains costs on peak demands, as PGW's cost of service study does, is

1 inconsistent with the consideration of annual demands which are absolutely essential
2 to the economic justification of the very costs being allocated.

3 Q. HOW DO THE COSTS OF PROVIDING FOR THE MOVEMENT OF GAS
4 TO MEET PEAK DEMANDS COMPARE TO THE COSTS OF
5 PROVIDING FOR THE MOVEMENT OF GAS TO MEET LESSER
6 DEMANDS?

7 A. Many of the costs associated with the distribution delivery system are not significantly
8 affected by pipe size. These costs would include planning, surveying, excavating,
9 hauling, pipe bed preparation, unloading and stringing of pipe, municipal inspection,
10 backfill, and pavement and sidewalk replacement. Therefore, total costs do not
11 increase at a one-to-one ratio with increases in maximum demands. The additional
12 costs associated with meeting elevated demands are largely related to the cost of the
13 pipe itself.

14 Moreover, throughput capability increases not at a one-to-one ratio with the
15 size of the pipe, but at a rate equal to the square of the pipe's diameter. Doubling the
16 diameter of a pipe, for example, increases its capacity by four times the original
17 capacity. Thus, the additional costs of providing additional capacity are lower than
18 the average costs of providing capacity. This means that the costs associated with
19 providing capacity for the movement of average demands are greater on a unit basis
20 than are the costs associated with providing capacity for additional demands. PGW's
21 distribution system exists to deliver annual system requirements. There are costs that
22 are uniquely associated with meeting peak demands, and as such peak demands
23 should bear some cost responsibility.

24 Q. ARE GAS FLOWS ON THE DESIGN PEAK DAY SO IMPORTANT THAT
25 MOST OF PGW'S DISTRIBUTION SYSTEM COSTS ARE DIRECTLY

1 RELATED TO, AND CAUSED BY, PEAK DAY DEMAND
2 REQUIREMENTS?

3 A. No. Peak demands are not the major cause of PGW's demand-related mains cost, and
4 it is therefore wrong to allocate mains-related costs on the basis of peak demands, as
5 Ms. Heppenstall has done. Only the marginal costs incurred to meet peak demands
6 above other demands are caused by, or directly related to, peak requirements. The
7 PGW delivery system would not be viable and simply would not exist if the only
8 demand for gas was the demand associated with extreme weather conditions. The
9 PGW delivery system exists because the total annual demand for gas is sufficient to
10 warrant its existence. It is an extreme and erroneous view that the mains costs
11 associated with PGW's delivery network are caused by peak day demands. Because
12 PGW's system exists to deliver annual gas requirements, but some additional costs are
13 related to the delivery of gas during periods of elevated demand, it is appropriate to
14 allocate its mains costs on both annual and peak demands. The allocation of
15 distribution system-related costs largely on the basis of peak demands, as PGW has
16 done, misallocates substantial costs.

17 Q. TO WHAT EXTENT DO THE COSTS OF MEETING PEAK GAS FLOW
18 REQUIREMENTS EXCEED THE COSTS OF MEETING AVERAGE GAS
19 FLOW REQUIREMENTS?

20 A. PGW's peak day demand is about 3.8 times its average demand. A pipe's cross-
21 sectional area, and correspondingly its capacity, varies with the square of its radius.
22 Therefore, doubling the size of a pipe's radius (or diameter), increases the capacity of
23 the pipe four-fold. For example, doubling the diameter of a 2-inch pipe to 4 inches
24 increases the capacity by 4 times the capacity of the 2-inch pipe. Increasing the
25 diameter of a 2-inch pipe to 8 inches increases the capacity by 16 times. The costs of

1 meeting increased flow requirements that are caused by, or associated with, elevated
2 demands is answered by the relationship of the change in total capacity costs and to
3 the change in capacity.

4 I explained earlier that since many capacity costs do not change significantly
5 with the size of the pipe, the increased costs associated with meeting increased
6 capacity requirements is expected to be small. Indeed, it is largely these economies
7 of scale that lead to falling average costs of service and the provision of gas
8 distribution service more economically by one monopoly provider, like PGW, rather
9 than by many competing providers.

10 Q. DO YOU HAVE PGW-SPECIFIC DATA ILLUSTRATING THAT THE
11 INCREASED COSTS ASSOCIATED WITH MEETING INCREASED
12 DEMANDS ARE SMALL?

13 A. In OCA-01-20, PGW was asked to provide a breakdown of transmission and
14 distribution mains investment by pipe diameter and footage. The Company
15 responded that the related footage of mains for its mains investment is not available.
16 Therefore, I do not have current PGW-specific data illustrating that the increased
17 costs associated with meeting increased demands are small. However, I was the
18 OCA's cost allocation rate design witness in PGW's most recent prior base rate
19 proceeding (Docket No. R-2017-2586783). In that proceeding, PGW provided
20 information indicating that since 2005, the most common type of distribution that has
21 been installed was plastic mains, and PGW also provided the average per-foot cost to
22 install those mains. Table 3 presents the data included in my direct testimony in
23 Docket No. R-2017-2586783 related to the average per-foot cost to install plastic
24 mains since 2005:

Table 3.
PGW's Cost of Installed Plastic mains

Diameter (inches)	Average Cost (per foot)
2	\$85
4	\$143
6	\$171
8	\$176

1 As shown in Table 3, the average cost of installing a 2-inch main was
 2 approximately \$85 per foot, while the average cost of installing a 4-inch main was
 3 approximately \$143 per foot. Thus, for a four-fold increase in capacity, PGW's total
 4 average costs increased by nearly 70 percent $((\$143-\$85)/\$85)$. Based on this
 5 example, a doubling of the pipe size (and hence a quadrupling of capacity) increased
 6 capacity costs by 70 percent, indicating that increased demands above average
 7 demands can be accommodated at increased distribution mains costs that are 18
 8 percent $(70 \text{ percent} / \text{four-fold increase in capacity})$ of the costs of meeting average
 9 demands:

2-inch	Cost per Foot		Percent	Capacity	Cost of
(a)	4-inch	Increase	(d)=(c)/(a)	Increase	Peak
\$85	(b)	(c) = (b)-(a)	70%	(e)	(f)=(d)/(e)
	\$143	\$58		4	18%

10 Table 3 indicates that the average cost of installing a 6-inch main was
 11 approximately \$170 per foot. Thus, for a 16-fold increase in capacity, PGW's total
 12 average costs increased by 100 percent $((\$170-\$85)/\$85)$ over the cost of 2-inch pipe.
 13 Based on this example, a quadrupling of pipe size (and hence a 16-fold increase in
 14 capacity) increased capacity costs by about 100 percent, indicating that increased
 15 demands above average demands can be accommodated at an increased distribution
 16 mains costs that are 6 percent $(100 \text{ percent} / 16\text{-fold increase in capacity})$ of the costs
 17 of meeting average demands:

2-inch	Cost per Foot		Percent	Capacity Increase	Cost of Peak
	4-inch	Increase			
(a) \$85	(b) \$170	(c) = (b)-(a) \$85	(d)=(c)/(a) 100%	(e) 16	(f)=(d)/(e) \$6

1 Given these two PGW-specific examples above, well less than half of
2 distribution mains costs are associated with meeting elevated peak demand
3 requirements and could be allocated based on peak demands, and the remainder is
4 related to customers' annual demands for natural gas and could be allocated on
5 average demands.

6 Q. PLEASE COMPARE YOUR VIEWS ON HOW MAINS-RELATED COSTS
7 SHOULD BE ALLOCATED WITH PGW'S VIEW.

8 A. PGW supports the allocation of its mains costs 26.5 percent on the basis of average
9 demands and 73.5 percent on the basis of excess demands. The A&E method utilized
10 by Ms. Heppenstall results in an allocation of mains costs based on a pure peak
11 method of allocation. I have shown that there are incremental costs, small though
12 they may be, associated with building a gas delivery system with sufficient capacity
13 to meet peak demands, which are higher than average demands.

14 Under Ms. Heppenstall's cost allocation procedures, no mains costs are
15 allocated on the basis of customer average demands, which is the basic service that
16 PGW provides and the very reason PGW exists in the first place. PGW's proposed
17 cost allocation method, which in fact does not allocate costs on the basis of the
18 primary service (annual delivery of gas) that PGW provides, and without which the
19 PGW distribution system would not exist, violates the principle of allocating costs in
20 accord with cost-causality. On the other hand, my subsequent recommendation to
21 actually accomplish the allocation of a portion of mains costs on the basis of average

1 demands that cause those costs, and the allocation of a portion of mains costs on the
2 basis of the peak demands that cause the peak-related distribution costs, is consistent
3 with Ms. Heppenstall's belief and her attempt to allocate a portion of costs on average
4 demands, and comports with the principle that costs should be allocated to the service
5 units that cause the costs.

6 Q. HOW CAN MAINS INVESTMENT COSTS BE PROPERLY
7 ALLOCATED?

8 A. The additional costs of providing capacity in order to meet peak demands, as opposed
9 to lesser demands, should be allocated on a peak demand basis. I demonstrated earlier
10 that no more than approximately 20 percent of PGW's mains costs are associated with
11 meeting increased demands, and hence, a small portion of mains costs should be
12 allocated on the basis of peak demands. I conservatively recommend that 50 percent
13 of PGW's mains system costs, instead of a lesser amount, be allocated on the basis of
14 peak demands. The remaining 50 percent of PGW's mains costs, being related to, or
15 caused by, PGW's annual gas requirements, should be allocated on annual or average
16 demands. This 50 percent peak/50 percent average (Peak & Average) allocation is a
17 conservative recommendation regarding the recognition of annual, or average,
18 deliveries, as it recommends far less than the approximately 80 percent cost
19 responsibility associated with annual demands.

20 Q. HAS THIS COMMISSION PREVIOUSLY APPROVED USE OF THE
21 PEAK & AVERAGE METHOD?

22 A. Yes. The Commission has previously accepted the fact that mains are built on the
23 basis of year-round demands as well as peak demands. In National Fuel Gas
24 Distribution's ("NFGD") 1994 base rate proceeding, the Commission accepted the
25 Peak & Average methodology, stating, "[T]he Peak and Average method that

1 allocates mains equally is a sound and reasonable method of cost allocation and
2 should remain intact.” Pa. P.U.C. v. National Fuel Gas Distribution Co., 83 Pa. PUC
3 262 (1994). See also, Pa. P.U.C. v. National Fuel Gas Distribution Co., 73 Pa. PUC
4 552 (1990); Pa. P.U.C. v. Equitable Gas Co., 73 Pa. PUC 301 (1990); Pa. P.U.C. v.
5 National Fuel Gas Distribution Corp. 72 Pa. PUC 1 (1989); Pa. P.U.C. v. Peoples Gas
6 Co., 69 Pa. PUC 138 (1989).

7 Q. HAVE OTHER COMMISSIONS ACCEPTED THE USE OF THE PEAK
8 AND AVERAGE METHOD?

9 A. Yes. The Indiana Utility Regulatory Commission (“IURC”) has strongly endorsed
10 the use of the Peak & Average methodology. See In re Citizens Gas & Coke Utility,
11 IURC Cause No. 42767, (Oct. 19, 2006). The IURC found that the Peak & Average
12 method was the “equitable and realistic” method for allocating distribution mains
13 costs, and provided the following analysis:

14 Based upon the record evidence, this Commission concludes
15 that the OUCC's cost-of-service study is most reflective of
16 cost causation and possesses a high degree of objectivity
17 upon which the Commission may place reliance in
18 establishing the rates and charges in this proceeding.

19 While we do not doubt that distribution mains must be
20 constructed with peak demand in mind, distributions mains
21 do not only serve customers on peak demand days.
22 Therefore, a measure of the costs of distribution mains must
23 be allocated to customers based on their usage that takes
24 place on non-peak days. For example, a customer that does
25 not take service at all on the peak demand day-and therefore
26 contributes nothing to peak demand requirements of
27 distribution mains-but receives service through distribution
28 mains at other times should be responsible for some portion
29 of distribution main costs

30 The OUCC's approach is much more equitable and realistic.
31 Rather than allocating distribution main costs exclusively
32 based on either peak demand day or average annual

1 consumption, the OUCC used a compromise approach that
2 allocated these costs based on both. Under the OUCC's cost
3 of service study, 80% of distribution main costs are allocated
4 based on average demand. (Public's Ex. No. 6 at 13.) In this
5 way, the OUCC's approach allocates part of distribution
6 main costs to customers who receive service through
7 distribution mains throughout the year but who may not
8 receive much or any service on the peak demand day

9 For the reasons set forth above, we find the OUCC's cost of
10 service study most accurately reflects the manner in which
11 distribution main costs are actually incurred. See, *In Re*
12 *Citizens Gas & Coke Utility*, IURC Cause No. 39066, at 31
13 (Nov. 1, 1999). We therefore adopt the OUCC's cost of
14 service study to implement the rates increase approved in
15 this Cause.

16 *In re Citizens Gas & Coke Utility*, IURC Cause No. 42767, at 74-75 (Oct.19, 2006).

17 The Illinois Commerce Commission (“ICC”) has accepted the Peak & Average
18 method for allocating transmission and distribution costs in the natural gas industry.
19 The ICC explained the reasoning behind utilizing a Peak & Average methodology in
20 their decision as follows:

21 Generally, [Central Illinois Public Service Company or
22 “CIPS”] and [Union Electric Company or “UE”] gas
23 transmission and distribution facilities exist because there is
24 a daily need for such facilities. Regardless of when CIPS
25 and UE experience their respective peak and the level of the
26 peak, customers depend on the continued operation of the
27 Ameren gas transmission and distribution systems to meet
28 their daily needs. On the day that the peak does occur.
29 Ameren’s own Mr. Carls testifies that CIPS’ and UE’s
30 respective systems are built to accommodate the system peak
31 without regard to each class’ peak. In light of the nature in
32 which the transmission and distribution systems are used and
33 because of the relatively declining cost of increasing
34 capacity, peak demand is not the appropriate emphasis in
35 allocating demand costs...As the Commission concluded in
36 Docket 94-0040, a utility cannot justify its transmission and
37 distribution investment on demands for a single day. The
38 allocation method that properly weights peak demand is the
39 [Average & Peak or “A&P”] method, the same method that
40 the Commission adopted in CIPS’ and UE’s last gas rate

1 cases. The A&P method properly emphasizes the average
2 component to reflect the role of year-round demands in
3 shaping transmission and distribution investments.
4

5 Central Ill. Pub. Service Co. Proposed General Increase in Natural Gas Rates, et al.,
6 2003 Ill. PUC Lexis 824, 231-232 (2003).

7 Q. DO YOU HAVE OTHER CONCERNS WITH PGW'S COST OF SERVICE
8 STUDY?

9 A. Yes. I also have concerns with the Company's allocation of the costs included in
10 O&M Accounts 890, 893, 903 and 908, and the allocation of late payment revenues.

11 Q. PLEASE EXPLAIN YOUR CONCERN WITH THE COMPANY'S
12 ALLOCATION OF THE EXPENSES IN O&M ACCOUNT 890.

13 A. O&M Account 890 includes the costs associated with the Maintenance of Measuring
14 Station Expenses – Industrial. Per the response to OSBA-02-17, these costs should
15 have been allocated based on Factor 5 (Direct Assignment to the Industrial Class)
16 rather than Factor 6 (Service Line Investment, Plant Account 380).

17 Q. PLEASE EXPLAIN YOUR CONCERN WITH THE COMPANY'S
18 ALLOCATION OF THE EXPENSES IN O&M ACCOUNT 893.

19 A. O&M Account 893 includes the costs associated with the Maintenance of Meters and
20 House Regulators. These costs have been allocated to customer class based on the
21 number of customers (Factor 7). These costs are more appropriately allocated on
22 Factor 4 which allocates costs based on meter investment in plant Account 381.

23 Q. PLEASE EXPLAIN YOUR CONCERN WITH THE COMPANY'S
24 ALLOCATION OF OTHER THE EXPENSES IN O&M ACCOUNTS 903
25 AND 908.

26 A. O&M Account 903 includes Customer Records and Collection Expenses. O&M
27 Account 908 includes Customer Assistance Expense. The costs in Accounts 903 and

1 908 have been allocated based on the number of customers (Factor 7). In its last base
2 rate case, PGW performed a detailed analysis of these costs to develop class
3 allocation factors for these accounts. This detailed analysis evaluated the extent to
4 which each customer class was served or befitted under the individual cost items
5 included in Accounts 903 and 908. In this proceeding, PGW did not perform a
6 detailed analysis of the individual cost items in Accounts 903 and 908 and simply
7 allocated those costs based on the number of customers. The Company should have
8 again performed a detailed analysis of the costs included in Accounts 903 and 908.
9 Since a detailed analysis was not performed, I recommend that the costs reflected in
10 Accounts 903 and 908 be allocated based on the detailed analysis of those accounts
11 included in PGW's last base rate case.

12 Q. WHAT IS YOUR CONCERN WITH PGW'S ALLOCATION OF OTHER
13 REVENUES?

14 A. PGW's cost of service study includes Other Revenues in the amount of \$12,161,000
15 which consists of \$10,500,000 in late payment revenues and \$1,661,000 in capacity
16 release and LNG sales revenue. As indicated in the response to OCA-16-08,
17 Residential customers are responsible for 90 percent of late payment revenues.
18 Therefore, I recommend that 90 percent of late payment revenues should be assigned
19 to the Residential class

20 Q. HAVE YOU PREPARED A COST OF SERVICE STUDY FOR THE PGW
21 SYSTEM THAT ADDRESSES YOUR CONCERNS WITH THE
22 COMPANY'S STUDY?

23 A. Yes. Schedule JDM-1 presents the results of a cost of service study that I have
24 performed for the PGW system under present rates. My study is modeled after the
25 Company's study but reflects the allocation of mains utilizing the Peak & Average

1 method. By allocating 50 percent of mains investment costs on the basis of average
2 demand in this study, I, as PGW attempted to, have recognized the critical fact that
3 PGW's existence as a viable business entity relies upon, and thus, its distribution
4 mains investment costs are caused by, end-user annual gas requirements. I have also
5 recognized that some additional costs are incurred to install mains that can flow peak
6 demand requirements in excess of average requirements by allocating a 50 percent
7 portion of mains investment costs on the basis of peak demands. Allocating 50
8 percent of PGW's mains costs based on peak demands results in a conservative
9 recognition of volumetric cost responsibility, for the reasons previously discussed.

10 For the reasons previously discussed, my study also revises the allocation of
11 O&M Accounts 890, 893, 903, and 908, and late payment revenues. These changes
12 to PGW's cost study correct significant misallocations of costs of PGW's total cost of
13 service and produce a cost study that is consistent with the principle that costs should
14 be allocated to the service units that cause the costs to be incurred.

15 Q. HOW DO THE RESULTS OF YOUR RECOMMENDED PEAK &
16 AVERAGE COST OF SERVICE STUDY COMPARE TO THE RESULTS
17 OF PGW'S A&E STUDY?

18 A. Table 4 below compares the results of PGW's and the OCA's cost of service studies
19 at present rates. The results presented in Table 4 for PGW are based on the responses
20 to OSBA-01-01 and OSBA-02-05 which corrected a number of errors reflected in the
21 cost of service study filed in the Company's initial application.

22

Table 4. Class Cost of Service and Rate of Return Present Rates

Class	Company			OCA Study		
	Cost of Service	Rate of Return	Index	Cost of Service	Rate of Return	Index
Residential	\$372,285	6.39%	1.01	\$354,377	7.81%	1.23
Commercial	63,328	9.21	1.45	68,318	7.15	1.13
Industrial	4,537	11.52	1.82	5,771	4.46	0.70
Municipal	6,501	2.26	0.36	6,754	1.03	0.16
PHA GS	2,162	(0.25)	(0.04)	2,098	0.19	0.03
PHA-Rate 8	2,481	6.34	1.00	2,492	6.34	1.00
NGVS	2	10.18	1.60	3	3.13	0.49
Interruptible	23,159	(0.73)	(0.12)	34,614	(5.51)	(0.87)
Overall	\$474,455	6.35%	1.00	\$474,428	6.35%	1.00

1 Q. EARLIER IN YOUR TESTIMONY YOU INDICATED THAT MR. RUBIN
2 WAS PRESENTING TESTIMONY EXPLAINING THAT THE
3 COMMISSION CANNOT RELY ON MANY OF THE FPFTY
4 PROJECTIONS INCLUDED IN THE COMPANY’S APPLICATION.
5 WHAT ARE THE IMPLICATIONS OF THIS FOR THE COMPANY’S
6 COST OF SERVICE STUDY?

7 A. It is a standard practice for a witness addressing a utility’s cost of service study and
8 rate design proposals to do so based on the utility’s proposed revenue requirement.
9 This allows the cost of service and rate design recommendations of different parties
10 to be compared on a comparable basis. This should not be taken, however, as an
11 endorsement of the utility’s proposed revenue requirement claims.

12 In this proceeding, I have relied upon the customer class annual usage and
13 peak demands reflected in the Company’s cost of service study. PGW’s cost of
14 service study is based on the projected usage and peak demands of customers by class
15 for a FPFTY ending August 1, 2021. As a result of the COVID-19 pandemic and the

1 resulting significant decline in economic activity, customer usage and peak demands
2 during the FPFTY are likely to be significantly lower than that reflected in the
3 Company's cost of service study. These declines are likely to be most significant for
4 PGW's commercial and industrial customers. These declines in usage and peak
5 demand are not reflected in PGW's cost of service study and, therefore, revenues at
6 present rates for the commercial and industrial classes are likely overstated in the cost
7 of service study, and the rate of return for these classes would also be overstated.

8 Q. SHOULD THE DECLINES IN ANNUAL USAGE AND PEAK DEMANDS
9 OF PGW'S COMMERCIAL AND INDUSTRIAL CUSTOMERS BE
10 REFLECTED IN THE COST OF SERVICE STUDY?

11 A. No. PGW's decisions to invest in distribution facilities to serve commercial and
12 industrial customers were based on the anticipated usage of these customers at the
13 time the investment decisions were made. While the annual usage and peak demands
14 of PGW's commercial and industrial customers are likely to have declined as a result
15 of the COVID-19 pandemic, PGW's investments to serve these customers have not
16 changed. Therefore, it would be inappropriate to reflect the declines in annual usage
17 and peak demands in the cost of service study because it would shift the costs
18 associated with PGW's investments to serve commercial and industrial customers to
19 other customers.

1 **III. CLASS REVENUE REQUIREMENTS**

2 Q. PLEASE DESCRIBE HOW PGW IS PROPOSING TO DISTRIBUTE ITS
3 REQUESTED REVENUE INCREASE AMONG ITS CUSTOMER
4 CLASSES IN THIS PROCEEDING.

5 A. PGW claims it is proposing to move each rate class toward the cost of service
6 indicated by its study while avoiding unreasonably large increases to any firm
7 customer class. PGW's proposed revenue distribution is presented in Table 5.

Table 5. Company Proposed Revenue Distribution

Class	Present Rates	Proposed Rates	Increase	Percent
Residential	\$318,467	\$377,566	\$59,098	18.6%
Commercial	59,883	63,183	3,300	5.5
Industrial	4,681	4,894	213	4.5
Municipal	4,541	5,476	935	20.6
PHA-GS	1,354	1,679	325	24.0
PHA – Rate 8	2,598	2,724	127	4.9
NGVS	2	2	0	0.0
Interruptible	12,700	18,700	6,000	47.2
Total	\$404,225	\$474,223	\$69,998	17.3%

8
9 Q. WHAT ARE SOME OF THE PRINCIPLES OF A SOUND REVENUE
10 ALLOCATION?

11 A. A sound revenue allocation should:

- 12 • Utilize class cost of service study results as a guide;
- 13 • Provide stability and predictability of the rates themselves, with a minimum of
14 unexpected changes seriously adverse to ratepayers or the utility (gradualism);
- 15 • Yield the total revenue requirement;
- 16 • Provide for simplicity, certainty, convenience of payment, understandability,
17 public acceptability and feasibility of application; and

- 1 • Reflect fairness in the apportionment of the total cost of service among the
2 various customer classes.²

3 Q. IS PGW'S PROPOSED REVENUE ALLOCATION REASONABLE?

4 A. No. PGW's revenue allocation is guided by its cost of service study results. As
5 explained in the prior section of my testimony, the annual usage and peak demands
6 reflected in PGW's cost of service study are unlikely to represent reasonable
7 estimates of the usage and demands of the Company's commercial and industrial
8 customers during the FPFTY. Therefore, the cost of service study is unlikely to
9 provide a reasonable indication of the rate of return for each customer class served by
10 PGW. Without a reasonable indication of the rate of return for each customer class,
11 there is no basis to differentiate the percentage amount of the increase assigned to
12 each customer class. Therefore, if the Commission determines that an increase in
13 rates is warranted in this proceeding, that increase should be assigned to each
14 customer class through proportionate system average across-the-board increases to
15 the base rates applicable for each customer class.

16 Q. IF THE COMMISSION DETERMINES THAT AN INCREASE IS
17 WARRANTED IN THIS PROCEEDING AND THAT THE INCREASE
18 SHOULD BE ASSIGNED TO EACH CUSTOMER CLASS BASED ON
19 THE RESULTS OF A COST OF SERVICE STUDY, SHOULD THE
20 COMPANY'S COST OF SERVICE STUDY BE USED TO DETERMINE
21 AN ALLOCATION OF THE INCREASE?

22 A. No. As explained in the prior section of my testimony, PGW's cost of service study
23 violates the principle of allocating costs on the basis of cost-causality, and does not
24 reasonably reflect the costs of providing service to the various customer classes. The

² *Principles of Public Utility Rates*, Second Edition, James C. Bonbright, Albert L. Danielsen, David R. Kamerschen; Public Utility Reports, Inc., 1988, pages 383-384.

1 OCA’s cost of service study, which corrects the flaws in PGW’s study, should be
 2 used as guide for the allocation of any increase authorized by the Commission in this
 3 proceeding, if the Commission determines that the use of a cost of service study for
 4 determining a revenue allocation is appropriate.

5 Although PGW’s revenue allocation is guided by its cost of service study
 6 results, the Company is not proposing to set rates based on the results indicated by its
 7 cost of service study, but has proposed a revenue allocation which reflects movement
 8 toward the indicated cost of service for each customer class. Such an approach would
 9 be reasonable if a cost of service study were to be utilized to determine a revenue
 10 allocation in this proceeding and that study provided a reasonable indication of the
 11 cost of service for each class. A revenue allocation guided by the results of the
 12 OCA’s cost of service study is presented in Table 6.

13

Table 6. OCA Proposed Cost of Service Study Revenue Distribution

Class	Present Rates	Proposed Rates	Increase	Percent
Residential	\$318,467	\$368,815	\$50,434	15.8%
Commercial	59,883	70,243	10,360	17.3
Industrial	4,681	5,895	1,215	26.0
Municipal	4,541	5,719	1,178	26.0
PHA-GS	1,354	1,679	352	26.0
PHA – Rate 8	2,598	3,159	449	17.3
NGVS	2	2	0	0.0
Interruptible	12,700	18,700	6,000	47.2
Total	\$404,225	\$474,213	\$69,988	17.3%

14

15 Q. HOW DID YOU DEVELOP YOUR PROPOSED REVENUE
 16 DISTRIBUTION?

1 A. Both the OCA's and Company's studies indicated that the Interruptible class was
2 providing a negative rate of return. Therefore, I maintained the increase proposed by
3 the Company for this class. Even with this increase, the Interruptible class is
4 providing a return which is significantly below the indicated cost of service. The
5 Industrial, Municipal, and PHA-GS rate classes are each providing a return which is
6 less than the system average return. For each of these classes, I have proposed an
7 increase which is 1.5 times the system average increase. PHA-Rate 8 is a very small
8 rate class and is providing a rate of return equal to the system average rate of return.
9 For this class, I am proposing an increase equal to the system average increase
10 requested by PGW. Rate NGVS is an extremely small rate class and, consistent with
11 the Company's proposal, I am proposing no rate increase for this class. The
12 Commercial class is providing a return which is slightly in excess of the system
13 average return and, therefore, I have proposed a system average increase for the
14 Commercial class to recover a portion of Interruptible class' revenue deficiency. I
15 assigned the remainder of the increase to the Residential class. The Residential class
16 is providing the highest rate of return, and assigning the remainder of the increase to
17 the Residential class results in slightly less than a system average increase for this
18 class, and recovers a portion of the Interruptible class revenue deficiency.

19 Q. WHAT DO YOU RECOMMEND WITH RESPECT TO A REVENUE
20 DISTRIBUTION IF THE COMMISSION AUTHORIZES AN INCREASE
21 FOR PGW WHICH IS LESS THAN THE INCREASE REQUESTED BY
22 PGW?

23 A. If the Commission authorizes an increase which is less than PGW's requested
24 increase, I recommend a proportionate scale-back of the increases reflected in Table 6.

1 **IV. RATE DESIGN**

2 Q. PLEASE DESCRIBE PGW'S CURRENT AND PROPOSED
3 RESIDENTIAL RATES.

4 A. Residential customers are currently assessed a monthly customer charge of \$13.75
5 and a volumetric distribution charge of \$6.6967 per Mcf. PGW is proposing to
6 increase the monthly Residential customer charge to \$19.25, or 40 percent, and
7 increase the volumetric distribution charge to \$7.3893 per Mcf, or 10 percent.

8 Q. IF THE COMMISSION DETERMINES AN INCREASE IS
9 APPROPRIATE, SHOULD PGW'S PROPOSED RESIDENTIAL
10 CUSTOMER CHARGE BE APPROVED?

11 A. No, it should not, for several reasons. First, PGW's proposed Residential customer
12 charge proposal is out of line with the Residential customer charges of other NGDCs
13 in the Commonwealth. Second, PGW's proposed Residential customer charge
14 violates the principle of gradualism. Finally, a high fixed monthly customer charge is
15 inconsistent with the Commission's general goal of fostering energy conservation. I
16 would note that OCA witness Mr. Roger Colton is also addressing PGW's proposed
17 Residential customer charge and has found that the proposed charge would have a
18 disproportionately negative impact on low-income and low-use customers.

19 Q. HOW DOES PGW'S PROPOSED RESIDENTIAL CUSTOMER CHARGE
20 COMPARE WITH THE MONTHLY RESIDENTIAL CUSTOMER
21 CHARGES OF OTHER NGDCS IN THE COMMONWEALTH?

22 A. Table 7 provides a comparison of PGW's Residential customer charge proposal with
23 the customer charges of other Pennsylvania NGDCs. If adopted, PGW's proposed

1 monthly Residential customer charge of \$19.95 would be significantly higher than
2 that of any other NGDC in the Commonwealth.

Table 7. Comparison of Residential Customer Charges for Pennsylvania NGDCs

PGW (proposed)	\$19.25
Columbia Gas of Pennsylvania	\$16.75
PGW (current)	\$14.60
Peoples Gas	\$15.75
Peoples Natural Gas (Peoples Division)	\$14.50
Peoples Natural Gas (Equitable Division)	\$14.50
National Fuel Gas Company	\$12.00
PECO Energy Company	\$11.75

3 Q. PLEASE EXPLAIN YOUR COMMENT THAT PGW'S RESIDENTIAL
4 CUSTOMER CHARGE PROPOSAL VIOLATES THE PRINCIPLE OF
5 GRADUALISM.

6 A. Gradualism is an important factor in developing a sound rate design and refers to
7 stability and predictability in rates with a minimum of unexpected changes seriously
8 adverse to ratepayers, and with a sense of historical continuity. In short, gradualism
9 refers to the avoidance of rate shock. PGW's Residential customer charge proposal
10 represents an increase of 40 percent in that rate. Such a significant increase should be
11 avoided.

12 Q. WHY IS A HIGH FIXED MONTHLY CUSTOMER CHARGE
13 INCONSISTENT WITH THE COMMISSION'S GENERAL GOAL OF
14 FOSTERING ENERGY CONSERVATION?

1 A. The more revenue that is collected through the fixed monthly charge, the lower the
2 volumetric charge. The higher the volumetric charge, the greater the incentive is to
3 lower usage.

4 Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE
5 RESIDENTIAL CUSTOMER CHARGE THAT SHOULD BE
6 ESTABLISHED IN THIS PROCEEDING?

7 A. Based on PGW's requested increase, a Residential customer charge of \$16.00 would
8 be reasonable. To the extent the Commission authorizes an increase that is less than
9 the Company's requested increase, I recommend that the \$16.00 charge be
10 proportionately scaled-back to reflect the reduction in PGW's requested increase.
11 That is, for example, if the Commission authorized PGW an increase which was 20
12 percent of its requested increase, PGW's Residential customer charge should be
13 increased from \$13.75 to \$14.20. This would provide for a Residential customer
14 charge that is consistent with the charges of other Pennsylvania NGDCs, provide for
15 gradualism, and better promote energy conservation than the charge proposed by the
16 Company.

17 Q. WHAT IS PGW'S GAS PROCUREMENT CHARGE?

18 A. The GPC is a charge assessed to PGW's sales customers to recover the costs
19 associated with the acquisition, management, and cash working capital associated
20 with natural gas supplies. PGW has determined these costs to be \$0.0214 per Mcf, but
21 is proposing to maintain the current charge of \$0.04 per Mcf.

22 Q. SHOULD PGW'S CURRENT GPC BE MAINTAINED?

23 A. No. The GPC should be revised to \$0.0214 per Mcf to reflect PGW's current natural
24 gas acquisition and management costs.
25

1 **V. GAS SUPPLIER TARIFF MODIFICATIONS**

2 Q. PLEASE IDENTIFY THE GAS SUPPLIER TARIFF SERVICE
3 MODIFICATIONS BEING PROPOSED BY PGW.

4 A. PGW is proposing three changes to its gas supplier tariff. These changes address:
5 (1) the balancing provisions for suppliers serving interruptible transportation
6 customers; (2) the assignment of interstate pipeline capacity to suppliers serving firm
7 transportation customers; and (3) resolution of pool balances when a supplier leaves
8 the PGW system.

9 Q. PLEASE EXPLAIN THE FIRST MODIFICATION BEING PROPOSED BY
10 PGW TO ITS GAS SUPPLIER TARIFF.

11 A. Suppliers serving IT customers are currently required to balance deliveries on behalf
12 of their customers and usage of their customers within 10 percent (+/- 10 percent) on
13 a daily basis (Allowable Daily Variation). A Daily Imbalance Surcharge of \$0.50 per
14 Dth is imposed for each Dth outside the Allowable Daily Variation. PGW claims,
15 despite the Daily Imbalance Surcharge, the Company has experienced situations in
16 which suppliers are not meeting their Allowable Daily Variation, and that this
17 prevents PGW from being able to effectively balance its system. Therefore, PGW is
18 proposing to increase the Daily Imbalance Surcharge to \$2.00 per Dth for daily
19 imbalances of +/- 100 percent.

20 Q. IS THIS PROPOSED MODIFICATION REASONABLE?

21 A. No. I don't believe that PGW's proposed modification to the Daily Imbalance
22 Surcharge is sufficient to encourage suppliers serving IT customers to meet their
23 Allowable Daily Variation. I believe it more appropriate to adopt the same imbalance
24 charges for suppliers serving IT customers that are applicable to suppliers serving
25 firm transportation customers. For suppliers serving firm transportation customers,

1 suppliers are subject to the following penalty for imbalances greater than the
2 permitted tolerance:

3 A penalty equal to the greater of fifty dollars (\$50.00) or two
4 hundred percent (200%) of the higher of the prices for
5 delivered gas supplies published in Gas Daily for Texas
6 Eastern M-3 and Transco Z6 (non-NY), which are applicable
7 to the calendar day in which the deficient deliveries were
8 made. The Supplier will also pay all costs incurred by the
9 Company to obtain gas volumes needed to rectify the
10 deficiency. (Supplier Tariff original page no. 37).

11 Q. PLEASE EXPLAIN THE PROPOSED MODIFICATION TO THE
12 CAPACITY ASSIGNMENT PROVISION OF PGW'S SUPPLIER TARIFF.

13 A. PGW currently requires suppliers serving firm transportation customers to accept
14 assignments of PGW's firm interstate pipeline capacity. These assignments are made
15 through interstate pipeline electronic bulletin boards. The pipelines collect the
16 reservation charges associated with the assigned capacity directly from suppliers
17 which is reflected as a credit on PGW's invoices from the interstate pipelines. It has
18 been PGW's experience that suppliers do not always accept an assignment of capacity
19 on a timely basis and, as a result, PGW does not receive the appropriate credit for the
20 assigned capacity from the pipelines. PGW is proposing to bill suppliers directly for
21 credits not received due to a supplier failing to accept gas assignment of capacity on a
22 timely basis plus a penalty charge of \$50 per day per release.

23 Q. IS PGW'S PROPOSAL REASONABLE?

24 A. Yes, PGW's proposal appears reasonable.

25 Q. PLEASE EXPLAIN THE PROPOSED MODIFICATION TO THE
26 SUPPLIER TARIFF CONCERNING THE RESOLUTION OF POOL
27 BALANCES WHEN A SUPPLIER LEAVES THE PGW SYSTEM.

1 A. PGW’s tariff currently provides no guidance as to the price to be charged to resolve
2 supplier imbalances (pool balances), whether positive or negative, when a supplier no
3 longer serves customers on the PGW system. PGW is proposing to resolve pool
4 balances by having the supplier purchase gas from PGW when the supplier owes
5 PGW gas, and the Company purchase gas from the supplier when the Company owes
6 the supplier gas, at a 12-month average of the Daily Market Index Price. This Daily
7 Market Index Price is equal to:

8 The prices published each day in Gas Daily under the
9 heading “Citygate Prices” for deliveries at “Texas Eastern
10 M-3” and “Transco Z6 [non-NY].” Whenever a price is
11 published as a range, the value used for that day would be
12 the midpoint of the range. (Gas Service Tariff, Third
13 Revised Page No. 104.)

14 Q. IS THIS PROPOSED MODIFICATION REASONABLE?

15 A. Yes, this modification appears reasonable.

16 **VI. NEW SERVICE PROGRAMS – DOCKET NO. R-2017-2586783**

17 Q. PLEASE IDENTIFY THE NEW SERVICE PROGRAMS PROPOSED BY
18 PGW AND APPROVED BY THIS COMMISSION IN PGW’S LAST BASE
19 RATE PROCEEDING IN DOCKET NO. R-2017-2586783.

20 A. In PGW’s last base rate proceeding, the Company proposed and the Commission
21 approved a Pilot Technology and Economic Development (“TED”) Rider, a Pilot
22 Micro-Combined Heat and Power Incentive Program, and Back-Up Service – Rate
23 BUS.

24 Q. PLEASE DESCRIBE THE TED RIDER.

25 A. In its last base rate proceeding, PGW proposed to implement, on a pilot basis, the
26 TED Rider, which the Company contended would increase access and expand the use

1 of natural gas by giving commercial customers more options to obtain natural gas,
2 including combined heat and power (“CHP”) projects, natural gas vehicles (“NGVs”),
3 and fuel cells. The TED Rider would permit PGW to negotiate the delivery charges,
4 as well as the customer contribution to the development and service of the
5 infrastructure, for firm service non-residential customers on Tariff Rate Schedules for
6 General Service, Municipal Service Rate, Philadelphia Housing Authority Service,
7 and Development Natural Gas Vehicle Service. The TED Rider was to be available
8 by request of the applicant and, with approval by PGW, would be subject to the
9 following criteria:

- 10 1. The TED Rider would be applicable to usage associated with new gas load
11 at competitive risk only.
- 12 2. The TED Rider would be applicable for a defined period as outlined in the
13 customer’s service agreement.
- 14 3. The TED Rider would be determined and applied using an economic test
15 consistent with PGW’s commercial and industrial line extension tariff
16 provisions.

17 PGW claimed that the primary purpose of the TED Rider was to negotiate the
18 amounts and time periods for a customer’s contribution to mains and services costs
19 and their overall distribution charges to address project-specific or competitive issues
20 in order to improve a customer’s access to natural gas and expand the use of natural
21 gas in PGW’s service territory.

22 Q. HOW MANY CUSTOMERS DOES PGW CURRENTLY HAVE UNDER
23 THE TED RIDER AND WHAT IS THE COMPANY PROPOSING IN THIS
24 PROCEEDING?

1 A. PGW currently has one customer utilizing the TED Rider. However, the Company
2 anticipates adding one TED Rider customer per year. In this proceeding, PGW is
3 proposing to continue the TED Rider beyond the initial three-year pilot period.

4 Q. WERE THERE REPORTING REQUIREMENTS IMPOSED ON PGW
5 WITH RESPECT TO THE TED RIDER IN THE LAST RATE CASE?

6 A. Yes. In the event that PGW filed a general base rate case during the three-year TED
7 Rider pilot program following the effective date of the rates established in its last
8 proceeding, PGW was required to provide information showing the rate of return on
9 incremental investment for TED Rider customers as a sub-class in its filed cost of
10 service study. PGW has met this reporting requirement and the indicated rate of
11 return for the TED Rider customer was 60.02 percent (PGW Exhibit CEH-1,
12 Schedule J, page 1).

13 Q. SHOULD THE TED RIDER BE CONTINUED BEYOND THE THREE-
14 YEAR PILOT PERIOD?

15 A. Yes. However, I recommend that in its next base rate proceeding, PGW provide
16 information showing the rate of return on incremental investment for TED Rider
17 customers, consistent with the requirement imposed on PGW in its last base rate
18 proceeding. This information will assist in ensuring that the TED Rider is operating
19 as intended and not adversely affecting other customers.

20 Q. PLEASE DESCRIBE THE MICRO-CHP INCENTIVE PROGRAM.

21 A. In its prior base rate case, PGW requested approval of a five-year pilot Micro-CHP
22 Incentive Program for small- and medium-sized commercial properties to encourage
23 market development and market acceptance of small, targeted fuel-switching projects
24 to increase the usage of natural gas. Proposed projects would be required to satisfy an
25 economic test. For projects that qualified, PGW would offer up to \$750 per kW for

1 units between 20 kW and 50 kW, and up to \$1,000 for any units below 20 kW. PGW
2 proposed to provide a report to the Commission on the economics of the program six
3 months prior to the end date of the pilot. In the event that PGW filed a base rate case
4 before that time, PGW proposed to include information about the economics of the
5 Micro-CHP program in the supporting information for that base rate case. In either
6 instance, PGW would propose whether to continue the pilot program in its current
7 form or with modification.

8 Q. DOES PGW HAVE ANY CUSTOMERS PARTICIPATING IN THE
9 MICRO-CHP PROGRAM?

10 A. No, it does not.

11 Q. WHAT IS PGW PROPOSING IN THIS PROCEEDING CONCERNING
12 THE MICRO-CHP INCENTIVE PROGRAM?

13 A. PGW is proposing to modify the incentives offered as follows: \$1,000 per kW
14 installed up to 20 kW; and \$750 per kW installed greater than 20 kW and less than or
15 equal to 50 kW. Based on the feedback received from potential customers and the
16 non-standard unit sizes for Micro-CHP, PGW is proposing these modifications to
17 clarify the incentives available to customers.

18 Q. SHOULD PGW'S PROPOSED CLARIFICATION TO THE MICRO-CHP
19 INCENTIVE PROGRAM BE APPROVED?

20 A. Yes, subject to the same reporting requirements imposed in PGW's last base rate
21 proceeding.

22 Q. PLEASE DESCRIBE RATE BUS.

23 A. In its last base rate case, PGW proposed a tariff provision that would permit PGW to
24 negotiate a rate with a customer installing any type of operable backup or emergency
25 equipment and that would, from time to time, require natural gas from the Company

1 for the customer's operation of that equipment. This service differed from existing
2 services because the customer was not required to take any amount of gas from PGW.
3 Customers could select the backup level of service that was needed and would pay a
4 negotiated standby (or reservation) charge that would collect only those costs which
5 standing ready to service the generation equipment imposes on PGW. If, during the
6 term of the customer's contract with the Company, the customer required gas to run
7 its generator, the customer would pay the previously negotiated delivery and
8 commodity charges.

9 Q. WHAT REPORTING REQUIREMENTS WERE IMPOSED ON PGW IN
10 THE LAST RATE CASE FOR RATE BUS?

11 A. As part of its annual gas cost rate ("GCR") filings, PGW was required to provide data
12 on the number of customers, sales levels, and the costs incurred to provide service
13 under Rate BUS. PGW was also required to provide an analysis of Rate BUS in its
14 next base rate case and provide a recommendation as to whether it should continue.
15 PGW has provided that analysis in this proceeding.

16 Q. BASED ON THAT ANALYSIS, IS PGW PROPOSING TO CONTINUE
17 SERVICE UNDER RATE BUS?

18 A. Yes. PGW contends that margins under Rate BUS will reach \$333,000 in 2026.

19 Q. SHOULD PGW CONTINUE TO PROVIDE SERVICE UNDER RATE
20 BUS?

21 A. Yes, subject to the same reporting requirements established in its last base rate case.

22 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

23 A. Yes, it does at this time. However, I reserve the right to supplement my testimony
24 upon the receipt of responses to discovery that were outstanding at the time I prepared
25 this testimony.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC
UTILITY COMMISSION

Docket No. R-2020-3017206

v.

PHILADELPHIA GAS WORKS

SCHEDULE ACCOMPANYING THE
DIRECT TESTIMONY OF
JEROME D. MIERZWA

ON BEHALF OF THE
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

June 15, 2020

PHILADELPHIA GAS WORKS

DEVELOPMENT OF RATE OF RETURN BY SERVICE CLASSIFICATION
UNDER PRESENT RATES

Item (1)	Cost of Service (2)	Residential (3)	Commercial (4)	Industrial (5)	Municipal (6)	PHA - GS (7)	PHA -Rate 8 (8)	NGVS (9)	Interruptible (10)
1. Revenues From Tariff Sales and Transportation	\$ 403,734	\$ 318,467	\$ 59,883	\$ 4,681	\$ 4,541	\$ 1,354	\$ 2,106	\$ 2	\$ 12,700
2. Other Revenues	102,469	77,078	17,948	1,458	1,550	368	670	-	3,397
3. Total Operating Revenues	506,203	395,545	77,831	6,139	6,091	1,721	2,777	2	16,097
4. Less: Operating Expenses and City Contribution	408,171	308,692	60,744	5,360	5,852	1,708	2,201	2	23,614
5. Income Before Interest and Surplus	98,031	86,854	17,087	779	238	13	576	0	(7,516)
6. Less: Interest and City Contribution	47,078	33,914	7,283	532	702	209	277	-	4,160
7. Current Revenue Over/Under Requirements	50,954	52,940	9,804	247	(464)	(196)	299	0	(11,676)
8. Original Cost Measure of Value (Factor 15.)	1,543,972	1,112,265	238,851	17,453	23,029	6,838	9,086	13	136,437
9. Rate of Return before Interest and Surplus, Percent	6.35%	7.81%	7.15%	4.46%	1.03%	0.19%	6.34%	3.13%	-5.51%
10. Relative Rate of Return	1.00	1.23	1.13	0.70	0.16	0.03	1.00	0.49	-0.87

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission :
 :
 v. : Docket No. R-2020-3017206
 :
 Philadelphia Gas Works :

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts above set forth in my Direct Testimony, OCA Statement No. 4, are true and correct and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 15, 2020
*289876

Signature:


Jerome D. Mierzwa

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