

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

REBUTTAL TESTIMONY OF

**CONSTANCE E. HEPPENSTALL**

ON BEHALF OF  
PHILADELPHIA GAS WORKS

Docket No. R-2020-3017206

TOPIC:

Cost of Service

July 13, 2020

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CEH-1R	Revised Cost of Service Study
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1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME.**

3 A Constance E. Heppenstall.

4 **Q. BY WHOME ARE YOU EMPLOYED?**

5 A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC.

6 **Q. DID YOU PREVIOUSLY SUBMIT TESTIMONY IN THIS PROCEEDING ON**  
7 **BEHALF OF PGW?**

8 A. Yes, I submitted my direct testimony, PGW St. No. 5 on February 28, 2020.

9 **Q. PLEASE DESCRIBE THE PURPOSE OF YOUR REBUTTAL TESTIMONY.**

10 A. The purpose of my rebuttal testimony is to discuss the testimony and cost of service studies  
11 filed by Office of Small Business Administration (OSBA) Witness Robert Knecht, Office  
12 of Consumer Advocate (OCA) Witness Jerome Mierzwa and Philadelphia Industrial and  
13 Commercial Gas Users Group (PICGUG) Witness Jeffrey Pollock.

14 **Q. ARE YOU SUBMITTING A REVISED COST OF SERVICE STUDY WITH YOUR**  
15 **REBUTTAL TESTIMONY?**

16 A. Yes, as Exhibit CEH-1R. In response to items uncovered during discovery, I revised  
17 Exhibit CEH-1 to include the following changes:

- 18 • Change the allocation factor for OPEB revenues to Factor 1A
- 19 • Perform a Direct allocation of ECR Revenue to customer classes.
- 20 • Revise ROR calculation.
- 21 • Revise allocation for Services

- 1 • Revised Labor Allocation.

2 In addition, Exhibit CEH-1 was revised to reflect a 50-50 allocation of mains to Average  
3 and Excess rather than the allocation based on peak demand versus average throughput,  
4 the revised allocation of Late Payment Fees and the revised allocation of costs related to  
5 LIURP and CRP Forgiveness as further discussed in my rebuttal testimony.

6 **Q. DOES THE REVISED COST OF SERVICE CHANGE THE COMPANY'S**  
7 **RECOMMENDATION FOR THE REVENUE ALLOCATION OR CUSTOMER**  
8 **CHARGE INCREASE.**

9 A. No, it does not.

10 **II. REBUTTAL OF OSBA WITNESS ROBERT KNECHT**

11 **Q. OSBA WITNESS KNECHT SUBMITTED A COST OF SERVICE STUDY ALONG**  
12 **HIS TESTIMONY. PLEASE COMMENT ON HIS STUDY.**

13 A. Mr. Knecht has put forward a number of modifications or adjustments to my COSS. Some  
14 are policy differences and some are alleged corrections of errors. In any event, I do not  
15 necessarily agree with them. However, as Mr. Knecht states on page 3 in his direct  
16 testimony, the results of Mr. Knecht's alternative cost of service study is not "directionally  
17 different" from the Company's results. Therefore, I have no significant issue with the  
18 results of his cost of service study.

19 **Q. HOWEVER, DO YOU HAVE A COMMENT REGARDING MR. KNECHT'S**  
20 **ASSERTION THAT THE COMPANY HAS CHANGED ITS APPROACH**  
21 **REGARDING THE ALLOCATION OF COSTS RELATED TO LIURP AND CRP**  
22 **FORGIVENESS?**

1 A. Yes, I do. The Company did not intentionally change its approach. The Company  
2 acknowledges that these costs should have been allocated in the same manner as the  
3 revenues related to these costs and should be allocated using Factor 1A. I have corrected  
4 this error in PGW Exhibit CEH-1R. In addition, we have determined that the costs related  
5 to CRP Forgiveness were actually included in Uncollectible Accounts (Account 904) not  
6 Account 921 as indicated in a response to a data request. See these corrections and revised  
7 allocation in Exhibit CEH-1R.

8 **III. REBUTTAL OF OCA WITNESS JEROME D. MIERZWA**

9 **Q. OCA WITNESS JEROME MIERZWA ALSO SUBMITTED A COST OF SERVICE**  
10 **ALONG WITH HIS TESTIMONY. PLEASE COMMENT ON HIS STUDY.**

11 A. Mr. Mierzwa asserts that the Company's cost of service study misallocates costs related to  
12 mains investment. He recommends that PGW use the Peak & Average method of  
13 allocating mains as opposed to the Average and Excess method used in the Company's  
14 cost of service.

15 **Q. WHY DID PGW USE THE AVERAGE AND EXCESS METHOD IN THE COST**  
16 **OF SERVICE STUDY?**

17 A. I used the Average and Excess Method (A&E method), as described in *Gas Rates*  
18 *Fundamentals*, because the Pennsylvania Public Utility Commission's (PA PUC's)  
19 decision and guidance in a fully litigated gas case approved the methodology of using the  
20 A&E method in Docket No. R-00061398 for PPL Gas Utilities Corporation in 2006. In  
21 addition, this methodology was used and approved in the PGW's last fully litigated case,

1 Docket No. R-00061931 in 2007. In contrast, in support of his methodology, Mr. Mierzwa  
2 cites PA PUC cases from 1994 and before, a full decade before the cases cited above.

3 **Q. DID YOU NONETHELESS MODIFY YOUR COST OF SERVICE STUDY TO**  
4 **DEMONSTRATE THE EFFECT OF CHANGING RATIOS USED IN THE**  
5 **AVERAGE AND EXCESS METHOD AS RECOMMENDED BY MR. MIERZWA?**

6 A. Yes. In Exhibit CEH-1, I weighted the Average Daily Throughput in Factor 3 at 0.26505  
7 and the Maximum Day Extra Demand at 0.73495, based on the ratio of peak day to average  
8 day. However, as the mains investment allocation method used in Docket No. R-00061931  
9 used a weighting of 0.50 for Average Daily Throughput and 0.50 for Maximum Day Extra  
10 Demand, I revised Factor 3 in Exhibit CEH-1R to reflect these weightings. This revision  
11 should satisfy Mr. Mierzwa's assertion that "on systems such as PGW's with little or no  
12 customer class load diversity, the A&E method collapses into a pure peak allocation."  
13 (OCA Statement No. 4, page 8, lines 17-18) as the allocation of mains investments is no  
14 longer weighted by the peak day to average day ratio.

15 **Q. DOES THIS REVISION REVISE PGW'S RECOMMENDATION FOR**  
16 **REVENUES BY CLASS UNDER PROPOSED RATES?**

17 A. No, this change in the weightings does not cause a substantial change in the results of the  
18 cost of service study and revenues under proposed rates are still moving toward the cost of  
19 service by class.

20 **Q. OTHER THAN PA PUC PRECEDENT, IS THERE ANOTHER REASON TO**  
21 **REJECT MR. MIERZWA'S USE OF PEAK & AVERAGE METHOD OF**  
22 **ALLOCATING MAINS INVESTMENTS?**

1 A. Yes, the Peak & Average Method tends to over allocate costs to average daily throughput.  
2 In Mr. Mierzwa's cost of service study, his method of allocating mains investment uses a  
3 weighting of 0.50 for the full peak demand which has a component of average daily usage  
4 (peak demand = average daily throughput + excess demand), and a weighting of 0.50 on  
5 average daily throughput. This method has the effect of weighting the average usage twice,  
6 once in the peak demand and once in average daily throughput.

7 **Q. PLEASE COMMENT ON MR. MIERZWA'S OTHER ADJUSTMENTS TO THE**  
8 **COST OF SERVICE STUDY.**

9 A. Mr. Mierzwa's other adjustments to PGW's cost of service study have a small effect on the  
10 overall results of his cost of service study. Therefore, I will not comment on each of the  
11 specific adjustments. However, I do agree with his assertion that Late Payment Fees, as  
12 part of Other Revenues should be broken out and allocated differently. In Exhibit CEH-  
13 1R, these revenues are broken out separately and allocated based on number of customers,  
14 so that 94% of these revenues are allocated to the residential class.

15 **IV. REBUTTAL OF PICGUG WITNESS JEFFRY POLLOCK**

16 **Q. PICGUG WITNESS JEFFRY POLLOCK ALSO SUBMITTED A COST OF**  
17 **SERVICE ALONG WITH HIS TESTIMONY. PLEASE COMMENT ON HIS**  
18 **STUDY.**

19 A. Mr. Pollock generally agrees with the Company's cost of service study. However, he has  
20 three areas of disagreement:

21 1. The Average and Excess (A&E) method of allocating mains investment as it relates  
22 to Rate IT volumes.

1           2.       The use of Peak Day demand rather than Design Day.

2           3.       The classification of distribution mains totally to the demand function.

3   **Q.     PLEASE COMMENT ON MR. POLLOCK'S DISAGREEMENT RELATED TO**  
4   **THE COMPANY'S A&E METHOD.**

5           Unlike Mr. Mierzwa, Mr. Pollock does not disagree with using the Average & Excess  
6           method of allocating mains investments. However, he does disagree with the inclusion of  
7           Rate IT customers' peak usage in the allocation. He argues that since the Rate IT customers  
8           are interruptible, they should not be allocated any peak-related costs (page 10, line 19) and  
9           their peak usage should be excluded from the calculation.

10 **Q.     DO YOU AGREE?**

11 A.     No, I do not. The Rate IT customers receive firm service under normal conditions which  
12       include a January peak day. Over the last 40 years, due to reduced throughput throughout  
13       the system, PGW has maintained and supported the system so that it can meet Rate IT  
14       customer peak demands. Therefore, the Rate IT customers should be allocated costs related  
15       to peak design.

16 **Q.     PLEASE COMMENT ON MR. POLLOCK'S RECOMMENDATION**  
17 **REGARDING DESIGN DAY.**

18 A.     Mr. Pollock recommends that the Company be required to provide the design day demands  
19       by customer class in the next base rate proceeding. The Company agrees to this request.

20 **Q.     PLEASE COMMENT ON MR. POLLOCK'S DISAGREEMENT RELATED TO**  
21 **CLASSIFICATION OF DISTRIBUTION MAINS AS DEMAND RELATED.**



1 A. Mr. Pollock recommends that 20% of mains investment be classified as customer-related  
2 to be recovered as part of the customer charge. PGW did not propose to classify a portion  
3 of distribution mains as customer related due to the order in Docket No. R-00061931 that  
4 specifically prohibits PGW from allocating distribution mains to customer-related costs.  
5 On page 41, the order states “We find....PGW’s proposal to allocate a percentage of costs  
6 of the distribution mains as a customer cost not to be acceptable.” In addition, we are not  
7 aware of the PA PUC approving this classification in any natural gas rate cases.

8 **V. CUSTOMER COSTS**

9 **Q. DID THE COMPANY SUBMIT A SCHEDULE SHOWING DIRECT CUSTOMER**  
10 **COSTS?**

11 A. Yes, Schedule G of the cost of service study shows the calculation of direct customer costs  
12 per bill and by customer class.

13 **Q. DID ANY OF THE PARTIES ADDRESS OR REVISE THE CALCULATION OF**  
14 **THESE COSTS IN THEIR DIRECT TESTIMONY?**

15 A. No, they did not.

16 **Q. WHAT RESIDENTIAL CUSTOMER CHARGE CAN PGW SUPPORT BASED ON**  
17 **SCHEDULE G.**

18 A. Schedule G of Exhibit CEH-1 supported a residential customer charge of \$29.66, higher  
19 than the Company’s requested customer charge of \$19.25. The revised Schedule G in  
20 Exhibit CEH-1R still supports a customer charge in excess of \$19.25. However, in the  
21 interest of gradualism, the Company proposed a customer charge of \$19.25, not the full  
22 amount that could currently be supported of \$26.54.

1 VI. **CONCLUSION**

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

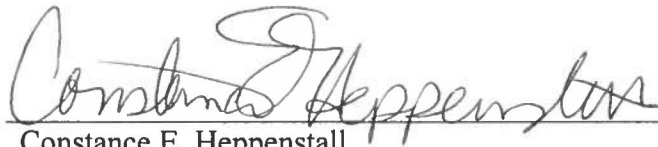
3 A. Yes, it does.

**VERIFICATION**

I, Constance E. Heppenstall, hereby state that: (1) I am employed by Gannett Fleming Valuation and Rate Consultants, LLC as Senior Project Manager, Rate Studies; (2) I have been retained by Philadelphia Gas Works (“PGW”) and am authorized to present testimony on its behalf; (3) the facts set forth in my testimony are true and correct to the best of my knowledge, information and belief; and (4) 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).

July 13, 2020

Dated \_\_\_\_\_



\_\_\_\_\_  
Constance E. Heppenstall  
Senior Project Manager, Rate Studies  
Gannett Fleming Valuation and Rate Consultants, LLC

EXHIBIT

CEH-1R

PHILADELPHIA GAS WORKS

REBUTTAL

COST OF SERVICE ALLOCATION STUDY

AS OF AUGUST 31, 2021

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC  
Valley Forge, Pennsylvania

PHILADELPHIA GAS WORKS

COMPARISON OF COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES  
BY SERVICE CLASSIFICATION FOR THE TWELVE MONTHS ENDED AUGUST 31, 2021

Service Classification (1)	Pro Forma Cost of Service (in 000's)		Pro Forma Present Rates		Pro Forma Margin Revenues,		Under Proposed Rates		Revenue Increase	
	Amount (2)	Percent (3)	Amount (in 000's) (4)	Percent (5)	Amount (in 000's) (6)	Percent (7)	Amount (8)	Percent Increase (9)		
Residential	\$ 358,503	75.6%	\$ 318,467	78.9%	\$ 377,566	79.6%	\$ 59,098	18.6%		
Commercial	68,927	14.5%	59,883	14.8%	63,183	13.3%	3,300	5.5%		
Industrial	4,956	1.0%	4,681	1.2%	4,894	1.0%	213	4.5%		
Municipal	6,952	1.5%	4,541	1.1%	5,476	1.2%	935	20.6%		
PHA - GS	2,066	0.4%	1,354	0.3%	1,679	0.4%	325	24.0%		
PHA - Rate 8	2,659	0.6%	2,598	0.6%	2,724	0.6%	127	4.9%		
NGVS	6	0.0%	2	0.0%	2	0.0%	-	0.0%		
Interruptible	30,389	6.4%	12,700	3.1%	18,700	3.9%	6,000	47.2%		
Total	\$ 474,458	100.0%	\$ 404,225	100.0%	\$ 474,223	100.0%	\$ 69,998	17.3%		
GTS and Other Contract Revenue	1,840		1,840		1,840		-			
Other Surcharges and Revenue	73,105		73,105		73,105		-			
Other Operating Revenues	27,525		27,525		27,525		-			
Total Other Revenues	102,470		102,470		102,470		-			
Total	\$ 576,928		\$ 506,695		\$ 576,693		\$ 69,998	13.8%		

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 B (8)	NGVS (9)	Interruptible (10)
1. Revenues From Tariff Sales and Transportation	\$ 403,883	\$ 318,467	\$ 59,883	\$ 4,681	\$ 4,541	\$ 1,354	\$ 2,256	\$ 2	\$ 12,700
2. Other Revenues	102,470	77,998	17,463	1,307	1,592	409	714	-	2,987
3. Total Operating Revenues	506,353	396,465	77,346	5,988	6,133	1,762	2,970	2	15,687
4. Less: Operating Expenses and City Contribution	408,205	311,946	61,011	4,465	6,057	1,710	2,380	3	20,633
5. Income Before Interest and Surplus	98,149	84,519	16,335	1,523	76	52	590	(1)	(4,946)
6. Less: Interest and City Contribution	47,078	34,441	7,236	511	712	210	284	-	3,682
7. Current Revenue Over/Under Requirements	51,071	50,078	9,099	1,012	(636)	(158)	306	(1)	(8,628)
8. Original Cost Measure of Value (Factor 15.)	1,543,980	1,129,528	237,329	16,771	23,348	6,900	9,317	23	120,764
9. Rate of Return before Interest and Surplus, Percent	6.36%	4.43%	3.83%	6.03%	-2.73%	-2.28%	3.28%	-2.94%	-7.14%
10. Relative Rate of Return	1.00	0.70	0.60	0.95	-0.43	-0.36	0.52	-0.46	-1.12

PHILADELPHIA GAS WORKS

DEVELOPMENT OF RATE OF RETURN BY SERVICE CLASSIFICATION  
UNDER PROPOSED RATES

Item (1)	Cost of Service (2)	Residential (3)	Commercial (4)	Industrial (5)	Municipal (6)	PHA - GS (7)	PHA - Rate B (8)	NGYS (9)	Interruptible (10)
1. Revenues From Tariff Sales and Transportation	474,223	\$ 377,566	\$ 63,183	\$ 4,894	\$ 5,476	\$ 1,679	\$ 2,724	\$ 2	\$ 18,700
2. Other Revenues	102,470	77,882	17,436	1,302	1,587	414	713	-	3,136
3. Total Operating Revenues	576,694	455,447	80,619	6,195	7,063	2,092	3,438	2	21,836
4. Less: Operating Expenses and City Contribution	411,354	315,192	60,957	4,461	6,040	1,737	2,375	3	20,588
5. Income Before Interest and Surplus	165,340	140,255	19,662	1,734	1,023	355	1,063	(1)	1,248
6. Less: Interest	47,078	34,460	7,224	510	710	211	283	-	3,678
7. Current Revenue Over/Under Requirements	118,262	105,795	12,438	1,224	313	144	780	(1)	(2,430)
8. Original Cost Measure of Value (Factor 15)	1,543,982	1,130,161	236,922	16,739	23,295	6,915	9,299	23	120,628
9. Rate of Return before Interest and Surplus, Percent	10.71%	12.41%	8.30%	10.36%	4.39%	5.14%	11.43%	-2.94%	1.03%
10. Relative Rate of Return	1.00	1.16	0.77	0.97	0.41	0.48	1.07	-0.27	0.10



PHILADELPHIA GAS WORKS  
SUMMARY COST OF SERVICE BY SERVICE CLASSIFICATION

Cost Function (1)	Cost of Service (Schedule E) (2)	Residential (3)	Commercial (4)	Industrial (5)	Municipal (6)	PHA- GS (7)	PHA - Rate 8 (8)	NGVS (9)	Interruptible (10)
<b>Volumetric Costs</b>									
Residential	\$ 186,012	\$ 186,012							
Commercial	44,423		44,423						
Industrial	3,751			3,751					
Municipal	4,484				4,484				
PHA- GS	972					972			
PHA- RC	1,888						1,888		
NGVS	5							5	
Interruptible	30,341								30,341
<b>Total Volumetric Costs</b>	<b>271,876</b>	<b>186,012</b>	<b>44,423</b>	<b>3,751</b>	<b>4,484</b>	<b>972</b>	<b>1,888</b>	<b>5</b>	<b>30,341</b>
<b>Customer Costs</b>									
Residential	172,491	172,491							
Commercial	24,504		24,504						
Industrial	1,205			1,205					
Municipal	2,468				2,468				
PHA- GS	1,094					1,094			
PHA- RC							771		
NGVS	1							1	
Interruptible	48								48
GFS/IT	-								
<b>Total Customer Costs</b>	<b>201,811</b>	<b>172,491</b>	<b>24,504</b>	<b>1,205</b>	<b>2,468</b>	<b>1,094</b>	<b>771</b>	<b>1</b>	<b>48</b>
<b>Total Excluding Gas Costs</b>	<b>\$ 473,687</b>	<b>\$ 358,503</b>	<b>\$ 68,927</b>	<b>\$ 4,956</b>	<b>\$ 6,952</b>	<b>\$ 2,066</b>	<b>\$ 2,659</b>	<b>\$ 6</b>	<b>\$ 30,389</b>

PHILADELPHIA GAS WORKS  
COST OF SERVICE AS OF AUGUST 31, 2021, AT PROPOSED REVENUE LEVEL ALLOCATED TO  
CUSTOMER CLASS SERVICE CLASSIFICATIONS

Factor Ref.	Account	Cost of Service in 100%	Volumetric Costs										Customer Costs						
			(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
(2)	(1)	(3)	Residential	Commercial	Industrial	Municipal	PHA - GS	PHA - R8	NGVS	Interruptible	Res	Com	Ind	Muni	PHA - GS	PHA - R8	NGVS	Interruptible	
<b>OPERATION AND MAINTENANCE EXPENSES</b>																			
<b>PRODUCTION EXPENSES</b>																			
<b>Manufactured Gas Production Expenses</b>																			
701	Operation Labor and Expenses	259	208	44	3	4	1	-	-	-	-	-	-	-	-	-	-	-	-
702	Boiler Fuel Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
703	Boiler Expenses	350	291	59	4	5	2	-	-	-	-	-	-	-	-	-	-	-	-
706	Maintenance of Structures	5	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
707	Maintenance of Boiler Plant Equipment	232	186	39	2	3	1	-	-	-	-	-	-	-	-	-	-	-	-
708	Maintenance of Other Production Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
710	Operation Supervision and Engineering	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
712	Other Power Expenses	744	596	125	8	10	3	1	-	-	-	-	-	-	-	-	-	-	-
734	Duplicate Charges - Credit	(545)	(422)	123	(6)	(7)	(2)	(1)	-	-	-	-	-	-	-	-	-	-	-
735	Other Power Expenses	1,057	835	222	15	17	5	1	-	-	-	-	-	-	-	-	-	-	-
736	Other Power Expenses	23	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
740	Maintenance Supervision and Engineering	373	299	63	4	5	2	1	-	-	-	-	-	-	-	-	-	-	-
741	Maintenance of Structures	125	100	21	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-
742	Maintenance of Production Equipment	449	360	76	5	6	2	-	-	-	-	-	-	-	-	-	-	-	-
	Total - Manu. Gas Production Expenses	3,361	2,695	567	36	46	16	1	0	0	0	0	0	0	0	0	0	0	0
<b>Other Gas Supply Expenses</b>																			
804	Manufacturing Line Purchases	4,939	3,960	833	53	67	21	5	-	-	-	-	-	-	-	-	-	-	-
807	Purchased Gas Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
808	Purchased Gas Cost Adjustments	378	303	64	4	5	2	-	-	-	-	-	-	-	-	-	-	-	-
812	Gas Used for Operations	2,625	2,105	443	28	35	11	3	-	-	-	-	-	-	-	-	-	-	-
813	Other Gas Supply Expenses	7,942	6,388	1,340	85	107	34	8	-	-	-	-	-	-	-	-	-	-	-
	Total Other Gas Supply Expenses	11,303	9,093	1,907	121	153	50	9	-	-	-	-	-	-	-	-	-	-	-
	<b>Total Natural Gas Production Expenses</b>																		
<b>OTHER STORAGE EXPENSE</b>																			
840	Operating Supervision and Engineering	1,551	1,196	278	26	31	6	14	-	-	-	-	-	-	-	-	-	-	-
841	Operation Labor and Expenses	3,312	2,554	594	55	66	12	31	-	-	-	-	-	-	-	-	-	-	-
842	Rents	286	228	53	6	6	3	6	-	-	-	-	-	-	-	-	-	-	-
843	Maintenance	7,000	5,288	1,153	123	151	28	70	-	-	-	-	-	-	-	-	-	-	-
850	Operation Supervision and Engineering	1,550	1,195	278	26	31	6	14	-	-	-	-	-	-	-	-	-	-	-
	<b>Total Natural Gas Storage Expenses</b>	14,263	10,998	2,568	237	285	53	132	-	-	-	-	-	-	-	-	-	-	-

PHILADELPHIA GASWORKS  
COST OF SERVICE AS OF AUGUST 31, 2021, AT PROPOSED REVENUE LEVEL ALLOCATED TO  
CUSTOMER CLASS SERVICE CLASSIFIERS

Factor Rate	Account	Cost of Service in Units (3)	Volume-Related Costs						Customer Costs										
			Residential (4)	Commercial (5)	Industrial (6)	Municipal (7)	PH&S (8)	PH&R (9)	Min (10)	PH&S (11)	PH&R (12)	PH&S (13)	PH&R (14)	PH&S (15)					
<b>DISTRIBUTION EXPENSES</b>																			
870	Suburban Engineering	2,042	673	181	15	18	3	8	3	8	150	738	191	13	25	5	-	-	-
871	Customer Lead Dispatching	1,944	1,238	330	23	34	6	15	6	15	232	-	-	-	-	-	-	-	-
874	Maintenance Services Expenses	2,402	1,660	443	38	45	8	21	8	21	351	2,396	716	1	17	19	-	-	-
875	Maintenance Services - Other	2,402	1,660	443	38	45	8	21	8	21	351	2,396	716	1	17	19	-	-	-
876	Maintenance Services - Other - Gas Station	616	382	105	3	11	2	6	2	6	32	-	-	-	-	-	-	-	-
877	Maintenance Services - Other - Gas Station	19,106	8,696	2,177	11	11	2	6	2	6	32	13,574	4,206	313	503	82	-	-	-
878	Maintenance Services - Other - Gas Station	10,311	4,470	913	73	41	17	41	17	41	895	6,223	1,655	42	308	69	-	-	-
879	Maintenance Services - Other - Gas Station	11,311	4,470	913	73	41	17	41	17	41	895	6,223	1,655	42	308	69	-	-	-
880	Maintenance Services - Other - Gas Station	12	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
881	Maintenance Services - Other - Gas Station	316	105	28	2	2	2	2	2	2	25	1	4	1	4	1	1	1	1
882	Maintenance Services - Other - Gas Station	10,311	4,470	913	73	41	17	41	17	41	895	6,223	1,655	42	308	69	-	-	-
883	Maintenance Services - Other - Gas Station	1,035	682	177	13	18	3	8	3	8	156	-	-	-	-	-	-	-	-
884	Maintenance Services - Other - Gas Station	62	340	91	8	9	2	4	2	4	83	54	7	-	-	-	-	-	-
885	Maintenance Services - Other - Gas Station	1,815	740	191	14	16	3	7	3	7	112	537	182	7	17	13	-	-	-
886	Maintenance Services - Other - Gas Station	2,957	1,815	465	42	50	9	23	9	23	437	710	145	3	5	12	-	-	-
887	Maintenance Services - Other - Gas Station	1,035	682	177	13	18	3	8	3	8	156	-	-	-	-	-	-	-	-
888	Maintenance Services - Other - Gas Station	62	340	91	8	9	2	4	2	4	83	54	7	-	-	-	-	-	-
889	Maintenance Services - Other - Gas Station	1,815	740	191	14	16	3	7	3	7	112	537	182	7	17	13	-	-	-
890	Maintenance Services - Other - Gas Station	2,957	1,815	465	42	50	9	23	9	23	437	710	145	3	5	12	-	-	-
<b>Total Distribution Expenses</b>			<b>28,652</b>	<b>7,648</b>	<b>661</b>	<b>779</b>	<b>143</b>	<b>357</b>	<b>143</b>	<b>357</b>	<b>6,747</b>	<b>31,180</b>	<b>8,053</b>	<b>543</b>	<b>1,047</b>	<b>182</b>	<b>279</b>	<b>1</b>	<b>2</b>
<b>CUSTOMER ACCOUNTING EXPENSES</b>																			
917	Administrative	2,102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918	Administrative	761	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
919	Administrative	29,896	9,143	2,107	8	4,474	76	48	76	48	-	2,303	1,07	3	4	9	-	-	-
920	Administrative	12,940	9,365	2,907	235	270	48	73	48	73	-	28,138	1,403	35	53	118	-	-	-
921	Administrative	10,711	18,414	3,194	241	270	124	125	124	125	-	19,395	790	9	11	77	-	-	-
<b>Total Customer Accounting Expenses</b>			<b>48,650</b>	<b>31,944</b>	<b>241</b>	<b>270</b>	<b>124</b>	<b>125</b>	<b>124</b>	<b>125</b>	<b>-</b>	<b>41,285</b>	<b>1,867</b>	<b>48</b>	<b>95</b>	<b>207</b>	<b>73</b>	<b>-</b>	<b>28</b>
<b>CUSTOMER IN FORCE AND INFORMATION EXPENSES</b>																			
922	Customer In Force	5,410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
923	Customer In Force	3,310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Customer In Force and Info Expenses</b>			<b>8,720</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>ADMINISTRATIVE AND GENERAL EXPENSES</b>																			
924	Administrative & General Expenses	14,931	5,467	1,547	103	121	30	51	30	51	549	6,325	632	49	90	34	10	-	-
925	Administrative & General Expenses	5,806	4,201	1,104	155	21	21	55	21	55	-	-	-	-	-	-	-	-	-
926	Administrative & General Expenses	32,396	11,863	2,705	223	203	65	110	65	110	1,132	13,724	1,604	100	195	75	64	-	-
927	Administrative & General Expenses	2,111	1,473	440	43	46	8	21	8	21	-	-	-	-	-	-	-	-	-
928	Administrative & General Expenses	31,170	11,589	2,645	219	257	68	107	68	107	(1,198)	(13,418)	(1,754)	(103)	(193)	(71)	(23)	-	-
929	Administrative & General Expenses	1,093	746	211	74	78	16	31	16	31	113	1,296	170	10	19	7	5	-	-
930	Administrative & General Expenses	6,432	4,642	1,279	121	126	25	41	25	41	13	150	15	6	11	6	4	-	-
931	Administrative & General Expenses	67,497	32,093	8,179	673	706	184	326	184	326	5,713	12,376	1,558	91	183	68	42	-	-
932	Administrative & General Expenses	16,000	11,572	3,192	291	334	59	92	59	92	673	8,070	915	51	103	38	26	-	-
933	Administrative & General Expenses	9,472	4,905	1,337	103	122	25	50	25	50	678	847	168	8	14	4	4	-	-
934	Administrative & General Expenses	1,847	875	194	13	15	4	8	4	8	38	787	110	8	11	4	4	-	-

PHILADELPHIA GASWORKS  
COST OF SERVICE AS OF AUGUST 31, 2021, AT PROPOSED REVENUE LEVEL ALLOCATED TO  
CUSTOMER CLASS SERVICE CLASSIFIERS

Factor	Account	Cost of Service in 100's (3)	Volume-Related Costs						Customer Costs									
			Residential (4)	Commercial (5)	Industrial (6)	Municipal (7)	PH&S (8)	PH&R (9)	MG&S (10)	Intermittible (11)	Res (12)	Cum (13)	Ind (14)	Min (15)	PH&S (16)	PH&R (17)	MG&S (18)	Intermittible (19)
928	Regulatory Commission Expenses	5,432																
929	Capital Expenditures	(115)																
10	General Advertising Expenses	8,282																
	Refueling and Other Savings	(753)																
	<b>Total Administrative &amp; General Expenses</b>	137,588	18,731	18,731	1,542	1,542	1,812	389	700	1,391	2	49,489	3,288	739	1,391	495	1	53
	<b>Total Operation and Maintenance Expenses</b>	326,936	138,638	34,038	2,805	3,289	739	1,391	1,391	2	49,489	13,478	1,432	572	495	1	53	
<b>DEPRECIATION AND AMORTIZATION EXPENSE</b>																		
<b>PRODUCTION PLANT</b>																		
1	Structures and Improvements	785	632	133	3	11	3											
326	Boiler Plant Equipment	88	15	1														
327	Other Power Equipment	11																
311	Job Equipment	78	13	1														
312	Job Cost Equipment	3	2															
313	Other Equipment	0																
318	Regulator Equipment	0																
319	Gas Storage Equipment	0																
320	Other Equipment	646	136	3		11	3											
<b>STORAGE PLANT</b>																		
321	Structures and Improvements	322	58	5		6	1											
322	Gas Holders	172	48			12	2											
323	Regulator Equipment	11	1															
324	Other Equipment	1,140	879	13		23	4											
325	Valve and Regulator Equipment	801	144	13		10	3											
326	Compressor Equipment	305	55	5		6	1											
327	Measuring and Regulating Equipment	224	40	4		2	1											
328	Other Equipment	547	116	13		12	2											
<b>DISTRIBUTION PLANT</b>																		
329	Structures and Improvements	64	5			1												
330	Compressor Station Equipment	17,305	11,024	254		300	55											
331	Measuring and Regulating Equipment - Others	26	4															
332	Service Lines	444	76	7		11	1											
333	Manholes	2,886																
334	Water Treatments	2,092																
335	Gas Regulators	60	1															
336	Other Regulators	12																
337	Industrial Gas Meters & Regulating Equipment	12																
338	Other Equipment	418	115	4		5	1											
<b>GENERAL PLANT</b>																		
339	Structures and Improvements	2,400	916	211	17	20	5											
340	Office Furniture and Equipment	4,843	1,743	419	34	41	10											
341	Transportation Equipment	6,113	2,423	45	54	13	22											
342	Tools and Equipment	238	52	2														
343	Power Equipment	624	238	4		5	1											
344	Power Substation Equipment	104	38	9														
345	Communication Equipment	1,013	47	18	7	11	2											
346	Miscellaneous Equipment	480	215	48	4	5	1											
	<b>Total Depreciation &amp; Amortization Expense</b>	67,554	22,046	5,488	463	559	189	237	2	3,316	30,285	4,521	419	217	426	2		
12	<b>Cost of Removal</b>	4,500	1,786	480	39	47	9	21		351	1,510	230	9	21	6			
	<b>Total Operating Expenses</b>	393,350	162,378	39,966	3,307	3,886	857	1,619	2	40,126	139,640	18,229	948	1,872	617	1	55	

PHILADELPHIA GAS WORKS  
COST OF SERVICE AS OF AUGUST 31, 2021 AT PROPOSED REVENUE LEVEL ALLOCATED TO  
CUSTOMER CLASS SERVICE CLASSIFIERS/TERRITORIES

Account (1)	Factor Rat. (2)	Cost of Service in Units (3)	Volumetric Costs										Customer Costs					
			Residential (4)	Commercial (5)	Industrial (6)	Municipal (7)	PH&S (8)	PH&S (9)	NGWS (10)	Intermittible (11)	Res. (12)	Com. (13)	Ind. (14)	Man. (15)	PH&S (16)	PH&S (17)	NGWS (18)	Intermittible (19)
<b>INTEREST AND OTHER EXPENSE</b>																		
Interest on Long Term Debt	1/	54,447	21,941	5,548	473	5h.1	118	241	1	4,752	18,270	2,716	14	748	134	77	-	7
Other	12	(3,012)	(3,026)	(606)	(89)	(89)	(89)	(44)	-	(750)	(3,226)	(492)	(20)	(46)	(245)	(4)	-	-
All UDC	17	(2,112)	(877)	(236)	(19)	(23)	(48)	(10)	-	(174)	(742)	(113)	(6)	(11)	(7)	(3)	-	-
Loss From Extinguishment of Debt	12	5,400	1,768	409	33	30	9	21	-	348	497	228	8	27	11	65	-	2
Total Interest and Other Expense		47,073	18,662	4,815	412	487	95	217	1	3,970	15,738	2,408	36	223	116	85	-	2
<b>CITY PAYMENT</b>	12	16,000	7,135	1,841	168	186	36	83	-	1,406	6,041	921	38	89	44	26	-	1
<b>NET INCOME</b>	12	118,493	46,967	12,119	1,038	1,226	239	546	2	9,255	39,765	6,063	248	563	203	168	-	4
<b>TOTAL COST OF SERVICE</b>		378,921	236,146	50,741	4,919	5,795	1,277	2,495	5	35,493	201,245	27,672	1,147	2,744	1,293	307	-	67
<b>Less: Other Revenues</b>																		
Interest on Bonds and Other Revenues	1/	7,410	1,577	65	77	15	14	14	-	438	2,491	370	15	15	18	11	-	-
Other Revenues	13	1,064	508	63	79	17	34	34	-	426	2,309	381	19	38	17	12	-	1
Other Payments	7	10,000	108	14	17	4	7	7	-	31	586	80	4	8	4	3	-	-
DCS C-Subcharges	13	8,100	3,549	295	349	75	50	50	-	1,916	9,383	1,414	12	18	13	23	-	9
DCS B-Subcharges	A	11,577	1,577	291	314	59	47	47	-	-	12,344	1,876	83	166	74	54	-	4
DCS E-Subcharges	A	9,388	2,907	235	770	48	73	73	-	-	-	-	-	-	-	-	-	-
Other Revenues	13	1,985	1,246	145	107	33	20	20	-	-	-	-	-	-	-	-	-	-
Energy Cost Recovery	DA	1,085	1,085	112	112	18	4	4	-	121	849	88	4	9	4	3	-	-
Energy Cost Recovery	DB	1,845	1,845	112	112	18	4	4	-	121	849	88	4	9	4	3	-	-
Other Revenues	13	10,476	4,178	1,182	1,311	745	817	817	-	3,122	28,754	3,118	37	776	159	166	-	14
<b>TOTAL COST OF SERVICE RELATED TO TARIFF SALES AND TRANSPORTATION</b>		474,451	186,012	44,423	3,751	4,484	972	1,888	5	30,341	172,491	24,504	1,205	2,468	1,094	771	1	46

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 1. ALLOCATION OF COSTS WHICH VARY DIRECTLY WITH SALE OF GAS

Factors are based on the pro forma average daily sales volumes for each service classification.

Service Classification	Pro Forma Average Daily PGC Volumes (Mcf)	Allocation Factor 1	Pro Forma Average Daily Firm Sales (Mcf)	Allocation Factor 1A
(1)	(2)	(3)	(4)	(5)
<u>Volumetric Costs</u>				
Residential	90,870	0.80171	95,087	0.72327
Commercial	19,118	0.16867	29,515	0.22451
Industrial	1,212	0.01070	2,387	0.01816
Municipal	1,532	0.01352	2,744	0.02087
PHA GS	487	0.00430	487	0.00370
PHA R8	122	0.00108	1,245	0.00947
NGVS	2	0.00002	2	0.00002
Interruptible	-	-		
Total	<u>113,343</u>	<u>1.00000</u>	<u>131,467</u>	<u>1.00000</u>

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTORS 2 AND 2A. CALCULATION OF MAXIMUM DAY EXTRA DEMAND FACTORS.

Factors are based on the maximum day extra demand throughput for each classification.

Service Classification	Pro Forma Average Daily Throughput Volumes (Mcf)	Peak Day Capacity (Mcf)	Extra Capacity (Mcf)	Allocation Factor 2	Allocation Factor 2A*
(1)	(2)	(3)	(4)=(3)-(2)	(5)	
<u>Volumetric Costs</u>					
Residential	95,087	429,513	334,426	0.71231	0.77118
Commercial	29,515	107,276	77,761	0.16563	0.17932
Industrial	2,387	9,559	7,172	0.01527	0.01654
Municipal	2,744	11,394	8,650	0.01842	0.01995
PHA GS	487	2,119	1,633	0.00348	0.00376
PHA R8	1,245	5,251	4,006	0.00853	0.00924
NGVS	2	6	4	0.00001	0.00001
Interruptible	37,849	73,696	35,847	0.07635	
Total	169,316	638,814	469,499	1.00000	1.00000

\* Factor 2A excludes Interruptible volumes.

Load Factor                      0.265047                      0.734953

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH DISTRIBUTION

Factors are based on the weighting of the factors derived from average daily throughput volumes and from maximum day extra capacity demand for each service classification, as follows:

Service Classification	Average Daily Throughput			Maximum Day Extra Demand		Allocation Factor 3 (7)=(4)+(6)
	MCF/Day (2)	Allocation Factor (3)	Weighted Factor* (4)=(3)x 0.50000	Allocation Factor 2 (5)	Weighted Factor* (6)=(5)x 0.50000	
<u>Volumetric Costs</u>						
Residential	95,087	0.56160	0.28078	0.71231	0.35613	0.63691
Commercial	29,515	0.17432	0.08716	0.16563	0.08282	0.16998
Industrial	2,387	0.01410	0.00705	0.01527	0.00764	0.01469
Municipal	2,744	0.01621	0.00811	0.01842	0.00921	0.01732
PHA GS	487	0.00287	0.00144	0.00348	0.00174	0.00318
PHA R8	1,245	0.00735	0.00368	0.00853	0.00427	0.00795
NGVS	2	0.00001	0.00001	0.00001	0.00001	0.00002
Interruptible	37,849	0.22354	0.11177	0.07635	0.03818	0.14995
Total	169,316	1.00000	0.50000	1.00000	0.50000	1.00000

\* The weighting of the factors is based on the percentage of average daily throughput.



PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH METERS AND ACCOUNTS 381

Factors are based on the cost of meters by class included in Accounts 381 Meters and M&R Equipment.

<u>Service Classification</u> (1)	<u>Original Cost of Meters</u> (2)	<u>Allocation Factor</u> (3)
<u>Customer Costs</u>		
Residential	\$ 57,306,393	0.71560
Commercial	18,004,478	0.22483
Industrial	1,311,869	0.01638
Municipal	2,474,336	0.03090
PHA - GS	344,988	0.00431
PHA - Rate 8	636,266	0.00795
NGVS	2,419	0.00003
Interruptible	-	-
	<hr/>	<hr/>
Total	<u>\$ 80,080,750</u>	<u>1.00000</u>

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH INDUSTRIAL MEASURING AND REGULATING EQUIPMENT.

Directly assigned to the Industrial Class

<u>Service Classification</u> (1)	<u>Allocation Factor</u> (1)
<u>Volumetric</u> Industrial	1.0000

FACTOR 6. ALLOCATION OF COSTS ASSOCIATED WITH SERVICES AND HOUSE REGULATORS.

Factors are based on the cost of services by class included in Account 380, Service Lines.

<u>Service Classification</u> (1)	<u>Original Cost of Service Lines</u> (2)	<u>Allocation Factor</u> (3)
<u>Customer Costs</u>		
Residential	\$ 682,254,829	0.87688
Commercial	82,378,351	0.10588
Industrial	1,036,743	0.00133
Municipal	5,079,791	0.00653
PHA - GS	5,560,935	0.00716
PHA - Rate 8	1,725,978	0.00222
NGVS	1	-
Interruptible	-	-
	-	-
Total	<u>\$ 778,036,628</u>	<u>1.00000</u>

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 7. ALLOCATION OF COSTS ASSOCIATED WITH CUSTOMER ACCOUNTING  
AND METER READING.

Factors are based on the number of customers for each classification, as follows.

<u>Service Classification</u> (1)	<u>Number of Customers</u> (2)	<u>Allocation Factor 7</u> (3)
<u>Customer Costs</u>		
Residential	479,356	0.94122
Commercial	24,915	0.04892
Industrial	594	0.00117
Municipal	850	0.00167
PHA - GS	2,011	0.00395
PHA - Rate 8	1,129	0.00222
NGVS	3	0.00001
Interruptible	427	0.00084
Total	<u>509,286</u>	<u>1.00000</u>

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 8. ALLOCATION OF DISTRIBUTION OPERATION OTHER EXPENSES AND RENT.

Factors are based on distribution operation expenses other than those being allocated.

Service Classification <u>(1)</u>	Operation Expenses <u>(2)</u>	Allocation Factor <u>(3)</u>
<u>Volumetric Costs</u>		
Residential	\$ 24,445	0.33202
Commercial	6,525	0.08862
Industrial	564	0.00766
Municipal	665	0.00903
PHA GS	122	0.00166
PHA R8	305	0.00414
NGVS	1	0.00001
Interruptible	5,756	0.07818
<u>Customer Costs</u>		
Residential	26,611	0.36146
Commercial	6,871	0.09332
Industrial	463	0.00629
Municipal	893	0.01213
PHA GS	163	0.00221
PHA R8	238	0.00323
NGVS	1	0.00001
Interruptible	2	0.00003
Total	<u>\$ 73,625</u>	<u>1.00000</u>

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 9. ALLOCATION OF DISTRIBUTION ASSETS

Factors are based on distribution assets other than those being allocated.

<u>Service Classification</u> (1)	<u>Rate Base Costs</u> (2)	<u>Allocation Factor</u> (3)
<u>Volumetric Costs</u>		
Residential	\$ 474,874	0.37949
Commercial	126,735	0.10128
Industrial	10,953	0.00875
Municipal	12,913	0.01032
PHA GS	2,371	0.00189
PHA R8	5,927	0.00474
NGVS	15	0.00001
Interruptible	111,802	0.08935
<u>Customer Costs</u>		
Residential	425,443	0.33999
Commercial	66,720	0.05332
Industrial	2,527	0.00202
Municipal	6,003	0.00480
PHA GS	3,303	0.00264
PHA R8	1,758	0.00140
NGVS	4	-
Interruptible	-	-
Total	<u>\$ 1,251,348</u>	<u>1.00000</u>

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 10. ALLOCATION OF ADMINISTRATIVE AND GENERAL EXPENSES.

Factors are based on the allocation of operation and maintenance expenses.

Service Classification (1)	Operation & Maintenance Expenses (2)	Allocation Factor (3)
<u>Volumetric Costs</u>		
Residential	\$ 67,127	0.3662
Commercial	15,307	0.0835
Industrial	1,262	0.0069
Municipal	1,487	0.0081
PHA GS	370	0.0020
PHA R8	621	0.0034
NGVS	1	0.0000
Interruptible	6,747	0.0368
<u>Customer Costs</u>		
Residential	77,659	0.4236
Commercial	10,210	0.0557
Industrial	597	0.0033
Municipal	1,111	0.0061
PHA GS	421	0.0023
PHA R8	364	0.0020
NGVS	1	0.0000
Interruptible	35	0.0002
Total	<u>\$ 183,321</u>	<u>1.0000</u>

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 11. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

Factors are based on the allocation of total operation and maintenance direct labor expense to service classifications as shown on the following page.

Service Classification (1)	Total Labor Expense (2)	Allocation Factor (3)
<u>Volumetric Costs</u>		
Residential	\$ 71,548	0.52066
Commercial	18,046	0.13132
Industrial	1,498	0.01090
Municipal	1,778	0.01294
PHA GS	365	0.00266
PHA R8	733	0.00533
NGVS	2	0.00001
Interruptible	12,773	0.09295
<u>Customer Costs</u>		
Residential	27,667	0.20133
Commercial	2,445	0.01779
Industrial	114	0.00083
Municipal	207	0.00151
PHA GS	129	0.00094
PHA R8	93	0.00068
NGVS	-	-
Interruptible	20	0.00015
Total	<u>\$ 137,418</u>	<u>1.00000</u>





PHILADELPHIA GASWORKS  
FACTOR 11 ALLOCATION OF LABOR COSTS TO  
CUSTOMER CLASS SERVICE CLASSIFICATIONS

Account (1)	Labor Costs (2)	Volumetric Costs						Customer Costs										
		Residential (4)	Commercial (5)	Industrial (6)	Municipal (7)	PHA_GS (8)	PHA_RR (9)	MGUS (10)	Interservice (11)	Res (12)	Com (13)	Ind (14)	Mutl (15)	PHA_GS (16)	PHA_Rate.B (17)	MGUS (18)	Interservice (19)	
41	115																	
59	636	48	17	6	8	1			5	47	8			1				
60	2,186	343	79	18	8	7			34	386	62			6				
61	894	894	224	18	77	5			89	1,118	140			6				
62	253	95	22	2	2	1			10	111	14			2				
63	550	27	46	4	4	2			20	234	31			3				
64	6,058	1,964	1,055	41	108	20			831	653	34			1				
65	7,247	1,428	337	33	77	18			336									
66	3,266	1,203	274	23	27	7			121	1,292	183			70				
67	1,273	812	215	15	35	4			191									
TOTAL	137,224	71,546	13,046	1,436	1,774	365	733	2	12,773	27,607	2,445	114	207	230	95			20

TOTAL LABOR RELATED COST FOR ALLOCATION

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 12. ALLOCATION OF SURPLUS AND INTEREST EXPENSE.

Factors are based on the result of allocating the original cost measure of value, as presented on the following pages.

Service Classification (1)	Original Cost Less Depreciation (2)	Allocation Factor (3)
<u>Volumetric Costs</u>		
Residential	\$ 612,020	0.39640
Commercial	157,909	0.10227
Industrial	13,505	0.00875
Municipal	15,968	0.01034
PHA GS	3,100	0.00201
PHA R8	7,108	0.00460
NGVS	17	0.00001
Interruptible	120,588	0.07810
<u>Customer Costs</u>		
Residential	518,141	0.33559
Commercial	79,013	0.05117
Industrial	3,234	0.00209
Municipal	7,327	0.00475
PHA GS	3,815	0.00247
PHA R8	2,191	0.00142
NGVS	6	-
Interruptible	40	0.00003
Total	\$ 1,543,982	1.00000

FACTOR 13. ALLOCATION OF REGULATORY COMMISSION EXPENSES, ASSESSMENTS AND OTHER REVENUES.

Factors are based on the allocated cost of service excluding those items being allocated.

Service Classification (1)	Total Cost of Service (2)	Allocation Factor (3)
<u>Volumetric Costs</u>		
Residential	\$ 200,625	0.40744
Commercial	49,926	0.10140
Industrial	4,165	0.00846
Municipal	4,908	0.00997
PHA GS	1,051	0.00213
PHA R8	2,105	0.00428
NGVS	4	0.00001
Interruptible	26,950	0.05473
<u>Customer Costs</u>		
Residential	173,655	0.35268
Commercial	23,586	0.04789
Industrial	1,171	0.00238
Municipal	2,366	0.00481
PHA GS	1,060	0.00215
PHA R8	762	0.00155
NGVS	1	-
Interruptible	57	0.00012
Total	\$ 492,393	1.00000

PHILADELPHIA GASWORKS  
COST OF SERVICE AS OF AUGUST 31, 2021, AT PROPOSED REVENUE LEVEL ALLOCATED TO  
CUSTOMER CLASS SERVICE CLASSIFIERS

Factor Rate	Account	Cost of Service in 100's (3)	Volumetric Costs					Customer Costs									
			Residential (4)	Commercial (5)	Industrial (6)	Municipal (7)	PH&S (8)	PH&R (9)	PH&S (10)	Interruption (11)	Res (12)	Cum (13)	Ind (14)	Min (15)	PH&S (16)	PH&R (17)	NGVS (18)
<b>RATE BASE</b>																	
<b>PRODUCTION PLANT</b>																	
1	1-453	1,185	246	15	20	8	2										
324	Land and Land Rights	14,148	2,316	151	141	81	14										
325	Structures and Improvements	414	70	4	6	2											
326	Boiler Plant Equipment	108	23	1	2	1											
327	Other Power Equipment	511	86	5	7	2											
328	PO Equipment	78	13	1	1												
329	Oil Gas Equipment	10															
330	High Pressure Equipment	11															
331	Regulator Equipment	11															
332	Gas Storage Equipment	10,631	2,137	142	79	57	14										
320	Other Equipment	30,985	5,100	321	406	129	32										
	Total Production Plant																
<b>STORAGE AND PROCESSING PLANT</b>																	
24	Land and Land Rights	253	59	5	7	1	3										
350	Structures and Improvements	6,641	1,491	113	32	25	61										
351	Gas Holders	(96)	(16)	(1)	(2)		(1)										
352	Purification Equipment	9,411	1,571	143	74	37	71										
353	Separation Equipment	4,735	1,106	102	33	23	57										
354	Measuring Equipment	1,282	234	24	26	5	12										
355	Other Equipment	10,075	2,343	215	761	49	71										
359	Total Storage and Processing Plant	41,340	7,471	485	677	156	317										
<b>DISTRIBUTION PLANT</b>																	
9	Land and Land Rights	101	10	1	1												
374	Structures and Improvements	7,343	1,717	101	24	24	61										
375	Warehouses	9,406	1,614	139	62	30	75										
376	Measurement & Regulating Equipment - General	303,036															
377	Measuring & Regulating Equipment - General	51,484															
378	Measuring & Regulating Equipment - General	1,101															
379	Measuring & Regulating Equipment - General	46															
380	Other Equipment	4,018	1,233	107	20	23	58										
381	Total Distribution Plant	1,263,662	27,976	11,087	3,042	234	5,085										
<b>GENERAL PLANT</b>																	
10	Land and Land Rights	3,711	10	25	30	7	13										
382	Structures and Improvements	7,421	6,580	413	50	146	242										
383	Warehouses	46,952	4,589	413	484	121	200										
384	Measurement & Regulating Equipment - General	15,474	1,710	182	11	79	44										
385	Measuring & Regulating Equipment - General	68	6	1	1		2										
386	Tools, Equip and Garage Equipment	5,980	500	41	49	12	30										
387	Power Operated Equipment	89	18	1	2		1										

PHILADELPHIA GASWORKS

COST OF SERVICE AS OF AUGUST 31, 2021, AT PROPOSED REVENUE LEVEL ALLOCATED TO  
CUSTOMER CLASS SERVICE CLASSIFICATIONS

Account (1)	Factor Rate (2)	Cost of Service in 100's (3)	Volume-Related Costs										Customer Costs				
			Residential (4)	Commercial (5)	Industrial (6)	Municipal (7)	PH&S (8)	PH&S (9)	MGYS (10)	Interruptible (11)	Res (12)	Cum (13)	Ind (14)	Min (15)	PH&S (16)	PH&S (17)	MGYS (18)
327 Communication Equipment	10	1,415	519	118	13	11	3	5	5	5	79	5	9	1	3	-	-
328 Miscellaneous Equipment	101	10,974	1,983	812	75	18	77	17	17	4,326	818	8	65	25	27	-	2
Total General Plant		12,389	6,102	14,022	1,163	1,370	340	573	22	7,140	9,406	13	74	26	30	-	32
Total Plant		1,503,886	597,311	1,545,559	13,223	15,042	3,119	6,872	17	531,148	761,719	3,103	7,084	3,123	4,111	6	32
<b>OTHER RATE BASE ELEMENTS</b>																	
Cost of Working Capital	10	48,115	14,089	3,550	275	255	81	30	-	16,980	2,424	131	213	95	60	-	8
Total Other Rate Base Elements		48,115	15,082	3,550	275	255	81	30	-	16,980	2,424	131	213	95	60	-	8
Total Measure of Value		1,551,999	612,020	1,577,009	14,595	15,968	3,400	7,108	17	548,141	760,013	3,234	7,327	3,615	2,191	6	40

PHILADELPHIA GAS WORKS

FACTORS FOR ALLOCATING COST OF SERVICE TO SERVICE CLASSIFICATIONS

FACTOR 14. ALLOCATION OF UNCOLLECTIBLES NOT RECOVERED FROM MFC

Factors are based on 3-year average of uncollectibles.

Service Classification <u>(1)</u>	3-Year Average Uncollectibles <u>(2)</u>	Allocation Factor <u>(3)</u>
<u>Customer Costs</u>		
Residential	\$ 36,884,034	0.96587
Commercial	996,900	0.02611
Industrial	33,769	0.00088
Municipal	-	-
PHA GS	272,444	0.00713
PHA R8	484	0.00001
Total	<u>38,187,631</u>	<u>1.00000</u>

PHILADELPHIA GAS WORKS

CALCULATION OF CUSTOMER COSTS PER BILL BY SERVICE CLASSIFICATION

Cost of Service (1)	Residential (2)	Commercial (3)	Industrial (4)	Municipal (5)	PHA - GS (6)	PHA - R8 (7)	NGVS (8)	Interruptible (9)
<b>Fully Allocated Customer Costs</b>								
Customer Costs (in 1,000's)	\$ 201,245	\$ 27,622	\$ 1,342	\$ 2,744	\$ 1,253	\$ 877	\$ 1	\$ 62
Number of Customers	479,366	24,915	594	850	2,011	1,129	3	427
Customer Cost per bill	\$ 34.99	\$ 92.39	\$ 188.19	\$ 269.02	\$ 51.92	\$ 64.73	\$ 27.78	\$ 12.10
<b>Direct Customer Costs (in 1000's)</b>								
<b>O &amp; M Expenses:</b>								
874 Mains And Services Expenses								
Mains								
Services								
876 M & R Station Expenses - Industrial	13,674	4,296	313	590	82	152	1	-
878 Meter and House Regulator Expenses	6,223	1,955	142	269	37	69	-	-
879 Customer Installations Expenses	1,815	192	2	12	13	4	-	-
892 Maintenance of Services	2,783	145	3	5	12	7	-	2
893 Maintenance of Meters & House Regulators	2,193	107	3	4	9	5	-	2
901 Supervision	761	37	1	1	3	2	-	1
902 Meter Reading Expenses	28,139	1,463	35	50	118	66	-	25
903 Customer Records & Call Expenses	10,731	280	9	-	77	-	-	-
904 Uncollectible Accounts	5,186	270	6	9	22	12	-	5
908 Customer Assistance Expenses								
Subtotal O & M Expenses	70,741	8,745	514	940	373	317	1	35

PHILADELPHIA GAS WORKS

CALCULATION OF CUSTOMER COSTS PER BILL BY SERVICE CLASSIFICATION

	Cost of Service (1)	Residential (2)	Commercial (3)	Industrial (4)	Municipal (5)	PHA - GS (6)	PHA - R8 (7)	NGVS (8)	Interruptible (9)
<b>Depreciation Expense</b>									
380 Services	21,736	19,060	2,301	29	142	156	48	-	-
381 Meters	2,886	2,066	649	47	89	12	23	-	-
382 Meter Installations	2,682	1,927	605	44	83	12	21	-	-
383 House Regulators	54	48	6	-	-	-	-	-	-
384 House Regulator Installations	95	68	21	2	3	-	1	-	-
385 Industrial M & R Equipment	12	11	1	-	-	-	-	-	-
390 Structures and Improvements	-	-	-	-	-	-	-	-	-
391 Office Furniture And Equipment	-	-	-	-	-	-	-	-	-
Subtotal Depreciation	27,475	30,285	4,521	176	419	217	126	-	2
<b>Rate Base</b>									
390 Services	393,500	345,052	41,664	523	2,570	2,817	874	-	-
381 Meters	51,484	36,842	11,575	843	1,581	222	409	2	-
382 Meter Installations	59,399	42,506	13,355	973	1,835	256	472	2	-
383 House Regulators	1,132	992	120	2	7	8	3	-	-
384 House Regulator Installations	57	51	6	-	-	-	-	-	-
385 Industrial M & R Equipment	186	-	-	186	-	-	-	-	-
390 Structures And Improvements	35,718 *	30,683	4,034	236	439	167	144	1	14
391 Office Furniture and Equipment	29,416 *	25,270	3,322	194	362	137	119	1	11
Subtotal Rate Base	570,892	481,396	74,076	2,957	6,804	3,607	2,021	6	25
Surplus and interest @ 10.7%	61,220	51,623	7,944	317	730	387	217	1	3
Total Direct Customer Costs	\$ 178,632	\$ 152,649	\$ 21,210	\$ 1,007	\$ 2,089	\$ 977	\$ 660	\$ 2	\$ 40
Number of Customers	509,286	479,356	24,915	594	850	2,011	1,129	3	427
<b>Direct Costs per bill</b>	\$ 26.54	\$ 70.94	\$ 141.23	\$ 204.77	\$ 40.48	\$ 48.70	\$ 45.65	\$ 7.74	

\* Customer cost portion of account.

PHILADELPHIA GAS WORKS

CALCULATION OF MERCHANT FUNCTION CHARGE

Line No.		Residential	Commercial	Industrial	Municipal	PHA - GS	PHA - Rate B	NGVS	Interruptible	Total
(1)	Non-Gas Revenue - Proposed Rates	\$ 377,566	\$ 63,183	\$ 4,894	\$ 5,478	\$ 1,679	\$ 2,724	\$ 2	\$ 18,700	\$ 474,223
(2)	GCR Revenue	149,009	31,482	1,986	2,519	800	201	4	-	186,010
(3)	Total Revenue - Lines (1)+(2)	\$ 526,574	\$ 94,665	\$ 6,880	\$ 7,995	\$ 2,478	\$ 2,926	\$ 6	\$ 18,700	\$ 660,234
(4)	Percent of GCR to Total Revenue - Lines (2)/(3)	28.30%	33.26%	28.97%		32.27%				
(5)	Uncollectible Account 904 (000's)	31,971	864	29	-	236	-	-	-	33,101
(6)	Uncollectible Account 904 to GCR (000's) - Line (4) X (5)	9,048	287	8	-	76	-	-	-	
(7)	Uncollectible Share of Revenue, % - Line (6)/(2)	6.07%	0.91%	0.42%		9.52%				
(8)	Uncollectible Account 904 to GCR - Line (6) X 1000	9,047,867	287,455	8,439	-	76,160	-	-	-	
(9)	Annual Firm Sales Service Volumes	33,167,501	6,978,235	442,503	559,040	222,298	804	804	-	41,370,382
(10)	Merchant Function Charge per MCF - Line (8)/(9)	0.2728	0.0412	0.0191	-	0.3426	-	-	-	



PHILADELPHIA GAS WORKS

CALCULATION OF GAS PROCUREMENT CHARGE

Natural Gas Supply Service, Acquisition and Management and Benefits	\$	375,503
Storage Gas Working Capital Plus Cash Working Capital - Cost		<u>509,583</u>
Total GPC Costs	\$	885,086
Annual Firm Sales Service Volumes - MCF		41,370,382
Gas Procurement Charge		0.0214

PHILADELPHIA GAS WORKS  
CALCULATION OF TED RIDER RATE OF RETURN

Line No.

	Revenue from TED Rider Customer - Pro Forma 8/31/2021		
(1)	Pro Forma Revenue Excluding GCR - TED	\$	91,224
(2)	PGW Investment	\$	152,000
(3)	Rate of Return - Line (1) divided by Line (2)		60.02%