



PHILADELPHIA GAS WORKS

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June 2, 2022

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

**Re: Philadelphia Gas Works' ("PGW") Annual Resource Planning Report, Docket
No. M-2022-3030280**

Dear Secretary Chiavetta:

On behalf of Philadelphia Gas Works ("PGW") enclosed please find its Annual Resource Planning Report, Forms 3 through 9. Please contact me if you have any questions.

Respectfully,

/s/ Craig W. Berry

Craig W. Berry, Esquire

Enclosure

cc: Cert. of Service w/enc.

CERTIFICATE OF SERVICE

I hereby certify that this day I served a copy of PGW's Annual Resources Planning Report upon the persons listed below in the manner indicated in accordance with the requirements of 52 Pa. Code Section 1.54.

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Dated: June 2, 2022

/s/ Craig W. Berry
Craig W. Berry, Esq.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122**

ANNUAL RESOURCE PLANNING REPORT

June 2022

Forms 3 to 9

**Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Section 59.81 and 59.82**

PHILADELPHIA GAS WORKS

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¹ PGW filed its Annual Resource Planning Report, Forms 1 and 2 on February 28, 2022. That Report contained three numbered exhibits, which are accounted for in this report.

Section 59.81

Form IRP-Gas-3 – Historical, Current, and Forecast Number of Customers

Response:

Please see the attached form.

FORM-IRP-GAS-3: Historical, Current, and Forecast Number of Customers ⁽¹⁾
 REPORTING UTILITY: PHILADELPHIA GAS WORKS

	Index Year Fiscal Year	Historical Data		Current Year	Three Year Forecast		
		-2	-1	0	1	2	3
		2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
Firm Customers							-
Retail Residential		464,940	469,879	470,108	469,776	467,411	465,046
Retail Commercial		21,707	22,413	22,712	23,205	23,509	23,813
Retail Industrial		475	474	459	470	467	464
Other		-	-	-	-	-	-
Subtotal Sales Service		487,121	492,766	493,279	493,451	491,387	489,323
Electric Power Generation		0	0	0	0	0	-
Interruptible Customers		7	3	3	3	3	3
Transportation Service ⁽²⁾		25217	24905	24206	26,662	28,878	31,094
CUSTOMER TOTAL		512,345	517,673	517,488	520,116	520,268	520,420
Increase (Decrease)		3,882	5,328	(186)	2,628	152	152
Percent Change (%)		0.8%	1.0%	0.0%	0.5%	0.0%	0.0%

⁽¹⁾ Customer Count is based on the average number of billings over the course of the year.

⁽²⁾ The increase in Transportation customers is due to customers switching to transportation.

Section 59.81

**Forms IRP-Gas-4A and -4B – Annual and Peak Day Energy Supply
Resources and Demand Requirements**

Response:

Please see the attached forms.

FORM-IRP-GAS-4A: Annual Energy Supply Resources and Demand Requirements
 REPORTING UTILITY: PHILADELPHIA GAS WORKS
 (Volumes in MMcf)

	Historical Data		Current Year	Three Year Forecast		
Index Year Actual Year	-2 2019-2020	-1 2020-2021	0 2021-2022	1 2022-2023	2 2023-2024	3 2024-2025
Gas Supply:						
Supply Contracts	41,469	42,108	44,610	47,456	47,059	47,034
Storage Withdrawals	9,109	10,521	13,612	14,891	14,949	15,103
LNG	1,141	1,293	1,966	2,600	2,591	2,601
Exchanges with Other LDCs	-	-	-	-	-	-
Subtotal Gas Supply	51,718	53,922	60,187	64,947	64,599	64,738
Transportation Deliveries	31,927	31,109	31,479	32,151	32,348	32,545
TOTAL GAS SUPPLY	83,645	85,031	91,667	97,099	96,947	97,283
Requirements:						
Firm Requirements	39,937	41,564	43,814	46,493	46,372	46,319
Liquefaction	1,733	1,192	1,517	2,729	2,468	2,457
Interruptible Requirements	664	557	581	392	392	392
Storage Injections	9,384	10,608	14,274	15,334	15,366	15,571
Sales to other LDC's	-	-	-	-	-	-
Subtotal Firm & Interruptible	51,718	53,922	60,187	64,947	64,599	64,738
Transportation	31,927	31,109	31,479	32,151	32,348	32,545
Load Reductions						
TOTAL GAS REQUIREMENTS	83,645	85,031	91,667	97,099	96,947	97,283
Surplus (Deficiency)	0	0	0	0	(0)	(0)

FORM-IRP-GAS-4B: Peak Day Energy Supply Resources and Demand Requirements ⁽¹⁾
 REPORTING UTILITY: PHILADELPHIA GAS WORKS
 (Volumes in MMcf)

Index Year Actual Year	Historical Data		Current Year	Three Year Forecast		
	-2 2019-2020	-1 2020-2021	0 2021-2022	1 2022-2023	2 2023-2024	3 2024-2025
Gas Supply:						
Supply Contracts	152	153	281	261	256	255
Storage Withdraws	166	165	162	185	190	190
LNG	36	74	207	249	250	251
Subtotal Gas Supply	353	392	650	695	696	696
Transportation	151	161	18	15	15	16
TOTAL GAS SUPPLY	505	552	667	710	711	712
Requirements:						
Firm Requirements ⁽²⁾	353	391	576	611	609	608
Interruptible Requirements	0	0	2	1	1	1
Storage & LNG Fuels	-	-	11	12	12	12
Subtotal Firm & Interruptible	353	392	588	625	623	621
Transportation	151	161	79	85	88	90
Load Reductions	-	-	-	-	-	-
TOTAL GAS REQUIREMENTS	505	552	667	710	711	712
Surplus (Deficiency)	0	0	0	0	0	0

⁽¹⁾ Peak Day for the actual/estimated year is forecasted at a 5 degree temperature. For the fully forecasted years, the Peak Day is based on a 2 degree temperature.

⁽²⁾ Firm requirements for the forecast years include plant use.

Section 59.82

**Forms IRP-Gas-5 – Energy Conservation Report – Program
Description**

Response:

Please see the attached form.

FORM-IRP-GAS-5 PROGRAM DESCRIPTION

Company: Philadelphia Gas Works (PGW)

Program: Home Comfort Program

Existing Proposed

Contact Person: Steven Jerue
(215) 684-6499

Objective: Home Comfort provides free, in-home weatherization and energy conservation education services for income-qualified, single-family customers, including those enrolled in CRP. Home Comfort seeks to make the homes of eligible customers more energy efficient, which improves comfort and reduces the subsidy cost. In 2017 PGW also launched the Low Income Multifamily Efficiency pilot, which provides conservation services to multifamily buildings with low income residents.

Details of Activity and Implementation Schedule:

Eligible customers are targeted for program participation. For each participating household, PGW's contractors will perform an energy diagnostic audit, energy education, and conservation treatments such as home repairs, programmable thermostat, insulation, etc.

Actual and/or Anticipated Results:

Year	Peak Load Reduction Mcf	Energy Savings (4)			Other Results
		Electric Mwh	Gas Mcf	Oil Gallons	
2011 (2)			25		1,634 Homes w/Treatment
2012 (2)			35		2,158 Homes w/Treatment
2013 (2)			19		2,395 Homes w/Treatment
2014 (2)			14		2,673 Home w/Treatment
2015 (2)			12		3,707 Homes w/Treatment
2016 (2)			17		3,814 Homes w/Treatment
2017 (2) (6)			23		2,118 Homes w/Treatment
2018 (2) (6)			13		2,478 Homes w/Treatment
2019 (2) (6)			12		2,996 Homes w/Treatment
2020 (2) (6)			15		1,650 Home w/Treatment

Monetary and Personnel Resources:

Year	Personnel Est. Hrs. (3)	Categorized Program Expenses		
		Outside Services	Admin.	Total
2011 (1)	17,974	\$2,191,948	\$54,382	\$2,246,330
2012 (1)	23,798	\$4,599,186	\$635,667	\$5,234,853
2013 (1)	26,345	\$7,032,750	\$1,021,654	\$8,054,404
2014 (1)	N/A	\$6,181,851	\$999,164	\$7,181,015
2015 (1) (5)	N/A	\$7,913,908	\$700,724	\$8,614,632
2016 (1) (5)	N/A	\$7,598,605	\$495,954	\$8,094,559
2017 (1) (5) (6)	N/A	\$4,876,103	\$375,680	\$5,251,783
2018 (1) (5) (6)	N/A	\$7,523,003	\$325,600	\$7,848,602
2019 (1) (5) (6)	N/A	\$7,681,082	\$287,386	\$7,968,468
2020 (1) (5) (6)	N/A	\$6,545,627	\$244,558	\$6,790,185

- (1) Actual
- (2) Actual number of participants, actual expenditure, estimated energy savings
- (3) PGW no longer tracks the personnel hours involved in CRP Home Comfort treatments, and instead tracks progress relative to cost-effectiveness goals.
- (4) Average energy savings per treated home.
- (5) Pursuant to the PUC's revisions to the annual Table 1 and Table 2 LIURP evaluation reports, administrative costs include PGW internal costs and allocated portfolio implementation costs. Outside services includes all program implementation and overhead costs.
- (6) Spending total includes programmatic and administrative costs (including labor) for the single family Home Comfort program and the Low Income Multifamily Efficiency (LIME) program. Completed jobs include single family homes treated in the Home Comfort program, and multifamily buildings treated in the LIME program.

Section 59.82 **Forms IRP-Gas-6 – Energy Users**

Response: Please see the attached form.

**FORM-IRP-GAS-6
ENERGY USERS
COMPANY: PHILADELPHIA GAS WORKS**

Fiscal Year Ending August 31, 2021

	<u>Number of Customers</u>	<u>Sales (Mcf)</u>
Firm:		
Residential:		
Heating	455,168	31,778,265
Non-heating	14,711	369,380
Commercial	22,413	7,706,507
Industrial	<u>474</u>	<u>446,929</u>
Sub-total Firm	492,766	40,301,081
Interruptible		
Commercial, Industrial, & Cogen	<u>3</u>	<u>492,120</u>
Total Gas Sold	492,768	40,793,201
Unbilled Adjustment	-	-
Transportation	24,905	30,640,346
Utility Use	<u>-</u>	<u>296,018</u>
Total	<u>517,673</u>	<u>71,729,564</u>

Section 59.82

**Forms IRP-Gas-7 – Energy Conservation and Load Management
Program Summary**

Response:

Please see the attached form.

FORM-IRP-GAS-7 PROGRAM SUMMARY

Company: Philadelphia Gas Works (PGW)

Program Name	Peak Load Reduction (Mcf)	Energy Use Change (Mcf)	Personnel Est. Hrs (2)	Categorized Program Expenses		
				Outside Services	Adm.	Total
Enhanced Low-Income Retrofit Program (ELIRP) - 2011 (1)	NA	25	17,974	\$2,191,948	\$54,382	\$2,246,330
Enhanced Low-Income Retrofit Program (ELIRP) - 2012 (1)	NA	35	23,798	\$4,599,186	\$635,667	\$5,234,853
Enhanced Low-Income Retrofit Program (ELIRP) - 2013 (1)	NA	19	26,345	\$7,032,750	\$1,021,654	\$8,054,404
Enhanced Low-Income Retrofit Program (ELIRP) - 2014 (1)	NA	14	N/A	\$6,181,851	\$999,164	\$7,181,015
CRP Home Comfort Program - 2015 (1)	NA	12	N/A	\$7,913,908	\$700,724	\$8,614,632
CRP Home Comfort Program - 2016 (1)	NA	17	N/A	\$7,598,605	\$495,954	\$8,094,559
Home Comfort Program - 2017 (1)	NA	23	N/A	\$4,876,103	\$375,680	\$5,251,783
Home Comfort Program - 2018 (1)	NA	13	N/A	\$7,523,003	\$325,600	\$7,848,602
Home Comfort Program - 2019 (1)	NA	12	N/A	\$7,681,082	\$287,386	\$7,968,468
Home Comfort Program - 2020 (1)	NA	15	N/A	\$6,545,627	\$244,558	\$6,790,185

(1) Actual

(2) PGW no longer tracks the personnel hours involved in LIURP treatments, and instead tracks progress relative to cost-effectiveness goals.

Section 59.82

**Forms IRP-Gas-8 – Energy Conservation and Load Management
Program Cost-Benefit Analysis Inputs**

Response:

Please see the attached form.

Company Name: Philadelphia Gas Works (PGW)
FORM-IRP-GAS-8 Cost-Benefit Analysis

PROGRAM: LIURP

t	Year	Energy Savings (1) Mcf E	Average Distribution Cost (2018\$) (2) \$/Mcf ACE	Avoided Energy Cost (2018\$) (3) \$/Mcf MCE	Participant Demand Savings (4) Mcf D	Utility Capacity Savings Mcf G	Average Demand Costs \$/Mcf ACD	Avoided Demand Costs \$/Mcf MCD	Participant Costs PC
1	2020	24,667	8.12	7.57	N/A	N/A	N/A	0	
2	2021	24,667	8.69	7.87	N/A	N/A	N/A	0	
3	2022	24,667	8.88	8.18	N/A	N/A	N/A	0	
4	2023	24,667	9.14	8.46	N/A	N/A	N/A	0	
5	2024	24,667	9.01	8.71	N/A	N/A	N/A	0	
6	2025	24,667	8.94	8.99	N/A	N/A	N/A	0	
7	2026	24,667	8.89	9.15	N/A	N/A	N/A	0	
8	2027	24,667	8.86	9.25	N/A	N/A	N/A	0	
9	2028	24,667	8.86	9.45	N/A	N/A	N/A	0	
10	2029	24,667	8.68	9.74	N/A	N/A	N/A	0	
11	2030	24,667	8.51	9.88	N/A	N/A	N/A	0	
12	2031	24,667	8.35	10.09	N/A	N/A	N/A	0	
13	2032	24,667	8.18	10.34	N/A	N/A	N/A	0	
14	2033	24,667	8.02	10.50	N/A	N/A	N/A	0	
15	2034	24,667	7.86	10.71	N/A	N/A	N/A	0	
16	2035	24,667	7.71	11.01	N/A	N/A	N/A	0	
17	2036	24,667	7.56	11.04	N/A	N/A	N/A	0	
18	2037	24,667	7.41	11.05	N/A	N/A	N/A	0	
19	2038	24,667	7.26	11.23	N/A	N/A	N/A	0	
20	2039	24,667	7.12	11.49	N/A	N/A	N/A	0	
21	2040	-	6.98	11.71	N/A	N/A	N/A	0	
22	2041	-	6.85	11.71	N/A	N/A	N/A	0	
23	2042	-	6.71	11.71	N/A	N/A	N/A	0	
24	2043	-	6.58	11.71	N/A	N/A	N/A	0	
25	2044	-	6.45	11.71	N/A	N/A	N/A	0	

(1) The Average Energy Costs are the annualized distribution costs for PGW firm ratepayers, and do not include the Weather Normalization Adjustment or Distribution System Improvement Charge.

(2) The Avoided Energy Costs used for this analysis were calculated in accordance with the avoided cost formula set forth in the DSM docket at R-2009-2139884 and P-2009-2097639.

Company Name: Philadelphia Gas Works (PGW)
 FORM-IRP-GAS-8 Cost-Benefit Analysis

PROGRAM: LIURP

t	Year	Incentive Cost I	Utility Costs UC	Discount Rates			Escalation Rate (3) % e	System Sales (4) Mcf S	Sales Ratio f
				Participant (d) %	Non-Participant (d) %	Utility (d) %			
1	2020	\$ -	\$ 6,790,185	2.92%	2.92%	2.92%	0	45,173,184	0.005500
2	2021	\$ -	\$ -	2.92%	2.92%	2.92%	0	46,048,950	0.0054
3	2022	\$ -	\$ -	2.92%	2.92%	2.92%	0	48,469,115	0.0051
4	2023	\$ -	\$ -	2.92%	2.92%	2.92%	0	50,468,509	0.0049
5	2024	\$ -	\$ -	2.92%	2.92%	2.92%	0	50,544,858	0.0049
6	2025	\$ -	\$ -	2.92%	2.92%	2.92%	0	50,662,151	0.0049
7	2026	\$ -	\$ -	2.92%	2.92%	2.92%	0	50,749,743	0.0049
8	2027	\$ -	\$ -	2.92%	2.92%	2.92%	0	50,851,874	0.0049
9	2028	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
10	2029	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
11	2030	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
12	2031	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
13	2032	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
14	2033	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
15	2034	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
16	2035	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
17	2036	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
18	2037	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
19	2038	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
20	2039	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0049
21	2040	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0053
22	2041	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0053
23	2042	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0053
24	2043	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0053
25	2044	\$ -	\$ -	2.92%	2.92%	2.92%	0	51,080,732	0.0053

(1) The Participant, Non-Participant and Utility discount rates are real discount rates based on PGW's long-term debt and AFUDC (Allowance for Funds Used During Construction).
 (2) The System Sales are sales to ratepayers subject to the Universal Service and Energy Conservation Surcharge.

Section 59.82

**Forms IRP-Gas-9 – Conservation and Load Management Program
Cost-Benefit Analysis Results**

Response:

Please see the attached form.

Company Name: Philadelphia Gas Works (PGW)
FORM-IRP-GAS-9 Cost-Benefit Analysis

PROGRAM: LIURP

Period of Analysis		Total Utility Benefits (Bu) \$	Total Utility Costs (Cu) \$	Revenue Reduction Cost (Cr) \$	Participant Revenue Requirement (Rp) \$	Total participant Benefits (Bp) \$	Total Participant Costs (Cp) \$
Beginning Year	Ending Year						
2020	2044	\$ 3,630,809	\$ 6,790,185	\$ 3,190,541	\$ 36,018	\$ 3,190,541	\$ 36,018

Discounted Payback Period Yrs.	NET PRESENT VALUE			BENEFIT COST RATIO			Rate Impact Non-Part (RIMnp) \$/Mcf
	Participant (NPVp) \$	Non-Part (NPVnp) \$	Utility (NPVu) \$	Participant (BCRp) \$	Non-Part (BCRnp) \$	Utility (BCRu) \$	
N/A	\$ 3,154,522	\$ (6,315,029)	\$ (3,159,376)	88.58	0.36	0.53	\$ 0.151

- (1) This filing reports on the results of PGW's LIURP program. Results from PGW's demand side management programs are reported at docket numbers R-2009-2139884 and P-2009-2097639.
- (2) The avoided costs used for this analysis were calculated in accordance with the avoided cost formula used for DSM program reporting set forth at docket numbers R-2009-2139884 and P-2009-2097639.