

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-1.a-b.
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please reference the following statement by Gregory Stunder from PGW's Response to CAC-I-7, attached hereto as Exhibit A: "PGW's main replacement program, Energy Sense program and Home Comfort program (i.e. LIURP) reduce GHG emissions."

- a. Please provide all documents, analyses, and calculations showing that PGW's main replacement program reduces greenhouse gas emissions. Please provide any underlying workpapers in native format with formulas intact.
- b. By approximately how much does PGW's main replacement program reduce greenhouse gas emissions?

Attachments: 0

Response:

Since 2010, PGW has successfully eliminated the potential emission of 60,000 tons of CO₂ equivalent from replacing mains and services. The calculations for greenhouse gas emissions are published by the USEPA in its Greenhouse Gas Reporting Tool. These calculations are for distribution mains and services and can be found in Subpart W, 98.233(r): Population Count and Emission Factors. PGW utilizes Equation W-32A and Equation W-36 of this Subpart to calculate the avoided emissions.

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-1.c-f.
Date of Response: 7/21/2020
Response Provided By: Denise Adamucci

Question:

Please reference the following statement by Gregory Stunder from PGW's Response to CAC-I-7, attached hereto as Exhibit A: "PGW's main replacement program, Energy Sense program and Home Comfort program (i.e. LIURP) reduce GHG emissions."

- c. Please provide all documents, analyses, and calculations showing that PGW's Energy Sense program reduces greenhouse gas emissions. Please provide any underlying workpapers in native format with formulas intact
- d. By approximately how much does PGW's Energy Sense program reduce greenhouse gas emissions?
- e. Please provide all documents, analyses, and calculations showing that PGW's LIURP program reduces greenhouse gas emissions. Please provide any underlying workpapers in native format with formulas intact
- f. By approximately how much does PGW's LIURP program reduce greenhouse gas emissions?

Attachments: 1

ES-01.c.f Attachment PGW emissions 2020_0716.pdf

Response:

Please see attached.

Annual Savings	Total (MMBtus)	Energy (MWh)	CO2 Metric Tons
LIURP (CY19)	49,034	476	2,953
<i>Home Comfort</i>	48,116	474	2,902
<i>Low-Income Multifamily Efficiency Pilot</i>	918	2	50
EnergySense (FY19)	30,346	154	1,728
<i>Residential Equipment Rebates</i>	6,768	148	466
<i>Efficient Building Grants</i>	253	5	17
<i>Commerical Equipment Rebates</i>	9,550	-	510
<i>Efficient Construction Grants</i>	13,775	1	736
Total (PY19)	79,380	630	4,681

Lifetime Savings	Total (MMBtus)	Energy (MWh)	CO2 Metric Tons
LIURP (CY19)	1,068,642	10,714	64,598
<i>Home Comfort</i>	1,051,956	10,677	63,681
<i>Low-Income Multifamily Efficiency Pilot</i>	16,686	38	917
EnergySense (FY19)	680,720	3,162	38,559
<i>Residential Equipment Rebates</i>	144,305	2,968	9,799
<i>Efficient Building Grants</i>	8,059	140	529
<i>Commerical Equipment Rebates</i>	202,067	33	10,805
<i>Efficient Construction Grants</i>	326,289	21	17,426
Total (PY19)	1,749,362	13,876	103,157

Natural Gas CO2 Reduction Calculation	
MMBtu saved	1,749,362
MMBtu conversion to MCF	1.030
Conversion to MCF	1,698,409.98
Conversion Factor (metric tons CO2/MCF)	0.0550
Metric tons CO2	93,346.31
Conversion from metric to short tons	1.10231
Calculated short tons of CO2 cumulative - gas only	102,896.57

Calculation and assumptions sourced from EPA "Greenhouse Gases Equivalencies Calculator - Calculations and References"

<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

Source Formula: 0.0053 metric tons CO2/therm x 10.37 therms/MCF = 0.054961 metric tons CO2/MCF

Electricity CO2 Reduction based on EPA formula	
Electric MWh savings	13,876
Conversion to kWh	13,876,100.00
Conversion Factor (metric tons CO2/kWh)	0.0007
Metric tons CO2	9,810.40
Conversion from metric to short tons	1.10231
Calculated short tons of CO2	10,814.11

Calculation and assumptions sourced from EPA "Greenhouse Gases Equivalencies Calculator - Calculations and References"

<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

Source Formula: 1,559 lbs CO2/MWh x (4.536 x 10⁻⁴ metric tons/lb) x 0.001 MWh/kWh = 7.07 x 10⁻⁴ metric tons CO2/kWh

Total Calculated Short Tons of CO2 **113,710.68**

Total Calculated Metric Tons of CO2 **103,156.71**

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-4.d-e.
Date of Response: 7/21/2020
Response Provided By: Gregory Stunder

Question:

Please reference the following statement from PGW's Corporate Social Responsibility Report, attached hereto as Exhibit B: "PGW has joined the city of Philadelphia in its commitment to combat global climate change."

- d. Please describe the actions PGW has taken to date that reflect its "commitment to combat global climate change."
- e. Please describe the actions PGW is currently planning to take in the future as part of its "commitment to combat global climate change."

Attachments: 0

Response:

Please see the Rebuttal Testimony of Gregory Stunder, Statement No. 1-R, pages 9-10.

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-6
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please identify all mains or services that PGW currently plans to decommission, or otherwise remove from service, and not replace during the next 34.6 years. For each main or service so identified, please provide all documents relating to the reasons for PGW's plans to decommission, or otherwise remove service, and not replace the main or service.

Attachments: 0

Response:

PGW continually assesses its system for redundant or under-utilized mains for removal. Prior to each main replacement project design, network studies are performed for the area to determine the appropriate diameter and length of main(s) needed to serve current customers. Those redundant or under-utilized mains are either removed or abandoned.

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-20
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please confirm that, in Case No. P-2017-2602315, PGW projected expenditures for Main Replacement in FY 2020 to be approximately \$55,123,908.

- a. If anything but confirmed, please explain your response in detail.
- b. Please explain why increases from the amount projected in P-2017-2602315 are necessary, including any supporting documentation and analyses.

Attachments: 0

Response:

The amount listed above was the projected amount for the main replacement program in FY 2020 based on the latest cost information in 2017, the year our latest LTIP was developed. FY 2020 does not end until August 31, 2020, therefore all costs are not accounted for to date.

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-21
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please confirm that, in Case No. P-2017-2602315, PGW projected expenditures for Main Replacement in FY 2021 to be approximately \$55,567,199.

- a. If anything but confirmed, please explain your response in detail.
- b. Please explain why increases from the amount projected in P-2017-2602315 are necessary, including any supporting documentation.

Attachments: 0

Response:

The amount listed above was the projected amount for the main replacement program in FY 2021 based on the latest cost information in 2017, the year our latest LTIP was developed. FY 2021 does not start until September 1, 2020.

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-22
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please identify each increase to projected expenditures for FY 2020 and FY 2021 relative to the amounts approved in Cause No. P-2017-2602315 for each of the following:

- a. Main Additions;
- b. Main Replacements;
- c. Service Additions; and
- d. Service Replacements.

Attachments: 0

Response:

The projected expenditure amounts listed in P-2017-2602315 (Petition of Philadelphia Gas Works for Approval of its Second Long-Term Infrastructure Improvement Plan for the Period Beginning September 1, 2017 and Ending August 31, 2022) represent estimated costs for main replacement from 2018 – 2022). PGW's LTIIP does not include main or service additions or service replacements. Below are PGW's capital budgets for main replacement for FY 2020 and FY 2021:

	FY 2021	FY 2020
Main Replacements	\$64,813,000	\$62,454,000

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-23
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please explain in detail the reason increases to the projected expenditures for FY 2020 and FY 2021 relative to the amounts approved in Case No. P-2017-2602315 are need for each of the following:

- a. Main Additions;
- b. Main Replacements;
- c. Service Additions; and
- d. Service Replacements.

Attachments: 0

Response:

As explained in the previous response (ES-01-22), PGW's LTIP does not include any main or service additions nor does it include service replacements.

The amounts listed below are PGW's approved capital budgets for main replacement. The projected expenditures in the approved LTIP were based on 2017 costs with a 2% inflation factor per year. The capital budget is prepared with the latest cost per LF data available, adjustments to bring previous costs to current dollars and escalations for inflation for future years.

	FY 2021	FY 2020
Main Replacements	\$64,813,000	\$62,454,000

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-24
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please provide the approximate capital cost per mile to replace each of the sizes and types of main.

- a. 1-1/4" and Smaller LP (Service)
- b. 8" and Smaller LP/IP
- c. 12" and Larger LP
- d. 12" HP
- e. 30" HP

Attachments: 0

Response:

- a. The current cost to replace 1-1/4" and smaller service is \$1,650 per service.
- b. – e. PGW has supplied main costs per mile in the response to BIE-PS-8.

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-25
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

For each of the following sizes and types of main, please provide the approximate annualized cost to replace one of mile of pipe and the number of years used for depreciation purposes:

- a. 1-1/4" and Smaller LP (Service)
- b. 8" and Smaller LP/IP
- c. 12" and Larger LP
- d. 12" HP
- e. 30" HP

Attachments: 0

Response:

Pursuant to the depreciation study submitted with the initial filing in this proceeding (see initial filing requirement I.A.3.), the base accrual rate/useful life for all mains is 1.85% (i.e. 54 years).

Philadelphia Gas Works
Case Name: R-2020 BRC Rate Case TBA
Docket No(s): BRC 2020 Rate Case

Response to Discovery Request: ES-01-ES-01-26
Date of Response: 7/21/2020
Response Provided By: Daniel M. Furtek

Question:

Please identify the expected useful life for each of the following sizes and types of main:

- a. 1-1/4" and Smaller LP (Service)
- b. 8" and Smaller LP/IP
- c. 12" and Larger LP
- d. 12" HP
- e. 30" HP

Attachments: 0

Response:

Pursuant to the depreciation study submitted with the initial filing in this proceeding (see initial filing requirement I.A.3.), the base accrual rate/useful life for all mains is 1.85% (i.e. 54 years).

VERIFICATION

I, Daniel M. Furtek, hereby state that I am the Vice President – Resource Management and Technology for Philadelphia Gas Works (“PGW”), I am authorized to make this verification on its behalf, and that the facts set forth in the attached discovery responses which I am sponsoring are true and correct to the best of my knowledge, information and belief. 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 21, 2020

Dated



Daniel M. Furtek
Vice President – Resource Management and
Technology
Philadelphia Gas Works

VERIFICATION

I, Denise Adamucci, hereby state that I am Vice President of Regulatory Compliance and Customer Programs for Philadelphia Gas Works (“PGW”), I am authorized to make this verification on its behalf, and that the facts set forth in the attached discovery responses which I am sponsoring are true and correct to the best of my knowledge, information and belief. 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 21, 2020

Dated

Denise Adamucci

Denise Adamucci, Vice President
Regulatory Compliance & Customer Programs
Philadelphia Gas Works

VERIFICATION

I, Gregory Stunder, hereby state that I am the Vice President – Regulatory and Legislative Affairs for Philadelphia Gas Works (“PGW”), I am authorized to make this verification on its behalf, and that the facts set forth in the attached discovery responses which I am sponsoring are true and correct to the best of my knowledge, information and belief. 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 21, 2020

Dated



Gregory Stunder
Vice President – Regulatory and Legislative Affairs
Philadelphia Gas Works