

**Low Carbon Pathways Community
Meeting Public Comments:
Following Community Meeting on
August 12th, 2026**

Submitted on: Thursday, August 13, 2026 at 2:31pm

- Company/Organization:
- Name: Naomi Miller
- Residential Zip Code: 19102
- Email: [REDACTED]

Comments: My prepared statement (I was unable to present it in person due to technical problems):

My name is Naomi Miller. I live in Center City Philadelphia, a block from City Hall. Although my building's energy is electric and steam from the steam plant, I have standing as a person who breathes and pays taxes in Philadelphia. I also care about long-term effects of methane and its role in climate change.

I would like PGW to wean itself from methane gas by providing clean energy to homes powered by a 100% renewable grid.

As an older person, I am concerned about excessive heat and small particulate matter. Since I moved here in the late 1980s, we've gone from an average of 26.8 to 30.4 days per year of temperatures at or above 90° or more [Phila. Inq.]. I'm also concerned about burning gas on a large scale personally because it produces ground level ozone pollution that is bad for people with heart conditions, like me. And I am concerned about small particulates that are implicated in Alzheimers disease. The PM2.5 (small particulates) have been going up thanks to the Canadian and western wildfires. Since methane is a powerful greenhouse gas, by burning it we are making climate change worse.

Philadelphia is ostensibly committed to becoming carbon-neutral by 2050, when I will be 100 years old if I live that long. I'd like to see some progress even sooner. If I had grandchildren, I'd be even more worried on their behalf. As I am sure you are aware, Philadelphia's childhood asthma rate is an unconscionable 3 times the national average.

I urge PGW to become a company that provides full electrification powered by 100% clean, renewable energy, paired with energy efficiency and weatherization. Public ownership of PGW means we taxpayers have a financial, social, and moral interest in how it makes money. Burning gas is antithetical to responsible promotion of the health and welfare of Philadelphians. The cost of transforming PGW from the Philadelphia Gas Works to the Philadelphia Green Works is worth it.

Based on the thoughtful comments of so many of the other people testifying, I would like to add my support to these ideas:

- If the transition will lead to short- (or long-) term cost increase, as a municipal company PGW should contract with the city to provide some kind of means-tested support for ratepayers.
- The ERM assessment of cost should incorporate monetary value of expected health benefits.

- The ERM assessment should include not just the cost of going 100% renewable, but also the cost of NOT going 100% renewable (e.g., constant repairs to an aging system).

Submitted on: Thursday, August 13, 2026 at 9:20pm

- Company/Organization:
- Name: Emily Levine
- Residential Zip Code: 19123
- Email: [REDACTED]
- Comments: I am in support of a low-carbon pathways plan that moves PGW off methane gas and to clean energy powered by a 100% renewable grid. I'm concerned about the potential plan for using natural gas because that is not a climate resilient solution.

I want to be able to live in a city that has clean air for people to breathe. Pollutants caused by burning methane can worsen childhood asthma and in Philadelphia, the asthma rate is already 3 times the national average. According to the American Lung Association's 2026 State of the Air report, Philadelphia earned F ratings for its particle pollution.

It's very important for PGW to make smart choices now so people can have a healthy future. I'm urging PGW to focus their efforts into full electrification powered by 100% clean, renewable energy, paired with energy efficiency and weatherization, to ensure that future generations of Philadelphians have a safe and livable climate.

Submitted on: Tuesday, August 18, 2026 at 7:58pm

- Company/Organization:
- Name: Kate Rojas
- Residential Zip Code: 19135
- Email: [REDACTED]
- Comments: I'm Kate Rojas, and I live in Wissinoming in Northeast Philadelphia. I am concerned about the health of my neighbors in Port Richmond if a natural gas plant is installed there.

Philadelphia already has a high rate of childhood asthma (3 times the national average), and I want the air we breathe to be clean and healthy.

Gas is not the safest form of energy. As a city-owned utility, PGW should be a leader in representing the the best interests of the people who live here by investing in alternate forms of energy such as solar.

Submitted on: Wednesday, August 19, 2026 at 11:24am

- Company/Organization:
- Name: Wayne Olson
- Residential Zip Code: 19128
- Email: [REDACTED]
- Comments: Natural gas is methane, which is worse for the environment than CO2. It can be dangerous. I remember reading accounts of explosions in Lancaster Newspapers. One was a house in Elizabethtown. Fortunately, no one was at home. The other was at a multi-story factory in a neighboring county. The employees reported smelling gas, but the management did nothing. The resulting explosion caused injuries and severe structural damage. A small study was done on the effects of homes with gas ranges. In these houses the residents had more respiratory problems. Natural gas is processed into Liquified natural gas in some of our Gulf Coast States. The rates of cancer among those people who live near these plants are extremely high. Chefs in large restaurants surprisingly appreciate a new type of cooking with electricity. I think it is called induction cooking. The kitchens are cooler and stove tops are at room temperature.

Submitted on: Thursday, August 20, 2026 at 6:44pm

- Company/Organization:
- Name: Ivan Vivar
- Residential Zip Code: 19123
- Email: [REDACTED]
- Comments: We must end greenhouse gas emissions to prevent further climate change driven by methane, and the resulting extreme weather like extreme heat, flooding, and wildfires. Therefore, PGW must pursue a true emission-free transition, NOT a greenwashing approach involving continued gas use with carbon offsets.

PGW and the school district should proactively make a plan to implement the geothermal study at McCloskey Elementary now that the study has been released showing that it is a good location. McCloskey desperately needs the cooling that geothermal would provide.

We need binding targets for PGW to move completely off of gas.

Submitted on: Friday, August 21, 2026 at 1:45pm

- Company/Organization: Pamela Darville
- Name: 19144
- Residential Zip Code: 19144
- Email: [REDACTED]
- Comments: To the Philadelphia Gas Works Team,

Thank you for convening the recent community meetings mandated by the settlement agreement in your base rate case. As a city-owned utility serving half a million customers, your commitment to transparency and public input on the "Low Carbon Pathways" evaluation is a commendable step forward. However, the dialogue at these sessions has surfaced critical tensions—between ambitious climate goals and the immediate economic and health realities of Philadelphians—that demand a more robust response.

Key Recommendations for PGW:

1. Prioritize Plain Language Communication

- Replace technical reports with one-page fact sheets comparing each pathway (full electrification vs. hybrid) side-by-side in terms of cost, health impact, and feasibility.
- Establish a Community Advisory Board of ratepayer advocates, public health experts, and environmental justice leaders to review all materials before public release, ensuring they are accessible and reflect diverse community perspectives.

2. Address Health and Safety Concerns Directly

- Hydrogen blending risks were a central concern at the meetings. Attendees rightly expressed fear of indoor air quality impacts. The record shows burning hydrogen with methane can increase nitrogen oxide emissions up to six-fold—a serious trigger for asthma and COPD exacerbations. It's recommended that there are independent, transparent studies on these risks, especially given Philadelphia's aging housing stock and vulnerable populations.

3. Make Affordability Foundational, Not an Afterthought

- The settlement slashed PGW's proposed rate hike from \$105 million to \$62 million and rejected the "revenue guarantee" that would have charged customers for gas they don't use. This proves protecting customers and pursuing climate goals can coexist.
- However, transition costs must not fall on low-income ratepayers, who already spend a

disproportionate share of earnings on energy bills. Energy efficiency programs, weatherization, and low-income assistance (like LIHEAP, the Customer Responsibility Program, and the Hardship Fund) must be foundational elements of any plan—not afterthoughts.

The path forward must be sustainable by design—environmentally sound and inclusive. That means addressing health fears with independent science, presenting choices clearly with transparent trade-offs, and ensuring the cost burden does not fall disproportionately on those least able to pay. The people of Philadelphia deserve a clean, healthy, and affordable energy future—and they deserve to fully understand the road that gets us there.

Submitted on: Friday, August 21, 2026 at 6:08pm

- Company/Organization:
- Name: Alan Mark Windle
- Residential Zip Code: 19103
- Email: [REDACTED]
- Comments: The information provided at the August 12th meeting was far too complex for the general public and failed to address the most basic question: How will PGW put itself out of business or transition to a completely different business? I would have liked to see a high-level summary of how PGW's product (natural gas) is used by customers. I believe it is primarily for heating, cooking, and hot water. A true transition plan will show how PGW will transition all those appliances to electric. Customers will need loans or grants to replace their gas appliances with electric and some kind of incentive for doing so.

Submitted on: Friday, August 21, 2026 at 8:01pm

- Company/Organization: PGW ratepayer
- Name: Elaine Fultz
- Residential Zip Code: 19143
- Email: [REDACTED]
- Comments: It is critically important that the Low Carbon Pathways report assess alternatives through the lens of the City Climate Goals. Given the climate emergency's increasing impact on Philadelphia on the one hand and PGW's pivotal role in determining whether the City can meet its climate goals on the other, no other benchmark is meaningful. Whether, and how much, the various pathways further the City's goals must be addressed as the central question of the report.

To be meaningful to, and interpretable by, Philadelphians, the Report must be written in a plain, direct style. Please present expected impacts clearly. The processes by which PGW arrives at assessments will surely be complex, but the bottom line is not. Don't obscure expected impacts with professional jargon.; address your ratepayers and constituents in transparent language.

-- To obtain meaningful feedback on the report, it will be necessary to give us time to read it and digest its findings and recommendations. At a minimum, please provide a full month for public reactions.

-- The Port Richmond LNG plant expansion is intricately linked with PGW's future pathway. At this moment, PGW's proposal to expand this plant lacks justification, nor has PGW looked at non-polluting, non-warming alternatives. It is simply not possible to have a meaningful consideration of alternative for the future while putting this proposal on a separate track. The same is true of the very promising findings concerning the feasibility of geothermal as a future pathway for PGW. Both these issues are, and need to be treated as, part and parcel of PGW's future pathways.

Submitted on: Sunday, August 23, 2026 at 4:10pm

- Company/Organization: Earth Quaker Action Team
- Name: Eileen Flanagan
- Residential Zip Code: 19144
- Email: [REDACTED]
- Comments: Whether we live in Chestnut Hill or Gray's Ferry, climate change is already impacting us all. Heat waves of increasing in length and intensity, wildfire smoke, more intense weather-- these are just the early signs of a crisis that will continue to get worse. How much depends on all of us. If the leaders at PGW really understand the severity of climate catastrophe, they will do everything possible to reduce greenhouse gas emission in Philadelphia. Unlike PECO, you are not beholden to corporate shareholders. Your only job is to serve the people of our city, and future generations of Philadelphians. Please think big. Be brave. Be creative. This is not a time for half measures.

Submitted on: Tuesday, August 25, 2026 at 12:57pm

- Company/Organization: PennEnvironment
- Name: Flora Cardoni
- Residential Zip Code: 19143
- Email: [REDACTED]
- Comments: PennEnvironment Public Comment for PGW's

Virtual Community Engagement Meeting

August 25, 2026

My name is Flora Cardoni and I am the Deputy Director with PennEnvironment, the statewide, citizen-based, environmental advocacy nonprofit. Thank you for the opportunity to submit a comment on behalf of PennEnvironment's citizen members across Philadelphia.

As Philadelphia gets battered with the effects of extreme weather this summer like wildfire smoke, dangerously high heat, and damaging extreme downpours and microburst storms, it's clear we must do everything in our power to reduce the city's climate pollution as quickly as possible.

Fortunately, the city of Philadelphia has made a commitment to be carbon neutral by 2050. Reaching net zero greenhouse emissions by 2050 is in line with what the scientific community states needs to be done in order to stop the worst impacts of climate change. To meet that goal, we need to move away from burning fossil fuels, like gas, that contribute to climate change and threaten our health, and embrace clean, renewable energy.

That's why PennEnvironment supports a plan where PGW transitions completely off of gas to 100% clean, renewable energy, while prioritizing weatherization and energy efficiency measures. To that end, we appreciate that PGW is considering a full-electrification pathway. Full electrification is essential to this transition to clean, renewable energy. We also appreciate the greater emphasis that has been placed on energy efficiency and weatherization based on community input.

However, we are concerned that PGW is not actually studying a full-electrification pathway. PGW's own description of this pathway says the intention is to "shift away from natural gas towards more electricity usage," which implies some continued use of natural gas. Additionally, in PGW's June presentation, gas backup appeared as part of the "electrification," scenario. While reliance on delivered fuels may make sense in certain circumstances during the transition off the gas system, an electrification pathway should not rely on gas backup. Continued reliance on piped gas would undercut one of the big opportunities for cost savings: decommissioning the gas system. Paying to maintain the gas system for a backup role would be a waste of resources, while the gas itself

would continue to threaten our health, safety, and climate. This is especially shortsighted as battery storage technology and thermal energy storage technology have progressed at leaps and bounds, while also decreasing in cost, making those options cleaner, safer backup alternatives.

We urge PGW to consider a full electrification scenario without gas back up, where the savings of decommissioning the gas system are taken into account. Of course, cost is not the only factor to consider. We encourage PGW to fully weigh the air quality and public health benefits associated with this and all potential pathways as well

We also want to raise concerns related to so-called “cleaner fuel options,” like decarbonized gas, hydrogen fuel, or bio gas, which show up throughout different pathways. These fuels are incredibly costly, many are unproven at scale, and they all rely on using, burning and leaking methane gas, which is a more potent global warming pollutant than carbon dioxide. These false solutions are costly, don't improve air quality, and provide little if any climate benefit.

The bottom line is that full electrification needs to be powered by clean, renewable energy, with expanded geothermal heating and cooling, battery and thermal storage backup, and system-wide energy efficiency and weatherization upgrades. This would be cleaner, faster, more cost effective, and result in lower emissions than any pathway that relies on expanding so-called “cleaner fuels” or maintaining a gas backup system. We urge PGW to study that version of a full electrification scenario.

Finally, to maintain system integrity while facilitating the transition, PGW should proactively consider alternatives to pipe replacement. PGW should consider advanced leak detection, advanced repair and rehabilitation methods, like cured in place lining and joint sealing, that can deliver the same or better risk reduction outcomes without the high costs and multi-decade depreciation schedules of full pipe replacement. Many of these technologies were developed specifically for cast iron and could be deployed by PGW at scale. PGW should be focused on decommissioning the pipe system in a way that protects public health and safety, not doubling down on new infrastructure just to strand the assets. We also encourage PGW to consider non-pipeline alternatives (NPAs), starting with conducting a system wide hydraulic analysis and developing a framework for considering NPAs such as building electrification.

Given all of these challenges, we urge PGW to release a draft report and allow at least one month for members of the public and outside experts to submit comments before they publish a final report, instead of moving directly to publishing the final report this fall.

Ultimately, as PGW considers how to reduce its reliance on dirty, dangerous fossil fuels and to hit the goal of a fully net-zero Philadelphia by 2050, PGW should take steps to move towards a truly clean, renewable energy future as rapidly as possible. Gas is harmful to our city, our climate, our pocketbooks, and to our health. So, we urge PGW and the city to focus their efforts into full electrification powered by 100% clean, renewable energy, paired with energy efficiency and

weatherization, to ensure that future generations of Philadelphians have a safe and livable climate in the place we all call home.

- Company/Organization:
- Name: Peter Furcht
- Residential Zip Code: 19107
- Email: [REDACTED]
- Comments: PGW's number 1 priority must be the supply of affordable, reliable, and clean energy, period. Everyone, everyone, should have the right to affordable, reliable, and clean energy, 24/7/365.

PGW supplies natural gas to Philadelphians but the world is changing and consumer needs and demands are changing with it. Natural gas is no longer a desired commodity due to its impact on climate disruption and health. People are switching to clean sources of energy.

I switched out my furnace for an electric heat pump which can be powered from clean electricity. I am now one less person paying PGW money to maintain their pipelines. I know many other people who are doing the same thing. PGW is losing customers and will continue to lose customers as the City of Philadelphia works to reach its 2050 carbon neutral goals.

What are you going to do PGW to address a future of significantly less natural gas sales? Are you going to transition your energy supply to something different, say the distribution of geothermal fluids or are you just going to slowly shrink and then suddenly go bankrupt when you can no longer afford to keep up your gas network because you've done nothing to plan for the future? It is your choice.

In your August 12th meeting, you said you are working on a plan and a report on what your future looks like, what actions you plan to take.

* Will you share that plan with the public prior to its release so the public can provide our feedback on your thoughts, your data, etc.? We should get at least 30 days to do that review.

The slides you presented, referencing sources and data that are built into your energy prediction model had some unusual information on them.

* On slide 6, "Annual Energy Outlook - Energy Sources & Emissions" you show electrical generation capacity by source and it shows renewables topping out at about 25% in about 2037 and remaining there through 2050 while natural gas usage grows during that time. Really? Is that a realistic prediction considering renewables are cheaper than natural gas?

* Slide 10, "PJM and PA PUC - Electric Systems Impacts" states that "New-build capacity is assumed to be Gas Combustion Turbines (lowest cost). Future iterations could consider

renewable generators” Once again, really? Your model for the future cost of energy is built on the false claim that natural gas is cheaper than renewables? Renewables have been less expensive than natural gas for a couple of years now. Your model basis is already out of date.

* Slide 12, “AGF and AEO - Alternative Fuel Mix and Costs” talks about adding hydrogen to existing pipelines. Really? PGW can’t keep natural gas from leaking from their pipelines. Hydrogen will find many more leaks than natural gas so much if it will simply leak out not to mention that most appliances and much of the existing pipelines are not compatible with any significant amount of Hydrogen. This is not a real possibility.

* The company PGW has hired to build this model and generate the plan and report, ERM, is it the right company to do this job? Reading their website, they have statements like “...sustainability that pays” and “...value creation through sustainability”, “...we repair corporation’s green credentials while maintaining profitability...” This does not sound like a firm who is focused on truly transforming a company whose primary product is polluting, causing climate disruption, and needs to transition. It sounds like a firm who is expert at making a company appear green when it really isn’t.

* The recently ‘completed’ PGW Geothermal study was referenced during the discussion. Unfortunately, like the sources referenced in the slides, that study is another report that is flawed. One of the main conclusions drawn in that report was that while lifecycle costs of geothermal are lower, it is more expensive to install a new geothermal system with all the required infrastructure than it is to simply upgrade an existing gas furnace to a new gas furnace. Is that a fair apples to apples comparison? No, of course not. What it fails to address is what is the life cycle cost of installing a heat pump in place of a furnace if the geothermal infrastructure is already in place like the gas infrastructure is already in place? What is the incremental cost of adding another user to the geothermal loop if the infrastructure is already in place?

* Lastly, a 2023 study commissioned by HEET (Home Energy Efficiency Team), a nonprofit climate-solutions incubator based in Boston, found that PGW will need to spend upwards of \$8 billion over the next 35 years to maintain their pipelines. What if PGW created a plan that spent that \$8 billion converting users from natural gas to geothermal, or something else clean and reliable?

PGW you decide.

Submitted on: Wednesday, August 26, 2026 at 5:35pm

- Company/Organization: PGW Ratepayer
- Name: John Francis
- Residential Zip Code: 19143
- Email: [REDACTED]
- Comments: To get robust public feedback, you need to give your ratepayers time to digest your findings. Please give the public at least one month to review your upcoming report on Low Carbon Pathways.

Submitted on: Wednesday, August 26, 2026 at 10:34pm

- Company/Organization: PA PSR
- Name: Isha Thapar
- Residential Zip Code: 19104
- Email: [REDACTED]
- Comments: It is vital to curtail greenhouse gas emissions to prevent further climate change and its associated health harms, including extreme heat, flooding, wildfires, and air pollution. These exposures contribute significantly to morbidity and mortality through heat-related illness, respiratory and cardiovascular disease, and exacerbation of other chronic conditions. PGW must pursue a true emission-free transition, not a greenwashing approach that prolongs dependence on gas.

Submitted on: Thursday, August 27, 2026 at 5:24am

- Company/Organization:
- Name: Paul Devine Bottone, MD
- Residential Zip Code: 19146
- Email: [REDACTED]
- Comments: Health risks due to air pollution and climate change are rising precipitously: respiratory, heart, neurodegenerative, and other diseases, including cancers; complications related to fetal development and preterm births; psychological distress, traumatic displacement, and a litany of other concerns.

As a municipally-owned utility, PGW has a responsibility to take these concerns seriously and act accordingly. A low-carbon pathway must consider public health.

Only a transition away from gas—and the health risks of volatile organic compounds and particulate matter, as well as combustion and greenhouse gas effects—can facilitate the harm reduction that Philadelphians deserve.

A low carbon pathway presents immense opportunity for the city, the utility, and the planet, and PGW must rise to the occasion by placing the needs of customers and citizens above corporate lobbyists. It is past time to make Philadelphia a leader in non-fossil fuel energy, public health, and environmental justice. PGW can do this by intentionally and transparently pursuing alternative sources and energy efficiency in an open process with clear reporting and ample community involvement. These hearings have been an important first step, and their momentum must not be wasted.

Alice Lu
August 26, 2026
PGW ratepayer

PGW Low Carbon Pathways August Meeting Comments

Every month, most of my PGW bill goes toward covering distribution costs like maintaining and building out new pipelines and paying for new gas line extensions. That means each of PGW's 500,000 customers are paying to lock in an unsustainable system that's reliant on fossil fuels, when we know there are cleaner, cheaper, less-polluting, and more efficient alternatives readily available.

I'm a PGW ratepayer, and like many of my fellow PGW customers, I want a say in what my money is being spent on.

At both the June and August Low Carbon Pathways meetings, public responses were unanimously in favor of PGW's full electrification. And presence from City Councilmembers' offices at this August meeting shows how important this issue is for the city. With PGW's presentation at the August meeting, I'm concerned that the Low Carbon Pathways study is not doing enough to fully explore and evaluate the potential for full electrification. When talking about electrification, I mean full (not greater) deployment of electric appliances. I mean a system that is fully electric, not still relying on fossil fuels that "play a lesser role," forcing customers to continue being exposed to air pollution and paying two bills: one for their energy and one to keep gas lines alive.

I understand full electrification will require thoughtful planning in order to be done equitably. That is why I am asking PGW to *really* consider full electrification now, with accurate and complete data. PGW has already taken steps to explore some alternatives, like the recent geothermal feasibility study, which could also provide much needed cooling to our city's schools. Utilities like Eversource in Massachusetts are exploring broad geothermal deployment across the neighborhood scale. New England is rapidly deploying heat pumps to help residents meet their heating and cooling needs without relying on combustion appliances that pollute their indoor air and local environments.

I ask PGW to consider the following requests as they round out the Low Carbon Pathways study and prepare for its finalization:

- 1) The Pathways models rely on data inputs, but the current inputs presented likely do not account for the real cost or condition of most technologies. Similarly, not all inputs are being considered in the models. For example, just as PJM grid emissions and upstream emissions are included in emissions reductions calculations, **how will PGW similarly plan to incorporate accurate, behind-the-meter fugitive emissions in the study? What about public health costs?**
- 2) It's been made clear that this study is to serve as a "foundation for future decision making," but I am concerned that there is no opportunity for the public to comment on the actual substance of the report, before it is finalized. **Will PGW put the report up for public comment, before finalizing it?**
- 3) Finally, I am glad PGW has been directed to hold these public-engagement meetings, and I hope PGW is meaningfully considering comments and questions. **Will PGW provide written**

responses to all questions and comments, including how the input was (or was not) incorporated in the final report?

Thank you for considering my comments.



**2025 PGW Base Rate Case Settlement
Low Carbon Pathways Community Engagement Meeting (August 12, 2026)**

**Comments of Community Legal Services
August 26, 2026**

Community Legal Services of Philadelphia (“CLS”) submits these comments following the August 12, 2026, community engagement meeting (“August Meeting”) regarding Philadelphia Gas Works’ (“PGW”) Low Carbon Pathways Study (“Study”). The August Meeting was the second community engagement meeting on the Study convened pursuant to the settlement in the 2025 PGW Base Rate Case.¹

CLS represents low-income Philadelphians in matters involving access to safe and affordable utility service. CLS also served as counsel for the Tenant Union Representative Network (“TURN”) and the Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania (“CAUSE-PA”) in PGW’s 2025 Base Rate Case. Following PGW’s June 3, 2026, community engagement meeting, TURN and CAUSE-PA, through CLS as counsel, submitted comments identifying recommendations to advocate for robust public participation and ensure that the Study meaningfully addresses customer affordability and long-term infrastructure costs.²

CLS incorporates those recommendations by reference rather than repeating them at length here. PGW’s August presentation provided some additional detail regarding selected assumptions and data sources and identified several topics raised during the first round of stakeholder comments. But the presentation did not demonstrate meaningful progress toward incorporating many of the substantive recommendations in the June Comments. More fundamentally, stakeholders still have not seen the Study’s modeled results or conclusions, even though PGW intends to publish the final Study this fall.

I. The issues raised in the June Comments remain unresolved.

The June Comments urged PGW to incorporate the following principles into the Study and the accompanying community engagement process – most of which appear unaddressed after the August Meeting:

¹ See Joint Petition for Settlement and Statements in Support, PUC Docket No. R-2025-3053112 (filed August 7, 2025) at § H(1).

² See Comments of TURN and CAUSE-PA Regarding PGW’s June 3, 2026, Low Carbon Pathways Community Engagement Meeting (June 17, 2026) (“June Comments”).



- **Model each pathway’s low-income customer impacts separately**, including impacts on CRP customers, low-income customers not enrolled in CRP, tenants, high-usage households, and high energy-burden neighborhoods;
- **Evaluate total household energy burden**, including combined gas and electric costs under electrification and hybrid pathways;
- **Prioritize weatherization, energy efficiency, and whole-home repairs** as core emissions-reduction strategies that can simultaneously reduce usage, improve housing conditions, and increase affordability;
- **Analyze customer attrition and the costs borne by customers remaining on the gas system**, including the risk that low-income households could be left paying escalating costs for legacy infrastructure as other customers electrify;
- **Evaluate alternatives before committing customers to long-lived gas infrastructure**, including an assessment of stranded cost risks and an accounting of true costs of greenhouse gas emissions;
- **Subject low-carbon fuels and emerging technologies to rigorous cost, feasibility, emissions, and equity review**; and
- **Provide a transparent and responsive public process**, including timely public review of the Study before it is finalized and an explanation of how stakeholder feedback affected PGW’s final analysis.³

In the August Meeting, PGW identified some developments relevant to the June Comments. PGW stated, for example, that weatherization and energy efficiency will be “primary solutions” across the modeled scenarios, and that the Study will quantify upstream and downstream greenhouse gas emissions.⁴ In its presentation, PGW also stated that its Low-Carbon Pathways would be “structured around supporting the City’s 2050 carbon neutrality goal” – though in a separate Questions and Answers document provided to the public, PGW claimed less forcefully that it was “evaluating the various pathways for the City to potentially achieve its carbon neutrality goal.”⁵

³ June Comments at 8-9.

⁴ Philadelphia Gas Works, Low Carbon Pathways Study Community Engagement Meeting No. 2 (August 12, 2026) at 3, available at https://www.pgworks.com/uploads/pdfs/LowCarbonPathways_PresentationSlides_August12.pdf (last accessed August 26, 2026).

⁵ Philadelphia Gas Works, Low Carbon Pathways Questions & Answers at 1, available at https://www.pgworks.com/uploads/pdfs/PGW_Low_Carbon_Pathways_Q_A.pdf (last accessed August 26, 2026) [hereinafter “Q&A”].



These developments, however, do not show that PGW has incorporated many of the specific recommendations raised by public stakeholders and City policymakers in June. Based on the information presented at the August Meeting, PGW did not identify separate modeling of low-income customer impacts, total household energy burden, impacts on customers remaining on the gas system as others electrify, or the true economic cost of greenhouse gas emissions. PGW also did not present the modeled results themselves. The failure to provide for public review of a draft prior to finalization of the Study indicates PGW's Study may fail to address stakeholder input.

II. Stakeholders should be permitted to review the Study before it is finalized, not merely attend presentations.

CLS remains concerned that the community engagement process has not provided a meaningful opportunity to provide feedback on PGW's Study. The June Comments requested that PGW make its Study available for public review before the second community engagement meeting, make written comments publicly available, and explain in the final Study how stakeholder feedback was considered.⁶ Members of Philadelphia City Council separately requested that PGW provide a draft to the public and City Council sufficiently in advance of the second meeting to permit meaningful review.⁷

PGW did not provide the draft as requested. Instead, stakeholders again received a presentation describing the Study's approach, assumptions, and inputs while the actual analysis remained unavailable. PGW's Questions & Answers document appears to have served as its principal vehicle for responding to comments and questions raised during the first phase of stakeholder engagement. Providing written answers is useful, but a Q&A document is not a substitute for allowing stakeholders to review and comment on the Study itself. Nor does responding to individual questions show whether stakeholder recommendations changed PGW's assumptions, methodology, modeling, or conclusions.

The breadth of City Council participation in the August Meeting further demonstrates the public importance of this process. Representatives from the offices of Councilmembers Kendra Brooks, Jamie Gauthier, Katherine Gilmore Richardson, Rue Landau, Nicolas O'Rourke, and Anthony Phillips attended the meeting. That interest is unsurprising. The Study concerns issues that could shape long-term infrastructure spending, customer costs, greenhouse gas reductions, housing conditions, and public health throughout the City of Philadelphia. PGW has described

⁶ June Comments at 7-9.

⁷ See Councilmembers Jamie R. Gauthier, Nicolas O'Rourke, and Minority Leader Kendra Brooks, Letter re: Request for Low-Carbon Pathways Plan (June 17 2026), available at https://www.pgworks.com/uploads/pdfs/Public_Comments_-_June_2026.pdf (last accessed August 26, 2026).



the Study as providing a “foundation for future decision-making.”⁸ But the fact that the Study is not itself an actionable plan does not reduce the importance of scrutiny now. Future infrastructure, rate, programmatic, and policy decisions may rely upon its findings. As PGW itself stated, it is important to “first understand the options, their benefits and drawbacks, before selecting and committing milestones and possibly ratepayer funds to any specific plans.”⁹ This is precisely why the data, assumptions, methodology, and grounds for the Study’s findings should be subject to meaningful review before they become fixed in a final report.

PGW’s June presentation stated that the project team would “continue to develop and refine the Low Carbon Pathways model with stakeholder feedback.”¹⁰ Yet both settlement-required stakeholder meetings have now occurred without stakeholders seeing any of the model’s results or the draft Study. Under PGW’s current schedule, the public therefore appears likely to see the actual Study only after its analysis and conclusions are final. That is not a meaningful opportunity to influence the Study. As of now, public engagement has been reduced to a box-checking exercise in which stakeholders are invited to comment on descriptions of an analysis they have never been permitted to examine.

The process to date thus warrants a third community engagement meeting. The first two meetings fulfilled the minimum number required by the Base Rate Case settlement, but the purpose of stakeholder engagement should not be measured by whether PGW completed the required number of meetings. It should be measured by whether stakeholders had a meaningful opportunity to inform the Low Carbon Pathways Study. A third meeting held after circulation of a draft Study would provide the first opportunity for the public and City policymakers to engage directly with PGW’s actual findings and models.

CLS therefore requests that PGW:

1. Circulate a complete draft of the Low Carbon Pathways Study to the public and Philadelphia City Council well in advance of finalization;
2. Provide a meaningful written comment period on the draft;
3. Convene a third community engagement meeting after stakeholders have had sufficient time to review the draft; and

⁸ Q&A at 1.

⁹ Q&A at 1.

¹⁰ Philadelphia Gas Works, Low Carbon Pathways Study Community Engagement Meeting No. 1 (June 3, 2026) at 8, available at https://www.pgworks.com/uploads/pdfs/PGW_LowCarbonPathways_June_3_Meeting.pdf (last accessed August 26, 2026).



4. Explain in the final Study how stakeholder comments were considered and identify material changes made in response to that input.

III. Conclusion

As stated above, CLS incorporates by reference the concerns and recommendations set forth in the June Comments submitted by TURN and CAUSE-PA.¹¹ The August Meeting did not provide sufficient information to conclude that most of those recommendations have been incorporated into PGW's analysis. PGW's Study may influence decisions about Philadelphia's energy infrastructure and customer costs for decades. Its findings may also shape future policy concerning greenhouse gas reductions, affordability, housing, and public health. The evidentiary and analytical grounds for those findings require further review and input from stakeholders.

Before PGW issues the Study this fall, the public, City Council, and other stakeholders should have an opportunity to review the actual Study and examine the data, assumptions, methodology, and conclusions upon which future decisions may rely. CLS urges PGW to circulate a draft, provide a meaningful opportunity for written comment, and convene an additional stakeholder meeting before the Study is finalized.

Respectfully submitted,

/s/ Benjamin Clark

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¹¹ See June Comments.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, et
al.

v.

Philadelphia Gas Works

Docket No. R-2025-3053112
Docket No. C-2025-3053827
Docket No. C-2025-3053978
Docket No. C-2025-3054216

SECOND COMMENTS OF THE ENERGY JUSTICE ADVOCATES

August 26, 2026

I. Introduction

These second comments (“Second Comments” or “Comments”) of the Energy Justice Advocates (“EJA”)¹ follow and build on the first comments (“First Comments”) that EJA submitted to Philadelphia Gas Works (“PGW”) on June 17, 2026. On October 9, 2025, the Pennsylvania Public Utility Commission approved a settlement (the “Settlement”) of PGW’s most recent rate case, to which EJA was a party.² As relevant here, the Settlement contains a term entitled “Community Engagement,” under which PGW committed to convene two community engagement meetings to inform PGW’s evaluation of various potential pathways and considerations for long-term greenhouse gas (“GHG”) emission reductions in Philadelphia, and to accept written comments within two weeks after each meeting.³ PGW held the first community engagement meeting (the “First Community Engagement Meeting”) on June 3, 2026, and EJA submitted its First Comments during the written comment period that followed.

On August 12, 2026, PGW held its second community engagement meeting (the “Second Community Engagement Meeting”) pursuant to the Settlement, sharing a presentation (the “August 12 Presentation”) regarding the Low Carbon Pathways Study (the “Study”) it is in the process of preparing.⁴ EJA participated in that meeting and appreciated a productive conversation. EJA respectfully submits these Second Comments as a follow-up to the Second Community Engagement Meeting.⁵

¹ EJA is comprised of POWER Interfaith, Vote Solar, Clean Air Council, Sierra Club, Physicians for Social Responsibility PA, PennEnvironment, and PennPIRG.

² Pa. P.U.C., Order, *Pa. P.U.C. et al. v. Philadelphia Gas Works*, Docket No. R-2025-3053112 (Oct. 9, 2025).

³ Philadelphia Gas Works et al., Joint Petition for Settlement, at 16, *Pa. P.U.C. et al. v. Philadelphia Gas Works*, Docket No. R-2025-3053112 (Aug. 7, 2025).

⁴ Philadelphia Gas Works, Low Carbon Pathways Study Presentation Slides, at 2–10 (Aug. 12, 2026). Meeting materials are available at <https://www.pgworks.com/community-impact/sustainability>.

⁵ Philadelphia Gas Works, Low Carbon Pathways Study Presentation Slides, at 10 (Aug. 12, 2026).

II. Comments

A. Substantive Notes

EJA appreciates that the August 12 Presentation confirmed that the Low Carbon Pathways Study “will be structured around supporting the City’s 2050 carbon neutrality goal,” that the study will “quantif[y] upstream and downstream emissions throughout full energy value chains,” that the study will show total costs and customer rate impacts for each pathway, and that weatherization and energy efficiency “are in all scenarios as primary solutions.”⁶ These commitments correspond to priorities raised in comments by EJA and other community members and implementing them will help provide the framework for a useful study.

Building on that foundation, EJA renews the recommendations of its First Comments, including the attached Technical Appendix. Without repeating those detailed comments in full, a few high-level principles bear emphasis. To start, the Low Carbon Pathways Study should set GHG reduction targets for 2030, 2035, 2040, and 2045 that are consistent with the City’s 2050 net zero goal and should evaluate the likelihood of each pathway to meet these targets and the final goal. It is important and helpful to be clear that the Study will be structured around supporting the City’s 2050 goal. But for that support to be meaningful, the Study’s analysis must be rigorous and specific.

EJA also recommends that PGW ensure that key modeling assumptions are transparent and consistent. The August 12 Presentation indicates that electrification pathways will bear transmission, distribution, and capacity costs “for all incremental peak demand.”⁷ However, a useful electrification analysis must project not only costs but also savings opportunities.

⁶ Philadelphia Gas Works, Low Carbon Pathways Study Presentation Slides, at 3 (Aug. 12, 2026).

⁷ Philadelphia Gas Works, Low Carbon Pathways Study Presentation Slides, at 4 (Aug. 12, 2026).

Accordingly, the Study should also model the demand-side resources that reduce those peaks and costs, including distributed energy resources, storage, flexible demand, and energy efficiency, as detailed in EJA's First Comments. The Study should likewise apply symmetric assumptions about technology improvement: the presentation shows gas equipment efficiency improving from 80% to 95% over time, and heat pump performance and costs should similarly reflect expected improvement and cost declines over the studied period.⁸

Similarly, gas infrastructure costs should be modeled in an evenhanded way. A major flaw that limited the usefulness of PGW's Business Diversification Study in 2021 was that it failed to consider the possibility of any significant long-term cost savings from decommissioning unnecessary gas infrastructure when doing so is made possible by electrification.⁹ The Low Carbon Pathways Study should not simply repeat that approach. Instead, it should advance its analysis to incorporate consideration of how savings from avoided pipeline replacement could be reinvested in the community through programmatic and financial support for electrification for those most in need. The Low Carbon Pathways Study should also examine every opportunity for cost savings from advanced repair techniques rather than pipeline replacement.

Additionally, the Low Carbon Pathways Study should evaluate affordability in terms of customer bills as well as in overall rates and should ensure that equitably expanding access to energy efficiency measures is fully integrated into PGW's decarbonization planning. Pursuant to that objective, PGW should ensure that its Low-Income Usage Reduction Program ("LIURP") programming is as finely tuned as possible to maximize access for tenants, a market segment that

⁸ Philadelphia Gas Works, Low Carbon Pathways Study Presentation Slides, at 4 (Aug. 12, 2026).

⁹ Philadelphia Gas Works, Business Diversification Study, at 40 (2021) ("Analysis assumes no significant long-term cost reductions take place").

historically has proven difficult to reach with LIURP benefits. EJA strongly supports the recommendations on this matter of Community Legal Services, the Tenant Union Representative Network, and the Public Interest Law Center in their Letter to PGW of August 14, 2026, and urges PGW to incorporate those recommendations into the Low Carbon Pathways Study.

B. Process Notes

EJA appreciates the community engagement measures PGW has implemented to date. PGW has posted written comments submitted after the First Community Engagement Meeting to its website, has posted a Questions & Answers document, has committed to accepting and posting written comments following the Second Community Engagement Meeting, and has committed to continuing to share project materials.¹⁰

Looking forward, EJA urges PGW to provide a period of at least 30 days for the public to review and comment on a draft of the Low Carbon Pathways Study prior to its finalization. EJA further urges PGW to convene a third community engagement meeting to discuss and respond to any comments received during that period and to incorporate written responses to comments in the final Study (with the comments themselves included in an appendix). While the August 12 Presentation was useful and appreciated, it did not contain any of the Study's analysis or conclusions. Yet public comment and stakeholder input are at their most valuable for all involved when there are concrete and specific assumptions and results to respond to and discuss. In light of the important matters at stake in this Study, such substantive engagement would be helpful and appropriate.

¹⁰ Philadelphia Gas Works, Low Carbon Pathways Study Presentation Slides, at 3 (Aug. 12, 2026).

III. Conclusion

The Energy Justice Advocates appreciate the opportunity to provide these Comments and respectfully request that PGW incorporate the recommendations discussed above into its next steps.

Dated: August 26, 2026

Respectfully submitted,

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PGW Low Carbon Pathways Comment from Mitch Chanin

August 26, 2026

My name is Mitch Chanin, and I'm a resident of Northeast Philadelphia and a PGW ratepayer. I am writing to provide comments about PGW's Low Carbon Pathways (LCP) study, following the 8/12/26 public engagement meeting. While I am a member of the [HERE for Climate Justice Coalition](#) and other local organizations, I am speaking for myself and not on behalf of a group.

My comments build upon my brief statement during the 8/12/26 meeting. They respond to information that PGW and Environmental Resources Management (ERM) presented at the meeting and in the ["Low Carbon Pathways Questions & Answers"](#) document that PGW recently posted online (no publication date listed). The comments outline my concerns about several assumptions that PGW and ERM appear to be making as part of the Low Carbon Pathways analysis and about gaps in the analysis.

Before addressing those issues, I'd like to repeat my request for PGW and ERM to engage the public in a more robust way before publishing the Low Carbon Pathways report. I urge you to:

1. Share a full draft of the report with the public before completing the final report
2. Accept comments about the draft for at least 30 days
3. Respond in writing to all comments as part of the final report

HERE for Climate Justice asserted in a recent letter to the Philadelphia Gas Commission that:

Those steps—which represent best practices for public engagement—would ensure that the report is as accurate and thorough as possible, and as responsive as possible to the public's concerns. Members of the public and outside experts can improve the quality of the report by:

- *checking the assumptions, data, and reasoning found in the draft*
- *introducing data and/or concepts that may not be familiar to the consultants*
- *presenting important questions & concerns the consultants may have not considered*

The Low Carbon Pathways report will likely shape PGW's budgets and business model for years to come. It is important that PGW and ERM welcome, consider, and respond to feedback on a draft report in order to ensure that Low Carbon Pathways is the best possible foundation for future decision making.

I fully agree with this assertion. My additional comments are below.

Thank you,
Mitch Chanin



Detailed Comments

1. **The report should examine the health impact of pollution from PGW-supplied gas, as well as the potential health benefits of electrification and weatherization.**

Item #9 in PGW's Q&A document asks *"How is PGW considering public health and air quality impacts in the Low Carbon Pathways Study?"*

It then lays out the following answer: *"Similar to the 2021 PGW Diversification Study, the Low Carbon Pathways Study does not include a comprehensive assessment of air quality and public health impacts, as this would require focused air chemistry and transport analyses."*

Does this mean that the study will include *no* analysis of public health and air quality impacts, or simply that the analysis will not be "comprehensive"? Without conducting original air chemistry and transport analyses, ERP and PGW could conduct a literature review and use that research to outline likely impacts.

A comment submitted after the 1st public engagement meeting in June stated that:

The report should fully account for the health impacts of gas leaks and combustion byproducts in each scenario, and the health benefits that would result from reduced gas use in each scenario. It should include an equity/environmental justice analysis that examines how people in different neighborhoods and people with varied socioeconomic statuses (and racial identities) are affected differently by pollution. The report should analyze:

- i. Indoor pollution from stoves and other appliances, including [NOx](#), [benzene](#), and [nanoclusters](#)*
- ii. [Outdoor pollution](#) from boilers, furnaces, and other devices that vent NOx outside*

There is ample and growing evidence of significant health impacts that result from indoor and outdoor air pollution produced by gas combustion. If the LCP report fails to account for the impact of this pollution, the report will underestimate the benefits of replacing combustion with cleaner alternatives.

In addition, investment in weatherization and basic home repairs can have important benefits for residents' health. The report should account for these benefits as well.

2. **The report should fully account for the climate impact of methane leaks along the supply chain from well to customer, including behind-the-meter leaks inside buildings.**

A comment submitted following the 1st community engagement meeting stated that:

- a. Recent GHG inventories published by PGW and the City of Philadelphia as well as the slides presented during the 6/3/26 community engagement meeting appear to underestimate Scope 3 emissions that result from PGW's sale of natural gas. It looks like those tallies don't account for leaks that take place "behind the meter" – within customers' buildings and other facilities.
- b. Recent studies have found that much more methane leaks from natural gas systems in US cities than is reported in official inventories. See "[Majority of US urban natural gas emissions unaccounted for in inventories](#)," published in the Proceedings of the National Academy of Sciences (PNAS) in 2021.
- c. The PNAS paper states that "Urban NG emissions have been reported for several cities including Boston, Indianapolis, Washington, DC, Los Angeles, New York City, and **Philadelphia** using top-down methods based on tower, aircraft, and remote sensing measurements (e.g., refs. 4–8). Top-down studies consistently estimate **distribution and end use NG [natural gas] emissions to be significantly (two to 10 times) larger than the bottom-up estimates.**" Figure 7 includes data specifically for Philadelphia.
- d. The paper presents evidence that appliances and pipes within buildings contribute significantly to methane pollution from cities. See this 2021 Yale Climate Connections article, which is based on the PNAS paper: [Tiny leaks, big impacts: New research points to urban indoor methane leaks](#).
- e. PGW could commission a survey of leaks within buildings and other facilities served by the utility. Until that type of data is available, the Low Carbon Pathways report should acknowledge that credible studies point to the likelihood of significant pollution from behind-the-meter leaks. The reference scenario should include an estimate or range for behind-the-meter leaks, and the two decarbonization scenarios should project how much those leaks may decline.

PGW's "Questions and Answers" document responds as follows:

PGW has and continues to calculate natural gas emissions, including from customer meters, based on Federal guidance through the Environmental Protection Agency's (EPA) Greenhouse Gas Reporting protocols. PGW uses these protocols in calculating its Greenhouse Gas Inventories, also posted on the sustainability webpage. Additional information on this reporting is available on page 4-4 of PGW's most recent GHG Inventory Report for calendar year 2024. PGW intends to continue calculating its GHG emissions, and will be tracking emerging research and updated Federal protocols for identifying and accounting for gas leaks.

Additionally, routine maintenance of natural gas appliances is important for ensuring equipment performance, energy costs, lifetimes, and addressing any natural gas leaks within the appliances. PGW offers several customer equipment programs, including energy efficiency programs and the PGW Parts & Labor Program.

I do not believe that the GHG reporting protocols described in the Q&A document are sufficient. My recent experience discovering multiple leaks from gas lines inside my own home (which required expensive repairs) along with anecdotes shared by friends and colleagues add to the concerns I've developed through reviewing scientific research about gas leaks.

The Q&A asserts that PGW's methodology includes emissions "from customer meters." By definition, however, behind-the-meter leaks take place beyond rather than at a customer's meter. Since the protocols that ERP and PGW are using do not fully account for behind-the-meter leaks, the LCP report should supplement these protocols with additional analysis. Otherwise, LCP will systemically undercount PGW's scope 3 greenhouse gas emissions and undervalue the climate benefit produced by replacing gas with non-methane alternatives.

The comment submitted in June cites a paper published in the *Proceedings of the National Academy of Sciences* (a respected and influential journal) in 2021, "[Majority of US urban natural gas emissions unaccounted for in inventories](#)." The paper's conclusion states that:

Current efforts to reduce NG [natural gas] emissions often target pipeline leaks; however, if a significant portion of NG emissions are not from pipelines but from consumption-driven processes, it could require changing the scope of future policy. The results also imply that policies aimed at reducing NG consumption such as shifting away from NG use in buildings could substantially reduce GHG emissions if NG is replaced with green alternatives.

I urge PGW and ERP to respond to the data and conclusion laid out in the paper.

In addition, the Q&A document appears to hold customers responsible for addressing behind-the-meter leaks through "routine maintenance of natural gas appliances" while also asserting that PGW's customer equipment programs play a meaningful role in reducing such leaks. This leads me to several follow-up questions:

- Can PGW and ERP estimate how much gas may be leaking from internal gas distribution lines, valves, and other sources within buildings, as well as from appliances?
- Can PGW and ERP quantify the degree to which PGW's customer equipment programs reduce behind-the-meter leaks?
- Can PGW and ERP quantify the investment that individual customers would need to make in order to eliminate leaks inside their buildings?

3. The report should fully examine the potential to reduce capital costs by using a "[triage and transition](#)" strategy to manage the gas distribution network safely prior to decommissioning gas lines, rather than replacing leak-prone pipes.

PGW's Q&A document asks the following question: "How does PGW approach its infrastructure planning to control costs and avoid over-building? Does PGW consider opportunities to repair in-place, rather than fully replace natural gas infrastructure?"

In response, it states that *“PGW has and continues to evaluate opportunities to reduce the physical/actual size of mains during main replacement, repair rather than replace mains when possible, and abandon mains when they are no longer needed.”*

The Low Carbon Pathways report should (a) explain how PGW currently evaluates these opportunities and (b) analyze how PGW can maximize the use of innovative pipeline repair technologies in the future to protect public safety, reduce costs, and avoid creating stranded assets.

A spring 2026 publication by the former chair of the Massachusetts Department of Public Utilities, [Erase and Replace: The Throwaway Culture of Fixing Old Pipes](#), notes that “[o]utside of the U.S., gas distribution companies have been aggressively exploring and implementing new technology to repair or reline pipes at a lower cost rather than replacing them.” Those technologies include plastic sleeving, cured-in-place liner (CIPL) pipeline renewal systems, and CISBOT (cast iron sealing robots). Low Carbon Pathways should examine each of these options.

- 4. The report should fully explore the potential for PGW to supply affordable, fossil-free heating and cooling to Philadelphia residents and businesses by building and operating thermal energy networks, and ERM should ensure that accurate assumptions are used in the modeling.**

The [slides presented](#) at the 8/12/26 community engagement meeting appear to undervalue the cost savings and other benefits that come from investing in this technology. One key assumption stood out to me.

Slide #4 states under the heading “technology efficiency” that “electrified heating technology ranges from 310% for residential air source heat pumps to 360% for ground source.” These figures appear to come from a 2023 Energy Information Agency report. Alternative sources list higher coefficients of performance for ground source heat pumps, however. The efficiency of thermal energy networks that connect multiple buildings and incorporate seasonal thermal energy storage is still higher. For example, [“A review of district energy technology with subsurface thermal storage integration,”](#) a 2024 paper published in the journal *Geothermal Energy*, states that:

[W]here the typical individual GSHP COP [ground source heat pump coefficient of performance] ranges from 3 to 6, and the typical TEN [thermal energy network] COP ranges from 6 to 14 (Oh and Beckers 2023)—with potentials for COP values in excess of 20 (Andersson et al. 2003), it is apparent that the combination of UTES [underground thermal energy storage] & TEN technologies warrants significant attention from policymakers, researchers, and design engineers alike.

It appears that the LCP report may underestimate the efficiency of individual ground-source heat pumps. At the same time, the slides do not indicate that ERM plans to incorporate the higher efficiency of networked systems into their modeling,

It is important to note that deploying geothermal heating and cooling systems and thermal energy networks can greatly reduce peak electricity demand in the winter as well as reducing total consumption across the year, because they operate at high efficiency even during periods of extreme cold. Conversely, air source heat pumps' efficiency declines during very cold weather. Reducing peak demand can greatly reduce the cost of transmission and distribution (T&D) infrastructure as well as capacity costs.

Two additional points about potential benefits that the report should examine:

- The report should consider the potential for these technologies to reduce residents' summer cooling costs and to provide affordable cooling to residents who currently have limited or no access to cooling. The slides displayed at the 8/12 meeting do not appear to address the cost of cooling or the health benefits and social benefits that result from providing affordable cooling.
- The report should explore the potential for PGW to generate additional revenue by investing in technology that provides cooling as well as heating. The slides do not appear to indicate that the study will include projections for revenue from summer cooling.

I was encouraged to hear Janelle Johnson-Grummert explain during the 8/12 community engagement meeting that PGW may examine potential sources and sinks for thermal energy networks (including water mains and wastewater pipes) as part of a later follow-up study. The current report should examine opportunities for thermal energy networks as fully as possible, however, and should include accurate assumptions.

5. The report should consider strategies to reduce the cost of electricity for Philadelphians and to accelerate the shift to clean, fossil-free electricity.

Projections for the future cost and carbon intensity of electricity are key inputs for ERM's modeling. Assumptions about the future of our electricity supply will play a critical role in determining which pathways are most affordable and sustainable. The slides that ERM presented at the 8/12 community engagement meeting suggest that the LCP report will incorporate a few alternative assumptions, based on projections by PJM and the U.S. Energy Information Administration (EIA).

None of the scenarios mentioned on the slides achieves the level of decarbonization that is needed to protect a livable climate or to match Philadelphia's 2050 carbon neutrality goal, however. Multiple research institutes have conducted modeling that explored how the US could decarbonize our electric grid more quickly. Here is one example from the

University of California: [2035 Electric Decarbonization Modeling Study](#). ERM should consider incorporating additional assumptions beyond those provided by EIA.

More importantly, the report should recognize that the cost of electricity is shaped by decisions at the local, regional, and state level, and not only by national forces. The report should consider how the City of Philadelphia, PGW, the PA Public Utility Commission, and other local institutions can take action to reduce electricity costs through policy, planning, and investment. Options for making electricity cleaner and more affordable include permitting reform, deployment of rooftop solar and local battery storage, development of virtual power plants, long-term power purchase agreements, mandates for integrated distribution planning, and more.