POWER: An Interfaith Movement

powerinterfaith.org

May 28, 2021

Via Email

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Re: Philadelphia Gas Works Business Diversification Study

Dear Christine,

On behalf of POWER, I am happy to submit these comments about the draft materials for the PGW Business Diversification study. We look forward to further conversation about the study, and we look forward to working with the City on plans to transform PGW and buildings across the city.

Thanks very much,

Rabbi Julie Greenberg

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COMMENTS ON THE DRAFT MATERIALS FOR THE PGW BUSINESS DIVERSIFICATION STUDY

POWER Interfaith

May 28, 2021

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I. Executive Summary

POWER Interfaith ("POWER") appreciates the opportunity to provide these written comments ("Comments") on the draft materials ("Draft Materials") shared on April 30, 2021 by the City of Philadelphia (the "City") in connection with the City's Business Diversification Study for Philadelphia Gas Works ("PGW").[1] These Comments complement and expand on testimony offered by POWER members at the Town Hall meeting about the Business Diversification Study convened by the Philadelphia Gas Commission on May 11, 2021.[2]

The purpose of these Comments is to provide feedback on the Draft Materials and to support the City in accomplishing a just transition for PGW to a fully decarbonized business model. These Comments first address cross-cutting issues. To start, while the City promised to provide a full draft of the Business Diversification Study for public comment,[3] the Draft Materials provided by the City comprise only a set of PowerPoint slides describing the study. In order to provide the public with a meaningful opportunity for participation, the City must hold a hearing on a full draft of the Business Diversification Study at which the public can submit comments on the draft. Next, the Draft Materials fail to provide specific information on opportunities for savings on energy and bills from energy efficiency, repairs and retrofits. It is also unclear the extent to which cost projections factor in such energy efficiency opportunities, which the full draft study must clarify, and if such opportunities are not factored in, to incorporate them.

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[1] City of Philadelphia, *Draft Materials and Town Hall Transcript for PGW Business Diversification Study Now Available*, City of Philadelphia (Apr. 30, 2021), https://perma.cc/DE4B-E7M9; City of Philadelphia, *Draft Materials* (Apr. 2021), https://perma.cc/TA8Y-6SYN.
[2] Virtual Town Hall Tr. (May 11, 2021) ("May 11 Tr."), https://www.phila.gov/media/20210520113906/VirtualTownHall_PDFTran-5-11-21.pdf.
[3] City of Philadelphia, *PGW Business Diversification Study Kicks Off* (Sept. 2, 2020), https://perma.cc/3HXV-WRRZ.

Another cross-cutting issue is that the Draft Materials assume, under all decarbonization scenarios, that PGW maintains its entire gas distribution network at its current size, even under a high electrification scenario in which almost all residents are not using it. Keeping the full gas network in place regardless of use would impose a very high cost burden on ratepayers, but the Draft Materials do not explain why portions of the gas network cannot be strategically decommissioned as they become unnecessary. Such a strategic decommissioning process would greatly alleviate the cost burden on Philadelphians and would reduce the revenue needs of PGW substantially, opening up more flexibility for new business models. The full draft study needs to drop the unreasonable assumption that under all decarbonization scenarios the gas network must stay the same size, and model the possibilities that open up as a result.

Additionally, the Draft Materials appear to assume that under all decarbonization scenarios, the City remains in the fossil fuel business through 2050, through PGW selling liquefied natural gas and compressed natural gas to regional customers even after it stops distributing natural gas in the City. This is completely unacceptable, and it would be a moral scandal for the City to still be involved in the fossil fuel business in 2050. The Business Diversification Study needs to make it expressly clear that PGW will fully exit all fossil fuel business lines, and model pathways for doing so.

Furthermore, the Business Diversification Study must analyze options to advance the four critical values of (1) affordability, (2) decarbonization, (3) fair labor, and (4) health and safety in an integrated fashion, and not simply pose false choices between them. POWER sees community-informed solutions that integrate these four goals as a necessary response to the disastrous juncture of climate crisis and extreme inequality in our city. A cross-cutting problem in all the decarbonization scenarios in the Draft Materials is a failure to model potential public

policy interventions and business model changes that could support integrated progress on all four of these values. The full draft study must correct these omissions.

Finally, the four scenario-specific analyses in the Draft Materials also need improvement. First, the high decarbonized gas scenario fails to address supply and cost constraints that throw into serious question the feasibility of replacing any significant proportion of current gas demand with decarbonized gases. Next, this scenario also fails to advance the essential value of health and safety in any meaningful fashion, leaving residents stuck dealing with indoor air pollution problems from continued reliance on gas combustion for heating and cooking. Finally, this scenario fails to ensure equitable access to electrification for all, and creates the risk of a "death spiral" in which those with privilege electrify and those left behind face health impacts and rising infrastructure costs.

Second, the high electrification scenario suffers from distorted affordability and revenue modeling through a failure to incorporate both cost reductions possible through decommissioning unnecessary gas infrastructure and new revenue streams from business opportunities consistent with high electrification. Similarly, the high electrification scenario fails to model options for the public policy interventions needed to ensure equitable access to electrification and instead simply assumes electrification could only occur in an unplanned fashion.

Third, the hybrid electrification-decarbonized gas scenario fails to address supply, cost, and health issues for decarbonized gases, and also fails explain why the gas network cannot be reduced in size even as most heating demand is met by electrification. Finally, the fourth scenario, involving a hybrid of electrification, decarbonized gas, and networked geothermal, fails to explain why decarbonized gas should be part of the scenario and fails to substantiate its

projections for the proportion of demand that networked geothermal could meet. In order to help fill that information gap, the City should pursue a networked geothermal pilot program, which would provide an important learning opportunity about a potential new revenue source and could help provide and maintain union jobs.

As next steps, the City should incorporate these Comments into a full draft of the Business Diversification Study, and publish that draft for public comment. Failing to allow for public comment on a full draft of the study, as promised, will not generate the insights and forge the trust needed to navigate a just transition for PGW. Upon completion of the study, the City must promptly convene hearings on changes to PGW's business model to be implemented in 2022 to incorporate the study's findings. This is time-sensitive. PGW will next be able to apply for a rate increase on January 1, 2022, and it must not be allowed to raise rates on residents again without a real plan for decarbonization.

Finally, the City must order PGW to stop working behind the scenes to preempt the City's ability to implement the Business Diversification Study. As discussed further below, it is concerning to note reports of PGW's activities in support of the bill by Senator Gene Yaw that seeks to preempt municipalities from adopting policies to transition away from natural gas. PGW is also a major funder of—and active participant in—trade associations that fight to preempt municipalities around the country from taking control of their energy future. It would not be reasonable for any municipally-owned utility to work to hamstring and limit the municipality that owns it, and the City must not tolerate this behavior. PGW must be ordered to immediately terminate any form of funding, lobbying, or advocacy for municipal preemption or against any policy tool the City may need to implement the Business Diversification Study. Next, PGW must be ordered to produce a full and public report on any such activities. Having cleared the air in

such a fashion, PGW must then re-engage with the City and with the public in a true spirit of partnership and collaborate on the shared project of decarbonization consistent with the City's policy.

II. Background

POWER is a racial and economic justice organizing force in the Commonwealth of Pennsylvania, helping people put faith and values into strategic action to win concrete change in the public sphere. POWER organizes in southeastern Pennsylvania and in coalitions across the state for racial and economic justice on a livable planet by shifting the moral and policy universe towards possibilities that support the common good. POWER's Climate Justice and Jobs team draws people from both marginalized and privileged neighborhoods into the public struggle over land and energy, considering key land and energy issues as contested space in this world. POWER fights against dirty fossil fuel expansion and for green economy solutions. In our integrated strategy, we center racial and economic equity issues as an essential part of every single building block of policy.

POWER strongly supports a just transition to a 100% clean energy future for PGW, consistent with the City's commitments and the urgency of the climate crisis. On September 26, 2019, the City of Philadelphia passed Resolution No. 190728, which determined that "the City of Philadelphia shall take measures to achieve a fair and equitable transition to the use of 100% clean renewable energy for electricity in municipal operations by 2030, for electricity City-wide by 2035, and for all energy (including heat and transportation) city-wide by 2050 or sooner."[4]

[4] City of Philadelphia, Resolution No. 190728 at 3 (Sept. 26, 2019), https://phila.legistar.com/LegislationDetail.aspx?From=RSS&ID=4142523&GUID=BA06CC3B-7B43-4743-A07E-515A145C4A2A.

As Resolution No. 190728 specified, the "clean renewable energy" that shall be used for all purposes in the City, including heat, "includes energy derive[d] from solar, wind, and geothermal; but does not include natural gas."[5] Additionally, on January 15, 2021, Mayor Jim Kenney announced that the City is committed to achieving "net-zero greenhouse gas emissions in the buildings, energy, transportation, and waste sectors" by 2050.[6]

These policy commitments reflect the need for action on climate change, particularly to protect environmental justice communities. As the Pennsylvania Department of Environmental Protection's Environmental Justice Office Director Allison Acevedo recently noted, "Pennsylvanians who have lived in communities with almost a century of disinvestment now also face disproportionate risk from climate change impacts… State and local leaders must work proactively and intentionally with communities and other partners to reduce the significant risks of climate change and cultivate resources, health supports, and other development in communities that disproportionately confront these critical climate issues."[7]

III. Technical Issues with the Draft Materials

A. Cross-Cutting Issues

1. The City Promised to Provide a Full Draft of the Business Diversification Study for Public Comment, But Has Provided Only a Set of PowerPoint Slides Describing the Study

One overarching technical issue is that the Draft Materials do not disclose much of the calculations, modeling, or assumptions used to form the basis of the preliminary conclusions in

[5] *Id.* at 2.
[6] City of Philadelphia, *City Commits to Carbon Neutrality by 2050, Releases Climate Action Playbook and Hires First Chief Resilience Officer*, City of Philadelphia (Jan. 15, 2021), https://perma.cc/Q2S6-WCC4.
[7] Press Release, Governor Tom Wolf, *Gov. Wolf 2021 Climate Impacts Report Projects Pennsylvania Will Be 5.9° F Warmer by Midcentury, Targets Areas to Reduce Risk* (May 5, 2021) ("Governor Wolf Press Release"), https://perma.cc/9864-6PR5.

the Draft Materials. The City previously committed to providing a full draft of the study for public comment, stating that "[l]ike the City's process for receiving feedback on regulations, drafts of the outline and study will be available for public review and comment."[8] As the City stated, this step would "be taken to ensure that residents' voices are reflected in the study."[9]

However, the Draft Materials, which take the form of a set of PowerPoint slides about the study, do not meet this standard and do not provide the public with access to the information needed to evaluate the conclusions contained in the Draft Materials. By failing to share a full draft Business Diversification Study for the public to comment upon, the City has significantly deprived the public of the ability to provide technical comments on the Business Diversification Study. Indeed, under the City's present approach, the public can only comment on a set of PowerPoint slides about the study, but not on a draft of the study itself. Given the important issues at stake in the transformation of PGW, this is inadequate.

This gap should be rectified, as discussed further below, by further opportunities for public participation, including commenting on the full Business Diversification Study. Nevertheless, even based on the limited contents of the Draft Materials, a number of further comments are warranted, and are offered here in the hopes that they will be useful in the completion of the study.

2. The Draft Materials Fail to Provide Information on Energy Efficiency, Repair, and Retrofit Opportunities

An additional cross-cutting issue is that the Draft Materials do not provide any specific information on the energy and financial savings possible through aggressive deployment of energy efficiency, including home repairs and retrofits. On Slide 14, the Draft Materials

[8] City of Philadelphia, *PGW Business Diversification Study Kicks Off* (Sept. 2, 2020), https://perma.cc/3HXV-WRRZ.
[9] *Id.*

generally acknowledge that energy efficiency must be a part of any decarbonization scenario.[10] However, the Draft Materials contain no quantitative information on how much the public could save in terms of energy use and bills through energy efficiency.

In evaluating the revenue and cost impacts of different decarbonization options, the Draft Materials expressly assume that bills will stay stable.[11] The Draft Materials provide no detail on what this assumption means or how it was derived. However, it appears to mean assuming that aggressive energy efficiency measures will not take place, because such measures would substantially reduce customer bills. At the same time, Slide 67 recognizes that "[b]uilding shell upgrades reduce demand for space heating."[12] The Business Diversification Study, to provide useful guidance for the future, must clarify how these assumptions interact, and provide specific information quantifying what energy and bill savings are possible from energy efficiency.

Another reason it is important for the Business Diversification Study to model the potential savings from energy efficiency is because it would help map out the business opportunities available for PGW in providing energy efficiency services. As reflected on Slide 24, the business diversification option with the highest level of stakeholder support is for PGW to play "a more active role in energy efficiency and weatherization of homes."[13] While the Draft Materials fail to adequately analyze the role of energy efficiency, including home repairs and retrofits, in a just transition for PGW, the Business Diversification Study must correct this deficiency.

[10] Draft Materials at Slide 14.
[11] *Id.* at Slide 33 ("operating costs do not include building shell upgrades"); Slide 37 ("assuming PGW customer bill stability"); Slide 38 ("assuming PGW customer bill stability"); Slide 39 ("assuming PGW customer bill stability"); Slide 40 (assuming "stable customer bills").
[12] *Id.* at Slide 67.
[13] *Id.* at Slide 24.

3. The Draft Materials Unreasonably Assume that PGW's Infrastructure Cannot Be Reduced in Size, Inflating Cost Projections and Systematically Skewing the Analysis Towards the Use of Decarbonized Gas

A basic principle of decarbonizing a gas utility is that as gas demand falls, gas infrastructure needs to be reduced in size to avoid saddling ratepayers with unnecessary costs.[14] It may take some time to do so, but instead of modeling this process, the Draft Materials instead unreasonably assume that even if gas demand falls substantially (or even drops to near zero), PGW must indefinitely continue to charge the public for the cost of maintaining its entire gas network at its current size. This approach is both extremely expensive and extremely wasteful, and makes little sense.

No gas utility would ever decarbonize in this way, so assuming that this will occur is not helpful. Instead, what is needed is modeling of how, during the period from now until 2050, a declining cost curve driven by strategic decommissioning of gas infrastructure interacts with new revenue sources coming online from diversified business lines. Assuming that even in decarbonization scenarios with little gas use, the public will pay crushing costs to maintain unnecessary levels of gas infrastructure until 2050, is not practical, realistic, or useful.

As Mike Henchen, director of the building decarbonization program at the energy thinktank RMI, recently commented in an interview about PGW, "What you want to avoid is the situation where you have to maintain and spend money on the whole system, even while you sell less gas."[15] Instead, as Henchen notes, the City could examine a segment of PGW's gas network, "work to support every building served by [a pipe] to convert to a carbon-free alternative to gas, and then decommission an actual pipe in the ground… Close the valve."[16]

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[14] Jonathan Mingle, *Cities Confront Climate Challenge: How to Move from Gas to Electricity?* (Apr. 20, 2021), https://e360.yale.edu/features/cities-confront-climate-challenge-how-to-move-from-gas-to-electricity.
[15] *Id*.
[16] *Id.*

Such an effort could draw from the innovative work of Councilmember Derek Green and the Philadelphia Energy Authority on the Built to Last program. The Built to Last Program provides for coordinated, interagency work to restore safe, healthy, and affordable homes to low-income residents through a variety of interventions, including energy efficiency, repairs, retrofits, and electrification.[17] A similar initiative focused on equitable electrification in the context of PGW's decarbonization could provide for a key leadership and implementation role for PGW. Such an initiative could ensure that low-income residents have equitable access to the long-term cost savings and health benefits available from electrification that is integrated with energy efficiency, home repairs, and retrofits.

Finally, assuming that PGW's gas network cannot be reduced in size systematically skews the decarbonization scenario analysis towards making decarbonized gas look artificially more attractive because it uses that network. Propping up decarbonized gas in this manner is effectively a massive subsidy extracted from PGW ratepayers. It obscures the true public savings that may be available through the reduced infrastructure costs and reduced customer bills from the strategic decommissioning of unnecessary portions of PGW's network. As discussed further below with regard to the specific decarbonization scenarios discussed in the Draft Materials, this analytic flaw must be corrected in the Business Diversification Study.

4. Decarbonizing PGW Must Include Exiting All Fossil Fuel Business Lines, Including Those Involving Gas Transportation, Liquefied Natural Gas, and Compressed Natural Gas

For PGW to meaningfully decarbonize, PGW must develop a business plan to exit all of its fossil fuel business lines, not just stop distributing natural gas. As Slide 36 notes, in addition

[17] Alon Abramson, *Built to Last: An Initiative to Restore Safe, Healthy, and Affordable Homes*, Philadelphia Energy Authority (Aug. 2020) ("Built to Last Overview"), https://philaenergy.org/wp-content/uploads/2020/08/8-2020-PEA-Built-to-Last-Overview.pdf.

to revenues from gas customers, PGW also derives substantial revenues from "other business lines," including gas transportation services and liquefied natural gas ("LNG") facilities.[18] However, under all of the decarbonization scenarios evaluated, the Draft Materials appear to assume that these "other" fossil fuel business lines will continue until 2050.[19] The Draft Materials even propose that PGW develop an expanded business line involving "[t]he operations and sales of Liquefied Natural Gas (LNG) or Compressed Natural Gas (CNG) to regional customers."[20]

Given the urgent need for a just transition to full decarbonization, it is not acceptable for the City to continue actively fueling climate change in such a fashion. As the Pennsylvania Department of Environmental Protection has recognized, climate change will hit environmental justice communities, including many of POWER's members, the hardest.[21] For the City to still be actively participating in the fossil fuel business by 2050, as the Draft Materials appear to assume, would be a moral scandal. The Business Diversification Study must address this problem by confirming the City's intention to exit all of its fossil fuel business lines by 2050 (or sooner) and charting a path to do so.

5. <u>The Business Diversification Study Must Evaluate How to Advance the Four Critical Values of Affordability, Decarbonization, Fair Labor, and Health and Safety in an Integrated Fashion</u>

Finally, the Business Diversification Study must analyze options to advance the four critical values of (1) affordability, (2) decarbonization, (3) fair labor, and (4) health and safety in an integrated fashion, and not simply pose false choices between them. POWER sees community-informed solutions that integrate these four goals as a necessary response to the

[18] Draft Materials at Slide 36.
[19] *Id.* at Slides 37–40.
[20] *Id.* at Slide 45.
[21] Governor Wolf Press Release.

disastrous juncture of climate crisis and extreme inequality in our city. A recurring problem in all the decarbonization scenarios is a failure to model potential public policy interventions and business model changes that could support integrated progress on all these values.

Instead, the scenarios in the Draft Materials simply assume that when PGW's traditional primary revenue source, distribution of natural gas goes away, no revenue source other than distribution of decarbonized gas could replace it, and the revenue gap mean that bills have to spike, causing affordability problems. In particular, potential public policy interventions and business model changes that could complement and support the high electrification scenario are left unanalyzed. Finally, a just transition for PGW is also an opportunity to improve residents' health, safety, comfort, and economic well-being while also creating lots of good jobs. Ambitious efficiency retrofits could also make Philadelphia's buildings more resilient**,** allowing them to remain at a comfortable (and healthy) temperature much longer in the event of a power outage. These broader social co-benefits should also be acknowledged and factored into scenario analysis, which should also include projections on job creation through energy efficiency, repairs, retrofits, and electrification. These omissions represent not only a failure of analysis, but a failure of imagination. The full Business Diversification Study must rectify this problem.

B. High Decarbonized Gas Scenario

With respect to decarbonizing PGW's gas distribution business, the Draft Materials state that the Business Diversification Study will evaluate four full decarbonization scenarios, namely, scenarios relying on (1) high levels of decarbonized gas; (2) high levels of electrification; (3) a

hybrid of electrification and decarbonized gas; and (4) a hybrid of electrification, decarbonized gas, and networked geothermal.[22]

1. Cost, Production, and Supply Constraints

The Draft Materials note that decarbonized gases, including biomethane, hydrogen, and synthetic natural gas, are highly expensive and that a high decarbonized gas scenario is undesirable because it "poses unsustainable bill impacts[.]"[23] However, the Draft Materials do not adequately acknowledge the additional challenge of whether a sufficient supply of decarbonized gas would be available to meet a high proportion of PGW's full system needs at any feasible price.

The gas industry's own analyses show that there is projected to be only enough supply of biomethane and synthetic natural gas to meet a fraction of current gas demand. As a study by the American Gas Foundation demonstrated, even if production of biomethane and synthetic natural gas was fully ramped up, it could only supply between about 5.3% and (under the most optimistic possible conditions) 12% of current demand.[24] Reaching that 12% proportion would, the study projects, require until 2040 to build out production facilities, if such buildout occurs at all.[25] These production limitations create a serious supply bottleneck, at least at a level of pricing that would be reasonable to include in production modeling.

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[22] Draft Materials at Slide 29.
[23] *Id.* at Slide 47.
[24] American Gas Foundation, *Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment*, at 2 (Dec. 2019), https://perma.cc/8JM4-CWC4 ("AGF Study"). The AGF Study estimates total resource potential for both biomethane and synthetic natural gas in 2040 to be between 1,660 tBtu (low scenario) and 3,780 tBtu (high scenario). According to the U.S. Energy Information Administration ("U.S. EIA"), total U.S. gas consumption in 2019 equals 31,099 tBtu. U.S. EIA, *Natural Gas Explained*, https://perma.cc/QPU8-4Q9G. Biomethane and synthetic natural gas together there have a resource potential that ranges from 5.34% (1,660 tBtu / 31,099 tBtu) to 12.15% (3,780 tBtu / 31,099 tBtu).
[25] AGF Study at 2.

Hydrogen faces similar constraints. Critically, the ability of natural gas infrastructure to safely carry hydrogen is limited. The California Energy Commission has estimated that a natural gas distribution system can only safely tolerate a mix of up to 7% of hydrogen by volume before expensive safety upgrades would be needed.[26] The Draft Materials state that they assume a blend of 7% of hydrogen by volume.[27]

Given the supply limitations described above, this leaves a substantial gap. But Draft Materials claim that in a high decarbonized gas scenario, all decarbonized gas needs other than those met by biomethane and hydrogen would come from synthetic natural gas, a technology that the Draft Materials note is "not yet commercialized."[28] The Draft Materials do not state when sufficient supplies of synthetic natural gas, at a feasible cost, will become available, if they ever do. As noted above, the most optimistic scenario envisaged by the American Gas Foundation projects that both biomethane and synthetic natural gas, combined, could only supply up to 12% of current gas demand, assuming production facilities for those gases are ramped up to their maximum.

Since the Draft Materials do not establish if or when, in light of projected production limitations, a sufficiently large supply of synthetic natural gas will ever become available at a feasible cost to make a high decarbonized gas scenario workable, the high decarbonized gas scenario should be discarded as speculative and unsupported. However, if the City intends to contend that a high decarbonized gas scenario is appropriate to include on a list of potential PGW futures, the City should show how and why it reasonably believes that such a large supply of decarbonized gas could be procured at a feasible cost.

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[26] California Energy Commission, The Challenge of Retail Gas in California's Low-Carbon Future, at 24 (Apr. 2020), https://ww2.energy.ca.gov/2019publications/CEC-500-2019-055/CEC-500-2019-055-F.pdf.
[27] Draft Materials at Slide 63.
[28] *Id.*

2. Indoor Air Quality Issues

The Draft Materials' discussion of the high decarbonized gas scenario also contains no plan for how to address the serious indoor air quality problems posed by reliance on the combustion of decarbonized gases. As Slide 29 recognizes, using decarbonized gas for customer end-uses faces all the same indoor quality problems as using natural gas.[29] As Dr. Walter Tsou of Physicians for Social Responsibility testified on May 11, "there are significant health impacts of burning gas indoors," particularly to "young children whose lungs are still developing and will breathe in twice the indoor air relative to the size of their lungs compared to adults."[30]

Cooking with a natural gas combustion stove emits air pollutants that cause asthma, wheezing, and "decreased respiratory function."[31] One meta-analysis found that children living in a home that uses gas for cooking have a 42% higher risk of having asthma.[32] Additionally, these public health impacts are inequitably distributed, as residents of low-income homes are hit the hardest, because low-income homes tend to be smaller and have kitchen stoves that are less well ventilated.[33]

In contrast, a recent study by the Commonwealth of Massachusetts found that broad electrification efforts can have substantial public health benefits. That study found that complete electrification of heating in Massachusetts would have public health benefits of (1) annually

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[29] *Id.* at Slide 29.
[30] May 11 Tr. at 63:9–24.
[31] Jenifer M. Logue et al, *Pollutant Exposures from Natural Gas Cooking Burners: A SimulationBased Assessment for Southern California*, at 4 (June 2014), https://www.osti.gov/servlets/purl/1163745/; Julie Chao, *Pollution in the Home: Kitchens Can Produce Hazardous Levels of Indoor Pollutants* (July 23, 2013), https://newscenter.lbl.gov/2013/07/23/kitchens-can-produce-hazardous-levels-of-indoor-pollutants/.
[32] Weiwei Lin et al, *Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children*, 42 Int'l J. of Epidemiology 6 (2013), https://academic.oup.com/ije/article/42/6/1724/737113#12981970.
[33] Steven Mufson, *The battle over climate change is boiling over on the home front*, Washington Post (Feb. 23, 2021) ("Washington Post Article"), https://www.washingtonpost.com/climate-environment/2021/02/23/climate-change-natural-gas/.

avoiding 200 deaths from cardiovascular and respiratory illness; (2) annually avoiding 12,400 days of work absences; and (3) annually saving $2.2 billion in healthcare costs.[34] The final Business Diversification Study should contain a similar evaluation of the public health benefits of electrification and the public health costs of relying on natural gas or decarbonized gas.

The Draft Materials assign a "yellow" middle rating to the high decarbonized gas scenario, because it brings "no significant change" to the indoor air quality problems caused by natural gas.[35] However, the public, as clearly shown in survey results, has rated action on indoor air quality among its top priorities for the Business Diversification Study.[36] Failing to take any action on air quality should, properly, be assigned a "red" lowest rating on air quality. The harmful status quo is not acceptable, and Business Diversification Study should not suggest otherwise.

3. Failure to Ensure Equitable Access to Electrification

A further problem with the high decarbonized gas scenario is that it unrealistically assumes that more privileged customers will not begin to electrify on their own in the face of rising gas costs, particularly from the more expensive varieties of decarbonized gas which the scenario assumes will be put into use. This will create an inequitable dynamic in which those who do not have access to the private capital needed to electrify are "left behind" on the gas network with indoor air quality problems and the rising infrastructure costs that are sometimes referred to as a "death spiral." Such an unplanned electrification process would be unjust and inequitable.

[34] Commonwealth of Massachusetts, *Massachusetts 2050 Decarbonization Roadmap*, at 43 (Dec. 2020) ("MA Decarbonization Roadmap"), https://www.mass.gov/doc/ma-2050-decarbonization-roadmap/download.
[35] Draft Materials at Slide 29.
[36] *Id.* at Slide 26.

In contrast, a high electrification pathway that is supported by public policy interventions and business model changes ensuring equitable access to electrification avoids these problems. There is no question that the privileged will have access to electrification. The only question is whether the City is willing to do the analysis and take the steps to ensure that electrification is accessible to all. How such an equitable approach to a high electrification scenario could be modeled is discussed further below.

C. High Electrification Scenario

Given that decarbonized gas, under even the most optimistic possible conditions, could likely only ever supply a small proportion of current gas demand,[37] the Business Diversification Study needs to take a more serious and detailed look at the high electrification scenario. The hybrid electrification/decarbonized gas scenario is discussed further below, but even under that scenario, given the limitations on decarbonized gas supply, the City would effectively be facing a high electrification scenario, which will require many of the same policy approaches and business model adjustments needed for that scenario.

An additional reason why the high electrification scenario should be studied in more detail is that electrification has overwhelming stakeholder support. As the Draft Materials show, electrification has over 70% support, substantially higher than any other energy direction, including a hybrid electrification-decarbonized approach (about 50% support) and a decarbonized gas approach (about 40% support).[38]

1. <u>Incomplete Affordability Analysis</u>

[37] *See supra* Part III.B.1.
[38] *Id.* at Slide 23. The Draft Materials do not provide any quantitative data from survey, but present survey results in a bar chart on Slide 23 with the specific percentages for scenarios left unlabeled, necessitating the above estimates.

The Draft Materials assign a yellow-coded middle rating to high electrification's impact on affordability, but fail to support this conclusion.[39] Notably, the Draft Materials indicate that they are assuming the current size and cost of PGW's current infrastructure will only increase out to 2050.[40] However, the Draft Materials do not explain why it is reasonable to assume that if the City decides to pursue a high electrification decarbonization pathway, PGW would also simultaneously need to indefinitely maintain a gas distribution system at 100% of its current size.

In order to be relevant and useful, any study of a high electrification scenario must model and factor in the cost savings possible through shrinking PGW's gas distribution infrastructure as it is replaced by electrification. Simply put, it is unreasonable to expect ratepayers to continue to pay for infrastructure that is not needed or used.

If under the high electrification scenario, ratepayers are not unreasonably saddled with continuing to pay to maintain PGW's entire current gas infrastructure for the next 30 years, the evidence shows that high electrification is a highly cost-effective way for residents to power their heating needs. As Slide 33 shows, over the long term, residents who electrify save money compared to continuing to use gas.[41]

This is consistent with findings by the Commonwealth of Massachusetts, which recently published a report detailing its roadmap to achieve net zero emissions by 2050.[42] As the report concluded, "[e]lectricity is the least-cost means of supplying zero-carbon energy, and in many cases, electrification also increases energy efficiency."[43]

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[39] *Id.* at Slide 31.
[40] *Id.* ("Electrification causes a shift of fixed gas system costs to customers who are not able to electrify[.]"). *See also*, *id.* at Slide 36, showing PGW's gas system costs increasing steadily out to 2050.
[41] Draft Materials at Slide 33.
[42] MA Decarbonization Roadmap at 4.
[43] Commonwealth of Massachusetts, *Energy Pathways to Deep Decarbonization: A Technical Report of the 2050 Decarbonization Roadmap Study*, at 1 ("MA Pathways to Deep Decarbonization Technical Report") (Dec. 2020), https://www.mass.gov/doc/energy-pathways-for-deep-decarbonization-report/download.

As the Massachusetts report also concluded, "[a]cross a wide range of potential futures, electrification of end uses, particularly space heating through the use of electric heat pumps, was found to be the most economically advantageous and cost-effective decarbonization strategy for widespread deployment across the Commonwealth's building sector, especially for residences and homes[.]"[44]

Finally, it is also important to note, for the purposes of affordability analysis, that electric heat pumps offer an additional benefit beyond what a gas furnace can provide: they offer affordable, highly-efficient cooling as well.[45] Particularly as temperatures rise, extending the access of low-income residents to affordable cooling services, who might otherwise rely on inefficient window or portable air conditioning units, or go without, has important financial and public health benefits that must be factored into an affordability analysis.[46]

Another critical omission is any modeling of adjustments to PGW's business model in assessing the affordability impacts of the high electrification scenario. The only slide in the Draft Materials that provides any discussion of the affordability impacts of high electrification is Slide 31, which contains an express admission that the analysis does not factor in any "diversifying strategies for PGW."[47] Yet in any imaginable scenario in which the City decided to pursue the high electrification option, PGW's business model would need to be completely transformed.

The Draft Materials do not contain any modeling of options for that business model transformation, but it is essential that the Business Diversification Study does. The public

[44] MA Decarbonization Roadmap at 45.
[45] Commonwealth of Massachusetts, *Building Sector Report: A Technical Report of the Massachusetts Decarbonization Roadmap Study*, at 19 (Dec. 2020) ("MA Building Sector Decarbonization Technical Report"), https://www.mass.gov/doc/building-sector-technical-report/download.
[46] MA Pathways to Deep Decarbonization Technical Report at 45 ("For example, switching to an air-source heat pump provides space cooling benefits, with measurable public health benefits, likely directed to underserved communities, in the face of a warming climate.")
[47] Draft Materials at Slide 31.

deserves and needs a real study of the high electrification scenario that includes careful attention to and modeling of the business model options that can realize that vision in a just and equitable way.

The omission of business diversification strategies from the affordability assessment also appears to produce misleading conclusions about affordability in the Draft Materials. Slide 29, which contains a master chart of the ratings for all four evaluated scenarios, contains no disclaimer informing readers that the affordability ratings exclude the potential positive effects of business diversification strategies. It is only upon careful review of Slide 31, which discusses the affordability rating for the high electrification scenario, that it is disclosed that the rating ignores the affordability benefits of business diversification strategies. As noted above, what is really needed is actual modeling of such strategies. However, since the affordability ratings reflected in the master chart on Slide 29 do not include potential benefits of business model adjustments, at a minimum, this must be communicated to the reader with a prominent disclaimer.

Furthermore, the affordability evaluation of the high electrification scenario also appears to completely exclude the role of public policy interventions in protecting low-income ratepayers. However, it is not realistic to assume that if the City pursues the high electrification pathway, it would take zero action to protect low-income ratepayers. A more useful approach for the Business Diversification Study would be to model the effects of different policy interventions the City could deploy, to help identify the most effective ones. As noted above, the Philadelphia Energy Authority's Built to Last program represents a promising paradigm.[48]

Additionally, Slide 64, which presents an "Energy Cost Comparison," is also misleading.[49] Although the headline of the slide announces that it addresses "rate affordability,"

[48] Built to Last Overview.
[49] Draft Materials at Slide 64.

the slide actually only contains information about the projected per-unit cost of electricity and gas over time.[50] As the slide notes, the chart does not include as part of the "Energy Cost" for gas the monthly fixed charges that must be paid for gas service.[51] As the slide also notes, the per-unit cost of energy is not a particularly relevant criterion for customers, because highly efficient electric heat pumps use many fewer units of energy than gas heating systems.[52]

On the contrary, residents concerned with "rate affordability" need to know the monthly total cost of different energy options, not the per-unit cost of energy supply for a fictional world in which all home heating system types consume an identical number of units of energy and in which gas customers pay no fixed monthly charges. Accordingly, this chart should be removed and replaced with a chart of average monthly total energy cost projections, which includes consideration of per-unit energy costs but also properly considers average energy consumption as well as the monthly fixed charges that residents would have to pay for gas service.

2. Incomplete Revenue Analysis

On Slide 38, the Draft Materials discuss revenue impacts from electrification.[53] Electrification is assigned the lowest "red" ranking on revenue impacts.[54] The slide notes that "new revenue sources and business models" will be needed to cover PGW's system costs.[55] However, like the discussion of affordability, the treatment of revenue impacts suffers from the same two flaws: (1) it unreasonably assumes that under a high electrification scenario, PGW will continue to pay enormous sums to maintain a gas distribution system of identical size out to 2050 even while nearly all its customers electrify, and (2) it unreasonably fails to examine whether or

[50] *Id.*
[51] *Id.*
[52] *Id.*
[53] *Id.* at Slide 38.
[54] *Id.*
[55] *Id*.

not new business models could meet PGW's revenue needs, particularly where PGW's infrastructure cost fall as the size of its gas distribution system is reduced over time.

It does not take much analysis to determine that if PGW changes none of its costs, removes its traditional revenue source, and adds no new revenue sources, it will experience negative revenue impacts. But these assumptions are not realistic, as no gas utility decarbonization process would ever unfold in such a fashion. What is needed instead is real business modeling of (1) potential infrastructure cost reductions and (2) potential revenue streams available from different business diversification strategies. The Draft Materials failed to perform these tasks. The Business Diversification Study can, and must, do better.

As Slide 38 itself recognizes, there are numerous potential business diversification options consistent with high electrification that could produce additional revenue for PGW, including heat as a service, weatherization and energy efficiency services, strategic electrification, utility-led financing options, and networked geothermal.[56] All of these options, as well as other options discussed elsewhere in the Draft Materials, such as developing community solar projects,[57] must be modeled in order to understand what the revenue impacts (and opportunities) of a high electrification scenario would be. Concluding that a high electrification future will have large revenue impacts on PGW depends on ignoring the potential revenue generation from the many diversification strategies consistent with high electrification. This is not appropriate for a Business Diversification Study, which should be centrally focused on assessing the possible revenue from different diversification options, in order to support an informed choice between those options.

[56] *Id*.
[57] *Id*.

Accordingly, since the Draft Materials contain no information on whether or not, under a high electrification scenario, potential cost reductions paired with new additional revenue streams could meet PGW's revenue needs, the "red" lowest rating for high electrification in the revenue impacts area should be removed, because it is unsupported. That rating should be filled in based on actual business modeling once completed.

D. Hybrid of Electrification and Decarbonized Gas Scenario

The Draft Materials' discussion of the hybrid electrification-decarbonized gas scenario also suffers from the same twin flaws of assuming all of PGW's infrastructure costs stay the same and that PGW gains no new revenue sources from business diversification opportunities.[58] Having discussed those flaws at length above, these Comments will not dwell on them further here.

1. Missing Proportionality Analysis

One problem particular to this hybrid scenario is that the Draft Materials do not make clear the modeling assumptions supporting the projected amount of demand that would be met with decarbonized gas. Slide 63 suggests that the hybrid scenario analysis assumes that 25% of annual heating demand will be met by decarbonized gases, primarily biomethane.[59] The basis for determining this percentage is unclear, and should be further explained in the Business Diversification Study.

However, given the serious cost and supply constraints on decarbonized gas, especially biomethane, there are serious questions about whether meeting such a 25% proportion of demand would be feasible.[60] It should be further explained how and why it is reasonable to assume that

[58] Draft Materials at Slide 32.
[59] *Id.* at Slide 63.
[60] *See supra* Part III.B.1.

those constraints will be overcome. If they are not, a hybrid electrification-decarbonized gas scenario may very well end up very similar to the high electrification scenario, requiring many of the same infrastructure cost reductions and business model adaptations. The Business Diversification Study, to be useful, must grapple with these issues.

2. Redundancy Issues

The Draft Materials also indicate that the hybrid electrification-decarbonized gas scenario under review assumes that residents that have installed electrified heating and cooking solutions will also keep their gas furnace and will use decarbonized gas for heat "during the coldest periods of winter."[61] The Draft Materials state that heat pumps "are sensitive to outside temperature" and thus a gas furnace is needed "as a backup source of heat."[62]

However, the Draft Materials provide no technical basis for their claim that heat pumps cannot work in cold temperatures. In contrast, the Commonwealth of Massachusetts recently studied options for achieving full decarbonization by 2050, and concluded that heat pumps are an extremely efficient and effective way to meet the heating (and cooling and dehumidification) needs of Massachusetts residents:

> As systems that can provide heating, cooling, and dehumidification, electric heat pumps provide a single-equipment solution for meeting the entire typical range of building space conditioning needs. And they can do so extremely efficiently: by extracting and moving ambient heat, rather than producing it through combustion, currently-available heat pumps can deliver two to six times the amount of energy that they consume year-round, including during periods of bitter cold winter weather. This high level of energy efficiency drives the cost-effectiveness of heat pump technology, particularly as an affordable solution for widespread deployment.[63]

[61] Draft Materials at Slide 17.
[62] *Id.*
[63] MA Decarbonization Roadmap at 45.

As the Commonwealth of Massachusetts has confirmed, heat pumps have been "proven to work as a building's only heating source."[64]

It is worth noting that Massachusetts, located to the north of Pennsylvania in a colder climate zone, typically experiences colder winters than Pennsylvania. It is unclear why heat pumps, which work very well in Massachusetts winters, could not work equally well in Philadelphia winters.

It is also notable that the Draft Materials do not describe, under the high electrification scenario, any problem at all with residents fully relying on electrified heat. As such, it is also unclear why the Draft Materials assume that only when residents electrify under the hybrid scenario (but not under the high electrification scenario) do those residents also need to keep their gas appliances and periodically use them.

In general, it is unclear why, technologically, heat pumps could not serve as a building's sole heat source. It is possible that in certain buildings, installation of a heat pump sized properly to meet a building's full heating needs may be very expensive or impossible, and if that is the case, the modeling should adopt a reasonable estimate of the number of such buildings and factor that in.

However, the Draft Materials' apparent assumption that all heat pumps installed in all buildings under a hybrid scenario need to have "backup" from gas heat for when the weather gets cold in unsupported. If that assumption is dropped, the study must supply an alternative reason why the entire current gas network must be maintained under the hybrid scenario, at great cost to ratepayers.

[64] MA Building Sector Decarbonization Technical Report at 19.

Finally, it should be noted that if nearly all Philadelphians switch to heat pumps for heating, this may require additional some investment in the electric distribution grid to support the increased winter electric demand. Yet the amount of the added investment needed may turn out to be relatively small. The distribution grid is already built out to handle heavy summer electric demand, with peaks driven by air conditioning. Additionally, "peak management" technologies such as energy efficiency, demand response, and energy storage can help reduce the costs of adapting the grid. Further, as residents transition off gas, the gas network can be gradually decommissioned, providing savings on gas infrastructure costs. All of these factors should be considered as part of an "apples to apples" comparison of the costs of a high electrification scenario to other scenarios. However, it is difficult to imagine how any necessary electric distribution grid investments would come close to or exceed the infrastructure costs of maintaining a full-sized gas distribution network indefinitely.

E. Hybrid of Electrification, Decarbonized Gas, and Networked Geothermal Scenario

The final scenario assessed in the Draft Materials is a hybrid that combines electrification, decarbonized gas, and networked geothermal. Like the other scenario assessments, it should be noted that this one too suffers from a failure to assess the possibility of shrinking PGW's total system size and a failure to model the amount of revenue potentially available to PGW from business diversification strategies. Since these matters are addressed above, they will not be addressed again here.

The primary problem specific to this assessment is its lack of detail. The Draft Materials provide little information about how networked geothermal might work as part of PGW's future, and note that "[a]dditional research on this concept is required."[65] Although Slide 34 indicates a

[65] Draft Materials at Slide 34.

high-level estimate of residents that could be served by networked geothermal, no basis is provided for that estimate, which likely understate the potential of networked geothermal.[66] Further research is indeed required, which is part of why a networked geothermal pilot, as discussed further below, is important.

One framing issue that should be corrected is that networked geothermal is discussed only as part of a hybrid with both electrification and decarbonized gas. However, there is no basis to conclude that networked geothermal should only be studied as part of a scenario also including decarbonized gas. Networked geothermal systems do not use gas for any function, but instead use electricity to move water through pipes underground. As such, networked geothermal systems are fully consistent with a high electrification future, and if PGW were to engage in the installation and maintenance of networked geothermal systems, this added revenue opportunity could be an ideal component of a business diversification strategy supporting a high electrification scenario. Unless it is shown that there is some need or gap that only decarbonized gas can fill, it should not be assumed that networked geothermal can only be studied alongside decarbonized gas.

Finally, as a technical note, the Draft Materials mischaracterize the functioning of networked geothermal technology (which the Draft Materials refer to as "Geothermal MicroDistricts").[67] Slide 3 states that networked geothermal systems carry "piped hot water" between multiple buildings.[68] This is inaccurate. In fact, networked geothermal systems can carry water of varying temperatures, which is important because this means they can provide not just heating, but also cooling services, like air source heat pumps.

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[66] *Id.*
[67] *Id.* at 3.
[68] *Id.*

This has design and engineering implications, because the most efficient design of a networked geothermal system is to link buildings with different heating and cooling needs, such as residences, offices, and businesses, in order to be able to store heat shed from cooling one location and transfer it later to another location to provide heating.[69] As the nonprofit HEET explains, "[i]magine a supermarket with its fridges humming all the way through the winter. It's going to be rejecting heat into that shared loop of water, making the water hotter. That heat can then be used by the homes down the street."[70]

Finally, it should be noted that infrastructure costs for networked geothermal could be recouped over very long time-frames. Drilling the necessary boreholes will require a considerable upfront expense, but those boreholes will last many decades and require little maintenance. Additionally, the City should explore options for incorporating water mains and sewage pipes into networked geothermal systems, a task for which PGW could partner with the Philadelphia Water Department.[71] If some heat pumps within the system transfer heat into and out of water mains or sewage pipes, that could reduce the need to drill boreholes. Fewer boreholes would mean a lower capital cost for the system.[72]

IV. The City Should Pursue a Networked Geothermal Pilot Program

A. Developing a New Revenue Source

The City has committed, as part of its plan to take action to decarbonize PGW, to pursue a pilot program informed by the findings of the Business Diversification Study.[73] Networked

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[69] HEET Written Testimony, at 6–7 (May 11, 2021) ("HEET Testimony"), https://www.dropbox.com/s/2vc5y27dezs7l3d/HEET%20Written%20Testimony%2005-11-21.pdf?dl=0.
[70] *Id.* at 6.
[71] Lilli Ambort & John Farrell, *Water Main Geothermal: Could Existing Water Pipes Replace Dirty Energy Utilities?*, at 7–9, Institute for Local Self-Reliance (Oct. 2020), https://ilsr.org/report-water-main-geothermal/.
[72] *Id*.
[73] City of Philadelphia, *PGW Business Diversification Study Kicks Off* (Sept. 2, 2020), https://perma.cc/3HXV-WRRZ.

geothermal technology is an ideal candidate for such a pilot, due to a number of key characteristics. First, networked geothermal represents a potential new decarbonized revenue source for PGW. As the Draft Materials indicate, a key challenge for PGW in decarbonizing is setting up new revenue streams to replace its traditional revenue source, distributing gas. Networked geothermal is a promising candidate. A networked geothermal system can repurpose existing gas distribution lines and rights of way to instead carry water that can be used to provide heating and cooling using geothermal energy. PGW could pilot a "heat and cooling as a service" business model by repurposing portions of its infrastructure to provide networked geothermal heating and cooling to residents and businesses. This would allow such repurposed infrastructure to not simply be a cost center, but a tool to generate revenue in a decarbonized future.

B. Providing and Maintaining Union Jobs

Second, networked geothermal provides an opportunity to provide and maintain union jobs for PGW workers. Much of the labor required to install and maintain a networked geothermal system draws on skills similar to those needed for working with gas pipes, which PGW's union workforce has. A networked geothermal pilot would be a "shovels in the ground" project that could put such skilled union labor to work building a sustainable future for PGW.

C. A Learning Opportunity

Networked geothermal pilots are underway or under consideration in a number of jurisdictions, including Massachusetts[74] and New York,[75] all of which provide opportunities that the City could learn from in designing its own pilot. Moreover, the nonprofit HEET convenes a

[74] Justin Gerdes, *Massachusetts Pilot Project Offers Gas Utilities a Possible Path to Survival*, Greentech Media (Aug. 6, 2020) https://www.greentechmedia.com/articles/read/can-gas-companies-evolve-to-protect-the-climate-and-save-their-workers.
[75] Samantha Gilman, *New York, Massachusetts Utilities Investigate Potential New Business Model: Community-Scale Geothermal*, Electric Power Research Institute (Jan. 26, 2021), https://energycentral.com/o/EPRI/new-york-massachusetts-utilities-investigate-potential-new-business-model.

consortium on networked geothermal deployment, including representatives from jurisdictions implementing pilots, that the City could participate in and learn from.[76]

While there is abundant information available on best practices from the above sources, a networked geothermal pilot in PGW's service territory would provide an essential learning opportunity for how such best practices could be applied here. While networked geothermal may provide a "win-win-win" combination of decarbonizing, generating revenue, and providing union jobs, it will take experimentation to test out its prospects and to assess opportunities to scale. A properly designed and resourced networked geothermal pilot program could provide that opportunity.

V. Further Public Participation is Essential to the Just Transition of PGW

A. The City Must Provide a Full Draft of the Study for Public Comment

Further public participation is essential to the just transition of PGW to a fully decarbonized future. To start, the public must have an opportunity to provide feedback and comments on a full draft of the Business Diversification Study. As noted above, the City promised this opportunity. In the City's own words, the City committed to the following: "Issue drafts of the outline and study: Like the City's process for receiving feedback on regulations, drafts of the outline and study will be available for public review and comment."[77]

With all of the information missing from the Draft Materials, not providing a full draft of the Business Diversification Study is effectively locking the public out of participating in its creation. Providing a set of PowerPoint slides describing the study is not an adequate substitute for providing a full draft of the study as promised.

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[76] HEET, HEET Community Charrettes, https://heet.org/2021/03/01/heet-community-charrettes/.
[77] City of Philadelphia, *PGW Business Diversification Study Kicks Off* (Sept. 2, 2020), https://perma.cc/3HXV-WRRZ.

A solution to this problem would be to schedule a hearing at which members of the public can submit oral and written comments on a full draft of the Business Diversification Study. Then, the City can consider those comments, respond to them, and create a final draft of the Business Diversification Study. Given the complex challenges involved in decarbonizing PGW, providing incomplete information to the public for comment will not generate the insights and forge the trust needed to navigate this process. Instead, a just transition needs transparency and a full and open engagement with public comment.

Another important step is to make publicly available all of the written comments the City receives on the Draft Materials. This ensures that members of the public can learn from the written comments of others, which improves everyone's ability to participate in the discourse about PGW's future. Similar to the process used in environmental impact review, the City should include as appendices to the final study a transcript of oral comments, a compendium of written comments, and a chart indicating how the City has responded to each oral and written comment. Given the stakes of PGW's transformation, it is important that the City show that it is treating comments from the public seriously in such a fashion.

B. The City Must Hold Hearings to Determine Changes to PGW's Business Model in Light of the Study's Findings

It is also important that public participation continues after the finalization of the Business Diversification Study. For all of the work that has and will go into the study to have meaning, it must be translated into action, and the public must have a role in formulating that action. As the Draft Materials indicate, the option for PGW's future with the highest level of stakeholders "very opposed," and the lowest level of stakeholder support, is "[c]ontinuing current business model."[78]

[78] Draft Materials at Slide 24.

As such, after the Business Diversification Study is concluded, the City should promptly convene hearings on how PGW's business model will be adjusted in 2022 in light of the findings of the Business Diversification Study. These hearings need to address several key topics. As a starting point, they should address changes to PGW's business plan to include implementation of a business diversification pilot. But just as importantly, PGW's business plan must be changed to begin the process of aligning with the City's policy of full decarbonization by 2050 at the latest. That date may seem far off, but PGW is currently in the process of building out hundreds of millions of dollars in gas infrastructure investments with a useful life of far past 2050. To reduce stranded asset risks and ensure ratepayer dollars are prudently invested, PGW must begin thinking about how to realign and redesign its business now.

This process is time-sensitive. PGW will next be able to file for a rate increase on January 1, 2022.[79] PGW should not be allowed to raise rates on residents again without having a plan in place to ensure that ratepayer dollars will be invested prudently and consistent with City policy, and not poured into more gas infrastructure likely to become stranded assets in a decarbonized future. Moreover, there are steps that can and should be taken immediately, such as banning gas connections in new construction and eliminating incentives for new gas appliances, that reduce stranded asset risks and prevent the costs of decarbonization from growing.

As such, the City must take swift action to initiate a participatory public process for transforming PGW's business plan to be consistent with a decarbonized future. This process should start with hearings on changes to PGW's business plan to be implemented in 2022, but the process must be ongoing.

[79] Pennsylvania Public Utility Commission, Order and Op. at 22 (Nov. 19, 2020), https://www.puc.pa.gov/pcdocs/1684745.docx.

VI. The City Should Order PGW to Stop Working Behind the Scenes to Preempt the City from Implementing the Business Diversification Study

Finally, it is also essential to a just transition that PGW engage with the City and the public with transparency and a spirit of partnership. However, it appears that PGW has, instead, worked behind the scenes to preempt the City's ability to implement the Business Diversification Study.[80] It is concerning to note reports that PGW has attempted to persuade parties to testify in favor of a Senate bill by Senator Gene Yaw that seeks to preempt municipalities from adopting policies to transition off of natural gas, known as Senate Bill 275.[81] PGW has also refused to release, pursuant to a Pennsylvania Right to Know Request, records regarding discussions it had involving "strategy used to develop or achieve the successful adoption of Senate Bill 275."[82]

PGW is also an active member and major contributor to the Energy Association of Pennsylvania ("EAP"), which has strongly supported passing Senator Yaw's municipal preemption bill. Terrance J. Fitzpatrick, President of the EAP, testified in favor of the Yaw municipal preemption bill, and listed in his testimony PGW as among the EAP members supporting passage of the bill.[83]

PGW is, moreover, an active member and major contributor to the American Gas Association ("AGA"),[84] which has invested heavily in attempting to pass similar municipal

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[80] Susan Phillips, *As Philadelphia works to tackle climate change, a question emerges: Is PGW on board?*, WHYY (May 28, 2021) https://whyy.org/articles/as-philadelphia-works-to-tackle-climate-change-a-question-emerges-is-pgw-on-board/; Andrew Maykuth, *Can Philadelphia's gas utility survive in a climate where fossil fuels are shunned?*, Philadelphia Inquirer (May 11, 2021) ("Inquirer Article") https://www.inquirer.com/business/philadelphia- gas-works-climate-study-decarbonization-20210511.html; Jeremy Deaton, *Philly Wants to Wean Off Gas. The City-Owned Gas Utility Is Refusing to Go Along*, Nexus Media News (Mar. 22, 2021) ("Nexus News Article"), https://nexusmedianews.com/philadelphia-gas-utility-climate-change/.

[81] Inquirer Article.

[82] PGW, *Exhibits to Brief of PGW in Opposition to Appeal of Charles Spatz*, at 2 (Apr. 29, 2021), https://www.documentcloud.org/documents/20791392-pgw-exhibits-to-brief-of-pgw-in-opposition-to-appeal-of-charles-spatz#document/p2/a2037128.

[83] Terrance J. Fitzpatrick, *Comments – Joint Public Hearing to Discuss Senate Bill 275(Energy Choice)*, EAP (May 11, 2021), https://perma.cc/5WB9-CMFM.

[84] American Gas Association, Invoice for Philadelphia Gas Works (Sept. 28, 2018), https://www.documentcloud.org/documents/20787119-pgw-dues.

preemption bills around the country and which actively develops playbooks of strategies to fight municipalities that try to transition off of natural gas.[85] As the Washington Post recently reported, while many cities and towns are considering requiring new buildings to be electrified, "the American Gas Association...and its members are campaigning in statehouses across the country to prohibit the new local ordinances."[86]

In contrast, City Council passed a resolution calling upon the General Assembly to reject the Yaw municipal preemption bill, which City Council found "would restrict municipalities from addressing climate change through legislating energy and heating infrastructure requirements."[87] City Council further found that taking away such tools from municipalities would interfere with their ability to "protect the most vulnerable ratepayers" and to "proactively explore ways to clean, green, and investing in our infrastructure, including for heating and cooking[.]"[88]

As explained by Charlie Spatz, a researcher at the Climate Investigations Center, "When you pay your gas bill in Philadelphia, Philadelphia Gas Works is taking that money and spending it on dues for groups like the American Public Gas Association and the American Gas Association, which are then doing things to fight against electrification. The gas utility is pretty at odds with the actual policies of the Mayor's Office and the City Council."[89]

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[85] Washington Post Article; Jeff Brady & Dan Charles, *As Cities Grapple with Climate Change, Gas Utilities Fight To Stay In Business*, NPR (Feb. 22, 2021), https://www.npr.org/2021/02/22/967439914/as-cities-grapple-with-climate-change-gas-utilities-fight-to-stay-in-business; https://www.nrdc.org/experts/alejandra-mejia/gas-interests-threaten-local-authority-6-states.
[86] Washington Post Article.
[87] City of Philadelphia, Resolution No. 210374 at 1 (Apr. 29, 2021), https://phila.legistar.com/LegislationDetail.aspx?ID=4920953&GUID=3E36B49B-3D34-4221-B99F-90B79B4FAC45&Options=&Search=.
[88] *Id.*
[89] Nexus News Article.

It is not appropriate for PGW, as a publicly owned utility, to use the public's resources to launch a "preemptive strike" against the Business Diversification Study through supporting Senator Yaw's municipal preemption bill or through funding the municipal preemption and anti-electrification advocacy of the AGA. It would not be reasonable for any municipally-owned utility to work to hamstring and limit the municipality that owns it, and the City must not tolerate this behavior.

To begin to repair these harms, PGW must be ordered to immediately terminate any form of funding, lobbying, or advocacy for municipal preemption or against any policy tool the City may need to implement the Business Diversification Study, including electrification. Next, PGW must be ordered to produce a full and public report on any such funding, lobbying or advocacy activities. As Justice Louis Brandeis famously observed, sunlight is the best disinfectant.[90] Having cleared the air in such a fashion, PGW must then re-engage with the City and with the public in a true spirit of partnership and collaborate on the shared project of decarbonization consistent with the City's policy.

VII. Conclusion

As Resolution No. 190728 notes, "[t]he City of Philadelphia must continue to take the lead in advancing proactive climate change solutions."[91] The City of Philadelphia has the opportunity to be a national leader in modeling best practices for decarbonizing a municipally-owned gas utility. It should take the opportunity to do it right. POWER respectfully requests that

[90] Louis Brandeis, *Other People's Money*, Ch. 5 (Dec. 1913), http://louisville.edu/law/library/special-collections/the-louis-d.-brandeis-collection/other-peoples-money-chapter-v.
[91] City of Philadelphia, Resolution No. 190728 at 1 (Sept. 26, 2019), https://phila.legistar.com/LegislationDetail.aspx?From=RSS&ID=4142523&GUID=BA06CC3B-7B43-4743-A07E-515A145C4A2A.

the City address the issues described above, and looks forward to reviewing a draft Business Diversification Study that takes these Comments into account.

May 28, 2021

Respectfully submitted,

/s/

Bishop Dwayne Royster
Executive Director
POWER Interfaith

POWER Climate Justice and Jobs Team