

Christine Knapp
Office of Sustainability, City of Philadelphia
1515 Arch St
Philadelphia, PA 19102

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Dear Ms. Knapp,

Thank you for your leadership in making Philadelphia a more climate resilient and sustainable city. We appreciate that the City is commissioning a study about options for Philadelphia Gas Works' future. We are concerned, however, that the proposed "business diversification" study outlined in the October 2019 Request for Proposals (RFP) is too limited in its goals and methods to lead to the type of transformative plan that we need.

Our organizations call on the City to commit to the following goals and principles in planning for the future of PGW:

- 1. Set a goal for transforming PGW into a fully decarbonized municipal heating and cooling utility by the year 2030, and for ensuring that all buildings across Philadelphia can be heated without the use of fossil fuels at an affordable cost by that date.**

The RFP does not specify a timeline for reducing greenhouse gas emissions. Instead, it states that the City and its contracted research team will work together to determine what decarbonization goals are feasible. As the climate crisis accelerates, we need to plan for a rapid phase-out of fossil fuels and for a zero-emissions future--not merely a "low carbon future," as described in the RFP. It is important that the City bases its plans on the ambitious targets that science and justice require, rather than on weaker targets that may appear to be more politically feasible.

- 2. Create just and equitable plans that:**
 - a. Ensure all Philadelphians can afford to heat their homes, paying no more than 6% of their income for utilities.
 - b. Protect income, benefits, and pensions for PGW workers and retirees
 - c. Create good union jobs and make new jobs available to people who have been excluded from living wage employment -- particularly Black and Brown residents
 - d. Encourage more community engagement with PGW's future and bolster PGW as a strong and vibrant publicly-owned utility
- 3. Ensure that planning for PGW's future considers funding sources, policy shifts, and technological improvements that may be needed to accomplish the 2030 goal.** The City should fully examine technologies, business models, and policies that PGW and City government could implement with resources that are now available. At the same time, the planning process should recognize that a quick and equitable shift to zero-carbon heating may require investment from the federal or state government (or other

potential Green New Deal investment funds), regulatory changes, or technology improvements that take place more quickly than is now anticipated.

The study should identify resources that may be needed at the national level to inform conversations about federal energy and climate programs and the broader discussion about a nationwide Green New Deal. In the event that national resources are made available in the future, this funding gap analysis will assist the City in quickly identifying what to apply for. The PGW planning process should prepare for potential funding opportunities by establishing specific fundable projects (outside the City's current budget) that advance greenhouse gas reduction goals in an equitable and just way.

4. **Consider how PGW's transition to zero emissions can be integrated with a comprehensive building retrofit program.** Repairing and retrofitting buildings to make them more energy efficient will be an essential part of a transition to zero-carbon heating. Those activities could also improve residents' health, make our buildings more comfortable, bring down the cost of maintenance, and reduce gentrification and displacement. New research by Data Progress indicates that there is broad public support for large-scale federal public investment in "green housing retrofits."¹ The City should explore options for such a program and examine the multiple benefits that could result.
5. **Carry out a robust, participatory planning process that centers community and labor.** the City has not released any details about the public engagement initiative. We believe The RFP references a public engagement process that will be separate from--though connected to--the consultant-led technical and economic study. We are concerned that this process must fully include workers and community members from the beginning.

Last fall, the Intergovernmental Panel on Climate Change wrote that we must make ***"rapid, far-reaching and unprecedented changes in all aspects of society"***² in order to limit global warming. The climate crisis is already exacerbating many of the inequities that Philadelphia residents struggle with: high energy burdens, low-wage jobs, health hazards in homes and school buildings, high rates of asthma, and rapid gentrification and displacement.

The City must lead the way in planning for the unprecedented changes that are required here in Philadelphia. Our communities are resilient, knowledgeable, and creative. Our workforce is dedicated, strong, and innovative. Our communities and workers can implement bold solutions. It's time for us to work together to plan and implement them.

In the following pages, we list technical, economic, and environmental questions that we believe the proposed study should address, plus ideas for participatory planning. We look

¹ "Memo: The Green Homes Guarantee is Popular," Data for Progress, October 2019: www.dataforprogress.org/memos/green-homes-guarantee

² "Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments," IPCC, www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/

forward to discussing how we can work with City officials to advance an innovative plan for PGW that creates jobs, advances racial and economic justice, and meets the goal of making our homes and buildings resilient, zero-carbon, and healthy.

Sincerely,

- Mitch Chanin, Steering Committee Member, **350 Philly** (350philadelphia@gmail.com)
- Tracy Carluccio, Deputy Director, **Delaware Riverkeeper Network** (tracy@delawareriverkeeper.org)
- Sam Rubin, Eastern Pennsylvania Organizer, **Food and Water Watch**, (srubin@fwwatch.org)
- Anthony Giancatarino, Director, **Just Community Energy Transition Project** (agiancatarino@gmail.com)
- Bryan Mercer, Executive Director, **Media Mobilizing Project** (bryan@mediamobilizingproject.org)
- Cecily Harwitt, Eastern Pennsylvania Director, **One Pennsylvania** (cecily@onepa.org)
- Zakia Elliott, Program Manager, **Philadelphia Climate Works** (zakia.elliott@sierraclub.org)
- Julie Greenberg, Climate Justice Coordinator, **Philadelphians Organized to Witness Empower and Rebuild (POWER)** (jgreenberg@powerphiladelphia.org)
- Adams Rackes, Member Leader, **Reclaim Philadelphia** (adamsrackes@gmail.com)
- Jim Wylie, ExCom Chair, **Sierra Club, Southeastern PA Group** (jim.wylie@verizon.net)
- Kirtrina Baxter, Coordinator, **Soil Generation** (soilgen215@gmail.com)
- Rachie Weisberg, Hub Coordinator, **Sunrise Movement** (rachie@sunrisemovement.org)
- Peter Winslow, President, **A SMART Collaboration LLC** (pjwinslow@gmail.com)
- Susan Volz, Organizer, **Lilac** (shesthefastest@gmail.com) -- added 1/7/20
- JoEllen McBride, Advocacy Director, **500 Women Scientists, Philly Pod** (joellen.mcbride@gmail.com) -- added 1/11/20
- Lynn Robinson, Director, **Neighbors Against the Gas Plants** -- added 2/9/20
- Pratima Agrawal, Lead Volunteer, **Philadelphia Ready for 100** -- added 2/12/20

Proposed Considerations for Comprehensive PGW Study/Studies

1. PARTICIPATION, EQUITY ANALYSIS, AND ACCOUNTABILITY PROCESSES

We believe that equity is not only about the outcomes of a transition, but is also about the process of achieving this goal. How we study and implement PGW's transition from fossil fuels to renewable energy is critically important. We ask the City to:

- a. Address how different transition options will impact the day-to-day life of residents. In particular, we believe that any City study and plan should ask:
 - i. **Who benefits from this transition?** In particular, will marginalized Philadelphians, people in poverty, Black and Brown Philadelphians, and workers benefit from electrification and decarbonization of PGW? What programs and policies need to be in place to ensure those benefits?
 - ii. **Who is burdened by this transition?** In particular, will marginalized Philadelphians, people in poverty, and Black and Brown Philadelphians, and workers bear the burden of increased costs, job losses, and/or low-wage jobs of such a transition? What programs and policies need to be in place to ensure that we avoid inequitable outcomes?
 - iii. **What are the unintended consequences** of a transition away from fossil fuels? And how can we prepare to address these challenges?
 - iv. **Where are there opportunities to partner with** leaders and institutions from different sectors (housing, hospitals, businesses, etc.) to implement the transition?
 - v. **How can we implement** the PGW transition in a way that prioritizes the needs of impacted and marginalized residents and workers?
- b. Develop a process for robust public engagement through hearings, surveys, participatory planning sessions, comment opportunities, and public meetings across neighborhoods throughout the city. The process should include opportunities for engagement in the planning, analysis, implementation, and evaluation stages of the study.
- c. Create an advisory body that includes representatives from the following sectors:
 - i. Customers of PGW, especially low-income residential rate-payers
 - ii. Environmental justice organizations
 - iii. Labor unions
 - iv. Organizations that are rooted and led by communities that are impacted by racial inequity, poverty, energy insecurity, and the climate crisis
 - v. Environmental organizations
 - vi. Affordable housing and tenant organizations
 - vii. Public health groups

- d. Consider best practices for city-community collaboration and racial equity analysis in technical planning, such as The City of Seattle’s Equity and Environment Initiative, the National Association of Climate Resilient Planners (NACRP), or the Government Alliance on Racial Equity.
- e. Identify how the results of the transition study could be implemented and evaluated to ensure PGW is held accountable to the transition plan. Create transparency mechanisms for PGW to submit annual public status reports that compare progress to anticipated milestones in the final transition plan.
- f. Detail appropriate actions necessary to ensure PGW stays on track to meet the goals of the transition plan.

2. TECHNICAL CONSIDERATIONS AND RECOMMENDATIONS

I. Technology Options

- a. Examine several zero-carbon technologies that can be used to provide heat in commercial and residential buildings across Philadelphia including:
 - i. Electric heat pumps, both air-source and ground-source systems, including cold-climate heat pumps
 - ii. Construction of carbon neutral, low-temperature hot water district heating networks that fully use all waste heat, and only use renewable energy without relying on fossil fuels as a backup source of energy
 - iii. “GeoMicroDistrict” systems like those that have been proposed for Massachusetts. As described in a recent report, this proposal envisions replacing “leaking gas pipes with ambient temperature water loops in existing gas company corridors in the street. These micro-district loops connect to linear arrays of closed-loop vertical boreholes in the street”³
 - iv. Are there renewable gas options, such as renewable natural gas produced from food scraps or wastewater streams, that could provide solutions in certain limited situations where electrification is not feasible?
- b. Explore the potential for a large-scale energy efficiency retrofit program to substantially reduce the amount of energy needed to heat and cool buildings across the city
 - i. Consider how energy efficiency retrofits in Philadelphia residents’ homes can be combined with basic repairs, so that all Philadelphians can have a healthy, safe, comfortable home that is heated with renewable energy

³ “Energy Shift — A Utility-Scale Path From Gas To Renewable Thermal,” by Zeyneb Magavi and Audrey Schulman, *Building Energy Magazine*, Fall 2019.

- ii. Determine how the installation of solar panels and energy storage technology could be combined with these retrofitting projects
- c. Examine options for minimizing the transition's impact on the electric grid by reducing peak demand using distributed energy resources, energy storage technology, and aggregated demand response
- d. Examine options for resiliency and reliability. For example, increasing passive resilience in all residential buildings, especially low-income buildings, so that they remain habitable for a longer duration when an outage occurs, including the option to require all low-income housing to be passive house and net-zero buildings with some amount of on-site renewable generation and energy storage to provide power during a grid outage.

For each technology option, it is important to consider technology improvements that are expected in the near future, as well as improvements that could be accelerated if there were sufficient demand or additional support from state or federal governments.

II. Economic, Equity, and Environmental Sustainability Analysis of Technology

The study should identify the potential positive and negative economic, social, and environmental impacts that are associated with each technology identified above. For each of the above technology options, the study should assess the following:

a. Social costs and benefits

- i. Who benefits?
- ii. Who is burdened?
- iii. What are the unintended negative consequences? How will this technology change impact low-income communities and Black and Brown communities who have borne the brunt of pollution and high energy costs?⁴
- iv. How much would the construction and renovation projects required to implement each technology option disrupt residents' lives? How could construction, renovation, and installation projects be organized in such a way that they cause the least possible disruption?

b. Direct economic costs and benefits

- i. Cost for equipment, materials, installation, and construction
 - 1. These estimates should account for technology improvements that are likely to take place in the coming years, as well as cost

⁴ This will require conversation with community leaders. Some examples of these analyses can be found in the following: Greenlining Institute's *Equitable Building Electrification* report http://greenlining.org/wp-content/uploads/2019/10/Greenlining_EquitableElectrification_Report_2019_WEB.pdf; *Race, Power and Policy: Dismantling Structural Racism* toolkit found at https://www.racialequitytools.org/resourcefiles/race_power_policy_workbook.pdf

reductions that will occur as technology and services are used on a larger scale.

- ii. Operation and maintenance costs
 - 1. Assess how much money could be saved if PGW cancelled plans to replace gas mains across the city and focused on fixing only imminently dangerous leaks or the largest known leaks.
- iii. Energy/fuel costs
 - 1. The study should include a sensitivity analysis that examines alternative scenarios for natural gas prices in the coming years. Some analysts assert that the cost of gas is likely to rise more quickly than the Energy Information Agency estimates. In addition, the study should examine how proposed carbon fees and environmental regulations may affect gas costs.
 - 2. Consider what costs can be avoided for *cooling* buildings through the installation of heat pumps or other technologies that provide both heating and cooling, as well as through energy efficiency and demand flexibility programs.
- iv. Identify the cost of stranded PGW assets in each scenario.
 - 1. Examine several scenarios of the rate of natural gas load defection due to decarbonization efforts described in the study, assuming full decarbonization by 2030, and use various scenarios for costs of fossil fuels, renewable energy, energy storage, and based on a modeled trend of increased operational efficiency of heat pumps and other renewable energy technologies.
- v. To what extent would these investments improve the Net Operating Income of commercial building owners and by how much would they increase the value of their assets?

c. Job impacts

- i. Job creation that results from construction, manufacturing, and maintenance and operation of new equipment and infrastructure, and from associated building retrofit projects
- ii. Job losses from phasing out the distributed natural gas system
- iii. Costs of transition assistance for displaced workers
- iv. Training needs and opportunities

d. Environmental/health costs and benefits

- i. Analyze the environmental impact of each technology option, including greenhouse emissions, toxic air pollution, water pollution, land use, water use, and more. As part of the impact analyses, the study should consider:

1. Upstream impacts that occur during acquisition and processing of raw materials, manufacturing, and construction
 2. Downstream impacts that occur when waste is generated and when equipment is recycled
- ii. Examine health risks and benefits to Philadelphia residents that would result from each technology option as well as maintaining the status quo. This analysis should include, but not be limited to, the following considerations:
1. Assessment on how eliminating combustion of gas and oil in homes, schools, and other buildings reduce exposure to carbon monoxide, particulates, and other pollutants.
 2. Evaluation of how retrofitting homes can reduce residents' exposure to mold, unhealthy temperatures, and other hazards.
 3. The study should examine how these technology changes could reduce medical costs, as a result of reducing emissions and in-home health hazards from natural gas, paid by PGW ratepayers, government entities, and hospitals.
 4. Documentation of the monetary value of reducing the number of days that residents must miss work or school due to illness caused by environmental pollution and poor air quality.

e. Net Cost Benefit Test

- i. Examine the total net costs and benefits, including energy service costs and benefits, health costs and benefits, system transition costs and benefits, environmental costs and benefits assuming the most recent recommendations from recognized UN climate researchers regarding the price of carbon, and other relevant costs and benefits.

III. Business model options

- a. What are the long-term options for PGW to sell or lease a variety of renewable energy and energy saving technologies related to heating and cooling, water heating, and electricity generation (e.g. solar water heaters, solar photovoltaics, on-demand water heating, geothermal systems)?
- b. Could PGW own and operate GeoMicroDistrict systems installed on public property?

IV. Workforce considerations

- a. Examine options for ensuring fair wages and working conditions, a fair and equitable transition for current PGW workers, protection of PGW pensions, and economic benefits for communities of color.
 - i. If there is a transition from gas to electric heat, who will do the installation and construction work that is needed?
 - ii. As a gas supplier, PGW has a natural monopoly. That natural monopoly would not exist for many other services and products that would be involved in the provision of zero-carbon heating. For example, an individual building owner could choose to hire a private contractor that may offer cheaper prices and pay lower wages to its employees to install heat pumps. How can the city ensure that building owners who engage in retrofits or renewable energy installations through the City's low-cost financing and subsidy programs uphold fair labor standards and equity practices, rather than securing the lowest-wage contractors?
 - iii. How can the City ensure that new jobs that are created through this transition are accessible to people who have been excluded from living wage employment (such as returning citizens)?
 - iv. How can the City ensure current PGW workers who are displaced by the transition are able to obtain employment for the same salary and with the same benefits working to provide renewable heat and related activities?
 - v. How can the City ensure workers employed in the transition to renewable heat and in maintaining new equipment and infrastructure are:
 - 1. Public employees
 - 2. Paid a living wage with good benefits
 - 3. Welcome to join a union and engage in collective bargaining

3. LEGISLATIVE POLICY AND FINANCING CONSIDERATIONS

I. Legislative Considerations

- a. Consider policies, programs, and technologies implemented and proposed in other cities in order to facilitate the transition from gas to electric heating powered by renewable energy-- and for dramatically increasing energy efficiency--with the understanding that there is no exact precedent for the transition we are calling for here in Philadelphia.
- b. Identify potential legislative and regulatory changes or approvals needed at the federal, state, and local levels to ensure a just and equitable transition to renewable heat.
- c. Examine policy changes that could promote a rapid shift to renewable sources of electricity for the residential and commercial sectors, such as implementing community choice aggregation.

II. Financing Considerations

- a. Consider a variety of options for financing the transition:
 - i. Examine how much investment would be needed in different scenarios.
 1. How much public (vs. private) investment would be needed?
 2. To what extent would individual building owners be expected (and able) to pay for the needed renovations and equipment?
 3. To what extent would these energy investments, especially when paired with energy efficiency and renewable energy, produce savings for the residents and generate revenue?
 4. What subsidies would be needed?
 5. Identify the policy and financing interventions needed to ensure that low-income residents' energy burden (people who spend more than 6% of their income on energy bills, according to the US Department of Health and Human Services)⁵, is decreased/eliminated as we invest in transforming the utility.
 - ii. Identify existing local, state, and federal financial resources and incentives available to PGW and the City to support the transition
 - iii. Explore other potential state and local financing options that could make these energy transition options more feasible, such as:
 1. Subsidies
 1. Research and development grants

⁵ <https://www.acf.hhs.gov/ocs/resource/liheap-energy-burden-evaluation-study>

2. Pay as You Save (PAYS) programs and or On Bill Financing options that the utility could implement paired with loan-loss reserve mechanisms to guarantee low-income participants are protected in case of financial struggle.⁶
3. Long-term Green Bonds or Green Bank loans
4. 3rd party energy service provider solutions

⁶ For an example: <https://chorusfoundation.org/howsmart-ky/>