October 20, 2022

Luly Massaro
Clerk, Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

RE: Stakeholder Feedback on PUC Docket 22-01-NG

Dear Public Utilities Commission Staff,

Thank you for the opportunity to submit comments in response to the Draft Staff Recommendation for Public Comment in Docket No. 22-01-NG, *Investigation into the Future of the Regulated Gas Distribution Business in Rhode Island in Light of the Act on Climate*. As stakeholders committed to achieving the greenhouse gas emissions (GHG) reduction mandates enshrined in the Act on Climate, we commend the Public Utilities Commission (PUC) for opening an investigation into how the gas distribution business must change and transition away from the combustion of fossil fuels. We respectfully offer the following responses to questions asked in the Draft Staff Recommendation for Public Comment.

Response to Questions in the Draft Staff Recommendation for Public Comment

1. **Have staff identified appropriate purposes for the docket?**

While the Staff Draft Scope accurately notes many elements of the transformative nature of the Act on Climate, it omits a key directive and grant of authority to state bodies to execute the mission. The General Assembly specifically granted broad, expansive, and unequivocal powers to achieve the necessary emissions reductions. Specifically, Rhode Island General Law §42-6.2-8 states, *"Each agency shall have the authority to promulgate rules and regulations necessary to meet the greenhouse gas emission reduction mandate established by §42-6.2-9."* Therefore, the PUC should approach this docket from the perspective of establishing a

foundation for future regulatory actions with the understanding that the Commission already has been granted all necessary powers to effect the required changes to the gas distribution network and utility business model.

The Draft Scope also notes that "the PUC should first identify how the Act may affect public utilities and enumerate issues that require government action" (p. 2). We, the undersigned, respectfully contend that the primary focus for the PUC should be meeting the public policy goals supported by the residents of Rhode Island in the Act on Climate and using this opportunity to identify the necessary changes to the utilities to meet those requirements. Secondarily, this investigation provides the PUC and stakeholders the opportunity to identify actions that will improve Rhode Islanders' health and safety, expand access to the benefits of clean energy resources, and create a more equitable energy system.

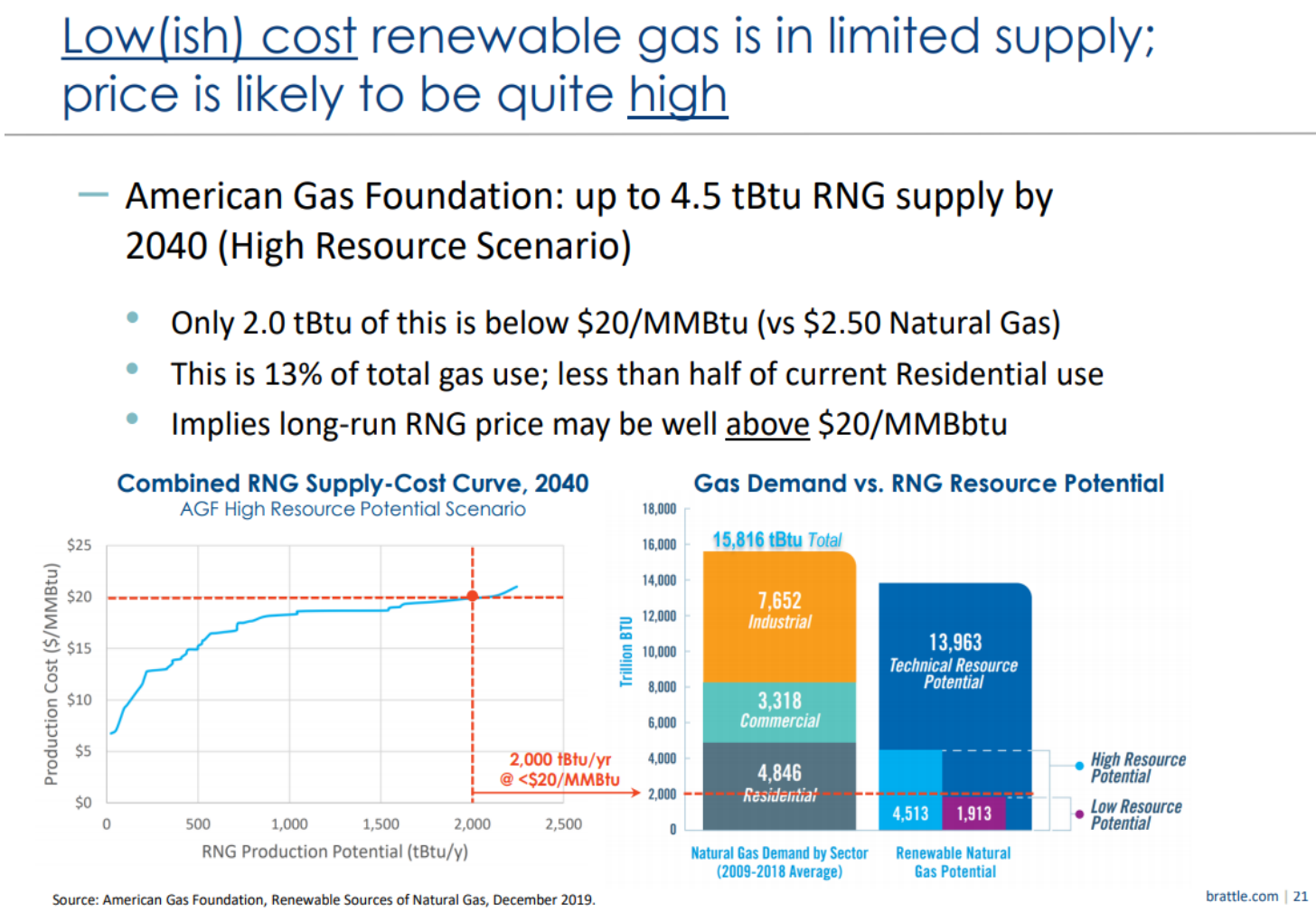
Section II, Subsection B. *Gas System and Regulation of the Act*

Staff "recommends conducting a technical analysis of these alternatives that are specific to Rhode Island" (p. 2). Stakeholders note that Rhode Island's Office of Energy Resources and Division of Public Utilities and Carriers conducted a Heating Sector Transformation (HST) stakeholder process from 2019-2020 that discussed many questions referred to in the Draft Scope. While we do not agree with the "wait and see" approach ultimately recommended in that report, we note that the foundational research and analysis conducted as part of that proceeding could serve as a valuable reference during this docket. As noted in Figure 1 below, that process identified limited technical potential and significantly higher prices of so-called decarbonized gasses, such as hydrogen or biofuels, compared to current demand levels.[1] Around the same time, the Buildings Sector Technical Report completed as part of the Massachusetts 2050 Decarbonization Roadmap found the same technical and cost concerns related to these replacement fuels.[2]

[1] RI Heating Sector Transformation Workshop: Brattle Group Presentation. 13 February 2020. Slide 21. https://energy.ri.gov/sites/g/files/xkgbur741/files/documents/HST/HST-Public-Workshop-2-13-2020-Slides.pdf

[2] *Buildings Sector Report: A Technical Report of the Massachusetts 2050 Decarbonization Roadmap Study.* https://www.mass.gov/doc/building-sector-technical-report/download. Pg 4.

Figure 1. Limited Potential and High Costs for Renewable Gas[3]



The HST report also suggests a far more favorable and realistic pathway for a decarbonized future that relies primarily upon air-source or ground-source heating electrification, as demonstrated in the Figure 2 below. This aligns with findings and recommendations from various reports, including Massachusetts Buildings Sector Report and the 2019 Stockholm Environment Institute and Brown University Climate and Development Lab's *Deeper Decarbonization in the Ocean State* report. The latter made recommendations including greater investment in energy efficiency, electrification of space heating, and planning the systematic decommissioning of natural gas infrastructure.[4]

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[3] Brattle Group Presentation. RI Heating Sector Transformation Workshop.13 February 2020. Slide 21. https://energy.ri.gov/sites/g/files/xkgbur741/files/documents/HST/HST-Public-Workshop-2-13-2020-Slides.pdf

[4] Jason Veysey, J. Timmons Roberts, Daniel Traver, Brett Cotler, Benjamin Gross and Angie Kim. *Deeper Decarbonization in the Ocean State: The 2019 Rhode ISland GHG Reduction Study.* Stockholm Environment Institute and Brown University Climate and Development Lab. Pg. 57. https://www.sei.org/wp-content/uploads/2019/09/deeper-decarbonization-in-the-ocean-state.pdf

Figure 2: Annualized Cost of Decarbonized Space Heating in 2050[5]

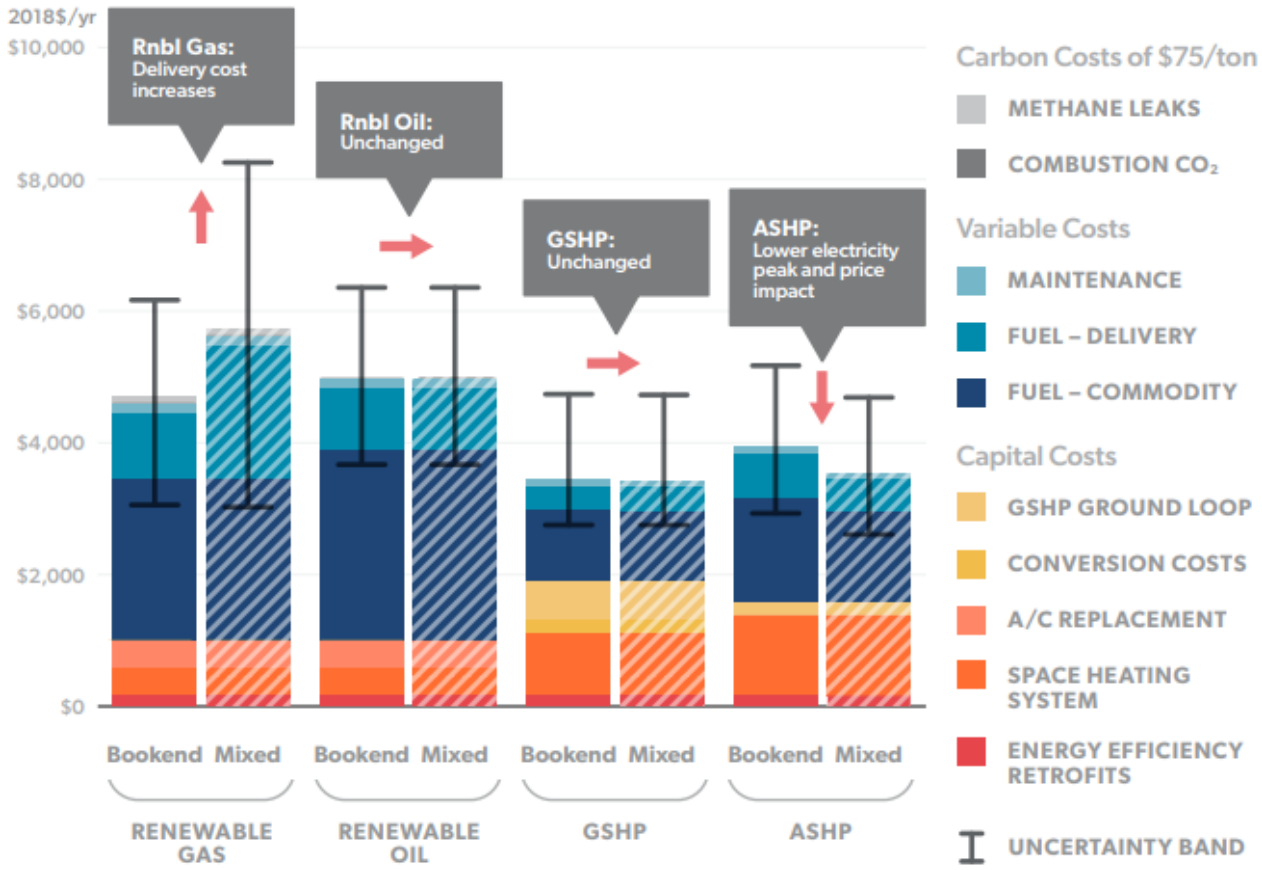

FIGURE ES 2: ANNUALIZED COST OF SPACE HEATING IN 2050, REPRESENTATIVE SINGLE-FAMILY HOME BOOKEND VERSUS MIXED SCENARIOS, 2018$

Similarly, Massachusetts finds that "Given the cost and scarcity of low- or zero-carbon drop-in replacement fuels, coupled with the current and growing availability and applicability of heat pump technology–as well as induction cooking–and the practical necessity for residual 2050 emissions elsewhere in the economy, the building sector must approach near-zero emissions in the aggregate by 2050 in order for the Commonwealth to achieve net-zero statewide emissions in the same time frame. Although multiple technologies exist to decarbonize buildings, electrification of end uses, particularly through the use of highly efficient electric heat pumps and other building appliances, appear to be the dominant least-cost strategy."[6]

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[5] *Heating Sector Transformation in Rhode Island: Pathways to Decarbonization.* Brattle Group. Pg. iii. https://energy.ri.gov/sites/g/files/xkgbur741/files/documents/HST/RI-HST-Final-Pathways-Report-5-27-20.pdf

[6] *Buildings Sector Report: A Technical Report of the Massachusetts 2050 Decarbonization Roadmap Study.* Pg. 6. https://www.mass.gov/doc/building-sector-technical-report/download

Recommended Approach

We recommend the following approach for the proceedings:

1. Identify how the Act on Climate necessitates economy wide changes to the use of fossil fuels;
2. Establish availability, cost, and emissions profile of alternative fuels and identify appropriate prioritization of fossil fuel replacements for hard to electrify systems and end uses;
3. Identify whether and how that prioritization and change requires government action;
4. How that will affect public utilities and consumers; and,
5. How the whole process could be shaped to avoid the worst impacts on consumers, the public, and utilities. This should include considerations of the costs of inaction and missed opportunities to align infrastructure planning and investments in a timely manner to avoid imprudent decisions.

Additionally, in this section Staff makes the following statement:

> *"The PUC's work here will recognize that the EC4 has options for deploying emissions-reducing technology in other sectors like transportation and oil heating. The coordinated dispatch of these technologies through time will be driven primarily by cost, but also by other factors like effectiveness, sustainability, fairness, equity, and economic impacts. Thus, the PUC's work cannot assume lock-step emissions reductions across sectors. Between now and 2050, it is plausible that emissions from the gas sector need to be addressed much faster than other sectors or much slower—two scenarios that may favor differing implementation plans for the gas system."*

Ultimately, the PUC's primary focus should be to identify the most aggressive and feasible gas system decarbonization pathway that both rapidly and equitably reduces current GHG fossil gas emissions in the near-term while eliminating the potential risk of new long-lived fossil fuel connections to the network and protecting ratepayers from stranded costs. For reference, the Massachusetts Clean Energy and Climate Plan calls for a 47 percent GHG emissions reduction from buildings by 2030–essentially mirroring the economy-wide GHG emissions reduction mandate of 50 percent over the same time frame.[7] Therefore, we have not seen any evidence that heating sector emissions in RI can lag behind the Act on Climate requirement of 45 percent by 2030.

A new connection to the gas system today represents a fire that will likely burn for decades to come and serves neither the public interest nor efforts to achieve the requirements of the Act on Climate. Gas system infrastructure left in place unnecessarily

[7] *Massachusetts Clean Energy and Climate Plan for 2025 and 2030.* Pg xiv.https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download

long is also extending unsustainable and unhealthy systems, and exposing ratepayers to volatile price swings and ongoing safety concerns.

Reducing GHG emissions on the timetable informed by science and required by the Act on Climate will require rapid, aggressive, yet achievable actions. As such, the PUC should integrate emissions reductions taking place outside of this docket that can reduce GHG emissions related to end uses currently served by the gas distribution systems. For instance, the PUC should take the 100 percent Renewable Energy Standard by 2033 into account when evaluating the comparative emissions savings available for various heating decarbonization pathways. Transitioning the vast majority of residential and non-industrial end users to high-efficiency electric heating options powered by 100 percent renewable energy, whether supported by air-source, ground-source, or networked geothermal systems, represents the only viable pathway that envisions a fully decarbonized heating sector.

2. Is the proposed workplan described in Section III—including a Policy Analysis, Scoping of the Technical Analysis to Be Performed by RIE, and Policy Development—appropriate for meeting the purposes?

The undersigned stakeholders are concerned that "Section III, Subsection A. *Purpose"* is drafted in such a way that may ignore strategies that may necessarily involve examination of other energy delivery systems—namely to leverage the electric distribution system which encompasses the same footprint in Rhode Island as the gas system. As Chair Gerwatowski noted during his 2020 confirmation hearing:

"From my perspective we oughta be looking at them [the wholly-owned electric and gas distribution companies] *as an energy delivery company so that they don't have a feeling that they have to protect one business model against another business model. So if you're moving people off of gas and electrifying they don't see that as harming their business because they're maybe getting reduced revenue on the gas side but they may be getting more on the electric side and we find a ratemaking way to have it all work together so we can lead that company towards a model where they're okay with having fewer and fewer people use natural gas and more and more of the customers electrify. These are the things that excite me because in Rhode Island we're uniquely situated. In other states in the Northeast, the gas and electric company are separate and their service territories overlap and it makes a mess to try to figure your way through that without having stranded costs. But in Rhode Island it's different. We have some real opportunities to work and treat them as an energy delivery company rather than two different companies and move ourselves directionally towards reducing reliance on fossil fuels."*[8]

We support the Staff recommendation that the PUC adopt as one of its overarching purposes: "Identify necessary or beneficial actions that are beyond the PUC's jurisdiction over the gas system specifically and/or public utilities generally" (p. 4). However, we reiterate that the Act on Climate envisions and grants broad regulatory authority to the PUC and its sister agencies:

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[8] *Confirmation Hearing for PUC Chair Ron Gerwatowski*. RI Senate Environment and Agriculture Committee, 3 June 2020. https://ritv.devosvideo.com/show?video=933aaf746ab4&apg=634c8273

"Each agency shall have the authority to promulgate rules and regulations necessary to meet the greenhouse gas emission reduction mandate established by §42-6.2-9."[9] Further, the Act on Climate clarifies that *"this chapter, being necessary for the welfare of the state and its inhabitants, shall be liberally construed so as to effectuate its purposes."*[10]

3. Do any issues or questions described in Section III need to be narrowed or broadened?

The PUC's investigation should incorporate health considerations not typically factored into the Commission's regulatory purview, including the negative health effects of fuel combustion within buildings. As multiple studies have found, combustion of gas inside of buildings leads to emissions of carbon monoxide, nitrogen oxides, particulate matter, and formaldehyde. These air pollutants have been linked to various acute and chronic health effects, including respiratory illness, cardiovascular disease, and premature death.[11] Unsurprisingly, concentrations of carbon monoxide and nitrogen dioxide are the highest for apartments, due to a typically smaller residence size, presenting additional risk for renters who often have lower incomes.

Particularly troubling, these air pollutants are particularly harmful to children. A meta-analysis looking at the association between gas stoves and childhood asthma found children in homes with gas stoves have a 42 percent increased risk of experiencing asthma symptoms (current asthma), a 24 percent increased risk of ever being diagnosed with asthma by a doctor (lifetime asthma), and an overall 32 percent increased risk of both current and lifetime asthma.[12] Conducting a Future of Gas investigation that bars examination of the impacts of gas behind the meter would miss a once in a generation opportunity to evaluate energy options holistically. It may be appropriate to specifically engage with the Department of Health and other public health experts as a stakeholder throughout this process.

Aside from the risks inherent with gas combustion, studies also point to significant behind-the-meter methane leakage which poses its own obvious safety, health and climate dangers. One set of researchers estimated that natural gas stoves emit 0.8-1.3 percent of the gas they use as unburned methane.[13] That study also found that more than three-quarters of methane emissions measured from the gas stoves emanate while the appliance is off. The researchers calculated that using a 20-year timeframe for methane, just the annual methane emissions from all gas

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[9] Rhode Island General Laws §42-6.2-8. http://webserver.rilegislature.gov//Statutes/TITLE42/42-6.2/42-6.2-8.htm

[10] Rhode Island General Laws §42-6.2-11. http://webserver.rilegislature.gov//Statutes/TITLE42/42-6.2/42-6.2-11.htm

[11] *Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California.* UCLA Fielding School of Public Health. April 2020. Dr. Yifang Zhu (Principal Investigator). Pg. 6. https://coeh.ph.ucla.edu/effects-of-residential-gas-appliances-on-indoor-and-outdoor-air-quality-and-public-health-in-california/

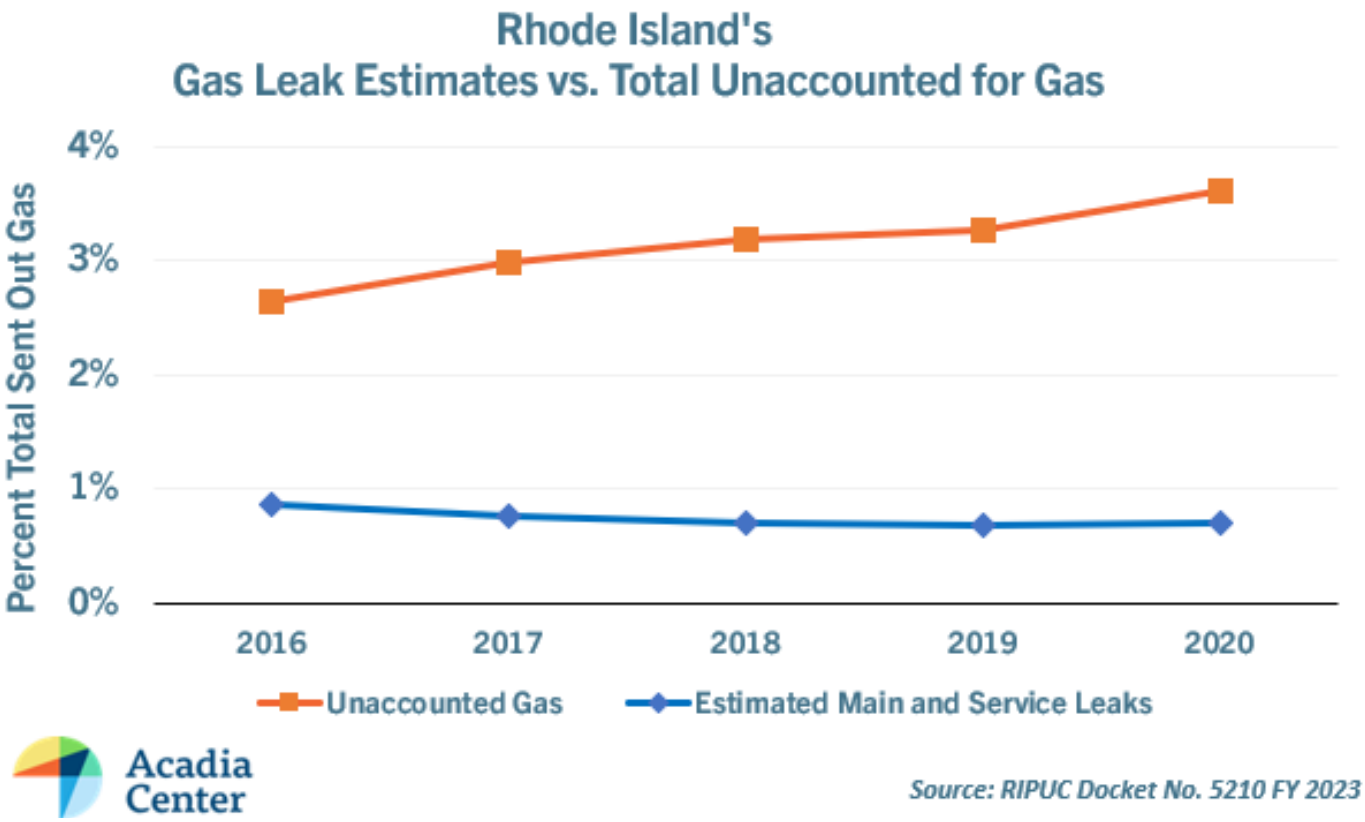
[12] Brady Seals and Andee Krasner, *Health Effects from Gas Stove Pollution,* Rocky Mountain Institute, Physicians for Social Responsibility, Mothers Out Front, and Sierra Club, 2020. Pg 13. https://psr.org/wp-content/uploads/2020/05/health-effects-from-gas-stove-pollution.pdf

[13] *Methane and NO_x Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes.* Environmental Science & Technology 2022, 56 Pgs 2529-2539. Eric D. Lebel (Corresponding Author). https://pubs.acs.org/doi/pdf/10.1021/acs.est.1c04707

stoves in the U.S have a climate impact comparable to annual carbon dioxide emissions of 500,000 cars.

Further, recent utility filings at the PUC raise serious concerns that traditional methodologies for calculating front-of-the meter methane leaks are wholly insufficient and likely unreliable, as demonstrated in Figure 3 below. The Commission should explore assumptions and methodologies concerning methane leaks as a primary area of focus. Better understanding the scale of methane leaks will help stakeholders properly evaluate the GHG impacts of fugitive emissions and identify feasible approaches to mitigate and eliminate those emissions.

Figure 3. Discrepancies Between Methane Leak Calculations and Unaccounted for Gas



The PUC should extend its evaluation of methane leakage to include methane leakage that occurs behind the meter as it presents significant public health and safety risks while also contributing to GHG emissions. The health, safety, and ratepayer implications of any utility-proposed alternative uses of the fossil gas distribution system to deliver other combustible gas should also be analyzed to provide a holistic view of Rhode Island's options for the future.

4. **Do any issues or questions need to be eliminated from or added to Section III?**

Staff should add the following questions to Section III, Subsection B. *Policy Analysis*:

- *"How will potential future changes to the GHG inventory accounting structure that match updated science and accepted best practices be factored into the policy analysis?"*

Addressing this question is vital for ensuring the PUC uses the most up-to-date data, including Global Warming Potentials (GWP) associated with methane; updates to methane leak methodologies; and consideration of the out-of-state emissions associated with gas, biofuels, and hydrogen. By incorporating the latest science and best practices, the PUC can ensure that all parties have an accurate understanding of the effectiveness of different pathways.

For instance, a sensitivity analysis using New York's GHG accounting structure for out-of-state emissions and a sensitivity analysis to include top-down methane leak estimates (which are 6 times higher than the bottom-up estimates currently being used) could help illuminate the true impacts of the gas system on GHG emissions. New York has moved to a 20-year GWP for methane leakage and given the rapid increase in climate impacts and prevalence of scientific and policy communities moving to that standard, this approach should also be taken in Rhode Island. Relying only on the 100-year GWP would render much of this work obsolete.

Other Recommendations

Stakeholder Engagement

The PUC must establish and continue to support a transparent and accessible stakeholder engagement process to ensure that assumptions, processes, priorities, and objectives all receive robust input and review, especially from communities that have been historically left out of the regulatory decision-making process. Stakeholders should have regular opportunities to review and provide input on any utility plans and proposals, including assumptions, tools, and methodologies. The utility should be required to explicitly show how stakeholder input informed its analysis and proposals. The Commission should use best practices for community outreach and proactively engage with communities around Rhode Island to raise awareness and enable greater stakeholder input into the process. Third-party facilitation of stakeholder engagement processes would be useful. For further insights into increasing stakeholder participation at the PUC, we recommend looking to the work of the state's Executive Climate Change Coordinating Council's outreach in support of the 2022 Climate Plan update as well as preliminary research conducted by Synapse Energy Economics, Climable.org, and Brown University's Climate Development Lab in its report, *A Better New England Regulatory Framework for Mitigating Climate Change.*[14]

Independent Analysis

All utility modeling efforts must be transparent and informed by robust stakeholder review. In

[14] *A Better New England Regulatory Framework for Mitigating Climate Change.* https://www.synapse-energy.com/sites/default/files/Better_New_England_Regulatory_Framework_Mitigating_Climate_Change_21-102.pdf

addition, modeling done by the utility can not be the only modeling considered. It is vital that the Commission also conduct, seek, and/or consider independent analyses to enable stakeholders to challenge assumptions and offer alternative proposals. Effective independent analysis will require transparent and timely access to all relevant information, data, assumptions, and modeling tools.

Coordinated Planning and Regulation for Gas and Electric
Stakeholders recognize the need and opportunity to treat Rhode Island's wholly owned gas and electric utilities as a single energy delivery company. Leveraging the electric grid to diversify the delivery of energy for today's fossil fuel powered end uses is the most straightforward strategy to reach decarbonization goals while delivering significant other benefits that cannot be achieved by today's fossil fuels or theoretical decarbonized fuels.

We, the undersigned stakeholders and participants in the Beyond Gas RI advocacy group, appreciate the opportunity to provide comments on the Staff's Draft Scope of Work in this docket. Please contact Hank Webster, Acadia Center's Rhode Island Director, at Hwebster@acadiacenter.org or 401.276.0600 x 402 should any of the comments above require further clarification.

Sincerely,

Hank Webster, *Acadia Center*

Priscilla De La Cruz, *Audubon Society of RI*, and *Environment Council of RI*

Timmons Roberts, *Climate and Development Lab, Brown University (for identification)*

Darrèll Brown*, Conservation Law Foundation*

Larry Chretien, *Green Energy Consumers Alliance*

Sarah Krame, *Sierra Club*

Sue AnderBois, *The Nature Conservancy*

W. Bart Lloyd, *Newport, RI (resident)*