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October 14, 2022

Sarah Smegal, Hearing Officer
Mark D. Marini, Secretary
Massachusetts Department of Public Utilities
One South Station, 5th Floor
Boston, Massachusetts 02110

Subject: DPU 20-80 *Investigation by the Department of Public Utilities on its own Motion into the Role of Gas Local Distribution Companies as the Commonwealth Achieves its Target 2050 Climate Goals*
Joint Comments of Interested Persons

Dear Hearing Officer Smegal:

In response to the September 8, 2022 Hearing Officer Memorandum issued in the above-referenced docket, please find below joint comments from interested persons.
We thank the Department of Public Utilities ("DPU" or "Department") for the opportunity to participate in DPU Docket No. 20-80 ("DPU 20-80"); this docket has benefited from considerable participation from a range of inputs, including local gas distribution companies ("LDCs"), environmental advocates, labor and industry representatives, and others. Now, the DPU should take the lessons learned over the past nearly two years and bring them forward into the next phases of this work.

Massachusetts' climate law and policy landscape includes important recent legislation, including *An Act to Create a Next-Generation Roadmap for Massachusetts Climate Policy* ("Roadmap Law"), under which the Commonwealth must achieve net-zero greenhouse gas ("GHG") emissions, or an 85% reduction below 1990 emissions levels, by the year 2050.[1] The Roadmap Law requires the Department to evaluate not only safety, security, reliability of service, and affordability, but adds to the DPU's priorities consideration of equity and reductions in GHG emissions to meet statewide GHG emissions limits.[2]

In December 2020, Massachusetts' Executive Office of Energy and Environmental Affairs ("EEA"), in collaboration with Massachusetts Department of Environmental Protection ("MassDEP") and Massachusetts Department of Energy Resources ("DOER") released its 2050 Decarbonization Roadmap,[3] as well as its Interim Clean Energy and Climate Plan ("CECP") for 2030.[4] A final Clean Energy and Climate Plan for 2025 and 2030 was released on June 30, 2022

[1] 2021 Mass. Acts Chapter 8.
[2] *Id.*
[3] Mass. Exec. Office of Energy and Env't. Affairs, Massachusetts's 2050 Decarbonization Roadmap (2020), Available at https://www.mass.gov/doc/ma-2050-decarbonization-roadmap/download.
[4] Mass. Exec. Office of Energy and Env't. Affairs, Clean Energy and Climate Plan for 2030 (2020), Available at https://www.mass.gov/doc/interim-clean-energy-and-climate-plan-for-2030-december-30-2020/download.

and included sub-limits by sector for the first time as required by the Roadmap Law.[5] Most recently, Massachusetts enacted *An Act Driving Clean Energy and Offshore Wind*, which is focused on developing wind and solar energy and, among other changes, requires the Department to conduct an adjudicatory proceeding before approving any utility actions proposed in DPU 20-80.[6]

The DPU initiated its investigation into the future of the gas industry in Massachusetts in DPU 20-80 on October 29, 2020 by issuing a Vote and Order instructing LDCs to hire independent consultants to engage with stakeholders, develop potential policy pathways for decarbonization, and submit proposals for helping the Commonwealth achieve its 2050 climate goals.

The LDCs hired three consultants to perform the above-described tasks: Energy & Environmental Economics ("E3"), Environmental Resources Management ("ERM"), and ScottMadden (collectively "LDCs' consultants"). Following a lengthy stakeholder process, the LDCs filed their business plans along with reports from their consultants on March 18, 2022.

During this process, stakeholders pointed out critical flaws in the models utilized by E3 on many occasions. These include, but are not limited to, known flaws in the Massachusetts Greenhouse Gas Inventory, underestimating future competition for biomethane, and making the blanket assumption that RNG is greenhouse gas neutral. However, these concerns were not practically addressed by E3 or the LDCs.

Achievement of Massachusetts' mandate to achieve net-zero GHG emissions will require development and incorporation of electrification and energy efficiency technologies; however, it remains to be seen if there is in fact a continued role for methane, regardless of the source, in these systems. Whether it is derived from fossils or from other sources, methane is a potent GHG.[7] Even if non-fossil derived methane could be produced and transported without leaking, there is no indication that sufficient cost-effective supply capacity exists, especially as Massachusetts works to reduce its solid waste output.

Similar concerns surround the LDCs' proposed use of hydrogen to meet our energy needs. Independent evidence does not support widespread use of hydrogen for space and hot water heating; although it may serve a purpose for hard-to-decarbonize end uses.[8] But the broad consensus of independent reviews is that several issues prevent hydrogen from being a beneficial heating source, including, but not limited to, safety concerns around transporting hydrogen, the lack of emissions benefits when hydrogen is blended, degradation of pipes used to transport hydrogen (and the cost of replacing all our pipeline to accommodate embrittlement), and the significant amount of clean energy that would be needed to create enough so-called "green"

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[5] Mass. Exec. Office of Energy and Env't Affairs, Massachusetts Clean Energy and Climate Plan for 2025 and 2030 (Jun. 30, 2022); available at: https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download.

[6] 2022 Mass. Acts. Chapter 179.

[7] U.S. Env't Prot. Agency, Overview of Greenhouse Gases (May 16, 2022), (https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane).

[8] https://www.cell.com/joule/fulltext/S2542-4351%2822%2900416-0

hydrogen to meet our decarbonization goals.[9] Hydrogen should be directed only to applications in sectors and industries that are hard to decarbonize by electrification. In addition to health and safety concerns, hydrogen has not been shown to be cost-effective or efficient when compared to alternate sources, such as heat pumps.[10]

There is no realistic decarbonization strategy for the buildings sector relying on green hydrogen as the central strategy due to several limitations with green hydrogen. The emission reduction potential from blending hydrogen with methane is ultimately tiny and not worth the likely level of capital expenditure in the gas system necessary to accommodate it. Further, the amount of clean electricity that would be consumed by manufacturing enough green hydrogen to replace methane for heating buildings would siphon off so much of the output of clean sources of electricity such as wind power that decarbonization of the grid to deliver electricity directly to customers would be impossible in any practical or credible scenario for the cumulative capacity and rate of deployment of these green power generators. [11] Emissions accounting for hydrogen must consider the inputs required to produce hydrogen (including electricity and/or fossil fuels) and the outputs of the hydrogen production process (including GHG emissions), hydrogen leakage rates (it is an indirect greenhouse gas with a global warming potential ("GWP") of between 5-11 over 100 year period), as well as the required infrastructure for the production, processing, and storage of hydrogen. In fact, both the LDCs' "All Options" Pathway and the Commonwealth's own plans for least cost deployment of decarbonized technologies support the assertion that alternative fuels have no place in our clean energy future when it comes to heating.

Experts in decarbonization of energy resources, including Massachusetts' Clean Energy and Climate Plan and Decarbonization Roadmap, agree that widespread, aggressive electrification is the best path forward to cost-effective achievement of elimination of GHG emissions. This will include greening our electric grid; increasing investments in clean energy generating technologies such as thermal energy, solar, wind, and storage; and increased electric transmission. We will need to identify the best paths forward to ensure that customers are able to transition to electrified technologies without facing the burdens of high costs, especially for those who have been historically overburdened and underserved by the energy industry. Development of robust programs for new clean technologies such as air and ground source heat pumps and geothermal districts must be a priority, as evidence demonstrates the benefits of implementation.

Development of clean energy resources must be complemented by legislative changes. For example, Massachusetts' Gas System Enhancement Program ("GSEP") must be reformed to ensure that funds are expended in a prudent manner; at present, this program has served more as a vehicle for LDCs to repair and replace pipeline without consideration of whether better avenues are available for Massachusetts' energy needs.

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[9] 'Time to stop the fight' | 32 independent studies slam the widespread use of hydrogen for heating - Expanded study of studies concludes that H_2 heating would be far too expensive and inefficient to compete with heat pumps - "Is heating homes with hydrogen all but a pipe dream? An evidence review" https://www.sciencedirect.com/science/article/pii/S2542435122004160; "Re-examining Japan's Hydrogen Strategy Moving Beyond the "Hydrogen Society" Fantasy," https://www.renewable-ei.org/pdfdownload/activities/REI_JapanHydrogenStrategy_EN_202209.pdf

[10] https://www.sciencedirect.com/science/article/pii/S2542435122004160

[11] RMI, Low-Carbon Fuels Have a Limited Role to Play in New York's Buildings, May 25, 2022, https://rmi.org/low-carbon-fuels-have-a-limited-role-to-play-in-new-yorks-buildings/.

The LDCs have not shown that there is a role for biomethane and hydrogen in Massachusetts' energy future; yet they take this assumption as sufficient for the basis of several new filings at the Department. In addition to the next steps in determining the future of gas in Massachusetts that we propose below, it is imperative that the Department place a moratorium on new gas pipeline installations within its jurisdiction to avoid conflict between short-term decision making and long-term planning.

In the next phases of the review of the future of gas in the Commonwealth, any proposals from the LDCs must be subject to heightened scrutiny and evaluated to determine whether implementation would help the Commonwealth reach its 2050 climate goals. This means that LDCs' proposals be subject to independent third-party peer review and must include robust alternatives analyses as part of any study conducted. Further, interested entities with expertise in matters pertaining to decarbonization and Massachusetts' climate law must be brought in as parties in any such proceedings and afforded the opportunity to provide testimony, rebuttal testimony, and to cross-examine witnesses. Research which has been funded by sources that have a strong financial interest and motivation in perpetuating current gas industry practices and procedures cannot be taken at their face value; and equal weight must be given to expert testimony from non-gas industry consultants and witnesses.

The Department should also take steps to implement independent long-term distribution planning. Currently, energy planning is performed in silos, with LDCs, who have a vested interest in specific outcomes, doing the majority of work. By moving long-term planning to an independent entity, energy plans could be created in the best interest of ratepayers and our Commonwealth's decarbonization requirements.

The Department has taken the initial steps toward requiring the LDCs to align their plans and operations to help Massachusetts achieve its realization of a clean energy future. We look forward to the next phases of this matter.

Very truly yours,

Andee Krasner, *Program Manager, Climate and Health*, Greater Boston Physicians for Social Responsibility

Sarah Griffith, *Member*, Climate Reality Project Boston Metro Chapter

Martyn Roetter, *Member*, Gas Leaks Allies, National Grid Gas Customer, Independent Technology and Management Consultant

Nathan Phillips, *Professor*, Boston University; *Member*, Gas Leaks Allies; National Grid Gas customer

Cathy Kristofferson, *Co-founder*, Pipe Line Awareness Network for the Northeast (PLAN)

Alice Arena, *President*, Fore River Residents Against the Compressor Station (FRRACS)

Ania Camargo, *Coordinator*, Mothers Out Front Downtown Boston

Karen Kraut, *Member*, Mothers Out Front Brookline

Charles W. Lidz, *Vice Chair*, Ashland Sustainability Committee

Sarah Krame, *Associate Attorney*, Sierra Club

Kyle Murray, *Senior Advocate and Massachusetts Program Director*, Acadia Center

Anne Wright, *Coordinator*, Mothers Out Front Massachusetts Clean Heat, Clean Air Campaign

Marilyn Ray Smith, *Member*, Gas Transition Allies, Brookline GreenSpace Alliance, Emerald Necklace Conservancy; National Grid customer

Edward Woll, *Member*, Gas Transition Allies; Elders Climate Action Massachusetts Legislative Team; Mothers Out Front Legislative Team; Eversource customer

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