Conservation Law Foundation

For a thriving New England

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Via Electronic Mail

June 16, 2025

The Honorable Joseph J. Solomon, Jr.
Chair, House Committee on Corporations
House Lounge, State House
Providence, RI 02903

RE: CLF **Opposes** House Resolution No. 6418 – Alternative Fuels Study Commission

Dear Chair Solomon:

Thank you for the opportunity to provide testimony on House Resolution No. 6418, which would create a commission to study the use of alternative fuels. The Conservation Law Foundation ("CLF") is concerned about the prospect of the General Assembly spending significant time and resources evaluating the potential of fuels that are already well-understood and will only play a small role in our state's energy future. We are also concerned about the composition of the proposed commission, which heavily favors industry groups with financial interests in the commission's findings, and fails to include any advocates for the environment, environmental justice, or utility consumers. We therefore oppose this resolution.

CLF is a member-supported non-profit environmental advocacy organization working throughout New England to counter climate change, restore the health of our oceans, embolden new energy infrastructure, and safeguard health, quality of life, and economic prosperity for future generations. We are working to cut emissions from the energy and heating sectors, and push for affordable and equitable energy policies in Rhode Island and across New England.

I. "Renewable fuels" such as biofuels are not a feasible solution for wide scale decarbonization of the electricity or gas distribution systems.

While CLF recognizes a role for renewable fuels like so-called "renewable natural gas" ("RNG") in a decarbonized future, it is very clear that any such role must be small and targeted.[1] The potential role of these fuels is often overstated by industry groups that profit from the status quo and want to delay a transition to truly clean electricity and heat. The potential of these fuels has been studied thoroughly (including in Rhode Island-specific studies and reports) and found to be very limited. We are therefore concerned about the prospect of the General Assembly spending

[1] *See, generally*, Michael J. Walsh, *Limited and Careful Use: The Role of Bioenergy in New England's Clean Energy Future* (Oct. 2023), *available at* https://www.clf.org/wpcontent/uploads/2023/10/CLF_BioEnergyReport_WEB.pdf.

significant time and resources evaluating the potential of fuels that are already well-understood and will only play a small role in our state's energy future.

It is not feasible to achieve wide-scale decarbonization of the electricity or gas distribution systems through reliance on fuels like RNG or hydrogen. These fuels are expensive and limited in quantity and should be reserved for end-uses that cannot easily be electrified (often called "hard-to-decarbonize end uses") such as high-heat industrial processes, aviation, maritime, and chemical feedstocks. Diversion of limited fuel supplies away from these sectors for use in electricity generation or building heating would make achieving both state and national climate targets more difficult.

Aside from diverting these fuels away from their highest and best uses, blending RNG and hydrogen into the gas system is problematic for several reasons. The Massachusetts Department of Public Utilities, in its Order in Docket No. 20-80 (the state's "Future of Gas" investigation), explicitly disallowed recovery from ratepayers for RNG and hydrogen, emphasizing that "RNG and hydrogen blending are new, unproven, and uncertain technologies" for blending in the gas distribution system.[2]

a. RNG

RNG is a limited resource nationwide and regionally and is especially scarce in Rhode Island. The American Gas Foundation ("AGF"), a fossil fuel industry group, has found that even in an optimistic scenario, RNG could displace only 12% of fossil gas demand nationally.[3] The AGF found that Rhode Island ranks among the states with the lowest RNG resource potential in the country.[4] RNG is also significantly more expensive than fossil gas. Gas utilities in New York have estimated that RNG costs range between $11.29 to $34.56 per MMBtu.[5]

Further, depending on the feedstock, RNG may not have reliable emissions reduction benefits relative to fossil gas. Emissions must be carefully examined in determining whether different

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[2] Massachusetts Department of Public Utilities, D.P.U. 20-80-B, Order on Regulatory Principles and Framework 71 (Dec. 6, 2023).

[3] The American Gas Foundation found that in a "high resource potential scenario", 4,510 trillion BTUs of RNG would be available in 2040. American Gas Foundation, *Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment* 2 (2019), *available at* https://gasfoundation.org/2019/12/18/renewable-sources-of-natural-gas/. Assuming, as reported by the U.S. Energy Information Administration, that the US used 31.5 quadrillion BTUs of gas in 2020, that amounts to about 12% of current US gas demand. *See* U.S. Energy Information Administration, *Natural Gas Explained*, https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php (last visited June 16, 2025).

[4] American Gas Foundation, *Renewable Sources of Natural Gas, Supply and Emissions Reduction Assessment* 64-69 (Dec. 2019), *available at* https://www.gasfoundation.org/wp-content/uploads/2019/12/AGF-2019-RNG-Study-Full-Report-FINAL-12-18-19.pdf.

[5] New York PSC 23-G-0437, *NYSEG and RG&E Initial Long-Term Plan*, Appendix A at 35, *available at* https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={A006F28A-0000-C969-9A0A-D396ED09BB5F}.

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sources of RNG will have a net positive environmental impact.[6] While RNG is often considered zero-carbon, evaluation of the climate impacts of RNG must also consider the energy required to produce it, whether the source creates new methane where none or little would have existed otherwise, and how much methane leaks during production. Given these constraints, the Natural Resources Defense Council assessed the ecologically sound supply of RNG at about half the AGF's estimate, just 3%–7% of current U.S. gas demand.[7]

These availability numbers also fail to account for higher and better uses of the organic feedstocks suitable for RNG. Biogas generated from Rhode Island's landfills, food waste, and wastewater treatment plants could also be used to produce electricity in ways that can help Rhode Island achieve its 100% renewable electricity target far more cost-effectively than if that same resource was used for RNG. The Public Utilities Commission ("PUC") should ensure that such in-state resources are developed most prudently to meet Rhode Island's energy and climate goals.[8]

Sustainably available national feedstocks suitable for RNG are also highly suitable for electricity, advanced liquid, and aviation fuels, and even carbon dioxide sequestration. The import of RNG from elsewhere–as well as advanced fuels and carbon credits–raises important questions about greenhouse gas accounting that the Executive Climate Change Coordinating Council ("EC4") will need to consider for assessing whether these strategies are compliant with the Act on Climate. The state will need to develop an economy-wide strategy for dealing with renewable fuels and sustainably available bio-feedstocks.

Swapping out fossil methane for RNG does not address issues associated with upstream and downstream methane leaks, both of which can be a significant contributor to the global warming impact of gas use. Notably, in Boston, fugitive methane emissions comprise 2.5% of total gas consumption[9] in addition to upstream emissions associated with methane extraction, or presumably, in the case of RNG, biogas production.[10] Further, the Boston study demonstrated that approximately half of the fugitive methane emissions came from behind the meter (i.e., on the customer's side of the meter). Avoiding methane use, whether biogenic or fossil, reduces climate, health, and safety risks associated with the gas system.

b. Hydrogen

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[6] Merrian Borgerson, *A Pipe Dream or Climate Solution?* 6, NRDC (June 2020), *available at* https://www.nrdc.org/sites/default/files/pipe-dream-climate-solution-bio-synthetic-gas-ib.pdf.
[7] *Id.* at 5.
[8] Most RNG projects are currently developed because of the availability of federal Renewable Fuel Standard and California Low Carbon Fuel Standard credits that substantially subsidize such projects, covering up to 90% of the cost of producing RNG. The renewable attributes of these are ultimately allocated to the transportation sector.
[9] Maryann Sargent et al., *Majority of US urban natural gas emissions unaccounted for in inventories*, Proc. Nat'l Acad. Sci. U.S.A. (Nov. 2, 2021), 118 (44) e2105804118, *available at* https://doi.org/10.1073/pnas.2105804118.
[10] Emily Grubert, *At scale, renewable natural gas systems could be climate intensive: the influence of methane feedstock and leakage rates*, 2020 Environmental Research Letters 15 084041, https://iopscience.iop.org/article/10.1088/1748-9326/ab9335/pdf.

Similarly, blending green hydrogen (hydrogen produced using renewable energy) in gas distribution pipelines offers limited opportunities for decarbonization. This is due to several factors including the cost and scarcity of green hydrogen, the large amounts of renewable energy required to produce green hydrogen, safety concerns associated with blending hydrogen into the gas distribution system, the inability to utilize hydrogen in existing gas infrastructure and appliances and diminishing climate benefits when hydrogen is injected into a leaking distribution system.

Green hydrogen is an expensive resource, currently ranging between $3-$7/kg, or $25-$60 per MMBtu, for green hydrogen.[11] For comparison, natural gas prices averaged $2.53 per MMBtu in 2023.[12]

Hydrogen cannot be safely transported in high volumes through existing gas distribution system infrastructure. Studies suggest that pipeline safety concerns limit hydrogen blending to a maximum 20% blend by volume (6.67% by energy content).[13] The California Public Utilities Commission has concluded that a "systemwide blending injection scenario becomes concerning as hydrogen blending approaches 5% by volume."[14] Upgrading or replacing pipelines so that they could be safely used for hydrogen would be enormously expensive. "Building a hydrogen pipeline can cost up to 68% more per mile than a conventional fossil gas pipeline."[15]

Household appliances similarly cannot accommodate large volumes of hydrogen. The National Regulatory Research Institute recently analyzed hydrogen-burning appliances and found that blend percentages greater than 5% by volume (1.67% by energy content) can result in unsafe ignition conditions for home appliances such as water heaters and stoves.[16]

Hydrogen has a substantially lower energy density than methane, which means that far greater quantities must be combusted to generate the same amount of energy or heat. The lower energy density of hydrogen means that even if you could blend up to 20% by volume, that would still be

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[11] Leigh Collins, *Switch to green hydrogen will lead to 'significantly higher energy prices in 2050 than today': analyst*, Hydrogeninsight (Mar. 28, 2023) *available at* https://www.hydrogeninsight.com/production/switch-to-greenhydrogen-will-lead-to-significantly-higher-energy-prices-in-2050-than-today-analyst/2-1-1426500.
[12] Henry Hub Natural Gas Spot Price, U.S. Energy Information Administration (Jan. 31, 2024) https://www.eia.gov/dnav/ng/hist/rngwhhdm.htm.
[13] Kevin Topolski et al., *Hydrogen Blending into Natural Gas Pipeline Infrastructure: Review of the State of Technology*, Nat'l Renewable Energy Lab'y (Oct. 2022), https://www.nrel.gov/docs/fy23osti/81704.pdf
[14] California Public Utilities Commission, Rulemaking No. R.13-02-008, *Hydrogen Blending Impacts Study: Final Report* (July 18, 2022).
[15] Sara Gersen & Sasan Saadat, Earthjustice, *Reclaiming Hydrogen for a Renewable Future* 19 (Aug. 2021), https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice_2021.pdf (*citing* Julien Dumoulin-Smith et al., US Alternative Energy, Bank of America, at 4 (June 28, 2021)).
[16] *Green Hydrogen for Pipeline Injection in LDC Infrastructure*, National Regulatory Research Institute, https://drive.google.com/file/d/1zC37DW0_uJBpjK9MjXHeNH3AzZNmpxyi/view.

less than 7% by energy, so hydrogen will have at most a negligible impact on decarbonizing buildings as the remaining gas in the distribution system would be methane.

There are also climate concerns associated with blending hydrogen into the gas distribution system due to its higher leakage rates as compared to fossil gas.[17] Hydrogen leaks easily due to its small molecular size. Leakage rates for hydrogen are therefore expected to be 1.3-2.8 times greater than those for methane.[18] Hydrogen is an indirect greenhouse gas with a 100-year global warming potential 5.8 times greater than carbon dioxide.[19] Recent research suggests that on shorter time scales, the global warming potential for hydrogen is far higher: 19 to 38 for 20- year global warming potential and 34 to 66 for 10-year global warming potential.[20] The high leak rates of hydrogen and its function as a greenhouse gas mean that hydrogen has limited ability to contribute to meaningful GHG reductions in the gas distribution system.

Finally, green hydrogen production is a highly inefficient use of clean energy resources. For end uses that can be electrified directly, including buildings, it is far more efficient and cost effective to use electricity directly (e.g., to power electric heat pumps) than to use it to produce green hydrogen. Replacing fossil gas in the buildings sector with green hydrogen makes little sense where the clean electricity that would be used to produce green hydrogen via electrolysis can directly support the desired end use via electrification.

II. The composition of the commission heavily favors industry groups with financial interests in the commission's findings, and fails to include any advocates for the environment, environmental justice, or utility consumers.

CLF is also troubled by the composition of the proposed commission. As proposed in House Resolution No. 6418, the commission would include 14 members, including four members of the House, three executive branch employees, and seven representatives of various industry and corporate groups—including several producers and marketers of the fuels that the commission would be created to study. While the perspectives of such groups are useful to policymakers, they cannot be the only perspectives considered. None of these groups are focused on meeting the requirements of the Act on Climate, or any other public policy goal. They are all groups whose bottom line will be impacted directly by the findings of the commission.

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[17] Sara Gersen & Sasan Saadat, Earthjustice, Reclaiming Hydrogen for a Renewable Future, 19 (Aug. 2021), https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice_2021.pdf.
[18] Fotis Rigas & Paul Amyotte, Myths and Facts about Hydrogen Hazards, 31 Chem. Eng'r Transactions 913, 914 (2013), available at https://www.aidic.it/cet/13/31/153.pdf.
[19] Derwent, R., Simmonds, P., O'Doherty, S., Manning, A., Collins, W. and Stevenson, D. 2006. "Global Environmental Impacts of the Hydrogen Economy." Int. J. of Nuclear Hydrogen Production and Applications. 1(1): 57-67. Available at: http://agage.mit.edu/publications/global-environmental-impacts-hydrogen-economy.
[20] Ilissa B. Ocko & Steven P. Hamburg, Climate consequences of hydrogen leakage, Atmospheric Chemistry & Physics (preprint, discussion started Feb. 18, 2022), available at https://acp.copernicus.org/preprints/acp-2022-91/acp-2022-91.pdf.

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The proposed commission includes zero representatives from environmental organizations, zero representatives from environmental justice organizations or communities, and zero representatives of energy consumers whose bills would be affected by policies proposed as a result of the commission's work. If the proposed commission goes forward, it must be with a more balanced membership that includes voices beyond industry groups, including those of advocates for the environment, environmental justice, and utility consumers.

For these reasons CLF opposes H-6418. Thank you for your time and consideration of these comments.

Sincerely,

James Crowley
Senior Attorney, CLF Rhode Island

cc: Members of the House Committee on Corporations
Darrèll Brown, Vice President for Rhode Island, CLF