clf
Conservation
Law Foundation

For a thriving New England

CLF Maine 53 Exchange Street, Suite 200
Portland, ME 04101
P: 207.210.6439
F: 207.221.1240
www.clf.org

Testimony before the Committee on Energy, Utilities and Technology in opposition to Rep. Foster' Proposed Sponsor Amendment to LD 698: An Act Directing the Public Utilities Commission to Study the State Natural Gas Supply Pursuant to the Maine Energy Cost Reduction Act

March 8, 2023

Senator Lawrence, Representative Zeigler, and members of the Committee on Energy, Utilities and Technology, my name is Phelps Turner, and I am a senior attorney with Conservation Law Foundation (CLF). I appreciate this opportunity to testify in opposition to Rep. Foster's Proposed Sponsor Amendment to LD 698: An Act Directing the Public Utilities Commission to Study the State Natural Gas Supply Pursuant to the Maine Energy Cost Reduction Act.

CLF, founded in 1966, is a public interest advocacy group that works to solve the environmental challenges threatening the people, natural resources and communities in Maine and across New England. In Maine for almost four decades, CLF is a member-supported organization that works to ensure that laws and policies are developed, implemented and enforced that protect and restore our natural resources; are good for Maine's economy and environment; and equitably address the climate crisis.

Our reliance upon gas in the electric sector must be drastically reduced in favor of zero-carbon energy sources like wind and solar, coupled with complementary technologies and programs like energy efficiency, storage, and demand response programs. The transition away from gas in the electric sector will not happen overnight. New transmission lines are urgently needed to support increased renewable deployment, especially for offshore wind.[1] But planning for this transition is essential to ensure that gas-fired plants are retired as quickly as possible while still meeting electricity demand and maintaining grid reliability.

This bill amendment's intent for Maine and the region to continue to enter into long-term gas contracts and build new gas infrastructure is fundamentally at odds with climate action because it would lock in decades of additional gas use—and the associated greenhouse gas (GHG) emissions that contribute to climate change. There is a substantial risk that such infrastructure would be used for the duration of its useful life and thereby prevent Maine from meeting its climate goals. Or, if this infrastructure must cease operating before the end of its useful life, Maine will be left with stranded assets[2], the cost of which will be passed on to ratepayers, which raises serious equity and economic efficiency concerns.

[1] The New England States' Regional Transmission Initiative aims to address this problem. New England States Regional Transmission Initiative, https://newenglandenergyvision.com/new-england-states-transmission-initiative/.
[2] *See* Heather Payne, *The Natural Gas Paradox: Shutting Down a System Designed to Operate Forever*, 80 Md. L. Rev. 693 (2021), https://digitalcommons.law.umaryland.edu/mlr/vol80/iss3/4.

clf

conservation law foundation

The bill amendment's proposal to sink Maine and the region into an even heavier reliance on methane gas should also be properly viewed as a threat to reliability, rather than a benefit. New England's overreliance on methane/natural gas has been identified as a problem for the winter reliability of the electricity grid and a threat to energy security in New England due to competing demand for power generation and heating, compounded by inadequate storage and pipeline capacity.[3]

Investing in expanded pipeline infrastructure and increased regional imports of liquified natural gas (LNG) does nothing to solve the price volatility of natural gas and increases the risk of customers being required to pay for the stranded costs of obsolete gas infrastructure as renewables and battery storage solutions continue to increase their share of the regional power generation portfolio.[4] As noted by the Federal Energy Regulatory Commission (FERC), even with anticipated natural gas production increases outpacing domestic winter demand, "the continued growth in net exports… will place additional pressure on natural gas prices this winter."[5] Moreover, in a global energy market expanding gas capacity does not ensure gas availability when needed since LNG deliveries will go to international markets with the highest price.[6] Finally, pipeline capacity constraints in New England are limited to the winter season and only threaten reliability during periods of extreme cold; for the majority of the year, the existing pipelines have excess capacity.[7] Addressing this limited seasonal constraint through the buildout of gas capacity means inefficiently over-building the system beyond what is needed the majority of the time.

Continued investment in renewable energy generation, expanding battery storage capacity, improving demand response programs, and transitioning building heating loads to heat pumps, on the other hand, solves multiple problems simultaneously. While this strategy is essential for meeting Maine' climate obligations, it also addresses winter reliability concerns by reducing the current demands on the existing natural gas system for both power generation and heating. Additionally, while global demand will continue to drive the price of natural gas, reducing our own reliance on gas will help to insulate Maine consumers from price increases and

[3] FERC, Winter Energy Market and Reliability Assessment 2022-2022 (Staff Report) (Oct. 20, 2022, updated Oct. 25, 2022), https://www.ferc.gov/media/report-2022-2023-winter-assessment#.
[4] Rachel Morison, "Gas Is The New Coal With Risk of $100 Billion in Stranded Assets," Bloomberg News (Apr. 17, 2021), https://www.bloomberg.com/news/articles/2021-04-17/gas-is-the-new-coal-with-risk-of-100-billion-in-stranded-assets?srnd=premium-asia#xj4y7vzkg.
[5] FERC, Winter Energy Market and Reliability Assessment 2022-2022 (Staff Report) at 1 (Oct. 20, 2022, updated Oct. 25, 2022), https://www.ferc.gov/media/report-2022-2023-winter-assessment#.
[6] *See, e.g.*, Amanda Gokee, "Energy costs could keep climbing amid ongoing market volatility," New Hampshire Bulletin (Dec. 7, 2022) ("A tanker full of liquefied natural gas heads to New England's largest electricity generator. Then, it abruptly changes course, abandoning its North American contract for a higher bidder in Europe."), https://newhampshirebulletin.com/2022/12/07/energy-costs-could-keep-climbing-amid-ongoing-market-volatility/; Marianna Parraga, "More U.S. LNG heads to Europe despite output constraints," Reuters (Oct. 3, 2022), https://www.reuters.com/business/energy/more-us-lng-heads-europe-despite-output-constraints-2022-10-03/.
[7] FERC, Winter Energy Market and Reliability Assessment 2022-2022 (Staff Report) at 37 (Oct. 20, 2022, updated Oct. 25, 2022), https://www.ferc.gov/media/report-2022-2023-winter-assessment#.

clf

conservation law foundation

volatility driven by geopolitical events and other factors outside our control, such as the war in Ukraine.

Accordingly, rather than stranding investments in new gas infrastructure, that investment should be devoted to building out the regional transmission grid in a manner that supports the deployment of renewable generation at the necessary scale and in a manner that actually enhances grid reliability and resilience, while accelerating electrification potential.

The bill amendment would also unadvisedly authorize significant investments in "renewable" natural gas (RNG) though there is no viable pathway to decarbonize our gas supply using RNG due to the limited availability of RNG forecasted by reliable sources. The available supply of RNG cannot meet the needs of the end uses currently served by gas at anywhere near today's volumes.[8] The optimistic scenario from the American Gas Foundation (AGF) and ICF International finds that potential RNG supply would meet only 12% of current U.S. gas demand by 2040.[9] This limited supply would come with high costs of $7–$20 per MMBtu for RNG, compared with $2–$4 for fossil gas in 2020 and $5–$6 during the late 2021 gas price spike.[10]

There is a limited supply of RNG available for use in Maine, and availability is unlikely to increase due to limited supply and due to demand from competing hard-to-electrify sectors in which RNG will be critical. New England has minimal biogas potential. Five of the six New England states, including Maine, rank among the twelve states with the least biogas potential. [11] Nationally, it is estimated that biogas potential could replace just 5% of fossil gas consumption in the electric sector.[12]

The emissions reduction benefits of RNG relative to fossil gas vary greatly depending on the feedstock. Emissions must be carefully examined in determining whether different sources of RNG will have a net positive environmental impact. Evaluation of the climate impacts of RNG must 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, transmission and distribution.[13] Due to the very limited quantity of RNG that will be available in Maine, transmission will be particularly challenging, as RNG would need to be transmitted from

[8]Abigail Lalakea Alter, Sherri Billimoria, and Mike Henchen, RMI, Overextended: It's Time to Rethink Subsidized Gas Line Extensions, Rocky Mountain Institute, December 2021, p. 11.
[9] *Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment*, American Gas Foundation and ICF International, December 2019, https://www.gasfoundation.org/wp-content/ uploads/2019/12/AGF-2019-RNG-Study-Full-Report-FINAL-12-18-19.pdf.
[10] *Id.*
[11] National Renewable Energy Laboratory (NREL), *Biogas Potential in the United States*, 3 (Oct. 2013), https://www.nrel.gov/docs/fy14osti/60178.pdf.
[12] National Renewable Energy Laboratory (NREL), *Biogas Potential in the United States*, 3 (Oct. 2013), https://www.nrel.gov/docs/fy14osti/60178.pdf.
[13] Merrian Borgerson, "A Pipe Dream or Climate Solution?" NRDC, p. 6, June 2020, https://www.nrdc.org/sites/default/files/pipe-dream-climate-solution-bio-synthetic-gas-ib.pdf.

the Midwest. 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.[14] The limited supply of climate-beneficial biogas must be deployed to address hard to decarbonize sectors of the economy, ideally where it can be burned onsite for heat or electricity to avoid leakage from transportation through the pipeline system.

RNG mostly consists of methane and is just as harmful from a climate perspective as fossil gas when it leaks into the atmosphere. Injecting RNG into a leaking gas distribution system would not provide significant emissions reductions benefits relative to fossil gas, because the gas leaking from the system would still be methane—a highly potent greenhouse gas with a 20-year global warming potential 84 times that of carbon dioxide.[15] The region's aging gas distribution system is significantly leak prone and, generally speaking, leakage rates are currently vastly underestimated in existing inventories. A recent study concluded that because methane leaks along the entire RNG supply chain are so significant, simply flaring landfill gas at its point of origin results in lower GHG emissions than transporting it for other uses through pipes.[16] For hard-to-decarbonize end-uses where RNG would be an appropriate solution, leak prevention is critical to ensure that any increased use of RNG results in emissions reductions.

RNG is also expensive to produce or procure, and its consumer price is approximately three times the price of fossil gas.[17] The infrastructure costs associated with RNG are substantial and huge investments would be needed to ramp up supply, which is limited. All three of New England's current RNG projects had high startup costs,[18] and new facilities would likely face steep cost hurdles as well. The production and procurement costs for RNG vary widely. It costs between $3.00 and $30.00 per MMBtu to produce RNG.[19] At its cheapest, RNG production can cost less than fossil gas, which ranges from $2.52 to $4.37 per MMBtu.[20] However, RNG production estimates often exclude the cost of removing siloxanes from RNG produced with

[14] *Id.* at 5.
[15] Environmental Defense Fund, Methane: The other important greenhouse gas, https://www.edf.org/climate/methane-other-important-greenhouse-gas.
[16] 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.
[17] Programs Manual – Vermont Gas Systems, 10 (Aug. 20, 2019), https://www.vermontgas.com/wp-content/uploads/2018/09/VGS-RNG-Manual-Final-V-1.01.pdf.
[18] University of New Hampshire, *Cogeneration and EcoLine*, https://www.unh.edu/sustainability/operations/energy/ecoline (landfill RNG project cost $49 million); Elizabeth Gribkoff, VT Digger, *Partners Hail Groundbreaking of Salisbury Biodigester* (Aug. 20, 2019) https://vtdigger.org/2019/08/20/partners-hail-groundbreaking-of-salisbury-biodigester/ (Goodrich Farm project cost $20 million); Summit Natural Gas Maine, *Summit Announces Renewable Natural Gas Initiative*, (May 23, 2019), https://summitnaturalgasmaine.com/SummitAnnouncesRenewableNaturalGasInitiative (Summit Maine project projected to cost $20 million).
[19] Rebecca Gasper & Tim Searchinger, World Resources Institute, *The Production and Use of Waste-Derived Renewable Natural Gas as a Climate Strategy in the United States*, 24 (Apr. 2018), https://www.wri.org/publication/renewable-natural-gas.
[20] *Id.* at 23.

consumer waste, so lower costs may not be feasible.[21] Importing RNG is also costly: imported RNG costs between $12 and $25 per Mcf, while imported fossil gas costs $3 per Mcf.[22] If Maine increases its use of RNG, it would be costly whether the gas is produced in-state or imported from elsewhere.

Thank you for the opportunity to testify in opposition to Rep. Foster's Proposed Sponsor Amendment to LD 698.

[21] Gregory Von Wald *et al.*, *Biomethane in California Common Carrier Pipelines: Assessing Heating Value and Maximum Siloxane Specifications*, 70 (June 2018), https://ccst.us/wp-content/uploads/2018biomethane.pdf.
[22] Vermont Public Service Board, Docket No. 8667, Petition of Vermont Gas Systems, Prefiled Testimony of Thomas Murray on Behalf of Vermont Gas Systems, 8-9:21-1 (Oct. 23, 2015).