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January 23, 2024

Re: Opposition to LD 2077: An Act Regarding Customer Costs and the Environmental and Health Effects of Natural Gas

Dear Members of the Committee on Energy, Utilities and Technology:

In the fight against climate change and the goal to reach net zero greenhouse gas emissions by 2050, all possible methods and technologies must be implemented[1]. Unfortunately, LD 2077 would unnecessarily limit the ability of low-emission substitutes to natural gas to play a role in the energy transition. Electrochaea respectfully opposes LD 2077 as it would restrict an important means to decrease greenhouse gas emissions (GHG) from the State of Maine.

In particular, Electrochaea opposes the prohibition of service expansion by gas utilities and the prohibition of promotional allowances to customers or potential customers of the gas utilities. Gas utilities do not only supply natural gas to customers but also deliver renewable natural gas and hydrogen. Both of these types of gases are critical to the ability to reduce greenhouse gas (GHG) emissions. Similar to how the electrical grid is increasingly supplying renewable electricity to customers, the gas grid is also becoming increasingly decarbonized.

Electrochaea is participating in a project funded by the US Department of Energy in Clinton, Maine, where Summit Utilities, Inc. has been awarded a grant to complete the project entitled *Renewable Power-to-Gas.* This project will demonstrate that the biomethanation process can produce low-carbon intensity renewable natural gas at a dairy anaerobic digester in Clinton, Maine.

The biomethanation process at the core of this grant combines CO_2 from a dairy anaerobic digester and renewable hydrogen from electrolysis. The two feedstocks are delivered to a bioreactor containing a microorganism called archaea which takes up the CO_2 and hydrogen

[1] The IEA (International Energy Agency) report, "Net Zero by 2050: A Roadmap for the Global Energy Sector"[1] describes a pathway to a net zero economy in which the energy sector is based on renewable energy that includes wind, solar as well as forms bioenergy including RNG. https://www.iea.org/reports/net-zero-by-2050

and combines them to produce methane and water. The product, renewable synthetic methane, is a decarbonized substitute for all uses of fossil natural gas and can be delivered and used in the gas grid infrastructure. The technology displaces fossil natural gas, not by relying on additional feedstock (which is difficult to source), but by utilizing the otherwise-released waste CO_2 from biogas. Electrochaea is a sub-recipient of the DOE award and is providing technical assistance as well as the archaea biocatalyst.

1. **Renewable natural gas, which is distributed in the natural gas grid, is playing an important role in decreasing GHG emissions worldwide.**

Beyond synthetic methane, natural gas utilities have other tools that can promote lasting decarbonization. For example, renewable natural gas (RNG) is a form of bioenergy derived from biogas that has been captured from existing organic waste streams—including agricultural wastes, municipal wastewater, and municipal solid waste in landfills—and cleaned and conditioned to achieve quality standards required for delivery in the natural gas grid. RNG is a high-BTU fuel that can be used in the same infrastructure and by any application that uses geologic natural gas in the home, industry, and for transportation. RNG is also being used as a feedstock to produce other fuels, such as hydrogen and sustainable aviation fuel.[2] The benefits of RNG include energy diversification, economic, local air quality, and greenhouse gas emission reduction[3]. If LD 2077 is passed, these benefits will be minimized and will work counterproductively to the fight against climate change.

The production of RNG is continually growing. The IEA Renewables Report of 2023, reports that "RNG biomethane production is increasing in the US and worldwide. The United States has further accelerated its production growth for biomethane in the last years, prompted by new federal and state-level policy support. The new RFS Set Rule from the EPA aims to double biomethane supplies in the next three years. Given the obligation volumes proposed, the pipeline of projects under development and California's targets for injected biomethane, biogas, and RNG supplies combined are expected to expand 2.1-fold in the next five years."[4] However, policies such as LD 2077 send an investment signal that these innovative technologies are not useful or needed.

2. **Gas utilities are uniquely positioned to contribute to the decarbonization of the US energy system.**

The McKinsey & Company Report, "*Decarbonizing US gas utilities: The potential role of a clean-fuels system in the energy transition*"[5], describes how gas utilities are uniquely positioned to

[2] Coalition for Renewable Natural Gas
[3] https://www.epa.gov/lmop/renewable-natural-gas#benefits
[4] https://static1.squarespace.com/static/53a09c47e4b050b5ad5bf4f5/t/65a0575e6fd27e145d495322/1705006944797/Renewables_2023.pdf
[5] https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/decarbonizing-us-gas-utilities-the-potential-role-of-a-clean-fuels-system-in-the-energy-transition

make a significant contribution to the energy transition. Gas utilities operate the gas infrastructure, which is an existing infrastructure that can deliver clean fuels to customers. The fuel will consist of both RNG from biological waste and hydrogen from renewable sources. As new sources of RNG and biomethane are developed, new gas lines will be needed to bring the gas from the biogas production facility to the customer. Connection with the existing infrastructure is the most efficient means of energy distribution. If LD 2077 is passed, facilities that are developing biogas production may not be able to connect to the gas infrastructure and will not be able to deliver renewable gas to customers.

In addition, gas utilities can support the ability of the electric utilities to deliver an affordable and resilient net-zero electric system. Clean fuels like hydrogen and RNG can be used in current electric generators to produce renewable electricity.

3. **Electrification is not suitable for all industries and customers.**

Up to 30% of energy-related CO_2 emissions may be hard to abate solely with electricity.[6] Renewable gases will be critical for the decarbonization of hard-to-abate industries in which electrification is not practical. Expansion of the gas system may be required to reach critical industries or to collect renewable gases produced at RNG or synthetic fuel facilities.

While LD 2077 has the worthwhile goal of reducing statewide emissions, it falls short in acknowledging the tools available for decarbonization through the gas grid. Electrochaea respectfully opposes LD 2077 as it will only serve to limit an important means to fight climate change.

Sincerely,

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[6] https://www.mckinsey.com/capabilities/sustainability/our-insights/climate-math-what-a-1-point-5-degree-pathway-would-take