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Testimony before the Committee on Energy, Utilities and Technology in support of L.D. 1619, *Resolve, to Establish a Commission to Study Pathways for Creating a Thermal Energy Networks Program in Maine*

April 24, 2025

Senator Lawrence, Representative Sachs, and members of the Committee on Energy, Utilities and Technology, my name is Sean Mahoney, and I am the Vice President and senior counsel of the Conservation Law Foundation (CLF). I appreciate this opportunity to testify in support of L.D. 1619, *Resolve, to Establish a Commission to Study Pathways for Creating a Thermal Energy Networks Program in Maine*, and the proposed sponsor amendment.

CLF, founded in 1966, is a public interest advocacy group that works to solve the environmental and energy 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.

CLF supports the development of thermal energy networks in Maine, and therefore we support L.D. 1619 as amended by the sponsor amendment, because it is a logical and low-risk first step. Thermal energy networks provide highly efficient heating and cooling to clusters of buildings through loop systems that move and transfer thermal energy, presenting win-win opportunities for Maine: energy savings, paired with good jobs, paired with building comfort, clean air, and grid benefits, all without fossil fuel combustion and associated climate-damaging emissions.

The high efficiency of thermal energy networks leads to lower operating costs, decreasing the cost of heating and cooling homes and businesses. A 2021 report showed that heating an average-size home in Massachusetts using thermal energy networks cost between $420 and $620 per year, where heating that same house with a gas furnace cost $1,040 to $1,120 per year.[1] Further, instead of amassing materials and resources for one-off energy systems, thermal energy network developers can bundle the costs of materials, installation, and maintenance to make the entire system cheaper.[2]

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[1] J. Castigliego et al., Applied Economics Clinic for HEET, *Inflection Point: When Heating with Gas Costs More* (updated Mar. 2021), https://aeclinic.org/publicationpages/2021/01/13/inflection-point-when-heating-with-gas-costs-more; *see also* Brian Martucci, Utility Dive, *Thermal Energy Networks Can Decarbonize Neighborhoods. Meet the U.S. Cities Giving Them a Shot* (Nov. 20, 2024), https://www.utilitydive.com/news/thermal-energy-networks-us-cities-neighborhood-decarbonization/733225/.

[2] ILR Climate Jobs Institute, *Understanding Thermal Energy Networks: A Building Decarbonization Approach to Achieving Scale, Equity, and High-quality Union Jobs* (2024) at 17, https://www.ilr.cornell.edu/sites/default/files-d8/2024-12/understanding-thermal-energy-networks.pdf.

Conservation
Law Foundation

Networked geothermal also saves system costs due to its efficiency, which reduces demand on the electricity grid.[3] This allows thermal energy networks to flatten the electricity demand curve without relying on fossil-fuel energy. Thermal energy networks also ease the pressure to build out transmission lines, which could result in billions of dollars in savings.[4] An analysis by the Oak Ridge National Laboratory and the National Renewable Energy Laboratory indicates thermal energy networks can help avoid the buildout of 24,500 miles of new long distance transmission lines across the country.[5]

Additionally, these systems offer a promising workforce opportunity for natural gas industry workers, who can build on their existing skills to deploy geothermal projects. The development and use of thermal energy networks has the potential to add new jobs and repurpose current jobs in the energy sector. To start, water, sewer, gas pipeline and networked geothermal systems have a lot in common in terms of construction, equipment, and maintenance.[6] Workers with experience and expertise in gas pipelines, as well as oil and propane systems, have a similar set of skills and can transition to help construct and maintain thermal energy networks.[7] While the installation of thermal energy networks is not exactly the same as the installation of gas pipelines, pilot programs such as the utility Eversource's project in Framingham, Massachusetts have demonstrated the transferability of skills.[8]

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[3] June Kim, MIT Technology Review, *Underground thermal energy networks are becoming crucial to the US's energy future* (Oct. 4, 2023), https://www.technologyreview.com/2023/10/04/1080795/us-thermal-energy-networks/.

[4] Jess Silber-Byrne, The Building Decarbonization Coalition, *Affordable Heat, Efficient Grid: Using Thermal Energy to Save Time, Money, and Energy*, https://buildingdecarb.org/why-efficiency-matters. Silber-Byrne estimates that thermal energy networks and air-source heat pumps together could save $557 *billion* in infrastructure costs.

[5] ILR Climate Jobs Institute, *Understanding Thermal Energy Networks: A Building Decarbonization Approach to Achieving Scale, Equity and High-quality Jobs* (2024) at 16, https://www.ilr.cornell.edu/sites/default/files-d8/2024-12/understanding-thermal-energy-networks.pdf.

[6] Miriam Wasser, WBUR, *The country's first gas utility-run networked geothermal heating and cooling system breaks ground in Mass.* (June 13, 2023), https://www.wbur.org/news/2023/06/13/networked-geothermal-eversource-heat-pump-gas-utility.

[7] June Kim, *Underground Thermal Energy Networks Are Becoming Crucial to the U.S.'s Energy Future*, MIT Technology Review (Oct. 4, 2023), https://www.technologyreview.com/2023/10/04/1080795/us-thermal-energy-networks.

[8] "'This [thermal energy network] project for us is really enabling our group of dedicated employees to see a way that we can provide different services in a different way and also provide clean solutions to the building sector,' said Bill Akley, President of Gas Distribution at Eversource. He added that for the workforce, there are many similarities between building and maintaining a gas pipeline system and a networked geothermal system." Miriam Wasser, WBUR, *The country's first gas utility-run networked geothermal heating and cooling system breaks ground in Mass.* (June 13, 2023), https://www.wbur.org/news/2023/06/13/networked-geothermal-eversource-heat-pump-gas-utility.

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It's no wonder states and utilities around the country—including in neighboring northeastern states[9] and other cold-weather climates[10]—are pursuing pilots and other mechanisms for deploying these independent energy systems.

Given the exciting potential of thermal energy networks, some states are going further than the study proposed by L.D. 1619 by legislatively removing barriers to gas utilities developing thermal energy networks and directing them to propose pilots on their systems. However, we recognize sensitivities in Maine to costs, regulatory treatment, and feasibility, among other outstanding questions. L.D. 1619 proposes a sensible compromise: study, observe, and learn from the projects currently underway, and timely submit a report to the legislature, including suggested legislation[11], for advancing these systems in Maine as appropriate.

Thank you for your attention. CLF appreciates the opportunity to testify in support of L.D. 1619 to help advance thermal energy networks in Maine.

[9] *See, e.g.,* Eversource, *Geothermal Pilot Project in Framingham*, https://www.eversource.com/content/residential/about/transmission-distribution/projects/massachusetts-projects/geothermal-pilot-project; *see also* Upgrade NY, Utility Thermal Energy Networks in action across New York, https://www.upgradeny.org/about-thermal-energy-networks.
[10] *See, e.g., C*PR News, *Colorado Mesa University has proven geothermal energy can largely replace fossil fuels in its buildings. Now the world is taking notice* (Apr. 3, 2025), https://www.cpr.org/2025/04/23/colorado-mesa-university-geothermal-energy-use/.
[11] *See, e.g.,* Building Decarbonization Coalition, *Thermal Energy Networks (TENs) State Legislation*, https://buildingdecarb.org/resource-library/tens-state-leg.