



Testimony in support of LD 1619: Resolve, to Establish a Working Group to Study Pathways for Creating a Thermal Energy Networks Program in Maine

Before the Joint Standing Committee on Energy, Utilities and Technology

Good afternoon, Senator Lawrence, Representative Sachs, and members of the Energy, Utilities, and Technology Committee.

My name is Andrew Iliff, I'm the Policy Director at HEET. HEET is a Massachusetts nonprofit that, in 2017, proposed and then popularized the idea of gas utilities moving from gas infrastructure to networked geothermal heat pumps (also known as Thermal Energy Networks, TENS, or geothermal networks). We are independent and do not accept funds from any industry we impact, including the gas and geothermal industries. We are committed to driving forward a data-based, practical, and people-centered approach to our future energy system, one that addresses the priorities of the state or community - which often include safety, reliability, affordability, security, emissions, resilience, and more.

I'm here to offer HEET's strong support for LD 1619, which would establish a Commission to study how Maine can implement Thermal Energy Networks, or TENS—a highly efficient and equitable form of neighborhood-scale clean heating and cooling.

TENS provide highly efficient heating and cooling because they allow heat to be moved from where it is rejected to where it is needed, minimizing the need to generate thermal energy. TENS can also use the ground as a thermal battery, allowing heat to be stored underground during the summer and drawn back up to heat buildings in the winter.

The standard way to measure efficiency of heating and cooling is called the Coefficient of Performance, or COP. Resistance heat has a COP of 1. Maine is a national leader in the deployment of Air Source Heat Pumps, which typically have a COP between 2 and 4, meaning that each unit of energy consumed yields between 2 and 4 units of thermal energy. During the very coldest days, however, Air Source Heat Pumps struggle to pull heat from very cold air, significantly reducing efficiency, and requiring more electricity to keep people warm.

As Maine looks to transition from expensive fuels like oil to Air Source Heat Pumps and other electric sources of heat, electric demand will grow rapidly, particularly in winter. Models show New England shifting to a winter peak by 2036, with one model showing Maine with a winter peak three times its current summer peak by 2050.

This winter peak will be very expensive for ratepayers, requiring upgraded transmission and distribution infrastructure as well as new generation, much of which will have to sit idle for years at a time in order to cover the coldest days.

This is where TENS can support the deployment of Air Source Heat Pumps and help to control the rates paid by Mainers by helping to reduce peak demand at the coldest times.

Colorado Mesa University's thermal network has been running for more than a decade, and uses a range of thermal resources on the campus, leading to an annual COP of 5.7, and a winter COP of 8.9.

The extremely high efficiency of TENS can reduce winter peak demand, allowing Mainers to install heat pumps without paying increased rates for decades to pay for a massively upgraded electricity grid to meet the demands of the new winter peak.

HEET urges this committee to to vote Ought to Pass on LD 1619 with Rep. Runte's proposed amendment.

Thank you for your time, and please be in touch if there are any questions I may answer for the Committee.

Respectfully,
Andrew Iliff
Policy Director, HEET