



## Real Solutions: Thermal Energy Networks

### What are thermal energy networks?

Thermal energy networks are utility-scale infrastructure projects that connect multiple buildings into a shared system that can provide both heating and cooling.

These networks of water-filled pipes use shallow geothermal wells, or boreholes, to bring the constant temperature of the earth under our feet (about 55 degrees F) to ground-source heat pumps in our homes. Even more efficient than air-source heat pumps, these appliances convert that temperature into heating or cooling as needed.

Thermal energy networks can capture excess heating or cooling from grocery stores, office buildings, ice rinks, or even wastewater; share that temperature with other buildings; or store it underground. Energy is not wasted, but exchanged and balanced between buildings.

Underground loops can serve an entire street, development, or town center. They are a safe, proven technology that has been successfully implemented in many colder climates.

### What are the advantages of thermal energy networks?

- ❖ They yield **significant emissions reductions and lower customer costs**.
- ❖ Ground-source heat pumps used in these systems require a fraction of the electricity that air-source heat pumps use, so they are **more affordable than electric heating and cooling** and much cleaner and less expensive than oil, propane, or gas heat.
- ❖ Thermal energy networks **reduce demands on the electric grid, lowering peaks** and helping to keep electricity costs down.
- ❖ **Building thermal energy networks provides comparable jobs for fossil fuel workers**, especially in the gas sector.

### What do we want?

- **Bring thermal energy networks to more communities** by incentivizing utilities, co-ops, nonprofits, and businesses to own and operate these systems.
- **Ensure that low and moderate-income Vermonters can access** this clean, renewable, efficient energy.

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