



Office of Energy Transformation: Thermal Energy

Thursday, October 9th, 2025

About Vicinity Energy

Vicinity owns, operates, and maintains the largest portfolio of district energy systems across the U.S.

- **19 district energy systems** poised for decarbonization nationwide
- **250 million square feet** of buildings served
- **400+ MW of CHP** owned and operated
- **588,000 tons of carbon** avoided annually



The Boston and Cambridge district energy system

District energy **saves over 97,113 tons of carbon emissions annually** for Boston and Cambridge

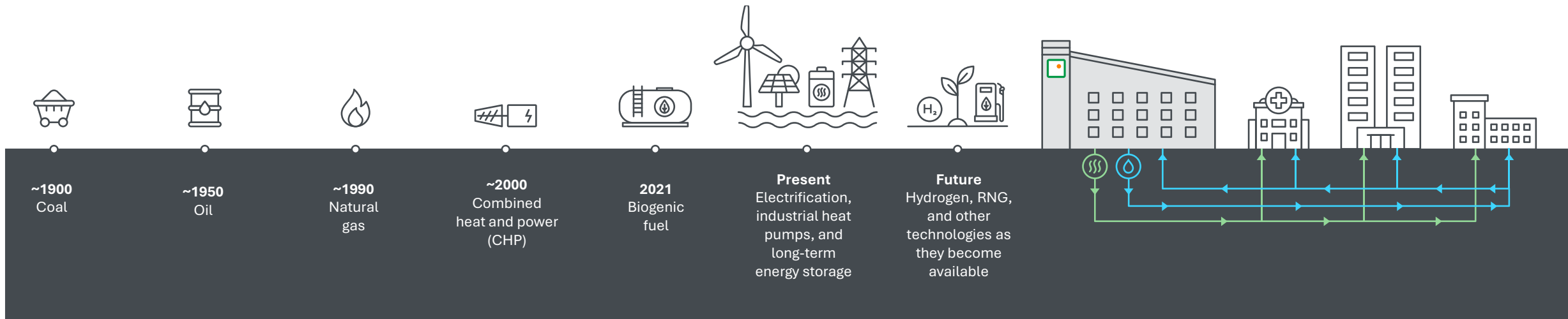
- **187 customers served** in Boston and Cambridge
 - **260 buildings**
 - **71 million square feet** of commercial space served
 - **Industries served:** universities, life science, hospitals, commercial real estate, and municipal
- **Existing infrastructure in place:**
 - **29-miles** of robust underground piping infrastructure
 - **New England's largest (200MW) CHP base load plant** at Kendall Station in Cambridge
- **Sustainable advantages:**
 - Importing **renewable electricity** with a direct connection to the high-voltage electric grid
 - Leveraging the **Charles River as an untapped renewable energy source**
 - Delivering carbon-free **eSteam™** to decarbonize the building sector



Transforming district energy: Vicinity's net zero journey

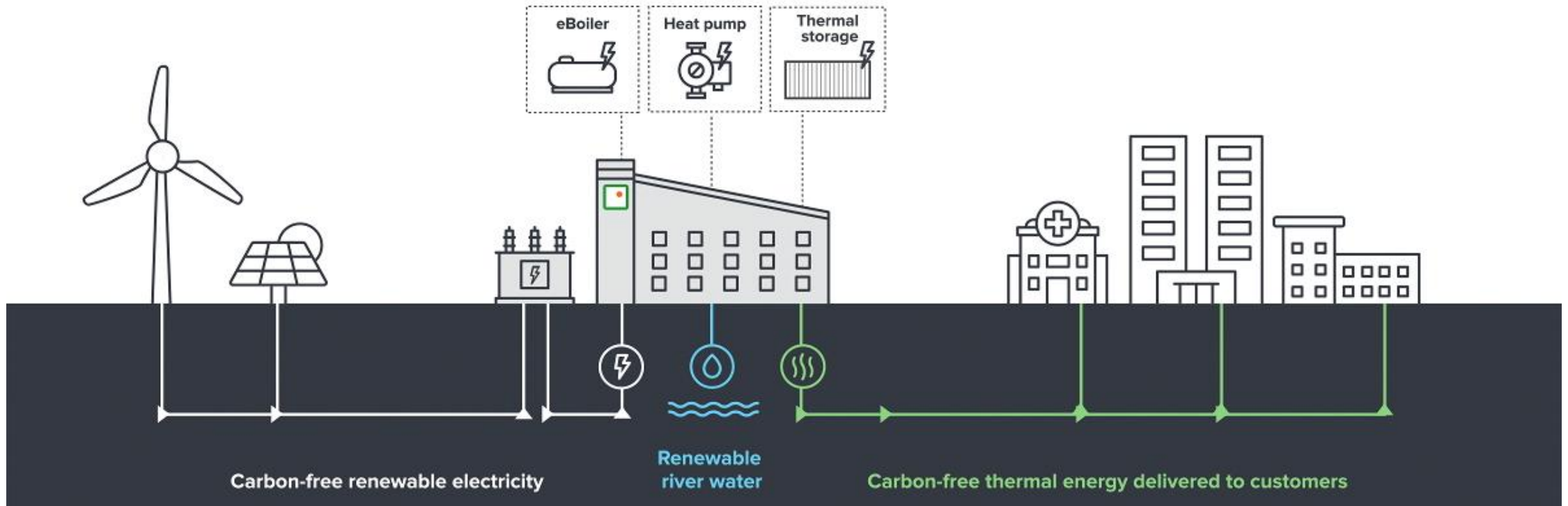
District energy has a long-standing commitment to sustainable energy evolution

- Transitioning to cleaner fuel sources to drive emissions reductions.
- Upgrading our central facilities with advanced technologies while leveraging existing infrastructure for enhanced efficiency and sustainability.



Carbon-free eSteam™

Integrating innovative technologies with renewable energy sources



1 Procure

Vicinity will procure electricity from renewable, carbon-free energy sources and import the power through a co-located electric substation.

2 Produce

Powered by renewable electricity, electric boilers and industrial-scale heat pumps will transform water into eSteam™.

3 Optimize

Thermal storage provides on-demand eSteam™ production from stored, off-peak renewable electricity.

4 Distribute

Carbon-free eSteam™ will be distributed to customers through existing underground piping infrastructure.

Electrification in Boston and Cambridge



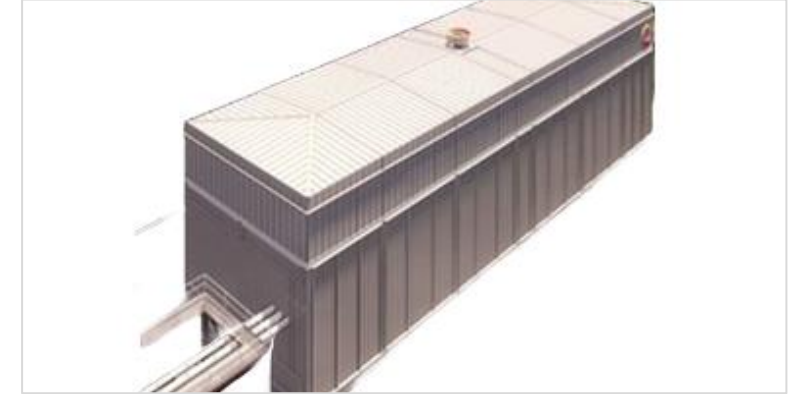
42MW Electric boiler

- Entered service in November 2024.
- Existing, readily available technology.
- Enhances reliability and reduces emissions and grid demand.



35MW Heat pump complex

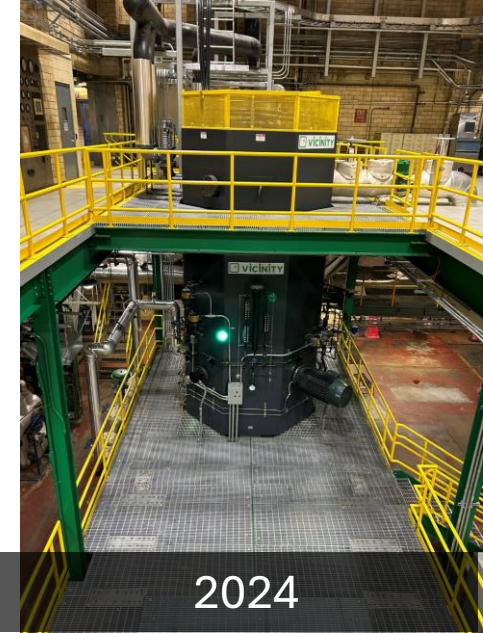
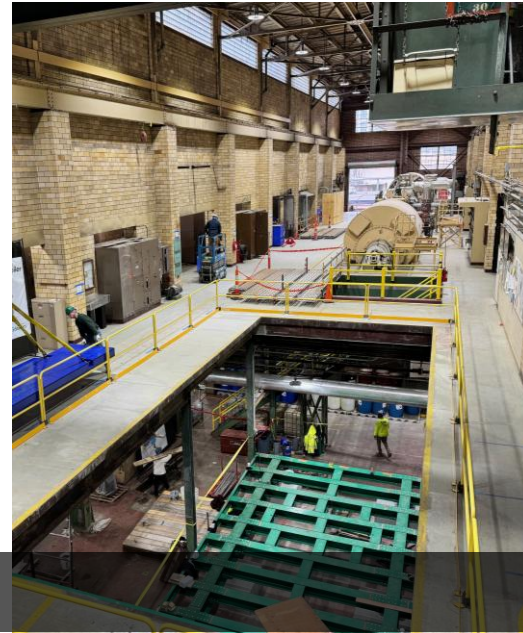
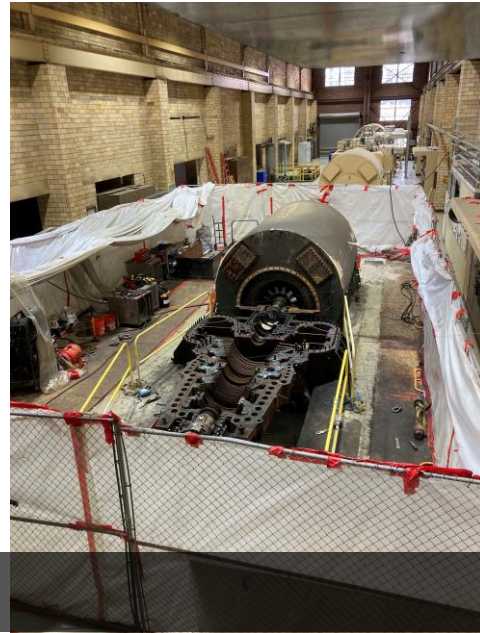
- Enters service in 2028.
- Circulates 24.5 million to 49 million gallons of water daily from the adjacent Charles River/Broad Canal.
- Designed for high efficiency and reliability to meet industrial demands for consistent thermal energy production.
- Occupies approximately 25,000 square feet, optimized for industrial-scale operations while minimizing footprint.
- Reduces reliance on traditional energy sources.



Thermal storage

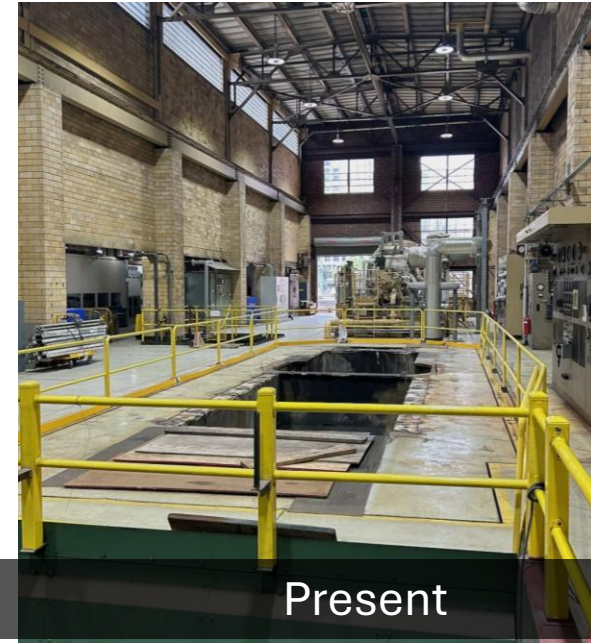
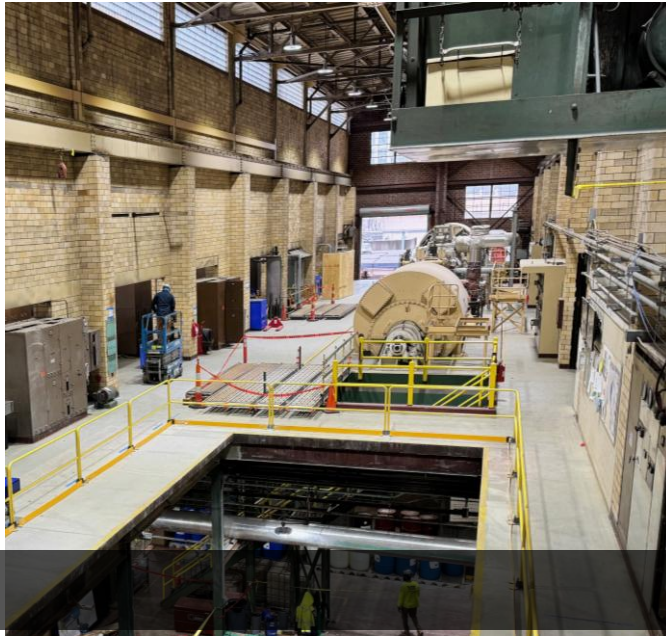
- Enables valley surfing for better renewable pricing.
- Relieves grid stress by reducing power consumption during peak periods.
- Links offshore wind generation period with district energy peak use period.

Kendall Facility Transformation – 42MW Electric Boiler



Starting our electrification journey alongside Mayor Wu in 2022 to delivering eSteam™ with our first 42MW electric boiler on November 19, 2024.

Kendall Facility Transformation – 35MW Heat Pump Complex



Building on this momentum, we continue advancing our electrification efforts as we prepare for our heat pump complex to enter service in 2028.



What's coming next?

Electrification of Boston / Cambridge District Energy System

- 1st River Source heat pump online by 2028.
- Installation of two additional Heat Pump Complexes at Kendall Station.
- Installation of Seawater Heat Pump complexes at harbor points along system.
- By 2035, Vicinity expects that as much as 50% of district energy delivered to customers will be eSteam™.
- Boston and Cambridge district energy systems will be fully decarbonized by 2050 – and we are well underway!



Design of Seawater Heat Pump



Questions?