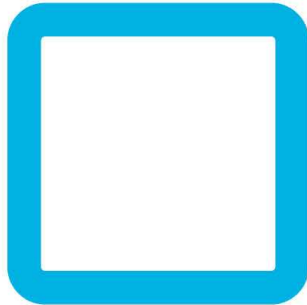


Connect with us.
Count on us.
Thrive alongside us.



Decarbonizing District Energy

City of Cambridge

Planning Board Annual Utility Report



June 10, 2025



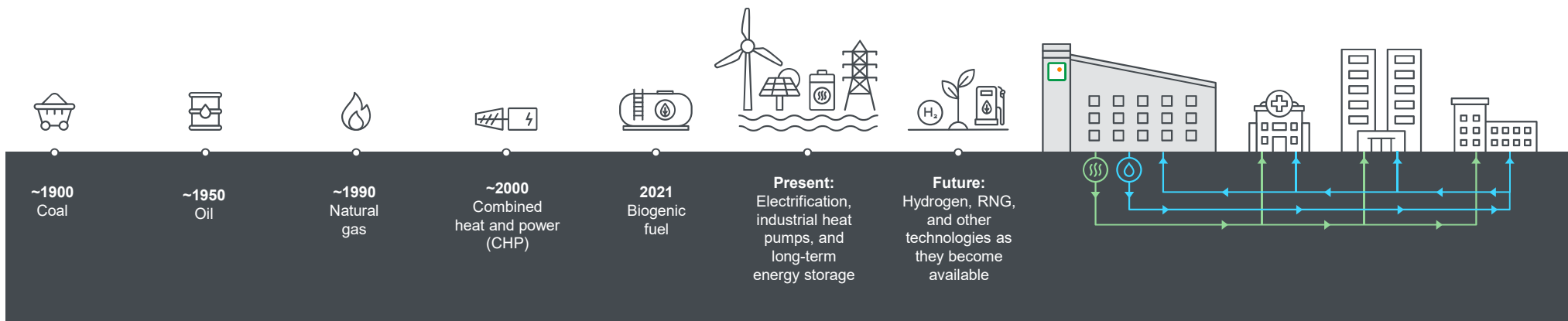
Agenda:

1. Updates on eSteam Transition
2. Vicinity Relocation – MXD Update
3. Vicinity 585 Kendall new connection and modernization



Leveraging existing infrastructure, new technologies, and renewable energy sources to decarbonize the building-energy sector

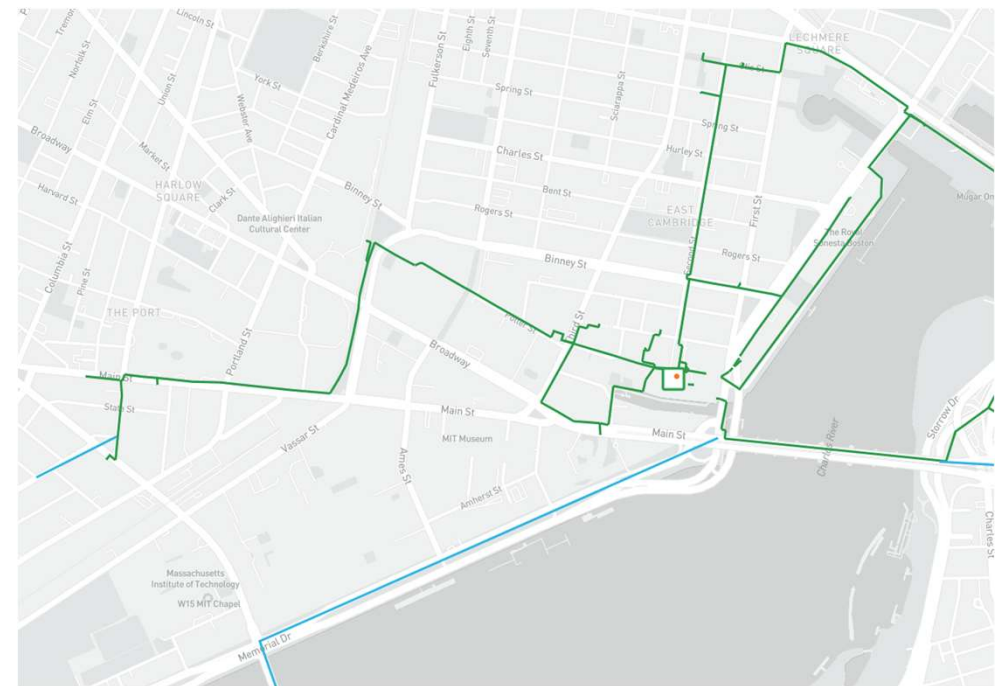
District energy has a 75-year history of greening its fuel sources. Vicinity will deploy innovative technologies to achieve **net zero carbon emissions before 2050**.



The Cambridge District Energy System

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

- **8 million+ square feet** of commercial space served in Cambridge
- **Existing infrastructure in place:**
 - **4.1-miles (and growing!)** 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



- Existing infrastructure
- New infrastructure
- Vicinity facility



Decarbonization Strategy: leveraging all three technologies

Suitable for districts with existing river water intake systems and ability to centralize technology



Electric boilers

Online Since Nov 24

Existing technology; procured and installed; drives rapid adoption; ability to locate in existing plants.

Progress:

- First Boiler is Online and operational
- Second Boiler in design



Heat pumps

Online 2028

Harness the 24-7 renewable power of rivers; achieve high efficiency and baseload capabilities; leverages existing water intake infrastructure.

Progress:

- Construction design and bid process underway



Thermal storage

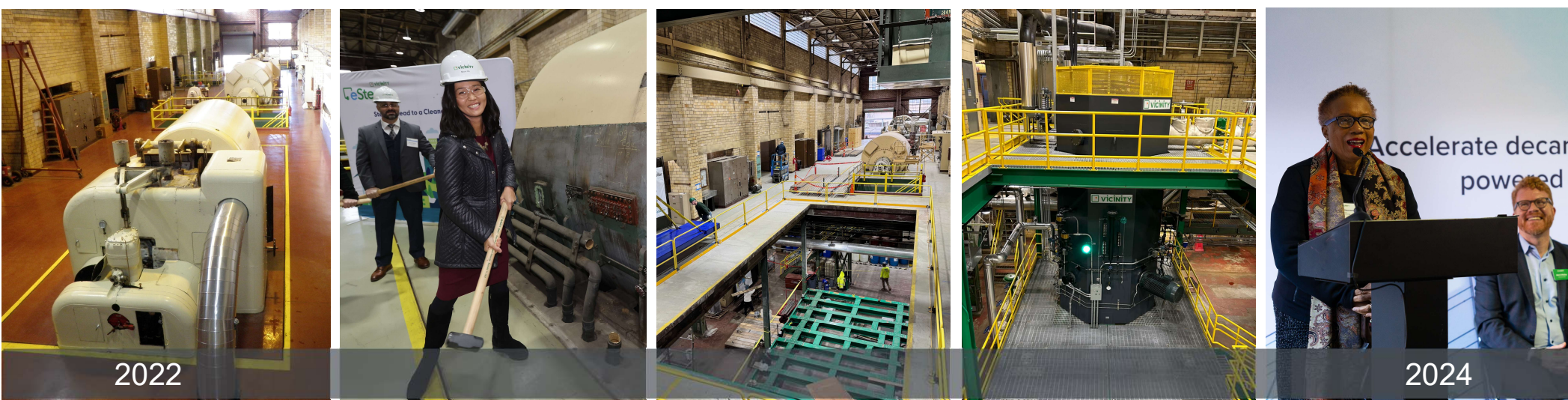
Online 2029/2030

Store renewable power during renewable surplus events; appropriate when electrification technology is centralized in large facilities.

Progress:

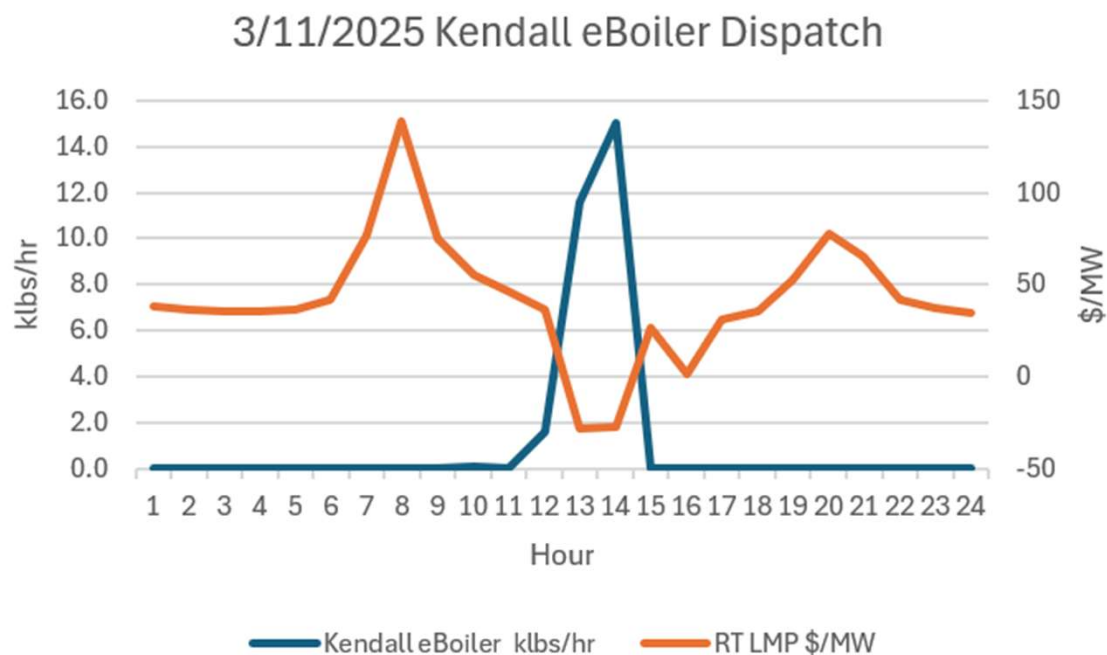
- Technology selection underway
Pacing offshore wind installations

Stage 1 Complete: Installation of 42MW Electric Boiler



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

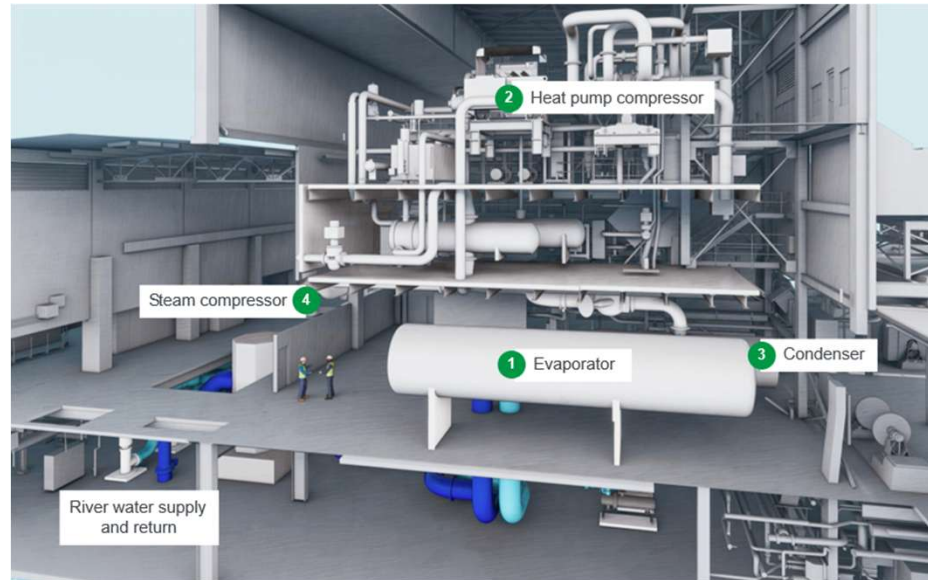
Delivering Net Zero eSteam to Cambridge



Example of eboiler operation triggered by negative power pricing "Valley Surfing"

- 50% of contracted eSteam for the year delivered
- Beginning in 2026, eBoiler will be providing 1/3rd of the Cambridge load and 8x 2025 levels
- Customers are benefiting from real time dispatch in line with electricity prices
- Collaboration and refinement continues to happen with City Government to ensure smooth transitions for Cambridge customers
- Early adopters have provided the case for more wide-spread adoption by both existing and new customers

Stage 2 Underway: Design and Installation of 35MW Heat Pump



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

MXD Vicinity Relocation of Eversource Substation: Substantially Complete



Update:

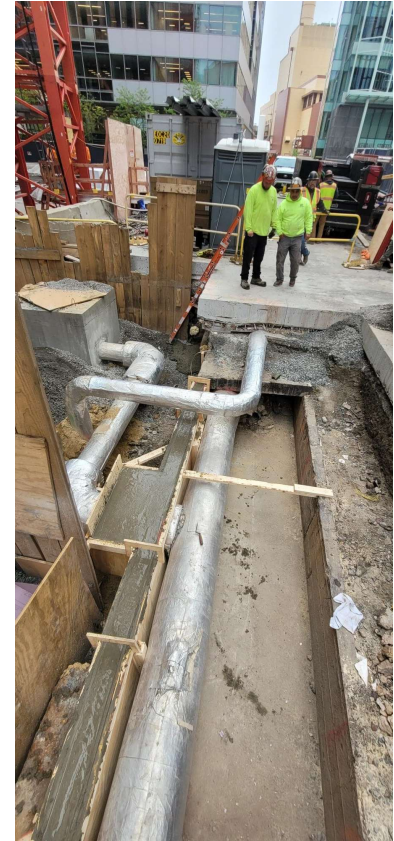
- Relocation of 20-inch steam main and condensate return;
- Enabled construction of MXD substation and development;
- **Completed** : Connection to new buildings and continued system growth
- Active coordination with Eversource for GCEP new tie line to Kendall in 2029.

Vicinity Relocation and Connection of Cambridge Performing Arts Center at 585 Kendall: In Progress



Update:

- Modernization of 16-inch steam main and condensate return along Kendall and Third Street;
- Enables construction of 585 Kendall Project development and reconstruction of Atheneum Street;
- **Completed** : Connection to new building and continued system growth
- Anticipated in- service Spring of 2026



THANK YOU

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