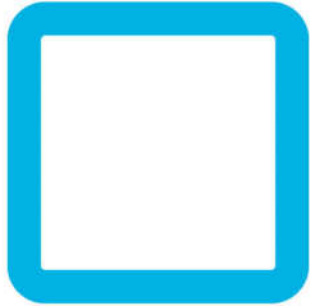


Connect with us.
Count on us.
Thrive alongside us.



Accelerating Decarbonization with District Energy:

Vicinity Energy's Rapid Electrification Plan

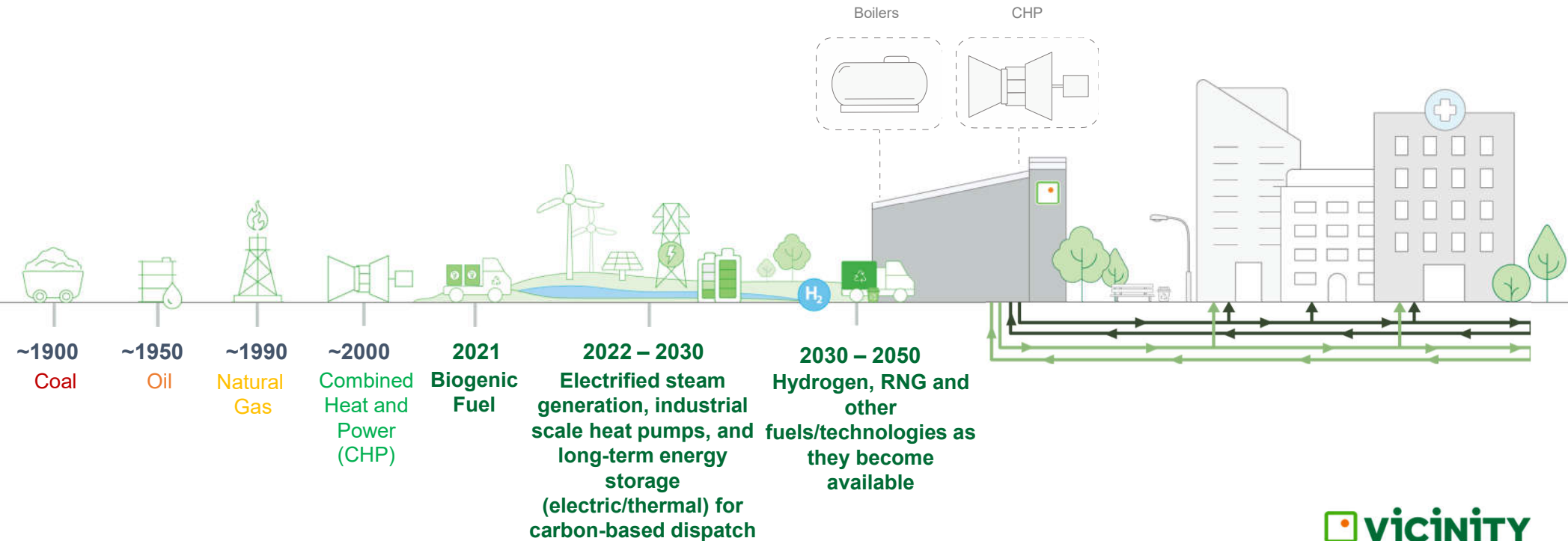
June 21, 2022



Vicinity Energy: Net Zero Carbon by 2050

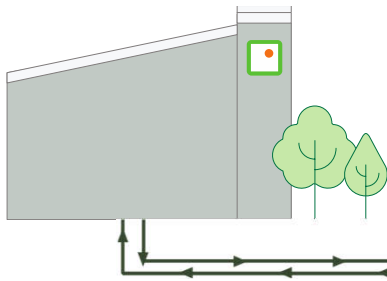
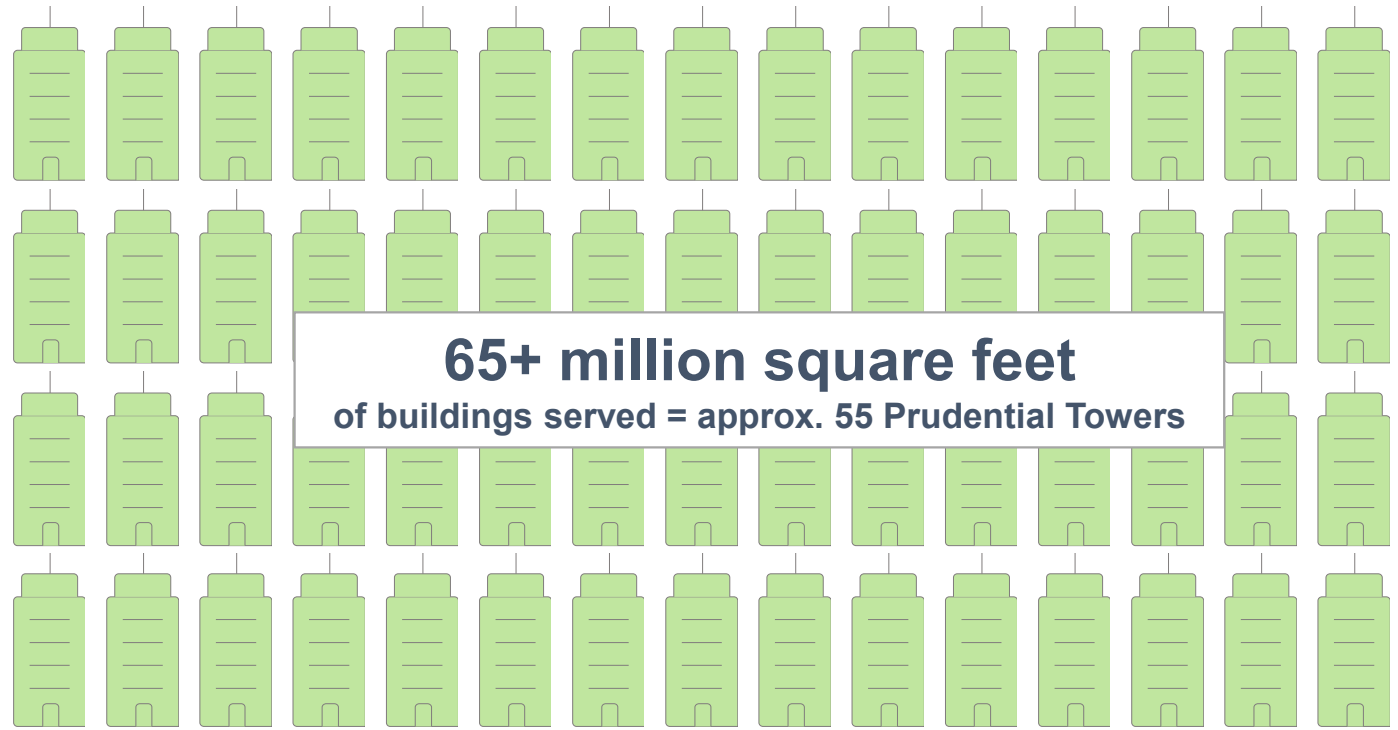
Leveraging Existing Infrastructure, New Technologies and Renewable Energy Sources to Decarbonize the Building-energy Sector

District Energy has a 100-year history of greening and Vicinity will deploy innovative technologies to achieve *net zero carbon emissions by 2050... Cutting our emissions in half by 2035*



Vicinity's Assets Have the Reach to Take a "Big Bite" out of Carbon Emissions

- **65+ million square feet** of buildings served
- All downtown hospitals, life science, civic / commercial
- Existing **26-miles** of robust underground energy delivery piping
- **2 central plants** poised for electrification
- Potential to **avoid 800,000 metric tons/year**



Vicinity Electrification Strategy and Execution Plan:

Case Study Boston and Cambridge

District Energy Can Eliminate New Gas Boilers in Cambridge

“Natural gas...has no place in a clean energy future.” – *Mothers Out Front*

New gas boilers in Cambridge will:

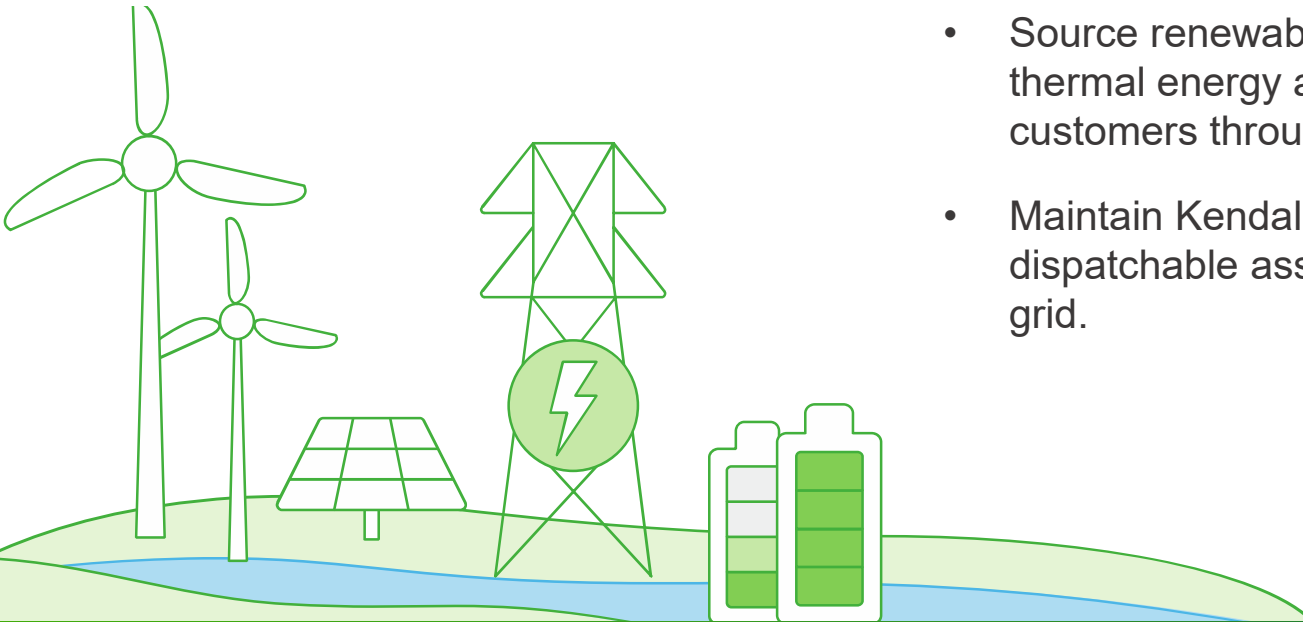
- "lock in" an emissions profile; they cannot become greener
- generate unmonitored emissions and pollutants
- degrade from their theoretical efficiency over time
- negatively impact Environmental Justice populations

A hybrid design of heat pumps + eSteam™ = low carbon energy supply to buildings that eliminates new gas boilers



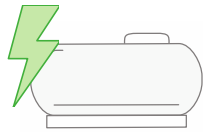
District Energy Systems Evolving as the State Encourages More Off-Shore Wind

- A shift to renewable power is coming
- District energy systems will meet this shift through electrification of our core steam generating assets
- Source renewable power, electrically generate thermal energy and convey this energy to customers through existing delivery system
- Maintain Kendall CHP as blackstart and dispatchable asset for the New England electric grid.



Vicinity is Electrifying...[NOW](#)

Our **Phase I** decarbonization plan includes electric boilers, industrial-scale heat pumps, & thermal storage.



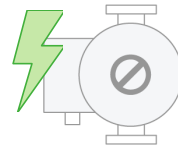
Electric Boilers 50 MW

2021/22 –

- 50MW electric boiler (120,000 lb/hr)
 - In final design
 - Equipment being sourced
- Filing process with ISO-NE in process

2024 –

- Installation of electric boiler at Kendall Station
- Connected to existing high-voltage transmission lines
- Heating produced will be from net zero/renewable power
- End state – up to 300 MWs of electric boilers



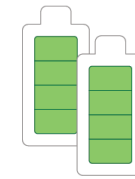
Heat Pumps 10 MW

2021/22 –

- 3rd party design nearly complete
- Issuing a request for proposal (RFP)

2025 –

- Plan to install largest heat pump complex in MA
- Use heat “lifted” from the Charles River to make steam
- Dramatically reduces our carbon footprint in the near term



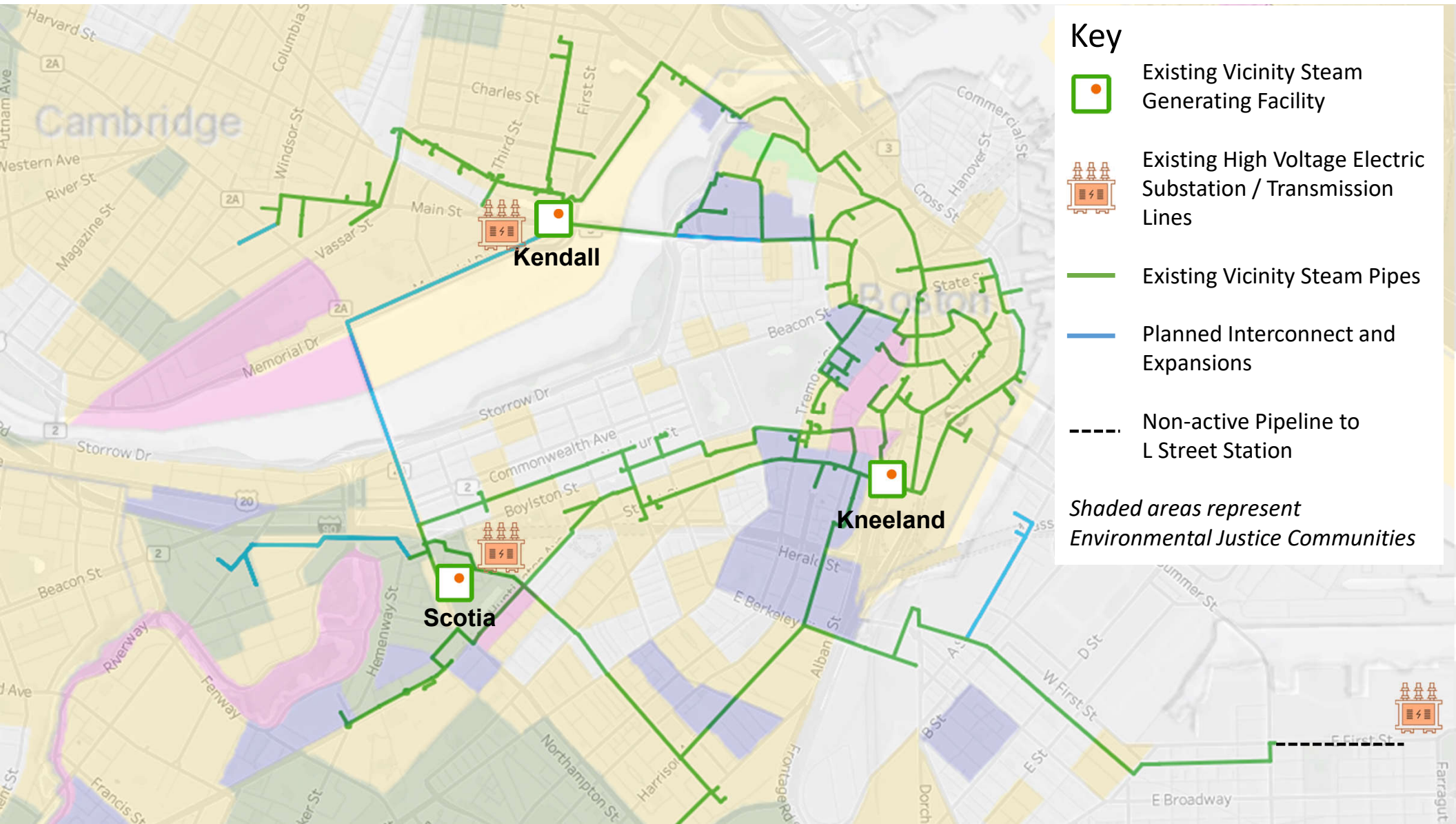
Thermal Storage 1,000 MWh

2021/22 –






- Approved for Network Service with ISO-NE
- ISO-NE interconnection in process

2025/27 –

- Provide 1,000 MWh of storage
- Mitigate cost and carbon content of electrical peaks by “peak shaving”
- Aligned with winter offshore wind peak
- Dramatically lower cost of electrified steam, driving adoption



Key

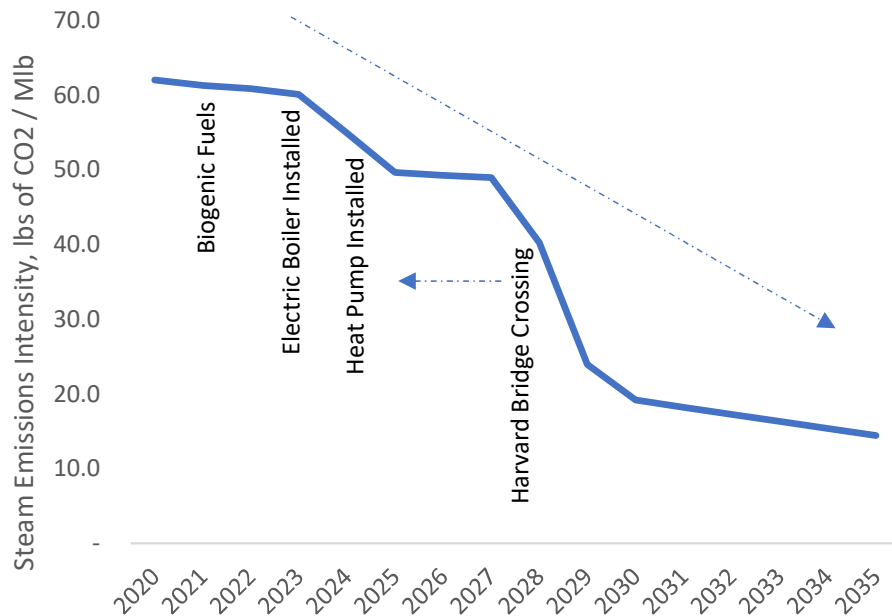
-  Existing Vicinity Steam Generating Facility
-  Existing High Voltage Electric Substation / Transmission Lines
-  Existing Vicinity Steam Pipes
-  Planned Interconnect and Expansions
-  Non-active Pipeline to L Street Station

Shaded areas represent Environmental Justice Communities

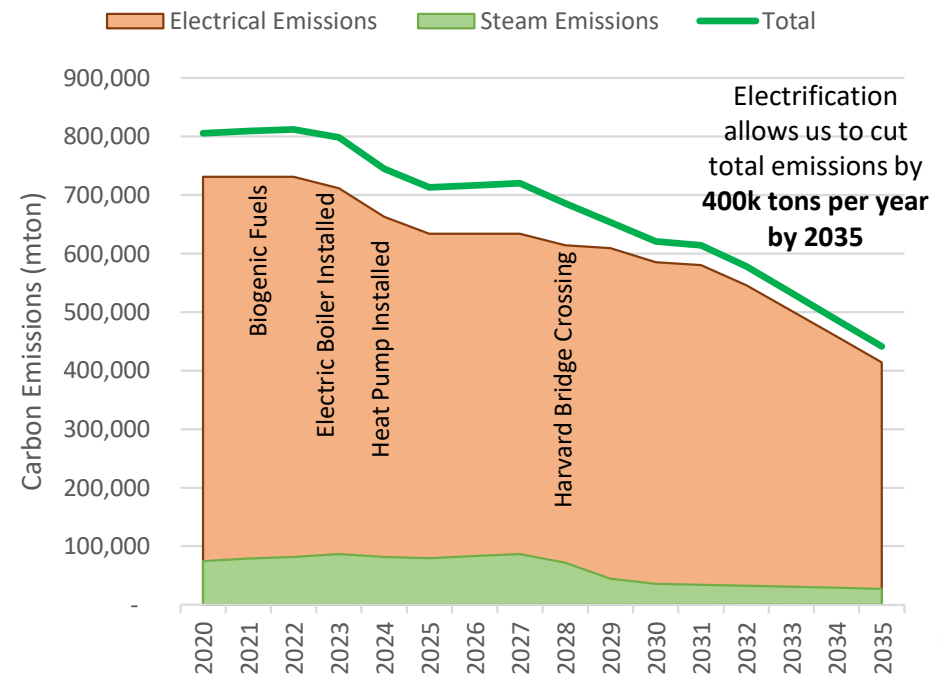
Achieving Net Zero: Significantly Reducing Emissions by 2035

Vicinity's carbon footprint will dramatically drop as we consume renewable power to generate "eSteam"

Steam Emissions Intensity Factor



Total Carbon Emissions

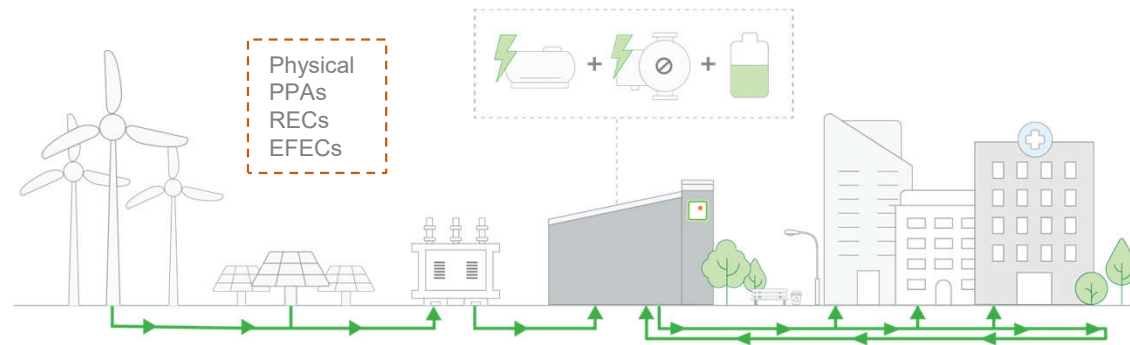


Vicinity's eSteam™ ... the future of district energy renewable thermal is emerging now!



We are bringing *renewable thermal and energy storage* assets to Cambridge

- **Leverage existing electric transmission interconnect** to access **wholesale market-priced renewable power**
- **Convert renewable power to steam** through highly efficient technologies at scale
- **Leverage existing status** as wholesale grid customer **to access real-time energy**
- **Purchase of renewable power** can be customer-controlled or Vicinity-supported
- **Customers** can use Vicinity's eSteam™ to **achieve their net zero goals at their own pace**



Electrification of district energy may be the easiest and most cost-effective path to net zero for all of Center City buildings!

