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Rapidly Electrifying 65+ Million Sqft of Building Space in Boston / Cambridge: Vicinity Energy's Net Zero Action Plan

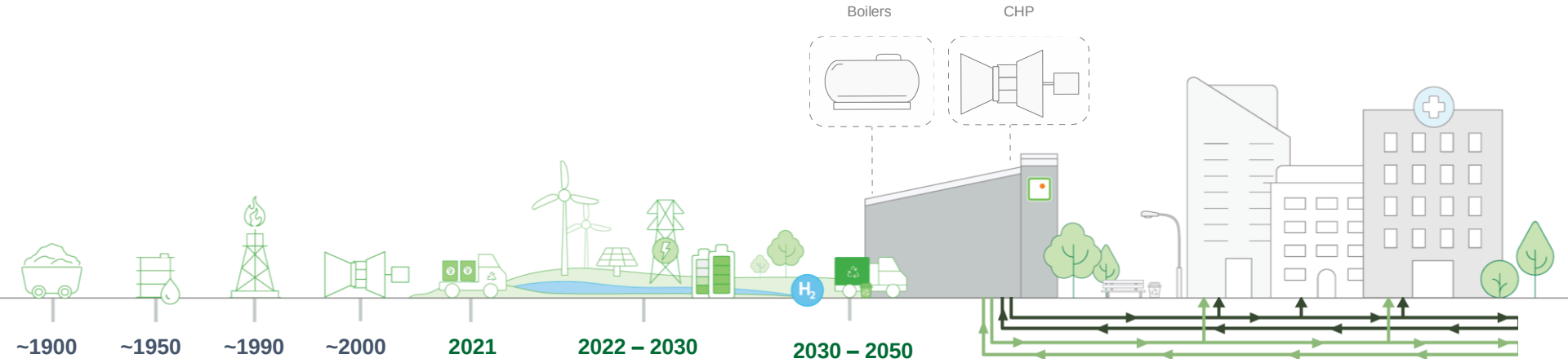
December 10, 2021

NEW ENGLAND Restructuring Roundtable

VICINITY

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***



~1900
Coal

~1950
Oil

~1990
Natural Gas

~2000
Combined Heat and Power (CHP)

2021
Biogenic Fuel

2022 – 2030
Electrified steam generation, industrial scale heat pumps, and long-term energy storage (electric/thermal) for carbon-based dispatch

2030 – 2050
Hydrogen, RNG and other fuels/technologies as they become available

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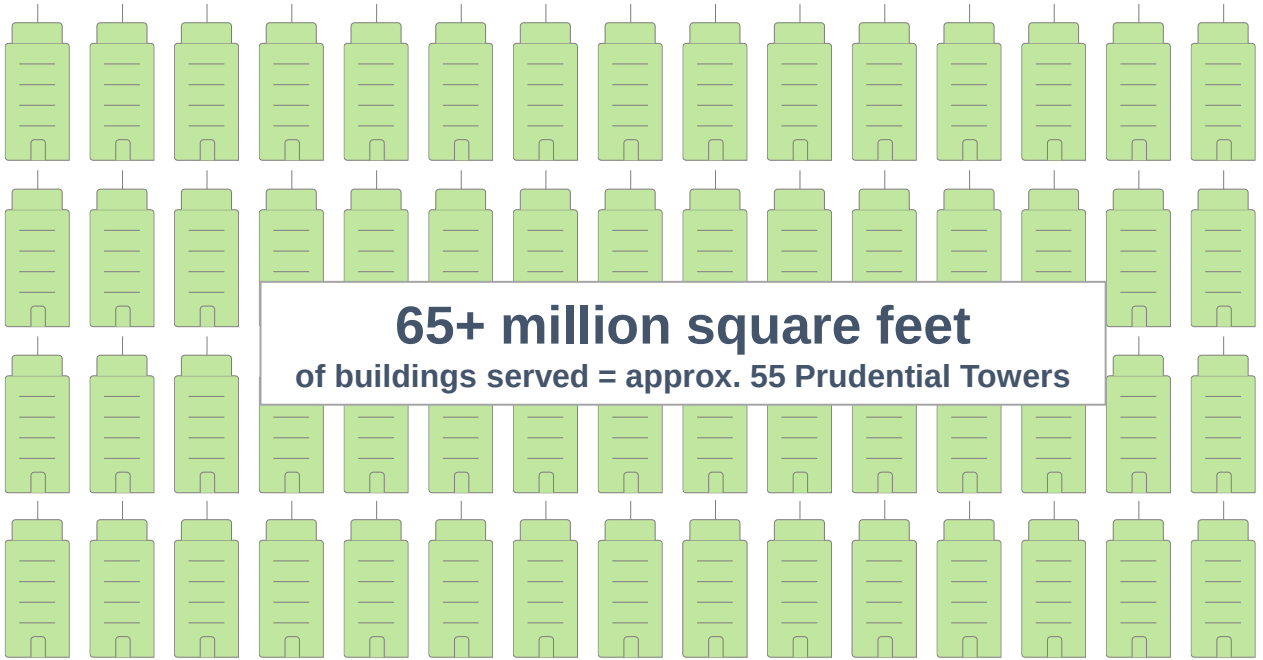
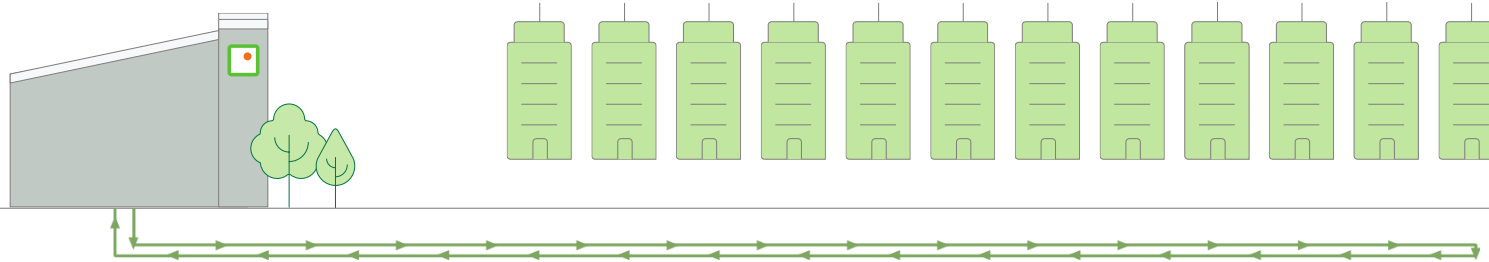
Vicinity's Assets Can Take a "Big Bite" out of Boston & Cambridge Carbon Emissions

- **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 of CO2**





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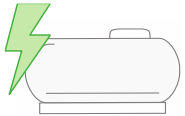
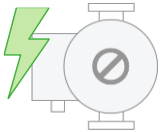
Vicinity is Electrifying…NOW

Our aggressive decarbonization plan includes electric boilers, industrial-scale heat pumps, thermal batteries, among other cutting-edge technologies and alternative fuels on the horizon.



Electric Boilers

- Phase One: 50MW electric boiler at Kendall Station
  - In final design
  - Equipment being sourced
  - In service – 24 months
- Connected to existing high-voltage transmission lines
- Will produce eSteam™ for heating from net zero /renewables
- Dramatically reduces our carbon footprint in the near term



Heat Pumps

- 3rd party design nearly complete
  - Plans to issue an RFP
- Plan to install largest heat pump complex in MA… likely U.S.A.
- Use heat “lifted” from the Charles River to make eSteam™ and preheat eSteam™ boiler water
- Dramatically reduces our carbon footprint in the near term

Thermal Batteries

- Filing process for favorable transmission rates with ISO-NE has been accepted
- Mitigate cost and carbon content of electrical peaks by “peak shaving”
  - *Aligns winter offshore wind peak with building heating peak*
- Dramatically lower cost of electrified steam, driving adoption

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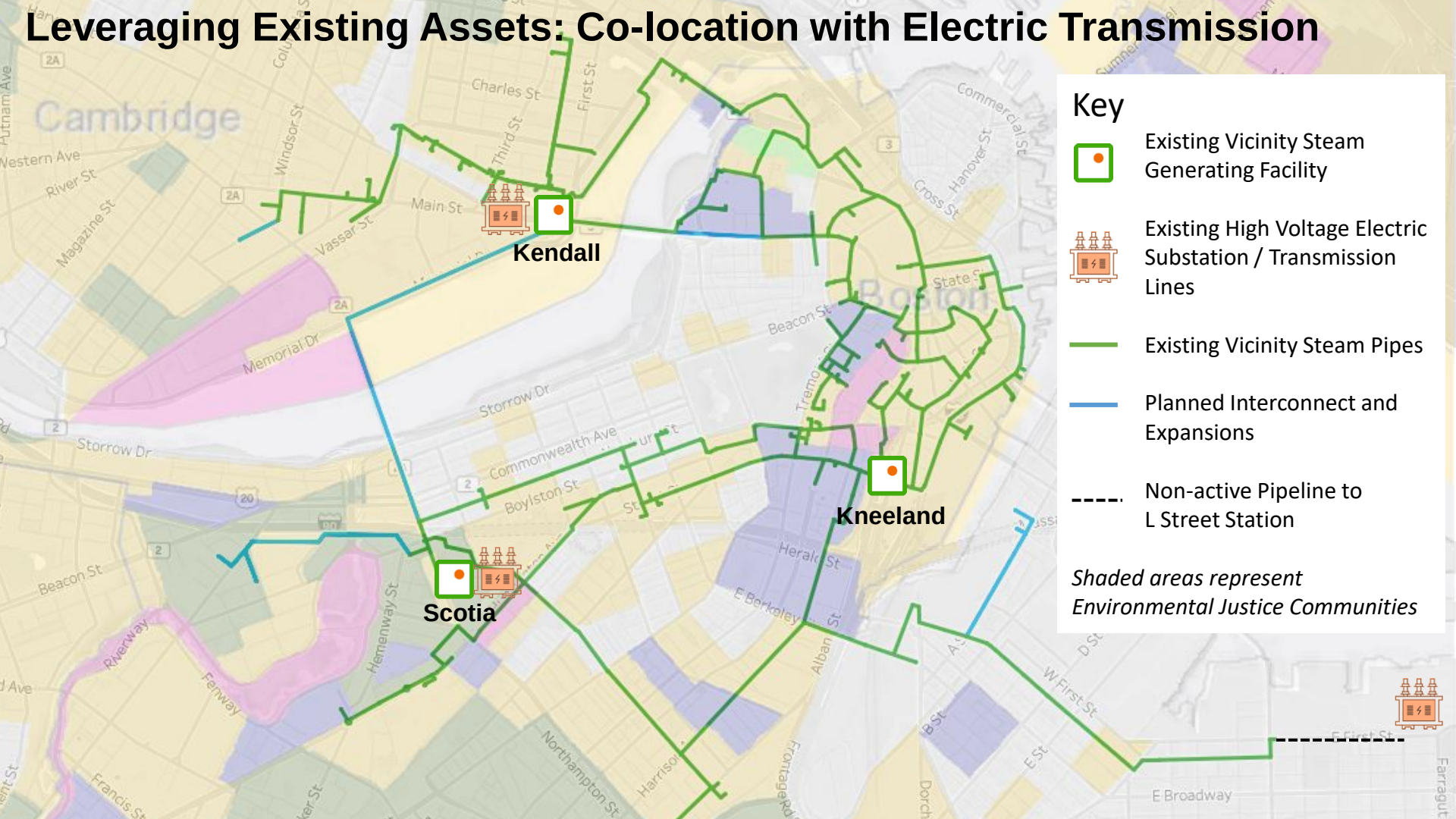
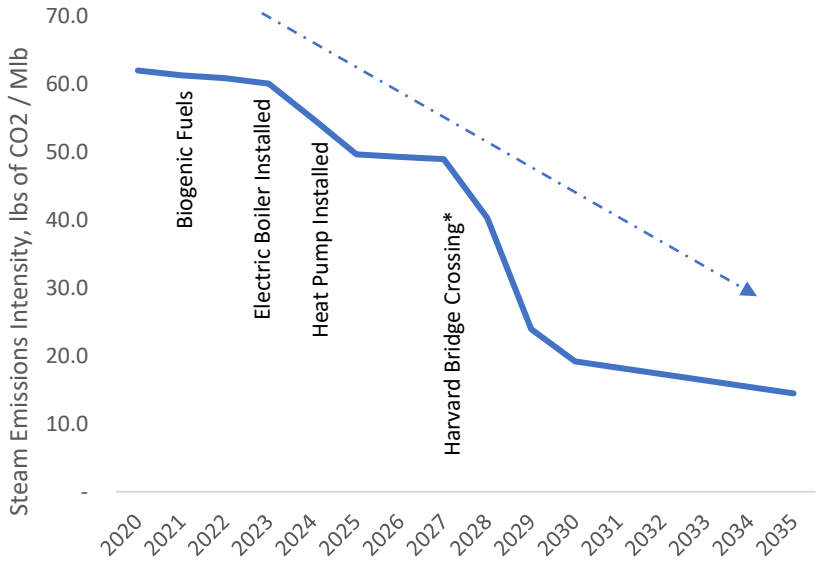
Leveraging Existing Assets: Co-location with Electric Transmission



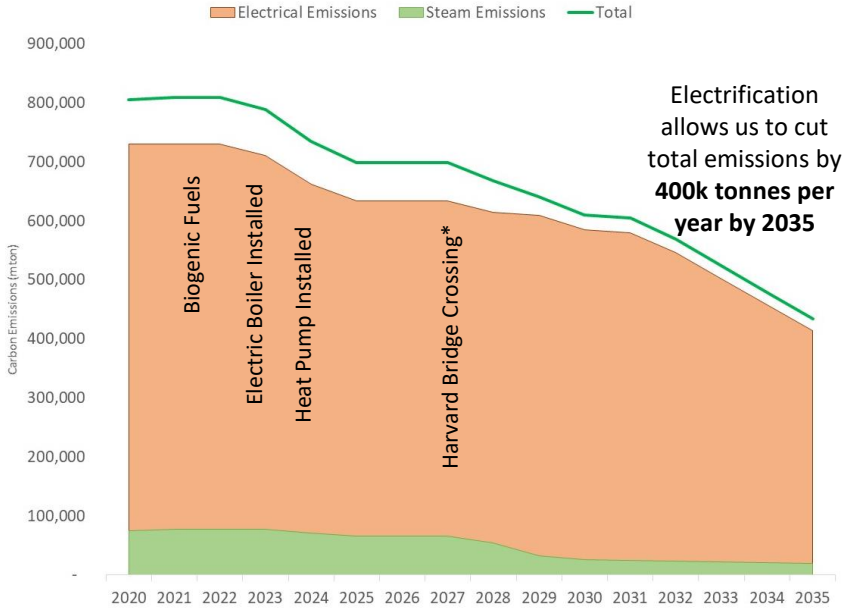
Achieving Net Zero: Significantly Reducing Emissions by 2035

Vicinity's carbon footprint will dramatically drop as we convert to renewable power to generate eSteam™

Steam Emissions Intensity Factor



Total Carbon Emissions



* Harvard bridge crossing allows retirement of Kneeland's gas burning assets in Boston. The crossing will increase the capacity of Kendall eSteam™ to downtown Boston.