



# City of Cambridge Planning Board Meeting

June 21, 2022

Utilities Coordination Presented By:

**EVERSOURCE**  
ENERGY

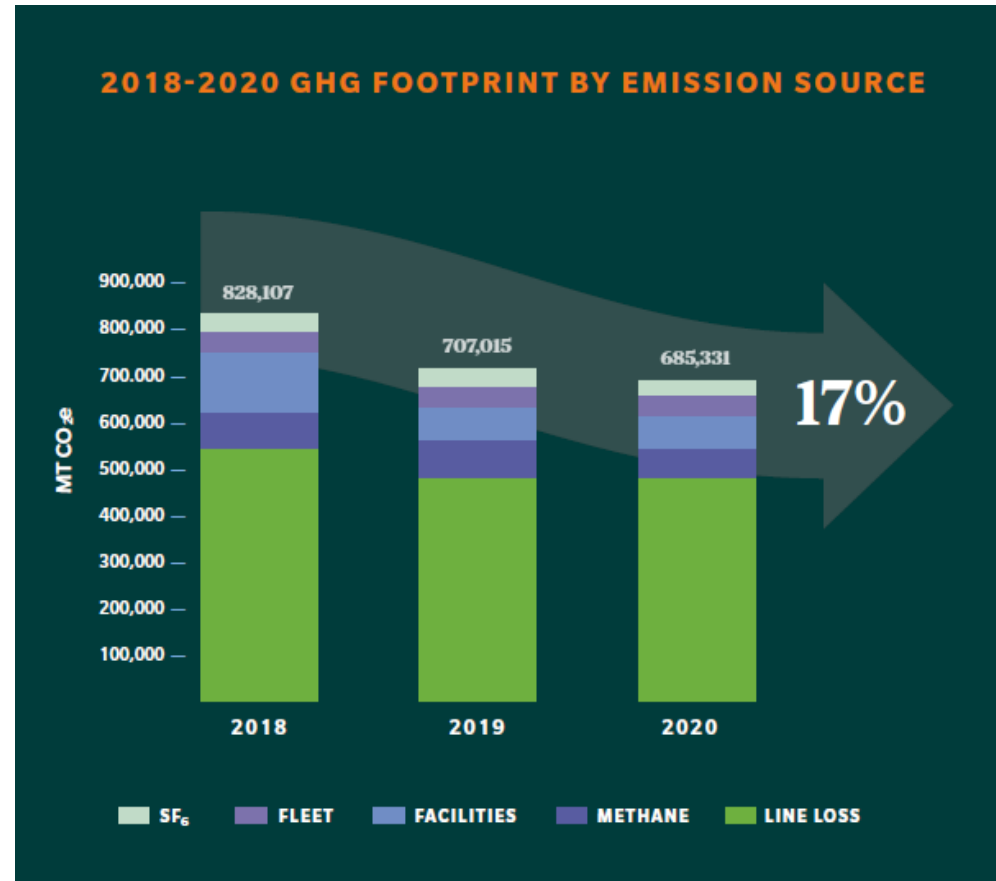


# Agenda

- Eversource Carbon Neutral by 2030 Update
- 2022 Load Growth and Forecasting Review
- Natural Gas
- Geothermal Pilot
- Transmission
- Electric Operations
- Energy Efficiency
- Electric Vehicles
- Wrap Up
- Q&A

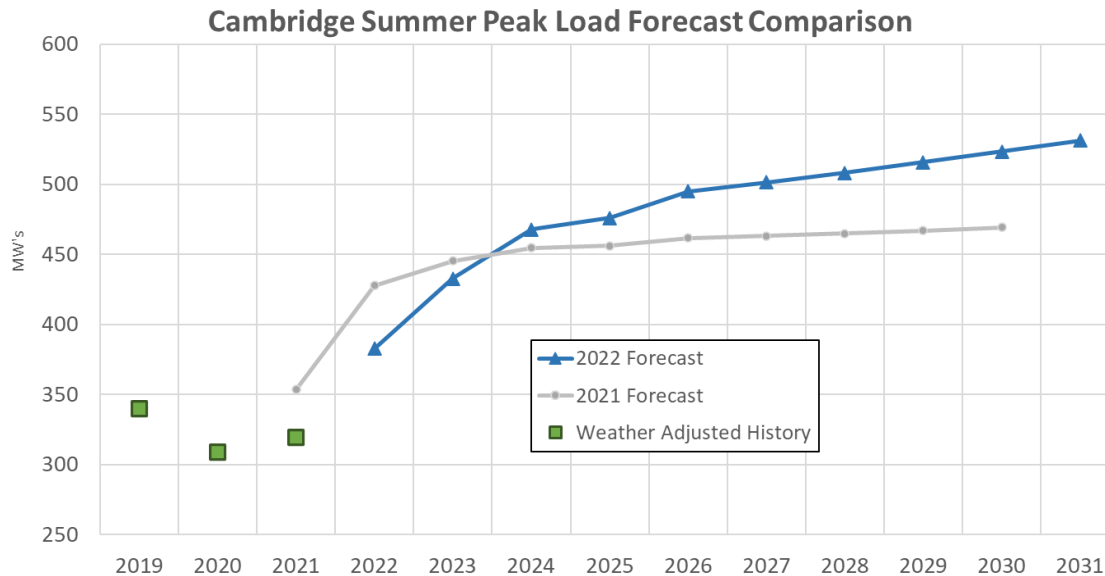
# Our Progress

- Our 2021 GHG footprint is currently undergoing third-party verification and will be available in our next Sustainability Report (due for publication in June 2022)
- In 2020, we saw a decrease in our overall emissions by 17% compared to 2018 and 3% compared to 2019.
- Due to operational changes for COVID-19, a one person per vehicle policy was implemented to keep employees safe and adhere to CDC guidelines
- This safety measure resulted in increased fuel consumption and a 10% increase in fleet emissions compared to 2019.
- An overall reduction in emissions was still achieved through reduced methane, SF<sub>6</sub> leaks, and improved facilities efficiencies.



# Load Forecasting Overview

- Eversource’s latest forecast of electric peak demand for the City of Cambridge was finalized in March 2022
  - 10-year forecasts capture economic growth, energy efficiency, solar installations, electric vehicles charging and large customer additions



- Known large customer projects remain the primary driver of long-term electric growth in the City of Cambridge
- Gas peak day forecasts are updated every two years and are submitted to the Massachusetts Department of Public Utilities (DPU)

# Long Term Electrification Demand Assessment

## Distribution Planning Horizon

**Objective:** Identify system constraints in the next 10 years to initiate capital projects with sufficient lead time to address demand

Identification   Funding   Siting   Construction  
Design/Evaluation   Permitting

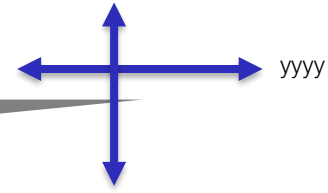


Headroom - newly added

Headroom

## Long Range Electric Demand Assessment

**Objective:** Convert the Commonwealth's Policy Objectives to Electric Demand at a Station and Feeder Level to determine the degree to which projects will enable electrification goals in a specific region



% - Electrification Objective

Top

ISO, State Level, and Company Forecasts

Electric Vehicles

Solar Adoption

Energy Efficiency

Top

State Policy Objectives/Pathways

Federal Policy Objectives

Peak Load Forecast

New Business

Contractual Reserve Capacity

Econometric Load Model

Electric Demand Assessment

EV Adoption Propensity

PV Adoption Propensity

Storage Adoption Propensity

Electric Heating Adoption Propensity

Socio - Economic Modelling based on Customer Reference Classes

Bottom

Bottom

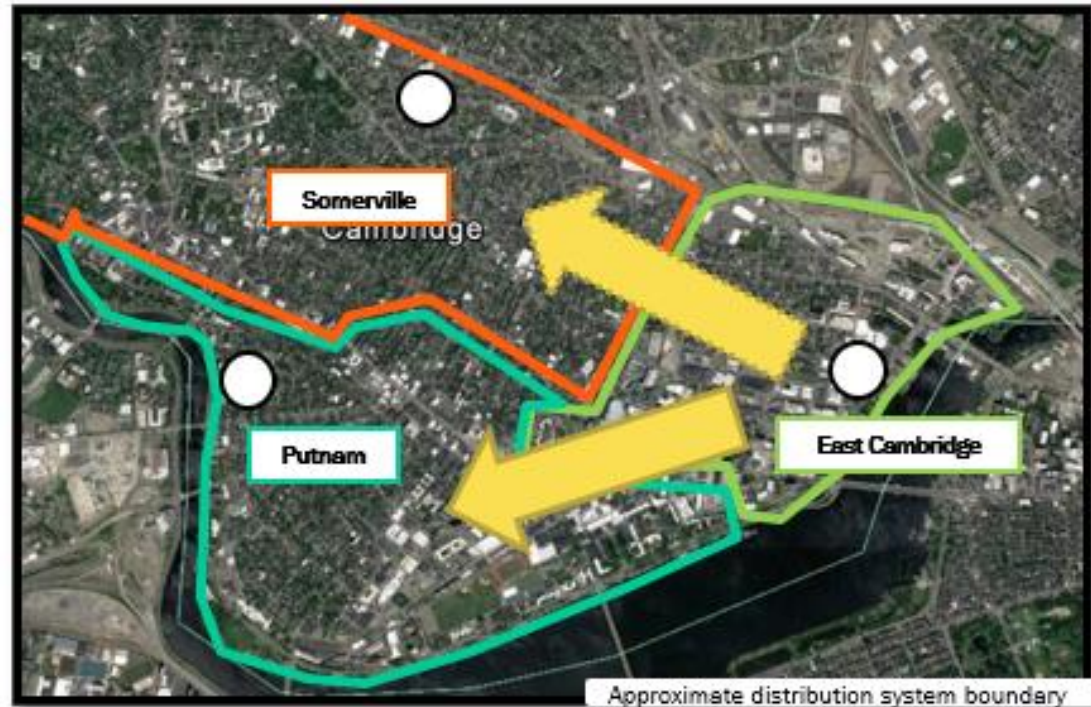
Today

Today + 10 years

2050

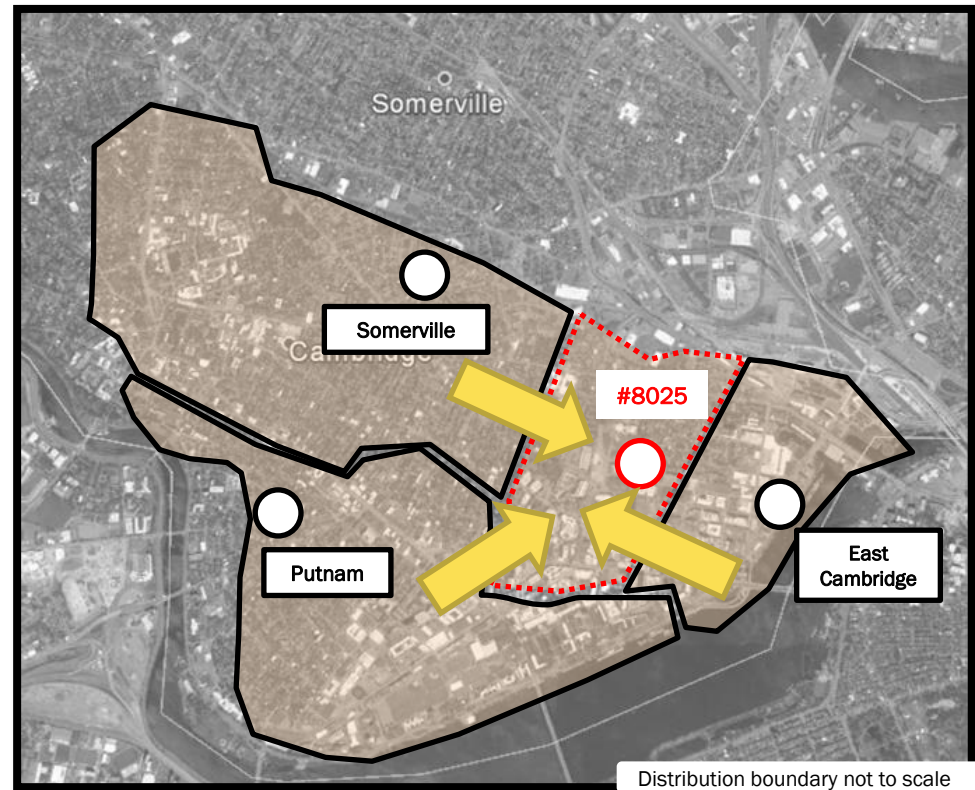
## System Planning - Comprehensive Solution - Interim and Long-Term

- 2020-2023
  - Install 4<sup>th</sup> transformer at Putnam
- 2023-2027
  - Install 3<sup>rd</sup> transformer at Somerville Substation
- Continued distribution street work from 2022-2027 to relieve East Cambridge #875 overload with load transfers to Putnam #819 and Somerville #402.
- Alternative solutions will exhaust all available capacity of neighboring substation by 2027
- Require comprehensive solution - new distribution bulk substation 8025 in service by 2028 is to address capacity need for all three substations: Somerville, Putnam, and East Cambridge.
  - Initial capacity for three 90MVA transformers, expandable to four



## Comprehensive Solution - Distribution Proposed Long-Term Solution

- New Distribution Bulk Substation #8025 in service by in 2028:
  - Initial capacity for three 90MVA transformers, expandable to four
- ~~Project resolves distribution capacity need at East Cambridge substation and neighboring substations~~
- Fourth transformer expansion provides long-term capacity needs for East Cambridge substation



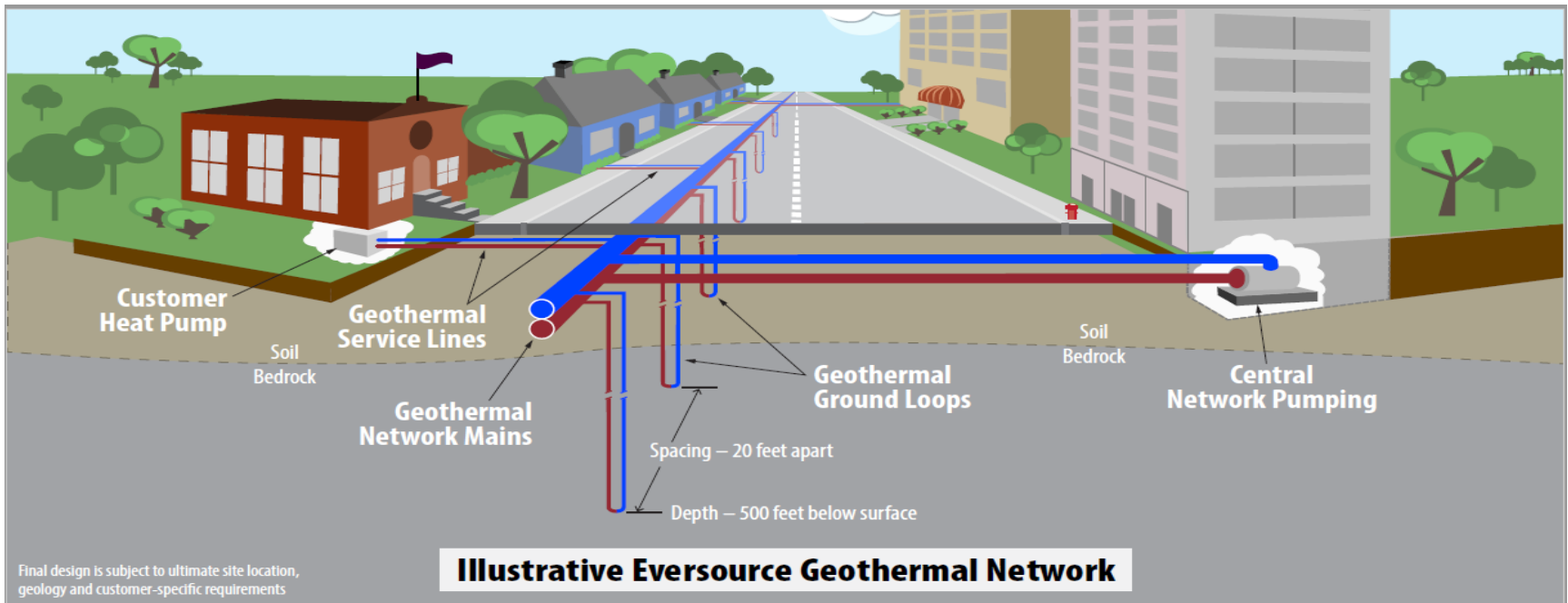
# Eversource Networked Geothermal Pilot

## What is the Networked Geothermal Pilot?

Eversource’s pilot is exploring if a networked geothermal system can be used instead of or in combination with traditional energy sources like natural gas, air source heat pumps, or delivered fuels such as heating oil or propane, and is focused on serving a diverse group of customers - from single- and multi- residential and commercial - within a dense neighborhood.

## How Does it Work?

The networked geothermal system uses the Earth as a heat source during the winter and a place to get rid of unwanted indoor heat in during the summer through circulating fluid in a buried piping network known as a “ground loop,” which carries the heat and exchanges it between buildings and the ground.

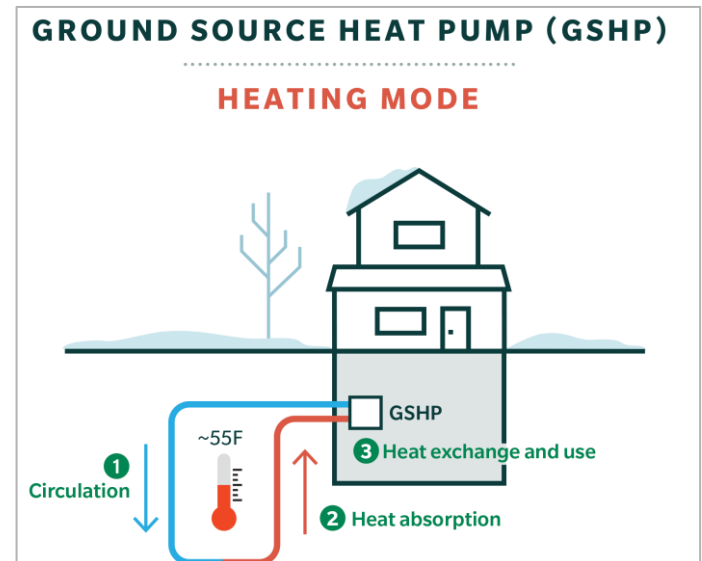
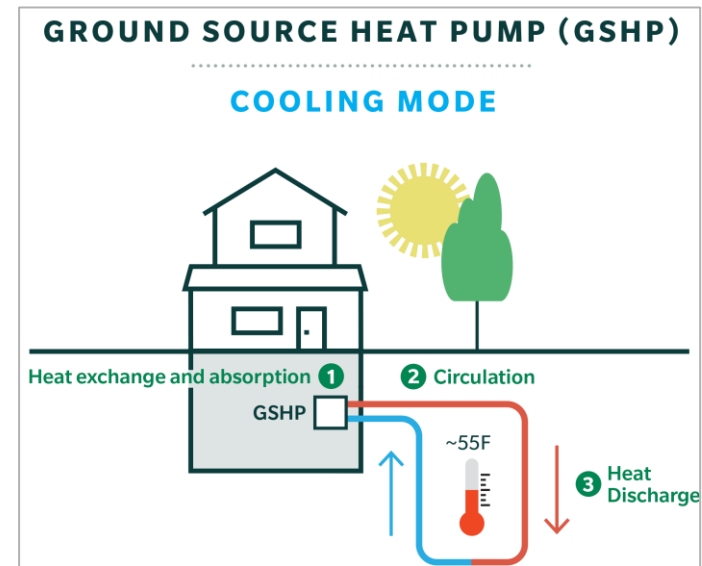




# Geothermal Pilot - Project Status Update

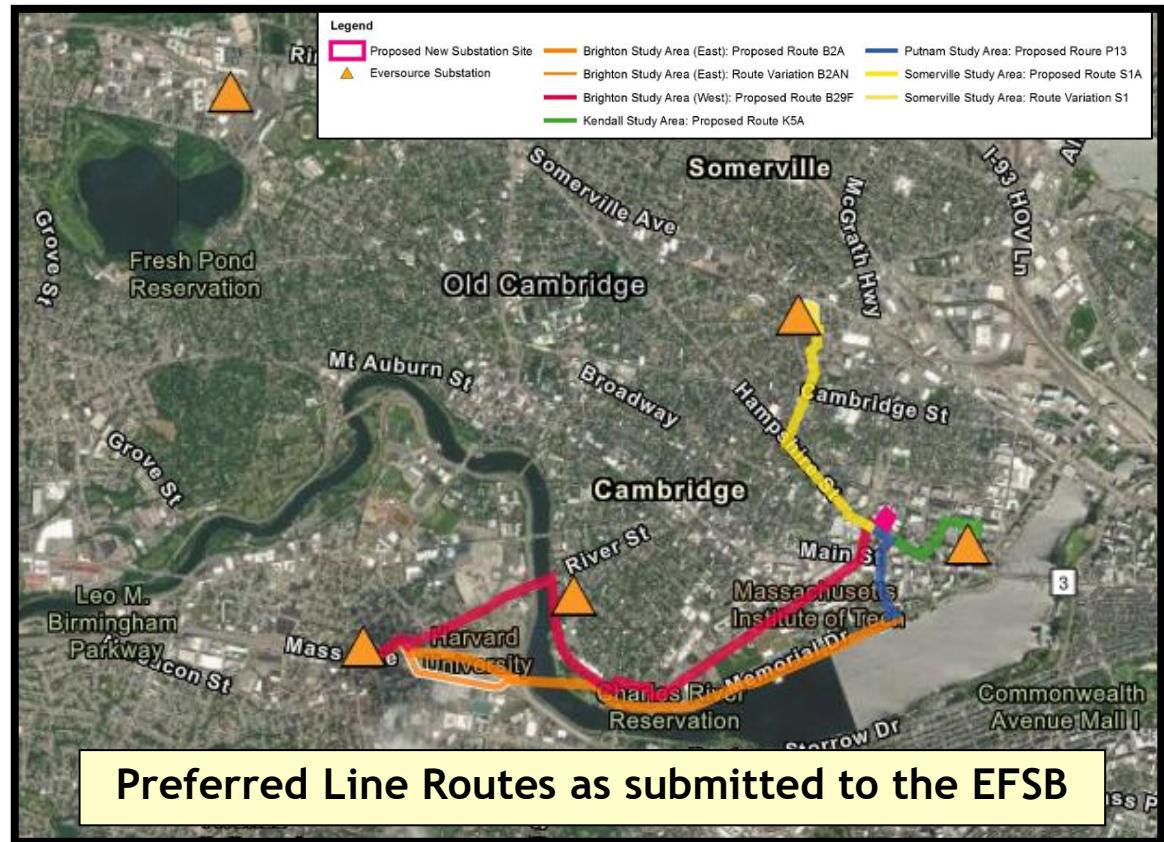
## Pilot Update:

- Framingham, MA was chosen as the site for the Geothermal Pilot Program
- Preferred route is established, and customer agreement discussions are ongoing
- Next steps include more detailed facilities design of the system
- Geothermal Pilot Program Updates can be found at: [Eversource Geothermal](#)



# Transmission Update: Greater Cambridge Energy Program Update

- Project and System Alternatives were considered. Line routes underwent extensive analysis, including development of Noticed Alternative Routes.
- Extensive Community Outreach to inform and solicit feedback across city neighborhoods: 10 pop-up events & 6 virtual “open houses”; interpretation & translation provided in Spanish, Haitian Creole, Portuguese & Mandarin



### Milestone Dates

- Dec. 15, 2021: Environmental Notification Form filed with state
- Mar. 10, 2022: Application filed with the Energy Facilities Siting Board (EFSB)
- Mar. 11, 2022: Massachusetts Environmental Policy Act Office (MEPA) certificate was issued
- Summer 2022: Anticipated EFSB Public Comment Hearing, Continued Community Outreach

## Electric Operations - Key Talking Points

- Major Completed/Upcoming City Projects
- What to expect in 2022/2023
- Major Development Projects



## Energy Efficiency 2022 Talking Points

- Major Energy Efficiency Partnerships with stakeholders in Cambridge (Public and Private sector)
  - Community Partnership Strategy participant
  - Program and marketing assistance to City of Cambridge in support of their DOER awarded grant. Eversource begin supporting in 2018 and continues to provide energy efficiency services and solar for multi-family 5-49-unit market rate buildings
  - Small Business Programs including a Main Streets effort
  - Universal Income Eligible Programs, to ensure equity amongst our customers
- Eversource establishes relationships with major developers to partner on EE during the construction of new buildings

## Partnerships / Projects:

- Alexandria Real Estate
  - sustainable design of 325 Binney Street (Moderna's new HQ).
  - signature feature is the facility's new Groundsource Heat Pump system, which will heat/cool the facility.
  - Zero Net Energy system will displace Natural Gas as the major heating source.
- Boston Properties (BXP)
  - Various Projects in Kendall Square
  - Working with BXP's design team to minimize EUI on each facility.
    - Google's New facilities
    - BP and other stakeholders....new bulk station underground near Binney Street.
    - LED Lighting, Controlled Exhaust Fans

### Current/Upcoming Projects:

Major EE Partnerships with Cambridge stakeholders

- Biomed
- Boston Properties
- Harvard
- MIT
- City of Cambridge Municipal Partnership

## Energy Efficiency 2022 Initiatives & Goals

- **Upcoming partnerships and EE initiatives in the community for 2022 and beyond**
  - Community First Partner participant
    - 150 weatherization projects targeted for Residential homes
    - 250 heating and cooling upgrades targeted for Residential homes
    - 100 Small business projects targeted
    - Additional education and awareness for customers with income constraints, renters and English Isolated customers
- **Cambridge/Eversource Partnership Supporting BEUDO Net Zero Targets**
- **Eversource Main Streets Initiative**

# Eversource EV Infrastructure Program: Next Phase Considerations



## Continuation of Successful Make-Ready Infrastructure Program for Level 2 and DCFC

- Public Spaces (e.g. municipal lots, state facilities), Workplaces, Multi-Unit Dwellings, Destinations)



## EVSE Incentives

- Rebates for a portion of EVSE equipment to incentivize more ports per site.
- *50% support of EVSE hardware for ports 5-10 for public, workplace and MUDs*



## Incentives for Primary Metered (Campus) Customers

- Rebates for customer owned equipment that does not connect directly to Eversource distribution system



## Fleet Engagement Advisory

- Support for light, medium and heavy-duty fleet operators considering electrification



## Equity Pilot

- MUD Installations with Car Sharing component, Others

- Completed 18 Level 2 sites with multiple charging points per site.
- 10 Level 2 sites in development
- 2 DC Fast Station sites in development

## Related Filing

As required by Transportation Bill, will file a tariff or program utilizing **alternatives to traditional demand-based rate structures** to facilitate fast charging for light-duty vehicles, heavier-duty vehicles, and fleet vehicles



# Eversource EV Infrastructure Program: Solutions for All Drivers

## Commercial Site Hosts

- Continuation of Make-Ready model
- Customer owns customer side infrastructure
- Rebates for Primary metered customer side
- Charger rebates
- Demand charge alternative rate

### **Equity**

- 100% EVSE incentive for EJC

## Multi Unit Dwellings

- Continuation of Make-Ready model
- Electrification advisory services
- Add a standard spec up to 20 ports

### **Equity**

- 100% EVSE incentive for EJC and Low Income

- Continuation of 1.0
- New for 2.0

## Garage Orphans

- Overnight use of municipal lots; continued build out of L2's
- DCFC Urban Charging Hubs (100% EVSE in EJC)

## Residential Managed Charging

- Rebates for connected Level 2 chargers / wiring
- Rebates for connected Level 2 at 2-4 unit homes

### **Equity**

- Turnkey installation

## Fleets

- Make-ready for passenger vehicle fleets
- Fleet Advisory services for MD/HD

## Equity Pilots

- 100% EVSE for fleets and workplaces that serve low-income communities
- Ride hailing program
- MUD Installations with Car Sharing component





## 2.0 Key Program Differences

### Infrastructure Ownership

- 1.0 Eversource funds, installs, owns and maintains all equipment up to the stub up of the EVSE
- 2.0 Eversource funds, installs all equipment up to the EVSE, but only owns equipment up to / including the meter
- 2.0 Eversource rebates for customer owned equipment that does not connect directly to Eversource distribution system (campus / primary)

### EVSE Incentives

- 1.0 Eversource rebates EVSE for EJC customers
- 2.0 Eversource rebates EVSE for EJC customers, and a portion of EVSE for all customers

### Customer Segments

- 1.0 Multi Unit Dwellings, Public, Workplace
- 2.0 Adds Residential rebates for connected level 2 chargers, enrollment in managed charging program
- 2.0 Adds Fleet Advisory Engagement service for fleet customers
- 2.0 Adds potential MUD / Car Sharing pilot

### Mid-Program Adjustments

- 1.0 No ability to make programmatic adjustments (e.g. DCFC approach, campus customers)
- 2.0 Seeks ability to make mid-term programmatic adjustments if necessary to achieve program goals

# Conclusion

## *Accommodate Load Growth, Prepare for Tomorrow*

- Load growth continues to be widespread throughout Cambridge. With your continued partnership Eversource is prepared to respond to the growing demand.
- Major Transmission Projects are working to build a sustainable and reliable regional grid in the face of load growth.
- Energy Efficiency has multiple programs active and is focused on expanding presence in Cambridge through community, private and civil partnerships.
- Geothermal Pilot Program is a robust and evolving project, Eversource will continue to keep the City and elected officials in the loop as the Framingham program develops
- Electric Operations work requests can be submitted through [eversource.com](https://eversource.com) - additional information on requirements are available online.
- Eversource is committed to integrating clean energy technology into our business operations, and through major strategic initiatives across service territory



## Community Relations

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