

A photograph of an offshore wind turbine under construction at sea. A large white nacelle is being lowered into place by a yellow crane. The crane has labels "WLL 40 T" and "TARE 32 T". The nacelle has a red stripe and a red safety cage. In the background, other wind turbines are visible on the horizon under a cloudy sky.

EVERSOURCE

AEG Boston 22Q3 Stakeholder Challenge: Grid Modernization
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EVERSOURCE

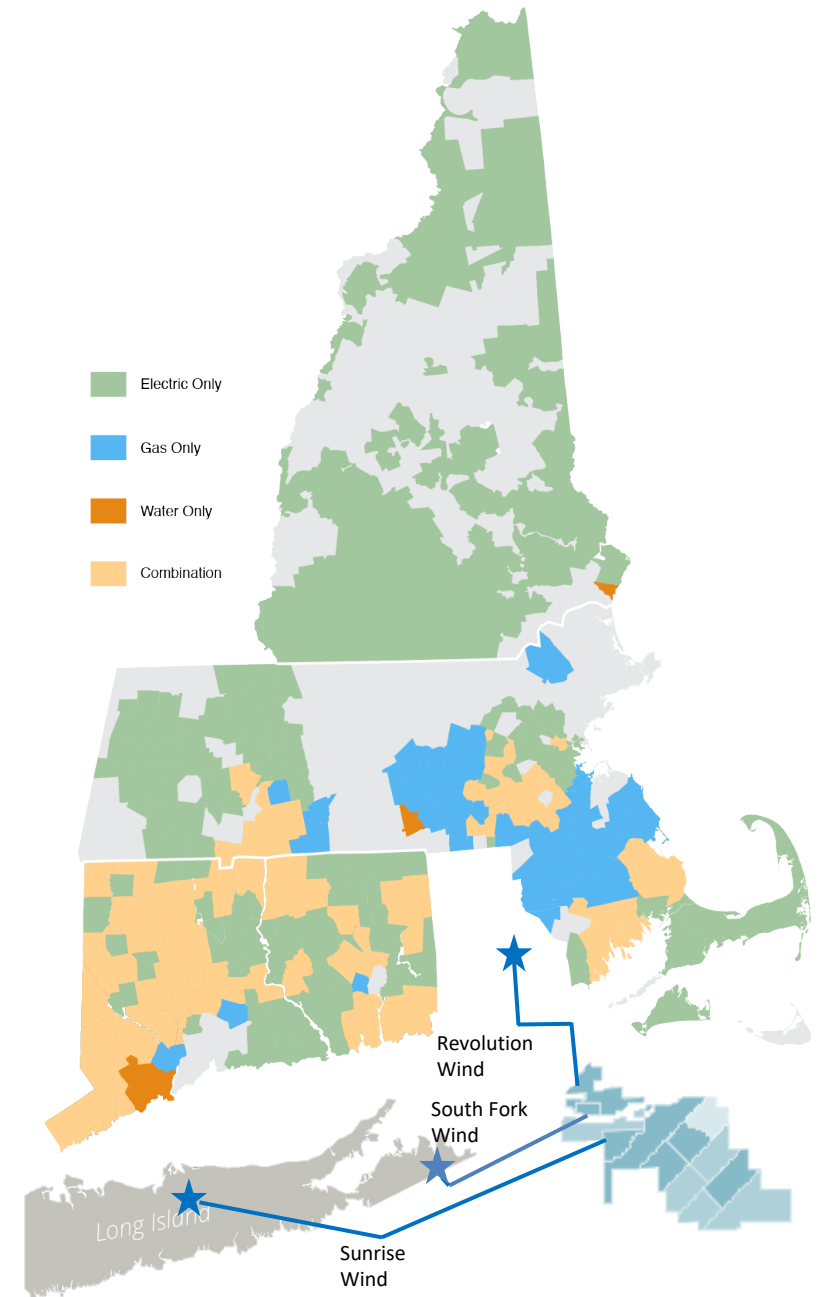
New England's largest energy provider, proudly serving more than 4.4 million electric, natural gas, and water customers in CT, MA, and NH

Owns 49% of New England's electric transmission system

Goal to be Carbon Neutral by 2030

Owns 70 MW solar portfolio in Massachusetts that generates enough electricity to power more than 11,000 homes

50-50 Partnership with Ørsted to provide ~1,760 MW of offshore wind power to New England and New York — enough to power more than 1 million homes across the region

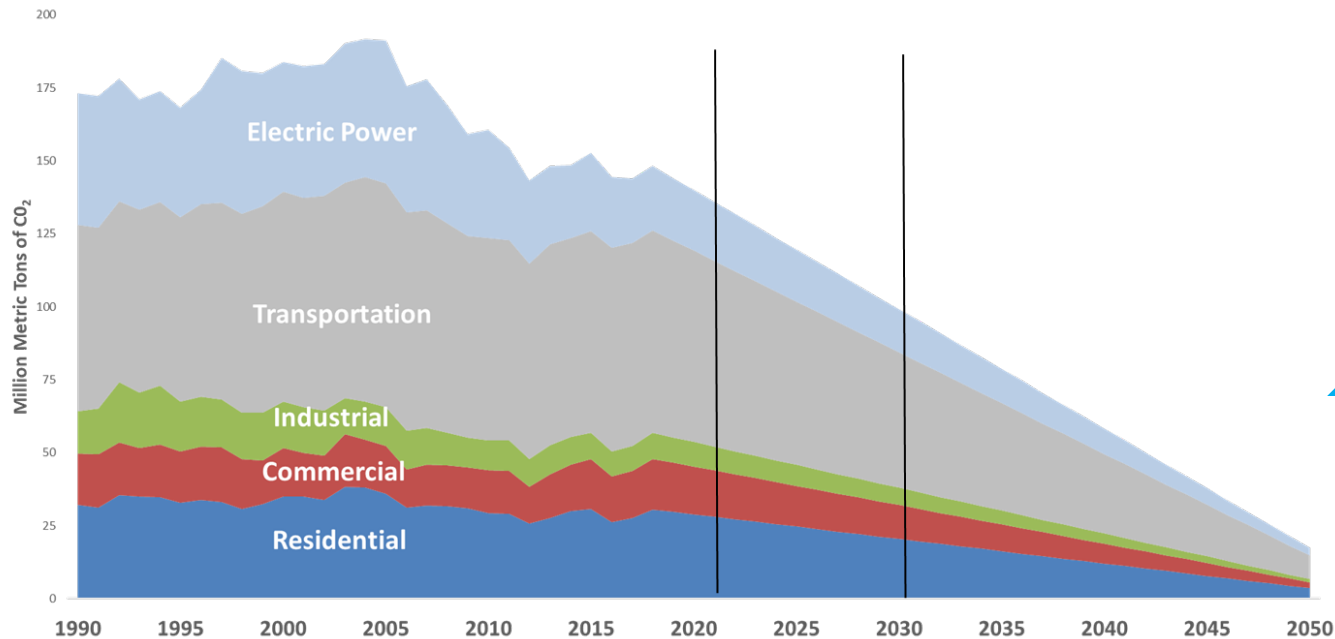


Problem Statement: Significant new electric transmission infrastructure is needed to increase access to additional low-cost clean energy resources across the Northeast, lowering costs overall.

Emission Reduction Targets are Driving Broad Electric Supply and Demand Changes



Between now and 2030, New England needs a **30% reduction in CO2 emissions**



Electrification of transportation and heating driving **7% increase in peak demand per decade and 10% increase in energy demand per decade**



Significant supply additions to meet policy and demand targets, including replacing retirements

- 5,000+ MWs of offshore wind
- 9,000+ MWs of solar generation
- 3,000+ MWs of storage
- 2,400+ MWs of hydro

Transmission Grid Modernization: System Planning Perspective

Federally

- Federal Energy Regulatory Commission pending rulemaking on building for the future via transmission planning (Docket RM21-17)
 - Proposes to mandate studying Long-Term Scenarios that include **federal, state, and local laws and regulations that affect demand, decarbonization, and electrification**

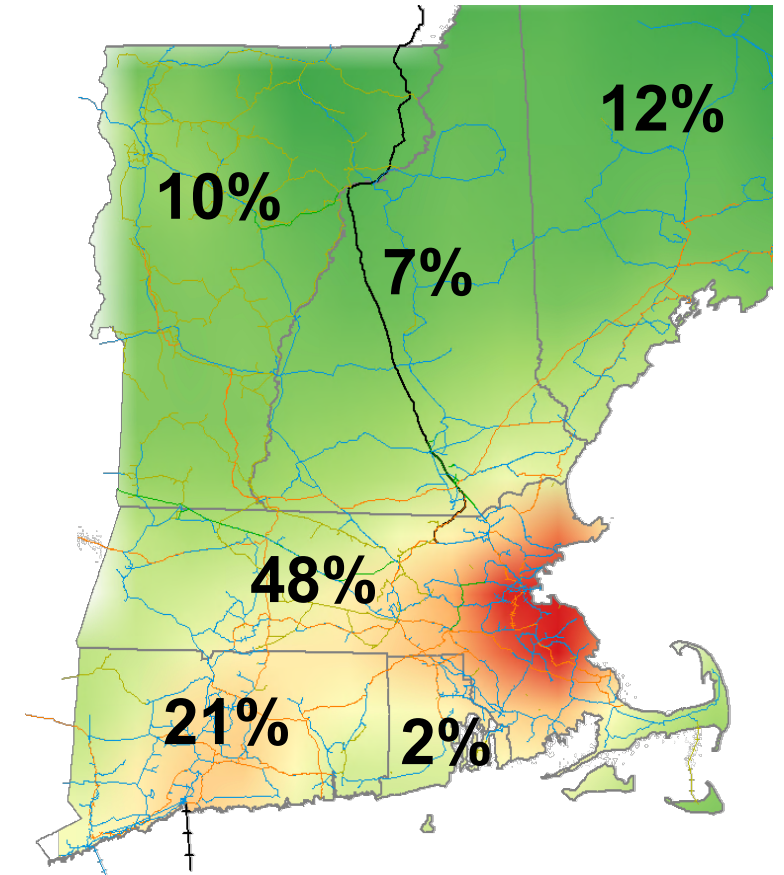
Regionally

- Anticipated impacts of electrification on demand are included in ISO-NE Capacity, Energy, Loads, and Transmission (CELT) forecast
 - For example, the 2022 Forecast includes
 - 1.9 GW of Heating Electrification by 2031
 - 1.5 GW of Transportation Electrification by 2031
- ISO-NE performing 2050 Study based on “All Options” pathway
 - **~50%** of New England transmission lines overload in 2050

Locally

- Eversource Local System Planning already “Right-Sizing” projects for future system needs based on **advanced long-range forecasting**
- Eversource is a catalyst for Grid Modernization and Clean Energy (e.g., Provincetown microgrid BESS, Offshore wind, DERs)

Electric Load Transition **22% increase in peak load by 2035**



Heat map of peak load changes 2031 vs. 2035

Regarding Grid Modernization of Transmission,
to achieve Greater Boston's Carbon & Equity
goals, a critical obstacle to collectively overcome
in 12 months is *project execution*.

