

A photograph showing the construction of an offshore wind turbine. 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. The background shows the ocean and a cloudy sky at dusk or dawn. Other wind turbines are visible in the distance.

EVERSOURCE

AEG 23Q1 Northeast Summit: Transmission, Equity & Resilience

Jacob Lucas, Janny Dong, Transmission System Planning

March 30, 2023

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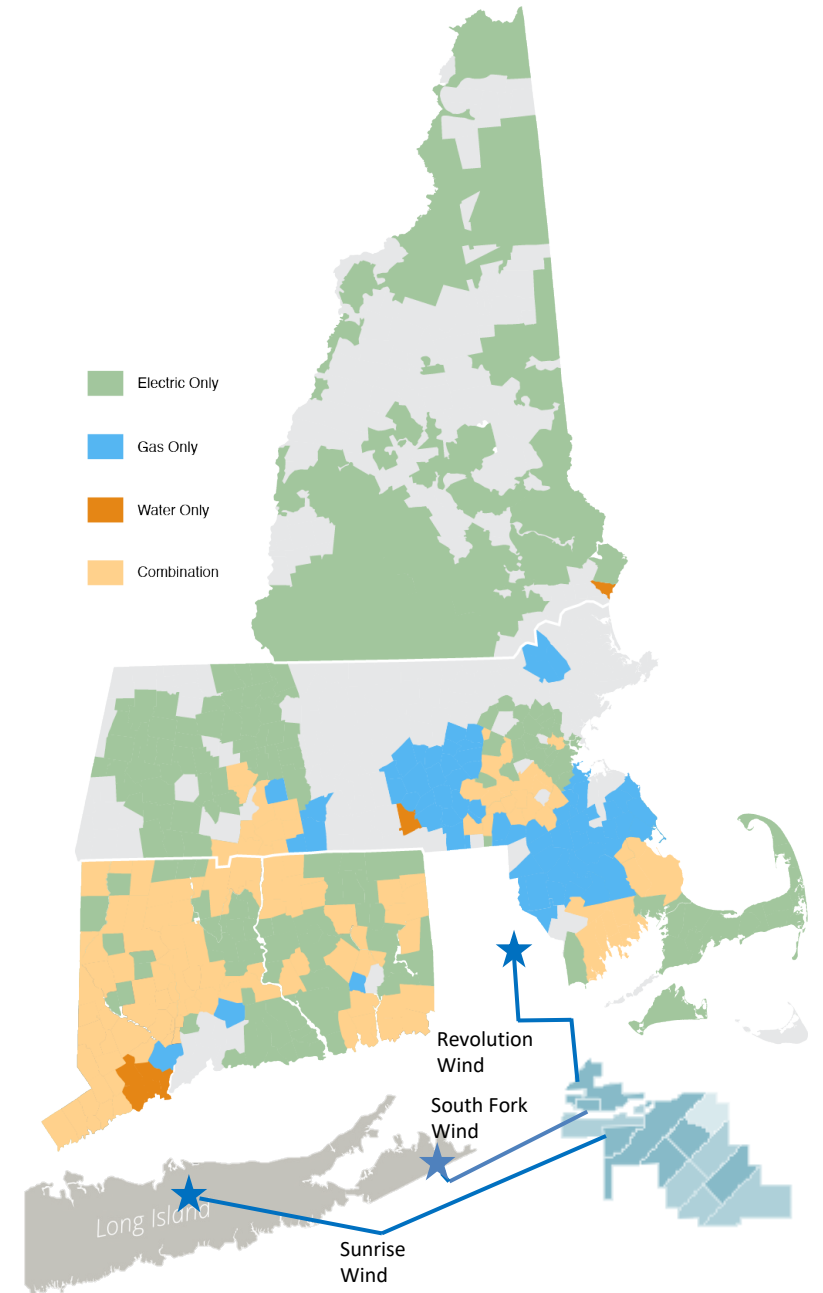
New England's largest energy provider, proudly serving more than 4.4 million electric, natural gas, and water customers in CT, MA, and NH

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



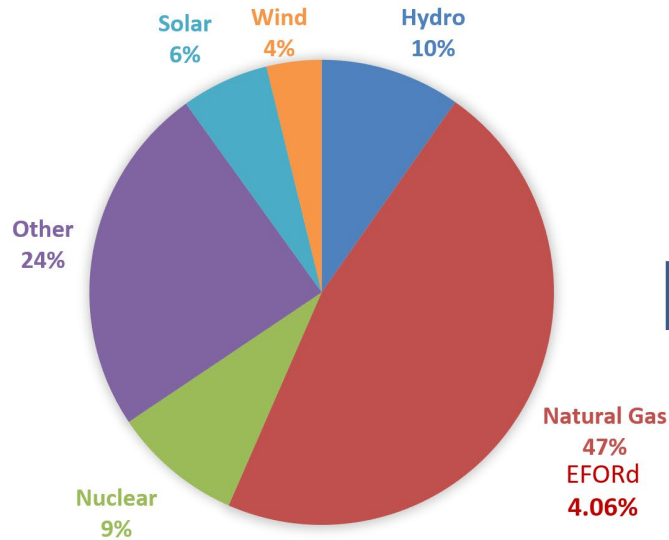
Problem Statement: Significant new electric transmission infrastructure is needed to achieve access to additional low-cost clean energy resources across the Northeast, lowering costs overall.

Emission Reduction Targets are Driving Broad Electric Supply and Demand Changes

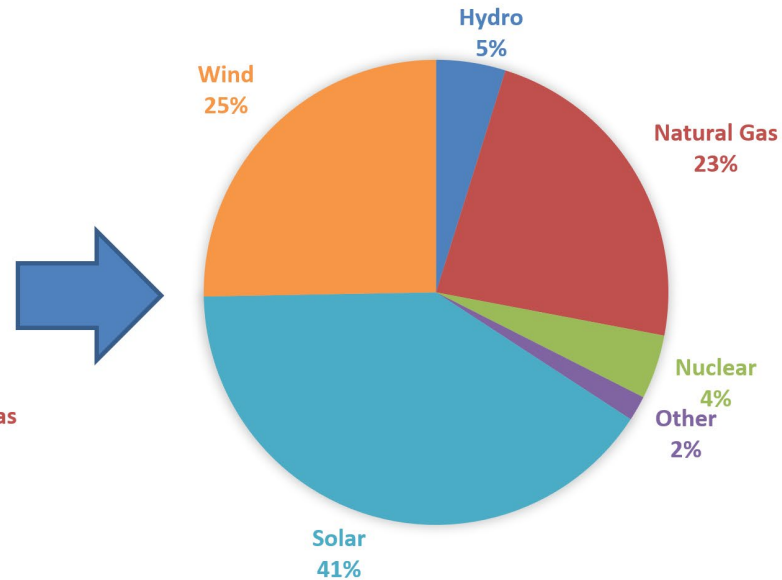


Between now and 2030, New England needs a **30% reduction in CO2 emissions**

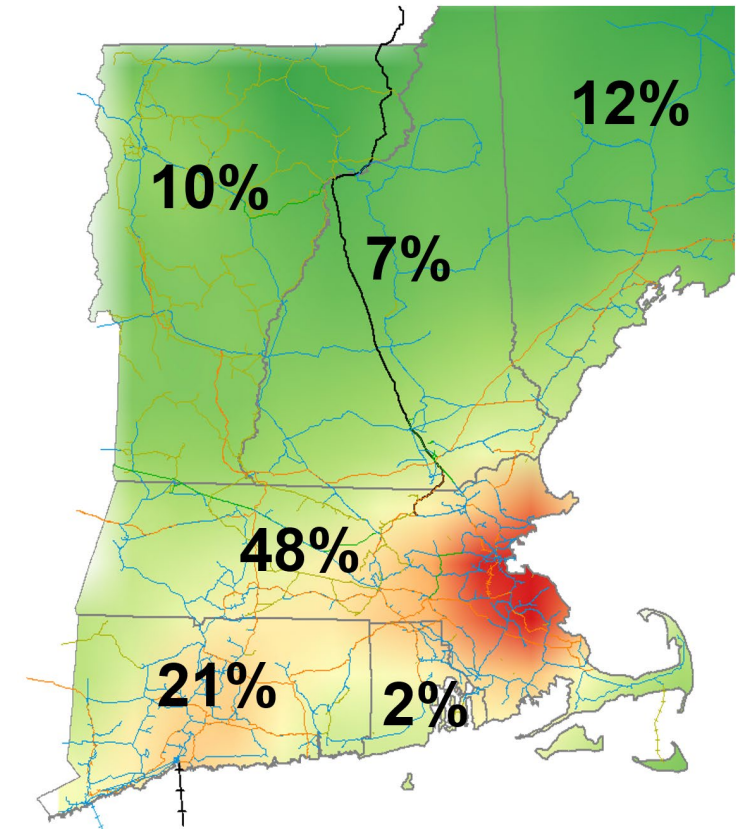
2022 INSTALLED NAMEPLATE MW



2040 INSTALLED NAMEPLATE MW



Electric Load Transition 22% increase in peak load by 2035



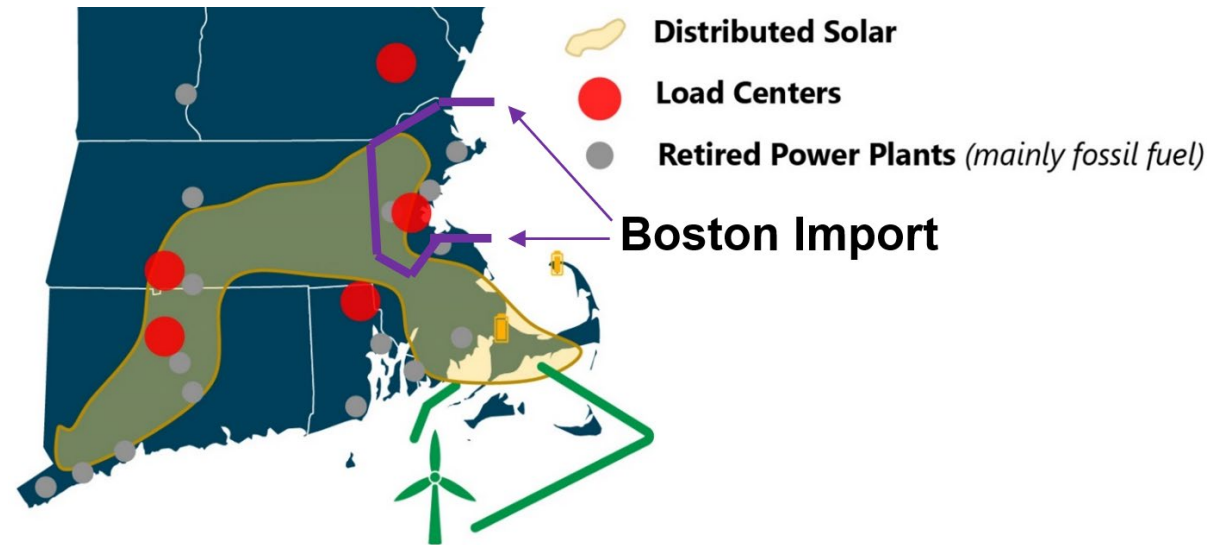
Challenges of Supplying Higher Demand and Enabling Renewable Energy

Electrified Boston Relies on Transmission Import

- Greater Boston 2031 peak load 6 GW (summer)
 - 19 GW by 2050 (100% gas to electric conversion and EVs!)
 - 8 GW of Heating Electrification load growth
 - 7 GW of Transportation Electrification load growth
- Current Boston Import transfer limit is 5.3 GW.

Clean Resources in SEMA Need Transmission to Reach Load Center

- SEMA 2031 summer peak load: 3 GW
- Projected offshore wind in SEMA: 5 GW
- Projected solar in Eversource SEMA territory: 4 GW
- Offshore wind & solar in excess of load: > 6 GW
- ISO-NE's New Generation Curtailment Pilot study of SEMA indicates in 2025:
 - Over 4,000 hours of offshore wind curtailment under the most limiting condition due to transmission constraints
 - Close to 5,000 GWh offshore wind curtailment under maintenance and transmission line out conditions.



Eversource Working to Combine **Grid Reliability, Resiliency and Clean Energy**



Advanced long-range forecasting for key technologies providing data driven inputs to transmission system planning and strategic decision-making processes



Local System Planning already **“Right-Sizing”** projects for future system needs and customer needs in a most cost-effective way



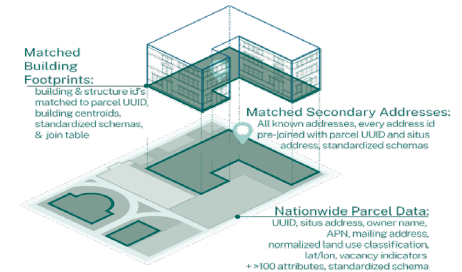
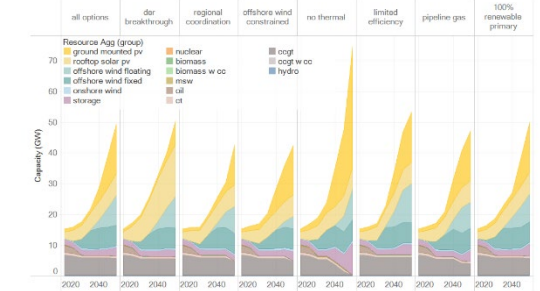
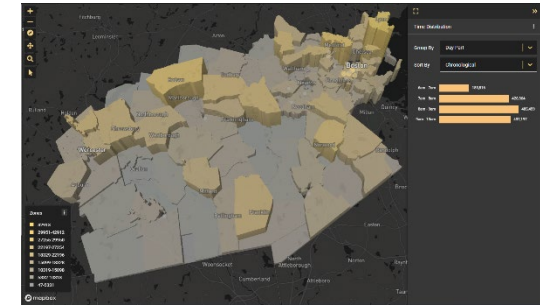
Pursuing strategic transmission investments to address reliability needs and interconnect offshore wind, battery storage, and solar



Efficient use of our rights of way and electric infrastructure by co-optimizing reliability improvements and clean energy integration



Proactive and coordinated planning for interconnections of renewable generation, customer loads and integrating with local transmission projects



Regarding Transmission, Equity and Energy Security in the Northeast, a critical obstacle to collectively overcome in 12 months is *educating regional stakeholders on the critical nexus between decarbonization, resource adequacy, and electric transmission infrastructure buildout.*

