



The State of the New England Grid

IBEW Second District Utility & Outside Construction Summit

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OVERVIEW OF ISO NEW ENGLAND



ISO New England Has Nearly Three Decades of Experience Overseeing the Region's Restructured Electric Power System

- **Regulated** by the Federal Energy Regulatory Commission
- **Reliability Coordinator** for New England under the North American Electric Reliability Corporation
- **Independent** of companies in the marketplace and **neutral** on technology



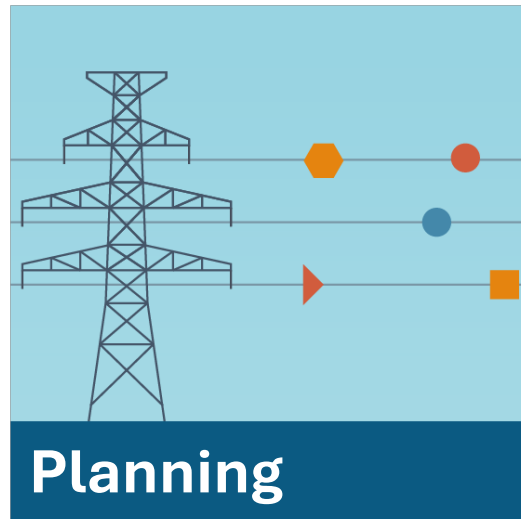
ISO New England Performs **Three Critical Roles** to Ensure Reliable Electricity at Competitive Prices



Coordinate and direct the flow of electricity over the region's high-voltage transmission system



Design, run, and administer the billion-dollar markets where wholesale electricity is bought and sold



Study, analyze, and plan to make sure New England's electricity needs will be met over the next 10 years

Things We Don't Do



Handle
retail electricity



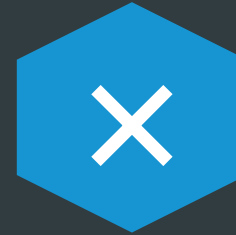
Own power grid
infrastructure



Have a stake in
companies
that own grid
infrastructure



Have
jurisdiction
over fuel
infrastructure



Have control
over siting
decisions

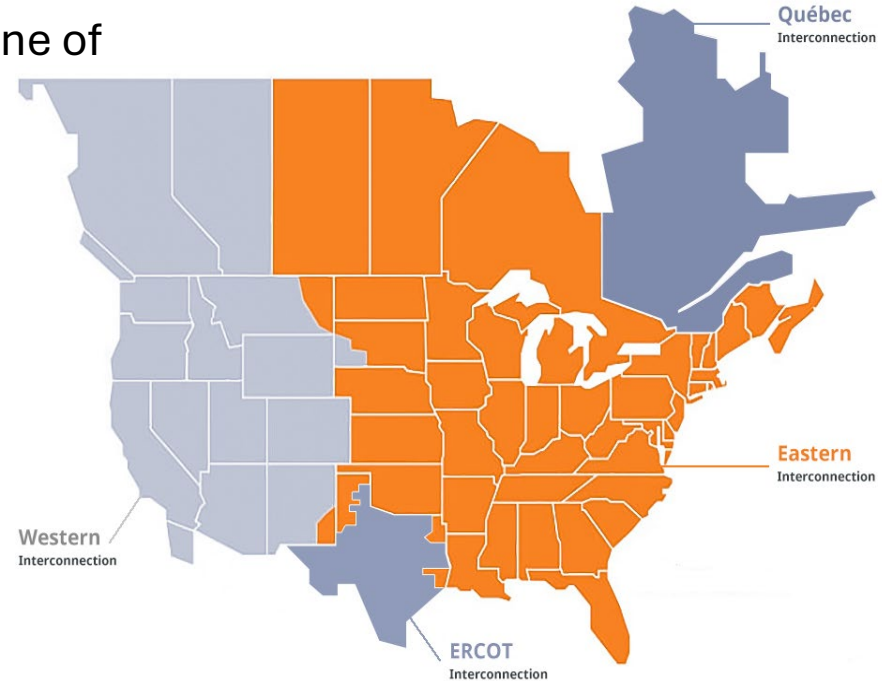


Plan the
resource mix



New England's Power Grid Is Part of a Larger Electric Power System

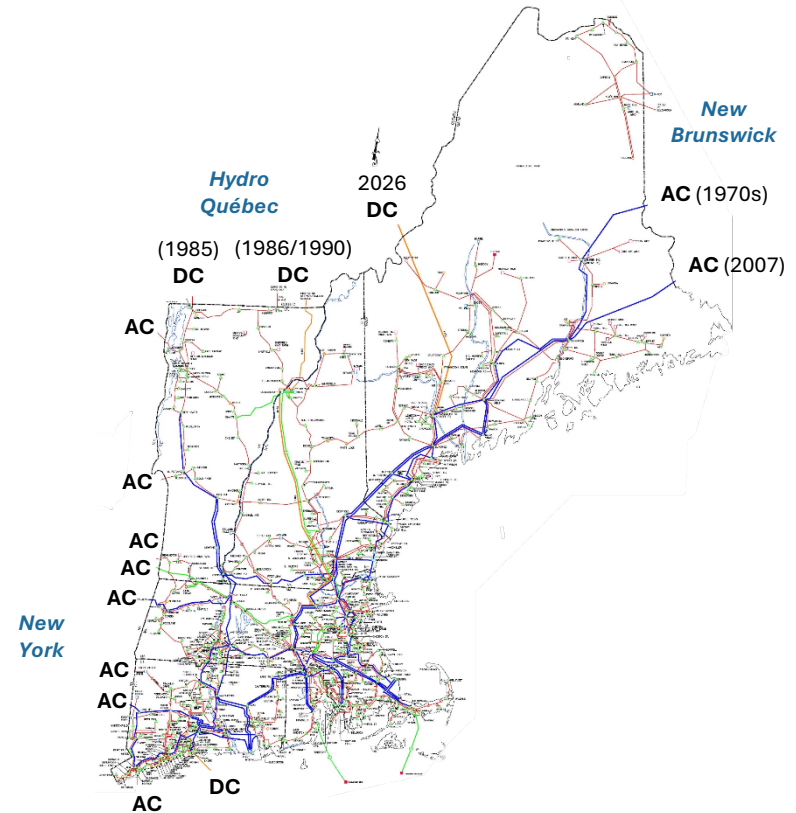
- Part of the **Eastern Interconnection**, one of four large power grids in North America
 - Interconnected through primarily alternating current (AC) transmission
- Tied to **Québec** only through direct current (DC) transmission
- 2003 blackout ushered in wide-area monitoring and **mandatory** reliability standards
- Subject to reliability standards set by **NERC** and **NPCC***



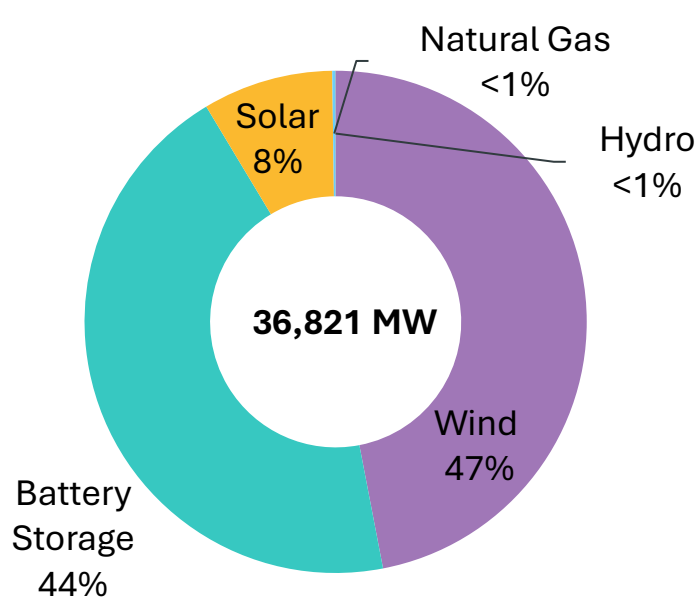
* North American Electric Reliability Corporation (NERC) and Northeast Power Coordinating Council (NPCC)

New England Has Multiple Ties to Neighboring Regions

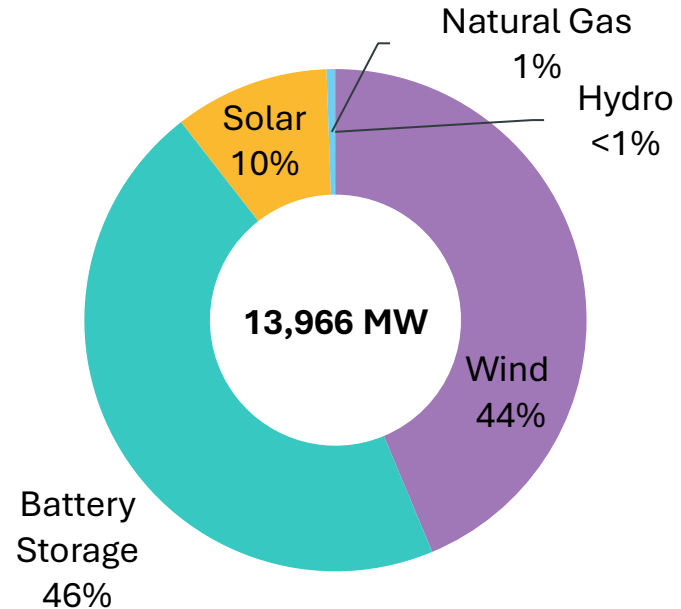
- Transmission system is tied to neighboring power systems in the U.S. and Eastern Canada:
 - New York (8 AC ties, 1 DC tie)
 - Hydro Québec (3 DC ties)
 - New Brunswick (2 AC ties)
- **7%** of the region's energy needs were met by imports in 2025



Today's Queue Reflects the Changing Interconnection Process



April 2025



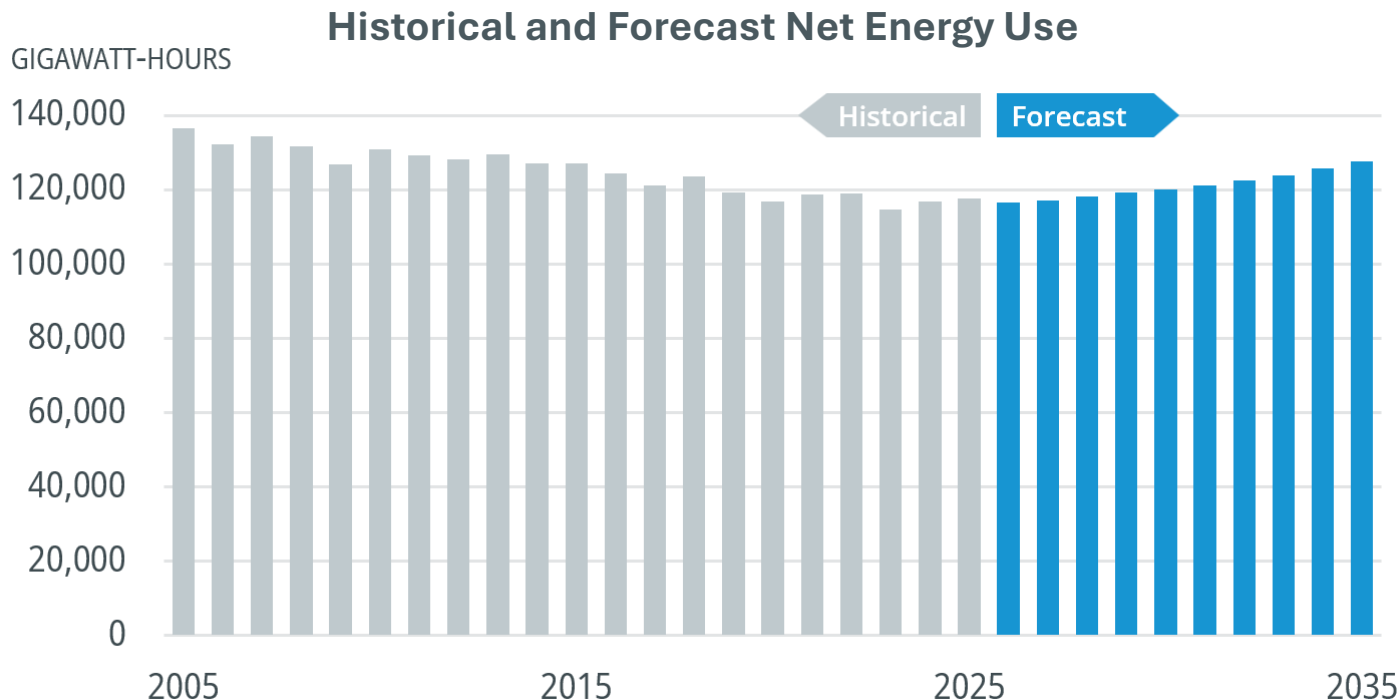
January 2026

Source: ISO Generator Interconnection Queue, FERC Jurisdictional Proposals; Nameplate Capacity Ratings.

FORECASTING REGIONAL LOAD GROWTH

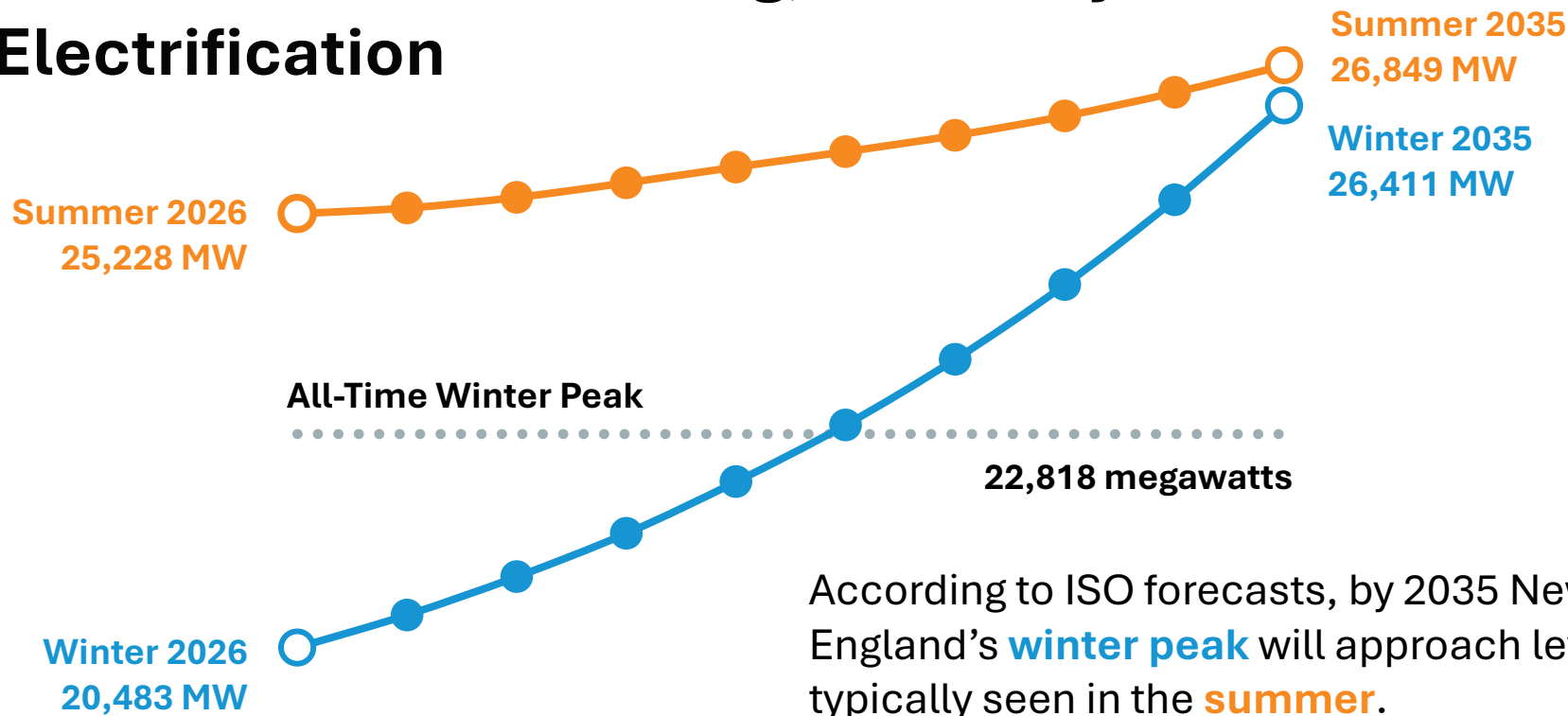


Electricity use expected to rise after two decades of decline



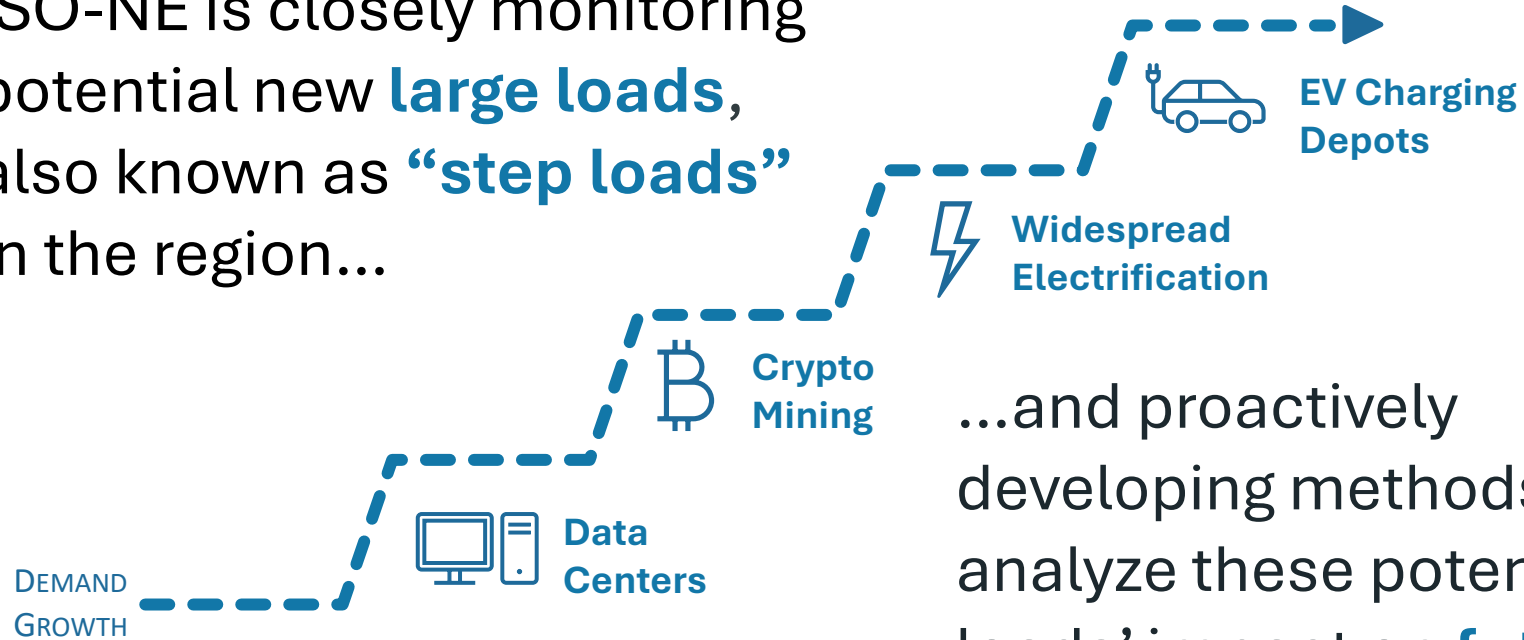
Source: [ISO New England 2026-2035 Forecast Report of Capacity, Energy, Loads, and Transmission \(2026 CELT Report\)](#) (May 2026)

Peak Demand is Growing, Driven by Electrification



Source: [ISO New England 2026-2035 Forecast Report of Capacity, Energy, Loads, and Transmission \(2026 CELT Report\)](#) (May 2026)

ISO-NE is closely monitoring potential new **large loads**, also known as “**step loads**” in the region...



...and proactively developing methods to analyze these potential loads' impact on **future demand**

ISO-NE is preparing for the potential of large load additions, including through:



Engagement with **New England Transmission Owners** regarding potential large load interconnections

Communication with **state policymakers, legislators and regulators** to understand any potential policy incentives for data centers

Research of methods and data sources to understand the potential magnitude, timing, and likelihood of future impacts of step loads in New England

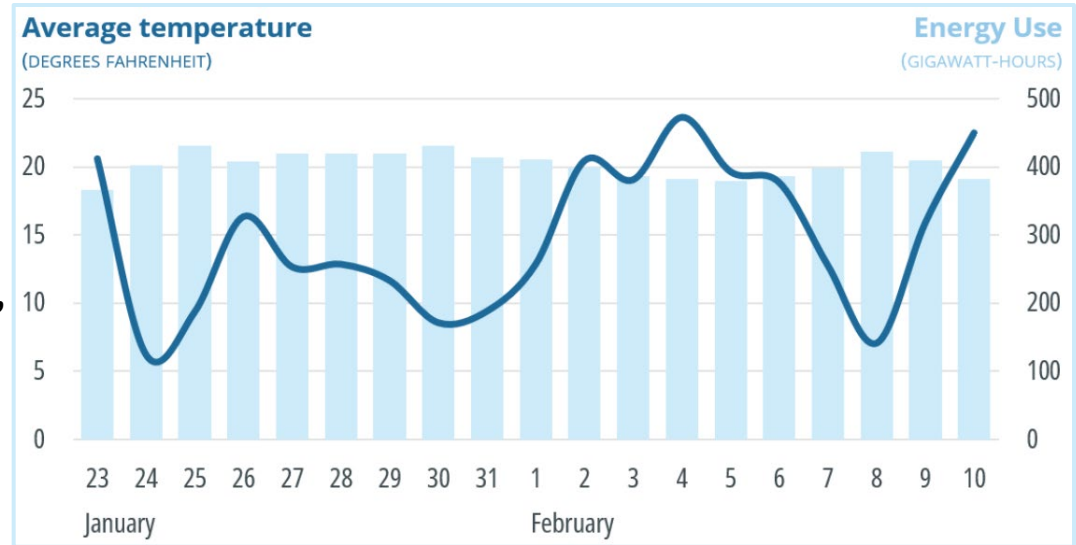
WINTER 2025/2026 RECAP



Grid Stays Reliable During Prolonged Cold

Electricity consumption increased as temperatures plunged

- During an outbreak of arctic air from Jan. 23 to Feb. 10, temperatures in the region averaged about 15 degrees Fahrenheit (°F) — **11°F below normal**
- New Englanders consumed ~7,669 GWh of electricity throughout the cold snap
- Peak demand for the winter occurred Jan. 25 at 20,182 MW, slightly above the ISO's [pre-winter forecast](#) for normal conditions

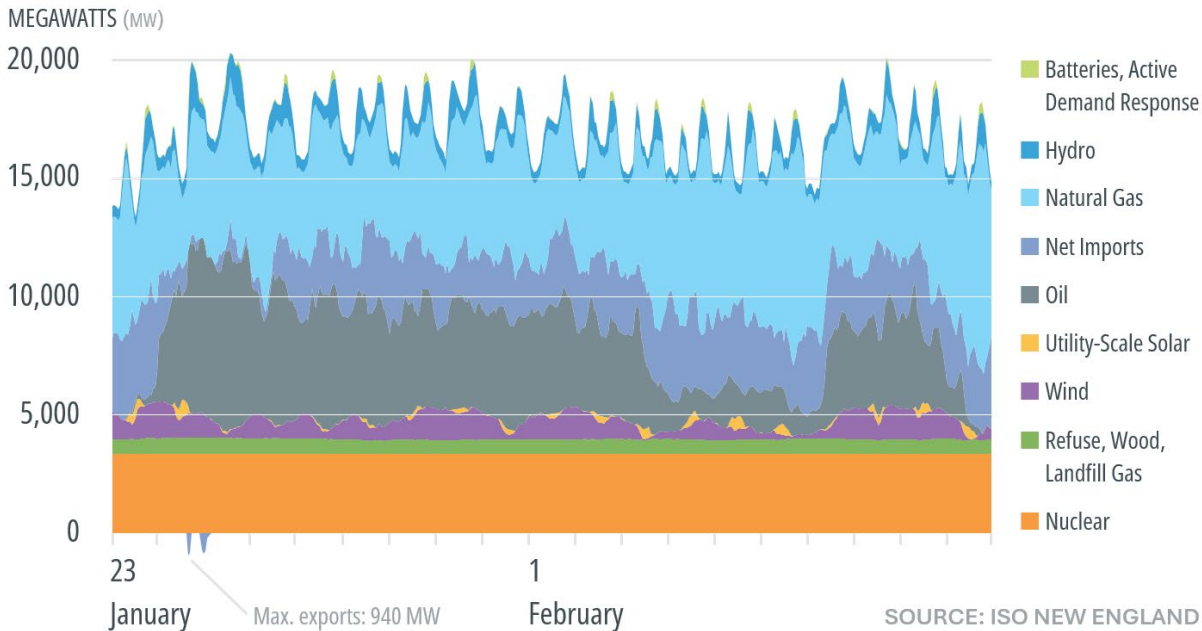


Oil Generation Increased With Severe Cold Weather

High demand, coupled with limited capacity to transport gas into New England, prompted high prices

As a result, many generators turned to oil as a more economical alternative.

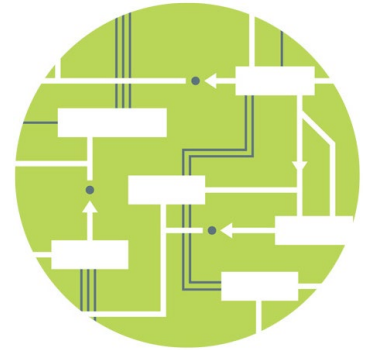
Generation from oil increased as severe cold weather set in



PLANNING THE TRANSMISSION SYSTEM



Regional Transmission Planning



- ISO New England is responsible for planning the regional transmission system over the ten-year planning horizon and beyond
 - Summarized in [Regional System Plan](#)
 - Stakeholder engagement through Planning Advisory Committee
- ISO New England can select new projects to address *three* categories of transmission system needs:
 1. **Reliability projects:** maintaining the ability to deliver bulk power considering load growth, generator retirements, and other future changes
 2. **System Efficiency projects:** reducing energy costs by increasing the ability to obtain power from cheaper sources
 3. **Public Policy projects:** expanding the transmission system as needed for the successful implementation of public policy

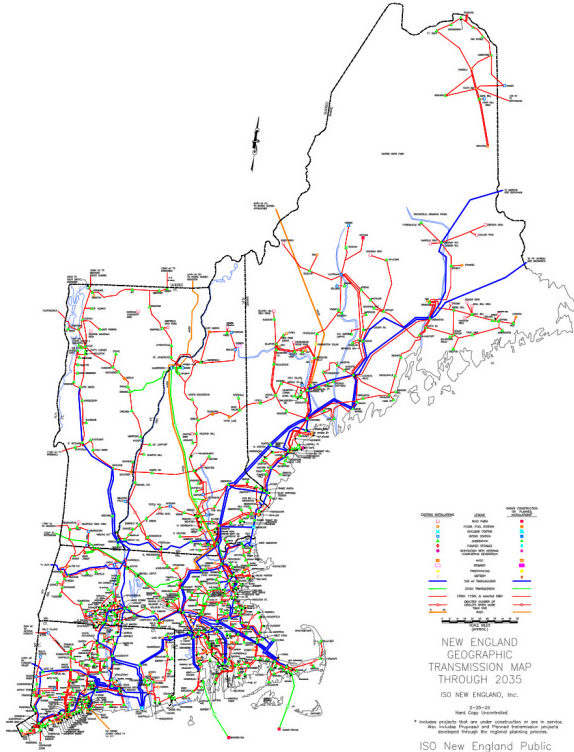


Longer-Term Transmission Planning (LTTP)

- 2020: New England States Committee on Electricity (NESCOE)'s [vision statement](#) recommended that the ISO work with stakeholders to conduct a **comprehensive long-term regional transmission study**
- 2024: [2050 Transmission Study](#) is the **first longer-term transmission study**
- 2025: At the direction of NESCOE, ISO issued a **request for proposals (RFP)** in March; proposals were due by Sept. 30.
 - The goal of the RFP is to upgrade transmission between northern ME and more populous regions in southern New England
 - ISO [released summaries](#) of the six proposals we received
- 2026: ISO will assess proposals and provide updates through the [Planning Advisory Committee](#) (PAC)
 - At the [March 24 PAC](#), ISO announced that two bids would proceed to the next step of evaluation
 - A **preferred solution** may be identified by Sept. 2026



Solving Transmission Needs: 2025 LTTP RFP



As requested by **NESCOE**, the RFP requires the following needs be addressed by Dec. 31, 2035:

- Increase the **Maine – New Hampshire** interface capability to at least 3,000 MW
- Increase the **Surowiec – South** interface capability to at least 3,200 MW
- Develop new infrastructure at Pittsfield, Maine, or at an alternate location north of the Albion Road substation, that can accommodate the interconnection of at least **1,200 MW (nameplate) of onshore wind**

CAPACITY AUCTION REFORMS



The Capacity Market Plays a Critical Role in Meeting the Region's Reliability Standards

The **energy**, **ancillary services**, and **capacity** markets work together to provide the incentives and revenue the region needs to meet reliability standards



The Day-Ahead and Real-Time Energy Markets are forward and spot markets for trading **electric energy**



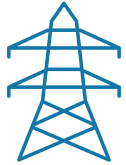
Resources provide **short-term reliability services**, as well as services needed to support the physical operation of the system (e.g., regulation, voltage support)



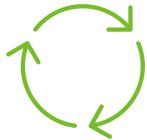
Resources compete to sell **long-term reliability services** to the system in three years' time through annual Forward Capacity Auctions

The capacity market provides revenue to cover costs and continue operation for resources needed for reliability, but that seldom run and therefore receive little revenue from the energy and ancillary services markets

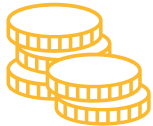
Capacity Market Design Decisions are Informed by Three Design Objectives



Reliability: to ensure that the capacity market is designed to satisfy the North American Electric Reliability Corporation's (NERC) one-day-in-ten Loss of Load Expectation (LOLE) resource adequacy standard



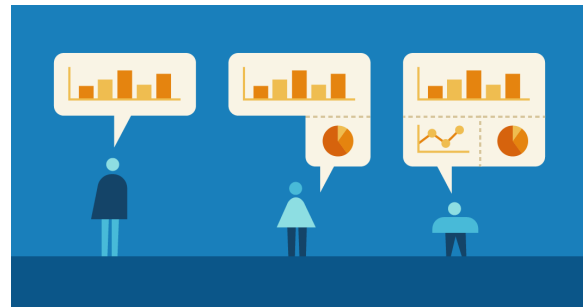
Sustainability: to incent the investment needed to meet the reliability design objective over time as system and market conditions change



Cost-effectiveness: to procure capacity to meet the reliability and sustainability design objectives while minimizing costs

Next Steps for the Capacity Market

- The **Capacity Auction Reform (CAR) Key Project** addresses system reliability and affordability as electricity demand and the resource mix change:
 - **First Phase (approved by FERC Mar. 2026)**
 - Transitions the capacity market from a three-year forward auction to a **prompt auction** that runs shortly before the capacity commitment period (CCP) and updates the process for resources exiting the capacity market
 - **Second Phase (ongoing – 2027)**
 - Restructures the CCP from **annual to seasonal** commitment periods
 - Reshapes capacity market accreditation to more accurately reflect **resource adequacy contributions** from an evolving resource mix, from season to season



Benefits of Proposed Auction Reforms



Accrediting resources based on their expected performance during tight system conditions will help the region procure a set of **resources that can perform during tight system conditions**



Accreditation framework will help to **ensure accurate entry/exit signals over time as system conditions change**, incenting the investment required to meet the region's one-day-in-ten reliability standard as system conditions evolve



Accreditation framework will **better link resources' expected resource adequacy contributions to their capacity market compensation**



Prompt auctions mean **better forecasts, no “phantom” entry, and simplicity**

INVERTER-BASED RESOURCE INTEGRATION



Standards are Essential for the Reliable Integration of DERs

- As the distribution system has **evolved**, so too has the transmission system
- Standards set by the North American Electric Reliability Corporation (NERC) and the Northeast Power Coordinating Council (NPCC) **require** the ISO to plan for **the contingency loss of resources**
- Historically, the concern has been large generators being disconnected or going unstable and tripping
 - This has changed with the proliferation of solar PV and other inverter-based/power electronics-based resources



Illustrative Example: Why Ride-Through Matters



Ride-through keeps DERs online

Proper inverter settings can prevent cascading impacts and mitigate the need for transmission upgrades

Questions



About the Presenter



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