

ISO-NE System Forecasting Public Webinar



2026 CELT Overview

Long Vu

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Why an Independent System Operator?

ISOs are independent, not-for-profit organizations that coordinate generation and transmission to provide reliable and cost-effective electricity



Non-discriminatory,
open access to the
transmission system



Full control of the
transmission system

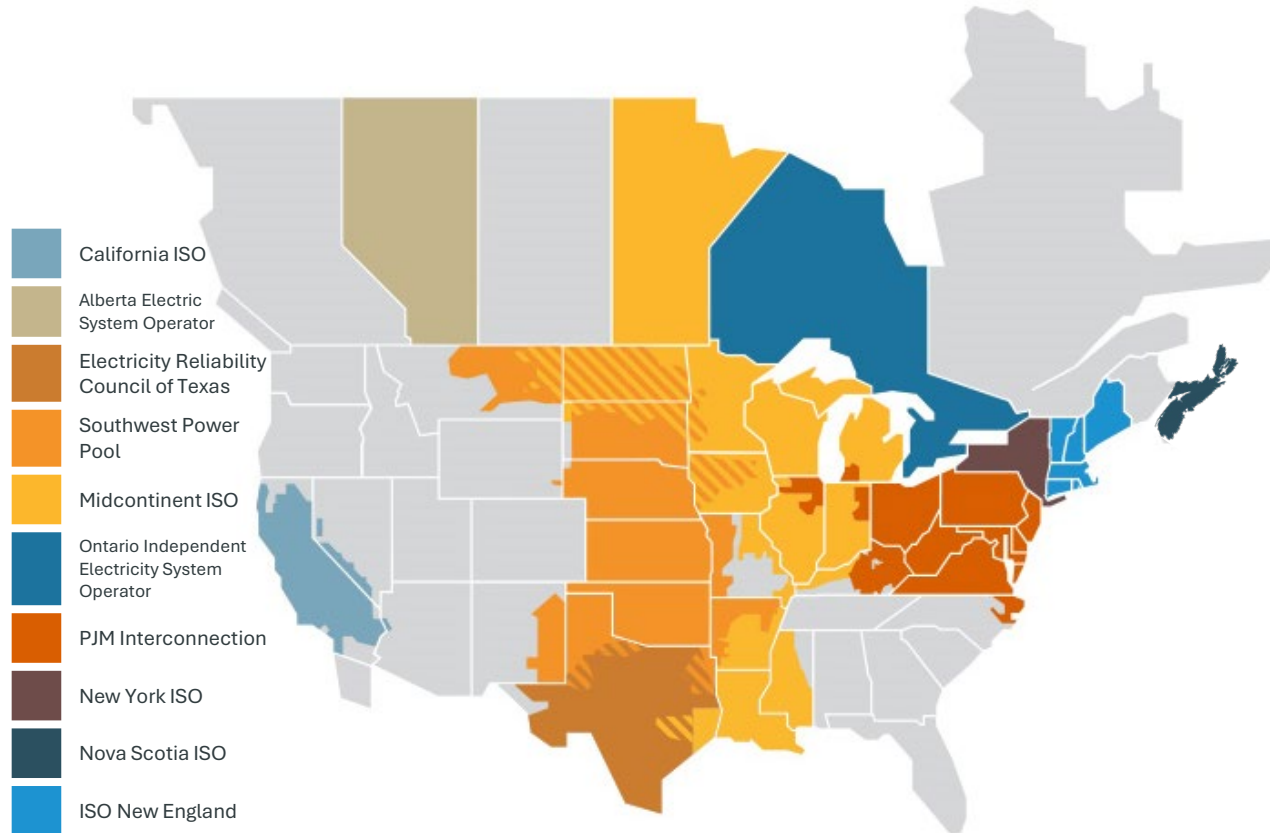


Consumers benefit
from competition for
electricity supply



Independence from
market participants

RTOs and ISOs in the United States



- ISO New England is one of four US RTOs (ISO-NE, PJM, MISO, SPP), all serving **multistate** areas
- Three ISOs (NYISO, CAISO, ERCOT), serving **single-state** areas
- In areas without ISOs or RTOs (grey areas on the map), the power system is operated by vertically integrated utilities



We have a mission that matters

Through collaboration and innovation, ISO New England plans the transmission system, administers the region's wholesale markets, and operates the power system to ensure reliable and competitively priced wholesale electricity



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



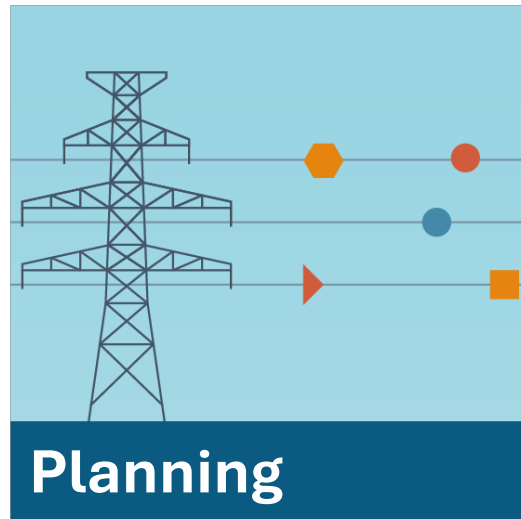
ISO New England Performs **Three Critical Roles** to Ensure Reliable Electricity at Competitive Prices



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



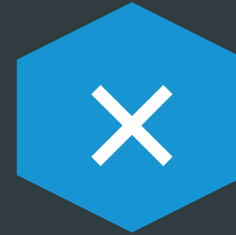
Own power grid
infrastructure



Have a stake in
companies
that own grid
infrastructure



Have
jurisdiction
over fuel
infrastructure



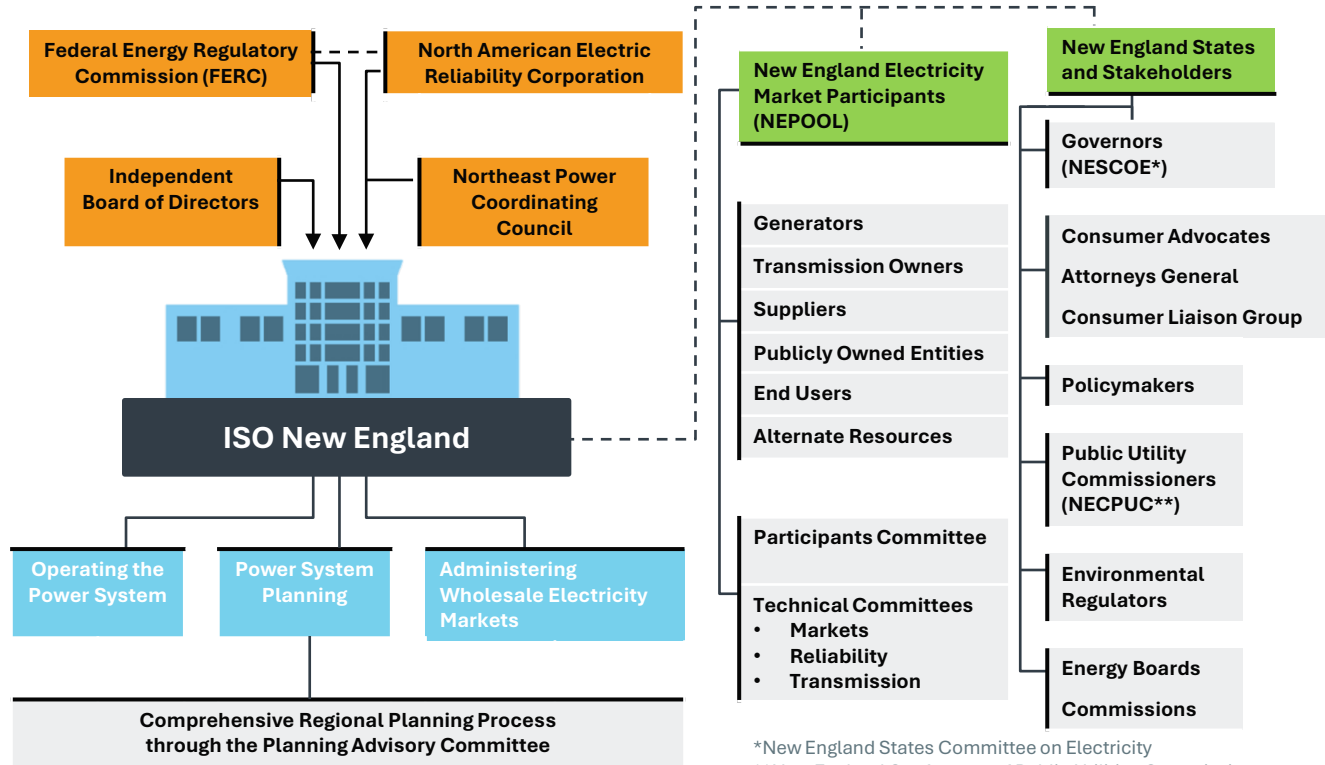
Have control
over siting
decisions



Plan the
resource mix



Numerous Entities Including an Independent Board Provide Oversight of and Input on ISO's Responsibilities



*New England States Committee on Electricity

**New England Conference of Public Utilities Commissioners

Generation and Demand Resources Are Used to Meet New England's Energy Needs



- Nearly **400** dispatchable generators in the region
- **Nearly 30,000 MW** of generating capacity
- Approximately **14,000 MW** of proposed generation in the ISO Queue, mostly wind, storage, and solar proposals
- Roughly **7,000 MW** of generation have retired or will retire in the next few years
- Nearly **3,600 MW** of demand resources with obligations in the Forward Capacity Market*, including energy efficiency, load management, and distributed generation resources

* In the Forward Capacity Market, demand-reduction resources are treated as capacity resources.

Weather Drives Regional Demand

- New England is a **summer-peaking system**; heat and humidity drive demand
 - Summer peaks average ~25,600 MW
- Region anticipates shift to **winter-peaking system** with the electrification of heating demand
 - Winter peaks average ~21,000 MW

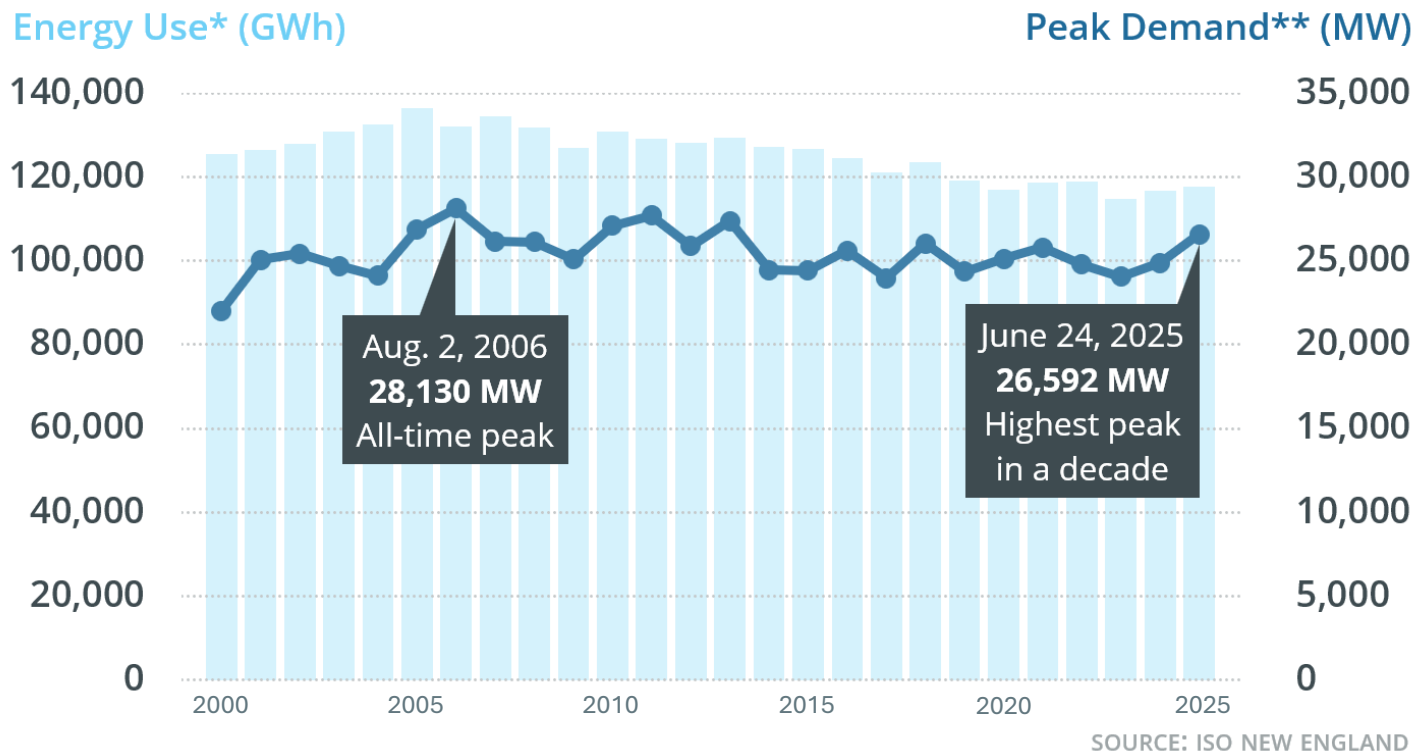
ISO New England Top Demand Days

Summer
28,130 MW
Aug. 2, 2006

Winter
22,818 MW
Jan. 15, 2004



Annual Energy Use vs. Peak Demand, 2000-2025



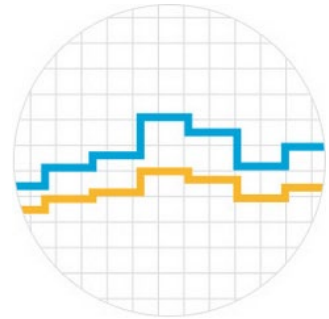
* Annual energy use, also known as net energy for load (NEL), is the total amount of grid electricity produced by generators in New England and imported from other regions during the year to satisfy all residential, commercial, and industrial customer demand.

** Peak demand represents the sum of metered generation and metered net interchange, less demand from pumped storage units. Starting with full market integration of demand response on June 1, 2018, this total also includes the grossed-up demand response value.

2026-2035 FORECAST REPORT OF CAPACITY, ENERGY, LOADS, AND TRANSMISSION

Forecasting Regional Electric Energy Use

- ISO New England is responsible for planning the regional transmission system over a 10+ year planning horizon
- Forecasting how much electricity the region will use in the future requires ISO system planners to weigh multiple variables
 - **Economic** activity and outlook
 - **Weather** and **load** patterns
 - Federal and state **policies reducing** electricity demand
 - Energy efficiency (EE) initiatives and distributed generation
 - Federal and state **policies increasing** electricity demand
 - Electrification of transportation and heating
 - Development of large loads, including data centers



2026 CELT Report



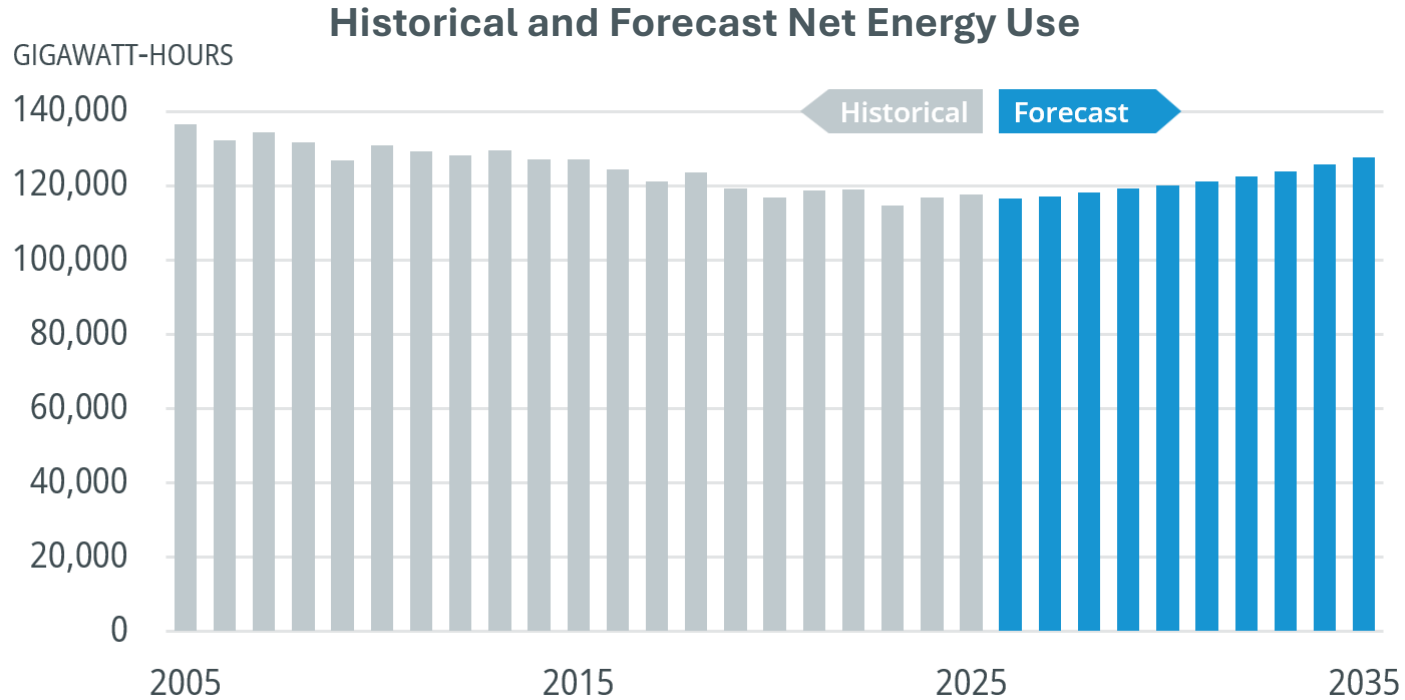
2026 CELT Report (May 1, 2026)

ISO New England's annual *Forecast Report of Capacity, Energy, Loads, & Transmission* (CELT Report) is a foundational resource for system planning and reliability studies

ENERGY USE & PEAK DEMAND

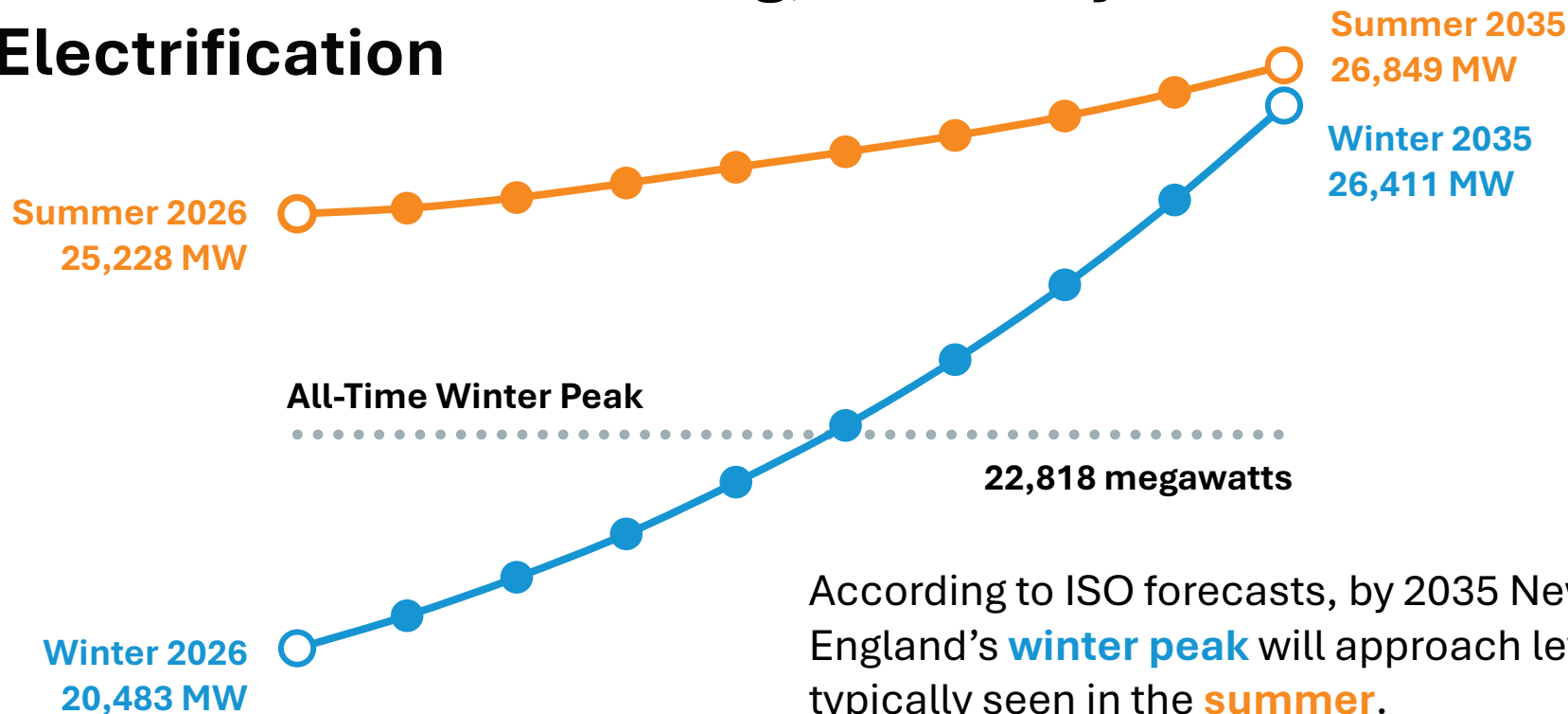


Electricity Use Is Expected to Rise After Two Decades of Decline



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)

Forecasts Consider a Range of Possible Weather Conditions

The 50/50 Forecast reflects typical conditions, while the 90/10 Forecast reflects extreme weather

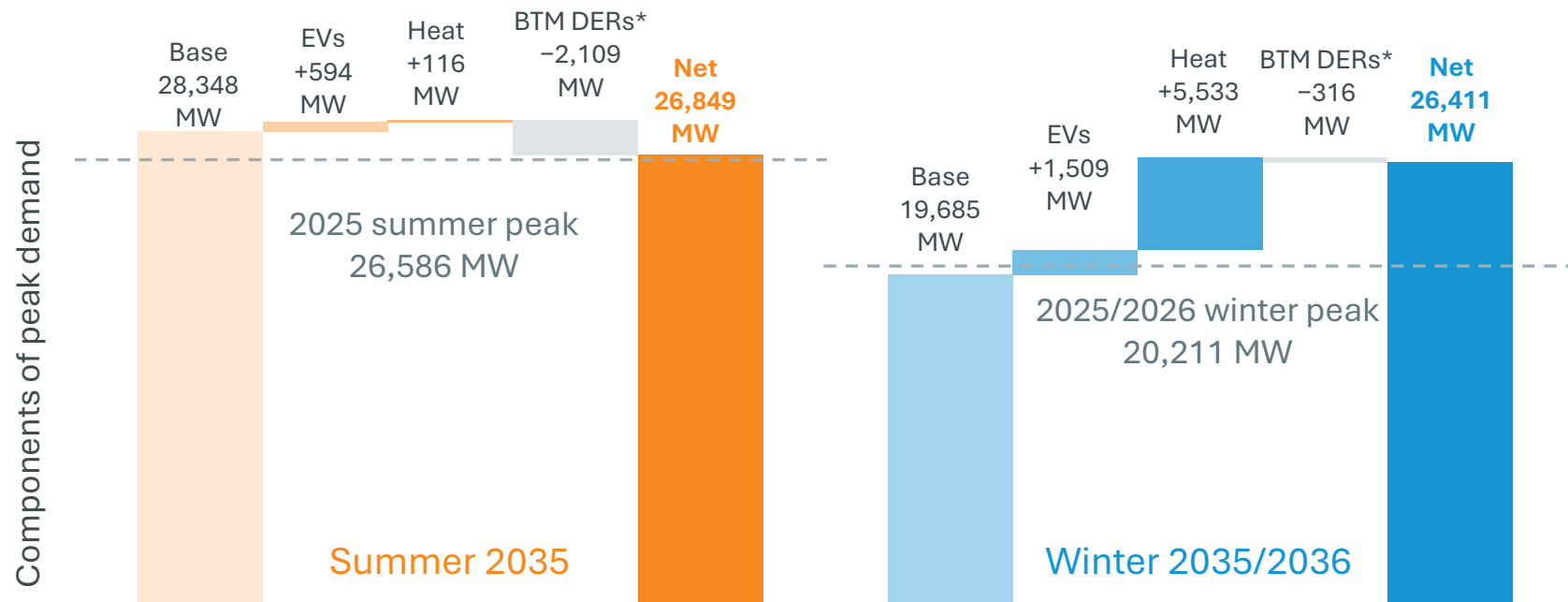
Summer Peak Demand (MW)	2026	2035
50/50 Net Forecast	25,228	26,849
90/10 Net Forecast	26,473	28,503

Winter Peak Demand (MW)	2026/2027	2035/2036
50/50 Net Forecast	20,483	26,411
90/10 Net Forecast	21,457	28,623

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

Technology Adoption Shapes Summer and Winter Peaks

These changes create new challenges for grid operations and forecasting



*Behind-the-meter (BTM) distributed energy resources (DERs)

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

METHODOLOGY

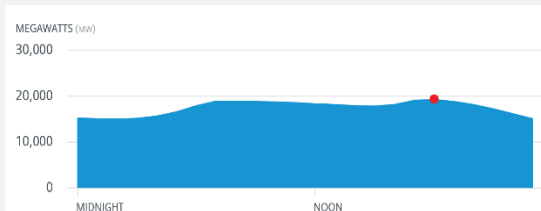


What Factors Make Up the Demand Forecast?

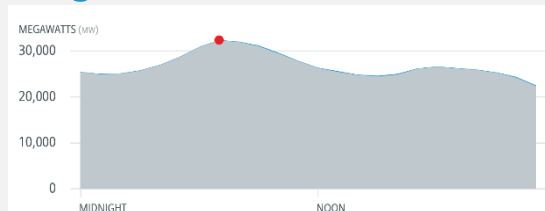
The ISO combines **six forecast components** to create a long-range projection that models electricity demand in each hour of the day

Components of demand modeled on a winter peak day in 2038

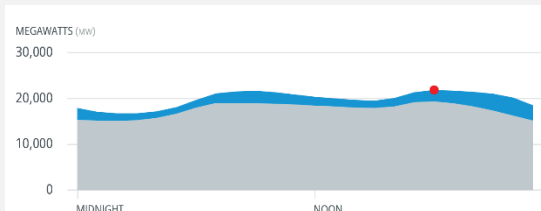
Base



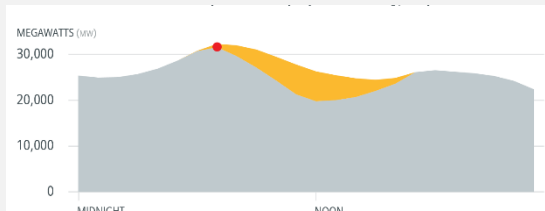
Large Loads



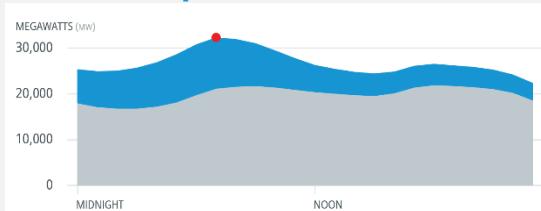
Electric Vehicles



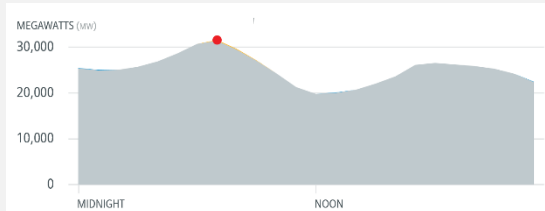
BTM PV



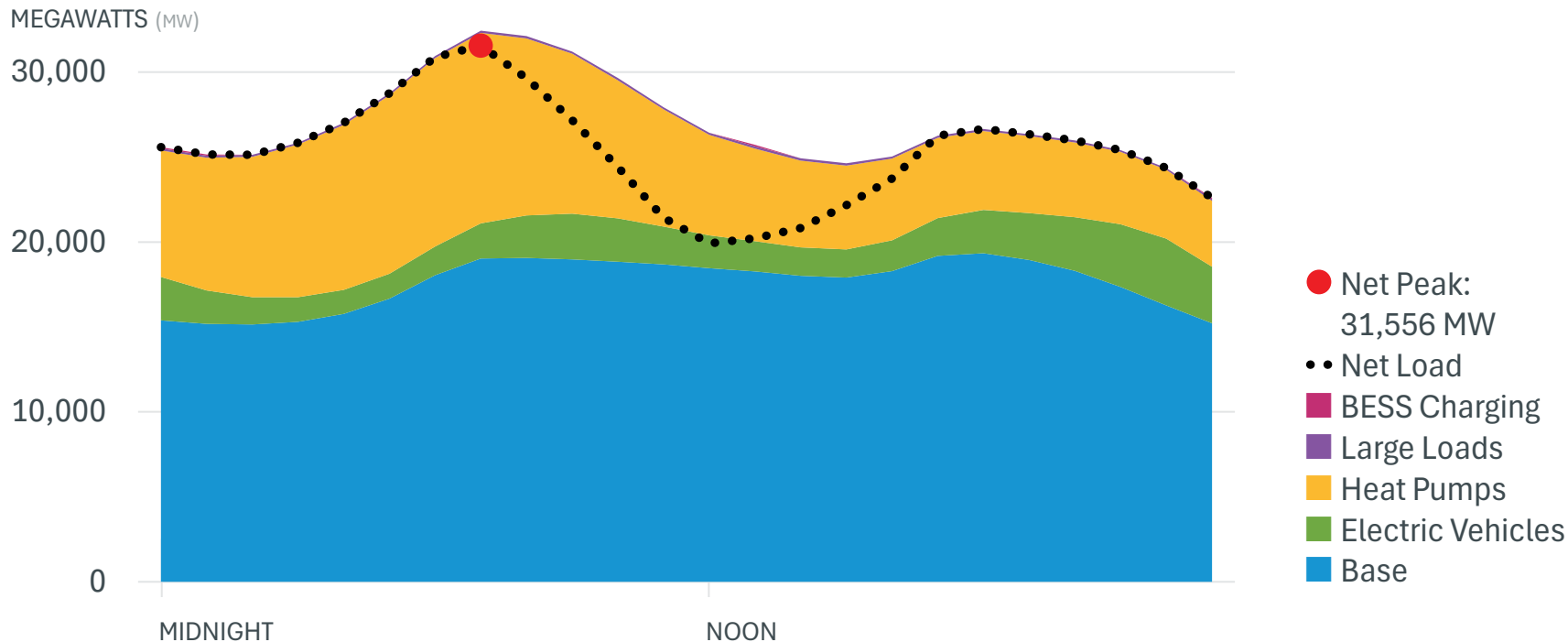
Heat Pumps



BTM BESS



Components of Demand on a 2038 Winter Peak Day



2026 CELT Features Improved Input Assumptions & Methodology

- Added Two New Forecasts
 - Large loads forecast
 - Battery Energy Storage Systems (BESS) co-located with behind-the-meter (BTM) solar
- Assumptions adjusted:
 - More conservative for EVs, heat pumps, and BTM solar
 - Reflects federal policy changes (e.g., tax credit expirations)
- Refined heat pump modeling:
 - Accounts for weatherization
 - Reduces reliance on resistance heating in cold conditions



New Forecast Components Respond to Emerging Trends

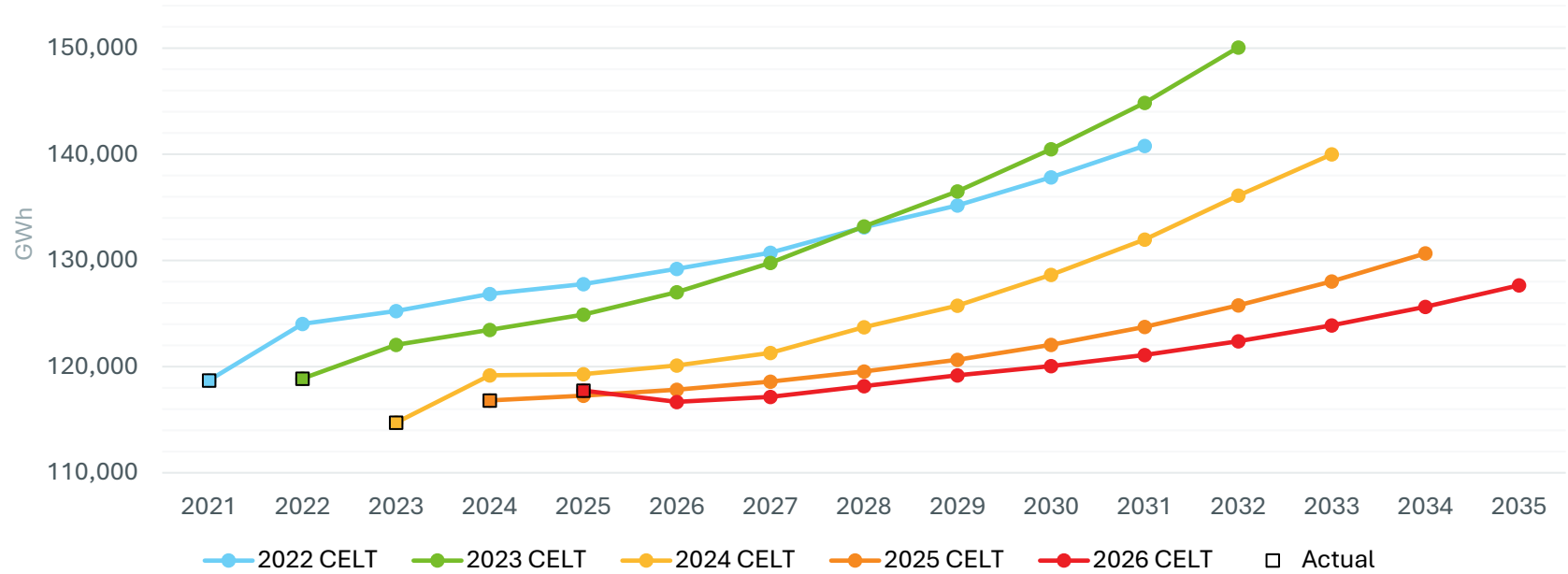
- Large load forecast models major new users of electricity
 - Prospective large loads in New England remain limited in number and scale, however, large loads are presenting challenges for electric grids in other parts of the country
- BESS component assesses growth in BESS co-located with BTM solar
 - BTM BESS are expected to have a relatively small impact on overall demand over the forecast horizon
 - These battery systems increase demand for grid electricity when charging and decrease demand when discharging



Learn more about the 2026
forecast enhancements on
[ISO's Newswire](#)

Energy Use Is Projected to Grow Over the Coming Decade, but the Growth Rate Has Slowed Compared to Earlier Forecasts

Net Annual Energy Use - CELT 2022 through CELT 2026



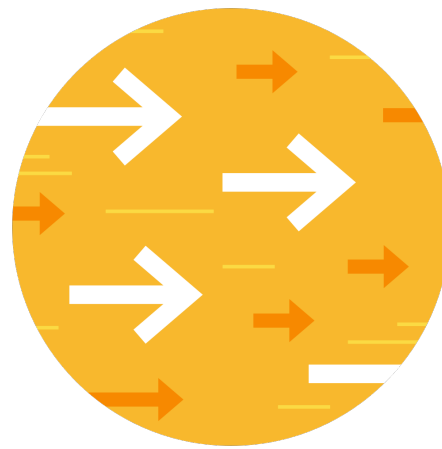
ELECTRIFICATION FORECASTS

Transportation & Heating

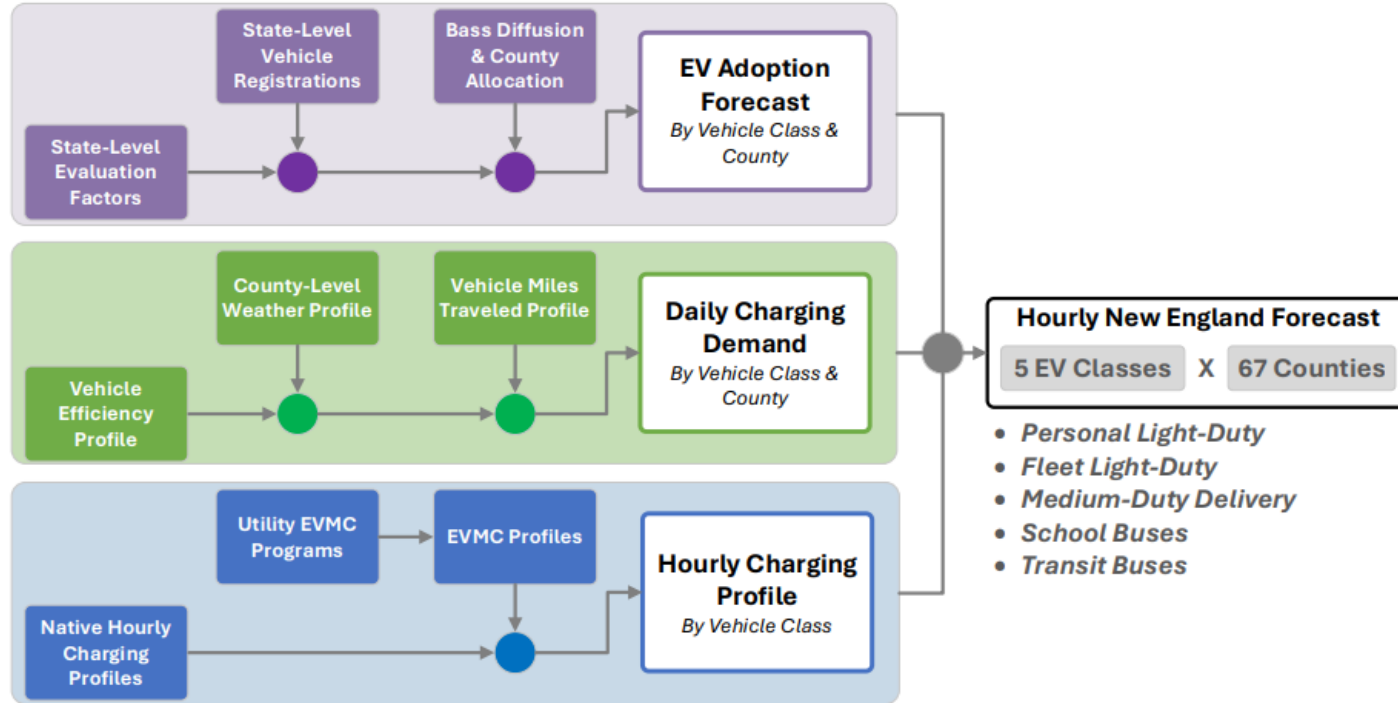


State and Federal Policies Shape Trends Around Electrification of Transportation and Heating

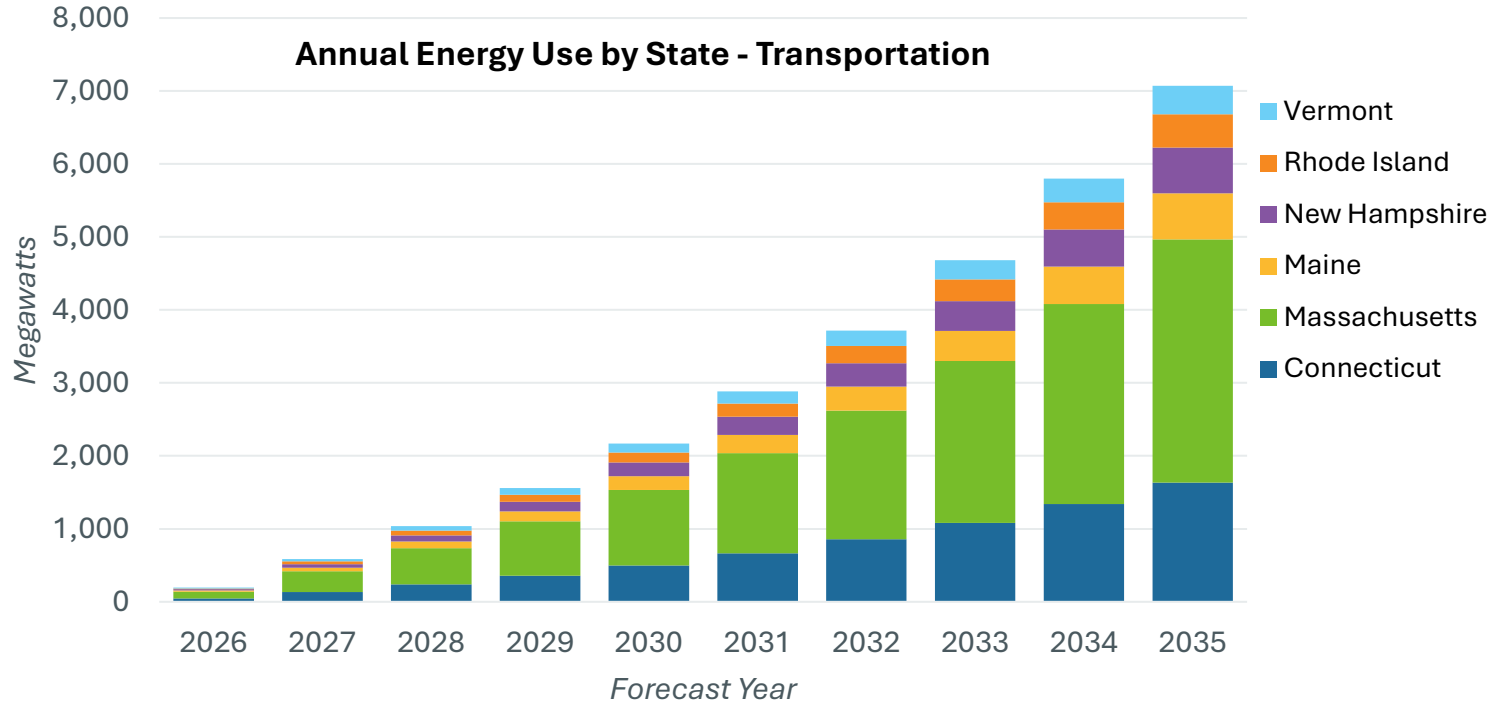
ISO-NE monitors state and federal policy decisions, incentive programs, and historical adoption rates to develop transportation and heating forecasts



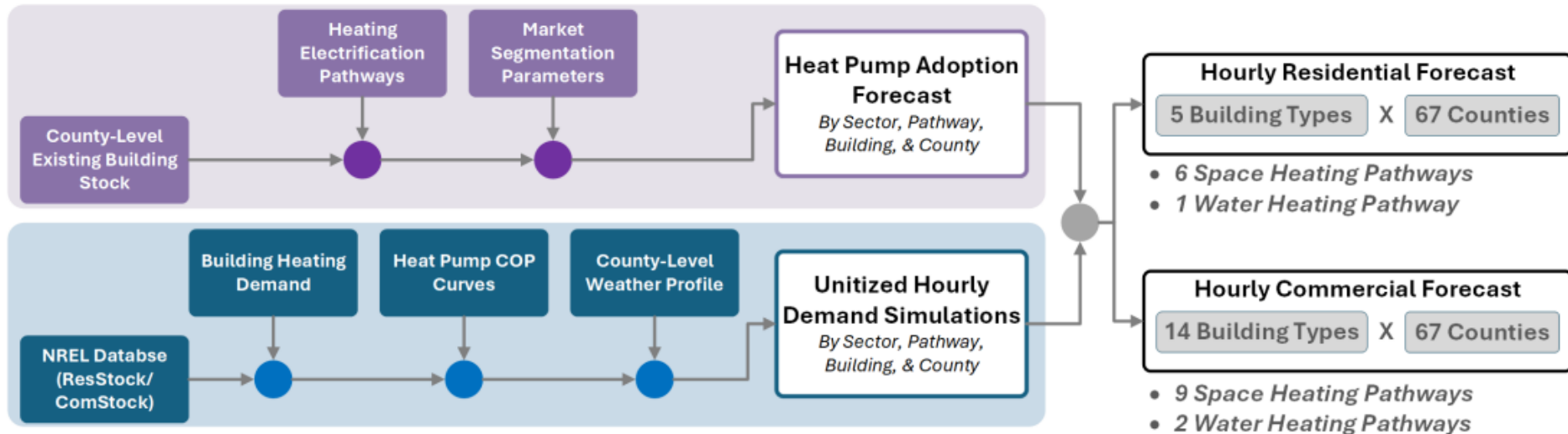
Electric Vehicle Forecast Process



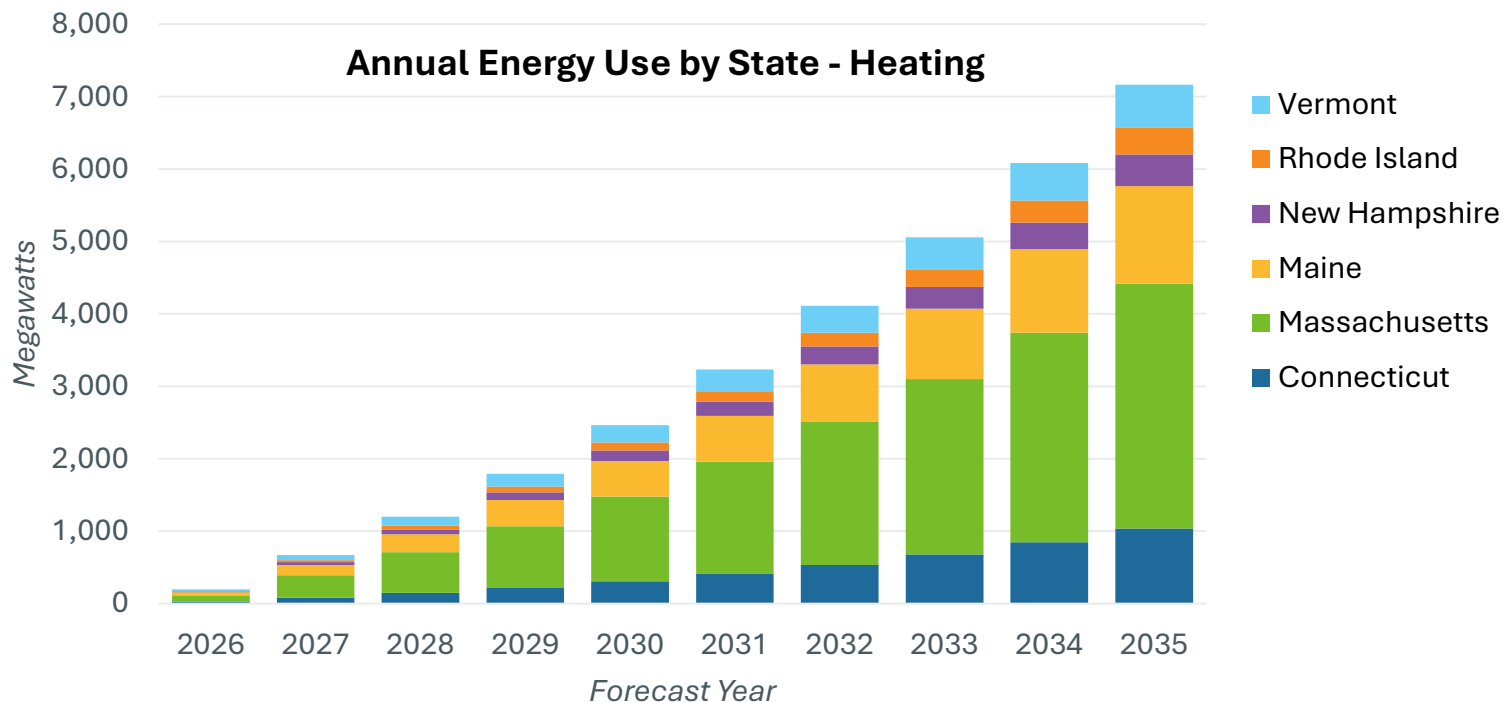
EV Adoption Is Forecast to Steadily Increase Annual Energy Use Over the Next Ten Years



Heating Electrification Forecast Process



Annual Energy Use for Heating Is on the Rise with Heat Pump Adoption



DISTRIBUTED GENERATION FORECAST

Solar PV & BESS



States Continue to Incentivize Distributed Generation Across New England

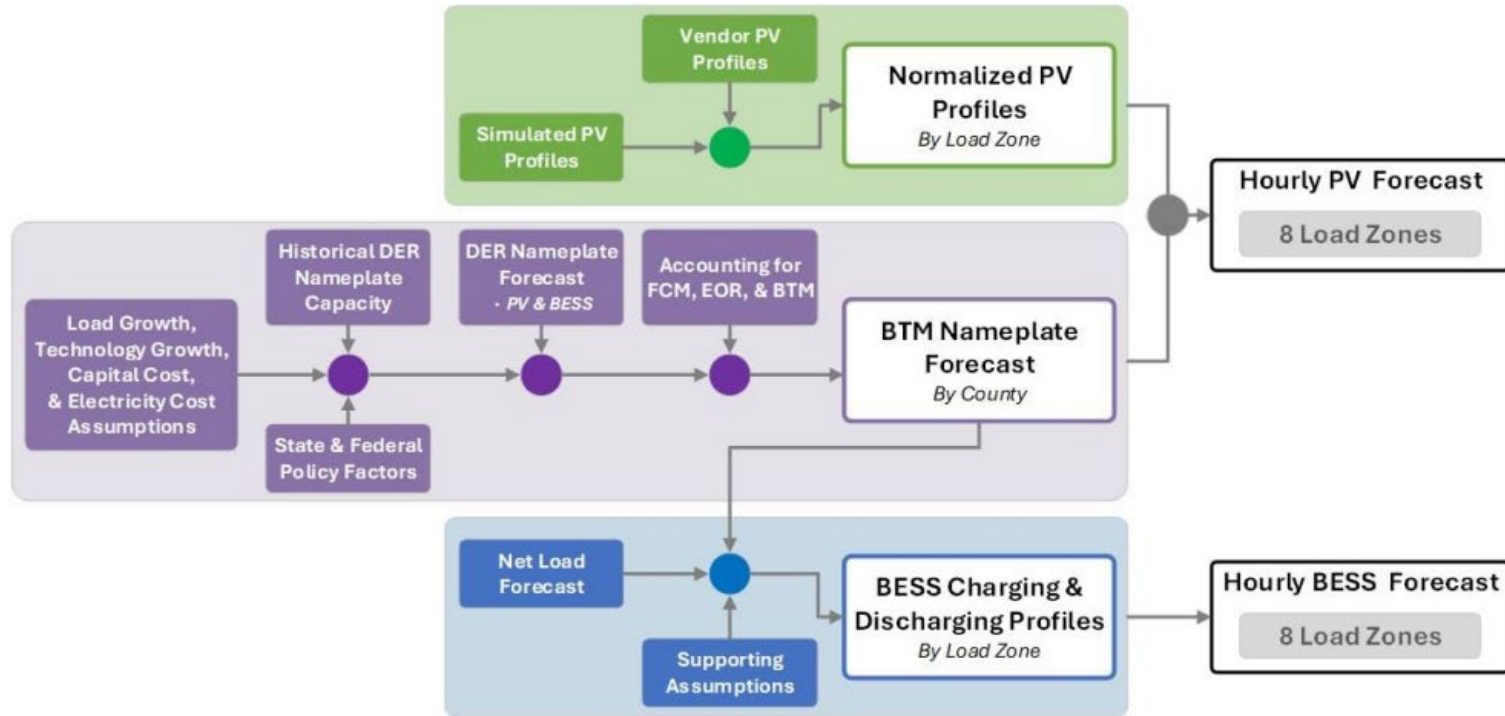


- Annually, state policymakers present to the ISO-NE Distributed Generation Forecast Working Group (DGFWG) about policies and programs that incentivize BTM resource deployment
 - ISO-NE uses this information to shape the BTM PV and BESS forecasts



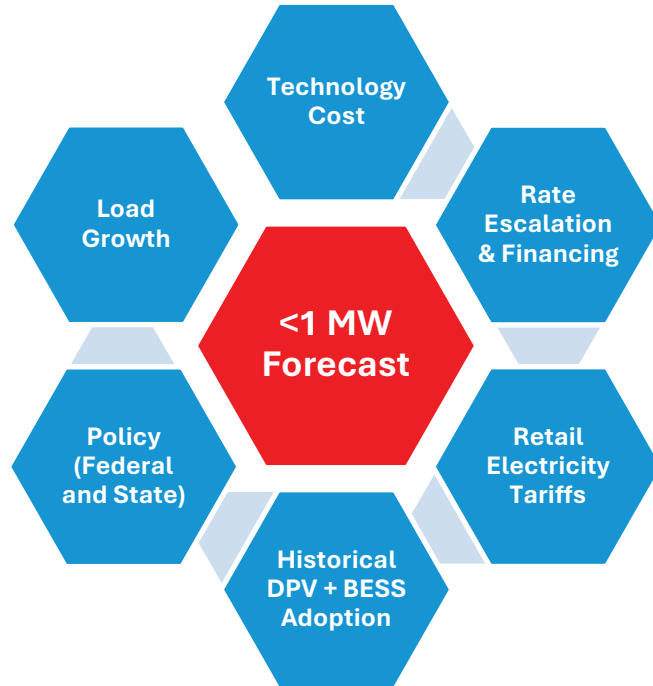
Learn more about the ISO's DG forecast:
[Distributed Generation Forecast
Working Group](#)

CELT 2026 DER Forecast Process Flow

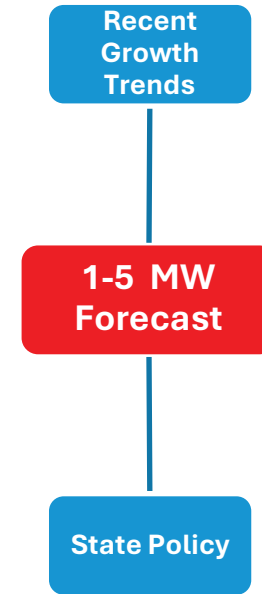


DER Forecast Inputs

Systems <1 MW



Systems 1-5 MW (PV Only)

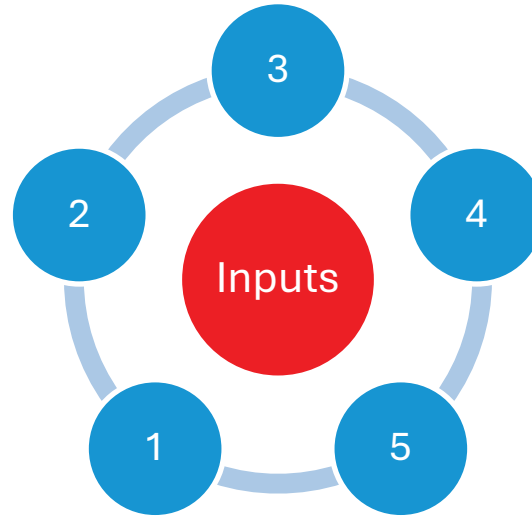


BESS Profiling Inputs

Aggregate Energy Capacity
Defined by assumed 2.5-hour duration

State of Charge Limits
90% maximum, 10% minimum
(useable range = 80% of energy capacity)

Round Trip Efficiency
Round trip losses reflect 90% efficiency



Hourly Net Load Forecast
Electricity demand
(net of electrification and BTM PV)

Installed Nameplate Capacity

State Incentives Drive Growth of Behind-the-Meter (BTM) Resources

BTM Resources Effect on Demand

		2026	2035
Annual Energy	BTM PV	-7,056 GWh	-10,197 GWh
	BTM BESS	0 GWh	5 GWh
Summer Peak	BTM PV	-1,759 MW	-1,986 MW
	BTM BESS	-11 MW	-124 MW
Winter Peak	BTM PV	0 MW	-316 MW
	BTM BESS	-26 MW	0 MW

LARGE LOADS FORECAST

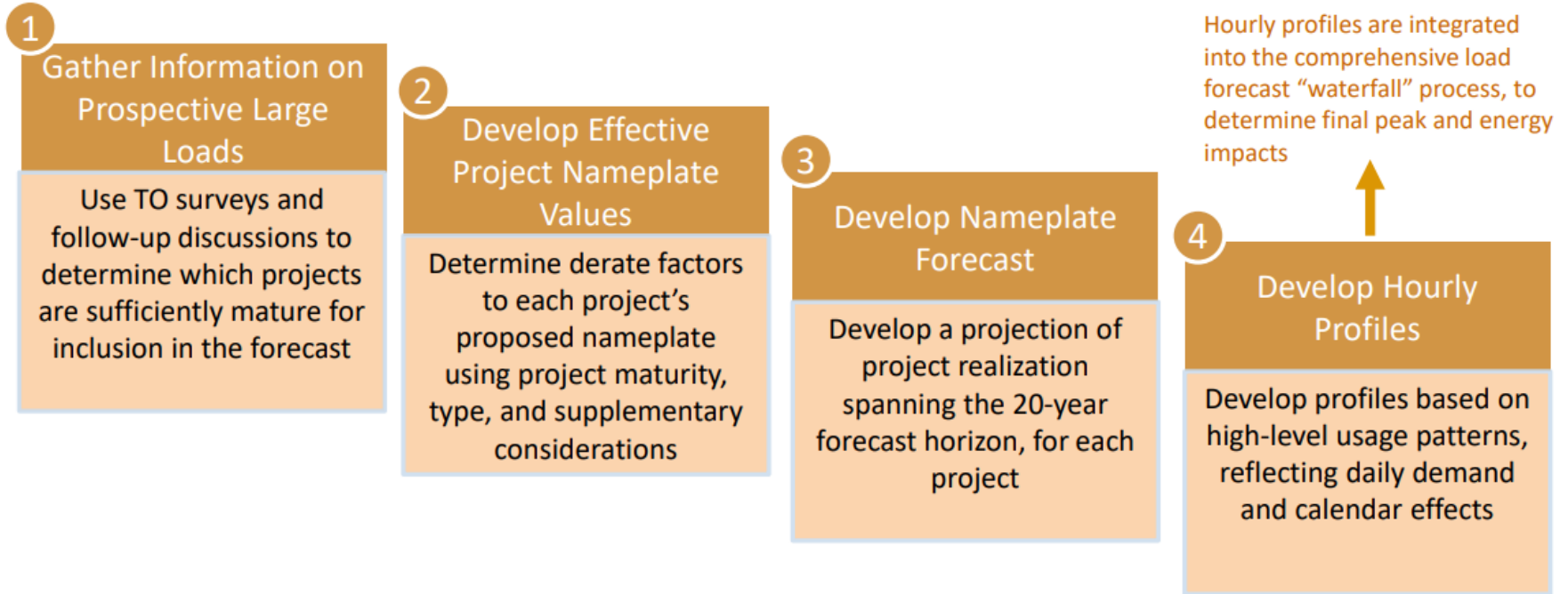


ISO-NE is closely monitoring potential new **large loads**, also known as “**step loads**” in the region...



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

Large Load Forecast Process



Large Load Outlook in New England

Current Status

- Limited, but potential for growth
- Only a few projects in formal study (<300 MW)

Near-Term Impact

- Minimal impact before **2027-2028**



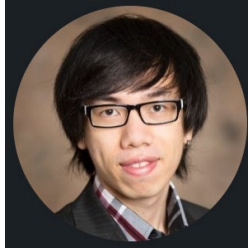
Long-Term Outlook

- **~110–130 MW** impact to peak demand by 2030s–2040s
- Large loads expected to consume **~800 GWh** from 2030 to 2035, rising to **~1,000 GWh** in the 2040s

Large loads are **not yet a major driver of load growth in New England**, but **ISO-NE is proactively planning** for potential acceleration

Learn more: [ISO-NE establishes forecast framework for data centers, other 'large loads' - ISO Newswire](#)

Questions?



Long Vu

**Lead Data Scientist, Load Forecasting
ISO New England**



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ISO New England**

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<https://www.iso-ne.com/about/public-affairs/consumer-resources>

New Webpage!

Consumer Resources

ISO New England is committed to providing clear, accessible information about our role in ensuring the reliable flow of electricity to our region's residents, businesses, and communities. The resources on this page offer insights into understanding electricity costs, power system operations, and more.

Read

- What are ISO New England's responsibilities?
- What is the relationship between wholesale electricity costs and your electric bill?
- How does electricity get from power suppliers to your home or business?
- How do the wholesale electricity markets select resources to meet New England's energy needs?
- Who is responsible for the oversight and governance of ISO New England?

Consumer Liaison Group (CLG)
Exchanging information with consumers on the power system and wholesale electricity markets

ISO New England (the ISO, or ISO-NE) is the independent, nonprofit corporation responsible for keeping electricity flowing across the six New England states and ensuring that the region has enough generating power to meet electricity demand and keep the lights on.

The CLG is a forum for the exchange of information between ISO New England and electricity consumers in the region. Meetings are free and open to the public, with no pre-arranged agenda or opportunity to attend. The CLG was formed to supplement stakeholder engagement and further expand communication between the ISO and its stakeholders, with a particular focus on electricity consumers, consumer advocates, and state government legislators.

The ISO held the first CLG meeting in 2008, and it remains a forum in which consumers provide input and information to the ISO and the ISO solicits comments on the regional power system.

Objectives of the CLG

- Serve as a forum for consumers to learn about developments discussed at regional stakeholder meetings that may affect reliability and price
- Offer opportunities for consumers to receive information from ISO-NE
- Provide a means of communication between consumers and consumer advocates and ISO-NE's senior management and subject matter experts
- Advise ISO-NE on consumer issues that may affect reliability and price
- Provide access to public power system data and information