APRIL 30, 2025 | MIDDLEBURY, VT

ISO New England Regional Update

Vermont System Planning Committee
April 2025 Quarterly Meeting

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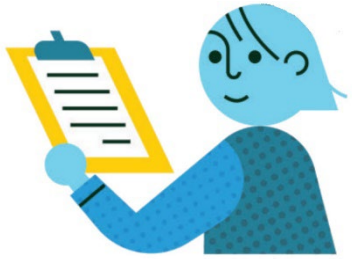
EXECUTIVE DIRECTOR, EXTERNAL AFFAIRS

Today's Updates



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MARKETS UPDATE

Monthly Markets Highlights

ISO-NE Actions on Import Tariffs

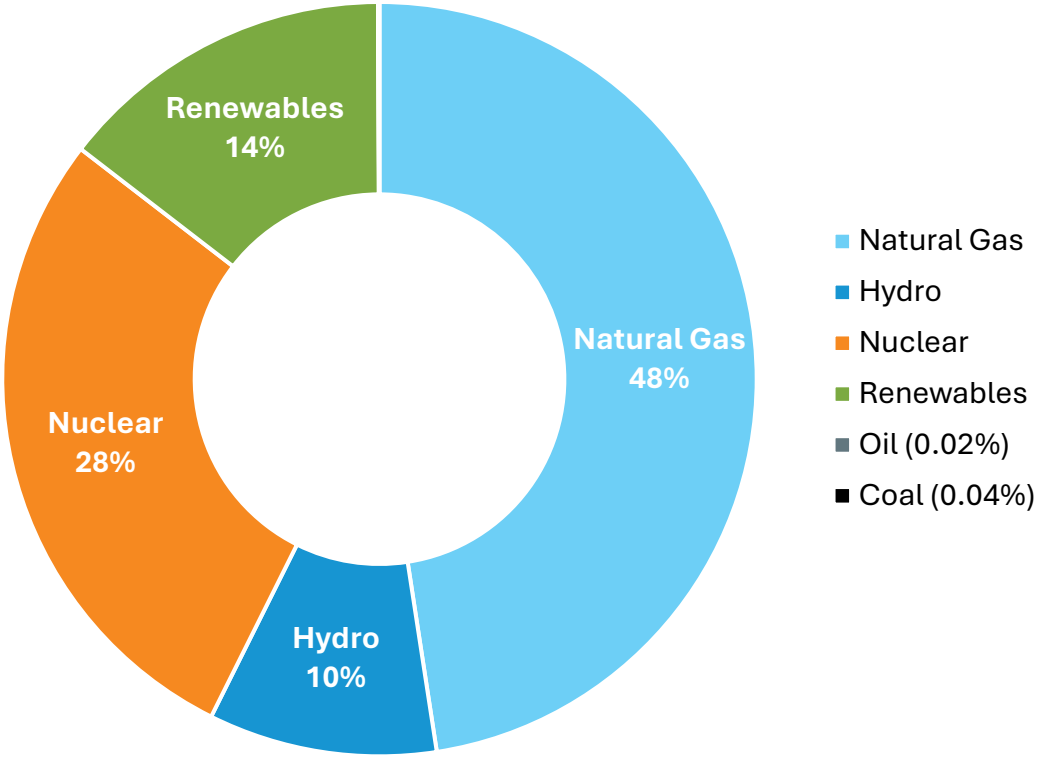
2024 Wholesale Market Costs

Monthly Wholesale Electricity Prices and Demand in New England, February 2025

February 2025 and Percent Change from February 2024 and January 2025	February 2025	February 2024	January 2025
Average Real-Time Electricity Price ($/megawatt-hour)	$126.40	301.0%	−6.4%
Average Natural Gas Price ($/MMBtu)	$14.62	318.9%	−13.6%
Peak Demand	18,750 MW	9.0%	−4.5%
Total Electricity Use	9,948 GWh	4.7%	−12.6%
Weather-Normalized Use*	9,936 GWh	4.3%	−12.2%

*Weather-normalized demand indicates how much electricity would have been consumed if the weather had been the same as the average weather over the last 20 years.

March 2025 Generation in New England, by Source



Source: 2025 Net Energy and Peak Load by Source

ISO-NE ACTIONS ON IMPORT TARIFFS

ISO-NE Takes Steps to Prepare for Potential Duties on Imported Electricity

- On April 14, FERC approved ISO's proposed mechanism by which it can, **if directed by the federal government**, collect customs duties related to electricity imported from Canada and sold into ISO-administered markets
  - ISO filed the proposal on February 28
- ISO New England believes that the **custom duties do not appear to apply to electricity** and that, even if they do, the ISO would not be responsible for implementing them
- However, given the uncertainty surrounding these issues, ISO felt it prudent to make this filing to ensure a process is in place

Summary of ISO-NE Proposal

- Under the approved mechanism, importers of electricity from Canada for sale into New England's energy markets would be assessed the cost of such duties
- The process will **only** kick in if a federal agency required ISO New England, via invoice, to pay the duty
- This process is intended to be temporary, allowing 120 days from the first invoice for the ISO to work with stakeholders on a replacement process
- In the event the process is triggered, FERC has further ordered the ISO to make additional informational filings
- As accepted, the ISO's proposal is effective for any costs incurred for market transactions on or after March 1

2024 WHOLESALE MARKET COSTS

New England Wholesale Electricity Costs[(a)]

	2020		2021		2022		2023		2024**	
	$ Mil.	¢/kWh	$ Mil.	¢/kWh	$ Mil.	¢/kWh	$ Mil.	¢/kWh	$ Mil.	¢/kWh
Wholesale Market Costs										
Energy (LMPs)[(b)]	$2,996	2.4	$6,101	4.8	$11,712	9.0	$4,847	3.9	$5,624	4.4
Ancillaries[(c)]	$62	0.1	$52	0.0	$124	0.1	$183	0.1	$183	0.1
Capacity[(d)]	$2,662	2.2	$2,243	1.8	$1,864	1.4	$1,308	1.1	$1,248	1.0
Subtotal	*$5,720*	*4.7*	*$8,404*	*6.6*	*$13,701*	*10.5*	*$6,338*	*5.1*	*$7,054*	*5.5*
Transmission charges[(e)]	$2,331	1.9	$2,688	2.1	$2,739	2.1	$2,640	2.1	$2,931	2.3
RTO costs[(f)]	$191	0.2	$216	0.2	$214	0.2	$214	0.2	$275	0.2
	Mystic Cost of Service Agreement				$173	0.1	$465	0.4	$139	0.1
Total	**$8,242**	**6.7**	**$11,308**	**8.9**	**$16,828**	**13.0**	**$9,657**	**7.8**	**$10,399**	**8.2**

(a) Average annual costs are based on the 12 months beginning January 1 and ending December 31. Costs in millions = the dollar value of the costs to New England wholesale market load servers for ISO-administered services. Cents/kWh = the value derived by dividing the dollar value (indicated above) by the real-time load obligation. These values are presented for illustrative purposes only and do not reflect actual charge methodologies. ***The wholesale values for 2024 are preliminary and subject to resettlement.**

(b) Energy values are derived from wholesale market pricing and represent the results of the Day-Ahead Energy Market plus deviations from the Day-Ahead Energy Market reflected in the Real-Time Energy Market.

(c) Ancillaries include first- and second-contingency Net Commitment-Period Compensation (NCPC), forward reserves, real-time reserves, regulation service, and a reduction for the Marginal Loss Revenue Fund.

(d) Capacity charges are those associated with the Forward Capacity Market (FCM).

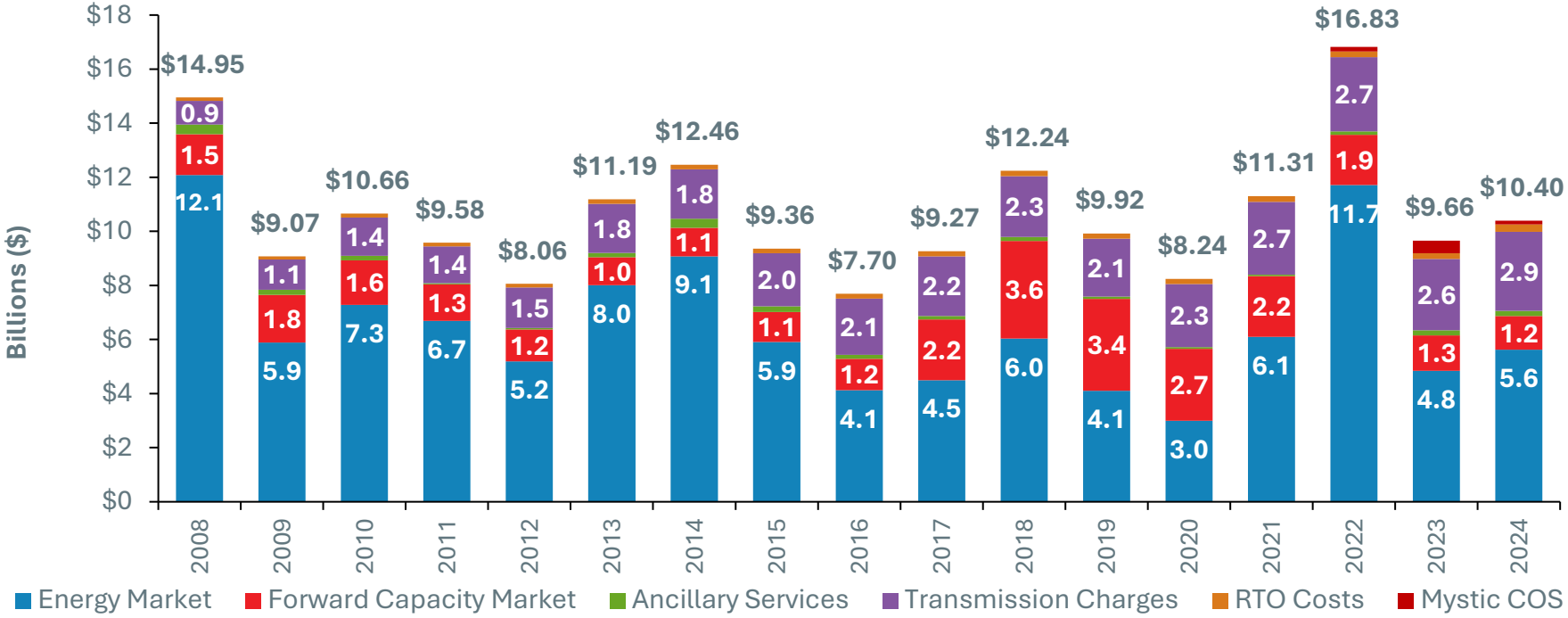
(e) Transmission charges reflect the collection of transmission owners' revenue requirements and tariff-based reliability services, including black-start capability, voltage support, and FCM reliability.

(f) RTO costs are the costs to run and operate ISO New England and are based on actual collections, as determined under Section IV of the *ISO New England Inc. Transmission, Markets, and Services Tariff*.

** 2024 figures are preliminary

New England Wholesale Electricity Costs*

Annual wholesale electricity costs have ranged from $7.7 billion to $16.8 billion



(The total costs for each year include Ancillary Services and RTO costs)

Source: ISO New England; ***2024 data is preliminary and subject to resettlement**

Note: Forward Capacity Market values shown are based on auctions held roughly three years prior to each calendar year.

OPERATIONS UPDATE

2024 Net Energy for Load

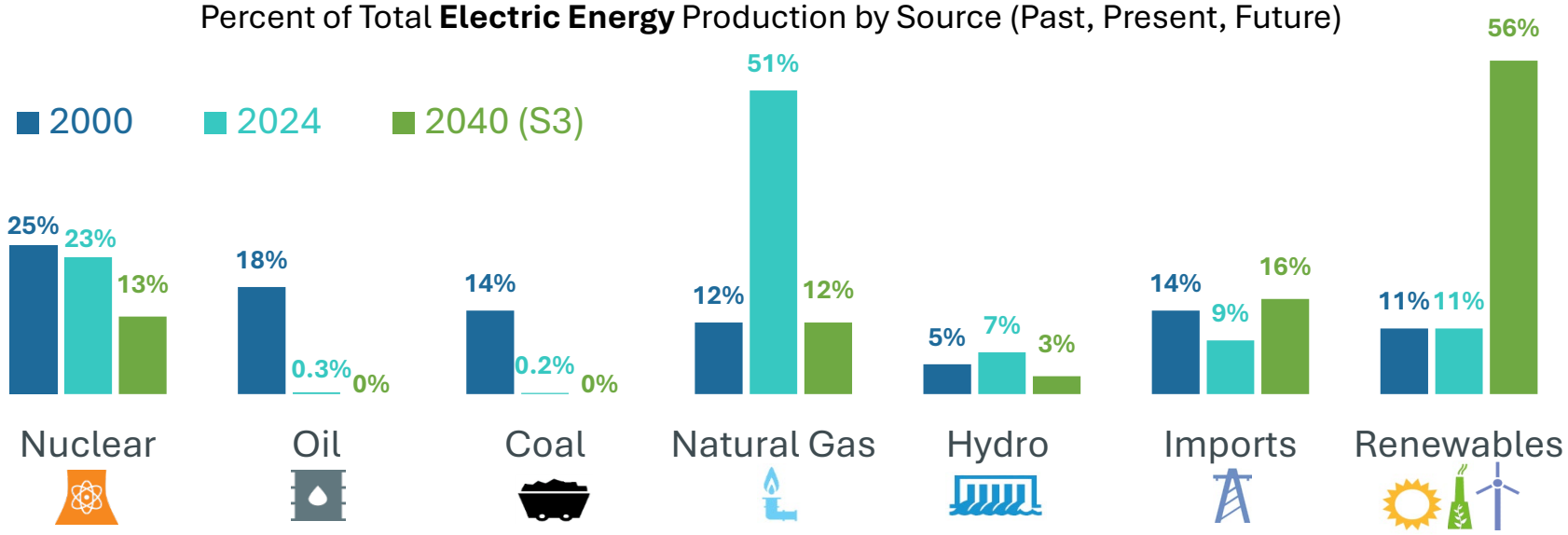
ISO New England Publishes 2024 Net Energy for Load Report

- ISO recently published a breakdown of the amount of electricity produced in New England and imported from other regions to satisfy demand in 2024
  - **Net energy for load (NEL)** = total electricity production in New England + net imports – pumping load
- Highlights of the NEL Report include*:
  - NEL amounted to 116,719 gigawatt-hours (GWh) in 2024, up 2% from 2023
  - Output from grid-connected solar installations increased by 18% from 2023 to 2024, rising to 4,554 GWh or 4% of NEL
  - Oil-fired resources produced the same amount electricity in both 2023 and 2024, accounting for 322 GWh or 0.3% of NEL
  - Wind power increased by 7% to 3,517 GWh or 3% of NEL
  - Coal resources increased from 181 GWh to 234 GWh or 0.2% of NEL

*Data is preliminary and subject to adjustment.

Dramatic Changes in the Energy Mix

New England made a major shift from coal and oil to natural gas over the past two decades, and is shifting to renewable energy in the coming decades



Source: ISO New England Net Energy and Peak Load by Source; data for 2024 is preliminary and subject to resettlement; data for 2040 is based on Scenario 3 of the ISO New England 2021 Economic Study: Future Grid Reliability Study Phase 1. Renewables include landfill gas, biomass, other biomass gas, wind, grid-scale solar, behind-the-meter solar, municipal solid waste, and miscellaneous fuels.

SYSTEM PLANNING UPDATE

Longer-Term Transmission Planning

2025 Energy and Seasonal Peak Forecasts

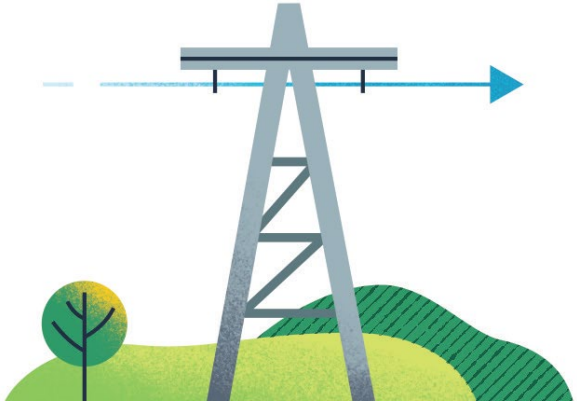
FERC Order No. 2023/2023-A Update

ISO Interconnection Request Queue

LONGER-TERM TRANSMISSION PLANNING

Long Term Transmission Planning Phase II

- 2024: **new process to implement transmission system upgrades** based on longer-term transmission studies
- **States**, through NESCOE, can evaluate and determine cost allocation for **transmission upgrades** needed to ensure a reliable grid throughout the clean energy transition
  - Upon request by the states, ISO will issue and evaluate requests for proposals (RFPs) to **address needs identified by the states** and provide **technical assistance** to the states in support of their procurements and efforts to secure federal funding for transmission investments



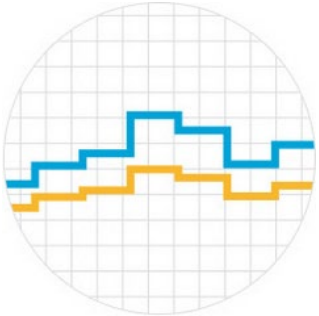
ISO Issues Request for Proposals for Transmission Solutions

- On March 31, at the direction of NESCOE, ISO issued an RFP to address longer-term transmission needs
  - The goal of the RFP is to upgrade the transmission system between northern Maine and southern New England
  - NESCOE's request includes a list of needs that all proposals must address
- ISO will assess proposals based on various factors, including cost benefit to the region and additional evaluation priorities identified by NESCOE
- The ISO will provide updates on the process through the Planning Advisory Committee

2025 ENERGY AND SEASONAL PEAK FORECASTS

Forecasting Regional Electric Energy Use

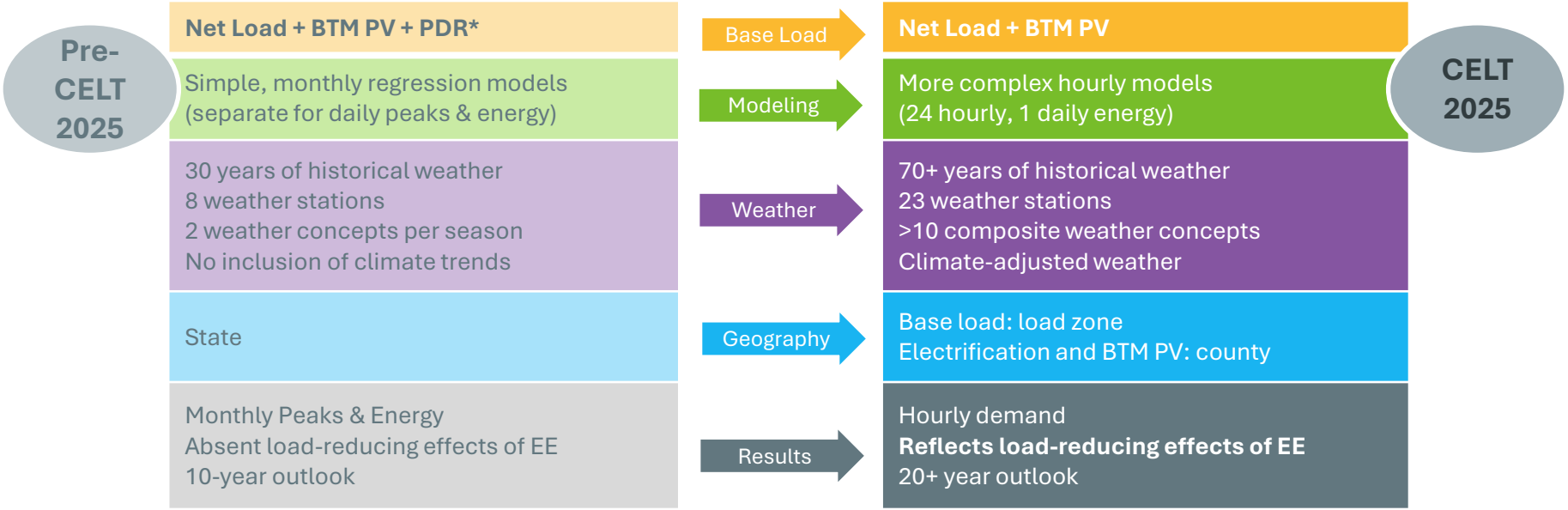
- ISO New England is responsible for planning the regional transmission system over a 10+ year planning horizon
- Forecasting how much electricity the region will use in the future requires ISO system planners to weigh multiple variables
  - **Economic** activity and outlook
  - **Weather** and **load** 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



- The Capacity, Energy, Load, and Transmission Report (CELT) is the foundational resource for the ISO's system planning and reliability studies
  - The forecast looks out 10 years and ISO updates the report annually in May

Modernizing the Forecast Methodology

- The 2025 CELT forecast cycle employs a **new base load forecast methodology** using **trend variables** to capture the impacts of EE, technology saturations, and economics
  - Load reductions from EE are captured **directly in the load forecast**



*Passive demand response (PDR) is composed of EE and passive distributed generation (PDG). PDG includes many different types of technologies but is predominantly gas turbines and photovoltaic (PV) generation.

Note: More information on ISO's transition into using the 2025 load forecast enhancements in Regional System Planning activities and Capacity Auction Reforms is summarized in a March 2025 memo from ISO.

Modernizing the Forecast Methodology

Continued enhancements are crucial as the ways the region produces and consumes electricity rapidly evolve

- Trend variables capture **longer term influences on electricity consumption**
  - EE (e.g., equipment stock changes due to market-facing EE or "codes and standards")
  - Economics (e.g., household demographics, business activity, electricity price)
  - Policy shifts (e.g., incentives for DERs, decarbonization)
  - Technological adoption trends (e.g., electric-based mowers, leaf blowers, vacuum cleaners, etc.)
- Modeling steps for each of the four load components have been updated or changed for CELT 2025
  - The **base load** forecast reflects significant updates discussed in full at the Dec. 2024 Load Forecast Committee (LFC)* meeting
  - The **heat pump**, **electric vehicle**, and **BTM PV** forecasts have undergone improvements to enable:
    - Adoption forecasting and potential future accounting at the county level
    - Hourly modeling
    - Inclusion of climate-adjusted weather data

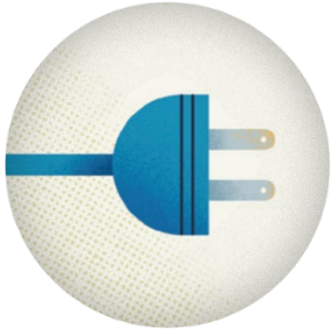
Learn more about the 2025 forecast enhancements on **ISO's Newswire**

*The LFC reviews ISO's methodologies and assumptions for developing the long-term load forecast for the region. All presentations related to the updates for CELT 2025 can be accessed via the LFC webpage.

FERC ORDER NO. 2023/2023-A UPDATE

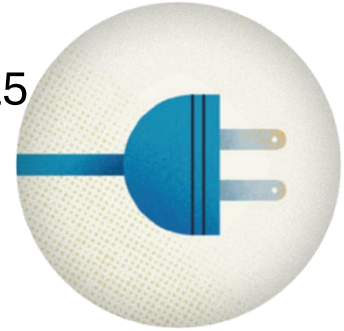
Background on FERC Order 2023

Interconnection Reforms



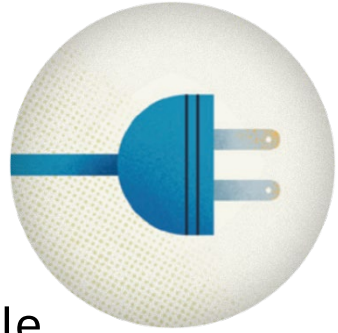
- In July 2023, FERC issued **Order No. 2023**
- The ISO's **proposal**, filed in May, will bring the region into compliance with Order Nos. 2023 and 2023-A
- The proposal's major changes include:
  - Adopts a "first-ready, first served cluster study process" for all interconnection requests
  - A penalty structure applied to the ISO and transmission owners for delays in study completion beyond established deadlines
  - Increased financial and site control requirements for developers entering projects into the ISO's interconnection process
  - Improves integration of battery storage projects and other new technologies
- **These reforms aim to prioritize projects with a high likelihood of development and deter speculative ventures**

Compliance Filing Order Highlights



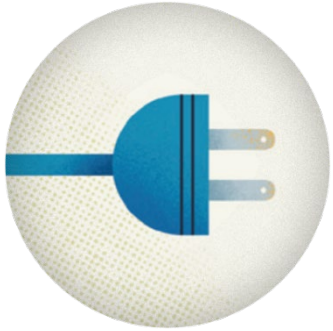
- FERC issued an Order on Compliance and Tariff revisions on 4/4/25
- At a high level, the order:
  - Accepts the main components of the Compliance Proposal
  - Directs further compliance to correct errors or address minor deviations that warrant further justification or correction
  - Accepts all dates proposed in the Compliance Proposal, including the August 12, 2024 effective date
- As a result of the order and the August 12, 2024 effective date, most of the Tariff changes incorporated in the Compliance Proposal are in effect, meaning:
  - The prior rules associated with serial feasibility studies and system impact studies are no longer in effect
  - There are dates, primarily associated with transition but with other impacts, that do not reflect the actions taken between the effective date and the date of the order (i.e., actions taken based on the prior rules that were effective before April 4, 2025)

Eligibility Date



- The April 2025 order did not modify the 6/13/24 eligibility date or the 5/14/24 Compliance Proposal filing date
- As such, only active Interconnection Requests (IRs) submitted and deemed valid on or before 6/13/24 are eligible to participate in the transition process
  - The ISO is not considering IRs submitted after June 13, 2024 for the transition process
  - The next opportunity to submit IRs will be during the Cluster Request Window for the first regular Cluster Study following the conclusion of the Transitional Cluster Study
- The ISO has suspended work on all serial feasibility studies and system impact studies
  - Any on-hand deposits associated with an IR that is eligible for the transition can be applied to transition studies

Next Steps



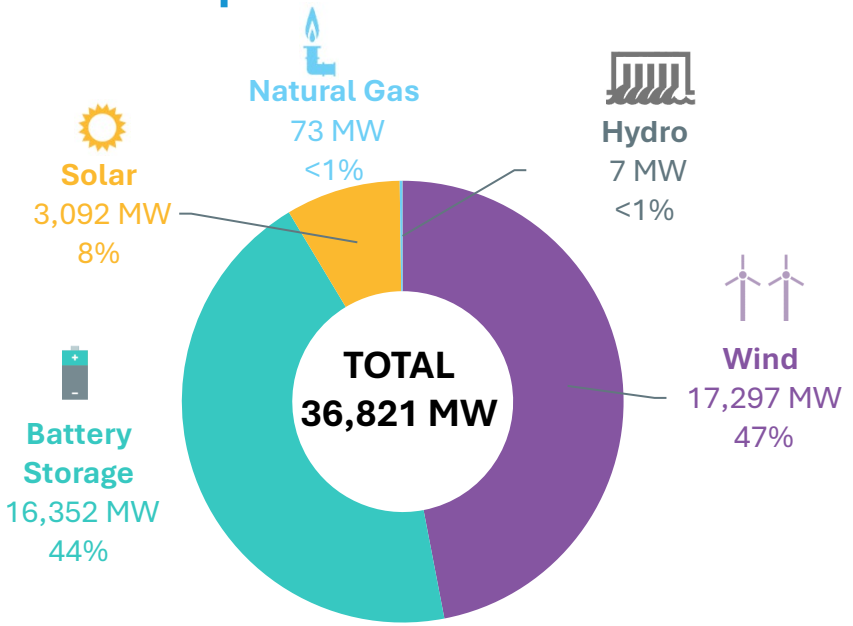
- In response to the order, the ISO is planning to take two steps:
  - **Adjust the dates that are necessary to shift the transition activities in the Compliance Proposal by ~one year** (discussed at the April 17 TC Meeting)
    - Will allow the Transitional Capacity Network Resource Group Study to take place with the 2025 interim reconfiguration auction qualification process
  - **Address the items for further compliance**, as directed by the order
    - The ISO is assessing the items requiring further compliance and is working on proposals to address them, which will be presented at the May 2025 TC meeting

- At the April TC meeting, RENEW Northeast introduced an amendment to shift the proposed late-stage System Impact Study (SIS) deadline from 4/4/25 to 8/29/25
  - The Participants Committee will consider and take action on a set of Order 2023-related changes – including the RENEW Amendment – at the May 1 PC meeting
    - ISO believes that the risks associated with continuing SISs through August outweigh purported benefits
    - If NEPOOL supports the proposed amendment at the PC, the ISO will include in its filing
    - The ISO's filing letter would state that any revisions to extend the late-stage SIS provision are severable from the remainder of the proposed revisions so that FERC does not have to reject the entire filing if it finds that the late-stage SIS provision is not just and reasonable

ISO INTERCONNECTION REQUEST QUEUE

Wind Power & Battery Storage Comprise Most of the New Resource Proposals in the ISO Interconnection Queue

All Proposed Resources



Source: ISO Generator Interconnection Queue (April 2025) FERC Jurisdictional Proposals; Nameplate Capacity Ratings
Note: Some natural gas proposals include dual-fuel units (with oil backup). Some natural gas, wind, and solar proposals include battery storage. Other includes hydro, biomass, fuel cells and nuclear uprate.

Proposals by State

(all proposed resources)

State	Megawatts (MW)
Connecticut	7,786
Massachusetts	20,546
Maine	5,117
New Hampshire	430
Rhode Island	2,597
Vermont	344
Total	**36,821**

Source: ISO Generator Interconnection Queue (April 2025) FERC Jurisdictional Proposals

RESOURCES & EVENTS

ISO CEO Addresses US House Energy Committee

- ISO-NE President and CEO Gordon van Welie testified March 25 in Washington before the Subcommittee on Energy of the US House Committee on Energy and Commerce
- In written and oral testimony, van Welie described the region's current energy outlook, noting the changing resource mix, projected demand growth, and potential impacts for reliability and the wholesale markets
- A video of the hearing and van Welie's written testimony are available on the energy subcommittee's website

Questions

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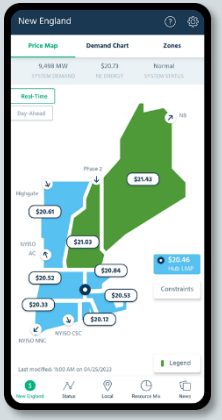

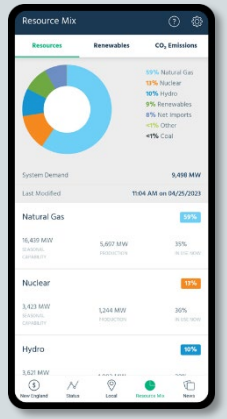

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