To:	NEPOOL Load Forecast Committee (LFC), Planning Advisory Committee (PAC), and NEPOOL Reliability Committee (RC)
From:	ISO New England, Inc.
Date:	March 27, 2025
Subject:	2025 Load Forecast Enhancements – Transition into Regional System Planning Activities & Capacity Auction Reforms

As part of the 2025 load forecast development, the ISO has implemented a new long-term load forecasting methodology. Among other improvements,[1] the new long-term load forecasting methodology uses hourly forecasting and modeling to better account for load shape impacts of emerging trends.[2] Additionally, the new long-term load forecasting methodology improves how energy efficiency (EE) is incorporated into the model. This memo provides background on the existing methodology, the improvements incorporated into the model, and how planning activities and the Capacity Auction Reforms (CAR) project will transition to using the new forecast.

Background

The Forward Capacity Market (FCM) created a need to uniquely account for passive demand resources (PDR[3]) to ensure their supply-side participation in the FCM did not cause a double counting issue in the forecast of demand (*i.e.*, by also reducing historical loads used for load forecasting, and therefore lowering the load forecast). To resolve this accounting issue, the load forecasting process included a PDR reconstitution, process by which PDR was reconstituted into historical loads used for forecast modeling to produce a gross load forecast, and a separate EE forecast, which was netted from the gross load forecast to produce a reliable "net of EE" forecast. The gross load forecast was used to support PDR's supply-side participation in the FCM and the "net of EE" load forecast was used in all other long-term planning studies, unrelated to the FCM.

The PDR reconstitution and the netting of the EE forecast to get to a reliable "net of EE" forecast are two functions that the ISO has grown increasingly concerned about, especially as part of the transition to hourly forecasting. Assumptions needed to translate seasonal FCM Capacity Supply Obligations from PDR

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[1] See September 17, 2024 RC and September 27, 2024 LFC materials for a more complete description of the improvements brought forth by the new forecasting methodology.

[2] See slides 4 and 5 of the September 27, 2024 LFC presentation for more background on the need for hourly modeling.

[3] PDR are composed of EE measures and passive distributed generation (PDG). While PDR has historically been predominantly composed of EE, in recent years, this trend has changed, and the share of EE has steadily been decreasing. PDG is composed of many different types of resources and technologies but is predominantly gas turbines and photovoltaic generation.

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into data streams needed to reconstitute historical loads translate into uncertainties in the gross load forecast and the associated EE forecast needed to arrive at a "net of EE" forecast. Additionally, observations from the FCM and regional trends in EE show that traditional EE measures presented via PDR have significantly decreased over time and EE programs are pivoting towards heating electrification and other out of market programs, which are beyond the scope of the EE forecast and are accounted for in other parts of the load forecast framework.[4]

As part of the 2025 load forecast development, the ISO has implemented a new forecasting methodology, which aims to address these increasingly important limitations along with other critical changes. The forecast stemming from this new methodology will be published in the 2025 Capacity, Energy, Load, and Transmission Report (CELT 2025). In contrast to the existing methodology, the new methodology uses detailed hourly models to develop an hourly forecast that implicitly accounts for EE. This new base load forecast methodology uses trend variables[5] to capture changes in how electricity is consumed over time, including load reductions that stem from EE programs. Because the new base load forecast methodology already implicitly accounts for the load reduction from EE, it avoids the need for both PDR reconstitution into historical loads and a separate EE forecast.

Transition to the Use of the 2025 Load Forecast Enhancements in Regional System Planning Activities

All system planning activities that are to commence after the publication of CELT 2025 will make use of the 2025 load forecast, developed under the new forecast methodology, with one exception.

Under the current FCM rules, the Tariff prescribes the use of the PDR reconstitution for the development of load modeling assumptions used in the calculation of capacity requirements.[6] As a result, inputs to the Forward Capacity Auctions held for the 2026-2027 and 2027-2028 Capacity Commitment Periods (CCP) were developed using the prior load forecast methodology. Relying on inputs developed in a similar fashion for the ARAs will avoid unintended market outcomes that could arise from a mid-stream transition. Consequently, for the 2026-2027 and 2027-2028 Annual Reconfiguration Auctions (ARAs), the calculations for the Installed Capacity Requirements and Hydro-Quebec Interconnection Capability Credits and Related Values will rely on the prior load forecast methodology for this specific application. Thus, the forecast to be developed for this specific period will be published along with the remainder of the forecast data in CELT 2025.[7]

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[4] See March 25, 2024 EEFWG materials for a more complete description of regional trends in energy efficiency.

[5] Trend variables effectively guide base load models as changes occur in how electricity is consumed over time. They are intended to capture longer term influences on electricity consumption, such as 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) as well as technological adoption trends (*e.g.*, electric-based equipment, such as mowers, leaf blowers, vacuum cleaners, etc.).

[6] See Section III.12.8. of the Tariff.

[7] For the same reasons, calculations for the Installed Capacity Requirements and Hydro-Quebec Interconnection Capability Credits and Related Values for the 2027-2028 Annual Reconfiguration Auctions, that will be performed in 2026, will be rely on a load forecast that will be developed under the prior forecasting methodology, for this specific application, and will be published, along with the remainder of the forecast data, developed under the new forecasting methodology, in CELT 2026.

Use of the 2025 Load Forecast Enhancements in the Capacity Auction Reforms (CAR) Project

Going forward, the new load forecasting methodology will be employed in the Installed Capacity Requirements and Hydro-Quebec Interconnection Capability Credits and Related Values calculations for the capacity auctions beginning with the 2028-2029 CCP. This is independent from PDR's continued participation as part of the supply mix that meets the region's capacity requirements, which will remain unchanged with the CAR project.

The ISO is working towards integrating the new forecasting methodology into CAR, *i.e.*, using the new load forecast methodology for activities that will take place for the 2028-2029 CCP and beyond. A natural change stemming from the new forecasting methodology is that PDR's supply-side participation will not be reconstituted as part of the load forecasting process that feeds the calculation of capacity requirements. The overall process for calculating capacity requirements under CAR is under design. Once finalized, it will be shared with stakeholders through the NEPOOL stakeholder committee process. Stakeholders will be able to provide feedback on the proposed process at that time.

Conclusions

With the 2025 load forecast to be published in CELT 2025, the ISO has developed a new forecasting methodology that improves the "net of EE" forecast by implicitly accounting for EE through the use of trend variables.

The ISO will purposely continue to produce load forecast data developed under the prior forecasting methodology, including the reconstitution process for PDR, for use in remaining FCM activities associated with those Capacity Commitment Periods for which the primary auctions have already taken place. Starting with the 2028-2029 CCP, the ISO will integrate the new forecast methodology into activities occurring under CAR. PDR's supply-side participation will remain unchanged, but because it will not be reconstituted as part of the load forecasting process anymore, the ISO will update this component of the calculation of capacity requirements.

The 2025 load forecast enhancements and the revisions to the calculation of Installed Capacity Requirements have been, and will continue to be, discussed through the NEPOOL stakeholder committee process, where stakeholders are welcome to provide input and feedback.

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