MINUTES OF THE
PLANNING ADVISORY COMMITTEE (PAC)
MEETING HELD ON MARCH 19, 2025

Name	Affiliation
S. Abhyankar	ISO New England (Chair)
J. Singh	ISO New England (Acting Secretary)
A. Ahmed	ISO New England Inc.
A. Fuzaylov	Synapse
A. Gagnon	Massachusetts Federal and Regional Energy Affairs
A. Gillespie	Calpine Energy Services, LP
A. Hastings	ISO New England Inc.
A. Hofmann	New England Power Company
A. Kleeman	ISO New England Inc.
A. Kniska	ISO New England Inc.
A. Krich	Boreas Renewables
A. Landry	Maine Public Advocate Office
A. Lawton	Synapse
A. Logan	Eversource Energy Service Company
A. Mitchell	New England Power Company
A. Pethe	Daymark Energy Advisors
A. Schutzman	Rhode Island Energy
A. Shadab	NextEra Energy Resources, LLC
A. Trotta	Avangrid
B. Blair	NH DOE
B. Bloomer	VELCO
B. D'Antonio	Eversource Energy Service Company
B. Forshaw	Energy Market Advisors LLC
B. Keen	Unaffiliated
B. Londo	Avangrid
B. McKinnon	South Hadley Electric Light Department
B. Robertson	Eversource Energy Service Company
B. Snook	Maine Public Advocate Office
B. Thomson	The Narragansett Electric Company
B. Woebbe	ISO New England Inc.
C. Benker	Eversource Energy Service Company
C. DeAngelis	PSEG
C. Putney	Eversource Energy Service Company
D. Basler	CHA Consulting
D. Bradt	Oxford Power consulting for NESCOE
D. Burnham	Eversource Energy Service Company
D. Cavanaugh	Energy New England (ENE)
D. Conroy	RLC Engineering

D. Green	RLC Engineering
D. Murphy	MMWEC
E. Hernandez	Eversource Energy Service Company
E. Jacobi	FERC
E. McDermott	Norwich Public Utilities
E. Perez Cervera	ISO New England Inc.
E. Ross	ISO New England Inc.
E. Runge	Day Pitney
E. Simonelli	New England Power Company
F. Ettori	VELCO
G. Pease	Eversource Energy Service Company
G. Stern	Connecticut Municipal Electric Energy Cooperative
H. Braun	London Economics International LLC
H. Sanchez	PSEG
H. Zheng	NextEra Energy Resources, LLC
J. Adadjo	Eversource Energy Service Company
J. Bagnoli	Eversource Energy Service Company
J. Black	ISO New England Inc.
J. Breard	ISO New England Inc.
J. Brining	Norwich Public Utilities
J. Cebrik	Avangrid
J. Dong	Eversource Energy Service Company
J. Donovan	Commonwealth of Massachusetts Office of the Attorney General
J. Fenn	Versant Power
J. Fu	U.S. Dept. of Energy
J. Fundling	Eversource Energy Service Company
J. Halpin	Eversource Energy Service Company
J. Iafrati	Customized Energy Solutions (CES)
J. Kasow	ISO New England Inc.
J. Lamson	RTO Insider
J. LaRusso	Acadia Center
J. Lucas	Eversource Energy Service Company
J. Martin	New England Power Company
J. McLaughlin	Eversource Energy Service Company
J. Pearson	ISO New England Inc.
J. Rossignoli	Ross Emergent LLC
J. Rotger	Customized Energy Solutions (CES)
J. Stroba	INS Engineering
J. Talbert-Slagle	Connecticut Office of Consumer Counsel
J. Vaile	Eversource Energy Service Company
J. Zhang	ISO New England Inc.
K. Caiazzo	Commonwealth of Massachusetts Office of the Attorney General
K. Gonzalez	ISO New England Inc.

K. Grant	Elevate Renewable Energy
K. Lagunilla	Rhode Island Energy
K. Osman	VELCO
K. Quach	ISO New England Inc.
K. Schlichting	ISO New England Inc.
K. Shaarbafi	Eversource Energy Service Company
K. Sirowich	ISO New England Inc.
L. DeFlumeri	New England Power Company
L. Durkin	ISO New England Inc.
L. Gonynor	New England Power Company
L. Looman	VELCO
L. Mott	Grid United
M. Berninger	ConEd Transmission
M. Coleman	JERA Americas Inc.
M. Drzewianowski	ISO New England Inc.
M. Fossum	New Hampshire Office of the Consumer Advocate
M. Goldberg	ISO New England Inc.
M. Haskell	Maine Public Utilities Commission
M. Ide	MMWEC
M. Matar	ISO New England Inc.
M. Perben	ISO New England Inc.
M. Pescatore	ISO New England Inc.
M. Preston	Eversource Energy Service Company
M. Ribeiro Dahan	ISO New England Inc.
M. Scott	New England Power Company
M. Siddiqui	New England Power Company
M. Valencia Perez	ISO New England Inc.
M. Winkler	ISO New England Inc.
N. Krakoff	Conservation Law Foundation
N. Raike	ISO New England Inc.
N. Toleman	Viridon
P. Asarese	ISO New England Inc.
P. Barefield	Zero Emission Grid
P. Bernard	ISO New England Inc.
P. Boughan	ISO New England Inc.
P. Das	ISO New England Inc.
P. Fitzgerald	SGC Engineering
P. Lopes	MA DCAM
P. Turner	Conservation Law Foundation
P. Vijayan	ISO New England Inc.
R. Brody	CTC Global
R. Collins	ISO New England Inc.
R. Gahagan	Treadwood LLC

R. Guay	Maine Public Utilities Commission
R. Harlan	Onward Energy
R. Harvey	Sierra Club
R. Kornitsky	ISO New England Inc.
R. Mone	RLC Engineering
R. Panos	New England Power Company
S. Allen	Eversource Energy Service Company
S. Cochran	Vitol Inc.
S. Garwood	Power Grid Strategies
S. Ingalls	Unaffiliated
S. Judd	ISO New England Inc.
S. Keane	NESCOE
S. Lamotte	ISO New England Inc.
S. Prakash	New England Power Company
S. Sinko	Norwich Public Utilities
S. Walcott	Eversource Energy Service Company
S. Yasutake	Gabel Associates
T. Blanco	New England Power Company
T. Checker	PSEG
T. Hassan	Central Maine Power Company
T. Hill	New England Power Company
T. Lundin	LS Power
T. Mirman	New England Power Company
T. Richardson	RLC Engineering
T. Snook	Vineyard Wind
V. Rojo	ISO New England Inc.
W. Richards	Apex Clean Energy
X. Liu	Eversource Energy Service Company
Z. Jiang	Eversource Energy Service Company

Item 1.0 – Chairs Remarks

Mr. Shounak Abhyankar (ISO-NE) welcomed PAC and reviewed the day's agenda.

Item 2.0 – Bean Hill Substation Proposed Station Replacement - CEII

Mr. Eric McDermont (NPU) presented relocation as the most viable solution for flood mitigation at Bean Hill Substation in Norwich CT. This project also addresses old equipment and environmental constraints. The preferred solution (Alternative 2) aims to increase reliability by adding circuit breakers with a projected start of major construction in Q2 2027 with an in-service date of 2032, costing an estimated $41.462M.

In response to questions, NPU issued the following statements:

- The current secondaries at the station go to 13.8 kV. The station is planning to go up to 34.5 kV.
- While the new flood risk is anticipated to be minimal with the elevation change, NPU is cautious to use definitive language.

No additional stakeholder comments were provided.

Item 3.0 – RSP Project List and Asset Condition List – March 2025 Update

Mr. Brent Oberlin (ISO-NE) presented on the first Regional System Plan (RSP) update of 2025. Some notable highlights included the following:

- One project had a major increase to its cost estimate (greater than $5M)
- No new projects were added
- Five upgrades were placed in service
- No projects were cancelled

In response to questions, the ISO issued the following statements:

- Including long-term transmission study cost projections on spending graphs is deemed potentially misleading (e.g. long-term RSP redundancy, active competitive transmission).
- Eversource's underground cable modernization project costs are not yet itemized and thus not included, and those costs will be added when available.
- Some CIP-014 substation upgrade project details cannot be shared at PAC due to beyond CEII restrictions (handling discussion in 2016-17); ~5-10 such additions to the asset condition list >$5M since 2016.

A stakeholder provided the following comment:

- A stakeholder suggested adding historical spending, including asset condition projects.

Item 4.0 – Tewksbury #22 Asset Condition Replacements

Mr. Rafael Panos (National Grid) presented on the increased scope and associated costs for the Tewksbury #22 substation (2022 estimated total cost is $35.49 M PTF and $35.84M, 2025 est. total cost is $62.81 M PTF and $67.45M total). National Grid attributes the variance to increases in labor/equipment, material/handling, engineering and permitting, escalation, AFUDC, and added transmission line scope. National Grid anticipates the start of major construction by Q1 2025 and a placing the project in service by Q2 2029.

In response to questions, National Grid issued the following statements:

- "Intermediate repair" refers to maintenance activities, such as transformer re-gasketing, aimed at extending asset life. These efforts were made, but they won't mitigate the high oxygen content, and the transformer is no longer reliable.

- The escalation line item increased from $1 million to $8 million accounts for material inflation from 2022 to 2024 and project scope changes.
- National Grid will investigate the increase in AFUDC.
- The Q1 2025 SOC schedule acceleration was necessary due to failures in 115 kV disconnects marked for replacement.
- New CCVTs do not have the ability to mount wave traps, necessitating the replacement of wave traps.
- The contingency increase accounts for potential issues and rising costs (i.e. tariffs) between the present and the projected 2029 completion date.

Stakeholders provided the following comments:

- A stakeholder expressed concern regarding an increased contingency despite the accuracy band tightening.
- A stakeholder suggested more front-loaded engineering before PAC presentations would be beneficial.

Item 5.0 – D-156 Asset Condition Refurbishment Project

Mr. Rafael Panos (National Grid) presented two solutions for the D-156 115 kV line, due to woodpecker damage, degraded insulation, and damaged shieldwire. National Grid supports Alternative 2, which replaces 39 wood pole structures with steel, replaces insulation on existing steel structures, reconductors 5.5 miles of the line, and replaces damaged shieldwire with OPGW. This project has a cost estimate of $19.005 M PTF, a start of major construction in Q1 2026, and a projected in-service date of Q2 2026.

In response to questions, National Grid issued the following statements:

- Replacing the 795 ACSR during structure replacements incurs minimal additional cost and avoids future standalone project expenses. This is particularly relevant for minimized disruption of the MA Department of Conservation and Recreation land location.
- The difference in the estimated cost between the Base Alternative and Alternative 2 is driven by more detailed engineering, resulting in a higher confidence level in the cost estimate.
- Images show an epoxy fill kit used to mitigate woodpecker damage prior to wood pole replacement, but these kits have not proven effective amid rise of woodpecker population.
- The standard for 115 kV insulators is typically 10-bells.
- The OPGW shield wire replacement is recommended due to issues beyond the two exhibited locations and across the 5.5-mile line. The line has also experienced multiple lightning strikes. OPGW installation adds a minor cost increase.
- The 795 ACSR line has no identified long-term capacity needs that merit consideration of advanced conductors.

Stakeholders provided the following comments:
- A stakeholder emphasized that comparing solutions with significantly varying cost accuracies is not best practice for stakeholder evaluation.

Item 6.0 – 2024 Economic Study: Additional Results

Mr. Richard Kornitsky and Ms. Elinor Ross (ISO-NE) provided additional details on Policy Scenario sensitivities and follow-up to Stakeholder Requested Scenarios.

In response to stakeholder questions, the ISO issued the following statements:

- Dual-fuel units are listed with their primary fuel according to the CELT, meaning oil retirements could include dual-fuel units.
- The capacity expansion model currently uses a reserve margin, not loss-of-load expectation analysis (LOLE), to optimize minimization of load shed. The ISO delivered feedback to Plexos developers to allow for LOLE constraints in the future.
- Costs for SMRs are declining, starting around $12,000/kW in 2033 and decreasing to $8,000/kW by 2050.
- Curtailment in the model includes wind, PV, and imports, but excludes batteries.

No further stakeholder comments were provided.

Item 7.0 – CT 2034 Needs Assessment

Ms. Sarah Lamotte (ISO-NE) identified the time-sensitive and non-time-sensitive needs in the study area, modeling assumptions, steady-state assessment results, and discussed the respective solutions development process.

In response to stakeholder questions, the ISO issued the following statements:

- EPRI is developing new protection settings for distributed energy resources (DER). A daytime minimum load stability study will be initiated upon completion, with a PAC notice preceding the needs assessment.
- Regarding Line 398, the ISO used historical data to determine minimum flow assumptions for different load levels. For nighttime minimum load cases, two versions were studied with NY transfers set to 1400 MW and zero.
- The study assumes a power factor of 0.998 leading for Connecticut, which allows for the consideration of excess voltage ampere reactive (VARs). It was noted that in low-load scenarios, there are few connected resources to absorb VARs, which contributes to high voltage conditions. The study assumes the distribution system operates within established bounds.

Stakeholders provided the following comments:

- A stakeholder inquired whether distributed energy resources DER modeling at Wickford Junction substation should have identified the violations and requested information on related needs. The ISO took this back.
- A stakeholder expressed concern about overvoltage exacerbation and perceived divergence from a market-based approach to reliability.

Item 8.0 – Update on the CELT 2025 Forecast

Ms. Victoria Rojo (ISO-NE) introduced the new hourly forecast methodology that will be used in the CELT 2025, updates to electrification forecasts, and draft forecast results that will be published in May 2025.

In response to stakeholder questions, the ISO issued the following statements:

- HVAC contractor outreach is not currently conducted, but summaries and reports will be explored for relevant information.
- Adoption rates impacted by political tailwinds are not explicitly factored into the forecast currently due to uncertainty but will be monitored as trends are assessed over the last few years.
- Large singular loads (datacenters/warehouses) are actively being investigated for inclusion in the forecast but are not currently included.
- The forecast still anticipates a winter peaking system in the 2030s, roughly around 2035, though the exact timing will vary as the forecast is probabilistic.
- The slight uptick in the 2025 forecast is a result of using climate-adjusted weather data, with warmer summers pushing the peak upward.
- Increased PV adoption has a diminishing impact on summer peaks and will dwindle over the next 10 years. Methodology improvements, nameplate value usage, and hourly modeling are improving PV forecasting accuracy and show a morning winter peak.
- The winter peak forecast is expected to drop 8-9% from the CELT 2024 forecast, driven by climate data (warmer temperatures) and lower EV forecasts.
- The ISO will use the pre-existing forecast methodology for the Installed Capacity Requirement (ICR) for the remaining Annual Reconfiguration Auction (ARA) ICR calculations, for consistency.
- Isolating the impact of the hourly methodology change is difficult due to intertwined changes.

Stakeholders provided the following comment:

- A stakeholder requested the factors and percentage drop in the winter peak forecast.
- A stakeholder suggested further understanding the broader impacts of moving from a monthly to hourly forecast.

Item 9.0 – Boston 2033 Solutions Study

Mr. Aqeel Ahmed (ISO-NE) explained the time sensitive needs for solution development with an overview of their components and comparison of options. The preferred solution has an anticipated total cost of $26M with a final in-service date of December 2028.

In response to stakeholder questions, the ISO issued the following statements:

- The timeline for the three-year window for time-sensitive needs may depend on the proposals in response to the 2025 Longer-Term Transmission Planning (LTTP) Request for Proposal (RFP) (the “2025 LTTP RFP”) are received. The PAC will be updated on any changes.

- The ISO is pausing the reassessment of non-time-sensitive needs in the Boston area until after the 2025 LTTP RFP is complete, as those results may impact needs. Time-sensitive solutions, such as reactors and protection upgrades, will proceed.
- The needs assessment in October identified time-sensitive needs based on high voltage during low load conditions, which static reactors addressed. Dynamic voltage control devices were not considered.

An organization provided the following comment:

- NESCOE expressed appreciation for the layout and noted LTTP's significance and the substantial work near Boston.

Item 10.0 – Closing Remarks/Adjourn for the Day

Mr. Abhyankar announced the next PAC meeting is on Tuesday, April 29, 2025.

The meeting was adjourned at 1:54 p.m.

Respectfully submitted,

_____/s/_____

Jasleen Singh

Acting Secretary, Planning Advisory Committee