MINUTES OF THE
PLANNING ADVISORY COMMITTEE (PAC)
MEETING HELD ON JANUARY 23, 2025

Name	Affiliation
S. Abhyankar	ISO New England (Chair)
J. Singh	ISO New England (Acting Secretary)
A. Ahmed	ISO New England Inc.
Z. Ahmed	ISO New England Inc.
M. Ainspan	NRG
S. Allen	Eversource Energy Service Company
A. Amahatsion	Avangrid
B. Anderson	NEPGA
J. Anderson	SP Global
B. Andrew	Eversource Energy Service Company
E. Annes	CT DEEP
J. Ansah	Ocean Winds
C. Aquino	Eversource Energy Service Company
P. Asarese	ISO New England Inc.
M. Azzolini	ConEd Transmission
K. Banerjee	Eversource Energy Service Company
S. Beale	NESCOE
D. Bergeron	Maine Public Utilities Commission
P. Bernard	ISO New England Inc.
M. Berninger	ConEd Transmission
T. Blanchard	Member of the Public
B. Bloomer	VELCO
C. Bothwell	Boston Government Services, LLC
P. Boughan	ISO New England Inc.
J. Bower	Daymark Energy Advisors
D. Bradt	Oxford Power
J. Breard	ISO New England Inc.
J. Brodbeck	Marble River, LLC
R. Brody	CTC Global
H. Buell	ISO New England Inc.
D. Burnham	Eversource Energy Service Company
K. Caiazzo	Commonwealth of Massachusetts Office of the Attorney General
D. Cavanaugh	Belmont Municipal Light Dept., Block Island Utility District, Braintree Electric Light Dept., Chester Municipal Light Dept., Concord Municipal Light Plant, Danvers Electric Division, Georgetown Municipal Light Dept., Groveland Electric Light

	Dept., Hingham Municipal Lighting Plant, Littleton (MA) Electric Light Dept., Mass. Bay Transportation Authority, Merrimac Municipal Light Dept., Middleborough Gas and Electric Dept., Middleton Municipal Electric Dept., North Attleborough Electric Dept., Norwood Municipal Light Dept., Pascoag Utility District, Reading Municipal Light Dept., Rowley Municipal Lighting Plant, Stowe (VT) Electric Dept., Taunton Municipal Lighting Plant, Village of Hyde Park (VT) Electric Dept., Wallingford, Town of, Wellesley Municipal Light Plant, Westfield Gas & Electric Light Dept.
J. Cebrik	Avangrid
A. Cienfuegos	Avangrid
L. Cioffi	Rhode Island Energy
M. Coleman	JERA Americas Inc.
R. Collins	ISO New England Inc.
J. Collins	New England Power Company
K. Colson	Eversource Energy Service Company
S. Conant	Customized Energy Solutions
R. Conant	RLC Engineering
D. Conroy	RLC Engineering
M. Corr	Taunton Municipal Lighting Plant
W. Coste	ISO New England Inc.
R. Coxe	Mosaic Energy Insights
A. Culoso	New England Power Company
B. D'Antonio	Eversource Energy Service Company
P. Das	ISO New England Inc.
K. Desai	Avangrid
J. Dong	Eversource Energy Service Company
B. Donmez	Longroad Energy
J. Donovan	Commonwealth of Massachusetts Office of the Attorney General
M. Doolin	Eversource Energy Service Company
M. Drzewianowski	ISO New England Inc.
L. Durkin	ISO New England Inc.
F. Ettori	Vermont Electric Power Company, Inc.
J. Fenn	Versant Power
P. Fitzgerald	SGC Engineering
B. Forshaw	Connecticut Municipal Electric Energy Cooperative, New Hampshire Electric Cooperative, Inc., Vermont Public Power Supply Authority
N. Forster	NESCOE
M. Fossum	New Hampshire Office of the Consumer Advocate

J. Fu	US DOE
P. Fuller	Sunrun Inc., NRG Power Marketing LLC
J. Fundling	Eversource Energy Service Company
A. Fuzaylov	Synapse
M. Gagne	ISO New England Inc.
A. Gagnon	Massachusetts Federal and Regional Energy Affairs
N. Gangi	ISO New England Inc.
G. Garcia	Avangrid
M. Gardner	NextEra Energy Resources, LLC
R. Gibbons	Avangrid
A. Gillespie	Calpine Energy Services, LP
S. Glackin-Coley	Avangrid
L. Gonynor	New England Power Company
M. Gonzalez	ISO New England
D. Green	RLC Engineering
R. Guay	Maine Public Utilities Commission
L. Guilbault	HQ Energy Services (U.S.) Inc.
S. Gupta	Zero Emission Grid
B. H	RLC Engineering
K. Haag	ISO New England Inc.
J. Halpin	Eversource Energy Service Company
R. Harlan	Onward Energy
J. Harris	US DOE
M. Haskell	Maine Public Utilities Commission
A. Hastings	ISO New England Inc.
C. Heilferty	ISO New England Inc.
S. Herbert	Vineyard Wind
A. Hofmann	New England Power Company
P. Holloway	MA DOER
H. Hunt	NESCOE
N. Hutchings	NextEra Energy Resources, LLC
J. Iafrati	Galt Power Inc.
M. Ide	Massachusetts Municipal Wholesale Electric Company and Member Companies (Ashburnham Municipal Light Plant, Boylston Municipal Light Dept., Chicopee Municipal Lighting Plant, Groton Electric Light Dept., Holden Municipal Light Dept., Holyoke Gas & Electric Dept., Hull Municipal Lighting Plant, Ipswich Municipal Light Dept., Mansfield Municipal Electric Dept., Marblehead Municipal Light Dept., Paxton Municipal Light Dept., Peabody Municipal Light Plant, Princeton Municipal Light Dept., Russell Municipal Light Dept., Shrewsbury's Electric & Cable Operations,

	South Hadley Electric Light Dept., Sterling Municipal Electric Light Dept., Templeton Municipal Lighting Plant, Wakefield Municipal Gas and Light Dept, West Boylston Municipal Lighting Plant)
S. Ingalls	Member of the Public
H. Jack	NextEra Energy Resources, LLC
S. Jackson	Form Energy
F. Jade	NextEra Energy Resources, LLC
B. Jagolinzer	Central Maine Power Company
H. Johlas	ISO New England Inc.
T. Kaslow	Firstlight Power Management LLC
J. Kasow	ISO New England Inc.
S. Keane	NESCOE
R. Keen	Member of the Public
H. Khireddine	New England Power Company
A. Kleeman	ISO New England Inc.
R. Kornitsky	ISO New England Inc.
N. Krakoff	Conservation Law Foundation
A. Krich	Large RG Group Member, Generation Group Member, Walden Renewables
M. Krolewski	Vermont Public Utilities Commission
F. Kugell	Avangrid
R. Lafayette	The Narragansett Electric Company
C. Lambrinos	New England Power Company
S. Lamotte	ISO New England Inc.
J. Lamson	RTO Insider
A. Lawton	Synapse
P. Levi	Form Energy
B. Li	Eversource Energy Service Company
A. Logan	Eversource Energy Service Company
L. Looman	Vermont Electric Power Company, Inc.
P. Lopes	DCAM, Commonwealth of Massachusetts
W. Lu	ISO New England Inc.
J. Lucas	Eversource Energy Service Company
T. Lundin	LS Power
J. Lutenegger	ISO New England Inc.
K. Mankouski	ISO New England Inc.
J. Martin	New England Power Company
T. Martin	New England Power Company
J. Miller	Clearway Energy Group
T. Mirman	New England Power Company
A. Mitchell	New England Power Company

S. Molodetz	NextEra Energy Resources, LLC
R. Mone	RLC Engineering
E. Morgan	Chicopee Electric Light Department
R. Mozumder	ISO New England Inc.
S. Muller	Union of Concerned Scientists
J. Nichols	ISO New England Inc.
W. Nuara	Massachusetts Executive Office of Energy and Environmental Affairs
B. Oberlin	ISO New England Inc.
R. Panos	New England Power Company
K. Pastoriza	Member of the Public
D. Patnaude	ISO New England Inc.
G. Pease	Eversource Energy Service Company
G. Peniuk	Power Advisory LLC
E. Perez Cervera	ISO New England Inc.
D. Phelan	NH Public Utilities Commission
B. Pierson	Walden Renewables
J. Porter	The Narragansett Electric Company
H. Presume	Vermont Electric Power Company, Inc.
F. Pullaro	RENEW Northeast
C. Putney	Eversource Energy Service Company
K. Quach	ISO New England Inc.
T. Qunais	Eversource Energy Service Company
N. Raike	ISO New England Inc.
J. Rauch	Avangrid
M. Reynolds	Eversource Energy Service Company
M. Ribeiro Dahan	ISO New England Inc.
C. Richards Jr	The Narragansett Electric Company
H. Roberts	RLC Engineering
B. Robertson	Eversource Energy Service Company
E. Rossignoli	ISO New England Inc.
J. Rotger	BP Energy Company, Cross-Sound Cable Company, LLC, DTE Energy Trading, Inc., Galt Power Inc., Mercuria Energy America, LLC
M. Rowe	Eversource Energy Service Company
E. Runge	Day Pitney
D. Schwarting	ISO New England Inc.
M. Scott	New England Power Company
K. Shaarbafi	Eversource Energy Service Company
A. Shadab	NextEra Energy Resources, LLC
P. Shattuck	Power Advisory LLC
G. Shen	Entrust Solutions
M. Siddiqui	New England Power Company

W. Signorelli	NEE
K. Sikorski	Eversource Energy Service Company
K. Sirowich	ISO New England Inc.
B. Snook	State of Maine - Maine Public Advocate Office
N. Sobhani	Daymark Energy Advisors
M. Spector	Grid United
N. Stacom	New England Power Company
A. Stevens	ISO New England Inc.
J. Stroba	INS Engineering
B. Swalwell	Tangent Energy Solutions, Inc.
J. Talbert-Slagle	Connecticut Office of Consumer Counsel
B. Thomson	The Narragansett Electric Company
N. Toleman	Viridon
A. Trotta	Avangrid
P. Turner	Conservation Law Foundation
G. Twigg	NECPUC
J. Vaile	Eversource Energy Service Company
R. Vega	ISO New England Inc.
Y. Venkobarao	Vistra Corp.
P. Vijayan	ISO New England Inc.
S. Walcott	Eversource Energy Service Company
P. Walker	The Narragansett Electric Company
J. Walters	CT DEEP
B. Wilson	ISO New England Inc.
M. Winkler	ISO New England Inc.
M. Winne	ISO New England Inc.
S. Xu	ISO New England Inc.
S. Yasutake	Gabel Associates
M. Young	NH Energy
J. Zhang	ISO New England Inc.
H. Zheng	NextEra Energy Resources, LLC
J. Zwirko	Holyoke Gas & Electric

Item 1.0 – Chairs Remarks

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

An update was provided regarding the development of revised DER modeling assumptions. This effort was initiated in late 2024 and the ISO has hired EPRI for their assistance. This effort is taking longer than expected, with recommendations expected in Q2 of 2025. An update will be provided to PAC at that time.

Item 2.0 –Longer-Term Transmission Planning RFP Plans and Schedule

Mr. Dan Schwarting (ISO-NE) discussed the background, contextualized the system modeling of the RFP, introduced the evaluation of financial benefit calculations, and announced the tentative schedule.

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

- The ISO noted that policies are expected to evolve over the 2050 Study period and that sensitivities will be considered, but the ISO intends to use the information available at the time of releasing the RFP.
- While there is no requirement in the RFP to address interface limits other than Maine-New Hampshire and Surowiec-South, any other interface increases (North-South, Boston imports, etc.) will be accounted for in economic modeling and benefits will be attributed to the project.
- The ISO will be releasing the RFP based on a request from NESCOE, consistent with the approved Tariff.
- The base case, aligned with the NESCOE request letter, will be released as part of the RFP. Projects will build upon this case, meeting reliability standards and objectives.
- Production cost models (similar to previous studies, hourly dispatch, full transmission model, with relaxed constraints in some areas that are not relevant to the RFP or any proposals submitted) and capacity expansion models (newer, used in EPCET, multi-year generation needs, considers pipe and bubble concept, such as Boston import constraints) were discussed. The capacity expansion model output feeds into the production cost model, addressing interconnection details.
- The models will use 2035 loads. 2050 load levels are not the focus of this RFP. All PPA-approved projects will be included.
- Cost Containment Mechanisms (CCMs) are considered qualitatively during project evaluation, affecting the cost side of the benefit-cost ratio (BCR), but are not directly factored into the economic model.
- The load assumed in the 2050 Transmission Study was based on assumptions provided by NESCOE.
- The ISO will need to wait to see the responses to the RFP, but a new 345 kV line could be proposed to address the requirements.
- The ISO uses PLEXOS to run models (e.g. Economic Studies, EPCET). While bidders are not required to use PLEXOS for submissions, it is an additional available tool. The ISO is internally discussing the release of model results with respect to confidentiality considerations.
- An HVDC transmission line connected directly from a windfarm in Maine that injects power into Boston would not meet the requirements for the RFP; this is because the HVDC line does not allow for the free flow of power across the required interfaces and only serves to benefit the single project. However, an HVDC transmission line connected to the existing Maine transmission system injecting power into Boston would be a valid proposal, because it would allow additional power from any source to flow across the relevant interfaces.
- Models will include QP639 and QP889 and their associated PPA-approved upgrades.
- The capacity expansion model will allow for additional wind interconnections based on the ISO's determination of increased transfer limits.

- The weather year for the capacity expansion model and production cost model will be 2019.
- The production cost model will run from 2035-2055.
- Transmission proposals with in-service dates before 2035 will have their earlier in-service dates reflected in the capacity expansion model.
- The load in the production cost model will be based on ISO forecast data, and will not exactly match the 51 GW or 57 GW load level from the 2050 Transmission Study.
- To evaluate proposals' ability to accommodate 1,200 MW of onshore wind in Maine, the RFP will consider the equivalent of network service and capacity service, with more details forthcoming at the February PAC meeting.
- The ISO plans to keep transmission system models constant throughout the evaluation but may look at sensitivity of results if a major generator retires or similarly large event occurs.
- The economic model will be directionally similar to the 2055 cases in the policy scenario, with the exclusion of energy storage and small modular reactors in the RFP being the biggest difference.
- The impact of federal permitting challenges for wind energy on the RFP and capacity expansion model is not expected to impact the results, because policies may change again by 2035, and because assumptions are intended to be similar to those used in the 2050 Transmission Study. The ISO plans to move forward as the process is currently laid out.
- The models will consider resources built in Maine post-2035, including incremental wind projects.
- The ISO aims for reasonable resource buildout assumptions, addressing limits on specific resources (e.g., solar in Boston).
- Inclusion of small modular nuclear reactors (SMRs) will be revisited at a future PAC meeting.
- Linear interpolation is employed for capacity buildout between 2035 and 2055. The emissions constraints are linear, and production cost follows emissions.
- Capacity expansion models and production cost models account for energy storage and pumping.
- If there are no proposals with a BCR greater than one, the supplemental process will ensue with NESCOE taking a more decisive role. Proposals with a BCR of one or less than one but with cost containment provisions may be discarded if another project has a BCR greater than one.
- To account for avoided transmission cost, the ISO will use projects and costs from the asset condition list. Stakeholder concerns about incentives to manipulate the list were noted.
- The ISO is interpreting a full rebuild to mean that future work is not required after the project is completed.
- Avoided capital costs can be negative.
- Generic asset replacement costs from the 2050 Transmission Study will need to be updated for use in evaluation of proposals.
- The ISO will be basing asset age on the asset condition database.
- The ISO will verify costs, potentially using an independent consultant. Significantly different costs may lead to project dismissal. Cost containment proposals will be taken into consideration in this process.
- Transmission line losses are not considered in the model and do not materially affect results.
- BCR considers benefits and costs over 20 years.

- The ISO will check whether estimates will be required to be within a certain threshold.
- Before the RFP is issued, the primary avenues for Qualified Transmission Project Sponsor (QTPS) questions will be the PAC and draft RFP. After the RFP is issued, communications will be through Responsive.
- The ISO noted that the current Loss of Source study schedule would not result in impacts to the RFP.
- The 2 GW limit applies to a resource and not lines entirely within NE. QTPS' must consider contingency, voltage, and stability performance upon loss of a large transmission line.
- While the RFP package will be similar to the previous Boston process, it will differ due to lessons learned and additional questions that are specific to this RFP.

The following stakeholder comments were issued:

- Several stakeholders and NESCOE encouraged the ISO to reconsider allowing the PAC to comment the draft RFP.
- Concerns were raised about the potential for incentives to manipulate the asset condition list.
- A request for more information on assumptions regarding onshore wind constraints to be provided at the next meeting. For example, potential sensitivity analyses for lower electrification adoption rates for projected forecasts if Tariff constructs and resources allow.

Item 3.0 – 2024 Economic Study: Final Policy Results

Mr. Richard Kornitsky and Ms. Elinor Ross (ISO-NE) reviewed the objective of the economic study policy scenario and its use of capacity expansion and production cost models to build a system that meets state emission reduction goals at least cost. Final reference case and high-level results from initial sensitivities were introduced.

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

- The table for varying resources' cumulative capacity (slide 13) does not include existing resources, only new resources. Note that existing resources are in the case.
- The 3 GW of land-based wind assumption originated from NESCOE's initial draft of the Longer-Term Transmission Process (LTTP). The use of this value was intended for consistency with other studies. The ISO has run multiple sensitivities with varying amount of land-based wind as well.
- The load forecast is internally derived. In the capacity expansion model, the 2019 weather year was used, which is an average year among weather years.
- On the 60-70% emissions band (Slides 29 and 34), the specific resources are not identified, but likely represent higher load hours requiring emitting generation.
- Scenario sensitivities are intended for informational use only.
- The feedback deadline is two days after the February PAC meeting because the topic runs on a two-month cycle and will return to the committee in March.
- The ISO will confirm that capacity factors (on Slide 40) for modeled PV resources are all assumed to be fixed mount.
- ISO to confirm if single-element sensitivity requests can be made for capacity factor types.

Item 4.0 – Updates to the Economic Study Technical Guide

Mr. Richard Kornitsky (ISO-NE) discussed the updates, notably the Market Efficiency Needs Scenario, prior to finalized tariff language and stakeholder feedback at the end of the month.

In response to stakeholder questions regarding pumped storage, charging production, and the use of gross vs. net load, the ISO-NE will issue a written response. the following statements:

Item 5.0 – Closing Remarks/Adjourn for the Day

Mr. Abhyankar announced the next PAC meeting is on Wednesday, February 26, 2025.

The meeting adjourned at **12:52 P.M.**

Respectfully submitted,

_____/s/_____

Jasleen Singh

Acting Secretary, Planning Advisory Committee