

**Planning Advisory Committee
WebEx Teleconference
January 21, 2021**

Attendee	Sector	Market Participant
P. Bernard	Chair	ISO New England Inc.
M. Lyons	Secretary	ISO New England Inc.
M. Ainspan	Alternate	NRG
R. Andrew	Transmission	Eversource Energy
J. Brodbeck	Supplier	Marble River
D. Cavanaugh	Publicly Owned/ Supplier	Energy New England/Block Island
F. Etori	Transmission	VELCXO
J. Fenn	Transmission	Versant Power
B. Forshaw	Publicly Owned	CMEEC
B. Fowler	Generation/Supplier / Alternative Resource	Wheelabrator North Andover Inc.; Exelon Generating Company LLC; Nautilus Power; Dynegy Power Marketing, LLC; Entergy Nuclear Power Marketing LLC; Great River Hydro, LLC
J. Iafrati	Supplier	Customized Energy Solutions
B. Jagolinzer	Transmission	Avangrid
S. Kaminski	Publicly Owned	New Hampshire Electric CoOp
T. Kaslow	Generation	First Light Power Resources
S. Kirk	Supplier	Exelon Generation Company
A. Krish	Generation	Boreas Renewables
B. Kruse	Alternative Resource	Calpine
J. Martin	Transmission	New England Power Company
T. Martin	Transmission	New England Power Company

B. McKinnon	Publicly Owned/ End User	Norwood Light Department, and New Hampshire Electric CoOp
H. Presume	Transmission	VELCO
J. Rotger	Supplier	Galt Power, Cross Sound Cable, BP Energy, Mercuria Energy and DTE Energy
P. Sousa	Supplier	Marble River
R. Stein	Generation/Supplier / Alternative Resource	Generation Group Member, NRG Power Marketing, HQ Energy Services, PSEG Energy Resources & Trade, SunEdison
B. Swalwell	Alternative Resource	Tangent Energy Solutions
B. Thomson	Publicly Owned	MMWEC
P. Turner	End User	Conservation Law Foundation
A. Worsley	Generation	Boreas Renewables

Guest		Affiliation
J. Babu		Eversource Energy
K. Bashford		ISO New England Inc.
D. Bergeron		Maine Public Utilities Commission
J. Breard		ISO New England Inc.
D. Burnham		Eversource Energy
E. Camp		Synapse Economics
D. Capra		NESCOE
R. Collins		ISO New England Inc.
D. Conroy		RLC Engineering
F. Dallorto		ISO New England Inc.
B. D'Antonio		NESCOE
M. Drzewianowski		ISO New England Inc.
J. Fairchild		Avangrid
K. Flynn		ISO New England Inc.
N. Gangi		Eversource Energy
J. Grasse		New England Power
P. Holloway		Massachusetts Department of Public Utilities
N. Hutchings		ISO New England Inc.
G. Jesmer		ISO New England Inc.
S. Judd		ISO New England Inc.
S. Keane		Massachusetts Department of Public Utilities
A. Kniska		ISO New England Inc.
R. Kowalski		ISO New England Inc.
P. Lopes		Mass DCAM

J. Lucas		Eversource Energy
E. Mailhot		ISO New England Inc.
A. Margolis		VT Department of Public Service
A. McBride		ISO New England Inc.
J. Moskal		USEPA
B. Oberlin		ISO New England Inc.
T. Paradise		Anbaric
S. Patel		Eversource Energy
D. Plante		Eversource Energy
E. Runge		Day Pitney
M. Saravanan		ISO New England Inc.
D. Schwarting		ISO New England Inc.
M. Scott		New England Power Company
C. Sedlacek		ISO New England Inc.
T. Shakespeare		Massachusetts Department of Public Utilities
P. Silva		ISO New England Inc.
C. Soderman		Eversource Energy
J. Solcum		Massachusetts Department of Public Utilities
P. Sousa		Massachusetts Department of Public Utilities
J. Truswell		ISO New England Inc.
J. York		LS Power

Item 1.0 – Chairs Remarks

Mr. Peter Bernard welcomed the committee and reviewed the days’ agenda.

Mr. Bernard announced that ISO-NE is currently working with DNV GL to finalize a report detailing the results of the stochastic analysis of wind, solar, and load data scope of work that was presented to the PAC in July 2020. Once the report is finalized, a presentation will be made

to PAC detailing the findings in the February-March 2021 timeframe. In addition to the stochastic work, DNV is currently working on adding another year of historical data to the time series data to expand it to 21 years (2000-2020). In addition to the extension and recalibration of the previously modeled wind, solar, and load data, the data set will be adding six hypothetical offshore wind farms up the coast of New England from Cape Cod to New Brunswick, four hypothetical onshore wind farms in western, central, and northern Maine, and seven hypothetical utility scale solar farms across the region. This data will help explore the diversity of wind resources in areas that currently do not have existing or contracted wind farms and help evaluate the variability of concentrated utility scale solar farms compared to distributed behind the meter solar resources. This new data set will be described in more detail at a future PAC presentation and posted for stakeholders in the March-April 2021 timeframe.

Q – The new dataset will be posted in March. Will there be a presentation to review the dataset at PAC.

A – We plan to review that at the March PAC meeting.

Lastly, Mr. Bernard called the committee's attention to the memo Bob Ethier sent out yesterday afternoon. After almost four and a half years serving as the PAC Chair, Mr. Bernard announced that he will be stepping down after the February 17, 2021 PAC meeting. Mr. Bernard expressed his appreciation to the committee during his time as PAC Chair. Mr. Bernard also mentioned that he would not be leaving the PAC as he plans to attend PAC meetings and at times will be called upon to make presentations and answer stakeholder questions. Ms. Jody Truswell will be assuming the role of PAC Chair at the March 2021 PAC meeting.

Mr. Robert Stein and Mr. Denis Bergeron commended ISO-NE on the nomination of Ms. Truswell as PAC Chair and expressed appreciation to Mr. Bernard for his work and efforts as PAC Chair over the past several years.

Item 2.0 – Southington Substation Relay Replacement Project

Mr. John Babu (Eversource Energy) reviewed the Southington Substation Relay Replacement Project.

There were no questions from the committee on this topic.

Item 3.0 – Amherst (NH) Substation Protection and Control Upgrades

Mr. John Babu (Eversource Energy) reviewed the Amherst (NH) Substation Protection and Control Upgrades Project.

There were no questions from the committee on this topic.

Item 4.0 – Eversource 345 kV Structure Replacement Project (2020-2021)

Mr. Chris Soderman (Eversource Energy) reviewed the Eversource 345 kV Structure Replacement Project (2020-2021).

Q – Regarding the lines illustrated in black in the presentation, will they be upgraded at a later date and if so, why aren't they included as part of this upgrade project?

A – We have not identified any asset conditions issues with those particular line structures at this time and they are not scheduled for upgrade. As such, they were not included as part of this project.

Q – How much of the work will be “live line” work.

A – Much of it will be “live line” with the exception of the needed insulator replacements.

Item 5.0 – Eversource Copper Conductor and Shield Wire Replacement Project

Mr. Chris Soderman (Eversource Energy) reviewed the Eversource Copper Conductor and Shield Wire Replacement Project.

Q – Is this all of the copper conductors that Eversource has on their system.

A – This is the majority of the copper lines on the Eversource PTF system. There are some copper lines on the non-PTF system but that replacement project would not come before PAC.

Q – Does Eversource expect any additional work of this nature coming in the future?

A – Eversource continues to evaluate the asset conditions of their lines and we will bring any new projects before the PAC for review if there is needed work.

Q – Are there any timelines for this work?

A - It will be in 2021 to 2022 with some of the work maybe pushed into 2023. The RSP Asset List is a good place to reference the projected in service date to get the most accurate information. The next RSP Asset List update is scheduled for March 2021.

Q – There are some 69 kV PTF lines, will that be another copper conductor upgrade that will be needed?

A – The only copper 69 kV PTF lines that Eversource is responsible for is in Eastern CT. That asset condition issue was reviewed at PAC in October 2020.

Q – This asset conditions issue is not a local area issue. Instead of spending hundreds of millions of dollars replacing these lines in kind (ex. replacing old 115 kV with new 115 kV), has Eversource considered upgrading those lines for future grid needs (ex. Replace old 115 kV with new 345 kV).

A – Eversource is reviewing this type of project work for future needs. It is a balance between current grid needs and projected future grid needs. We are awaiting the results of the ongoing Future Grid study to get a better understanding of projected future grid needs.

Comment – There could be a planning gap where TOs are looking at asset conditions and the ISO is looking at reliability needs.

Comment – The States are looking closely at these needed transmission asset replacement projects and trying to determine if there should be transmission upgrades to fulfill future transmission needs.

Q – At which frequency (miles per sample) do you perform strength testing?

A – Strength testing sampling was performed on a convenience base, and not strict miles per sample.

Item 6.0 – Transmission Planning for the Clean Energy Transition: Generation Dispatch Details

Mr. Reid Collins (ISO-NE) reviewed the details of anticipated generation dispatch as part of the Transmission Planning Clean Energy Transition.

Comment – Regarding the different system conditions, can ISO provide a write up on why ISO chose the various system conditions and dispatched used in the base case?

Q – On slide 7 showing the ties, it shows we could be exporting and would that change any of the study results.

A – We are assuming 0 MW exports due to the high level of renewables in both New England and NY.

Q – On slide 4 for the generation, what assumptions were made for non-distributed PV MWs?

A – I don't have the exact amount of non-distributed PV MWs. For future projects, we are using binding contracts, state RFPs or an FCM obligation.

Q – On slide 7, the NECEC line is curtailed at \$0 or negative prices. Have all of the fossil generation been turned off first?

A – Yes, all fossil units have been turned off prior to transmission lines being curtailed.

Q – On slide 10, regarding the EIPC work, will ISO provide additional information on those efforts for frequency response?

A – The frequency response reports are posted and available on the EIPC website.

Q – Is the end result of this pilot study is to determine what it will cost to address problems that are discovered in the study or to assist in future transmission planning?

A – We are looking the reliability issues vs costs and the impacts of curtailments. This will assist our future planning work.

Q – The dispatches on slide 17, is that an operable system? There are no resources to turn on if needed.

A – There are simple cycle and combined cycle units available as reserves? This looks at a peak load conditions with reserves available per system operation procedures. If there are system operation issues that come out of the study, we plan to address those problems.

Comments on the Pilot Study Base Cases is due to ISO by February 5, 2021.

Item 7.0 – Closing Remarks

The next PAC meeting will be Wednesday, February 17, 2021 via WebEx Teleconference.

The Planning Advisory Committee meeting adjourned at 11:35 AM.

Respectively submitted

Marc Lyons

Secretary, Planning Advisory Committee