

**Planning Advisory Committee
Doubletree Hotel – Westborough, MA
March 21, 2019**

Ray Albrecht	National Biodiesel Board
Bruce Anderson	NEPGA
Bob Andrew	Eversource Energy
John Bagnoli	Eversource Energy
Peter Bernard	ISO New England Inc.
Jon Black	ISO New England Inc.
Alex Boutsoulis	Consultant
Cal Bowie	Eversource Energy
Jon Breard	ISO New England Inc.
Dorothy Capra	NESCOE
Dave Cavanaugh	Energy New England
Digaunto Chatterjee	Eversource Energy
Ray Coxe	Mosaic Energy Insights for Brookfield
Ben D'Antonio	NESCOE
Kate Epton	ISO New England Inc.
Jeff Fenn	Emera Maine
Kevin Flynn	ISO New England Inc.
Brian Forshaw	CMEEC
Bill Fowler	Exelon
Nick Gangi	Eversource Energy
Steve Garwood	New Hampshire Transmission
Jeff Iafrati	Customized Energy Solutions
Eric Jacobi	FERC
Steve Judd	ISO New England Inc.
Tom Kiley	Northeast Gas Association
Steve Kirk	Exelon
Manasa Kotha	ISO New England Inc.
Rich Kowalski	ISO New England Inc.
Michael Kuser	RTO Insider
Steve Leahy	Northeast Gas Association
Paul Lopes	Massachusetts DCAM
Marc Lyons	ISO New England Inc.
Mike Macrace	Harvard Dedicated
Tim Martin	New England Power Company
Bruce McKinnon	New Hampshire Electric CoOp/South Hadley Electric Light
Shawn Moran	Eversource Energy
John Moskal	U.S. EPA
Fred Ninotti	ISO New England Inc.
Brent Oberlin	ISO New England Inc.
Paul Peterson	Synapse Economics
Dan Pierpont	CPV Towantic
Mike Purdy	Dominion

Abhinav Rawat	New England Power Company
Ed Roedel	Avangrid
Victoria Rojo	ISO New England Inc.
Jose Rotger	Cross Sound Cable
Eric Runge	Day Pitney
Bob Russo	Eversource Energy
Patricio Silva	ISO New England Inc.
Abhinav Singh	ISO New England Inc.
Carissa Sedlacek	ISO New England Inc.
Bob Stein	HQUS/PSEG/NRG/Footprint
Gabe Stern	CMEEC
Brian Thomson	Massachusetts Wholesale Electric Company
Carol Wendell	ISO New England Inc.

Item 1.0 – Chairs Remarks

Mr. Pete Bernard welcomed the committee and reviewed the day’s agenda.

Item 2.0 – Regional System Plan 19 (RSP19) Transmission Projects and Asset Conditions – March 2019 Update

Mr. Jon Breard (ISO-NE) provided an overview of the March 2019 update to the Transmission Projects and Asset Conditions Lists.

This update is provided to the PAC three times a year highlighting major cost estimate changes, project updates, new projects and projects placed in service since the last update (October 2018). Highlights include a cost increase of \$8.5M for the Aquidneck Island Project that converts lines 61/62 from 69 kV to 115 kV. The MPRP (ME) and Connecticut River Valley (VT) projects have been placed in service. There were no new projects added to the project list. There were also 10 upgrades to projects placed in service. Two for SWCT, two for GHCC, one project for Central/Western Mass, one for SEMA, one for Connecticut River Valley (project now fully completed), two for MPRP (project now fully completed), and one for Greater Boston. Primary concern from NESCOE was why the time sensitive SEMA/RI projects are still listed as planned instead of actively being worked on. Both ISO and Eversource responded that the projects are being worked on. At this time, the construction phase of the work hasn’t begun. The TO’s need to do equipment ordering, outage scheduling, local outreaching and siting proceedings. The more complicated parts of the project are the hold up. The easier parts of the project, such as reconductoring, have been completed.

Item 3.0 – Update on New England Natural Gas Developments

Mr. Tom Kiley (Northeast Gas Association) provided an update on New England Natural Gas Developments.

Pipeline and Gas Utilities send out reports reflecting that new records were set this winter both nationally and in New England. Algonquin set a new system peak day on January 21st and its second highest peak day was January 22nd. Tennessee Gas set a new system wide throughput record on January 3th. Iroquois set a new peak physical delivery day on February 1st. Estimated deliveries from New England LNG facilities rose from 360 million cubic feet per day on January 19, 2019 to more than 700 million cubic feet per day on January 21st. There are a few pipeline projects under way for 2019 & 2020 Portland Xpress Phase II and Westbrook Xpress Phase I are scheduled for 2019. The Atlantic Bridge Project Phase II, Portland Xpress Phase III, Station 261 Upgrade, and the Wright Interconnect are scheduled for 2020. There has been a moratorium on interconnection of new gas customers (commercial and residential) in 12 Massachusetts communities due to the lack of significant pipeline expansion (new or existing). Most of the questions focused on the impact of minimal significant pipeline expansion in the region.

Item 4.0 – Draft 2019 ISO-NE Annual Energy and Peak Load Forecast

Mr. Jon Black (ISO-NE) provided an overview of the Draft 2019 ISO-NE Annual Energy and Peak Load Forecast. The presentation reviewed the summer peak demand, energy efficiency, and PV forecasts for the region. There also was a review of the summer Demand Forecast performance issues identified last summer. There was also a discussion of modeling improvements implemented for this year's forecast.

BTM PV continues to play a significant role in the reduction and a timing shift of the peak load values. To better improve the forecast modeling a second weather variable was added called Cooling Degree Days (CDD) in addition to the Weather Temperature Humidity Index (WTHI). The model estimation period (daily peak load and historical weather from 2004 – 2018) and the historical weather history for probabilistic forecasting was reduced from 40 years to 25 years (1991 – 2015). The 2019 summer demand forecast will be updated using the latest Moody's Economic Data, updated model estimation period, new model specifications and new weather history. There will also be changes to the BTM PV and EE forecasts. In testing the new modeling changes, it showed significant improvement in the forecast error reducing the error margin from 3.4 % to 2.2% for summer weekdays and from 4.0% to 1.5% forecast error for the 10 highest demand days.

Customer questions were initially focused on the detailed inputs used for the forecast model for PV, EE and weather data. Mr. Black explained some of these inputs but he recommended that detailed technical questions were better suited for the PSPC, DGFWG, and Energy Efficiency Working Groups. There was also some concern with how ISO will deal with in the future larger scale implementation of co-located PV and Battery resources, both behind the meter and commercial scale.

Item 5.0 – EIPC Frequency Response Update

Mr. Steve Judd (ISO-NE) provided an update of the EIPC activity regarding frequency response.

The presentation focused on the frequency response and inertia challenges with the introduction of very large scale wind penetration primarily in ERCOT and the Midwest. EIPC is developing a series of model builds that will test at various contingency loss levels to determine the frequency response impact of a loss of 2,513 MWs (largest single loss to date), 3,100 MWs, 4,500 MWs, and 10,000 MWs. There were no questions from the committee on this topic.

Item 6.0 – Updating Needs Assessments to Reflect Latest Assumptions

Mr. Brent Oberlin (ISO-NE) provided an overview regarding updating the Needs Assessment to reflect the latest assumptions.

There have been significant issues regarding completion of area Needs Assessments due to changing system conditions. For example, the Eastern CT Needs Assessment was well underway when the FCA 13 Auction was run. At that time, the Killingly Energy Center (632 MWs) cleared in the auction. That changed the whole topography of the area and potentially neighboring areas. As such the Needs Assessment needs to be stopped and rerun with Killingly in the model to see what has changed. Same will go for Vineyard Wind for SEMA/RI study, etc. This is very time consuming process. For example, the Eastern CT studies have been on-going for 7 years because of new resources coming in, new transmission being placed in service, area retirements, or changing load conditions keep changing the study model. Mr. Oberlin outlined a plan to get the studies back on track for Greater Boston, West and Central Mass, Eastern CT, Southwest CT, Maine, and SEMA/RI. Questions primarily were focused on area projects and their potential impacts, the impacts of changing load levels and the impacts of the Maine Cluster projects.

Item 7.0 – Minimum, Light and Shoulder Loads – Update to the Transmission Planning Technical Guide

Mr. Brent Oberlin (ISO-NE) reviewed the updates to the Transmission Planning Technical Guide to account for minimum, light and shoulder load conditions.

Recently, a change was made to the minimum load levels used for area studies changing the load values from 8500 MWs down to 8000 MW based on historical trends. A correction was made to account for the paper mill loads. The mill load was calculated to be 320 MWs with the non-mill load calculated to be 7680 MWs. The target load level for non-manufacturing load for Minimum Load will be 7,680 MW. Mr. Oberlin has provided edits to the Transmission Planning Technical Guide to correct that oversight and provide additional clarification. There were no questions from the committee on this topic.

Item 8.0 – FCA 14 Transmission Transfer Capabilities and Capacity Zone Development

Mr. Al McBride (ISO-NE) reviewed the interface transfer capabilities and proposed Capacity Zone construct for the fourteenth Forward Capacity Auction (FCA-14, Capacity Commitment Period 2023-2024).

The proposed potential Capacity Zones for FCA-14 are: Connecticut, Southeast New England, Northern New England, Maine, and Rest-of-Pool. Mr. McBride stated that there is a potential to create a nested zone of Maine within the Northern New England zone. The potential capacity zones will be tested and reviewed at the May PSPC meeting and then presented to the RC for a vote in the fall. There were no questions from the committee on this topic.

Planning Advisory Committee meeting adjourned at 3:00 PM

Respectively submitted

Marc Lyons
Secretary, Planning Advisory Committee