

## **FINAL**

Pursuant to notice duly given, the annual meeting of the NEPOOL Participants Committee was held beginning at 10:00 a.m. on Friday, December 6, 2019, at the Colonnade Hotel, Boston, Massachusetts. A quorum determined in accordance with the Second Restated NEPOOL Agreement was present and acting throughout the meeting. Attachment 1 identifies the members, alternates, and temporary alternates attending the meeting.

Ms. Nancy Chafetz, Chair, presided and Mr. David Doot, Secretary, recorded. Ms. Chafetz welcomed the members, alternates and guests who were present.

### **APPROVAL OF NOVEMBER 1, 2019 MINUTES**

Ms. Chafetz referred the Committee to the preliminary minutes of the November 1, 2019 meeting, as circulated and posted in advance of the meeting. Following motion duly made and seconded, the preliminary minutes of the November 1, 2019 meeting were unanimously approved as circulated, with an abstention by Mr. Michael Kuser noted.

### **CONSENT AGENDA**

Ms. Chafetz referred the Committee to the Consent Agenda that was circulated and posted in advance of the meeting. Following motion duly made and seconded, the Consent Agenda was unanimously approved without comment, with abstentions by Exelon and Mr. Kuser noted.

### **REPORT ON ISO CYBER SECURITY EFFORTS**

Mr. Brook Colangelo, member of the ISO Board of Directors and Chair of the Board's temporary Special Committee on Information Technology and Cyber Security (ITCSC), gave a presentation on the ISO's current and future efforts to address cyber security challenges. After a brief introduction, Mr. Colangelo noted that technology and software were driving transformation within the industry and the ISO would need to keep pace with the changes.

Building upon past efforts of the Board's Audit and Finance Committee on cyber security and technology investment issues, the ISO Board had decided to establish the ITCSC to be chaired by Mr. Colangelo to determine if the Board should establish a standing committee dedicated to technology and best practices in cyber security.

In response to questions, Mr. Colangelo explained that the ITCSC was a special committee tasked with overseeing the ISO's use of technology to ensure cyber security. Based on the ITCSC's findings, it would make recommendations to various other Board committees and ultimately to the Board itself. He stated that the ITCSC planned to engage on these issues with, and identify best practices of, other RTOs/ISOs, as well as the Department of Homeland Security. Mr. Gordon van Welie, ISO Chief Executive Officer (CEO), added that many organizations, including RTOs/ISOs, were sharing cyber security-related information through various means, subject to security limitations.

When asked whether the ITCSC would look at North American Electric Reliability Corporation (NERC) standards to see if they were sufficient to protect the grid from external attack, Mr. Colangelo stated that the ITCSC would take a holistic view of ISO Board oversight and strategic direction regarding cyber security and technology, and would explore various aspects of this topic, but would try its best to avoid prescribing specific outcomes, and leave to management how best to implement protective measures.

A Participant asked whether attempts to infiltrate the system would be often seen in Real-Time or would be uncovered after-the-fact during an audit. Dr. Vamsi Chadalavada, ISO Chief Operating Officer (COO), responded that the ISO had a 24/7 security operations center that monitors traffic to catch potential penetrations as soon as practicable. Though the ISO had in place processes to look-back and evaluate penetration-related activity, it focused on employing

tools that serve as preventative measures and create a robust defense of the ISO's digital perimeter.

Asked whether he could predict the level of resources that would be devoted to cyber security in 5 years' time, Mr. Colangelo described why he could not make such a prediction, citing, in part, examples of threat actors' unceasing efforts to devise new ways to disrupt systems. Concurring, Mr. van Welie described new threat trajectories, including those presented by the increasing deployment of distributed resources, describing examples of how those kinds of resources had been compromised, and the ease and sources of denial-of-service attacks. Mr. Colangelo emphasized that these experiences demonstrated simplicity of execution, as well as the pace of change of technology, and compelled that the ISO thoughtfully and thoroughly evaluate its operations.

In response to questions on how the ISO might best take advantage of evolving technological changes, including artificial intelligence (AI), Mr. Colangelo described the ISO's commitment to leveraging change, both from a financial perspective and a research and development perspective. Dr. Chadalavada highlighted work by a group within the ISO that focuses on innovation and uses AI to enhance ISO performance. As appropriate, projects developed by that group would be presented to the ITCSC, the ISO Board and the Participants Committee.

## **ISO CEO REPORT**

Mr. van Welie referred the Committee to the summaries of the ISO Board and Board Committee meetings that had occurred since the November 1 Participants Committee meeting, which had been circulated and posted in advance of the meeting. There were no questions or comments on the summaries.

Mr. van Welie was asked to comment on the recent correspondence exchange with eight of New England's U.S. Senators. He focused his remarks on his responses to the following four points in the Senators' letter: (1) the Senators' suggestion that ISO was not considering the region's environmental and climate goals; (2) the Senators' suggestion that recent ISO market reforms were aimed at maintaining the fossil-fuel mix in contravention of State goals; (3) the Senators' suggestion that the ISO had not maintained an adequate level of engagement and discussion on the evolution of the market; and (4) the Senators' apparent belief that the Energy Security Improvements (ESI) initiative ignores the benefits of renewable resources and would delay market reforms that facilitate public policies.

Mr. van Welie summarized the responses to those assertions as follows:

The ISO respects and understands the States' environmental and climate goals and had implemented over the years a number of market design improvements that advance those goals, with the demonstrated result of material and continuing reductions in emissions. The ISO remains committed to, and challenged by, the objective of ensuring that market prices reflect the cost of providing required reliability services.

Recent market reforms of note include the Inventoried Energy Program (IEP) and the Competitive Auctions with Sponsored Policy Resources (CASPR) proposal. IEP was implemented as a temporary measure until a longer-term market-based approach could be designed and implemented. CASPR was implemented to provide a second opportunity for renewable resources to clear in the Forward Capacity Market. Neither change would "take the place of, delay, or stand in opposition to long-term, market-based changes to help states meet their public policy goals while maintaining reliability."

The ISO is committed to working with the States and stakeholders to find workable solutions for New England with due consideration for all the goals of the region, the directives of its regulators, and its responsibility to preserve reliability and competitive markets.

In response to concerns about ESI, those market changes are designed to help ensure system reliability, without regard to fuel type. Markets that encourage system reliability will recognize and compensate reliability attributes in a way that will facilitate public policies by accelerating the transition to reliable zero carbon, renewable resources and storage technologies that can provide those reliability attributes. Mr. van Welie noted that the region will need balancing energy, referring to the German concept of *Dunkelflaute*,<sup>1</sup> during periods of time when days are dark (e.g., a winter day) and high pressure limits wind production. European experience had been that, to maintain reliability, countries must plan a system that can maintain reliability for two weeks when energy from solar and wind resources is restricted or unavailable. For New England that means in the future that the ISO will need balancing energy resources that can produce energy for periods ranging from seconds up to multiple weeks in order reliably to meet a higher electric demand on the system. Thus, Mr. van Welie explained, ESI is meant to address these issues and may accelerate the transition to clean energy.

In responding to questions about his view of the future for traditional resources, Mr. van Welie referenced experiences in Europe and California with de-carbonization. He noted recent reports on the topic from Energy Futures Initiative, the foundation headed by former Energy Secretary Ernest Muniz, and from the Brattle Group. Those reports generally concluded that electricity demand on the grid is going to grow. Further, the reports suggest that regions will need more balancing resources beyond those provided by lithium ion technology, which generally has a short duration discharge. For that reason, as concluded in both reports and

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<sup>1</sup> “*dunkelflaute*,” when translated to English, means “dark doldrums.”

demonstrated through the European experiences, natural gas-fired and combined-cycle generators would continue to be part of the equation for a long time. To meet de-carbonization goals, changes were needed and were likely to be accomplished through new technology, such as hydrogen-based energy production.

A member stated, based on discussions with some of the Senators that signed the letter, that there was a political perception that the ISO was not doing enough to integrate renewables into the grid. He cautioned the ISO not to miss that view, shared by many constituents, as it responds to the letter. Mr. van Welie acknowledged that perception and the challenges posed by competing policy objectives and overlapping jurisdictions. He concluded by expressing confidence that the region would be able to identify a solution.

Following further discussion, Ms. Chafetz acknowledged the importance of continuing discussion on this topic, indicating that the discussion would pick up again in 2020.

## **ISO COO REPORT**

Dr. Chadalavada reviewed highlights from the December COO report, which was circulated in advance of the meeting and posted on the NEPOOL and ISO websites. He noted that, based on data through November 25, 2019: (i) Energy Market value was \$284 million, up \$82 million from October 2019 and down \$319 million from November 2018; (ii) average natural gas prices over the period were double October 2019 average values; (iii) average Real-Time Hub LMPs (\$35.52/MWh) were 74 percent higher than October averages; (iv) average daily (peak hour) Day-Ahead cleared physical Energy, as a percent of forecasted load, was 99.6 percent in November, up from 98.8 percent in October; and (v) daily Net Commitment Period Compensation (NCPC) for November totaled \$3.3 million, up \$600,000 from October 2019 and down \$1.3 million from November 2018. November 2019 NCPC, which was 1.2 percent of total Energy Market value, was comprised of (a) \$3.1 million in first contingency payments, up \$1.6

million from October, and (b) \$103,000 in second contingency payments, down \$835,000 from October.

Dr. Chadalavada highlighted two transmission outages, one on Line 349Y from Wakefield Junction in the Northeast Massachusetts and Boston (NEMA) Load Zone, related to work on the Greater Boston Upgrades, which would run through April 2020; the other, a combination of short term outages in the Southeastern Massachusetts and Rhode Island (SEMA/RI), expected to last until December 20, 2019. In each case, the outages were likely to require second contingency commitments as load approached or exceeded 18,000 MW. He also noted that recent second contingency commitments required in Maine were not expected to persist past the end of 2019, and that nothing in the plans for 2020 had been identified that would require further second contingency commitments in Maine.

Dr. Chadalavada reported that the ISO Board approved the most current Regional System Plan (RSP19) at the end of October and that, on November 5, 2019, the ISO submitted its informational filing for qualification in the fourteenth Forward Capacity Auction (FCA14). He noted also that, for the first time, the ISO would provide its best estimate of the anticipated electrification of the transportation and heating sectors in the 2020 Forecast Report of Capacity, Energy, Loads, and Transmission (2020 CELT Report). Those estimates would come from input provided by State agencies and distribution companies. Similar to previous efforts on energy efficiency estimates, he expected that the accuracy of the projections of the electrification of the transportation and heating sectors would improve over time.

Dr. Chadalavada then turned to an issue experienced in connection with the daylight savings time change on November 3, 2019. He explained that, on non-daylight savings time days, there is a 30-minute window to offer external transaction bids in the Day-Ahead Energy Market (DAEM) between the close of the New York DAEM at 9:30 a.m. and the close of the

New England DAEM at 10:00 a.m. On November 3, a software error in the eMarket application locked out a few Participants from entering or modifying external transactions after 9:00 a.m. The issue was promptly fixed by the early afternoon of November 3. Participants expressed appreciation that Dr. Chadalavada had raised the issue, relayed their experiences, and offered thoughts on process improvements. Dr. Chadalavada reported that the ISO conducted a causal analysis and was in the process of evaluating process improvements. In addition, he indicated that the ISO was exploring the feasibility of extending to 10:30 a.m. the DAEM submission window, and planned to confirm by early 2020 whether or not that extension would be proposed.

Turning to the 2019/2020 Winter Outlook, Dr. Chadalavada reported that the seasonal temperature outlook for the winter months indicated a 33 percent probability that there would be above normal temperatures for the region. Further, precipitation was expected to be at or below normal. He said that the 50/50 winter peak demand forecast was 20,476 MW and the 90/10 winter peak demand forecast was 21,173 MW. He highlighted that the transfer capability on the Northern New York alternating current (AC) ties would be increased from 1,400 MW to 1,500 MW for the winter period to account for lower ambient air conditions. Dr. Chadalavada reminded members of the planned transmission outage that had resulted in a temporary de-rate in the transfer capability on that interface to 500 MW. That outage was scheduled to conclude on December 20, after which that transfer capability would be restored to 1,500 MW.

Dr. Chadalavada then reported on Algonquin Pipeline maintenance efforts. He stated that the reports on inspections were generally positive and inspections were continuing through mid-December. In response to follow-up questions, he noted that he was aware of no major issues identified in the inspections to date, that inspections of the trunk lines were mostly if not fully complete, and that some laterals remained to be inspected.

Dr. Chadalavada next reported that, entering the Winter 2019/2020 period, fuel oil tanks were approximately 52 percent full, which was slightly better than where the ISO started in Winter 2018/2019. He also added that he did not believe that fuel oil tanks inventories would be an issue in winter 2019/2020, particularly in light of recent Operating Procedure No. 21 enhancements. He concluded with his opinion that the region was well-positioned for Winter 2019/2020 and was optimistic that the region would fare well absent extraordinary conditions.

### **2019 NEPOOL ANNUAL REPORT**

Ms. Chafetz referred the Committee to the 2019 NEPOOL Annual Report, “Working Together to Shape Tomorrow”, distributed at the meeting and posted on the NEPOOL website. Mr. Doot noted that the Annual Report demonstrated that NEPOOL had achieved much in 2019 and could expect continued challenges in 2020. He encouraged Participant feedback on the format and substance of the Annual Report. Ms. Chafetz thanked the Day Pitney team, and Messrs. Harold Blinderman and Pat Gerity particularly, for their efforts to assemble and complete that Annual Report.

### **ELECTION OF 2020 PARTICIPANTS COMMITTEE OFFICERS**

Mr. Chafetz referred the Committee to the proposed slate of 2020 NEPOOL Participants Committee Officers circulated and posted in advance of the meeting, explaining that the vote was to ratify the vote taken by secret ballot the month before and to elect the Secretary and Assistant Secretary for 2020.

The following motion was duly made, seconded and unanimously approved, with an abstention by Mr. Kuser:

WHEREAS, Section 4.6 of the Participants Committee Bylaws sets forth procedures for the nomination and election of a Chair and Vice-Chairs of the Participants Committee; and

WHEREAS, pursuant to those procedures the individuals identified in the following resolution were nominated and elected for 2020 to the offices of Chair or Vice-Chair, as set forth opposite their names; and

WHEREAS Section 7.1 of the Second Restated NEPOOL Agreement provides that officers be elected at the annual meeting of the Participants Committee.

NOW, THEREFORE, IT IS

RESOLVED, that the Participants Committee hereby adopts and ratifies the results of the election held in accordance with Section 4.6 of the Bylaws and elects the following individuals for 2020 to the offices set forth opposite their names to serve until their successors are elected and qualified:

Chair	Nancy P. Chafetz
Vice-Chair	Calvin A. Bowie
Vice-Chair	David A. Cavanaugh
Vice-Chair	Douglas Hurley
Vice-Chair	Thomas W. Kaslow
Vice-Chair	Michael X. Macrae
Secretary	David T. Doot
Assistant Secretary	Sebastian M. Lombardi

Ms. Chafetz thanked the Participants for their support and the opportunity to lead the Participants Committee for another year.

#### **ESTIMATED BUDGET FOR 2020 NEPOOL EXPENSES**

Mr. Kenneth Dell Orto, Budget & Finance Subcommittee (Subcommittee) Chairman, referred the Committee to the materials posted in advance of the meeting concerning the estimated budget for 2020 Participant Expenses (a copy of which is included as Attachment 2 to these minutes). He reported that, consistent with past practice, the Subcommittee worked with NEPOOL Counsel, the ISO and NEPOOL's Independent Financial Advisor to develop the 2020 Budget. He said that the Subcommittee reviewed together and discussed the proposed 2020 Budget and recommended its adoption without objection.

The following motion was duly made, seconded and approved unanimously, with abstentions noted by Littleton (NH), Vermont Electric Cooperative and Mr. Kuser:

RESOLVED, that the Participants Committee adopts the estimated budget for NEPOOL expenses for 2020 as presented at this meeting.

Acknowledging that this meeting would be Mr. Dell Orto's last as the Chair of the Subcommittee, Ms. Chafetz, on behalf the Participants, thanked him for his tireless efforts, diligence and thoughtful leadership of the Subcommittee. Ms. Chafetz then announced that Ms. Michelle Gardner had agreed to and would serve as the next Chair of the Subcommittee.

### **MEMBERSHIP SUBCOMMITTEE REPORT: ADVANCED ENERGY ECONOMY (AEE) APPLICATION**

Ms. Sarah Bresolin, Membership Subcommittee Chair, referred the Committee to the materials circulated and posted in advance of the meeting regarding an application for NEPOOL membership received by AEE, whose representative was present at the meeting. She said AEE had applied for membership in the Alternative Resources (AR) Sector but it did not meet all existing eligibility criteria for membership in that Sector. The Subcommittee sought guidance from the Participants Committee on the Sector or status for which AEE should be considered for membership. Ms. Bresolin reviewed the alternatives that had been considered to that point. The Committee was reminded that no action would be sought until the Membership Subcommittee brought a recommendation or reported back to the Participants Committee, and members offered their perspectives and suggestions on the membership issue.

There was overwhelming support for identifying a basis for AEE membership and participation in the Pool. Some members, however, were concerned with AEE membership in the AR Sector and the precedent that would be established if changes were made to permit their membership in that Sector. A number of members suggested that consideration be given to accepting AEE on the same basis as Fuels Industry Participants.

Following further discussion, Ms. Chafetz urged all those interested to participate in the Membership Subcommittee's December 9 meeting when the AEE matter was scheduled for consideration.

## **LITIGATION REPORT**

Mr. Doot referred the Committee to the December 4 Litigation Report circulated and posted in advance of the meeting. He highlighted the 60-day compliance filing requirement in response to the FERC's order on the region's Order 841 compliance filing, and the possibility that NEPOOL would seek an extension of time to allow the Participants Committee to vote at its February 6 meeting on the changes to be included in the compliance filing before they must be submitted. Ms. Maria Gulluni, ISO General Counsel, added that, while the ISO was still reviewing the Order, the most complicated aspect of the required compliance filing appeared to be related to the DAEM, and on those aspects of the Order, the ISO was contemplating seeking rehearing on or before the December 23, 2019 deadline for such requests.

With respect to return on equity (ROE) issues pending before the FERC, Mr. Doot reported that, on November 21, 2019, the FERC issued Opinion No. 569 in proceedings addressing complaints on ROEs in Midcontinent Independent System Operator (MISO) Control Area. He indicated that, although Opinion No. 569 did not make specific determinations with respect to New England ROE issues, action in the New England ROE cases was likely to be influenced by, if not consistent with, the FERC's methodology for determining a just and reasonable ROE in the MISO proceedings.

In response to questions from the Officers regarding what might be expected from the FERC given the potential addition of a new Commissioner and the expiration of commitments that had resulted in Commissioner recusals in pending proceedings, Mr. Doot referred members to all pending matters reported in the Litigation Report. He noted that some of the higher

visibility matters included pending proceedings on transmission ROE, on the PJM Minimum Offer Price Rule (MOPR), and on numerous New England Capacity Market-related filings that were still before the Commission on rehearing.

Mr. Doot concluded by highlighting the D.C. Circuit's decision to rehear a case *en banc* on the FERC's handling of tolling orders (*Allegheny Defense Project, et al. v. Federal Energy Regulatory Commission*, No. 17-1098 (D.C. Cir.)).

## COMMITTEE REPORTS

**Markets Committee (MC).** Mr. William Fowler, the MC Vice-Chair, reported that the MC was scheduled to meet on December 10–11, 2019 in Westborough. He reported that the MC had tentatively scheduled additional meetings in January, February and March for consideration of the changes to be included in the ESI filing.

**Reliability Committee (RC).** Mr. Robert Stein, the RC Vice-Chair, reported that the next meeting would be December 18, 2019. He highlighted a report that the RC would receive from the ISO on ISO efforts to reflect behind-the-meter solar resources in its load forecasts.

**Transmission Committee (TC).** Mr. José Rotger, the TC Vice-Chair, reported that the next meeting would be held by teleconference on Tuesday December 17 and would include discussion on three FERC-related items: (i) compliance with the FERC's order on New England's Order 841 (storage order) compliance filing; (ii) the ISO's response in the FERC-initiated 206 proceeding on the ISO's Order 1000 exemption; and (iii) Opinion No. 569, the FERC's order on ROE, and what that might mean for the pending New England ROE cases. Looking ahead to January, he noted the possibility that the January TC meeting could be re-scheduled or cancelled and for members to stay tuned for further information.

**Joint Nominating Committee (JNC).** Mr. Doug Hurley reported that, at a meeting in October, the JNC discussed whether to grant a waiver of the age-limit for Mr. Roberto Denis.

Following that discussion, the JNC decided to grant that age-limit waiver in order for Mr. Denis to stand for re-election in 2020 for one more three-year term. Accordingly, in 2020, the JNC would be searching for one new director. In each of the following two years, the JNC would be searching for at least two new directors. He reported that the JNC would next meet January 16, 2020, and would review potential candidates to be interviewed in the spring.

Mr. Hurley also reported that the JNC received a request at its October meeting to distribute a document to the Participants Committee listing the directors' expertise and the information used by the JNC to select the next directors. The JNC will provide that document and others to NEPOOL Counsel to distribute it to the Participants Committee.

#### **OTHER BUSINESS**

There being no further business, the meeting adjourned at 12:20 p.m.

Respectfully submitted,

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David Doot, Secretary

**PARTICIPANTS COMMITTEE MEMBERS AND ALTERNATES  
PARTICIPATING IN  
DECEMBER 6, 2019 MEETING**

PARTICIPANT NAME	SECTOR/ GROUP	MEMBER NAME	ALTERNATE NAME	PROXY
Acadia Center	End User	Deborah Donovan		
American Petroleum Institute	Fuels Industry Part.	Zoe Cadore		
AR Small Load Response (LR) Group Member	AR-LR	Doug Hurley	Brad Swalwell (tel)	
AR Small Renewable Generation (RG) Group Member	AR-RG	Erik Abend		
American PowerNet Management	Supplier			Mary Smith, Mike Macrae
Ashburnham Municipal Light Plant	Publicly Owned		Brian Thomson	
Associated Industries of Massachusetts	End User			Roger Borghesani
AVANGRID: CMP/UI	Transmission		Alan Trotta	
Belmont Municipal Light Department	Publicly Owned		Dave Cavanaugh	
Block Island Utility District	Publicly Owned	Dave Cavanaugh		
Boylston Municipal Light Department	Publicly Owned		Brian Thomson	
BP Energy Company	Supplier			Nancy Chafetz
Braintree Electric Light Department	Publicly Owned			Dave Cavanaugh
Brookfield Renewable Trading and Marketing	Supplier	Aleksandar Mitreski		
Calpine Energy Services, LP	Supplier	Brett Kruse		Bill Fowler
Central Rivers Power	AR-RG	Kevin Telford	Dan Allegretti	
Chester Municipal Light Department	Publicly Owned		Dave Cavanaugh	
Chicopee Municipal Lighting Plant	Publicly Owned		Brian Thomson	
CLEAResult Consulting, Inc.	AR-DG	Tamara Oldfield (tel)		
Competitive Energy Services, LLC	Supplier			Glenn Poole (tel)
Concord Municipal Light Plant	Publicly Owned		Dave Cavanaugh	
Connecticut Municipal Electric Energy Coop.	Publicly Owned	Brian Forshaw (tel)		
Connecticut Office of Consumer Counsel	End User		Joe Rosenthal	
Conservation Law Foundation (CLF)	End User	Jerry Elmer		
Consolidated Edison Energy, Inc. (ConEd)	Supplier	Jeff Dannels (tel)		
CPV Towantic, LLC	Generation	Dan Pierpont		
Cross-Sound Cable Company (CSC)	Supplier		José Rotger	
Danvers Electric Division	Publicly Owned		Dave Cavanaugh	
Direct Energy Business, LLC	Supplier	Ron Carrier		Nancy Chafetz
Dominion Energy Generation Marketing, Inc.	Generation	Mike Purdie	Jim Davis	
DTE Energy Trading, Inc.	Supplier			Nancy Chafetz
Dynergy Marketing and Trade, LLC	Supplier			Bill Fowler
Enel X North America, Inc.	AR-LR		Herb Healy	
ENGIE Energy Marketing NA, Inc.	AR-RG	Sarah Bresolin	Joe Dalton	
Entergy Nuclear Power Marketing LLC	Supplier	Ken Dell Orto		Bill Fowler
Eversource Energy	Transmission	James Daly	Cal Bowie	
Excelerate Energy LP	Fuels Industry Part.			Gary Ritter
Exelon Generation Company	Supplier	Steve Kirk	Bill Fowler	
FirstLight Power Management, LLC	Generation	Tom Kaslow		
Galt Power, Inc.	Supplier	Nancy Chafetz		
Generation Group Member	Generation	Dennis Duffy	Abby Krich	Ron Coutu; R. Stein
Georgetown Municipal Light Department	Publicly Owned		Dave Cavanaugh	
Great River Hydro	AR-RG			Bill Fowler
Groton Electric Light Department	Publicly Owned		Brian Thomson	
Groveland Electric Light Department	Publicly Owned		Dave Cavanaugh	
H.Q. Energy Services (U.S.) Inc.	Supplier	Louis Guibault (tel)	Bob Stein	
Harvard Dedicated Energy Limited	End User	Mary Smith	Mike Macrae	Doug Hurley
High Liner Foods (USA) Incorporated	End User		William P. Short III	
Hingham Municipal Lighting Plant	Publicly Owned		Dave Cavanaugh	
Holden Municipal Light Department	Publicly Owned		Brian Thomson	

**PARTICIPANTS COMMITTEE MEMBERS AND ALTERNATES  
PARTICIPATING IN  
DECEMBER 6, 2019 MEETING**

PARTICIPANT NAME	SECTOR/ GROUP	MEMBER NAME	ALTERNATE NAME	PROXY
Holyoke Gas & Electric Department	Publicly Owned		Brian Thomson	
Hull Municipal Lighting Plant	Publicly Owned		Brian Thomson	
Industrial Energy Consumer Group (IECG)	End User	Kevin Penders		
Ipswich Municipal Light Department	Publicly Owned		Brian Thomson	
Jericho Power LLC (Jericho)	AR-RG	Mark Spencer		
KCE CT 1, LLC	Provisional	Rachel Goldwassser		
Littleton (MA) Electric Light and Water Department	Publicly Owned		Dave Cavanaugh	
Littleton (NH) Water & Light Department	Publicly Owned	Craig Kieny		Dave Cavanaugh
Long Island Power Authority (LIPA)	Supplier		Bill Killgoar (tel)	
Maine Public Advocate's Office	End User			Jason Frost
Maine Skiing, Inc.	End User	Kevin Penders		
Mansfield Municipal Electric Department	Publicly Owned		Brian Thomson	
Marblehead Municipal Light Department	Publicly Owned		Brian Thomson	
Mass. Attorney General's Office (MA AG)	End User	Christina Belew	Benjamin Griffiths	Rebecca Tepper
Mass. Bay Transportation Authority	Publicly Owned		Dave Cavanaugh	
Mass. Municipal Wholesale Electric Company	Publicly Owned	Brian Thomson		
Mercuria Energy America, Inc.	Supplier			Nancy Chafetz
Merrimac Municipal Light Department	Publicly Owned		Dave Cavanaugh	
Michael Kuser	End User	Michael Kuser		
Middleborough Gas & Electric Department	Publicly Owned		Dave Cavanaugh	
Middleton Municipal Electric Department	Publicly Owned		Dave Cavanaugh	
National Grid	Transmission	Tim Brennan	Tim Martin	
Natural Resources Defense Council	End User	Bruce Ho		
Nautilus Power, LLC	Generation		Bill Fowler	
New Hampshire Electric Cooperative	Publicly Owned	Steve Kaminski		B. Forshaw (tel); D. Cavanaugh
NextEra Energy Resources, LLC	Generation	Michelle Gardner		
North Attleborough Electric Department	Publicly Owned		Dave Cavanaugh	
Norwood Municipal Light Department	Publicly Owned		Dave Cavanaugh	
NRG Power Marketing LLC	Generation	Neal Fitch	Pete Fuller	
Pascoag Utility District	Publicly Owned		Dave Cavanaugh	
Paxton Municipal Light Department	Publicly Owned		Brian Thomson	
Peabody Municipal Light Department	Publicly Owned		Brian Thomson	
PowerOptions, Inc.	End User	Cindy Arcate		
Princeton Municipal Light Department	Publicly Owned		Brian Thomson	
PSEG Energy Resources & Trade LLC	Supplier	Joel Gordon		
Reading Municipal Light Department	Publicly Owned		Dave Cavanaugh	
Repsol Energy North America Company	Fuels Industry Part.		Nancy Chafetz	
Rowley Municipal Lighting Plant	Publicly Owned		Dave Cavanaugh	
Russell Municipal Light Dept.	Publicly Owned		Brian Thomson	
Shrewsbury Electric & Cable Operations	Publicly Owned		Brian Thomson	
South Hadley Electric Light Department	Publicly Owned		Brian Thomson	
Sterling Municipal Electric Light Department	Publicly Owned		Brian Thomson	
Stowe Electric Department	Publicly Owned		Dave Cavanaugh	
Sunrun Inc.	AR-DG			Nancy Chafetz
Taunton Municipal Lighting Plant	Publicly Owned		Dave Cavanaugh	
Templeton Municipal Lighting Plant	Publicly Owned		Brian Thomson	
The Energy Consortium	End User	Roger Borghesani	Mary Smith	
Transource	Provisional			Dylan Drugan
Union of Concerned Scientists	End User		Francis Pullaro	
Vermont Electric Coop.	Publicly Owned	Craig Kieny		Dave Cavanaugh

**PARTICIPANTS COMMITTEE MEMBERS AND ALTERNATES  
PARTICIPATING IN  
DECEMBER 6, 2019 MEETING**

<b>PARTICIPANT NAME</b>	<b>SECTOR/ GROUP</b>	<b>MEMBER NAME</b>	<b>ALTERNATE NAME</b>	<b>PROXY</b>
Vermont Electric Power Company	Transmission	Frank Etori		
Vermont Energy Investment Corp (VEIC)	AR-LR		Doug Hurley	
Vermont Public Power Supply Authority	Publicly Owned			Brian Forshaw (tel)
Verso Energy Services LLC	Generation	Glenn Poole		
Village of Hyde Park (VT) Electric Department	Publicly Owned		Dave Cavanaugh	
Vitol Inc.	Supplier	Joe Wadsworth (tel)		Nancy Chafetz
Wakefield Municipal Gas & Light Department	Publicly Owned		Brian Thomson	
Wallingford DPU Electric Division	Publicly Owned		Dave Cavanaugh	
Wellesley Municipal Light Plant	Publicly Owned		Dave Cavanaugh	
West Boylston Municipal Lighting Plant	Publicly Owned		Brian Thomson	
Westfield Gas & Electric Department	Publicly Owned		Dave Cavanaugh	

**ESTIMATED 2020 NEPOOL BUDGET COMPARED TO  
2019 NEPOOL BUDGET AND 2019 PROJECTED ACTUAL EXPENSES**

<u>Line Items</u>	<u>2019 Approved Budget</u>	<u>2020 Proposed Budget</u>	<u>2019 Current Forecast</u>
NEPOOL Counsel Fees (1)	\$3,950,000	\$ 4,100,000	\$ 4,290,000
NEPOOL Counsel Disbursements (1)	\$ 40,000	\$ 40,000	\$ 40,000
Independent Financial Advisor Fees and Disbursements (2)	\$ 40,000	\$ 45,000	\$ 45,000
Committee Meeting Expenses (3)	\$ 675,000	\$ 725,000	\$ 705,000
Generation Information System (4)	\$ 850,000	\$ 945,000	\$ 825,000
Credit Insurance Premium (3)	\$ 720,000	\$ 510,000	\$ 720,000
NEPOOL Audit Management Subcommittee (“NAMS”) Consultant (5)	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>
<b>SUBTOTAL EXPENSES</b>	<b>\$6,275,000</b>	<b>\$6,365,000</b>	<b>\$6,625,000</b>
<b><u>Revenue</u></b>			
NEPOOL Membership Fees (3) (6)	(\$2,060,000)	(\$2,070,000)	(\$2,187,000)
Generation Information System (4) (7)	(\$ 850,000)	(\$ 945,000)	(\$ 825,000)
Credit Insurance Premium (3) (8)	<u>(\$ 720,000 )</u>	<u>(\$ 510,000 )</u>	<u>(\$ 720,000)</u>
<b>TOTAL REVENUE</b>	<b>(\$3,630,000)</b>	<b>(\$3,525,000)</b>	<b>(\$3,732,000)</b>
<b>TOTAL NEPOOL EXPENSES</b>	<b>\$2,645,000</b>	<b>\$2,840,000</b>	<b>\$2,893,000</b>

Notes

- (1) 2020 proposed estimate provided by Day Pitney LLP, NEPOOL counsel.
- (2) 2020 proposed estimate provided by Michael M. Mackles, NEPOOL’s Independent Financial Advisor.
- (3) 2020 proposed estimate provided by ISO New England Inc.
- (4) 2020 proposed estimate provided by APX, Inc., GIS Administrator.
- (5) If NEPOOL determines that an audit should be performed in 2020, funding for that audit will be addressed separately.
- (6) The 2020 proposed estimate is based on the 2019 actual receipts through October 2019, plus a forecast for new members for the remainder of the year. The breakdown for the proposed budget is approximately: 381 members at \$5,000 each, 28 members at \$1,000 each, 12 members at \$500 each, 29

members at \$1,500 each, and 33 members of large end users and MPEU's. This estimate takes into account the terminations throughout the year.

- (7) GIS costs, other than those associated with accessing the GIS through the application programming interface ("API") are paid by "GIS Participants" under Allocation of Costs Related to Generation Information System, which was approved by the NEPOOL Participants Committee on June 21, 2002. GIS costs associated with accessing the GIS through the API are paid by the GIS account holders using that API.
- (8) Credit insurance premium is paid by Qualifying Market Participants according to methodology described in Section IX of the ISO Financial Assurance Policy. The 2020 premium is based on 2019 annual policy sales.