

**FINAL**

The 2024 Summer Meeting of the NEPOOL Participants Committee was held at the Omni Mount Washington Hotel, Bretton Woods, New Hampshire, on Tuesday, June 25, and Wednesday, June 26, pursuant to notice duly given, followed on Thursday, June 27, by separate meetings between modified Sector groups and ISO Board Members, state officials, and FERC staff, respectively. 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. Sarah Bresolin, Chair, presided and Mr. Sebastian Lombardi, Secretary, recorded for the meeting.

**JUNE 25, 2024 SESSION**

The June 25, 2024 session began at 10:00 a.m., with Ms. Bresolin welcoming the members, alternates, federal and state officials, ISO colleagues, including members of the ISO Board, and guests who were present. After reviewing some brief housekeeping items, Ms. Bresolin invited, and those around the table each proceeded to, introduce themselves and identify the Entity on whose behalf they were participating in the meeting.

**APPROVAL OF MAY 2, 2024 MEETING MINUTES**

At the conclusion of those introductions, Ms. Bresolin referred the Committee to the preliminary minutes of the May 2, 2024 meeting, as circulated and posted in advance of the meeting. Following motion duly made and seconded, the preliminary minutes of that meeting were unanimously approved as circulated, with an abstention by Mr. Jon Lamson noted.

## **CONSENT AGENDA**

Ms. Bresolin then referred the Committee to the Consent Agenda that was circulated and posted in advance of the meeting, which included seven items unanimously recommended for Participants Committee support or approval by the respective Technical Committees. Following motion duly made and seconded, the Consent Agenda was unanimously approved as circulated, with an abstention by Mr. Lamson noted.

## **ISO CEO REPORT**

Mr. Gordon van Welie, ISO Chief Executive Officer (CEO), referred the Committee to the summaries of the ISO Board and Board Committee meetings, which had been circulated and posted in advance of the meeting, and invited questions. In response to a question regarding the report given to the ISO Board by Mr. Fintan Slye, Executive Director and Chairman of the Board of the United Kingdom (UK) Electricity System Operator (ESO), Mr. van Welie explained that Mr. Slye had been invited to speak to the ISO Board given certain operational complexities and commonality of issues facing both the UK and New England. Mr. van Welie highlighted the similarities between the ESO's interconnections to the European continent and ISO-NE's interconnections with Canada, ESO's and ISO's shared dependency on natural gas, particularly the role of liquefied natural gas (LNG), and significant investments to support the clean energy transition. Mr. van Welie opined that the UK ESO's experiences offered both a potential window into New England's future and many potentially important lessons.

Responding to additional questions, he explained that discussion around private placement funding to support the ISO's capital budget, discussed by both the Board's Audit and Finance Committee and the full ISO Board, addressed a renewal of the ISO's market arrangements, rather than new arrangements.

Acknowledging comments on the challenges, and particularly the cost, of incorporating off-shore wind into the system, Mr. van Welie noted the important role that off-shore wind would play in the decarbonization process. He added that, because of current contractual agreement constructs, those costs were likely to surface on the retail, rather than on the wholesale, side of the bill. Accordingly, it would be incumbent upon the States to inform and educate consumers of the costs. He also noted other options that could alter price impacts of decarbonization, like net carbon pricing.

## **ISO COO REPORT**

Dr. Vamsi Chadalavada, ISO Chief Operating Officer, began by noting that his June 2024 report (with May data) had been circulated and posted earlier in the month and his July 2024 report (with June data) would be circulated and posted early in July. He then highlighted a few operations-related items for May and June.

For May, he stated that the month was relatively uneventful -- slightly warmer and more humid than in past years. There was one event, a geomagnetic disturbance from May 10-12, that caused one line to trip, but that line reclosed very quickly and the trip was of short duration. Outside of that event, no geomagnetic disturbances had induced currents that compromised any transformers and the system held together really well. In May, the system peaked on May 22, during hour-ending 17:00 (17,328 MW as measured by Revenue Quality Meter data; 16,896 MW as measured by Real-Time telemetered data).

For June, Dr. Chadalavada noted the previous week's heat wave, during which peak load hit approximately 24,100 MW on June 20, hour ending 17:00. He also described a capacity scarcity event that occurred on June 18 just prior to the peak hour. Providing details and a narrative, he explained how the system experienced and recovered from a 30-Minute Operating

Reserve deficiency that day. The system performed well in the days that followed, with load approaching but not reaching the forecasted peaks, and operations eased by increased self-scheduling that anticipated possible additional scarcity events. Dr. Chadalavada confirmed that the recovery on June 18 was entirely market-based and did not rely on emergency assistance arrangements. In response to further questions, he explained how scarcity events would, as a practical matter given the market design, be of short duration, triggered on days of tight supply by the loss of a large resource close to the peak hour, when operators have very little time or flexibility to commit the next unit in (or even out of) merit to make up for the deficiencies resulting from actions in response to the loss of the resource. Specific data related to the June 18 scarcity event, including penalties and balancing ratios, was not yet, but would soon be, available.

Dr. Chadalavada provided a bit more insight into the correlation between weather and load forecasting and the determination of balancing ratios. He added that the ISO provides certain Real-Time information that confirms that there is a scarcity event, but had been unable to identify how to reasonably provide information or notices to the market as circumstances unfold through the day specifically portending a scarcity event.

When asked to provide a bit more insight into the status of and next steps regarding the ISO's evaluation of tie benefits, Dr. Chadalavada explained that, following the evaluation that surveyed the practices of peer ISOs/RTOs, reviewed the ISO's GE MARS model, and the inputs into that model, no specific modeling gaps or deficiencies had been identified. However, among the next steps identified by the ISO related to tie benefit evaluation were (i) opportunities to better harmonize how energy constraints are reflected in the models used by the ISO and neighboring Control Areas (on which discussions with those Areas had already begun) and (ii)

the segue to segmentation of tie benefits from annual to summer and winter tie benefits (which would be part of the prompt-seasonal capacity market design discussions). Dr. Chadalavada also identified the potential inclusion of tie benefits-related matters (e.g. expectations on the performance of tie benefits in terms of Pay-For-Performance (PFP) and modeling impacts of reduced surpluses of, and increased reliance on, assistance by neighboring Control Areas) in the 2025 and/or future Annual Work Plans.

Touching on planned outages, Dr. Chadalavada stated that there was one to note, an outage on Line 392 (Coopers Mills to Maine Yankee) from the end of May through the end of June. He expected that outage to have a marginal impact on the New England to New Brunswick interface, as well as a limited impact on the Orrington South constraint.

#### **ISO CFO REPORT: 2025/2026 ISO PRELIMINARY BUDGETS**

Mr. Robert Ludlow, the ISO's Chief Financial Officer (CFO) and Compliance Officer, referred the Committee to the "top down" presentation of the ISO's 2025 and 2026 preliminary Operating and Capital Budgets (Budgets) included with the materials posted in advance of the meeting. He stated that the preliminary budget presentation provided an opportunity for stakeholder review and feedback prior to presentation in August of the proposed detailed Budgets reflecting that feedback. He expanded on how budget development reflected the ISO's strategic planning process, and identified among the areas of focus the pace of the clean energy transition and ensuring that the wholesale markets incent/attract the investment necessary to maintain a reliable power system. He reported that he had also shared and reviewed the preliminary budget information with New England Sate officials earlier in the month.

Mr. Ludlow discussed the following key drivers causing the proposed increase over the 2024 Operating Budget: (i) increases in headcount; (ii) additional investments in information

technology (IT) infrastructure and licensing, cybersecurity, and the transition to cloud-based infrastructure; and (iii) inflationary and continued operational increases, including inflationary increases to salaries and benefits. He projected that the proposed 2025 Operating Budget would reflect an overall increase, before true-up, of approximately \$30 million, a 10.5% increase over 2024, or an additional 16 cents/month on a per consumer basis.

The proposed 2025 Capital Budget was \$40 million, a \$5 million increase over the 2024 Capital Budget. Areas driving capital costs included increases to interest income, major reliability-related efforts, cyber security, IT asset and infrastructure replacement, and efforts to further attract, develop and retain talent. With growth in the ISO workforce, there would be a need to expand the physical campuses. He said that the ISO was looking to acquire property adjacent to its Holyoke, MA location, and optimize the use of its Windsor, CT campus over the next few years, generally keeping its consolidated workforce at the Holyoke campus. He explained that, to support the future capital program, the ISO would have to secure, as noted in the CEO Report, roughly \$75 million in private placement notes.

In response to questions, Mr. Ludlow confirmed that the ISO employed outside consultants to analyze compensation and headcounts, which were consistent with other ISOs and RTOs. He explained that the additional headcount proposed was additive to the increases proposed in the prior few years. Overall headcount, he estimated, would increase to approximately 750, up roughly 200 from when the ISO began RTO Operations. He added that, although the ISO had experienced challenges attracting and retaining additional employees (or FTEs), it was working to mitigate the risk factors and requirements associated with retention and onboarding of additional FTEs. In addition to evaluating and fine-tuning compensation levels, the ISO planned to leverage benefits of its internship program (which focused on economists and

planning and software engineers), as well as increased contingency funds to allow the ISO the flexibility to hire short-term talent to keep the workload on track.

To that end, Mr. van Welie added that, because the work that was being created and the demand for the skills required to do that work, was at, and was expected to remain at, an all-time high, but with an imbalance/deficit in the supply of the required skill sets to complete that work, the ISO was facing some critical choices as to how to move forward. One path forward, consistent with past practice, could be the retention of outside consulting help, though that approach would depend on the availability of consultants as well as internal ISO resources to supervise consultant efforts. Another consideration would be how best to adjust to the “turn over” challenges being experienced – addressing turn over as a short-term condition that could be ridden out, or addressing it as a more long-term challenge to be improved through changes in hiring and training practices. Mr. van Welie added that Participants could also expect increased variability in the ISO’s headcount estimates, at least until the scope of the work required for future projects could be determined with more precision. Although budget and staffing levels were expected to be sufficient to get through activities planned for 2025 and into 2026, should FTE shortages persist, prioritization would become increasingly central to setting and achieving future work plan items.

In response to further questions, comments and requests, Mr. Ludlow confirmed the total FTEs to be added for 2025, indicated that more detailed information on those additions would be provided in future presentations, agreed to consider presenting additional detail regarding budget impacts on retail electricity rates, and identified certain rate and other information that, as in past years, would be provided in later budget presentations as information for 2025 was finalized and came more sharply into focus.

## LITIGATION REPORT

Mr. Lombardi referred the Committee to the June 24 Litigation Report that had been circulated and posted in advance of the meeting. He highlighted the following developments:

- (i) The United States (U.S.) Senate had confirmed as new FERC Commissioners David Rosner, Lindsay S. See, and Judy W. Chang, with Commissioner Rosner sworn in the previous week and Commissioners See and Chang to be sworn in in due course;
- (ii) Transmission Owner (*TO*) *Initial Funding Show Cause Order (EL24-83)*. The FERC instituted a Section 206 proceeding on June 13, 2024, finding that the ISO tariff appears to be unjust and unreasonable because it includes provisions for TOs to unilaterally elect to fund network upgrades required by an interconnection. A more fulsome summary by NEPOOL counsel was provided to and available on the website for the Transmission Committee. The ISO's response to the Show Cause Order would be due on or before September 11, 2024;
- (iii) *FERC Order 1920: Transmission Planning & Cost Allocation Reforms (RM21-17)*. The FERC issued on May 13, 2024 *Order 1920*, its final rule on proposed reforms to existing transmission planning and cost allocation requirements. More than 50 parties had requested clarification or rehearing of that Order. A detailed summary had been provided to and was available with the posted materials for the Transmission Committee; and
- (iv) *Order 2222 Compliance Filings (ER22-983)*. Metering data submission revisions required by the FERC's April 11, 2024 order, supported as part of the meeting's Consent Agenda, had already been filed by the ISO. Comments reporting on the

Committee's support for those revisions would be filed shortly following the meeting. Related, but separate revisions to specify in the Tariff itself sub-metering requirements for DER Aggregations' participation as sub-metered Alternative Technology Regulation Resources, directed as part of the FERC's May 23, 2024 order on rehearing, would similarly be filed by the ISO as directed, but ahead of Participants Committee action. The Participants Committee would act on those changes at its August meeting, with NEPOOL comments summarizing that action to be submitted shortly thereafter.

Mr. Lombardi encouraged anyone with questions on these highlights or on the full Report to reach out to him or any of NEPOOL counsel.

## **COMMITTEE REPORTS**

*Markets Committee (MC).* Mr. William Fowler, the MC Vice-Chair, reported that the MC would hold its Summer Meeting on July 9-10 at The Ocean's Edge Resort in Brewster, MA on Cape Cod. The MC would receive highlights from the Internal Market Monitor (IMM) on its 2023 Annual and 2024 Winter Quarterly Markets Reports and would consider changes in response to the FERC's May 23, 2024 order on rehearing as discussed in the Litigation Report, proposed hourly tracking changes to the Generation Information System (GIS), and a discussion on potential ways to manage PFP credit risks.

*Reliability Committee (RC).* Mr. Robert Stein, the RC Vice-Chair, reported that the RC would next meet on July 16, 2025 at the DoubleTree in Westborough, MA. Among the items to be considered would be *Order 2023* conforming changes to Planning Procedure 5-6 (PP 5-6) (changes to interconnection requirements) and revisions to the load power factor process. Discussion on PP 5-6 would continue at a virtual meeting scheduled for July 25, 2024.

**Transmission Committee (TC).** Mr. David Burnham, the TC Vice-Chair, reported that the July 24, 2024 TC meeting had been cancelled. The TC would meet next at the joint RC/TC Summer Meeting on August 13-14, 2024 at the Water's Edge Resort in Westbrook, CT. Looking ahead, discussion on the *Order 1920* compliance process would be on TC's September meeting agenda.

**Budget & Finance (B&F) Subcommittee.** Mr. Thomas Kaslow, B&F Chair, reported that the next B&F meeting would be July 29, 2024 to discuss the ISO's proposed financial assurance (FA) changes for PFP-related credit risk. Noting that potential PFP-related Market Rule changes being considered by the MC could be considered together with the FA changes, he encouraged members interested in that topic to attend both the MC and B&F meetings.

**Membership Subcommittee.** Mr. Brad Swalwell, Membership Subcommittee Chair, reported that the Subcommittee was next scheduled to meet on July 15.

## **NESCOE REPORT**

Ms. Heather Hunt, Executive Director, reported on two items of potential interest (each available on the NESCOE website). The first was an educational primer addressing the emergence of data centers and their implications on power systems in other RTOs. The second was a white paper prepared with and by DayMark Energy Advisors related to inter-regional planning. The white paper was intended to highlight the processes that proposed inter-regional transmission projects would have to go through in New England, New York and PJM, and to discuss the benefits of and challenges to the development of such projects. She welcomed feedback on those materials.

## **NECPUC REPORT**

Mr. George Twigg, Executive Director, reported on the ongoing NECPUC efforts related to retail demand response and load flexibility. NECPUC had completed its series of informational webinars and would next be turning to stakeholder meetings and discussions. He encouraged all those interest to reach out to him and to provide input.

## **FERC STAFF INTRODUCTIONS & COMMENTS**

After a break for lunch, Ms. Bresolin welcomed members and guests back to the meeting. She also welcomed, introduced and thanked the following FERC representatives for their attendance and participation: Mr. Eric Jacobi, Ms. Emma Brin, Mr. Brandon Ward, Mr. Aaron Siskind, and Ms. Mary Wierzbicki. Mr. Jacobi, the regional representative for New England, spoke briefly on his role and experience as decisional staff, particularly for larger New England matters coming before the FERC. He stated that he is a dedicated resource for New England and could help arrange pre-filing meetings with Staff, or answer more general process questions. He encouraged members to reach out to him if and as needed.

Ms. Brin and Mr. Ward, each an Analyst in the Office of Energy Market Regulation (OEMR)-East, said that they had been at the FERC for three years. Their group was the lead group for processing Section 205 filings and waiver requests. Ms. Brin and Mr. Ward, with others in their group, regularly listened in to New England stakeholder meetings, and had enjoyed the chance to put names to faces during the Summer Meeting. Ms. Brin stated that members could also come to her for help with facilitating a pre-filing meeting with FERC staff.

Mr. Siskind, from the FERC's Division of Economic and Technical Analysis in the Office of Energy Policy and Innovation (OEPI), had been with the FERC for almost 20 years. He highlighted his involvement in the 2004 Cold Snap, locational installed capacity (LICAP),

and most other capacity-related proceedings over the last 10 years. Although New England and eastern RTO market focused, he enjoyed staying abreast of other developing policy issues. He said that he was looking forward to upcoming efforts on Resource Capacity Accreditation (RCA).

Thanking the FERC staff representatives for their introductions, Ms. Bresolin encouraged members to take advantage of the opportunities prior to the formal Sector meetings later that week to get better acquainted with these FERC representatives and, if and to the extent appropriate, explore with them in a bit more depth some of the current issues facing the region.

Ms. Bresolin then introduced Ms. Mary Wierzbicki, who had been with the FERC for 20 years, and who serves as Director of OEPI's Division of Energy Market Assessments (DEMA). Ms. Wierzbicki introduced in a bit more detail the role and work of both OEPI and DEMA. She identified and provided background regarding the three market assessments published each year and presented at Commission meetings and to state officials (the *Winter and Summer Market and Reliability Assessments* and DEMA's annual *State of the Markets* report). She commended to members DEMA's *Energy Primer: A Handbook on Energy Market Basics*, which DEMA routinely updates, as providing a wealth of introductory information, not only on electric and gas markets (how they work and what vocabulary/terminology is used in the various regions of the country) and what the FERC does in connection with each, but also foundational information on gas-electric coordination. She also highlighted the regular calls that DEMA staff holds with the market monitors of each of the FERC-jurisdictional ISO/RTOs to discuss market performance, the recommendations from the market monitor reports, and their views on issues/proposals being discussed within respective regional stakeholder processes. Ms. Wierzbicki also highlighted

DEMA's leading efforts with respect to the 2022 and 2023 New England Winter Gas-Electric Forums, and the FERC's recent Order 1920 and Order 2023 rulemakings.

In response to questions, Ms. Wierzbicki explained the methodology behind the numbering of rulemaking orders, which were typically incremented, but for major orders, could be assigned an out-of-sequence number by and at the discretion of the FERC Chairman. She confirmed that the FERC continued to consider and work on gas-electric coordination issues. Staff was aware of and evaluating the recommendations by NAESB, Joint RTOs, EPSA/INGAA/NGSA, and others, but particularly given the fact that next steps did not appear to lend themselves to simple solutions, the FERC remained in the "figuring it out" stage. She welcomed any thoughts members might have on these issues.

Ms. Wierzbicki concluding by sharing some insights and recommendations with respect to the ways and frequency with which stakeholder thoughts could be relayed, whether through pre-filing meetings, direct contact with or from OEPI, or group meetings with appropriate FERC staff that could be organized. Ms. Bresolin thanked Ms. Wierzbicki for that helpful information and encouraged members to begin those conversations during the Sector meetings with Ms. Wierzbicki and her colleagues on Thursday.

## **EMM 2023 ANNUAL MARKET REPORT**

### ***Overview***

Dr. David Patton, President of Potomac Economics and the ISO's External Market Monitor (EMM), presented highlights from the EMM's 2023 Markets Report (EMM Annual Report), which had been circulated and posted in advance of the meeting. He began by opining that the New England Markets performed competitively in 2023, but noted that the EMM Annual Report nevertheless recommended improvements.

### ***Cross-Market Comparison***

Dr. Patton began by discussing the “all-in” prices on a dollar per megawatt-hour (MWh) basis across the various FERC-regulated markets and the Electric Reliability Council of Texas (ERCOT). His presentation showed that energy prices in New England were consistently higher than other markets (with the exception of ERCOT), which he explained could be attributed to New England’s higher natural gas prices. His presentation also showed that New England’s 2023 capacity prices were comparable with most organized markets, observing the cross-market variation was due to differences in surplus and market designs. In response to a question, Dr. Patton confirmed that the all-in price chart did not include costs of the Mystic Cost of Service Agreement.

Next, Dr. Patton discussed transmission congestion costs. As in past years, he showed New England experiences just a fraction (about 1/10<sup>th</sup>) of the congestion that other RTOs experience. A related, concomitant experience is that the New England region has the highest transmission rates in the nation (roughly \$22/MWh). Dr. Patton opined that over the last 10 years or so, New England has built transmission more vigorously than other RTOs to address transmission security issues. That said, he noted that other RTOs had begun to follow New England’s lead, albeit possibly for different reasons, e.g., building transmission for anticipated increases in intermittent resources.

Addressing virtual transactions, Dr. Patton explained that, as in prior years, New England’s Day-Ahead Energy Market was less liquid than the Day-Ahead Energy Markets of other RTOs due to lower virtual trading levels. Looking ahead, however, Dr. Patton believed that the FERC-approved Day-Ahead Ancillary Services Initiative (DASI), when coupled with a requirement to schedule physical resources to meet the regions’ forecasted load, should address

his concern because it would negate the need to allocate Net Commitment Period Compensation (NCPC) payments to virtual transactions.

### *Navigating the Clean Energy Transition*

Dr. Patton then turned to the clean energy transition. Based on experiences in other ISO/RTOs, he noted that the increase in intermittent resources on the grid would create a higher uncertainty in energy output. He explained that it was incredibly challenging to forecast the energy output for intermittent resources, adversely impacting ISO energy output forecasts. Energy output forecast errors increased as intermittent resources on the system increased. Given intermittent resource energy output fluctuations, the system would see a greater demand for resources that can ramp up or down. Relatedly, the uncertainty in energy output leads to uncertainty in transmission flows because intermittent generation tends to be clustered in a region. Thus, the possibility existed that transmission constraints would be violated. Moreover, Dr. Patton reported that he had seen situations where intermittent resources did not respond reliably to curtailment instructions. He added, however, that he was not too concerned with renewable resources setting negative prices. From his perspective, flexible resources would set prices in most hours when renewable resources could not meet demand. Additionally, Dr. Patton suggested that dispatchable resources would likely see a larger revenue impact from an increase in the frequency of reserve shortages.

Dr. Patton opined that New England's markets could address these challenges. He pointed to two critical market design elements: (1) efficient shortage pricing and (2) marginal capacity accreditation. With the former, Dr. Patton noted that shortage pricing could signal dispatchable resources as a revenue source. With the latter, he stated that some resources would become less critical from a reliability standpoint as the system transitions. Thus, an accreditation

methodology must provide positive signals to resources that provide reliability. Dr. Patton observed that, despite initial concerns about how the ISO was thinking of accrediting gas-only resources, the ISO's ongoing RCA project was attempting to re-design the region's accreditation regime to offer the right signals. Dr. Patton recommended evaluating a look-ahead dispatch model that optimizes dispatching resource hours in the future rather than the current model that does it 10 or 15 minutes ahead.

Responding to questions concerning tie benefits, Dr. Patton agreed that the assumptions underlying tie benefits should be evaluated and that the ISO's RCA project offered an excellent opportunity to do so. Regarding gas modeling and resource flexibility, he noted that no ISO/RTO had a model that could address resource lead time for accreditation purposes. Accordingly, transmission building should be undertaken economically so that it does not undermine market-based investments that solve the same problem at a lower cost.

### ***Out-of-Market Commitments and Operating Reserve Prices***

Referencing his presentation, Dr. Patton reported on the Day-Ahead commitments for Ten-Minute Spinning Reserves (TMSR). He noted that, on average, out-of-market commitments happened about 25 to 40 percent of the yearly hours to meet the system's TMSR Requirement. As a result, the prices in the Day-Ahead market are affected. He noted that DASI is going to address this issue.

Dr. Patton addressed what he viewed as a flaw in the fast-start pricing logic for Operating Reserves. After offering a high-level overview of this aspect of the market (further elaborated in the EMM Annual Report), he noted that when a fast-start resource is set at its Economic Minimum (EcoMin) for pricing purposes, it cannot set the marginal price. Consequently, the

available MW below a resource's EcoMin is undervalued. Thus, the fast-start pricing logic raises energy and reserve prices because the system appears short.

*Assessment of the July 5, 2023 PFP Event*

Dr. Patton observed that PFP events, though to date infrequent, were likely to increase in frequency. He addressed the July 5, 2023 PFP event. He explained that, during the event, the region lost import capability from Canada, and although exports to New York were then curtailed, New England was approximately 200 MW short of capacity for about 30 minutes. Dr. Patton noted that, although the reliability implications were almost negligible, the PFP rate remained an issue. Referring to his presentation, he showed that the units not committed in the Day-Ahead Market, e.g., steam and conventional units, had PFP charges. These resources, though essential for winter reliability, were at risk of inefficient retirement due to the exposure caused by a high, flat PFP rate. As detailed in the EMM Annual Report, he believed that the PFP rate should be a dynamic, sloped rate commensurate with the severity of the reliability event.

Following his comments, the Committee directed questions to the EMM related to his concern that exports are not charged the PFP rate (\$3,500/MWh). Referring to a chart in his presentation, Dr. Patton noted that, if exports had been charged the PFP rate, exports would have been charged around \$1.2 million during the July 5 event. He said that not charging exports but paying imports the PFP rate was a flaw in the PFP design and could create inefficient incentives and encourage gaming, such as a strategy to simultaneously schedule imports and exports at the New England/New York border in a scarcity event. In this scenario, no power would flow into either market, but the imports would receive a credit while the exports would not receive a charge at the PFP rate. Thus, Dr. Patton opined that exports were receiving a windfall. In response, a Committee member suggested that the EMM consider whether the Balancing Ratio

should be revised, which he agreed to consider. Relatedly, the EMM offered (without formally recommending) that the PFP construct would be better served if it was in the energy market to reflect the value of energy and prevent the need to self-schedule in some instances. In response, a participant stated that doing so could remove incentives for capacity resources to perform, a point the EMM acknowledged but countered by saying that a PFP construct in the energy markets could include a forward construct that mimics the current design's obligation to perform.

### ***Winter Reliability in the FCA***

Dr. Patton then provided an overview of the EMM Annual Report's section on winter reliability. He began by noting his belief that winter presents the biggest reliability concerns for the region. Thus, his team spent significant effort understanding and modeling the problem to offer insights on structuring the markets to address the reliability issues. He explained that winter presents a unique challenge because of the possibility of a long cold snap that consumes the region's fuel inventory and, thus, impacts the system's ability to produce sufficient energy. He highlighted ISO-NE's Probabilistic Energy Adequacy Tool (PEAT) as particularly helpful in addressing the winter reliability issue.

Next, he turned to several charts that illustrated Potomac Economics' simulation of the winter reliability risk by 2031–2032 using inputs from the PEAT study, the 2024 forecast of capacity, energy, loads, and transmission (CELT Report), and the FCA18 results. As detailed in the EMM Annual Report, the simulation indicated that winter reliability risk in New England was significantly impacted by the amount of available LNG and oil inventories. Accordingly, Market Participants' fuel procurement decisions have significant reliability implications, and the market design must therefore incentivize the efficient procurement of fuel for the winter season. Moreover, Potomac Economics' model also analyzed sensitivity cases assessing the possible

impact of (i) delayed offshore wind development and (ii) delayed offshore wind development but with higher penetration of two-hour energy storage resources. From the analysis, Dr. Patton opined that the amount of offshore wind operating on the system significantly impacted the winter reliability risk issue, but the entry of energy storage resources did not.

Dr. Patton answered questions about the model and noted the importance of capturing the available LNG amount in the system because it was not an exogenous amount that could be treated as a random variable. In response to a guest's comment about the EMM's conclusions on offshore wind's impact on winter reliability, Dr. Patton emphasized that offshore wind provides a certain amount of reliability, particularly during the winter period, and should be compensated for the reliability. Importantly, and more generally, Dr. Patton explained that every resource class provides some reliability and should be compensated accordingly.

Continuing the discussion on winter reliability, Dr. Patton, referencing his presentation, compared the 12-day LNG in reliability models and historical data. He opined that the ISO's prior assumption of LNG in the system was too optimistic and was hopeful that, in the future, those assumptions would be more conservative. Next, the EMM shifted his presentation to discuss the importance of dispatch logic in models. The gist of his comments was that the models must be realistic to capture opportunity costs and accurately quantify winter risk for accrediting resources. Finally, Dr. Patton provided a chart that showed Potomac Economics' estimates of the marginal capacity value for various resources using a model that included inventoried fuel versus one that did not. The key takeaway was that, if the ISO's model used for accreditation does not model the available fuel inventory in the system, then the model may not ensure that the market aligns with the winter reliability of each type of resource.

From this portion for the presentation, a couple of members asked clarifying questions. Dr. Patton confirmed his belief that the ISO's model should consider modeling inventoried fuels in the next two years. In response to a member's request, the EMM said he would consider adding this suggestion to his official recommendations. Dr. Patton also addressed questions concerning how the Potomac Economics model incorporated energy storage resources, noting how those resources contribute to winter reliability, particularly in a two-week cold snap.

## **JUNE 26 SESSION**

The Summer Meeting reconvened at 9:30 a.m. on June 26, 2024.

### **HOST STATE (MIKE HARRINGTON) WELCOME REMARKS**

Ms. Bresolin welcomed members and guests back to the meeting. She then introduced New Hampshire State Representative Michael Harrington, who offered some welcoming remarks as a representative of the host state of New Hampshire. Representative Harrington began by encouraging all to take advantage of the great things that New Hampshire had offer. He reflected on distinctive characteristics of New Hampshire, including its legislative body, its state motto and the pride displayed in living up to that motto, as well as its commonality of interest with the rest of the New England States for a reliable electric system at a reasonable price. He also noted the related importance of investigating advanced technologies and processes, citing as an example his experience with New Hampshire's inquiry into the implementation of next generation nuclear reactor technology. He concluded by wishing all an enjoyable time in New Hampshire.

### **MARKETS COMMITTEE SUMMER MEETING UPDATE**

Providing an update to his Markets Committee report from the day before, Mr. Fowler announced that the ISO, having accelerated some internal processes in response to Participant requests, was prepared to discuss at the Wednesday session of the MC's July Summer Meeting some preliminary thoughts on the scoping of the upcoming capacity accreditation/reforms work. He emphasized that the ISO was interested in Participant feedback and encouraged all those interested to participate.

**RECOGNITION OF BOB ETHIER**

On behalf of NEPOOL, Ms. Bresolin asked Mr. Tom Kaslow to say a few words on the occasion of the impending retirement of Mr. Bob Ethier, the ISO's Vice President of System Planning. Mr. Kaslow thanked Mr. Ethier for his years of close collaboration and dedicated service to the region, developing and monitoring the markets, planning for the future system and helping to keep the lights on. He commended Mr. Ethier's 360° view of planning, markets, and mitigation, highlighting Mr. Ethier's communication skills and personal approach to discerning stakeholder perspectives and seeking opportunities to reach mutually-supported outcomes. In recognition and appreciation of Mr. Ethier's more than 24 years of service, Mr. Kaslow presented Mr. Ethier with a token of NEPOOL's gratitude, the inscription on which Mr. Ethier himself read at Mr. Kaslow's request. Mr. Ethier reflected on the progress made over his time working with NEPOOL, his eagerness to follow the progress to be made going forward, but above all, thanked all for the pleasure and privilege of working in partnership on the really interesting work that the regional arrangements entailed.

**REMARKS BY BCSE PRESIDENT LISA JACOBSON**

Ms. Lisa Jacobson, President of Business Council for Sustainable Energy (BCSE), opened by recognizing NEPOOL's diversity of stakeholders and its culture of collaboration and thanking the Committee for the opportunity to offer remarks. She introduced the BCSE, a broad-based trade organization, founded over 30 years ago, with a mission to influence public policy to improve air quality and achieve better energy efficiency, reliability, affordability, and sustainability. She explained the BCSE focuses its efforts on advancing policies that will infuse capital into the energy industry and on advocacy at the federal level. She noted also that the

BCSE participates at both the state and local levels (though without engaging in active legislative lobbying).

Ms. Jacobson explained that the BCSE played an active role in the formation of the Regional Greenhouse Gas Initiative (RGGI) in New England and actively participates in international energy initiatives. She noted one example of the organization's work on an international level was its participation in the Rio Earth Summit in 1992, from which four treaties emerged, with one focused on climate change.

Ms. Jacobson's presentation focused on a piece of the information contained in the annual *Sustainable Energy in America Factbook (Factbook)* that the BCSE creates in partnership with Bloomberg New Energy Finance (BloombergNEF). She noted that the 13<sup>th</sup> edition of the *Factbook* was released in March, 2024. She explained that the *Factbook* was a resource geared towards policymakers and was accessible to the broader public at no cost. The 2024 *Factbook* contained historical data, as well as up-to-date commentary and data trends related to energy and emerging technologies in the U.S.

Reflecting on recent economic challenges such as the COVID-19 pandemic, and high inflation and interest rates, Ms. Jacobson acknowledged a resilient and encouraging performance in the energy sector. However, she stressed the need for progress to continue and to accelerate if climate goals were to be reached.

Ms. Jacobson noted that, at the conclusion of 2023, the nation's energy productivity (the combination of energy consumption and U.S. Gross Domestic Product (GDP)), was high and supporting significant growth in the U.S. economy. She highlighted as significant three pieces of federal legislation, the Chips and Science Act, the Inflation Reduction Act (IRA), and the Infrastructure Investment and Jobs Act (IIJA), noting the particular effectiveness of the IRA and

IIJA. She underscored record-breaking global investments in renewable energy, both in terms of output levels and percentage of generation.

Ms. Jacobson noted the importance of policy maker understanding as to the integration of natural gas in the U.S. economy, especially increased activity in LNG exports and exports to Mexico. She stated that, given the contribution by natural gas to the national economy, there should be focus on how to decarbonize the natural gas sector. Turning to transportation, Ms. Jacobson stated that electric vehicles (EVs) unsurprisingly experienced a record-breaking year in 2023, with a significant jump in ownership from prior years attributable in part to the increased number of choices in EVs. She emphasized that renewable natural gas and biofuels offered an incredible opportunity to help decarbonize the transportation and natural gas sectors.

Because a main goal of the BCSE is to support decarbonization efforts, Ms. Jacobson explained that much of the data in the *Factbook* focused on Green House Gas (GHG) emissions. She stated that, at end of 2023, the U.S. was about 16% below 2005 GHG levels (measured in million metric tons of CO<sub>2</sub> equivalent). To achieve the goal for reductions set by the Biden administration, she added, would require annual reductions of six percent. Ms. Jacobson underscored that the buildings sector and industrial sector particularly offered significant potential for reductions, and would need to be an area of focus moving forward.

Ms. Jacobson concluded her presentation by thanking NEPOOL for facilitating productive discussions and collaboration on these critical energy and environmental issues. She also responded to several questions from members. In response to one, she confirmed that the U.S. economy had a relative advantage in energy efficiency per GDP output. Elaborating, she stated that the BCSE endorsed a bipartisan bill introduced in the U.S. Senate called the “PROVE IT” Act, which capitalizes on U.S. advantages. She also explained that, because the U.S. did not

have a carbon border policy, the BCSE supported a current piece of legislation that would provide for data collection over the next couple of years that could be used to establish a carbon border adjustment. Ms. Jacobson affirmed that the energy transition was well underway and identified viable economic signals as important to progress on decarbonization, including energy efficiency-related support, tax code changes and carbon pricing.

#### **REMARKS BY BLOOMBERGNEF LEAD ANALYST TARA NARAYANAN**

Ms. Tara Narayanan centered her presentation on latest data trends and future projections relating to decarbonization efforts. Ms. Narayanan noted that BloombergNEF had historically been known for its work in the renewables and power sectors, but BloombergNEF had expanded to encompass all sectors experiencing disruption from decarbonization.

Ms. Narayanan began by noting that the end point for BloombergNEF's analysis was typically 2050, because 2050 represented the time by which certain climate goals should have been met. She stated that the central question in her analysis was how these goals could be achieved at the lowest cost. She stated that, if least cost economics were permitted to play out, and the status quo maintained, increased future demand would lead to a 40% climb in emissions with increased future demand. Acknowledging the current ongoing transition and recognizing the challenge of balancing cost-effectiveness with emission reduction targets, Ms. Narayanan stressed the urgency of investing in lower emission technologies to align supply with growing demand projections.

Based on charts in her presentation, Ms. Narayanan projected rapid growth in solar and wind energy to support electricity consumption, which will displace oil and gas and drive down emissions. She noted that the U.S. likely hit its peak oil and coal use in the 2010s. Ms. Narayanan also acknowledged the economic effect of the natural gas industry. She explained

that, under base case assumptions, natural gas use was expected to increase and emphasized that the future use of natural gas would be critical to reaching decarbonization/net-zero emissions goals.

Ms. Narayanan noted that BloombergNEF's predictions were based on extrapolations that incorporated tax credits; however, she also noted that those predictions would be adjusted to remove tax adjustments under the IRA because it was not desirable or realistic to endlessly subsidize these technologies.

Ms. Narayanan concluded by responding to a question addressing the end of her presentation. A member noted the significant use of oil, coal and natural gas even under the net zero scenario, suggesting the need for carbon capture and sequestration, and raising questions about risks given the current absence of carbon capture technology. Ms. Narayanan emphasized that the U.S. was a leader in carbon capture technology and had been used by the oil and gas industry. She described carbon capture technology as a mature and well-understood, but acknowledged that it had not yet achieved a scale needed to sustain a decarbonized world. Ms. Narayanan identified a lack of infrastructure as the biggest risk, a risk similarly faced by transmission and other technologies. Elaborating, she stated that pipelines to transport the carbon and way to store carbon were needed, but the development of each of those presented their own set of risks.

#### **PANEL DISCUSSION – ENERGY SECTOR PERSPECTIVES & REFLECTIONS “BEYOND NEW ENGLAND”**

The panel discussion was moderated by Ms. Jacobson and featured as panelists Ms. Sapna Gheewala Dowla, Associate Vice President of Policy & Research at the Alliance to Save Energy (the Alliance); Mr. Rob Mosher Rob Mosher, Vice President of Government Affairs,

Interstate Natural Gas Association of America (INGAA); and Mr. Anthony Fratto, Senior Director, Research & Analytics, American Clean Power Association (ACP). Ms. Jacobson opened the discussion by asking the panelists to introduce themselves and share their initial reactions for the discussion. The questions in the discussion were framed around the challenges and opportunities of the transition towards cleaner, cheaper, and more efficient and reliable energy sources.

After introducing themselves, Mr. Mosher began by emphasizing the magnitude of the task ahead in meeting clean energy goals by 2050, characterizing it as both daunting and exciting. Ms. Dowla highlighted the potential better use of energy efficiency measures that could alone help to achieve demand reductions of about 60%. She noted the availability of existing technologies and emphasized the challenge of scaling them effectively. Mr. Fratto emphasized the pivotal role that natural gas will play as a key component to changing our energy economy and an instrumental part of the transition. He noted that natural gas consumption was rising and demand was increasing due to factors such as artificial intelligence and data centers.

Ms. Jacobson asked the panelists to identify what they viewed as the biggest opportunities and challenges to catalyzing investment in support of the energy transition. Mr. Mosher stated that the biggest challenge is getting through the state and federal processes required to develop and build the infrastructure needed to support new energy systems, including the integration of new renewable resources. He highlighted the massive amounts of new transmission that was expected to be needed, and the challenge to ensuring customers receive reliable, cost-effective energy. Mr. Fratto echoed Mr. Mosher's statement that the main challenge was infrastructure-related, encompassing everything from siting, permitting and

environmental approval process challenges. Ms. Dowla noted the importance of continued work to keep policymakers adequately informed and educated on these complex issues.

Ms. Jacobson then posed a question about offshore wind and battery storage. Mr. Mosher emphasized that, with no discernible ‘silver bullet’ solution to achieve a clean energy future, a mix of resources would be needed. Acknowledging that offshore wind was a comparatively more developed technology, he noted regional variations in offshore wind feasibility, due in part to geographic differences, as well as cost and inflation challenges, especially in the Northeast.

Ms. Jacobson followed up by asking about demand-side management and virtual power plants. Ms. Dowla said the Alliance had two initiatives focused on next generation energy efficiency and virtual power plants. She noted that the Alliance had put together working groups to tackle the challenges of virtual power plants and how to best implement them. She said that virtual power plants were all over the U.S. and that, given the different regulation and priorities in each region, identifying best practices would be very important and helpful. She further noted that virtual power plants were still a new technology, presenting both challenge and opportunity.

Ms. Jacobson asked about natural gas infrastructure needs and how to ensure flexible fuel and storage options. Mr. Mosher noted that the largest fuel source for electricity generation, over 40%, was natural gas and projections were for that percentage to increase. He explained the “flashpoint” faced due to infrastructure development not keeping pace with consumption. He stressed the continuing need for natural gas to serve as a backstop to renewables. He noted that renewables were experiencing the same issues with permitting delays as natural gas. He stressed that broad infrastructure investment and development would be needed.

Ms. Jacobson concluded her set of questions by asking Mr. Fratto for his thoughts on batteries. Mr. Fratto elaborated on trends in battery storage, noting regional differences in deployment strategies. He contrasted California, which was home to more battery storage than other states, where long-term batteries were more useful given the state's level of solar-powered energy to Texas, which had more short-term, 1 hour batteries given the structure of its competitive markets. Mr. Fratto discussed the importance of long-term battery storage solutions and development for uses beyond ancillary services needs.

Ms. Bresolin joined Ms. Jacobson on stage to moderate members questions of the panelists. Regarding the potential effects of a lower inflation rate on the adoption of renewable energy technologies, Mr. Mosher stated that, while lower inflation might spur increased investment in technologies like solar, it would also necessitate restructuring Power Purchase Agreements (PPAs) and Renewable Energy Certificates (RECs). He expressed concerns about heightened uncertainty in project timelines due to permitting challenges, which could result in stalled projects and missed opportunities for linear infrastructure development across various sectors. He added that a decreasing inflation rate would create more market uncertainty.

Another question raised concerns about the pressure utilities faced to invest in future-proof infrastructure amidst uncertain long-term projections. In response, Mr. Fratto said utilities should be encouraged to mitigate risks associated with infrastructure investments by employing best-case assumptions in their planning processes and conducting thorough analyses that consider two bookend scenarios. Mr. Fratto also emphasized the critical role that utilities would play in evaluating future needs.

Ms. Dowla noted policy lag as a significant challenge in crafting a balanced energy mix that aligns with evolving technological advancements and consumer demands. She underscored

the importance of energy advocates, such as the Alliance, actively engaging with policymakers to ensure that regional energy policies are adaptive and involve energy efficiency measures.

Ms. Jacobson brought attention to the IRA's role in making policy goals more affordable and assessable in more areas of the country. She acknowledged the difficulty in planning for an uncertain future, but stressed the importance of garnering community support and establishing regional signals to guide collaborative efforts with local communities.

The final question related to the different collaboration efforts among the panelists' respective organizations. Mr. Mosher stated that INGAA participates in bipartisan caucuses and roundtables. Ms. Dowla discussed the Alliance's approach of unified messaging among diverse member companies and prioritizing federal policy advocacy. She emphasized the Alliance's involvement in shaping initiatives like the IRA and the IJA to ensure that energy efficiency remains a cornerstone of federal energy policy such as through the 'Solar for All' program. Mr. Fratto highlighted upcoming initiatives focused on addressing future load growth, particularly in response to the rising prominence of data centers, and invited collaboration from interested organizations to shape those policies.

There being no other business (other than the recognition of Mr. Dave Cavanaugh later that evening), the meeting adjourned at 11:45 a.m.

Respectfully submitted,

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Sebastian Lombardi, Secretary

## **RECOGNITION OF DAVE CAVANAUGH**

During the banquet that evening, the Committee endorsed by acclamation the following resolution of appreciation for the immediate-past Chairman of the Committee, Mr. Cavanaugh:

WHEREAS, Mr. David A. Cavanaugh was elected Chair of the New England Power Pool (NEPOOL) Participants Committee, and led NEPOOL, for three years, from 2021 through 2023, following two years serving as the elected Vice-Chair of the Publicly Owned Entity Sector, many more years as a NEPOOL representative and thought leader, and before that as a trusted colleague in ISO market operations; and

WHEREAS, Dave has been an unwavering advocate for NEPOOL's role in influencing and guiding the trajectory of New England's competitive wholesale power markets and its operations by working candidly, respectfully, and collaboratively with members, state and federal officials, and ISO colleagues; and

WHEREAS, Dave guided the operation of the NEPOOL Participants Committee, then nearly one year into, through to the end of, the unprecedented COVID-19 pandemic, and to the return to in-person meetings, strengthening the fundamental pillars of candor, respect and collaboration upon which the success of NEPOOL, and its relationship with ISO New England, New England State and federal officials, as well as between and among its members, is founded and sustained; and

WHEREAS, Dave's leadership and his hallmark empathy, positivity, and warm and steady style have skillfully advanced NEPOOL's mission and the interests of the many Participants he has represented through the years; and

WHEREAS, Dave has exemplified collaboration, not only through his professional participation and leadership, but in the organization of, and camaraderie forged over, many 18-hole pursuits, including his fair share of birdies and bogies for the formidable foursomes of which he was a part.

NOW, THEREFORE, the Participants Committee of the New England Power Pool, on behalf of the NEPOOL Participants, hereby expresses its sincere appreciation to Dave for his three years of service as its Chair and looks forward to continuing to work with him through the challenges ahead on the path to New England's energy future.

Signed and presented by the Chair of the NEPOOL Participants Committee on behalf of the NEPOOL Participants this 26th day of June, 2024, in Bretton Woods, New Hampshire.

**PARTICIPANTS COMMITTEE MEMBERS AND ALTERNATES  
PARTICIPATING IN  
JUNE 25-26, 2024 SUMMER MEETING**

PARTICIPANT NAME	SECTOR/ GROUP	MEMBER NAME	ALTERNATE NAME	PROXY
Advanced Energy United	Associate Non-Voting	Alex Lawton		
AR RG Large Group Member	AR-RG		Aidan Foley	
Ashburnham Municipal Light Plant	Publicly Owned Entity	Matt Ide	Dan Murphy	
AVANGRID: CMP/UI	Transmission	Alan Trotta	Jason Rauch	
Bath Iron Works Corporation	End User			Gus Fromuth; Bill Short
Belmont Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Block Island Utility District	Publicly Owned Entity	Dave Cavanaugh		
BlueWave Public Benefit Corp.	AR-DG	Mike Berlinski		
Boylston Municipal Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
BP Energy Company (BP)	Supplier			José Rotger
Braintree Electric Light Department	Publicly Owned Entity		Dave Cavanaugh	
Brookfield Renewable Trading and Marketing	Supplier	Aleks Mitreski		
Chester Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Chicopee Municipal Lighting Plant	Publicly Owned Entity	Matt Ide	Dan Murphy	
Clearway Power Marketing LLC	Supplier			Pete Fuller
Concord Municipal Light Plant	Publicly Owned Entity		Dave Cavanaugh	
Connecticut Municipal Electric Energy Coop. (CMEEC)	Publicly Owned Entity	Brian Forshaw	Richard Gaudet	
Connecticut Office of Consumer Counsel (CT OCC)	End User		Jamie Talbert-Slagle	Chelsea Mattioda
Conservation Law Foundation (CLF)	End User	Phelps Turner (tel)		
Constellation Energy Generation	Supplier	Gretchen Fuhr	Bill Fowler	
Cross-Sound Cable Company (CSC)	Supplier		José Rotger	
Danvers Electric Division	Publicly Owned Entity		Dave Cavanaugh	
Dominion Energy Generation Marketing	Generation	Wes Walker		
DTE Energy Trading, Inc. (DTE)	Supplier			José Rotger
Durgin and Crowell Lumber Co., Inc.	End User			Bill Short
Dynegy Marketing and Trade, LLC	Supplier	Ryan McCarthy	Andy Weinstein	Bill Fowler
ECP Companies Calpine Energy Services, LP (Calpine) New Leaf Energy	Generation	Andy Gillespie	Brett Kruse Alex Chaplin	Bill Fowler
EDF Trading North America, LLC	Supplier	Eric Osborn		
Elektrisola, Inc.	End User		Gus Fromuth	Bill Short
Emera Energy Companies	Supplier			Bill Fowler
ENGIE Energy Marketing NA, Inc.	AR-RG	Sarah Bresolin	Joe Dalton	
Eversource Energy	Transmission	James Daly	Dave Burnham	Vandan Divatia
FirstLight Power Management, LLC	Generation	Tom Kaslow	Peter Rider	
Galt Power, Inc. (Galt)	Supplier	José Rotger		
Garland Manufacturing Company	End User	Gus Fromuth		Bill Short
Generation Bridge Companies	Generation		Bill Fowler	
Generation Group Member	Generation	Dennis Duffy	Abby Krich	
Georgetown Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Granite Shore Companies	Generation			Bob Stein
Groton Electric Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Groveland Electric Light Department	Publicly Owned Entity		Dave Cavanaugh	
H.Q. Energy Services (U.S.) Inc. (HQ US)	AR-RG	Louis Guibault	Bob Stein	
Hammond Lumber Company	End User	Gus Fromuth		Bill Short
Hanover, NH	End User			Bill Short
High Liner Foods (USA) Incorporated	End User		William P. Short III	
Hingham Municipal Lighting Plant	Publicly Owned Entity		Dave Cavanaugh	

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PARTICIPANT NAME	SECTOR/ GROUP	MEMBER NAME	ALTERNATE NAME	PROXY
Holden Municipal Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Holyoke Gas & Electric Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Hull Municipal Lighting Plant	Publicly Owned Entity	Matt Ide	Dan Murphy	
Icetec Energy Services, Inc. (Icetec)	AR-LR	Doug Hurley		
Industrial Wind Action Corp.	End User	Lisa Linowes		
Ipswich Municipal Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Jericho Power LLC (Jericho)	AR-RG		Nancy Chafetz	Dan Pierpont
Jupiter Power	AR-RG		Frank Swigonski	
Lamson, Jon	End User	John Lamson		
Littleton (MA) Electric Light and Water Department	Publicly Owned Entity		Dave Cavanaugh	
Long Island Power Authority (LIPA)	Supplier	Bill Kilgoar		
Maine Power LLC	Supplier	Jeff Jones (tel)		
Maine Public Advocate's Office (Maine OPA)	End User	Drew Landry		
Mansfield Municipal Electric Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Marblehead Municipal Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Mass. Attorney General's Office (MA AG)	End User	Jacquelyn Bihrlle	Kelly Caiazzo	Jamie Donovan
Mass. Bay Transportation Authority	Publicly Owned Entity		Dave Cavanaugh	
Mass. Department of Capital Asset Management	End User		Paul Lopes (tel)	Nancy Chafetz
Mass. Municipal Wholesale Electric Company	Publicly Owned Entity	Matt Ide	Dan Murphy	
Mercuria Energy America, LLC	Supplier			José Rotger
Merrimac Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Middleborough Gas & Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Middleton Municipal Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Moore Company	End User			Gus Fromuth; Bill Short
Narragansett Electric Co. (d/b/a RI Energy)	Transmission	Brian Thomson		Janell Fabiano
Natural Resources Defense Council	End User	Claire Lang-Ree		
Nautilus Power, LLC	Generation		Bill Fowler	
New Hampshire Electric Cooperative	Publicly Owned Entity			Brian Forshaw
New Hampshire Office of Consumer Advocate (NHOCA)	End User	Matthew Fossum		
New England Power (d/b/a National Grid)	Transmission	Tim Brennan	Tim Martin	
New England Power Generators Assoc. (NEPGA)	Associate Non-Voting	Bruce Anderson	Dan Dolan	
NextEra Energy Resources, LLC	Generation	Michelle Gardner	Nick Hutchings	
North Attleborough Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Norwood Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
NRG Business Marketing, LLC	Supplier		Pete Fuller	
Nylon Corporation of America	End User			Bill Short
Pascoag Utility District	Publicly Owned Entity		Dave Cavanaugh	
Pawtucket Power Holding Company LLC	Generation	Dan Allegretti	Kevin Telford	
Paxton Municipal Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Peabody Municipal Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Princeton Municipal Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Reading Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
RI Division (DPUC)	End User	Paul Roberti		
Rowley Municipal Lighting Plant	Publicly Owned Entity		Dave Cavanaugh	
Russell Municipal Light Dept.	Publicly Owned Entity	Matt Ide	Dan Murphy	
Saint Anselm	End User	Gus Fromuth		Bill Short
Shell Energy North America (US)	Supplier	Jeff Dannels		
Shipyard Brewing LLC	End User	Gus Fromuth		Bill Short

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Shrewsbury Electric & Cable Operations	Publicly Owned Entity	Matt Ide	Dan Murphy	
South Hadley Electric Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Sterling Municipal Electric Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Stowe Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Sunrun Inc.	AR-DG			Pete Fuller
SYSO Inc.	AR-DG	Doug Matheson (tel)		
Tangent Energy Inc.	AR-LR	Brad Swalwell		
Taunton Municipal Lighting Plant	Publicly Owned Entity		Dave Cavanaugh	
Templeton Municipal Lighting Plant	Publicly Owned Entity	Matt Ide	Dan Murphy	
Tenaska Power Services Co.	Supplier		Eric Stallings	
Union of Concerned Scientists	End User			Francis Pullaro
Vermont Electric Cooperative	Publicly Owned Entity		Dan Potter	
Vermont Electric Power Company (VELCO)	Transmission	Frank Ettori		
Vermont Energy Investment Corporation	AR-LR		Stefan Koester	
Vermont Public Power Supply Authority	Publicly Owned Entity	Matt Ide	Dan Murphy	
Versant Power	Transmission	Dave Norman		
Village of Hyde Park (VT) Electric Department	Publicly Owned Entity	Dave Cavanaugh		
Vitol Inc.	Supplier	Seth Cochran		
Wakefield Municipal Gas & Light Department	Publicly Owned Entity	Matt Ide	Dan Murphy	
Walden Renewables Development LLC	Generation			Abby Krich
Wallingford DPU Electric Division	Publicly Owned Entity		Dave Cavanaugh	
Wellesley Municipal Light Plant	Publicly Owned Entity		Dave Cavanaugh	
West Boylston Municipal Lighting Plant	Publicly Owned Entity	Matt Ide	Dan Murphy	
Westfield Gas & Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Wheelabrator North Andover Inc.	AR-RG		Bill Fowler	
ZTECH, LLC	End User		Gus Fromuth	Bill Short