NEW ENGLAND POWER POOL

January 17, 2014

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: ISO New England Inc. and New England Power Pool, Docket No. ER14-___-000;
NEPOOL Proposed Revisions to Market Rule 1 of the ISO-NE Tariff

Dear Secretary Bose:

The New England Power Pool ("NEPOOL")[1] Participants Committee[2] hereby submits for inclusion in a joint filing with ISO New England Inc. ("ISO-NE") NEPOOL-approved revisions to the Market Rules to add two incremental capacity and energy/reserve market changes. These changes are designed specifically to complement and enhance a myriad of performance incentive-related changes already implemented or pending in the New England energy and operating reserve markets. NEPOOL's proposed Market Rule revisions (the "NEPOOL Proposal") are an alternative and preferred set of revisions to Market Rule changes proposed by ISO-NE (the "ISO-NE Proposal"), which seeks to implement an entirely new and unproven Forward Capacity Market ("FCM") economic construct as separately described by ISO-NE in its transmittal letter and supporting materials.

[1] Capitalized terms not defined herein have the meanings ascribed thereto in the Second Restated NEPOOL Agreement, Participants Agreement, or the ISO-NE Transmission, Markets and Services Tariff (the "ISO-NE Tariff"). Section III of the ISO-NE Tariff is referred to as "Market Rule 1."

[2] NEPOOL is a voluntary association organized in 1971 pursuant to the New England Power Pool Agreement, and it has grown to include more than 430 members. The Participants include all of the electric utilities rendering or receiving services under the ISO-NE Tariff, as well as independent power generators, marketers, load aggregators, brokers, consumer-owned utility systems, demand response providers, developers, end users, and independent transmission company and a merchant transmission provider. Pursuant to revised governance provisions accepted by the Commission in *ISO New England Inc. et al.*, 109 FERC ¶ 61,147 (2004), the Participants act through the NEPOOL Participants Committee. The Participants Committee is authorized by Section 6.1 of the Second Restated NEPOOL Agreement and Section 8.1.3(c) of the Participants Agreement to represent NEPOOL in proceedings before the Commission. Pursuant to Section 2.2 of the Participants Agreement, NEPOOL provides the sole Participant Process for advisory voting on ISO-NE matters and the selection of ISO-NE Board members, except for input from state regulatory authorities and as otherwise may be provided in the ISO-NE Tariff, TOA and the Market Participant Services Agreement included in the ISO-NE Tariff.

Both proposals seek to further address existing reliability, investment and resource performance challenges in New England. However, the two proposals offer fundamentally different approaches. ISO-NE seeks in the ISO-NE Proposal to redefine capacity as a very different product where payments are affected dramatically by whether a resource is providing energy and/or operating reserves in Real-Time three years hence. In so doing, ISO-NE seeks to fundamentally change the nature of the capacity market construct in New England through its new and untested "pay-for-performance" mechanism. ISO-NE's proposal abandons longstanding capacity market principles in New England and the other RTO markets and converts the FCM from a market designed to ensure long-term resource adequacy to one that is driven primarily by prospective and largely unpredictable actual production. Resources that are not producing energy or reserves at the time of a "Capacity Scarcity Condition" for any reason will be subject to significant penalties, even if that scarcity condition occurs during very low load conditions, or is caused by transmission outages or even by errors in ISO-NE's load forecasting. In contrast, the NEPOOL Proposal, building upon a series of Market Rule changes that either have been made or are pending, proposes moderate but important changes that would enhance the current market design and achieve the objective of improving the performance incentives for resources in the ISO-NE electricity markets.

In addition to this transmittal letter, NEPOOL also offers the following in support of its proposal:[3]

- Attachment N-1b -- Testimony of Peter D. Fuller, Director of Regulatory Affairs, NRG Energy Inc., East Region, on behalf of NEPOOL (the "Fuller Testimony");
- Attachment N-1c -- Testimony of Calvin A. Bowie, Manager - NEPOOL and ISO Relations, Northeast Utilities, on behalf of NEPOOL (the "Bowie Testimony");
- Attachment N-1d -- Testimony of Brian E. Forshaw, Chief Regulatory and Risk Officer, Connecticut Municipal Electric Energy Cooperative, on behalf of NEPOOL (the "Forshaw Testimony");
- Attachment N-1e -- Testimony of Elin S. Katz, Consumer Counsel, Connecticut Office of Consumer Counsel, on behalf of NEPOOL (the "Katz Testimony");
- Attachment N-1f -- Affidavit and Report of Richard D. Tabors, Ph.D., on behalf of NEPOOL;
- Attachment N-1g -- Summary of NEPOOL Stakeholder Process;

[3] NEPOOL Participants register their individual positions through votes on NEPOOL matters and, if they wish, through further explanations of their views during the stakeholder process. NEPOOL's positions are defined by the voting results. The affidavits/testimony reflect the views of their respective companies and do not reflect in all instances the positions or opinions of all NEPOOL Participants.

- Attachment N-1h -- A tabulation of the NEPOOL votes taken on the NEPOOL and ISO-NE Proposals at the December 6, 2013 NEPOOL Participants Committee meeting;
- Attachment N-1i -- Blacklined Tariff sheets containing NEPOOL's proposed revisions to the Tariff to become effective June 1, 2014;
- Attachment N-1j -- Clean Tariff sheets containing NEPOOL's proposed revisions to the Tariff to become effective June 1, 2014;
- Attachment N-2b -- Blacklined Tariff sheets containing NEPOOL's proposed revisions to the Tariff to become effective June 1, 2018; and
- Attachment N-2c -- Clean Tariff sheets containing NEPOOL's proposed revisions to the Tariff to become effective June 1, 2018.

I. JUMP BALL STANDARD

The governance arrangements negotiated and approved in order for ISO-NE to assume the role of the regional transmission organization in New England provide for a "jump ball" filing under Section 11.1.5 of the Participants Agreement when ISO-NE and NEPOOL approve alternative proposed changes to the Market Rules. Section 11.1.5 requires ISO-NE to make a "jump ball" filing when NEPOOL supports by at least a 60% Vote of the Participants Committee a Market Rule change that is different than an ISO-NE proposed Market Rule change. In a "jump ball" filing, the NEPOOL proposal is filed at the same time and on the same footing as ISO-NE's proposal (i.e., under Section 205 of the Federal Power Act). The Commission is not constrained by the requirement that it must accept the ISO-NE proposal if it is demonstrated to be just and reasonable, but rather is given the latitude to "adopt any or all of [ISO-NE]'s Market Rule proposal or the alternate Market Rule proposal as it finds, in its discretion, to be just and reasonable and preferable."[4]

[4] Participants Agreement at Section 11.1.5. Section 11.1.5 of the Participants Agreement provides in its entirety as follows:

> If the Participants Committee vote relating to an [ISO-NE] Market Rule proposal results in the approval by the Participants Committee by a Participants Vote equal to or greater than 60% of a Market Rule proposal that is different from the one proposed by [ISO-NE], including, but not limited to, a Governance Participant proposal, [ISO-NE] shall, as part of any required Section 205 filing, describe the alternate Market Rule proposal in detail sufficient to permit reasonable review by the Commission, explain [ISO-NE]'s reasons for not adopting the proposal, and provide an explanation as to why [ISO-NE] believes its own proposal is superior to the proposal approved by the Participants Committee. The Commission will not be required to consider whether the then-existing filed rate is unlawful, and may adopt any or all of [ISO-NE]'s Market Rule

Thus, the jump ball provision expands the more limited authority of the Commission that constrains its actions in response to a more traditional filing under Section 205. In a Section 205 filing where ISO-NE and NEPOOL are in agreement, the Commission "plays 'an essentially passive and reactive' role"[5] whereby it "can reject [a filing] only if it finds that the changes proposed by the public utility are not 'just and reasonable.'"[6] The Commission limits this inquiry "into whether the rates proposed by a utility are reasonable – and [this inquiry does not] extend to determining whether a proposed rate schedule is more or less reasonable than alternative rate designs."[7] The filed proposal "need not be the only reasonable methodology, or even the most accurate."[8] As a result, in a more typical Section 205 filing, even if an intervenor or the Commission develops an alternative proposal, the Commission must accept the proposal reflected in the Section 205 filing if it is just and reasonable.[9] Here, however, if the Commission finds both proposals to be just and reasonable, the Commission has the latitude to choose between the NEPOOL and ISO-NE proposals based on what it views to be the preferable proposal, and is not bound to conclude that one proposal is unjust and unreasonable before it can consider the second proposal.[10] If there are any additional proposals filed by intervenors though, those proposals cannot be accepted unless the Commission first concludes that neither the NEPOOL Proposal nor the ISO-NE Proposal is just and reasonable and preferable.[11]

II. COMMUNICATIONS AND CORRESPONDENCE

Communications and correspondence regarding this proceeding should be sent to the individuals listed below:

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proposal or the alternate Market Rule proposal as it finds, in its discretion, to be just and reasonable and preferable.

[5] *Atlantic City Elec. Co. v. FERC*, 295 F.3d 1, 10 (D.C. Cir. 2002) (*quoting City of Winnfield v. FERC*, 744 F.2d 871, 876 (D.C. Cir. 1984)).

[6] *Id.* at 9.

[7] *Cities of Bethany, et al. v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 917 (1984).

[8] *OXY USA, Inc. v. FERC*, 64 F.3d 679, 692 (D.C. Cir. 1995).

[9] *Cf. Southern California Edison Co., et al.*, 73 FERC ¶ 61,219 at 61,608 n.73 (1995) ("Having found the Plan to be just and reasonable, there is no need to consider in any detail the alternative plans proposed by the Joint Protesters." (*citing Cities of Bethany*, 727 F.2d at 1136)).

[10] *See* Participants Agreement at Section 11.1.5: "The Commission . . . may adopt any or all of ISO's Market Rule Proposal or the Alternate Market Rule Proposal as it finds, in its discretion, to be just and reasonable and preferable."

[11] *Cf. Southern California Edison Co., et al,* 73 FERC ¶ 61,219 at 61,608 n.73 (1995).

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III. NEPOOL PROCESS LEADING TO NEPOOL PROPOSAL

As required by the Participant Processes,[12] there has been a very deliberate and complete exploration and discussions among the ISO-NE, Market Participants and State regulators of market changes to improve the incentives and performance of resources, especially at times when they are most needed. Beginning with the issuance of ISO-NE's October 2012 white paper, entitled "FCM Performance Incentives" (referred to herein as the "FCM PI White Paper"),[13] ISO-NE led NEPOOL Participants and the States for over a year in discussions to explain its FCM "performances incentives" proposal and received feedback on that proposal. Prior to consideration by the Participants Committee, ISO-NE's proposal was reviewed and deliberated over the course of 15 Markets Committee meetings spanning a full year. Throughout the stakeholder process, NEPOOL Participants reacted and responded to ISO-NE's technical analysis and sought to explore alternative approaches.[14]

As the stakeholder process unfolded, Market Participants raised a host of concerns with the ISO-NE Proposal. Initial support for ISO-NE's conceptual proposal gradually eroded and almost completely disappeared as the commercial and market implications of an untested economic approach became understood and the ISO-NE Proposal's inflexibility in addressing broadly held concerns became apparent. In an effort to remedy their concerns with the ISO-NE Proposal during the final voting in the NEPOOL process, members offered numerous amendments and alternatives to the ISO-NE Proposal, all of which ISO-NE rejected.

One such effort was undertaken by NRG Energy, Inc. ("NRG") to develop a viable alternative to the ISO-NE Proposal that could: (1) achieve consensus, (2) reflect a preferred

[12] *See generally* Participants Agreement, *available at* http://nepool.com/uploads/Op-PA.pdf.

[13] *See* ISO-NE Strategic Planning Initiative white paper entitled "FCM Performance Incentives" (dated October 2012) at p. 3, *available at* http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2012/nov162012/fcm_performance_white_paper.pdf. NEPOOL stakeholders had no input into the development of the FCM PI White Paper.

[14] Attachment N-1g provides a more detailed description of that involved process.

approach to address evolving regional challenges, and (3) better complement and enhance other market initiatives. Beginning as early as November 2012, NRG began to discuss an alternative approach to ISO-NE's FCM "performance incentives" proposal with the NEPOOL Markets Committee, ultimately developing and presenting proposed Tariff language reflecting the NRG alternative at the October 8-9, October 29 and November 13-14, 2013 Markets Committee meetings. While no proposal (neither the ISO-NE Proposal or an alternative) passed at the Markets Committee, Market Participants and State regulators continued to seek an alternative approach to the ISO-NE Proposal that addressed very broadly held regional concerns. Based on the feedback received from interested stakeholders, NRG revised its alternative proposal largely to remove and vote separately key features of its proposal but also to address some concerns that were motivating opposition to its alternative proposal.[15]

At the December 6, 2013 Participants Committee meeting, Market Participants coalesced around NRG's proposed alternative that was grounded in the current market design and enhanced the financial incentives to resources at times of high stress on the system by proposing targeted, incremental changes to the current markets (referred to herein as the "NEPOOL Proposal"). NEPOOL approved the NEPOOL Proposal by an 80.28% Vote of the Participants Committee,[16] while the ISO-NE Proposal received a Vote of only 10.28% in favor, with only 5.5[17] members supporting the ISO-NE Proposal. The voting results are tabulated in Attachment N-1h.

In considering the alternative proposals, the Commission should note that the NEPOOL vote in support of those changes, even over the objection of ISO-NE, exceeded 80%. This fact alone provides compelling evidence that the just and reasonable NEPOOL Proposal is preferable in the marketplace to the unsupported and untested ISO-NE Proposal. The votes of NEPOOL Participants on this matter were well considered and were informed by the extensive experiences and concerns of those who participate in New England's Forward Capacity Market, both suppliers and consumers.

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[15] NRG broke its larger, initial proposal into three separate amendments for NEPOOL consideration at the December 6, 2013 Participants Committee meeting.

[16] As explained in New England's response to Order No. 719, the Participants Committee is the Participant body that provides the final input by NEPOOL on changes to the Tariff, Manuals, Operating Procedures and other New England matters. New England's governance arrangements have been established to recognize that some Participants may be unable to participate fully and with the benefit of full management feedback until after the Technical Committees have completed their deliberations and made their recommendations. For that reason, all recommendations from the Technical Committee are considered by the Participants Committee (absent delegation to another representative of NEPOOL), but it is final Participants Committee action that defines NEPOOL's organizational position. (*see* Filing of ISO New England and New England Power Pool in Response to Order No. 719, Docket No. ER09-1051, filed Apr. 28, 2009.)

[17] The vote of the Generation Sector Group Seat was split evenly in support of and opposed to the ISO-NE Proposal, resulting in that vote being cast "0.5" in favor and the overall number of votes in favor not being a whole number.

IV. THE NEPOOL PROPOSAL IS JUST AND REASONABLE

Both ISO-NE and NEPOOL generally agree that new incentives should be provided in the New England electricity markets to improve the performance of resources when most needed and to attract new investment. This identified need is being largely driven by a concern that the current markets are not providing sufficient incentives to influence market behavior so that it will address New England's evolving strategic risks,[18] including challenges associated with the region's increased reliance on natural gas-fired generation.

As noted, ISO-NE has a very different vision of how to address its concerns compared to the changes supported by the Market Participants. ISO-NE proposes new incentives in the Forward Capacity Market by fundamentally modifying the current concept of what a capacity market is intended to achieve by making a resource's FCM compensation heavily dependent on resource output during short, unpredictable five-minute intervals of operating reserve scarcity, with little to no connection to the *adequacy* of the quantity of resources purchased in the Forward Capacity Auction.[19] Alternatively, the NEPOOL Proposal adds two incremental, but significant capacity and energy/reserve market changes to improve economic and performance incentives in the markets. Unlike ISO-NE's proposal, NEPOOL's proposed changes complement, and provide enhancements to, a number of other market changes that have either already been made, are pending implementation, or are planned to be explored in the near-term through the stakeholder processes.[20] The Tariff changes to implement the NEPOOL Proposal are contained in Sections I.2.2, III.2.7A and III.13.7 to Market Rule 1. As described further herein, NEPOOL supports addressing the real-time price formation and operational incentives identified by ISO-NE in its October 2012 FCM PI White Paper[21] in the Real-Time markets for Energy and Ancillary Services. Further, NEPOOL supports improving the FCM by making incremental changes, rather than fundamentally redefining the capacity product procured in the FCM.

A. Background: Relationship Between the Capacity Market and Shortage Pricing

Early in 2013, several New England generators asked Dr. David Patton, ISO-NE's External Market Monitor, to respond to a series of questions concerning ISO-NE's proposal.[22] In

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[18] *See* ISO-NE's Strategic Planning – Risk Summary, June 14, 2011, *available at* http://www.iso-ne.com/committees/comm_wkgrps/strategic_planning_discussion/materials/4_spd_risk_summary_may_2011.pdf.

[19] Fuller Testimony at p. 2.

[20] Bowie Testimony at pp. 4-5.

[21] *See* FCM PI White Paper.

[22] Memo from Dominion, Entergy, NextEra, PSEG and TransCanada to David B. Patton, Ph.D., Potomac Economics (dated Dec. 21, 2012), *available at* http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_nepool_mp_memo_12_21_12.doc.

his letter dated February 19, 2013, Dr. Patton provided his opinions on ISO-NE's proposal and the areas addressed by the questions.[23] One question asked Dr. Patton to opine on the differences between shortage pricing in Real-Time and ISO-NE's proposed "performance incentives" proposal. Dr. Patton explained that, if it is true that the markets do not provide adequate incentives for units to be available during shortages in Real-Time, then it would be because: (1) Real-Time prices during shortages are too low (i.e., RCPF values are too low)[24] and/or (2) ISO-NE takes reliability actions that eliminate efficient Real-Time pricing to reflect actual shortages.[25]

Citing Dr. Patton's response, ISO-NE explained thereafter that increasing the energy price in Real-Time could provide similar incentives to the incentives that may be provided for resources under its "performance incentives" proposal and concluded that "the incentives created by high prices during scarcity conditions are an effective means to motivate resource performance and availability."[26] ISO-NE went on to explain that one way to create these enhanced incentives in the New England markets is to set higher Reserve Constraint Penalty Factor ("RCPF") values during periods when there are shortages of operating reserves.[27]

In other words, in the opinions of Dr. Patton and ISO-NE, *higher RCPF values and the 'PI' approach would have similar effects on suppliers' incentives with respect to Real-Time performance and availability*.[28] Importantly though, while the higher RCPF values have a similar effect to ISO-NE's proposed approach, the risks associated with each approach differ greatly. While ISO-NE agrees with Dr. Patton's central observation that "the FCM Performance Incentives design is comparable, with respect to suppliers' incentives, to increasing Real-Time

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[23] David B. Patton, Ph.D., Potomac Economics (dated Feb. 19, 2013), *Questions on ISO New England Performance Incentives Proposal* ("Patton Letter"), *available at* http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_potomac_economics_memo_02_19_13.pdf.

[24] Patton Letter at p. 4. "The value (the RCPF) of 30-minute reserves is now $500/MWh. Hence, energy prices during modest shortages would be expected to range from $500 to $1000/MWh."

[25] *Id.* "If high-cost actions are taken outside the market to prevent a shortage, the prices will reflect neither the shortage nor the high-cost action." Dr. Patton stated that the "Real-Time price may not always fully reflect the value of energy due to the effects of the ISO's reliability actions or the fact that the value of reserves (i.e., the demand curve values that set price during shortages) is not set high enough to reflect the full expected value of foregone consumption."

[26] ISO-NE memorandum from Robert Ethier, Ph.D., Vice President, Market Development to NEPOOL Markets Committee (dated Mar. 15, 2013) at p. 1, *available at* http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_iso_memo_03_15_13.pdf.

[27] *Id.*

[28] *Id.* at p. 2. ISO-NE admits that "RCPF values serve several purposes, including facilitating automatic (Real-Time) redispatch of generation resources to avoid reserve shortages."

energy and reserve prices during reserve shortages" (or setting higher RCPF values),[29] through penalties and payments in the long-term capacity market the ISO-NE Proposal seeks instead to effectively mimic such incentives. In doing so, the ISO-NE Proposal strays from a more conventional shortage pricing structure and seeks fundamental changes to New England's capacity market, radically departing from the intended design of the FCM and all other North American electric market designs.

NEPOOL through its alternative proposal takes the more direct and broadly-supported approach of improving the incentives in the Real-Time, hourly markets by setting higher RCPF values during periods of reserve deficiencies. In addition, while retaining the fundamental structure for FCM, the NEPOOL Proposal improves the 'availability' metric in the FCM by replacing the current mechanism that only measures resource availability during random Shortage Events with an EFORp construct that would measure capacity resources' availability during high peak hours in the summer and winter months, corresponding to the hours when the system peak demand is most likely to approach, or even exceed, the forecasted peak load upon which the Installed Capacity Requirement is based.

B. Energy/Ancillary Market Changes

As indicated, to help address economic and operational inefficiencies in the Real-Time energy and reserve markets, the NEPOOL Proposal revises Tariff provisions to change the current RCPF system-wide value for Thirty-Minute Operating Reserves ("TMOR") and Ten-Minute Non-Spinning Reserves ("TMNSR") (the "RCPF Changes"). Specifically, the RCPF Changes will increase the current system-wide RCPF values for the TMOR product from $500/MWh to $1,000/MWh and for the TMNSR product from $850/MWh to $1,500/MWh.[30] These increases, reflected in Section III.2.7A of the Tariff, would ensure that all resources offered in the energy market are available to the dispatch software to: (1) maintain adequate reserves on the system; (2) allow resulting prices to provide a better indication of scarcity conditions; and (3) provide increased real-time incentives for availability and production in direct and immediate response to regional energy and reserve needs. These signals also provide a direct response to the concerns that ISO-NE identified in its October 2012 FCM PI White Paper and subsequent materials.[31]

The RCPFs serve as a price cap for the Real-Time price of each reserve product and there are separate RCPF values for each reserve product and for system-wide and local requirements.[32] As explained by ISO-NE's External Market Monitor:

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[29] *Id.*

[30] Fuller Testimony at pp. 6-7.

[31] Fuller Testimony at pp. 10-11; *see also* FCM PI White Paper.

[32] Fuller Testimony at p. 6. ISO-NE maintains reserve requirements for the following reserve products: Ten Minute Spinning Reserves ("TMSR"), Ten Minute Non-Spinning Reserves ("TMNSR"), and TMOR, and for each respective reserve product, there is a separate RCPF value. The TMSR RCPF is

> The RCPF levels are "important because they determine how the Real-Time market responds under tight operating conditions. If RCPFs are not sufficiently high, the model may not schedule all available resources to meet the reliability requirements and Real-Time clearing prices may not adequately reflect the market conditions when this occurs. In such cases, the operator will likely intervene to maintain reserves and significantly affect market clearing prices in the process. Hence, it is important to evaluate the RCPF levels periodically to determine whether modifications are warranted."[33]

The use of RCPFs to set efficient prices during operating reserve shortages has been endorsed by the Commission.[34]

The NEPOOL Proposal reflects the overwhelmingly preferred direction by Market Participants to enhance performance incentives in the New England markets by focusing on changes to address Real-Time price formation issues in the hourly markets (energy/reserve markets), rather than to "mimic" such Real-Time incentives with a fundamentally-modified capacity market product as proposed by ISO-NE. The new RCPF levels proposed by NEPOOL represent a positive step in this direction as they would establish more efficient price signals to the marketplace during reserve shortages, providing increased incentives for Real-Time availability and production in response to ISO-NE's energy and reserve needs during high stress conditions, driving better consumption, production and hedging decisions, and creating transparent and appropriate market and dispatch incentives to both load and supply.[35]

The higher RCPF levels will also: (1) ensure that all Demand Response resources (and all resources with offer prices above $500/MWh) would be fully available to ISO-NE for Real-Time dispatch in order to maintain operating reserve levels; (2) attract more reserve resources to the market, which will be especially important as intermittent resources are further integrated into the system; (3) better incent Market Participants to schedule in the Day-Ahead Energy Market and pursue other hedging activities with commercial counter-parties to limit and manage their

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$50/MWh, the TMNSR RCPF is $850/MWh, the system TMOR RCPF is $500/MWh, and the local TMOR RCPF is $250/MWh (*See* Section III.2.7A of current ISO-NE Tariff).

[33] 2011 Assessment of the ISO New England Electricity Markets, prepared by the External Market Monitor for ISO-NE (Potomac Economics), dated June 2012, at p. 68, *available at* http://www.potomaceconomics.com/uploads/isone_reports/ISONE_2011_EMMU_Report_Final_June_2012.pdf; *see also generally* Fuller Testimony.

[34] *Wholesale Competition in Regions with Organized Elec. Markets*, Order No. 719, 73 Fed. Reg. p. 64,100 (Oct., 2008), FERC Stats. & Regs. ¶ 31,281 (2008) (Order No. 719); *see also ISO New England Inc. and New England Power Pool*, Docket No. ER12-1314-000 (May 21, 2012) (unpublished letter order accepting revisions to increase the system-wide Reserve Constraint Penalty Factor for Thirty-Minute Operating Reserves).

[35] Fuller Testimony at pp. 7-8; Forshaw Testimony at pp. 7-8; Katz Testimony at pp. 6-7.

exposure to Real-Time prices; and (4) decrease the amount of total Net Commitment Period Compensation ("NCPC") incurred.[36]

C. FCM Changes

1. Overview of FCM

ISO-NE and New England stakeholders have been working over the last several years to improve the current FCM to better achieve the resource adequacy objectives intended for that Market. Under the FCM, ISO-NE conducts periodic auctions for the capacity it requires to satisfy the Net Installed Capacity Requirement or Net ICR. The ICR is set approximately three and a half years in advance of the applicable Capacity Commitment Period and defines the amount of capacity resources to be purchased in the Forward Capacity Auction ("FCA") for that Capacity Commitment Period. Recognizing that no resource is available 100% of the time, the calculation of ICR includes assumptions of availability based on actual historic performance of all existing resources. Existing Capacity Resources are deemed to be in the auction as a price taker unless they submit a price-based de-list bid or seek to retire from the market altogether. New Capacity Resources offer in the FCA to provide capacity based upon long-run average costs and are subject to Offer Review Trigger Prices. Resources that clear in the FCA receive Capacity Supply Obligations ("CSOs").[37]

One of the fundamental issues in this proceeding is the nature of the obligations that would be held by resources as a consequence of taking on a CSO. Under the current arrangements, CSOs are to be paid the price at which capacity cleared in the applicable Forward Capacity Auction (or reconfiguration auction or the bilateral transaction prices), with that amount subject to two potential reductions. The first is a deduction for Peak Energy Rents, which are not at issue here. The second deduction, which *is* at issue in this proceeding, is a deduction that occurs if a resource is not available (as "available" is defined in the Tariff) during a Shortage Event.[38] In this proceeding, both NEPOOL and ISO-NE propose to replace the Shortage Event mechanism for measuring the 'performance' or availability of capacity resources with a newly proposed metric. As described further in their respective filings and supporting materials, the two entities propose markedly different approaches for this performance mechanism. An overview of NEPOOL's proposed capacity resource availability metric is described below with further detail provided in supporting testimony and reflected in NEPOOL-approved Tariff language.

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[36] Fuller Testimony at pp. 8-10.

[37] *See generally* Section III.13 to Market Rule 1 (the "Forward Capacity Market Rules").

[38] The definition of "Shortage Event" was recently expanded to include more circumstances than previously defined. *See ISO New England Inc. and New England Power Pool*, 145 FERC ¶ 61,095 (Nov. 1, 2013).

2. Description and Rationale for FCM Changes

The NEPOOL Proposal replaces the Shortage Event mechanism with a new performance mechanism, based on an "EFORp" metric. Instead of measuring performance only during Shortage Events (i.e, random reserve deficiency events when RCPFs are triggered), NEPOOL's proposed mechanism would measure performance based on availability during all "EFORp Hours."[39] EFORp Hours would be defined as four afternoon hours on summer weekdays and two evening hours on winter weekdays,[40] corresponding to hours when system load is expected to be highest, suggesting that the adequacy of overall supply would be most critical.[41]

The Commission has already approved evaluation metrics that measure resource availability during pre-defined peak hours, including in California, PJM Interconnection, Inc. ("PJM"), and New York.[42] As an example, a group of stakeholders in California advocated for the adoption of an EFORp performance metric because it would "provide … incentive to maximize availability during peak hours."[43] The Commission later accepted a reiteration of this proposal, finding that performance standards that evaluate a supplier's capacity payments based on past performance during certain hours was just and reasonable.[44] In PJM, the Commission has found that region's EFORp performance metric to be a just and reasonable way to evaluate performance in a capacity market.[45] Accordingly, the Commission has not only approved the concept of measuring the performance of capacity resources based on defined peak-hour periods, as NEPOOL is currently proposing, but specific programs in other RTOs across the country.

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[39] *See* Section III.13.7.1.1.3; Fuller Testimony at pp. 11-13.

[40] "EFORp Hours" are defined as "the hours ending 1400 through 1700, Monday through Friday on non-holidays during the months of June, July, and August and hours ending 1800 through 1900, Monday through Friday on non-holidays during the months of December and January." *See* Fuller Testimony at p. 13. This definition matches the current tariff definition of "Demand Resource On-Peak Hours" in Section I of the ISO-NE Tariff.

[41] Fuller Testimony at pp. 13, 18-19. NEPOOL recognizes that there also are other times in Real-Time operations when energy and reserve production are critical to reliability. Its proposed changes address these concerns directly as well through improved Real-Time prices.

[42] *See, e.g., California Independent System Operator Corporation ("CAISO")*, 127 FERC ¶ 61,298 (2009) (June 2009 Order); *PJM Interconnection, LLC ("PJM")*, 126 FERC ¶ 61,275 (2009) (March 2009 Order); *New York Independent System Operator, Inc. ("NYISO")*, 145 FERC ¶ 61,192 (2013) (December 2013 Order).

[43] *Proposal for forward capacity market in California*, submitted by FPL Energy Project Management, NRG Energy, Inc., Reliant Energy, Inc., San Diego Gas & Electric Company, Southern California Edison Company (Aug. 3, 2007, at p. 8, *available at* http://www.caiso.com/1c32/1c32ba981c0e0.pdf.

[44] June 2009 Order at P 25.

[45] *PES v. PJM*, 128 FERC ¶ 61,051 (2009) (July 2009 Order).

As an incentive to make capacity resources available during these critical peak-hour periods, NEPOOL's proposed EFORp construct at the end of each Capacity Commitment Period would impose charges or provide credits to resources based on their availability in all EFORp Hours during that Capacity Commitment Period. Using the current definition of availability as set forth in Section III.13.7.1.1.3, NEPOOL's proposed EFORp construct would calculate an availability score for each capacity resource for each EFORp Hour.[46] ISO-NE would then accumulate and average the hourly scores to calculate an annual "EFORp Hour Availability Score" for each capacity resource.[47] The EFORp Hour Availability Score during any Capacity Commitment Period would be compared to the resource's average EFORp Hour Availability Score during the historical 5-year period used to establish ICR.[48] Based on that Score, the resource would be paid or charged deviations at 150% of the FCA Clearing Price, subject to annual caps.[49] ISO-NE would aggregate all credits to be paid to resources with better-than-historic Availability Scores, and all charges to be collected from resources with worse-than-historic Availability Scores. The net of charges and credits would be refunded or charged to load based on the Capacity Load Obligation of each Load Serving Entity. Beyond the changes described herein, all other currently effective FCM provisions would remain in place (including the Peak Energy Rent provisions).[50] The mechanics of NEPOOL's proposed EFORp construct are more fully detailed in the redlined Tariff language as well as in the Fuller Testimony, which are included as attachments to this transmittal letter.[51]

Since the EFORp Hours correspond to hours when system load is expected to be highest, and thus the adequacy of overall supply would be most critical, the proposed mechanism provides a meaningful incremental incentive for all capacity resources to be highly available during such hours.[52] It also calibrates the overall cost of capacity experienced by load to the amount of availability delivered by capacity resources.[53] If the overall availability of capacity resources during EFORp Hours is higher than during the historical period used in establishing the ICR, while the amount of purchased capacity remains unchanged, capacity resources would be effectively delivering higher reliability than reflected in the ICR, which load would pay for

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[46] Fuller Testimony at p. 14.

[47] *Id*.

[48] *Id*. As described further in this filing letter, the total amount of MW of resources required to be procured in the FCA, to satisfy the system's adequacy requirements of the Net ICR, is based on the forecasted load for the future Capacity Commitment Period and the historic availability of the existing fleet of resources.

[49] *See* NEPOOL-proposed Section III.13.7.2.7.1.2 (Attachments N-2b and N-2c); *see also* Fuller Testimony at p. 14-15.

[50] Fuller Testimony at p. 18.

[51] *See* NEPOOL-approved Tariff sheets (Attachments N-2b and N-2c); Fuller Testimony at pp. 11-18.

[52] Fuller Testimony at p. 18.

[53] *Id*.

with a small surcharge (i.e., reflecting a higher overall capacity price). Likewise, if there is a lower overall availability, again the total purchased capacity would be unchanged but load would not have received all the reliability it paid for and would receive a credit to reflect the lowered availability (i.e., effectively a lower overall capacity price).[54]

In summary, NEPOOL's proposed EFORp metric is designed to complement the RCPF changes discussed above, to measure the availability of resources that have committed to provide resource adequacy in a pre-defined set of hours each year when resource adequacy is most at risk. With the capability to assess whether resources with CSOs are available at expected levels during critical peak periods, the proposed mechanism ultimately enhances the incentive for all resources with CSOs, whether scheduled in the Day-Ahead Market or not, to be available to ISO-NE for commitment and dispatch (consistent with their physical characteristics and capabilities) when they are most likely to be needed and provides load with greater assurance that their payments for capacity will help maintain peak-hour period reliability.[55]

V. THE NEPOOL PROPOSAL IS PREFERABLE TO THE ISO-NE PROPOSAL

While NEPOOL Participants generally agree with ISO-NE that the existing market pricing signals need to be stronger and that more economic incentives need to be provided to improve the performance of resources when they are most needed, virtually all of NEPOOL views the ISO-NE Proposal, as considered by the Participants Committee, as the wrong approach to try to achieve that objective.[56] The NEPOOL Proposal reflects a preferred approach that better addresses the concerns that are motivating changes to the New England markets through incremental change to the reserve and capacity markets rather than a major and unnecessary redefinition of the FCM product.[57]

A. Dr. Richard Tabors, NEPOOL's Consultant, Has Identified Fundamental Flaws With The Construct of the ISO-NE Proposal

At NEPOOL's request, Richard D. Tabors has reviewed the ISO-NE Proposal and provided his assessment in a report (the "Tabors Report"), which is included as part of Attachment N-1f to this transmittal letter. Dr. Tabors explains through a number of examples why he concludes that the ISO-NE Proposal has fundamental flaws, is inconsistent with market design principles that characterize an efficient and competitive market, and results in unjust and unreasonable outcomes.[58]

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[54] *Id*. at p. 17.

[55] *Id*. at pp. 18-19.

[56] *See* Forshaw Testimony at pp. 4-7.

[57] *Id.* at pp. 4-6.

[58] *See generally* Tabors Report.

The Tabors Report identifies the following flaws with ISO-NE's proposal: [59]

- First, the ISO-NE Proposal assumes that a CSO's forward financial position is only a share of the system's energy and reserve requirements during a "Capacity Scarcity Condition". Dr. Tabors walks through a series of examples that produce results demonstrating that this assumption is arbitrary, unjustified and inconsistent with sound capacity market design.[60]

- Second, the outcome of the ISO-NE Proposal would yield incremental financial rewards to generators for doing nothing more than what they were committed to do given their CSOs, as well substantial penalties to generators in some cases for performing precisely as reflected in their operating parameters, leading to a "massive redistribution of revenues among generators."[61]

- Third, the ISO-NE Proposal causes redistribution of revenues in a way that has little relation to cost causation. As Dr. Tabors observes, when a "Capacity Scarcity Condition" is experienced, a generator would receive or be penalized approximately an equivalent amount whether the scarcity is 1 kW, 1 MW or 100 MW.[62]

In the opinion of Dr. Tabors, and as supported by specific illustrative examples in the Tabors Report, the ISO-NE Proposal would not achieve ISO-NE's stated objectives, would result in compensation to generators in excess of what an efficient market would provide, would make and extract "performance payments" for reasons that are inconsistent with the realities of actual system operations and decision-making, and would favor certain resources over other types of resources.[63] In his view, implementation of the ISO-NE Proposal as constructed would result in payments and penalties that would not be just or reasonable.

B. The NEPOOL Proposal Focuses Change Where It Is Needed In The Hourly Markets, While Keeping FCM Consistent With Its Original Intent As A Resource Adequacy Market

The energy and ancillary reserve markets, not the capacity market, is the better place to make Market Rule changes to ensure the energy and operating reserve production by resources when needed.[64] The ISO-NE Proposal, however, seeks a fundamental and unnecessary

[59] *Id*.

[60] *Id.* at pp. 7-8.

[61] *Id*.

[62] *Id*. at p. 8.

[63] *See generally* Tabors Report.

[64] *See generally* Bowie Testimony; Forshaw Testimony at pp. 4, 7-8; Tabors Report at p. 2.

redefinition of the capacity product such that it would transform FCM into an operational performance market for capacity resources rather than the resource adequacy capacity market it was intended to be.[65] As described in this Section V, the NEPOOL Proposal instead seeks to build upon and emphasize changes already underway in the energy and reserve markets and to avoid a major and unnecessary redesign of the capacity product.

1. FCM As A Resource Adequacy Market

Dating back to the contemplation of accepting ISO-NE's proposed locational installed capacity ("LICAP') mechanism, and litigation stemming from that proposal, the Commission expressed a need to find a mechanism to "provide adequate assurances that necessary electric generation capacity or reliability would be provided."[66] Following oral argument, and without an alternative to LICAP, the Commission noted its concern about resource adequacy in New England – and the need for a capacity market to address this concern effectively.[67] As the Commission stated: "[a] capacity market mechanism should both provide adequate revenues to appropriately compensate (and keep in service where needed for reliability) existing capacity resources and provide incentive for the development of new infrastructure in areas where it is most needed."[68]

In furtherance of those goals, the Commission approved as just and reasonable, a Settlement Agreement that established the FCM. The new FCM focused on resource adequacy by establishing capacity auctions where "[t]he amount of capacity procured will be that amount required to maintain the installed capacity requirement".[69] As accepted by the Commission as just and reasonable, Market Rule 1 requires ISO-NE to:

> determine the Installed Capacity Requirement[70] such that the probability of disconnecting non-interruptible customers due to resource deficiency, on the average, will be no more than once in ten years. Compliance *with this resource adequacy planning criterion* shall be evaluated probabilistically, such that the Loss of Load Expectation ("LOLE") of disconnecting non-interruptible customers due to resource deficiencies shall be no more than 0.1 day each year.[71]

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[65] *Id*.; Katz Testimony at pp. 2-4.

[66] *Devon Power LLC*, 115 FERC ¶ 61,340 (2006) ("June 16 Order").

[67] *Devon Power LLC*, 113 FERC ¶ 61,075 (2005) ("October 2005 Order").

[68] *Devon Power LLC*, 107 FERC ¶ 61,240 (2004) ("June 2 Order").

[69] June 16 Order at P 17.

[70] "Installed Capacity Requirement" means the level of capacity required to meet the reliability requirements defined for the New England Control Area, as described in Section III.12 of Market Rule 1.

[71] *See* ISO-NE Market Rule 1, Calculation of Capacity Requirements, § III.12.1 (emphasis added).

Further, the ISO-NE Tariff defines a "Capacity Supply Obligation" as an "obligation to provide capacity from a resource, or a portion thereof, to satisfy a portion of the Installed Capacity Requirement that is acquired through a Forward Capacity Auction in accordance with Section III.13.2, a reconfiguration auction in accordance with Section III.13.4, or a Capacity Supply Obligation Bilateral in accordance with Section III.13.5.1 of Market Rule 1."[72]

In the end, the final Settlement Agreement approved by the Commission was a culmination of different design elements with one goal: to design an FCM that "integrates elements of these [alternative] market designs and is intended to help assure resource adequacy and reliability for New England at just and reasonable rates."[73]

2. Capacity Markets in Other RTOs

Consistent with the FCM in New England, the definition of capacity as a resource adequacy product has also been accepted by the Commission as just and reasonable in other RTO/ISO centralized capacity markets.[74] PJM uses such a definition of capacity for its market.[75] Consistent with this resource adequacy approach to capacity, Section 1.3, or Definition and Purpose of Reliability Pricing Model, unequivocally declares that "[t]he Reliability Pricing Model is the PJM resource adequacy construct that ensures that adequate Capacity Resources … will be made available to provide reliable service to loads within the PJM Region."[76] Further, Section 2.1 of the PJM Capacity Market Manual, entitled Overview of Resource Adequacy, states that the "purpose of PJM RPM resource adequacy is to determine the amount of capacity resources that can be required to serve the forecast load that satisfies the PJM reliability criterion."[77] Similarly, the New York Independent System Operator ("NYISO") also uses a resource adequacy construct in its capacity market.[78] NYISO's capacity market has a standard for resource adequacy that requires system planners to calculate an installed capacity requirement in MW for the Capability Year.[79] The Commission has also approved as just and

[72] *See* Section I.2.2 (Definitions) of ISO-NE Tariff.

[73] *Explanatory Statement in Support of Settlement Agreement of Settling Parties*, Docket Nos. ER03-563-000, -030, and -055 (Mar. 6, 2006).

[74] *See* ISO-NE Market Rule 1, Standard Market Design, § III.13.1.1; PJM, Manual 18 PJM Capacity Market, § 1.2.2; NYISO, Manual 4: Installed Capacity Manual, § 4.2.2.

[75] *PJM Interconnection*, LLC, 137 FERC ¶ 61,108 (2011).

[76] PJM, Manual 18 PJM Capacity Market, § 1.2.

[77] *Id*. at § 2.1.

[78] NYISO, Manual 4: Installed Capacity Manual, §§ 2.3, 2.4. Like New England, NYISO's resource adequacy standard (or "NPCC Resource Adequacy Standard") requires "the probability of disconnecting firm Load due to a Resource deficiency (Loss of Load Expectancy, or "LOLE") to be, on the average, no more than once in ten years after due allowance for: Scheduled and forced outages and scheduled and forced deratings; Assistance over interconnections with neighboring Control Areas and regions; and Capacity and/or Load relief from available operating procedures."

[79] *Id.*

reasonable a proposal by the California Independent System Operator Corporation ("CAISO"), declaring that CAISO's proposed capacity construct comported with the standard capacity product, or resource adequacy.[80]

The Commission recently reinforced the resource adequacy nature of the capacity product in RTOs across the nation.[81] In a report issued in preparation for the September 25, 2013 Commission Technical Conference on Centralized Capacity Markets in RTOs/ISOs (the "September Technical Conference"), Commission Staff explained that the capacity product currently consists of: "[r]esources available to generate energy or reduce load when needed"[82] and that the function of a capacity product is to "meet the planning reserve margin at just and reasonable rates."[83] The Commission has expressed that the current product in New England, NYISO, and PJM does so.[84] Put another way, the capacity product is a basic product, "*intended simply to meet the planning reserve margin*."[85]

During the Commission's September Technical Conference, panelists described the current capacity product as: "a single capacity product focused on meeting basic resource adequacy requirements, with any operational attributes needed to meet system requirements procured in the energy and ancillary services markets."[86] Consistent with this view, the Commission has made it clear that short-term operating reserve concerns do *not* currently fit within the generally accepted capacity definition. Put succinctly: "[w]hile the centralized capacity markets include a locational component to account for transmission constraints and ensure that capacity is available and deliverable to load, *other operational considerations are generally not considered when defining what types of capacity the market will procure*."[87] In fact, one of the topics of the September Technical Conference was to evaluate whether capacity products should be modified to reflect various operational characteristics.[88] Thus, there is no question that current capacity product definitions and markets, already approved as just and reasonable, focus primarily on resource adequacy – not Real-Time production of energy or operating reserves.

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[80] *See, e.g., CAISO*, 127 FERC ¶ 61,298 (2009); *CAISO*, 141 FERC ¶ 61,135 (2012).

[81] *Centralized Capacity Market Design Elements, Commission Staff Report*, in FERC Docket No. AD13-7-000 (Aug. 23, 2013) ("Commission Staff Report"). The Commission Staff Report noted that "all three eastern RTO/ISO centralized capacity markets define the capacity product in a generic way, generally allowing resources available to generate energy or reduce load when needed to compete solely on price to become a capacity resource." Commission Staff Report at p. 15.

[82] Commission Staff Report at p. 15.

[83] *Id.*

[84] *Id.*

[85] *Id.* at p. 18.

[86] *Notice Allowing Post-Technical Conference Comments*, Docket No. AD13-7-000 (2013).

[87] Commission Staff Report at p. 16 (emphasis added).

[88] *Id.*; *Notice Allowing Post-Technical Conference Comments*, Docket No. AD13-7-000 (2013).

3. ISO-NE's Proposal to Fundamentally Redefine the Capacity Product in New England is Inconsistent with Long-Standing Commission Precedent and Unnecessary

While NEPOOL's proposal based on the current resource adequacy capacity product is consistent with long-standing Commission precedent, the ISO-NE Proposal reflects a fundamental departure from such precedent. Notwithstanding the underlying basis for FCM and ICR, ISO-NE now proposes to make capacity payments heavily dependent on whether a resource actually produces energy or operating reserves in Real-Time during "Capacity Scarcity Conditions". Those scarcity conditions cannot be reasonably anticipated in advance. Nor can the performance of all but a handful of generators, as discussed below. As a result, the ISO-NE Proposal will effectively eliminate any ability of many resources reasonably to rely on capacity revenues to support investment.[89]

With implementation of reforms to the Energy and Ancillary Services markets —those made in the recent past, those approved and to be implemented, and those included in the NEPOOL Proposal — a redesigned capacity product as dramatic as ISO-NE is proposing is unnecessary and unjustified.[90] Those Energy and Ancillary Services market reforms include: modifications to the bidding/offer deadlines in the Day-Ahead Energy Market;[91] changes to permit bidders increased energy offer flexibility, including the opportunity to make hourly intra-day re-offers and to offer energy at negative prices;[92] modifications to permit the use of a Reserve Constraint Penalty Factor of $250/MWh for the replacement reserve requirement in place of normal supplemental commitment;[93] changes to authorize ISO-NE's procurement of additional ten-minute non-spinning reserves in the Forward Reserve Market;[94] changes to generating resource auditing requirements and procedures;[95] changes to the Forward Reserve Market incentives;[96] market mitigation modifications to allow dual-fuel units to take better

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[89] *See generally* Fuller Testimony.

[90] Bowie Testimony at pp. 4-5; Forshaw Testimony at pp. 4-6.

[91] *ISO New England Inc. and New England Power Pool*, 143 FERC ¶ 61,065 (Apr. 24, 2013).

[92] *ISO New England Inc. and New England Power Pool*, 145 FERC ¶ 61,014 (Oct. 3, 2013).

[93] *ISO New England Inc. and New England Power Pool*, Docket No. ER13-1736-000 (Aug. 15, 2013) (unpublished letter order accepting revisions to establish a Reserve Constraint Penalty Factor for the Replacement Reserve Requirement).

[94] *ISO New England Inc. and New England Power Pool*, Docket No. ER13-465-000 (Feb. 8, 2013) (unpublished letter order accepting revisions to Forward Reserve Market Rules to permit the procurement of additional Ten-Minute Non-Spinning Reserve).

[95] *ISO New England Inc. and New England Power Pool*, 142 FERC ¶ 61,024 (Jan. 9, 2013).

[96] *ISO New England Inc. and New England Power Pool*, Docket No. ER13-1733-000 (Aug. 15, 2013) (unpublished letter order accepting revisions concerning Forward Reserve Market incentives).

advantage of fuel switching capability;[97] and expanded authority for ISO-NE to communicate with natural gas pipeline operators.[98] And to the extent confusion over obligations under existing Tariff provisions was adversely affecting performance, that too has recently been addressed.[99] All of these changes combined with the additional changes in the NEPOOL Proposal, should be implemented and given a chance to address resource performance issues before the current capacity product is abandoned in favor of a new unproven concept that moves away from the resource adequacy construct.[100]

In fact, ISO-NE clearly acknowledges that the changes specified above are important market and operational improvements that will help to address strategic risks. ISO-NE recently informed stakeholders that it has decided not to move forward with a specific supplemental reliability program for Winter 2014-15 (or subsequent winter periods) precisely because of these significant operating and market enhancements, including changes to the Day-Ahead Energy Market schedule, the use of replacement reserves, increases in ten-minute reserve requirements, and improved auditing rules and additional changes that are pending implementation (i.e., the energy market offer flexibility and associated Net Commitment Period Compensation ("NCPC") payment changes).[101] As stated by ISO-NE at the November 2013 Markets Committee meeting, "ISO and Market Participants have limited experience with these changes and have not yet gone through an entire winter with the Winter 2013-14 changes in place."[102]

In sum, the NEPOOL Proposal takes a far more measured approach to ensuring performance of capacity resources when they are most needed.[103] The NEPOOL Proposal will allow analysis and careful adjustment of those improvements already underway in the energy and reserve markets while avoiding major disruption of an existing market. The NEPOOL Proposal treats installed capacity as it was intended, capacity available to meet the resource

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[97] *ISO New England Inc. and New England Power Pool*, Docket No. ER14-707-000 (Jan. 15, 2014) (unpublished letter order accepting relocation of dual-fuel switching provisions).

[98] *See* Pipeline Information-Sharing Changes, *ISO New England Inc. and New England Power Pool Participants Committee*, Docket No. ER14-970-000 (filed Jan. 10, 2014).

[99] *New England Power Generators Assoc., Inc. v. ISO New England Inc.*, 144 FERC ¶ 61,157 (2013), *order on reh'g*, 145 FERC ¶ 61,206 (Dec. 6, 2013). Commission-issued clarifications in response to the NEPGA Complaint concerning the 'performance' obligations of resources with Capacity Supply Obligations.

[100] Bowie Testimony at pp. 4-6; Forshaw Testimony at pp. 7-8.

[101] *See* ISO-NE presentation to NEPOOL Markets Committee at its Nov. 13-14, 2013 meeting, "Winter 2014-15 Solutions Update", *available at* http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a11_iso_presentation_11_13_13.ppt.

[102] *Id*. at p. 2.

[103] Katz Testimony at p. 2, 5-8; Forshaw Testimony at p. 7; Tabors Report at pp. 2, 11-12.

adequacy criterion of loss of load no more than one day in ten years.[104] Real-Time performance and energy delivery issues are appropriately addressed through the Real-Time Energy and Ancillary Services markets, and the NEPOOL Proposal seeks to improve the financial incentives through more efficient price signals in those hourly markets.[105]

C. The NEPOOL Proposal Better Balances Risks with Rewards

ISO-NE's untested and unproven theoretical proposal will impose significantly increased risks on capacity suppliers and large additional expenses on electricity consumers in New England.[106] With increased risks of large penalties, especially on the many resources that are neither fast-start nor baseload capable units, the ISO-NE Proposal may also exacerbate reliability issues by hastening the retirement of units that would otherwise be available to ensure resource adequacy.[107] In the alternative NEPOOL Proposal, NEPOOL seeks incremental changes that complement and enhance other recently made or pending market initiatives, rather than fundamentally redefining the capacity product. In doing so, the NEPOOL Proposal better balances risks with rewards by respecting commercial realities over economic theory.

1. Increased Penalties and Higher Costs Under the ISO-NE Proposal

The ISO-NE Proposal would inappropriately impose penalties on capacity resources for failure to produce energy or operating reserves during a "Capacity Scarcity Condition" when the reason for non-performance is beyond the control of those resources.[108] As an example, under the ISO-NE Proposal, transmission outages that prevent a capacity resource from producing energy or operating reserves during a "Capacity Scarcity Condition" would result in FCM penalties.[109] Similarly, capacity resources could be exposed to penalties for non-delivery even when a resource is following ISO-NE dispatch instructions or an ISO-approved planned

[104] Fuller Testimony at p. 4 ("This [NEPOOL's] mechanism for measuring the availability of generating resources recognizes that the FCM is the market that was established to help ensure resource adequacy to meet the planning reliability criterion (i.e., the Installed Capacity Requirement or ICR). The ICR is based on projections of average resource availability, and not, as is inherent in the ISO-NE Proposal, the real-time production of energy or reserves.").

[105] *Id*. ("Increasing the value of these penalty factors will allow prices in the real-time energy and ancillary service markets to better reflect reserve scarcity when it occurs, leading to more efficient valuation of the products needed to balance supply and demand in real-time while protecting against contingency events. This in turn will lead to better incentives for real-time availability and performance of resources, and better information with which load-serving entities and end-use consumers of electricity can manage their consumption and commercial hedging activities."); Katz Testimony at pp. 6-8; Tabors Report at pp. 11-12.

[106] Katz Testimony at pp. 3-5, 6-8; Forshaw Testimony at pp. 6-7; Tabors Report at pp. 2, 10.

[107] Fuller Testimony at pp. 19-20; Forshaw Testimony at pp. 6-7.

[108] Bowie Testimony at pp. 6-7; Katz Testimony at pp. 3-5; Tabors Report at p. 9.

[109] Bowie Testimony at pp. 6-7; Tabors Report at p. 9.

maintenance outage.[110] These kinds of non-delivery are not avoidable through additional investment in equipment, and thus the penalties serve no purpose but to raise revenues to compensate other resources, whether they hold CSOs or not.[111]

The following are a few additional examples where a resource could be penalized in circumstances that are virtually impossible to predict or prepare for and/or for reasons beyond a resource's control:

- It is a hot summer day and a solar generating capacity resource has been providing energy to the system and performing as expected. Then just after sunset, a "Capacity Scarcity Condition" is triggered by, for example, a large baseload unit experiencing a forced outage or transformer malfunction, and that same solar resource that had performed well all day long is off-line after sunset. Despite providing useful support to the system during a very hot summer day, this solar generating unit would be penalized under the ISO-NE Proposal for a reason completely beyond its control. An analogous example would be a wind capacity resource that fails to generate during a "Capacity Scarcity Condition" because the winds just happen to not be blowing during the time that ISO-NE would be measuring its new definition of performance.

- Having received an ISO-approved planned maintenance schedule, a nuclear generating facility is off-line due to maintenance activities on a typical October afternoon. Suddenly, and without notice, a "Capacity Scarcity Condition" occurs due to a contingency somewhere on the system. Under the ISO-NE Proposal, capacity resources would be measured based on their delivery of energy or reserves during scarcity conditions. Even though that nuclear unit would have performed at 100% if it had been on-line, since it was undergoing an ISO-NE pre-approved maintenance outage at the time of the "Capacity Scarcity Condition", the resource is hit with large performance charges, notwithstanding that ISO-NE has approved it being off-line and had made other arrangements to ensure sufficient resources would be available to ensure Real-Time reliability.

- ISO-NE under-projects Day-Ahead energy needs resulting in Real-Time loads materially exceeding forecast. Under the ISO-NE Proposal, despite an inaccurate load forecast, certain capacity resources, whose operating parameters require a longer lead time to begin operations, without having

[110] Bowie Testimony at pp. 6-7, 9; Tabors Report at p. 9.

[111] *See generally* Tabors Report.

received a Day-Ahead commitment would still be subject to significant performance charges with all associated risk placed squarely on them.[112]

- ISO-NE dispatches a generator through the Operating Day and instructs it to shutdown as load begins declining. After that instructed shutdown has occurred, an operating resource experiences an unexpected outage, resulting in a "Capacity Scarcity Condition." The generator that followed ISO-NE's dispatch instructions will be penalized for not producing energy or operating reserves.[113]

The capacity resources subject to such unavoidable and virtually unhedgeable risks[114] will have no choice but to build a risk premium into their capacity offers, thereby raising the costs for all with only the hope of theoretical future benefits for the system. Additionally, penalizing capacity resources for not operating while on a planned maintenance outage for example will tend to create a perverse incentive for those resources to forestall or minimize planned maintenance, thereby putting into jeopardy system reliability.[115]

As indicated, because of the significant risk of increased, unpredictable and virtually unhedgeable penalties (and with no exemptions) new capacity suppliers subject to these increased risks under the ISO-NE Proposal are likely to build substantial risk premiums into their capacity offers[116], and existing capacity suppliers can be expected to de-list their resources to avoid receiving a CSO unless they receive a much higher capacity price.[117] These reactions will raise the cost of capacity for all 32,000MW plus of New England capacity resources. These expenses may prove to be entirely unnecessary because the performance issues that ISO-NE seeks to address are effectively addressed through reforms to the energy and ancillary services markets specified above.[118] More importantly, those reforms to the energy and ancillary service

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[112] One of the factors that caused a recent OP4 and Shortage Event on December 14, 2013 was an under-forecasting of load by over 600 MW. *See* "NEPOOL Participants Committee Report January 2014", Vamsi Chadalavada, Executive Vice President and Chief Operating Officer (Jan. 10, 2014), available at: http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/prtcpnts/mtrls/2014/jan102014/coo_report_jan_2014.pdf.) ISO-NE acknowledged that generator performance during that period was positive. Under the ISO-NE Proposal, thousands of MW of generating resources would have been subject to penalties during that event.

[113] Tabors Report at pp. 6-7.

[114] *Id*. at p. 9.

[115] Bowie Testimony at p. 6.

[116] Katz Testimony at pp. 3-4; Forshaw Testimony at pp. 6-7.

[117] *See generally* Fuller Testimony at pp. 19-20.

[118] Bowie Testimony at pp. 3-6. In addition to the market initiatives specified herein, at the January 14-15, 2014 NEPOOL Markets Committee meeting, ISO-NE and stakeholders commenced a

markets will better connect increased costs for load to the load that creates the greater demand. The ISO-NE Proposal does not result in that close tie between costs and beneficiaries.[119]

The NEPOOL Proposal does not contain the unreasonable penalties that would be imposed under the ISO-NE Proposal, thereby substantially reducing the risk premium that would be included in capacity offers to cover unpredictable risks.[120] Instead, the NEPOOL approach would make scarcity price signals more visible to both buyers and sellers, improving consumption incentives as well as production incentives, and creating a better environment for commercial contracting and hedging activities.[121] In addition, the NEPOOL Proposal maintains the character of the FCM product as a resource adequacy product, distinct from the Real-Time delivery of energy and/or operating reserves and in doing so each resource's FCM revenues are far less risky than under the ISO-NE Proposal, which will make it far less costly to maintain efficient existing capacity and to invest in new capacity in the region, and better sustain that investment over time.[122]

Further, there are no penalties for non-delivery due to transmission outages under the NEPOOL Proposal, which is appropriate because those outages are beyond the capacity resource's control.[123] There are no penalties for non-delivery due to ISO-approved planned maintenance, which is entirely appropriate given that the purpose of such maintenance is to help maintain reliability and is pre-approved by ISO-NE taking into consideration the reliability needs of the system in approving such unit outages.[124] Also, the NEPOOL Proposal does not penalize resources for following ISO-NE dispatch instructions, which again avoids sending the wrong signal to capacity resources that could be counterproductive to maintaining reliability.[125]

2. Unfair Treatment of Capacity Resources Under the ISO-NE Proposal

The ISO-NE Proposal does not treat all capacity resources comparably because it seeks to redefine capacity effectively as a product that can only be provided economically by baseload energy resources or fast-start peaking resources that can operate within 10 to 30 minutes of being called upon. Under ISO-NE's Proposal, when a "Capacity Scarcity Condition" is triggered, only resources that are producing energy and/or providing reserves at the time of and during the "Capacity Scarcity Condition" (as measured by ISO-NE in each five-minute interval) will be

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stakeholder process to explore the design and possible implementation of a sloped demand curve for the region's capacity market.

[119] Forshaw Testimony at pp. 6-7.

[120] Forshaw Testimony at pp. 6-7; Katz Testimony at pp. 6-8; Tabors Report at pp. 2, 11-12.

[121] Fuller Testimony at pp. 19; Katz Testimony at pp. 6-8.

[122] Fuller Testimony at pp. 19-20.

[123] Tabors Report at p. 9.

[124] *Id*.

[125] *Id*.

able to avoid significant penalties. In reality, the pool of capacity resources in New England includes thousands of MWs of valuable resources that are neither economically dispatched every single day, nor capable of providing fast starts. Many of these resources provide substantial reliability benefits to the region, but under the ISO-NE Proposal they could be perfectly maintained and respond perfectly to all ISO-NE dispatch instructions, yet still be subject to significant financial penalties because of ISO-NE's redefinition of the capacity product. While there is a need for baseload and fast-start resources, there is no economic rationale to procure that characteristic from every resource in an amount equal to the ICR.

Thus, if implemented, the ISO-NE Proposal is likely to hasten the retirement of units that would otherwise be available to ensure resource adequacy, which could exacerbate reliability problems, rather than solve them.[126] With respect to existing capacity resources, the elimination of the FCM floor price has already triggered a far higher level of active participation (i.e., the submittal of de-list bids and Non-Price Retirement Requests for FCA8) by existing resources, based on their economic outlook under the existing FCM construct.[127] The ISO-NE Proposal significantly ratchets up the risk of participation in the markets by existing capacity resources (and especially for legacy fossil units), increasing the likelihood of both priced de-list bids and Non-Price Retirement Requests as a risk-mitigation strategy.[128] With over 8,000MW "at risk" according to ISO-NE's 2012 retirement study, rather than solving reliability problems, the risky and untested ISO-NE Proposal will increase the reliability risk of retirements or the need for additional reliability-must run contracts which will increase existing problems with the FCM.[129] Reflecting a more measured and commercially-rational approach to addressing evolving regional challenges, the NEPOOL Proposal on the other hand avoids creating this problem.

VI. REQUESTED EFFECTIVE DATES

NEPOOL seeks the same effective dates for the NEPOOL Proposal as are sought by ISO-NE for its Proposal. Any changes to the Real-Time markets (i.e., the RCPF Changes), and changes needed to be understood at the time resources begin to submit qualification packages for the ninth Forward Capacity Auction ("FCA9"), are requested to become effective June 1, 2014. Changes that affect payments for resources that clear in FCA9 are requested to become effective on June 1, 2018. For all changes, NEPOOL joins ISO-NE in seeking a final Commission order on or before May 14, 2014.

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[126] Forshaw Testimony at p. 6-7.

[127] Fuller Testimony at p. 20; Forshaw Testimony at p. 6.

[128] Fuller Testimony at p. 20.

[129] *Id.*; *see also* ISO-NE's Strategic Transmission Analysis: Generation Retirements Study (dated Dec. 13, 2012), *available at* http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/mtrls/2012/dec132012/retirements_redacted.pdf.

Because 18 C.F.R. § 35.3(a)(1) requires tariff changes to become effective no more than 120 days after being filed with the Commission, NEPOOL requests waiver of that requirement and asks the Commission to accept both the June 1, 2014 and June 1, 2018 effective dates.

VII. ADDITIONAL SUPPORTING INFORMATION

Section 35.13 of the Commission's regulations generally requires public utilities to file certain cost and other information related to an examination of traditional cost-of-service rates.[130] However, the NEPOOL Proposal does not change a traditional "rate", and neither NEPOOL nor ISO-NE are a traditional investor-owned utility. In light of these circumstances, NEPOOL submits the following additional information in substantial compliance with relevant provisions of Section 35.13, and requests a waiver of Section 35.13 of the Commission's regulations to the extent the content or form deviates from the specific technical requirements of the regulations.

35.13(b)(1) – Materials included herewith are identified more specifically on pages 2-3 of this transmittal letter and the joint transmittal letter accompanying part 1 of this filing.

35.13(b)(2) – As set forth in Section VI above, NEPOOL requests that the changes to Section III.2 (i.e., the RCPF value changes) become effective June 1, 2014; the changes to Sections I.2.2. (Definitions) and III.13 (FCM changes), June 1, 2018.

35.13(b)(3) – Pursuant to Section 16.11(a)(iv) of the Second Restated NEPOOL Agreement and Section 17.11(e) of the Participants Agreement, Governance Participants are being served electronically rather than by paper copy. A copy of this transmittal letter and the accompanying materials have also been sent to the governors and electric utility regulatory agencies for the six New England states that comprise the New England Control Area, the New England Conference of Public Utility Commissioners, Inc., and to the New England States Committee on Electricity. Their names and addresses are shown in Attachment I-1k. In accordance with Commission rules and practice, there is no need for the Governance Participants or the entities identified in Attachment I-1k to be included on the Commission's official service list in the captioned proceeding unless such entities become intervenors in this proceeding.

35.13(b)(4) – A description of the materials submitted pursuant to this filing is contained in Section VII of this transmittal letter.

35.13(b)(5) – The reasons for this filing are discussed in Sections III, IV and V of this transmittal letter.

35.13(b)(6) – As discussed in Section III of this transmittal letter and in more detail in Attachment N-1g, the changes to the Tariff reflect the results of the Participant Processes required by the Participants Agreement. The NEPOOL Proposal was approved by a NEPOOL Vote of 80.28%.

[130] 18 C.F.R. § 35.13 (2014).

35.13(b)(7) – NEPOOL has no knowledge of any relevant expenses or costs of service that have been alleged or judged in any administrative or judicial proceeding to be illegal, duplicative, or unnecessary costs that are demonstrably the product of discriminatory employment practices.

35.13(b)(8) – A form of notice and electronic media are no longer required for filings in light of the Commission's Combined Notice of Filings notice methodology.

35.13(c)(1) – The Tariff changes herein do not modify a traditional "rate," and the statement required under this Commission regulation is not applicable to the instant filing.

35.13(c)(2) – ISO-NE does not provide services under other rate schedules that are similar to the wholesale, resale and transmission services it provides under the Tariff.

35.13(c)(3) - No specifically assignable facilities have been or will be installed or modified in connection with the NEPOOL Proposal's Tariff revisions filed herein.

VIII. CONCLUSION

For the reasons stated in this transmittal letter and in the attached testimony supporting this filing, the Commission should approve the NEPOOL Proposal, which is just and reasonable and preferable to the ISO-NE Proposal.

Respectfully submitted,

NEPOOL PARTICIPANTS COMMITTEE

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Dated: January 17, 2014

ATTACHMENT N-1b

Testimony of Peter D. Fuller,
Director of Regulatory Affairs,
NRG Energy Inc., East Region,
on behalf of NEPOOL

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc. and	**)**	**Docket No. ER14-___000**
NEPOOL Participants Committee	**)**	

TESTIMONY OF PETER D. FULLER

Q. Please state your name, position and business address.

A. My name is Peter D. Fuller. I am Director of Regulatory & Market Affairs for NRG Energy, Inc.'s East Region ("NRG"). My business address is 104 Carnegie Center, Princeton, New Jersey, 08540.

Q. Please describe your professional experience and qualifications.

A. I hold a Bachelor of Science degree in Electrical Engineering from Bucknell University and a Master of Science in Electrical Engineering from Northeastern University. Since January 2008, I have held the position of Director, Regulatory & Market Affairs for NRG Energy Inc. In this position, I am responsible for NRG's state, regional and federal regulatory and policy activities in New England, including the company's interactions with the ISO New England wholesale markets as well as supporting the company's asset optimization and business development efforts in the region. Prior to joining NRG, I was Director of Market Affairs for Mirant Energy Trading from 2000-2007. I was a Vice-Chair of the New England Power Pool Participants Committee representing the Generation Sector from 2004 to 2013, and served as Chairman of the Participants Committee for 2006 to 2007. I currently serve as the Chair of the NEPOOL Budget & Finance Subcommittee. From 2005 to 2010, I served as Chairman of the New England Power Generators Association, the largest trade association representing independent power producers in New England. Prior to joining Mirant in 2000, I held a number of positions in power supply, planning and engineering with Eastern Utilities Associates. I have previously testified before the Massachusetts

Department of Public Utilities and the Connecticut Public Utilities Regulatory Authority.

Q. Can you please briefly describe the two alternate sets of Market Rule changes proposed by ISO-NE and NEPOOL, respectively, in this proceeding?

A. ISO New England Inc. ("ISO-NE") proposes to fundamentally modify the current FCM structure, and the basic concept of what a capacity market is intended to achieve, by making a resource's FCM compensation heavily dependent on resource output during short, unpredictable intervals of operating reserve scarcity, with little to no connection to the *adequacy* of the quantity of resources purchased in the Forward Capacity Auction (the "ISO-NE Proposal"). The ISO-NE Proposal would replace the existing "Shortage Event" penalty structure with a new 'performance incentive' mechanism, resulting in capacity payments to resources that would be the combination of two components: (1) a base capacity payment and (2) a performance payment or charge. The performance payment or charge would be entirely dependent upon the resource's delivery of energy or operating reserves during 'scarcity conditions,' and could be larger than the base payment.

NEPOOL seeks an alternative approach to the ISO-NE Proposal. At its December 6, 2013 Participants Committee meeting, NEPOOL approved an alternative set of revisions to the Market Rules that would maintain the FCM capacity product as a tool to ensure *resource adequacy*, and would place real-time performance incentive-related improvements directly into the energy and reserve markets. NEPOOL's proposed changes are intended to complement and enhance a number of other changes already made or currently pending in the energy and operating reserve markets. Specifically, NEPOOL proposes to (i) increase the values of the Reserve Constraint Penalty Factors ("RCPF") for Thirty-Minute Operating Reserves ("TMOR") and Ten-Minute Non-Spinning Reserves ("TMNSR") for the entire New England Control Area; and (ii) replace the current

"Shortage Event" mechanism for measuring the 'performance' of resources with Capacity Supply Obligations in the Forward Capacity Market with an 'EFORp' availability metric (collectively, the "NEPOOL Proposal").

Q. What is the purpose of your testimony?

A. My testimony describes the market design changes proposed under the NEPOOL Proposal and explains the reasons for proposing such changes. I also explain why the NEPOOL Proposal is better than the ISO-NE Proposal.

Q. In summary, why did NRG offer the NEPOOL Proposal?

A. Throughout stakeholder discussions over the past year, NEPOOL members and state representatives almost uniformly expressed concerns with the ISO-NE Proposal. Those concerns had been reflected in numerous presentations made by me and others to ISO-NE in the stakeholder process. I have included in *Attachment N1-b.1* to my testimony links to a number of my presentations on behalf of NRG that were circulated to and discussed with the NEPOOL Markets Committee during the past year that summarize NRG's concerns and the basic elements that comprise the NEPOOL Proposal. There were overwhelming concerns expressed by regional stakeholders, including many discussions concerning identified issues, blind spots and shortcomings of the ISO-NE Proposal, but ISO-NE nonetheless has proceeded with its proposal to address its concerns with the market. NRG's objective in the process was always on addressing ISO-NE's identified concerns with the market through a viable alternative to the ISO-NE Proposal that also was responsive to the overwhelming concerns with the ISO-NE Proposal and other, long-standing concerns NRG and others have with the markets. In the end, we were successful in achieving broad consensus through a preferred approach to address evolving regional challenges that actually considers, complements and enhances other market initiatives that have already been made or are pending.

Q. Please summarize the main elements of the NEPOOL Proposal.

A. The NEPOOL Proposal consists of two main elements. The first element would increase the RCPFs for the system-wide TMOR and TMNSR products. Increasing the value of these penalty factors will allow prices in the real-time energy and ancillary service markets to better reflect reserve scarcity when it occurs, leading to more efficient valuation of the products needed to balance supply and demand in real-time while protecting against contingency events. This in turn will lead to better incentives for real-time availability and performance of resources, and better information with which load-serving entities and end-use consumers of electricity can manage their consumption and commercial hedging activities.

The second element of the NEPOOL Proposal would institute a performance metric for generating capacity resources based on roughly 256 pre-defined summer hours and roughly 86 pre-defined winter hours, corresponding to hours when the demand on the system is most likely to be at or near the forecasted seasonal peaks for the year. This mechanism for measuring the availability of generating resources recognizes that the FCM is the market that was established to help ensure *resource adequacy* to meet the planning reliability criterion (i.e., the Installed Capacity Requirement or ICR). The ICR is based on *projections* of average resource availability, and not, as is inherent in the ISO-NE Proposal, the real-time production of energy or reserves. By using this refined performance metric, the NEPOOL Proposal will have a much lower risk profile associated with capacity market payments to generating resources than the ISO-NE Proposal. A lower risk profile will lead to a more stable investment climate, thereby advancing another recognized goal of the FCM which has been to provide a reliable and predictable revenue stream to encourage market investment in New England capacity when and where needed. To the extent this mechanism contributes to revenue stability, it will tend to lower the cost of investing, and should lead to lower overall capacity costs to consumers relative to the capacity costs that

would result from the ISO-NE Proposal, which places greater risk on resource owners.

Q. Provide an overview of ISO-NE's dispatch process in the Real-Time Energy and Reserve Markets.

A. As has already been explained in a joint ISO-NE/NEPOOL filing submitted in March 2012 in Docket No. ER12-1314-000, ISO-NE dispatches resources in the real-time energy market to provide energy and reserves to meet real-time demand for electricity and to maintain required quantities of the various reserve types system-wide and in pre-defined reserve zones. It accomplishes this task through a co-optimized market-clearing system that is part of the Unit Dispatch System ("UDS"). The system operators typically approve a new dispatch solution every 5 to 10 minutes (the "dispatch interval"). This co-optimization process produces dispatch quantities and real-time prices based on the submitted offer data and real-time operational constraints, including system and local reserve requirements and transmission constraints. When there is sufficient reserve supply and no re-dispatch for reserves, real-time reserve prices are zero. When resources are in merit to provide energy, but instead are re-dispatched or kept offline to provide reserves, positive real-time reserve prices will occur.

Q. What are Reserve Constraint Penalty Factors?

A. Reserve Constraint Penalty Factors ("RCPFs") serve as a cap for the real-time price of each reserve product. As the physical availability of reserves to meet the reserve requirement decreases, the cost of re-dispatching resources to maintain the reserve requirement increases. The co-optimized dispatch software will re-dispatch resources to maintain the required levels of reserves as long as the marginal cost of doing so is less than or equal to the applicable RCPF. Once the RCPF is reached, the co-optimizing software will not take further actions. At that point, ISO-NE system operators must intervene manually in the dispatch if there

are insufficient reserves available below the RCPF price, and these manual actions will necessarily result in uplift and price distortion.

Q. Please explain the relationships among the existing reserve products' RCPF values.

A. ISO-NE maintains reserve requirements for the following reserve products: local and system-wide TMOR, TMNSR, and system-wide Ten Minute Spinning Reserves ("TMSR"). For each respective reserve product, there is a separate RCPF value. As reflected in Section III.2.7A of the ISO-NE Tariff, the TMSR RCPF is $50/MWh, the local TMOR RCPF is $250/MWh, the system TMOR RCPF is $500/MWh, and the system TMNSR RCPF is $850/MWh.

Q. Please describe the relationship between real-time reserve prices and real-time energy prices.

A. The purpose of the co-optimization of energy and reserves in real-time is to reflect the fact that, at the margin, there is a trade-off in seeking to meet both the energy demands of the system and the requirements to hold some resources in reserve at all times. When the UDS software re-dispatches the system to maintain reserve levels, the incremental value of energy and reserves is equivalent, and this relationship is expressed by including the non-zero real-time price of reserves in the Locational Marginal Price ("LMP") for energy.

Q. Describe the proposed RCPF value changes.

A. The revision to the market rules in the NEPOOL Proposal would increase the system TMOR RCPF value from $500/MWh to $1000/MWh and the system TMNSR RCPF value from $850/MWh to $1500/MWh. The primary purpose of increasing the TMOR RCPF value is to enable the co-optimization software to access all available resources in attempting to meet the system-wide TMOR requirement (i.e., up to the allowable cap on energy offers of $1,000/MWh). Under the NEPOOL Proposal, the TMNSR RCPF value would be increased

above this cap, recognizing, as is already recognized in the currently established RPCFs, that there is a higher incremental value for TMNSR when the system is running short of that form of reserves.

Q. What pricing inefficiencies occur when the system TMOR and system TMNSR prices reach their respective RCPF values?

A. Once the RCPFs are hit, reserve prices are capped and the resulting price signals for the TMOR and TMNSR products, and thus for energy, fail to convey the true marginal cost of those products during the dispatch intervals when they are most valuable. As explained above, the UDS software normally co-optimizes the dispatch of resources on a least-cost basis to satisfy the energy and reserve needs of the system, producing real-time energy and reserve prices. When the system TMOR price reaches $500/MWh or when the system TMNSR price reaches $850/MWh, then further dispatch of reserves must be undertaken via manual actions of ISO-NE operators. These actions, by virtue of the fact that they come from resources with offer prices above the respective RCPFs, or because they are reserved for use only in high-stress conditions, are explicitly or implicitly more expensive than the RCPFs, and yet do not become visible in market prices because they are dispatched manually. When the existing RCPFs are capped below the allowable offer costs of dispatchable resources in the hourly markets, the real-time reserve prices do not always reflect the true cost of providing the TMOR or TMNSR products. Thus, when the RCPFs are triggered and reserve prices are capped, the costs associated with ISO-NE's manual actions to restore and maintain operating reserves are not transparent to the marketplace at precisely those times when reserves are most needed.

Q. What benefits are likely to result with such increases to the RCPF values for the system TMOR and system TMNSR requirements?

A. Increasing the system TMOR RCPF value to $1000/MWh and the system TMNSR RCPF value to $1500/MWh is a clear improvement to the status quo,

allowing the co-optimization software to access all resources offered into the real-time markets to meet the energy and reserve requirements of the system, and ensuring that the prices in those circumstances of greatest need rise to reflect that need. In so doing, the revised RCPFs will provide more efficient price signals to the marketplace during reserve shortages than are currently provided. These more efficient market signals will increase real-time incentives for availability and production in response to ISO-NE's energy and reserve needs during high stress conditions, which is a key concern ISO-NE identified in its initial white paper proposing its market reforms. Higher real-time prices will drive better consumption, production and hedging decisions, with the result being more transparent and appropriate market and dispatch incentives to both load and supply than currently provided when caps and uplift interfere with such signals. The higher RCPF levels will also: (1) ensure that all Demand Response resources (and all resources with offer prices above $500/MWh) would be fully available to ISO-NE for real-time dispatch in order to maintain operating reserve levels; (2) attract more reserve resources to the market, which will be especially important as intermittent resources are further integrated into the system; (3) better incent Market Participants to schedule in the Day-Ahead Energy Market and pursue other hedging activities with commercial counter-parties to limit and manage their exposure to real-time prices; and (4) decrease the amount of total Net Commitment Period Compensation ("NCPC") incurred.

Q. Please expand on each of these four points.

A. The first benefit is that the co-optimizing software will no longer be limited in its ability to use all of the resources offered in the real-time energy market to manage the system's energy and reserve needs, and to set prices based on the actual marginal cost of meeting those needs. ISO-NE filed, and the Commission recently approved, market rule changes that will fully integrate demand response resources into the energy markets, including requiring demand response resources with capacity obligations to offer their resources into the energy markets each day (*See* Docket No. ER12-1627). In that filing, at the behest of its Internal Market

Monitor, ISO-NE proposed and the Commission approved that demand response resources would not be subject to offer price mitigation in the energy markets, on the basis that all of a demand response resource's opportunity costs should be included in an economic offer, and that such opportunity costs could be very high and difficult for the IMM to estimate. As such, it is expected that some demand response resources will offer into the energy market at high prices, perhaps approaching the offer cap of $1000/MWh. Coupled with ISO-NE's stated intentions to ensure that such demand response resources can participate in the operating reserve markets to the extent they are capable, it is critically important that these resources be available to the co-optimization software. Even today, there are resources that offer into the energy market at prices greater than $500/MWh, and greater than $850/MWh, and the existing RCPFs exclude these resources from consideration in the co-optimization algorithm.

The second benefit is that more robust real-time prices for reserves will encourage additional resources to make their reserve capability available to the market, and may encourage new entry of resources specifically intended to participate in the real-time and Forward Reserve Markets. The Forward Reserve Market will also be strengthened as a result of the incrementally higher real-time reserve prices, since the forward market tends to reflect expectations of real-time reserve pricing. Both from an operational and an investment perspective, the increased RCPFs will encourage additional participation in the reserve markets. In addition to increasing competition in these markets and driving long-run efficiencies, this increased participation will be increasingly important as the region experiences growth in its supply of intermittent sources of renewable energy. This has been identified as one of ISO-NE's five major strategic challenges (*See* ISO-NE's Strategic Planning – Risk Summary, June 14, 2011, *available at*: http://www.iso-ne.com/committees/comm_wkgrps/strategic_planning_discussion/materials/4_spd_risk_summary_may_2011.pdf.).

A third benefit I referenced earlier is improved incentives for both load-servers and suppliers of energy and reserves to engage in efficient levels of hedging using available commercial vehicles, such as the Day-Ahead Energy Market as well as longer-term bilateral contracts to manage their exposure to real-time price volatility. The potential for real-time energy and reserve prices to be significantly higher than average prices increases the incentive for both sellers and buyers to seek out mechanisms to smooth out their anticipated revenue or cost, respectively.

Finally, the fourth benefit which I identified is that Net Commitment Period Compensation ("NCPC"), which reimburses generation resources for offered costs and fees that are not covered by market revenues based on clearing prices, should be reduced. To the extent real-time energy and reserve prices better reflect the actual marginal cost of meeting the system's energy and reserve needs, fewer resources should experience the revenue shortfalls that NCPC is designed to cover.

Q. Can you further explain why the new RCPF values will improve real-time price signals in the New England hourly markets and address the real-time market incentive problems identified by ISO-NE in its October 2012 White Paper?

A. Yes. In the opinion of my company as well as many others, the existing energy market prices do not fully capture the cost or value of maintaining energy and reserves at all times, and this under-pricing of scarcity affects long-term investment prospects as well as real-time operational incentives. ISO-NE acknowledges this problem/issue in its October 2012 white paper (*See* ISO-NE White Paper: FCM Performance Incentives, dated October 2012, *available at*: http://www.iso-ne.com/committees/comm_wkgrps/strategic_planning_discussion/materials/fcm_performance_white_paper.pdf.).

The NEPOOL Proposal will improve those price signals for the dispatch intervals in which the system would otherwise experience a TMOR or TMNSR deficiency and capped reserve prices under today's RCPF values. The new RCPF values for the TMOR product of $1000/MWh and for the TMNSR product of $1500/MWh will allow ISO-NE to more efficiently re-dispatch resources through the UDS system thereby enhancing the co-optimization of the energy and reserve markets. As a result, real-time energy and reserve prices will better reflect the incremental cost of the marginal resource that provides TMOR and TMNSR. This should significantly improve the accuracy of reserve price signals seen in the marketplace at times when reserves are most valuable, when TMOR or TMNSR reserves are scarce and their marginal cost exceeds $500/MWh and $850/MWh, respectively.

Q. Does the NEPOOL Proposal include any Market Rule changes to New England's Forward Capacity Market?

A. Yes. The other major element of the NEPOOL Proposal would be an incremental change to New England's Forward Capacity Market ("FCM") rules so that, going forward, it would measure "performance" of generating capacity resources based on their availability for ISO-NE commitment and dispatch in a pre-defined set of high load hours. This is in contrast to the current FCM, which measures "performance" only in "Shortage Events," which occur based on certain shortages of operating reserves that persist for at least thirty contiguous minutes. If there are no Shortage Events in a given year, each resource's capacity revenues for that year would be entirely divorced from its actual availability. Conversely, if there are Shortage Events, they can happen almost at random and a resource's capacity revenues can be materially impacted without any regard for how that resource actually performed during high load periods.

The NEPOOL Proposal also is distinct from the ISO-NE Proposal, which would measure "performance" during "scarcity conditions." Like Shortage Events, "scarcity conditions" would be based on shortages of operating reserves.

"Scarcity conditions," however, would be defined by the ISO-NE Proposal to occur in any *five-minute* dispatch interval, rather than being required to persist for at least thirty minutes to constitute a Shortage Event to be declared. In addition, the ISO-NE Proposal would measure "performance" of a resource as the MWh of energy or reserves actually provided during that five-minute interval, rather than measuring whether the resource had made itself available for ISO-NE in the day-ahead and real-time markets in accordance with the resource's physical characteristics. The NEPOOL Proposal for the FCM, in contrast, is designed to complement the RCPF changes discussed above, and to measure the availability of resources that have committed to provide resource adequacy in a pre-defined set of hours each year when resource adequacy is most at risk.

Q. What is the current definition of a system-wide Shortage Event?

A. Since the beginning of the FCM in June of 2010, ISO-NE has defined system-wide Shortage Events to occur when there is a shortage of ten-minute operating reserves for thirty or more contiguous minutes and the RCPF for the ten-minute requirement is binding. As of November 3, 2013, a system-wide Shortage Event can also be triggered in any Capacity Zone when the thirty-minute operating reserve requirement is binding or has been violated for thirty or more contiguous minutes.

Q. How is the performance of generating capacity resources currently measured during Shortage Events?

A. ISO-NE calculates an availability score for each resource with a Capacity Supply Obligation ("CSO") for each Shortage Event. Per the current FCM rules, a resource is deemed to be "available" if it is available for ISO-NE to commit and dispatch consistent with the resource's stated characteristics, and the resource has not experienced a forced outage (other than due to transmission limitations outside the control of the resource). Any resource that is unavailable during a Shortage Event will be penalized up to five percent of its annual FCM revenues,

or more if the Shortage Event persists for more than five hours (*See generally* Section III.13.7 of the current Tariff).

Q. Does the NEPOOL Proposal seek to replace the "Shortage Event" mechanism?

A. Yes. The NEPOOL Proposal would replace the current Shortage Event mechanism in the FCM with a new availability metric that would assess the availability of capacity resources across pre-defined peak hours during a given capacity commitment year (or Capacity Commitment Period) (referred to as an "EFORp" mechanism). Instead of measuring availability only during random reserve deficiency events when RCPFs are triggered (i.e., Shortage Events or scarcity conditions), NEPOOL's proposed mechanism would measure availability, using the same availability standards that exist in Section III.13.7.1.1.3 of the Tariff today, during high demand periods defined as "EFORp Hours."

Q. How are "EFORp Hours" defined?

A. EFORp Hours would be four afternoon hours on summer weekdays and two evening hours on winter weekdays. As specified in revised Section III.13.7.1.1.1 of the NEPOOL Proposal, "EFORp Hours" are defined as the hours ending 1400 through 1700, Monday through Friday on non-holidays during the months of June, July, and August and hours ending 1800 through 1900, Monday through Friday on non-holidays during the months of December and January. These are the same hours currently defined in the ISO-NE Tariff as "Demand Resource On-Peak Hours," and represent hours when the system is historically most at risk for high levels of demand approaching or exceeding the forecasted annual or seasonal peak.

Q. What is the "EFORp Hour Availability Score" and how is it calculated?

A. Using the current definition of "availability" as set forth in Section III.13.7.1.1.3 of the Tariff, and under NEPOOL's proposed EFORp construct, ISO-NE would calculate an availability score for each capacity resource for each EFORp Hour, which would represent the proportion of the resource's CSO megawatts that were available during the hour. ISO-NE would then accumulate and average the hourly scores to calculate an annual EFORp Hour Availability Score for each capacity resource.

Q. How are Availability Credits or Charges calculated under the EFORp construct?

A. The EFORp Hour Availability Score for a given Capacity Commitment Period would be compared to the capacity resource's average EFORp Hour Availability Score measured during the historical five-year period used to establish the Installed Capacity Requirement (or ICR). Deviations between the annual Score and the historical average would be paid or charged at 150% of the applicable zonal FCA Clearing Price, subject to annual caps (*See* NEPOOL-proposed Section III.13.7.2.7.1.2).

As an illustrative example, consider a 100MW resource that had an average EFORp Hour Availability Score of 90% in the five-year historical period used to establish existing unit availabilities in calculating the ICR. Further assume that, for a given Capacity Commitment Period, the resource takes on a CSO for its full 100MW of Qualified Capacity at the FCA Clearing Price of $5.00/kW-month. The resource's anticipated annual FCM revenues, prior to any adjustments, would be (100,000kW x $5.00/kW-month x 12 months = $6 million). Now assume that the resource's actual EFORp Hour Availability Score for this Capacity Commitment Period is 85%. The resource would be charged for the 5% deviation in the Score, in the amount of (85%-90%) x 100,000kW x $5.00/kW-month x 12 months x 150% = -$450,000, or 7.5% of the resource's annualized base FCM

revenue. Likewise, if the resource's actual EFORp Hour Availability Score for the year was 95%, it would receive an extra $450,000 in revenues.

Q. Is NEPOOL proposing any caps or other limitations on resources' revenues under this mechanism?

A. Yes, NEPOOL is proposing two such limitations. The first is an adaptation of the annual cap that exists in today's FCM, in which a capacity resource cannot lose more than its annualized FCM revenues. In order for that cap to bind, a capacity resource would have to have an actual EFORp Hour Availability Score for a given year less than 33.3% of its historical five-year average EFORp Hour Availability Score. For example, the 100MW resource in the example above, with a historical availability score of 90%, would need to have a Score of less than 30% in order for this cap to limit its lost revenues. This provides a wide bandwidth in which the marginal incentive for availability in the EFORp Hours would remain in place, encouraging resource owners that had poor availability in the early part of a summer to continue efforts to improve availability through the rest of the year.

The second is a limitation on the lost revenue that a resource could incur in the event of a Force Majeure event experienced by the resource, limiting such loss to no more than 20% of the annualized FCM revenues, subject to timely and accurate notification to ISO-NE of the existence of the Force Majeure and a diligent effort by the resource owner to bring the resource back into service following that Force Majeure event (*See* NEPOOL-proposed Section III.13.7.2.7.1.3(b)). The Force Majeure protection would also be prospective only, meaning that if the Force Majeure event occurred in the middle of a Capacity Commitment Period in which the resource owner had already incurred poor availability during EFORp Hours, the 20% limitation would not result in the resource owner 'clawing back' revenues already lost, and likewise, the 20% limitation would be pro-rated for the portion of the Capacity Commitment Period

remaining after the declaration of Force Majeure (*See* NEPOOL-proposed Section III.13.7.2.7.1.3).

Q. Please explain the rationale for the proposed limitation in the event of Force Majeure.

A. The proposed Force Majeure provision is based on several practical considerations reflecting the long-term nature of capacity market investments. Capacity resources are generally considered to have lifetimes in excess of twenty years or more. In order for competitive electricity markets to work, such resources need to be able to recover their long-run costs, on average and over time. In the event of a Force Majeure that results in a capacity resource being unavailable for an extended period, that resource would already be losing all of its energy and ancillary market revenues during the outage, impacting its near-term cash flow as well as its long-term economics. Without the proposed Force Majeure provision, the resources also would likely lose for an extended outage all of its capacity revenues as well, at exactly the time when it may be faced with significant incremental capital expenditures. The limitation on losing all of the capacity revenues under these circumstances is another way in which the NEPOOL Proposal is designed to limit risk while providing meaningful marginal incentives for availability. By putting reasonable bounds on the risk facing investors, the NEPOOL Proposal should encourage investment and keep costs as low as possible.

Q. Please describe the proposed changes to the "Poorly Performing Resources" provision of the Tariff.

A. The existing Tariff contains a provision, Section III.13.7.1.1.5, that can lead to a resource being declared ineligible to participate in the FCM if both of the following are true: in the most recent four consecutive Capacity Commitment Periods or the most recent four years in which the resource assumed a Capacity Supply Obligation: (a) the resource received three annual availability scores of

less than or equal to 40%; and (b) the resource has failed to be available in its entirety during ten or more Shortage Events during that same period. The NEPOOL Proposal would eliminate the second factor of this test, since Shortage Events would no longer exist, and would make the first factor more stringent by looking at two of the last three years/Capacity Commitment Periods rather than three of the last four. This change is intended to accelerate the process by which poorly performing resources are excluded from the capacity market, while still recognizing the long-term nature of capacity commitments and the yearly three-year look-ahead nature of the FCM design.

Q. How are credits and charges settled/allocated under the proposed availability metric?

A. Under the NEPOOL Proposal, ISO-NE would aggregate all annual credits to be paid to capacity resources with better-than-historic Availability Scores, and all charges to be collected from resources with worse-than-historic Availability Scores. Credits collected from 'under-performers' would be paid to 'over-performers.' Any residual would be credited or charged to Load-Serving Entities ("LSEs") based on each load entity's Capacity Load Obligation. This is a just and reasonable approach since the charges and credits are derived from the difference between actual resource availabilities and their availabilities during the historical time period used to determine the amount of capacity needed to satisfy the resource adequacy planning requirement, i.e., the ICR. To the extent that the aggregate availability of the capacity resources is better than in the assumed historical period, the region is getting marginally better performance and availability compared to the ICR and should pay effectively a higher price for higher reliability; and to the extent the aggregate availability is worse than historical, the region is getting less than what it bargained for in setting the ICR, and should be refunded some of the cost of capacity, so it effectively pays a lower price for the lower reliability.

Q. Does the NEPOOL Proposal contain any other changes to the current FCM rules?

A. No. Beyond the changes described herein, all other currently effective FCM provisions would remain in place (including the Peak Energy Rent provisions). As such, under the NEPOOL Proposal, the FCM would continue to be conducted on the basis of ICAP and Demand Resources and Intermittent Power Resources, which are not currently measured on the basis of Shortage Events, would continue to be measured in the same ways as they are under the current tariff.

Q. How does the proposed EFORp construct improve the current FCM design?

A. As already explained, the EFORp Hours correspond to hours when system load is expected to be highest, and thus the adequacy of overall supply would most likely be at risk. Accordingly, the proposed mechanism provides a meaningful incremental incentive for all capacity resources to be highly available during the peak load hours when system adequacy is most at risk, and also calibrates the overall cost of capacity experienced by load to the amount of availability delivered by capacity resources. If the overall availability of capacity resources during EFORp Hours is higher than during the historical period used in establishing the ICR, capacity resources are effectively delivering more than the minimum ICR, and this 'over-performance' is appropriately reflected in a marginally higher cost of capacity to the region. Likewise, lower overall availability, resulting in a credit to load, is consistent with a system that is delivering incrementally less reliability than was specified in the ICR. In sum, the proposed EFORp metric enhances the incentive for all resources with CSOs, whether scheduled in the day-ahead market or not, to be available to ISO-NE for commitment and dispatch (consistent with their physical characteristics and capabilities) during defined high-load hours in the summer and winter months, not just during unpredictable Shortage Events or scarcity conditions. With the capability to assess whether resources with CSOs are available at expected levels during critical peak periods, the proposed mechanism ultimately provides CSO

owners an added incentive to ensure their capacity resources are available when they are most likely to be needed and provides LSEs with greater assurance that their payments for capacity will help maintain peak-hour period reliability.

Q. Why is the NEPOOL Proposal better from your perspective than the ISO-NE Proposal?

A. At the most fundamental level, the NEPOOL Proposal is superior to the ISO-NE Proposal because the NEPOOL Proposal seeks to solve concerns with real-time performance by addressing the identified, and widely acknowledged, real-time market price formation problems in those markets directly. In contrast, the ISO-NE Proposal does nothing to address the underlying problem with real-time price formation and instead seeks effectively to substitute new real-time production based charges and payments in the capacity market for efficient real-time market price outcomes. The NEPOOL approach would make scarcity price signals more visible to both buyers and sellers, improving consumption incentives as well as production incentives, and creating a better environment for commercial contracting and hedging activities. Under the ISO-NE Proposal, real-time scarcity price signals to load would be dampened or non-existent, which may drive inefficient consumption and would provide an inappropriately large and comprehensive hedge that many load-servers and consumers would not choose if acting in their own commercial interests. The NEPOOL Proposal is based, in part, on a fundamental belief in commercial markets and that individual Market Participants can make better decisions in their own commercial best interests than a centralized regulatory mechanism.

In addition, the NEPOOL Proposal maintains the character of the FCM product as a *resource adequacy* product, distinct from the real-time delivery of energy and/or operating reserves. In doing so, each resource's FCM revenues are far less risky than under the ISO-NE Proposal. A more stable and reliable capacity revenue stream will facilitate new investment in capacity in the region, and better sustain that investment over time.

With respect to the existing fleet, the elimination of the FCM floor price has already triggered a far higher level of active efforts by existing resources to not take on CSOs (i.e., the submittal of de-list bids and Non-Price Retirement Requests in FCA8), based on their economic outlook under the existing FCM construct. The ISO-NE Proposal significantly ratchets up the risk of participation in the capacity market, especially by legacy fossil units, increasing the likelihood of both priced de-list bids and Non-Price Retirement Requests as a risk-mitigation strategy if the ISO-NE Proposal is implemented. With over 8,000MW already "at risk" under the existing FCM, according to ISO-NE's 2012 retirement study, the ISO-NE Proposal could increase the reliability risk of retirements or the need for additional reliability-must run contracts which will increase existing problems with the FCM.

The NEPOOL Proposal represents a moderate and rational path to a sustainable and efficient set of wholesale markets that is more amenable to efficient real-time incentives and performance outcomes, and that will better support an efficient level of investment in long-term capacity resources, and is far preferable to the risky and untested ISO-NE Proposal.

Q. Does this conclude your testimony?

A. Yes.

I declare under penalty of perjury that the foregoing is true and correct.

Peter D. Fuller

Executed on: 17 January, 2014

NRG Materials Provided to NEPOOL Markets Committee Materials Related to the ISO-NE and NEPOOL Proposals

Date	Document Title / Description	Internet Location
Nov 06, 2013	NRG Presentation 10-08-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14h_nrg_presentation_10_08_13.ppt
Nov 06, 2013	NRG MR 1 Redlined 10-03-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14h_nrg_mr_1_redlined_10_03_13_r1.doc
Oct 25, 2013	NRG MR 1 Redlined 10-03-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b7_nrg_mr_1_redlined_10_03_13_r1.doc
Oct 23, 2013	NRG Presentation 10-08-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b7_nrg_presentation_10_08_13.ppt
Oct 04, 2013	NRG Presentation 10-08-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c1_nrg_presentation_10_08_13.ppt
Oct 04, 2013	NRG MR 1 Redlined 10-03-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c1_nrg_mr_1_redlined_10_03_13.doc
Sep 18, 2013	NRG Presentation 09-20-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3a1_nrg_presentation_09_20_13.ppt
Aug 06, 2013	NRG Presentation 08-07-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10d_nrg_presentation_08_07_13.ppt
May 08, 2013	NRG Presentation 05-14-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/may14152013/a04b_nrg_presentation_05_14_13.ppt

Date	Document Title / Description	Internet Location
Mar 06, 2013	NRG Presentation 03-12-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_nrg_presentation_03_12_13.ppt
Jan 24, 2013	NRG Presentation 01-29-13 *FCM - And Broader - Market Reforms - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02b2_nrg_presentation_01_29_13.ppt
Jan 23, 2013	NRG Alternative Proposal 11-16-12 *FCM Performance Incentives - An Alternative Proposal - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02b2_nrg_alternative_proposal_11_16_12.pdf
Jan 23, 2013	Group of Generators Presentation 01-29-13 *FCM Performance Incentives: Initial Areas of Focus - By Capital Power, Dominion, EquiPower, Entergy, Exelon, NextEra and NRG*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02b3_generator_group_presentation_01_29_13.ppt
Nov 16, 2012	NRG Alternative Proposal 11-16-12 *FCM Performance Incentives*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2012/nov162012/a02_nrg_alternative_proposal_11_16_12_.pdf

ATTACHMENT N-1c

Testimony of Calvin A. Bowie,
Manager, ISO and NEPOOL Relations,
Northeast Utilities
on behalf of NEPOOL

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc. and	**)**	**Docket No. ER14-___-000**
New England Power Pool	**)**	

TESTIMONY OF CALVIN A. BOWIE

Q. Please state your name and professional affiliation.

A. My name is Calvin A. Bowie. I am submitting this testimony in my capacity as the elected Participants Committee officer from the Transmission Sector of NEPOOL during the time period when the ISO-NE and NEPOOL Proposals were considered and acted upon through the Participant Processes. I was the elected Participants Committee officer from the Transmission Sector from 2007 through 2013. I was the Chairman of the NEPOOL Participants Committee during 2012 and 2013. I am currently the Manager of ISO and NEPOOL Relations for Northeast Utilities.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide the Commission with the view of the majority of the NEPOOL Transmission Sector regarding the two market, performance incentive-related proposals ("PI" proposals) before the Commission in this "jump ball" filing.

Q. Who are the current members of the Transmission Sector in NEPOOL?

A. Bangor Hydro-Electric Company, Central Maine Power Company, New England Power Company (a subsidiary of National Grid), Northeast Utilities/NSTAR, The United Illuminating Company, and Vermont Electric Power Company, Inc.

Q. What involvement did the Transmission Sector have in the stakeholder process for the development of the PI proposal?

A. Members of the Transmission Sector were involved in all discussions of the PI proposals during the deliberations of the NEPOOL Markets Committee and Participants Committee and expressed their views during those meetings. In addition to this participation in stakeholder meetings the Transmission Sector met with the ISO-NE Board on June 25, 2013 and November 8, 2013, and conveyed its concerns with the ISO-NE proposal.

Q. What position did the Transmission Sector members take in voting at the Participants Committee on the PI proposals?

A. Among the Transmission Sector all of the members except National Grid opposed the ISO proposal and supported the NRG proposal that became the NEPOOL preferred alternative, and which I refer to herein as the "NEPOOL Proposal". For ease of reference in my testimony by using "Transmission Sector" I refer to the majority of the members of the Transmission Sector who oppose the ISO-NE proposal and support the NEPOOL Proposal.

Q. Why did the Transmission Sector not support the ISO proposal?

A. All members of the Transmission Sector agree that our customers could face reliability concerns and cost issues if sufficient resources are not available to meet their power needs. While all members of our sector support the ISO-NE's reliability goals, most believe the ISO-NE's FCM PI proposal has features that could be unnecessarily expensive, counterproductive and are too significant of a change from the current rules.

There are several reasons why the majority of the transmission owners did not support the ISO-NE proposal.

First, the Transmission Sector believes that the ISO-NE's FCM PI proposal would impose unnecessary expense on consumers by increasing the long-term fixed costs of installed capacity to meet the FCM PI requirements by introducing a substantial and unnecessary risk component into capacity pricing. This expense is unnecessary because it results from solutions to performance issues that are currently being addressed through reforms to the energy and reserves market specified below. Energy and reserve market reforms will better connect increased costs for load to the load that creates the greater demand, and are thus more compatible with the Commission's cost causation principles. The ISO's proposal does not result in that close tie between costs and beneficiaries.

Second, as we came to understand the ISO's proposal better, we viewed it as a solution to a performance problem that was better addressed through the energy and reserves markets rather than through the capacity market. The FCM is intended to be a market that ensures resource adequacy by procuring enough installed capacity to meet the Installed Capacity Requirement ("ICR") for the pertinent Capacity Commitment Period.

The ISO's proposal redefines capacity as a product that can be supplied best by baseload energy resources or fast-start peaking resources. Under ISO-NE's proposal, when a Capacity Scarcity Condition is triggered, only resources that are producing energy or reserves at the time of and during the pendency of the Capacity Scarcity Condition will be able to avoid significant penalties. In reality, the pool of capacity resources in New England includes thousands of megawatts of valuable resources that are neither economically dispatched as baseload resources, nor capable of providing fast-starts. Many of these resources provide substantial reliability benefits to the region, but under the ISO-NE proposal they could be perfectly maintained and respond perfectly to all ISO dispatch instructions, yet still be subject to significant financial penalties because of ISO-NE's redefinition of the capacity product. While there is a need for baseload and fast-start resources, there is not a need to procure such resources in an amount equal to the ICR. Indeed, to do so would be inefficient and unnecessarily expensive for consumers.

While the Transmission Sector does see a need for better performance of capacity resources when called upon, that need is partly being addressed through reforms already made or that are pending in the energy and reserve markets. Those energy and ancillary services market reforms include: modifications to the bidding/offer deadlines in the Day-Ahead Energy Market[1]; changes to permit bidders increased energy offer flexibility, including the opportunity to make hourly intra-day re-offers and to offer energy at negative prices[2]; modifications to permit the use of a Reserve Constraint Penalty Factor

[1] *ISO New England Inc. and New England Power Pool*, 143 FERC ¶ 61,065 (Apr. 24, 2013).

[2] *ISO New England Inc. and New England Power Pool*, 145 FERC ¶ 61,014 (Oct. 3, 2013).

(RCPF) of $250/MWh for the replacement reserve requirement in place of normal supplemental commitment[3]; changes to authorize ISO-NE's procurement of additional ten-minute non-spinning reserves in the Forward Reserve Market[4]; changes to generating resource auditing requirements and procedures[5]; changes to the Forward Reserve Market incentives[6]; market mitigation modifications to allow dual-fuel units to take better advantage of fuel switching capability[7]; and expanded authority for ISO-NE to communicate with natural gas pipeline operators[8]. Additional enhancements in the Forward Capacity Market to improve 'performance incentives' of capacity resources include changes to the definition of Shortage Event triggers[9] and clarifications from the Commission in response to the NEPGA Complaint concerning the 'performance' obligations of resources with Capacity Supply Obligations.[10] All of these changes combined with the additional changes proposed in the NEPOOL Proposal, should be implemented and given a chance to address performance issues before major changes are

[3] *ISO New England Inc. and New England Power Pool*, Docket No. ER13-1736-000 (Aug. 15, 2013) (unpublished letter order accepting revisions to establish a Reserve Constraint Penalty Factor for the Replacement Reserve Requirement).

[4] *ISO New England Inc. and New England Power Pool*, Docket No. ER13-465-000 (Feb. 8, 2013) (unpublished letter order accepting revisions to Forward Reserve Market Rules to permit the procurement of additional Ten-Minute Non-Spinning Reserve).

[5] *ISO New England Inc. and New England Power Pool*, 142 FERC ¶ 61,024 (Jan. 9, 2013).

[6] *ISO New England Inc. and New England Power Pool*, Docket No. ER13-1733-000 (Aug. 15, 2013) (unpublished letter order accepting revisions concerning Forward Reserve Market incentives).

[7] *ISO New England Inc. and New England Power Pool*, Docket No. ER14-707-000 (Jan. 15, 2014) (unpublished letter order accepting relocation of dual-fuel switching provisions).

[8] *See* Pipeline Information-Sharing Changes, *ISO New England Inc. and New England Power Pool Participants Committee*, Docket No. ER14-970-000 (filed Jan. 10, 2014).

[9] *ISO New England Inc. and New England Power Pool*, 145 FERC ¶ 61,095 (Nov. 1, 2013).

[10] *New England Power Generators Assoc., Inc. v. ISO New England Inc.*, 144 FERC ¶ 61,157 (2013), *order on reh'g*, 145 FERC ¶ 61,206 (Dec. 6, 2013).

made to the FCM, which is intended to ensure resource adequacy not operational performance.

Third, the Transmission Sector believes that the ISO-NE proposal would inappropriately impose penalties on capacity resources for failure to perform even when the reason for non-performance is beyond the control of those resources, or perversely when such resources are responding to ISO dispatch instructions in accordance with their physical operating characteristics. Under the ISO's proposal, transmission outages that result in capacity resources not being able to provide energy and/or reserves to the system would result in FCM penalties even if such transmission outages were fully outside the control of the capacity resource. Similarly, capacity resources could be exposed to penalties for non-performance even though following ISO dispatch instructions operate at a reduced output, or are on an ISO-approved planned maintenance schedule. These kinds of 'non-performance' are not avoidable through additional investment in equipment, and thus the penalties serve no purpose but to penalize. The capacity resources subject to such unavoidable and unhedgeable risks will have no choice but to build a risk premium into their capacity offers thereby raising the costs for all with only the hope of theoretical future benefits. Additionally, penalizing capacity resources for non-performance while on a planned maintenance outage will tend to create a perverse incentive for those resources to do maintenance outside of the ISO's schedule, or to minimize maintenance, thereby putting into jeopardy system reliability. Indeed, the incentive would be to not coordinate maintenance at all.

In actuality, the Transmission Sector is concerned that the ISO's proposal creates higher capacity prices (both for individual resources that will be compelled to hedge future penalties, and for all resources since the auction clearing prices will increase) without substantially incenting changes in behavior. Much of that behavior is outside of a resource owner's control (e.g. when a resource is on a planned outage, following dispatch instructions, or affected by a transmission outage). For an incentive to be valid, it must be tied to behavior changes that can and should be made in response to such incentive. ISO-NE's proposal fails to properly link incentives to behaviors.

Fourth, the Transmission Sector does not support the ISO's proposal because we do not have an adequate understanding of the financial implications to our customers and our companies of implementing FCM PI although, as indicated above, the implications appear to be increased costs without commensurate reliability benefits.

Finally, ISO-NE has repeatedly told stakeholders that the economic foundation of its proposal is to replicate the incentives that would arise in an uncapped energy-only market. Without debating the merits or flaws of an uncapped energy market, the Transmission Sector would point out that ISO-NE's proposal does not replicate the incentives of an uncapped energy market because the ISO-NE proposal includes out-of-pocket penalties in addition to the lost opportunity cost associated with non-delivery during scarcity conditions in an uncapped energy market. These out-of-pocket penalties are a critical distinction. As an example, if in an uncapped energy market a resource does not produce energy during a scarcity event where energy is priced at $1,500/MWh, it loses the opportunity to sell $1,500 energy. Under the ISO-NE proposal, an

underperforming resource would not only face a lost opportunity cost of $1,500/MWh, it would also pay a penalty of $2,000/MWh. Thus the total cost to the resource owner is $3,500/MWh, $2,000 of which is out-of-pocket in the form of penalties.

Q. Why does the Transmission Sector support the NEPOOL Proposal?

A. The Transmission Sector's support for the NEPOOL Proposal came about largely because it avoids some of the problems we saw with the ISO's FCM PI proposal, while providing a more incremental and targeted solution to ensuring the performance of capacity resources when most needed. The final NEPOOL Proposal did not get the same degree of scrutiny and input as did the ISO's proposal, although the basic framework was part of the discussions throughout the year-long stakeholder process. Nevertheless, the NEPOOL Alternative was acceptable to the Transmission Sector and is preferable to the ISO's proposal.

There are several reasons why this is the case. First, the NEPOOL Proposal focuses its reforms to enhance performance where they should be focused, in the energy and reserves markets. The NEPOOL Proposal treats installed capacity as it was intended, capacity available to meet the resource adequacy criterion of loss of load no more than one day in ten years. Short term performance and energy delivery issues are appropriately addressed through the short term energy and ancillary services markets, and that is what the NEPOOL Proposal does.

Second, by targeting its reforms in the energy and reserves markets, the NEPOOL Proposal targets costs of enhanced performance in a more accurate way both temporally

and locationally, primarily through real time reserve prices and LMPs created by the scarcity of reserves on the system. Because of its ability to better target costs of enhanced performance to the load that causes those costs, the NEPOOL Proposal is both more consistent with fundamental cost causation principles and more likely to include load in the solution to short-term reliability needs on the system as load sees price signals and responds accordingly.

Third, the NEPOOL Proposal provides additional performance incentives for capacity resources but does not contain the unreasonable penalties that would be imposed under the ISO's proposal. There would be no penalties for unavailability due to transmission outages, which is appropriate because those outages are beyond the capacity resource's control. There are no penalties for unavailability due to planned maintenance, which is entirely appropriate given that the purpose of such maintenance is to help maintain reliability. Also, the NEPOOL Proposal does not penalize resources for following ISO dispatch instructions, which again avoids sending the wrong signal to capacity resources that could be counterproductive to maintaining reliability.

Finally, the NEPOOL Proposal will allow for sound analysis of the reliability and financial effects of its incremental changes, so that the ISO, NEPOOL, the states and other stakeholders can determine what else, if anything is needed to be added or adjusted to ensure the performance of capacity resources in the New England markets.

For all of these reasons, the Transmission Sector opposes the ISO's proposal and supports the NEPOOL Proposal.

Q. Does that conclude your testimony?

A. Yes, it does.

I declare under penalty of perjury that the foregoing is true and correct.

Calvin A. Bowie

Executed on: January 17, 2014

ATTACHMENT N-1d

Testimony of Brian E. Forshaw,
Chief Regulatory and Risk Officer,
Connecticut Municipal Electric Energy Cooperative,
on behalf of NEPOOL

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc. and	**)**	**Docket No. ER14-___-000**
New England Power Pool	**)**	

TESTIMONY OF BRIAN E. FORSHAW
NEPOOL PARTICIPANTS COMMITTEE
PUBLICLY OWNED ENTITY SECTOR VICE-CHAIR

I. BACKGROUND AND QUALIFICATIONS

Q. Please state your name and professional affiliation.

A. My name is Brian E. Forshaw. I am the Chief Regulatory and Risk Officer for the Connecticut Municipal Electric Energy Cooperative ("CMEEC"), a joint-action power supply agency organized pursuant to the Connecticut General Statutes to secure reliable and low cost power supplies for municipal electric utilities, where I have been employed for over 33 years. My place of business is 30 Stott Avenue, Norwich, Connecticut, 06360-1526.

Q. Please summarize your relevant professional background.

A. My primary responsibilities at CMEEC include representing CMEEC and other Publicly Owned Entities[1] in matters before the New England Power Pool ("NEPOOL") and before various State and Federal regulatory and legislative forums. Additional responsibilities at CMEEC have included overseeing all aspects of CMEEC power supply activities, including risk management, long-term resource planning, strategic planning and contract negotiations.

In my over 33 years at CMEEC, I have directly participated, on behalf of New England's consumer-owned power systems, in virtually all of the efforts undertaken by NEPOOL and ISO-NE to restructure and refine New England's wholesale electric markets. This

[1] Capitalized terms not defined in this Affidavit have the meanings ascribed thereto in NEPOOL's transmittal letter in this proceeding, the Second Restated NEPOOL Agreement, Participants Agreement, or the ISO New England Inc. ("ISO-NE") Transmission, Markets and Services Tariff ("ISO-NE Tariff").

has included service on, among others, NEPOOL's Technical Committees and its Participants Committee. I am currently the elected representative of the Publicly Owned Entity Sector and serve as a Vice-Chair of the Participants Committee, an office I have held since 2002. I served as Chairman of the Participants Committee for 2008 to 2009. I believe that this direct experience gives me a unique perspective from which to assess and evaluate the Forward Capacity Market Performance Incentive ("FCM PI") proposals before the Commission in this "jump ball" filing.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide the Commission with CMEEC's perspective, which also represents the perspective of those members of the Publicly Owned Entity Sector that carried the vote of the Publicly Owned Entity Sector, regarding the two FCM PI proposals before the Commission in this proceeding.

III. PUBLICLY OWNED ENTITY SECTOR PARTICIPATION IN THE STAKEHOLDER PROCEEDINGS PRECEDING THE FILING OF THE FCM PI PROPOSALS

Q. Who are the current members of NEPOOL's Publicly Owned Entity Sector?

A. Each of the 55 members of the Publicly Owned Entity Sector[2] is an Entity which is either a municipality or an agency thereof, or a body politic and public corporation created under the authority of one of the New England states, authorized to own, lease and operate electric generation, transmission or distribution facilities, or an electric cooperative, or an organization of any such entities. Publicly Owned Entities participate in New England's electric markets primarily to serve their needs, or the needs of its member municipal utilities, as the case may be.

[2] A comprehensive list of the 55 members of the Publicly Owned Entity Sector and the 57 companies they represent can be found on NEPOOL's website at http://nepool.com/uploads/C-Sector_Roster.pdf.

Q. What involvement did the Publicly Owned Entity Sector have in the stakeholder process for the development of the FCM PI proposals?

A. Members of the Publicly Owned Entity Sector were involved in all discussions of the FCM PI proposals that occurred at NEPOOL's Principal Committees and expressed their views during those meetings. In addition to this participation in stakeholder meetings, the Publicly Owned Entity Sector conveyed its concerns with the ISO-NE proposal during meetings held with members of the ISO-NE Board on June 25, 2013 and November 8, 2013.

Q. What position did Publicly Owned Entity members take in voting at the Participants Committee on the FCM PI proposals?

A. 38 members of the Publicly Owned Entity Sector were present for the Participants Committee votes on the FCM PI Proposals. All of those members opposed the ISO-NE Proposal. With respect to the NEPOOL Proposal, all members not abstaining voted to support the NEPOOL Proposal, with the Massachusetts Municipal Wholesale Electric Company ("MMWEC"), and each of the Participant members it represented, abstaining on the vote on the NEPOOL Proposal.[3] Accordingly, for purposes of this Affidavit, reference to Publicly Owned Entity Sector in the discussion of the Sector's position on the ISO-NE Proposal is indicative of the position of each of the 38 members. With respect to the Publicly Owned Entity Sector's position on the NEPOOL Proposal, this Affidavit will, as noted above, present CMEEC's specific perspective, as representative of the perspective of those Sector members that carried the Publicly Owned Entity Sector's votes on the two FCM PI proposals before the Commission in this proceeding.

[3] *See* NEPOOL transmittal letter, Attachment N-1h.

IV. PUBLICLY OWNED ENTITY SECTOR OPPOSITION TO THE ISO-NE PROPOSAL

Q. Why did the Publicly Owned Entity Sector not support the ISO-NE Proposal?

A. The bases for opposition by the Publicly Owned Entity Sector to the ISO-NE Proposal can be summarized as follows:

- ***The ISO-NE Proposal is Unnecessary at this Time.*** The ISO-NE Proposal is unnecessary at this time because the concerns it purports to address are already being addressed through other means. Before adopting yet another "solution," the Commission should ensure that the concerns that motivate the ISO-NE Proposal are not already being addressed. ISO-NE's Wholesale Markets Plan commits New England to a set (10-12) of major energy and operating reserve market enhancements over the next 2-3 years that are aimed at the same concerns offered to justify the ISO-NE Proposal.[4] Changes that are already in place or in the pipeline include:
  - Expanding the definition of shortage event to "incentivize" better resource performance;
  - Energy market supply offer flexibility to help generators better communicate to ISO-NE and recover actual fuel costs;
  - Increased operating reserve requirements to bolster system reliability;
  - Stiffer penalties for generators that fail to perform consistent with reserve commitments;
  - Stricter generator auditing requirements to help ensure capacity commitments match availability;
  - Modifying how constraints are treated in the unit commitment software for the Day-Ahead Energy Market to produce a Day-Ahead commitment

[4] The latest, updated ISO-NE Wholesale Markets Project Plan, which describes the key market initiatives underway and planned for the upcoming three years to ensure an efficient and reliable electricity system in New England, is available at: http://www.iso-ne.com/pubs/whlsle_mkt_pln/.

schedule that is more closely aligned with what will be needed in Real-Time.

- Day-Ahead Energy Market time shift to better align the electric market with the gas trading day;
- Sub-hourly generating resource energy settlement, which will make real-time generating resource incentives more precise and targeted to short periods of reserve scarcity (slated for 2015 implementation);
- Expanded communication between electric and natural gas markets;
- Clarification by the Commission about the obligations of generators with capacity market obligations to procure fuel to meet Day-Ahead and Real-Time Energy Market commitments, meaning that they cannot make an economic decision not to procure fuel, but can be excused only if fuel is not physically available;[5]
- ISO has included implementation of a downward-sloping demand curve in their latest Wholesale Markets Plan update; and
- It now appears that FCA8 may clear at a higher level than in prior auctions, providing a source of revenues for generators to meet their obligations on a going forward basis.

Importantly, many of the changes noted above appear to be achieving their desired result. For example, ISO-NE has indicated that it does not believe that there will be a need for a supplemental fuel procurement reliability program for the Winter 2014/2015 period or beyond.[6] While still early to form a firm

[5] *New England Power Generators Assoc., Inc. v. ISO New England Inc.*, 144 FERC ¶ 61,157 (2013) (finding that "a capacity resource that fails to comply with dispatch instructions when it is physically available but has determined not to procure fuel or transportation due to economic considerations is in violation of the Tariff." *Id.* at P 58).

[6] *See* "Winter 2014-15 Solutions Update", ISO-NE presentation to NEPOOL Markets Committee (Nov. 13, 2013 meeting), available at: http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a11_iso_presentation_11_13_13.ppt.

conclusion, in his monthly report at the January 10, 2014 NEPOOL Participants Committee meeting, the ISO-NE Chief Operating Officer noted that recently it appears that a greater percentage of the Real-Time Load Obligation is being scheduled and clearing in the Day-Ahead Energy Market.[7]

- ***The ISO-NE Proposal Will Cost Consumers More Than the Value of any Offsetting Benefits.*** The ISO-NE Proposal will raise consumer costs without a concomitant increase in benefits. To the contrary, in fact, the ISO-NE Proposal is already adversely impacting the New England market. Reasons for those adverse impacts include:

  - The ISO-NE Proposal fails to address the challenges at the heart of the issues ISO-NE is purportedly seeking to resolve (i.e. longstanding problems in Energy and Operating Reserve Market pricing, as documented by ISO-NE's External Market Monitor and various stakeholders and ISO-NE's October 2012 Whitepaper;

  - The mere possibility that the ISO-NE Proposal will be implemented has already accelerated the exit of older, relatively less flexible (but nonetheless valuable) existing resources from the system, and appears to have been the reason for a number of potential new resources to withdraw from the qualification process for the eighth Forward Capacity Auction (FCA8); and

  - ISO-NE Proposal-induced Resource retirements have accelerated the date when new (and more expensive) Resources will be needed to clear the FCM,[8] increasing the likelihood that those Resources, or import

[7] See "NEPOOL Participants Committee Report January 2014", Vamsi Chadalavada, Executive Vice President and Chief Operating Officer (Jan. 10, 2014), available at: http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/prtcpnts/mtrls/2014/jan102014/coo_report_jan_2014.pdf.

[8] These retirement concerns exist today: 3,135 MW of existing Resources (generation and demand response ("DR") resources) submitted Non-Price Retirement ("NPR") requests for the FCA8 commitment period (2017/2018). As reported by the ISO-NE Chief Operating Officer at the April 2013 Participants Committee meeting, a total of 6,630 MW of new Resources submitted Show of Interest

transactions will set the FCA8 clearing price at a level substantially above the FCA7 clearing price of $3.15 per kW-mo. Given the level of Non-Price Retirements recently announced, it now appears that costs to consumers will go up by $15-$30 per MWh in June 2017, unless Insufficient Competition Rules end up being triggered.

- ***The ISO-NE Proposal Will Decrease Resource Participation and Increase Consumer Costs***. ISO-NE and its consultants appear to believe that the possibility of performance payments under the FCM PI construct will increase the amount of resources that will participate in the capacity market and will reduce the level of capacity payments required from the FCM. Contrary to ISO-NE's belief and the results of the study by the Analysis Group, the prospect of substantial penalties will not only restrict FCM participation, but will result in those units that do choose to participate in the Forward Capacity Auctions seeking higher premiums to compensate for the added risks associated with the ISO-NE Proposal. Asset owners and operators (including CMEEC and others from the Publicly Owned Entity Sector) place substantially more weight on exposure to performance penalties than they place on the "upside" of receiving a share of the non-delivery penalty payments made by other asset owners and operators. This is even more significant when considering the fact that exposure to such penalties is directly related to factors beyond control of the asset owner. Even if we accept the potentially understated estimates from ISO-NE's Analysis Group study, additional risk premiums associated with the implementation of the ISO-NE Proposal would drive up consumer costs to load by another $10-$12 per MWh.

V. SUPPORT FOR THE NEPOOL PROPOSAL

Q. Particularly in light of your response to the ISO-NE Proposal, could you please summarize why CMEEC supported the NEPOOL Proposal?

A. CMEEC supported the NEPOOL Proposal because it adopts a more measured approach to address the problems underlying resource performance. The NEPOOL Proposal seeks

("SOI") requests for FCA8 and only 2,126 MW, representing 61 new projects, decided to remain in the auction through the qualification process.

to build upon efforts already underway to address ISO-NE resource performance concerns without subjecting the region to the unintended consequences and substantially increased costs discussed above. The NEPOOL Proposal is focused on the "root cause" of ISO-NE's concerns by directly addressing pricing problems in the energy and operating reserve markets. Subject to further refinement, the NEPOOL Proposal could potentially be implemented well in advance of FCA9, the earliest possible date when the ISO-NE Proposal could be implemented. To the extent additional "insurance" is needed, an incremental firm energy procurement could be pursued for a subset of Resources (rather than the entire generation fleet) needed to address ISO-NE operational concerns.

VI. CONCLUSION

Q. As Vice-Chair of the Publicly Owned Entity Sector, what is your conclusion with respect to the FCM PI Proposals?

A. As indicated by the December 6, 2013 vote of the Publicly Owned Entity Sector, the Commission should not approve the ISO-NE Proposal.

Q. As Vice-Chair of the Publicly Owned Entity Sector, what is your recommendation with respect to the FCM PI Proposals?

A. As between the alternatives presented in this proceeding, having considered the potential impacts of each, I believe the better course would be to implement the NEPOOL Proposal. The Commission should permit the NEPOOL Proposal, as well as other planned Market Rule and market design changes, a chance to demonstrate their effectiveness in achieving their intended objectives, including incenting resource performance, before ordering or directing a fundamental change to the region's market design. Following a reasonable opportunity for such demonstration, the Commission can thereafter evaluate overall market and resource performance and direct, if and as appropriate, consideration or implementation, following appropriate stakeholder process, of any changes or improvements thereto.

Q. Does that conclude your testimony?

A. Yes, it does.

I declare under penalty of perjury that the foregoing is true and correct.

Brian E. Forshaw

Brian E. Forshaw

Executed on: January 16, 2014

ATTACHMENT N-1e

Testimony of Elin S. Katz,
Consumer Counsel,
Connecticut Office of Consumer Counsel,
on behalf of NEPOOL

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc. and	**)**	**Docket No. ER14-___000**
NEPOOL Participants Committee	**)**	

Testimony of Elin Swanson Katz, Connecticut Consumer Counsel
for the NEPOOL Participants Committee

Q. Please state your name, title, business address, and affiliation with the NEPOOL Participants Committee.

A. My name is Elin Swanson Katz, Connecticut Consumer Counsel, appointed by Connecticut Governor Dannel P. Malloy to lead the Connecticut Office of Consumer Counsel ("OCC") for a five-year term that began on October 3, 2011. OCC is in the End-User Sector of the New England Power Pool ("NEPOOL") Participants Committee. My business address is 10 Franklin Square, New Britain, Connecticut 06051. OCC is Connecticut's statutory advocate for utility customers pursuant to our enabling statute, Connecticut General Statutes § 16-2a. This enabling statute authorizes OCC to act on behalf's of the state's electric customers in any regulatory or judicial proceedings which may affect their interests, including matters before the Federal Energy Regulatory Commission.

Q. What is the purpose of OCC's testimony?

A. The purpose of this testimony is to give OCC's perspective, in our capacity as a member of the End-User Sector of NEPOOL, about two sets of proposed changes to the wholesale electric market rules in New England. These markets are administered by the regional transmission organization, ISO-New England, Inc. ("ISO-NE"). OCC's perspective has been informed in part by discussions with many stakeholders, including fellow consumer advocates, public utility commissions, capacity suppliers, investor-owned utilities, and municipal utilities.

Q. Please describe the two sets of proposed market rule changes at issue.

A. The first set of proposed changes, being filed by ISO-NE, is usually referred to as the Performance Incentives ("PI") proposal, although it is sometimes referred to as "Pay for Performance." Its stated purpose is to significantly change the rules in the Forward Capacity Market ("FCM") to provide greater financial incentives to capacity resources to improve their performance and operating flexibility, particularly during times of system stress. The second set of proposed changes is based on market reforms initially advanced by generation owner NRG and ultimately supported, as amended, by OCC and a significant majority of the NEPOOL Participants Committee ("NEPOOL Proposal"). The NEPOOL proposal also seeks to improve resource performance, but it would do so by making adjustments to rules for the real-time energy market and the operating reserve market, as well as by making much less drastic changes to the FCM than are being proposed by ISO-NE. This testimony will explain why OCC supports the NEPOOL Proposal and opposes ISO-NE's PI proposal.

Q. Were ISO-NE's PI proposal and the NEPOOL Proposal considered by the NEPOOL Participants Committee?

A. Yes, both proposals were considered by the NEPOOL Participants Committee. ISO-NE's PI proposal failed at the NEPOOL Participants Committee with only 10.28% in favor. The NEPOOL Proposal was supported by the NEPOOL Participants Committee with 80.28% in favor.

Q. How did OCC vote as to the two sets of proposals?

A. OCC voted to support the NEPOOL Proposal and to oppose ISO-NE's PI proposal.

Q. Why did OCC vote "no" on ISO-NE's PI proposal?

A. OCC voted "no" on the PI proposal because OCC has concluded, based on discussions with stakeholders and its own analysis, that the PI proposal will lead to unjust and unreasonable increases in capacity costs for customers and will not likely provide any reliability gains in return for those significant cost increases. Indeed, instead of

promoting reliability, OCC is concerned that the new risks created by the PI approach may lead to premature power plant retirements that immediately and materially threaten reliability in some sub-areas of the New England system. These reliability threats may persist because new investment is not likely to occur with PI in place.

Q. Does OCC agree with ISO-NE that under the current FCM construct, some units are getting all or a significant share of their annual capacity payments despite poor performance?

A. OCC does not dispute ISO-NE's representation that a small number of units may be getting "money for nothing" under the current FCM construct. However, concerns about a small percentage of capacity suppliers do not justify a sweeping rule change like PI. In addition, OCC disagrees with PI remedy because it will create an excessively risky environment for existing suppliers as well as for investors and developers of new power plants and demand-side resources, at a time when such new investment will soon be needed.

Q. Why does OCC view PI as creating an excessively risky investment environment for capacity?

A. PI creates excessive investment risk because, among other things, PI's substantial penalties would impact capacity suppliers that are not operating during particular five-minute intervals regardless of the reason why they were not operating. PI would ignore the actual operating characteristics of a power plant when levying penalties. For example, PI would harshly punish a generation unit that bids its energy into the day-ahead market, is not given day-ahead dispatch instructions by ISO-NE based on the market clearing process, and is then physically unable to produce in real-time based on its operating characteristics. Thus, under PI, a unit that is available to operate but is not dispatched by ISO-NE because of its economics will be penalized solely because it was more costly in the day-ahead market to operate, not because of its ability or willingness to perform. While this may have surface appeal to ISO-NE and perhaps others, as an impetus for development of more flexible resources, it gives insufficient regard to the fact

that every reliable and cost-effective power system requires a diverse mix of generation units. At a minimum, we expect that PI will complicate and increase the costs of financing new generation units and further reduce the chance that the capacity market is able to support the development of generation supplies when needed, where needed, and at a reasonable price.

Both ratepayers and merchant developers of new capacity have an enormous interest in ensuring that the financing of new generation plants is not excessively costly or risky. We are already seeing some significant retirements and planned retirements in New England's generation fleet, the output of which will need to be replaced by new capacity resources, including power plants. New merchant plants cannot be financed on reasonable terms or rates when new rules are drastically changing market designs and adding excessive performance risks. Under PI, we are persuaded based on discussions with developers and other stakeholders that new plants will either not be able to be financed, exacerbating a potential shortage, or would only be financed at an excessive cost. To the extent that new resources are financed and seek to participate in the capacity market, these financing costs would flow to ratepayers through capacity market offers setting the market-clearing price. Moreover, it is plausible that a plant that is needed for reliability and cannot manage its financing costs may need a ratepayer Reliability-Must-Run "backstop" to avoid bankruptcy. Thus, financing risks and costs impact both suppliers and ratepayers.

In addition, the "forward" nature of the Forward Capacity Market, coupled with the strict penalty approach in PI (penalties imposed regardless of fault), would add significant risk for capacity suppliers. A capacity supplier bidding into FCM in Year 1 may find in Year 4, when its responsibilities begin, that its ability to deliver capacity has been diminished by circumstances beyond its control, such as delays of transmission upgrades, reduced access to fuel, new environmental rules, and further changes to market rules. Although these risks would exist in any <u>forward</u> capacity market, the radically changed penalty structure in PI renders these uncontrollable risks harder for a capacity supplier to bear. This again will cause suppliers to raise their FCM bids and, in turn, raise consumer costs.

Q. Why are excessive risks for capacity suppliers under PI a potential reliability problem for customers?

A. PI presents a potential reliability problem because capacity suppliers may conclude that the risks of penalties under the PI proposal are too high, and those suppliers may either exit the market or decline to enter it. Based on discussions with capacity suppliers and their public comments, OCC is persuaded that suppliers generally fear a loss of $X in a year as a result of PI much more than they savor a gain of the same $X in a year, reflecting the likelihood that such suppliers, like humans generally, are more risk-averse than economic models assume. Thus, even when the PI proposal leads to symmetric gains for those who produce and penalties for those who fail to produce (and it will not always do so), this design will be viewed by risk-averse suppliers as a dangerous path, not an appealing opportunity to earn additional revenue. A more volatile set of FCM outcomes, resulting from the high penalties of PI, may create both retirements and financing difficulties, threatening reliability.

Q. But would you agree that ISO-NE has adjusted the PI proposal to limit risks for capacity suppliers?

A. ISO-NE has adjusted the PI proposal in an attempt to address risks, but the fundamental and insurmountable problems with PI remain. The adjustments were (i) a phase-in of the amount of the performance payment rate ("PPR," the figure which determines the penalty and reward for performance); and (ii) adding an annual stop-loss mechanism to the previously-proposed monthly stop-loss provision in the proposal, limiting what a capacity supplier can lose in a year from FCM participation. However, the PI proposal is still hampered by the fundamental problem that it holds capacity suppliers responsible for severe penalties for events beyond their control. It also still penalizes capacity suppliers if, based on operating characteristics, they are physically unable to respond in real-time when not committed in the day-ahead market or when they are not economically dispatched.

Q. Why do you prefer the NEPOOL Proposal to ISO-NE's PI proposal?

A. OCC has evaluated several potential alternatives to PI and finds that the NEPOOL Proposal is an acceptable alternative and a significant improvement over the PI proposal. OCC evaluated the PI proposal and alternatives throughout 2013. We had discussions with numerous stakeholders, including state parties, municipal utilities, investor-owned utilities, and generators, about a potential alternative to PI called Premium Capacity-Plus. The Premium Capacity-Plus proposal would have promised greater rewards and potential penalties to a subset of capacity suppliers (representing about 10-20% of available capacity) who were willing and able to respond in real-time to ISO-NE dispatch instructions. In this way, the Premium Capacity-Plus proposal sought to improve availability of resources at peak times and address the variability between expected load and actual loads. Premium Capacity-Plus also included changes to the energy and operating reserve markets. Despite OCC's support of the Premium Capacity-Plus proposal, it was not approved in the NEPOOL process.

OCC continued to explore other alternatives to PI, however, and continued to work with a variety of stakeholders. Among various proposals and approaches suggested by parties was a proposal by NRG, which like Premium Capacity-Plus, primarily sought to correct a small number of broadly-recognized problems with price formation in the energy and reserves markets, as opposed to the fundamental redesign of the capacity market sought through PI. Those energy and reserves market changes would increase economic incentives to make commitments in the day-ahead market and would improve performance in real time. By avoiding radical changes to FCM, we anticipated that NRG's proposal would create lower financing costs for necessary new capacity developments, while also creating what may be more rational outcomes in the energy market, even under scarcity conditions. Through discussions among OCC, other consumer advocates, public utility commissions, NRG and other generator interests, and others, certain revisions and refinements were made to NRG's plan. These revisions included a zonal approach to allocation of FCM penalties and rewards, known as "Availability Adjustments," and tightened restrictions on continuing FCM participation by Poorly Performing Resources. With these revisions, OCC was able to support the

proposal, referred to herein as the "NEPOOL Proposal," as a package of market rule adjustments that is a viable and preferable alternative to PI.

Q. Why do you say that NRG's approach, now the NEPOOL Proposal, addresses broadly-recognized problems with price formation?

A. Parties with diverse interests and significant experience in the regional markets, including such entities as NRG and CMEEC, have identified problems in coordination between the day-ahead and real-time markets, including underbidding by some load interests in the day-ahead market followed by higher loads in real-time.[1] This in turn may create the need for ISO-NE to take more frequent out-of-market actions, such as declarations of emergency conditions, that limit the real-time price of energy in the market. At a minimum, this situation often creates the need for uplift charges, which also limit the degree to which the real-time energy price reflects scarcity conditions. Another change included in the NEPOOL Proposal would raise the Reserve Constraint Penalty Factors ("RCPF") for two operating reserve products, and OCC has concluded that this approach would create a more accurate real-time price and greater incentives for availability and production by capacity suppliers during scarcity conditions.

Q. Isn't OCC concerned about higher real-time energy prices?

A. Of course we are concerned about higher energy prices, both because of the direct consumer impact and the possibility for the exercise of supplier-side market power. The specter of supply-side market power in New England markets is an issue that has not been discussed as frequently in the last few years of capacity excess, but it is always a serious potential concern. That said, generators need appropriate incentives and the ability (though not a guarantee) to recover their fixed and variable costs, along with a reasonable rate of return, if they operate reliably. NRG and others have raised at NEPOOL some concerns about price suppression caused by out-of-merit dispatch and other reliability actions by ISO-NE that are not reflected in the real-time price. OCC

[1] CMEEC March 27 Memorandum – Input for Apr. 2, 2013 Joint Meeting on Winter Operations, available at: http://www.isone.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/apr22013/a2_cmeec_winter_13_14_reliability_solutions_proposal_04_02_13_r1.docx.

appreciates ISO-NE's efforts and the difficult job that ISO-NE has in ensuring system reliability, but also recognizes the point that the current rules have possibly led to excessive dampening of the energy market incentives for operating during scarcity conditions. In addition to the specific RCPF adjustments, the NEPOOL Proposal calls generally for consideration of market rule changes to address these and other price formation issues, as well as the exploration of some ancillary service products to better support load-following and other operational requirements and thereby improve response to contingencies. Although load and generator interests are not always aligned, the mutual interest of load and suppliers in: (i) reducing the risks of participation in the ISO-NE-administered markets; (ii) reducing the financing costs of new investment; and (iii) avoiding premature retirements, coupled with a recognition of the serious issues the region faces, creates a real opportunity to develop reasonable solutions to price formation issues that benefit both load and suppliers.

Q. Does OCC support the "Equivalent Peak Period Forced Outage Rate" or "EFORp" approach?

A. OCC does favor the EFORp approach as part of the NEPOOL Proposal package. The EFORp proposal would provide greater incentives for units to be available during historically critical hours of the day in June through August, December, and January. Unlike the PI proposal, the EFORp proposal would not punish generators for failures to deliver that are beyond their control. The EFORp approach would also recognize the different operating characteristics of different units, and would reward or punish units based on a comparison to their previously-established level of performance. The rewards and punishments of the EFORp approach are significant (1.5 times the clearing price times the level of under- or over-performance), but not as potentially severe and certainly not as unpredictable and uncontrollable as the reward and penalty approach in PI.

Q. Does the NEPOOL Proposal do anything about the identified problem of some units receiving "money for nothing" in the capacity markets?

A. The NEPOOL Proposal does address the "money for nothing" issue. A resource with two annual availability scores of 40 percent or less in quick succession (over four Capacity Commitment periods or over the most recent three years in which the resource assumed a Capacity Supply Obligation) would be declared a Poorly Performing Resource. A Poorly Performing Resource would be restricted from participation in FCM for several years or until it can demonstrate to ISO-NE that the reason for poor performance has been remedied. In this way, a unit that is not available would be precluded from continuing to supply capacity.

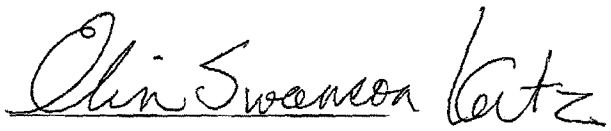
Q. Do you have any additional thoughts about the NEPOOL Proposal?

A. Some parts of the NEPOOL Proposal included specific tariff changes, while other parts call for consideration of market rule changes, including for real-time energy price formation, with the tariff language and other details still to be worked out among NEPOOL stakeholders. We do not claim that the NEPOOL Proposal is perfect, and certainly the less specific portions need to be "fleshed out" with further dialogue. That said, OCC is quite comfortable advocating in favor of the NEPOOL Proposal as a package of changes that are preferable to ISO-NE's PI approach.

Q. Does this conclude your testimony?

A. Yes.

I declare under penalty of perjury that the foregoing is true and correct.



Elin Swanson Katz

Executed on: January 17, 2014

ATTACHMENT N-1f

Affidavit and Report of Richard D. Tabors, Ph.D.
on behalf of NEPOOL

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc. and	**)**	**Docket No. ER14-___-000**
New England Power Pool	**)**	

AFFIDAVIT OF RICHARD D. TABORS, Ph.D.
ON BEHALF OF THE NEW ENGLAND POWER POOL

I, Richard D. Tabors, Ph.D., hereby state as follows:

I. QUALIFICATIONS AND EXPERIENCE

1. I am a Senior Consultant at Greylock McKinnon Associates, an economics consulting group located in Cambridge, Massachusetts and President and principal of Across the Charles, an economic and engineering consulting group also located in Cambridge, Massachusetts. From November 2004 until June 2012, I was a Vice President of Charles River Associates ("CRA") and for multiple years co-head of the Energy & Environment Practice. From 1989 until 2004, I was the founder and President of Tabors Caramanis & Associates, which was sold to CRA in 2004.

2. From 1976 until 2005, I was a member of the research staff and teaching faculty of Massachusetts Institute of Technology ("MIT") where I was Assistant Director of the Laboratory for Electromagnetic and Electronic Systems (MIT's power systems engineering group) and Deputy Director of the Technology & Policy Program within the School of Engineering.

3. I have spent much of my professional career at the interface between economics and engineering, primarily in the design and implementation of markets and market investment decisions in the electric power sector. With Fred C. Schweppe, Michael C. Caramanis and Roger E. Bohn, I co-authored Spot Pricing of Electricity, which is generally considered the basic theoretical text for the design of electric energy and transmission markets worldwide. My resume is attached as Attachment "*N1-f.b*" to this Affidavit.

4. During my professional career, I have provided expert testimony in over 50 legal matters throughout the United States, and internationally, including arbitrations, proceedings before the Federal Energy Regulatory Commission ("FERC" or the "Commission"), state regulatory commissions and before the United States Congress in matters related to energy, the development of power projects, and the decisions to invest in the electric energy market.

II. TASKS AND MATERIALS REVIEWED

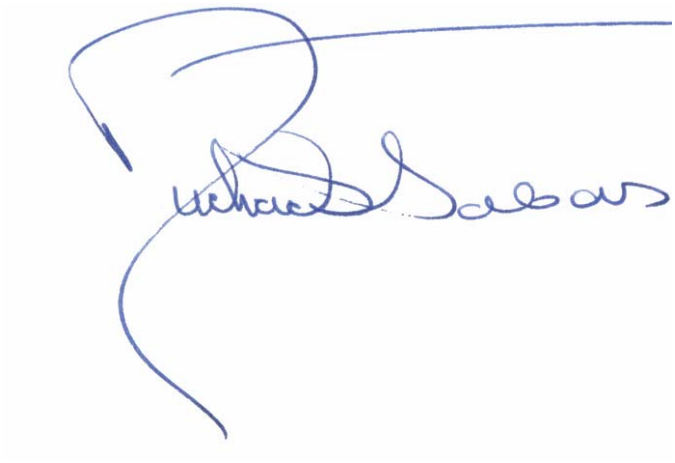
5. I was asked by the New England Power Pool ("NEPOOL") to review and comment on two versions of proposed changes to wholesale electric market rules governing payments for capacity. The alternative put forth by ISO-New England, Inc. ("ISO-NE") fundamentally re-defines the capacity product provided for in the Forward Capacity Market ("FCM") by emphasizing real-time performance through the creation of a new financial incentive / penalty structure that would apply during any defined Capacity Scarcity Condition ("ISO-NE Proposal"). The alternative put forth by NEPOOL increases the Reserve Constraint Penalty Factors and eliminates the concept of a Shortage Event by replacing it with an equivalent peak-period forced outage rate ("EFORp") mechanism.

6. In response to that request, I prepared a report that I entitled "Report on Two Proposals for Performance Incentive Revisions to the ISO-NE Markets: ISO-NE AND NEPOOL." I have attached a copy of my Report to this Affidavit as Attachment "*N1-f.a*". The Report is true and accurate to the best of my knowledge, belief and information. My Report reflects two key observations. First, I review two examples of the outcomes produced under the ISO-NE Proposal, which leads to the inevitable conclusion that the Proposal has a logic flaw that would produce unjust and unreasonable outcomes. As explained in my Report, while the concept brought forward by ISO-NE may provide for greater incentives for performance on the part of those entities with Capacity Supply Obligations ("CSO"), it is neither just nor reasonable in the manner in which real-time performance incentives are calculated or payments and penalties allocated. ISO-NE has proposed a structure to achieve its objective that defies economic logic in a number of

critical ways; provides payments and imposes penalties in unjustified circumstances; and explicitly (and apparently intentionally) does not reflect cost causation. Further, the ISO-NE proposal levies a high cost burden on New England consumers with little if any demonstrated benefit.

7. Second, I offer my observations on the NEPOOL Proposal, which I conclude is preferable to ISO-NE's Proposal. I explain that the NEPOOL Proposal provides an evolutionary approach to increase real-time performance incentives based upon the current structure of the FCM and the real-time markets, offers primarily positive incentives directly in the markets where they are most appropriate, and reinforces the economic market signals that are the underpinning of the wholesale electricity market design objective.

8. I declare under penalty of perjury that the foregoing is true and correct.



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Richard D. Tabors, Ph.D.

Executed on: January 16, 2014

REPORT ON TWO PROPOSALS FOR PERFORMANCE INCENTIVE REVISIONS TO THE ISO-NE MARKETS: ISO-NE AND NEPOOL

Richard D. Tabors, Ph.D
Senior Consultant
Greylock McKinnon Associates
Cambridge, MA 02142

Background

I have been asked by the New England Power Pool (NEPOOL) to review and comment on two versions of proposed changes to wholesale electric market rules governing payments for capacity. The alternative put forth by ISO-New England, Inc. (ISO-NE) fundamentally re-defines the capacity product provided for in the FCM by emphasizing real-time performance through the creation of a new financial performance incentive / penalty structure that would apply during any defined period with a capacity scarcity condition (ISO-NE Proposal). The alternative put forth by NEPOOL increases the Reserve Constraint Penalty Factors and eliminates the concept of a Shortage Event by replacing it with an equivalent peak-period forced outage rate (EFORp) mechanism.

I understand that changes to the structure of the capacity market to better incent Resources were the subject of considerable debate within the NEPOOL stakeholder process. The NEPOOL Proposal was supported and approved by a 80.2% vote of the Participants Committee while ISO-NE's Proposal failed with just 10.28% of the Participants Committee voting in favor.

Both proposals are being submitted to the Federal Energy Regulatory Commission (Commission or FERC) for consideration. I make two key points in this report (Report). First, I describe and discuss the implications of what I perceive to be a logic flaw in the ISO-NE Proposal that results in unjust and unreasonable outcomes. In this regard, I note that I am offering comments relative to my reaction to the specifics of ISO-NE's Proposal and will provide further comment once I have had the opportunity to review ISO-NE's supporting rationale which I expect will be provided by ISO-NE in its filing supporting its proposal. Second, I offer my observations as to why I believe the NEPOOL Proposal is preferable to ISO-NE's Proposal.

Summary

My report concludes that while the concept brought forward by ISO-NE may provide for greater incentives for real-time performance on the part of those entities with Capacity Supply Obligations (CSO), it is neither just nor reasonable in the manner in which real-time performance incentives are calculated or payments and penalties allocated. ISO-NE has proposed a structure to achieve its objective that defies economic logic in a number of critical ways; provides payments and imposes penalties in

unjustified circumstances; and explicitly (and apparently intentionally) does not reflect cost causation. Further, the ISO-NE Proposal would levy a high cost burden on New England consumers with little if any demonstrated benefit.

In contrast, the NEPOOL Proposal would provide an evolutionary approach to increase real-time performance incentives based upon the current structure of the FCM and the real-time markets, offer primarily positive incentives directly in the markets where they are most appropriate, and reinforce the economic market signals that are the underpinning of the ISO-NE wholesale electricity market design objective.

The discussion that follows reviews the current structure of the Forward Capacity Market and its implementation; summarizes the ISO-NE Proposal based on the October 2012 ISO-NE white paper on FCM performance Incentives circulated by ISO-NE[1]; highlights with specific examples the near fatal and fatal flaws of the ISO-NE Proposal, and then reviews and compares the NEPOOL Proposal with that of ISO-NE.

Summary of the ISO-NE Current Rules for Rewarding Real-Time Performance and Non-performance of Resources

To better understand the changes proposed by ISO-NE, it is necessary to understand, even at a relatively high level, the structure of the current ISO-NE Capacity Market rules. Under the existing systems, resources with Capacity Supply Obligations (CSO) are entitled to monthly capacity payments because they have cleared their capacity in the Forward Capacity Auction (FCA) or Reconfiguration Auctions[2]. A resource's capacity payment equals the product of its CSO and the Capacity Clearing Price in the applicable FCA or Reconfiguration Auction, subject to two payment reductions.

The first payment reduction is the Peak Energy Rent (PER) deduction which applies to all active generating and import resources with CSOs. PER reduces a resource's capacity payments if the Real Time Locational Marginal Price (LMP) for that resource exceeds the administratively determined strike price for a dual fuel combustion turbine unit regardless of whether that resource is operating in real-time or receiving real time revenues.

The second payment reduction – a penalty – comes into effect for any resource that assumed a Capacity Supply Obligation but failed to be fully available during a Shortage Event.[3] The Shortage Event is defined as a period of thirty or more contiguous minutes in which the system-wide or constrained zone specific price of the Ten-Minute Non-Spinning Reserve (TMNSR) or the Thirty-Minute Operating Reserve (TMOR)

[1] ISO-NE Strategic Planning Initiative White Paper entitled "FCM Performance Initiatives," October 2012 (FCM PI White Paper)
[2] Monthly FCA payments are stipulated in Section III.13.7.2.1.1. of the Market Rule 1
[3] Section III.13.7.2.7.1.2. of Market Rule 1

hits the administratively pre-determined cap for that service, indicating TMNSR or TMOR scarcity on the system[4].

The resource is considered available at its Economic Maximum Limit if:

(a) The resource was on-line with metered output above zero and following ISO dispatch instructions; or
(b) The resource was off-line with zero metered output, but it was available for dispatch and was following ISO's dispatch instructions and was capable of starting at ISO's request within thirty minutes; or
(c) The resource was off-line with zero metered output, but it was available for dispatch and was following ISO's dispatch instructions; was capable of starting within 12 hours and its output was competitively offered into the Energy Market but it was not committed by the ISO and consequently the resource was not available to operate within the 30 minute time period.
(d) The resource was off-line with zero metered output either because of a transmission outage or because it was on an approved maintenance or refueling outage.

In sum, under the current rule,

- Performance is related to the resource's *availability* relative to its CSO and the physical characteristics of the unit, i.e., start times, ramp time, etc. Availability in accordance with the resource's base physical characteristics is rewarded through the FCA payment received in the Forward Capacity Market. In addition, resources are compensated for energy and operating reserves they provide in the energy market and markets for ancillary services
- Non-availability is penalized. Resources that are not available up to their CSO are penalized in proportion to their full deviation between the CSO and their measured availability.
- Any Resource that is off line on planned / scheduled maintenance or refueling, is constrained from delivery by a transmission outage or that has met its obligation to offer its CSO into the Energy Market and was not dispatched by ISO-NE is not considered non-performing and is not penalized.

ISO-NE's Pay for Performance Design

ISO-NE's design of its performance incentives proposal rests on three fundamental assumptions, as stated in ISO-NE documents:

> 1. "A *Scarcity Condition* [formerly a shortage event] would be any 5-minute interval when the real-time reserve clearing price includes the Reserve Constraint Penalty Factor (RCPF) for: - System shortage of Total Operating Reserves, or - System shortage of Total 10-Minute Reserves, or - Zonal shortage of 30-Minute Reserve Requirement for the associated zone"[5]

[4] Section III.13.7.1.1.1 of Market Rule 1. Note that the definition of Shortage Event was changed in November 2013 to include TMOR. Prior to that time it had only included TMNSR.
[5] ISO-New England Performance Incentives Reference Guide, August 7, 2013. Page 1.

2. "*Forward position.* The Forward Capacity Auction determines a resource's base capacity payment, and creates a physical obligation and forward financial position in the capacity market. A resource's forward financial position is a share of the system's energy and reserve requirements during a reserve deficiency event"[6].

3. "*Settlement for deviations.* The performance payment during a reserve deficiency event is based on the deviation between a resource's actual performance and its forward financial position. These deviations are credited or charged at the Performance Payment Rate."[7]

The combination of these assumptions leads to the revised FCM related payment formula for all resources in the ISO-NE Forward Capacity Market (FCM) (Formula (1)):

$$Payment = P_{FCM} \times CSO + PPR \times \sum_{events} Score \quad (1)$$

Where

$Payment$ is the annual payment received by the resource in the FCM mechanism

P_{FCM} is the clearing price in the FCM auction

CSO is the capacity supply obligation of the resource cleared in the FCM auction

PPR is the Performance Pay Rate applied to the $Score$ of the resource in each period of scarcity conditions

The sum in the formula would be taken over all Scarcity Conditions that occurred for that resource during the period.

According to the proposed design, the $Score$ would be measured in MW and calculated for each resource for each scarcity condition. It would be calculated in such a manner that $Score$ values for the so called "over-performing" resources would be positive, for so-called "under-performing" resources – negative and the total sum of all scores during one scarcity condition period would be a negative number proportional to the shortage of MW that caused the scarcity condition. Thus, in accordance to this formula, each scarcity condition would trigger a reallocation of money primarily from "under-performing" resources to "over-performing" resources with the possibility that a small fraction of money collected from "under-performing" resources would be credited to consumers.

The proposed scoring system is based on the following formula (Formula (2)):

$$Score = Actual\ \mathrm{MW} - CSO \times BalancingRatio \quad (2)$$

[6] ISO New England Market Development, Memorandum to NEPOOL Markets Committee "FCM Performance Incentives – Performance Payment Rate", September 4, 2013. Page 1.
[7] Ibid.

Where:

$Actual\ \text{MW}$ - is the capacity of the resource delivering energy to the system plus capacity designated as providing reserves at the time of scarcity. Balancing Ratio is in turn defined as:

$$BalancingRatio = \frac{\text{Load + Operating Reserve Requirements}}{\text{Total CSO cleared in FCM}} \quad (3)$$

Note that the numerator in equation (3) relates to the actual load and operating reserve at the time of the scarcity condition.

Also note that formula (1) applies to all resources, including those that assume a CSO as well as those that do not assume a CSO in the FCM market.

- A resource with a CSO receives payment in the form of $P_{FCM} \times CSO$ and receives additional payments or is subject to charges in the form of $PPR \times \sum_{events} Score$ depending on whether the sum of all their Score values across all periods of scarcity condition is positive or negative.
- A resource without a CSO (i.e., their CSO is zero) receives zero advanced FCM payment but in any period of scarcity condition has either a zero or positive Score and therefore has an opportunity to receive payments but faces no risk of being assessed a charge.

The proposed scoring system expressed in formulas (2)-(3) implements the second of ISO-NE's fundamental assumptions that a "resource's forward financial position is a share of the system's energy and reserve requirements during a reserve deficiency event." The settlement for deviations assumption as expressed in Formula (1) indicates that the settlement for *deviations* is the compensation or charge in the form of the PPR multiplied by "the *deviation* between a resource's actual performance and its forward financial position."

Design Flaws: Two Examples

To understand the ISO-NE Proposal it is helpful to consider the following arithmetic examples.

Example 1. Assume that a large base load unit (e.g., a nuclear unit) with a CSO of 1000 MW is fully operational (Actual MW = 1000 MW) at the time of a scarcity condition that lasts for 1 hour. Let us further assume that Balancing Ratio at the time of scarcity is 50%. According to formula (2), the unit's Score would be equal to:

Score = 1000 MW – 50% x 1000 MW = 500 MW

Given that Score and that PPR is set at $2000/MWh, the unit would receive a performance incentive payment of:

$2000/MWh times 500 MW times 1 hour = $1,000,000.

This additive payment would be made even though the unit has been available at its CSO for which it already received full compensation through the first part of formula (1) (the FCM price). The added payment would be made notwithstanding the fact that the generator would have been compensated for all delivered energy through the energy price, remembering that large base load units typically do not provide operating reserves, only energy and planning reserves.

To fully appreciate the significance of this example, recall that there are 4540 MW of nuclear capacity in New England.[8] In this example, if such a 1 hour scarcity condition occurs under the 50% balancing ratio, the "under-performing" generators would transfer over $4.5 million for a single hour to nuclear generators for performing to their CSOs.

Example 2. Consider now an example of two "under-performing" resources – two combined cycle generators CC1 and CC2, each with 500 MW of CSO. Assume that under the same scarcity conditions shown in Example 1, CC1 was in the Day-Ahead market committed to run at full capacity during the hour of scarcity but becomes unavailable in real time due to a forced outage. CC2 competitively offered 500 MW in the Day-Ahead market but was not scheduled to run during the scarcity hour, because by following the ISO dispatch instruction it was shut down 1 hour prior and therefore was off-line when the scarcity conditions developed and could not be re-started within one hour of scarcity condition. Under the proposed PI both units would have the same Score and would be facing the same penalty charge. With the 50% Balancing Ratio, each unit's Score would be equal to:

$$\text{Score} = 0 \text{ MW} - 50\% * 500 \text{ MW} = -250 \text{ MW}$$

Both units would be subject to the Penalty Payment of $500,000. For CC1, it would receive a penalty assessed on 250MW even though its full 500MWs was not available. On the other hand, CC2 would also be penalized 250MW even though it was available and it operated in full accord with the ISO-NE dispatch instructions.

This example has two important implications. First, CC2 could properly be viewed as subsidizing the payments of CC1. For example, under the current system, only CC1 would be penalized and the penalty for CC1 would be assessed on the basis of its entire CSO, i.e. 500 MW, not 250 MW, whereas CC2 would not be penalized at all. Under the proposed system, CC2 effectively would be made responsible for half of the CC1's penalty. Second, the payments collected from penalized generators would mostly be used to finance the so-called over-performance of generators that were online under the scarcity conditions even to all those generators that would be performing up to their CSO levels and, as shown in Example 1, are already compensated for those deliveries in the real-time market.

To properly appreciate the magnitude of this revenue shift with the proposed PI mechanism, it is important to note that should the scarcity conditions emerge under the 50% balancing ratio, this mechanism would penalize at least 50% of all installed capacity in New England, or 50% of approximately 32,000 MW. The collective Score of this penalized capacity would be 8,000 MW (16,000 MW less 50% of 16,000 MW) and the resulting penalty assessed on this capacity at $2000/MW PPR

[8] Estimated as an average of the summer and winter Seasonal Claimed Capability per CELT.

would amount to at least $16 million dollars. This $16 million or more would be redistributed to on-line generators for what is proposed to be considered "over-performance" when in fact such a payment would be a substantial additional payment for performing according to their CSOs.

Fatal Flaws in the ISO-NE Proposal

The above two simple examples illustrate a number of fatal flaws in the ISO-NE Proposal. The most egregious flaw is that it is based on the assumption that the CSO resource's forward financial position is ***a share*** of the system's energy and reserve requirements during a time of a scarcity condition. This assumption is not logical, is arbitrary and is contrary to the actual requirements of a CSO in the FCM market. This assumption is also not supported by the economics and operations of ISO-NE's markets for energy and ancillary services.

This assumption is illogical and arbitrary because it has no relation to the "physical obligation" of the resource or any other relationship to FCM. Section III.13.6.1.1.1 of Market Rule 1 states that "a Generating Capacity Resource having a Capacity Supply Obligation shall be offered into both The Day-Ahead Energy Market and Real-Time Energy Market at a MW amount equal or greater than its Capacity Supply Obligation whenever the resource is physically available." Thus, the physical responsibility or obligation of the resource is to be available at its entire CSO, not a fraction of it, i.e. a balancing ratio. It is illogical to require the resource to be available at full capacity while considering that its "forward financial position" equals only a fraction of the resource's physical obligation. Moreover, if the forward financial position of the resource were set at a fraction of its CSO as is proposed, it is illogical that the payment (P_{FCM}) should be applied to the entire CSO and not simply to the calculated fraction.

This forward financial position assumption contradicts the economics and operations of the energy and ancillary services markets. Setting the so-called forward financial position in proportion to the balancing ratio would only make sense if resources were expected to be dispatched in proportion to the system-wide load they serve. This happens neither in the energy market, nor in markets for ancillary services. Generators are dispatched primarily in merit order on the basis of their economics and as a result are never dispatched in proportion to the load. If the dispatch cost of the generator is low, it is dispatched at its full capacity, i.e. at the entire CSO. If the dispatch cost of the generator is high, it is not dispatched at all. Market rules in New England (and in all other markets) do not provide for generator outputs to simply be scaled up or down in proportion to load. Similarly, a resource's participation in the market for ancillary services is based on the resource's economics, i.e. on the opportunity costs foregone by that resource in the energy market in order to provide reserves.

In short, the forward financial position is an inappropriate benchmark against which to assess the performance of the resource. Performance should be measured against a benchmark that is solidly tied to physical obligations and operational rules, not against illogical metrics such as BR * CSO. As shown in the examples above, by using this illogical benchmark ISO-NE's PI proposal creates an unjustifiable system of resource compensation, provides few if any incentives for investment in additional capacity and, in the process, would lead to massive redistribution of revenues among generators.

Yet another significant flaw of the proposed design is that the ***magnitude of the redistribution of revenues*** created by formula (1) has no connection to the magnitude of the scarcity problem that triggers that redistribution. This redistribution of revenues is not reflective in any way of the magnitude of the shortage to which it is being applied. The magnitude of the revenue redistribution among so called "over-performing" and "under-performing" generators bears virtually no relationship to the magnitude (or cost) of the scarcity problem that triggers this revenue redistribution.

To demonstrate the significance of this problem consider the following example under the same assumption that the scarcity conditions develop under the 50% balancing ratio and the total installed capacity of 32,000 MW. In this example I assume that the scarcity conditions would result in a 100 MW shortage in operating reserves. I assume that the requirements for energy and operating reserves equal 16,000 MW while actual MW under the PI mechanism are only 15,900 MW. This implies that 16,100 MW (32,000 MW total capacity less 15,900 Actual MW) would be non-performing capacity subject to penalty. Thus, the penalty assessed on the system would be:

Penalty = $2000/MWh x 50% x 16,100 MW x 1h = $16,100,000

Of those, the "over-performing" generators would receive:

Reward = $2000/MWh x (15,900 MW – 50% x 15,900 MW) x 1 h = $15,900,000

According to the ISO-NE's Proposal the difference between the penalty collected from "under-performing" generators and the reward paid to "over-performing" generators (which would equal $200,000) would be refunded to consumers.

If one assumes that the shortage was 10 MW instead of 100 MW, and applies the same calculations, the penalty would be equal to $16,010,000, the reward would be $15,990,000 and refund to consumers would be $20,000.

Indeed, the scarcity could be of 1 kW, 1 MW or 100 MW, the results would be the same: the resources providing energy and operating reserves would collectively receive $16.0 million over and above revenues already received for energy and operating reserves and resources that were not dispatched or operating to provide energy or operating reserves would be penalized by approximately an equivalent amount.

ISO-NE justification of the proposed market design

ISO-NE's FCM PI White Paper outlines three points in support of their performance incentive design.

> "The ISO's proposed pay-for-performance approach adheres to several market design principles that characterize efficient, competitive markets:
>
> - It enables suppliers to earn the missing money revenue stream that an efficient energy market would provide, by delivering energy and reserves during scarcity conditions;

- It provides performance payments and charges contingent upon actual performance irrespective of fault;
- It provides the same incentives to all suppliers, regardless of the resource type. Consistent with a competitive market, it neither favors nor discriminates against any class of resources.[9]"

These statements are not accurate given the ISO-NE's Proposal.

ISO-NE Point # 1. The PI System enables suppliers to earn the missing money revenue stream that an efficient energy market would provide, by delivering energy and reserves during scarcity conditions.

As example 1 above demonstrates, this is not correct because the proposed system is designed to compensate certain resources (e.g. large base load generators) at a level that would likely be over and above their just and reasonable revenues from the FCM and energy market. Although such large units may be subject to penalty payments as well as overage payments, assuming an 80% availability of the base load generator, it has a 4:1 greater chance of receiving a net positive payment than of facing a penalty. As a result these generators would be compensated in excess of what an efficient market would provide.

ISO-NE Point # 2. The PI System provides performance payments and charges contingent upon actual performance irrespective of fault

While in real-time this claim may be correct, the fact is that "actual performance" cannot only be tied to the real-time production but must also be cognizant of the dispatch schedule and physical capability of the system. For example, the ISO-NE Proposal does not allow for the fact that the ISO-NE may be the entity at fault for not having scheduled a specific generator for a specific time period or the ISO-NE may have scheduled a transmission outage that prevents a specific generator capable of responding from actually delivering. The concept that "no-fault is allowed" ignores the realities of system operations that, at the end of the day, are entirely within the purview of ISO-NE, not the entities with CSOs. Generators not scheduled may never be given the chance to produce energy or operating reserves during a period of scarcity conditions but still would be penalized for ISO-NE decisions.

ISO-NE point # 3. The PI System provides the same incentives to all suppliers, regardless of the resource type. Consistent with a competitive market, it neither favors nor discriminates against any class of resources.

This claim is also not correct. Resources of different types effectively receive different incentives. Inflexible but low cost generating units such as nuclear capacity would stand to see a positive revenue outcome. Less flexible higher cost generating units would face the potential for significant penalty charges. Resources vary in terms of their physical characteristics and hence in terms of their ability to be able to provide real-time production.

[9] FCM PI White Paper at p.13

While it is acknowledged that the FCM would continue to allow for bilateral trading, the ISO-NE Proposal is not a market and in and of itself provides no tradable products or services. This fact alone would prevent entities with CSOs from hedging their transactions. Further, the magnitude of payments would be disconnected from the magnitude of the operating reserves problem that triggers payments and penalties. As a result, the proposal violates even the most basic principles of cost causation and cannot be considered just and reasonable.

Impact on New England Consumers

The proposed PI mechanism would be burdensome to New England consumers. Indeed, as shown in the report prepared by the Analysis Group, the implementation of the propose PI mechanism would increase FCM clearing prices in 2018/19 planning period from a no FCM PE scenario of $1.31/kW-month to $3.76/kW-month under the low or moderate gas shortages scenario to as much as $4.49/kW-month under the high gas shortages scenarios[10]. Given an ICR for 2018/19 of 34,500MW, this would result in an annual increase of consumer capacity payment over no FCE PI of over $1 billion per year[11,12]. According to the "Historical Scenario" provided in the Analysis Group's report, these incremental payments do not incentivize any new entry of generation[13]. In the Analysis Group Report "Near-Term Equilibrium Scenario" indicates an increase of between 1,036MW and 1,472MW of Surplus Capacity above ICR[14]. However, the Analysis Group appears to assume that any cost effective reliability improvements would be achieved through an increase of dual fuel capacity in New England[15]. However, based on the Analysis Group's data, in contrast to over a $1 billion in incremental annual capacity payments, I estimate that the annualized costs of additional dual-fuel capability would be between $0.6 million and $119 million annually[16].

New England consumers would see a three-fold increase in capacity costs that would incentivize virtually no incremental capacity.

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[10] Todd Schatzki and Paul Hibbard "Assessment of the Impact of ISO-NE's Proposed Forward Capacity Market Performance Incentives," The Analysis Group, September 2013 ("The Analysis Group Report"). Table 4 estimates that under current rules the FCA Clearing Prices in the 2018/19 Commitment Period would be 1.31 $/kW-month and under different gas shortage scenarios examined the FCM PI revisions would result in a FCA Clearing price of between 3.76 to 4.49 $/kW-month. (Page 30)

[11] The Analysis Group Report, page 41, lists the Installed Capacity Requirement (ICR) during the 2018/2019 Commitment Period to be 34,500 MW.

[12] Given a 2018/19 ICR of 34,500MW (footnote 11) and The Analysis Group's Report estimates the increase in the FCA Clearing price of between $2.45/kW-month and $3.18/kW-month (footnote 10). The calculated increase in annual consumer capacity payments would be between $1,014,300,000 to $1,316,520,000 (34,500 MW times $2.45/kW-month and 34,500MW times @3.18/kW-month).

[13] The Analysis Group Report, Table 4, Columns 2, 3 and 4, page 30.

[14] The Analysis Group Report, Table 4, Columns 5, 6 and 7, page 30

[15] The Analysis Group Report, Table 3, and text, page 20.

[16] The Analysis Group Report estimates that the incentives created by FCM PI would cause an increase in dual fuel capacity of between 39 MW and 7,988 MW (Table 4, Row 10, Columns 5, 6 and 7) at an annualized cost no greater than $ 15,000/ MW. (Table 3, Pages 20). Based on these values, the annual cost of implementing these upgrades would be between $585,000 and $119,820,000.

The NEPOOL Proposal

The NEPOOL Proposal focuses on providing increased long-term as well as real-time performance incentives to those generators with a Capacity Supply Obligation – specifically focused on measurement of historic performance during system peak periods – a continuous measure of capacity availability. The NEPOOL Proposal also provides for the modification of the real time calculation of energy prices based on the cost of providing energy and reserves (to an administrative cap) in real-time. In contrast to the ISO-NE Proposal, the NEPOOL Proposal is a modification of the current co-optimized structure of the energy and reserves market rather than a fundamental and flawed restructuring of the capacity markets.

The NEPOOL Proposal effectively and efficiently would achieve the goal of providing strong long-term and real-time performance incentives to generators receiving capacity payments from the FCM. The NEPOOL Proposal would achieve the objective by making only two changes in the tariff.

- The first proposed change (III.2.7A Calculation of Real-Time Reserve Clearing Prices) would modify the Reserve Constraint Penalty Factors (RCPF) for Thirty Minute Operating Reserve (TMOR) from $500 to $1,000 and the Ten Minute Non-Spinning Reserve (TMNSR) from $850 to $1,500. As is discussed below, this change would provide for more efficient market signals and thereby a greater positive incentive to generators to be available during periods of reserve shortages. At the same time it would provide a greater real-time signal to the market of the value of the energy as well as the capacity maintained as operating reserves by increasing the LMP.
- The second would be to eliminate the "Shortage Event" and to substitute, in broad concept, the Equivalent Peak Period Forced Outage Rate (EFORp) mechanism. This change is parallel to the FERC approved structure implemented in PJM and is focused on the measurement of capacity availability during all defined EFORp hours rather than availability only during a Shortage Event. EFORp hours would be the same as the Demand Resource On-Peak Hours or hours ending 1400 through 1700 Monday through Friday (excluding holidays) in June, July and August and hours ending 1800 through 1900 Monday through Friday (Excluding holidays) in December and January. The Availability Score would then be the average availability (availability divided by the Capacity Supply Obligation) for all EFORp hours. The score for the current year would then be compared to the five-year historical average to calculate penalties or charges.

The NEPOOL Proposal separates energy (the first bullet) from capacity (the second bullet) elements of the Capacity Supply Obligation and would provide the information and incentives to both capacity and demand to see and respond to scarcity of Operating Reserves and to be available during periods of the year when peak demands are most likely to occur (EFORp hours).

The NEPOOL Proposal offers a well-conceived and rational structure for achieving what the ISO-NE has indicated as its objective, namely to provide an increased incentive to generators and demand resources to be available during periods of localized and system reserve insufficiency. In addition, the NEPOOL Proposal would provide the economic incentives for resources with CSOs to ensure high levels of availability when resource adequacy is most at risk.

- Replacing the Shortage Event with EFORp provides a strong economic signal to those with CSOs to be consistently available. Further, unlike the ISO-NE, the EFORp proposal provides for a rational handling of planned and unplanned outages. Where the ISO-NE Proposal attempts to reward and penalize all CSOs on a real-time, episodic basis, the NEPOOL Proposal, following the logic of the current tariff, does not penalized resources that are unavailable due to refueling, planned outages, scheduling by ISO-NE and transmission constraints. As a result, the NEPOOL Proposal would create an Availability Score for each CSO that is reflective of its availability given standard operating practice. Further, for a resource to remain in the capacity market pool it could not have an annual score of less than 40% for two of the three preceding years.
- By increasing the Reserve Constraint Penalty Factors for System TMOR from $500 to $1,000/MWh and the System TMNSR from $850 to $1,500/MWh the NEPOOL Proposal would provide incentives to the resources with CSOs, to resources without CSOs and to the demand side of the power system.
    - Resources with a CSO would see an increase in the revenue that they can receive for providing TMOR and TMNSR. This increase represents increased revenue potential for CSOs during periods of reserve shortage and therefore a significant positive real-time performance incentive.[17]
    - This same increase in TMOR and TMNSR would provide an incentive to demand that sees a greater price signal to reduce consumption during periods of reserve shortage.
    - Given the incentives and the structure of aggregators of demand, it is likely that the economic incentive associated with this increase in real-time prices would bring additional, highly flexible demand response products into the market.
- Unlike the ISO-NE Proposal the NEPOOL Proposal focuses on the carrot rather than the stick for a performance incentive and in so doing provides the signal for greater economic efficiency of both the capacity market and the energy market.
    - EFORp would reduce the uncertainty in capacity revenues by the creation and implementation of a logical, consistent, time averaged scoring system that would allow CSO entities – and their funding organizations – to better forecast their expected revenues.
    - The increase in penalty factors would provide improved price signals and with them improved real-time market performance that would reduce the price suppression that is currently caused by out-of merit dispatch.

Conclusion

The conclusion of this report is that while the concept brought forward by ISO-NE may provide for greater incentives for performance on the part of those entities with Capacity Supply Obligations (CSO), it is neither just nor reasonable in the manner in which performance incentives are calculated or payments and penalties allocated. ISO-NE has proposed a structure to achieve its objective that defies economic logic in a number of critical ways; provides payments and imposes penalties in unjustified

[17] It must be noted that the amount finally received by entities with CSOs would be net of PER.

circumstances and explicitly (and apparently intentionally) does not reflect cost causation. Further, the ISO-NE Proposal would levy a high cost burden on New England consumers with little if any demonstrated benefit.

In contrast, the NEPOOL Proposal would provide an evolutionary approach to increased performance incentives based upon the current structure of the FCM and the real-time markets offer primarily positive incentives in markets where most appropriate, and reinforce the economic market signals that are the underpinning of the ISO-NE wholesale electricity market design objective.

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Richard D. Tabors, Ph.D. is an economist and scientist with 35 years of domestic and international experience in energy planning and pricing, international development, and water and wastewater systems planning. He is currently President and Principal of *Across the Charles* an energy, water and wastewater consulting group in Cambridge, Senior Consultant at Greylock McKinnon of Cambridge and an Affiliate of the MIT Energy Initiative. Prior to forming *Across the Charles* Dr. Tabors was Vice President of Charles River Associates.

From 1976 until 2006 Dr. Tabors held a variety of position at Massachusetts Institute of Technology culminating in the title of Senior Research Engineer and Senior Lecturer. These positions involved research development and supervision as well as academic teaching and included being Assistant Director of the power systems engineering laboratory (LEES) and associated director of the Technology and Policy master's program. Prior to MIT Dr. Tabors was Assistant Professor of City and Regional Planning and a member of the teaching faculty of the College of Arts & Sciences at Harvard University. At present he is a visiting professor of Electrical Engineering at the University of Strathclyde, Glasgow, Scotland.

Dr. Tabors was a member of the team at MIT that developed the theory of spot pricing (*Spot Pricing of Electricity* Kluwer Academic, 1989) upon which real-time pricing (RTP) and locational marginal pricing (LMP) of electricity and transmissions services are based. While still at MIT Dr. Tabors and coauthors Michael Caramanis & Roger Bohn formed Tabors Caramanis & Associates (1988) that was sold to Charles River Associates in 2004.

Dr. Tabors provides expert assistance and testimony in regulatory and arbitration cases in the energy sector at the Federal, State and Provincial levels in North America and provides technical assistance in electricity markets and market development worldwide. His strength both in academia and in private practice is in the development and management of effective, client and problem focused teams that bring intellectual originality and rigor to the challenges of energy markets.

EXPERIENCE

2012–Present *President and Principal* Across the Charles, an Energy and Environmental Consulting Group, Cambridge, MA and Senior Consultant, Greylock McKinnon Associates

2004–2012 *Vice President*, Charles River Associates

- Co-director of Energy & Environment practice area.

2004–Present *Visiting Professor of Electrical Engineering*, University of Strathclyde, Glasgow, Scotland

1986–2006 *Senior Lecturer*, Technology and Policy Program, Massachusetts Institute of Technology (MIT)

1988–2004 *Founder and Principal*, Tabors Caramanis & Associates, Inc.

1989–1998 *Lecturer*, Department of Electrical Engineering and Computer Science, MIT

- "Introduction to Power Systems Operations and Planning."

1992–1998 *Senior Research Engineer*, Laboratory for Electromagnetic and Electronic Systems, MIT

1985–1998 *Assistant Director*, Laboratory for Electromagnetic and Electronic Systems, MIT

- Responsible for laboratory administration and research in power systems economics and planning, research on power systems monitoring and control, principal investigator on research program in performance based monitoring and control.

1990–1993 *Principal Research Associate*, MIT

- Co-Faculty "Planning for Water and Sewerage" and "Dealing with the Complete System," MIT Summer Session.

1984–1989 Co-Faculty "Power Systems Planning & Operation: Methodologies for Dealing with an Uncertain Future", MIT Summer Session.

1978-1988 *Lecturer*, Department of Urban Studies and Planning, MIT

1973-1988 *Principal*, Meta Systems

- utilities group in power systems planning, pricing and systems analysis

1985–1987 *Faculty*, Course 11.944, Department of Urban Studies and Planning (co-taught as KSG S115 with P. Rogers) “Energy Sector Planning in Developing Countries.”

1971–1976 *Research Associate and Member*, Center for Population Studies, Harvard University

- Research on resource and environmental planning in developing nations of South Asia and Africa.

1978–1984 *Program Manager*, Utility Systems, MIT Energy Laboratory

- Economic and systems research and development in electric and gas utility systems; including the integration of new generation systems (photovoltaics) into the grid.

1979-1983 *Project Manager and Principal Investigator*, Electric Generation Expansion Analysis System (EGEAS) Project, under contract to EPRI, MIT Energy Laboratory.

1977-1982 *Project Manager and Principal Investigator*, Photovoltaics Project, under contract to U. S. Department of Energy, MIT Energy Lab.

1976-1977 *Economist*, Photovoltaics Project, MIT Energy Laboratory and Lincoln Laboratory.

1976-1977 *Energy Economist*, New England Energy Management Information Systems (NEEMIS), Energy Laboratory, MIT.

1974-1976 *Assistant Professor of City and Regional Planning*, Harvard University.

1973-1976 *Research Fellow*, Environmental Systems Program, Division of Engineering and Applied Physics, Harvard University.

1971–1977 *Co-Faculty*, with Professor R. Revelle, Natural Science 118, & 119, Human Population and Natural Resources, and Population & Environment and in Urban Setting, Harvard University.

1973-1974 *Lecturer on City and Regional Planning*, Graduate School of Design, Harvard University.

1971 *Resident Representative*, Harvard University, East Pakistan (Bangladesh) Land, Water and Power System Study, Dacca, East Pakistan.

1970 *Graduate Administrative and Teaching Assistant* to A. K. Campbell, Dean, Maxwell Graduate School of Citizenship and Public Affairs, Syracuse University.

1969–1970 *Syracuse University Intern*, Economic Division, USAID Pakistan.

- Informal advisor on Regional Economic Planning to the Urban Development Directorate, Planning Department, Government of East Pakistan (Bangladesh).

CONSULTING EXPERIENCE

- For the City of New York provided technical and analytic support in the evaluation of the possible closing of the Indian Point Nuclear Generating Station including analysis of the impact of the Fukushima Nuclear accident (2011)
- Provided technical and economic strategy and regulatory assistance to off-shore wind developer (2009 – Present)
- In cooperation with Merrill Energy, provide expert advice on implementation of legislation to recover capital cost of transmission investment in Peru. (2010)
- Direct and provide consulting advice to the Federal Electricity & Water Authority in the United Arab Emirates on corporate reorganization. (2007-2011)
- Provide expert testimony to major US independent power producer in arbitration with steam host. (2007 – Present)
- Direct and provide expert services and consulting advice to Electricite du Liban on revenue recovery through development of AMI systems. (2006 – Present)
- Direct and provide consulting services to Electricite du Liban on restructuring of distribution services. (2006 – Present)
- Provide expert testimony in multiple contract disputes between bankrupt Independent Power Producer and power marketer. (2004 – 2006)
- Provide expert analytic assistance to Private Equity Fund on purchase of generation assets within the United States (2006- 2007).
- Member, Board of Directors, NeuCo Corporation.
- Direct and provide consulting services to Abu Dhabi Water and Electricity Authority on distribution system performance. (2003–2005)
- Direct and provide expert testimony on the development of the MidWest Independent System Operator. (2002–Present)
- Direct and provide expert testimony on long-term contract market in California. (2002–Present)
- Direct and provide expert testimony in purchase, contracting and regulatory approval of Midwestern transmission system. (2002–2003)

- Direct and provide expert testimony in 9-billion dollar California Electric refund case (2001–Present)
- Direct and provide expert testimony and consulting to major U.S. market and generator in the redesign of the California electricity market. (2002–Present)
- Member of the Blue Ribbon Task Force on design of electricity auctions of the California Power Exchange with Alfred Kahn, Peter Cramton and Robert Porter. (2000–2001)
- Member, Board of Directors of Dynamic Knowledge Corporation, Glasgow, Scotland. (2001–Present)
- Consultant to more than 20 power development companies for evaluation of locational value of new generation and transmission. (1999–Present)
- Consultant to and member of Technology Advisory Board, Excelergy Corporation, development of utility billing and system auction software. (1999–Present)
- Consultant to a Midwest utility for development of transmission congestion pricing structure. (1999–2001)
- Consultant to transmission asset development team of major U.S. corporation. (1999–2000)
- Consultant to and member of advisory board of Altra Energy Systems, electronic trading software and platform development company for electronic trading of electricity. (1998–2001)
- Consultant to major U.S. paper manufacturer for federal regulatory change required to interconnect a new co-generation facility. (1998–2000)
- Consultant to major Midwest utility in the development of an independent transmission company and the required tariffs. (1998–2002)
- Consultant with Enron Capital and Trade Resources on U.S. electricity restructuring with specific assignments in California, New York, Massachusetts and New England. Includes testimony in California “Blue Book” en banc hearings and participation in California Competitive Power Market Working Group. (1994–2001)
- Consultant to the Office of the Attorney General, Commonwealth of Massachusetts for Electric Utility Industry Restructuring. (1995–1998)
- Consultant with Sithe Energy on electricity pricing and electric industry restructuring. (1995–1998)
- Consultant with Independent Power Producers of New York (IPPNY) on restructuring of electric sector in New York. (1995–1998)

- Consultant to the Department of the Attorney General, State of Rhode Island and Providence Plantation for electric utility industry restructuring. (1996–1997)
- Consultant to the New England Competitive Power Coalition providing support for development of a blueprint for restructuring the New England Power Pool. (1995–1997)
- Consultant to ABB/Systems Control on transmission pricing and power systems operations. (1994–1997)
- Consultant to a major western utility for the development of transmission pricing strategies. (1994–1996)
- Development of real-time pricing strategies and rates for Oglethorpe Power Company, Atlanta, GA. (1995–1996)
- Consultant on the background to electric industry restructuring to Central Vermont Public Service. (1995)
- Development of real-time pricing rate response experiments for NYSERDA, EPRI and ESSERCo in ConEd and NYSEG service territories: Response to real-time pricing. (1989–1994)
- Development of marginal, cost-based, transmission system pricing system for the National Grid Company (NGC) of the United Kingdom. (1991–1993)
- Development of real-time rate structure and evaluation of customer impacts for Central Maine Power Company. (1990–1991)
- Development of purchase and transmission strategy for major U.S. independent power producer. (1990)
- Conservation and load management analysis and testimony for Boston Gas Company. (1987–1988)
- Development of Electric Power Systems Consulting Group, Meta Systems Inc. (1985–1988)
- Variable energy cost/spot pricing studies under contract to Integrated Communications Systems of Atlanta. Utilities included Mid-South and Pacific Gas and Electric, Southern California Edison, Central and South West. (1984-1987)
- Metcalf & Eddy Engineering, analysis of economic benefits of cogeneration/district heating for Columbia Point housing, Boston Redevelopment Authority. (1984–1985)
- Value of reliability study for Public Service of New Mexico. (1984)
- With East-West Center, Honolulu, Hawaii, study of electric futures of northeast Asia, Japan, Korea and Taiwan. (1983–1984)

- Independent variable energy cost spot pricing studies for Georgia Power, Florida Power and Light, Florida Power Corp., Tampa Electric and Gulf Power. (1983–1984)
- Petroleum pricing study, Philippines for IBRD. (1983–1984)
- Lignite pricing for electric power generation, Thailand. For IBRD (1982–1983)
- Independent, review of electric power futures for combustion engineering. (1982)
- Consultant, Microwave Associates, Inc., on electric load management and control. (1980-1981)
- Urban energy impact statement for HUD. (1979–1980)
- Consultant, Urban Systems Research and Engineering. Projects included: Analysis of Boston wastewater management plan for C.E.Q.; definition of 'modal' urban areas for environmental impact analysis using the EPA developed SPACE/SEAS model; Interceptor project to evaluate the impact of EPA interceptor grants program or land use patterns in suburban and rural areas of EPA Regions 2, 4, 6; Rural growth project analyzing regional development in non-metropolitan multi-county areas in the United States. (1971–1977)
- Urban systems research and engineering analysis of Boston wastewater management plan for C.E.Q. (1977)
- Bangladesh energy study for Asian Development Bank and UNDP. (1975–1976)
- Urban systems research and engineering, definition of model urban areas for environmental impact analysis using the EPA developed SPACE/SEAS model. (1975–1976)
- Land use and environmental quality modeling and case study analysis of land use impacts on water and air quality. Case studies focused on the Mill River basin in the New Haven SMSA. (1974–1975)
- Member, Technical Advisory Panel for Educational Evaluation in Massachusetts, Office of the Commissioner in Education, Commonwealth of Massachusetts. (1973–1974)
- Lake Chad polder development study of agricultural development with low-lift irrigation pumping in the area immediately surrounding Lake Chad. (1974)
- Urban systems research and engineering, interceptor sewer project to evaluate the impact of EPA interceptor grants program on land use patterns in suburban and rural areas of EPA Regions, 2,4,6. (1974)
- Decision-making and flood plain management in the Connecticut River valley, study for New England River Basin Commission. (1973)

FIELDS OF EXPERTISE

- Energy economics / energy pricing
- Power systems operations and planning
- Asset valuation: Generation, Transmission and Generation
- Water and wastewater management
- Corporate strategic planning and analysis
- Corporate reorganization and management

PROFESSIONAL AFFILIATIONS

- Institute of Electrical and Electronic Engineers
- American Waterworks Association
- International Association of Energy Economists
- Energy Bar Association

PUBLICATIONS

Books, Book Chapters, and Monographs

The Definition of Multifunctional Planning Regions: A Case Study of East Pakistan. A report to the East Pakistan Land, Power and Water Study, Harvard University Center for Population Studies, May 1971.

"Preferences for Municipal Services of Citizens and Political Leaders: Somerville, MA, 1971." With M.A. Vinovskis. *Population Policymaking in the American States: Issues and Processes*, D.C. Heath and Co., May 1974.

The Syracuse Metropolitan Regions: A Background for Paretian Environmental Analysis. Environmental Systems Program, Harvard University (ESP Monograph), September 1974.

Population Policymaking in the American States: Issues and Processes. With Bergman, Elihu, D. Carter, R. Cook, and D. Weir. D.C. Heath and Co., May 1974.

"Framework for the Analysis of State and Local Population Policy." *Population Policymaking in the American States: Issues and Processes*, D.C. Heath and Co., May 1974.

Interceptor Sewers and Urban Sewers. With Binkley, Collins, Kanter. D.C. Heath and Co., October 1975.

Land Use and the Pipe: Planning for Sewerage. With M. Shapiro and P.P. Rogers. D.C. Heath and Co., November 1976.

"Infrastructure Planning." In ASPO, *Rural and Small Town Planning*, The Old West Regional Commission, 1978.

"Utility Services." In So, Stollman, Beal, and Arnold, eds., *The Practice of Local Government Planning*, International City Management Assoc., December 1979.

"Energy Demand Estimation." With R. deLucia, In Jacoby and deLucia, eds., *Energy Planning in Developing Countries: The Case of Bangladesh*, John Hopkins Press, 1982.

"Traditional/Renewable Energy Sources." With R. DeLucia. In Jacoby and deLucia, eds., *Energy Planning in Developing Countries: The Case of Bangladesh*, Johns Hopkins Press, 1982.

"Utility Spot Pricing to Coordinate Deregulated Utilities, Customers and Generators." With R. Bohn and F. Schweppe. In Plummer, Ferrar and Hughes, eds., *Electric Power Strategic Issues: Deregulation and Diversification*, Johns Hopkins Press, 1982.

Electric Generation Expansion Analysis System, Vols. 1 & 2. With M. Caramanis and F.C. Schweppe. With Stone & Webster Engineering, Vols. 3, 4 & 5, EPRI, Palo Alto, CA, Report No. EL-2561, 1983.

"Electrical Utility Load Management Systems." A.H. El-Abiad ed., *Power Systems Analysis and Planning*, McGraw-Hill, 1983.

"Cogeneration: Ownership and Operating Economics." A.H. El-Abiad ed., *Power Systems Analysis and Planning*, McGraw-Hill, 1983.

"The New (Alternative) Electric Generation Technologies: An Evaluation of Their Potential." A.H. El-Abiad ed., *Power Systems Analysis and Planning*, McGraw-Hill, 1983.

"Using Spot Pricing to Coordinate Deregulated Utilities, Customers and Generators." With R. Bohn, and F. Schweppe. In Plummer, Ferrar and Hughes, eds., *Electric Power Strategic Issues*, Public Utilities Reports Inc., 1983.

"An Approach to Deregulating the Generation of Electricity." With R. Bohn, B. Golub, and F.C. Schweppe. In Plummer, Ferrar and Hughes, eds., *Electric Power Strategic Issues: Deregulation and Diversification*, Public Utility Reports, 1984.

"Utility Finance and Planning in Japan, Korea and Taiwan." With M. Castillo-Bonet. In Kim, Smith and Rose, eds*., Electric Futures of Asia and the Pacific*, East West Press Center, Honolulu, 1986.

Electricity in Northeast Asia: The Experiences of Japan, Korea, and Taiwan. Greenwood Press, Westport, CT, 1987.

Spot Pricing of Electricity. With F.C. Schweppe, M.C. Caramanis, and R. Bohn. Kluwer Academic Press, 1988.

Energy Aftermath: How We Can Learn from the Blunders of the Past to Develop our Energy Future. With T.H. Lee and B.C. Ball. Harvard Business School Press, Boston, 1989.

"Transitional Strategies for Emissions Reduction in the Electric Power Sector." With B. L. Monroe, III. In J. Tester and N. Ferraro, eds., *Energy and Environment in the 21st Century*, MIT Press, 1991.

"Engineering Economic Analysis: Applications to Electric Utility Investment Planning." In M. Baughman ed., *Engineering Economic Analysis: Overview and Current Applications*, IEEE Tutorial, 1992.

"Unbundling the U.S. Electric Power Industry: A Blueprint for Change." With Fernando, Kleindorfer, Pickel, and Robinson. Tabors Caramanis & Associates, March, 1995.

Articles and Reviews

"A Preliminary View of Economic Change and Urbanization: Bangladesh 2000." In Thomas and Lavan, eds., *West Bengal and Bangladesh: Perspectives from 1972*, Asian Studies Center, Michigan State University, South Asia Series No. 21, 1973.

"Urbanization and War: Inertia in Urban Migration in Bangladesh." Presented to the XXVI Annual Meeting of the Association for Asian Studies, Boston, MA, April 1974.

"Land Values and Public Investment in Urban Fringe Areas: A Case Study of Clay, New York." With M. Shapiro. Papers and Proceedings of the Northeast Regional Science Association, 1975.

Review of Greenberg et al., "Solid Waste Planning in Metropolitan Regions" in *Annual of Regional Science*, June 1978.

"A Louisiana Case Study: Towards a Single System of Substrate Regions." With C. S. Binkley. *Growth and Change*, January 1980.

"Homeostatic Utility Control." With F. C. Schweppe, J. L. Kirtley, H. R. Outhred, F. H. Pickel, and A. J. Cox. *IEEE Transactions on Power Apparatus and Systems*, Vol. PAS-99, No. 3, May/June 1980.

"Rate and Penetration Analysis, the Impact of Distributed Photovoltaic Power Systems within the Utility Grid System." With A. Cox, S. Finger, and A. Burns. *IEEE Transactions, IEEE 14th Photovoltaic Specialists Conference*, 1980.

"Economic Integration of New Energy Technologies into the Grid Using Homeostatic Control." Invited paper, IEA Conference on New Energy Conversion Technologies, April 1981.

"Economic Operation of Distributed Power Systems within an Electric Utility." With S. Finger and A. Cox. *IEEE Transactions on Power Apparatus and Systems*, Vol. PAS-100, No. 9, September 1981.

"Solar Energy/Utility Interface: The Technical Issues." With D.C. White. *Energy, The International Journal*, January 1982.

"Homeostatic Control for Electric Power Usage." With F. C. Schweppe and J. L. Kirtley. *IEEE Spectrum*, Vol. 19, No. 7, pp. 44–48, July 1982.

"The Introduction of Non-Dispatchable Technologies as Decision Variables in Long-Term Generation Expansion Models." With M. C. Caramanis, K. S. Nochur, and F. C. Schweppe. *IEEE Transaction on Power Apparatus and Systems*, Vol. PAS-101, No. 8, August 1982.

"Wisconsin Study Shows Homeostatic Control has High Potential for Industrial Loads." With F. C. Schweppe. *Modern Power Systems*, Vol. 3, No. 1, pp. 43-46, January 1983.

"Homeostatic Control: The Utility Customer Marketplace for Electric Power." With F. C. Schweppe and J. L. Kirtley. In *Local Heat and Power Generation: A New Opportunity for British Industry*, Interscience Enterprise, U.K., 1983.

"Deregulating the Electric Utility Industry." With F. C. Schweppe and R. Bohn. *The Energy Journal*, January 1984.

"Electricity Spot Prices in Developing Countries." *National Development*, November 1984.

"Evaluation of Spot Price Based Electricity Rates." With F.C. Schweppe and M. C. Caramanis. *IEEE Transactions on Power Apparatus and Systems*, Vol. PAS-104, no. 7 July 1985.

"Natural Gas Fired Combined Cycle Generators: Dominant Solutions in Capacity Planning." With D. Flagg. *IEEE Transactions on Power Apparatus and Systems*, No. 85 SM 492-4, 1985.

Review of Munasinghe, "Energy Pricing and Demand Management" in *The Energy Journal*, 1987.

"Utility Experience with Real Time Rates." With F. C. Schweppe and M. C. Caramanis. *IEEE Transactions on Power Systems*, Vol. 4, No. 2, May 1989.

"Coal to Natural Gas Seasonal Fuel Switching: An Option for Acid Rain Control." *IEEE Transactions on Power Systems*, Vol. 4, No. 2, May 1989.

"Algorithms for a Spot Price Responding Residential Load Controller." With B. Daryanian and F. C. Schweppe. *IEEE Transactions on Power Systems*, Vol. 4, No. 2, May 1989.

"Energy Systems for the Twenty-First Century." With B. C. Ball and T. H. Lee. *International Journal of Global Energy Issues*, Vol. 1, Nos. 1/2, 1989.

"Planning for Future Uncertainties in Electric Power Generation: An Analysis of Transitional Strategies for Reduction of Carbon and Sulfur Emissions." With B. L. Monroe, III. *IEEE Transactions on Power Systems*, 1991.

"Real Time Pricing as a Component of Least-Cost Power Strategies." With M.C. Caramanis and B. Daryanian. *Proceedings of the American Power Conference*, 1991.

"An Experiment in Real Time Pricing for Control of Electric Thermal Storage Systems." With B. Daryanian and R. E. Bohn, *IEEE Transactions on Power Systems*, 1991.

"A Computer Design Assistant for Induction Motors, Using Monte-Carlo Design Synthesis to Augment a Design Database." With J. A. Moses, J. L. Kirtley, J. H. Lang and F. Cuadra. *Conference Record of the 1991 IEEE IAS Annual Meeting*, 1991.

"A Simulator of the Manufacturing of Induction Motors." With C. L. Tucci, J. H. Lang, and J. L. Kirtley. *Conference Record of the 1991 IEEE IAS Annual Meeting*, 1991.

"A Framework for Integrated Resource Planning: The Role of Natural Gas Fired Generation in New England." With S. R. Connors, C. G. Bespolka, D. C. White, and C. J. Andrews. *IEEE Transactions on Power Systems*, 1992.

"Optimal Demand-Side Response to Electricity Spot Prices for Storage-Type Customers." With B. Daryanian and R. E. Bohn. *IEEE Transactions on Power Systems*, 1992.

"RTP-Based Energy Management Systems: Monitoring, Communication, and Control Requirements for Buildings under Real Time Pricing." With B. Daryanian and L. K. Norford. *ASHRAE Transactions*, 1992.

"Benefit Optimization of Centralized and Decentralized Power systems in a Multi-Utility Environment." With F. Nishimura, M. D. Ilic, and J. R. Lacalle-Melero. *IEEE Transactions on Power Systems*, 1993.

"Transmission System Management and Pricing: New Paradigms and International Comparisons." Invited Paper, IEEE Power Systems Winter Meeting, February 1993, *IEEE Transactions on Power Systems,* 1993.

"Competitive Electric Market will Tailor Services to Everyone." With D. J. Parquet. *California Manufacturer*, May 1995, pp 7-10.

"Smart Hardware: Large Power Transformer Monitoring." With J. Kirtley, B. Lesieutre, W. Hagman, P. Warren, M. J. Boyd, and H.P. Chou IEEE. *Computer Applications in Power*, November 1995.

"The Electric Car Unplugged." With R. deNeufville, S. R. Connors, F. R. Field III, D. Marks, and D. S. Sadoway. *Technology Review*, January 1996, Vol. 99, No. 1, pp.30–36.

"Lessons from the U.K. and Norway." *IEEE Spectrum*, August 1996.

"Zonal Transmission Pricing: A Methodology and Preliminary Results from the WSCC." *Proceedings of the Conference on Innovative Pricing*, San Diego, March, 1996 and *The Electricity Journal*, November 1996.

"A Market-Based Proposal for Transmission Pricing." *The Electricity Journal*, November 1996.

"Zonal Transmission Pricing: Preliminary Results from the WSCC." With S. Walton. *The Electricity Journal*, November 1996.

"The Regulatory Contract and Restructuring: A Modest Proposal." With R. S. Hartman. *The Electricity Journal*, December 1996.

"Optimal Operating Arrangements in a Restructured World: Economic Issues." With R. S. Hartman. *Energy Policy*, Vol. 26, No. 2, February 1998.

"Transmission Markets: Stretching the Rules for Fun and Profit." With N. Rao. *Electricity Journal*, June 2000.

"Forward Markets for Transmission that Clear at LMP: A Hybrid Proposal." Proceedings of the Thirty-Fourth Annual Hawaii International Conference on System Sciences, January 2001.

"Uniform Pricing or Pay-as-Bid Pricing: A Dilemma for California and Beyond." With A. E. Kahn, P. C. Cramton, and R. H. Porter. *The Electricity Journal*, July 2001.

"Ex Ante and Ex Post Designs for Electric Market Mitigation: Past and Present Experience and Lessons from California." With J. B. Cardell. *Proceedings of the Thirty-Sixth Annual Hawaii International Conference on System Sciences*, January 2003.

"The Role of Demand Underscheduling in the California Energy Crisis." With E.D. Hausman. *Proceedings of the Thirty-Seventh Annual Hawaii International Conference on System Sciences*, January 2004.

"Evaluating the Benefits of Independently-Owned Transmission Companies." *Journal of Structured Project Finance*, winter 2004.

"The use of Multi-Attribute Trade-Off Analysis in Strategic Planning For an Electric Distribution utility: An Analysis of Abu Dhabi Distribution Company" With Rick Hornby, *Proceedings of the Thirty-Fifth Annual Hawaii International Conference on System Sciences*, January 2005.

"Loss Hedging Rights: A Final Piece in the LMP Puzzle." *Proceedings of the Thirty-Fourth Annual Hawaii International Conference on System Sciences,* with Aleksandr Rudkevich , Ezra Hausman , Jan Bagnall and Christopher Kopel, January 2005.

"Price Discrimination in Organized/Centralized Electric Power Markets." With Seabron Adamson, Proceedings of the Thirty-Ninth Annual Hawaii International Conference on System Sciences, January 2006.

"Identification and Congestion Analysis of Transmission Corridors of the Eastern Interconnection." With Aleksandr Rudkevich , Kaan Egilmez , Minghai Liu , Prashant Murti , Poonsaeng Visudhiphan , and Thomas J. Overbye, *Proceedings of the Fortieth Annual Hawaii International Conference on System Sciences*, January 2007

"Transmission Tariffs by Use of System and Economic Benefits." With Daniel J. Camac , Raul C. Bastidas , Wilfredo Sifeuntes , and Hyde M. *Merrill Proceedings of the Forty-second Annual Hawaii International Conference on System Sciences*, January 2009.

"Interconnection in the GCC Grid: The Economics of Change." *Proceedings of the Forty-Second Annual Hawaii International Conference on System Sciences*, January 2009

"Development of the Smart Grid: Missing Elements in the Policy Process" With Geoffrey Parker and Michael C. Caramanis *Proceedings of the Forty-Third Annual Hawaii International Conference on System Sciences*, January 2010.

"The Manufacture of Potable Water: Case Analyses of Electric System Alternatives" with Siddarth Nagendraprasad, Ayoob Hussain, Mounir Ayntrazi and Jonathan A. Brant *Proceedings of the Fourty- Fifth Annual Hawaii International Conference on System Sciences*, January 2012. (Winner of the Best Paper Award in Power Systems Group)

"Carbitrage: Utility Integration of Electric Vehicles and the Smart Grid" with Edward Kim, Robert Stoddard and Todd Allmendinger. *The Electricity Journal* Vol. 25, Issue 2, March 2012.

"Who's on First? The Coordination of Gas and Power Scheduling" with Scott Englander and Robert Stoddard *The Electricity Journal* Vol. 25, Issue 5, June 2012.

"Learning to Love Congestion: Competitive market problems and their implications for customers' net costs" with Hyde M. Merrill *Public Utility Fortnightly*, July 2012.

"North American Resource Adequacy: "Déjà vu all over again" *Proceedings of the Forty-Sixth Annual Hawaii International Conference on System Sciences*, January 2012

Technical Reports

"U.S. Electrical Energy Demand and the Potential for Photovoltaics." With M. Pope and R. Matlin. Technical Note, Lincoln Laboratory, MIT, November 1976 (TN 76-2).

"The Cost of a Cold Winter." With S. Raskin. *The NEEMIS Newsletter*, Energy Laboratory, MIT, No. 6, Vol. l, January 1977.

"Impacts of Dispersed Solar Space and Hot Water Heating on New England Electric Service." With S. Law and A. Burns. MIT Energy Laboratory, June 1978.

"A Uniform Economic Valuation Methodology for Solar Photovoltaic Applications Competing in a Utility Environment." With P. R. Carpenter. MIT Energy Laboratory Report No. MIT-EL 78-010, June 1978.

"SERI Venture Analysis." With S. Finger MIT Energy Laboratory Technical Report No. MIT-EL 78-032, July 1978.

"Methodology and Definition of Solar Photovoltaic Planning Regions." With P. R. Carpenter. MIT Energy Laboratory Report No. MIT-EL 78-034, July 1978.

"The Economics of Water Lifting for Small-Scale Irrigation in the Third World: Tradition and Photovoltaic Technologies." MIT Energy Laboratory Technical Report No. MIT-EL 79-011, May 1979.

"Homeostatic Control: Economic Integration of Solar Technologies into Electric Power Operations and Planning." MIT Energy Laboratory Report, No. MIT-EL-81-028, July 1981.

"Boston Harbor Management Study." With J. T. Kildow, principal investigator. MIT Sea Grant College Program, Report No. MITSG81-15, November 1981.

"Utility Spot Pricing Study: Wisconsin." With M.C. Caramanis and R. Stevenson. MIT Energy Laboratory Technical Report No. MIT-EL 82-025, June 1982.

"Market and Economic Analysis of Residential Photovoltaic Systems: Final Report." MIT Energy Laboratory Technical Report No. MIT-EL 82-024, June 1982.

"Industrial Interfuel Substitution Phase I Report: Model Development and Case Study." With G. Russo. MIT Energy Laboratory Technical Report No. MIT-EL 82-035, June 1982.

"Management Decisions for Cogeneration." With R.R. Radcliffe. MIT Energy Laboratory Technical Report No. MIT-EL 82-084, July 1982.

"Economic Analysis of the Photovoltaic Technology, Final Report." MIT Energy Laboratory Technical Report Draft, August 1982.

"Utility Spot Pricing: California." With F. C. Schweppe and M. Caramanis. Prepared for Pacific Gas and Electric and Southern California Edison, MIT Monograph, Cambridge, MA, October 1982.

"Deregulating the Electric Utility Industry." With R. Bohn, B. Golub and F. C. Schweppe. MIT Energy Laboratory Technical Report No. MIT-EL 82-003, January 1982.

"Management Decisions for Cogeneration: A Survey Analysis." With R. Radcliffe. MIT Energy Laboratory Report, Report No. MIT-EL 82-025, June 1982.

"Management Decisions for Cogeneration: Discriminating Between Users and Non Users." With R. Radcliffe. MIT Energy Laboratory Report, Report No. MIT-EL 82-029.

"Spot Pricing and Its Relation to Other Load Management Methods." With M. Caramanis and F. C. Schweppe. MIT Energy Laboratory Report, MIT-EL 83-001, January 1983.

"Utility Spot Pricing: California II." With F. C. Schweppe and M. C. Caramanis. Prepared for California Energy Commission, Final Report, January 1984.

"An Assessment of Public Infrastructure in Massachusetts." Joint Center for Urban Studies, A Case Study prepared for the use of the Subcommittee on Economic Goals and Intergovernmental Policy of the Joint Economic Committee, Congress of the United States, February 25, 1984.

"Ammonia from Bagasse Gasification: A Study of Ethanol Production Systems in Brazil." With C. Fernando. MIT, Laboratory for Electromagnetic and Electronic Systems, LEES Report No. TR 85-002, April, 1985.

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ATTACHMENT N-1g

Summary of NEPOOL Participant Processes
Regarding the ISO-NE and NEPOOL Proposals

NEPOOL Participant Processes Regarding the ISO-NE and NEPOOL Proposals

This Attachment summarizes the NEPOOL Participant Processes employed over more than a year to explore, analyze and discuss among ISO-NE, Market Participants and New England State regulators numerous alternative market changes to improve incentives for capacity resources to be available to ISO-NE when they are most needed. The concerns from the view point of ISO-NE were previewed in part in its strategic plan issued in 2011.[1] ISO-NE then, in October 2012, issued its white paper, entitled "FCM Performance Incentives". From that point, there were 15 Market Committee meetings at which the reasons for and details concerning the the ISO-NE Proposal were reviewed. Market Participants and representative of State regulators provided substantial feedback and proposed and discussed numerous changes and alternatives. As explained below, that process ultimately resulted in an overwhelming rejection of the ISO-NE Proposal and support by more than 80% Vote, with numerous abstentions noted, the alternative NEPOOL Proposal.

I. NEPOOL MARKETS COMMITTEE

A. NEPOOL Markets Committee Discussions

Over more than one year of deliberations, Market Participants and representatives of State regulators raised a host of concerns with the ISO-NE Proposal. In an effort to remedy their concerns with the ISO-NE Proposal, members offered numerous amendments and alternatives to the ISO-NE Proposal. An index of the complete set of materials presented to the Markets Committee is included as *Attachment N-1g.2*.

B. NEPOOL Markets Committee Votes

In the culmination of its process, the Markets Committee voted on the ISO-NE Proposal at its November 13-14, 2013 meeting. The ISO-NE Proposal was presented with a motion made at the request of ISO-NE for the Markets Committee to recommend that the Participants Committee approve it at the upcoming annual NEPOOL meeting. There were 13 Participant-sponsored motions to amend the ISO-NE Proposal, only one of which received broad support.[2]

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[1] *See* ISO-NE's "Strategic Planning – Risk Summary" (June 14, 2011), available at: http://www.iso-ne.com/committees/comm_wkgrps/strategic_planning_discussion/materials/4_spd_risk_summary_may_2011.pdf.)

[2] The motions to amend that as supported by the Markets Committee, offered by Brookfield Energy Marketing ("Brookfield"), would amend Section III.13.7.2.4 such that, if a resource is subject to an ISO-NE-imposed operational limit (defined by Brookfield to include transmission outages, de-rates, voltage issues, and the largest system contingency protection restrictions), the resource would not be penalized for non-delivery of energy or reserves above that ISO-NE imposed restriction. That motion to amend passed with a Markets Committee Vote of a 71.77% in favor. The individual Sector votes were Generation (15.02% in favor, 2.15% opposed, 2 abstentions), Transmission (8.58% in favor, 8.59% opposed), Supplier (17.17% in favor, 0% opposed, 12 abstentions), Alternative Resources (14.17% in favor, 0% opposed), Publicly Owned Entity (2.52% in favor, 14.65% opposed, 5 abstentions), and End User (14.31% in favor, 2.86% opposed, 1 abstention). That amendment was also offered at the Dec. 6,

The remaining 12 motions to amend were not supported by the Markets Committee. The once-amended main motion to recommend Participants Committee support for an amended ISO-NE Proposal was then voted and was overwhelmingly opposed. Similarly, at the request of ISO-NE, the Markets Committee considered and failed to recommend Participants Committee support for the unamended ISO-NE Proposal, with only a hand-full of votes registering support.[3]

II. NEPOOL BUDGET & FINANCE SUBCOMMITTEE

In addition to the Market Rule and related Section I.2.2 definition changes contained in the ISO-NE and NEPOOL Proposals described in this filing, NEPOOL members and state regulators also considered related changes needed to the Financial Assurance Policy. These proposed changes would expand financial assurance requirements to include in each Market Participant's calculation of its financial assurance obligations the obligations associated with the ISO-NE Proposal (and thereby protect against potential defaults that could result from the imposition of penalties for failure to perform associated with the ISO-NE Proposal) (the "FA Changes"). The FA Changes were vetted through the Budget & Finance Subcommittee at two Subcommittee teleconference meetings convened in November.

With one exception, no Subcommittee member attending those meetings expressed concerns that were specific to the Financial Assurance Policy, although several Subcommittee members reserved their rights to object to the FA Changes as part of the larger ISO-NE Proposal. One Subcommittee member from the AR Sector expressed concerns with how the FA Changes might impact state-sponsored energy efficiency programs.

III. NEPOOL PARTICIPANTS COMMITTEE

A. December 6, 2013 Participants Committee Meeting

Subsequent to Markets Committee consideration of the ISO-NE Proposal, the ISO-NE Proposal was considered by the Participants Committee at its December 6, 2013 annual meeting. All of the materials circulated in advance of the meeting can be found on the NEPOOL website at http://nepool.com/NPC2013.php. The final minutes of that meeting have not yet been approved and will be provided to the Commission when they are. The following summary by NEPOOL counsel is to help provide preliminary context, with the expectation that individual NEPOOL Participants will provide their more detailed views directly to the Commission on the Proposals and amendments thereto, as they deem appropriate.

2013 Participants Committee meeting, but was not supported following Participants Committee approval of an alternative motion to amend the ISO-NE Proposal that addressed some but not all of the same issues associated with exempting resources from penalties for production limitations entirely outside of their control(see Section III.B.5 below).

[3] Both the vote on the once-amended main motion and the unamended main motion were determined to have failed by a show of hands. The notice of actions from that Markets Committee meeting is available online at http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/actions/2013/mc_actions_13111314.doc.

Since neither the ISO-NE Proposal nor any alternative was recommended by the Markets Committee for Participants Committee support, Participants Committee consideration began with a motion to approve the ISO-NE Proposal. The Participants Committee deliberations were initiated with a report by the Markets Committee Chair on the Markets Committee deliberations, highlighting that ISO-NE had during that process made two changes to its earlier proposal: (1) the inclusion of a "stop loss" provision to accept and annual cap on aggregate performance charges; and (2) a phase in over time of the Performance Payment Rate ("PPR") from the proposed rate of $5,455 per MWh, such that the PPR would initially be se at $ 2,000 per MWh and would climb over time to a rate supported by ISO-NE's theoretical calculation offered to support the PPR. Members then expressed their views and concerns with respect to the ISO-NE Proposal.

Publicly Owned Entity representatives stated objections to the ISO-NE Proposal because they viewed the underlying changes as redundant in light of other efforts then underway in the energy and reserve markets, had the potential to impose substantial additional costs. They expressed a preference to see how other initiatives already approved by NEPOOL and filed with the Commission played out and delivered before committing to broader changes.

Transmission Owner representatives objected to the ISO-NE Proposal noting the fundamental changes to unit configuration that would occur, expressing the view that units should not be penalized if they acted in accordance with ISO dispatch instructions. Further, Transmission representatives added that the ISO-NE Proposal should include an exemption for Resources unable to perform because of transmission limitations which would be entirely outside of their control.

Generator representatives provided a variety of views. Members acknowledged that past operational events and deteriorating Resource performance factors supported the effort to enhance Resource performance incentives. One member expressed concern that, without some change, performance problems could increase, creating greater future problems. He urged support for the ISO-NE Proposal, but with a preference to provide a transmission outage exemption and to eliminate the Peak Energy Rent ("PER") deduction. Several generator representatives objected to the ISO-NE Proposal because it penalized Resources for following ISO dispatch direction, it did not have a transmission outage exemption (which they viewed as illogical given ISO-NE's involvement in scheduling all transmission outages), and it would not support new generation investment in the region.

In support, an End User Participant stated that the ISO-NE Proposal was an appropriate response to the significant inflection point in energy infrastructure, reliability, and market design, and would facilitate the kinds of technologies that were creating this inflection point and would make for a more efficient, lower cost, and more reliable system. Others expressed opposition to the Proposal, objecting because it did not provide an adequate basis upon which Demand Response could participate in the markets. Consumer Advocate End Users objected to the Proposal because it would apply risk to all resources 24/7, was untested, and would create an uncertain but much greater level of risk. They also expressed a strong preference for a more modulated, less comprehensive approach. Other End User representatives objected to the Proposal because it was too risky for the market and, without adequate

exemptions for Resources like energy efficiency and variable resources, could result in the region overpaying for capacity.

An ISO-NE representative expressed appreciation to the stakeholders for their engagement over the past year, noting that, based on stakeholder feedback, ISO-NE had incorporated the phase-in of the PPR and the annual "stop loss", and if the ISO-NE Proposal were to be implemented, ISO-NE would request continued feedback on improving it.

B. Participants Committee Votes on Motions to Amend the ISO-NE and NEPOOL Proposals

The Participants Committee considered a series of proposed amendments to the ISO-NE Proposal and to what ultimately was supported and is now the NEPOOL Proposal. Those amendments are summarized below in the order in which they were offered and considered.

1. Brookfield Amendment #1

The first amendment to the ISO-NE Proposal, offered by the Brookfield representative, was to provide an exemption for Intermittent Power Resources from the penalties associated with the ISO-NE Proposal ("Brookfield Amendment #1"). Some expressed support for Brookfield Amendment #1, indicating that imposing a penalty on intermittent units, which were already subject to a major de-rating of their capacity value, would have no effect on performance by such units, where performance was driven by factors (i.e., the weather) outside of owner/operator control. Others objected to exempting intermittent resources from the penalty provisions without corresponding changes to the eligibility for bonus payments for performing better than their capacity rating. Still others opposed Brookfield Amendment #1 in order to maintain the consistency of capacity product definition for all sellers reflected in the ISO-NE Proposal. ISO-NE indicated that it did not support Brookfield Amendment #1, or any exemptions at all.[4] Brookfield Amendment #1 was voted and was determined by a show of hands to have failed to have achieved sufficient support to amend the ISO-NE Proposal.

2. MMWEC Amendment #1

Massachusetts Municipal Wholesale Electric Company ("MMWEC") Amendment #1 ("MMWEC Amendment #1") was, similar to Brookfield Amendment #1, an amendment to make Intermittent Resources exempt from penalties for failure to perform, but in contrast to Brookfield Amendment #1, would make Intermittent Power Resources ineligible to receive distributions of penalty revenues if they were to perform during a scarcity condition. ISO-NE stated that it could not support MMWEC Amendment #1 for reasons it had stated previously. MMWEC

[4] In explaining its opposition to exemptions, including Brookfield Amendment #1, ISO-NE indicated that its Proposal was developed to create a level playing field so that all Market Participants would be treated the same and evaluated by the same criteria. Reasons for avoiding exemptions included: ensuring that, when offering into an auction, Resources offer based on the same set of performance expectations/requirements and reflecting their true characteristics, without adjustment for the benefits of any special treatment or special exemptions; preventing incentives from undermining incentives; and preventing a shift in risk of the consequences of a failure to perform from a Resource that receives an exemption to everyone else.

Amendment #1 was voted but was not approved, with a 53.33% Vote in favor (Generation – 2.14%; Transmission – 17.17%; Supplier – 1.56%; Alternative Resources – 4.56%; Publicly Owned Entity – 17.17%; and End User – 10.73%). (See "MMWEC #1" Vote on *Attachment N-1g.1*).

3. Brookfield Amendment #2

The Brookfield representative offered a second amendment to exempt from penalties for failure to perform any External Transactions supporting Import Capacity Resources that were not dispatched by ISO-NE due to inaccurate LMP forecast/latency in scheduling protocols ("Brookfield Amendment #2"). ISO-NE stated that it could not support Brookfield Amendment #2 for reasons it had stated previously. Brookfield Amendment #2 was voted and was determined by a show of hands to have failed.

4. NU Amendment #1

A representative of the Northeast Utilities companies ("NU") offered a motion to amend the ISO-NE Proposal so as to exempt a Resource from penalties for failure to perform if that Resource's inability to deliver energy or reserves during a scarcity condition was due to an outage or de-rate of a transmission facility in the New England Control Area ("NU Amendment #1"). A Supplier Sector representative highlighted perceived limitations with NU Amendment #1. A Generator representative supported the proposed transmission outage exemption because it would treat all capacity suppliers similarly. State representatives supported the NU Amendment #1 as but one example of an exemption structured to provide consumer savings without imposing uncontrollable risk on generators. ISO-NE stated that it could not support NU Amendment #1. NU Amendment #1 was voted and was determined by a show of hands to have been approved, with one opposition noted by NextEra Energy Power Marketing ("NextEra").

5. Brookfield Amendment #3

The Brookfield representative offered a third amendment to the once-amended ISO-NE Proposal such that, if a Resource were subject to an ISO-NE-imposed limit, the Resource would not be penalized for non-delivery of energy or reserves above that ISO-NE-imposed limit ("Brookfield Amendment #3"). The Brookfield representative explained that Brookfield Amendment #3, which had previously been recommended by the Markets Committee, was more expansive than NU Amendment #1 because Resources following dispatch instructions for any reason, including to avoid overloading a transmission line, would not be penalized. ISO-NE stated that it could not support Brookfield Amendment #3 for reasons previously stated. Brookfield Amendment #3 was voted but was not approved, with a 56.84% Vote in favor (Generation – 7.36%; Transmission – 3.43%; Supplier – 14.71%; Alternative Resources – 14.17%; Publicly Owned Entity – 0%; and End User – 17.17%). (See "Brookfield #3" Vote on *Attachment N-1g.1*).

6. MMWEC Amendment #2

The MMWEC representative offered a second amendment to amend the once-amended ISO-NE Proposal so as (i) to exempt from the ISO-NE (a) Import Capacity associated with contracts with the New York Power Authority ("NYPA") and (b) Resources unable to

perform or out-of-service due to a planned outage or loss of transmission; and (ii) to revise ISO-NE-proposed Section III.13.7.2.5 to read as follows: "The ISO shall review the Performance Payment Rate in the stakeholder process ~~as needed~~ annually and shall file with the Commission a new Capacity Performance Rate if and as appropriate." ("MMWEC Amendment #2"). Noting planned maintenance outages were a risk better borne by the generator, State representatives indicated their opposition to MMWEC Amendment #2. ISO-NE stated it also opposed MMWEC Amendment #2. MMWEC Amendment #2 was voted and was determined by a show of hands to have failed.

7. NextEra Amendment

The NextEra representative offered an amendment (i) to set the Performance Payment Rate ("PPR") at $5,455 per MWh beginning with FCA9 (i.e., no phase-in of the PPR); (ii) to provide a limited exemption for transmission-related outages; and (iii) to make a change to the monthly "stop loss" provisions ("NextEra Amendment"). The NextEra representative explained that the limited exemption for transmission-related outages included in the NextEra Amendment would replace in its entirety NU Amendment #1 already voted and approved. State representatives reiterated concerns that a PRR set at $5,455 per MWh would result in consumers having to pay more costs than the resulting benefits would justify as well as with NextEra's removal of the NU Amendment #1 language for transmission-related outages. While it supported the $5,455 MWh penalty amount, ISO-NE noted its conclusion that a phase-in and evaluation of the PRR would be appropriate, and therefore did not support the NextEra Amendment. The NextEra Amendment was voted and was determined by a show of hands to have failed.

8. EquiPower Amendment

An amendment offered by EquiPower Resources Management ("EquiPower") would have changed the Proposal so as to permit an existing Resource to submit a Static De-List Bid for up to the megawatt amount that the Market Participant expected may not be physically available due to reductions in ratings as measured by EFORd[5] multiplied by summer Qualified Capacity at 90 degrees ("EquiPower Amendment"). State representatives indicated their opposition to the EquiPower Amendment. ISO-NE opposed the EquiPower Amendment because it believed it appropriate for Resources to submit price and megawatt pairs for each megawatt for which they were qualified. The EquiPower Amendment was voted and was determined by a show of hands to have failed.

9. NU Amendment #2

The NU member offered a second NU amendment that would have modified the Proposal so as to eliminate changes in that Proposal to the current FCM performance rules for passive demand resources ("NU Amendment #2"). ISO-NE stated that it could not support NU Amendment #2. NU Amendment #2 was voted and was determined by a show of hands to have failed.

[5] EFORd is the "Equivalent Forced Outage Rate on Demand".

10. NU Amendment #3

The NU member then offered a third NU amendment that would change the Proposal to reinsert the current Market Rule provisions in the ISO-NE-proposed Section III.13.7.1.1.3 so as to use the resulting hourly MW values for calculating an Existing Generating Resource's Capacity Performance Payment under the ISO-NE Proposal ("NU Amendment #3"). ISO-NE stated that it could not support NU Amendment #3 because it would fundamentally undermine the design it had proposed. NU Amendment #3 was voted and was determined by a show of hands to have failed.

11. PSEG Amendment

An amendment by PSEG Energy Resources & Trade ("PSEG") would have changed the Proposal so as to set the FCA9 Starting Price at $22/kW-month ("PSEG Amendment"). Generator representatives expressed support for the amendment, insisting that there would be no downside to increasing the FCA Starting Price and that the increase would be helpful to the market. State representatives suggested that it was important for stakeholder discussions, which had not addressed this proposal, to take place before consideration of the PSEG Amendment. ISO-NE stated that it did not at that time support the PSEG Amendment, but recognized the need to periodically evaluate the auction starting price and urged that there be process around that issue. ISO-NE noted its plans and expectation for presentation and discussion of a sloped demand curve at the January 2014 Markets Committee meeting, and suggested that, based on feedback to be received, it would make a determination as to how to proceed for FCA9. The PSEG Amendment was voted and was determined by a show of hands to have failed.

12. Dominion Alternative

An amendment by Dominion Energy Marketing ("Dominion Alternative") would have replaced the once-amended ISO-NE Proposal in its entirety with an EFORd pay-for-performance approach and maintained the enhanced Shortage Event penalty mechanism recently accepted by the Commission.[6] ISO-NE stated that it did not view the Dominion Alternative as an improvement, and as a result could not support it. The Dominion Alternative was voted and was determined by a show of hands to have failed.

13. NRG Alternative (i.e., the NEPOOL Proposal)

NRG then offered an amendment which ultimately became the NEPOOL Proposal, to replace the ISO-NE Proposal in its entirety with Market Rule revisions (described in more detail in the NEPOOL transmittal letter, Attachment N-1a) (the "NRG Alternative"). Members supporting the NRG Alternative expressed their view that the NRG Alternative was a major improvement over the ISO-NE Proposal because it was more likely to incent new investment, more appropriately reflected the abilities of existing Resources, and placed stronger incentives in the energy market. Others expressed support for the NRG Alternative as a rational approach, taking measured steps to address evolving regional challenges in the proper market context, and identifying and implementing further incremental changes with the benefit of experience rather

[6] *ISO New England Inc. and New England Power Pool*, 145 FERC ¶ 61,095 (Nov. 1, 2013).

than waiting until June 1, 2018 (the start of the Capacity Commitment Period associated with FCA9) as proposed by ISO-NE. In addition, some members supported the NRG Alternative because the region could minimize the large anticipated increase in capacity prices under the ISO-NE Proposal, while the benefits of other initiatives could be assessed. Others attributed their support to an increased confidence that the changes proposed by the NRG Alternative could be hedged in the marketplace.

A number of members indicated their intention to abstain when voting on the NRG Alternative, noting that, while they found the Alternative preferable to the ISO-NE Proposal, they needed additional time to determine whether they could affirmatively support the Alternative. One member who abstained identified concerns with the Alternative's details, but stressed the importance of sending a signal to the Commission that an alternative to the ISO-NE Proposal was the right choice for the region at that time. Members also spoke in opposition to the NRG Alternative, with one explaining that, while his company was supportive of improving energy pricing, it could not support the NRG Alternative because it would replace the ISO-NE Proposal with something that would not address all the region's identified performance issues.

Although the States did not express a collective opinion on the NRG Alternative, individual state representatives expressed support for the NRG Alternative because it would improve price formation, would result in market rather than administrative response by units, and ultimately was an appropriate and preferable alternative to what they believed to be a deeply flawed ISO-NE Proposal. ISO-NE identified its concerns with the NRG Alternative, noting: (1) the Alternative, relative to what was then in place in the Tariff, would take a step backwards with respect to incenting Resource performance; (2) the Alternative would not resolve the "zombie resource" or "money for nothing" problems so characterized; and (3) ISO-NE had not had an opportunity to fully consider the adjustments to the NRG Alternative presented at the meeting.

The Committee voted and approved the NRG Alternative with a 80.28% Vote in favor (Generation – 14.71%; Transmission – 13.73%; Supplier – 15.45%; Alternative Resources – 3.37%; Publicly Owned Entity – 17.17%; and End User – 15.85%). (See "NEPOOL Proposal" Vote on *Attachment N-1g.1*).[7]

14. NRG Amendment #2

NRG then offered a second amendment to amend further the NRG Alternative to eliminate the FCM PER deduction ("NRG Amendment #2"). An End User representative supporting NRG Amendment #2 suggested the PER deduction be eliminated because, as then structured, it did not serve as an effective hedge for load, was arbitrary, had unwanted effects on Demand Response ("DR") and other Resources not dispatched within those hours, and did not provide a hedge against scarcity pricing. An AR representative echoed those sentiments, indicated his view that the energy market was already sufficiently mitigated, and indicated that he would support the elimination of the PER deduction. A Transmission member expressed opposition to eliminating PER, indicating that it was a hedge for load, as well as a protection

[7] The votes on this NRG motion to amend the ISO-NE Proposal, and on the amended proposal at the end of the amendment voting process was identical. Accordingly, the results in both instances are referred on the attached tabulation as the NEPOOL Proposal.

against the exercise of market power. The NESCOE representative indicated support for the view that the PER deduction could result in consumer savings but also support for reconsidering the mechanism. He went on to indicate that the States would, however, collectively oppose the elimination of the PER deduction and NRG Amendment #2.

ISO-NE indicated that, in the context of its Proposal, it would support discussion about PER and how it worked in conjunction with the ISO-NE Proposal, but given that its Proposal had been replaced by NRG Amendment #1, ISO-NE could not support NRG Amendment #2.

The Committee voted and failed to approve NRG Amendment #2 with a 44.01% Vote in favor (Generation – 17.17%; Transmission – 0%; Supplier – 17.17%; Alternative Resources – 6.55%; Publicly Owned Entity – 0%; and End User – 3.12%). (See "NRG #2" Vote on *Attachment N-1g.1*).

15. GDF SUEZ Amendment

An amendment by GDF SUEZ Energy Marketing North America ("GDF SUEZ") was offered so as to modify the PER deduction to avoid potential outcomes where Resources would effectively operate a loss when called on by ISO-NE to provide generation, operating reserves or regulation services in Real-Time ("GDF SUEZ Amendment"). ISO-NE stated that it did not support the GDF SUEZ Amendment. The GDF SUEZ Amendment was voted and was determined by a show of hands to have failed by approximately the same vote as that taken on NRG Amendment #2.

16. NRG Amendment #3

The NRG representative offered a third amendment to further amend the NRG Alternative so as to revise the current Market Rules: (i) to permit offer prices for existing Resources (de-list bids) based on 'long-run average costs' rather than 'net risk-adjusted going-forward costs'; (ii) to establish the Dynamic De-List Bid threshold at 80% of the Offer Review Trigger Price of a combustion turbine; and (iii) to enable Existing Resources with IMM-approved offers above the Dynamic-List Bid threshold to participate in the auction at prices below the IMM-approved price ("NRG Amendment #3"). A Supplier representative expressed support for NRG Amendment #3, noting that it would close a gap in the current market design caused by discrepancies in how Resources were required or prohibited from bidding at their long run average cost. State, Publicly Owned Entity, End User, and ISO-NE representatives expressed opposition to NRG Amendment #3. NRG Amendment #3 was voted and determined by a show of hands to have failed, with support coming generally from generators and some suppliers, and opposition or abstentions by others.

C. Participants Committee Votes on the NEPOOL and ISO-NE Proposals

1. Vote on NEPOOL Proposal

After completing consideration of each of the proposed amendments, the Participants Committee then considered and approved the twice-amended main motion (i.e., the NRG Alternative) with a 80.28% Vote in favor (Generation – 14.71%; Transmission – 13.73%;

Supplier – 15.45%; Alternative Resources – 3.37%; Publicly Owned Entity – 17.17%; and End User – 15.85%). (See "NEPOOL Proposal" Vote on *Attachment N-1g.1*).[8]

2. Vote on ISO-NE Proposal

Following NEPOOL approval of the NEPOOL Proposal (i.e. the NRG Alternative), at the request of ISO-NE, the Participants Committee considered the unamended ISO-NE Proposal, as offered and seconded at the beginning of the discussion.[9] The Committee then voted and failed to approve the unamended ISO-NE Proposal with a 10.28% Vote in favor (Generation – 2.86%; Transmission – 2.86%; Supplier – 1.29%; Alternative Resources – 2.66%; Publicly Owned Entity – 0%; and End User – 0.61%). (See "ISO-NE Proposal" Vote on *Attachment N-1g.1*).

D. Vote on ISO-NE Proposal-Related Financial Assurance Policy Changes

Following action on the NEPOOL and ISO-NE Proposals, the Participants Committee considered the FA Changes described in Section II above. The Participants Committee supported the FA Changes subject to two understandings. The first understanding was that support for the FA Changes (i) was conditioned on Commission approval, and ISO-NE implementation of, the ISO-NE Proposal without change that would impact the financial assurance requirements, and (ii) was without prejudice to any position taken or to be taken by a Participant on the ISO-NE Proposal. The second expressed understanding was that, should the Commission require changes to the underlying ISO-NE Proposal that impact the financial assurance requirements, the FA Changes and any proposed revisions thereto would be re-presented to NEPOOL for subsequent consideration in the Participant Processes.

[8] Passage of a motion to change a Market Rule requires a Participant Vote equal to or greater than 60% of the Participants Committee's aggregate Sector Voting Shares. As already indicated, an alternative Market Rule change that is approved by a vote of at least 60% of the Participants Committee. will enjoy "jump ball" status (i.e. the ability contractually to be considered by the Commission on equal legal footing with an ISO-proposed Market Rule change). In light of the support for the NEPOOL Proposal (i.e., the NRG Alternative), a "jump ball" has been created here.

[9] Pursuant to Section 11.1.3 of the Participants Agreement, ISO-NE is entitled to have a vote on its proposal if its proposal is modified in a way that it does not support, with only those changes it does find acceptable, even if an alternative proposal has already passed.

ROLL-CALL VOTES TAKEN ON ISO-NE AND NEPOOL PROPOSALS AT DECEMBER 6, 2013 PARTICIPANTS COMMITTEE MEETING

TOTAL

SECTOR	MMWEC #1	Brookfield #2	NEPOOL Proposal	NRG #2	ISO-NE Proposal
GENERATION	2.15	7.36	14.71	17.17	2.86
TRANSMISSION	17.17	3.43	13.73	0.000	2.86
SUPPLIER	1.56	14.71	15.45	17.17	1.29
AR	4.56	14.17	3.37	6.55	2.66
PUBLICLY OWNED ENTITY	17.17	0.00	17.17	0.000	0.000
END USER	10.73	17.17	15.85	3.12	0.61
% IN FAVOR	53.33	56.84	80.28	44.00	10.28

GENERATION

Participant Name	MMWEC #1	Brookfield #2	NEPOOL Proposal	NRG #2	ISO-NE Proposal
Dominion Energy Marketing, Inc.	A	F	F	F	O
Entergy Nuclear Power Marketing LLC	A	A	A	F	O
EquiPower Resources Management, LLC	O	O	A	F	O
Essential Power, LLC	A	O	F	F	O
GDF SUEZ Energy Marketing North America	O	O	O	F	F
Generation Group Member	F	F	F	F	0.5
Millennium Power Partners	O	A	A	F	A
NextEra Energy Resources, LLC	O	O	A	F	O
NRG Power Marketing, LLC	O	A	F	F	O
TransCanada Power Marketing Ltd.	O	A	F		
Verso Maine Energy LLC	O	F	F	F	O
IN FAVOR (F)	1	3	6	10	1.5
OPPOSED (O)	7	4	1	0	7.5
TOTAL VOTES	8	7	7	10	9
ABSTENTIONS (A)	3	4	4	0	1

TRANSMISSION

Participant Name	MMWEC #1	Brookfield #2	NEPOOL Proposal	NRG #2	ISO-NE Proposal
Bangor Hydro-Electric Co.	F	A	F	A	O
Central Maine Power Co.	F	O	A	O	O
New England Power Co.	F	O	O	O	F
The United Illuminating Co.	F	F	F	O	O
NU /NSTAR	F	O	F	O	O
Vermont Electric Power Co.	A	O	F	O	O
IN FAVOR (F)	5	1	4	0	1
OPPOSED (O)	0	4	1	5	5
TOTAL VOTES	5	5	5	5	6
ABSTENTIONS (A)	1	1	1	1	0

ALTERNATIVE RESOURCES

Participant Name	MMWEC #1	Brookfield #2	NEPOOL Proposal	NRG #2	ISO-NE Proposal
Renewable Generation					
First Wind Energy Marketing	O	F	O	F	F
Small RG Group Member	A	F	F	F	O
Distributed Generation					
Conservation Services Group	A	F	A	O	O
Small DG Group Member	A	F	A	O	O
Load Response					
EnerNOC, Inc.	O	A	O	F	O
Vermont Energy Investment Corp.	A	F	A	O	O
Small LR Group Member	F	F	A	O	A
LR Provisional Group Member	F	F	F	F	O
IN FAVOR (F)	1	6	1	3	1
OPPOSED (O)	2	0	2	4	5
TOTAL VOTES	3	6	3	7	6
ABSTENTIONS (A)	4	1	4	0	1

ROLL-CALL VOTES TAKEN ON ISO-NE AND NEPOOL PROPOSALS AT DECEMBER 6, 2013 PARTICIPANTS COMMITTEE MEETING

SUPPLIER

Participant Name	MMWEC #1	Brookfield #2	NEPOOL Proposal	NRG #2	ISO-NE Proposal
BP Energy Co.	A	A	A	F	A
Brookfield Energy Marketing /CSC	S	S	S	S	S
Brookfield Energy Marketing	F	F	F	F	A
Cross-Sound Cable	A	F	F	F	O
Calpine Energy Services	O	O	F	F	O
Competitive Energy Services, LLC	A	F	F	F	O
Consolidated Edison Energy, Inc.	A	A	F	F	O
Dynegy Marketing and Trade, LLC	O	A	F	F	O
Energy America, LLC	A	A	A	A	A
Exelon Generation Company	O	F	A	F	O
Galt Power, Inc.	A	A	A	A	A
Granite Ridge/Merrill Lynch Commodities	O	A	F	F	O
H.Q. Energy Services (U.S.) Inc.	O	F	O	F	F
Hess	A	A	A	A	A
Integrys Energy Services, Inc.	A	A	A	A	A
Kimberly-Clark Corporation	A	A	A	A	O
Linde Energy Services, Inc.	A	A	A	A	O
LIPA	A	F	F	A	O
PPL EnergyPlus, LLC	O	A	A	F	O
PSEG Energy Resources & Trade LLC	O	F	F	F	O
Vitol Inc.	A	A	F	F	O
IN FAVOR (F)	0.7	6	9	12	1
OPPOSED (O)	7	1	1	0	12.3
TOTAL VOTES	7.7	7	10	12	13.3
ABSTENTIONS (A)	11.3	12	9	7	5.7

PUBLICLY OWNED ENTITY

Participant Name	MMWEC #1	Brookfield #2	NEPOOL Proposal	NRG #2	ISO-NE Proposal
Ashburnham Municipal Light Plant	F	O	A	O	O
Boylston Municipal Light Dept.	F	O	A	O	O
Braintree Electric Light Department	F	O	F	O	O
Chicopee Municipal Lighting Plant	F	O	A	O	O
Concord Municipal Light Plant	F	O	F	O	O
CT Municipal Electric Energy Coop.	F	O	F	O	O
Groton Electric Light Dept.,	F	O	A	O	O
Hingham Municipal Lighting Plant	F	O	F	O	O
Holden Municipal Light Dept.	F	O	A	O	O
Holyoke Gas & Electric Dept.	F	O	A	O	O
Hudson Light and Power Dept.	F	O	A	O	O
Hull Municipal Lighting Plant	F	O	A	O	O
Ipswich Municipal Light Dept.	F	O	A	O	O
Littleton (MA) Electric Light Dept.	F	O	F	O	O
Littleton (NH) Water & Light Dept.	F	A	F	O	O
Mansfield Municipal Electric Dept.	F	O	A	O	O
Marblehead Municipal Light Dept.	F	O	A	O	O
Mass. Municipal Wholesale Elec. Co.	F	O	A	O	O
Middleborough Gas and Electric	F	O	A	O	O
Middleton Municipal Electric Dept.	F	O	A	O	O
New Hampshire Electric Coop.	F	O	F	O	O
Paxton Municipal Light Dept.	F	O	A	O	O
Peabody Municipal Light Plant	F	O	A	O	O
Princeton Municipal Light Dept.	F	O	A	O	O
Rowley Municipal Lighting Plant	F	O	A	O	O
Russell Municipal Light Department	F	O	A	O	O
Shrewsbury's Electric & Cable Ops.	F	O	A	O	O
South Hadley Electric Light Dept.	F	O	A	O	O
Sterling Municipal Electric Light	F	O	A	O	O
Taunton Municipal Lighting Plant	F	O	F	O	O
Templeton Municipal Lighting Plant	F	O	A	O	O
Vermont Electric Cooperative	F	O	F	A	O
VT Public. Power Supply Authority	F	O	F	A	O
Wakefield Municipal Gas and Light	F	O	A	O	O
Wallingford, Town of	F	O	F	O	O
Wellesley Municipal Light Plant	F	O	F	O	O
W. Boylston Mun. Lighting Plant	F	O	A	O	O
Westfield Gas & Electric Light Dept.	F	O	A	O	O
IN FAVOR (F)	38	0	12	0	0
OPPOSED (O)	0	36	0	37	38
TOTAL VOTES	38	36	12	37	38
ABSTENTIONS (A)	0	2	26	1	0

ROLL-CALL VOTES TAKEN ON ISO-NE AND NEPOOL PROPOSALS AT DECEMBER 6, 2013 PARTICIPANTS COMMITTEE MEETING

END USER

Participant Name	MMWEC #1	Brookfield #2	NEPOOL Proposal	NRG #2	ISO-NE Proposal
Cianbro Companies	A	F	F	A	O
Connecticut Office of Consumer Counsel	F	A	F	O	O
Conservation Law Foundation	O	F	O	O	F
Corinth Wood Pellets, LLC	A	F	F	A	O
Dragon Products Company	A	F	F	A	O
Elektrisola, Inc.	A	F	F	A	O
Environment Northeast	F	F	A	A	O
Fairchild Semiconductor Corporation	A	F	F	A	O
Food City, Inc.	A	F	F	A	O
Hardwood Products Company	A	F	F	A	O
Harvard Dedicated Energy Limited	A	F	F	O	O
High Liner Foods (USA) Inc.	F	F	F	A	O
Industrial Energy Consumer Group	F	F	F	F	O
LaBree's Inc.	A	F	F	A	O
Maine Public Advocate Office	A	F	F	A	O
Maine Skiing, Inc.	F	F	F	F	O
Marden's Inc.	A	F	F	A	O
Mass. Attorney General's Office	O	F	F	O	O
MoArk, LLC	A	F	F	A	O
NH Office of Consumer Advocate	A	F	A	O	O
PalletOne of Maine	A	F	F	A	O
PowerOptions, Inc.	A	F	F	O	O
Praxair, Inc.	A	A	A	A	O
St. Anselm College	A	F	F	A	O
Shipyard Brewing Co., LLC	A	F	F	A	O
The Energy Consortium	A	F	F	O	O
Union of Concerned Scientists	O	F	O	O	A
Utility Services Inc.	A	A	A	O	A
Westerly Hospital, The	A	F	F	A	O
Z-TECH, LLC	A	F	F	A	O
IN FAVOR (F)	5	27	24	2	1
OPPOSED (O)	3	--	2	9	27
TOTAL VOTES	8	27	26	11	28
ABSTENTIONS (A)	22	3	4	19	2

NEPOOL Markets Committee Materials
Related to the ISO-NE and NEPOOL Proposals

Materials provided to the Markets Committee during the development of the ISO-NE and NEPOOL Proposals are posted in reverse chronological order on the ISO-NE website at http://www.iso-ne.com/key_projects/fcm_perf_incentives/mc_mtrls/ as follows:

Date	Document Title / Description	Internet Location
Nov 15, 2013	NU MR 1 Redlined Pages #3 Transmission Exemption 11-14-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14c_nu_mr_1_redlined_pages_3_transmission_exemption_11_14_13.doc
Nov 15, 2013	Brookfield Amendment #3 MR 1 Redlined Page 11-06-13 Revision 3	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14a3_brookfield_amendment_3_mr_1_redlined_page_11_06_13_r3.doc
Nov 12, 2013	NU Presentation #1 11-14-13 *Restore Prior Performance Rules for Passive Demand Resources - By David Errichetti*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14c_nu_presentation_1_passive_dr_11_14_13.ppt
Nov 07, 2013	NU MR 1 Redlined Pages #1 Passive DR 11-07-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14c_nu_mr_1_redlined_pages_1_passive_dr_11_07_13.doc
Nov 07, 2013	NU Presentation #2 10-29-13 *Reinstate FCM Provisions for Existing Generation - By David Errichetti*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14c_nu_presentation_2_existing_generation_10_29_13.ppt
Nov 07, 2013	NU MR 1 Redlined Pages #2 Existing Generation 11-07-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14c_nu_mr_1_redlined_pages_2_existing_generation_11_07_13.doc
Nov 06, 2013	GDF SUEZ Alternative MR 1 Redlined Pages 10-22-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14f_gdf_suez_alternative_mr_1_redlined_pages_10_22_13_r1.doc
Nov 06, 2013	ISO MR 1 Section 1 Redlined Effective 2018 11-06-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14_iso_mr_1_section_1_redlined_effective_2018_11_06_13.doc

Date	Document Title / Description	Internet Location
Nov 06, 2013	Dominion Presentation 11-14-13 *Alternative to ISO-NE's Performance Incentives - By Ronald Hart*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14g_dominion_presentation_11_14_13.ppt
Nov 06, 2013	EquiPower Presentation and MR 1 Redlined Page 11-05-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14e_equipower_presentation_mr_1_redlined_page_11_05_13.ppt
Nov 06, 2013	ISO MR 1 Appendix A Redlined Effective 2018 11-06-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14_iso_mr_1_app_a_redlined_effective_2018_11_06_13.doc
Nov 06, 2013	Dominion MR 1 Redlined Pages 11-14-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14g_dominion_mr_1_redlined_pages_11_14_13.pdf
Nov 06, 2013	MMWEC FCM PI Intermittent Resources Proposal 10-18-13 *Revisions to the FCM Performance Incentives to eliminate the provisions of FCMPI from applying to resources classified as Intermittent Resources - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14b_mmwec_fcm_pi_intermittent_resources_proposal_10_18_13.doc
Nov 06, 2013	ISO Tariff Section I.2.2 Redlined Effective 2014 11-06-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14_iso_tariff_section_i_2_2_redlined_effective_2014_11_06_13.doc
Nov 06, 2013	MMWEC Presentation 10-29-13 Revision 1 *MMWEC modifications to FCMPI - By Gary Will PPT*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14b_mmwec_presentation_10_29_13_r1.ppt
Nov 06, 2013	ISO MR 1 Section 13 Redlined Effective 2018 11-06-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14_iso_mr_1_section_13_redlined_effective_2018_11_06_13.doc
Nov 06, 2013	Brookfield Amendment #2 MR 1 Redlined Page 11-06-13 *Performance Exemption for Capacity Import Resources offered under the ex post LMP*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14a2_brookfield_amendment_2_mr_1_redlined_page_11_06_13.doc

Date	Document Title / Description	Internet Location
Nov 06, 2013	GDF SUEZ MR 1 Redlined Pages 10-02-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14f_gdf_suez_mr_1_redlined_pages_10_02_13.doc
Nov 06, 2013	Motion	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14_motion.doc
Nov 06, 2013	MMWEC FCM PI Planned Outage Proposal 10-17-13 *Revisions to the FCM Performance Incentives (FCMPI) to eliminate Non-performance penalties for the loss of generation due to Planned Outages - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14b_mmwec_fcm_pi_planned_outage_proposal_10_17_13.doc
Nov 06, 2013	MMWEC FCM PI Transmission Outage Proposal 10-17-13 *Revisions to the FCM Performance Incentives (FCMPI) to eliminate Non-performance penalties for the loss of generation due to Transmission Outages - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14b_mmwec_fcm_pi_transmission_outage_proposal_10_17_13.doc
Nov 06, 2013	NextEra MR 1 Redlined 10-24-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14d_nextera_mr_1_redlined_10_24_13_r1.doc
Nov 06, 2013	NextEra Presentation 10-29-13 *Proposal for Performance Incentives - By Michelle Gardner*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14d_nextera_presentation_10_29_13.ppt
Nov 06, 2013	GDF SUEZ Memo October 29, 2013 *Correction - Alternative Changes to Modify the Peak Energy Rent Mechanism - From Tom Kaslow*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14f_gdf_suez_memo_10_29_13.pd
Nov 06, 2013	NRG Presentation 10-08-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14h_nrg_presentation_10_08_13.ppt

Date	Document Title / Description	Internet Location
Nov 06, 2013	ISO Tariff Section I.2.2 Redlined Effective 2018 11-06-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14_iso_tariff_section_i_2_2_redlined_effective_2018_11_06_13.doc
Nov 06, 2013	ISO MR 1 Section 13 Redlined Effective 2014 11-06-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14_iso_mr_1_section_13_redlined_effective_2014_11_06_13.doc
Nov 06, 2013	MMWEC FCM PI NYPA Proposal 10-18-13 *Revisions to the FCM Performance Incentives to eliminate the provisions of FCMPI from applying to the Import Capacity Resources associated with the NYPA contracts - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14b_mmwec_fcm_pi_nypa_proposal_10_18_13.doc
Nov 06, 2013	NRG MR 1 Redlined 10-03-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14h_nrg_mr_1_redlined_10_03_13_r1.doc
Nov 06, 2013	MMWEC MR 1 Redlined Pages 10-18-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/nov13142013/a14b_mmwec_mr_1_redlined_pages_10_18_13_r1.doc
Oct 30, 2013	Dominion Presentation 10-29-13 *Addressing ISO-NE's Performance Incentives - By Ronald Hart*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b6_dominion_presentation_10_29_13.ppt
Oct 28, 2013	NU Presentation #1 10-29-13 Revision 1 *Restore Prior Performance Rules for Passive Demand Resources - By Calvin Bowie*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b8_nu_presentation_1_passive_dr_10_29_13_r1.ppt
Oct 28, 2013	NU MR 1 Redlined Pages #2 Existing Generation 10-28-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b8_nu_mr_1_redlined_pages_2_existing_generation_10_28_13.doc
Oct 28, 2013	NU MR 1 Redlined Pages #1 Passive DR 10-28-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b8_nu_mr_1_redlined_pages_1_passive_dr_10_28_13.doc

Date	Document Title / Description	Internet Location
Oct 25, 2013	NU Presentation #2 10-29-13 *Reinstate FCM Provisions for Existing Generation - By Calvin Bowie*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b8_nu_presentation_2_existing_generation_10_29_13.ppt
Oct 25, 2013	NRG MR 1 Redlined 10-03-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b7_nrg_mr_1_redlined_10_03_13_r1.doc
Oct 25, 2013	FCM PI - Stakeholder Amendment Listing 10-25-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b7_nrg_mr_1_redlined_10_03_13_r1.doc
Oct 24, 2013	NextEra MR 1 Redlined 10-24-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b5_nextera_mr_1_redlined_10_24_13_r1.doc
Oct 24, 2013	Analysis Group Presentation 10-23-13 *FCM Impact Assessment - Additional Results - By Paul Hibbard and Todd Schatzki*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2a_analysis_group_presentation_10_23_13.ppt
Oct 24, 2013	NextEra Presentation 10-29-13 *Proposal for Performance Incentives - By Michelle Gardner*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b5_nextera_presentation_10_29_13.ppt
Oct 23, 2013	EquiPower Presentation 09-24-13 *FCM PI – EquiPower Proposal for Administrative Delist – By William Fowler*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b3_equipower_presentation_09_24_13.ppt
Oct 23, 2013	GDF SUEZ Memo October 29, 2013 *Correction – Alternative Changes to Modify the Peak Energy Rent Mechanism – From Tom Kaslow*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b4_gdf_suez_memo_10_29_13.pdf
Oct 23, 2013	MR 1 Redlined Effective 2014 10-23-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2a_mr_1_redlined_effective_2014_10_23_13.docx
Oct 23, 2013	MMWEC MR 1 Redlined Pages 10-18-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b1_mmwec_mr_1_redlined_pages_10_18_13_r1.doc

Date	Document Title / Description	Internet Location
Oct 23, 2013	Dominion MR 1 Redlined Pages 10-22-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b6_dominion_mr_1_redlined_pages_10_22_13.doc
Oct 23, 2013	MR 1 Redlined Effective 2018 10-23-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2a_mr_1_redlined_effective_2018_10_23_13.docx
Oct 23, 2013	Brookfield MR 1 Redlined Pages 10-07-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b2_brookfield_mr_1_redlined_pages_10_07_13.doc
Oct 23, 2013	MC Chair/Vice-Chair Memo October 17, 2013 *FCM PI Proposal - Stakeholder Schedule - From Allison DiGrande and Tom Kaslow*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/fcm_pi_chair_vice_chair_memo_extra_october_meeting_10_17_13.pdf
Oct 23, 2013	MMWEC Presentation 10-29-13 Revision 1 *MMWEC modifications to FCMPI - By Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b1_mmwec_presentation_10_29_13_r1.ppt
Oct 23, 2013	MMWEC FCM PI Intermittent Resources Proposal 10-18-13 *Revisions to the FCM Performance Incentives to eliminate the provisions of FCMPI from applying to resources classified as Intermittent Resources - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b1_mmwec_fcm_pi_intermittent_resources_proposal_10_18_13.doc
Oct 23, 2013	GDF SUEZ MR 1 Redlined Pages 10-02-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b4_gdf_suez_mr_1_redlined_pages_10_02_13.doc
Oct 23, 2013	IMM Presentation 10-29-13 *FCM PI Mitigation Design Tariff - By Parviz Alivand*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2a_imm_presentation_10_29_13.pdf
Oct 23, 2013	NRG Presentation 10-08-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b7_nrg_presentation_10_08_13.ppt

Date	Document Title / Description	Internet Location
Oct 23, 2013	GDF SUEZ Alternative MR 1 Redlined Pages 10-22-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b4_gdf_suez_alternative_mr_1_redlined_pages_10_22_13.doc
Oct 23, 2013	Brookfield Presentation 10-08-13 *Proposed modifications to ISO's proposed Pay-For-Performance FCM construct - By Aleksandar Mitreski*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b2_brookfield_presentation_10_08_13.ppt
Oct 21, 2013	MMWEC FCM PI Planned Outage Proposal 10-17-13 *Revisions to the FCM Performance Incentives (FCMPI) to eliminate Non-performance penalties for the loss of generation due to Planned Outages - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b1_mmwec_fcm_pi_planned_outage_proposal_10_17_13.doc
Oct 21, 2013	MMWEC FCM PI Transmission Outage Proposal 10-17-13 *Revisions to the FCM Performance Incentives (FCMPI) to eliminate Non-performance penalties for the loss of generation due to Transmission Outages - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b1_mmwec_fcm_pi_transmission_outage_proposal_10_17_13.doc
Oct 21, 2013	MMWEC FCM PI NYPA Proposal 10-18-13 *Revisions to the FCM Performance Incentives to eliminate the provisions of FCMPI from applying to the Import Capacity Resources associated with the NYPA contracts - From Gary Will*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct292013/a2b1_mmwec_fcm_pi_nypa_proposal_10_18_13.doc
Oct 09, 2013	CT PURA Premium Capacity Plus Proposal 09-17-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c3_ct_pura_premium_capacity_plus_proposal_09_17_13.pdf
Oct 09, 2013	NextEra Presentation 10-08-13 Revision 1 *Forward Capacity Market Revised Stop Loss and PPR - By Joel Newton*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c4_nextera_presentation_10_08_13_r1.ppt

Date	Document Title / Description	Internet Location
Oct 09, 2013	EquiPower Presentation 09-24-13 *FCM PI - EquiPower Proposal for Administrative Delist - By William Fowler*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c6_equipower_presentation_09_24_13.ppt
Oct 07, 2013	ISO FCM PI Reference Guide 10-08-13 Revision 1	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03a_iso_fcm_pi_reference_guide_10_08_13_r1.doc
Oct 07, 2013	GDF SUEZ Memo October 8, 2013 *Alternative Changes to Modify the Peak Energy Rent Mechanism - From Tom Kaslow*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c5_gdf_suez_memo_10_08_13.pdf
Oct 07, 2013	GDF SUEZ Alternative MR 1 Redlined Pages 10-08-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c5_gdf_suez_alternative_mr_1_redlined_pages_10_08_13.doc
Oct 07, 2013	IMM Presentation 10-08-13 Revision 1 *FCM PI Mitigation Design Tariff - By Parviz Alivand*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03b_imm_presentation_10_08_13_r1.pdf
Oct 04, 2013	Dominion MR 1 Redlined 10-04-13 PDF	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c2_dominion_mr_1_redlined_10_04_13.pdf
Oct 04, 2013	NRG Presentation 10-08-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c1_nrg_presentation_10_08_13.ppt
Oct 04, 2013	NRG MR 1 Redlined 10-03-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c1_nrg_mr_1_redlined_10_03_13.doc
Oct 03, 2013	MR 1 Redlined 10-02-13 *FCM PI Mitigation Rules*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03b_mr_1_redlined_mitigation_10_02_13.doc
Oct 02, 2013	MR 1 Redlined 10-02-13 *FCM PI Rules*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03a_mr_1_redlined_10_02_13.doc

Date	Document Title / Description	Internet Location
Oct 02, 2013	GDF SUEZ MR 1 Redlined Pages 10-02-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03c5_gdf_suez_mr_1_redlined_pages_10_02_13.doc
Oct 02, 2013	ISO Memo October 2, 2013 *FCM Pay for Performance - Revised Elements*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03a_iso_memo_10_02_13.pdf
Oct 02, 2013	ISO FCM PI Tariff Changes Guide 10-02-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/oct892013/a03a_fcm_pi_tariff_changes_guide_10_02_13.doc
Sep 23, 2013	EquiPower Presentation 09-24-13 *FCM PI - EquiPower Proposal for Administrative Delist - By William Fowler*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep242013/a4a2_equipower_presentation_09_24_13.ppt
Sep 23, 2013	Brookfield Presentation 09-24-13 *Proposed modifications to ISO's proposed Pay-For-Performance FCM construct - By Aleksandar Mitreski*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep242013/a4a3_brookfield_presentation_09_24_13.ppt
Sep 23, 2013	Dominion Presentation 09-20-13 *Addressing ISO-NE's Performance Incentives - By Ronald Hart*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep242013/a4a1_dominion_presentation_09_20_13.ppt
Sep 18, 2013	Analysis Group FCM PI Impact Assessment Report September 2013 *Assessment of the Impact of ISO-NE's Proposed Forward Capacity Market Performance Incentives*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3b_analysis_group_fcm_pi_impact_assessment_report_09_2013.pdf
Sep 18, 2013	GDF SUEZ PER Elimination Proposal 09-20-13 *Proposal to Eliminate the PER Component of FCM-PI - By Tom Kaslow*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3a4_gdf_suez_per_elimination_proposal_09_20_13.pdf
Sep 18, 2013	CT PURA Premium Capacity Plus Proposal 09-17-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3a3_ct_pura_premium_capacity_plus_proposal_09_17_13.pdf

Date	Document Title / Description	Internet Location
Sep 17, 2013	NextEra FCM PI Proposal #3 09-16-13 *Addition of Annual Stop-Loss*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3a2_nextera_fcm_pi_proposal_3_annual_stop_loss_09_16_13.doc
Sep 18, 2013	NRG Presentation 09-20-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3a1_nrg_presentation_09_20_13.ppt
Sep 18, 2013	NextEra FCM PI Proposal #2 09-16-13 *Level of Monthly Stop-Loss*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3a2_nextera_fcm_pi_proposal_2_monthly_stop_loss_09_16_13.doc
Sep 18, 2013	NextEra FCM PI Proposal #1 09-16-13 *Excused Unavailability for Transmission Outages*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3a2_nextera_fcm_pi_proposal_1_limited_transmission_exemptions_09_16_13.doc
Sep 12, 2013	Analysis Group Presentation 09-11-13 Revision 1 *FCM PI Impact Assessment - Additional Results - By Paul Hibbard and Todd Schatzki*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep10112013/a12f_analysis_group_presentation_09_11_13_r1.ppt
Sep 11, 2013	ISO Memo September 6, 2013 *Updated Responses to NESCOE Questions on ISO's Pay-for-Performance Proposal*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep202013/a3b_iso_memo_09_06_13.pdf
Sep 10, 2013	Agenda Item #2 *FCM PI Financial Assurance*	http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/budgfin_comm/budgfin/mtrls/2013/sep162013/2_fcm_pi_fa.pdf
Sep 5, 2013	ISO FCM PI Tariff Changes Guide 09-04-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep10112013/a12d_fcm_pi_tariff_changes_guide_09_04_13.doc
Sep 5, 2013	ISO MR 1 Redlined 09-04-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep10112013/a12d_iso_mr_1_redlined_09_04_13.doc
Sep 5, 2013	ISO Presentation 09-11-13 *FCM Performance Incentives - Financial Assurance Policy Changes - By Marc Montalvo*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep10112013/a12c_iso_presentation_09_11_13.ppt

Date	Document Title / Description	Internet Location
Sep 5, 2013	IMM MR 1 Redlined 09-04-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep10112013/a12e_imm_mr_1_redlined_09_04_13.doc
Sep 4, 2013	Dominion Presentation *Addressing ISO-NE's Performance Incentives*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep10112013/a12b_dominion_presentation_pi_alternative.pdf
Sep 4, 2013	ISO Memo September 4, 2013 *FCM Performance Incentives - Performance Payment Rate - By ISO Market Development*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/sep10112013/a12a_iso_memo_09_04_13.pdf
Aug 20, 2013	Analysis Group Presentation 08-08-13 Revision 1 *FCM PI Impact Assessment - Additional Data and NRG Alternative Analysis (Revised August 16, 2013) - By Paul Hibbard and Todd Schatzki*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10c_analysis_group_presentation_08_08_13_r1.ppt
Aug 06, 2013	Dominion Presentation FCM PI Alternative *Addressing ISO-NE's Performance Incentives (information only - no discussion)*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10e_dominion_presentation_pi_alternative.pdf
Aug 06, 2013	NRG Presentation 08-07-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10d_nrg_presentation_08_07_13.ppt
Aug 02, 2013	Draft ISO FCM PI Reference Guide 08-07-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10a_draft_iso_fcm_pi_reference_guide_08_07_13.pdf
Aug 02, 2013	IMM Presentation 08-08-13 FCM PI Mitigation Design - A Strategic Initiative - By Parviz Alivand	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10b_imm_presentation_08_08_13.pdf
Aug 02, 2013	Agenda Item #4.a *FCM PI Financial Assurance*	http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/budgfin_comm/budgfin/mtrls/2013/aug122013/4a_fcm_pi_fa.pdf

Date	Document Title / Description	Internet Location
Aug 02, 2013	ISO Memo August 1, 2013 *FCM Performance Incentives - Revised Stop-Loss Value - From ISO Market Development*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10a_iso_memo_08_01_13.pdf
Aug 02, 2013	ISO Presentation 08-08-13 *FCM Performance Incentives - A Strategic Planning Initiative - By Andrew Gillespie, Ron Coutu and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/aug7892013/a10a_iso_presentation_08_08_13.ppt
Jul 10, 2013	Stoddard Presentation 07-11-13 *FCM Performance Incentives - Evaluation and Recommendations - By Robert Stoddard*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jul10112013/a12c_stoddard_presentation_07_11_13.ppt
Jul 04, 2013	ISO Memo July 5, 2013 *Operating Reserve Deficiency Information - At Criteria And Extended Results PDF (180k)*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jul10112013/a12a_iso_memo_07_05_13.pdf
Jul 03, 2013	ISO Memo July 3, 2013 *FCM Performance Incentives - Stop Loss Mechanism*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jul10112013/a12a_iso_stop_loss_mechanism_memo_07_03_13.pdf
Jul 03, 2013	Stoddard Analysis of ISO's Performance Incentives Proposal 07-02-13 *Performance Incentives in ISO New England's Forward Capacity Market - Prepared For: NextEra Energy Resources - Prepared By Robert Stoddard / Charles River Associates*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jul10112013/a12c_stoddard_on_iso_performance_incentives_07_02_2013.pdf
Jul 03, 2013	Analysis Group Presentation 07-11-13 *FCM PI Impact Assessment Results - By Paul Hibbard*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jul10112013/a12b_analysis_group_presentation_07_11_13.ppt
Jul 03, 2013	Draft ISO FCM Performance Incentives Reference Guide 07-10-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jul10112013/a12a_draft_iso_fcm_pi_reference_guide_07_10_13.pdf
Jul 03, 2013	ISO Presentation 07-11-13 *FCM Performance Incentives - A Strategic Planning Initiative - By Andrew Gillespie, Ron Coutu and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jul10112013/a12a_iso_presentation_07_11_13.ppt

Date	Document Title / Description	Internet Location
May 29, 2013	IMM Presentation 06-04-13 *FCM Performance Incentives - By Parviz Alivand*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jun452013/a07a_imm_presentation_06_04_13.ppt
May 29, 2013	ISO Memo May 29, 2013 *Operating Reserve Deficiency Information - At Criteria - From Market Development*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jun452013/a07b_iso_memo_05_29_13.pdf
May 29, 2013	Analysis Group Presentation 06-04-13 *FCM PI Impact Assessment Update - Assessment Method, Assumptions and Data - By Paul Hibbard*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jun452013/a07d_analysis_group_presentation_06_04_13.ppt
May 29, 2013	ISO Presentation 06-04-13 *FCM Performance Incentives - By Andrew Gillespie, Ron Coutu and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jun452013/a07b_iso_presentation_06_04_13.ppt
May 17, 2013	Dominion Presentation 05-14-13 Revision 1 *Addressing ISO-NE's Performance Incentives - By Ron Hart*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/may14152013/a04b_dominion_presentation_05_14_13_r1.pdf
May 13, 2013	ISO Presentation 05-14-13 Revision 2 *FCM Performance Incentives - A Strategic Planning Initiative - By Andrew Gillespie, Ron Coutu, and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/may14152013/a04a_iso_presentation_05_14_13_r2.ppt
May 08, 2013	NRG Presentation 05-14-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/may14152013/a04b_nrg_presentation_05_14_13.ppt
Apr 08, 2013	NextEra Presentation 04-10-13 *Discussion Points on ISO's Performance Incentives Proposal - By Fernando DaSilva*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/apr9102013/a17d_nextera_presentation_04_10_13.ppt
Apr 04, 2013	Dominion Presentation 04-10-13 *Addressing ISO-NE's Performance Incentives - By Ronald Hart*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/apr9102013/a17d_dominion_presentation_04_10_13.pdf
Apr 03, 2013	ISO Memo April 2, 2013 *Feedback on NRG's Proposals for Performance Incentives - From ISO Market Development*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/apr9102013/a17d_iso_memo_feedback_on_nrg_proposal_04_02_13.pdf

Date	Document Title / Description	Internet Location
Apr 03, 2013	IMM Presentation 04-10-13 *IMM's Discussion on FCM PI - A Strategic Planning Initiative - By Parviz Alivand*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/apr9102013/a17b_imm_presentation_04_10_13.pdf
Apr 03, 2013	ISO Presentation 04-10-13 *FCM Performance Incentives - A Strategic Planning Initiative - By Andrew Gillespie, Parviz Alivand, Ron Coutu and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/apr9102013/a17a_iso_presentation_04_10_13.ppt
Apr 03, 2013	Analysis Group Presentation 04-10-13 *FCM Performance Incentives - Framework for Impact Assessment - By Paul Hibbard*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/apr9102013/a17c_analysis_group_presentation_04_10_13.ppt
Mar 15, 2013	IMM Memo March 15, 2013 *Response to Questions on the ISO's Performance Incentive Proposal - From David LaPlante*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_imm_memo_03_15_13.pdf
Mar 15, 2013	ISO Memo March 15, 2013 *External Market Monitor's Letter to NextEra - From Robert Ethier*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_iso_memo_03_15_13.pdf
Mar 12, 2013	Dominion Presentation 03-12-13 Revision 1 *Addressing ISO-NE's Performance Incentives - By Ronald Hart*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_dominion_presentation_03_12_13_r1.pdf
Mar 08, 2013	PSEG Presentation 03-12-13 *"Pay-for-Performance" Forward Capacity Market Re-Design - A View from the Cheap Seats - By Joel Gordon*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_pseg_presentation_03_12_13.ppt
Mar 07, 2013	ISO Presentation 03-12-13 Revision 1 *FCM Performance Incentives - A Strategic Planning Initiative - By Ron Coutu, Andrew Gillespie and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_iso_presentation_03_12_13_r1.ppt
Mar 06, 2013	NRG Presentation 03-12-13 *Market Reform Proposals - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_nrg_presentation_03_12_13.ppt

Date	Document Title / Description	Internet Location
Mar 05, 2013	ISO Memo March 5, 2013 *Operating Reserve Deficiency Information - Historical Data - From ISO Market Development*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_iso_reserves_memo_03_05_13.pdf
Mar 05, 2013	IMM Presentation 03-12-13 *IMM's Opinion on FCM PI - A Strategic Planning Initiative - By Parviz Alivand*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_imm_presentation_03_12_13.ppt
Mar 05, 2013	Potomac Economics Memo February 19, 2013 *Questions on ISO New England Performance Incentives Proposal - From David Patton*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_potomac_economics_memo_02_19_13.pdf
Mar 05, 2013	ISO RCPF Activation Data 03-05-13	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_iso_rcpf_activation_data_03_05_13.xlsx
Mar 05, 2013	NEPOOL MP Memo December 21, 2012 *ISO New England Performance Incentives Proposal - From Dominion, Entergy, NextEra, PSEG and TransCanada*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_nepool_mp_memo_12_21_12.doc
Mar 05, 2013	NextEra Presentation 03-12-13 *EMMU Response to Questions on Performance Incentives Proposal - By Fernando DaSilva*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/mar11122013/a14_nextera_presentation_03_12_13.ppt
Mar 01, 2013	ISO Presentation 03-01-13 *Initial Discussion of Impact Analysis Approach - By Robert Ethier*	http://www.iso-ne.com/key_projects/fcm_perf_incentives/mc_mtrls/iso_presentation_03_01_13.pdf
Jan 28, 2013	EnerNOC Presentation 01-29-13 Revision 1 *EnerNOC Feedback on Pay For Performance - By Herb Healy*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02b1_enernoc_presentation_01_29_13_r1.pdf
Jan 24, 2013	NRG Presentation 01-29-13 *FCM - And Broader - Market Reforms - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02b2_nrg_presentation_01_29_13.ppt

Date	Document Title / Description	Internet Location
Jan 23, 2013	ISO Presentation 01-29-13 *FCM Performance Incentives - A Strategic Planning Initiative - By Ron Coutu, Andrew Gillespie and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02a_iso_presentation_01_29_13.ppt
Jan 23, 2013	NRG Alternative Proposal 11-16-12 *FCM Performance Incentives - An Alternative Proposal - By Pete Fuller*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02b2_nrg_alternative_proposal_11_16_12.pdf
Jan 23, 2013	Group of Generators Presentation 01-29-13 *FCM Performance Incentives: Initial Areas of Focus - By Capital Power, Dominion, EquiPower, Entergy, Exelon, NextEra and NRG*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2013/jan292013_joint_mtng/a02b3_generator_group_presentation_01_29_13.ppt
Nov 16, 2012	NRG Alternative Proposal 11-16-12 *FCM Performance Incentives*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2012/nov162012/a02_nrg_alternative_proposal_11_16_12_.pdf
Nov 12, 2012	ISO Presentation 11-16-12 *FCM Performance Incentives - A Strategic Planning Initiative - By Matthew White, Andrew Gillespie and Ron Coutu*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2012/nov162012/a02_iso_presentation_11_16_12.ppt
Nov 12, 2012	ISO Project Charter Memo November 16, 2012 *FCM Performance Incentives - From Andrew Gillespie and Matthew White*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2012/nov162012/a02_iso_project_charter_memo_11_16_12.doc
Oct 29, 2012	ISO New England FCM Performance Incentives October 2012	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2012/nov162012/fcm_performance_white_paper.pdf
Oct 29, 2012	ISO Memo October 22, 2012 *FCM Performance Incentives - From Gordon van Welie*	http://www.iso-ne.com/committees/comm_wkgrps/mrkts_comm/mrkts/mtrls/2012/nov162012/cover_memo_fcm_white_paper.pdf

ATTACHMENT N-1h

Tabulation of NEPOOL Participants Committee Votes
Taken on the ISO-NE and NEPOOL Proposals

DECEMBER 6, 2013 PARTICIPANTS COMMITTEE MEETING
VOTES TAKEN WITH RESPECT TO
THE NEPOOL AND ISO-NE PROPOSALS

TOTAL

Participant Name	NEPOOL Proposal	ISO-NE Proposal
GENERATION	14.71	2.86
TRANSMISSION	13.73	2.86
SUPPLIER	15.45	1.29
ALTERNATIVE RESOURCES	3.37	2.66
PUBLICLY OWNED ENTITY	17.17	0.00
END USER	15.85	0.61
% IN FAVOR	80.28	10.28

GENERATION SECTOR

Participant Name	NEPOOL Proposal	ISO-NE Proposal
Dominion Energy Marketing, Inc.	F	O
Entergy Nuclear Power Marketing LLC	A	O
EquiPower Resources Management	A	O
Essential Power, LLC	F	O
GDF SUEZ Energy Mktg. North Amer.	O	F
Generation Group Member	F	0.5
Millennium Power Partners	A	A
NextEra Energy Resources, LLC	A	O
NRG Power Marketing, LLC	F	O
TransCanada Power Marketing Ltd.	F	--
Verso Maine Energy LLC	F	O
IN FAVOR (F)	6	1.5
OPPOSED (O)	1	7.5
TOTAL VOTES	7	9
ABSTENTIONS (A)	4	1

TRANSMISSION SECTOR

Participant Name	NEPOOL Proposal	ISO-NE Proposal
Bangor Hydro-Electric Company	F	O
Central Maine Power Company	A	O
New England Power Company	O	F
The United Illuminating Company	F	O
NU / NSTAR	F	O
Vermont Electric Power Company	F	O
IN FAVOR (F)	4	1
OPPOSED (O)	1	5
TOTAL VOTES	5	6
ABSTENTIONS (A)	1	0

SUPPLIER SECTOR

Participant Name	NEPOOL Proposal	ISO-NE Proposal
BP Energy Company	A	A
Brookfield Energy Marketing Inc./CSC	S	S
Brookfield (70%, when split)	F	A
Cross-Sound Cable (30%, when split)	F	O
Calpine Energy Services	F	O
Competitive Energy Services, LLC	F	O
Consolidated Edison Energy, Inc.	F	O
Dynegy Marketing and Trade, LLC	F	O
Energy America, LLC	A	A
Exelon Generation Company	A	O
Galt Power, Inc.	A	A
Granite Ridge/Merrill Lynch Commodities	F	O
H.Q. Energy Services (U.S.) Inc.	O	F
Hess	A	A
Integrys Energy Services, Inc.	A	A
Kimberly-Clark Corporation	A	O
Linde Energy Services, Inc.	A	O
LIPA	F	O
PPL EnergyPlus, LLC	A	O
PSEG Energy Resources & Trade LLC	F	O
Vitol Inc.	F	O
IN FAVOR (F)	9.0	1.0
OPPOSED (O)	1.0	12.3
TOTAL VOTES	10.0	13.3
ABSTENTIONS (A)	9.0	5.7

ALTERNATIVE RESOURCES SECTOR

Participant Name	NEPOOL Proposal	ISO-NE Proposal
Renewable Generation Sub-Sector		
First Wind Energy Marketing	O	F
Small RG Group Member	F	O
Distributed Generation Sub-Sector		
Conservation Services Group	A	O
Small DG Group Member	A	O
Load Response Sub-Sector		
EnerNOC, Inc.	O	O
Vermont Energy Investment Corp.	A	O
Small LR Group Member	A	A
LR Provisional Group Voting Member	F	O
IN FAVOR (F)	2	1
OPPOSED (O)	2	6
TOTAL VOTES	4	7
ABSTENTIONS (A)	4	1

DECEMBER 6, 2013 PARTICIPANTS COMMITTEE MEETING
VOTES TAKEN WITH RESPECT TO
THE NEPOOL AND ISO-NE PROPOSALS

PUBLICLY OWNED ENTITY SECTOR

Participant Name	NEPOOL Proposal	ISO-NE Proposal
Ashburnham Municipal Light Plant	A	O
Boylston Municipal Light Dept.	A	O
Braintree Electric Light Department	F	O
Chicopee Municipal Lighting Plant	A	O
Concord Municipal Light Plant	F	O
CT Municipal Electric Energy Coop.	F	O
Groton Electric Light Dept.	A	O
Hingham Municipal Lighting Plant	F	O
Holden Municipal Light Dept.	A	O
Holyoke Gas & Electric Dept.	A	O
Hudson Light and Power Dept.	A	O
Hull Municipal Lighting Plant	A	O
Ipswich Municipal Light Dept.	A	O
Littleton (MA) Electric Light Dept.	F	O
Littleton (NH) Water & Light Dept.	F	O
Mansfield Municipal Electric Dept.	A	O
Marblehead Municipal Light Dept.	A	O
Mass. Municipal Wholesale Electric Co.	A	O
Middleborough Gas and Electric	A	O
Middleton Municipal Electric Dept.	A	O
New Hampshire Electric Coop.	F	O
Paxton Municipal Light Dept.	A	O
Peabody Municipal Light Plant	A	O
Princeton Municipal Light Dept.	A	O
Rowley Municipal Lighting Plant	A	O
Russell Municipal Light Department	A	O
Shrewsbury's Electric & Cable Ops.	A	O
South Hadley Electric Light Dept.	A	O
Sterling Municipal Electric Light	A	O
Taunton Municipal Lighting Plant	F	O
Templeton Municipal Lighting Plant	A	O
Vermont Electric Cooperative	F	O
VT Public. Power Supply Authority	F	O
Wakefield Municipal Gas and Light	A	O
Wallingford, CT PUC Elec. Div.	F	O
Wellesley Municipal Light Plant	F	O
W. Boylston Municipal Lighting Plant	A	O
Westfield Gas & Electric Light Dept.	A	O
IN FAVOR (F)	12	0
OPPOSED (O)	0	38
TOTAL VOTES	12	38
ABSTENTIONS (A)	26	0

END USER SECTOR

Participant Name	NEPOOL Proposal	ISO-NE Proposal
Cianbro Companies	F	O
Connecticut Office of Consumer Counsel	F	O
Conservation Law Foundation	O	F
Corinth Wood Pellets, LLC	F	O
Dragon Products Company	F	O
Elektrisola, Inc.	F	O
Environment Northeast	A	O
Fairchild Semiconductor Corporation	F	O
Food City, Inc.	F	O
Hardwood Products Company	F	O
Harvard Dedicated Energy Limited	F	O
High Liner Foods (USA) Inc.	F	O
Industrial Energy Consumer Group	F	O
LaBree's Inc.	F	O
Maine Public Advocate Office	F	O
Maine Skiing, Inc.	F	O
Marden's Inc.	F	O
Mass. Attorney General's Office	F	O
MoArk, LLC	F	O
NH Office of Consumer Advocate	A	O
PalletOne of Maine	F	O
PowerOptions, Inc.	F	O
Praxair, Inc.	A	O
St. Anselm College	F	O
Shipyard Brewing Co., LLC	F	O
The Energy Consortium	F	O
Union of Concerned Scientists	O	A
Utility Services Inc.	A	A
Westerly Hospital, The	F	O
Z-TECH, LLC	F	O
IN FAVOR (F)	24	1
OPPOSED (O)	2	27
TOTAL VOTES	26	28
ABSTENTIONS (A)	4	2

ATTACHMENT N-2a

Part 2 cover letter on behalf of NEPOOL

NEW ENGLAND POWER POOL

January 17, 2014

VIA ELECTRONIC FILING

The Honorable Kimberly D. Bose, Secretary
888 First Street, NE
Washington, DC 20426

Re: ISO New England Inc. and New England Power Pool,
Filings of Performance Incentive Market Rule Changes;
Docket No. ER14-_____ (Part 2 of 2)

Dear Secretary Bose:

The New England Power Pool ("NEPOOL") hereby submits the second and remaining part ("Part 2") of its alternative proposal of Market Rule[1] changes intended to improve the operating performance of capacity resources in New England. The NEPOOL materials in this Part 2 include this cover letter explaining the reasons for the two-part submission and the Tariff changes that are proposed to become effective on June 1, 2018.

Due to technical limitations associated with the Commission's eTariff system, ISO-NE is not able to submit in one submission multiple changes to the same Tariff section that have different effective dates. Accordingly, the first part of the overall submission in this proceeding ("Part 1") included the Tariff changes that are proposed to become effective on June 1, 2014, and this Part 2 includes the Tariff changes that are proposed to become effective on June 1, 2018. The explanation and supporting materials for all the Tariff changes are contained in Part 1. Although the overall filing has been divided into two parts to accommodate the eTariff system, the Commission should treat Parts 1 and 2 as a single filing.

The NEPOOL materials in this Part 2 include the following attachments:

- Attachment N-2a: this cover letter;
- Attachment N-2b: NEPOOL's blacklined Tariff sheets effective June 1, 2018; and
- Attachment N-2c: NEPOOL's clean Tariff sheets effective June 1, 2018.

[1] Capitalized terms used but not defined in this cover letter are intended to have the meaning given to such terms in the ISO New England Inc. ("ISO-NE") Transmission, Markets and Services Tariff (the "Tariff"), the Second Restated New England Power Pool Agreement, and the Participants Agreement.

These Part 2 materials are being served simultaneously on the same parties being served with Part 1 of the filing.

Respectfully submitted,

NEPOOL PARTICIPANTS COMMITTEE

By: _____

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Its Attorneys

Dated: January 17, 2014