



memo

To: NECPUC

From: Eric Johnson, Director, External Affairs, ISO New England

Date: April 30, 2014

Subject: Update on Recent and Upcoming Regional Activities

This memo is prepared by the ISO's External Affairs Department to provide an update on several regional issues and activities that may be of interest to you. For your convenience, and when appropriate, I have identified dates when key discussions and votes are scheduled to occur at stakeholder meetings, as well as planned filings. There is also a section highlighting upcoming meetings. Additionally, this month I have included an [appendix](#) that contains an update on ISO's many system planning studies.

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ISO Summer Outlook

On April 29, ISO New England issued a press release indicating that electricity supplies during the upcoming summer in the region are expected to be sufficient to meet consumer demand. The summer outlook press release is available [here](#).

During the summer, consumer demand for electricity peaks in New England, due in large part to air conditioning.

Under normal summer weather conditions of about 90°F – ISO New England forecasts that the regional demand for electricity could peak at 26,660 megawatts (MW). If extreme summer weather occurs, such as an extended heat wave of about 95°F, demand could rise to 28,965 MW. Both forecasts include the demand-reducing effect of region wide energy-efficiency (EE) measures. Without EE acquired through the region's Forward Capacity Market, the forecast for peak demand during normal summer weather conditions would be 28,165 MW, and the peak demand forecast for extreme summer weather conditions would be 30,470 MW.

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Markets Committee

Upcoming Meetings

On May 6 and 7, the Markets Committee will meet in Marlborough, Massachusetts.

The May 6 meeting will be dedicated to two important topics: (1) the prospect of a winter reliability program and permanent dual fuel changes and (2) integrating demand response into the reserve market.

(1) Winter reliability program and permanent dual fuel changes

Various representatives from ISO New England, including Pete Harris, Christopher Parent, Steven Weaver and Bob Laurita will make a presentation and lead this discussion.

(2) Integrating demand response into reserve market

ISO New England's Director, Demand Resource Strategy, Henry Yoshimura, will discuss potential market design changes that will allow demand response resources to provide operational reserves to the wholesale electric system. The areas that will be discussed include: changes to the manner in which demand response resources are modeled, how baselines are adjusted and performance of demand response resources is monitored in real time, additional offer parameters that allow a demand response resource to provide reserves, and how demand response resources would be designated and compensated for providing real-time reserves.

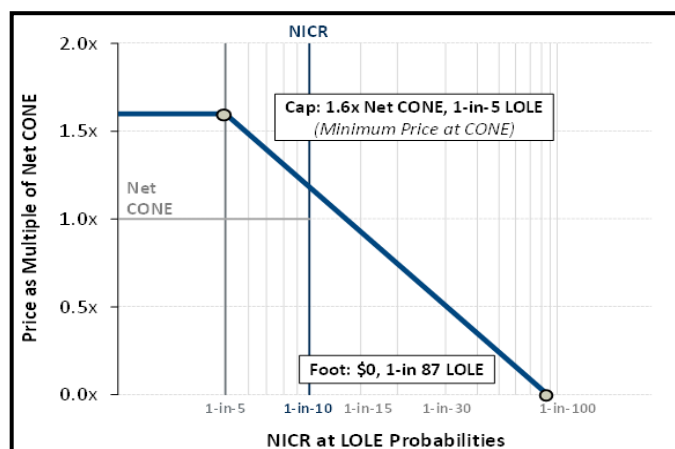
Future Markets Committee meetings will include discussion of market rule changes that will allow demand response resources to participate in the Forward Reserve Market, and conforming changes to the Forward Capacity Market rules.

Topics tentatively scheduled to be discussed at the May 7 committee meeting include: Net Commitment Period Compensation cost allocation (voting item), capacity and energy market conforming rule changes, and Day-Ahead energy market timing.

Demand Curve/Net CONE Compliance Filing

In March, the Markets Committee recommended approval of a downward-sloping demand curve in the capacity market. The proposal was developed on an expedited schedule following a January FERC order requiring the ISO to submit a proposal by April 1.

At the March 19, 2014 Markets Committee meeting, the committee voted 74% in favor of an ISO-supported demand curve (initially presented by Northeast Utilities), which contains a cap of $1.6 \times$ Net CONE, and has a more gradual slope than initially proposed by the ISO. The curve does not include a kink point. The illustration to the right shows the demand curve filed with FERC on April 1, 2014, which received approximately 74% and 70% support by the NEPOOL Markets and Participants Committees respectively.



The proposal extends by two years the timeframe that new resources can lock in a capacity price, from five years to seven years. It also incorporates the construct offered by NESCOE to allow a limited amount of new generating resources to be classified as Renewable Technology Resources and exempt from the Offer Review Trigger Price within the auction.

ISO New England requested an effective date for the sloped demand curve rules of June 1, 2014 so the rule changes related to the FCM qualification process will be in place prior to the qualification deadlines for FCA 9.

Stakeholders, including NESCOE filed comments with FERC. NESCOE expressed unanimous support for the proposal from the six New England states. NESCOE said the tariff revisions are an opportunity to improve outcomes for both supply resources and electricity customers, as well as resolve an issue of great importance to the New England states and the long-term sustainability of the market.

Several stakeholders filed comments in opposition to the filing.

Non-Price Retirement Request Timeline

In March, the Markets Committee unanimously supported a proposal to move up the deadline for resources to submit non-price retirement (NPR) requests in the capacity market. The NEPOOL Participants Committee unanimously supported the proposal in early April and the ISO filed the [revisions](#) on April 9. Under current FCM rules, a resource owner whose NPR request is rejected for reliability reasons has six months to notify the ISO of its decision to retire the resource or remain in operation for the relevant Capacity Commitment Period. Under the revised rules, a resource owner must notify the ISO no later than 15 days prior to the start of the relevant Forward Capacity Auction (FCA), regardless of when the ISO determination of need was made.

The change is intended to prevent resource owners from withholding retirement decisions until after the ISO has counted a resource as a capacity resource in the auction. Without the change, a resource could submit an NPR request and the ISO could determine the resource is needed for reliability and count it toward the installed capacity requirement in the relevant FCA, but the owner could notify the ISO shortly after auction that it plans to retire the resource. That scenario would lead to an auction base-case model that does not accurately reflect the system topology in a way to best send price signals and could impact auction clearing prices. Requiring retirement notifications to be made prior to the start of the FCA will address these issues.

The ISO requested that FERC grant an effective date of June 9, 2014 for these revisions.

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FCA 8 Protests

Earlier this year, various state agencies from throughout the region, including Connecticut's Attorney General and Office of Consumer Counsel, the Maine Office of the Public Advocate, and the New Hampshire Office of the Consumer Advocate, filed a protest to ISO New England's Forward Capacity Auction Results filing for the eighth capacity auction. These state agencies were joined in their protest by various electric cooperatives and interest groups.

The protest asserted that FERC should investigate whether the eighth auction results were the result of the owner of Brayton Point exercising market power or manipulation by submitting a non-price retirement request for Brayton Point and electing to retire the units after the ISO's determination that the continued operation of the plant was needed to ensure reliability. In an [answer](#) to the protest, the ISO noted that it does not take a position on whether FERC should investigate the retirement actions and provided a sequence of the events leading up to Brayton Point's decision to retire.

Additionally, Eastern Massachusetts Consumer-Owned Systems, National Grid, Northeast Utilities, United Illuminating and the Massachusetts Attorney General and Department of Public Utilities protested the capacity clearing price for the NEM/Boston capacity zone in the eighth auction.

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FERC Approves Capacity Market Modeling Proposal

Earlier this week, FERC issued an order accepting ISO New England's January 31, 2014 Capacity Zones compliance filing with an effective date of April 28. FERC rejected all protests, including the suggestion that the ISO should model all zones, all-the-time, in the capacity market. The ISO will annually identify and evaluate all the boundaries and interface transfer capabilities and will apply an objective criteria to revise the number and boundaries of capacity zones automatically as conditions change. In particular, the ISO will look at actual (and expected) constraints on the system that result, for example, from generator retirements and delist bids.

Background

On January 31, 2014, [ISO New England submitted capacity zone modeling changes](#) consistent with directives in a May 31, 2013 FERC compliance order. The ISO modeled two zones in the initial auctions (FCA-1 through FCA-6),¹ and expanded the number of zones to four in the two most-recent auctions (FCA-7 and FCA-8).² However, going forward, FERC required the ISO to consider the possibility of modeling more than four zones and the rules governing zonal modeling.

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Federal Energy Regulatory Commission Activities

New England Senators Call for Investigation and Back LaFleur Re-nomination

Citing the sharp increase in natural gas prices in New England this winter, six New England Senators recently [called on](#) the Federal Energy Regulatory Commission to investigate any possible market manipulation in the natural gas market. The senators noted the critical role that natural gas plays in New

¹ Two zones include Maine (export-constrained) and Rest of Pool.

² Four zones include Maine (export-constrained); Connecticut and Northeastern Massachusetts/Boston (import-constrained); and Rest of Pool.

England's electricity generation and the importance of ensuring "that the price of natural gas and electricity is transparent and reflects market fundamentals."

The senators that signed the letter include Senators Richard Blumenthal, Angus King, Ed Markey, Jack Reed, Jeanne Shaheen, and Sheldon Whitehouse.

Several New England senators also called on the White House to [support the re-nomination](#) of acting FERC Chairman Cheryl LaFleur. In a March 31 letter to President Obama, the senators noted LaFleur's "unwavering commitment to providing affordable and reliable energy to Americans," and highlighted her deep roots in the northeast and extensive knowledge of the "unique energy challenges" facing New England. Chairman LaFleur's term is set to expire in June. The signatories to this letter include Senators Kelly Ayotte, Susan Collins, King, Markey, Reed, Shaheen, and Whitehouse.

ISO New England Participates in FERC Winter Operations Technical Conference

On April 1, FERC convened a [technical conference](#) to "explore the impacts of recent cold weather events on the [RTO/ISOs], and discuss actions taken to respond to those impacts." ISO New England's Vice President of System Operations, Peter Brandien, [presented](#) at the technical conference, noting the critical importance of the region's oil-fired resources this winter as the high price of natural gas made many non-gas-fired units economic in the wholesale electricity market. These included units that had procured additional fuel through the reliability program designed by ISO New England (and approved by FERC) heading into the winter season. However, he cautioned that the region will be further challenged by generator retirements heading into the winter 2014-2015, including Vermont Yankee and the remainder of the Salem Harbor Station.

In addition, Brandien highlighted the ongoing constraints on the natural gas pipeline system impacting New England, and he detailed the steps taken by the ISO to meet the short- and long-term natural gas/electric interdependency challenges facing the region. These include changing the timing of New England's day-ahead energy market, increasing communications with the natural gas industry, and efforts to modify the Forward Capacity Market to incentivize better resource performance.

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Federal Affairs

ISO Responds to House Energy Committee Inquiry on Winter Operations

In late March, several senior Republican members on the House Energy & Commerce Committee sent letters to a number of ISO/RTOs, including ISO New England, requesting data and operational information on winter 2013-2014 operations. Gordon van Welie, President & CEO, ISO New England, [responded to the Committee](#) on April 18, discussing grid operations from this past winter as well as the region's long-term dependency on natural gas and the difficulty in alleviating a constrained gas pipeline system. In addition to reviewing many of the Strategic Planning Initiative challenges, van Welie highlighted the growing renewable energy profile in the region, as well as demand response and energy efficiency resources.

ISO Participates in DOE Quadrennial Energy Review Stakeholder Meeting in Hartford

On April 21, the United States Department of Energy (DOE) held a pair of regional outreach meetings in New England as part of its stakeholder dialogue in the development of the Quadrennial Energy Review (QER). DOE held meetings in Providence, Rhode Island, and Hartford, Connecticut, in an effort to better understand the unique energy infrastructure challenges facing the region and to discuss possible solutions.

In December 2013, the New England U.S. Senate delegation called on DOE to hold a stakeholder outreach meeting in New England in 2014.

Gordon van Welie [presented at the QER meeting in Hartford](#), noting that the growing demand for natural gas in New England is leading to increasing constraints on the region's natural gas pipelines – impacting both reliability and prices. He highlighted the value of the additional oil resources procured by the region heading into last winter, and the fact that much of New England's non-gas-fired generation ran in economic merit to a great extent in December, January, and February given the high price of natural gas in New England.

van Welie joined U.S. Secretary of Energy Ernie Moniz and Connecticut Governor Dannel Malloy at the April 21 meeting. DOE kicked off its stakeholder outreach with a [meeting in Washington](#) on April 11.

Senate Energy Committee Holds Hearing on Security and Reliability of the Electric Grid

On April 10, the U.S. Senate Committee on Energy & Natural Resources [held a wide-ranging hearing](#) on the “reliability and security of the US electric grid,” which included testimony from FERC Commissioners Cheryl LaFleur and Phil Moeller, as well as the heads of the North American Electric Reliability Corporation and the National Association of Regulatory Utility Commissioners.

The physical security of the electric grid has received increased attention in the last several months, most recently due to the public disclosure of information detailing potential grid vulnerabilities. While the inappropriate nature of the public release of that information has been questioned, during the hearing the Committee discussed the importance of grid security (both physical and digital) and FERC's recent Notice of Proposed Rulemaking on physical security. In addition, the Committee also discussed upcoming federal environmental regulations that will impact fossil-fired power plants.

Senate Finance Committee Moves to Extend Production Tax Credit

On April 3, the Senate Finance Committee [approved a measure](#) (the Expiring Provisions Improvement Reform and Efficiency (EXPIRE) Act) to extend a number of tax provisions, including the Production Tax Credit (PTC) which expired on January 1, 2014. The PTC extension, the subject of much attention during the Committee's mark-up of the legislation, was not included in the original version of the bill introduced by Committee Chairman Ron Wyden, but was subsequently included in the revised “chairman's mark” prior to the mark-up. The retroactive, two-year PTC extension, which expired on January 1, 2014, is estimated to cost \$13.35 billion over ten years.

Chairman Wyden noted that he is not interested in future tax extenders legislation; rather, he is hoping for the certainty of comprehensive tax reform in the coming months. He noted that “I want to be straightforward on one point – this will be the last tax extenders bill the committee takes up as long as I'm chairman. That's why the bill is called the EXPIRE Act. It is meant to expire.”

It remains unlikely the Senate will successfully address a tax extenders package in 2014 and even less likely that the House of Representatives will pass a measure allowing both chambers to convene a successful conference committee.

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Planning Advisory Committee

The Planning Advisory Committee met on April 29. Among other things, the committee heard presentations related to capital costs for certain types of generation, resource adequacy studies, as well as state energy and peak forecasts to be included in the 2014 Regional System Plan.

Generic Capital Cost

Jessica Lau, an engineer in the Resource Adequacy group at the ISO, presented an update on generic capital costs for new supply-side resources. This information may be useful in future regional planning studies.

Technology Type	Plant Size (MW)	Heat Rate (Btu/kWh)	Total Plant Cost (\$/kW) ³
Advanced CC	340 – 400	6,430 – 7,525	1,025 – 2,095
Advanced GT	210	9,750	675
Biomass	20 – 100	12,350 – 13,500	3,600 – 8,180
Conventional CC	550 – 620	7,000 – 7,050	900 – 1,150
Conventional GT	85	10,850	975
NG Fuel Cells	10	9,500	7,110
Offshore Wind	200 – 400	N/A	3,100 – 6,230
Onshore Wind	50 – 200	N/A	1,750 – 2,400
Solar Photovoltaic	10 – 150	N/A	2,000 – 4,185
Conventional Hydro	500	N/A	2,935
Geothermal	50	N/A	4,360 – 8,400
IGCC (Single Unit)	600	8,700 – 8,900	2,800 – 4,400
Municipal Solid Waste	50	18,000	8,310
Nuclear	1,400 – 2,235	10,000	4,000 – 5,530
Pulverized Coal	650 – 750	8,750 – 8,800	2,000 – 3,245
Pumped Storage	250	N/A	5,290

Resource Adequacy Studies

ISO's Manager of Resource Adequacy, Peter Wong, provided an overview of the results of several resource adequacy studies that will be included in the 2014 Regional System Plan. Wong's presentation noted that Capacity Supply Obligations obtained through the first eight auctions should be adequate to meet installed capacity requirements through the 2017/2018 commitment period; however, the net installed capacity requirement will increase to approximately 36,100 MW by 2023.

The presentation also noted that above and beyond resources that cleared FCA-8 and forecasted energy efficiency, the system will need 425 MW and 1,155 MW of new capacity in the 2019/20 and 2023/24 timeframes respectively.

2014-2023 State Energy and Peak Forecast Update

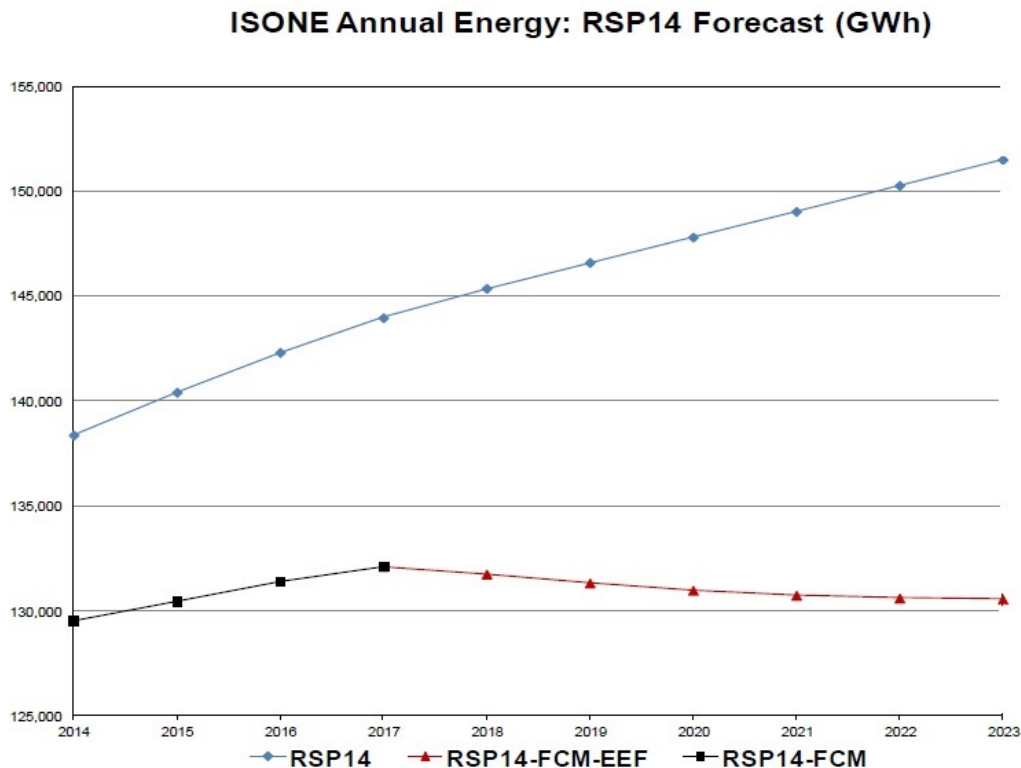
ISO's Supervisor of Load Forecasting, David Ehrlich, presented the regional and state energy and peak forecast for the next decade (2014-2023).

The forecast included forecasted average annual growth rates for the six New England states and the region with and without passive demand response. The forecast notes that passive demand response is expected to create negative energy growth in Rhode Island and Vermont.

State/Region	Average Annual Growth Rate Forecast for 2014-2023			
	Summer 90/10	Summer 90/10 with Passive Demand Response	Energy	Energy with Passive Demand Response
Connecticut	1.0%	0.8%	0.7%	0.4%
Maine	1.1%	0.4%	0.8%	0.1%
Massachusetts	1.4%	0.7%	1.1%	0.0%
New Hampshire	1.6%	1.3%	1.1%	0.8%
Rhode Island	1.3%	0.4%	0.9%	-0.7%
Vermont	0.9%	-0.2%	0.7%	-0.8%
Region	1.3%	0.7%	1.0%	0.1%

³ Expressed in 2011/12 dollars.

The presentation also included a graphic (below) which illustrates how the region's annual energy consumption is expected to remain relatively flat (0.1% average) as a result of expected energy efficiency.



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New England States Committee on Electricity

2013 Annual Report Published

The New England States Committee on Electricity (NESCOE) recently published its [2013 annual report](#). This document describes the organization's accomplishments from 2013 and lays out priorities for 2014 and 2015. Among the highlights of this past year are NESCOE's participation in the New England Governors' Regional Energy Infrastructure Initiative; the completion of the [incremental hydropower imports](#) whitepaper and [gas-electric study](#); and the ongoing participation in regional stakeholder groups, NEPOOL Committees, and FERC/NERC [filings](#). NESCOE indicated that in order to give states and the market certainty, further work on coordinated renewable power procurement was halted.

Priorities for the coming years include:

- executing the Governors' Regional Energy Infrastructure Initiative;
- reviewing and commenting on the ISO's Transmission Planning Guides including the exploration of the use of probabilistic analysis in planning processes;
- facilitating transmission siting efforts for projects that advance state policies;
- tracking transmission costs; and
- continuing to participate in ISO and NEPOOL stakeholder groups.

Distribution Utility Gas Infrastructure Proposal

On April 22, National Grid, Northeast Utilities, and United Illuminating sent a [letter](#) to NESCOE outlining a proposal to help expand natural gas infrastructure in New England. The utilities recognized that one hurdle the Governors' Regional Energy Infrastructure Initiative is designed to overcome is the reluctance of natural gas pipeline companies to expand the capacity of their pipelines absent firm long term contracts with highly credit worthy counterparties.

In this letter, the utilities indicated that they are willing to consider entering into long term contracts with interstate pipeline companies for new firm gas transportation capacity, if an acceptable cost recovery mechanism is worked out. The utilities also raised the possibility that some utilities may be in a position to be equity investors in pipeline expansion projections.

The utilities provided a timeline which they believe is necessary in order to meet the states' goals of having a gas pipeline solution in place for the winter of 2017/18. Pursuant to this timeline the utilities are asking for state buy-in by May 1, in order to proceed with a request for proposals the following month.

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NEPOOL Variable Resource Working Group

On April 17, 2014, a new [Variable Resource Working Group](#) (VRWG) met to review the group's charter and discuss aspects of market rules that impact intermittent resources. The ISO discussed procedures that intermittent resources will be able to use to voluntarily change output in response to negative LMPs (to be operational near the end of 2014) until "do not exceed" economic dispatch procedures are implemented. Stakeholders also participated in discussions of procedures the ISO uses to perform a claimed-capability audit in order to determine when new intermittent resources are commercial for participation in the capacity market. Finally, the ISO reviewed procedures for how partial delist/demand bids from intermittent resources, with different summer and winter capacity supply obligations, are addressed in capacity auctions. The next meeting of the VRWG is scheduled for September 18.

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Net Metering Expansion in Vermont

Governor Shumlin signed into law a bill that expands the state's existing net metering program. Under net metering, individuals and businesses can be compensated for electric energy they generate via small distributed resources, typically solar photovoltaics, and sell back to distribution utilities. The original net metering program had a cap of 4% of a distribution utility's peak load.

The new law, signed on April 1, increases the cap to 15%. Given the success of the net metering program (about 3,600 resources currently participate), it is likely that raising the cap will create an incentive for more distributed generation resources in Vermont.

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2013 ISO New England Financial Statement with Independent Auditor's Report

Earlier this month, ISO New England's audited financial statements for 2013, including an independent auditor's opinion letter, were posted to the [ISO's website](#). This report includes statements relating to ISO New England's financial position, activities and cash flow.

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Consumer Liaison Group

The next meeting of the Consumer Liaison Group (CLG) will be held on May 29, 2014, in Ogunquit, Maine. The CLG Coordinating Committee has lined up a panel, moderated by Donald Sipe, Partner at Preti Flaherty, to discuss the region's shortfall in diverse energy resources.

Panelists include Daniel Allegretti, Vice President of Energy Policy for Constellation Energy Group; Carolyn O'Connor, Director of External Affairs and Communications for Hydro Quebec; Thomas Welch, Chair of the Maine Public Utilities Commission; and Michael Stoddard, Executive Director of Efficiency Maine. To register for the event, please click [here](#).

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March 2014 Wholesale Electricity Costs

The average day-ahead and real-time energy prices for March were \$111 and \$116 per megawatt hour (MWh), respectively. These average energy prices are less than the prices seen in February, due to lower natural gas prices in March. The

average price of natural gas (at the Algonquin Citygate in Boston) was \$14.90/MMBtu for the month of March, down from \$20.85/MMBtu for the month of February.

	March 2014	March 2014 Compared to February 2014	March 2014 Compared to March 2013
Average Day-Ahead LMP (hub)	\$111.15/MWh	-29%	109%
Average Real-Time LMP (hub)	\$116.05/MWh	-24%	115%
Average Natural Gas Price (hub)	\$14.90/MMBtu	-29%	121%
Peak Real-Time Load	19,661 MW	0%	7%
Average Real-Time Load	14,809 MW	-5%	4%

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ISO New England Training

Each year, the ISO provides training opportunities led by ISO subject matter experts to educate stakeholders and market participants on the ISO's major responsibilities, wholesale electricity markets, and the transmission system. State officials and staff are eligible for a 50% discount on all ISO training courses. Advanced registration is required. To register, please visit the ISO's [Training & Events Network](#). For a listing of all training opportunities, please [click here](#). [Course materials](#) are also available online. The following is an overview of upcoming courses:

Course	Date	Location	Description
ISO New England 101	October 1	To be determined	A one-day training for state and regional regulatory officials, legislators, consumer advocates and representatives that covers, at a high level, an overview of New England's bulk transmission system, ISO's functions and responsibilities, and New England's wholesale electricity markets, including the Forward Capacity Market.
WEM 101	May 12-16, or September 15-19	Northampton, Massachusetts	Introduction to Wholesale Electricity Markets is a five-day course that provides a comprehensive overview of the electric industry, the ISO and its functions, and features and mechanics of wholesale electricity markets.
WEM 201	June 3-5, or November 3-5	Northampton, Massachusetts	Intermediate Wholesale Electricity Markets is a three-day course that provides intermediate-level treatment of energy market concepts including unit commitment, Locational Marginal Pricing, co-optimization, market interactions, settlement mechanics, and Financial Transmission Rights.
FCM 101	October 20-23	Northampton, Massachusetts	Introduction to Forward Capacity Market is a four-day course that provides a comprehensive understanding of the Forward Capacity Market and Forward Capacity Auction.

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Upcoming NEPOOL Committee Meetings and NECPUC Call Schedule

<u>Month</u>	<u>Participants Committee</u>	<u>Markets Committee</u>	<u>Reliability Committee</u>	<u>Planning Advisory Committee</u>	<u>Transmission Committee</u>	<u>NECPUC Conference Call</u>
May	2	6, 7, 23 ⁴	20	21	27	12
June	6, 24-26 ⁵	10, 11	18	19	20	None
July	None	8-10 ⁶	16	15	22	7

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Upcoming Meetings of Interest

The following is a list of upcoming industry-related meetings (at which ISO New England representatives will be speaking), which may be of interest:

May 14, 2014

[NECA/CPES Annual Energy Conference & Expo](#), North Falmouth, MA

ISO Speaker: Jonathan Black, Senior Engineer

ISO Speaker: Patricio Silva, Senior Analyst, System Planning Administration

Northeast Association of Electric Cooperatives, North Conway, NH

ISO Speaker: Michael Giaimo, Senior External Affairs Representative, External Affairs

May 19, 2014

[Natural Gas Power Generation 2014 Conference & Expo](#), Chicago, IL

ISO Speaker: Dennis Robinson, Director, Market and Resource Administration

May 22, 2014

[KPMG Global Energy Conference](#), Houston, TX

ISO Speaker: Ray Hepper, Vice President & General Counsel

May 29, 2014

[Platts 9th Annual Northeast Power & Gas Markets Conference](#), New York, NY

ISO Speaker: Bob Ethier, Vice President, Market Development

June 4, 2014

[Utility of the Future Leadership Forum](#), Washington, DC

ISO Speaker: Gordon van Welie, President & CEO

June 16, 2014

[Annual NECPUC Symposium](#), Stowe, Vermont

ISO Speaker: Gordon van Welie, President & CEO

ISO Speaker: Stephen Rourke, Vice President, System Planning

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⁴ Meeting on May 23 is tentative. Please consult [ISO calendar](#).

⁵ June 24-26 meetings are committee's summer meeting.

⁶ Committee's summer meeting.

APPENDIX: ISO REPORTS & STUDIES

ISO New England Reports and Studies – April 2014 Update⁷

Description	Author	Status
1. Strategic Planning Initiative⁸		
a. Roadmap for New England: A Proposal for Meeting the Challenges Identified in the Strategic Planning Initiative (SPI)	ISO	Posted March 27, 2012
i. ISO Discussion Paper: Aligning Markets and Planning	ISO	Posted June 13, 2012
ii. Alignment of Markets and Planning White Paper (describes gaps in current planning and market process and potential solutions)	ISO	Posted October 27, 2011
iii. Using the Forward Capacity Market (FCM) to Meet Strategic Challenges	ISO	Posted May 11, 2012
iv. FCM Performance Incentives White Paper	ISO	Posted October 22, 2012
v. Addressing Gas Dependence White Paper	ISO	Posted July 30, 2012
b. Natural Gas Study Phase I	ICF International, for ISO	Final report posted October 12, 2012
c. Natural Gas Study Phase II	ICF International, for ISO	Draft Natural Gas Study Scope of Work (Phase II) presented to PAC September 20, 2012 Draft Report presented to PAC December 18, 2013 Winter 2013/14 Benchmark and Revised Projections for New England Natural Gas Supplies and Demand presented to PAC April 29, 2014 (Phase II Update)
d. Gas-Fired Power Generation in Eastern New York and its Impact on New England's Gas Supplies	ICF International, for ISO	Report presented to PAC November 20, 2013
e. Natural Gas Demand Side Management in New England	ICF International, for ISO	Report presented to PAC November 20, 2013

⁷ Information is subject to change. Some reports and studies contain Critical Energy Infrastructure Information (CEII) and require ISO approval to access.

⁸ Strategic Planning Initiative materials, at : http://www.iso-ne.com/committees/comm_wkgrps/strategic_planning_discussion/materials/index.html.

Description	Author	Status
f. Strategic Transmission Analysis—Implications for Greater Renewable Generation and Generator Retirements on Transmission System Requirements	ISO System Planning	Scope of work and assumptions presented to PAC September 21, 2011 PAC update December 14, 2011 PAC update March 14, 2012 PAC update December 13, 2012 PAC update May 22, 2013 PAC update December 18, 2013
g. Interdependence of ISO Proposals to Key SPI Risks	ISO	Posted April 16, 2013
h. 2013 Winter Operations Summary	ISO	Posted February 28, 2013
i. 2013 Regional Electricity Outlook	ISO	Posted January 31, 2013
j. 2014 Regional Electricity Outlook	ISO	Posted February 25, 2014
2. Economic Studies		
a. 2011 Economic Study (wind scenarios)	ISO System Planning	Overview of GridView and draft scope of work presented to PAC May 26, 2011 PAC update July 21, 2011 PAC update September 21, 2011 PAC update November 16, 2011 PAC update February 15, 2012 Draft results presented to PAC May 17, 2012 PAC update January 17, 2013 PAC update with additional cases studied at the request of stakeholders March 21, 2013 Final report March 31, 2014
b. 2012 Economic Study (incremental/decremental load scenarios)	ISO System Planning	Scope of work presented to PAC June 19, 2012 Results and next steps presented to PAC October 18, 2012 PAC update January 17, 2013 Final report posted April 23, 2014
c. 2013 Economic Study (HQ Phase II Imports)	ISO System Planning	High level scope of work presented to PAC May 22, 2013 Scope of work and assumptions update presented to PAC July 9, 2013 PAC update January 20, 2014 PAC update April 29, 2014
3. Regional System Plan; Load, Energy Efficiency, and Distributed Generation Forecast Reports		
a. 2013 Regional System Plan (RSP13)	ISO System Planning	Final RSP13 November 7, 2013

Description	Author	Status
i. RSP Transmission Projects	ISO System Planning	Project list presented to PAC March 21, 2013 Project list update presented to PAC June 19, 2013 Final 2013 RSP project list posted June 24, 2013 Project list update presented to PAC October 16, 2013
b. 2014 Regional System Plan (RSP14)	ISO System Planning	Scope of work presented to PAC January 23, 2014 RSP14 resource adequacy study scope of work presented to PAC April 29, 2014
i. RSP Transmission Projects	ISO System Planning	Project list presented to PAC March 17, 2014
c. Preliminary ISO Energy & Seasonal Peak Forecast 2014-2023	ISO System Planning	Presented to PAC February 19, 2014
d. 2014 Capacity Energy Loads and Transmission (CELT) Report (2014-2023)	ISO System Planning	Posted May 1, 2014
e. 2013 Energy-Efficiency Forecast (2016–2022)	ISO System Planning	Final EE forecast posted February 22, 2013
f. 2014 Energy-Efficiency Forecast (2018-2023)	ISO System Planning	Draft Final EE Forecast presented to PAC March 31, 2014 Final EE forecast posted April 28, 2014
g. 2014 Distributed Generation Forecast	ISO System Planning	Scope of work and interim forecast December 16, 2013 Revised forecast January 27, 2014 Final interim PV forecast April 2, 2014
4. Other ISO Studies		
a. Final 2012 ISO New England Electric Generator Air Emissions Report	ISO System Planning	Posted January 31, 2014
b. Generic Resource Capital Cost Update	ISO System Planning	Posted November 14, 2012
c. Generic Cost of Resources	ISO System Planning	Presented to PAC April 29, 2014
d. Draft Transmission Planning Technical Guide	ISO System Planning	Posted March 18, 2013 Presented to PAC March 20, 2013 Revised draft posted December 6, 2013
e. Draft Transmission Planning Process Guide	ISO System Planning	Posted and presented to PAC February 12, 2013 Response to PAC Comments on draft presented to PAC May 22, 2013 Revised draft posted December 6, 2013
f. Wind Development in Constrained Areas	ISO System Planning	Presented to PAC March 21, 2013
5. ISO Transmission Planning Studies for Major Projects^{9, 10}		

⁹ Needs Assessments and Solution Studies available at http://www.iso-ne.com/committees/comm_wkgrps/prtcnpts_comm/pac/reports/index.html.

¹⁰ PAC presentations often include the study history for a particular project.

Description	Author	Status
a. New Hampshire/Vermont	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: 2023 Needs Assessment Results presented to PAC March 17, 2014
i. Market Resource Alternatives Analysis (Non-Transmission Alternatives Analysis)	ISO System Planning	Results of NH/VT Pilot Study presented to PAC May 26, 2011
b. New England East–West Solution: Interstate Reliability Project (NEEWS)	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: Final Follow-Up Analysis for 2011 NEEWS Interstate Reliability Project Updated Solution Assessment posted September 21, 2012
c. Greater Hartford/Central Connecticut (GH/CC)	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: 2022 Needs Assessment Results posted April 25, 2014 and Solution Study presented to PAC March 24, 2014
i. Market Resource Alternatives Analysis (Non-Transmission Alternatives Analysis)	ISO System Planning	Scope of work presented to PAC December 14, 2011 Final Demand-Side Results presented to PAC November 14, 2012 Final Supply-Side Results presented to PAC December 13, 2012
d. Southwest Connecticut	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: 2022 Needs Assessment posted April 14, 2014 and Solution Study update presented to PAC March 24, 2014
e. Greater Boston: North, South, Central	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: 2023 Needs Assessment and Solution Study Update presented to PAC November 20, 2013

Description	Author	Status
f. Pittsfield/Greenfield Project	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: Final 2022 Needs Assessment posted December 6, 2013
g. Southeast Massachusetts/Rhode Island (SEMA/RI)	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: 2022 Needs Assessment presented to PAC February 19, 2014
i. Market Resource Alternatives Analysis	ISO System Planning	Presentation to PAC April 29, 2014
h. Eastern Connecticut	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: 2022 Needs Assessment Results Update to PAC on July 9, 2013
i. Maine	ISO System Planning	Materials including scopes of work, needs assessments, follow-up analyses, solution studies, and stakeholder comments are available here . Latest Development: 2023 Needs Assessment Scope of Work presented to PAC November 20, 2013
6. Interregional and National Studies		
a. 2013 Northeast Coordinated System Plan (NCSP13)	ISO, NYISO, and PJM	Final 2013 Northeast Coordinated System Plan April 16, 2014
b. 2012 National Electric Transmission Congestion Study	U.S. DOE	DOE released draft for public comment and will publish final version of study after considering comments ¹¹
c. Transmission Constraints and Congestion in the Western and Eastern Interconnections, 2009-2012	U.S. DOE	Final summary released January 2014 [This is not the DOE's 2012 National Electric Transmission Congestion Study, which will be released separately.]

¹¹ <http://energy.gov/oe/services/electricity-policy-coordination-and-implementation/transmission-planning/2012-national>.

Description	Author	Status
d. Eastern Interconnection Planning Collaborative (EIPC) Multi-Region Natural Gas-Electric Study	ISO, PJM, TVA, MISO, NYISO, and Ontario	Statement of Work presented to PAC March 21, 2013 Statement of Work Update presented to PAC June 19, 2013 PAC Update January 22, 2014 PAC Update March 17, 2014 PAC Update April 29, 2014
e. Quadrennial Energy Review (QER)	U.S. DOE	Presidential Memorandum January 9, 2014 QER Public Meeting April 11, 2014 QER Public Meetings April 21, 2014 (Part I and Part II) Report expected by January 31, 2015

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