



## Consumer Liaison Group Coordinating Committee

# 2013 Report of the Consumer Liaison Group

Joint Report of the  
Consumer Liaison Group Coordinating Committee and  
ISO New England

May 28, 2014



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## Statement from the Consumer Liaison Group Coordinating Committee

Dear Reader,

Welcome to the *2013 Report of the Consumer Liaison Group* (CLG) prepared jointly by the Consumer Liaison Group Coordinating Committee (CLGCC) and ISO New England (ISO). This is the fifth annual CLG report, the first having been published in 2010 summarizing the 2009 activities, the year the CLG was established.

The CLG was formed to meet the need, as cited in the Federal Energy Regulatory Commission's Order 719, for heightened communication between Regional Transmission Organizations (RTOs) and their stakeholders, with a particular focus on electricity consumers, consumer advocates, and state government regulators. Like other RTOs across the country, ISO New England is responsible for the reliable operation of the region's bulk power system, administration of the region's wholesale electricity markets, and regional power system planning.

The CLG bylaws, formulated by stakeholders and the ISO, require the organization to be governed by a Coordinating Committee of up to 12 members. These members represent various stakeholder groups, with not more than four members coming from any one New England state. During 2013, the committee had nine members: two from Maine, one from New Hampshire, four from Massachusetts, one from Rhode Island and one from Connecticut. The member from Vermont retired and the Coordinating Committee is conducting a search for another Vermont representative.

ISO New England's information flow to the CLG has been instrumental in fulfilling the mandate to afford stakeholders a greater understanding of the ISO's activities and decision-making processes and the potential cost impacts of its decisions and initiatives on end users. The CLG and the ISO have worked collaboratively to identify issues of importance to end-use consumers and have provided information at the quarterly CLG meetings that include a range of cost implications for certain regional initiatives.

Because New England's wholesale electricity markets are continually evolving, the CLG also serves as a forum for consumers to provide input and information to the ISO and to each other regarding what is working well and what may need to be changed. Looking to the future, members of the CLGCC recognize that the CLG's full mandate cannot be fulfilled without greater participation from consumer members on the issues that concern them, including potential changes to the power system and the wholesale markets that might allow them to participate more profitably, purchase less expensively, or operate more efficiently.

For 2014–2015, the CLG has the following goals:

1. To attract more commercial and nonprofit end users to actively participate in the organization
2. To attract greater attendance from each New England state
3. To augment the representation on the Coordinating Committee of states other than Massachusetts and, at a minimum, to replace the retired members from Vermont and Rhode Island
4. To heighten efforts to fulfill CLG's twin mandate of "providing the ISO with a greater understanding of consumer issues and concerns," that is, further developing the flow of information and even advocacy from consumers and other stakeholders to ISO New England

We invite you to take an interest in the Consumer Liaison Group and to play a role in achieving these goals, which can lead to a better electricity industry in New England and an improved price structure for consumers. You are invited to review our webpage, part of the ISO New England website, including past issues of the *CLG Newsletter*. Please feel free to contact any one of us for more information.

Sincerely,

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## Purpose and Structure of the Consumer Liaison Group

The Consumer Liaison Group (CLG) is a forum for sharing information between ISO New England (ISO) and those who ultimately use and pay for electricity in New England. Through this forum, the ISO develops a better understanding of consumer issues, needs, and concerns relative to the electric power system and its costs. Similarly, consumers and their representatives gain a better understanding of regional electricity issues.

### Objectives

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The objectives of the CLG are as follows:

- Be generally informed of the operation of the power system and industry issues, which includes having access to ISO subject matter experts
- Be made aware of market changes, in advance of final consideration by the ISO when feasible, which can have an impact on consumers
- Work with the ISO to ensure that it provides timely quantitative and qualitative information on the cost impacts of important initiatives
- Have the ISO assist consumers in identifying the issues that can affect them economically
- Be informed of and participate in the stakeholder process that determines wholesale power market rules and power system needs
- Be informed of the results of any economic analysis conducted and presented to stakeholders in the regional stakeholder process
- Provide the ISO with a greater understanding of the specific issues of interest to consumers

### Participation and Meeting Format

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The Consumer Liaison Group is open to the public. Participants generally include consumers and consumer representatives (including state consumer and ratepayer advocates), state business and industry associations, chambers of commerce, individual businesses, trade groups, nonprofit organizations, and other end users. Because the CLG is an open forum, several New England Power Pool (NEPOOL) members and state regulators also are regular, active participants in CLG discussions.<sup>1</sup>

The CLG meets quarterly and attracts a diverse group of approximately 75 attendees at each meeting, both in person and via teleconference. CLG meetings follow the same format:

- Opening remarks from a special guest speaker—typically, an industry or business executive, policymaker or regulator—who provides a unique perspective on a particular topic or issue
- A panel discussion facilitated by a moderator who guides the discussion, often representing industry, the ISO, regulators, and consumer perspectives
- A representative from the ISO, who provides an update on initiatives that have or will be taking place at NEPOOL and ISO stakeholder meetings that can have an impact on electricity prices, as well as other updates on ISO and regional energy issues

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<sup>1</sup> NEPOOL is a group formed in 1971 by the region's private and municipal utilities to foster cooperation and coordination among the utilities in the six-state region for ensuring a dependable supply of electricity. Today, NEPOOL members are ISO stakeholders and market participants. More information is available at [www.nepool.com](http://www.nepool.com).

## Governance

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The Consumer Liaison Group Coordinating Committee (CLGCC) is the governing body that works closely with the ISO to identify issues of importance to the CLG membership, set the agenda for CLG meetings, and generally guide the work of the CLG.<sup>2</sup>

The CLGCC can consist of up to 12 members (six members and six alternates) with no more than four members from any one of the New England states. Specific membership requirements ensure that all consumers, including residential and commercial/industrial consumers, are represented from a majority of the New England states and that a range of consumer interests is considered when determining CLG priorities. The committee has at least one representative of residential ratepayers and one representative of commercial and industrial ratepayers, and members must be either a ratepayer (or directly represent ratepayers), a member of a consumer organization, or a government consumer or government ratepayer advocate.

CLGCC members are selected by vote of the CLG at its first meeting in an even-numbered calendar year and serve for a term of two years or until successors are selected. The Coordinating Committee annually designates a chairperson from its membership. Should a vacancy occur on the committee, the chairperson fills the vacancy with the approval of a majority of the remaining members. Current CLG Coordinating Committee members are listed on page 2. The ISO designates a point-of-contact within its External Affairs Department to work with the CLGCC.

## Information and Communications

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ISO New England facilitates the meetings and communications among CLG participants. A dedicated section of the ISO's website has been established for all CLG materials, communications, annual reports, newsletters and other valuable information for consumers ([www.iso-ne.com/clg](http://www.iso-ne.com/clg)). This practice ensures that the body of information developed through the CLG is transparent, easily accessible, and available to all interested consumers and industry participants.

A glossary defining electricity market and power system terms is available on the ISO's website to assist CLG members in understanding frequently used electricity market or power system terms and acronyms ([www.iso-ne.com/glossary](http://www.iso-ne.com/glossary)).

Additionally, in 2012, the ISO implemented *ISO to Go* (<http://www.iso-ne.com/support/isotogo/>), a free mobile application that provides smartphone access to the most frequently viewed real-time data on the ISO website and data portal, ISO Express ([isoexpress.iso-ne.com/](http://isoexpress.iso-ne.com/)).<sup>3</sup> Through the "app," users can view current system conditions; the five-minute load graph, which compares forecasted demand and real-time consumer demand; the fuel mix by resource type currently providing electricity; and an array of real-time wholesale electricity price data.

CLG participants also are encouraged to view the ISO's news blog, ISO Newswire ([www.isonewswire.com](http://www.isonewswire.com)), and subscribe to a mailing list to receive a monthly email highlighting some of the most recent articles.<sup>4</sup>

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<sup>2</sup> Governance of the Consumer Liaison Group is fully explained in the "CLG Purpose and Structure" available at [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/consum\\_liaison\\_gov/clg\\_structure\\_document\\_revised\\_12\\_29\\_09.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/consum_liaison_gov/clg_structure_document_revised_12_29_09.pdf).

<sup>3</sup> *ISO to Go* is available for free for the iPhone or iPad at the Apple App store or for Android devices at Google Play.

<sup>4</sup> To subscribe, send a blank email to [isolist-isonewswire-subscribe@mail.iso-ne.com](mailto:isolist-isonewswire-subscribe@mail.iso-ne.com).



## 2013 Consumer Liaison Group Meeting Summaries

As CLG members continued to learn about this year, the natural gas pipelines serving New England are not sufficient to meet the increasing demand for natural gas to heat homes and businesses and to generate electricity. Pipeline constraints, particularly during the winter months when home heating needs increase the demand for natural gas, have driven the average spot price for natural gas in New England to the highest in the country. In 2013, the price of natural gas averaged \$6.97 per million British thermal units (MMBtu), up 76% from the 2012 record low of \$3.95/MMBtu. This caused the average price of wholesale energy to rise from \$36.09/megawatt-hour (MWh) in 2012 to \$56.06/MWh in 2013, a 55% year-to-year increase.<sup>5</sup>

The topics chosen for discussion at the 2013 CLG meetings provided consumers an opportunity to learn firsthand about the impacts that the region's reliance on natural gas-fired generation and the constrained pipeline system can have on consumers and system reliability. CLG members also learned how the electric industry obtains resources to meet future energy needs, and how changes to the ISO's Forward Capacity Market (FCM) can affect consumers.

The four CLG meetings held in 2013 featured the following topics:

- March 13: The Role of Natural Gas in New England's Energy Production—Benefits and Challenges for Consumers
- June 6: How the Electric Industry Obtains Resources for Future Needs—Impacts on Consumers
- September 25: Examining the Role of Natural Gas in New England's Electricity Generation
- December 5: Impacts of ISO and Government Decision-Making on Retail Rates

The following summaries are intended to capture the discussions at CLG meetings but do not necessarily reflect the views of the ISO or the CLGCC.

### March 13: The Role of Natural Gas in New England's Energy Production—Benefits and Challenges for Consumers

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Meeting objective: Discuss the region's reliance on natural gas for power generation and associated impacts on consumers

#### **Special Guest Speaker: Michael A. Delaney, Attorney General, State of New Hampshire**

Attorney General Michael Delaney outlined his state's guiding principles for energy affairs—safety and reliability, just and reasonable pricing, and a focus on the consumer. He noted that the electricity industry is particularly difficult for consumers to understand. The attorney general then discussed New Hampshire's streamlined power generation siting process. He also reviewed the state's program of tax subsidies for those installing environmental safeguard equipment, even if the installation is made pursuant to government requirements and the subsidies are not needed as an incentive.

Attorney General Delaney noted the public's mixed feelings about the relicensing of the Seabrook nuclear power plant but pointed out that New Hampshire, as part of the process, secured commitments for enhanced management practices at the plant as well as increased state oversight of its operations.

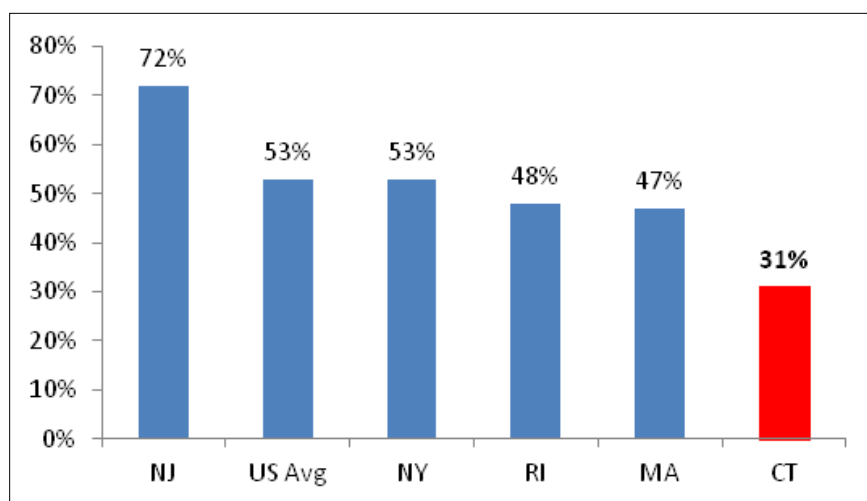
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<sup>5</sup> ISO New England, Inc., "2013 Wholesale Electricity Prices in New England Rose on Higher Natural Gas Prices," press release (March 18, 2014), [http://www.iso-ne.com/news/pr/2014/2013\\_price%20release\\_03182014\\_final.pdf](http://www.iso-ne.com/news/pr/2014/2013_price%20release_03182014_final.pdf).

## Panel Discussion

Bob Keating from Keating Strategies moderated a panel of energy industry representatives, including: Eric Jacobi from the Connecticut Department of Energy and Environmental Protection (DEEP), Commissioner Michael Harrington from the New Hampshire Public Utilities Commission, Stephen Leahy from the Northeast Gas Association, and Scott Rackey from OsComp Systems. Panelists discussed natural gas issues across New England and associated impacts on consumers.

DEEP's Eric Jacobi highlighted Connecticut's approach to energy planning and the passage of the state's first-ever Comprehensive Energy Strategy. One of the key components of the strategy is the expansion of the natural gas distribution system to give Connecticut residents and businesses greater access to natural gas for heating purposes (i.e., more energy options for consumers). According to Mr. Jacobi, only 31% of the state's 1.4 million households use natural gas for home heating, while 50% of households still use oil.<sup>6</sup> Figure 1 compares Connecticut's percentage of natural gas penetration for home heating with the percentages from other states in the Northeast and the United States average for February 2013.



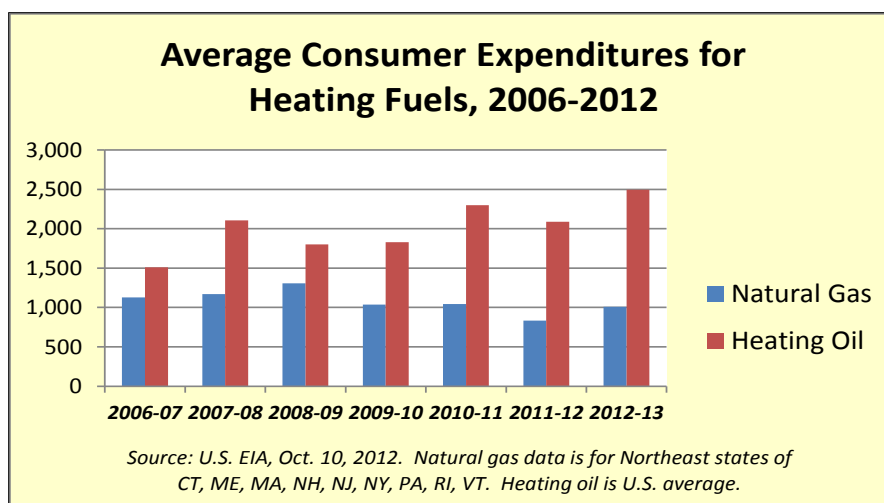
**Figure 1: Natural gas heating penetration in several Northeast states and the United States average, February 2013 (%).**

Through a seven-year expansion plan, the state hopes to extend natural gas service to as many as 300,000 additional on- and off-main customers, offering consumers significant cost savings by switching from oil.

Stephen Leahy from the Northeast Gas Association echoed the cost-saving benefits of switching from oil to natural gas, but noted that, as New England utilizes more pipeline capacity for home heating, less capacity is available for non-firm customers, like natural-gas-fired generators.<sup>7</sup> Figure 2 shows the average consumer costs for natural gas and oil heating fuels for 2006 to 2012.

<sup>6</sup> Eric Jacobi, "Role of Natural Gas in New England's Energy Production: Challenges and Benefits for Consumers," CLG presentation (March 13, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/mar132013/03\\_13\\_13\\_clg\\_jacobi.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/mar132013/03_13_13_clg_jacobi.pdf).

<sup>7</sup> Stephen Leahy, "Natural Gas Market Conditions; Gas & Power in New England," CLG presentation (March 13, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/mar132013/03\\_13\\_13\\_clg\\_leahy.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/mar132013/03_13_13_clg_leahy.pdf).



**Figure 2: Average consumer expenditures for natural gas and oil heating fuels, 2006–2012 (\$).**

After discussing the region’s heavy reliance on gas-fired generation and the constrained pipeline system, the panelists turned to potential solutions to this pressing reliability risk. Many of these solutions have been raised through the ISO’s Strategic Planning Initiative (SPI), which was launched in the fall of 2010. For more information on SPI and other ISO initiatives, see [Appendix A: ISO New England Activities and Initiatives](#).

Commissioner Michael Harrington highlighted three long-term solutions to the reliability concerns associated with natural gas dependence: (1) investment in new pipeline capacity, (2) investment in liquefied natural gas (LNG) storage, and (3) investment in electric power generation with dual-fuel capability. Commissioner Harrington noted that the high fixed costs associated with building new pipeline capacity could be offset by the commodity cost savings from the purchase of low-cost Marcellus Shale gas through an unconstrained pipeline system. Commissioner Harrington also highlighted the ISO’s “Pay-for-Performance” proposal, which is designed to enhance investment incentives in the Forward Capacity Market for capacity resources to improve their performance and deliver energy when it is needed the most (i.e., during stressed system conditions).<sup>8</sup>

Scott Rackey from OsComp Systems offered an additional solution for end users—a new compressed natural gas (CNG) transportation technology that circumvents the constrained pipeline system and allows for continuous CNG service to commercial and industrial customers by truck, creating “virtual pipelines” in the region. According to Mr. Rackey, OsComp’s trucked CNG solutions offer reliable, low-cost CNG service, resulting in immediate energy cost savings for large end users.<sup>9</sup>

## June 6: How the Electric Industry Obtains Resources for Future Needs—Impacts on Consumers

Meeting objective: Discuss how the electric industry obtains resources through ISO New England’s Forward Capacity Market (FCM) and the associated impacts of the FCM on consumers

<sup>8</sup> Michael Harrington, “New England’s Increasing Dependence on Natural Gas for Power Generation,” CLG presentation (March 13, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/mar132013/03\\_13\\_13\\_clg\\_harrington.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/mar132013/03_13_13_clg_harrington.pdf).

<sup>9</sup> Scott Rackey, “Natural Gas Service by Truck without Pipelines,” CLG presentation (March 13, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/mar132013/03\\_13\\_13\\_clg\\_rackey.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/mar132013/03_13_13_clg_rackey.pdf).

### **Special Guest Speaker: Richard Levitan, President, Levitan & Associates, Inc.**

Richard Levitan reviewed the emergence of natural gas as the leading fuel in New England for generation of electricity. He noted that the emergence of plentiful shale gas has altered the natural gas delivery system and its directional flows and capacity needs, with the Algonquin and Tennessee pipelines now seeing the heaviest use. However, at this time of peak need for natural gas, all of the region's LNG terminals are unused.

Mr. Levitan reviewed both short-term and long-term steps being undertaken to alleviate the bottleneck in natural gas generating capacity caused by congestion in the pipelines. The short-term steps include enhanced information sharing between the energy industry and pipeline companies and greater coordination between their different scheduling practices, plus moves to increase oil reserves for backup use. The longer-term actions include new proposals for establishing performance incentives for power generators in the FCM to enhance reliability during times of peak demand. Mr. Levitan expressed the belief that investment in increased pipeline capacity is unavoidable and reviewed the expansion projects now underway.

### **Panel Discussion**

Robert Rio, Vice President of Government Affairs for the Associated Industries of Massachusetts, moderated a panel of electric industry representatives, including: Mark Karl, Senior Director of Resource Adequacy for ISO New England; Mary Smith, Associate Director of Energy Supply and Utility Administration for Harvard University; and James Daly, Vice President of Energy Supply for Northeast Utilities. Panelists discussed the ISO's Forward Capacity Market and anticipated rule changes that may have a cost impact on consumers.

Mark Karl from ISO New England provided an overview of the FCM, auction results from the seventh Forward Capacity Auction (FCA #7), and changes anticipated for FCA #8 and beyond.<sup>10</sup> Among the changes anticipated for future capacity auctions is the ISO's "Pay-for-Performance" (PFP) proposal, which is intended to strengthen resource performance incentives in the FCM beginning in the 2018/2019 timeframe. For more information on the ISO's PFP proposal, see [Appendix A: ISO New England Activities and Initiatives](#).

#### *FCA #7 Results—Insufficient Competition in the Northeast Massachusetts (NEMA)/Boston Capacity Zone*

In the three capacity zones representing most of New England—Connecticut, Maine, and the Rest of Pool (which includes New Hampshire, Rhode Island, Vermont, southeastern Massachusetts and western/central Massachusetts)—the descending-clock auction concluded at the floor price of \$3.15 per kilowatt-month (kW-month) with excess supply in each zone. In the NEMA/Boston zone, the auction closed in the first round at \$14.999/kW-month when a new resource sought to withdraw from the auction. If the new resource—a 674 megawatt (MW) power plant proposed by Footprint Power—had withdrawn from the auction, the NEMA/Boston zone would have been short of the resources needed to meet demand in 2016/2017. In a zone with insufficient competition, such as NEMA/Boston, all new resources will be paid the clearing price, and the existing resources will be paid \$6.661/kW-month, an administrative price calculated under the market rules addressing insufficient competition. The compensation mechanism is designed to provide price protection for consumers while encouraging competition. The mechanism provides incentives for new resources to be developed in resource-short zones, while capping compensation to existing resources at a level below that paid to new resources.

Table 1 highlights the results of the last seven auctions.<sup>11</sup>

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<sup>10</sup> Mark Karl, "How the Electric Industry Obtains Resources for Future Needs—Impacts on Consumers," CLG presentation (June 6, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/jun62013/06\\_06\\_13\\_clg\\_karl.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/jun62013/06_06_13_clg_karl.pdf).

<sup>11</sup> ISO New England ran FCA #8 on February 3, 2014. See Appendix A for details on the results of the auction.

**Table 1**  
**Forward Capacity Market Auction Results (FCA #1 through FCA #7)**

Auction Commitment Period	Total Capacity Acquired (MW)	Capacity Required (MW)	Excess Capacity (MW)	New Demand Resources (MW)	New Supply (MW)	Clearing Price (\$/kW-month)	Prorated Price (\$/kW-month)
FCA 1 2010/2011	34,077	32,305	1,772	1,188	626	\$4.50 Floor price	\$4.25
FCA 2 2011/2012	37,283	32,528	4,755	448	1,157	\$3.60 Floor price	\$3.12
FCA 3 2012/2013	36,996	31,965	5,031	309	1,670	\$2.95 Floor price	\$2.54*
FCA 4 2013/2014	37,501	32,127	5,374	515	144	\$2.95 Floor price	\$2.52*
FCA 5 2014/2015	36,918	33,200	3,718	263	42	\$3.21 Floor price	\$2.86
FCA 6 2015/2016	36,309	33,456	2,853	313	79	\$ 3.42 Floor price	\$3.13
FCA 7 2016/2017	36,220	32,968	3,252	245	800	\$3.150 Floor price \$14.999 NEMA/Boston	ROP: \$2.744 Maine: \$2.744 CT: \$2.883 N/B: \$14.999

\* The prorated price in Maine was \$2.47/kW-month and \$2.34/kW-month for FCA #3 and FCA #4, respectively.

Mary Smith, Associate Director of Energy Supply and Utility Administration at Harvard University, discussed the FCM's impact on retail customers, like Harvard University. She stressed the importance of clear communications between ISO New England, market participants, and consumers to ensure that changes in the FCM do not come as a surprise to retail customers. She also highlighted the capacity costs stemming from prior auctions, particularly FCA #7 which saw significantly higher prices in the NEMA/Boston capacity zone due to insufficient competition.<sup>12</sup>

James Daly, Vice President of Energy Supply for Northeast Utilities, provided his perspective on upcoming market rule changes and their impacts on resources participating in the FCM. He highlighted the ISO's PFP proposal, scheduled for FCA #9, and noted that resources are likely to price more risk into their FCA bids with PFP in place, resulting in higher prices over time. He also forecasted oscillating prices in the FCM as resources retire and excess supply diminishes.<sup>13</sup>

## **September 25: Examining the Role of Natural Gas in New England's Electricity Generation**

Meeting objective: Discuss the region's reliance on natural gas for power generation and how that growing dependence can affect reliability

### **Special Guest Speaker: J.M. Calo, Ph.D., P.E., Professor of Engineering, School of Engineering, Brown University**

Professor Calo, having reviewed the current dilemmas in power provisioning, noted that the storage of electricity on a wide scale is an option not yet fully developed. There is a need, he said, for a versatile mechanism to store large quantities of electricity. Maintaining that coal will continue as a major fuel for generating electricity in parts of the United States and elsewhere, the professor cited the importance and

<sup>12</sup> Mary Smith, "FCM's Impact on the Retail Customer," CLG presentation (June 6, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/jun62013/06\\_06\\_13\\_clg\\_smith.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/jun62013/06_06_13_clg_smith.pdf).

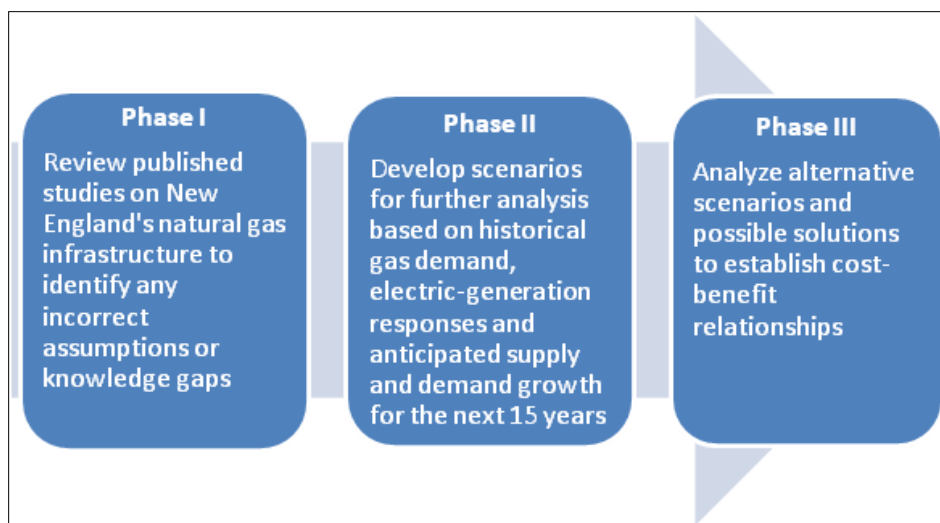
<sup>13</sup> James Daly, "FCM Rule Change Implications for Resources," CLG presentation (June 6, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/jun62013/06\\_06\\_12.clg.daly.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/jun62013/06_06_12.clg.daly.pdf).

promise of direct carbon fuel cell (DCFC) development. Such fuel cells can generate electricity directly from coal with half the carbon emissions of other coal applications. And although he is working on developing a sufficiently advanced and commercially feasible DCFC addition to the current array of generation methods, this process will take some time. Professor Calo's presentation included a review of DCFC natural processes and technology as currently understood and applied.

### Panel Discussion

Bill Ferguson, Executive Director of The Energy Council of Rhode Island (TEC-RI), moderated a panel of electric industry representatives, including: Ben D'Antonio, Counsel and Analyst for the New England States Committee on Electricity (NESCOE); Dan Dolan, President of the New England Power Generators Association (NEPGA); Kevin Kirby, Vice President of Market Operations for ISO New England; and Michael Dirrane, Marketing Director for Spectra Energy. Panelists discussed the region's heavy reliance on natural gas for power generation and associated impacts on reliability.

Ben D'Antonio focused his remarks on the three-phase Gas-Electric Study commissioned by NESCOE to assess the sufficiency of natural gas supplies and infrastructure to support power generation in New England through 2029. Black & Veatch completed Phase III of the study in August 2013, identifying a number of short-term (2014-2016) and long-term (2017-2029) solutions to the region's natural gas constraints. These include additional dual-fuel capability, demand response, and LNG purchases in the near-term and a cross-regional natural gas pipeline solution in the long-term.<sup>14</sup> Figure 3 shows the three phases of the Black & Veatch study.



**Figure 3: Phases of Black & Veatch's Gas-Electric Study: Analysis of Natural Gas Supplies and Infrastructure for the New England Electric Power Sector, 2014 to 2029.**

**Source:** Black & Veatch, *Natural Gas Infrastructure and Electric Generation: Proposed Solutions for New England* (August 26, 2013), [http://www.nescoe.com/uploads/Phase\\_III\\_Gas-Elec\\_Report\\_Sept.\\_2013.pdf](http://www.nescoe.com/uploads/Phase_III_Gas-Elec_Report_Sept._2013.pdf).

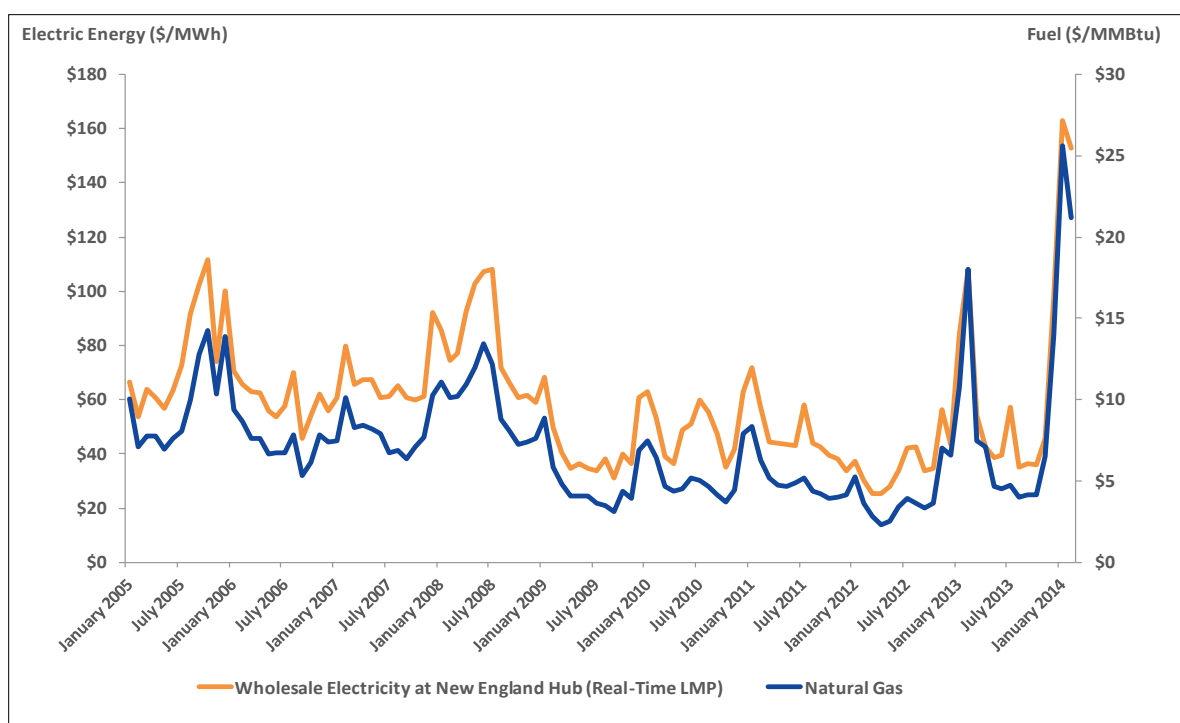
NEPGA President Dan Dolan acknowledged the gas transportation challenges in the region, but stated that generators cannot rationalize the 20-year firm transportation contracts needed to finance the gas pipeline companies' expansion projects. He noted, though, that the states are exploring alternatives to ensure pipeline

<sup>14</sup> Ben D'Antonio, "Gas-Electric Study Phase III: Natural Gas Infrastructure and Electric Generation: Proposed Solutions for New England," CLG presentation (September 25, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/sep252013/nescoe\\_clg\\_9\\_25\\_2013.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/sep252013/nescoe_clg_9_25_2013.pdf).

expansion in the region.<sup>15</sup> See Appendix A for information on the New England Governors' Regional Energy Infrastructure Initiative, announced in December 2013.

ISO New England's Kevin Kirby explained how the ISO conducts economic dispatch of the system, selecting the lowest-priced resources first, until the demand for electricity is met. He noted that the abundance of low-cost shale gas has been beneficial to retail customers the past few years, but that pipeline constraints into New England expose the region to high natural gas prices in the winter when demand is high for heating and power generation needs.<sup>16</sup>

Figure 4 illustrates the relationship between wholesale electricity prices and natural gas prices. With the region's heavy reliance on natural-gas-fired generation, natural gas units are typically the marginal unit setting the price of electricity in the region. Gas pipeline constraints in the winters of 2012/2013 and 2013/2014 led to significantly higher natural gas prices and, in turn, significantly higher wholesale electricity prices for the region.



**Figure 4: New England wholesale electricity and natural gas prices, January 2005 to January 2014.**

Michael Dirrane, Director of Northeast Marketing for Spectra Energy, spoke about the natural gas constraints on the Algonquin Gas Transmission pipeline, one of five interstate pipelines feeding the New England region. According to Mr. Dirrane, the number of days with zero interruptible capacity available on the Algonquin pipeline (i.e., the number of days with no left-over capacity for gas-fired generators) rose from 19 days for August 2009–July 2010 to 292 days for August 2011–July 2012. Mr. Dirrane also spoke of the Algonquin Incremental Market (AIM) Expansion project, which seeks to expand the Algonquin pipeline by roughly 400

<sup>15</sup> Dan Dolan, "The Role of Natural Gas in New England's Electricity Generation," CLG presentation (September 25, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/sep252013/dolan\\_clg\\_9\\_25\\_2013.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/sep252013/dolan_clg_9_25_2013.pdf).

<sup>16</sup> Kevin Kirby, "ISO New England System Operations and Challenges with Electricity/Gas Coordination," CLG presentation (September 25, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/sep252013/kirby\\_clg\\_9\\_25\\_2013.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/sep252013/kirby_clg_9_25_2013.pdf).



million cubic feet per day (MMcf/d) by November 2016. This additional capacity will be used to meet growing local distribution company (LDC) home-heating demand and will not solve the natural gas constraints felt by gas-fired generators in the region.<sup>17</sup>

## **December 5: Impacts of ISO and Government Decision-Making on Retail Rates**

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Meeting objective: Discuss how ISO New England and government decision-making can have an effect on retail electric rates

### **Special Guest Speaker: John Norris, Commissioner, Federal Energy Regulatory Commission**

On natural gas supply, Commissioner Norris suggested that before investing in pipeline expansion, we maximize our use of current transport and the current electric power grid. We can improve both communication and scheduling coordination between the energy and pipeline industries. We should also assess the resource mix we want long term. In particular, the commissioner suggested, we might look at developing our hydro and wind power capacities in tandem with planning for pipeline expansion. Commissioner Norris reminded the audience that the states, not the Federal Energy Regulatory Commission (FERC), determine their own resource mix. Transport, he said, should be able to handle diverse resources while balancing return on investment for developers with cost containment for consumers.

The capacity market, Commissioner Norris averred, should be designed to meet peak load *plus* reserve requirements, not just the former, as is currently the case. Finally, he stated, FERC needs guidelines that give more weight to cost considerations along with reliability concerns.

### **Panel Discussion**

Joseph Rosenthal, Principal Attorney for the Connecticut Office of Consumer Counsel, moderated a panel of electric industry representatives, including: Mary Smith, Associate Director of Energy Supply and Utility Administration for Harvard University; Craig Foley, Managing Partner of inCharge LLC; Michael Henry, Senior Counsel and Director of the Sustainable Transmission Project for Environment Northeast; and David Cash, Commissioner of the Massachusetts Department of Public Utilities. Panelists discussed the changes taking place in the wholesale market and the impacts they have on consumers.

Mary Smith, Associate Director of Energy Supply and Utility Administration for Harvard University, discussed the changes proposed and made to the wholesale markets in 2013 and the impacts they may have on retail customers. She highlighted the ISO's "Pay-for-Performance" proposal, which she believes will increase capacity prices and add to consumer risk. She called on the ISO, federal and state officials, and the utilities to work hand-in-hand to ensure reliability at a minimum cost to consumers.<sup>18</sup>

Craig Foley, Managing Partner of inCharge LLC, focused his remarks on the impact ISO and government decision-making has on businesses. He explained that an unstable regulatory and economic climate can make business decisions more difficult and uncertain. He asked for leadership and clarity from government officials to help business owners make more informed decisions in the marketplace.<sup>19</sup>

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<sup>17</sup> Michael Dirrane, CLG presentation (September 25, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/sep252013/dirrane\\_clg\\_9\\_25\\_2013.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/sep252013/dirrane_clg_9_25_2013.pdf).

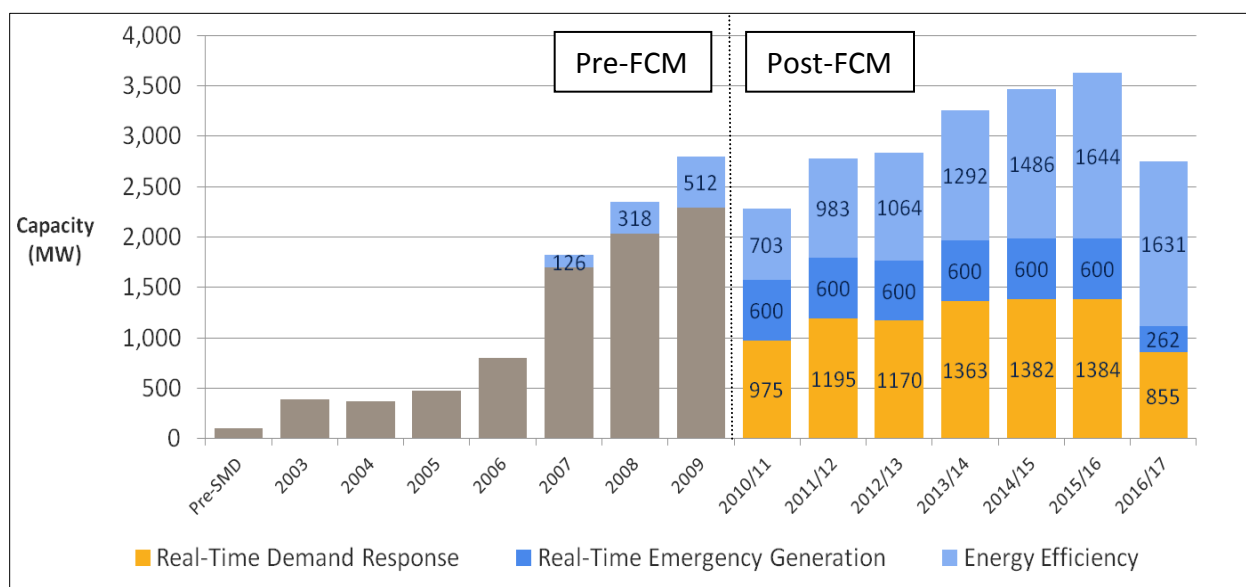
<sup>18</sup> Mary Smith, "Impact of ISO & Government Decisions on Retail Rates," CLG presentation (December 5, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/dec52013/smith\\_clg\\_12052013\\_v2.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/dec52013/smith_clg_12052013_v2.pdf).

<sup>19</sup> Craig Foley, "Impacts of ISO and Government Decision-Making on Retail Rates," CLG presentation (December 5, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/dec52013/foley\\_clg\\_1252013.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/dec52013/foley_clg_1252013.pdf).



Michael Henry, Senior Counsel and Director of the Sustainable Transmission Project for Environment Northeast, discussed grid planning and how, in his view, non-transmission alternatives are excluded from the process. He stated that grid planning needs to keep pace with and incorporate new technologies, such as distributed generation, as well as state consumer, economic, and environmental goals.<sup>20</sup>

David Cash, Commissioner of the Massachusetts Department of Public Utilities, spoke about the policy tools and economic incentives used in Massachusetts to grow the state's clean energy sector and mitigate volatile energy prices. He pointed to the state's energy-efficiency (EE) programs and how they contribute to reduced greenhouse gas (GHG) emissions and improved reliability.<sup>21</sup> Figure 5 shows the active participation by EE and demand response in the FCM since the first Forward Capacity Auction (FCA #1) was run in February 2008, procuring the resources needed for the 2010/2011 capacity commitment period.



**Figure 5: Energy efficiency and demand response participation in the Forward Capacity Market.**

According to Commissioner Cash, participation by energy efficiency and demand-response resources reduces risk and lowers costs in the wholesale energy market. As an example, Commissioner Cash highlighted a “demand-response event,” which took place on June 24, 2010. Because of high heat and humidity, the ISO experienced higher-than-expected peak loads and called on demand-response resources to reduce electricity demand in the region and help bring the system out of a capacity deficiency.

## Consumer Liaison Group Future Initiatives

ISO New England, working with the CLG Coordinating Committee and CLG members, will continue to conduct outreach in the states to inform consumers and consumer advocates of the existence, role, and information provided by the Consumer Liaison Group. Additionally, the CLGCC will continue striving to attract more end-user participation, to increase participation from all New England states, and to increase the consumer's

<sup>20</sup> Michael Henry, “Expanding the Tools in the Toolkit: The Case for Full Assessment of Energy Efficiency and Distributed Generation in Meeting Grid Reliability Needs,” CLG presentation (December 5, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/dec52013/henry\\_clg\\_12052013.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/dec52013/henry_clg_12052013.pdf).

<sup>21</sup> David Cash, “Rates, Bills and the Clean Energy Agenda,” CLG presentation (December 5, 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mtrls/2013/dec52013/cash\\_clg\\_1252013\\_v2.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mtrls/2013/dec52013/cash_clg_1252013_v2.pdf).

presence in ISO New England stakeholder discussions and initiatives. The CLGCC will also explore more ways to educate end users about industry institutions, such as NEPOOL and FERC, and about how consumers can advocate before industry institutions, government bodies, and elected officials. Additional efforts will be made to pinpoint and explain to end users the basic policy dilemmas and choices currently facing the energy industry, the public, and government. To help further this work, the CLG will continue to publish the *CLG Newsletter*.

## Appendix A: ISO New England Activities and Initiatives

This section highlights the major topics presented by the ISO at CLG meetings in 2013. In addition to these presentations, the ISO's External Affairs Department issues a memo each month that provides timely updates on regional energy issues, stakeholder meetings, and other information that may be relevant to consumers. The memos are posted on the CLG webpage.<sup>22</sup>

### Strategic Planning Initiative to Address Regional Challenges

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In 2010, the ISO, in coordination with regional stakeholders, launched the Strategic Planning Initiative, a comprehensive effort to identify and resolve challenges facing the power system and wholesale electricity markets. After extensive discussions and feedback from stakeholders, broad consensus was reached and five challenges were identified that will likely affect the New England power grid:

- Increased reliance on natural-gas-fired capacity
- Resource performance and flexibility
- Retirement of generators
- Integration of variable (i.e., intermittent) resources
- Lack of alignment of the system planning process with market mechanics

Since 2012, the ISO has shifted from understanding and defining the risks to identifying and developing solutions. A number of studies and whitepapers have been released that outline the challenges and proposed solutions to these market, resource, and reliability issues.<sup>23</sup>

The ISO's *2014 Regional Electricity Outlook* provides an easy-to-understand summary of the issues identified through the Strategic Planning Initiative and presents the immediate-, short-, and long-term solutions the ISO and stakeholders are pursuing to solve these challenges.<sup>24</sup>

### Winter 2013/2014 Reliability Program

Challenging operating conditions during winter 2012/2013 led the ISO to conclude that additional action would be required to maintain reliability during winter 2013/2014. The ISO experienced a number of instances in which natural-gas-fired generators did not have sufficient fuel to provide electric energy consistent with their offered capabilities due to natural gas pipeline constraints during the 2012/2013 winter. Increased and sometimes extreme volatility in natural gas prices exacerbated fuel-procurement issues. In addition, many dual-fuel and oil-only resources did not have sufficient fuel to allow for reliable operation during extended or repeated periods of cold weather.

These operational events reinforced the ISO's concerns over gas dependence and created concerns about dependence on oil-fired generation during the winter. Because oil-fired generators were not maintaining full storage tanks, their oil inventories could be depleted rapidly when they ran during sustained cold weather, limiting their ability to run at other times when gas supplies were constrained.

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<sup>22</sup> The monthly memos are posted at [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/clg/mnthly\\_issu\\_memo/index.html](http://www.iso-ne.com/committees/comm_wkgrps/othr/clg/mnthly_issu_memo/index.html).

<sup>23</sup> A complete index of Strategic Planning Initiative materials, including studies, whitepapers, and proposals is available at [http://www.iso-ne.com/committees/comm\\_wkgrps/strategic\\_planning\\_discussion/index.html](http://www.iso-ne.com/committees/comm_wkgrps/strategic_planning_discussion/index.html).

<sup>24</sup> ISO New England Inc., *2014 Regional Electricity Outlook* (February 2014), [http://www.iso-ne.com/aboutiso/fin/annl\\_reports/2000/2014\\_reo.pdf](http://www.iso-ne.com/aboutiso/fin/annl_reports/2000/2014_reo.pdf).

As a first step in developing solutions, the ISO assessed the incremental electric energy needs of the system in the event of colder weather conditions than experienced during the 2012/2013 winter. To calculate the needs for the 2013/2014 winter, the ISO used historical data from the 2003/2004 winter, which had the coldest weather in the last 10 years. Overall, the ISO projected that the region would need about 2.4 million MWh of energy, or 4.2 million barrels of oil, to meet the increased demand in a winter with temperatures like those experienced in 2003/2004.

In June 2013, the ISO submitted the Winter Reliability Program to FERC for review and approval.<sup>25</sup> The program included incentives to ensure that oil-fired generators incrementally increased their fuel oil inventory, a demand-response program, payments to dual-fuel units for testing their switching capability, and changes to market monitoring aimed at increasing flexibility for dual-fuel units.

In August 2013, the ISO sought bids to participate in the Winter Reliability Program, ultimately selecting 1.95 million MWh of energy from oil inventory services and demand response, or 81% of the initial 2.4 million MWh target. The cost of the program totaled \$75.1 million.

FERC accepted the Winter Reliability Program in September 2013 and the program's bid results in October 2013.<sup>26</sup> The Winter Reliability Program ran from December 1, 2013 to February 28, 2014.

In May 2014, the ISO launched discussions with stakeholders on a plan to address the 2014/2015 winter. These discussions are currently underway, and the ISO intends to submit a proposal to FERC this summer.

#### **New England Governors' Regional Energy Infrastructure Initiative**

In December 2013, New England's governors announced plans for a regional energy infrastructure initiative designed to bring affordable, cleaner, and more reliable energy to homes and businesses across the region. In a joint statement, the governors agreed to work together, in coordination with ISO New England and through the New England States Committee on Electricity (NESCOE), to advance a regional energy infrastructure initiative that diversifies the region's energy supply portfolio through investment in new electric power transmission and natural gas pipeline capacity in New England.<sup>27</sup> These investments are intended to bring greater amounts of clean energy into the region and ensure adequate supplies of natural gas for power generation.

Through its Strategic Planning Initiative, ISO New England identified the region's reliance on natural gas for power generation, and the associated need for additional natural gas pipeline infrastructure, as one of the most pressing risks to reliable system operations. To assist the states in meeting their goals, ISO New England has agreed to provide technical support and other assistance to facilitate this regional initiative.<sup>28</sup>

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<sup>25</sup> ISO New England Inc., *Winter 2013-14 Reliability Program*, Docket No. ER13-1851-000 (June 28, 2013), [http://www.iso-ne.com/regulatory/ferc/filings/2013/jun/er13-1851-000\\_winter\\_2013-2014\\_6-28-2013.pdf](http://www.iso-ne.com/regulatory/ferc/filings/2013/jun/er13-1851-000_winter_2013-2014_6-28-2013.pdf).

<sup>26</sup> *Order Conditionally Accepting Tariff Revisions*, (144 FERC ¶ 61,204, Docket Nos. ER13-1851-000, ER13-1851-001, ER13-1851-002) (September 16, 2013), [http://www.iso-ne.com/regulatory/ferc/orders/2013/sep/er13-1851-000\\_9-16-2013\\_winter\\_rel.pdf](http://www.iso-ne.com/regulatory/ferc/orders/2013/sep/er13-1851-000_9-16-2013_winter_rel.pdf) and *Order Conditionally Accepting Bid Results*, (145 FERC ¶ 61,023, Docket No. ER13-2266-000) (October 7, 2013), [http://www.iso-ne.com/regulatory/ferc/orders/2013/oct/er13-2266-000\\_10-7-13\\_winter\\_bid\\_order.pdf](http://www.iso-ne.com/regulatory/ferc/orders/2013/oct/er13-2266-000_10-7-13_winter_bid_order.pdf).

<sup>27</sup> *New England Governors' Commitment to Regional Cooperation on Energy Infrastructure Issues* (December 5, 2013), [http://www.governor.ct.gov/malloy/lib/malloy/2013.12.05\\_new\\_england\\_governors\\_statement-energy.pdf](http://www.governor.ct.gov/malloy/lib/malloy/2013.12.05_new_england_governors_statement-energy.pdf).

<sup>28</sup> NESCOE's letter to the ISO requesting technical support and the ISO's response are available at <http://www.iso-ne.com/pubs/pubcomm/corr/index.html>.

## System Planning

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### Regional System Planning

The ISO conducts comprehensive regional system planning pursuant to a FERC-approved tariff and publishes a regional system plan (RSP) each year that summarizes the long-term (10-year) reliability needs of New England's transmission system.<sup>29</sup> Stakeholders, including state consumer advocates, provide input to the planning process and the RSP through the Planning Advisory Committee.<sup>30</sup>

For the past three years, the ISO has developed an energy-efficiency (EE) forecast to equip system planners with information about the long-term impacts of state-sponsored EE investments for use in long-term planning studies beyond the three-year FCM timeframe. The 2012 EE forecast was the nation's first regional EE forecast. A final 2014 EE forecast was released in April 2014.<sup>31</sup>

After the success of the EE forecast, the ISO launched an initiative to develop a new distributed generation (DG) forecast to estimate how much DG exists today and how much DG is on the horizon through state-sponsored programs.<sup>32</sup> For purposes of this forecast, DG resources are 5 MW or less in nameplate capacity and are interconnected to the distribution system. Currently, photovoltaic (PV) energy represents the largest share of future DG resources throughout New England. To assist the ISO in developing a DG forecast and to provide a forum to discuss issues surrounding the integration of DG resources to the power grid, the ISO formed the Distributed Generation Forecast Working Group (DGFWG). After consultation with the DGFWG, the ISO released a final interim PV forecast in May 2014.<sup>33</sup>

### FERC Order 1000

In July 2011, FERC issued Order 1000, a final rule pertaining to intra- and interregional transmission planning and cost-allocation practices in both ISO/RTO and non-ISO/RTO regions.<sup>34</sup> The ISO, working with its stakeholders, developed and submitted filings in October 2012 to comply with the various requirements of this order.

In May 2013, FERC issued an order on the ISO's compliance filings, ruling that to protect the public interest, the grid operator could not retain in its Transmission Operating Agreement a federal right-of-first refusal for incumbent utilities.<sup>35</sup> The ISO was required to submit a compliance filing to address certain aspects of its planning process associated with transparency and comparability of transmission planning principles. FERC also rejected the states' proposed process for identifying projects driven by public policy. The order requires

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<sup>29</sup> ISO New England Inc., *2013 Regional System Plan* (November 8, 2013), [http://www.iso-ne.com/trans/rsp/2013/rsp13\\_final.docx](http://www.iso-ne.com/trans/rsp/2013/rsp13_final.docx).

<sup>30</sup> ISO New England's *Open Access Transmission Tariff* (OATT) is available at [http://www.iso-ne.com/regulatory/tariff/sect\\_2/index.html](http://www.iso-ne.com/regulatory/tariff/sect_2/index.html).

<sup>31</sup> More information on the ISO's Energy-Efficiency Forecast is available at [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/engy\\_effncy\\_frcst/index.html](http://www.iso-ne.com/committees/comm_wkgrps/othr/engy_effncy_frcst/index.html).

<sup>32</sup> DG resources are on-site, "behind-the-meter" sources of electric energy.

<sup>33</sup> More information on the ISO's Distributed Generation Forecast is available at [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/distributed\\_generation\\_frcst/index.html](http://www.iso-ne.com/committees/comm_wkgrps/othr/distributed_generation_frcst/index.html).

<sup>34</sup> *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, (136 FERC ¶ 61,051, Docket No. RM10-23-000, Order 1000) (July 21, 2011), <http://www.ferc.gov/whats-new/comm-meet/2011/072111/E-6.pdf>.

<sup>35</sup> *Order on Compliance Filing* (143 FERC ¶ 61,150, Docket Nos. ER13-193, ER13-196) (May 17, 2013), [http://www.iso-ne.com/regulatory/ferc/orders/2013/may/er13-193\\_er13-196\\_5-17\\_13\\_order\\_on\\_order\\_1000\\_compliance\\_filings.pdf](http://www.iso-ne.com/regulatory/ferc/orders/2013/may/er13-193_er13-196_5-17_13_order_on_order_1000_compliance_filings.pdf).

the ISO, rather than the states, to select the more efficient and cost-effective transmission solution that resolves an identified transmission need driven by public policy requirements.

In November 2013, the ISO submitted a compliance filing responding to the requirements in the May 2013 order, requesting a May 1, 2014 effective date for the revised regional transmission planning process.<sup>36</sup> The ISO revised its existing reliability and market efficiency planning process, adding a new public policy transmission planning process (and a related cost-allocation mechanism) to incorporate a significant role for New England state officials and provide for open, project-based competition for public policy projects. The ISO's revisions ensure a transparent process by which the ISO evaluates and selects the most efficient and cost-effective transmission upgrades driven by public policy.

## Wholesale Electricity Markets

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### Reports on Market Performance

The ISO regularly reports on the performance of the region's wholesale electricity markets.<sup>37</sup> In addition to detailed quarterly, monthly, and weekly reports, the ISO's internal and external market monitors prepare comprehensive annual reports on the development, operation, and performance of the markets.<sup>38</sup>

### Forward Capacity Market

Under the Forward Capacity Market, the ISO projects the capacity needs of the power system three years in advance and then holds an annual auction to purchase the resources that will satisfy the regional requirements. The resources that clear in the auction are obligated to provide power or curtail demand when the ISO calls on them during the one-year commitment period that correlates with each auction.

#### FCA #8

The eighth Forward Capacity Auction (FCA #8) was held in February 2014, utilizing four capacity zones to provide the price signals to address locational resource needs.<sup>39</sup> For the first time, the auction concluded with a slight shortfall in the capacity resources needed to meet consumer demand in New England from June 1, 2017 to May 31, 2018. Finalized auction results show that the region acquired 33,712 MW to be available in 2017/2018, 143 MW short of the 33,855 MW Installed Capacity Requirement.<sup>40</sup> This shortfall can be procured through annual and monthly reconfiguration auctions held before the 2017/2018 period.

While the seven previous auctions concluded at the floor price with excess capacity (with the exception of one zone in FCA #7), the eighth auction was the first without a floor price. Before the auction was conducted, resources totaling about 3,135 MW announced plans to retire, resulting in an insufficient level of resources in the auction to ensure a competitive outcome. Like for FCA #7, this triggered administrative pricing rules

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<sup>36</sup> Further Order No. 1000 Regional Compliance Filing of ISO New England Inc. and the Participating Transmission Owners Administrative Committee, Docket Nos. ER13-193, ER13-196 (November 15, 2013), [http://www.iso-ne.com/regulatory/ferc/filings/2013/nov/er13-196-002\\_11-15-2013\\_order\\_1000.pdf](http://www.iso-ne.com/regulatory/ferc/filings/2013/nov/er13-196-002_11-15-2013_order_1000.pdf).

<sup>37</sup> The ISO's various market reports are posted at [http://www.iso-ne.com/markets/mkt\\_anlys\\_rpts/index.html](http://www.iso-ne.com/markets/mkt_anlys_rpts/index.html).

<sup>38</sup> The Internal Market Monitor's annual report is posted at <http://www.iso-ne.com/markets/mktmonmit/rpts/other/index.html>. The External Market Monitor's annual report is posted at [http://www.iso-ne.com/markets/mktmonmit/rpts/ind\\_mkt\\_advsr/index.html](http://www.iso-ne.com/markets/mktmonmit/rpts/ind_mkt_advsr/index.html).

<sup>39</sup> The four zones are Connecticut, Maine, NEMA/Boston, and Rest of Pool (which includes west, central and southeast Massachusetts, New Hampshire, Rhode Island, and Vermont).

<sup>40</sup> ISO New England Inc., *Forward Capacity Auction Results Filing*, Docket No. ER14-1409-000 (February 28, 2014), [http://www.iso-ne.com/regulatory/ferc/filings/2014/feb/er14\\_1409-000\\_fca8\\_results\\_filing\\_2-28-2014.pdf](http://www.iso-ne.com/regulatory/ferc/filings/2014/feb/er14_1409-000_fca8_results_filing_2-28-2014.pdf).

designed to protect consumers from the potential exercise of market power that could inappropriately raise prices, while still providing incentives to attract and retain resources.

### *“Pay-for-Performance”*

Through its Strategic Planning Initiative, the ISO identified resource performance as one of the top five challenges facing the region with respect to reliability. Studies of resource performance have indicated that at times of high system stress, a significant share of the region’s generating capacity fails to respond to ISO dispatch instructions according to their offered capabilities.<sup>41</sup> Many of these concerns could be resolved if resources undertook additional operational investments, whether in dual-fuel capability, non-interruptible gas-supply contracts, or other arrangements to ensure adequate resource performance when needed. However, the current FCM design provides little incentive for generation resources to undertake these investments.

To address this issue, the ISO developed market rule changes, called “Pay-for-Performance,” to enhance investment incentives in the FCM and make each resource’s capacity revenue contingent, in part, on its actual performance during stressed system conditions. The new performance incentive design will allow for transfers of revenue from under-performing resources to over-performing resources, providing strong incentives for resources to perform when needed and in accordance with ISO dispatch instructions.

ISO New England’s PFP proposal was filed with FERC in January 2014, along with an alternative proposal by the New England Power Pool (NEPOOL).<sup>42</sup> The ISO’s PFP proposal is intended to go into effect for FCA #9, which will procure the resources needed for the capacity commitment period beginning June 1, 2018.

### *Demand Curve*

The ISO has also proposed a downward-sloping demand curve for the capacity auction to resolve significant flaws in the FCM and alleviate the need for administrative pricing rules (as seen in FCA #7 and FCA #8).<sup>43</sup> Like PFP, the demand curve proposal is intended to go into effect for FCA #9.

The proposed changes include several elements. First, the changes define the shape of the system-wide sloped demand curve in which the key points are defined by the estimated cost of entry for a new capacity resource (referred to as CONE in the rules) and well-established system planning design criteria used to ensure resource adequacy. Second, the changes extend the period during which a market participant may “lock-in” the capacity price for a new resource from five to seven years. Third, the changes establish a limited exemption from the buyer-side capacity market mitigation rules for certain renewable resources that are built to advance state environmental policy objectives. Finally, the changes eliminate, at the system-wide level, the administrative pricing rules that were necessary in certain market conditions under the vertical demand curve construct.

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<sup>41</sup> Analysis Group, *Analysis of Reserve Resources: Activation Response following Contingency Events* (May 29, 2012), [http://www.iso-ne.com/committees/comm\\_wkgrps/strategic\\_planning\\_discussion/materials/analysis\\_group\\_reserve\\_resource\\_analyses\\_5\\_29\\_2012.pdf](http://www.iso-ne.com/committees/comm_wkgrps/strategic_planning_discussion/materials/analysis_group_reserve_resource_analyses_5_29_2012.pdf).

<sup>42</sup> ISO New England Inc. and New England Power Pool, *Filings of Performance Incentives Market Rule Changes*, Docket ER14-1050-0000 (January 17, 2014), [http://www.iso-ne.com/regulatory/ferc/filings/2014/jan/er14-1050\\_000\\_1-17-14\\_pay\\_for\\_performance\\_part\\_1.pdf](http://www.iso-ne.com/regulatory/ferc/filings/2014/jan/er14-1050_000_1-17-14_pay_for_performance_part_1.pdf).

<sup>43</sup> ISO New England Inc. and New England Power Pool, *Demand Curve Changes*, Docket ER14-1639-000 (April 1, 2014), [http://www.iso-ne.com/regulatory/ferc/filings/2014/apr/er14-1639-000\\_demand\\_curve\\_chges\\_4-1-2014.pdf](http://www.iso-ne.com/regulatory/ferc/filings/2014/apr/er14-1639-000_demand_curve_chges_4-1-2014.pdf).



## The ISO's Budget Review Process

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The ISO's budget development process begins in the spring of each year with stakeholder discussions on priorities in planning, operations, and capital projects. The ISO then presents a five-year strategic plan to give stakeholders a better understanding of its longer-term, multi-year objectives.<sup>44</sup> In the August timeframe, the ISO presents proposed operating and capital budgets to its stakeholders for review. At the end of October, the ISO submits its final operating and capital budgets to FERC.

In May 2013, the ISO filed a settlement agreement with FERC on the ISO's 2013 budget, creating a formal budget review process with state regulators.<sup>45</sup> The ISO followed this process for the review and submittal of the 2014 budget. After an extensive budget review process with state regulators, the ISO filed its administrative and capital budgets with FERC in October 2013.<sup>46</sup> In December 2013, FERC issued an order approving the ISO's administrative and capital budgets for 2014.<sup>47</sup>

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<sup>44</sup> ISO New England Inc., *2014-2018 Business Plan* (April 2013), [http://www.iso-ne.com/committees/comm\\_wkgrps/prtcpnts\\_comm/budgfin\\_comm/budgfin/mtrls/2013/aug232013/2014\\_op\\_cap\\_budg\\_nepool\\_bf\\_08\\_23\\_13\\_updated\\_for\\_oct\\_npc.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/budgfin_comm/budgfin/mtrls/2013/aug232013/2014_op_cap_budg_nepool_bf_08_23_13_updated_for_oct_npc.pdf) (plan begins on slide 159).

<sup>45</sup> ISO New England Inc., *Settlement Agreement*, Docket Nos. ER13-185, ER13-192 (May 13, 2013), [http://www.iso-ne.com/regulatory/ferc/filings/2013/may/er13-185-000\\_5-9-13\\_settlement\\_agreement.pdf](http://www.iso-ne.com/regulatory/ferc/filings/2013/may/er13-185-000_5-9-13_settlement_agreement.pdf).

<sup>46</sup> ISO New England, Inc., *Filing of 2014 Capital Budget and Revised Tariff Sheets for Recovery of 2014 Administrative Costs*, Docket No. ER14-90-000 (October 15, 2013), [http://www.iso-ne.com/regulatory/ferc/filings/2013/oct/er14-90-000\\_10-15-13\\_2014\\_admin\\_cap\\_budget.pdf](http://www.iso-ne.com/regulatory/ferc/filings/2013/oct/er14-90-000_10-15-13_2014_admin_cap_budget.pdf).

<sup>47</sup> *Order Accepting Proposed Budgets and Tariff Revisions* (145 FERC ¶ 61,227, Docket No. ER14-90-000) (December 19, 2013), [http://www.iso-ne.com/regulatory/ferc/orders/2013/dec/er14-90-000\\_12-19-13\\_ordr\\_accept\\_2014\\_budget-tariff%20rev.pdf](http://www.iso-ne.com/regulatory/ferc/orders/2013/dec/er14-90-000_12-19-13_ordr_accept_2014_budget-tariff%20rev.pdf).



## Appendix B: Analysis of Wholesale Costs and Retail Rates

One of the first goals among CLG participants when the group first formed was to better understand how a typical retail consumer's bill reflects market costs. The ISO first conducted this analysis in 2009 and has subsequently updated it each year for the CLG's Annual Report.

The analysis concluded that wholesale costs and the rates for residential retail power supply can vary dramatically among the states and from year to year, mainly because wholesale electricity markets and retail rates are used to obtain different products. Wholesale markets reflect the short-term spot market for electric energy, whereas retail rates reflect longer-term, fixed-price contracts. The relationship of wholesale costs and retail rates will vary with the retail power procurement policies of each utility and state. Understanding these differences is essential when comparing the two markets.

Table 2 shows the range of wholesale power costs for the 12 months ending February 2012, 2013 and 2014 among the New England states and the range of residential retail power supply rates in effect for each of these dates.

**Table 2**  
**Wholesale Market Costs**  
**and Residential Retail Power Supply Rates<sup>(a)</sup>**

	<b>Wholesale Market Costs (¢/kWh)</b>	<b>Residential Retail Power Supply Rates<sup>(b)</sup> (¢/kWh)</b>
<b>February 2012</b>	5.31 – 5.70	7.39 – 8.37
<b>February 2013</b>	5.93 – 6.25	6.81 – 9.08
<b>February 2014</b>	7.76 – 8.47	7.44 – 9.56

(a) The analysis is based on a hypothetical residential consumer that uses 750 kWh/month. The values indicate a range of lowest to highest costs among the states.

(b) The range of residential retail power supply rates includes the states that have unbundled retail electricity markets. Vermont has not unbundled its retail electricity market, and therefore its rates are not included as part of this analysis.

Additional results of the analysis are as follows:

- From February 2013 to February 2014, wholesale market costs increased 31 to 36%, largely because of a spike in wholesale energy costs during the winter months of 2013/2014. All of the New England states saw an increase in power supply rates in this timeframe.
- From 2013 to 2014, all of the New England states saw an increase in total residential retail bills, which include costs for power supply, distribution, and transmission.<sup>48</sup>
- The estimated *regional* transmission rate increased by approximately 17% (from 1.15 ¢/kWh in February 2013 to 1.34 ¢/kWh in February 2014) and is equivalent to 7 to 8% of total residential retail rates, which ranged from 16.66 ¢/kWh to 19.38 ¢/kWh.<sup>49</sup>

<sup>48</sup> Total residential retail rates ranged from 14.26 ¢/kWh to 16.94 ¢/kWh in 2013 and from 16.66 ¢/kWh to 19.38 ¢/kWh in 2014.

<sup>49</sup> The regional transmission rate reflects the costs of reliability projects that have been identified through the regional transmission planning process as providing a regional benefit. These costs are considered part of the regional network service (RNS). The regional transmission rate is calculated as the sum of all RNS charges for the specific period, divided by

- A review of *actual* transmission rates for residential retail consumers in Connecticut, Massachusetts, Maine, New Hampshire, and Rhode Island in February 2014 shows that transmission represents 10 to 14% of the total residential retail rate.<sup>50</sup>

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the total net energy for load for the same period. For 2014, the period is based on the 12 months ending February 28, 2014. The net energy for load is detailed at [http://www.iso-ne.com/markets/hstdata/rpts/net\\_energy/index.html](http://www.iso-ne.com/markets/hstdata/rpts/net_energy/index.html).

<sup>50</sup> The difference between these actual transmission rates for residential consumers and the regional transmission rates is the inclusion of local transmission costs and projects in the residential transmission rates. Additionally, methodologies to allocate transmission costs to residential customers are likely to vary by state and utility.

## Appendix C: Wholesale Electricity Costs

The annual wholesale costs of meeting consumer demand for electricity in New England can vary significantly. Total annual costs have ranged from a low of \$8 billion in 2012 to a high of nearly \$15 billion in 2008 over the past six years (see Table 3).

**Table 3**  
**New England Wholesale Electricity Costs, 2008 to 2013**  
**(in Millions and ¢/kWh)<sup>(a)</sup>**

	2008		2009		2010		2011		2012		2013	
	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh
<b>Wholesale market costs</b>												
<b>Energy (LMPs)<sup>(b)</sup></b>	\$12,085	9.1	\$5,884	4.6	\$7,284	5.6	\$6,695	4.9	\$5,192	3.9	\$8,009	6.0
<b>Ancillaries<sup>(c)</sup></b>	\$366	0.3	\$190	0.1	\$164	0.1	\$39	-	\$54	-	\$155	0.1
<b>Capacity<sup>(d)</sup></b>	\$1,505	1.1	\$1,768	1.4	\$1,647	1.3	1,345	1.0	\$1,182	0.9	\$1,057	0.8
<b>Subtotal</b>	<b>\$13,956</b>	<b>10.5</b>	<b>\$7,842</b>	<b>6.1</b>	<b>\$9,095</b>	<b>7.0</b>	<b>\$8,079</b>	<b>5.9</b>	<b>\$6,429</b>	<b>4.8</b>	<b>\$9,220</b>	<b>6.9</b>
<b>Transmission charges<sup>(e)</sup></b>	\$869	0.7	\$1,155	0.9	\$1,417	1.1	\$1,378	1.0	\$1,533	1.1	\$1,806	1.3
<b>RTO costs<sup>(f)</sup></b>	\$125	0.1	\$123	0.1	\$137	0.1	\$130	0.1	\$139	0.1	\$167	0.1
<b>Total</b>	<b>\$14,951</b>	<b>11.3</b>	<b>\$9,080</b>	<b>7.1</b>	<b>\$10,649</b>	<b>8.2</b>	<b>\$9,588</b>	<b>7.0</b>	<b>\$8,100</b>	<b>6.0</b>	<b>\$11,193</b>	<b>8.3</b>

(a) Average annual costs are based on the 12 months beginning January 1 and ending December 31. Costs in millions = the dollar value of the costs to New England wholesale market load servers for ISO-administered services. Cents/kWh = the value derived by dividing the dollar value (indicated above) by the real-time load obligation. These values are presented for illustrative purposes only.

(b) Energy values are derived from wholesale market pricing.

(c) Ancillaries include first- and second-contingency Net Commitment-Period Compensation (NCPC), forward reserves, real-time reserves, regulation service, and a reduction for the Marginal Loss Revenue Fund.

(d) Capacity charges are those associated with market mechanisms in effect at the time.

(e) Transmission charges reflect the collection for transmission owners' revenue requirements and tariff-based reliability services, including black-start capability and voltage support. In 2013, the cost of payments made to these generators for reliability services under the ISO's tariff was \$59.6 million.

(f) RTO costs are the costs to run and operate ISO New England Inc.

The wholesale costs include the cost of traditional supply resources and demand resources and the annual cost of transmission investment to serve all the region's power needs. These costs also include the cost of all ISO functions to operate the power grid; administer the markets; implement the 10-year system planning process, including the interconnection of new generators and the qualification of new demand resources; and provide market monitoring oversight of participant behavior and in-depth market analysis and reporting. In the six years between 2008 and 2013, the ISO's annual costs have ranged from \$123 million to \$167 million.

Wholesale electricity costs are paid for by market participants that purchase electricity from the wholesale market for their own use or to supply to retail customers. In turn, suppliers and utilities provide electricity to retail customers according to the retail market structures and requirements of the six New England states. Utilities charge retail customers for power supply through their monthly bills using the rates approved by the state or local public utilities commissions. Retail customers share in the cost of regional transmission investment and generally pay for it over a 35- to 40-year period through the transmission rates in their retail bill. In 2013, the total value of all wholesale electricity costs, including the cost of regional transmission and ISO operations, was approximately \$11.2 billion. Allocating this cost across the load served at a wholesale level in 2013 yields a rate of 8.3 ¢/kWh.