



Gordon van Welie  
President and CEO

July 6, 2015

Commissioner Judith Judson  
Department of Energy Resources  
100 Cambridge Street  
Suite 1020  
Boston, Massachusetts 02114

Dear Commissioner Judson:

I am writing in response to your July 1, 2015 letter in which you request information relative to ISO New England's winter reliability and pay-for-performance ("PFP") programs. In particular, you asked two specific questions. First, you asked "Does ISO-NE expect that these programs will incent additional pipeline capacity to be brought into the region and if so, how?" Second, you asked about their impacts on reliability, price volatility and generation emissions. For your consideration, I am including our perspectives on these questions and a brief overview of these initiatives as well as references to additional information.

In short, both of the ISO programs were designed to assure reliability, and were not designed to incent investment in new natural gas pipelines. As I explain in more detail below, both programs will incent more robust fuel inventory, but we believe that this will be accomplished by fuel switching (with oil replacing gas) during the winter period when the pipelines become constrained. We have observed significant fuel switching, and a corresponding increase in the region's emissions, during the past several winters.

The use of oil may lessen price volatility when gas prices rise to the point when oil becomes economic; however, we do not believe that it will materially change the pricing when pipeline constraints significantly increase the price of delivered gas in New England. Furthermore, based on studies performed for the ISO, we expect constraints on the pipeline system to significantly worsen as coal, oil and potentially nuclear plants retire and the region becomes more reliant on natural gas.

### **Pay-for-performance**

Over a period of several years, the ISO observed deterioration in performance across much of the region's generating fleet during times when the power system was operating under stressed conditions. The ISO determined that the resource performance requirements in the Forward Capacity Market (FCM) were not sufficient to ensure a reliable system and we concluded that this posed a serious risk to power system reliability. The ISO worked through a regional stakeholder process and the Federal Energy Regulatory Commission

(FERC) subsequently approved our proposal to strengthen the FCM performance obligations and incentives with what is referred to as “pay-for-performance” or “PFP.”<sup>1</sup>

PFP created a two-settlement system to compensate resources in the capacity market. Resources that clear in a capacity auction are eligible to receive a base capacity payment. Then, if scarcity conditions exist (i.e., the power system is experiencing a shortage of operating reserves), PFP will pay resources based on their performance during those conditions; resources that over-perform will receive a payment, while those that under-perform will receive a charge. PFP creates strong financial incentives for capacity suppliers to perform when called on during periods of system stress.

PFP is intended to create incentives for generators to make cost-effective investments to ensure they are able to perform when called on by the ISO. Most instances of non-performance by gas-fired generators during the winter season were due to the lack of access by those generators to firm gas transportation when the gas pipelines become constrained, since typically these generators do not hold firm gas transportation rights. PFP will create strong incentives for gas-fired generators to firm up their fuel supply, however it does not prescribe which solution a resource should pursue. Our analysis has concluded that installing dual fuel capability is the most cost-effective option for a typical gas generator. Thus, PFP will improve resource performance, but it will not necessarily result in added natural gas pipeline capacity, as individual generators are not likely to enter into the long-term contracts needed to fund additional gas infrastructure as long as cheaper alternatives such as dual-fueling exist.

While these actions should maintain a reliable supply of electricity under most conditions, relying on dual fuel capability is only a viable option if the states approve permits to burn oil. During the winter months when the pipelines are constrained, the region is typically dependent on the utilization of non-gas electrical supply to maintain reliability.<sup>2</sup> This highlights a longer term reliability risk. More than 3,000 MW of non-gas generation have retired, or announced plans to retire, and there is the potential for further significant retirements of coal, oil and nuclear units in the years to come. Many of these resources are forty years of age or older and are experiencing significant financial and environmental pressures. As these resources cease operation, they will be replaced in large part by gas-fired resources (with the need for dual fuel capability). This will increase the demand for natural gas infrastructure to supply fuel for new resources.

### **Winter Reliability Programs**

The interstate natural gas pipelines serving New England have been utilized at full or near-full capacity over the past three winters. This has resulted in very high natural gas prices, which has contributed to high wholesale electricity prices. Most of the natural gas flowing through these

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<sup>1</sup> FERC order on ISO-NE's PFP proposal, May 2014: [http://www.iso-ne.com/static-assets/documents/regulatory/ferc/orders/2014/may/er14\\_1050\\_000\\_5\\_30\\_14\\_pay\\_for\\_performance\\_order.pdf](http://www.iso-ne.com/static-assets/documents/regulatory/ferc/orders/2014/may/er14_1050_000_5_30_14_pay_for_performance_order.pdf)

ISO-NE's PFP filings, January 2014: [http://www.iso-ne.com/static-assets/documents/regulatory/ferc/filings/2014/jan/er14\\_1050\\_000\\_1\\_17\\_14\\_pay\\_for\\_performance\\_part\\_1.pdf](http://www.iso-ne.com/static-assets/documents/regulatory/ferc/filings/2014/jan/er14_1050_000_1_17_14_pay_for_performance_part_1.pdf)  
[http://www.iso-ne.com/static-assets/documents/regulatory/ferc/filings/2014/jan/er14\\_1050\\_001\\_1\\_17\\_14\\_pay\\_for\\_performance\\_part\\_2.pdf](http://www.iso-ne.com/static-assets/documents/regulatory/ferc/filings/2014/jan/er14_1050_001_1_17_14_pay_for_performance_part_2.pdf)

<sup>2</sup> Non-gas sources of electricity include coal, oil and nuclear power stations, hydro electricity imports from neighboring regions and increasingly, renewable generation.

pipelines during the winter is used by customers to heat their homes and businesses. The lack of natural gas capacity into the region is a reliability concern because as the weather gets colder there is less gas available for gas-fired power plants, which represent almost half of the region's electricity generation.

To remedy these concerns, the ISO has implemented stop-gap reliability programs for the past two winters (2013-14, and 2014-15), and we are proposing a further winter program for the next three winters—until PFP takes effect in June 2018.

Past programs were designed to provide financial incentives for oil-burning generators to have fuel oil inventory at the beginning of the winter, or for gas-fired generators to contract for LNG supplies. The programs also provided incentives for demand-response resources. The programs succeeded in providing a hedge for system operators when pipelines were constrained and gas-fired generators had limited access to pipeline gas. In those instances, operators could rely on oil-fired generation.

The programs have proven to be a cost-effective short-term solution to help keep the lights on in New England during the winter. The programs were always focused on reliability and were not intended to address the volatility of wholesale electricity prices that occurs when natural gas demand peaks in the winter. The programs also anticipate that oil-fired resources would be able to burn oil within the limits of their environmental permits. We do not view reliance on oil-fired generators as a viable long-term solution as these resources are at risk of retirement due to increasing economic challenges (i.e., relatively low priced natural gas during most of the year), and increasingly stringent environmental requirements to curb emissions.

In addition to providing opportunities for LNG to participate in the 2014-15 winter reliability program, the region saw significant supplies of LNG entering the marketplace apart from these incentives. This helped improve system reliability and ease price volatility; however, these deliveries appear to have been a response to record high natural gas prices that occurred the previous winter (2013-14). The region benefitted from these LNG supplies, but the region does not have any assurance that similar LNG volumes will be delivered in the future. LNG is a global commodity and firm supplies typically have to be secured through forward contracts; short-notice (spot) LNG supplies are dependent on the relative price of gas between regions. Furthermore, while deliveries of LNG enabled additional gas-fired generation to operate while the pipelines were constrained there are limits to the amount of LNG that can be supplied at short notice and thus the region remains heavily dependent on oil, coal and nuclear resources during the winter.

### **Conclusion**

The Winter Reliability Program and PFP will enhance reliability for the region by providing incentives for generators to take steps to ensure their ability to operate during stressed system conditions, including periods of high demand on the existing natural gas pipelines. However, our studies have shown that as additional non-gas resources retire, New England's reliance on a limited natural gas infrastructure system poses additional reliability risks for the region.<sup>3</sup>

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<sup>3</sup> *Winter 2013/14 Benchmark and Revised Projections for New England Natural Gas Supplies and Demand*, prepared for ISO-NE by ICF International, April 2014: [http://www.iso-ne.com/static-assets/documents/committees/comm\\_wkgrps/prtcnts\\_comm/pac/mtrls/2014/apr292014/a3\\_icf\\_benchmarking\\_study.pdf](http://www.iso-ne.com/static-assets/documents/committees/comm_wkgrps/prtcnts_comm/pac/mtrls/2014/apr292014/a3_icf_benchmarking_study.pdf)

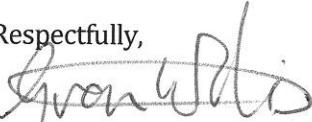


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As additional resources on this topic, I would recommend the comments we were invited to share with the New England Governors in April at their *Northeast Forum on Regional Energy Solutions*,<sup>4</sup> as well as the ISO's *2015 Regional Electricity Outlook*.<sup>5</sup>

I hope you find this information useful and please do not hesitate to contact me if you need further assistance.

Respectfully,



Gordon van Welie  
President and CEO

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<sup>4</sup> [http://www.iso-ne.com/static-assets/documents/2015/04/northeast\\_forum\\_on\\_regional\\_energy\\_solutions\\_van\\_welie\\_remarks\\_and\\_slides\\_04232015.pdf](http://www.iso-ne.com/static-assets/documents/2015/04/northeast_forum_on_regional_energy_solutions_van_welie_remarks_and_slides_04232015.pdf).

<sup>5</sup> [http://www.iso-ne.com/static-assets/documents/2015/02/2015\\_reo.pdf](http://www.iso-ne.com/static-assets/documents/2015/02/2015_reo.pdf).



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**Judith F. Judson**  
Commissioner

July 1, 2015

Gordon van Welie, President and Chief Executive Officer  
ISO New England, Inc.  
One Sullivan Road  
Holyoke, MA 01040

Dear Mr. van Welie,

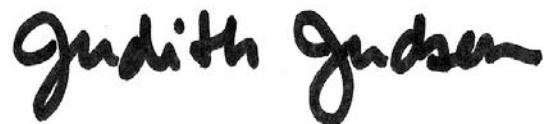
As you may be aware, the Department of Energy Resources (“DOER”) asked the Department of Public Utilities (“DPU”) to investigate the potential mechanisms by which new natural gas delivery capacity could be added to the New England market for electricity generation. Included in this request was a query as to how Massachusetts electric distribution companies (“EDCs”) could procure this capacity on behalf of their ratepayers, in recognition of the close correlation between natural gas and electricity prices. Pursuant to the DPU’s investigation into the matter (D.P.U. 25-37), DOER is preparing reply comments in response to comments filed on June 15, 2015. Several comments raised questions as to the impact on the market of ISO-NE’s Pay for Performance (“PFP”) and Winter Reliability programs and how these programs influence the need for states to act on gas delivery capacity. In light of these questions, DOER seeks ISO-NE’s assistance to more fully understand these issues.

The challenges facing electric generation due to natural gas constraints, including the impacts on market prices, was widely addressed in January during your “ISO on Background: State of the Grid—Managing a System in Transition.” I also recently read an article in which you were quoted, saying, “the states are going to have to band together and look at building pipe, and the balance sheet that’s going to be backing this is going to be the electric distribution companies.” (States Need to Build Pipelines: ISO-NE CEO, *Platts*, June 3, 2015) Based on this and other reports I’ve read from your organization, ISO-NE is not just identifying the problems facing the region, but also devising potential solutions – some of which can be ISO-NE implemented while others may require state or other action.

DOER seeks to further understand the PFP and Winter Reliability programs. In light of the comments raised in D.P.U. 15-37, I would find it helpful for ISO-NE to provide DOER with the pertinent information regarding the impact of these programs. How are PFP and Winter Reliability intended to work? Does ISO-NE expect that these programs will incent additional pipeline capacity to be brought into the region and if so, how? What impact on **reliability, price volatility and generation emissions** does ISO-NE anticipate from PFP and Winter Reliability?

I look forward to reviewing the information you are able to provide. DOER is grateful for the work ISO-NE does on behalf of the region's energy markets and I look forward to working with you on resolving these challenging, but critical, issues.

Sincerely,

A handwritten signature in black ink that reads "Judith Judson". The signature is written in a cursive, flowing style.

Judith F. Judson  
Commissioner

Cc: Anne C. George, VP External Affairs and Corporate Communications