James Holodak, Jr.
Vice President, Regulatory Strategy
& Integrated Analytics

nationalgrid

Via Electronic and U.S. Mail

Alexander F. Speidel, Esq.
Staff Attorney / Hearings Examiner
New Hampshire Public Utilities Commission
21 S. Fruit St., Suite 10
Concord, NH 03301-2429

Re: Docket IR 15-124 – Investigation Into Potential Approaches to Mitigate Wholesale Electricity Prices

Dear Attorney Speidel:

In response to the Staff's request for comments and / or proposals relative to high winter wholesale electricity prices in New Hampshire and the region, first articulated at the May 12, 2015 stakeholder meeting and memorialized in Staff's Request for Stakeholder Input dated May 14, 2015, I hereby submit for your consideration the comments of Massachusetts Electric Company, Nantucket Electric Company and The Narragansett Electric Company, each d/b/a National Grid (collectively, "National Grid").

Executive Summary

High winter wholesale electricity prices affect the entire New England region. It is well documented that the high wholesale electricity prices New England has experienced over the past three winters are the result of pipeline capacity constraints on the delivery of natural gas into the region. As an electric distribution company serving over two million electric customers across Massachusetts and Rhode Island, National Grid is a key regional industry stakeholder uniquely positioned to work with state and federal regulators to facilitate a regional solution.

The natural gas pipeline capacity constraints impacting New England are well-documented and many industry experts, including National Grid, believe that alleviating the constraints as soon as possible is critical to ensuring reliable and affordable electricity for all customers in the region. As referenced herein, numerous studies conducted over the past few years have confirmed that New England is faced with natural gas pipeline constraints limiting the ability of gas-fired electric generators to fully access the abundant and lower-priced domestic gas supplies. New England wholesale electric energy costs were higher by $1.7 Billion in the winter of 2012/2013, $3.8 Billion in the winter of 2013/2014, and $1.6 Billion in the winter of 2014/2015, all compared to the winter of 2011/2012 when the region had not yet been exposed to the now persistent and significant constraint driven natural gas price premiums/basis-differentials for the New England versus the Mid-Atlantic and Gulf markets. This trend of high wholesale electricity prices is expected to continue at a cost to New England customers of billions of dollars per year until the natural gas pipeline capacity constraints are relieved.

A regional solution must be implemented to alleviate the constraints that have led to high and volatile electricity prices and electric system reliability challenges. To that end, National Grid supports the development of incremental natural gas infrastructure required for New England. Incremental pipeline capacity secured recently by National Grid's and the region's other local gas distribution companies for load growth is generally dedicated for firm gas LDC load and will not relieve the constraints and volatility experienced by gas generators. Two additional natural gas infrastructure expansion projects have recently been proposed to bring gas to New England with the potential to bring, in total, an additional 2 Bcf of natural gas delivery capability to New England. National Grid believe both projects to be needed. In fact, National Grid, along with several other New England electric distribution companies ("EDCs"), has already proposed a regional gas / electric solution that is generally consistent with the approach identified by the New England States

Committee on Electricity ("NESCOE").[1] Specifically, National Grid and other EDCs, on behalf of electric customers, could enter into long-term contracts with interstate pipeline companies for new firm gas transportation capacity, subject to receiving regulatory approvals, necessary cost recovery assurances and acceptable remuneration. Such long-term contracts would facilitate the development of increased capacity and thereby enable the delivery of adequate gas supplies necessary to fuel the gas-fired electric generation units in the region. As stated in the letter from the EDCs to NESCOE on April 22, 2014, National Grid believes this proposed solution to be "both feasible in the near term and fair, to the extent that the result would be that the costs of developing this additional infrastructure will be borne by those who derive the long-term benefits from this investment."

A regional solution requires regional participation and cost-sharing in order to be feasible and equitable. All electric distribution customers in New England will ultimately benefit from the lower energy costs and enhanced reliability resulting from increased pipeline capacity sufficient to allow generally unconstrained access to the lower priced domestic gas supplies available just outside the region. Accordingly, it is critical that electric distribution customers across New England together support the costs of the additional natural gas delivery infrastructure investments required by the region.

Pipeline Capacity Constraints Threaten Electric System Reliability

Natural gas pipeline constraints impact the reliability of the New England electric system and cause higher electricity costs. According to ISO-NE's Internal Market Monitor's 2013 and 2014

[1] In a letter to NESCOE dated April 22, 2014, National Grid and other electric distribution companies ("EDCs") expressed support for NESCOE's proposal that the development of natural gas infrastructure capacity be funded by a FERC-approved tariff. *See* Letter from National Grid, Northeast Utilities, and United Illuminated Holdings to NESCOE dated April 22, 2014 (http://www.nescoe.com/uploads/EDCLetter_RegionalInfrastructure_22April2014.pdf); *see also* "Response to Request for Expression of Interest to Act as a Counterparty" submitted to NESCOE by the EDCs on July 3, 2014 (http://www.nescoe.com/uploads/EDCs_ExpressionofInterest_3July2014.pdf). National Grid's proposal described herein is generally consistent with NESCOE's proposal except to the extent that NESCOE's proposal contemplated that the allocation of costs would be governed by and through an ISO-NE FEREC approved tariff schedule; it is now contemplated that cost allocation and recovery will be recovered through state-approved retail tariff provisions.

Annual Market Reports, the codependency between New England's natural gas and electricity markets is attributable to the confluence of several factors, including the following:

- An influx of natural gas-fired generating capacity over the past 15 years;
- An aging and declining fleet of legacy oil- and coal-fired generators in the electricity market, and the retirement of the Vermont Yankee nuclear station;
- The general decrease in domestic natural gas prices with the increased production of domestic shale gas; and
- Relatively static gas pipeline capacity in New England that has had to accommodate a 37% increase in overall natural gas consumption since 1999; 95% of this 37% was for gas generation. [2]

Together, these factors have resulted in "gas-fired generators generating a much higher proportion of electricity in New England, while pushing gas pipeline capacity to its limits during peak gas demand periods."[3] Thus, "the reliability of New England's wholesale electricity grid is dependent, in part, on the owners and operators of natural gas-fired generators effectively managing natural gas deliveries during contemporaneous periods of high gas and electric power demand" and "also increasingly dependent on the region's oil fleet having sufficient oil on hand to operate when the gas network is highly constrained and gas prices rise to levels that exceed the price of oil." [4]

In its 2014 Regional System Plan ("RSP"), ISO-NE reported on the results of analysis it had commissioned to assess the ability of the existing natural gas supply and delivery system to serve the region's projected gas demand through 2020. As part of its assessment, ISO-NE summarized results of analysis performed by ICF International ("ICF"):

> New England faces fuel supply challenges resulting from pipeline infrastructure constraints. One challenge is that FERC tariffs require pipeline developers to secure firm natural gas contracts to be able to recover the costs for improving the pipeline system, but electric power market participants in the Northeast have failed to make these firm contracts. Operational challenges year round, particularly during peak

---

[2] ISO-NE's Internal Market Monitor's 2013 Annual Markets Report at p. 3; ISO-NE's Internal Market Monitor's 2014 Annual Markets Report at 3.

[3] ISO-NE's Internal Market Monitor's 2013 Annual Markets Report at p. 3.

[4] ISO-NE's Internal Market Monitor's 2014 Annual Markets Report at p. 25.

> winter electric power demand periods, are likely to become more severe as gas consumption by electric power generating units continues to grow without these firm contracts or other firm fuel arrangements."[5]

ICF also determined that "the New England natural gas market is likely to remain constrained through 2020. The winter near-peak analysis indicates that gas-supply deficits may occur on both peak days and on multiple high-demand days throughout the winter. Because of projected gas supplies, LDC demand, and electric generator gas demands, the electricity sector will most likely have a gas-supply deficit on 24 to 35 days per winter by 2019/2020."[6] Further, ICF predicts that "[g]iven the projected gas supplies, electric power system reliability during the winter months would be compromised by sustained cold weather."[7] Moreover, "[o] utages of non-gas-fired capacity, such as a disruption to a nuclear unit, and contingency outages of natural gas supplies would result in a serious deficit in the gas supply in New England."[8]

In a subsequent report, ISO-NE found that: "[t]he interstate natural gas pipelines serving New England continue to be utilized at full or near-full capacity during the winter months, which contributes to higher prices here compared to other US regions," and that "most of the natural gas flowing through pipelines during the winter serves customers using it to heat their homes and businesses."[9] Thus, "[a]s more and more residences and businesses convert to natural gas for heating purposes, the pipeline system serving the region will become progressively more constrained, further limiting the gas supply available to power generators in the winter."[10]

---

[5] ISO-NE's Regional System Plan 2014 at pp. 140-41 (summarizing ICF International (ICF), *Gas-Fired Power Generation in Eastern New York and its Impact on New England's Gas Supplies*, white paper (November 18, 2013) (internal references omitted)).

[6] Id. at 141 (citing ICF's *Assessment of New England's Natural Gas Pipeline Capacity to Satisfy Short-Term and Near-Term Electric Generation Needs: Phase II* (December 16, 2013)).

[7] Id. at 142 (citing "ICF's *Winter 2013/2014 Benchmark and Revised Projections for New England Natural Gas Supplies and Demand* (April 29, 2014), 2014").

[8] Id.

[9] ISO-New England's April 7, 2015 Report on the Winter of 2014-2015 (http://isonewswire.com/updates/2015/4/7/new-england-power-system-performed-well-through-winter-20142.html)

[10] Id.

Pipeline Capacity Constraints Drive Electricity Costs Significantly Higher

The capacity constraints on natural gas delivery to the region have resulted in significant wholesale electric energy cost increases over the past several years. The ISO-NE Internal Market Monitor's 2013 Annual Markets Report ("2013 Annual Markets Report") stated that "wholesale electricity costs… in 2013 compared with 2012 … increased by about 45%, while energy costs increased by about 57%. ... the increase in energy costs was the result of an increase in natural gas prices."[11] This 2013Annual Markets report first revealed the extent to which New England, with its constrained pipeline capacity, was now exposed to extreme premiums in the spot prices for the natural gas used to fuel many of the electricity generators in the region:

> During January 21–28, low temperatures throughout New England contributed to an increased demand for natural gas, specifically for commercial and residential heating, which contributed to increased natural gas prices. Natural gas prices in New England during this period reached a high of $35/million British thermal units (MMBtu). In contrast, natural gas prices across the rest of the country were in the range of $4/MMBtu. On January 23– 25, the price of natural gas in New England surpassed the approximately $18/MMBtu price of 0.3% sulfur no. 6 oil. These higher fuel prices were directly reflected in the wholesale day-ahead and real-time electricity prices.
>
> ***
>
> New England experienced a record snowstorm during a three-day period from Friday, February 8, to Sunday, February 10. The snowfall across much of the region ranged from 30 to 40 inches. During this event, natural gas prices in New England increased to a high of $31/MMBtu. In comparison, natural gas prices during this time were slightly above $3/MMBtu across the rest of the country. The higher natural gas prices in New England directly affected New England's wholesale electricity prices.[12]

The 2013 Annual Markets Report also concluded that pipeline constraints have caused areas in the northeast to experience very high natural gas prices and considerable price volatility. This is evidenced by a comparison of average day-ahead natural gas basis by month "relative to the average prices for the Marcellus Shale region. New England wholesale gas customers often pay a significant

---

11 ISO-NE Internal Market Monitor's 2013 Annual Report at p. 2.

12 Id. at pp. 24, 25.

premium for gas compared with nearby regions; this premium has been as great as 637% in a month. Moreover, the basis differential for New England has exceeded the basis for New York City in every month but one and has been about 50% higher over the entire period than New York City's basis."[13]

The high cost of the natural gas pipeline constraints on deliveries to New England was also evident during the beginning of 2014 when the region experienced the Polar Vortex. The ISO-NE Internal Market Monitor's 2014 First Quarter Report ("IMM 2014 1st Qtr Report") revealed that "[t]he total cost of electric energy in the Reporting Period was $5.3 billion, a 75% increase over the same period in 2013."[14] The IMM 2014 1st Qtr Report further stated that the primary driver for such increase was the higher average gas price of $19.95/MMBtu for the period, a 72% increase from Q1 2013.[15]

The high costs of New England's constrained access to domestic natural gas continued to be evidenced in the winter of 2014-2015, despite a warmer than normal December, a dramatic drop in oil prices, and significant increased injections of imported LNG. ISO-NE's April 7, 2015 report on the winter of 2014-15 provided the following:

> the amount of Marcellus shale gas that could be delivered to the region from the west remained limited by New England's constrained pipeline system. During many cold days in February, daily spot-market natural gas prices hovered in a range of $20 to $30 per million British thermal units (MMBtu), which is high by historical standards. These higher gas prices increased winter wholesale electric prices: February's average wholesale energy price was $126.70/MWh, which makes it the third-highest average monthly wholesale energy price in New England. The highest and second-highest prices were logged in the previous winter, during January and February 2014, respectively.[16]

Simply stated, existing gas pipelines in the region are fully subscribed with the majority of capacity held by the New England local gas distribution companies ("LDCs") under long-term firm

---

[13] ISO-NE Internal Market Monitor's 2013 Annual Report at p. 35 .

[14] ISO-NE Internal Market Monitor's 2014 First Quarter Report at p. 4.

[15] Id.

[16] ISO-New England's April 7, 2015 report on the winter of 2014-2015 (http://isonewswire.com/updates/2015/4/7/new-england-power-system-performed-well-through-winter-20142.html)

contracts. On very cold days, LDCs typically utilize 100% of their pipeline capacity and often dispatch regional LNG to satisfy the requirements of their firm customers. On these days LDCs would not be releasing capacity into the secondary market and there would be little or no capacity offered by the pipelines as interruptible. Therefore, even though there are ample supplies of domestic natural gas available from the Marcellus supply region and elsewhere in North America, the lack of additional capacity results in extremely high prices for those parties who do not hold firm capacity, such as gas-fired electric generators. This scarcity of capacity has resulted in scarcity pricing in the New England natural gas spot market, which in turn sets the marginal price in the ISO-NE facilitated wholesale electric market.

Proposed Regional Solution

New pipeline infrastructure must be constructed in order to secure the incremental gas delivery capacity required for the region to have firm, generally unconstrained access to the low priced domestic supplies available just a few hundred miles away and throughout the rest of the country. The incremental gas capacity will alleviate the constraints that have led to the high and volatile electricity prices and electric reliability challenges described above. Perhaps the simplest alternative would be for the owners of the natural gas-fired electricity generating resources in New England to enter into the 15-20 year contracts required by pipelines to secure the required firm delivery capacity. However, it has become clear that most gas-fired resources in the region have been unwilling and/or unable to take on such long-term commitments. Pipelines also are unwilling and/or unable to build new capacity without having long-term contracts, with sufficiently creditworthy counterparties, in place. As a result, to the extent that new capacity is being built it is solely to support LDC load despite increased demand for natural gas as a fuel source for New England's gas-fired generators.

Alternately, subject to receipt of regulatory approvals, assured cost-recovery and acceptable financial remuneration, EDCs in New England could enter into long-term contracts for pipeline

capacity with one or more interstate pipeline companies for the purpose of securing the incremental firm gas supply to the region to ensure reliable and cost-effective natural gas supplies are available to the ISO-NE gas-fired electricity generators. The EDCs and their affiliates presently manage large portfolios of electric and gas supply contracts and possess the expertise to negotiate and manage the contracts required to deliver the necessary infrastructure. The EDCs also possess the high creditworthiness pipeline companies require of counterparties to the long-term agreements enabling the pipeline construction. The EDCs would recover the total costs (including administrative costs and remuneration) associated with the incremental gas pipeline capacity through a fully reconciling, non-bypassable retail electric cost recovery mechanism.

Such long-term contracting arrangements between EDCs and pipelines would support the construction of new pipeline capacity which would provide New England with greater access to lower-priced and abundant domestic natural gas supplies. The new pipeline capacity can be offered into the secondary capacity release market similar to the process that LDCs follow during non-winter months when the pipeline capacity is not needed for home heating purposes. The capacity can be offered in a competitive market on the pipeline company's electronic bullet board pursuant to FERC regulations providing complete transparency to all participants. Gas-fired generators in the region (and/or their fuel managers) should be given a priority to compete only amongst themselves in the capacity release market for this capacity in the first instance.[17] Any remaining capacity that is not "sold" at the "generator-only auction" may be offered to the broader market participants in the secondary capacity release. Any capacity payments received from the gas-fired generators or others would be credited toward the pipeline support charges and would reduce the net remaining costs to be collected from the EDC customers.

---

[17] Any restriction on the release of capacity designed to confer preferential access to electric generators serving ISO-NE would require an exemption from FERC's standard capacity release rules.

All New England States Should Participate in the Regional Solution

The proposed regional solution will bring incremental gas pipeline capacity into New England to alleviate the existing constraints. The resultant lower winter electric prices and reduced volatility, as well as increased system reliability, will benefit all electric distribution customers across the region. Accordingly, the obligations and costs of the pipeline capacity contracts required to effectuate the regional solution should be shared broadly by customers throughout New England.

National Grid appreciates the opportunity to submit these comments. Please let me know if you need any additional information regarding this matter.

Sincerely,

James Holodak Jr

James Holodak, Jr.

cc: Brooke E. Skulley, Assistant General Counsel, National Grid

National Grid One Metro Tech Center
Brooklyn, NY 03301
929-324-4599
email: james.holodakjr@nationalgrid.com