

Gordon van Welie President and Chief Executive Officer

August 29, 2022

The Honorable Jennifer Granholm U.S. Department of Energy 1000 Independence Ave., SW Washington, DC 20585

Dear Secretary Granholm,

I write regarding the letter that you received from the six New England Governors dated July 27, and echo the importance of fuel supplies to the reliability of New England's electric grid during the winter season. I want to call your attention to both short-term and long-term efforts to address energy security concerns in the region.

As you know, the New England region is committed to aggressive action to mitigate the impact of the electric sector on climate change, as embodied in the decarbonization targets established by law in five of the six New England states. ISO New England is both supporting and enabling these actions by planning and executing changes to both the wholesale electricity markets and the transmission grid, in conjunction with the New England states and our stakeholders. The ISO has adopted a vision to harness the power of competition and advanced technologies to reliably plan and operate the grid as the region transitions to clean energy. We view the region's energy security needs in the context of making this transition to clean energy. Furthermore, we recognize that action on climate change is a top priority for the Biden Administration.

Even with the successful development of extensive offshore and onshore wind as well as solar generation in New England, the region will continue to be dependent on resources with the operating flexibility to balance and backstop this variable renewable generation to sustain reliability. Today, natural gas generation provides this flexibility and in the future, this could include non-carbon-emitting energy storage technologies. The region's expected dependence on natural gas in the near future is especially true since policymakers are looking for the electric grid to serve substantially higher demands given their priorities for electrification of transportation and heating in the region. Our expectation of this continuing challenge, beyond the specific issues for which we are preparing this winter, underlies the issues about which we are writing you.

During the coldest days of the year, New England does not have sufficient pipeline infrastructure to meet the region's demand for natural gas for both home heating and power generation. For years, the region has relied heavily on foreign liquefied natural gas (LNG) shipments into import facilities near Boston (Everett) and New Brunswick, Canada to ensure reliable grid operations when pipeline gas is not available in sufficient quantities to support the generation sector. The current uncertainty surrounding the global market for LNG has the potential to stress electric grid reliability this upcoming winter under certain weather scenarios; however, beyond this winter, the ability to import sufficient quantities of LNG will be essential for New England to meet its reliability, electrification, and clean energy goals for many years to come.

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Preparation for September 8 Technical Conference

Earlier this year, the Federal Energy Regulatory Commission (FERC) announced that it will hold a winter gas-electric forum in New England on September 8 to "to achieve greater consensus or agreement among stakeholders in defining the electric and natural gas system challenges in New England and identify what, if any, steps are needed to better understand those challenges before identifying solutions." In preparation for that meeting, ISO New England, in collaboration with the regional utilities, has created (and attached for your information) a *Draft Problem Statement and Call for Action* that I hope will aid in reaching consensus on the problem so the region and its federal partners can focus on finding durable solutions.

The *Statement* highlights that New England can meet both its long-term reliability and public policy needs through a variety of investments in physical infrastructure. However, it has been difficult to site and permit various forms of energy infrastructure, and further, the region has been unable to develop sufficient consensus on whether to mitigate the risk of low probability extreme weather events, and the regulatory path to pay for solutions to cover this risk. In the near-term, the *Statement* emphasizes the critical importance of the Everett LNG facility to the reliability of the entire New England region – an importance that will remain after the existing agreement to maintain operations at the Mystic Generating Station ends in June 2024. In short, the ISO believes that continued operations at the Everett LNG facility are vital as the region continues to evolve towards a cleaner, more renewable energy focused electric grid. At the same time, the region also must expeditiously move forward with practical and feasible short-term actions while studying long-term solutions.

Actions to Support Reliability this Winter

The upcoming FERC forum focuses on electricity and natural gas challenges in New England. I would like to highlight several important actions the ISO has already taken over the past several years that aid New England significantly in preparation for this coming winter, given the region's circumstances.

First, the ISO secured FERC approval to retain a natural gas-fired generator with critical LNG import capability that bolsters the region's access to fuel when pipeline gas is constrained. Second, the ISO has developed a tool to forecast the risk of potential energy shortfalls in New England over a 21-day (three week) period. This tool is designed to provide clear signals to suppliers in the wholesale marketplace of the need to secure additional fuel supplies and provides up to a 21-day period to communicate with the public and seek conservation to mitigate the risk of an energy shortfall. Finally, the ISO is working closely with the region's transmission owners and electric distribution companies to coordinate the implementation of emergency actions, should the need arise, to minimize the potential impacts on electric consumers in the region. Based on these actions, and the results of our winter assessment to date, the ISO expects to be able to operate the system reliably in a mild to moderate winter (using established operational procedures to manage capacity deficiencies). However, concerns remain should the region experience an extreme winter, similar to the winter of 2013-14.

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Over a Decade of Analysis and Efforts to Mitigate Energy Security Challenges

ISO New England has been active in expressing its concerns and taking action to mitigate the risks associated with the availability of sufficient quantities of fuel to serve the electric generation fleet during the winter. The ISO has published a detailed timeline for the diagnosis and analysis of the region's energy security challenges, as well as the numerous ways in which ISO New England and the region have sought to address these challenges¹; however, I wanted to highlight a few examples of the ISO's efforts.

In 2012, FERC held a series of technical conferences (including a session in New England), in which ISO New England raised concerns and stressed the importance of enhanced coordination between the electric and natural gas industries. In 2013, the ISO designed and implemented (and FERC approved) a program to provide economic incentives for generators to physically store sufficient quantities of oil and subsequently, LNG and demand response resources during five consecutive winters. In 2014, the ISO filed substantial changes to its Forward Capacity Market with FERC (approved in May 2014) to provide stronger incentives—known as "Pay-for-Performance"— for resources to undertake investments that ensure they can perform during stressed system conditions. Also in 2014, the New England states formally requested that the ISO support a proposal to flow the "cost of firm natural gas pipeline capacity" through the ISO's tariff, recovering the cost of the additional pipeline capacity through Regional Network Service rates. This concept met significant resistance.

The ISO stressed the region's fuel security challenges in comments to DOE during the most recent *Quadrennial Energy Review* (QER) processes, and DOE highlighted the importance of natural gas to New England's electric grid in its 2015 and 2017 *QER*.

Over the last decade, we have taken steps to improve information sharing capabilities with natural gas pipeline operators and began publishing regular reports on fuel inventory. In 2018, the ISO published its *Operational Fuel Security Analysis (OFSA)*, which quantified the region's energy-security risk, specifically "the possibility that power plants won't have or be able to get the fuel they need" to meet demand and maintain reliability. Soon after the *OFSA* was published, the ISO filed at FERC (in response to FERC's January 2018 resilience order) detailing the scope and depth of the fuel-security challenge facing New England. The ISO specified that it "recognizes that fuel security is just one aspect of the bulk power system's resilience; however, it is the most significant challenge for the New England bulk power system's resilience, and it currently has no defined in-market long-term solution."

As I mentioned, in 2018, the ISO took action to postpone the retirement of the Mystic Generating Station (including the Everett LNG facility) outside of Boston, MA for two years to give New England time to implement transmission and market solutions. While the transmission solution is progressing, in October 2020 the FERC rejected the proposed market changes known as the Energy Security Initiative. In the meantime, the retention of the Mystic Generating Station/Everett LNG facility has turned out to be crucial to ensuring that the region has sufficient certainty on LNG supplies to cover the risks of moderate weather patterns in the coming winter.

¹Timeline: Historical Efforts to Address Fuel Security Issues in New England, ISO New England; <u>https://www.iso-ne.com/about/what-we-do/in-depth/efforts-to-address-fuel-security-in-new-england</u>

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ISO Urges Strong Consideration of the Initiatives Identified by the New England Governors First, the ISO would like to lend its support to the states' call for the specific solutions to the region's fuel challenges as outlined in the July 27 letter from the New England Governors. In the absence of sufficient pipeline infrastructure, the ISO would welcome the ability for domestic natural gas to be brought to New England via tanker at the Everett facility.² As has been well documented, LNG – from any source – is of tremendous value to New England during the winter months.

We urge the Department of Energy to stand ready to support targeted requests for exemptions to the Jones Act to allow New England to access domestic LNG by tanker if emergency conditions develop this winter or in the future.

Second, the states raise the notion of a regional energy reserve for power generation, a valuable concept that the federal government already supports through the Northeast Home Heating Oil Reserve. The ISO would be pleased to explore and collaborate on further ideas for an energy reserve to support electricity production. We believe that such a concept will be critical to mitigating low probability extreme weather risks, correlated contingencies and supply chain risks.

We urge you to use the Department of Energy's convening authority and leadership to support the states' and the ISO's suggestion to develop an energy reserve in New England.

Moreover, we urge you to consider the consequence of these issues for New England as you administer the Department's authorities under the 2022 Inflation Reduction Act and the 2021 Bipartisan Infrastructure Framework. This could include identifying opportunities for investment in energy infrastructure in New England, identifying congested transmission corridors, supporting research into low-carbon balancing fuels such as hydrogen, and continuing to support the importance of electricsystem reliability to ensure the success of the clean energy transition.

On the states' final point, the ISO enthusiastically supports collaboration between the states, the federal government, regional stakeholders, and ISO New England on electric reliability during the winter as well as the region's clean energy transition more broadly. Finally, I would like to emphasize, that while the industry has traditionally viewed the gas and electric systems as separate, with separate regulatory processes, it has become clear that we should view them holistically as one inter-dependent regional energy system, particularly in the context of the transition to clean energy that seeks to lower carbon emissions in the entire system.

² The ISO appreciates that the U.S. Department of Energy is not the federal agency ultimately charged with approving or denying requested waivers to the Jones Act, and that ISO New England would not be the direct applicant of a waiver request. Nevertheless, the ISO will continue to work with the states, resource owners and appropriate federal agencies on the feasibility of a Jones Act waiver should the need arise.

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I hope you find the attached *Statement* informative. I know that the U.S. Department of Energy, the New England states, and ISO New England have been in close communications on reliability issues, and will continue to be moving forward. However, I would be pleased to speak with you about any of the issues affecting bulk power system reliability in New England, either prior to or following the September 8 technical conference.

Sincerely,

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Gordon van Welie President & Chief Executive Officer

CC: The New England Governors FERC Commissioners New England Congressional Delegation

Draft ISO/EDC/LDC Problem Statement and Call to Action on LNG and Energy Adequacy Federal Energy Regulatory Commission New England Winter Gas-Electric Forum, September 8, 2022

ISO New England and the New England gas and electric distribution companies agree that, as the region transitions to a clean energy future, there is a need to develop and execute a plan to reduce dependence on *imported* LNG. This plan could include accelerated development of clean energy resources, additional transmission to access electrical energy, increased in-region liquefaction and dual-fuel resources, long duration storage, and green fuels.

In the meantime, the region needs to secure and stabilize the imported LNG supply chain to supply customers of natural gas. Most immediately, *the region must ensure the continued operation of the Everett LNG Facility to maintain reliable electric and natural gas service for New England consumers.* The need for the Everett LNG Facility will extend for a finite period beyond June 2024, when ISO New England's retention of the related Mystic Generating Station expires, and until the required infrastructure investments are made to reliably enable the envisioned clean energy future.

Everett Facilitates the Initial Stage of the Clean Energy Transition

Ultimately, renewable resources will provide electricity to meet both current needs and additional future demand related to home heating and transportation. The region will also develop the clean, long duration resources needed to balance renewables' variable production characteristics.

Until that time, however, the region will depend on gas to ensure the reliable provision of heat and electricity. Specifically, on the electricity side, we will continue to need natural gas to fuel the current gas-fired generation fleet until sufficient clean energy resources and alternative forms of long duration energy storage are built. Regarding the gas infrastructure, LNG is needed to meet home heating needs and, more fundamentally, to maintain pressure on the gas pipeline system.

In sum, we believe that, for the clean energy transition to be successful, the region must continue to have reliable supplies of gas for home heating and electricity. Without adequate gas, the region may not be able to meet the demand for home heating and electricity – and, when reliability suffers, the clean energy transition suffers. We have seen that story play out in Europe, Australia and, closer to home, in California and Texas. In sum, it is critical to the region's decarbonization goals that the lights and heat stay on in New England – and, for the foreseeable future, that requires gas.

Everett Provides Critical Gas Supply

The natural gas pipelines that serve New England operate at maximum capacity during the winter. During very cold weather, and for extended periods, the pipelines cannot fully supply heating demand or provide enough fuel to power gas generators without significant injections of LNG on the eastern and northern parts of the New England gas system. Because New England is at the end of the interstate pipeline system and lacks large scale, long duration energy or fuel storage, both the gas distribution system and the electric power system have a dependence on imported LNG, and this reality will persist until the region invests in access to alternative long duration energy storage infrastructure.¹

The only LNG import facility in regular use in New England is Everett.² Everett has LNG storage capacity equivalent to 3.4 billion cubic feet of natural gas and includes equipment for the import, storage, local transportation and regasification of LNG that is delivered to the facility by ship. Everett has the capacity to make firm gas deliveries of up to 435 million cubic feet per day³ to two of the five interstate natural gas pipelines in New England for use by generators and gas utilities.⁴ These injections from Everett help maintain pipeline pressures on high demand gas days.

The Current Lack of a Regional Plan to Ensure Energy Adequacy, including the Absence of a State or Federal Regulatory Solution, Endangers the Reliability of the Electric Power System

While the reliability of New England's electric power system is dependent on a reliable gas system, the regulatory oversight of the two systems is not fully compatible. Specifically, the electricity markets are not designed to spur investments in supporting infrastructure needed to ensure a reliable clean energy transition. While the region is in the process of developing a plan and cost allocation methodology for assuring investments in the transmission infrastructure required to integrate renewable resources, there is no comparable plan to ensure the region has sufficiently robust, long duration, sources of balancing energy (including for the meantime, sufficient supplies of natural gas). In essence, the prevailing assumption is that the fuel markets will ensure sufficient fuel supply in response to high prices in the electricity markets. For a variety of reasons, this assumption is proving to be flawed.

Fuel suppliers, including LNG providers, will not maintain and invest in infrastructure and fuel supplies without a long-term financial commitment. However, the counter-party for such a long-term commitment does not exist in New England, particularly for fuel to supply electric generators. Specifically, the majority of wholesale and retail buyers of electricity in New England generally have a short position in the market and are not making long-term commitments to electric energy suppliers, nor do these suppliers have a "firm fuel" obligation under the ISO's FERC-regulated Tariff.

The result of this structure is that fossil-fired electric generators do not have sufficient guaranteed longterm incomes on which to rely when making fuel arrangements. As a result, they will, at best, engage in seasonal contracting for fuel to cover their expected supply obligations and rely on spot fuel markets for the additional supplies to cover unexpected events. Pipelines or suppliers of imported LNG cannot rely on this limited contracting to invest in infrastructure, or ensure stable supplies of LNG.

In 2014, some of the New England states and the Electric Distribution Companies (EDCs), recognizing the risks of this structure, considered requiring the EDCs to become the contracting counterparty to stabilize regional gas supplies for gas generators, but that path was stymied when the Massachusetts Supreme Judicial Court ruled that the Massachusetts Department of Public Utilities did not have the authority to

¹ Given the growing uncertainties in the global LNG markets as a result of the war in Ukraine, this dependence is increasingly fraught.

² The region also depends on regular LNG injections from the St John facility located in New Brunswick, Canada, which is outside of U.S. jurisdiction.

³ This translates to about 2,700 MW per day of capacity.

⁴ Everett also has the capability to deliver 100,000 MMBtu per day by truck, which supports local storage refills for gas utilities throughout the region.

approve this proposal. In short, there is a structural problem that encompasses the gas and electric systems and there is a bifurcated state and federal regulatory system for addressing it.

As the clean energy transition progresses, this reliability and regulatory dilemma will become more pronounced. In simple terms, renewables will displace fossil fuels, but the need for balancing energy (and in particular the long duration, peaking requirement for balancing energy) will increase. The recent Future Grid Reliability Study, which was a product of a collaborative effort between the ISO, the states and NEPOOL, illustrates the issue.⁵ Cost recovery for the infrastructure that provides this balancing energy will be difficult, especially if it is only used intermittently, and it is unlikely that these costs can be recovered through an electricity market structure that drives electricity suppliers to short-run marginal costs. This problem currently applies to fossil fuel providers, but it will also likely apply to clean, long-duration balancing energy providers with high capital and/or carrying costs (*e.g.*, providers of clean hydrogen or long duration batteries).

Solving the Energy Adequacy Problem Is a Critical Element of a Clean and Reliable Energy Future

While the region has been discussing and attempting to mitigate energy adequacy concerns for many years, ISO New England and the New England gas and electric distribution companies believe we are at a critical juncture given the impending retirement of a key piece of shared fuel infrastructure. The need to find a solution to this issue is vitally important to a reliable and clean energy future.

As the region seeks to decarbonize its economy, a robust solution should move the region toward a reliable and clean energy future by increasing the amounts of clean energy on the system, developing the transmission to interconnect and deliver those resources, maintaining the balancing resources to manage the variability of those resources, and ensuring energy adequacy through an energy reserve to manage through extended periods of severe weather or energy supply constraints.

An energy reserve would cover unusual events, including combinations of major contingencies, or extreme weather, or both. It does not refer to the daily balancing energy requirement to maintain short-term reliability of the bulk power system, but rather to provide a supplementary, "stand-by" quantity of energy to fill in when input energy supply chains are disrupted. In essence, "energy adequacy" or an "energy reserve" can be viewed as regional insurance to cover relatively low probability risks. The ISO is presently working with the Electric Power Research Institute to study and quantify extreme weather risks. Results from this study should be available in early 2023 and will inform the discussion on the magnitude of the risks, and potentially, how best to solve for these risks.

Preliminarily, an energy reserve could be achieved through some or all of the following:

• State regulated cost-of-service infrastructure investments coupled with contracting for the necessary energy

⁵ The study shows that approximately 73-90 GW of wind, solar and storage will be needed in 2040 for reliability depending on the amount of available dispatchable resources. <u>https://www.iso-ne.com/static-assets/documents/2022/07/2021</u> economic study future grid reliability study phase 1 report.pdf at page 3.

- FERC regulated cost-of-service rates for recovering investments in infrastructure and forward energy supply chain arrangements
- FERC regulated wholesale electric market tariffs that rely on uniform clearing price mechanisms to incent investments in infrastructure and forward energy supply chain arrangements

At this stage, given the region's experience over the past two decades, the region needs to determine how much insurance to buy, and which options, or combinations of options, will be the most effective and efficient. Defining and quantifying the risk/cost tradeoff will in turn depend on the potential solutions and we recognize this is an important step to achieving regulatory approval in either, or both, regulatory venues.

It is clear that the New England Governors are concerned about these issues, as indicated in their recent letter to Secretary Granholm. The New England states have a major role in determining the nature and extent of any regional risk mitigation solution, since they represent the end consumers who will have to pay for the insurance, and further, control the siting and permitting of the necessary infrastructure.

To this end, *the region should undertake a comprehensive study of both the energy adequacy problem and the potential solutions for addressing the problem*. Any solution that involves the ISO and revisions to its Tariff will require deliberation in the appropriate NEPOOL forum and ultimately, approval by the FERC.

Due to the urgency of this issue, we believe it is incumbent upon the region to expeditiously move forward with practical and feasible short-term actions while studying long-term solutions. Therefore, the ISO will work with the New England states and stakeholders to accelerate actions that will help reduce the region's long-term dependency on Everett and imported LNG, mitigate the energy adequacy problem, and continue the transition to a clean energy future. Such short-term actions include identifying expedient investments in transmission and ISO tariff-based or market-based solutions. Clear guidance from the FERC and the states will be critical to finding a feasible solution.

We hope that this problem statement will help inform the discussions at the September 8th FERC Winter Gas-Electric Forum and subsequent discussions with the New England states and NEPOOL.