

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 long-term 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. https://www.iso-ne.com/static-assets/documents/2022/07/2021_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.