ISO new england

memo

To: NEPOOL Participants Committee

Cc: New England States Committee on Electricity

From: Gordon van Welie, President and Chief Executive Officer

Date: January 31, 2022

Subject: Correspondence Regarding Winter Reliability

I write in advance of the February Participants Committee meeting to share my thoughts about the recent letter exchange with the New England states. This correspondence with the states follows an increase in the ISO's public discussion of winter reliability risks. Although we have been talking about these issues for twenty years, we have stepped up public communications in the last year given events in Texas, the challenging global LNG market, and the increased likelihood of extreme weather. As we noted during our communications on this winter's outlook, we are not trying to alarm the region, but we would not be doing our job if we did not highlight the region's vulnerabilities in certain circumstances. From our perspective, we are having the right conversation, although it's a difficult one.

I am cognizant that the conversation about reliability is occurring as the region takes a big step forward in the clean energy transition by addressing the Minimum Offer Price Rule. I believe that these two efforts must occur simultaneously. Reliability will be critical to achieving the region's clean energy goals.

I would like to build on the momentum created by the recent correspondence. We are meeting with FERC Commissioners and the NESCOE managers to talk about the specific concerns we raised heading into this winter, and to explore a way forward on the energy security issue. We plan to continue talking with the states about this issue, and we've asked FERC to continue to focus on these issues with us until we find a solution. We are hoping that they will utilize their convening power to get all the right parties together later this year.

We think the first step is for the region to agree on the existence and scope of the problem. To that end, I would like to share with you the ISO's understanding of the issue. I will also tell you what we are doing – and not doing – within the limited scope of our authority. Finally, I will start to outline the solution space in order to get us all thinking about it, although we can't make progress in that area until we have reached regional consensus on a problem definition.

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The problem:

Our goal for the current conversation is to get regional agreement on the existence and scope of the problem. From the ISO's perspective, the problem is our dependence on a resource mix and fuel infrastructure that are insufficient to meet electricity demand under various scenarios that include severe weather and coincident contingencies.

The region needs to deploy significant quantities of renewables in order to meet its de-carbonization goals. This will allow the region to eventually displace fossil fuels most of the time, but not all of the time. Renewables are weather dependent and intermittent, and therefore the region will need a sustainable solution to withstand wind and solar "droughts" (otherwise known as the "winter doldrums") by the end of this decade. The clean energy transition is a long journey and we cannot escape the reality that the region will be reliant on much of the existing fleet, and the fuels they utilize, for many years to come.[1]

The current fleet and its fuel supply have become increasingly constrained. The fleet has seen significant retirements in recent years, as well as significant delays in the development of new resources. At the same time, the fuel supply that serves the fleet has not adapted to meet the growth in demand.

Fundamentally, the ISO's concern is that the resource mix and fuel infrastructure on which we depend will be insufficient in the face of the wrong combination of severe weather, non-gas generation contingencies, and fuel supply chain issues. In fact, the combination of extended severe weather conditions and a single large contingency could cause us to take emergency actions, including calling for controlled outages. These contingencies include the loss of a large nuclear unit, Canaport losing its sole electric feed, an outage of the HQ Phase 2 HVDC line, the loss of several large units, or the potential loss of imports from New York. These are not hypotheticals, as *all of these situations have occurred this winter, in the January 10 to 22 timeframe.*

Vamsi will unpack these details in his COO report, but my point is that these are many of the major contingencies we worry about, and they all occurred within the span of two weeks. Thankfully, the region did not experience extended severe weather during this timeframe and we have been able to manage through them.

I think it is also worth mentioning the evolving situation in New York. We are facing the potential reductions of imports from New York due to the shutdown of Indian Point and more gas consumption in New York, causing gas constraints in New England to bind earlier than in past years.

[1] *See* the November 2020 study prepared by the Energy Futures Initiative and Energy + Environmental Economics and sponsored by Calpine, at E3 EFI New England Net Zero (ethree.com). "This study shows that cost-effectively meeting this dual challenge [growing electricity demand and reducing emissions to nearly zero] will involve the addition of large amounts of wind, solar, and battery storage resources, complemented by firm capacity to provide generation during extended periods of low wind and solar availability. Firm capacity includes natural gas power plants, nuclear, hydrogen generation, or other yet-to-be commercialized options such as long-duration storage."

Finally, this winter has illustrated the risks and costs associated with depending on *spot market* LNG cargoes. This is not a sustainable path. When I explain to state policymakers that the region has to depend on just-in-time imported gas from Trinidad, Qatar, and sometimes Russia, they shake their heads in disbelief.

As indicated in the letter exchange, the states want more studies to better assess the risk. As you know, we have launched a new project with EPRI to produce more sophisticated modeling of the impacts of extreme weather. While we are committed to using this modeling to quantify the nature and impacts of the risks, it is *not needed* to identify the major risks that are already apparent in our day-to-day operations. Moreover, we should not wait for this modeling capability to begin discussing feasible solutions.

How the ISO is addressing the problem:

Regarding the ISO's plans to address the problem, we have put in place some market changes and we have improved our operational procedures to maximize our situational awareness and forecasting ability. We are continuing to work on the Resource Capacity Accreditation and Day-Ahead Ancillary Services Improvements projects to further improve incentives. These projects will incrementally improve price formation in our markets and better optimize the utilization of short-duration energy inputs.

That said, there is nothing within the scope of the ISO's authority that will result in a comprehensive solution to the problem. From our perspective, such a solution requires actions that are outside of our jurisdiction, such as fuel procurement, construction and siting of transmission, and improvements to the fuel infrastructure. Any of these solutions require the active support of the states.

There are two actions within our jurisdiction that we would prefer not to take: another short-term financial band-aid, in the form of a winter reliability program, and the retention of resources on an out-of-market basis. The short-term winter reliability programs that largely paid existing resources for oil are of limited utility because they will not fully address the type of event we saw play out in Texas. Moreover, their value is offset by their impact on market signals and their reliance, in contravention of state policy, on the region's most carbon-intensive resources. The same is true of the retention of retiring resources.

These two actions will also suffer from a lack of support. FERC has been clear that they are not supportive of such solutions and we have received the same feedback from the states and NEPOOL, most recently during the contentious proceedings on the Mystic retention. While we may ultimately be forced to propose solutions to FERC that have undesirable tradeoffs, we do not want to start with solutions that lack the support of the states and NEPOOL.

The solution space:

There are two broad categories of solutions: demand-side measures and supply-side measures. On the demand side, the ISO already integrates state-sponsored conservation measures and distributed

resources in the wholesale market and we are planning further enhancements as we comply with Order 2222. Further investment in conservation and demand response programs for retail users of electricity and gas may be useful, and is squarely in the states' jurisdiction. The only other tool we have is public conservation appeals, working closely with the Governors and the local utilities. This is a major reason we were speaking so publicly about the risks leading into the winter – so that the public would know they can help avoid more extreme emergency actions.

On the supply side, we need regional energy storage solutions that have a duration of multiple weeks to substantially mitigate the risks we have today and in the future, when the winter doldrums will become a bigger problem. This will require additional investment in long-duration energy storage technologies. The extent of the additional investment will depend upon the rate of retirements of existing resources that have on-site fuel, the rate of increase in demand on the system due to electrification, and the duration of the event and contingency combinations we are seeking to cover.

I hope for a breakthrough in technology for carbon capture or clean, long-duration energy storage in the form of long-duration batteries, advanced modular nuclear reactors, or clean fuels, such as green hydrogen, but I think these solutions are still years off. As I think about incremental investment in long-duration energy supply or storage for the next 10 to 15 years, there are currently only three technologies practically and economically available:

- *Hydro electricity imports.* This will require more transmission and firm commitments from Hydro Quebec.
- *Imported LNG.* We only have three supply points. One is outside of US jurisdiction, one is economically threatened, and the remaining supply point is an offshore buoy that can only accommodate a very specific type of LNG ship. To assure and/or increase our LNG supply, the region would have to contract with these supply points or invest in in-region liquefaction.
- *Light Oil.* Only 1/3 of the region's oil inventory is No. 2 oil and it is scattered across a portion of the combined-cycle fleet, mostly in small, relatively short-duration tanks that are resupplied by trucks. The region could increase this capacity by requiring resources to significantly increase dual fuel capability.

In sum, we believe that the concerns that we highlighted again this winter will continue until we have a robust, coordinated plan to address the vulnerabilities in New England's energy supply chain and wholesale electricity markets. In addition to the ISO's continuing markets and operational improvements, a robust plan will require coordinated policy action by state and federal agencies – and all of it must occur in conjunction with regional stakeholders, including NEPOOL.

The ISO cannot solve this problem on its own. I look forward to exploring both the nature of the problem and the potential solutions with you.

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Summary of ISO New England Board and Committee Meetings

February 3, 2022 Participants Committee Meeting

Since the last update, the Nominating and Governance Committee, and the System Planning and Reliability Committee met on January 19. The Markets Committee, Compensation and Human Resources Committee, and the Board of Directors met on January 20. All of the meetings were held virtually.

The Nominating and Governance Committee received a report on Joint Nominating Committee activities, and reviewed the Company's strategic planning process and potential topics for 2022. The Committee received a report on the political and policy trends that may affect energy policy activity during 2022. The Committee also reviewed discussions from the meetings held in November with the NEPOOL sectors and state representatives, including the states' governance recommendations. The Committee continued its discussions on best practices regarding Board diversity and inclusion initiatives.

The System Planning and Reliability Committee received an update on the Company's compliance with NERC and NPCC standards. The Committee then discussed activities and events that were a major focus during the late summer and fall of 2021, including regional planning activities, qualifications for Forward Capacity Auction #16, economic study requests, integration of Distributed Energy Resources, and winter preparedness. In addition, the Committee previewed activities anticipated to be a major focus for the first quarter of 2022. The Committee also reviewed a dashboard summary of ongoing projects, and received updates on the 2050 transmission study and other ongoing major transmission studies. The Committee also considered the portion of a recent FERC rulemaking relevant to an Independent Transmission Monitor. Lastly, the Committee held an executive session to assess achievement of 2021 corporate goals.

The Markets Committee began its meeting with an executive session to assess achievement of 2021 corporate goals, and to review the scope and coverage of the Internal Market Monitor and External Market Monitor for adequacy. In regular session, the Committee received reports from both the Internal and External Market Monitors on key market issues during the 2021 fall season. The Committee discussed the initiative to eliminate the Minimum Offer Price Rule

(MOPR) in the Forward Capacity Market, including ongoing discussions with stakeholders regarding a proposal to adopt a transition period before the elimination of the MOPR.

The Compensation and Human Resources Committee discussed market pressures on compensation and the evolving competitive workforce landscape. The Committee also held a preliminary discussion related to corporate performance and the achievement of corporate goals for 2021, and agreed to recommend to the Board the Company's corporate goals for 2022. In executive session, the Committee reviewed the Company's succession plans for management and held a preliminary discussion related to 2022 officer compensation and, with the Company's outside compensation consultant, considered the reasonableness of that compensation when compared to similarly-situated companies.

The Board of Directors received a report from the CEO with updates on winter preparedness, the Pathways Study Report, management's plan for the workforce to return to the office, and recent correspondence with the Connecticut Department of Energy & Environmental Protection and NESCOE. The Board then heard reports from the standing committees outlining highlights from their recent meetings. During the Nominating and Governance Committee report, the Board approved edits to the Committee's charter to specify the Committee's responsibility to ensure a diverse board. The Board then received updates from members of the Board on topics discussed at liaison meetings with state utilities commissions and various communications with stakeholders. While in executive session, the Board approved the Company's corporate goals for 2022.