

GORDON VAN WELIE, PRESIDENT & CEO, ISO NEW ENGLAND

BEFORE THE HOUSE ENERGY & COMMERCE COMMITTEE

SUBCOMMITTEE ON ENERGY, CLIMATE, & GRID SECURITY

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Chairman Duncan, Ranking Member DeGette, Chairwoman Rogers, Ranking Member Pallone, and Members of the Committee, thank you for the opportunity to appear before you today.

My name is Gordon van Welie, and I am the President and Chief Executive Officer of ISO New England.

ISO New England is the independent, not-for-profit corporation responsible for keeping electricity flowing across the six New England states and ensuring that the region has reliable, competitively priced wholesale electricity today and into the future. We do this by executing our three core responsibilities – operating the grid, administering the competitive wholesale electricity market, and providing power system planning.

ISO New England is also committed to working with the New England states and our stakeholders to enable a reliable transition to an economy powered by clean energy. This is a monumental task and it requires four critical pillars to provide a robust foundation for the transition: New England will need to add significant amounts of clean energy to the grid; ensure we have sufficient flexible resources to balance the moment-to-moment variability of renewable energy; ensure that we have sufficient backup energy for those periods when renewables cannot perform; and we will need to further build out the region's transmission infrastructure to meet significantly higher demands on the electric grid.

We are transitioning to a power system that will have to meet a doubling of average demand and a tripling of winter peak demand by 2050. Moreover, this demand must be met with a resource mix where the majority of resources have variable production characteristics or are energy constrained under

certain conditions. Our challenge is figuring out how much energy we will get from this evolving fleet of resources, how to ensure reliability through the wholesale market design and how to plan the transmission system to integrate the renewables and meet the forecast demand.

The outlook for reliability is manageable assuming certain assumptions hold up. These assumptions include a robust market design that assures resource and energy adequacy. Additionally, this assumes that the market will respond, (either to wholesale price signals or to state contracts), with new resources to meet increased electrification load and replace retiring resources; that there will be a reliable gas system and a responsive oil-supply chain; that transmission will be built to interconnect wind and to import incremental Canadian hydropower; that the region has readily available access to imported LNG; and that electricity production limitations due to emissions restrictions on generators will be manageable.

ISO New England has been working with the Electric Power Research Institute (EPRI) to conduct a probabilistic energy-security study for New England that provides a framework to assess risks associated with extreme weather events. The study tool provides an early warning system to inform the region on the magnitude of these risks and provides a basis for developing solutions. We have done analysis of two initial timeframes: 2027 and 2032.

We believe the risks in the 2027 timeframe are manageable, primarily due to the positive effect of significant regional investments in solar resources and energy efficiency, which have slowed demand growth, the fact that we have a committed resource mix for that timeframe through the forward capacity market, and the significant investments in the ISO market design and operator tools. We have developed enhanced tools to forecast a potential energy shortfall on a rolling, three-week basis. If we do forecast a shortfall, we can work with market participants to increase fuel inventories, and work with state officials to urge the public to conserve energy to mitigate the impact of a potential energy

shortfall. These actions could be necessary due to the reality that the New England system is under stress during extended periods of cold weather when the region's fuel infrastructure is constrained.

The variables and risks in the 2032 timeframe are greater; however, these risks can be mitigated if the New England states, the ISO, and the FERC take proactive action.

The biggest long-term risk is that the region cannot maintain sufficient resource or energy adequacy to meet the demand for electricity. This could be caused by the rate of electrification outpacing the addition of new resources, or existing generators retiring prematurely, or the imposition of additional constraints on the utilization of the existing oil and gas generators.

The single biggest variable affecting resource adequacy is the efficacy of the FERC-regulated wholesale markets. The market structure is under increasing pressure to deliver outcomes that support both the states' decarbonization objectives and the region's reliability objectives. Ensuring an effective and durable market design that can address both objectives requires affirmative support from both the state and federal regulatory community. In particular, our studies have shown that as more renewables are added to the power system, it will put downward pressure on energy market revenues, creating more reliance on increased capacity market revenues, or in the worst case, widespread reliance on contracts to retain selected resources needed for reliability. The latter outcome will result in an unwinding of the competitive wholesale market construct. I believe the most efficient, market-based solution to this problem is effective carbon pricing, which would drive innovation in the market by compensating new and existing clean energy resources for their carbon free energy, while also providing powerful incentives to existing carbon emitting resources to reduce their carbon emissions. In order to mitigate the wholesale price effects, the ISO has recommended implementing a form of carbon pricing called "net carbon pricing" that would automatically rebate the bulk of the collected carbon emission revenues back to consumers.

In addition, New England has particularly severe gas pipeline constraints during the winter that limit the delivery of gas into the region and therefore exacerbate energy adequacy risks. Natural gas generators supply about half of New England's electricity needs on an annual basis, yet the interstate pipelines are not designed to serve peak demand from both home heating and power generation. As a result, the generation mix switches to using significant amounts of oil and imported liquefied natural gas (LNG) in the winter. This creates price volatility during periods of cold weather and potential reliability risks if the supply chain for these fuels is compromised.

As has been demonstrated in recent events in other regions, the electric and gas systems are interdependent and a failure in one system impacts the other. ISOs have no jurisdiction over the natural gas system and do not have the expertise to determine whether it will remain reliable through the energy transition. Gas infrastructure and supplies will be needed well into the future until commercially available renewable fuels, or alternative technologies, are economic. In particular, while we expect that the average usage of gas will decline, our modeling shows that the peak demand for gas and oil will increase during periods when renewables are not able to perform. Our studies indicate that the most vulnerable scenarios occur during winter cold snaps. This raises difficult economic and regulatory questions that straddle multiple regulatory jurisdictions – namely, who will invest in the low capacity factor supply and demand response resources to support both the electric and gas systems during these periods of vulnerability, and how should the costs of these resources be recovered?

I believe that policymakers and regulators should be thinking of the reliability of the energy system as a whole. In that regard, I commend the recommendations in the report on Winter Storm Elliot issued jointly by the Federal Energy Regulatory Commission (FERC) and the Northeast Electric Reliability Corporation (NERC). I would like to highlight the recommendation that federal and state legislation is needed to provide more oversight to the reliability of the gas system. Congress established rigorous

regulatory oversight and mandatory standards over the bulk electric system after the 2003 blackout, but has not established a comparable level of oversight and standards for the single biggest source of energy to that system. I urge this committee to support the report's recommendations and take the necessary action to assure the reliability of the energy system as a whole.

Thank you.