Ensuring System Reliability Through the Transition to a Cleaner Energy Future

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KEY MESSAGES

• The New England power system is changing rapidly
  – Shifting away from resources with stored fuels (coal, oil, nuclear) toward resources with just-in-time fuel (natural gas) and resources that are weather dependent (wind and solar)

• We need to ensure reliability through the transition, and firm up the delivery of energy during the winter

• The ISO’s operational analysis and experience show the region trending in a negative direction with regard to fuel-security risk
Price Volatility Becomes More Acute as Infrastructure Constraints Become More Severe

Wholesale Electricity at New England Hub (Real-Time LMP)

- Hurricanes hit the Gulf
- Before the Recession and Marcellus Shale gas boom
- Winter 2012/2013
- Winter 2013/2014
- Winter 2014/2015
- Winter 2017/2018
Recent Cold Weather Period Reinforces Findings in Operational Fuel-Security Analysis (OFSA)

• During the recent cold weather period (from December 26 to January 8), gas and oil **fuel price inversion** led to oil being in economic merit and base loaded, leading to rapid depletion of the region’s oil supply.

• Fuel delivery **logistics** became a concern
  – Heating customers get priority for oil and gas
  – Storms can delay trucked oil and LNG tankers
  – Truck drivers face restrictions on driving time

• With oil being base loaded, **emissions** limitations became a concern for several oil-fired generators.
Frigid Cold Drove Up Regional Demand for Natural Gas

This led to spikes in natural gas prices, which then led to spikes in wholesale electricity prices; with natural gas at a premium, oil generation became economic.
Generators’ Oil Inventories Declined Rapidly

Several large oil units were left with only enough fuel for a few more days, forcing the ISO to posture (hold back) units to conserve this fuel.

Note: This chart is the ISO’s best approximation of usable oil, discounting unit outages, reductions, or emissions.
FINDING A PATH FORWARD TO ADDRESS FUEL SECURITY
Key Observations:

• New England is trending toward a riskier fuel-security profile – based on our historical experiences and the forward-looking results from the OFSA

• The operational risk manifests itself as a lack of firm energy during cold weather

• The region is likely to remain exposed to winter energy constraints for the foreseeable future – and the region will become more dependent on large volumes of LNG

• Coordinating the timing of exit and entry of resources will be very challenging – state-sponsored renewable resources will reduce energy market revenues over time, causing increases in capacity market revenues and gradual retirements of existing resources

• Premature loss of existing non-pipeline-gas units will greatly exacerbate operational risks – Exelon’s plans to retire Mystic units in 2022 accelerates discussions on fuel security
The ISO, States and Industry All Have Roles to Play

• The ISO’s objective is to manage reliability by procuring services through the market

• We need to firm up the delivery of energy during the winter months, and ensure that the market design uniformly values all resources that provide such a service

• The winter energy constraints can be mitigated by investment in additional energy infrastructure and/or providing operating flexibility for existing resources
The ISO Is Working on Three Tracks to Address the Fuel-Security Challenge

- **Immediate**: Ask FERC for a *tariff waiver to ensure fuel security* by retaining Mystic units 8 & 9; Exelon will ask FERC for cost-of-service compensation

- **Short-term**: Working with stakeholders, develop *changes to the tariff* to make fuel security a reason resources can be retained for reliability
  - File changes by end of 2018 so they are in place before the March 2019 retirement de-list bid deadline for FCA #14

- **Long-term**: Working with stakeholders, develop a *market-based solution* that will ensure there is sufficient firm energy to maintain reliability in winter
  - Needed resources and infrastructure will be *compensated through the market*, rather than reliability contracts
How Do the States Want to Position the Region in the Long Term?

• How does the region ensure **reliable and firm sources of energy** when the power system is stressed by very cold weather?

• Should policymakers **alleviate the winter energy constraints** that drive reliability risks, price volatility and higher emissions during very cold weather?

• Can states shape their **resource procurements** to meet both policy goals and alleviate winter reliability challenges?