



# 2015-2016 Winter Preparedness

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*Federal Energy Regulatory Commission*

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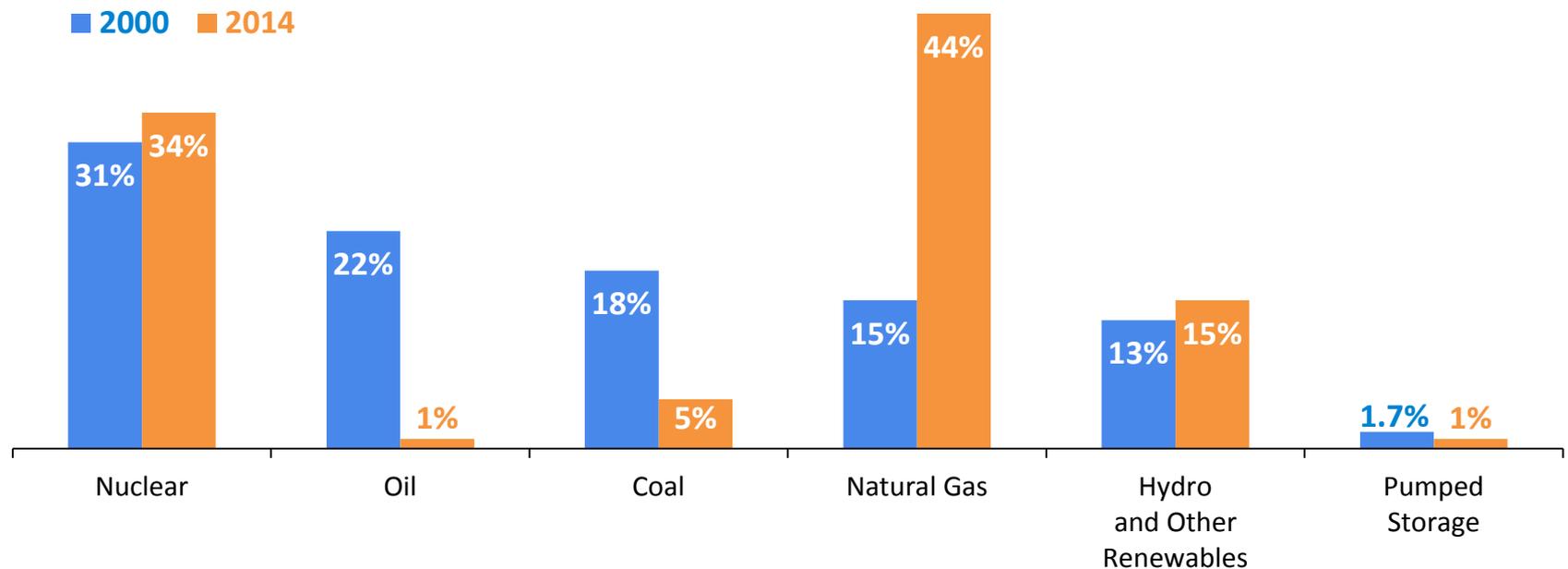
# Summary

- Increased situational awareness of conditions on the gas system has been essential to reliable operation of the bulk electric system
- ISO-NE has worked with stakeholders to develop market enhancements to improve generator performance and strengthen grid reliability
- Although, ultimately, generators are responsible to meet market obligations (per the Commission's clarification of generator obligations), the ISO has offered winter programs to ensure reliability
- ISO-NE is reasonably confident that it can achieve reliable winter operations
  - That said, loss of any major non-gas unit or significant disruptions in gas supply or pipeline capability will create major challenges for ISO operations

# Dramatic Changes In The Energy Mix

*The fuels used to produce New England's electric energy have shifted as a result of economic and environmental factors*

Percent of Total **Electric Energy** Production by Fuel Type  
(2000 vs. 2014)  
(110,198 GWh vs. 108,356 GWh)



Source: ISO New England [Net Energy and Peak Load by Source](#)

Other renewables include landfill gas, biomass, other biomass gas, wind, solar, municipal solid waste, and miscellaneous fuels

# Actions To Address Increased Gas Dependence

- As indicated on the previous slide, New England's reliance on natural gas to produce electricity has nearly tripled since 2000
- Given the limited number of gas pipelines able to move gas into New England, ISO-NE has had to take a number of actions that are described on the following slides
- These include:
  - Market rule changes
  - Improved situational awareness of conditions on gas system
  - Winter reliability programs

# Market Rule Changes

- Moved the Day-Ahead Market timelines to accommodate long-lead-time generating resources
  - Also moved the Resource Adequacy Assessment to better match the natural gas evening cycles
- Tightened the FCM Shortage Event Trigger to strengthen ISO-NE's ability to maintain reserves
- Allowed generators to change offers on an hourly basis in both the day-ahead and real-time markets
  - Generators can reflect intra-day fuel-price changes in their energy-market offers, thereby improving financial incentives to follow dispatch orders
- Developed a “*Pay-for-Performance*” approach in FCM to strengthen financial incentives for resources to perform beginning in 2018

# Improved Situational Awareness

- Enhanced, regular communications with gas pipelines following changes to ISO-NE's Information Policy per FERC Order 787
  - Routine review of gas purchases via pipeline EBBs for generators known to be committed on natural gas
- Regular conference calls with Northeast Reliability Coordinators
- Winter preparedness seminars
- Generator fuel surveys
- ISO-NE Forecast Department – Gas Usage Tool (GUT)
  - Developed internally by ISO-NE Operations Support Team
  - Daily scraping of the five EBBs of the interstate gas pipelines serving New England
  - Aggregates estimated scheduled deliveries of gas based on historical nominations
- Hired an individual with gas industry experience to assist with evaluating gas supply and transportation availability

# Improved Situational Awareness, Cont.

- **Gas Usage Tool (GUT)**

- Utilized within the Control Room to assist with evaluating current and next day operating plans
- Daily scraping of the five EBBs of the interstate gas pipelines serving New England
- Aggregates estimated scheduled deliveries of gas based on historical nominations for:
  - Each gas LDC (city gate meters)
  - All regional commercial and industrial loads
  - All non-electric sector delivery points
- Estimates the remaining gas pipeline capacity, by individual pipe, for use by the electric power sector
- Overlays the daily, 14-hour (10:00 am – midnight) burn profiles of all gas-fired generators by pipeline to see if the electric sector demand can be accommodated

# Winter Reliability Programs

- ISO administered winter programs in 2013-14 and 2014-15
  - Their primary purpose was to create incentives for generators to fill oil tanks at the beginning of the winter
  - Programs also included a new demand response program
  - Last year, the program also included LNG
  - Both programs were critical to reliability, with generators burning almost all of the program oil in their tanks
- FERC has approved programs for winters 2015-2016, 2016-2017, and 2017-2018
  - The programs will bridge the gap until Pay For Performance is effective
- The basic structure is the same as last year's program
  - The program offsets some of generators' carrying costs for unused firm fuel, thereby creating an incentive for generators to secure fuel at the beginning of the winter
  - ISO will set a payment rate reflecting current market conditions each July for the upcoming winter