Reliable Power Grid Operations Expected This Winter in New England

Resources should be adequate unless unexpected outages or fuel delivery constraints occur

Holyoke, MA—November 30, 2017—The New England power system is expected to have the resources needed to meet consumer demand for electricity this winter, according to ISO New England, the operator of the region’s power system.

However, power system operations could become challenging if demand is higher than projected, if the region loses a large generator, electricity imports are affected, or when natural gas pipeline constraints limit the fuel available to natural-gas-fired power plants. In those instances, the ISO could be required to implement special operating procedures to maintain reliability.

2017/2018 winter outlook by the numbers

- Peak demand forecast:
  - At normal winter temperatures of about 7 degrees Fahrenheit (°F): 21,197 megawatts (MW)
  - If extreme winter weather of 2°F occurs: 21,895 MW
- Resources with a Forward Capacity Market (FCM) capacity supply obligation to be available: 30,999 MW
  - Total resources, including both FCM obligations and capability without FCM obligations: 32,521 MW (a generator’s maximum possible output may be greater than its FCM obligation)
- Natural-gas-fired generating capacity at risk of not being able to get fuel when needed: more than 4,000 MW
- Winter 2016/2017 peak demand: 19,647 MW on December 15, 2016, during the hour from 5 to 6 p.m.
- All-time winter peak in New England: 22,818 MW on January 15, 2004
- All-time peak demand: 28,130 MW, on August 2, 2006

Power resource capacity and fuel delivery constraints

The power plants and demand-side resources with obligations to be available are sufficient to meet the forecasted peak demand under both normal and extreme weather conditions. While New England has adequate capacity resources to meet projected demand, a continuing concern involves the availability of fuel for those power plants to generate electricity when needed. The region’s natural gas delivery infrastructure has expanded only incrementally, while reliance on natural gas as the predominant fuel for both power generation and heating continues to grow. During extremely cold weather, natural gas pipeline constraints limit the availability of fuel for natural-gas-fired power plants. Further, the retirement of a 1,500 MW coal- and oil-fired power plant in May has removed a facility with stored fuel that helped meet demand when natural gas plants were unavailable.

Winter Reliability Program

To address potential shortages of fuel to generate electricity, ISO New England will administer the Winter Reliability Program again to help protect overall grid reliability. The program provides incentives for generators to stock up on oil or contract for liquefied natural gas before winter begins, as well as for demand-side resources
to be available. The availability of generators with fuel has been a key reliability factor during recent cold winters. The program will run from December 1, 2017, through February 28, 2018. This is the last winter for this interim program due to new capacity market performance incentive rules that go into effect June 1, 2018.

Demand
Total energy consumption and peak demand have remained flat in New England in recent years as a result of increased use of energy-efficiency measures and behind-the-meter solar photovoltaic (PV) systems. Both the normal and extreme peak demand forecasts take into account the 1,832 MW in energy savings from energy-efficiency measures acquired through the region’s Forward Capacity Market. While PV helps reduce energy consumption during sunny winter days, demand peaks in winter after the sun has set. By reducing demand on sunny days, PV can help preserve other fuels for use when demand is peaking.

Operational procedures to maintain reliability
Should unexpected generator or transmission line outages occur, the ISO has procedures in place to maintain reliability, including calling on demand-response resources to reduce their energy use, importing emergency power from neighboring regions, and asking businesses and residents to voluntarily conserve electricity.

ABOUT ISO NEW ENGLAND

Created in 1997, ISO New England is the independent, not-for-profit corporation responsible for the reliable operation of New England’s electric power generation and transmission system, overseeing and ensuring the fair administration of the region’s wholesale electricity markets, and managing comprehensive regional electric power planning.