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Contact:**Ellen Foley** (413) 535-4139**Marcia Blomberg** (413) 540-4555**Lacey Girard** (413) 540-4483

New England Expected to Have Sufficient Resources to Meet Power Demand this Summer

Holyoke, MA—April 28, 2015—New England is expected to have enough electric generation and demand-response resources available to serve forecasted peak demand this summer, according to ISO New England Inc., the operator of the region's bulk power system and wholesale electricity markets.

2015 summer peak demand forecast

This summer, under normal weather conditions of about 90 degrees Fahrenheit (°F), electricity demand is forecasted to peak at 26,710 megawatts (MW). Extreme summer weather, such as an extended heat wave of about 94°F, could push demand up to 29,060 MW. These forecasts take into account the demand-reducing effect of 1,685 MW of energy-efficiency (EE) measures acquired through the Forward Capacity Market (FCM).

"The New England power grid is prepared to meet consumers' needs for power this summer," said Vamsi Chadalavada, executive vice president and chief operating officer of ISO New England, Inc. "Prior to every peak-demand season, ISO New England focuses on grid preparations to be ready to handle high amounts of electricity demand and a required reserve margin. This effort includes coordinating closely with the region's power plant owners, transmission companies, natural gas pipeline operators, and neighboring grids in Canada and New York to ensure their resources are ready. Last year's retirement of the Vermont Yankee nuclear power plant, with a capacity of 615 megawatts, will mean the region will have less electric generating capacity than last summer, and also a narrower reserve margin when demand is peaking. If a prolonged heat wave occurs and the extreme peak demand forecast materializes, then the region will need to rely more heavily on power imports from neighboring areas, and may also need to use operating procedures to maintain system reliability."

Capacity resources to meet demand

New England has different types of capacity resources it can use during the summer when demand for power reaches its highest point: generators that produce electricity, such as nuclear, oil, coal, natural gas, hydro, biomass, and wind; demand-response resources that can be activated to reduce their energy use; and power imported into New England from New York and Canada.

Through the FCM, approximately 29,575 MW of generating resources have an obligation to be available this summer. Some resources' capability to produce power is greater than their capacity supply obligation, and these resources typically offer the additional megawatts into the energy market when demand for power is peaking and spot energy prices rise. If all generating resources in New England were operating at full output, the total amount of power produced would be approximately 30,325 MW.

About 640 MW of demand-resources and about 1,240 MW of net electricity imports also have supply obligations to be available this summer.

State of the power grid and resources

Transmission system upgrades

By early June, several major transmission system upgrades will be completed, including improvements in Maine (part of the Maine Power Reliability Project) that will allow power to flow more easily throughout the state and out of Maine and into other New England states. Additionally, the Interstate Reliability Project in Massachusetts, Connecticut, and

Rhode Island, will improve the flow of power in New England from east to west. These transmission projects enhance the system's ability to move power around the region, from where it is produced to where it is in demand, thereby increasing operational flexibility and grid reliability.

Generator additions and retirements

Two new resources have come online since last summer—a wind facility and wood-burning facility—totaling 120 MW of nameplate capacity (the maximum amount of electricity a generator is capable of producing). However, when factoring in the retirement of Vermont Yankee—which operated at near 100% output last summer—the region stands at a net loss of about 570 MW of generation compared to last summer.

Natural gas pipeline maintenance

Natural gas pipeline companies typically schedule maintenance and construction during the summer months when demand for gas is low. These pipeline outages decrease the total amount of gas supplies that can be delivered into the region, and under some conditions can affect the ability of gas-fired generators to get fuel. ISO New England has been in close contact with the natural gas pipeline companies that have scheduled system maintenance this summer, and has determined that the planned outages should not result in significant reductions of gas supply to generators during the peak summer periods.

Solar resources

The exponential growth of solar photovoltaic resources in the region is adding to the complexity of operating the grid, especially during the summer months. More than 900 MW (nameplate capacity) of “behind-the-meter” solar facilities are currently installed throughout New England, but because they are not connected to the high-voltage power system, ISO New England can’t “see” how much power they produce, or where and when it is being produced. At the ISO level, power output from these resources shows up as a reduction in overall demand on the high-voltage power system. Especially on sunny, clear days, the electricity output from these resources can help offset the use of fossil-fired generation during the afternoon peak demand period; however, when the sun sets, electricity output from solar resources is rapidly reduced, which presents operational challenges. The steep increase in demand for power from the grid must be quickly met with electricity from other generators. ISO New England is working to develop more sophisticated short-term forecasting tools to better anticipate real-time output from solar facilities.

Operational procedures to maintain reliability

ISO New England has well-established operational procedures in place to maintain grid reliability in the event of an unexpected resource outage, an extended heat wave that causes consumer demand to spike, fuel supply issues that affect the amount of electric generation available, or a combination of these factors. These procedures include calling on demand-response resources to curtail their energy use, importing emergency power from neighboring regions, and asking businesses and residents to voluntarily conserve energy.

Last summer, demand for power peaked on July 2, 2014, at 24,443 MW. The all-time record for peak demand was set on August 2, 2006, when demand reached 28,130 MW after a prolonged heat wave.

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.

