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ISO New England Expects Sufficient Electricity Supplies Under Average, Above-Average Summer Temperatures

Procedures in place to deal with unexpected conditions

Holyoke, MA—May 24, 2021—New England should have the resources necessary to meet consumer demand for electricity under both average and above average temperatures this summer, according to ISO New England Inc., the operator of the region’s bulk power system and wholesale electricity markets.

This summer, under typical weather conditions, electricity demand is forecasted to peak at 24,810 megawatts (MW). Above-average summer weather, such as an extended heat wave, could push demand up to 26,711 MW.

Planning for the summer

ISO New England prepares short-term forecasts for the summer and winter seasons, taking into account estimated contributions from all resources, including those with and without an obligation through the capacity market to supply electricity; unplanned resource outages; imports from neighboring regions; and resource additions and retirements. These estimates help inform ISO New England’s planning on how to operate the grid during the upcoming peak season.

These forecasts also estimate consumer demand under a variety of weather conditions. Average summer weather is used to develop what is known as the 50-50 forecast, meaning there is a 50 percent chance that peak demand will be above or below the forecast. Above-average heat and humidity are used to generate what is known as the 90-10 forecast, which means there is a 10 percent chance that peak demand will surpass the forecast.

These forecasts do not account for unprecedented, extreme conditions – the type of weather seen in California and Texas during the past year. ISO New England is currently working on ways to plan and prepare for these types of low-probability, high-impact events.

“Events in other parts of the country have shown how quickly the unexpected can become reality,” said Vamsi Chadalavada, ISO New England’s executive vice president and chief operating officer. “Over the next several months, we’ll work with the New England states and stakeholders in the energy industry to discuss the challenges these types of events pose to the region.”

Tools in place to maintain reliability

Though ISO New England expects the region to have adequate supplies of electricity this summer, conditions could force system operators to take action to maintain system reliability. ISO New England operators have many tools at their disposal, up to and including controlled power outages, to maintain the overall reliability of the power system. These well-established procedures protect the region in the event of an unexpected power plant or transmission line outage, an extended heat wave that results in increased consumer demand, fuel supply issues or emissions limitations that affect the amount of electric generation available or a combination of these factors.

These procedures include importing emergency power from neighboring regions, calling on power system reserves, and asking businesses and residents to voluntarily conserve energy. In severe events, system operators may be forced to call for controlled power outages to protect the overall grid. Climate change has caused weather to become more volatile and less predictable, increasing this potential for system operators to resort to the actions.

How the region will meet this summer's peak electricity demand

More than 31,000 MW of capacity is expected to be available to meet New England consumer demand for electricity. ISO New England employs a variety of resources to meet demand: generators that produce electricity, using fuels such as natural gas, nuclear, oil, coal, hydro, biomass, and wind; demand-response resources that reduce their energy use; and power imported into New England from New York and Canada.

This summer's forecasts incorporate the demand-reducing effects of more than 2,600 MW of energy efficiency measures. This decrease is made up of resources that are designed to save electricity across many hours, but cannot change the amount saved in response to instructions from system operators. Examples include the use of energy-efficient appliances and lighting, and advanced cooling and heating technologies.

The forecasts also include a reduction of more than 800 MW during the peak hour that can be expected from the region's behind-the-meter solar photovoltaic (PV) installations. Though New England has approximately 4,000 MW of solar PV installed, these systems produce their highest output in the early afternoon hours. The increase of solar power in New England has, in effect, pushed the peak hour of grid demand later in the day, when the sun is lower in the sky and production from solar PV systems is also lower. Rather than peaking during the mid-afternoon, as was customary in the summer before PV installations became more widespread, demand for grid power now peaks in the early evening hours.

ISO New England is continuing to monitor [the impact of the COVID-19 pandemic](#) on consumer demand for electricity. Over the past several months, the ISO has seen consumer demand return to near normal levels, as vaccination efforts have expanded and the New England states have continued with their reopening efforts. The region's power system is designed to handle fluctuations in consumer demand, and the pandemic is not expected to pose a reliability threat this summer.

Last summer's demand peak was 25,121 MW and occurred on July 27, 2020. The all-time record for peak demand was set on August 2, 2006, when demand reached 28,130 MW after a prolonged heat wave. In New England, consumer demand for electricity is highest during the summer because of air conditioning use.

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.



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