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Please post to the Northern Pass Comment Page. Pamela Martin

New England has enough electricity production even if a heat wave hits

By DAVID BROOKS
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- Aided by enough solar power to equal the output of Seabrook Station, plus continuing cuts in requirements created by efficiency programs and a system known as demand response, New England should have more than enough electricity resources to meet demand this summer, even during a heat wave.

That's the prediction of ISO New England, which operates the power grid and wholesale electricity markets in the six-state region. A main job of such Independent System Operators across the country is to observe and tweak the markets to ensure that enough electricity can be generated to meet regional needs. This process has gotten more complicated as electricity systems have been deregulated and renewable energy sources are added to the mix.

The annual report estimates that an extended heat wave averaging 94 degrees, causing power-hungry air conditioning to run overtime all across New England, would require a peak of 29,042 megawatts of electricity, less than the 29,734 megawatts that power plants have guaranteed that they will be able to provide. An additional 500 megawatts more could be squeezed out of those plants, if necessary, the report said.

As a comparison, Seabrook Station can generate up to 1,300 megawatts at any given time.

Adding to the region's cushion, ISO New England said it can count on "about 557 MW of demand response resources," in which large electricity customers guarantee to cut back on usage if the grid becomes strained.

The report notes one of the complications of the modern grid: "behind-the-meter" solar power. That refers to photovoltaic systems, such as solar panels on the roof of a house that serve mostly to reduce the amount of electricity used by a customer, rather than to add electricity to the system.

Since these systems are behind the meter, ISO New England has no direct view of what they are doing, and cannot control them or easily predict what they will do at any given time.

The 2016 summer peak forecast factored in 423 megawatts of reduced demand from behind-the-meter solar power.

That figure is considerably below the 1,300 megawatts of estimated maximum output from solar power, because solar panels maximize output about 1 p.m. but peak demand on hot days tends to run from 3 to 5 p.m. or so, when solar panel output is already declining, said Marcia Blomberg, a spokeswoman for ISO New England.

Another challenge of solar power for power grids is that electricity production ends abruptly when the sun sets. That abrupt change forces other power plants to quickly make up the difference in production, an issue which will only become more difficult to handle as solar power increases.

Natural gas presents another complication. ISO New England noted that gas pipelines traditionally shut down for maintenance work in summer because natural gas was formerly used almost entirely for heating, leaving pipelines less busy in warm weather. Those maintenance shutdowns must now be factored into power forecasts.

Last summer, ISO said demand for power peaked on July 20 at 24,398 megawatts. The all-time record for peak demand was set Aug. 2, 2006, when demand reached 28,130 megawatts after a heat wave.

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