

For Immediate Release:

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NYISO Preparing for Increased Solar Generation

Issues Study on Solar's Impact on Grid Operations

The New York Independent System Operator (NYISO) today issued a solar integration study that lays the groundwork for reliably managing projected growth in solar resources.

The report, [*Solar Impact on Grid Operations – An Initial Assessment*](#), examines the potential for growth in solar power, the impact of increasing intermittent resources on grid operations, and forecasting issues that must be addressed to make effective use of solar resources in the future. In 2012 Governor Andrew Cuomo launched NY-Sun, a \$1 billion program to increase the amount of solar energy production in New York State. Earlier this year, the Governor announced the state's Clean Energy Standard, a program to require New York State to obtain 50% of its electricity from renewable and clean energy sources by 2030.

Competitive electricity markets have helped grow renewable energy, placing the NYISO at the forefront of federal and state initiatives to develop clean energy resources. The NYISO has been recognized as a leader in wind power integration and is now applying that success to solar.

For the study, the NYISO examined the potential impacts of increased solar and other intermittent energy resources on grid operations by focusing on four primary areas:

- development of hourly solar profiles and a 15-year solar photovoltaic (solar PV) projection in each of the NYISO market's 11 load zones for load and solar production forecasting purposes;
- "lessons learned" and integration studies from other regions that have experienced significant growth in solar and wind resources;
- potential reliability concerns associated with solar PV equipment and interconnection standards; and,
- the impact of various levels of behind-the-meter solar PV and wind penetration on regulation requirements used in grid operations to balance the system.

Summary of Findings and Recommendations

The study finds the New York electric system can reliably manage the increased variability in five-minute loads associated with the solar PV and wind penetration levels studied -- up to 4,500 megawatts (MW) wind and 9,000 MW solar PV -- through higher regulation service requirements. Regulation service corrects for changes in electricity use affecting the stability of the power system.

As recommended in the study, the NYISO will continue to track solar PV and wind penetration levels—and the capability of its generation fleet to provide regulation services—in order to assess and make adjustments as appropriate.

Large-scale implementation of behind-the-meter solar PV will impact the NYISO's load profile and system operations. Although these impacts may be mitigated in the future by on-site storage technology, the study recommends the incorporation of real-time and day-ahead solar forecasts into its control room operations and markets as soon as practicable. Similar to its pioneering work in the area of wind forecasting, the NYISO began evaluating potential solar forecasting systems earlier this year and is on track to have a system in place by the Summer of 2017.

The experience of other regions undergoing similar growth in intermittent energy resources confirms the importance of monitoring the capability to serve regulation and ramping needs as wind and solar PV penetration increases and displaces conventional generation. Ramping refers to the ability of generation resources to “ramp” up and down in response to scheduling instructions and changing system conditions.

The study lays the groundwork for additional research underway at the NYISO. A copy of the [full report](#) is available on the NYISO website, www.nyiso.com.

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The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.

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