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NYISO Issues Distributed Energy Resources Outlook for New York State

New York Ranked Fifth in the Country for Total Installed Distributed Energy Resource Capacity

Rensselaer, N.Y.—New York state, already ranked fifth in the country for total distributed energy resource (DER) capacity, is pursuing an array of initiatives to further increase the use of on-site power generation and storage systems. To inform energy industry stakeholders, regulators and policymakers, the New York Independent System Operator (NYISO) today issued a new report assessing the state of DER technologies and their prospects for growth in the coming years.

Prepared by international energy advisory and testing organization DNV GL (formerly DNV KEMA), the report ([A Review of Distributed Energy Resources](#)) evaluates the current and future growth outlook for several key DER technologies. The study also highlights market drivers and regulatory and environmental policies governing such systems and shows how other utility regions manage such resources.

DER power generation and storage resources are typically located on or near an end-user's property and supply all or a portion of the end-user's electricity. Such resources also may deliver power into the grid. DER technologies include solar photovoltaic (PV), combined heat and power (CHP) systems, microgrids, wind turbines, microturbines, back-up generators and energy storage equipment.

According to the report, more residential and commercial customers are interested in adopting DER technologies to lower their utility costs, improve power quality and access new revenue. The study cites an acute need for government and utility sectors to address several key challenges and obstacles for expanding the use of DER, including:

- Technical requirements limiting the development and integration of DER technologies, such as transmission interconnection and grid-reliability concerns;
- An escalating variety of regulatory policies, requirements and tariffs across utility jurisdictions;
- Fair compensation and associated cost allocation for the benefits of integrating DER onto the grid; and
- The lack of "turn-key" solutions and the need for complex, costly and project-specific engineering analysis to support project financing and implementation.

"This study underscores NYISO's commitment to work with state government leaders and the electric utility industry to improve the resiliency of the electric system and help customers to be more engaged in energy markets by efficiently integrating DER with the centralized power grid," said NYISO President and CEO Stephen G. Whitley.

In 2013, the NYISO convened a daylong workshop to gather government and industry perspectives from more than 200 stakeholders on the potential role for DER across the state. That event served to frame issues for further exploration in the study.

Hugo van Nispen, executive vice president at DNV GL, said, "NYISO's leadership in commissioning this work reinforces its active role in reviewing how emerging technologies and evolving regulations will influence the future of energy markets and reliability. The report defines the most critical areas to address in order to anticipate and prepare for the changes facing the power industry."

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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The study found that 57 percent of New York state's DER capacity is generated by small-scale CHP. In other states that have high DER penetration, solar PV is the dominant technology. Solar PV ranks second in New York at 41 percent, with 2 percent derived from various energy storage methods. New York ranks in the top 5 states for total DER installations of 2 megawatts or less.

The study also found considerable technical potential for increased penetration of DER technologies in New York state and across the country. For example, New York ranks high in potential for additional rooftop PV and small-scale CHP systems.

The study complements important strides New York state government is making to promote the development of energy storage technologies and other DER innovations. In April 2014, Governor Andrew M. Cuomo announced the formal opening of the \$23 million Battery and Energy Storage Technology (BEST) Test and Commercialization Center, which is operated by DNV GL in Rochester. Also in 2014, as part of a \$17 billion extreme weather preparedness strategy, the Cuomo administration launched a \$40 million competition to spur the development of community microgrids across the state that would help to ensure vital services can be maintained during extensive outages due to weather events or other grid disruptions.

The study also provides information to support the New York State Public Service Commission's Reforming the Energy Vision (REV) initiative. REV was launched to pursue distribution utility regulatory changes that promote more efficient uses of energy, a deeper penetration of renewable energy resources such as wind and solar, and a wider deployment of DER technologies such as microgrids, on-site power supplies and energy storage.

The NYISO's DER initiative is part of its continuing contributions to the evolution of the power grid in New York state. In the early 2000s, with New York looking to expand the production of wind energy, NYISO commissioned what was then a pioneering wind-grid integration study to evaluate how much wind energy could be safely integrated in various regions of the state without damaging grid reliability. That study later became a national model for helping other states and countries chart out their wind energy growth strategies. Today's DER study serves as a starting point for evaluating the potential role of DER technologies in meeting system needs in a reliable and efficient manner that recognizes the role that end-use customers can play in moderating demand from the system.

To view the full report, [A Review of Distributed Energy Resources](#), please visit the [Publications](#) page of the NYISO website, www.nyiso.com.

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