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# Growing Opportunities In NY's Energy Storage Industry

By **Danielle Mettler-LaFeir** (June 20, 2018, 1:16 PM EDT)


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To meet the ambitious energy and environmental goals of New York's Reforming the Energy Vision, or REV, program, New York is putting in place policies to increase the use of energy storage — sending out a strong signal to the growing energy storage industry to invest in New York. By enabling the widespread deployment of renewable energy resources, better management of traditional energy resources, and reducing greenhouse gas, or GHG, emissions, energy storage is essential if New York is going to meet its REV goals. It is therefore not surprising that New York is seeking to significantly increase energy storage capacity.

In 2014, New York launched REV — Gov. Andrew Cuomo's comprehensive energy strategy — which establishes statewide goals to increase the use of renewable power, reduce GHG emissions and promote energy efficiency. In response, the New York Public Service Commission, or NYSPSC, and the New York State Energy Research and Development Authority, or NYSERDA, are taking several actions to implement REV and increase energy storage capacity. And, just last year, New York became the fourth state to pass legislation establishing an energy storage capacity target. To further spur the deployment of energy storage systems, during his 2018 "State of the State" address, Cuomo also announced a goal of 1.5 gigawatts, or GW, of energy storage capacity in New York by 2025, and $260 million in funding from NYSERDA to accelerate the growth of the industry. NYSERDA and the New York Department of Public Service, or NYDPS, therefore, are developing an energy storage road map. The road map, which is scheduled to be released in draft form for public comment by June 30, 2018, will provide specific regulatory and policy methods to help New York achieve its 1.5 GW energy storage goal and implement the energy storage legislation.

Combined, the energy storage legislation, the governor's initiative, and actions taken by state agencies and authorities, support the goals of the REV program and establish a steadfast commitment by New York to create a thriving market for energy storage.

**Types of Energy Storage Systems**

There are currently five types of energy storage systems available:

- Batteries;
- Flywheels;

- Compressed air storage;
- Thermal storage; and
- Pumped hydro-power.

These systems can store energy generated by both renewable and conventional methods, and can be large front-of-the-meter utility-scale systems, or smaller residential and commercial behind-the-meter systems called distributed energy resources, or DERs. DERs are small-scale units of local generation connected to the grid, and include renewable and nonrenewable generation and storage systems. For example, a DER system could include solar generation with battery storage.

**Benefits of Energy Storage**

Without effective and sufficient methods to store energy, energy has to be generated as needed (in real time) to meet the demands of the electric grid. To date, the use of renewables to supply electricity has been limited due to their intermittent nature, and the inability to store the energy they produce. For example, solar energy is produced when the sun shines, and wind turbines produce energy when the wind blows, which does not always coincide with electric demand. As a result, energy generation has been, and still is, largely limited to sources that can produce energy on command, requiring the majority of energy to be generated from fossil fuels and nuclear power.

Energy storage systems, however, allow energy generated to be stored, and later dispatched when needed. This provides several benefits, including:

- Allowing increased use of intermittent renewable energy sources;
- Reducing the need for small, inefficient, fossil-fueled units to be used to meet infrequent peak electric demand;
- Reducing the need for new electric system infrastructure; and
- Integrating demand response and energy efficiency measures.

Energy storage allows energy created when there is sufficient sunlight or wind to be stored and used later when sunlight or wind are unavailable due to low wind, cloud cover or nighttime conditions. This, in turn, helps increase the ability to use renewables to generate electricity, and can reduce or eliminate the need to use peaking units that generate significantly more GHGs and other emissions.

**Significant Expansion of Energy Storage Is Necessary to Meet REV Goals**

In 2014, New York launched REV, Cuomo's comprehensive energy strategy "for a clean, resilient and more affordable energy system in New York." The following REV goals were set for 2030:

- Creating 50 percent of New York's electricity from renewable energy;
- Reducing GHG emissions 40 percent below 1990 levels; and
- Establishing energy efficiency of 600 trillion British thermal units, or BTUs.

In 2016, New York generated approximately 25 percent of its electricity from renewables, 20 percent from hydro, and only 5 percent from sources such as wind, solar and biomass. While DER storage systems seem to hold the most promise for expanding energy storage, according to NYSERDA, only about 23 megawatts, or MW, of DER storage was installed in New York in 2017. Renewable capacity is growing in New York as more wind and solar projects are constructed, but because the availability of renewable resources is intermittent, it will be nearly impossible to meet the goal of 50 percent renewables by 2030 without a significant increase in energy storage capacity.

**Executive and Legislative Promotion of Energy Storage**

On Nov. 29, 2017, Cuomo signed Assembly Bill A06571, which created Section 74 of the New York Public Service Law titled "Energy storage deployment program." The goal of the energy storage legislation is to encourage the deployment of all types of energy storage that are commercially available, cost-effective, and can assist New York in lowering GHG emissions, reducing peak demand and the need for infrastructure upgrades, and otherwise improving reliability. It, therefore, requires state agencies and authorities to encourage energy storage deployment, and requires NYSPSC to establish a 2030 energy storage target, which is scheduled to be set in late 2018 after the road map is finalized.

In addition to setting a goal of 1.5 GW of energy storage capacity by 2025, Cuomo directed $260 million in financial commitments from NYSERDA to promote energy storage projects. Like the energy storage legislation, the governor directed state agencies and authorities to work together in 2018 to generate a pipeline of storage projects through utility procurements, advance regulatory changes in utility rates and wholesale energy markets, incorporate storage into criteria for large-scale renewable procurements, and reduce regulatory barriers to energy storage.

**State Agency Initiatives Promoting Energy Storage**

In support of REV's goals, the energy storage legislation, and the governor's initiative, NYSPSC and NYSERDA have taken several actions, and are identifying additional agency actions that will support the widespread deployment of energy storage resources in New York. The road map being developed by NYSERDA and NYDPS is central to these efforts. It is expected to identify policies, regulations and initiatives that can be used to grow the energy storage market and will focus on several considerations, including:

- Rate design;
- Expanding and enhancing the value stack for exported electricity to energy storage;
- Improving load relief initiatives;
- Utility roles and business models;
- Market acceleration incentives;
- Examining wholesale market changes with the New York Independent System Operator, or NYISO, and NYISO's DER road map and "State of Storage Report";
- Reducing soft costs (permitting, customer acquisition, interconnection);

- Leveraging NY Green Bank's financing and the New York Power Authority's financing and procurement; and

- State government procurement.

The draft road map is scheduled to be released for public comment at the end of June 2018. The types of policy and regulatory mechanisms in the road map will largely form the parameters of the energy storage market in New York. It is, therefore, vitally important for those interested in being a part of New York's energy storage market to participate in the road map process.

NYSERDA is also promoting all types of energy storage to meet the REV and energy storage goals. NYSERDA's near-term plan is focused on promoting DER storage systems because of their availability, growth of the industry and the benefits they provide. NYSERDA found that typical DER storage resources are underutilized, have high installed costs relative to hardware costs, and often have unacceptable investment returns. By addressing barriers in the DER storage sector, and barriers on the ability to use DER storage to meet transmission system needs, NYSERDA is seeking to greatly expand DER storage in New York.

Further, NYSERDA is promoting energy storage through funding initiatives. To date, NYSERDA has provided funding for more than 50 energy storage projects. In 2017, NYSERDA announced $15.5 million in REV funding for energy storage projects, and is in the process of awarding this funding as well as the $260 million committed by Cuomo to energy storage projects, with several opportunities currently available. Recently, NYSERDA approved $1 million in funding for a $2 million 50 kilowatt, 200 kilowatt-hour battery storage system .

The NYSPSC is also working to promote energy storage. Indeed, it has issued a number of recent orders approving energy storage systems and opening the door for certain compensation. Examples of the NYSPSC's efforts include:

- A March 9, 2017, order establishing New York's Value of Distributed Energy Resources, or VDER. tariff for DER, and requiring NYSERDA and NYDPS to develop the road map.

- A May 18, 2017, order allowing large commercial batteries in New York City to feed the electric grid. Utilities must file a report with NYPSC on whether batteries and other DERs should be allowed to provide energy to the grid under existing programs.

- A Feb. 22, 2018, order increasing the maximum capacity of projects eligible to receive compensation under New York's VDER tariff, from 2 MW to 5 MW. The VDER tariff was established in 2017 and compensates DERs based on their value to the electric grid.

- A Feb. 22, 2018, order granting Consolidated Edison permission to allow DER battery storage systems in its territory to export electricity to the grid.

- An April 19, 2018, order modifying New York's standardized interconnection requirements to enable energy storage to more easily connect to the grid.

As policies and initiatives continue to be implemented to meet the REV goals, and regulatory and policy initiatives are identified in the road map, NYSPSC, NYSERDA and other state agencies will continue to

take actions promoting the deployment of energy storage systems.

**Future Outlook for Energy Storage in New York**

Meeting New York's REV goal of a renewable energy-focused and distributed electric grid will rely heavily on energy storage, which has broad bipartisan support. As New York seeks to grow energy storage throughout the state, new opportunities will be created for current and prospective participants in the energy storage industry, especially for storage systems in areas of the state that have high-peak electric demand, and those that capture and store renewable energy. The specific policies, initiatives and regulatory requirements for these systems will be largely based on the road map, which is expected to be finalized by the end of 2018.

The deployment of DER battery storage systems appears to hold the most significant near-term opportunities, and is where NYSERDA and NYSPSC are currently focused on increasing deployment in New York. Those involved in the battery storage industry, therefore, have significant opportunities right now to reap the benefits of New York's ambitious energy storage goals and initiatives.

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