Portfolio Media. Inc. | 111 West 19th Street, 5th Floor | New York, NY 10011 | www.law360.com
Phone: +1 646 783 7100 | Fax: +1 646 783 7161 | customerservice@law360.com

A Path To New York's Energy Storage Goal

By **Danielle Mettler-LaFeir** (July 13, 2018, 1:35 PM EDT)

Danielle Mettler-LaFeir

On June 21, 2018, the New York State Research and Development Authority, or NYSERDA, in conjunction with the New York State Department of Public Service, issued the Energy Storage Roadmap for public review and comment. Its purpose is to identify recommendations on how New York can meet its energy storage goal of 1,500 megawatts by 2025 established by Gov. Andrew Cuomo in his 2018 State of the State address, and to assist the New York State Public Service Commission, or NYSPSC, in establishing New York's 2030 energy storage goal anticipated to be set by the end of 2018.[1]

The road map is part of the broader suite of policies and initiatives of New York's comprehensive energy policy, known as Reforming the Energy Vision, or REV. The goals of REV include generating 50 percent of New York's electricity with renewables and decreasing greenhouse gas emissions by 40 percent by 2030. The road map, in conjunction with REV and the Clean Energy Fund, or CEF, is intended to shift New York's energy market from one based on large and discrete, mostly fossil-fueled, supply resources to one with increased distributed energy resources, or DERs, and a greater use of renewables.

Although it also includes longer-term opportunities, the primary focus of the road map is to identify barriers to the deployment of energy storage systems and the most promising near-term policies, regulations and initiatives to further New York's goals (2019-2015). The road map's specific recommendations to increase energy storage capacity to meet the 1,500 MW goal by 2025 fall into seven categories and include several regulatory actions, financing and financial incentives, and direct procurement policy initiatives.

Challenges to Increasing Energy Storage

The road map identified seven challenges that act as barriers to the deployment of sufficient energy storage capacity needed to meet the 1,500 MW by 2025 goal:

- The inability to monetize the full value of energy storage.
- Regulatory and market rules that limit the ability of energy storage to receive sufficient compensation for its benefits.

- The newness and diversity of storage technologies, making customer and investor confidence relatively low and, therefore, financing difficult.
- The low volume of energy storage projects, which impedes investor confidence and the ability to finance using traditional methods.
- High soft costs related to permitting, siting, interconnection, acquisition and financing.
- Insufficient data to identify potential customers and site energy storage for maximum benefit.
- Energy storage installation and operational costs are too high.

Energy Storage Market Segments

The road map divides energy storage projects into three market segments: customer-sited, distribution system and bulk system. Informed by reports prepared by Energy and Environmental Economics Inc. and Acelerex, the road map's scenario for meeting the 1,500 MW by 2025 goal is for each of the three market segments to reach 500 MW by 2025. To meet this scenario, specific barriers and drivers associated with each of the three energy storage market segments are identified in the road map.

Customer-sited energy storage systems are located behind a customer's retail meter and can be stand-alone or paired with on-site DER generation, such as solar panels. These systems are available to residential, commercial, industrial and municipal customers. The road map identified many factors that drive the economics of customer-sited systems, with the largest being: (1) the ratio of a customer's peak to average electric load; (2) demand charge cost; (3) desire for resiliency; and (4) ability to access additional revenue streams for financing.

The 500 MW of customer-sited systems that the road map scenario calls for are expected to be located predominantly in New York City, Westchester County and Long Island, given that the economic opportunities for storage in these areas are much greater due to high demand charges. The main barriers to increased deployment of customer-sited systems identified by the road map are high costs associated with installation, financing, revenue uncertainty associated with operation, and lack of customer data that can be used to determine whether a customer is a good candidate for a customer-sited energy storage system.

Distribution system energy storage systems are connected directly on the distribution circuits. They can be stand-alone storage systems or paired with traditional or renewable DERs. These are energy storage solutions that can provide local distribution system relief, peak demand relief and local reliability improvements. The 500 MW of distribution system storage by 2025 are expected to come from expanding nonwires distribution alternatives, or NWAs, community distributed generation with storage, and wayside storage to utilize regenerative braking in the New York City subway system.

According to the road map, the main barriers to increased deployment of distribution energy storage systems are: (1) existing utility tariffs governing grid access fees may not account for the benefits of NWAs, like energy storage (as opposed to more traditional pole and wire installations); (2) developers have insufficient access to distribution system data to determine whether and where an energy storage project would be beneficial; (3) revenue uncertainty for DER and storage systems; and (4) financing difficulties.

Bulk system energy storage can be stand-alone systems or systems paired with intermittent large-scale renewables (or other more traditional generation). Energy storage systems can address peaking needs that are now being met by older, high-emitting fossil-fueled units and can be paired with large-scale renewable generation.

The 500 MW of bulk system storage by 2025 is expected to come from some storage paired with renewable generation (like solar or wind), and stand-alone storage for targeted uses, including peaker hybridization. The main barriers to increased deployment of bulk system storage identified by the road map are high costs and regulatory barriers, such as current reliability, aggregation and metering rules that may discourage pairing energy storage with renewable generation.

Getting to 1,500 MW by 2025

To remove or mitigate some of the barriers and challenges identified, and promote increased deployment of energy storage in all three market segments, the road map identifies seven categories of actions that New York can take. These recommendations largely focus on increasing the deployment of customer-sited and distribution system energy storage.

- Retail rate actions and utility program changes to send more accurate price signals consistent with the value of energy storage. These regulatory actions are meant to increase customer-sited and distribution system storage systems, and include the development of an optional rate for customers that install behind the meter DER and storage systems (similar to Con Edison's "Rider Q" pilot tariff), expanding VDER to stand-alone storage systems, and better valuing the future environmental benefits (including carbon emission reduction) of energy storage.

- Investor-owned utility role changes to enable utilities to earn revenue based on outcomes that meet New York's energy storage goals, but also maintaining limits on utility ownership of storage in DER markets. This includes regulatory mechanisms such as creating a new earnings adjustment mechanism for each utility that incentivizes improvement of the distribution-systemwide load factor, and augmenting the regulatory cost-benefit analysis for energy storage projects. The road map recommends continuing with the prohibition on utility ownership of DERs.

- Direct procurement policies that expand utility NWAs (including DER and storage), continues NYSERDA's program that provides renewable energy certificates for generation that pairs large-scale renewables with energy storage, and continues New York's "Lead by Example" procurement initiatives. This includes requiring utilities to update their eligibility criteria guidelines to account for increased NWAs, extension of NWA contracts, and enabling developers to maintain the interconnection and participate in NYISO markets after the term of the NWA expires. Also included in the road map are several specific actions by the New York Power Authority, or NYPA, meant to increase energy storage deployment.

- A market acceleration initiative that would establish an approximately $350 million fund using existing sources such as those authorized by the CEF. This initiative would include creation of an adder under the NY Sun program for projects that pair solar generation with storage, and NYSPSC establishing financial incentives for stand-alone storage systems. The road map estimates that 500 MW of storage capacity could be installed by 2021-22 if the proposed market acceleration initiative is implemented.

- Reduce soft costs for customer-sited and distribution system storage projects by: (1) expanding access to more granular system load data so developers can target highest-need and highest-opportunity locations on the electric system; (2) lowering permitting, interconnection and capital costs; and (3) reducing financing costs. To increase access to data, utilities would have to provide significant specific distribution system and customer data for use by DER developers. NYSERDA will continue its work on reducing soft costs, which is funded by $8.1 million under the CEF. To reduce the cost of financing, the NY Green Bank is available to provide loans, investments, construction financing, etc. for energy storage projects. NY Green Bank recently issued a request for information regarding specific ways it can assist in financing energy storage projects.

- "Clean Peak" actions, including: (1) aligning storage approaches with the New York State Department of Environmental Conservation's combustion turbine peaking unit regulations; (2) developing approaches to differently value peak carbon reductions; and (3) developing a method to determine which peaking units are the best potential candidates for replacement with storage.

- Wholesale market actions to modify the rules to better enable storage participation, including dual market participation (where storage simultaneously provides wholesale and distribution system services) as required by Federal Energy Regulatory Commission Order 841. The road map recommends the following NYISO actions: (1) accelerate the timelines in NYISO's draft Master Plan released May 2018; (2) make capacity market changes to enable energy storage to meet capacity requirements; (3) exempt energy storage from buyer-side mitigation rules; (4) modify transmission planning to incorporate energy storage; and (5) change the participation model that encourages developers not to add energy storage to renewable generation resources.

Near-Term Opportunities and Next Steps

The greatest near-term opportunities for energy storage in New York are in customer-sited and distribution system battery storage systems (stand-alone and paired with solar) in downstate New York, including in New York City, Long Island and Westchester County. This is due to higher demand costs during periods of peak demand, and the higher value placed on energy storage in these geographic areas, making these storage systems more economical. If approved by NYSPSC, the road map's initiatives could make these systems even more economical in the downstate area, and expand their deployment in other areas of the state. For electric utilities, approval of the road map's recommendations could result in additional reporting of data, changes to tariffs to promote energy storage, and expanded incentives to use more NWA options, including storage.

The draft road map will be open for public comment, and technical conferences will be scheduled throughout New York state during the third quarter of 2018. NYSPSC is expected to issue an order by the end of 2018, which will adopt some or all of the recommendations in the road map and establish the energy storage goal for 2030, which could exceed 2500 MW.

Public comment on the road map, and other items commenters believe NYPSC should consider in establishing the 2030 energy storage goal, can be made via NYSPSC Case 18-E-0130, In the Matter of Energy Storage Deployment Program.[2]

Danielle E. Mettler-LaFeir is counsel at Barclay Damon LLP.

[1] Section 74 of the New York State Public Service Law, which was signed into law by Governor Cuomo in November 2017, requires NYSPSC to establish a New York State energy storage goal for 2030.

[2] All filings, comments and other documents associated with the road map proceedings are available on NYPSC's online system
at http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=55960.