

NEW YORK ENERGY STORAGE POLICY

Storage Policy Snapshot:

<i>Does New York have a renewables mandate?</i>	YES; 50 percent by 2030
<i>Does New York have a state mandate or target for storage?</i>	YES, 1,500 MW by 2025
<i>Does New York offer financial incentives for energy storage development?</i>	YES
<i>Does New York have a policy for the strategic deployment of Non-Wires Alternatives or Distributed Energy Resources to defer, mitigate, or obviate need for certain T&D investments?</i>	YES
<i>Does New York have a policy addressing multiple use applications for storage?</i>	NO
<i>Does New York have a policy on utility ownership of storage assets?</i>	NO
<i>Does New York allow or mandate the inclusion of energy storage in utility IRPs?</i>	YES
<i>Has New York modified its permitting or interconnection requirements specific to energy storage?</i>	NO
<i>Does New York allow customer-sited storage to be eligible for net metering compensation?</i>	YES (Energy storage projects paired with eligible DER are eligible)
<i>Has New York revised its rate structures to drive adoption of behind-the-meter storage?</i>	PENDING
<i>Approximate development of storage capacity in New York</i>	Approximately 1,460 MW of storage deployed

State Storage Assessment

Supported by a clear vision articulated by the state's governor, actions by the New York Legislature and New York Public Service Commission (NY PSC) have solidified the role of energy storage as an important foundation of the state's transition to a clean energy-powered future. In fact, New York has established one of the most aggressive procurement targets for energy storage in the country with its pledge to meet a target of 1,500 MW of storage deployed by 2025. By comparison, California has a 1,300 MW by 2020 target; Massachusetts is pursuing a target of 2,000 MW by 2025, and New Jersey recently adopted a 2,000 MW by 2030 target.

At this time, energy storage is still in the early stages of development in New York (as is the case with other states). Approximately 1,460 MW of storage have been deployed in New York, of which approximately 1,400 MW of pumped hydro at two New York Power Authority facilities. The largest non-hydro storage facility in the state is a 20-MW flywheel used for frequency regulation, operated by Beacon Power in Stephenstown, N.Y. Beyond that, another 100 MW of storage is in various states of development, mostly in constrained downstate regions, and about six other battery storage projects that in aggregate total 430 MW.

New York is defining energy storage policy within the broader efforts contained in the Reforming the Energy Vision (REV) initiative, which has been in place since 2015 and aims to make a number of systemic changes to the state's regulatory model and operational requirements. REV's clean energy goals for 2030 include:

- 40 percent reduction in greenhouse gas emissions from 1990 levels;
- 50 percent of New York's electricity must come from renewables; and
- 23 percent reduction in energy consumption from 2012 levels

Provisions of the REV proceedings include moving New York utilities from a cost-of-service business model to a market-based model. Specifically, utilities will maintain their former status as energy distributors, but will also assume the role of "market operators," facilitating transactions between those who provide energy and those who use it. Utilities will be incentivized to use DER in their grid planning efforts. In this new role, utilities will own the distributed service platform that DER sellers and retail customers use to buy and sell electricity. REV envisions that current utilities in New York state will become a sort of "mini-ISO" as it relates to DERs. Utilities will be incentivized to use DER in their grid planning efforts.

The REV policy is being executed in two tracks. Both tracks seek to meet the same three goals: Track One described in an order released on February 26, 2015, focuses on shaping the new utility vision and DER ownership challenges. Track Two described in an order released on May 16, 2016, focuses on the necessary changes in the current regulatory, tariff, market, and incentive structures.

With regard to the development of energy storage specifically, New York is in the midst of developing an energy storage policy framework that can support what is anticipated to be a

robust market in both the state's distribution system and wholesale market managed by the New York Independent System Operator (NY ISO). To date, New York's energy storage policy framework has utilized procurement targets, financial incentives and demonstration projects to jumpstart the energy storage marketplace in the state. Two specific areas that have been the core tenets of New York's storage policy are: 1) financial incentives provided by the state that are geared toward enabling the unique system benefits storage can provide; and 2) changes in rate design that would enable a shift toward energy storage, which are being assessed as part of the broader REV initiative.

Executive Directives

In February 2018, Governor Andrew Cuomo's State of the State address included a clean energy agenda, in which energy storage (and energy efficiency) targets were promised by executive directive (to be subsequently implemented by the New York PSC). The energy storage initiative set New York on the trajectory to achieve 1,500 MW of storage by 2025 and up to 3,000 MW by 2030. (The energy efficiency target for investor-owned utilities aims to more than double utility energy efficiency progress by 2025). Governor Cuomo added another goal, pledging to make New York's electricity supplies 100 percent free of carbon dioxide emissions by 2040. Both announcements were made as part of the governor's wider REV initiatives that includes a Clean Energy Standard to generate 50 percent of the state's electricity from renewable energy sources by 2030.

Other state-level agencies are directly involved in the development of energy storage policy in New York. Perhaps most directly involved is the New York State Energy Research & Development Authority (NYSERDA) conducts energy analyses, provides financial aid for energy-related projects, and arbitrates programs related to energy efficiency and renewable energy. In response to the governor's State of the State address, NYSERDA, in collaboration with the New York Department of Public Service, developed the [New York State Energy Storage Roadmap](#) to identify key policies, regulations and initiatives instrumental to achieving what would become the formally adopted goal aiming for 3,000 MW of energy storage capacity by 2030.

The Roadmap offers an approach and a series of recommended actions that are intended to achieve the Governor's 1,500 MW target for energy storage. Key provisions of New York's Energy Storage Roadmap include:

- Providing \$35 million in incentive funding for energy storage projects;
- Providing a \$200 million fund to provide loans for energy storage project developers;
- Reviewing utility rates and carbon policies, creating new business opportunities for energy storage systems; and
- Reducing soft costs for energy storage.

As outlined in the Roadmap, the New York State Energy Research and Development Authority (NYSERDA) established, as part of its Clean Energy Fund, a \$15.5 million funding program for energy storage projects. Through the funding program, NYSERDA is seeking proposals for early

stage product development (up to \$200,000 per award), product development (no award limit) and product field testing (up to \$1 million per award). The bridging incentive is intended to jumpstart the energy storage market in the state of New York.

Storage Legislation

AB A6571 (“Establishing the Energy Storage Program”) (November 2017)

- The law directs the NY PSC to “establish a target for the installation of qualified energy storage systems to be achieved through 2030 and programs that will enable the state to meet such target,” with goals/targets established in conjunction with programs administered by other state agencies.
- A6571 also specifically calls out for an aggressive build-out of “commercially available technology” which is cost-effective and can assist in lowering greenhouse gas (GHG) emissions, reducing peak demand, reducing the need for expensive infrastructure upgrades and otherwise improving the reliability of the electrical network, all cornerstones of the NY REV program. These commercially available technologies could include mechanical, chemical or thermal energy storage.

AB 8921A (“Establishing an energy storage deployment strategy”)

- The law required that by December 31, 2018, the NYC PSC finalize a statewide energy storage goal.
- The law also formally adopted the storage goal referenced by Gov. Cuomo in his executive directive, namely that the NY PSC adopt an energy storage goal of installing up to 3,000 MW of qualified storage energy systems by 2030, with an interim objective of deploying 1,500 MW of energy storage systems by 2025.
- This law also described and adopted a suite of energy storage deployment policies and actions to help eliminate barriers inhibiting deployment and support the State’s achievement of that goal.
 - 8 PSL §74(1) defines a “qualified energy storage system” as a “commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy using mechanical, chemical, or thermal processes to store energy that was generated at one time for use at a later time.”

Regulations

Docket 14-M-0101 (The “Reforming the Energy Vision” (REV) proceeding) (2015)

- This massive regulatory proceeding touches many different areas of New York’s energy market, including but not limited to energy storage.

- Under the REV proceeding, New York has been attempting to transform its electricity system into one that is cleaner and smarter, as well as more resilient and affordable.
- Energy storage technologies will play an increasingly important role in this REV transformation. Specific regulatory changes under the REV initiative are intended to promote more efficient use of energy, deeper penetration of renewable energy resources such as wind and solar, wider deployment of “distributed” energy resources, such as micro grids, rooftop solar and other on-site power supplies, and storage. It is also promoting markets to achieve greater use of advanced energy management products to enhance demand elasticity and efficiencies.
- Specific goals of the REV proceeding include:
 - Requires 50 percent of the state's electricity needs from renewable energy by 2030.
 - Requires a reduction of statewide greenhouse gas emissions by 40 percent by 2030 and the internationally recognized target of reducing emissions 80 percent by 2050.
- In the REV model, the state acts as a facilitator between developers and utilities. Through the REV Demo program, the state maintains an open call for demonstration project proposals that will test new technologies and business models for energy storage and other distributed energy resources.

CASE 15-E-0302 / CASE 16-E-270 (Order Adopting a Clean Energy Standard) (2016)

- The adoption of the Clean Energy Standard in New York in 2016 was arguably the first piece of regulatory policy in New York that served as a catalyst for energy storage development in the modern era.
- While the regulatory order was primarily focused on creating a renewables goal for the state, it did make important references to storage that set the stage for how storage would factor into the broader energy initiatives unfolding in the state. Specifically, the 2016 Clean Energy Standard set a goal that 50 percent of the electricity consumed in New York by 2030 would be generated from renewable energy sources (i.e., the “50-by-30 goal”).

CASE 15-E-0751: Value of Distributed Energy Resources (VDER) (March 2017)

- CASE 15-E-0751 is an ongoing proceeding to develop accurate pricing for distributed energy resources that reflects the actual value DERs create.
- The goal of this proceeding is therefore to enable an increase in both overall DER penetration and the benefits that DER installations, individually and collectively, provide to the system by making compensation accurately match those benefits.

CASE 14-M-0101 (Development of Energy Storage Projects) (March 2017)

- This order emerged out of a broader NY PSC order advancing utility planning of Distributed System Implementation Platforms (DSIP).
- The order was intended to direct the state’s utilities to “significantly increase the scope and speed of their energy storage endeavors.”
- Specifically, under this case the NY PSC directed the state’s investor-owned utilities to deploy at least two energy-storage projects by the end of 2018.
- The order requires that by the deadline of December 31, 2018, an individual utility must have energy storage projects deployed and operating at no fewer than two separate distribution substations or feeders.”
- In addition, the order states that utilities will strive to have these energy-storage systems perform at least two types of grid functions, such as increasing the generating capacity of a substation (“hosting capacity”) or help reduce the power needed when energy demand is at its highest (“peak load”).

CASE 18-E-0130 (The “Energy Storage Roadmap”) (June 2018)

- On June 21, 2018, the NY PSC and the New York State Energy Research and Development Authority (NYSERDA) filed the “New York State Energy Storage Roadmap and DPS/NYSERDA Staff Recommendations” to the New York PSC in order to provide the NY PSC with a range of options to satisfy the newly enacted legislation directing the NY PSC’s to establish a statewide energy storage goal for 2030, and a deployment policy to support that goal.
- The Roadmap identifies near-term policies, regulations, and initiatives needed to realize the governor's 2025 target in anticipation of a 2030 target to be established later this year by the state's Public Service Commission.
- The Roadmap describes a long-term (2026-2030) vision for energy storage deployment, though its primary focus is to identify opportunities, use cases, and implementable actions to support deployment of various energy storage applications in the near-to-medium term (2019-2025).
- The Roadmap is technology-neutral and acknowledges that a range of energy storage solutions will be deployed to best meet customer and system needs.
- The Roadmap includes a host of recommendations to address barriers that impede energy storage from reaching its full potential, with an emphasis on near-term bridging mechanisms and reforms. The Roadmap recommendations fall into seven general categories with associated policy goals, including:
 1. *Retail rate actions and utility programs:* Improve customer delivery rates and programs like dynamic load management (DLM) programs to send more accurate price signals.
 2. *Utility roles and business models:* Incentivize utilities to manage the full customer bill, leveraging assets such as Non-Wires Alternatives (NWA) and unused real estate to reduce ratepayer costs.

3. *Direct procurement*: Use direct procurement approaches through utility NWAs, the Renewable Energy Standard (RES), and the State’s “Lead by Example” initiatives to expand the market for energy storage.
4. *Market acceleration incentives*: Utilize “bridge incentives” to accelerate soft and hard cost reductions.
5. *Soft-cost reductions*: Reduce soft costs by, for example, expanding access to more granular system load data and increasing access to a skilled workforce.
6. *“Clean peak” actions*: Develop approaches to CO2 reduction compensation that varies with time, and integrate the DEC’s draft combustion turbine peaking unit regulations into energy storage policy.
7. *Wholesale market actions*: Reform wholesale and retail market rules to better enable and coordinate energy storage services when technically and economically feasible

Docket 18-00516/18-e-0130. (“Storage Targets”) (December 2018)

- On December 13, 2018, pursuant to Governor Andrew Cuomo’s call for a long-term energy storage target and in accordance with the Storage Roadmap, the NY PSC formally adopted a target of 1,500 MW of storage capability by 2025 and an aspirational target of 3,000 MW by 2030.
- The goal of the Order was to “accelerate the market learning curve and drive down costs, thus speeding the deployment of energy storage at scale through the highest-value applications.”
- The Order also required that NYSERDA establish and administer a “bridge” incentive in order to accelerate the energy storage learning curve, drive down costs, and facilitate new research into energy storage as a non-wires alternative and replacement for peaker plants.
- Each utility is required to procure a minimum amount of storage to be operational by December 31, 2022, with Consolidated Edison required to procure at least 300 MW and each of the other electric IOUs required to procure at least 10 MW each, provided that bids do not exceed a utility-specific defined ceiling.
- Utilities shall amortize and recover the contract costs over the term of the contract. These costs shall be recovered from all delivery customers in the same manner that NWA program costs are recovered at each utility. The IOUs shall account for their actual wholesale revenues earned from the asset as a benefit for ratepayers in recovering contract costs. To provide an incentive for the utilities to maximize the wholesale revenues of the storage asset, when revenues exceed contract costs on an annual basis, the Commission authorizes revenue sharing of 30% to utility shareholders and 70% to ratepayers.

CASE 18-E-0130 (“Incentive Funds to Leverage Market Acceleration”) (March 2019)

- One of the key parts of this broad case (see summary of the Energy Storage Roadmap that was also included in this case), the NY PSC ordered a \$310 million “bridge fund” to kick start the energy storage market in the state.
- The bridge fund is intended to be administered by the New York State Energy Research and Development Authority (NYSERDA).
- The NY PSC directed the state’s six major electric utilities to hold competitive procurements for 350 megawatts of bulk-sited energy storage systems.
- The bridge fund will use previously collected but uncommitted renewable portfolio standard ratepayer funds to finance energy storage projects.
- The funds are slated to be allocated among three market segments —customer-sited storage, distribution-sited storage, and bulk market storage —but the order did not spell out those allocations.

The Future of Energy Storage in New York

Even against the backdrop of the massive REV proceedings in New York, there are still a number of policy issues related to energy storage that are still being vetted by the state’s stakeholders. Three significant policy issues that still require resolution in New York include:

- Utility ownership of storage assets
- Inconsistencies between New York’s Energy Storage Roadmap and NYISO standards
- Siting challenges within New York City

A summary of these issues currently under discussion in New York is provided below.

Utility Ownership

From the utilities’ perspective, questions remain regarding the ownership models and applications for storage that will emerge from REV initiatives.

Achieving a full array of utility and customer benefits through the development of energy storage may require a variety of storage scale, ownership, and control scenarios. However, in general the New York PSC has made clear through various REV orders and proceedings that utility ownership of Distributed Energy Resources (DERs) would be prohibited, barring a few specific exceptions. DERs in this case is considered to be distributed generation, storage used for economic purposes, and customer-side demand management. However, the exceptions outlined by the New York PSC could prove to be favorable to utility-owned energy storage as a DER.

Exceptions for utility ownership of energy storage assets currently include the following circumstances:

- Procurement of DER has been solicited to meet a system need, and a utility has demonstrated that competitive alternatives proposed by non-utility parties are clearly inadequate or more costly than a traditional utility infrastructure alternative
- A project consists of energy storage integrated into distribution system architecture
- A project will enable low- or moderate-income residential customers to benefit from DER where markets are not likely to satisfy the need
- A project is being sponsored for demonstration purposes

There are stakeholders in New York, including utilities, that continue to make the argument that storage deployment at a scale optimal to the power system, which could include utility ownership given that utilities historically have been most informed of grid needs and positioned to deploy resources throughout their territories. As energy storage technologies and opportunities continue to mature, it is likely that utilities will continue to challenge the prohibition against ownership.

Inconsistencies with NYISO Standards

One of the key elements in New York’s Energy Storage Roadmap is creating the potential for energy storage to draw revenues from both the retail market and wholesale markets. This is consistent with policy objectives established by FERC’s Order 841, and was viewed positively by storage developers as it opens the possibility for storage technologies to pursue multiple revenue streams based on multiple-use applications. However, based on the New York ISO’s (NY ISO’s) filing response to FERC’s Order 841, this is still likely unsettled policy and a potential conflict.

Here’s how: Order 841 directs ISOs and RTOs to develop revisions to existing tariffs to open up their wholesale energy, capacity and ancillary services markets to energy storage resources on a nondiscriminatory basis. Grid operators had to submit their compliance filings by Dec. 3. However, in its filing NY ISO does not accommodate dual participation in both retail and wholesale markets. The NY ISO also requested an extension from FERC on the implementation of its new rules for energy storage in the wholesale market to May 2020.

This potential policy inconsistency may take some time to resolve, with strong arguments on both sides of the issue. Being able to participate in the ISO is going to be key to the full implementation of energy storage in New York. However, because the NY ISO is not under the jurisdiction of state agencies the goals outlined within New York’s Energy Storage Roadmap may be difficult to achieve unless participation in the wholesale markets is approved.

Siting Challenges in New York City

Siting storage projects in highly congested areas, such as New York City, has remained a challenge as building and fire codes have not evolved sufficiently to address siting restrictions that impact storage development. One specific problem has been delays resulting from the Fire Department of New York’s permitting processes and concerns about safety and the risk of fire

associated with battery storage. The lack of clarity around standards pertaining to the indoor siting of lithium-ion battery storage systems has limited energy storage projects in the city. This lack of clarity is impacting storage development and thus the potential to meet targets the state has established.

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