

# NY's Vision For Grid Of The Future: Flexible, Open, Affordable

By **Daniel Spitzer and William McLaughlin** (May 16, 2024)

New York state is building upon its efforts at better aligning its regulatory structure with a transforming energy market and the guiding principles first articulated in its "Reforming the Energy Vision," or REV, proceeding.[1]

The state is taking new steps to support and promote the updating of the physical transmission grid, and the needed adaptation of utility business models that have remained largely within a traditional monopoly provider paradigm.

On April 18, the New York Public Service Commission initiated Case 24-E-0165, "Proceeding on Motion of the Commission Regarding the Grid of the Future." [2] This proceeding seeks to jump-start the essential process of grid modernization in New York.

In its order instituting the proceeding, the NYPSC states that the objective of the proceeding is to "unlock innovation and investment to deploy flexible resources ... to achieve [the state's] clean energy goals at a manageable cost and at the highest levels of reliability." [3]

It describes the proceeding "as an opportunity to establish a comprehensive strategy to deliver a more reliable, affordable, and decarbonized grid for all New Yorkers, building upon the investments in a smart and connected grid made to-date." [4]

For the grid of the future, the commission is signaling that it is moving toward more flexible, cost-effective solutions, and that it will be seeking input from a broad spectrum of stakeholders — suggesting potential opportunities for nonutility participation.

In the order, the NYPSC directly acknowledges that the state's progress toward its aggressive greenhouse gas emissions reductions goals is stalling, and lays out objectives including "establish[ing] a clear set of needed grid capabilities," establishing targets for deployment, identifying related investments, and anticipate customer benefits and saving. The commission directs Department of Public Service staff to develop and file the first iteration of the "New York Grid of the Future Plan" by Dec. 31. [5]

The genesis of the Grid of the Future proceeding was Gov. Kathy Hochul's State of the State presentation, which described it as follows:

As economic development projects blossom around the state and more New Yorkers electrify with EVs and heat pumps, New York has a once-in-a-generation opportunity to plan investments that build a truly affordable, resilient and clean grid. Governor Hochul is directing the Department of Public Service to harness innovation by initiating the New York



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Grid of the Future proceeding. The proceeding will identify smart grid technologies that will enable flexible services, like virtual power plants, that can be deployed to achieve our clean energy goals at a manageable cost. This proceeding will deliver a New York Grid of the Future Plan by the end of 2024, laying out clear targets for needed capabilities, required investments, and expected benefits and savings.[6]

In accordance with the governor's objectives, the proceeding will be focused on possible future actions to be taken by the state to promote the timely evolution of the electric grid, and to develop an "actionable framework for evolving the electric system." [7]

The proceeding focuses on the grid's essential role in achieving the decarbonization goals codified in the Climate Leadership and Community Protection Act, together with the specific procurement and investment targets laid out in other REV-related proceedings, such as procuring 10 gigawatts of distributed solar capacity and three GW of energy storage by 2030, and nine GW of offshore wind capacity by 2035.

The Grid of the Future order directs DPS staff to create two documents focused on New York's transition to a "more flexible, affordable, reliable, interconnected, and automated grid [that is] value-driven to ensure that such transition is beneficial to all customers." [8]

The first will be a grid flexibility study to identify potential areas of action. According to the order, grid flexibility services "represent the grid's ability to shift either demand or supply to meet bulk power system and/or local distribution system needs." [9]

Examples given in the order are distributed energy resources and virtual power plants, which are defined as "aggregations of DER that can balance electricity demand and supply and provide utility-scale and utility-grade grid services like a traditional power plant." [10]

Other examples of grid flexible services are demand-response tools; smart meters; thermostats and appliances that help manage demand peaks; improved operations capabilities, such as shorter dispatch intervals and better weather forecasting; and advanced inverters and plant control and communication systems that can, for example, respond to automatic generation control signals and autonomously deliver fast grid-stabilizing frequency response.

The commission set the following specific parameters and goals for the grid flexibility study:

- Assess the present and potential future capabilities of flexible resources;
- Identify, characterize and recommend means and methods for effectively integrating flexible resources into grid planning and operations under a range of different scenarios; and
- Recommend near-term actions to better deploy identified resources.

The scenarios to be examined must address both summer and winter peak loads; consider needs on different levels of the power grid; consider regional differences between upstate and downstate utilities; and identify barriers to resource deployment with estimates for potential deployment under current conditions, and the potential once those barriers have been addressed. [11] This study is scheduled to be complete by Nov. 15.

The Grid of the Future order then turns to the Grid of the Future plan itself. While

acknowledging that the plan will evolve with stakeholder input, the order requires the following initial elements:

- An inventory must be prepared of the resources needed, characterized by the services provided, identifying how much of each resource is needed, who can potentially provide them, how they will be obtained and what the barriers are for obtaining them.
- Building on each utility's distributed system implementation plan, or DSIP, the Grid of the Future plan will determine how the utilities can support the expected needs and innovation for evolution of the grid, with a new or improved DSIP process as the result.
- Financial aspects necessarily play a key role in the plan. First, DPS staff is to recommend new or compensation structures for the flexible resources.
- Second, the plan should show how customer savings and benefits are to be identified and promoted through better price signals on utility bills.
- The needs of market participants such as the New York Independent System Operator and utilities must be identified; the opportunity for changing roles and responsibilities for these participants also must be identified, along with improved interoperability among them.
- Changes in technology and information infrastructure must be accounted for.
- Acknowledging the reality of our times, there must be strict physical security and cybersecurity protocols included.
- DPS staff must address the geographic and temporal variability between upstate and downstate systems involving such matters as transmission, distribution, and environmental constraints, grid configuration differences (i.e., radial vs. meshed), regional demographics, and local laws and moratoriums.
- Finally, recognizing the significant cost implicated by upgrading the grid, the plan must provide for a fair allocation of costs and benefits among customer classes.

The order directs the DPS to complete its work by the end of 2025, but authorizes the secretary of the NYPSC to grant the staff extensions as necessary. The timeline for the work is as follows:

1. DPS staff is to convene at least one technical conference during the second half of 2024.
2. DPS staff is to file the grid flexibility study by Nov. 15.
3. The first draft of the Grid of the Future plan is due no later Dec. 31.
4. After soliciting input and reviewing the first draft of the Grid of the Future plan, staff is to file an updated Grid of the Future plan by Dec. 31, 2025.

With this schedule, NYPSC action approving the plan will not occur before 2026. It is too early to say whether that approval will implement specific programs, or if other proceedings — such as a separate proceeding on virtual power plants or other programs — will commence thereafter.

### **Potential Impacts of the Order**

The order addresses a number of concerns attendant to the state's aggressive energy transition efforts, and continues the REV proceeding's customer-centric focus. The order effectively acknowledges that while existing market structures and incentives have moved New York toward its goals, current provisions may not be delivering a sufficient price signal to developers, utilities and customers to incentivize deployment of the grid flexible resources.

The energy transition, with its significant increase in intermittent generation sources, is increasing flexibility requirements along with variability in generation. The order represents a bold effort at building a road map for integrating market-based incentives and technological improvements in a cost-efficient, resilient grid.

Similar to other REV-related proceedings, the commission is now explicitly recognizing that the energy transition has created a need to evaluate the changing roles and responsibilities of the state's distribution utilities, the New York Independent System Operator and a multitude of new market participants. Moreover, the commission is acknowledging that the grid of the future will be incompatible with the traditional, highly centralized, top-down approaches of the past.

The NYPSC states that the foundational context for the Grid of the Future plan will be significant investment by investor-owned utilities and flexible resource providers, which also produce tangible customer benefits.[12] And efforts will build specifically upon the DSIP recently prepared by New York's investor-owned utilities.

As a consequence, utilities will play a key role implementing whichever programs arise out of the Grid of the Future proceeding — we expect them to push to be the dominant provider of solutions — which may include further efforts to chip away at prior NYPSC divestiture orders. But the commission also indicates that it is seeking to develop a framework for engaging stakeholders in future and revised DSIPs.

The commission has further stated that stakeholders must include utility customers, grid owners, planners, and operators, as well as DER developers, owners, operators, and aggregators. Accordingly, it is signaling that the grid of the future will rely less upon the existing methods for identifying upgrades, and instead seek to incorporate flexible solutions that ensure reliable operation at a reasonable cost.

This suggests that there will be significant opportunities for third-party software and physical solutions, including renewable energy generators and energy storage companies, and those providing energy efficiency, demand response management, and other load reduction alternatives to offer solutions.

Stakeholders should begin preparing now to present innovative solutions to the DPS during the yet-to-be scheduled technical conference, to ensure that novel and cost-effective solutions and innovations are incorporated into the discussion early.

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[1] New York Public Service Commission, Case 14-M-0101, Reforming the Energy Vision, Order Instituting proceeding (REV Order), April 25, 2014.

[2] New York Public Service Commission, Case 24-E-0165, Proceeding on Motion of the Commission Regarding the Grid of the Future, Order Instituting Proceeding, April 18, 2024.

[3] *Id.* at 3.

[4] *Id.*

[5] *Id.*, at 4.

[6] Gov. Kathy Hochul, State of the State 2024 Book, at 97.

[7] Grid Order, at 11-12.

[8] *Id.*

[9] Grid Order, fn 11.

[10] Grid Order at 3, fn. 4. The definition is taken from U.S. Department of Energy's Pathways to Commercial Lift Off: Virtual Power Plants, September 2023, available at: [https://liftoff.energy.gov/wpcontent/uploads/2023/10/LIFTOFF\\_DOE\\_VVP\\_10062023\\_v4.pdf](https://liftoff.energy.gov/wpcontent/uploads/2023/10/LIFTOFF_DOE_VVP_10062023_v4.pdf).

[11] Grid Order, at 13.

[12] Grid Order, at 12.