



James T. Gallagher
Executive Director

By Electronic Mail

Hon. Kathleen H. Burgess
Secretary to the Commission
New York State Public Service Commission
Empire State Plaza
Agency Building 3
Albany, New York 12223-1350

September 10, 2018

Re: Case 18-E-0130 – In the Matter of Energy Storage Deployment Program

Dear Secretary Burgess,

Enclosed, please find comments submitted by the New York State Smart Grid Consortium in relation to the New York State Energy Storage Roadmap and Department of Public Service (DPS)/ New York State Energy Research and Development Authority (NYSERDA) Staff Recommendations.

Please let us know if you have any questions or need any further information.

Sincerely,

A handwritten signature in blue ink, appearing to read "James T. Gallagher".

James T. Gallagher
646-472-2064

**New York State
Public Service Commission**

In the Matter of Energy Storage Deployment Program

Case 18-E-0130

September 10, 2018

New York State Smart Grid Consortium

New York State Energy Storage Roadmap -- Comments on Prioritizing Goals and Milestones, Improving Accountability and Transparency, Ensuring Program Cost Effectiveness, and Improving Integrated Distribution and Transmission Planning to Optimize the Use of Energy Storage Technologies

The New York State Smart Grid Consortium (Consortium) applauds the State of New York for establishing the aggressive goals and timetable outlined in the New York State Energy Storage Roadmap (the “Roadmap”), and we recognize it as an important step in achieving the aggressive energy and environmental goals established by Governor Cuomo. In an effort to improve the Roadmap and to ensure its ultimate effectiveness, we submit comments in four specific areas.

- The need to clarify and prioritize overall program goals
- The importance of accountability and transparency
- Ensuring program cost effectiveness – on a project by project and overall program basis
- Improving integrated distribution and transmission planning to properly consider energy storage impacts

1) The Need to Clarify and Prioritize Program Goals and Associated Milestones

To realize the stated end-state vision and goals, the Roadmap recommends a range of policy, regulatory and programmatic actions for consideration and implementation in the near to medium term (2019-25). These actions fall into over seven broad categories, which include, among others, investor owned utility (“IOU”) and public power authority actions, retail rate design changes, direct utility procurement approaches, incentive strategies, and recommended wholesale market and NYISO actions. The document also identifies high level milestones, but only through the year 2019. Overall there are hundreds of specific recommended actions and called for steps outlined in the document, ranging from encouraging the IOUs to clarify their roles and business models, to having utilities align their corporate incentives to be consistent with these clarified roles and business models, to better valuing the system and environmental impacts of energy storage and other forms of DER, to encouraging utilities to accelerate the

implementation of AMI, creating new portals for DER providers to access customer data, recommending that the NYISO take certain actions to ensure the greater utilization and penetration of energy storage, and even including recommendations directing DPS and NYSERDA staff to continue active participation in various industry working groups.

There is merit in many of the specific recommended actions, however, the document is more an exhaustive inventory of to do items rather than a true strategic plan that identifies and prioritizes the most important milestones that must be achieved with the specific recommended timing and sequence of accomplishments. As a result, it is very likely that staff, utility and stakeholder resources are going to be overextended, working on too many overlapping initiatives, including some concepts being addressed in other proceedings before the Commission. In retrospect, it is important that we learn from the Commission's Reforming the Energy Vision Proceeding, in which Staff and the parties were overextended, spread incredibly thin trying to simultaneously accomplish a myriad of tasks, without always having the proper sense of priorities.

We strongly recommend that the Commission take the steps necessary to turn this document into a true strategic roadmap by identifying the specific highest priority milestones it wants to see achieved in each of the next five years. Without getting mired down in the details of hundreds of specific recommendations and action steps, it is better to first identify the highest priority goals that the Commission believes need to be achieved, and when they need to be achieved to ensure the achievement of the Storage Initiative's ultimate goals and vision. The NYS Smart Grid Consortium, representing a broad range of entities involved in grid modernization in New York State, would be happy work with the Staff of the PSC to engage stakeholders to prepare preliminary recommendations regarding the highest priority milestones with a timeline for their achievement.

2) Transparency and Accountability

In Section 4.8 , Accountability, Staff recommends that the Commission Order establish accountability over those responsible for achieving the 2025 and 2030 storage targets, including NYSERDA, the investor owned utilities, and LIPA/PSEG. Staff further recommends that to facilitate any such review of performance that DPS and NYSERDA Staff provide the Commission annually with a “State of Storage” Report that presents progress towards achieving the storage targets, identifies impediments leading to slow deployment, as well as corrective paths for ensuring milestones and targets are reached. We believe it is essential that the referenced State of Storage report be publicly available on a specified schedule to ensure complete transparency. Further, and as described above, the goals and milestones included in this annual report should be prioritized to highlight progress towards achieving the truly essential actions that need to be accomplished each year to achieve the ultimate goals and vision of the Energy Storage initiative.

3) Ensuring Energy Storage Program cost-effectiveness on an overall and individual customer sited project basis.

Section 4.0, pg 31 of the Roadmap states that the overall approach envisioned in its implementation is to:

“... develop rates, rules and program designs that enable all potentially valuable technology or resource types to participate effectively in the market by purposefully and specifically addressing barriers that impede the technology or resource types. This will allow for technology-agnostic competition among technology (or technology-combination) solutions to achieve the best value for the system based on cost, value, functionality and timing.”

We believe this is an excellent objective, however, care will especially need to be taken when considering individual energy storage projects on a customer-sited basis. As noted on page 27:

Individual load shapes determine how much bill savings benefit customers will realize. Higher benefits are realized if a customer’s peak demand overlaps with the time period of peak charges; is short enough that the storage can flatten this peak; and is high enough that the customer would otherwise see a high demand charge. Customers with longer and flatter load shapes will capture lower benefits.

It will be essential that care be taken when assessing the available technologies to address an individual customer's unique load profile situation, through required energy audits or some other customer sited technology screening mechanism, that the least cost and most effective technology option for that specific application is identified and chosen for implementation. In some cases there may be technology options other than energy storage that are far more economic in such high coincident load profile situations. For example, it may be more appropriate to consider other potentially lower cost energy efficiency or energy management options in an effort to reduce the customer's peak demand and to improve that customer's overall load shape. To fail to do so could result in a substantial overinvestment in energy storage when other technology options might have improved that specific customer's load shape at a much lower cost. In addition, where energy storage has been identified as the best technology to meet a specific grid need, we recommend prioritizing policy actions that encourage deployment of distribution and bulk system storage systems which can effectively address coincident peak and other electrical system needs, as opposed to customer sited behind-the-meter systems that tend to benefit fewer customers. This assumes also that the proposed distribution and bulk system storage applications are shown to be more cost effective than individual customer sited storage options on an overall basis. This should be monitored and evaluated closely, to ensure the policy actions result in the optimal balance between customer sited and distribution/bulk system energy storage needs.

This also underscores the need to first improve customer retail delivery rates, as called for on page 32, to ensure they are providing more accurate price signals that correspond to the true system wide and locational value of peak load. Further, it is essential that customer incentives be made available not only for energy storage options, but also for competing energy efficiency or load management technology options that address the same need.

4) Improving Integrated Distribution and Transmission Planning to Optimize the Use of Energy Storage Technologies

Since 2015 , along with our partner Prosumer Grid of Atlanta Georgia, the NYS Smart Grid Consortium has been working with several New York utilities and their California counterparts on an U.S. Department of Energy ARPA-E funded project to develop a highly specialized and interactive software tool capable of simulating the operation of emerging Distribution System Platforms (DSPs) at the physical, information, and market levels. The software offers electricity industry analysts, engineers, economists, and policy makers a “design studio environment” in which various propositions of roles, market rules, rates, processes, and services can be studied to achieve a robust DSP design.

The software provides a number of urgently needed, but currently unavailable simulation capabilities including:

- a) Decentralized energy scheduling able to model active, DER-rich subsystems, including energy storage.
- b) Explicit modeling of DER services transacted in the market.
- c) Locational and time-vector pricing of active/reactive power, ancillary, and security services.
- d) Explicit modeling, analytics, and valuation of DER services, DSP rules and business models.
- e) Simulation of the DSP interactions with up-stream ISO, same level DSPs, and downstream (microgrid, building, and home) prosumer subsystems.

We are now nearing completion of the simulation tool. In addition to test simulations that are being carried out using actual grid data provided by Con Edison, National Grid and Avangrid, the simulation tool is now being utilized by the Consortium and Prosumer Grid in Puerto Rico, where we are developing a long range plan for the redesign of the Puerto Rico Electric Power Authority’s (PREPA) distribution and transmission grid (the analysis is being funded entirely by

the Consortium, at no cost to PREPA or Puerto Rico). One of the critical tasks we are performing for PREPA , through targeted use cases, is identification of the optimal sizing and location of distribution and bulk system energy storage. These same types of analyses would be extremely beneficial for the New York State power grid.

The New York Commission and Staff have been very supportive of this project from the beginning, and although there is little if any mention of enhanced grid planning and simulation tools in the Storage Roadmap, we wish to encourage continued support for these efforts, and believe that somewhere within the roadmap there should be recognition and Commission expectation of the need to continue the expeditious development and application of such tools.