STRATEGIC MANAGEMENT GROUP

Harnessing Nature to Create Positive Change

VIA ELECTRONIC FILING

March 20, 2023

Hon. Michelle L. Phillips
Secretary
New York State Public Service Commission
Empire State Plaza, Agency Building 3
Albany, New York 12223-1350

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

Dear Secretary Phillips:

I am a proven developer who is a consultant embedded into Hanwha 174 Power Global to develop the largest energy storage system in New York with a Con Edison contract and slated to start construction soon on a NYPA parcel on a brownfield site that once hosted the Poletti Power Plant. Having been on the cutting edge developing this utility scale project over the last three years, I am submitting this letter to provide guidance to the plan entitled ***New York's 6 GW Energy Storage Roadmap: Policy Options for Continued Growth in Energy Storage*** inviting public comments on December 28, 2022.

I appreciate the opportunity to share these comments and can be reached at kellysarber@hotmail.com or by phone at 760.613.5994.

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Strategic Project Management, Inc. (SPM) strongly supports Staff's analysis and recommends that the Commission adopt a new energy storage deployment goal of 6 GW by 2030. The State will need approximately 12 GW of energy storage by 2040 and more than 17 GW by 2050 to achieve a decarbonized electric grid, as required by the Climate Leadership and Community Protection Act (CLCPA). These findings are consistent with other recent studies (cite NYISO and Scoping Plan with integration analysis) which have found the need for similar levels of energy storage on the State's grid. Acting now to establish a new 2030 goal and programs to achieve it, the State and developers will have the opportunity to leverage the Federal Investment Tax Credit, in tandem with new State funding mechanisms, thus putting the State on a path to meet the State's long-term energy storage needs in a timely and cost-effective manner.

I further recommend that the Commission direct a continual annual review of progress toward the new target, and DPS and NYSERDA Staff to continue to work with industry to identify and remove deployment barriers, adjust programs where necessary and advance new initiatives. Market conditions can change rapidly and impede project deployment. By working together with industry to continually monitor and evaluate program results, the Commission and Staff can better ensure long term market certainty and chart a smooth course toward the 2040 decarbonized grid goals.

SPM recommends the Commission confirm that if any of the projects under current contracts are withdrawn ("project attrition"), the MW's and funding assigned to those projects should be rolled into the new proposed programs, in their respective categories, and that the proposed procurement timelines should be adjusted accordingly to capture these additional projects MWs. In addition, I recommend that NYSERDA size program solicitations to include an attrition rate, recognizing that 100% of projects are not likely to be completed for a variety of reasons. Incorporating project attrition in program solicitations will help to ensure that the programs reach the 6 GW target by 2030.

I strongly agree with Staff's recommendation to establish a new Index Storage Credit Program, mirrored after the State's successful large-scale renewable procurement program, with NYSERDA administering competitive solicitations. The ISC program offers projects finance-ability, is compatible with markets and provides greater revenue certainty to developers through financial hedging. The ISC will lower project risks and project costs and impacts to ratepayers.

The program should funded through bill collections from New York's Load-Serving Entities (LSEs) consistent with their proportion of the load, as is the case with NYSERDA's large-scale renewables and offshore wind Index (O)REC programs. To maximize the system benefits of the ISC program, NYPA and LIPA should participate in the program and accept ISC obligations in proportion to their load share. This will streamline bulk procurement statewide and send a strong and unified State signal to industry, reducing administrative costs and thus benefit ratepayers.

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I commend Staff for recognizing the role of both 4-hour and 8-hour energy storage systems and including these systems in the proposed bulk procurement program and urge NYSERDA to annually assess these needs for 4 and 8-hour systems in advance of program solicitations. I also urge the Commission to provide NYSERDA flexibility to consider procuring other system durations, such as 6-hour or more than 8 hours, as market conditions, grid needs and technology readiness evolve. Similar to California, the State should look for pilot projects to assist promising technologies move through smaller projects to scale to commercial operations.

In support of NY-BEST comments, I recommend that the Reference Price reflect realistic assumptions of what a well-performing system could actually earn in the energy and capacity markets and also request the full transparency on the specific sources and formulas used for reference price calculations. It is critical for industry to understand the sources of data to successfully participate in the program.

a. Incorporate Roundtrip Efficiency - Importantly, I disagree with Staff's recommendation to exclude Round Trip Efficiency (RTE) in the REAP calculation and urge the Commission to incorporate an RTE factor in the REAP calculation. Since energy storage systems have RTE less than 100%, some spreads will not be sufficient to generate positive arbitrage revenue. If an RTE factor is not incorporated, the REAP calculation may include hours where the arbitrage spread is only 10-15 %. In that case, the REAP will erroneously assume revenue that is unrealizable for most energy storage systems. For example, with a 4-hour 85% efficient system, a spread of $55/MWh high price and $50/MWh low price would not generate positive $5.00. Rather, because the system must purchase 15% more energy at $50 to sell a unit of energy at $55, the arbitrage would actually lose $3.82 in this example. This effect is a threshold issue, not simply a scaling issue, as it could be binary for many days and would be difficult to address through an adjustment in the Strike price.

To address Staff's concerns about the complexity of calculating round trip efficiency, I recommend that the RTE factor be a uniform assumption that is part of the monthly Index Storage Credit calculation and further suggest an 85% RTE as a reasonable assumption for 4-hour systems.

b. 8- hour Energy arbitrage reference price - Developing a reference price that accurately reflects the potential energy arbitrage revenue for eight-hour systems is more complex than for four-hour systems. Many different technologies with substantially different attributes may be competitive at 8-hour duration. Li ion batteries can be deployed with 8-hour duration and will typically have very high round-trip efficiency (RTE). Other technologies may offer lower capital cost systems than Li ion, but frequently with lower RTE. While higher RTE is generally preferable, the lower cost, the potential to scale to even longer duration and other attributes can make these technologies competitive or even preferable depending on the system needs.

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In addition to 8-hour system offerings likely having a wider range of RTEs, the effect of RTE is amplified in an 8-hour arbitrage ("TB8") because the spread in price will be lower for the last four hours. This means that there is a higher likelihood of the energy arbitrage of some of the hours being non-economical with lower RTE. To put this in perspective, an energy storage system that charges and discharges at the same rate and has a 60% RTE will need to charge for 13.3 hours in order to discharge for 8 hours. A straight TB8 calculation would not account for the charging cost of the extra 5.3 hours and would substantially inflate the reference price for the system.

Overestimating the reference price would either disadvantage those systems or pass the risk premium associated with the inaccurate reference price to consumers. Several suggestions have been advanced for different alternatives:

i. Create reference price based on individual project RTE. This method is employed in California by PG&E and increases accuracy but at the expense of complexity.

ii. Split the difference in RTE to have a standard RTE in the mid-range of those anticipated, say 70%. While not an ideal model or hedge for any single project this approach shares the risk more evenly.

iii. Stay with same RTE as four-hour reference price and accept that some risk premium must be included in the strike price for lower RTE systems.

iv. Calculate the energy arbitrage reference price based on only arbitraging the top four hours. This removes the hedge on the full-time window but also eliminates much of the risk from inaccurate reference price.

I recommend that the State consider this issue in the program design phase of the ISC and work with industry to develop the appropriate reference energy arbitrage price for eight-hour systems.

I also recommend that NYSERDA consider establishing a limitation on liability with respect to monthly payment to NYSERDA required from the project, in the instance where the Reference Price exceeds the Strike price. This could be achieved through different methods such as: establishing the limit as the negative strike price value, capping the maximum monthly payment at a preset value (for example 300 % of the project's strike price for the month or period) or by capping the liability at the actual project revenues minus the Strike Price. This type of limitation would address financing risk while also protecting and providing benefits to ratepayers as the lack of a payment cap could materially increase financing costs.

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The Roadmap notes that a number of future reforms to commodity markets relevant to energy storage are either under consideration or underway at the NYISO. These reforms could result in unforeseen changes to the types and level of compensation storage projects receive for their services. NYSERDA and DPS Staff recommend that ISC contracts be structured to enable amendments to the ISC formula if future reforms to the commodity markets result in unforeseen compensation changes.

SPM Inc. recommends that contract language should be tightly structured to respond to significant market changes over a sustained period and should minimize project financing concerns. No one appreciates this issue more then what has happened on our project in Astoria, with struggles related to supply chain, inflation and other unprecedented cost overrides that we struggle to address under the current contract construct. Further, I recommend that such language be limited to respond only to reforms that result in significant and sustained increases or decreases to compensation levels, not simply be a temporary or short-term deviation, and allow either party to trigger contract re-opening in such an event.

The Roadmap recommends that the ISC program include non-price evaluation factors such as project viability, economic benefits, and societal benefits, including the extent to which the proposed project would drive reductions in the use of fossil fuel peakers. NYSERDA and DPS Staff recommend that non-price factors with further specifics on the evaluation factors be developed by NYSERDA for each solicitation. In particular, developers are investing millions of dollars on projects in their pipeline due to the State wanting to attract private vendors; companies should be rewarded for this investment.

That means that I agree that non-price factors should be included in bid evaluation according to the following specific suggestions:

- Project viability/maturity – I recommend that bonus points be awarded for projects that have achieved certain maturity/viability thresholds. This could include awarding bonus points to projects that have advanced through the Class Year process and have accepted cost allocation or projects that have completed a system impact study. For projects larger that 80 MW, it could include receipt of a Certificate of Public Convenience and Need from DPS and for projects smaller that 80 MW it could include receipt of local permits.

- Reduced reliance on peakers - projects located in Zones J and K and in Con Edison and LIPA services territories, or projects outside these zones/territories that can demonstrate their ability to reduce the need for peakers at times of peak load, should receive bonus credits. Many peakers are currently situated in load pockets which, even with planned transmission build out, may extend peaker operations longer than is desired by the State. Installation of storage that can serve these locations reduces the need for peakers to meet peak load and increases the likelihood these assets will be approved by the NYISO for retirement, thus benefitting local DACs by displacing the emissions produced by these facilities.

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- Project Diversity – ensuring that the projects selected in the ISC solicitations are diverse will enhance the likelihood of overall program success. Project diversity could include many different factors such as: project size diversity, locational diversity, developer diversity, technology diversity. These factors provide flexibility and may help protect against unforeseen challenges that could slow or limit project development.

Given that NYISO interconnection costs can sometimes vary greatly from initial estimates, we recommend that the ISC program provide the developer a one-time option to not accept cost allocation and reapply in following Class Year. This would essentially provide the project with COD flexibility. The Commission and Staff should consider developing an interconnection cost sharing approach similar to that provided under the OREC program, whereby a one-time adjustment to the ISC would be permitted to share the project's actual interconnection costs, if they are above a certain level, with NYSERDA.

Given that distribution-connected storage projects greater than 5 MW will be subject to retail charging rates, to help this sector, I encourage NYSERDA to consider how these projects will participate in the Index Storage Credit competitively. In the previous iteration of Bulk Storage Incentive Program, 5-20 MW projects had a different incentive level than larger, transmission-connected projects in recognition of the different cost realities and of the benefits these smaller project provide. These projects can provide unique benefits including being able to site close to load, providing distribution benefits, and shorter typical interconnection timelines. Therefore, I encourage NYSERDA to provide a path to market for distribution-connected storage greater than 5 MW.

AS the largest project under contract with Con Edison on property owned by NYPA, I support NY-BEST's recommendation that the required JU bulk storage dispatch rights procurements be continued and that the JU be required to meet the MW procurement amounts included in the 2018 Energy Storage Order. As a supporter of the Commission's recently approved changes to the JU storage procurements, this increased flexibility will improve the success rate for these solicitations.

Under NYISO's current transmission planning rules, SATA is not permitted to complement traditional transmission solutions or be a component of a broader solution set.

For example and as the Roadmap notes, a proposal that included energy storage was removed from consideration in the ongoing Long Island Offshore Wind Export Public Policy Transmission Need because the NYISO tariff does not include provisions for evaluating or considering storage as transmission. In response to NYSER and NY-BEST's proposal of the work plan project and strong stakeholder support, the NYISO has committed storage as transmission to Issue Discovery for 2023. However, as of the date of the filing of these comments in late March 2023, the NYISO has not initiated its SATA Issue Discovery project. In contrast, other RTO/ISOs in the United States have already adopted or are promulgating SATA rules including MISO, SPP, ISO-NE and CAISO.

Because of the important of this as a market signal, I recommend that the DPS and NYSERDA request NYISO to expedite its issue discovery project and following that, initiate a project to make tariff changes required to incorporate SATA in its interconnection and regional transmission planning processes. This should include the Public Policy Transmission Planning Process, as well as timely adoption of a cost

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recovery/allocation mechanism. SATA is notably absent from state level transmission planning. At the state level, there have been numerous recent transmission approvals including the $4.4 billion of utility Phase 2A transmission projects authorized by the PSC on February 16, 2023. The lack of a meaningful approach to SATA is potentially creating significant unnecessary costs to ratepayers.

Storage as transmission should be open to independent developers. While I agree with Staff's recommendation that the Joint Utilities should be directed study the potential of energy storage to provide non-market transmission and distribution services, these projects should not be limited solely to utility ownership. The greatest opportunity for SATA to provide cost-effective transmission services is if independent developers are allowed to compete.

To ensure the incorporation of SATA in transmission planning as well as competition, I recommend that the JU be directed to modify the Coordinated Grid Planning Process (CGPP) proposal to ensure the third-party developers have meaningful opportunities to provide storage as transmission/NWAs to utilities to meet local transmission needs arising from the process to ensure the lowest cost and greatest benefits to ratepayers. It is critical that the State lead on storage transmission to not only increase the deployment of energy storage but also cost effectively and expeditiously achieve its broader policy goals including the CLCPA.

I disagrees with Staff's recommendation that any SATA projects should be counted toward the 6 GW goal. The 6 GW goal and modeling of storage needs beyond 6 GW to support the decarbonization of the electricity grid did not include SATA. Any application of SATA to displace T&D investments is an addition use of storage beyond the needs that drove the 6 GW target and therefore should not be subtracted from assets being deployed to meet that goal. Therefore, I recommend that SATA deployments should not be counted against the 6 GW goal or displace projects being implemented to achieve the goal. Should the Commission disagree and decide to reduce programs based on SATA deployment, we further recommend that any reduction only occur based on contracted projects not on plans.

In conclusion, I appreciate the comprehensive and thoughtful Roadmap proposed by DPS and NYSERDA Staff and Staff's outreach to industry to obtain insights and market experience to inform the Roadmap. My clients including 174 Power Global support the proposed Energy Storage Roadmap and urges the Commission to act expeditiously to issue an Order to adopt a new energy storage goal of 6 GW by 2030, approve the Roadmap and the programs – with our suggested modifications - that are necessary to implement it. I stand ready to assist the Commission and Staff with any questions you may have on these comments. Thank you for the opportunity to share my input and feedback.

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