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VIA EMAIL

TO: Mr. Paul Hibbard and Mr. Todd Schatzki
Analysis Group
111 Huntington Avenue, 14th Floor
Boston MA 02199

Mr. Zachary Smith and Ms. Maddy Mohrman
New York Independent System Operator, Inc.
10 Krey Blvd.
Rensselaer NY 12144

RE: Demand Curve Reset Energy Storage Modeling Assumptions

Dear colleagues,

The New York Battery and Energy Storage Technology Consortium (NY-BEST) is a not-for-profit industry trade association with a mission to grow the energy storage industry in New York. We act as a voice of the energy storage industry for more than 180 member organizations on matters related to advanced batteries and energy storage technologies. Our membership includes global corporations, start-ups, project developers, leading research institutions and universities, and numerous companies involved in the electricity and transportation sectors.¹

NY-BEST thanks the Analysis Group (AG) and the NYISO for their diligent efforts in the 2025-2029 Demand Curve Reset Period process (DCRP) to examine the costs for eligible technologies, calculate the net cost of new entry (Net CONE) for such technologies, and recommend the proxy plant for

¹ NY-BEST comments represent the interests of the organization as a whole and not the views of any single member. Our members have diverse interests and the organization's views are intended to be reflective of the energy storage industry collectively.

each Locality in the NYISO's capacity market. NY-BEST provides the following comments in response to the draft report presented by AG on June 17, 2024.²

While we commend AG for their thorough analysis, we are seriously concerned about the selection of a 2-hour battery as the proxy for the Demand Curve Reset. This is problematic for three key reasons:

1. The analysis justifying the selection of a 2-hour battery as the proxy unit does not incorporate projections of future costs and capacity prices.

AG has not considered how the capacity value of the unit will change going forward based on expected deployment of renewable and storage resources. NYISO's analysis has been clear: the Capacity Accreditation Factor ("CAF") of 2-hour systems will drop faster than 4-hour and 8-hour batteries as more renewables and storage are deployed. Indeed, a 2021 report by AG indicated that the 2-hour battery CAF would become half of the 4-hour battery CAF with only a 2% reduction in peak load.³ Thus, the lower Net CONE currently enjoyed by the 2-hour battery compared to the 4-hour battery is temporary. While AG's recent DCRP analysis may indicate that a 2-hour battery is the cheapest proxy unit today, it does not account for the future reduction in UCAP associated with the imminent drop in the CAF.

Given that the amortization period used in the analysis is 15 years, NY-BEST recommends AG consider integrating a 15-year CAF forecast into the analysis. It is likely that accounting for the high risk of declining capacity prices for a 2-hour battery over the life of the project would result in a 4- or 8-hour battery being the least expensive proxy unit in the long term. If it is impractical to incorporate a full longer term model, then at the least a method to properly account for and incorporate a risk premium needs be incorporated into the analysis. NY-BEST strongly recommends AG properly incorporate the expected decline in UCAP, which is presently one of the most significant considerations of developers and financiers, into their analysis.

2. Choosing a 2-hour battery as the proxy will contribute to volatility in the capacity market.

If a 2-hour battery is chosen as the proxy but CAFs decline precipitously within the next four years, capacity prices will likely increase towards the maximum clearing price to compensate for this decline. In the subsequent DCRP, a 2-hour battery is unlikely to be selected as the proxy, potentially resulting in an abrupt drop in capacity prices as the demand curve is determined based on a new, lower cost proxy unit. This volatility would contribute to instability in the market and discourage the rapid deployment of clean energy technologies needed to achieve the mandates of the Climate Act.

² Analysis Group, Inc., "Independent Consultant Study to Establish New York ICAP Demand Curve Parameters for the 2025/2026 through 2028/2029 Capability Years," June 17, 2024. Accessed online: <https://www.nyiso.com/documents/20142/45393991/Analysis-Group-2025-2029-DCR-Draft-Report-Revised.pdf/ff05ff6a-47cb-7f3a-dd76-79633715bde6>.

³ Analysis Group, Inc., "Modifications to the BSM Construct in the NYISO Capacity Market," November 2021. Accessed online: <https://www.nyiso.com/documents/20142/25957407/AG%20BSM%20Report%20Draft%20and%20Appendix%20A%202021.11.01.pdf/e451a309-a5a6-87a8-508a-e37cc44fcf94>.

3. In practice, 2-hour batteries are unlikely to be built in New York.

Given the anticipated decline in the CAF of 2-hour batteries, developers are unlikely to build 2-hour storage systems that are dependent on capacity values. Indeed, across all ISOs and regulated markets, 2-hour batteries tend to be developed in markets where capacity is not expected to be a material source of revenue for periods beyond the initial several years. Given the long development timeline of the NYISO market, developers will want to ensure that the capital is only deployed for projects with clear visibility on return; this is not the case for 2-hour batteries deployed as a capacity resource.

Further, in response to the New York Public Service Commission's recent Order Establishing Updated Energy Storage Goal and Deployment Policy, NYSERDA is unlikely to fund bulk 2-hour storage as part of the Index Storage Credit (ISC) program, particularly as the Energy Storage Roadmap analysis finds that storage durations of no less than 4 hours and exceeding 8 hours will be necessary for New York to meet the requirements of the Climate Act. Comments submitted by the New York State Reliability Council in the Roadmap proceeding likewise conclude that energy storage of durations less than 4 hours will not be sufficient to cover more than half of modeled reliability events.⁴ In addition, there is a significant risk that funding 2-hour battery projects will incur a higher expense to the State, as ISC payments would increase as the CAF declines. Choosing a 2-hour battery as the proxy unit is thus misaligned with State targets to deploy longer-duration resources that have more certain revenue streams over the long term.

In addition, there are four key areas where NY-BEST believes the energy storage modeling inputs as currently written do not accurately reflect the cost of energy storage development and must be adjusted to ensure accurate and reasonable outcomes from the DCRP:

1. Sales Tax Exemption

AG has assumed an as-of-right sales tax exemption for energy storage projects. This is inaccurate. While local Economic Development Corporations and/or Industrial Development Authorities do provide discretionary sales tax abatements, these are not guaranteed. Indeed, one developer alone reports having approximately 50 MW of paid interconnection positions that are ineligible for a sales tax exemption. Further, while AG assumes the benefits are received at zero cost and that they extend throughout the entire operational life of the project, in reality these discretionary exemptions end upon commercial operation and come with significant fees and Payment In Lieu Of Taxes (PILOT) requirements that can amount to hundreds of thousands of dollars. NY-BEST recommends that AG include sales tax in all modeling of energy storage projects. At the very least, AG should not assume a full exemption, to account for the cost of achieving the discretionary benefit.

2. Investment Tax Credit (ITC) Costs

⁴ Docket No. 18-E-0130, Order Establishing Updated Energy Storage Goal and Deployment Policy, at 31.

AG has assumed a 30% ITC for all energy storage project components. This is overly generous, particularly as not all energy storage costs are eligible for ITC benefits. For example, System Upgrade Facilities (SUFs), ground lease payments, required landscaping or building improvements, etc, all represent significant project costs that are not eligible for the ITC. NY-BEST therefore requests that AG provide a full break-out of costs assumed to qualify for the ITC.

AG has also disregarded the cost and timing of monetizing the ITC, given the limited tax liability of project developers and misalignment between capital expenditures and ITC realization. Currently, the model assumes that the developer can monetize the ITC when capital costs are incurred, but the ITC is only available after the Commercial Operation Date (COD). This assumption therefore underestimates the Allowance for Funds Used During Construction (AFUDC) and Overnight Capital Costs that will be required during the pre-COD term. Further, research has found that transferred tax credits typically sold at 89 to 95 cents on the dollar in 2023, rather than the 100 cents on the dollar assumed by AG.⁵

Finally, AG has not considered transaction-related costs to obtaining the ITC. For example, last year, 74% of credit transfers included insurance coverage for the buyer.⁶ Tax credit insurance premiums are generally between 2% and 3% of the limit purchased, but can reach up to 5% for non-credit type risk premiums.⁷ Unavoidable costs relating to insurance, legal, and accounting should all be considered when evaluating the benefits provided by the ITC to energy storage projects.

For these reasons, NY-BEST recommends AG lower the assumed value of the ITC to account for these real costs.

3. After-Tax Weighted Average Cost of Capital (ATWACC)

AG assumes that all proxy units can be financed with a 6.7% COD and 14% COE, with an ATWACC of 8.76% in NYC and 9.02% everywhere else. However, financing of both 2-hour and 4-hour BESS proxy units on a merchant, single asset basis cannot reasonably be achieved under these terms; these assumptions do not reflect current market dynamics or the financing costs of developers doing business in the New York market. Indeed, the Brattle Group's recent analysis for PJM recommended increasing the ATWACC from 8.85% in 2022 to 10.0% in 2024, based on the sample of representative companies and an assumed COD of

⁵ Congressional Research Service, "Tax Credit Transfers and Direct Payments in the Inflation Reduction Act of 2022." February 26, 2024. Accessed online: <https://crsreports.congress.gov/product/pdf/IF/IF12596>.

⁶ Ibid.

⁷ Brown & Brown, "Inflation Reduction Act Key Renewable Energy Tax Credit Initiatives." 2022. Accessed online: <https://www.bbrowne.com/wp-content/uploads/2022/09/White-Paper-IRA-Key-Renewable-Energy-Tax-Credit-Initiatives-Brown-Brown.pdf>.

6.9% and COE of 16.1%.⁸ In ERCOT, the Brattle Group is recommending an increase from 8.85% to 10.35%.⁹ NY-BEST recommends AG align with the current state of the market by increasing the assumed ATWACC accordingly. Alternatively, NYISO could engage a third party to conduct a separate analysis and recommend a new method for calculating the cost of single asset financing on a fully merchant basis.

4. Fixed O&M

AG has assumed the same O&M costs regardless of the project location, with the exception of site lease and insurance costs. However, the costs and requirements for operating and maintaining a battery in New York City are significantly higher than in the rest of New York State. For example, NYC Fire Department (FDNY) requirements unique to NYC that directly increase Fixed O&M costs include:

- All fire protection systems associated with an energy storage system must be monitored 24/7 by an approved central station;
- A designated Certificate of Fitness holder must be available via phone immediately and onsite within two hours in the event of an emergency; and
- Additional fire and gas detection and sprinkler system requirements must be incorporated into the project design.

Prevailing wage requirements are also significantly higher in NYC than in the rest of the State, further increasing O&M costs in the locality.

Additionally, AG assumes that energy storage facilities will be remotely monitored by existing Owner staff, and therefore assumes no labor personnel costs. While BESS can technically be operated remotely, on site employees are still required to manage the day to day operations, and a project that is assumed to be developed on a merchant, single asset basis cannot be assumed to have existing staff. Even if the project were to be financed on a portfolio basis and utilize existing staff, there would be incremental O&M costs for shared staffing services allocated to the project's economics.

NY-BEST recommends that AG incorporate higher Fixed O&M costs for all energy storage systems, and especially for projects interconnecting into Zone J.

NY-BEST appreciates the work by AG and the NYISO to update the Demand Curve to reflect a changing economic and technological landscape. As discussed above, NY-BEST urges the AG to update their modeling assumptions to ensure the DCRP process accurately reflects existing market conditions for energy storage.

⁸ The Brattle Group, "May-June 2024 ATWACC and Annual Automatic Update Methodology," June 19, 2024. Accessed online: [https://www.pjm.com/-/media/committees groups/committees/mic/2024/20240605/20240605-item-02b---atwacc-and-annual-automatic-update-methodology-education---brattle.ashx](https://www.pjm.com/-/media/committees%20groups/committees/mic/2024/20240605/20240605-item-02b---atwacc-and-annual-automatic-update-methodology-education---brattle.ashx).

⁹ The Brattle Group, "ERCOT CONE Study Draft," May 24, 2024. Accessed online: https://www.ercot.com/files/docs/2024/05/21/3_SAWG_Draft-CONE-Results_5-24-2024.pptx

We stand ready to assist with any questions you may have on these comments. Thank you for the opportunity to share our input and feedback.

Sincerely,

A handwritten signature in cursive script that reads "William Acker".

Dr. William Acker
Executive Director
NY-BEST