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VIA ELECTRONIC FILING

TO: State Energy Plan Comments
NYSERDA
17 Columbia Circle
Albany, NY 12203-6399

RE: NY-BEST Comments on the Draft Scope for the New York State Energy Plan

The New York Battery and Energy Storage Technology Consortium ("NY-BEST") is pleased to submit comments for consideration in relation to the Draft Scope for the New York State Energy Plan ("Draft Scope") released by the New York State Energy Planning Board ("Board") on September 9, 2024.

We greatly appreciate the Board's consideration of our comments and recommendations. If you have any questions about these comments or need additional information, please contact us at 518-694-8474 or by email at info@ny-best.org. Thank you.

Respectfully submitted,

Dr. William Acker
Executive Director, NY-BEST

INTRODUCTION

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 175 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 and our members have been actively engaged in the State's implementation of the State's Climate Leadership and Community Protection Act (CLCPA)[2], including through the development and implementation of the State's Energy Storage Roadmaps. NY-BEST is committed to helping meet New York State's goal to deploy 6 GW of energy storage on the electric grid by 2030 and to direct 40% of the overall benefits of clean energy investments to Disadvantaged Communities. We applaud the Board for beginning the scoping process for the next iteration of New York's ambitious Energy Plan and are eager to support the success of this initiative.

COMMENTS ON THE DRAFT SCOPE

NY-BEST is broadly supportive of the Draft Scope, and particularly applauds the focus on climate change impacts, environmental justice, and climate justice. As the Board is aware, the impacts of increasingly extreme weather and accelerating growth of energy demand compound the already significant challenge of transitioning to an equitable, zero-emissions energy system. To overcome these challenges, energy storage resources will be indispensable to achieving New York's climate and energy mandates, particularly as they:

- directly reduce reliance on peaker plants, which are disproportionately sited in Disadvantaged Communities, providing significant and immediate air quality and health benefits;
- enable efficient integration of renewable resources;
- facilitate reliability as the electricity grid decarbonizes;
- provide flexibility, load management and other grid services; and
- support the electrification of other sectors, including buildings and transportation.

NY-BEST urges the Board to ensure that the Final Scope clearly indicates that the Plan will analyze how various energy storage use-cases can best be leveraged to support the future energy system, including by: catalyzing clean energy job growth; proving cost savings by enabling a more efficient energy system as we decarbonize; and maximizing health benefits by facilitating peaker plant

[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.

[2] New York State Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019. https://www.nysenate.gov/legislation/bills/2019/s6599.

retirement and electrification of other end-uses. Namely, we recommend the Board consider the following topics for analysis and discussion in the 2025 New York State Energy Plan:

A. Investing in battery manufacturing in New York State
B. Supporting energy storage markets and interconnection
C. Contracting Long-Duration Energy Storage (LDES) resources
D. Leveraging Storage as a Transmission Asset (SATA)
E. Harnessing cross-sectoral benefits of energy storage
F. Cultivating community partnerships

A. <u>Investing in battery manufacturing in New York State.</u>

NY-BEST broadly supports the language in Sections IV and V of the Draft Scope referencing analysis of opportunities and challenges to advancing a clean energy economy with economic development and job opportunities across the State. However, we recommend that these sections more explicitly indicate that the Plan will include an analysis of the opportunity for New York battery manufacturing and supply chain growth to support local jobs.

Battery manufacturing is one of the fastest growing industries, projected to generate 310,000 jobs across the U.S. lithium-ion battery supply chain by 2030, in support of rapid electric vehicle (EV) and battery energy storage system (BESS) deployment and a transition to a clean energy economy.[3] Hosting a robust New York-based battery supply chain will ensure the State retains the jobs and economic benefits of the clean energy transition. However, New York is currently being significantly outcompeted by other states when it comes to top destinations for private sector battery manufacturing investments.

Driven by recent federal policy, the U.S. has witnessed unprecedented private sector investments in battery, EV, and BESS manufacturing totaling over $180 billion since 2021. These investments have largely taken place outside of New York, with nine states— AZ, GA, IL IN, KY, MI, NV, OH, and TN —accounting for over 80% of the total investments to date. While some of these "battery belt" states have clear advantages stemming from their incumbent supplier networks and end users (notably auto makers), not all do. Analysis shows that large State incentive packages, not systemic advantages, are largely driving manufacturer investment decisions.[4] Simply put, other states are out-bidding New York.

To close this gap, NY-BEST has recommended the State launch a Battery Manufacturing Expansion and Attraction Program to ensure a spot on the short-list for future job-creating battery manufacturing facilities. Analysis demonstrates that with an upfront investment of

[3] E. Vasilauskas, D. McCracken, & M. Horrigan, W.E. Upjohn Institute for Employment Research. *Projecting the Demand for Workers in the Production of Lithium-Ion Batteries in the United States,* May 2024. Accessed online: https://research.upjohn.org/cgi/viewcontent.cgi?article=1308&context=reports

[4] Customized Energy Solutions (CES) for NY-BEST. *Analysis And Recommendations For New York State Supply ChainFor Battery Cell Manufacturing*, April 30, 2024. Available upon request.

approximately $1 billion in New York State funds, such an initiative could unlock a total private sector investment of $22.5 billion and create 22,250 high-paying jobs across the State.[5]

NY-BEST recommends that in the Final Scope, the Board more explicitly state that the Plan will assess policies, programs, and funding mechanisms to not only support "*emerging* clean energy technologies," but also to catalyze competitive New York manufacturing and supply chain potential for *established* clean energy technologies. The Plan should analyze the impact these mechanisms would have in supporting jobs and economic development goals as well as energy transition goals (e.g. by increasing the availability of domestic products and minimizing supply chain risk).

B. <u>Supporting energy storage markets and interconnection</u>

NY-BEST applauds the Board for including a section of the Draft Scope dedicated to Energy Storage and Flexible Resources (Section VI.iii.). However, notably missing from this section is an analysis of market design and opportunities to better capture the value streams that energy storage provides to the grid, at both the wholesale and retail levels. While the Draft Scope states the Plan will discuss "the State's role in initiatives to promote" deployment of energy storage and flexible resources, NY-BEST recommends it more explicitly state the Plan will analyze opportunities to improve market design and discuss pathways for collaboration between the State, the NYISO, and the Joint Utilities.

For example, at the wholesale level, the NYISO markets were designed for the attributes and limitations of fossil-based resources, and are not optimized for the properties of the resources that will power the grid in the future. In the long-term, the State must work with the NYISO to reform the markets to efficiently incentivize the resource mix that will be needed to achieve State mandates; this should be more clearly reflected in the Final Scope.

At the retail level, the Final Scope should discuss opportunities to refine distribution-level market signals, such as the Value of Distributed Energy Resources (VDER) value stack, to ensure resources are appropriately incentivized when and where they are needed most. Further, as distributed systems were originally designed to be unidirectional, utility tariffs have historically treated generation and load separately. However, with increasing dependence on energy storage and other bidirectional resources (e.g. Vehicle-to-Grid) that serve as both generation and load, this no longer is sensible and does not incentivize the resources necessary to meet State goals. Thus, the Final Scope should more clearly indicate the Plan will assess opportunities to reform utility tariffs to improve the incentivization and integration of bidirectional resources.

Finally, markets for energy storage and other clean energy resources will not be successful without streamlined processes for interconnection at both the retail and wholesale level.

[5] Ibid.

Bidirectional resources face particular challenges; for example, V2G projects entering the Standard Interconnection Requirement (SIR) process as generation often pay higher interconnection costs and face longer interconnection timelines than unidirectional EV charging projects interconnecting as load. The Final Scope should more clearly include a review of opportunities to address interconnection challenges for bidirectional resources in both Section VI.iii. and Section XI.

C. <u>Contracting Long-Duration Energy Storage resources</u>

Clean electricity is the pillar upon which all our climate and equity goals rest. Electrification of buildings and transportation will only help achieve carbon neutrality if the electricity powering it is zero-emissions. While the State has demonstrated national leadership in procuring and supporting the deployment of renewable energy and short-duration energy storage, a significant gap remains, namely in developing the Dispatchable Emissions-Free Resources (DEFRs) that the NYISO will rely on to achieve 100% zero-emissions by 2040. DEFRs will play a critical role in maintaining reliability in the event of a multi-day reduction in solar and/or wind output, particularly as electrification drives our grid to become winter-peaking.

While the Draft Scope mentions DEFRs in Section VI.i. and Energy Storage in Section VI.iii., it does not discuss Long-Duration Energy Storage (LDES), a critical DEFR technology New York State will rely on to meet its climate mandates. Unlike some DEFRs that only generate energy, LDES DEFRs provide the added benefit of shifting energy. LDES resources – such as batteries utilizing zinc, iron or other chemistries, flow batteries, fuel cells using green hydrogen, compressed air, and advanced pumped hydropower – improve the overall efficiency of the electricity system by *shifting* surplus renewable energy to be used at times when it is needed. Capacity expansion models frequently do not model this benefit. Thus, the Final Scope should clearly state that the Plan will include improved modeling to address the benefits of LDES.

Short-duration energy storage and LDES are both critical, but fundamentally different, technologies that provide different services to the grid. While more progress has been made in supporting short-duration energy storage resources, the multifaceted benefits that LDES bring to the grid are not currently fully valued in the NYISO markets nor rewarded by the State, meaning that developers are not incentivized to build these essential projects in New York. While the NYISO undergoes longer-term processes to reform market rules to better capture and monetize LDES services, the State must launch programs in the near-term to support rapid LDES technology deployment, to ensure climate and equity mandates are achieved.

NY-BEST recommends the Board ensure the Final Scope explicitly indicates the Plan will analyze the role of LDES both in facilitating the reliability of the electricity system as well as in supporting the integration of renewable resources and enabling achievement of the

Zero-by-2040 target. The Scope should also direct the Plan to include an assessment of opportunities to work with the NYISO to appropriately value the attributes of LDES resources in the wholesale market, and for the State to develop LDES-specific procurement programs in support of energy targets.

D. <u>Leveraging Storage as a Transmission Asset (SATA)</u>

While the Draft Scope includes assessing "electric transmission and distribution system infrastructure" in Section VI.i. and mentions "transmission and distribution upgrades to accommodate renewable and distributed energy resources" in Section VI.ii., it does not include a discussion of Storage as a Transmission Asset (SATA).

SATA, particularly when equipped with Grid-Forming (GFM) capability, is a powerful existing technology that has a crucial role in ensuring Power Quality on New York's transmission network as the deployment of wind and solar rapidly increases. GFM technology has been successfully deployed in other parts of the U.S. as well as internationally, demonstrating the ability of the technology to effectively provide transmission benefits and achieve billions of dollars of cost savings for ratepayers by:

- avoiding or deferring expensive transmission upgrades, such as synchronous condensers; and
- maintaining or improving Power Quality to enable more wind and solar to connect to the grid.

While the State has traditionally considered utility use-cases for energy storage to avoid T&D upgrades, third-party owned energy storage systems deployed on the system also have significant capacity to support T&D needs if SATA is appropriately incentivized and compensated. NY-BEST therefore recommends the Board explicitly include an examination of SATA in the Final Scope, including an analysis of the opportunities it presents to enable a more cost-effective energy transition.

E. <u>Harnessing cross-sectoral benefits of energy storage</u>

While NY-BEST appreciates the standalone inclusion of energy storage in section VI.iii. of the Draft Scope, we urge the Board to ensure that energy storage is also comprehensively analyzed across the other sections of the Plan, as it has a key role to play in supporting the decarbonization of other sectors and the successful deployment of other technologies. For example:

- <u>Section IX: Alternative Fuels.</u> The Draft Scope includes discussing opportunities and best practices in targeting the use of alternative fuels such as hydrogen to strategic end-uses where electrification is not a viable option. While NY-BEST supports this, we recommend including an analysis of cross-cutting interactions between alternative fuels and the electricity sector. For example, while green hydrogen can effectively decarbonize hard-to-electrify industrial and transportation end-uses,

significant electricity demand for electrolyzers will impact the decarbonization trajectory of the electricity system; the Plan must be include an assessment of this impact and opportunities to optimize green hydrogen production with the needs of the electricity system. Further, the Plan should explore opportunities to optimize electrolyzer load with on-site building and transportation loads, so as to drive grid flexibility while supporting decarbonization of other sectors. Finally, NY-BEST recommends including a discussion of how alternative fuels may be able to support the resiliency of the electric grid. For example, green hydrogen paired with fuel cells can provide an excellent source of zero-emissions, reliable backup electric power during blackouts and opportunities for long-term storage.

- Section X: Buildings and Industry. The Draft Scope states the Plan will discuss opportunities to encourage load management in buildings and industry, decarbonization of industrial processes, and grid-interactive efficient buildings. NY-BEST supports this, but recommends explicitly including energy storage as a key technology in managing load from building electrification and providing resiliency benefits to residences and buildings. Further, the Plan should include a discussion of thermal energy storage in supporting industrial decarbonization and explore opportunities to incentivize these resources, which are not currently valued in energy markets.
- Section XI: Transportation. The Draft Scope includes assessing the impact of increased electrification and the infrastructure required for a widespread adoption of Electric Vehicles (EVs). NY-BEST supports this, but recommends the Board explicitly examine the opportunity for energy storage to support this infrastructure buildout, including by managing charging load and reducing the need for expensive grid upgrades at certain stations. Further, the Plan should include an assessment of the benefits of harnessing managed EV charging and bidirectional Vehicle-to-Grid (V2G) technology to support grid flexibility and integration of intermittent renewables, as well as identify policies, programs, and rate reform necessary to incentivize these resources. Indeed, according to Brattle's presentation during the December 10 Grid of the Future Technical Conference, "EV charging represents the single largest opportunity for grid flexibility. …Existing V2G barriers are significant, but if they are overcome and enrollment rates are high then V2G exceeds all other opportunities in terms of capability and value."[6]

F. Cultivating community partnerships

NY-BEST appreciates that the Draft Scope includes references to "siting and community acceptance" in both Sections VI.ii. and VI.iii. However, we recommend the Final Scope more clearly discuss opportunities to pair clean energy deployment with community outreach,

[6] The Brattle Group & DNV. "Grid Flexibility Potential Study: Draft Results, Prepared for NYS Grid of the Future Technical Conference #3." December 10, 2024. Accessed online: https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={301ABC93-0000-CD60-9DA7-D61D6DC33D1C}

education, and partnerships. In support of the goal "to ensure the fair treatment and meaningful involvement of all people in State decision-making, policies, and programs" in Section III, the Plan should include a discussion of opportunities for both the State and the clean energy industry to cultivate proactive partnerships with local authorities and Community-Based Organizations (CBOs), and opportunities for these relationships to support democratizing energy information, co-designing State programs with local input, and ensuring host communities benefit from clean energy projects.

Without a concerted State outreach and partnerships effort, New York will not be able to meet deployment targets. Indeed, largely due to fear and misinformation, dozens of towns across the State have already imposed moratoria on energy storage development, impacting over 1 GW of projects in the interconnection queue and significantly slowing clean energy progress. To support an equitable energy transition, the Plan must include a discussion of mechanisms to address this, such as by working with CBOs to improve and expand community outreach and partnerships via the NYSERDA Clean Energy Hubs, which may require additional funding and staff support.

CONCLUSION

NY-BEST appreciates the work by the Board to support an equitable energy transition in New York State. As discussed in our above comments, we recommend the Board ensure that the Final Scope clearly indicates that the Plan will analyze how various energy storage use-cases can best be leveraged to support the future energy system. 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.