New York Battery and Energy Storage Technology Consortium, Inc.

VIA ELECTRONIC FILING

December 23, 2016

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

Re: CASE 15-E-0751 In the Matter of the Value of Distributed Energy Resources – Notice Soliciting Comments on Scope and Process for Phase Two of the Value of Distributed Energy Resources

Dear Secretary Burgess:

The New York Battery and Energy Storage Technology Consortium ("NY-BEST") is pleased to submit these comments for your consideration in the above referenced case in relation to **Notice Soliciting Comments on Scope and Process for Phase Two of the Value of Distributed Energy Resources (DER)** Proceeding.

NY-BEST and our more than 160 member organizations from across New York State and beyond appreciate the opportunity to provide these comments and we stand ready to assist the Department of Public Service (DPS) staff and the Public Service Commission (PSC) in establishing methodologies, and interim methods for valuing DERs.

If you have any questions or require additional information regarding these comments, please contact me at (518) 694-8474.

Respectfully,

William P. Acker
Executive Director

NY-BEST COMMENTS

CASE 15-E-0751 In the Matter of the Value of Distributed Energy Resources - Notice Soliciting Comments on Scope and Process for Phase Two of the Value of Distributed Energy Resources

INTRODUCTION

The New York Battery and Energy Storage Technology Consortium ("NY-BEST") is a not-for-profit industry trade association that serves as a voice of the energy storage industry for more than 160 member organizations on matters related to advanced batteries and energy storage technologies. Our membership covers the full span of activities related to research, development, production and deployment of energy storage devices, and currently includes technology developers ranging in size from small start-up companies to global leaders, leading research institutions and universities, national labs and numerous companies involved in the electricity and transportation sectors.

Our mission is to catalyze and grow the energy storage industry and establish New York State as a global leader in energy storage. We do this by:

(1) Acting as an authoritative resource on energy storage, proactively communicating energy storage related news and information, and facilitating connections amongst stakeholders;
(2) Advancing and accelerating the commercialization process for energy storage technologies, from research and development, to products and widespread deployment;
(3) Educating policymakers and stakeholders about energy storage and advocating on behalf of the energy storage industry; and
(4) Promoting New York's world-class intellectual and manufacturing capabilities and providing access to markets to grow the energy storage industry in New York.

NY-BEST has been actively engaged in the State's Reforming the Energy Vision (REV) initiative and its related proceedings since its inception and supports NYS Public Service Commission's (PSC) efforts to transform New York's electric industry with the objective of creating market-based, sustainable products and services that drive an increasingly efficient, clean, reliable, and customer-oriented industry. We also support the goals of the

State's Energy Plan and the Clean Energy Standard to generate 50 percent of the state's electricity from renewable sources by 2030 and reduce greenhouse gas emissions by 40 percent by 2030 and 80 percent by 2050. NY-BEST views storage as essential to achieving these goals and as a result, we remain keenly interested in ensuring that methodologies and mechanisms that value energy storage are adopted through this proceeding.

The Case for Storage

NY-BEST commends the DPS staff and the Commission for commencing the proceeding on the value of DER. We view the creation of a system to value LMP+D+E associated with DERs as being at the heart of accomplishing the goals of REV. NY-BEST has actively participated in the Value of DER (VDER) proceeding and collaborative and we look forward to participating in the next phases of the proceeding.

To support our comments below on the next phases of the VDER proceeding, we have outlined why we believe that actions are necessary now to create new monetization mechanisms for storage.

Energy storage is a key enabling technology to achieve the goals of REV, the Clean Energy Standard mandate and the State's greenhouse gas emissions reduction goals. Energy storage is one of the keys to solving load management and flexibility needs across the grid – from providing flexible peaking resources to meet flexible dispatch needs, to seasonal capacity, management of daily peak and demand swings, highly responsive reserve and regulation, renewables firming and integration and more. Energy storage is a unique and valuable resource that is able to provide many benefits across a broad spectrum of applications, including:

- Bulk energy services
    - Off-to-on-peak energy time shifting and firming, on-peak intermittent energy smoothing and shaping, arbitrage, and capacity
- Management of ramping requirements
    - Resulting from variable output generation from wind and solar
- Ancillary services
    - Frequency regulation, reactive power and voltage support, reserves (spinning, non-spinning, supplemental), black start
- Transmission and distribution infrastructure

  - Congestion relief, upgrade deferral, minimization of line losses, voltage support, resiliency, transportable distribution-level overload mitigation, peak load shifting downstream of distribution system, variable distributed generation integration, microgrid formation.
  - Increasing circuit hosting capacity and the ability to integrate distributed renewable resources.
- Customer energy management
  - Power quality, reliability, resiliency, demand-charge management and retail time and price shifting, variable generation integration/back-up power/UPS.

Energy storage technologies provide a variety of solutions with different technologies being utilized to meet quantity, quality, and operational needs. These varied applications also provide different combinations of benefits and value streams.

Energy storage is able to provide services to the grid when and where they are needed; there are no "must-run," uneconomic energy or renewable curtailment issues associated with storage. Energy storage is reliable, dispatchable and verifiable in discreet increments as required by locational needs. Energy storage deployments also cross over asset classes in that benefits can be realized across the transmission, generation, distribution, and/or behind-the-meter (demand/end-use) portions of the electricity system. In fact, it is precisely all of these attributes that give energy storage its strengths and ability to provide flexibility to grid operations across a wide range of applications.

Benefits stacking (i.e., the ability to receive revenue from providing multiple compatible applications), including distribution system level demand management benefits is, thus, important to the value proposition for energy storage – both to fully realize benefits and to properly compensate providers.

However, current market designs do not recognize or value all of these attributes and generally preclude energy storage from providing multiple benefits using the same storage device.

Ideally, NY-BEST believes that tariffs established to achieve the REV goals should:

- Ultimately be standardized across utilities (DSPs) and technologies - the tariff construct and technology options should be uniform with locational pricing that has

a uniform method of calculation that may result in different tariff pricing by utility and/or within certain utility locations;
- "unbundle" costs to the end customer to allow multiple benefit streams to storage and other technologies;
- provide for locational and temporal granularity (Because benefits can differ with location down to individual distribution circuits, the degree of locational granularity is important);
- allow flexibility to respond to market and load conditions; and
- address existing tariffs structures that hinder deployment of DERs such lack of inclusion of storage.
- provide medium to long-term visibility to tariffs that allow DERs to sign long-term contracts.

NY-BEST Recommendations for Next Phases of VDER

NY-BEST appreciates the opportunity to provide recommendations and suggestions on future scope, timeline and procedure on the next stages of the Value of DER (VDER) proceeding. Consistent with staff's request in the Notice Soliciting Comments, our comments are intentionally brief and are organized consistent with the topics requested. Importantly for context, our recommendations assume that the Staff Report and Recommendations[1] for the VDER are adopted by the Commission without any changes, including the Staff recommendation to allow for storage paired with solar to participate in the Phase One tariff, which NY-BEST supports.

1. **Topics and issues that were deferred during the Phase One discussions that we believe can and should be addressed during the first quarter of 2017**.

   a. NY-BEST strongly recommends and urges the Commission and the Department to follow the recommendations of the Non-NEM Technologies working group and the recommendations in the Staff Report to address stand-alone storage as early as possible in 2017, and not wait to address this as part of the Phase Two tariff. ***This is our highest priority.***

[1] Staff Report and Recommendations in the Value of DER (VDER) Proceeding, filed in DPS Case 15-E-0751, October 27, 2016.

Such immediate action is necessary to begin to adequately recognize and create locational value for important services and benefits provided by storage, such as capacity improving load factor, and grid services (voltage/VARs support, hosting capacity, frequency response and regulation, spinning reserves, system control and dispatch, etc). These services are essential to the achieving the State's goals of reducing peak demand, improving system efficiency and supporting the increased penetration of renewable energy. Importantly, energy storage provides all of these benefits and energy storage providers remain unable to fully monetize these benefits through existing market mechanisms. NY-BEST recommends that as part of this effort, new mechanisms be created that are aligned with the State's policy goals, and unlock the many benefits storage technologies can provide to the grid.

b. NY-BEST recommends that the Department and Commission consider, as an early-action item, creating valuation mechanisms for behind-the-meter clean DER technologies. Under the methodology proposed in the Staff Report, clean energy that is produced and consumed behind the meter is treated differently than energy which is exported to the grid in that it is unable to participate in the proposed Phase One tariff. This approach, along with the proposal to exclude these clean resources from eligibility to receive RECs, is resulting in a perverse disincentive for customer-sited clean DERs and undermining the fundamental goals of REV to increase the use of clean distributed resources.

   We recommend that the Department and Commission consider amending the proposed Phase One tariff to allow non-exporting, behind-the-meter storage and clean DERs, such as fuel cells, to be eligible for the tariff in an effort to address this disparity. Such an approach would provide a means to quickly adopt a measure that could simultaneously spur additional private sector investments and benefit the grid.

   For example, of the proposed Phase One tariff methodology's four "values", two could apply directly to non-exporting, behind-the-meter storage with minimal modification. Specifically, the system capacity value and local delivery value could be calculated and compensated with the Phase One tariff immediately, while the other values that are further evaluated. Compensation would then be based on the directly measured discharge output of the system (instead of the energy exported to

the grid) and value for that energy would consist of the Installed Capacity Value and Demand Reduction Values calculated for the Phase One tariff. This structure would make a tariff for behind-the-meter storage and fuel cells available quickly while more complex questions are analyzed.

c. NY-BEST recommends that the work referenced in the Staff Report as underway at NYSERDA to develop a solar-plus-storage "intervention" continue to be prioritized as a near-term action in 2017. NY-BEST agrees with the Staff Report recommendation that DPS, NYSERDA and the utilities examine intervention and demonstration strategies that can help further monetize system value, especially in high value locations of the distribution system. NY-BEST and our members welcome the opportunity to provide input into the development of such a program and we further encourage timely action by the Department and the Commission to bring this program to fruition.

2. Topics for Consideration in Phase Two

We have previously articulated that we view LMP+D+E as being at the heart of accomplishing the goals of REV. NY-BEST envisions over the longer term the electric grid to be a bidirectional, transactive, and situationally-aware system that supports the following principles:

- Transactive nodes across the grid, with bidirectional interconnections and "prosumers" (producer-consumers) buying and selling energy products and services;

- The elimination of barriers to entry, allowing new technologies to participate in the electric grid and ensuring that the batteries and energy storage are not excluded;

- The valuation of products and services based on transparent and standardized methodologies, procedures and processes through the unbundling of the costs and benefits of energy resources in providing products and services to the grid, ensuring that each DER's value streams are appropriately and fairly captured; and

- The elimination of competitive barriers so that each resource can participate on a level playing field.

Moving to a full LMP+D market mechanism that encompasses all of the benefits provided by DERs is integral to achieving this vision over the longer term. As we work to establish more sophisticated methodologies, NY-BEST encourages focusing on the following areas:

a. Unbundling values embedded in utility rates - NY-BEST supports the Staff Report recommendation that utilities should be required to begin developing tariffs that more fully unbundle the values and services currently embedded in average bundled rates. The increased granularity offered in these unbundled tariffs will facilitate accurate compensation of DER providers. NY-BEST supports unbundling costs to the end customer to allow multiple benefit streams to storage and other DER technologies. Such unbundling of rates should reflect the individual attributes embedded in electricity service; for example, energy, capacity, ancillary services, environmental impacts, or others.

b. Refining the Components of the Value Stack – This includes refining and improving the methodologies used for the Value of D, E and creating new mechanisms to capture temporal and locational values. NY-BEST acknowledges that the Value of D incorporated in the Staff Report represents a proxy value as an initial means to create an interim tariff. We believe that additional work is necessary to capture the true distribution system benefits. For the Value of E, NY-BEST recommends that the environmental valuation should include NOx and SO2 values. Consistent with the comments of several parties in this proceeding, NY-BEST believes that methodologies to establish values associated with reducing criteria air pollutants such as NOx and SO2 are currently available and could easily be incorporated in a future VDER tariff. We further recommend consideration be given to creating peak hour signal at the distribution level. Such a signal would provide a technical and economic signal for locational system relief.

c. Developing transition strategies and market mechanisms that encourage investment in DERs such as energy storage – As the REV process continues down the path to a fully functioning and animated marketplace, interim steps are necessary to open the marketplace to DER providers. For example, demand response programs have historically been designed to compensate and encourage low capital solutions, such as short-term load shedding. In contrast, installing DERs that are capital equipment assets intended to operate for many years generally require that the owner and

investors have confidence in the future revenue streams. NY-BEST recommends that in the next phases of the VDER tariff development, additional focus be placed on creating transition strategies and market mechanisms that provide sufficient investor confidence to promote private sector investment and growth of the energy storage market and DER market.

3. Suggestions on Format for future proceedings

NY-BEST has been pleased to actively participate in the Value of DER proceeding since it commenced. We have appreciated the opportunity to participate in the unique collaborative process established by DPS staff and to provide input to staff and to other parties and stakeholders through that process. We also acknowledge the effort of staff throughout this proceeding to ensure that all stakeholder voices and concerns were heard and explored.

Moving forward, we encourage a more structured approach to the development of new VDER methodologies. While we valued the opportunity to participate in discussions amongst the collaborative parties, we believe that the collaborative's efforts produced the best results when work groups were created to tackle specific issues and Staff proposals were put forward to solicit specific comments and focus the discussion.

Going forward, NY-BEST encourages an iterative collaborative process that is:

- strategically focused on specific topics,
- allows for open discussion and for input when scoping issues upfront,
- creates designated work groups,
- uses Staff developed straw proposals to crystallize the discussions, and
- allows parties to respond to in a constructive manner that ultimately leads to a final proposal.

ADDITIONAL SUGGESTIONS – ENERGY STORAGE REV TARGET

NY-BEST offers the following observations and recommendations on how this proceeding can be coordinated with other REV proceedings to bring about the transformational changes envisioned by REV.

Since REV was commenced in the spring of 2014, NY-BEST has been participating in all of the REV proceedings, various working groups and advisory committees and offering our expertise and recommendations on how the State can leverage the benefits of storage to improve the electric grid and achieve the State's policy goals. We have continued to be supportive of the REV initiative and the State's policy goals to increase renewable resources, reduce greenhouse gas emissions and build the grid of the future and we have continually advocated for the role of storage to achieve these goals.

At the Department's Technical Conference on Energy Storage held on May 26 of 2016[2], NY-BEST and several of our members, made the case for a "no-regrets" statewide target for storage of **1 GW of multi-hour storage by 2022 and 2 GW by 2025** to establish a path toward having 4 GW or more of multi-hour storage installed by 2030.

To date, aside from a few limited areas of the REV initiative (i.e., Con Edison Virtual Power Plan REV demonstration project, specific utility non-wires alternatives projects), the benefits offered by energy storage have remained largely untapped and the pathways to the market for storage remain murky and largely stalled.

While the Staff Recommendation in the proposed VDER Phase One tariff - allowing solar paired with storage to participate in the tariff - is a positive step, NY-BEST and our members believe that additional and bolder measures are needed to realize the benefits of storage for the State's grid. In addition to our recommendations for the VDER proceeding discussed above, NY-BEST urges the Department and the Commission to set a specific goal or target for the deployment of energy storage that could be implemented across all of the relevant REV proceedings (DSIPS, EAMs, Dynamic load management, Clean Energy Standard). A "REV-wide" target for storage would ensure that storage is incorporated into

[2] DPS Technical Conference held on May 26, 2016 as part of the Clean Energy Standard Proceeding, Case 15-M-0302
http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={18FD6888-EC64-406C-8150-3E0F8C5B3061}

every relevant REV initiative. The storage target could be structured similar to the REV Demo program, and build on the model of that program, where the primary objective is to provide each utility the flexibility to learn from the wide variety of energy storage applications. Storage deployed through the VDER tariffs would count towards this target. In this manner, all stakeholders in the VDER conversation will consider storage in the design of the VDER tariffs. Implementation of the tariffs and experience in deploying storage in accordance with the tariffs will provide extremely valuable lessons for all stakeholders from the grid operators, interconnection staff, local permitting officials, financiers and storage project developers.

NY-BEST would welcome the opportunity to discuss this recommendation further with Department staff, as well as explore additional options for harnessing the benefits of storage.

CONCLUSION

NY-BEST greatly appreciates the efforts of DPS staff and the Commission to develop methodologies to value DERs. As stated above, we support the goals of the REV initiative and we believe energy storage is a key enabling technology to achieve those goals. The Staff Report proposes a major positive step towards the valuation of distributed energy resources and begins to recognize the important role for storage.

As we move forward, our primary concern for the VDER proceeding is that appropriate interim measures, which place a value on all of the services that storage can provide, be put in place in the near term to ensure that New York's grid is able to realize the benefits provided by storage.

NY-BEST believes there is an immediate need to create new methods that will give confidence, stability, and visibility to future revenue streams for storage and all DER providers. We urge the Commission to adopt additional interim programs that will animate markets and spur private investment in New York markets.

NY-BEST encourages the Department and Commission to consider establishing a storage target to ensure that the benefits of storage are realized by the State's grid.

We appreciate the opportunity to provide these comments and we stand ready to assist the Department, Commission, utilities and all stakeholders as these and other REV-related proceedings continue.