



## New York Battery and Energy Storage Technology Consortium, Inc.

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VIA ELECTRONIC FILING

October 26, 2015

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 14-M-0101** Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision – Staff White Paper on Ratemaking and Utility Business Models

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 the Staff White Paper on Ratemaking and Utility Business Models.

NY-BEST and our more than 150 member organizations from across New York State and beyond appreciate the opportunity to provide these comments and we stand ready to assist DPS staff and PSC in establishing ratemaking reforms and utility business models that support the policy framework set forth in Reforming the Energy Vision (REV) and to incorporate distributed energy resources, including energy storage, as a primary tool in the planning and operation of an interconnected modernized power grid.

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

Respectfully,

A handwritten signature in black ink, appearing to read "William P. Acker", written in a cursive style.

William P. Acker  
Executive Director

Enclosure



## New York Battery and Energy Storage Technology Consortium, Inc.

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### NY-BEST COMMENTS

**CASE 14-M-0101** Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision – Staff White Paper on Ratemaking and Utility Business Models

#### INTRODUCTION

The New York Battery and Energy Storage Technology Consortium (“NY-BEST”) is a not-for-profit industry trade association that serves as the voice of the industry for more than 150 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) serving as a center for communication, education and interaction amongst stakeholders; (2) leveraging New York’s world-class intellectual and manufacturing capabilities and market leadership; (3) supporting and accelerating the commercialization process from research and development to products and widespread deployment; and (4) advocating for policies that promote the energy storage industry.

#### GENERAL COMMENTS

NY-BEST supports the NYS PSC’s 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 support efforts to transform the State’s electric grid to a more modern, efficient, and reliable and clean system. While NY-BEST recognizes that this transformation will take time and be accomplished through an iterative approach, we are concerned that the approach presented by DSP staff in the Staff White Paper on Ratemaking and Utility Business Models (“Staff White Paper”) falls short in some critical areas in designing new models that will capture the value and benefits of energy storage.



## New York Battery and Energy Storage Technology Consortium, Inc.

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Importantly, while we believe it is necessary to take the time to develop comprehensive reforms, NY-BEST is concerned that the State is not sufficiently planning for the increased penetration of renewable energy that is now occurring as a result of NY-SUN and other state initiatives. Energy storage is an essential element to the State's success in reaching the 50% renewable energy goal by 2030. Given that solar and wind power are intermittent sources, only providing power when the sun is shining or wind is blowing, there are significant challenges in moving from generating a small portion of the state's energy from these sources to relying on them for most of our energy. Storing the energy produced by renewable sources for use at a later time when it is needed is essential to ensuring the stability of the electric grid as we move closer to a higher penetration of renewable energy. The combination of batteries and other energy storage devices with renewable energy sources allows the renewable energy to be used at any time and turns intermittent resources into flexible resources. In many cases, the same energy storage systems that firm and time-shift renewables can be used to reduce peak load and enhance resiliency. We continue to urge the Commission to champion efforts to more closely examine the amount of storage that will be needed on the state's electric grid to support the 2030 goal of 50% renewable energy and to far surpass this goal as we move beyond 2030.

### Benefits of Energy Storage

As we have stated previously, NY-BEST believes that energy storage is one of the keys to solving the load management and other flexibility problems across the grid – from flexible peaking resources to meet flexible dispatch needs, seasonal capacity, management of daily peak and demand swings, highly responsive reserve and regulation, renewables integration and more.

In its ability to both accept and discharge energy in to the grid on demand and as needed, energy storage is a unique resource that is able to provide many benefits across a broad spectrum of applications, as well as throughout the grid. Energy storage technologies provide a variety of solutions with different technologies being utilized to meet quantity, quality, energy, power and operational needs. These varied applications also provide different combinations of benefits and value streams.



## New York Battery and Energy Storage Technology Consortium, Inc.

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Our comments below will frequently refer to capturing the value of energy storage. For staff's use in reviewing our comments, NY-BEST is again sharing a list of the numerous and broad benefits of storage, which include the following:

- Transmission and distribution infrastructure
  - Congestion relief, upgrade deferral or elimination, 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
- Bulk energy services
  - Off-to-on-peak energy time shifting and firming, on-peak intermittent energy smoothing and shaping, arbitrage, and capacity
- Capacity
  - Current battery technology can provide products of duration of four hours and more that should qualify for the NYISO capacity market in a manner similar to pumped hydro storage (Energy Limited Resource –“ELR” Tariff)
- 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
- Customer energy management
  - Power quality, reliability, resiliency, demand-charge management and retail time and price shifting, variable generation integration/back-up power/UPS

NY-BEST encourages DPS Staff and the Commission to ensure that all of these benefits are fully realized and valued through the REV process.

### **I. Comments on Introduction and Summary**

The Staff White Paper outlines a number of initiatives that are currently in development that will inform the Commission's decision (page 5). These include:

- The development of a benefit-cost analysis framework;



## New York Battery and Energy Storage Technology Consortium, Inc.

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- The development of an approach to calculate the full value of DER to the distribution system;
- Staff's guidance for utility Distributed System Implementation Plans (DSIPs);
- On-going inquiries for improved rate design for low-income customers;
- The review of the New York State Energy Resource and Development Authority's (NYSERDA) Clean Energy Fund filing;
- On-going consultant studies being undertaken to 1) examine the benefits and costs of net energy metering (NEM), and 2) develop approaches to appropriately value the multi-sided market aspect of the modern utility model as part of ongoing regulatory and pricing reform; and
- REV demonstration projects

NY-BEST notes that the utilities long-term dynamic load management programs also remain outstanding. Given that much of the Staff White Paper hinges on pending decisions in these cases, we are limited in our ability to provide comprehensive and specific comments, as several important questions and key factors still exist.

With respect to near-term action, DPS staff states "The critical task is to incentivize the near-term activities that will promote the development of full-scale markets. Among others, these include making data more accessible, developing platform capabilities, and engaging customers with the goal of near-term reduction in system peak and control of customer bills." (page 9)

NY-BEST agrees that efforts in the near term are essential. We urge DPS staff and the Commission to undertake additional foundational work that will help achieve this goal. As we have recommended previously, we recommend that staff and the PSC take the time to establish a proper evaluation model and collect essential foundational data. Substantial additional data and information needs to be provided by utilities and made available to DER providers. Ideally, this analysis needs to be in-depth and locational-based. NY-BEST recommends a near-term utility initiative to map the grid at all levels to identify areas of congestion, areas of development opportunity and the like to enable the mapping of DERs, and aggregation of DERs, to the grid.



## New York Battery and Energy Storage Technology Consortium, Inc.

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In addition, NY-BEST members have identified the need for time-resolved usage data (e.g., sub-hourly). While some of this data may not exist or be easily generated, we would suggest the Commission consider requiring aggregated smart meter data be made available, as well as power quality information.

### **III. Comments on Aligning Customer Value With Earnings Opportunities**

#### **Market-Based Earnings (MBEs)**

DPS staff states in the White paper that “neither the utility business model nor market growth transformations contemplated by REV will occur overnight” and that particularly during the early stages of REV implementation, the “Commission should retain strong oversight of the continuing monopoly nature of the business, supply clear expectations of desired outcomes, and have the mechanisms in place to measure success and alter the course if deemed necessary. Staff recommends a combination of financial incentives that consist of new Market Based Earnings (MBEs) opportunities, changes to conventional ratemaking methods, and targets with new positive-only, symmetrical, and bidirectional earnings impacts.”

Staff further states that “New MBEs can come in several forms. In addition to their conventional functions, utilities in the role of platform providers will be able to earn revenues from various value-added services provided to market participants, for example, micro-grid engineering. As a network provider, utilities should enable interoperability and open sourcing as much as feasible throughout the system to gain the greatest value for customers without compromising the security, safety and reliability of the overall network.”

NY-BEST recognizes and concurs with the phased approach proposed by Staff and we agree with Staff that new utility business models and incentives are essential to achieve the goals of REV. NY-BEST’s primary concerns relate to the potential for the lack of a level playing field between utilities acting as DSPs and DERs seeking to participate in the DSP markets. A more clear description of the ownership structure surrounding the DSP is essential to fully evaluate the revenue models being proposed. Transparency with respect to the allocation





## New York Battery and Energy Storage Technology Consortium, Inc.

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of operating and capital costs among different classes will continue to be fundamental. Further, fees imposed by the DSP on DERs must be competitively neutral and not unduly advantage the utility where competitive services are also available. MBEs should be based primarily on platform service revenues so that the focus is on facilitating and developing the market such as optimization/scheduling and data access.

### Earnings Impact Mechanism (EIMs)

Regarding the creation of new performance incentives for utilities, DPS staff proposes 5 specific Earning Impact Mechanism (EIM) categories, including a peak reduction EIM (page 55). The State White paper states, “Reducing peak demand on the bulk electric system, and thereby improving system efficiency, are major objectives under REV that will bring immediate benefits. The goal of this EIM would be a decrease in each utility’s peak load from one year to the next, in order to improve efficiency and reduce the top 100 peak load hours over a five-year period. The statewide load associated with the top 100 peak load hours is approximately 14% of the peak load or 4846 MW in 2013. Reduction of this peak could save customers billions of dollars per year.”

NY-BEST supports the concept of incentives for peak reduction and the goal of a three percent reduction in peak load annually. Importantly, NY-BEST notes that the discussion in the Staff White Paper fails to recognize the role for energy storage in reducing the peak load. Energy storage can be used to shift peak loads and capture these immense values for ratepayers. In particular, energy storage achieves this without requiring any change in behavior by or service to the customer. However, under the current utility business model, no entity can profit through improving the efficiency of the grid. Even where some portion of those values are available to customers or third parties, the inability to stack the values provided by energy storage, and to compare all values on a similar time horizon creates significant barriers to deploying energy storage at the levels that would minimize ratepayer costs in the future. All of these factors need to be overcome in the design of performance incentives, ratemaking reforms and tariffs at both the retail and wholesale (NYISO) level.

NY-BEST urges staff and the Commission to consider adopting performance incentives that reward utilities for improving system utilization and flattening peak loads. For example, DSPs could be incentivized by providing them with a higher rate of return on an asset base



## New York Battery and Energy Storage Technology Consortium, Inc.

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that provides increased service to customers through increased utilization, or by adopting NY-BEST's proposed Asset Utilization tariff (described below).

NY-BEST recognizes that there remain a number of implementation issues to work through in establishing EIMs. Important factors include: ratepayer impacts (of the incentives and the outcomes), the degree of utility control over the outcomes, the feasibility of the metric, and financial impact on utilities.

However, undue delay will result in limited third party investments into New York's electricity markets and stifle project development. To continue to attract private investors and project developers, NY-BEST encourages Staff and the Commission to adopt interim measures such as: expanding Demand Management Programs, creating bridge incentive programs to spur projects that will assist in flattening peak load, more rapidly adopting demonstrations projects or allowing for voluntary adoption of asset utilization tariffs.

### **IV. Comments on Rate Design and DER Compensation**

#### **LMP+D**

DPS Staff state in the White paper that "A large amount of investment will be made in the electric system in the coming years, by utilities and increasingly by third parties, DER providers, and end use customers. Those investments need to be economically efficient while also furthering the policy objectives of REV. That means that investments must be optimized at the customer end of the electric system as well as the traditional production end, and requires that customers and market participants have sufficient information and value creation potential to make the best choices about how they purchase and use power, and how they invest in and use DER.... there is an incomplete understanding of the full value that DERs provide to the system, and thus insufficient information on which to base investment and usage choices. This situation requires us to better determine how customer behavior contributes to the entire bill, the disaggregated cost of delivery service, and conversely the benefit that should be provided to the customer in terms of total cost avoidance or reductions to the distribution system by DER, which the Commission has referred to as the "value of D". The value of D when added to the location-based marginal price of energy (LMP) ***will constitute the full value of DER to the system***, or the LMP+D."(pages 74-75; emphasis added by NY-BEST).





## New York Battery and Energy Storage Technology Consortium, Inc.

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NY-BEST believes that the “value of D” concept is at the heart of REV and should be given prominence going forward in joint deliberations of Staff, Commission and stakeholders to agree on fundamental concepts, methodologies and approaches and to set the stage for a phased-in planning cycle to development and implementation. As proposed, LMP+D is too simplistic to appropriately signal the value of energy storage and shifting load to flatten peaks. LMP+D does not include the *long-term* avoided costs for avoided investments in transmission, distribution, and generation. Similar to traditional transmission, distribution, and generation assets, storage and other DERs may require long-term price signals and contracts in order for developers to invest in these resources, especially at the level optimal for minimizing long-term costs. Instead, competitive processes for longer-term contracts for larger resources and installation payments for smaller (e.g., residential) resources could cover fixed costs. These payments could differ based on resource attributes and location to signal where and which resources are most valuable to the system. Tariff structures can be used in addition to incentivize desired operation of the DERs to serve grid needs (e.g., shift peak load, etc.).

NY-BEST recognizes that appropriately capturing the value of D involves longer-term issues, but we believe it is important to begin the analytic process now to ensure a smooth transition from the proposed modifications to current tariffs to the ultimate vision of real-time price signals based on LMP + Value of D. As a near term action, NY-BEST urges the Commission to adopt DPS Staff’s recommendation that the utilities should adopt the same software to determine distribution-level marginal costs.

NY-BEST supports the Staff recommendation that they initiate a study to calculate avoided LMP + D (page 91). Staff also states that the calculation of avoided LMP + D will be informed by the results from the proposed Cost-Benefit Analysis Framework proceedings. NY-BEST concurs that a CBAF should form the basis for the calculations, however, it is important that the CBAF fully value benefits. In the BCA analysis, multiple frameworks were provided but only some of which reflected societal benefits and the longer-term benefits. We remain concerned that the CBAF as proposed in the Staff CBAF White paper does not sufficiently capture the benefits of energy storage, and, if this is not addressed, we are concerned that the LMP+D calculations will be similarly flawed.



## New York Battery and Energy Storage Technology Consortium, Inc.

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NY-BEST agrees with Staff that there are many risks associated with “sending the wrong economic signals that drive inefficient choices” (page 82) and that potential problems can be addressed by a technology-agnostic design that is more precise, both in recovering costs and in sending price signals that prompt efficient DER participation by customers.” NY-BEST agrees with Staff that tariff design should be technology-agnostic. However, Staff then states that “adopting a rate design and compensation mechanism based on a more precise calculation of system value should greatly improve the proper valuation of DER.” NY-BEST believes that rate design and compensation mechanisms implemented under REV should be granular at the circuit where the value of the DER will be realized, not based on system-level average values.

### Tariffs

NY-BEST believes that tariff design is critical to the success of REV. 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 supports implementation of all three of the dimensions of granularity discussed by the staff (page 88):

- **Temporal**—Time-differentiating prices that vary in response to marginal price



## New York Battery and Energy Storage Technology Consortium, Inc.

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- **Locational**—Reflecting congestion or capacity constraints in pricing; for example, locational marginal pricing or distribution locational marginal pricing
- **Attribute**—Unbundling rates to reflect the individual attributes embedded in electricity service; for example, energy, capacity, ancillary services, environmental impacts, or others.

Although NY-BEST understands the need for “gradualism”, both to avoid unintended market disruption and to provide time to properly develop valuation mechanisms and markets, we note again that a prolonged uncertain transition time could hinder private investment. Specifically, uncertainty in future revenue and market risk may could cause private capital to wait to enter the market. NY-BEST recommends that bridge mechanisms and tariffs, such as the proposed Asset Utilization Tariff (discussed below) be implemented to ensure that progress toward REV goals is not impeded.

### Proposed rate design reform

NY-BEST supports the broader use of demand charges discussed in the Staff White Paper (Pages 98-102). We appreciate the Staff’s recognition that, “The introduction of advanced metering functionality will enable movement beyond the historical dispute between fixed customer charges and volumetric rates. Because long-run distribution marginal costs are driven by coincident peak on a circuit-by-circuit basis, customers’ usage at system peak provides the most accurate measure of system costs. And, unlike fixed customer charges, peak demand can be managed by customers via DR, energy efficiency, and/or DG.” As new demand charges are developed through REV, NY-BEST urges staff to recognize the critical role that energy storage plays in addressing peak demand and ensure that energy storage is integrated in the design of these new programs. We also encourage Staff and the Commission to work to develop interim demand charge programs in advance of the widespread introduction of advanced metering.

NY-BEST concurs with Staff that further improvements are needed in rate design for Commercial and Industrial (C&I) customers. Specifically, demand rates need to be more precise and reflect the time of day in which the cost is incurred. We agree that such changes will better ensure that demand rates are coincident with peak and will incentivize customers to take actions to shift load to off-peak times. We support Staff’s



## New York Battery and Energy Storage Technology Consortium, Inc.

recommendation to have utilities fully review their C/I rates and propose rate changes, as necessary, to more closely align with time values.

### Asset Utilization Tariff Proposal

As NY-BEST has previously stated, NY-BEST encourages the Commission to consider adopting cost effective incentives for storage and other alternative technologies. This can be done by creating an “Asset Utilization Tariff” that is technology neutral and is based on the cost savings to each utility from reduced ICAP, T&D deferral, distribution system peak load management and energy savings. For example, the Asset Utilization Tariff could be applied to energy storage on a stand-alone basis or to energy storage paired with distributed solar and used to reduce peak load and increase utilization. The form of this tariff could be similar to the current ConEd Demand Management Incentives program, with the important difference that:

- 1) the compensation (\$/kW) would be based on the avoided cost and not limited to 50% of the asset capital cost.
- 2) Both behind-the-meter and in-front of the meter applications that provide the benefits would qualify for the tariff (this issue was previously raised by NY-BEST in the Demand Response Tariff Proceeding, PSC Case 14-E-0423, and recognized by the Commission in the PSC Order dated, June 18, 2015.)

(See details of the existing Con Ed program here:

[http://www.coned.com/energyefficiency/demand\\_management\\_incentives.asp](http://www.coned.com/energyefficiency/demand_management_incentives.asp)).

The proposed Asset Utilization Tariff is designed to improve grid utilization rates. Grid-connected energy storage projects and distributed solar operating in New York today can only monetize the benefits valued by the NYISO wholesale energy market or the customer, such as capacity/demand charges, energy and ancillary services. However, there are a number of other benefits that this combination delivers that are not effectively captured or monetized by the owner of the asset. The proposed Asset Utilization Tariff will allow these assets to monetize new value streams in partnership with the Utility.

NY-BEST believes that an Asset Utilization tariff would create benefits for the grid, the utility, the customer and third parties. For example, utilities serving as the DSP are tasked



## New York Battery and Energy Storage Technology Consortium, Inc.

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with insuring system reliability including the need to upgrade local distribution network to meet the summer peak load. PSC has estimated that the costs savings provided by improving the utilization rates by 1% (from 55% to 56%) is approximately \$220-\$330 million per year. The savings vary by zone, but PSC estimates that the Transmission and Distribution deferral benefits in New York City alone (Zone J) are \$305/kW per year. The proposed Asset Utilization Tariff would be based on the cost savings to each utility from a reduction in ICAP, T&D deferral, and Energy savings achieved. The proposed Tariff would be for a fifteen or twenty year term and would be subject to an annual cap. The proposed Tariff would be technology agnostic (e.g. solar, battery, demand response or energy efficiency), would encourage both in-front-of and behind-the-meter resources, and would allow developers to bundle products together to best meet the peak load and asset utilization requirements of the tariff. The proposed tariff will provide a win-win-win arrangement between the utility, customer, and third parties because all parties will have an incentive to perform and it is expected to lower costs to the utility customers. The utility would earn a return on this tariff as compensation for the distribution-level benefits accrued. Third parties would be able to own and operate the asset under the tariff regime and earn additional revenue in the wholesale market and/or through agreements with individual customers.

The proposed tariff would also enhance electric system reliability without producing emissions, reduce overall system emissions and increase system utilization rates.



## New York Battery and Energy Storage Technology Consortium, Inc.

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### CONCLUSION

NY-BEST appreciates the opportunity to provide these comments and we stand ready to assist with the Commission, utilities and all stakeholders as these and other REV-related proceedings continue.

Respectfully submitted,

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