Energy Storage Association
www.energystorage.org

1800 M Street, NW, Suite 400S
Washington, DC 20036
p 202.293.0537
f 202.530.0659

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VIA ELECTRONIC MAIL
EMP.Comments@bpu.nj.gov

Grace Strom Power, Esq.
Chief of Staff
New Jersey Board of Public Utilities
44 S. Clinton Avenue
Trenton, New Jersey 08625

RE: Comments by the Energy Storage Association on the New Jersey Draft 2019 Energy Master Plan

Dear Ms. Strom Power:

The Energy Storage Association ("ESA") respectfully submits these comments on the New Jersey Draft 2019 Energy Master Plan ("Draft Plan") for the New Jersey's Board of Public Utilities' ("BPU") consideration.

ESA is the national trade association dedicated to energy storage, working toward a more resilient, efficient, sustainable and affordable electricity grid – as is uniquely enabled by energy storage. With more than 180 members, ESA represents a diverse group of companies, including independent power producers, electric utilities, energy service companies, financiers, insurers, law firms, installers, manufacturers, component suppliers, and integrators involved in deploying energy storage systems around the globe. Further, our members work with all types of energy storage technologies and chemistries, including lithium-ion, advanced lead-acid, flow batteries, zinc-air, compressed air, and pumped hydro, among others.

In our comments, ESA supports several recommendations proposed in the Draft Plan to achieve the State's energy storage target of 2,000 megawatts by 2030 and includes additional recommendations for the BPU's consideration. ESA's also raises concern over certain misrepresentations about the cost-effectiveness of energy storage and the benefits it can provide for New Jersey.

Respectfully,

Nitzan Goldberger
State Policy Director
Energy Storage Association

ESA Comments on the Draft 2019 New Jersey Energy Master Plan

I. INTRODUCTION

Executive Order No. 28 calls for the development of an action plan to achieve Governor Murphy's ambitious vision of a clean, resilient, flexible and affordable grid for New Jersey. The key pillars have been set by several policy goals, including a 100% clean energy goal by 2050 and a storage target of 600 megawatts ("MW") by 2021 and 2,000 MW by 2030. In these comments, ESA provides support for several policy recommendations related to energy storage in the 2019 Draft New Jersey Energy Master Plan ("Draft Plan") and includes additional recommendations for the Board of Public Utilities' ("BPU") consideration. Finally, ESA highlights several factual errors about energy storage presented in the Draft Plan.

II. BENEFITS OF ENERGY STORAGE

Energy storage is a cost-effective solution for renewables integration, distribution and transmission grid assets and peaking capacity

Energy storage is critical to ensuring that the State's ambitious renewable energy and environmental policies are implemented in a way that is reliable, affordable, and efficient. Governor Murphy, the BPU, and the state legislature recognized the importance of energy storage by setting a long-term energy storage target of 2,000 MW by 2030. Energy storage not only helps integrate more variable wind and solar power and distributed energy resources (DERs) onto the grid but can also reduce curtailment of renewable energy and other clean energy resources by storing that resources at times when there is potential overgeneration, for use at a later time. And at the distribution level, energy storage systems can facilitate great adoption of clean energy resources such as customer-sited photovoltaic (PV) systems by *enhancing* hosting capacity along the distribution grid.

Storage can avoid costs to ratepayers of excess grid capacity in the form of power plants and wires. Since storage can charge off-peak when system demand and electricity costs are lower, and then deliver that electricity during peak periods of demand to relieve grid stress, energy storage can save consumers in the State money by reducing the amount of spare power plant capacity needed to meet system peak demands while better utilizing generation resources available during off-peak periods. While the Energy Storage Study produced by Rutgers University[1] did not quantify the statewide economic benefits of storage deployment, Massachusetts' 2016 state-commissioned energy study of widespread energy storage deployment found benefits to its ratepayers of $2.3 billion over 10 years, most of which comes from reducing system and local peak demands. Given that New Jersey has a system peak 40% greater than Massachusetts, a similar order of magnitude in benefits to ratepayers is reasonably expected.[2]

[1] Rutgers University Energy Storage Analysis, May 23, 2019, available at: https://www.bpu.state.nj.us/bpu/pdf/commercial/New%20Jersey%20ESA%20Final%20Report%2005-23-2019.pdf

[2] Massachusetts Department of Energy Resources, *State of Charge* report, September 2016, available at: https://www.mass.gov/files/documents/2016/09/oy/state-of-charge-report.pdf.

Energy storage also has a unique role to play in enhancing efficiency and reducing costs at the distribution level. DERs such as energy storage can be deployed as a cost-effective solution for deferring or avoiding costlier distribution system upgrades, increasing power quality on distribution circuits. Several utilities have begun to demonstrate the use of energy storage as a distribution asset, most notably New York's Con Edison plans to defer a $1.2 billion substation upgrade through its non-wires alternative program, the Brooklyn-Queens Neighborhood Program, by contracting for 52 MW of demand reductions and 17 MW of distributed resource investments, including energy storage.[3] PSEG Long Island has made similar solicitations to reduce peak demand as a means of avoiding network upgrades and has deployed two storage systems with a total capacity of 10 MW/80 MWh in South Fork in 2018 for this purpose as well.[4]

Energy storage can facilitate deferral and avoidance of transmission build out as well. This is particularly important in the context of New Jersey's renewable energy targets, which may require additional transmission infrastructure. Transmission deferral is an important value, of the many to consider for energy storage. For example, National Grid is deploying a 6 MW / 48 MWh (8-hour duration) energy storage system on the island of Nantucket that is expected to delay adding a third submarine transmission line by at least a decade. Similarly, Arizona Public Service deployed a 2 MW / 8 MWh (4-hour duration) energy storage system to defer investment on a 20-mile transmission line in Punkin Center.

III. STORAGE POLICY RECOMMENDATIONS

Given the benefits described above, ESA recommends that policy frameworks to drive energy storage in New Jersey focus on the areas that provide the greatest value or savings potential. These include:

- Leverage energy storage to reduce consumption during peak periods and shift energy from periods of low demand to high demand in order to reduce distribution and capacity costs for the State.

- Facilitate the use of non-wires alternatives at the distribution and transmission level where they provide a more cost-effective alternative to traditional wires investments to drive down distribution and transmission infrastructure costs.

- Support the deployment of standalone and hybrid energy storage systems at the distribution and bulk system level to facilitate integration of renewable energy and prevent curtailment events.

Key to unlocking storage market is developing programs that let storage assets provide services that drive savings for ratepayers, and compensate assets based on those savings

[3] Con Edison, Distributed System Implementation Plan (DSIP), 30 June 2016, available at: https://www.coned.com/-/media/files/coned/documents/our-energy-future/our-energy-projects/ceconydsip.pdf?la=en.

[4] See Section 3.3. of PSEG, Utility 2.0 Long Range Plan 2018 Annual Update, June 2018, available at: http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BFEFE1AFC-282C-4868-8E41-E3D9BF815316%7D; See PSEG LI 2015 South Fork RFP, available at: https://www.psegliny.com/aboutpseglongisland/proposalsandbids/2015southforkrfp.

ESA's policy recommendations for driving the deployment of energy storage focus on enabling energy storage assets to provide services through new programs and regulatory reforms. These policies are designed to enable energy storage systems to provide a service that reduces costs to New Jersey – either through non-wires alternatives, grid services, or peak demand reduction – and get compensated for the value of the savings provided.

ESA supports the Draft Plan's Goal 3.2.1 to develop programs to manage and reduce peak demand.[5] ESA believes that this can be done through the development of a set of programs and competitive procurements that will drive the deployment of a variety of customer-sided and front-of-the-meter energy storage systems, along with other technologies, that will save money for New Jersey through the reduced costs of managing the distribution system as well as savings from costs incurred by the State at the PJM wholesale market. The BPU may consider a technology neutral competitive solicitation for resources that can either reduce consumption during peak periods or shift energy to those peak periods (charging at times when the grid is not stressed). The program would provide developers long-term contracts between 5-10 years and cost no additional funds to the state if the price for that capacity is set below the estimated savings from reduced system stress.

In addition, ESA respectfully recommends that the BPU work with the utilities to create several utility programs for customer-sited energy storage to ensure those assets have an opportunity to provide services and receive compensation for those services based on the value they provide. To further reduce costs to meeting peak demand, the BPU and utilities could develop a program that provides compensation for customers who participate in a daily dispatch program, such as the one that is provided by National Grid and Eversource in Massachusetts. The program enables customers to participate for five years and receive funds through the three-year Energy Efficiency Plans. Another important program is the "Bring Your Own Device" program currently available for Green Mountain Power in Vermont, Liberty's customers New Hampshire, and has been proposed by Eversource for its New Hampshire customers as well. Under such a program, customers are able to provide traditional grid services to the utility and are compensated for the value they provide through an on-bill credit. The savings provided by customer-sited storage comes through the deferment of traditional distribution investment that would have otherwise been needed.

Distribution planning processes must also be reviewed to determine if reforms are needed to increase consideration of distributed energy resources and energy storage for distribution system needs. The BPU could consider a requirement that for traditional investments beyond a certain dollar threshold, distribution utilities must demonstrate that they have adequately considered energy storage systems before selecting the traditional investment. The BPU may also consider a separate non-wires alternatives (NWA) solicitation program to facilitate storage solutions to deferring or replacing the need for distribution investment. An effective NWA program is one that narrows the eligible distribution investments through a thoughtfully developed selection criteria, and also addresses the utility business model by providing a mechanism to compensate the utility for selecting a non-wires alternative over traditional investment.

ESA also supports the Draft Plan's recommendation to advocate at the regional and federal levels for appropriate compensation of the full value stack that DERs such as energy storage contribute to the

[5] 2019 Draft New Jersey Energy Master Plan, June 10, 2019, pg.63-64. Available at: https://nj.gov/emp/pdf/Draft%202019%20EMP%20Final.pdf

grid.[6] ESA believes that the most sustainable way to deploy energy storage systems is to ensure they can provide services through a variety of applications and often across several domains. If DERs are able to seek compensation for services provided to the wholesale market, New Jersey will be able to drive deployment and reach its target at a lower overall cost.

Finally, given the uncertainty over the pending reforms of market rules at PJM as they relate to energy storage and whether energy storage systems will be able to fairly compete with other technologies for services at the wholesale market, ESA underscores the importance of building a robust state policy to drive energy storage in order to achieve the State energy and environmental objectives. ESA respectfully recommends that the BPU explore ways to facilitate transmission-connected energy storage assets in recognition of the benefit those assets will provide to New Jersey's electricity grid.

IV. RESPONSE TO DRAFT PLAN's STATEMENTS ON ENERGY STORAGE

While the Draft Plan does not include the full text of the Energy Storage Analysis conducted by Rutgers University, there are several statements on energy storage that ESA strongly disagrees with. Not only do these statements misrepresent the current reality in the storage market across the United States, but they could encourage an unnecessary and unjustified delay in action on energy storage that would impact the State's ability to achieve its environmental and energy policy objectives.

Energy storage, including batteries, is being deployed cost-effectively today

The Draft Plan's statement that "the predominant chemistry Lithium-ion systems may not be cost-competitive for most applications through 2030" is simply false. Leading system operators and utilities around the country today are repeatedly choosing energy storage in competitive tenders, demonstrating its crucial role in modernizing our grid. According to Wood Mackenzie Power & Renewables, at the end of 2018, 1 gigawatt ("GW") of battery-based energy storage projects were operational in the United States ("U.S.") across more than 20 states with a variety of electricity costs and system needs. Nearly 95% of these systems use lithium-ion battery technology.

Some of the country's leading utilities -- including Hawaiian Electric Company, Xcel Colorado, Duke Energy, NV Energy, Arizona's largest utilities, and California's investor-owned-utilities -- have chosen battery energy storage systems as a cost-effective tool for meeting their states' environmental and energy policy objectives. Other private developers and independent power producers have also installed and operated these systems over many years.

These systems are delivering cost-effective solutions for a variety of applications, including distribution and transmission grid services, serving as an alternative to combustion turbine natural gas peaking plants, and providing customers with opportunities to reduce consumption and manage electricity bills. Existing deployment of energy storage systems in the U.S., including states with similar profiles to New Jersey, contradict the Draft Plan's statement that **"**energy storage currently adds more value if it is sited across the distribution network and integrated with solar rather than centralized on the grid."[7]

[6] 2019 Draft Plan, pg.63-64.
[7] 2019 Draft Plan, pg.57.

V. CONCLUSION

ESA appreciates the opportunity to provide these comments to the BPU to support the development of New Jersey's 2019 Energy Master Plan. We look forward to working with the BPU and stakeholders to develop a long-term plan that realizes Governor Murphy's energy and environmental vision, and that provides the residents of New Jersey with the benefits of a more resilient and sustainable grid.