September 19, 2023

Sherri L. Golden
Secretary of the Board
New Jersey Board of Public Utilities
44 South Clinton Ave., 1st Floor
PO Box 350
Trenton, NJ 08625-0350

RE: IN THE MATTER OF THE NEW JERSEY ENERGY STORAGE INCENTIVE PROGRAM. DOCKET NO. QO22080540.

Dear Secretary Golden:

New Jersey Solar Energy Coalition ("NJSEC"), Solar Energy Industries Association ("SEIA"), Advanced Energy United ("United"), and Vote Solar appreciate the opportunity to provide input on the Board of Public Utilities' ("BPU" or "the Board") request for information ("RFI") pertaining to the development of the New Jersey storage incentive program ("SIP"). Energy storage plays a key role in the further advancement of a decarbonized electric grid. United, NJSEC, and SEIA (together "we" or "our" for the purposes of these comments) represent companies that have installed, or are installing, both solar plus storage assets and stand-alone energy storage devices across the United States and are reflective of their on-the-ground experience. Vote Solar also provided additional recommendations to the RFI questions where indicated below.

We thank the Board for the significant work done on New Jersey's SIP, which is being implemented pursuant to the New Jersey Clean Energy Act of 2018 ("CEA"), and for the specific work BPU Staff have done concerning the SIP straw proposals that are the subject of this comment opportunity. While there is still a lot of important and detailed work to be done, we are confident that this part of the SIP, taken in combination with our below comments, will significantly aid New Jersey in not only achieving the goals of the SIP, but in also achieving both the letter and spirit of the CEA. Since the establishment of the CEA, New Jersey's energy landscape has changed significantly. Federal funding available through the Infrastructure Investment and Jobs Act ("IIJA") and the Inflation Reduction Act ("IRA") provide customers and businesses new opportunities to accelerate achievement of New Jersey's stated goal of transitioning to 100% clean energy by 2035.[1] This transition includes many important components involving advanced energy solutions such as

[1] Exec. Order No. 317 (Feb. 15, 2023), 55 N.J.R. 511(a) (Mar. 20, 2023), ¶ 23, available at https://www.nj.gov/infobank/eo/056murphy/pdf/EO-317.pdf.

demand response, distributed generation, and peak load reduction, all of which play important roles in achieving the goals of this proceeding and the CEA more generally.

The Board has specifically requested stakeholder feedback on over 30 questions which we have answered below. However, please note that given the wide range of issues addressed in the RFI, we have not fully commented on all topics. The lack of comments on specific topics does not imply agreement or disagreement with Staff's recommendations regarding those topics. We also look forward to addressing the revised straw proposal that Staff anticipates issuing after reviewing stakeholders' responses to the below questions.

NJSEC, SEIA, United, and Vote Solar Background

NJSEC was formed to create public policy support for New Jersey's solar industry. NJSEC works in legislative outreach, education, and the development of realistic public policy alternatives that align with the fiscal and social circumstances that are unique to New Jersey. NJSEC members include local and national developers, renewable energy credit market traders and analysts, engineers, and legal and accounting professionals supporting all phases of New Jersey's solar industry.

SEIA is the national trade association for the United States solar industry. As the voice of the industry, SEIA works to support solar as it becomes a mainstream and significant energy source by expanding markets, reducing costs, increasing reliability, removing market barriers, and providing education on the benefits of solar energy and energy storage. SEIA works with its 1,000 member companies and other strategic partners to advocate for policies that create jobs and shape fair market rules that promote competition and the growth of reliable, low-cost solar power. SEIA's member companies range from manufacturers, residential, community solar, commercial, and utility-scale solar developers, installers, construction firms, investment firms, and service providers. SEIA has nearly 50 member companies located in New Jersey with several more national firms also conducting business in the state.

United is a national association of businesses that works to accelerate the move to 100% clean energy and electrified transportation in the U.S. Advanced energy encompasses a broad range of products and services that constitute the best available technologies for meeting our energy needs today and tomorrow. These include electric vehicles, energy efficiency, demand response, energy storage, solar, wind, hydro, nuclear, and smart grid technologies. United represents more than 100 companies in the $374 billion U.S. advanced energy industry, which employs 3.2 million U.S. workers.

Vote Solar is a non-profit policy advocacy organization with the mission of making solar more accessible and affordable across the United States. The organization works at the state-level in 27 states to drive the transition to a just 100% clean energy future. Vote Solar is a team of solar advocates using a winning combination of deep policy expertise, coalition building, and public engagement to power just and equitable clean energy progress in states nationwide. Our team advances clean energy progress in state legislative and regulatory arenas, where most decisions

about electricity are made. Since 2002, Vote Solar has brought our winning combination of deep policy and technical expertise, coalition building, and public engagement to drive meaningful progress.

NJSEC, SEIA, United, and Vote Solar Responses to RFI Questions

NJSEC, SEIA, United, and Vote Solar are pleased to respond to the following questions posed by the Board.

1.0 UTILITY OWNERSHIP/DISPATCH CONTROL

1.1 What are the advantages and disadvantages of utility control versus non-utility control of energy storage systems?

New Jersey should align its emerging market for energy storage deployment with New Jersey's pro-competitive electricity markets. Competitive markets and risk-based capital remain foundational principles of New Jersey's electricity policy, and the deployment of energy storage should be subject to the same restrictions on utility-ownership as were established when New Jersey passed the *Electric Discount and Energy Competition Act* in 1999. It is important to note that the legislature specifically declared that "that competition will promote efficiency, reduce regulatory delay, and foster productivity and innovation".[2] We agree with the Board's previous recommendation that the New Jersey SIP adopt a storage business model that encourages private ownership and operation (i.e., control) of energy storage devices, consistent with New Jersey's restructured competitive market structure. We further note that this approach is wholly consistent with the direction given to the electric distribution companies ("EDCs") in the recently adopted order in Triennium 2 regarding demand response ("DR") programs, where the Board clearly articulated that **the EDCs should develop DR programs designed to foster a competitive market for DR services**.[3] That being said, if staff were to propose anything different on utility ownership or control in its revised straw proposal, we note that this is a significant change on a complex issue, and fully working through it in this proceeding would cause further, unnecessary delays and jeopardize the state reaching its storage goals. Thus, any consideration of this issue should be done in a separate proceeding where the issue could be fully explored without delaying the current SIP.

Allowing EDCs to own a dispatchable resource that could be in direct competition with independently owned energy resources would create an uneven playing field that would discourage

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[2] See C.48:3-50(2)(b)(1).

[3] In re the Implementation of P.L. 2018, c. 17, The New Jersey Clean Energy Act of 2018, Regarding the Establishment of Energy Efficiency and Peak Demand Reduction Programs; In re the Implementation of P.L. 2018, c. 17, The New Jersey Clean Energy Act of 2018, Regarding the Second Triennium of Energy Efficiency and Peak Demand Reduction Programs; In re: Electric Public Utilities and Gas Public Utilities Offering Energy Efficiency and Conservation Programs, Investing in Class I Renewable Energy Resources and Offering Class I Renewable Energy Programs in Their Respective Service Territories on a Regulated Basis, Pursuant to N.J.S.A. 48:3-98.1 and N.J.S.A. 48:3-87.9 - Minimum Filing Requirements, BPU Docket Nos. QO19010040, QO23030150, and QO17091004, Order dated July 26, 2023, ("T2 July Order"). (Emphasis added).

private investment. Indeed, New Jersey utilities are fully funded by their captive customers – New Jersey's ratepayers – including a regulated return on equity (ROE) for their investments. New Jersey's electric distribution companies should remain focused on planning, upgrading, and operating the distribution and transmission system to accommodate deep penetration of competitive distributed energy resources ("DERs") including stand-alone storage and solar-storage hybrid resources.

Regarding utility control of energy storage assets, our view is similar in that New Jersey should focus on the use of market-based mechanisms, such as a price or other signal, for incentivizing performance rather than giving the utility direct control over energy storage resources. For some types of energy storage assets, giving the utility control would complicate investors' ability to model the asset's operations, thus making it difficult to model value streams and return on investment. This, in turn, would threaten the project's ability to attract capital and is one of several examples surrounding the numerous problems of utility ownership and/or control of energy storage systems.

That said, we support New Jersey's EDCs being allowed to explore innovative programs and being encouraged to consider competitively sourced, distribution-level non-wires solutions before making a traditional investment to meet a distribution need. But we also believe this is possible without the need for EDCs to own or control energy storage assets. If New Jersey EDCs are allowed to own or control energy storage assets under limited circumstances, they should be precluded from receiving incentives for energy storage, beyond appropriate and traditional rate base rate of return utility asset treatment.

1.2 For Distributed resource Performance-based Incentives, should responding to a utility signal be compulsory or voluntary?

For distributed storage resources, payment should be based on the successful dispatch of storage when called upon by the EDC as part of their program, during certain performance hours, as established by each EDC. The premise of a performance-based incentive is that the owner has the right to determine whether to respond to a specific event. If they do not respond to the event, they do not get paid the incentive. We agree with the Board's statement from the SIP straw proposal that the distributed performance incentive be an active dispatch program in which "responding to calls should be voluntary for the consumer, as is the case in the Connected Energy programs."[4] The overall incentive is based on the percentage of time that the resource owner has responded to the utility event. If the storage owner is unable to or chooses not to respond to the event, they would not receive any incentive for that event. Participation should not be compulsory, and the utilities should focus on creating and implementing proper programs that encourage voluntary performance.

Other existing battery demand response programs have demonstrated unequivocally that customers will reliably dispatch their batteries in programs that allow for voluntary participation if

[4] New Jersey Board of Public Utilities. Notice in the Matter of the New Jersey Energy Storage Incentive Program. Docket No. QO22080540. September 30, 2022.

they are properly compensated for the grid services which they are providing. In California's Emergency Load Reduction Program (ELRP), which gives customers the ability to voluntarily participate or opt out of dispatch events, CAISO credited the battery demand response program which helped to avoid the need to initiate rolling blackouts during times of peak demand in 2022.[5] In New England, the ConnectedSolutions program, which also allows for voluntary event participation, has "reduced expensive peak demand, provided cost savings, enhanced resiliency for participating residential, commercial, and industrial customers." [6] If the SIP is designed and implemented correctly, pay for performance will flourish in the Garden State and the goals of the SIP will be achieved.

1.3 For Grid Supply Resource Performance-based Incentives, should responding to a market signal be compulsory or voluntary?

Regarding grid supply storage resources, responding to a market signal should likewise be voluntary. The SIP straw proposal proposes basing incentive payments on the amount of carbon emissions abated through operation of the energy storage device, determined by measuring the marginal carbon intensity of the wholesale electric grid, specifically the Marginal Emissions Rate ("MER") set by PJM Interconnection, LLC ("PJM") at the time the energy is discharged, minus the carbon intensity of the energy drawn during the charging interval for the resource. We do not believe that this complicated model is sufficiently developed and that payments should instead be based on locational marginal pricing ("LMP") dispatch to help reduce peaks.

Existing wholesale markets provide incentives to economically dispatch energy storage in a least-cost manner. From a state policy perspective, what is most important at this stage in developing a market for energy storage is to cultivate a diverse portfolio of energy storage resources – short, long, and multi-day storage resources – which together with renewables are capable of completely replacing needs for fossil-fueled resources in the long-run. New Jersey should focus on helping these resources close the gap between technology costs and existing market revenues, allowing resources to decide how to respond to day-ahead and real-time market signals. Overly prescriptive, complex programs designed to reduce near-term emissions may have unintended consequences and risk further delay in launching the incentive program and deploying energy storage at scale. Where possible, New Jersey should prioritize simplicity and providing stable program design necessary to incentivize private investment needed to rapidly scale storage deployment in New Jersey by 2030.

2.0 Installed Storage Targets, Deployment Timelines and Capacity Blocks

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[5] "Californians saved the grid again. They should be paid more for it." 15 September 2022. *Canary Media*. https://www.canarymedia.com/articles/grid-edge/californians-saved-the-grid-again-they-should-be-paid-more-for-it

[6] "ConnectedSolutions: A Program Assessment for Massachusetts." September 2021. *Clean Energy Group.* https://www.cleanegroup.org/wp-content/uploads/ConnectedSolutions-An-Assessment-for-Massachusetts.pdf

2.1 How should capacity blocks be structured and proportioned, both within each component of the NJ SIP (Grid Supply and Distributed) and relative to each other?

We recommend the Board establishes capacity blocks proportioned by front-of-the-meter ("FTM") transmission, distribution connected FTM, behind-the-meter ("BTM") non-residential, and BTM residential storage systems. Each of these segments represents an opportunity to deliver unique benefits to different sets of ratepayers and each has a unique cost and incentive structure, requiring separate consideration to ensure all benefits are deliver to New Jersey ratepayers and residents. In order to provide greater certainty on revenue streams for a diversity of energy storage projects in New Jersey, we recommend the BPU start with larger capacity blocks for all market segments, as outlined in the table below. We also recommend delineating between residential and non-residential BTM storage capacity, as the BPU does in the Administratively Determined Incentive ("ADI") program for solar, as well as reserving dedicated blocks of capacity for low-income customers and customers in overburden communities ("OBCs").

We further recommend that the BPU not structure the block program with three small intra-year capacity blocks, even if that means moderately reducing the initial upfront incentives and/or moderately increasing the $/kWh or $/kW-year decrease in annual payments between each block. We believe not strictly tying the capacity blocks to energy years will lessen administrative delays, allow greater flexibility, and generally allow for the more rapid deployment of energy storage assets.

Block	Transmission FTM (MW)	Distribution-Connected FTM (MW)	BTM-Non-Residential (MW)	BTM- Residential (MW)
1	100	70	50	30
2	100	70	50	30
3	100	70	50	30
4	100	70	50	30
TOTAL	1000 MW			

2.2 Should the proposed first-come, first-served application process be changed to a "First-Ready, First-Served" process?

The answer to this question depends on how the Board defines "first ready." In general, we agree with the Board's proposal for a first come, first served approach as outlined in the Straw SIP. A first ready structure could lead to stranded investments if they are not ready in time to meet the annual procurement cap. Additionally, a first ready approach would create unproductive construction competition which leads to "boom and bust" cycles. A first ready requirement also creates the need for Board Staff to make judgements on actual "ready" dates. Making a formal determination of whether a project is "ready" could occupy significant staff time at the Board and lead to petty litigation if parties believe they received an incorrect determination on whether their project was ready. If the Board does take a first ready approach, a clear legal standard for the submission of

evidence should be established so that projects can rely on that legal standard when building timelines and financing.

However, a "first come" structure might also result in project maturity delays in the absence of posting some reasonable amount of funds at risk in escrow. We would, therefore, recommend a modest fee be placed into escrow that would be forfeit if the project was not completed within 2 years of completion of the necessary Construction Service Agreement ("CSA") agreements/reports returned to PJM, with the option for an additional one year extension of time if they have funded a System Impact Study ("SIS"). We also believe that there needs to be an exception that any EDC interconnection delays be exempted from the required timeline. We would also encourage the Board to set a reasonable required timeframe for the EDCs to act on submitted applications to ensure there are no backlogged projects waiting on EDC approval. We believe that a 12-month timeframe is more than reasonable.

2.3 How should the program be designed to avoid or minimize interconnection delays? Should the interconnection process be modified for accommodating energy storage and if so, how?

As the Board is no doubt aware, interconnection delays are posing major challenges to clean energy projects across the country, and the problem is particularly acute in PJM. PJM interconnection queue reform is underway; when PJM proposed a 2-year pause on reviewing new interconnection applications as part of its process reform, it cited a backlog of 1,200 energy projects awaiting interconnection. The Federal Energy Regulatory Commission ("FERC") recently released a new interconnection rule targeted at reducing queues and wait times for projects.

We recommend that the BPU consider the interconnection process that California's Self-Generation Incentive Program ("SGIP") uses for distributed energy projects, which requires a staged approach to incentive reservation. The BPU's Straw proposes that Distributed projects must have interconnection approval to reserve incentives. However, incentive certainty is needed much earlier than interconnection approval, as project developers often incur development costs, contract with off takers, and secure project financing prior to interconnection approval. Therefore, we suggest an approach where developers can conditionally reserve incentives. For BTM storage, this can be satisfied by submitting an incentive application with a customer signature; for FTM storage, interconnection application submittal and demonstration of site control or a deposit can suffice. The incentive should be reserved for a set time during which the developer must meet project development milestones to maintain the incentive reservation. SGIP requires an application fee of 5% of the total incentive amount to ensure applications are for serious projects only and are reserved for six months. The fee is refunded if the project completes the application process.

Being a flexible asset, storage should not be modeled in the same way as solar resources since it has the ability to restrict charging to non-peak hours and avoid discharging during congested grid conditions. Storage does not necessarily warrant distribution system upgrades even when an equivalent capacity solar system would. The BPU should look to IREC's model interconnection

procedures of 2023 for language to integrate into the NJ interconnection rule so that storage systems are more accurately studied during the interconnection process to reflect their flexibility.[7]

3.0 INCENTIVE STRUCTURE

3.1 Incentives are meant to cover a portion of the fully installed cost of an energy storage system. What is the fully installed unit cost (in $/kWh) for energy storage systems at present, and estimated to be each year through 2030? How do New Jersey-specific costs vary from these estimates? Please provide links to your references.

Energy storage incentives should be sufficiently designed to spur investment and based on the benefits the resources deliver. Staff noted that the range of incentives for existing programs in states like California, New York, and Connecticut are in the range of $1,000 to $100 per kWh depending on factors such as class of customer, time of use, and location.[8] We generally support these pricing ranges and the factors that are considered and believe a similar implementation in New Jersey is appropriate. However, we encourage the Board to set incentives appropriately to support the three different classes of storage resources: short-duration, long-duration, and multi-day storage. These resource classes have different cost profiles in terms of $/kW and $/kWh: short duration resources have lower $/kW capex cost; long and multi-day storage resources have lower $/kWh capex cost.

We also agree with the September 29, 2022, straw SIP which noted that all incentive programs more than paid for themselves while encouraging significant private investment. For example, the Massachusetts Department of Energy Resources ("Massachusetts DOER") found that deploying 1,766 MW of storage would cost no more than $1.35 billion while saving ratepayers $2.3 billion, thereby delivering a benefit-cost ratio of at least 1.7 even if ratepayers paid the full cost of such projects.[9]

3.2 What are the best public data sets for energy storage costs?

We recommend utilizing Lazard's levelized cost of storage analysis.[10] Lazard's levelized cost of storage analysis is an industry accepted standard that accurately includes the proper factors and analysis to implement and successfully encourage private development. We also recommend that data sets be used to evaluate non-financial costs and benefits as well. To this end, we recommend utilizing Locational Marginal Emissions ("LME") rates to evaluate the carbon impacts of a given energy storage project.[11]

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[7] IREC (Interstate Renewable Energy Council) Model Interconnection Procedures, 2023. Available at https://irecusa.org/resources/irec-model-interconnection-procedures-2023/

[8] We acknowledge that Connecticut's performance incentive is based on dollars per kW. Connecticut's current performance incentive is approximately $200 per kW for behind the meter resources.

[9] See Mass. Dep't of Energy Res., State of Charge: Massachusetts Energy Storage Initiative xi (2016), https://www.mass.gov/media/6441/download (projecting that the benefits to the electric system of deploying energy storage would significantly exceed the costs of doing so).

[10] See https://www.lazard.com/media/42dnsswd/lazards-levelized-cost-of-storage-version-70-vf.pdf

[11] See https://resurety.com/white-paper-charging-towards-zero

For long-duration storage, we recommend using the Long Duration Energy Storage Council's report authored by McKinsey & Co.[12]

3.3 Should Fixed Incentives be assignable to an aggregator? Why or why not?

We support allowing incentives to be assigned to aggregators, as any restrictions on aggregation would be counterproductive to the aims of the program. Flexibility in payment structure allows for innovative pricing structures that are tailored to certain market needs.

3.4 Should a Distributed energy storage resource that can provide grid services have the ability to opt in to either the Grid Supply or the Distributed storage program, for both the Fixed and Performance-based incentives?

Yes, as this flexibility supports the goals of the SIP by providing more options toward incentivizing more participation which will result in flexible assets reducing peak load. Building flexibility into the grid only benefits New Jersey's SIP program and brings value to ratepayers in lowering overall costs to the electric system. We encourage Staff to continue its "future proofing" of the electric system. As Staff correctly noted in its straw proposal, even after meeting the mandate of 2,000 MW of installed energy storage by 2030, New Jersey must then ensure that "100 percent of the electricity sold in the State be derived from clean sources of electricity by January 1, 2035."[13]

3.5 The Straw proposes the use of the PJM Marginal Emission Rate ("MER") signal as a basis for Performance-based Incentives for Grid Supply energy storage systems. Is or will the PJM MER be sufficiently developed to use to calculate NJ SIP Performance-based Incentives?

We believe that the PJM MER is not sufficiently developed at this time and that the program should be developed along more traditional LMP metrics. Perhaps at some future date when the MER data is sufficiently developed, the New Jersey program can migrate to this incentive structure. At that time, projects developed under the LMP-based structure should be able to remain under that structure or make a one-time election to move over to the new structure.

3.6 Is there a different methodology that can be used to determine Performance-based Incentives,such as a Peak Demand Reduction program?

Yes, a peak demand reduction program could rely on a number of market and EDC signals to determine when to respond to peaking conditions. We recommend that for distribution-level

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[12] Net-zero power: Long duration energy storage for a renewable grid, November 2021. Available at: https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/net%20zero%20power%20long%20duration%20energy%20storage%20for%20a%20renewable%20grid/net-zero-power-long-duration-energy-storage-for-a-renewable-grid.pdf.

[13] Exec. Order No. 315 (Feb. 15, 2023), 55 N.J.R. 509(a) (Mar. 20, 2023), p.6, available at https://www.nj.gov/infobank/eo/056murphy/pdf/EO-315.pdf.

assets, the Board direct the EDCs to develop a peaking response communications protocol. Assets enrolled in the performance-based incentives would be required to respond to up to 30-60 annual peaking events targeted at power supply cost drivers such as the wholesale forward capacity market obligation-setting events at PJM.

The EDCs would "call" such peak events and communicate them 24 hours prior to the event (this can often be done via an API and an integrated software platform such as a Virtual Power Plant). If the asset responds to the signals by discharging during peak, it will receive the performance incentive. The same principle could be applied to other power supply cost drivers such as regional network transmission service charges or locational marginal price signals. This is the most effective format to both lower emissions (which tend to be highest during peak periods) and to drive down power supply costs for non-participating customers. This model is being successfully used in many jurisdictions, as discussed in our response to item 3.7.

Some key program design elements include:

- A clear and consistent mode of communication between the EDC and the asset.
- A full 24 hours of notice prior to a peaking event so batteries can charge beforehand.
- An opportunity to earn a partial incentive if an asset does not respond to every event. Although historically assets in similar programs have a remarkably high rate of participation during peak events, occasionally they may need to miss an event for maintenance or because of communications breakdowns.
- Clear guidance from the Board about how many events may be called annually and what reasonable criteria EDCs can use to call an event.

As for transmission-level assets, there is no equivalent entity to an EDC that could call the peaks and notify participants. We recommend that the Board create a program or entity, the primary function of which would be to identify potential peaks and communicate them to assets enrolled in the performance-based incentive program then track the performance of those assets in response to peaking events.

3.7 If a Peak Demand Reduction program were to be developed, how should it be structured? What other states have similar programs that New Jersey should use as a benchmark?

We agree with the BPU's statement in the Straw SIP, where it was recognized that several other states have established successful energy storage performance programs in which customers are compensated for dispatching their distributed energy storage systems to provide grid services. These successful storage programs include ConnectedSolutions in Connecticut, Massachusetts and Rhode Island, and the Emergency Load Reduction Program (ELRP) in California have established and successful energy storage programs. We support New Jersey's efforts to pick the best aspects of these programs that Staff finds to be optimal for similar implementation in New Jersey. Currently, New Jersey has the benefit of looking at other state energy storage programs with a proven track record of success and can quickly select the best practices from other states and implement them in

New Jersey. Implementing a few minor changes to the best practices of other states so they are specifically tailored to New Jersey's SIP mandates would seem prudent at this time. It would certainly seem inefficient for New Jersey to try and "build" a whole new program that does not benefit from the proven success of other state energy storage structures and incentives.

In the ConnectedSolutions program, customers are compensated between $225 and $400 per average kilowatt dispatch across 30 to 60 events per summer. Participation in each event is voluntary, but customers are incentivized to participate frequently because their compensation is based on their average performance across all annual events. The program is intended primarily to reduce stress on the grid and avoid expensive energy purchases from fossil fuel peaker power plants. In California's ELRP, customers are paid $2 per kWh for voluntarily dispatching their batteries during times of high grid stress to avoid the need for load shed events. While the compensatory mechanism is overly complex, the goals of the Massachusetts Clean Peak Standard provide strong benchmarks. Similar to a Renewable Portfolio Standard, the Clean Peak Standard requires that a portion of peak load come from clean energy sources, and EDCs must obtain a minimum number of Clean Peak Energy Certificates ("CPECs"). Energy projects earn CPECs through a multiplier scheme based on the degree to which the project helps meet seasonal and monthly system peak demand. Green Mountain Power in Vermont offers $850 per kW and $950 per kW for 3- and 4-hour storage, with a maximum upfront incentive of $8,500 and $9,500, and an additional $100 per kW up to $1,000 if the project is installed in a grid-constrained area. Customers under this program must consent to have the utility control their battery during peak events that number about 5 to 8 per month and 3 to 6 hours per peak event.

Some of the prevailing best practices found in these distributed storage performance programs include:

- Compensating customers based on their actual participation and battery dispatch performance.
- Allowing customers to voluntarily participate in events without compensation or penalty for nonperformance.
- Providing customers with a performance payment that fairly compensates for the value their storage system provides and incentivizes broad participation.
- Opening the performance program to all batteries, whether new or already deployed, with the understanding that the customers are being paid for the value that their battery systems are providing and that already-deployed batteries have value to provide.
- Allowing customers to participate in the program via an aggregator, which will be notified by EDCs or a DERMS about scheduled events and will in turn facilitate dispatch of customer batteries in response.
- Facilitating customers to enroll in the program via smart phone apps of third-party aggregators.
- Limiting participation to projects sourced from clean energy that are in service to complementary peak demand, clean energy, and emissions reductions goals.

3.8 What degree/percentage of Peak Demand should be targeted for reduction? What effect would such a program have on GHG emissions?

We would support a 20% target of statewide peak demand by 2030 which also aligns with the goals in New York, Maine, and Connecticut. It is well established that reducing peak demand will also reduce GHG emissions as currently most of the peaker plants in New Jersey are the largest GHG electric generation sources as a majority of them use fossil fuels for their electric generation. Further, as the state electrifies the transportation and heating sectors, peak demand will likely continue to grow, exacerbating the need for peak demand management that can be effectively delivered through energy storage deployment. Vote Solar believes that it is important to recognize that while such a program could have an effect on GHG emissions, program design must ensure that emissions reductions are optimized, and that GHG emissions are not increased in any way, especially in overburdened communities. Therefore, we recommend that BPU staff engage in a meaningful engagement process with stakeholders from environmental justice and overburdened communities through a formal working group to ensure GHG emissions reductions, and reductions of other co-pollutants such as inhalable particulate matter ("PM") 2.5, are maximized in areas that stand to benefit the most from reduced emissions.

3.9 The Straw proposed that each EDC establish its own level of Performance-based Incentives. Should EDCs establish EDC-specific performance incentives, or should the incentive be standardized and common to all EDCs?

A standardized and consistent performance incentive design, deployed across all EDCs would lessen the administrative burden, and lower the costs for storage developers and aggregators in developing offering to customers. But given differences between EDCs, the ratepayer benefits of the program would be maximized through the development of EDC-specific levels of incentives. The methodology for setting the EDC specific performance incentives should be consistent and set by the BPU as this will provide the needed market certainty in encouraging private development.

3.10 Should energy storage owners be permitted to opt in, or be subject to utility control, in order to be eligible for Distributed performance incentives?

Energy storage on the distribution system should be eligible for performance incentives without requiring them to be subject to utility control.

3.11 How should incentives be structured for thermal storage systems?

Thermal storage systems should be compensated equally via the incentive structure for the grid services provided (e.g., kW of demand reductions). To the extent this requires conversions to thermal units, this should be done in a way that compensated equally for the grid benefits provided.

3.12 Under what circumstances, if any, should Distributed resources be able to opt into Grid Supply Performance-based Incentives?

In its next iteration of the SIP, the BPU should draw a distinction between distribution connected FTM and BTM distributed resources. In the absence of such clarity around terminology, it is challenging to provide a succinct response to this question.

3.13 Large projects and long duration projects have the potential to qualify for significant incentives. Should incentive caps be applied in this program? If so, how (for example, by customer, project, developer, duration, or meter), or other method?

To meet the goal of deploying 2,000 MW of storage by 2030, incentives should not be restricted by program caps of any kind at this time.

3.14 Should a cap be set such that the sum of federal and state incentives does not exceed a certain amount? If so, please provide details.

No caps should be set, as providing a benefit to the system should be compensated accordingly and should form the basis of the incentive. At this point in time, New Jersey will need as much help as possible to achieve its mandates, and setting an incentive cap will only result in limiting the benefit to that cap if going above a certain amount is not compensated accordingly. While not having a cap will result in increased participation, knowing they will be compensated according to the benefit that they are providing. Vote Solar contends that concerns regarding overcompensation would be abated by placing emphasis on incentives that expand clean storage access to overburdened communities through innovative and nascent project models expanding low-income participation and community ownership.

3.15 What provisions should be included in the program for monitoring, reporting and evaluation in order for deployed projects to maintain eligibility for incentives that are paid over time?

The criteria to maintain eligibility for incentives should be the same as those used to establish initial eligibility. However, the BPU should also ensure that advanced warning must be legally provided before any entity is dropped as ineligible and there should be an ample cure period of at least six months.

3.16 How can BPU structure NJ SIP Performance-based Incentives to both promote value stacking and prevent double compensation?

Energy storage resources are versatile and can provide a wide range of services, many of which can be stacked. The ability to stack values is important for energy storage (and other DERs for that matter). The Board can look to other jurisdictions to see how this issue of value stacking has been addressed, for example in the Value of DER tariff structure in New York, which includes quantification of wholesale energy and capacity, environmental benefits and avoided distribution system benefits. The Board should allow assets to participate in wholesale market opportunities if those same value streams are not already compensated in the SIP program. For example, for transmission-level assets, they may participate in the

SIP for compensation related to energy arbitration but should also be allowed to participate in any ancillary services markets. Value stacking in this manner allows assets to be put to the highest and best use on the grid. If the grid is in need of fast frequency regulation, for example, and the asset is not needed for a peaking event related to the SIP, it should be used at that time for regulation. Allowing value stacking (without double dipping) also makes more projects financially viable and ultimately leads to more storage being deployed on the grid to support grid functionality and decarbonization.

The Board should be clear in specifying which wholesale market revenue streams SIP assets may provide and which power supply cost drivers are being captured by the SIP and therefore "off limits" for SIP assets. The Board should also clarify that a solar plus storage project with less than 5 MW of solar paired with storage can participate in both the ADI program and the NJ SIP.

The risk of "double compensation" arises if a resource is paid twice for the same service, and this is generally only likely for a resource that would be taking service under a retail utility tariff and simultaneously participating directly in the PJM market. For these types of resources, utilities should file versions of their tariffs that exclude the wholesale market components. Using New York as an example, that state's utilities recently filed amended tariffs to align their retail offerings, which includes VDER and other DER tariffs, with the NYISO's DER Participation Model. For resources opting into that model, the retail tariffs will no longer include wholesale market components, including, but not limited to VDER. As it relates to the SIP, to the extent that incentives are tied directly to one or more of these market values, care should be taken to ensure that no double compensation is occurring.

4.0 OVERBURDENED COMMUNITY INCENTIVES

4.1 Staff is considering establishing both an adder and a capacity block for OBCs. What size should the capacity blocks be over time as a percentage of the overall Distributed segment? How much should the adder be in 1) $/kWh or 2) as a percentage of the base incentive?

We support both a separate capacity block and an adder for projects serving OBCs.[14] A separate capacity block ensures that there is an opportunity to participate for low and medium income ("LMI") households while also ensuring that any incentive level step-downs are tied to actual LMI participation and not just residential participation more generally. Additionally, it is imperative that state-level storage initiatives align with federal Justice40[15] principles so that projects have access to federal incentives. This means that 40% of all benefits of New Jersey's storage initiatives must reach disadvantaged communities. What constitutes a 'benefit' does not necessarily require OBC participation as direct energy consumers of a given project, but rather can come through other means such as demonstrated emissions reductions in environmental justice areas burdened by

[14] See In the Matter of the New Jersey Storage Incentive Program, Joint Solar Energy Industry Association and New Jersey Solar Energy Coalition Comments, BPU Docket No. QO22080540, December 12, 2022 at 12-14.
[15] See https://www.energy.gov/diversity/justice40initiative -:~:text=All%20Justice40%20covered%20programs%20are,benefits%20directed%20to%20disadvantaged%20communities

peaking facilities, through workforce development opportunities, added resiliency measures for critical facilities, and disadvantaged community ownership of storage assets. We recommend that 40% of storage project *benefits* reach OBCs, and an initial 10- 20% of the capacity be reserved for OBCs. These percentages, along with what would be identified as OBC benefits, should be identified and adjusted over time based on input from OBC and environmental justice stakeholders through a formal working group.

We support a high standard residential incentive similar to the adder implemented in the Connecticut energy program structure.[16] However, it is important to note that states like Connecticut are currently considering further increasing the LMI incentives due to low levels of participation to date. Connecticut's program currently provides an upfront incentive of $400/kWh, up to $7,500 per project, as well as 10 years of performance payments. With increased energy storage costs, the $7,500 per project cap has proven to be too small and will likely be increased or removed for LMI projects during the ongoing annual program review. Without knowing what upfront incentive level is envisioned for residential customers and the size of any performance payments, it is difficult to identify the specific level of incentive that will be needed to achieve LMI participation. Vote Solar recommends that this incentive level be determined through a separate working group process that includes OBC and environmental justice stakeholders.

4.2 How can BPU assure that the incentive structure chosen will in fact provide benefits to OBCs?

The Board can ensure that OBCs will benefit by measuring the program benefits directly in terms of the additional rate discounts that will flow to the OBC community residents. Environment benefits will, of course, also flow to these communities, but will be far more difficult to measure with any accuracy.

There are ways to ensure benefits are delivered to OBCs beyond the structuring of an incentive. Specifically, energy storage resources that receive the OBC adder should be required to meet certain criteria. These require further discussion and exploration, including with input from OBC representatives. For front-of-the-meter storage, some options to ensure benefit delivery to OBCs include: partnering (financially) with local organizations, requiring host community agreement with EJ focus/support, reliability support by siting on feeders that experience frequent outages, reduced dispatch of polluting generators in environmental justice communities, and high energy burden relief through community storage that delivers bill relief to utility customers that are on low-income rate or to large employers in OBCs. Vote Solar strongly recommends the establishment of a separate working group that consists of OBC and environmental justice stakeholders who can address these questions, as well as provide authority and oversight in ensuring the state's storage initiatives deliver meaningful benefits to communities long disadvantaged by the energy economy.

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[16] See https://portal.ct.gov/pura/electric/office-of-technical-and-regulatory-analysis/clean-energy-programs/energy-storage-solutions-program. See also https://portal.ct.gov/pura/electric/office-of-technical-and-regulatory-analysis/clean-energy-programs/residential-renewable-energy-solutions-program

5.0 OTHER QUESTIONS

5.1 What actions, if any, should BPU take to improve access to the energy storage value stack as part of implementing the NJ SIP?

We recommend that the BPU require the EDCs to identify distribution circuits where there is potential to add distribution value by dispatching storage. This can be accomplished through a mapping tool or circuit list, which should be updated at regular intervals. With more granular information on grid needs, the SIP could then provide additional incentives for storage deployed in higher-value areas.

5.2 How will FERC Order 2222 affect New Jersey's energy storage market? What changes should the Board make to the NJ SIP to take advantage of PJM's pending implementation of FERC Order 2222?

FERC's 2222 Ruling will ensure distributed and BTM projects can participate in PJM markets, however, the Board should also ensure that current program utility rules enable this participation by not prohibiting market participation explicitly or implicitly via interconnection restrictions or operational constraints. Energy storage is a dynamic resource that can play many distinct roles without implicating double compensation.

5.3 Are modifications to the NJ SIP needed to maximize the ability of energy storage developers to access federal investment tax credits or other federal incentives?

It would not appear that access to the federal investment tax credit and other federal incentives would require modifications to the NJ SIP program as currently envisioned in the current straw proposal. With regards to federal incentives, 40% of the benefits are required to reach disadvantaged communities as part of the federal Justice40 Initiative. Vote Solar recommends that a working group of disadvantaged and environmental justice community leaders be established to ensure at least 40% of benefits from projects under the NJ SIP reach disadvantaged groups, and as a result projects under the SIP remain eligible for the full extent of federal incentives.

5.4 What provisions, if any, should be established for interconnection of zero-export energy storage facilities (that is, energy storage facilities that do not inject power back into the grid and only supply power to on-site load)?

Zero-export storage facilities should receive the full value of available block incentives as appropriate. This reflects our view that storage used to reduce load by a given amount is providing the same benefit as a project that injects that same capacity onto the grid.

Also, the Board could consider a fast-track interconnection process for zero-export storage projects, because these types of projects are simpler and easier to interconnect.

5.5 What specific best practices regarding rates and tariffs from other states should be incorporated?

We recommend the BPU to develop a strict timeline to support storage-specific tariff development. The development of a tariff should include storage rates for behind-the-meter and front-of-the-meter storage. We also encourage the BPU to review storage proceedings and studies underway in other states, particularly in Massachusetts and Connecticut, who are developing new wholesale distribution service tariffs to be applied to front-of-the-meter-distribution connected energy storage systems.

Also, we encourage the BPU to consider that energy storage is delivering benefits to ratepayers through participation in this contemplated SIP. Any additional costs imposed in the form of rates will only increase the necessary incentive and could simply result in shifting rate-payer costs and benefits around. Rates should be designed only to recuperate any demonstrated marginal costs imposed on the distribution system by operation of the storage asset. This is a complicated question, and we urge careful consideration.

5.6 Should energy storage be utilized and compensated in the Triennium 2 Energy Efficiency /Demand Response proceeding as an allowable Demand Response resource? If so, what changes, if any, should be made to the NJ SIP design to avoid potentially providing double compensation for the same service?

While demand response capabilities offer an important mechanism for managing the reliability and economic optimization of the electric distribution system, the current Triennium 2 Energy Efficiency /Demand Response program should remain separate and distinct from the NJ SIP. Convolving these two programs would significantly complicate the issue of utility funding, ownership, and measurement.

5.7 How should energy storage systems be metered and measured? Can an inverter serve this function? What role should advanced metering infrastructure ("AMI") play in the NJ SIP?

Advanced inverters currently being used have the capability of metering and measuring storage system charging and dispatch. It is not necessary for AMI data to be used to administer an energy storage program. AMI cannot disaggregate whether the electricity being exported is solar or storage, nor can it tell when the battery is exporting and serving some of the on-site load. In other programs where storage performance is measured at the revenue meter it requires a convoluted baselining methodology that undervalues the storage performance and is a barrier to participation. We recommend that any performance incentives be measured based on the revenue-grade data provided by the applicable inverters or energy storage management systems.

5.8 Please provide any other comments on the NJ SIP.

The New Jersey SIP should include provisions to create appropriate incentives for existing storage facilities to ensure correct application for the performance incentives. Clearly, these facilities are

providing similar system benefits to the grid on a performance basis, and it would be counterproductive to see these facilities shutter if they are unable to cover ongoing maintenance and capital improvement requirements to continue to function. To maximize benefits to ratepayers, the Board could consider offering existing storage facilities that do not make modifications a "performance only incentive" option.

More importantly, the New Jersey SIP should also encourage existing facilities to maximize their operating potential by increasing their storage capacity and profile by incremental additions, altered scheduling to increase capacity factor, and capital additions to improve efficiency. These incremental improvements would be more cost effective for New Jersey ratepayers and be of significant help toward meeting the overall capacity mandates of the SIP.

The BPU should launch the SIP as soon as practically possible in order to avoid inadvertent market distortions and uncertainty derived from the need for the private sector to make investment decisions in the near term on project pipelines that emerged in response to the market signals created by the straw SIP and the anticipation of blocks of capacity opening in the 2023 energy year. Since the SIP envisions the projects must not be placed in service prior to being awarded the SIP, the longer the BPU delays opening the program from the initial SIP timeline, the more uncertainty for late-stage energy storage development that is reliant on investments that need revenue certainty, including associated incentives necessary for projects to be economic. As a result, we recommend opening the SIP as soon as possible and/or considering a temporary waiver process in the first year of the program for projects that are placed in service prior to being awarded capacity, consistent with the temporary waivers associated with the first year of the ADI program.

Lastly, while the SIP should support the development of competitive markets for developer and customer-owned storage, it may be appropriate, under certain circumstances, to allow EDCs to directly contract for a limited amount of emerging energy storage resources as part of a demonstration program, such as for long-duration and multi-day storage, outside of the SIP program. These resources face higher initial barriers to market than commercial energy storage resources, but they will be essential for meeting New Jersey's clean energy goals. In this case, EDC involvement should be focused on helping to remove market barriers for the emerging technologies, limited in scope by the Board, and that role should end once the goals of the demonstration program are achieved. Importantly, consideration of this option must not slow down the development and launch of the SIP program.

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We appreciate the opportunity to provide input on these straw proposals and look forward to our continued involvement in this and other important New Jersey proceedings. We are always happy to answer any questions and work with Staff as we all strive to plan and implement these important programs toward achieving the goals of the CEA.

Respectfully submitted,

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