December 18, 2024

New Jersey Board of Public Utilities
44 South Clinton Avenue, 7th Floor
P.O. Box 350
Trenton, NJ 08625-0350
Board.secretary@bpu.nj.gov
Attn: Secretary Sherri L. Golden

**Re: Docket No. QO22080540; In the Matter of the New Jersey Energy Storage Incentive Program**

Dear Secretary Golden,

Pursuant to the Board's Request for Information Notice of November 7, 2024, in the above-referenced docket, Energy Management, Inc. ("EMI") and Lotus Infrastructure Partners ("Lotus," formerly Starwood Energy Group Global, Inc.) (collectively, the "Companies") hereby jointly submit responsive comments regarding the 2024 Straw Proposal ("Straw Proposal" or "Straw") for the New Jersey Storage Incentive Program ("SIP"). Consistent with the prior Comments of December 12, 2022 (the "2022 Comments") and September 12, 2023 ("2023 Comments"),[1] the Companies urge that the 2024 Straw Proposal should be modified to (i) assure that incentives are sufficient to support the volumes of storage needed to meet New Jersey's goals and to address the urgency of climate change, (ii) utilize economies of scale to do so at the lowest cost, (iii) encourage the use of deactivated generation sites with existing transmission facilities and Capacity Interconnection Rights ("CIRs") that minimize cost, community impacts and permitting delays, and (iv) harmonize state and federal policy by providing enhanced incentives for grid scale projects in "Energy Communities" as defined at I.R.C. 45(b)(11).

[1] To avoid duplicative pleadings, those 2022 and 2023 Comments are incorporated by reference.

## 1. The 2024 Straw Properly Limits the SIP to Privately funded Entities.

As an initial matter, the Companies concur with the provisions of the 2024 Straw that expressly limit the SIP to privately funded entities. In a properly functioning competitive market, all participants operate on a level playing field, with comparable investor risk exposure and access to market information. In that regard franchised electric distribution companies have structural advantages (including insulation from shareholder risk if storage is to be included in rate base) and should not participate in the competitive SIP procurements. Utility ratepayers, however, are not well positioned to be exposed to those risks, and the fundamental rationale for New Jersey's restructuring of the electricity market was to insulate ratepayers from project risk and shift that risk to private investors. And, as discussed in the 2023 Comments, recent experience of utility projects resulting in abandonment and massive cost overruns demonstrates that developing complex and early-stage is, as an industry analyst recently stated, not within "the core competency" of today's utilities. Id., at n. 2.

## 2. The Board Should Consider Reverting to the Multi-Year Incentive Structure of the 2022 Straw or Implementing Long-term PPAs.

The Companies respectfully urge the Board to consider, as a first and essential matter, whether the grid supply incentive structure of the 2024 Straw would achieve the stated goals of New Jersey. The 2022 Straw was based upon a careful "gap analysis" of project costs and the amount of "missing money" needed to incent the desired investment, resulting in an initial cost-based incentive structure of ten annual payments of $20/kWh "intended to cover approximately 30% of the total fully installed cost of the project:"

> Based on administrative estimates of energy storage resources from publicly available estimates and comparable state programs nationwide, Staff suggests providing 10 annual payments of $20/kWh of storage capacity for the grid supply program and $40/kWh of storage capacity for the distributed program for the first year incentive block.

2022 Straw at 15,17. In contrast, the 2024 Straw does not include any "gap" or cost-based analysis of whether the grid scale program would result in investment sufficient to meet the state's storage goals.[2] Rather, the annual amounts of grid supply procurement would be constrained by "budget considerations." Id. at 9, 10,11. To the extent that the referenced budget consideration is that SIP incentives are to be provided solely through annual allocations of Societal Benefit Charge ("SBC") dollars, there would be no assurance that the resulting procurement amounts would be sufficient to incent, or correlate to, the volume of investment needed to meet New Jersey's goals. For example, the SBC allocation to grid scale storage for FY 2025 is set at $46 million,[3] and there is no apparent analysis of whether, or to what extent, the

[2] In notable contrast, the annual block size of the Distributed Segment of the 2024 SIP would be determined would be set "following a Gap Analysis to ensure that the incentive to the owner incorporates consideration of the difference between projected revenue …and the Installed Costas well as ongoing operations and maintenance costs of the Energy Storage System"

[3] See, Clean Energy Order, Docket No. O24040224 at p. 4 (6/27/24) allocating $60 million to storage programs, of which $46 million is allocated to grid supply storage.

resulting amounts of annual procurement would allow New Jersey to meeting the stated goals, either in FY 20225 or in following years.

The Companies thus respectively propose that the BPU revert to the approach of the 2022 Straw, where there is a known and cost-based incentive value (initially $20/kWh) payable over 10 to 15 years,[4] amounts calculated by Staff based upon gap analysis of objective data to provide the requisite incentive to achieve the desired result. Importantly, to the extent the SIP program remains funded solely by SBC dollars, the level of annual allocations needed to meet the State's goals would be far more easily accommodated if spread over the 10-15 annual allocations, rather than the single annual allocation under the 2024 Straw. And, to the extent the Board seeks to add competitive elements to the 2022 Straw approach, it could consider basing the 10-15 annual payments upon either the initial cost-based value determined by staff or such lower alternative value submitted by an eligible project. In either case, the annual allocations of funds needed to meet the State's goals when spread over 10-15 years would be far easier to accommodate as opposed to the required allocation being made in a single budget year.

Several storage industry commenters at the public information session of November 20, 2024 suggested the alternative of long-term pricing under purchase power agreements ("PPAs"). The Companies concur with those commenters and believe that PPAs are a tested an effective means of obtaining the financing of major capital projects and New Jersey has an established model for the offtake agreements allowing the development of offshore wind projects needed to meet other state policy goals. In any case, the Board's review should start with the question of whether any proposed SIP structure (including the 2024 Straw) is likely to incent the amounts of grid scale storage that are needed to meet the goals of New Jersey. The Companies believe that each of the alternative structures discussed above are far more likely to result in the investment needed to meet the state's goals.

3. **The SIP Should Nor Defer Annual Procurement Volumes In Expectation of Future Price Reductions.**

The 2024 Straw recognizes a SIP policy trade-off between (i) moving slowly in a manner that could result in lower costs in the future and (ii) expediting the quantifiable system and environmental benefits of accelerated implementation, with Staff noting its "expectation" that costs are likely to decline over time:

> In setting these [annual] targets, Staff believes the Board should weigh three main factors: (i) expected declines in the installed cost of storage over time (recognizing the disruption to this trend caused by recent supply chain issues); (ii) the environmental, public health, and grid benefits of quickly scaling storage; and (iii) the need to gain operational experience in New Jersey's storage program. (2024 Straw at p.9)

[4] And, as the 2023 Straw Proposal states, "Staff recognizes that projects are likely to require higher contract prices if the length of the contract is shorter, given that there is a shorter time over which to recover the capital costs of the project." Id. at 15.

While the Companies acknowledge that prices may decline, the basis for an "expectation" of that decline is questionable. The 2022 Straw relied heavily upon the U.S. Department of Energy's National Renewable Energy Lab ("NREL") 2021 forecast of future battery costs (the "NREL Report"). However, as discussed in detail in the 2022 Comments at pages 3-6 and the 2023 Comments at pages 4-6, the NREL study had admitted shortcomings and updated market analyses make the assumption of future price decreases highly questionable such that, while the public benefits of acting sooner are real and certain, the benefits of delayed implementation are speculative and dependent upon price declines that may never occur.

Further, as cited in the Prior Comments, the New Jersey Energy Master Plan expressly recognizes the need for storage implementation to be "accelerated" through "rapid deployment," policy directives that should outweigh possible future movements in volatile markets.[5] More recently, the need to proceed promptly and in larger volume was further confirmed by Governor Murphy's Executive Order 315 of February of 2023 that accelerated New Jersey's target date for 100 percent clean energy to 2035, a full 15-year advance from the prior date.[6] The Companies therefore believe that the storage target procurements should be accelerated and that the annual storage procurement blocks should be increased to respond to the urgency for action identified in New Jersey's climate policies.

4. **The SIP Should Also Control Compliance Costs by Incenting Larger Grid Scale Projects that Utilize Economies of Scale.**

While the multiple variables affect installed battery project costs, project size is a primary cost driver (as discussed in detail above and in the 2022 Comments at pages 2-7 and 2023 Comments at pages 8-9) and the SIP would minimize the cost of meeting New Jersey's goals by making procurements primarily from larger Grid Supply projects that reduce costs through economies of scale. The relationship of project scale to cost was highlighted by a recent economic analysis of the World Bank Group indicating that the installed cost of small-scale storage is more than twice as much as the cost of large grid-scale storage:

> Scale matters because it can impact both the choice of technology used and the LCoS. Costs per kW typically increase for smaller scale energy storage, but how costs scale to meet smaller loads depends on the technology. For example, Li-ion batteries and flow batteries are considered potential competitors at a utility scale. A Utility scale Li-ion battery system might have a CAPEX cost of between $400 and $500/kWh for 4 hours of storage, but the same technology at small residential scale may cost over $1,000/kWh.

Economic Analysis of Battery Energy Storage Systems, World Bank Group (2020), at 31.[7] We also note in this regard the comments of the New Jersey Office of the Rate Counsel at the second

[5] State of New Jersey, 2019 New Jersey Energy Master Plan, Pathway to 2050, at 13, 38, https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf.

[6] https://nj.gov/infobank/eo/056murphy/pdf/EO-315.pdf.

[7] https://documents1.worldbank.org/curated/en/222731592289791721/pdf/Economic-Analysis-of-Battery-Energy-Storage-Systems.pdf.

stakeholder meeting in favor of meeting the target mandate through "larger scale lower cost projects":

> Rate counsel recognizes that distributed storage has an important role to play, but we do stress that there's a balance [between] the benefits of distributed storage and the lower cost of meeting the legislative mandate with larger scale, lower cost projects.[8]

The New Jersey Energy Storage Analysis (ESA) Final Report published by Rutgers University in 2019 (the "Rutgers Report") similarly referenced the NJRDC's earlier recognition that larger-scale storage projects would lower costs to ratepayers:

> NJRDC. The FERC Order allows storage to be on the same playing field as traditional generation resources and potentially compete with resources like peaking plants. This could encourage larger utility-scale projects and lead to a decrease in cost.

Rutgers Report at Appendix 6.[9] Thus, the economies of scale of larger Grid Supply projects would substantially lower the costs of meeting New Jersey's goals and, moreover, it is unlikely that New Jersey could meet its volumetric goals without such larger scale projects. Thus, it is critical that the SIP be structured to provide procurement blocks and incentives levels that are sufficient to support investment in such larger projects.

**5. The SIP Should Require Project Maturity Requirements.**

The Companies support reasonable provisions regarding project maturity and, as Staff has noted, it is important that allotments be made to non-speculative projects that have a reasonable expectation of coming on-line within a reasonable time. The Companies do, however, urge a clarification or modification of the proposed Grid Supply requirement of Section 14:8-14.3(l)(1) of "an executed system impact study." First, what is typically "executed" is a system impact study agreement ("SISA") rather than an impact study itself and, further, certain SIP projects may be expedited through the transfer of existing CIRs. Reference to execution of SISAs and CIR transfers would also correspond more closely to the overall timing sequence of the program, where " the Planned COD must be no more than 550 Calendar Days after the date of the execution of the GIA." Second, the PJM interconnection procedures and terminology are currently in transition and subject to a pending filing at the FERC. The Companies thus request that Section 14:8-14.3(l)(1) be clarified and restated as "an executed system impact study agreement or the requisite notification of intent to utilize CIRs associated

[8] Comments of Sarah Steindel, New Jersey Asst. Deputy Rate Counsel, Stakeholder Meeting: Energy Storage Meeting 3, November 14, 2022, at 1:50:15 in the recording.

[9] Notably, in addition to lowering costs, the Rutgers Report also indicated the environmental benefit of larger-scale storage projects noting that, under the current PJM system mix, small-scale lithium storage projects could lead to increases in critical emissions: "Under the current PJM generation mix, use of Li-ion batteries in small-scale standalone installations could result in slight increases to CO2 and other emissions." Rutgers Report at 139.

with a deactivated generation resource, or such comparable measures as may become applicable under the PJM interconnection and cluster study procedures."

While the proposed regulation provides that the selection criteria are to be established by the Board, as discussed in the Prior Comments, the most effective way to minimize delay and assure realization is to prioritize procurement from Grid Supply projects with existing transmission rights including CIRs, especially projects located at the sites of deactivated fossil plants,[10] which present a unique opportunity for expedited development. Utilizing existing sites and transmission facilities would also minimize adverse locational effects and reduce costs to ratepayers. In addition to interconnection issues, many projects at new sites face serious permitting delays and challenges that prevent them from reaching commercial operation on time, if at all. The Board can thus have far greater confidence that projects located at deactivated sites will achieve commercial operation on schedule and contribute to the urgent goals of the SIP.

6. **Performance-Based Incentives for Grid Supply Projects.**

The Companies believe that Performance-based incentives for grid supply could be effectively structured based upon either the PJM Marginal Emission Rate or Peak Demand Reduction, so long as the rules are clear and benchmarked to publicly posted and predictable market indicators. In any event, grid supply projects will in the normal course be actively managed with the objective off charging off-peak in lower emission hours and discharging on-peak to displace marginal generation sources with high emission rates and thereby reduce emission on an ongoing basis. However, the Companies strongly believe that if the implementation of a performance-based grid supply incentive is deferred, all grid supply projects with an SIP allocation (including those from an either procurement) should be eligible to participate and receive those incentives when they come into effect, so that all projects to operate on a level playing field. Moreover, since the very purpose would be to incentivize operations that provide a public benefit, it would not be sound policy to limit that benefit by incentivizing only some, and not all, operating projects that could provide that benefit.

7. **Enhanced Incentives for "Overburdened Communities" and "Energy Communities".**

In response to Staff's question, the Companies believe that the appropriate enhanced incentive locational qualifier for grid supply projects is the federal category of "Energy Community" rather than the state category "Overburdened Community." "Overburdened Community" identified by low-income households is the appropriate qualifier for the distributed program, where the focus is at the household level for installations on the customer's side of the meter. In contrast, the grid supply program presents entirely different objectives and community impacts; while it makes sense to encourage distributed resources in low-income communities, it is not sound policy to also encourage grid scale projects in those communities. And it is very

[10] See, PJM Manual 14G, Section 4.4.1 Transfer of CIRs from a deactivated unit. Within the period of one year from deactivation, the PJM rules allow the transfer of the CIRs associated with deactivated generating units to new projects. That allowance provides New Jersey with a unique window of opportunity for the development of major storage facilities at recently retired locations in an expedited and least-cost manner, with minimal community impacts.

difficult to try to tie incentives to a correlation of storage operation to alterations in the dispatch of particular facilities that may be located in Overburdened Communities.

For those reasons the federal incentive category of "Energy Community" is the more appropriate locational qualifier for grid scale facilities, as the category was developed by Congress specifically for the benefit of communities facing hardships resulting from the retirement of traditional energy facilities. The public policy to prioritize clean energy facilities at deactivated energy sites was recognized by Congress in the recently adopted Inflation Reduction Act, which allows an additional ITC for qualifying projects located in an "Energy Community," defined to include a census tract "where [a] coal-fired electric generating unit has been retired." I.R.C. § 45(b)(11) ("Special Rule For Qualified Facility Located In Energy Community"). Among other things, Congress recognized the public policy of incentivizing the development of projects in those adversely affected communities where job and property tax loss will be most felt by the transition away from and retirement of traditional energy resources. The same policy interests in benefiting Energy Communities adversely affected by the energy transition are equally applicable to the SIP and the adoption by the Board of a corresponding enhanced incentive for the grid supply program would coordinate and harmonize state and federal policy.

**8. <u>Implications of NJ Legislative Bills S225/A4893</u>**

In response to Staff's question, Bills S225/A4893 if enacted would require several modifications of the proposed 2024 Straw and such modifications would be largely consistent with the Companies' comments in tis proceeding. First, the Bills would require that the program "shall be designed to achieve or exceed, together with other programs established by the board, the energy storage goals established by subsection d of section 1 of P.L. 2018 c.17 (C:48:3-87.8)." The SIP would thus need to be designed around a deliberate plan to meet the established volumetric storage goals. Second, the Bills would require a "gap analysis" for both distributed and grid supply programs to determine the amount of incentive required to meet the stated volumetric goals:

> When determining the amount of the upfront incentive to an energy storage system, <u>the board shall perform a gap analysis</u> to ensure that the incentive to the owner incorporates consideration of the difference between available revenue streams, including the performance incentive offered under the pilot program, and all-in system costs of the energy storage system. S.225, at 4.

Third, the Bills would provide for the Board to "allocate <u>at least</u> $60 million per year" of SBC funds to the SIP, and after the pilot period "the Board may determine the appropriate amount of funds to allocate to upfront incentives." Consistent with the comments of the Companies, the effective result would be to require a SIP that is deliberately designed to meet the stated volumetric goals, through incentive levels that provide the requisite funding as determined through a "gap analysis," and with the aggregate level of SIP funding be sufficient to accomplish those stated volumetric goals.

9. **Conclusion.**

As set forth above, the Companies urge that the Straw Proposal be modified to (i) assure that incentives are sufficient to support the volumes of storage needed to meet New Jersey's goals and to address the urgency of climate change, (ii) utilize economies of scale to do so at the lowest cost, (iii) encourage the use of deactivated generation sites with existing transmission facilities and Capacity Interconnection Rights ("CIRs") that minimize cost, community impacts and permitting delays, and (iv) harmonize state and federal policy by providing enhanced incentives for grid scale projects in "Energy Communities" as defined at I.R.C. 45(b)(11). The Companies commend Staff's efforts and believe the SIP can become a national model for expediting storage resources in order to enhance reliability and mitigate climate change.

Respectfully Submitted,


**Energy Management, Inc.**

Dennis J. Duffy, V.P.
20 Park Plaza, Suite 1101
Boston MA 02116
dduffy@emienergy.com

**Lotus Infrastructure Partners**

Jeffrey Delgado, Managing Director
5 Greenwich Office Park
Greenwich, CT 06831
jdelgado@lotuspartners.com