

<b>NEW JERSEY ENERGY STORAGE INCENTIVE PROGRAM (NJ SIP) STRAW PROPOSAL (STRAW)</b>	<b>§ § §</b>	<b>New Jersey Board of Public Utilities (BPU) or (Board)</b>
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**STEM, INC.'s COMMENTS ON NJ SIP STRAW**

Stem, Inc. (Stem)<sup>1</sup> hereby submits these comments on Board Staff's Storage Incentive Program (SIP) Straw Proposal (Straw) filed on September 29, 2022. Stem is a leading provider of artificial intelligence (AI)-powered software that optimizes energy storage and solar assets. Our Athena® software platform controls large batteries and solar assets so that they provide the most value to their commercial owner, the electricity grid, and oftentimes both.

Stem is unique in that we build and then manage clean energy systems across a single software network. Stem has approximately 2.1 gigawatt-hours (GWh) of energy storage assets contracted or operating in more than 75 jurisdictions. As a result, our continuously learning software has a base of approximately 1 billion runtime hours.

**Company Background:**

Founded in 2009, Stem is headquartered in San Francisco, California. We are listed on the New York Stock Exchange and have approximately 600 employees. Stem's behind-the-meter (BTM) commercial and industrial customers include more than 30 Fortune 500 companies such as Amazon, UPS, Meta, and Owens Corning. Our front-of-the-meter (FTM) customers and partners include Engineering, Procurement,

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<sup>1</sup> [www.stem.com](http://www.stem.com)

and Construction companies (EPCs); energy project developers; Independent Power Producers (IPPs); and investor-owned, cooperative, and public power utilities.

Our customers have a mix of BTM and FTM sites that Stem manages. Some customers have individual sites, while others maintain a large portfolio which we centrally operate from our software platform. Increasingly, we're helping our customers optimize asset categories such as EV charging stations, which often pair with solar and energy storage. We also partner with solar providers who add storage to standalone, community or commercial solar projects.

Recognized both as a pioneer and a current leader in the energy storage market, Stem was the first to deliver commercial and industrial storage to Fortune 500 companies, operates the largest virtual power plant (VPP) at 420 megawatt-hours (MWh) for Southern California Edison, and has the largest fleet of operating assets in the ISO-New England (ISO-NE) wholesale market.

Stem's broad and deep operating experience informs the following recommendations on best practices and potential pitfalls for energy storage incentive programs.

**Overall Policy and Straw Proposal Input:**

First, Stem supports the BPU's regulatory approach to create a smart incentive structure that builds statewide value across the electric system. We encourage the Board's continued consideration of the three grid domains for energy storage interconnection: transmission, distribution, and customer. The Board's holistic viewpoint will help to maximize energy storage benefits across New Jersey's customers and grid.

We recommend that the BPU integrate energy storage into the Board's existing processes for energy planning and procurement to help ensure that energy storage can fully participate in markets and maximize its flexible and broad capabilities. We also recommend that the BPU consider wholesale market drivers including PJM rules and FERC Order 2222 implementation, as well as rate design in the form of dynamic pricing and time-of-use programs.

Also, we believe that customer-sited energy storage can add significantly more value than a traditional power plant by virtue of providing services to all segments of the grid, enabling storage to participate in multiple markets simultaneously and improving systemwide economics and net benefits. By value and net benefits, we mean benefits to New Jersey consumers and/or the grid in the state, not incentives or compensation mechanisms. For this reason, Stem supports BPU's focus on value stacking to maximize benefits both for the broader electric grid and for customers who choose to invest in and deploy energy storage.

A by-product of the diverse use cases that energy storage can provide for the grid is a wide range of revenue opportunities available to energy storage asset owners. As a result, Stem recommends that as the BPU evaluates performance-based incentives, it considers how wholesale power market rules and retail rate design can be leveraged to align energy storage operational decisions with grid benefits and revenue recognition.

In the same vein, Stem suggests that the BPU evaluate energy storage in a broad manner beyond the lens of traditional demand response (DR), or load shedding via manual curtailment. While DR is a valuable and important way to extract grid

services from demand-side assets, energy storage can also serve as a generation resource that exports and injects power onto the grid.

Energy storage can effectively play both roles, but traditionally, some regulatory constructs tend to categorize BTM storage as “demand” and FTM storage as “generation”. As a result, there can be a lack of alignment with energy resource needs, which results in underused and/or undervalued BTM capacity. A related issue is that Investor-Owned Utility (IOU) tariffs are sometimes in conflict with other market signals. For example, due to dual participation rules, customers may be ineligible to participate in “just in time” rate programs because they are enrolled in DR programs. While the intent behind dual participation rules — to prevent double compensation to energy providers — is sound, we believe that a more modern regulatory approach would build in risk management and take advantage of the flexibility of energy storage to provide grid services when and where they are most needed and to compensate these resources commensurate with the value they provide.

Last, Stem supports the BPU’s focus on distributed storage programs for both residential and commercial markets. We recommend setting specific targets and milestones for each customer segment, rather than combined goals, due to the significant differences in the complexities, project timelines, and adoption criteria for commercial vs. residential energy storage adoption.

**Distributed Market Input:**

Following are Stem’s recommendations for the Distributed or BTM market:

- Set a developer cap to promote incentive distribution among many Distributed customers. The unintended consequence of not setting a cap on how much

energy storage a developer can build could result in a handful of large developers building most of the planned capacity, thereby limiting the far-reaching economic development potential intended by the BPU.

- Set a per-project incentive cap to help ensure the benefits of the program are distributed widely among end use customers in the state. Stem recommends limiting incentive eligibility for energy storage system capacity that is up to the customer's peak demand and up to a 4-hour duration. For example, a customer with a 1 MW peak demand would be eligible for incentives up to a 1MW / 4MWh energy storage system.
- Extend the 10-year investment horizon in the Straw Proposal to 15 years. This would further increase investment certainty, which is critical to provide financiers and asset owners with the assurance that their projects will be economically viable over the long-term life of the assets. We believe a longer investment horizon will spur increased confidence for private sector investment in support of New Jersey's ambitious energy storage and decarbonization goals.
- Revise the proposed grid interconnection process. The Straw Proposal thoughtfully considers the significant impacts of grid interconnection processes and timelines on energy storage market development in New Jersey. The Proposal notes that PJM queue reform is underway, and Stem notes that in February of 2022, 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. In addition,

the Federal Energy Regulatory Commission (FERC) has a Notice of Proposed Rulemaking (NOPR) underway to institute interconnection process improvements (*Improvements to Generator Interconnection Procedures and Agreements*, 179 FERC ¶ 61,194 (2022) (“NOPR”). Stem anticipates that both proceedings will significantly affect how and when energy storage projects are operationalized in New Jersey.

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 by submitting an incentive application with a customer signature. 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.

- Evaluate performance-based incentives for EDCs within the context of existing wholesale power market rules and retail rate design. BTM storage can already provide value to the grid via PJM Capacity, Energy, and Ancillary Services markets, and via coincident peak reduction for the local transmission zone. Any program established by EDCs should complement these existing value streams and not conflict or compete with them.
- Add more capacity targets allocated to BTM, or institute “soft” program targets, where the FTM budget can be re-assigned to BTM if there is demand. Also, Stem proposes carving out the BTM budget into distinct allocations for commercial vs. residential installations to enable adoption by both market segments. The Straw’s proposed mix of energy storage procurement targets is significantly weighted toward grid supply (FTM) vs. BTM deployment. New Jersey’s existing Competitive Solar Incentive (CSI) program is exclusively FTM, and of 2,000 MW from the proposed SIP and CSI, only 6% of capacity is allocated to BTM. That 6% is shared between residential and commercial customers. Stem appreciates that the BPU selected this mix in support of a good faith effort to act quickly to meet New Jersey’s ambitious statutory mandate of 2,000 MW of installed energy storage by 2030. However, Stem believes the imperative for procurement speed should not override the opportunity to extract the maximum benefit from the state’s energy storage investment.

**Grid Supply Storage Input:**

Following are Stem's recommendations for Grid Supply Storage or FTM:

- Align performance-based incentives to support prioritized policy objectives and ensure that asset owners understand their performance obligations. The Straw seeks comment on whether performance-based incentives should apply to specific performance hours or solely focus on GHG reduction. Stem believes that, in general, energy storage asset owners who respond to PJM market signals will contribute to both areas, because the highest-priced performance hours are likely to align with system peak and high GHG emissions. Performance hours can be adjusted in future years provided they are dynamic and tied to wholesale market conditions so that energy storage can provide value to the grid and asset owners can participate in multiple revenue streams via value stacking.
- The Straw seeks feedback on performance-based incentives related to PJM's marginal carbon emissions data and queries whether energy storage assets should be incentivized for charging directly from solar. Stem's position is that co-locating energy storage with solar, and charging from solar, does not necessarily reduce marginal emissions. This is because marginal emissions are the emissions that come online if new load is added, for example in the case of an extended heat wave. Depending on the available resource mix and pricing when new load comes online, that could mean that a more carbon-intensive resource, such as a natural gas peaker plant, would be called upon. For this reason, Stem recommends that performance incentives be based on



the marginal emissions intensity on the grid at a given time, regardless of charging source. Additionally, tying energy storage incentives to solar will impact where energy storage is deployed, which is likely to impede the BPU's goal of deploying energy storage statewide where it is most needed on the grid and in specific communities.

**Conclusion:**

Stem appreciates the BPU's consideration of these comments. Energy storage implementation is critical to realizing New Jersey's decarbonization goals while supporting customer needs and grid resiliency. Stem stands ready to work with the Board and stakeholders to support the Storage Incentive Program.

Respectfully submitted,

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