



Filed Electronically

December 18, 2024

Ms. Sherri L. Golden
Secretary of the Board
New Jersey Board of Public Utilities
44 South Clinton Avenue, 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,

Tierra Climate Inc. ("Tierra Climate") appreciates the opportunity to provide updated comments and recommendations on the New Jersey Storage Incentive Program ("NJ SIP") in light of recent developments in the program's structure and guidance. We commend the New Jersey Board of Public Utilities ("BPU") for its continued commitment to achieving the Clean Energy Act's target of 2,000 MW of energy storage by 2030 while addressing the complex challenges of reducing greenhouse gas ("GHG") emissions.

Thank you again for this opportunity to provide comments on the NJ SIP, particularly regarding the performance-based incentive ("PBI"). Tierra Climate is committed to working with the BPU and other interested stakeholders to ensure the NJ SIP achieves its stated decarbonization goals. Please do not hesitate to reach out if you have any questions about our submission or if we can be of further assistance.

Sincerely,

Jacob Mansfield
CEO & Co-Founder
Tierra Climate Inc.

Tierra Climate RFI Responses:

1. Should a performance incentive based on net avoided emissions be proposed only if PJM or another entity produces a day-ahead, marginal emissions signal?

Tierra Climate recommends distinguishing between ex post historical marginal emissions data used for settlement purposes and ex ante forecasted marginal emissions data used for day-ahead and real-time dispatch decisions. While we concur with the BPU that current PJM marginal emissions data is inadequate for either purpose, third-party resources already exist that could satisfy the BPU's requirements. For example, RESurety produces ex post historical marginal emissions data on a nodal level, while WattTime provides regional-level data. Forecasting marginal emissions rates is a nascent data science problem; however, day-ahead and real-time price forecasts are used widely for trading and dispatch decisions, and we expect the PBI can spur development of similar forecasts for emissions. Therefore, Tierra Climate strongly urges the BPU to evaluate the alternative data sources mentioned above for settlement purposes.

2. In the absence of a day-ahead emissions signal, should the SIP institute another form of performance incentive for Grid Supply projects?

Tierra Climate endorses the use of historic real time marginal emissions rates to quantify realized avoided emissions resulting from energy storage operations. This approach is operationally feasible and can be co-optimized alongside energy and ancillary service markets given the proper PBI. Assuming the emissions impact is measured using real time marginal emissions data, a day ahead emissions signal is not required. For a Grid Supply energy storage system attempting to co-optimize across its day-ahead energy and ancillary service obligations, day-ahead and real-time marginal emissions forecasts could serve the same objective.

3. What other changes or alternatives would you propose to the GHG Performance Incentive?

Tierra Climate recommends making existing Grid Supply energy storage systems eligible for any future GHG PBI. Our previous analyses demonstrate that emissions signals can meaningfully alter dispatch decisions, enabling 'additional' outcomes under an activity-based additionality framework. Restricting these incentives to greenfield assets risks locking existing assets into suboptimal emissions-related operations due to their initial value stacks at the time of commercial operation date (COD).

Contrary to popular belief, energy prices and marginal emissions rates in PJM are not highly correlated. Therefore, Grid Supply energy storage systems are unlikely to reduce emissions via energy arbitrage by default, especially after accounting for roundtrip efficiency losses. Emissions reduction and revenue maximization represent competing objectives in storage operations, where prioritizing one often comes at the expense of the other. A well-designed PBI is therefore essential to assign a clear value to emissions reductions, enabling operators to co-optimize for both environmental impact and economic performance.

4. How can the Board mitigate the risk of Grid Supply projects not operating/performing after receiving upfront incentives?

a. Are the reporting requirements proposed herein sufficient?

No Comment

b. Should there be a clawback clause to recover fixed incentive payments from energy storage systems that cease operating shortly after coming online?

No Comment

c. What should be the metric of success for a specific project be (e.g., discharging power during peak demand periods) for Grid Supply energy storage systems? In other words, what metrics should the Board consider when evaluating operation?

Tierra Climate recommends incorporating a cumulative emissions impact assessment as part of Grid Supply energy storage project submissions, similar to the analysis used by the BPU to determine the net positive environmental impact of energy storage deployments. This criterion would align with the BPU's objective of incentivizing technologies that credibly decarbonize the grid. Additionally, in the absence of financial incentives, this assessment could indirectly influence siting decisions, encouraging developers to select locations with higher renewable energy deliverability and greater avoided emissions potential. Finally, assigning a social cost of carbon could elevate projects with higher emissions reduction potential, even if they require higher fixed incentive payments.

5. Should Grid Supply energy storage projects that replace or demonstrably reduce the run- time of fossil-based peaker plants in overburdened communities be evaluated solely on price or receive additional weight or a preference in competitive solicitations? If additional weight or preference is warranted, please specify how.

Tierra Climate endorses using GHG reductions as an additional consideration in competitive solicitations, particularly for projects in overburdened communities. We recommend that the BPU assign a social cost of carbon to the cumulative emissions impact estimates of project submissions as outlined in 4(c). This approach would allow the BPU to prioritize projects with significant emissions reduction potential, even if these projects require higher fixed incentive payments.

About Tierra Climate:

Tierra Climate is an innovative technology company dedicated to unlocking the decarbonization potential of utility-scale energy storage systems. Our mission is to power a clean and reliable electricity grid through transparent digital solutions. With decades of experience spanning energy storage operations, asset optimization, and data science, our team brings unique insights into the intersection of technology and climate action. For more information, visit our website: tierraclimate.com.