FREEWIRE

Comments of FreeWire Technologies on New Jersey's Energy Storage Incentive Program Straw Proposal

I. Introduction

FreeWire is a leading provider of hardware and software-based Vehicle Grid Integration ("VGI") technologies that are helping to strengthen the electric grid while accelerating transportation electrification. FreeWire's battery-integrated direct current fast chargers ("DCFC") effectively allow for the permanent reduction of electric vehicle ("EV") load while the chargers' software enables further load reduction and shifting capabilities and energy services. FreeWire's unique battery-integrated DCFC have already been deployed at scale, namely at small commercial and retail locations like convenience stores and gas stations and at fleet charging stations across the globe.

FreeWire's technology uses a low-power input from the grid (drawing a maximum of 27 kW) to charge its internal battery energy storage system ("BESS") which then charges EVs with a high-power output (up to 200 kW). For context, FreeWire's 200 kW DCFC is equivalent to a permanent load reduction of 87% compared to a traditional DCFC[1] with the same output power[2]. FreeWire's solution promotes equitable access to ultrafast EV charging in grid constrained rural and urban areas by using ubiquitous low and medium voltage or even single-phase power unlike most traditional DCFC that require three-phase power at 480v. This accelerates transportation electrification by minimizing or even avoiding the need for time-consuming and costly

[1] Traditional DCFC refers to a DCFC that neither contains an integrated BESS nor is co-located with a stationary BESS.
[2] When replacing an existing 200 kW traditional DCFC. For a new install, FreeWire's 200 kW DCFC still offers the same benefit of permanent load reduction in that it requires 87% less input power to achieve the same output.

infrastructure upgrades on both sides of the meter that are often required to support traditional DCFC with a comparable output power.

In addition to using the DCFC's integrated BESS as a buffer to the grid, as described above, FreeWire's technology can be equipped with a bidirectional inverter allowing it to export energy stored in the BESS for uses besides ultrafast EV charging. For example, a site host could utilize stored energy to provide their site with backup power during a grid outage, peak load reduction for utility bill management, or they could choose to export it to the grid during a local grid emergency. FreeWire's battery-integrated DCFCs can also be aggregated into a virtual power plant to participate in wholesale electricity markets and therefore multiply their benefits to the grid. In short, FreeWire's battery-integrated DCFC is a fully-capable and highly-flexible distributed energy resource ("DER"). This, combined with its ability to accelerate transportation electrification as a rapidly deployable ultrafast EV charger, is exactly the kind of solution that the New Jersey's Energy Storage Incentive Program ("NJ SIP") Straw Proposal (the "Proposal") is seeking to incentivize.

II. Context and Recommendations

FreeWire sincerely appreciates the New Jersey Board of Public Utilities' ("BPU") efforts to put forth an energy storage incentive program that is both thoughtful and comprehensive. FreeWire agrees with the Straw's definition of energy storage device[3], taking a technology-neutral approach to meeting the statutory mandate of 2,000 MW of installed energy storage by 2030, and to explicitly recognizing the value of distributed storage by separating it

[3] "A device that is capable of absorbing energy from the grid or from a Distributed Energy Resource (DER), storing it for a period of time using mechanical, chemical, or thermal processes, and thereafter discharging the energy back to the grid or directly to an energy-using system to reduce the use of power from the grid." See Straw Proposal at page 12.

from grid-scale storage. Further, we support Staff's recommendation that, in addition to the incentives contained within the Straw, that private investors be allowed to "'stack' revenues from the wholesale electricity market, to utilize the behind-the-meter resource to actively manage their energy usage at the distribution level and reduce electricity costs, or to participate in a [DER] Aggregation service, when available"[4]. However, as acknowledged in the Proposal, the regulatory environment and market structure to support this type of value stacking does not currently exist in New Jersey.[5] The BPU will need to work in parallel to the creation of the NJ SIP to construct the market mechanisms necessary to compensate distributed storage assets for the full value that they provide. The BPU should consider opening a separate proceeding or conducting additional stakeholder workshops within this proceeding to identify gaps in existing regulation and market structures that will allow the type of value stacking that the Proposal envisions. Without a deliberate and simultaneous effort to create value stacking opportunities for distributed storage assets, it is possible that the market may not develop at the desired pace or that it will require prolonged incentives to do so.

FreeWire supports the incentive structure in the Proposal - namely having both a fixed and pay-for-performance incentive. However, we believe that the fixed incentive amount needs to start higher to reflect higher capital costs during the near-term years and to stimulate the market while the policies necessary to unlock the value stacking methodology are developed. We suggest a 15-year incentive structured as follows; years 0-5 at $50/kWh; years 6-10 at $45/kWh; and year 11-15 at $40/kWh. FreeWire recommends that all distributed storage projects be exempt from availability requirements in order to limit program complexity. We believe that the

[4] See Straw Proposal at page 2.
[5] "New Jersey does not currently have a means of pricing the benefits that batteries can provide at the distribution level . . . New Jersey is committed to adopting changes in regulatory policy that recognize the full wholesale and distribution value of batteries Straw Proposal at page 22 and 23.

performance-based incentive will adequately address performance concerns because 70% of the total project incentive value will be in the form of a performance-based incentive.

Additionally, we recommend that the BPU fill gaps in existing policy and funding support to accelerate the adoption of EVSE that are integrated or co-located with Electric Vehicle Supply Equipment (herein referred to as "battery-backed EVSE") given that they uniquely satisfy several of the Proposal's and State's broader clean energy goals. This could be accomplished as follows:

- Program design should include an upfront incentive to offset the incremental costs of installing a battery-backed EVSE to compensate for their ability to provide permanent load reduction, accelerate transportation electrification, and provide energy services of other distributed energy storage devices. The amount shall be calculated as follows:
    - In the case of a new battery-backed EVSE, the amount of the incentive should be calculated as the delta between the output power and the input power multiplied by $100/kW.
    - To further incentivize permanent load reduction via the replacement of traditional EVSE (non battery-backed), a bonus $/kW incentive should be awarded that is calculated based on the delta between the nameplate power of traditional EVSE that has been replaced and the input power of the battery-backed EVSE multiplied by $100/kW.
- The program design should also include an upfront $/kW incentive for public battery-backed EVSE that avoid the need for significant upgrades to the distribution grid (such as line extensions, new transformers, and other distribution grid equipment). While this may eventually be included in the value stacking approach contemplated by the

Proposal, this incentive would serve as a stop-gap measure while the exact avoided cost methodology is developed.

FreeWire appreciates the opportunity to provide these comments on the Proposal to the BPU and looks forward to continuing to participate in this docket.

Sincerely,

C. Silverman

Chip Silverman
Market Development and Policy Manager
FreeWire Technologies