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FreeWire Technologies' Comments - Strategies to Attract Private Investment in Zero Emission Vehicle Charging Infrastructure

Additional submitted attachment is included below.

July 30, 2020

Tim Olson, Senior Policy Advisor
California Energy Commission
1516 9th St
Sacramento, CA 95814

RE: RFI - Strategies to Attract Private Investment in Zero Emission Vehicle Charging Infrastructure and Other Clean Transportation Projects – Docket # 20-FINANCE-01

Dear Mr. Olson,

On behalf of FreeWire Technologies, Inc. ("FreeWire"), thank you for the opportunity to comment on the California Energy Commission's ("CEC") Request for Information ("RFI") regarding Strategies to Attract Private Investment in Zero Emission Vehicle ("ZEV") Charging Infrastructure. FreeWire appreciates the time and significant effort that the Fuels and Transportation Division of the CEC put into this RFI, which presents yet another strong effort by California to lead on climate change by supporting critical Zero Emission Vehicle technologies.

As the leading manufacturer of battery-integrated electric vehicle supply equipment ("EVSE"), FreeWire's response is intended to provide unique insights and perspective regarding the development of pilot financing mechanisms for EV charging projects. We offer our sincere apologies for submitting these comments past the filing deadline, but hope they may be of assistance at this time.

We believe that the Commission has the opportunity to attract high levels of private investment through the following mechanisms:

1. Pursuing DCFC with integrated energy storage, bolstering the value proposition of EV charging infrastructure by reducing costs and timeframes of installation, buffering demand charges and expanding the universe of sites where DCFC can be deployed;
2. Implementing a state-funded financing pilot wherein loans for innovative DCFC deployments are paid down through charging revenue; and
3. Creating a one-stop-shop for EVSE incentives and state financing opportunities, which would reduce the administrative burden of private sector participation

1. Integrating DCFC with energy storage can redefine the business case

Similar to solar and storage technology, DCFC and storage integrations like FreeWire's Boost Charger can redefine the business case of EV charging infrastructure through (1) buffering demand charges, (2) expanding the universe of sites where DCFC can be deployed, (3) reducing the costs and timeframes of installation, and (4) providing resiliency for this critical fueling infrastructure during Public Safety Power Shutoff (PSPS) and other grid-down events.

Buffering Demand Charges

The Boost Charger leverages energy-buffering technology that takes advantage of off-peak electricity rates. Utilizing the Boost Charger's battery-integrated platform, EV drivers, fleet operators and other stakeholders can reduce operating expenses by avoiding costly demand charges. For drivers, this allows for maximum charging speeds at all times, while minimizing the cost of charging during peak power periods.

Since the Boost Charger battery is constantly recharging from the grid, it is able to fast charge up to 18 vehicles a day based on a 25-kWh average charging session. In the extremely unlikely event that the battery is depleted after charging vehicles, the Boost Charger will "pass-through" 20 kW from the grid to the vehicle, which would otherwise be used to recharge the Boost's integrated battery pack. The Boost Charger's fast charging capacity is 6X to 9X greater than projected demand in 2025, based on CEC's EVI-Pro modeling.

Expanding the Universe of Sites Where DCDC can be Practicably Located

Battery-backed EVSE systems like the Boost Charger can greatly expand the universe of sites where DCFC stations can practicably be located, and for EVSE siting purposes, geographic distribution and deployment in strategic locations should be paramount if the goal is to provide charging resources where they are needed to combat range anxiety and spur EV adoption.[1] When FreeWire offers its Boost Charger to a site host, its equipment is typically more expensive than the traditional DCFC dispenser. However, because of the Boost Charger design it substantially reduces, or eliminates entirely, make-ready electric infrastructure costs and lowers site host's operational costs by reducing demand charges and limiting grid impacts. From a total cost-of-ownership perspective, it is a more cost-effective DCFC asset than conventional technologies.

In addition, the Boost Charger is a semi-permanent asset. Unlike conventional DCFC, where 70% to 80% of installation cost lies with grid upgrades, the Boost minimizes those costs and 90% of the investment is in the charging equipment itself. Thus, if utilization fails to materialize, the Boost Charger can be practicably redeployed at a new location, providing more flexibility and thereby avoiding stranded assets and sunk costs.

Reducing the Costs and Timeframes of Installation

The Boost Charger can be deployed within 12 weeks of purchase, compared to traditional DCFC installations where installation can range from 8 to 24 months. The Boost Charger is compatible

[1] The Boost Charger enables deployments within disadvantaged communities which might otherwise fail to get deployed because of project killing install costs for traditional charging, particularly in MUDs and other congested locations.

with single phase and three phase input, enabling site owners to avoid time-consuming utility upgrades.

2. Implementation of State-funded Financing Pilots

Owners of EV charging infrastructure face significant utilization risk when it comes to owning EV charging infrastructure. With the high upfront costs of DC fast charging equipment, in addition to uncertainty about if and when high utilization for DCFC will occur, investing in DCFC can be a financially risky investment. While the availability of incentives and rebates for installing DCFC has helped reduce the financial risk site owners face, there remains a need to increase the financial stability of EVSE investments.

FreeWire believes a state-funded financing pilot should be implemented to evaluate the potential of reducing the utilization risk EVSE owners face when investing in DCFC. When deciding to implement DCFC, many site owners evaluate the costs and potential utilization of DCFC. While the upfront costs of EVSE are transparent to site owners, uncertainty regarding utilization is often the determinative factor against making an investment in EV infrastructure.

By implementing a financing pilot, the lender (State of CA), would take on the associated utilization risk, agreeing to repayments solely based on the asset's revenue. The site owner would then repay the state from revenue generated from the charger. Through these repayments, the state would have the opportunity to reinvest the money into new EVSE projects. With the support of a government backed loan and the rise of EV adoption across California, successful demonstration of a state financing pilot would spur private sector investment, creating a new model for private financing.

3. Create a One-Stop-Shop for EVSE Incentives and State Financing Opportunities

FreeWire appreciates that California nation-leading efforts to fund and provide resource for transportation electrification. However, the myriad of funding opportunities and siloed approach to funding charging projects is an obstacle to ensuring a fast, streamlined buildout of EV infrastructure, especially for startups and small businesses in this industry. To maximize public funding of a potential EVSE installation, a project developer must navigate a myriad of different program opportunities. A project may separately qualify for "make-ready" utility programs, CALEViP rebates, Air District grants, public financing options and other local programmatic funding streams, each with a separate and distinct application process, redundant reporting requirements and unique eligibility criteria.

This siloed approach serves an obstacle to new market entrants that have limited resources focused on innovation, rather than staffing up with regulatory and procurement personnel. The time and effort involved in applying to the separate, siloed programs ends up limiting the opportunities that companies like FreeWire are ultimately able to pursue. Furthermore, separating funding streams, such as the bifurcated approach regarding utility funding of make-ready infrastructure versus other public funding programs devoted to equipment costs, leads to a failure to consider the total cost of ownership and less cost-effective projects than would otherwise be selected under a more holistic approach.

In addition, the failure of the industry to make use of public financing available through CalCAP, in part, lie with the fact that this is dealt with separately from incentive funding. FreeWire proposes that CEC look at other contexts where public financing and incentive funding have been evaluated in concert. In particular, the Commission may want to evaluate New York State's successful approach in providing grant funding alongside Clean Water State Revolving Fund ("SRF") financing through the New York State Empire Facilities Corporation ("NYSEFC"). NYSEFC has successfully used the grant programs it administers to leverage nation-leading uptake of SRF financing, and we believe a similar approach could be successful with regard to EV infrastructure financing by the State of California.

Conclusion

By redefining the business case for EVSE through battery-integrated technologies, pursuing an innovative utilization risk-based loan structure for EVSE financing and simplifying the process for pursuing public funding opportunities to ensure that all market participants, including startups attempting to address the EV infrastructure challenge through novel and innovative solutions, the state of California has a significant opportunity to attract private investment in EV charging. FreeWire appreciates CEC's continued efforts in reassessing the approaches for supporting the buildout of EVSE across the state, and is hopeful that CEC will implement the suggestions provided in these comments.

Sincerely,

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