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BESTFIT Draft Solicitation - FreeWire Technologies' Comments

Additional submitted attachment is included below.

May 26, 2020

Via Electronic Filing

California Energy Commission
Re: Docket No: 19-TRAN-02
1516 Ninth Street
Sacramento, CA 95814

RE: Draft Concept Document BESTFIT

Dear Commissioners and Energy Commission Staff:

FreeWire Technologies (FreeWire) appreciates the opportunity to provide feedback on the Built-Environment Electrification Solutions & Form Factors for Fitting Infrastructure to Transportation (BESTFIT) Innovative Charging Solutions draft solicitation concept presented at the May, 20 2020 staff workshop. We take this opportunity to sincerely thank California Energy Commission (CEC) staff for this thoughtful proposal to support the development and demonstration of innovative charging infrastructure solutions for both medium heavy and light duty vehicles.

As the leading manufacturer of battery-integrated EV charging systems, FreeWire believes that the incorporation of energy storage with electric vehicle supply equipment (EVSE) is fundamental to ensuring a cost-effective, streamlined and geographically diverse buildout of EV charging infrastructure. Our existing Mobi and upcoming Boost product lines have demonstrated the potential for this integration to increase asset utilization and reduce overall deployment costs – enabling charging infrastructure at the grid edge and beyond.

FreeWire offers the following comments regarding this draft solicitation concept and staff-directed questions posed at the workshop:

1. **Increase the Maximum Award for Light Duty Projects to $1.5 Million**

FreeWire respectfully suggests that the maximum project award for light duty projects be increased to $1.5 million. While medium/heavy duty (MDHD) projects will arguably be more cost-intensive than light duty, we believe that up to $1.5 million is a more appropriate project limit for the light duty category as engineering and design complexities and associated costs will be similar across both categories. Increasing the maximum available funding does not necessarily restrict the CEC from making smaller awards, and would recognize that total project costs may vary across project proposals.

FreeWire believes that a maximum project award of $2 million is appropriate for the MDHD category. The maximum award per applicant approach is preferable from the perspective of ensuring a diversified investment by the CEC in innovative charging solutions.

2. **Establish a Separate Area of Focus for "Resilient" EV Chargers or Recognize Resiliency Co-Benefits Explicitly Under the Scoring Criteria for the Established Categories**

FreeWire believes the three areas of focus proposed for project eligibility – increasing charger utilization, reducing the total cost of deployment and improving the charging experience – represent fundamental challenges in need of innovative solutions. We respectfully suggest that Resiliency be added as the fourth core focus area.

As critical fueling infrastructure, EVSE infrastructure must be resilient in the face of outages across the state associated with utility shutoffs, wildfires, earthquakes and other events. The Public Safety Power Shutoffs will create a drag on vehicle electrification as fleets, particularly in critical service industries, will need chargers that can operate independently of the grid. These fleets may not electrify or may elect to retain both internal combustion as well as electric vehicles to have transportation during these events. Similar, when fires occur and the grid is preemptively shutdown, evacuation in electric vehicles will present serious, if not impossible, challenges to surmount using conventional charging infrastructure. Deployment of resilient charging infrastructure is critical for fully meeting the state's electrification goals. The CEC should include resiliency as an additional area of focus or, in the alternative, recognize resiliency considerations explicitly under the scoring criteria for Innovation and Economic, Social, and Environmental Benefits.

3. **Light Duty and Medium/Heavy Duty Categorization**

Within the MDHD vehicle segment, there are a wide array of EVSE configurations across the various OEMs and vehicle subcategories, and there does not appear to be a clear line for distinguishing between "light duty" and "MDHD" EVSE. For example, Proterra buses can charge via the same CCS connectors on DCFC also compatible with many light duty models. With increasing capabilities of the light duty DCFC EVSE segment in particular, the cross-functionality of equipment is only going to become more common in the future enabling better utilization of charging infrastructure. It also would seem that the underlying rationale for having a higher maximum project award for MDHD projects is more attributable to increased costs associated with upgrading grid infrastructure, installing and operating MDHD deployments, and the total power requirements at a site rather than the type of vehicle this equipment is capable of serving. In assessing applications the CEC should focus more on how the technology overcomes these challenges than whether they can be utilized by one type of equipment or another.

Therefore, FreeWire recommends that CEC categorize applications submissions based on whether the proposed demonstration project serves light duty vs. MDHD vehicles instead of applying a somewhat arbitrary definition of light duty vs. MDHD EVSE. The GFO that may emerge from this draft solicitation concept should recognize that MDHD and light duty vehicles can increasingly be served by the same types of EVSE solutions. Furthermore, if a demonstration were to truly serve both vehicle segments, the Commission should consider

whether it should qualify for separate awards or a combined award of up to $3 million under the MDHD and light duty categories.

4. Minimize Operating Costs as well as Purchase/Installation Costs

FreeWire appreciates the Commission's effort to support innovations that minimize total deployment costs by avoiding costly grid impacts, which aligns with our company mission. Beyond minimizing the purchase/installation costs as a Key Performance Indicator [KPI] for this Area of Focus, CEC could also seek solutions that meaningfully reduce ongoing operating costs by minimizing peak energy use and demand charges. Ratepayers benefit from these technologies as they reduce the need for and impact of utility programs providing make ready infrastructure and demand charge relief for EV charging.

The development of innovations under this category could significantly expand the universe of sites where EVSE can be located – in particular unlocking strategic sites for EV infrastructure in grid-constrained urban and rural locations. Enabling cost effective charging deployments across the entire built environment and not just corridors with access to high voltage more equitably shares the benefits of public purpose funds and allows for charging infrastructure to be placed in more communities and strategic locations where it is needed. As such, we recommend evaluating the ability to expand the reach of charging infrastructure as a KPI for measuring the success of demonstrations under this area of focus, in addition to KPIs focused on total deployment (grid upgrades + equipment + installation) and ongoing operating costs.

A fundamental challenge to commercialization of innovative EV charging technologies is the current bifurcated approach to supporting EVSE deployment, wherein equipment purchase/installation incentives are administered separately from "make ready" upgrades. Beyond supporting innovative technologies through grant funding opportunities like this draft solicitation and request for comments, FreeWire suggests the CEC, California Public Utilities Commission and other interested bodies establish a new program centered on the total cost of deployment to harmonize existing incentive and make ready programs. Under such a program, as FreeWire envisions it, the amount of make-ready versus equipment/installation support would vary for each project, with a cap on total funding established for tiers (e.g. L2, 50-74 kW, 75-150 kW, etc.) of charging infrastructure. Such an approach would ensure a level playing field from an incentive standpoint, and award projects that are the most cost-effective for ratepayers and other stakeholders including EV drivers and site hosts.

The current approach of separately administering make ready and equipment incentives results in higher cost solutions limited in their application. Innovative solutions often do not qualify for funding under incentive eligibility criteria drawn narrowly around the status quo, resulting in a tilted landscape in the marketplace where these conventional systems are heavily subsidized while the innovators are forced to "sell uphill," missing out on funding support even though their solutions provide greater public benefit. Public authorities charged with establishing these incentive structures should guard against tipping the scales in favor early technologies and seek adopt holistic program that broadly support innovation, especially in an emerging technology

space like EV charging. A total cost of deployment framework that includes an avoided cost analysis provides a better result and more efficiently and fairly use public funds than current standalone utility make ready and equipment incentive programs.

Conclusion

FreeWire is very encouraged by staff's BESTFIT Solicitation Concept. For a small company developing complex and novel solutions to address barriers limiting mass deployment of EV Charging infrastructure, funding opportunities like this can be crucial in actualizing our product vision and accelerating the pace of innovation and product validation. The CEC should view its role similar to an investor trying to promote proven technology but also ensuring a broad portfolio, enabling solutions that have multiple market benefits and game changing potential. Staff has developed a solid approach that FreeWire proposes to further strengthen further by increasing the maximum project award for light duty projects and additionally focusing on innovations that enhance the resiliency of EV chargers.

Sincerely,

Rajiv Shah
Counsel and Director of Regulatory Affairs
FreeWire Technologies, Inc.