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*Comment Received From: FreeWire Technologies, Inc.  
Submitted On: 10/1/2020  
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**FreeWire Technologies Comments - CALeVIP Design Workshop**

*Additional submitted attachment is included below.*



October 1, 2020

California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814-5512

**Re: Docket No 17-EVI-01 – CALeVIP Design Workshop**

FreeWire Technologies (FreeWire) is grateful for the opportunity to comment on the California Energy Commission's (CEC's) proposals discussed during the California Electric Vehicle Infrastructure Project (CALeVIP) Design Workshop held on September 17, 2020. FreeWire appreciates CEC's continued leadership in support of the buildout of electric vehicle (EV) charging infrastructure across California. The Commission's efforts to spur the advancement of this industry are commendable and we are particularly excited that FreeWire's Boost Charger is being included as an innovative new direct current fast charging (DCFC) option eligible for funding support under CALeVIP.

FreeWire supports most of the design changes proposed during session 1 of the workshop and has several additional suggestions for improvement in design. The proposed reduction in incentive levels for 50 to 99.9 kW DCFC appears to be reasonable, but we suggest that CEC consider providing a \$30,000 adder for 100+ kW DCFC that are capable of charging two vehicles simultaneously at 50 kW or above. In addition, FreeWire respectfully requests that CEC provide a 15% funding minimum and a \$15,000 adder for DCFC that support resiliency through the capability of charging vehicles during grid outages.

With regard to session 2, FreeWire strongly opposes making Tesla connectors eligible for CALeVIP funding because providing public funds to support this proprietary approach to charging is inherently unfair in and of itself and runs counter to CEC's own efforts to promote standardization within the industry. Furthermore, this proposal is contradictory to the California Air Resources Board's (CARB's) recent proposal to require all fast-charge capable vehicles use the SAE CCS 1 standard beginning in 2026. With respect to EVITP certification requirements, FreeWire urges CEC to ensure that current gaps in program curriculum are satisfactorily addressed.

**Site Verification Form, Checkpoint Reviews and Voluntary Invoice Template**

Reducing the number of days afforded to submit a site verification form, requiring additional checkpoint reviews and providing a voluntary invoicing template appear to be commonsense improvements to accelerate application processing timeframes, reduce fallout rates and decrease the prospect that reserved funds are held for projects that are unreasonably delayed or never move forward. Regarding the invoicing template, FreeWire would not object to going further with the establishment of mandatory invoicing criteria specified within such a template, but prefers that use of the template itself be voluntary to avoid adding an administrative burden wherein the electric vehicle supply equipment (EVSE) manufacturer is required to maintain a separate and distinct invoice for purchases under CALeVIP.



## DCFC Incentive Levels

Lowering the incentive for 50 to 99.9 kW DCFC from \$50,000 to \$30,000 appears to be fair from FreeWire's perspective as it aligns with actual observed market conditions as they exist today in terms of the discrepancy between the cost of lower power versus higher power DCFC systems. That said, most high power DCFC stations are only able to provide power through a single connector rather than providing the capability of splitting its nameplate power output between two plugs to allow for simultaneous charging of two vehicles. Building such functionality into a system is not trivial and helps to significantly increase overall charger utilization, thereby reducing the overall number of ports needed to meet our transportation goals. In recognition of these benefits, FreeWire suggests CEC consider providing an adder of \$30,000 for high power (100+ kW) DCFC capable of simultaneously charging two vehicles at 50 – 99.9 kW.

FreeWire supports increasing the disadvantaged community (DAC) funding minimum to 35%, and recommends increasing the DAC adders to \$1,000 for L2 and \$15,000 to support attainment of the higher funding threshold. In addition, FreeWire supports making comparable adders available for DCFC in and around MUDs and rural communities. As stated in our oral comments during the workshops, CEC should ensure that the geographic areas eligible for the MUD and rural adders be identified clearly by an interactive mapping application, similar to the way CALENVIROSCREEN can be utilized for targeting resources in DACs.

Finally, FreeWire would like to note its appreciation of CEC's recognition that charging infrastructure is critical fueling infrastructure.<sup>1</sup> In the face of increasing Public Safety Power Shutoffs (PSPS) events as well as wildfires, earthquakes and other disasters that may result in grid outages, it is essential for the state to ensure it is supporting the build out of a critical mass of resilient EVSE capable of charging vehicles in the absence of grid power. This should be accomplished by promoting clean resiliency mechanisms, such as pairing the charging stations with energy storage and/or on-site renewable generation sources, rather than relying on traditional solutions such as fossil fuel-powered generators. We recommend establishment of both a funding minimum (15% of project funds) and an adder (\$15,000) for resilient EVSE.

## Tesla Connectors Should NOT Receive Support Under CALeVIP

FreeWire is strongly opposed to making Tesla connectors eligible for CALeVIP incentives, and urges CEC to drop this proposal. This proposal seems to fly in the face of CEC and its sister agency's efforts, through CALeVIP and other programs, to push for and support standardization amongst networks and charging protocols within the industry. For example, CARB recently proposed that all fast-charge capable vehicles implement CCS in California beginning in 2026.<sup>2</sup> The state should not be providing incentive dollars for proprietary connectors on closed networks, available only to those who purchase vehicles from a single automaker, in the interim. Rather, CALeVIP should support open, inclusive charging protocols and networks that support charging of all vehicles. Given

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<sup>1</sup> See <https://www.energy.ca.gov/news/2020-03/state-clarifies-fuel-providers-are-open-business-essential-services-during-covid>.

<sup>2</sup> See pages 43-45 at <https://ww2.arb.ca.gov/sites/default/files/2020-09/ACC%2011%20Sept%202020%20Workshop%20Presentation%20%28Updated%29.pdf>.



the coalescence around CCS as a universal charging standard in the US amongst OEMs, with the exception of Tesla, it makes good sense that CEC move away from a 1:1 CCS:CHAdeMO criterion to requiring one CHAdeMO connector per site. On the other hand, it makes no sense to provide public dollars in support of Tesla's exclusionary approach.

Tesla has made a business decision in California and across the US to continue this exclusionary, proprietary approach to charging. In Europe, regulators and policymakers, in addition to Tesla's own customers, have driven them to adopt CCS 2. This business model provides Tesla with sufficient economic incentives to deploy charging infrastructure, as Tesla itself has noted utilization of the proprietary approach as a means to encourage consumers to purchase its vehicles. CALEVIP should not be incentivizing Tesla's continuation of that model, nor should the program be incentivizing charging infrastructure that drives consumers to a single automaker due to its incompatibility with every non-Tesla EV. In terms of a long-term vision for charging infrastructure, we believe it to be appropriate for policymakers to drive towards universal connectors and interoperability. As stated above, this is happening in Europe and CARB appears to be moving in that direction within California. This proposal runs counter to those objectives.

This proposal also appears to be disconnected from reality. The reality is that Tesla connectors represent 41% of the DCFC connectors in California, with CCS at 32% and CHAdeMO at 27%.<sup>3</sup> Tesla's aforementioned business model has provided enough incentive for it to establish its network of superchargers across California – there is simply no need for public dollars to further establish its foothold. Furthermore, owners of Tesla vehicles have the option to use adapters, which are widely available, to use non-proprietary level 2 chargers and DCFC, whereas non-Tesla drivers have no such option to make use of Tesla connectors. Indeed, a level 2 J1772 adapter is included in every purchase of a Tesla vehicle. During the workshop, Tesla representative's claim that a CHAdeMO adapter is not widely used for fast charging, if true, is due to the fact that the Tesla CHAdeMO adapter is bulky, overly expensive and incapable of charging at speeds greater than 50 kW. On the other hand, Tesla has made a lower-priced CCS 2 adapter available in Europe that is under half the price, much smaller, and capable of charging at speeds nearly three times as fast (140 kW). The company has not made a similar CCS 1 adapter available in North America as a business decision, plain and simple.

Lastly, FreeWire is concerned that including Tesla connectors will lead to charging station installations that work well for Tesla drivers, but are unreliable and of lesser quality for non-Tesla drivers. This is another consequence of Tesla's approach to charging, which is closed and proprietary. Since Tesla charging hardware is unavailable to third party hardware manufacturers, it is currently not possible for anyone other than Tesla to integrate Tesla connectors into their charging stations. Furthermore, when it comes to software, Tesla does not participate in the open charging protocols that have been adopted by the rest of the industry and are intended to ensure interoperability of hardware with different networks, resulting in an open and accessible charging ecosystem for EV drivers and site hosts in CA. FreeWire's concern is that this would lead to charging stations where the minimum number of non-Tesla connectors required to qualify for CALeVIP funds are installed, without regard to quality or output power capabilities, and those non-Tesla chargers are not properly maintained over time, thus eroding the faith of EV drivers in these public charging

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<sup>3</sup> *Id.*, pg. 44.



stations. On the other hand, any charging station owner wishing to build a site that includes both Tesla and non-Tesla will likely have to pursue two entirely separate paths to procure hardware, and pay for 2 separate networks to operate the stations.

If CEC moves forward with this proposal, it should consider requiring that non-Tesla connectors co-located at the same site with Tesla connectors to, at a minimum, match the power output capabilities of the Tesla connectors. In addition, if Tesla connectors are made eligible for this program, FreeWire urges CEC to require, as a condition for eligibility, that the hardware is made available to third-party EVSE manufacturers (either for procurement of the connectors or by providing an unthrottled CCS adapter) for integration into their charging stations and with third party networks. While such a requirement would not resolve the issues of fairness identified above regarding the inability for non-Tesla drivers to utilize the publicly funded Tesla connectors, it would help address the unfairness to non-Tesla EVSE manufacturers and EVSP.

### **EVITP Certification**

FreeWire supports the comments submitted by the Electric Vehicle Charging Association. In particular, we request that CEC work with industry and other relevant stakeholders to ensure that all gaps in the program curriculum are addressed before January 1, 2022.

Thank you for your consideration of FreeWire's comments on proposed programmatic changes to the CALeVIP program. Please feel free to contact me if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rajiv Shah'.

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