

**DOCKETED**

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*Comment Received From: FreeWire Technologies*  
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*Docket Number: 19-TRAN-02*

**FreeWire Comments on Docket 19-TRANS-02**

*Additional submitted attachment is included below.*

March 18, 2022

**Via Electronic Filing**

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

RE: Docket: [19-TRAN-02](#) - CEC Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure Funding Allocation Workshop

Dear Commissioners and Energy Commission Staff:

FreeWire Technologies (FreeWire) appreciates the opportunity to provide feedback on the CEC Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure Funding Allocation Proposed Concepts and Questions presented at the February 28, 2022, workshop. We take this opportunity to sincerely thank the California Energy Commission (CEC) staff for this thoughtful proposal to support the development and demonstration of innovative charging infrastructure solutions for light, medium, and heavy-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 battery-integrated direct current fast charging (DCFC) stations 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's interest to participate in Clean Transportation Program medium- and heavy-duty infrastructure deployments spans nearly all of the proposed concepts, however, FreeWire's feedback was best addressed under the two solicitation topic areas included below:

**Questions for all Concepts**

- What amount of grant funds would be appropriate for each project/concept?
  - FreeWire advocates for awards of at least \$1.5 million for light-duty projects and \$2 million for medium- and heavy-duty projects. These award amounts reflect the real costs to deploy electric vehicle (EV) charging infrastructure today, accounting for reasonable match share.
  - With this said, FreeWire proposes the CEC to include at least one solicitation that will fully support deployment approaches and technologies that could serve and benefit light, medium, and heavy-duty applications equally or simultaneously. For example, deployment of battery integrated DCFC stations for school district, transit, and local government fleets could potentially serve light duty passenger vehicles, as well as heavy-duty school and transit buses. Projects that can accomplish this could present time and cost savings on downstream activities such as infrastructure and EVSE

purchases, project management staff time, and other costs during and after installation, due to streamlining efficiencies and the nature of dual-purpose infrastructure. Projects that combine light, medium, and heavy-duty applications in one project scope should also be incentivized in the scoring criteria.

- Should the CEC target specific regions in the state?
  - The CEC should consider at least one solicitation to support solutions that do not require complex and costly grid infrastructure upgrades. Projects under this category could target regions in the state that face grid constraints requiring costly utility infrastructure, need rapid deployment solutions, or otherwise would not occur unless grid upgrades are not required (and grant funds can assist). The CEC should consider a solicitation concept that caters to innovative approaches solving unique sets of challenges such as rapid deployment, deployment without grid upgrades, deployment in rural communities and communities with broadband challenges, and projects that provide community resiliency.
- What types of partners (geographic locations, types of equipment, size of fleet) would be best suited to this concept?
  - FreeWire encourages the CEC to consider eligibility requirements and scoring criteria that incentivizes projects that will deploy infrastructure across multiple sites, multiple use cases, and/or with multiple partner and fleet entities under one proposal, showcasing mixed and repeatable deployment models.

#### **School District Vehicle Grid Integration**

- Should this solicitation focus on either vehicle-to-grid or vehicle-to-building projects, or allow for both?
  - FreeWire suggests that the CEC allow flexibility under the vehicle-to-grid (VGI) or vehicle-to-building (V2B) definitions to include battery-to-grid technologies. For example, battery-to-grid (or charger-to-grid) technologies can directly interconnect charging stations with grid infrastructure, while providing energy storage, and have less impact to the vehicle itself. This technology can also provide site resiliency and provide power directly to the site during grid-down events when connected to the same panel through the same meter or a submeter. It can also provide load shaving and load shifting opportunities during demand response and critical peak pricing events. The CEC should consider the value of battery storage integrated directly into DCFC stations and incentivize site hosts that install equipment that minimizes the impact to the grid.

#### **Large Scale Ultra-Fast Charging Stations**

- What defines a site as large scale? How many chargers/outlets would be the minimum?
  - Large scale sites should be capable of serving 8 vehicles at once or within a given period (for example, within 30 minutes how many vehicles could be charged to full charge assuming 50% charge). Providing a charging rate metric instead of prescribing hard values on the number of chargers required will allow for innovative charging concepts and models. Another potential way to define this metric is what is the geographical or jurisdiction range and accessibility of a charging depot or solution? Can it serve multiple fleets within a district, municipality, city, or community?

- What is the industry accepted minimum for ultra-fast charging?
  - FreeWire defines ultra-fast charging as stations with an output of 150 kW or higher, as compared to fast charging stations with an output of 24 kW to 149 kW.

## Conclusion

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 EV charging deployment. 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.

**FreeWire's comments reflect the ever-evolving complexity around deploying EV charging infrastructure throughout California. Industry needs programs and solicitations that can support multi-duty class, cross-sectoral solutions that solve complex and multi-faceted challenges at a rapid pace with opportunities to streamline deployment processes and reduce overall costs.**

Sincerely,

Renee Samson, Director of Regulatory Affairs  
FreeWire Technologies, Inc.