DOCKETED	
Docket Number:	20-TRAN-04
Project Title:	Electric Vehicle Infrastructure Project Funding
TN #:	238827
Document Title:	Tesla Comments on Draft Solicitation Concepts for MUD and Rural Charging
Description:	N/A
Filer:	System
Organization:	Tesla
Submitter Role:	Public
Submission Date:	7/13/2021 3:17:45 PM
Docketed Date:	7/13/2021

Comment Received From: Francesca Wahl
Submitted On: 7/13/2021
Docket Number: 20-TRAN-04

Tesla Comments on Draft Solicitation Concepts for MUD and Rural Charging

Additional submitted attachment is included below.

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July 13, 2021

California Energy Commission
Re: Docket No: 20-TRAN-04
1516 Ninth Street
Sacramento, CA 95814

RE: Staff Pre-Solicitation Workshop for Light-Duty Electric Vehicle Infrastructure Projects Serving Rural and Multi-Unit Dwelling Residents – June 28, 2021

Dear Energy Commission Staff:

Tesla appreciates the opportunity to provide feedback on the recent workshop hosted by the California Energy Commission (Energy Commission) on the forthcoming solicitations for charging infrastructure deployment serving rural and multi-unit dwelling (MUD) residents.

Tesla's comments below focus on the technical equipment requirements and the site availability and access criteria discussed during the workshop and outlined in the draft solicitation concepts. Recommendations include the following:

- Projects providing Level 1 and Mobile Charging Access for MUDs should be closely evaluated for scalability and serving long term MUD resident needs.
- Any load management capabilities should be evaluated in the context of charging application type (DCFC vs. Level 2), potential use case and location, customer experience and cost impact.
- It is appropriate to include all charging connector types as eligible for participation in the projects given the minimum access parameters outlined in the draft concepts.
- Data security and need for access should be considered when evaluating certain data collection requirements.
- Establishing a 10-mile radius for proximity to existing DCFC infrastructure is unnecessary for the rural solicitation.
- Prioritizing access to and funding sites that are available 24/7 is important.
- Customer experience should be a key element of the evaluation criteria.

I. Equipment Technical Requirements

a. Level 1 and Mobile Charging Access for MUDs

The draft solicitation concept for increasing charging access and EV adoption at MUDs includes mobile and Level 1 charging options for the eligible charging technology types.[1] Exploring mobile charging options and other potential innovative technologies is worthwhile yet should not come at the expense of continuing to build out permanent charging access to where EV drivers already park for long periods of time including at home, an apartment complex, or at work. To meet future EV deployment goals for California, both strategies will likely be necessary. Given, however, that the intent of this MUD solicitation is scale and the "ability to adequately serve at least 100 residential units across multiple MUDs,"[2] use of mobile charging applications should be closely evaluated for project costs and customer experience. While there may be some upfront soft costs that can be reduced via mobile charging applications, there are other elements such as the timing of recharging the units and recharging generally that could impact the customer experience.

[1] Draft Solicitation Concept, p.6.
[2] Draft Solicitation Concept, p.5.

At the same time, while we see value in providing access to Level 1 charging for customers in existing MUDs in the near term, it is unclear whether this will be a cost-effective long-term solution for providing necessary access to EV charging infrastructure. It is important to consider factors such as charge time, cost, load management, and site host engagement, among other items. From a cost perspective, on the electrical side, there is little distinction between installing a circuit that will serve a Level 1 EVSE versus make-ready for Level 2 EVSE in a MUD.[3] The primary cost differential will be the actual charging hardware that is then utilized to charge the EV.

While it may be more cost effective in the near term to plug an EV into a 110 Level 1 wall outlet, this comes with tradeoffs and is often challenging or restricted in a MUD. First, property owners will not be able to recover the costs for electricity to charge the vehicles with Level 1 given the separate metering infrastructure to enable this will be extremely costly. Therefore, a property owner will either have to give electricity for charging away for free or add some additional general charge for the renter to be able to have access to the electricity. Second, from a grid and load management perspective, EV drivers will likely need to plug in as soon as they arrive at a destination with Level 1 charging to get a full charge and there will be limited opportunity to utilize price signals to encourage drivers to charge off-peak. While Level 1 represents a lower load, as EV deployment grows, this may be challenging from a management and cost perspective for the property owner or site host at a MUD. Moreover, Level 2 is better suited to integrate more renewable energy as it can take advantage of times when there is excess solar or wind. Finally, instead of focusing on how to encourage Level 1, the focus should be on continuing to drive down the cost of Level 2 charging hardware, which comes with many more advanced management capabilities and will be necessary as EV adoption grows. Discussions on upfront costs should be focused on lowering Level 2 hardware costs, which may be driven today by incentive levels generally being too high in the Level 2 space to drive true cost reductions.

Therefore, while we agree that Level 1 can serve drivers in the short term in existing buildings and should be made more accessible as an interim option for certain EV users, Level 1 should not be incentivized under the guise of providing greater EV access when the long-term need lies in driving down the costs of Level 2 and enabling access for all at MUDs to Level 2 charging where you park.

b. Load Management Capabilities

During the workshop, there was discussion regarding load management capabilities for various charging types and any potential requirements, beyond technical capabilities, that should be evaluated to be included in the solicitation. Load management capabilities should be evaluated in the context of charging application type (DCFC vs. Level 2), potential use case and location, customer experience, and cost impact. For instance, if scalability is one of the key metrics for MUD deployment and access, the cost of adding load management capabilities should be considered and how any active management could impact customer experience. Generally, establishing a baseline for technical capabilities is more appropriate than requiring active load management for participation in the solicitation on a charger by charger basis. It is important to also distinguish between the different types of load management options and whether what is being evaluated focuses on power-sharing to maximize site utilization versus responding to active price signals to reduce usage at certain times. Any technical capability requirements for load management should be evaluated for consistency with other existing CEC funding programs and should not add additional requirements. For rural charging access, setting active load management requirements at this time is unnecessary given that the primary objective is to drive EV adoption and facilitate ease of access to charging in those less accessible areas. Additional management requirements would likely impact customer experience and further add costs that would not further the intent of providing access to rural areas.

[3] Both require conduit, electrical panels, circuit breakers and an equal amount of labor to install. Cost differences arise from differences in wire gauge, circuit breaker and electrical panel sizes.

c. Connector Type

For both the draft solicitation concepts for MUDs and rural charging access, the eligible connector type includes the Tesla connector as an option. Specifically, it states that DCFC installations "must have at least one SAE standard CSS connector and may include CHAdeMO and Tesla" and Level 2 installations "must have at least one SAE standard J1772 connector and may have Tesla connectors."[4] In recent comments submitted by Tesla regarding CALeVIP equipment eligibility, we highlighted the importance of including Tesla connectors to help drive EV adoption.[5] The reasons outlined include Tesla vehicles representing a majority of the EV deployment in California today, the lack of a standard connector for DCFC that can serve all vehicles, the high utilization of Tesla stations, and greater in-state economic development. Given the structure of allocating CALeVIP funding is based on a first come first served basis, it is even more appropriate in the context of a competitive solicitation with applicant caps and specific scoring criteria to enable the Tesla connector to serve as an eligible technology type for inclusion in the program. The structure as outlined in the draft solicitation for equipment eligibility guarantees that any EV charging locations that receive funding via these solicitations provide charging access to all EV drivers in California, non-Tesla and Tesla, due to the proposed requirement for co-located CCS, CHAdeMO, and J-1772 connectors.

d. Data Collection

The draft solicitations outline several data collection elements including the type of vehicle that was charged and the number of unique vehicles and frequency of "repeat" vehicles.[6] While this information may be valuable to have access to from a research perspective, it is unclear why it is necessary in order to evaluate the success of these solicitations. Furthermore, unless there are some unique identifiers assigned to each driver via an account for charging at a particular location, it may be difficult to collect this is information and may create an undue burden for drivers who elect not to share this information. Finally, if such data is collected, it will be important to maintain driver privacy and data security access limitations.

II. Site Availability and Access Criteria

a. Rural DCFC Site Location

For the draft solicitation to serve rural sites, it outlines several requirements for the location of the sites regarding proximity for existing or planned infrastructure. Specifically, it strongly encourages DCFC project sites to be "at least 10 miles from an existing or planned DC fast charging."[7] While it is prudent to ensure there is not unnecessary duplication of charging sites that may lower the utilization of each site, setting an arbitrary 10-mile radius for proximity is unnecessary given that the rural projects have several intended purposes including to increase EV adoption by rural drivers and "support daily rural travel and charging behavior." Furthermore, depending on the type of DCFC that is deployed at a station, it may not serve all EVs. For instance, a site that has only CCS connectors will not serve Tesla vehicles and vice versa. Furthermore, an existing site that has only 2 DCFC chargers may be insufficient for charging demand and additional DCFC capacity within a 10-mile radios may be necessary. In these instances, proximity to existing DCFC is irrelevant.

[4] Draft Solicitation Concept, p.6.
[5] Tesla Comments, CALeVIP Equipment Requirements and Eligibility Sept 17, 2020 Workshop, Oct.1, 2020.
[6] Draft Solicitation for MUD Residents, p.7; Draft Solicitation for Reliable Rural Charging Solutions, p.8.
[7] Draft Solicitation Concept, p. 6.

b. 24/7 Availability

During the workshop, Staff asked whether sites and chargers should be available 24/7. Providing access to charging sites 24/7 is important to increase EV driver confidence and adoption. Therefore, we support setting this requirement for site selection under the funding solicitation. There may be limited exceptions, such as workplace charging, where 24/7 access is not necessary, however, for most of the sites needed to serve MUD and rural residents, 24/7 access will be necessary. For MUD residents, having access to Level 2 charging overnight will be important. At the same time, providing access to DCFC in rural areas 24/7 will also be necessary to ensure a reliable charging experience for customers that are driving long distances daily.

III. Customer Experience and Flexibility

Throughout the draft solicitation concepts for MUDs and rural residents, there is limited discussion to the consideration of customer experience. To drive EV adoption, customer experience is a key element that must be considered and is directly impacted by providing reliable charging infrastructure access.

While growing, EV penetration is still limited. To drive widespread adoption and realize the benefits from transportation electrification for greenhouse gas (GHG) emission reductions, air quality improvements and reduced costs, among other items, customer experience of owning an EV is an important and often overlooked element. Simply put, if customers have a poor electric vehicle or charging experience or feel like they would need to compromise by owning an EV, they will not purchase the vehicle. Projects funded by these solicitations, therefore, should continue to consider the customer impact and recognize that EVs are, first and foremost, a mobility resource for people. We recommend adding the following under the evaluation criteria currently outlined in the draft solicitations:

- *The proposed project considers customer experience of owning an EV and providing reliable charging access.*

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Tesla appreciates the opportunity to provide feedback on the draft solicitations for serving rural and MUD residents. In this context, we support consideration of alternatives to conventional home charging as a potential project funding category as well as exploring opportunities for mobile charging and other DERs for building more resilient infrastructure networks.

Sincerely,

Francesca Wahl
Senior Charging Policy Manager
Business Development and Public Policy