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Sierra Club Comments to CEC re LD EV Infrastructure Allocation

Additional submitted attachment is included below.

December 21, 2021

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California Energy Commission
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Submitted via docket at: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=20-TRAN-04

Subject: Sierra Club California Comments re: Light-Duty Electric Vehicle Infrastructure Allocation Workshop - December 2, 2021

Dear Mr. Wenzel,

We appreciate the opportunity to offer recommendations on this proposal.

Microgrids, Resiliency and Charging

One of the questions asked was "What should be the relative focus on V1G and V2G?' In our opinion, both are equally important and both should be a critical part of any grant programs for evaluating microgrids. VIG is important to manage smart charging of EVS to that the EV charging load can be cost effectively managed in such a way as to mitigate grid overload. V2G is essential because it will allow EVs in aggregate in the future as their population increases, to play a major and very cost-effective role in grid stabilization especially to better integrate intermittent renewables into the grid and flatten the duck curve. These applications could be especially helpful for a microgrid operation.

Local Government Fleet Charging

We recommend that projects from Cities, Counties School districts and ports all be allowed.

Regarding funding criteria, we believe there should be a substantial commitment of adopting ZEV polices, that there should be a 50% match share and with a focus on priority communities.

On the funding issue, approximately 50% of the infrastructure cost may be covered by the local government entity's utility. In this case, we recommend that the CEC consider that the entity provide at least some portion e.g. a 20% share of the total cost. The grant and utility may be able to cover the balance. If there is no utility or incentive contribution to the project, then we recommend a 50% cost share from the entity. This will enable the available grant funds to fund more projects.

DC Fast Charger Corridors

One "possible concepts" raised was about Drive-thru / Parallel charging stations to accommodate pickups with trailers.

We recommend that at least some grant funds support charging stations that accommodate vehicles with trailers through both parallel and pull through methods.

Another question asked in this section was, "Are there other DC Fast charger corridor concepts we should consider?"

We recommend that the CEC either by itself and/or in partnership with NREL make a data field addition to the database for each port that is tracked in the AFDC to indicate the type and size of physical access available at each charging port.

Both for light duty vehicles with trailers and for MHD vehicles with or without trailers, drivers need to know that a charging port can not only meet their charger power requirements but that it can also accommodate the size of their vehicle.

A system could be created to designate standard codes for standard sizes/types of parking spots for vehicles such as the following:

1. A = Class 1-3 vehicles
2. B= Class 4-6 vehicles
3. C= Class 7-8 straight trucks
4. AT = Class 1-3 vehicles with trailer (with sufficient ingress and egress space)
5. BT = Class 4-6 vehicles with trailer (with sufficient ingress and egress space)
6. CT= Class 7-8 tractor trucks with trailer (with sufficient ingress and egress space)

The system could also designate whether the parking area is a "normal" pull through configuration such as would be available at a retail gas station or a large pull through such as at a truck stop.

With this type of classification system, a semi-truck driver with a trailer, for example could go to the PlugShare app, or another app and could apply filters for DCFC's with at least an e.g. 250 kW power charger and a class "CT" physical space to help her plot her charger location route from e.g. San Diego to Seattle.

In addition, the CEC and NREL could then modify the HEVI-Load model to accommodate this additional data field and to model the number and locations of larger size charger parking / pull through spots needed to support the larger size vehicles along corridors.

Another question asked was "What should the minimum power level for DC fast chargers on corridors be?"

We recommend that the minimum should be at least 150kW and probably, it should be 250kW. The higher the power, the less time it takes to charge and the more EV charging turnover you can have for a given piece of real estate per hour. Users are motivated to complete their charge in the shortest amount of time possible. Within the next few years more new EVs will be able to take advantage of at least 250 kW charging. Many EV owners will be able to complete a charge from e.g. 10% - 80% in about 15 minutes. Any chargers less than 250 kW should be able to be upgraded to at least 250 kW in the future. Chargers at 150 kW or less will become stranded assets once EVs can take advantage of 250 kW + and the chargers are there. This is already happening to some extent for some Tesla charging stations with 150 kW chargers where nearby 250 kW chargers are also available.

High Density Level 2 Charging

One question asked here was "What are the characteristics of the charging environment needed to shift a driver's attitude from uncertain about charging availability to confident about charging options?"

We believe there are several that could address this concern as follows.

First there needs to be a demonstrated link between supply and demand that is planned and measured. It's not good enough to just install a facility of e.g.100 chargers and hope that it meets needs. In other words, there should be local studies on current and forecast demand for chargers that are needed in this space and then the plan to install dense level 2 chargers should be designed to meet this need with a minimum additional excess reserve to handle unexpected peak utilization. Actual utilization should be measured on a regular basis and when it appears that growing utilization will exceed supply, a plan should be put in place, in advance of excess demand, to continuously meet the growing demand with additional chargers.

Reliability is key. It is essential that a commonly used definition of "reliability" be developed (perhaps the CEC could facilitate this.) and then measured against a minimum acceptable standard e.g. 97%+ availability.

The project developer must have the responsibility to provide a sustainable funding mechanism and maintenance support program that can insure that the installed chargers are maintained to achieve the minimum reliability standard continuously. The maintenance support agreement must specify support metric standards around the timeliness of response to downtime events, etc.

Availability – The availability status of each of the chargers should be remotely visible via PlugShare or other commonly used apps. There are some apps such as EVMatch.com where for example, an EV owner can select a charger in advance, select a time and pay for the charge in advance. This can remove the anxiety of whether a charger will be available when needed. For MUDs, another company called MudCharging.com offers one suggestion on how to design and install the infrastructure for MUDs to support the increasing percentage of tenants at a MUD with EVs cost effectively (https://www.mudcharging.com/ see video entitled "Future Ready MUD Charging").

In summary, planning to have sufficient chargers in a given local urban area to meet demand with an extra safety margin, having confidence that the chargers are well maintained to a high standard of reliability and the ability to remotely check charger availability with the option to reserve and prepay for a charge will give EV owners a high level of confidence that they have a solid charging strategy even if they do not have a personal home charger.

Expanded Use of Physical Signs at EV Charging Sites to Promote ICE Driver Awareness

We fully support this idea and CEC's proposals in this area. We believe increased charger signage would be successful in increasing public awareness of the comprehensive and growing availability of publicly available chargers thus accelerating EV adoption growth.

General Recommendation Regarding standards

We recommend that the CEC require that all chargers utilized in these grant funded programs support interoperability standards including at least, ISO 15118 and OCPP protocols for all the reasons put forth in the CEC's recent workshop on ISO 15118 on December 2, 2021.

Sincerely,

Ray Pingle, Lead Volunteer - Transportation Electrification
Sierra Club California