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Comments on Light Duty Electric Vehicle Infrastructure Projects for Rural and Multi-Unit Dwelling Residents Pre-Solicitation Wor

Additional submitted attachment is included below.



VIA ELECTRONIC FILING

July 13, 2021

California Energy Commission
Re: Docket No. 20-TRAN-04
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Comments on Light Duty Electric Vehicle Infrastructure Projects for Rural and Multi-Unit Dwelling Residents Pre-Solicitation Workshop

Greenlots, Siemens and Veloce Energy, together the Joint Parties (“Parties”), respectfully file these comments on the “EV Charging for Multi-Unit Dwelling (MUD) Residents” and “Reliable Rural Charging Solutions” draft grant concepts that Staff presented at the pre-solicitation workshop on June 28, 2021.

The Parties commend the Commission for encouraging the deployment of charging infrastructure to drive EV adoption among rural areas and residents in MUDs via a competitive grant solicitation. We have chosen to comment on specific discussion questions as outlined in the workshop presentation. Our comments below apply to both proposed program concepts unless specified otherwise.

Proposed Funding and Eligibility

MUD Charger Siting: The Parties contend that the “½ mile distance” requirement for charger location, while well intentioned, may preclude some MUDs owing to the unavailability of suitable sites within that distance and/or landlords unwilling to support electrification efforts on site. We recommend that Staff be open to innovative alternative ideas in such situations - for example, in Norway an adjacent shopping mall parking garage is used for MUD charging in the after-retail hours.

Charger Technology: The Parties strongly object to spending public funds on Level 1 chargers for the following reasons: a) Level 1 chargers come free with all new EV purchases; the charger is included in any pre-owned purchases of EVs as well, and b) with light-duty EV ranges trending towards 400 miles/charge (and when light-duty EV drivers are reverting to ICE-vehicles owing to unacceptable charging times/experiences¹), Level 1 chargers are rapidly becoming obsolete.

¹ "Discontinuance Among California's Electric Vehicle Buyers: Why are Some Consumers Abandoning Electric Vehicles," National Center for Sustainable Transportation, UC Davis, May 2021.

Therefore, it is an inefficient use of public funds to support the procurement of Level 1. Low power chargers also provide significantly less opportunity for managed charging and grid integration optimization.

It is being argued by some that a Level 1 charger or even just a 120v charger receptacle would be acceptable from a cost perspective. The Parties wish to provide some factual counters. With Level 1 charger capacity providing just 3-5 miles of range per hour, it takes between 40 and 67 hours to fully-charge an EV with a 200-mile range, which is at the lower end of new EVs coming to the market. Some may further argue that charging to 50% of the range should suffice for daily use – but it will still take between 20 and 33 hours to achieve that charge level. Because charging takes so long, every individual parking space in a MUD would need to be equipped with a 120v plug socket to cater to each and every EV, not to mention putting driving limits on MUD EV drivers.

On the other hand, with networked Level 2 chargers, fewer chargers could provide not only faster charge times for residents, but also, they would drive higher utilization given the turnover in usage and therefore, cost efficiencies for the landlord as well as the tenant driver. Software services are available in the market for networked Level 2 chargers to provide reservations, so tenants can efficiently share a single charger and be billed individually – which provides the landlord with the revenue stream to pay for the charger (if needed) and enables each driver to pay for their electricity without affecting the landlord’s power bill (thus removing another barrier to MUD deployments).

The costs of running the wiring from a service panel for a Level 1 charger and Level 2 charger are virtually the same, and the fact that the Level 2 charger can be shared means the *cost per EV* is generally lower than for Level 1 if two or more EVs use the charger. In fact, for large MUDs where 10 or more EVs would use the charger, there should be at least one DCFC in a MUD charging site to provide MUD residents the confidence to adopt EVs knowing that a 20-minute charge would give them the range needed for most daily commutes.

CBOs/Public Entity Requirements: The Parties are of the opinion that the Commission should avoid being overly-prescriptive with regard to project team components. The applicant lead should have the flexibility to decide the team mix based on the site and community requirements, and should be able to comprise both private and public entities.

Match Funding

The Parties support the requirement that the applicants provide a percentage of the total project costs as match share. However, we think 25 percent is too high a target for both programs, which may impact the competitiveness of the applicant pool, thereby limiting the grant to certain entities who may have won previous CEC funding. The match share should vary by location type as well as by business model, charging innovation, etc. In the same light, we also recommend that the Commission not put a requirement on the portion of the match share that should be in cash – rather it should encourage the applicant to be innovative in the manner it chooses to finance the match share via provision of services, diversity in business models, etc. For example, if the applicant is able to deploy distributed energy resources such as solar and/or energy storage that would eliminate the need for any distribution system upgrade, this avoided marginal cost should count towards the match percentage.

Proposed Project Readiness

MUD Project Requirements: A key barrier to installation of chargers at MUDs is available electrical capacity at the service panel. In our experience, as much as 50% of panels require upgrading. Another barrier at MUDs is knowing the processes to be used to track charger users and bill them for their electricity consumption, unless the landlord is providing free charging (a rare occurrence). Accordingly, applicants should demonstrate availability of sufficient panel capacity for the charger, as well as describe their plans for managing tracking and billing of charging.

Application Submittal Timeline: While a longer timeline will allow more time to secure site agreements, it will also delay installations. The advantage of the longer timeline is outweighed by the disadvantage of not having the chargers available for earlier use – especially given the current shortage of available charging stations.

The Parties believe a signed contract requirement would be inappropriate given that the project proceeding is likely contingent upon winning funding. Letters of intent should be sufficient, and a generous application submittal window is appropriate in order for bidders to gather the best or most appropriate sites, not just those that are quickest to identify or gather.

Introducing Additional Competitive Elements to MUD Program: We also encourage the Commission to consider introducing more competition into the site selection and equipment/solutions procurement process for the MUD program. This could be done by bifurcating the site identification activities from those intending to develop the projects. CEC could have a public entity or CBO use their local community knowledge to gather potential participants, have those sites be aggregated and submitted to the Commission, then the Commission would separately put out an RFP to prospective project developers to develop the identified, aggregated sites. These steps could also happen in parallel. Alternatively, sites/buildings could apply directly to CEC for consideration.

This would be similar to a community solar project development approach, leveraging scale of economies to get the best, most appropriate products and services at the best costs, and separately leveraging local organizations most familiar with their communities to identify the most appropriate sites. This introduces competition both with respect to site/building selection, and with developers bidding to develop the sites, rather than the developer who happened to get to a particular site first becoming the developer who necessarily will develop the site. Should this approach not be practical in the instant grant solicitation concept, we encourage staff to consider and ideate on how such an approach could be leveraged in other programs and concepts.

Proposed Technical and Operations Requirements

Networking Requirements: The Parties once again urge the Commission to require that all publicly-funded chargers **be networked (not just “network capable” as Staff proposed for MUDs)**. To capture the benefits of VGI, networked chargers are essential to shift charging away from the peak hours or toward times of abundant renewables. Utilities (and their ratepayers) benefit

from lower grid reinforcement costs, while EV drivers benefit from lower fueling costs. Moreover, networking is essential to track consumption for each EV and provide billing services. We anticipate very few site owners, whether for MUDs or rural charging stations, will want to provide free electricity.

In order to future proof the state's investment, the cost-efficient approach is for chargers to be equipped with communications that allow for remote control and for providing data to EV owners and utilities. Remote control allows for ongoing adjustment of charging strategies as potential grid impacts change over time; for example, the potential for a new midnight peak noted in the AB2127² Report can easily be managed by staggering charger start times. The data is valuable to EV drivers to understand how much their fuel is costing and to utilities to understand detailed grid conditions. These capabilities are also essential for ensuring reliability, uptime, and a positive charging experience.

Therefore, for both the MUD and rural programs, we strongly urge the Commission to require chargers that are smart, i.e., actually networked and that measure and record charging data, versus the proposed requirement in the concept presentation that "*All charger installations must be network capable*".

Interoperability and Standardization: Prioritizing chargers that speak open protocol languages with vehicles and backend networks ensures chargers, the cloud, and vehicles can exchange the information necessary to easily or automatically align charging with surplus renewable energy generation, enable plug-in vehicles to power homes and businesses during outages, streamline the charging experience, provide customers with hardware and software switching ability and increased choice, and provide certainty and a platform for innovation to the market. Interoperability reduces the risk of stranded assets by preventing vendor lock-in and lowers costs through the increased competition between manufacturers.

As such, we strongly encourage the Commission to require that chargers procured with public funds are interoperable and are based on open standards, such as Open Charge Point Protocol (OCPP) and OpenADR. We are not recommending that the Commission mandate the use of a particular standard. Instead, the Commission should require that an open standard chosen by the project implementer be used – and that such standard actually be used for the communication between the charger and the back-end system (the “cloud”). **Use of such an open standard is essential to prevent stranded assets and protect customer choice**; there are recent examples of stranded assets from the decision of a network provider to leave a market³, and use of a proprietary protocol locks the site owner into a single network provider for the charger's 10-year or longer lifetime. The use of an open protocol for communication with chargers should be verified via either a third-party certification against the protocol, such as the Open Charge Alliance's third-party certification program⁴, or by providing evidence that the model of charger being provided has operated on networks provided by different companies in past commercial deployments.

² Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment, June 2021

³ See “Confusion reigns as ChargePoint quietly pulls support from Australian EV chargers,” July 21, 2020, available at <https://thedriven.io/2020/07/21/confusion-reigns-as-chargepoint-quietly-pulls-support-from-australian-ev-chargers/>

⁴ <https://www.openchargealliance.org/certification/ocpp-16-certification/>

We also recommend that networked chargers be equipped with the ability to communicate directly to the EV over the charging cable.⁵ Doing so allows for the necessary communication to flow using ISO 15118, the widely-adopted global open standard being commercially utilized for this pathway. Standards that support driver-friendly capabilities such as “plug and charge”, using ISO 15118, and future VGI capabilities are crucial to create a necessarily seamless EV driver charging experience similar to or better than filling up at the gas pump, as is necessary for widespread EV adoption.

With respect to payment interoperability and facilitating driver roaming, we suggest CEC strongly encourage bidders to have and maintain OCPI-based roaming agreements with other networks. Such agreements allow members of one network to use, and be billed for using, chargers owned by another network, without having to become members of the second network.

With regard to “*chargers not installed in a sheltered area*”, the Parties recommend that these chargers be compliant with NEMA 4 requirements.

Reliability, Uptime and Customer Service: It is critical that the Commission ensure that charging stations are not only equitably distributed, but also that they are maintained in an equitable way once deployed and are equitably reliable. This unfortunately is a significant shortcoming with much of the charging infrastructure currently deployed, public charging in particular. While early adopters may have tolerated lower levels of reliability, the broader marketplace will not, and poorly maintained public charging will be a significant deterrent to EV adoption, and a significant factor in EV discontinuance. Drivers should not experience significant differences in accessing charging stations on account of whether they have been well-maintained, regardless of where they live. EV adoption already will likely be more challenging in more rural and/or disadvantaged areas. The Commission is urged to place sufficiently high priority on this issue to ensure the tendency to have less reliability in certain areas is not compounded by the historical discrepancies in the reliability of charging in these areas, let alone by more limited access.

Therefore, uptime, maintenance and reliability should be a core, central consideration for chargers developed in these programs, especially public charging in rural parts of the state where this is likely to be a greater challenge. Currently, the industry is bringing to market product and service offerings that can better ensure and guarantee uptime and reliability. Accordingly, the Commission should provide incentives for innovative approaches to ensuring or guaranteeing reliability and service, not necessarily by setting minimum requirements, but instead by directly scoring uptime and reliability into the scoring criteria. We recommend this be at least 20% of the total points awarded, and let bidders propose innovative service offering which can guarantee service level and uptime commitments.

The currently drafted requirements only have “an uptime goal of 95 percent”, and that is just for the MUD concept. There are no requirements or specificity for how uptime and reliability will be ensured or scored into the *reliable* rural charging concept. CEC should make this a hallmark of both grant opportunities – not just network uptime but also the uptime of the chargers themselves – especially with the reliable rural charging program, by scoring this in a significant way and

⁵ See It Parties Comments on AB2127 Draft Report filed May 26, 2021 in CEC Docket 19-AB-2127. Views of 32 organizations across the EV industry are represented in these comments.

letting bidders compete and innovate with proposal on how to provide or guarantee this uptime and reliability.

DCFC-Specific Project Requirements

CCS-only proposals should be allowed since CHAdeMO is no longer being equipped or supported in new EVs being introduced in North America, and because rural DCFC chargers in particular are principally intended to support new EV drivers and EV adoption in areas where current and historical EV models available has been a barrier to adoption (i.e., it is unlikely that used Nissan Leafs will be driving adoption in rural parts of the state). Additionally, the Parties discourage funding Tesla chargers that work with only one manufacturer's vehicles through this program. At the minimum, there should be a cap on the number of proprietary connectors per site that can receive funding through this program, or be part of an application receiving funding. Certain drivers have access to a proprietary charging network which bars access to drivers of other manufacturers' vehicles, in contrast, public funds should be directed to open access networks only, which are available for use by any member of the public. For DCFC chargers situated in communities, there should be a 50kW power level floor, and for those along corridors or largely intended to serve a corridor, there should be a 100kW floor.

Proposed Evaluation Criteria / Reaching Underserved Populations

Scoring Criteria: As discussed above, both programs, but the reliable rural charging program in particular, should directly score reliability and uptime. We recommend this be at least 20% of the total points awarded, and let bidders propose innovative service offering which can guarantee service level and uptime commitments.

For the MUD program, the Parties urge the Commission to consider increasing the weight on “*Innovation and Sustainability*”, with higher scoring for projects that deploy Distributed Energy Resources (DERs) such as energy storage and other behind-the-meter technologies that would drive cost efficiencies by reducing or eliminating distribution system upgrades and service interconnection inefficiencies.

Keeping MUD Charging Rates Low: The Parties would like to refer to its response to our earlier discussion, as networked chargers would enable managed charging as well as potentially allow for residents to avail themselves of EV-only tariffs that encourage charging during off-peak to take advantage of low electricity pricing (via submetering). A MUD building owner or rural site owner may not want their entire load on a time-of-use tariff, so having the EV charger on a separate tariff offers the opportunity to segregate the consumption and allow for selection of a tariff optimum for EV charging. See our discussion of EV charging services above, where companies provide apps to assist drivers in managing their charging and reducing their charging costs.

Data Availability: It is important to have data available to the public about the chargers, including location, who can use the chargers, what payment methods are accepted, and, in real-time, the price per kWh, whether the charger is operational (not broken), and whether the charger is in use. Such data should be accessible online to app developers, much like GPS and weather data are available, for incorporation into apps that EV drivers can use to find available chargers. One of the

most valuable use cases for such data is to reserve chargers for specific times, thus enhancing the consumer experience, reducing range and charge anxiety (the latter including the fear of a charger being occupied), and increasing charger utilization.

Proposed Schedule

The Parties request the Commission to delay the submission deadline to March 2022, given the holiday periods in November and December, 2021.

The Parties appreciate the opportunity to submit these comments.

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