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Tesla Comments October 2022 Reliability Workshop

Additional submitted attachment is included below.

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November 14, 2022

California Energy Commission
22-EVI-04
1516 Ninth Street
Sacramento, CA 95814

RE: Electric Vehicle Charging Infrastructure Reliability Workshop October 21

Dear Energy Commission Staff:

Tesla appreciates the opportunity to provide feedback in response to the Electric Vehicle Charging Infrastructure Reliability workshop the Commission hosted on October 21, 2022. We applaud staff's advanced engagement on this important topic starting with the previous workshop in March 2022 and leading up to the implementation of Assembly Bill (AB) 2061 (Ting, 2022).

Establishing clear reliability standards for publicly funded EV charging infrastructure is critically important to ensure funding is used to deploy stations that can easily be utilized by all EV drivers. There are a number of factors that must be considered in creating reliability requirements and developing an appropriate uptime formula. These include consistency across state and federal program requirements (to the extent feasible), site level redundancy, clearly defining what is considered up and operational, incorporating field monitoring as needed, and creating template site level agreement language.

I. Establish consistency with other reliability standards including any federal NEVI program requirements.

Discussions regarding reliability standards in the context of public funding programs continue to arise in many venues across California and also outside the state with the draft technical requirements proposed by the Federal Highway Administration (FHWA) in the context of the National Electric Vehicle Infrastructure (NEVI) program. In order to prevent a patchwork of state funding program formulas for evaluating reliability via an uptime metric, the Energy Commission should strive for consistency in the underlying formula for calculating uptime and general alignment with any final standard adopted by the NEVI program, to the extent feasible, and in alignment with AB 2061. Tesla submitted Joint Comments on the draft technical requirements for NEVI, which included feedback on evaluation criteria for the calculation of uptime.[1]

II. Evaluate calculating uptime at a site level for larger sites given inherent redundancy built into the system.

Generally, we recommend uptime be calculated at a site level and not focus on a per port or per stall level. Further, in evaluating uptime is important to consider site redundancy, as one of the advantages of larger sites is that there are many ports available to customers in case there is an issue with a particular port. AB 2061 (Ting) maintains flexibility by enabling the Energy Commission to adjust requirements based on a number of factors, including the number of chargers per site. This correctly points out that it may not be appropriate to have a one-size-fits-all solution with these standards, and whether the uptime calculation should be based on per charger or station.

Based on Tesla's experience deploying our direct current fast charging (DCFC) network, known as the Supercharger Network, over the past decade, station reliability is extremely important to customer

[1] https://www.regulations.gov/comment/FHWA-2022-0008-0337

experience. In general, when considering where to deploy Superchargers, Tesla proactively builds larger stations. These larger stations inherently have redundancy in the case of unforeseen events that take down one or more of the stalls at a site. For example, customer experience impacts are minimal or non-existent if 2 stalls are temporarily offline at a 20-stall charging station. But customer experience can be distressingly poor if 2 stalls go off-line at a 4- stall station. Having a reliable, accessible charging network is one of the elements that helps customers consistently rate the Supercharger experience as best in class. In Tesla's 2021 Impact Report, we highlighted that reliability is a key factor for our network and the chances of not being able to charge at any location at any given time are close to zero.

III. In developing an uptime formula, it is important to clearly define what enables a station to be considered as "up".

In FHWA's draft technical guidance, it states that "uptime is calculated for the time when a charger's hardware and software are both online and available for use, or in use, and the charging port successfully dispenses electricity as expected."[2] The term "as expected" is not furthered defined. While the general definition of "up" recommended by FHWA is appropriate, we encourage the Energy Commission to consider whether additional parameters for classifying a charger as "up" are necessary to ensure a charger providing only a trickle charge when a vehicle is capable of higher charge rates would not necessarily be counted as up, pending instances of excluded downtime.[3]

IV. Field monitoring can be a valuable tool for evaluating the reliability of publicly funded charging stations.

During the workshop, Energy Commission staff suggested developing a field monitoring program to evaluate the reliability and usability of public charging infrastructure.[4] Tesla is generally supportive of adding an in-field monitoring component to ensure the useability of publicly funded charging infrastructure. It will be important to evaluate frequency of such monitoring, opportunity to leverage other existing process, and how to best provide funding to cover the cost for field monitoring. It will be important to further discuss this concept when implementing AB 2061.

V. Further discussion regarding the specific elements of the Reliability Agreement Language Template is necessary.

On October 18, prior to the workshop, Energy Commission staff provided a draft of the reliability agreement language template for REACH and REV. This is a helpful starting point for discussing specific program requirements and incorporating implementation of the elements outlined by AB 2061. There are several items included in the maintenance requirements for the reliability standard in the service agreement template, including evaluating and addressing repairs within 48 hours of initial notice, that should be further evaluated. For instance, it may be important to distinguish that for certain hardware components, a 48-hour response time in getting to the site and diagnosing of the issue is appropriate and reasonable but it may take longer to make a full repair. Additionally, as discussed above regarding how to determine what qualifies as "up," the definition of "operational" in the template may need to be further evaluated. Finally, further detailed discussion of the record keeping and recording elements will be necessary to understand feasibility and application of these requirements.

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[2] Draft Technical Guidance NEVI, p.50.
[3] Note that many factors influence charge rate at any given time including vehicle state of charge.
[4] October 21, 2022 Workshop slides, slide 32.

Tesla appreciates the opportunity to provide feedback on the EV charging reliability standards and looks forward to engaging in the implementation process for AB 2061 as the Energy Commission pursues this effort in 2023.

Sincerely,

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Senior Charging Policy Manager
Business Development and Public Policy