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EVgo Comments on Electric Vehicle Charging Infrastructure Reliability Workshop

Additional submitted attachment is included below.

November 14, 2022

California Energy Commission
715 P Street
Sacramento, CA 95814

Re: Docket No. 22-EVI-04 Electric Vehicle Charging Infrastructure Reliability Workshop – Oct. 21, 2022

I. Introduction

EVgo appreciates the opportunity to submit comments on the California Energy Commission's (CEC) Electric Vehicle (EV) Charging Infrastructure Reliability Workshop (Workshop). The reliability of California's electric vehicle supply equipment (EVSE) is foundational for the achievement of the state's transportation electrification (TE) goals, and we commend the CEC for undertaking a process to ensure robust uptime across charging networks.

As the owner and operator of one of the nation's largest EV charging networks, with over 850 fast charging locations across 60 metropolitan areas and more than 500,000 customer accounts, EVgo has a clear business interest in maintaining high uptime at its charging stations. A down charger is a missed revenue opportunity, and as such, EVgo aims to provide reliable, convenient charging that EV drivers want to use at convenient locations with value-added services like EVgo Reservations and other digital tools that help to enhance the consumer experience.[1]

EVgo has been a first mover in the EV charging space, and in the early days of technology deployment, there are always lessons to be learned and improvements to be made. That is why EVgo is actively replacing legacy chargers with more reliable and, where possible, higher-power chargers to meet EV drivers' evolving needs. EV charging is still a nascent industry and we're finding that new chargers offer greater uptime performance than first-generation chargers. As part of the EVgo ReNew Initiative, EVgo has updated 125 stalls this year[2] and is actively working with site hosts to evaluate the replacement of additional stalls in 2023. Including eligibility for replacements and upgrades in CEC's flagship programs is one helpful tool to accelerate this effort statewide.

In addition to replacement efforts, EVgo also regularly performs preventative health checks on chargers in its network, including testing among all distinct payment methods and assessments of common points of failure, including the connectors themselves that are often dropped or

[1] https://www.evgo.com/reservations/
[2] EVgo Q3 2022 Earnings Call, slide 12, Nov. 2, 2022, available at: https://s27.q4cdn.com/370825096/files/doc_financials/2022/q3/2022-11-02-EVgo-Q3-2022-Earnings-Call-Presentation-Final.pdf

even run over.[3] EVgo also recently launched Autocharge+, a new feature that allows EV drivers to initiate a charge session simply by plugging in their vehicle to an EVgo charger – avoiding potential challenges associated with credit card readers and EV-to-EVSE communications issues to create a refueling experience that is more convenient than filling up at the gas pump.[4]

In addition to its work on upgrading and reinforcing its existing network through EVgo ReNew, EVgo performs critical research and equipment testing at its Innovation Lab in El Segundo, California, to ensure the reliable operation of the company's fast charging network.[5] To this end, EVgo works directly with charger manufacturers to improve safety and reliability for the EV charging industry and make interoperability testing available to automakers so they can bring more EVs to market with confidence.

In short, EVSE reliability is a core organizational objective, and EVgo remains committed to pursuing new strategies to increase uptime across its network. As the CEC begins to implement Assembly Bill 2061 (AB 2061),[6] EVgo looks forward to working with the CEC and other stakeholders to develop strong, achievable standards that are critical to bolstering the consumer confidence necessary to drive EV adoption. Below, EVgo shares some of its thoughts on how charger reliability implementation and how the CEC can leverage its unique position as a market catalyst to drive forward new programs and initiatives that will lead to a more robust statewide charging network that other states may follow.

I. Uptime Standard Formula

Any forthcoming EVSE reliability standard should use a transparent, standardized, and easily replicable formula to calculate station uptime percentage and ensure consistency across the EV charging industry – ideally by the minute to ensure maximum precision in calculating uptime. Critical inputs to this formula include definitions of charger uptime, downtime, and excluded downtime. EVgo looks forward to working with the CEC and other stakeholders to delineate the conditions under which EVSE may be considered inoperable and under what circumstances these conditions may be counted as excluded downtime. In the meantime, EVgo is supportive of the formula put forth by other stakeholders in Docket 21-TRAN-03 for the purpose of calculating EVSE uptime:

$$\frac{[(\text{Number of Minutes in the period}) - (\text{Stall outage Minutes} - \text{Excluded Minutes})]}{(\text{Number of Minutes in the period})}$$

[3] https://www.evgo.com/blog/building-the-ev-charging-network-of-the-future/
[4] https://www.evgo.com/autocharge/
[5] https://www.prnewswire.com/news-releases/evgo-expands-innovation-platform-with-opening-of-new-lab-in-southern-california-301269414.html
[6] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB2061

II. Considerations for Charger Reliability Standards

i. Application of Uptime Standards

It is important to consider EV charger redundancy when evaluating EVSE uptime at the site-level.[7] The uptime that concerns EV drivers is the average uptime of the chargers that share one location. For example, if one charger has issues but there are seven others working flawlessly at the same site, there is virtually no user impact unless eight drivers are looking to charge concurrently. To account for this, uptime should be evaluated on a site level basis as the annual average across all chargers, as has already been implemented in other grant programs.

ii. Excluded Downtime

While EVgo always strives to maximize uptime for the reasons mentioned above, there are sometimes situations outside of any charging network's control that may impact reliability. As such, EVgo appreciates CEC's reference to significant or complex issues in its Workshop, including but not limited to vandalism and grid-related events like power safety public shutoffs, when considering uptime standards.[8]

Moreover, EVgo is increasingly seeing supply chain disruption as an issue, and this means that finding replacement parts to expeditiously fix issues as they can arise can be challenging, cost-prohibitive or even impossible. In fact, EVgo is with greater frequency having to buy new chargers and strip them for replacement parts which are increasingly unavailable. EVgo continues to address parts-related challenges associated with EVSE maintenance and encourages the CEC to consider current supply chain conditions when establishing reliability standards.

As a baseline, the CEC should also include vehicle interoperability issues, preventative maintenance, and force majeure in its proposed definition of excluded downtime. Additionally, accidents or equipment damage caused by users are increasingly common, and while EVgo continues to work with its customers, automaker partners, and others to drive forward better education on charging usage and better charging etiquette, user error and associated accidents will be challenging to prevent. Relatedly, the complexities related to equipment damage may necessitate a longer time to resolve, as even a little accidental tap by a car into the station creates safety issues that must be thoroughly and thoughtfully assessed and diagnosed for the sake of public safety.

iii. Corrective Maintenance

EVgo appreciates CEC's reference to corrective maintenance during its Workshop. Diagnosing an issue with a charger is often the first step for resolving reliability issues; EVgo encourages the CEC to focus first on establishing a 48-hour response time to dispatch technicians once an issue has been validated (if on-site repairs are required) and consider separate timelines for resolving reliability issues once they have been identified. It is important to underscore that while certain

[7] Measuring uptime at the site level means averaging uptime across chargers at a given site.
[8] These categories of excluded downtime are explicitly contemplated in AB 2061.

charger outages are relatively straightforward to address, others may take significantly longer to address and pose a safety issue if maintenance is rushed before a methodical solution can be deployed. For example, EVgo has recently experienced repeated copper theft from charging equipment on its network; rushing to repair repeatedly vandalized chargers may not help to solve the underlying reliability issue.

For these reasons, EVgo contends that completing corrective maintenance within five days, as suggested during the workshop, is not always feasible. Taking a more methodical, systemic approach to the types of issues chargers may experience and the estimated time to resolve these issues will help ensure that reliability standards are reasonable for all stakeholders and reflective of real-world conditions.

III. CEC Should Leverage Its Role as Market Catalyst to Drive Innovation That Propels Improved Uptime for EVSE

EVgo commends the Commission for its long-standing role in catalyzing the EV charging market in California and supporting innovative technologies that put the state's TE goals within reach. As the CEC considers new standards and regulations for the EV charging industry, EVgo encourages the CEC to consider the explicit authority provided in AB 2061 to develop new tools and programs that enhance EVSE uptime statewide.

Regardless of new EVSE regulations, EV charging is a relatively new technology, the EV sector is still nascent, and much consumer education is still needed to ensure a smooth transition as consumers become accustomed to the charging experience. With this in mind, CEC should consider promoting charger reliability not only through the lens of regulation, but also through innovative programs and market-catalyzing initiatives. These complementary programs can be designed to (1) leverage cutting-edge technologies and industry experience; (2) address common reliability challenges across California's charging network; (3) serve as a cost-effective solution for expanding the longevity of legacy charging infrastructure that spurred the state's early EV market; and (4) create new opportunities to efficiently upgrade existing sites with next-generation chargers that align with EVs' expanding charging capabilities. EVgo seeks to be a resource to the CEC as it considers how to efficiently develop new programs and initiatives that complement its forthcoming EVSE reliability standards.

EVgo appreciates the reliability concepts that CEC presented during the workshop, including EVSE field testing. However, this concept raises significant questions related to testing methodologies, sampling approaches, the capabilities of particular cars used during testing, implementation costs, and EVSP roles and responsibilities. CEC also proposed a consumer survey concept that would seek to enable drivers to report charger issues via QR code on a sticker placed on a charger. It is unclear at this time how reported issues with chargers would be handled by the CEC and whether EVSPs would have access to the survey data necessary to effectively validate and respond to any reported driver concerns. Moreover, community-based platforms like PlugShare and Google Maps already provide valuable information on charger status and real-time EV driver feedback. EVgo seeks greater clarification on how these concepts would be implemented and looks forward to working with the CEC on developing effective tools and programs that can help EVSPs maintain high reliability across their networks.

IV. Conclusion

EVgo appreciates the opportunity to provide feedback on this critical topic. We look forward to serving as a resource to the CEC on the development of robust EVSE reliability standards and continuing to support the agency's efforts in developing a convenient and reliable charging network for all Californians.

Respectfully submitted,

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