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GM Comments on CEC Reliability Workshop

Additional submitted attachment is included below.

November 11, 2022

California Energy Commission
715 P Street
Sacramento, CA 95814

Submitted Electronically to docket number 22-EVI-04

Re: EV Charging Infrastructure Reliability Workshop

General Motors Company (GM) thanks the California Energy Commission (CEC) for the opportunity to provide comments on the Electric Vehicle Charging Infrastructure Reliability Workshop (Workshop) held on October 21, 2022. We greatly appreciate the effort that went into the workshop and the CEC's willingness to seek recommendations from stakeholders.

GM believes the future is all-electric and we are putting significant resources into accelerating this transition. We are bringing a wide range of new vehicles to market in different vehicle classes and price points, and we remain on track for 1 million units of EV production capacity in North America by the end of 2025. The vehicles, however, are just one part of this equation. To enable an all-electric future that leaves no one behind, we need to ensure convenient, reliable, affordable charging access for all. This will require significant expansion of charging infrastructure and considerable improvement in the charging experience for customers. GM is committing nearly $750 million to address key needs and improve the overall charging ecosystem, including but not limited to publicly available chargers where reliability is essential.

Reliability of the network is extremely important and has been a source of concern for customers in the early years of the market. Drivers need to have confidence in public EV charging stations and in their ability to go wherever they want to go in an EV. This means the network should be as convenient, reliable, and easy to use as today's conventional fuel network, with stations rarely "down" and generally functioning as expected from the perspective of the EV driver.

GM generally supports the uptime requirement as one important piece of the overall reliability puzzle. A common approach to defining and measuring uptime is necessary, including clarity on "excluded time" so that the uptime calculations and expectations account for reasonable exceptions such as vandalism. We see some potential value in aligning CEC's efforts on this metric with the requirements that are being developed for the National EV Infrastructure (NEVI) program, though it's important to note that these requirements are not yet final, and we encourage CEC to continue stakeholder discussions in the meantime.

However, while "uptime" of 97% or greater is a good goal and something the industry must strive for, the broader "reliability" discussion is much more complicated and a narrow focus on uptime with many exceptions might mask real reliability issues that prevent drivers from charging as expected. Stations may not meet customer needs and expectations even if they are technically not "down." Payment system failures, broken screens, or simple operator errors, for example, might prevent customers from a satisfactory experience without necessarily

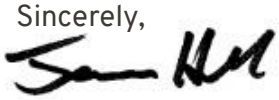
qualifying as "downtime." Improving reliability will require not just minimum requirements and data reporting, but also cross-sector collaboration to identify and address root causes of reliability challenges with a continued focus on the EV driver perspective.

To holistically tackle the EV charging reliability challenge, GM supports continued discussion around several ideas presented by staff and outside speakers at the recent workshop:

- **Recordkeeping and reporting:** Thoughtful and well-designed recordkeeping and reporting requirements can help all stakeholders better understand root causes of reliability problems and lay the groundwork for future improvements. GM specifically supports the idea of collecting data on attempts to initiate charge, including failed attempts, as an important complement to "uptime" reporting. As with all reporting requirements, it will be important to consider cost and administrative burden and to ensure cross-program alignment where possible.
- **Standardized error codes and nomenclature:** As highlighted in multiple workshop presentations, the lack of standardized error codes contributes to uncertainty around the root causes of failures. We therefore support continued dialogue around standardized reporting and error codes, potentially leveraging the effort underway at SAE. There may be opportunities for CEC to support implementation and testing as industry looks to put this into practice.
- **Maintenance requirements:** Conceptually, we support the focus on preventative and corrective maintenance, including efforts to ensure that repairs are made in a reasonable timeframe. Additional discussion is needed on these requirements to adequately account for costs and other constraints. There may be some challenges in the near term as this is a nascent industry grappling with unusual labor and supply chain challenges. That said, CEC has the potential to play a useful role in driving progress and encouraging the adoption of best practices.
- **Field monitoring and customer surveys:** While there are many implementation details and cost considerations to work through, we see potential value in the field monitoring and customer survey programs previewed by CEC staff the workshop and look forward to continued dialogue on these concepts.

Uptime requirements and reporting alone will not be sufficient to address reliability challenges. We anticipate market forces will resolve many reliability issues over time. However, at this early stage in the industry, policy and funding are important. Targeted public funding for operations, maintenance, and reliability-focused efforts such as standards conformance, programs aimed at addressing common failure points (e.g., payment systems), and possible future solutions such as predictive analytics. We encourage CEC to take a holistic, customer-centric approach to requirements and support mechanisms (e.g., operations and maintenance support, training, flexibilities, etc.) that considers the overall experience, constraints, and end goals.

Sincerely,



Jamie Hall
Senior Strategist, EV Policy and Market Development