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*Comment Received From: Chris King*
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# Siemens Comments on Revised Staff Report on EV Charging Reliability

*Additional submitted attachment is included below.*

SIEMENS

May 15, 2024

California Energy Commission
715 P Street
Sacramento, CA 95815

RE: Docket No. 22-EVI-04 Electric Vehicle Charging Infrastructure Reliability

Dear California Energy Commissioners and Staff,

Siemens appreciates the opportunity to provide our input and support for the California Energy Commission's (CEC) rulemaking to establish uptime recordkeeping and reporting standards for electric vehicle (EV) chargers and charging stations. Siemens supports the development of uptime reliability standards that will lead to strong consumer confidence and greater EV charging investment and EV adoption.

This California Energy Commission staff report *Tracking and Improving Reliability of California's Electric Vehicle Chargers* (Staff Report) proposes new regulations that would, for electric vehicle chargers installed outside single-family homes and multifamily dwellings of four or fewer dwelling units:

1. Track the number and location of all chargers.
2. Track the usage of all networked chargers.
3. Require reliability recordkeeping and reporting for all state- and ratepayer funded chargers installed on or after January 1, 2024, for six years.
4. Require all state- and ratepayer-funded chargers installed on or after January 1, 2024, to meet a 97 percent uptime standard for six years.
5. Require all publicly available state- and ratepayer-funded chargers installed on or after January 1, 2024, to share real-time data on the availability and accessibility of the chargers.
6. Require all state- and ratepayer-funded chargers installed on or after January 1, 2026, to meet a 90 percent successful charge attempt rate standard for six years.

These regulations are proposed under Assembly Bill 2127 (Ting, Chapter 365, Statutes of 2018), Assembly Bill 2061 (Ting, Chapter 345, Statutes of 2022), other legislation, the Public Utilities Code, and Executive Order B-48-18.

**About Siemens eMobility**
Siemens has deployed charging stations across every state in the U.S. powered by American ingenuity. Our own EV charging footprint spans several states, including Wendell, North Carolina, where we have continued to expand our manufacturing facility for bus, truck and heavy-duty

electric vehicle charging solutions. Siemens has made investments of more than $500 million in expansions across our U.S. operations including a new Buy American focused AC charger facility in Carrollton, Texas and in Grand Prairie, Texas (IBEW Local 220) and Pomona, California (IBEW Local 1710) manufacturing sites, both of which help provide the electrical infrastructure technologies that support EV charging systems and other critical electrical infrastructure; hundreds of new good-quality and union manufacturing jobs across the U.S to support critical power and EV charging infrastructure; and minority stake investments in a US-based wireless charging company WiTricity and in Electrify America. We have also recently expanded our domestic manufacturing with the acquisition of Heliox a technology leader in DC fast charging solutions, serving eBus and eTruck fleets and passenger vehicles. Finally, we are proud to co-locate our R&D efforts near our manufacturing footprint with our eMobility R&D Headquarters in Peachtree Corners, Georgia, where the team continues to explore cutting edge electric vehicle opportunities to serve the U.S. market.

**Siemens Comments**

Siemens provides the following comments on the Staff Report:

1. Page 10 of the Staff Report describes the connector types for direct current fast chargers (DCFC) only. To make it more complete, the Staff Report should discuss connector types for AC chargers (SAE J1772 and NACS) and note that NACS connectors can also substitute for SAE J1772 connectors. Such a note should clarify that only a single NACS connector is needed for both AC and DCFC charging. Further, it would be helpful for the Staff Report to clarify that NACS is being adopted as SAE J3400 in a traditional standards development process expected to conclude by the end of 2024.
2. On page 12, we suggest the Staff Report note that Charge Point Operator is another synonym for a charging network provider.
3. Page 26 defines Applicability of the EV Charger Utilization Reporting Regulations and states that they "apply to all chargers in the state regardless of funding source or availability of the charger to the public." For several reasons, Siemens respectfully suggests that chargers that are not available to the public and not publicly funded should be excluded from the regulations. Such chargers, including workplaces and multi-family dwelling parking facilities not open to the public, are the subject of private contracts between employers and employees or landlords and tenants, respectively. In such private contracts, the parties may determine that their chargers should be subject to different reliability and reporting metrics than those required by the state, different metrics that could lower the cost of charging services or otherwise provide benefits to these private parties. For example, an employer may provide free charging and not even monitor utilization. Moreover, utilization and other data are proprietary and confidential data owned by these private parties. Exempting these chargers is also consistent with the Applicability of EV Charger Reliability Reporting Regulations as proposed on page 27 *et seq*. Finally, imposing utilization reporting requirements on these private chargers creates a costly burden on private persons and entities without a clear need for such data by the state. Therefore, the applicability of the regulations should exclude chargers that are not available to the public and not publicly funded.
4. Page 27 discusses Data Use and notes that "The CEC will hold utilization data specific to a charger confidential." This statement should be broadened to include all personally identifiable information (PII).

5. For the reasons given in our comment number 3 above, Siemens recommends, on page A-3 *et seq*., that § 3120(a) be restated as follows: "All charging station operators and charging network providers of one or more AC Level 2s or DCFCs installed in California excluding temporary chargers or off-grid chargers as defined in section 3121 of this Article as well as any charger used solely for private use at a single-family residence, a multifamily dwelling, or a workplace."
6. Page A-5 has the definition of "Charging network provider", stating it "means the entity that operates the digital communication network that remotely manages the chargers." This definition is technically incorrect. When read literally, "digital communication network" refers to the cellular communication network (or other communication network) that connects the chargers to the network operating center and central software that manages the chargers. Such communication networks are operated by companies such as AT&T and Verizon. To correct this definition, Siemens suggests rewording the definition as follows: ""Charging network provider" means the entity that remotely manages the chargers via a digital communication network. Charging network providers may also serve as charging station operators and/or manufacture chargers." § 3122(b)(1) should be corrected similarly.
7. Page A-15, § 3124 (c)(1)(B) refers to OCPP communications of "faulted" or "Unavailable" chargers. The fault type needs to be considered by the OCPP server when calculating downtime. Chargers will report faults caused by grid disturbances (*e.g*., a voltage sag), mis-wiring and improper EV behavior for diagnostics. Downtime calculations should be limited to faults caused by chargers only and exclude examples such as the faults described above.
8. Page A-15, § 3124 (c)(1)(C) refers to OCPP communications of BootNotificationResponse. The time from last heartbeat to boot notification can be caused by a charger reboot due to a firmware update or a power cycle by site personnel. Such downtime should be considered maintenance.
9. Page A-15, § 3124 (d) refers to Excluded Downtime. Siemens recommends adding a category to exclude Interoperability Issues between charger and EV. The communications between the charger and EV must meet certain standards, such as SAE J1772 or ISO 15118, but are not always interoperable. The reason is that the standards may be implemented slightly differently by the software engineers at different companies, which is why there are events such as the CharIN Testivals where field tests are conducted to verify interoperability between chargers and EVs. A complicating factor is that the firmware in both chargers and EVs is regularly changed – updated – and can inadvertently cause interoperability problems. Siemens is aware of cases where an EV charged successfully one day with a charger but then failed the next day, with the very same charger, after an update of the firmware in the EV. There are also latencies in high-level communication between the charger and EV that would contribute to delays in charging attempts. Siemens anticipates such interoperability issues to decline over time, but these issues are a practical reality today. Therefore, Siemens recommends excluding interoperability issues from downtime calculations.
10. Page A-15, Grid Power Loss: Siemens recommends a number of changes to this definition. First, the definition should account for grid recovery following an outage. After an outage, all the chargers at a multi-charger site should not turn on simultaneously at full power, because that could cause a significant voltage sag or other grid disturbance. To avoid such problems, the chargers should come back on sequentially. The time to do so should be excluded downtime. Second, grid instability should be excluded downtime, such as under- and over-voltage conditions or local facility operations that cause power quality problems beyond the control of the charging network operator (e.g., the chargers are served by the same electrical feed as a

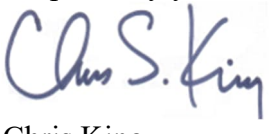
major manufacturing facility that cause power surges or other issues). These conditions could cause the charger to not operate correctly. Finally, requiring documentation from the power provider is problematic. The power provider may not keep records sufficiently detailed to report every outage to every charging site. The power provider may not even be aware an outage has occurred if the outage is restored using an automated device such as a recloser. For these reasons, the documentation needed should be revised to something more generic, such as "the network operator must retain records of outages."

Beyond the above comments, Siemens reserves the right to conduct additional review and submit additional comments if warranted.

**Conclusion**

Siemens appreciates the opportunity to comment and would be happy to discuss further any of our suggestions. Siemens looks forward to doing our part to ensure the U.S. becomes a global leader in transportation electrification.

Respectfully yours,



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