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Comments regarding EVI Reliability and Reporting Standards

Additional submitted attachment is included below.

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August 12, 2025

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 22-EVI-04
715 P Street
Sacramento, CA 95814

Re: Docket No. 22-EVI-04 – Comments of Center for Sustainable Energy® regarding the California Energy Commission's Proposed Regulations on Electric Vehicle Charging Port Recordkeeping and Reporting, Reliability, and Data Sharing

Center for Sustainable Energy® (CSE) welcomes the opportunity to provide comments on the California Energy Commission's (Energy Commission) proposed regulations regarding electric vehicle (EV) infrastructure reliability and reporting standards.

CSE is a national nonprofit that accelerates adoption of clean transportation and distributed energy through effective and equitable program design and administration. Governments, utilities, and the private sector trust CSE for its data-driven and software-enabled approach, deep domain expertise, and customer-focused team. CSE's fee-for-service business model frees it from the influence of shareholders, members, and donors, and ensures its independence. Our vision is a future with sustainable, equitable and resilient transportation, buildings, and communities. CSE provides these comments based on our experience designing, implementing, and evaluating statewide incentive programs in multiple states, which collectively translates to over $1 billion worth of program value under management. CSE is pleased to implement the California Electric Vehicle Infrastructure Project (CALeVIP) on behalf of the Energy Commission.

CSE offers the following recommendations to enhance the reliability reporting standards:

1. Develop enforcement measures to ensure compliance with reporting requirements.
2. Adopt requirements to collect utilization data, including session and interval data, to comprehensively characterize EV infrastructure usage.
3. Adopt requirements to collect data from Level 2 infrastructure to understand distinct charging use cases.
4. Utilize analytical tools to streamline data collection and analysis.

CSE's recommendations are discussed in detail below.

1. Develop enforcement measures to ensure compliance with reporting requirements.

Comprehensive and accurate EV infrastructure data will help enhance charger reliability, consistent with the goals of Assembly Bill (AB) 2061 (Chapter 345, Statutes of 2022). As a condition of receiving grant funding through CALeVIP, Electric Vehicle Service Providers (EVSPs) are required to submit periodic data reports. However, as part of CSE's implementation of CALeVIP, CSE has experienced challenges in receiving these data reports in a timely and consistent manner. In several instances, CSE has had to repeatedly reach out to EVSP reporting agents over the course of several months in order to schedule technical meetings, receive data reports, and receive corrections to previously-submitted data reports that contained errors. The collection of EV infrastructure data has also been hampered by the lack of a clear enforcement mechanism.

While the quality of data reports have improved over the last few years as reporting processes have become more automated, EVSPs still fail to provide accurate reports on EV infrastructure reliability. Notably, many reports do not provide details on downtime events or the factors that cause downtime, even though such details are required in the CALeVIP data reporting requirements. The lack of this information makes it difficult to assess the reliability of state-funded EV infrastructure and benchmark performance against reliability goals, such as 97 percent uptime standard proposed in the Energy Commission's proposed regulations.

CSE appreciates the Energy Commission's inclusion of reliability reporting requirements in the proposed regulations. However, CSE's experience implementing CALeVIP indicates that EVSPs may not report reliability data on a consistent basis, especially without a clear enforcement measure in place. Accordingly, CSE strongly recommends the Energy Commission develop robust enforcement mechanisms, including financial penalties for those EVSPs that repeatedly fail to report complete and accurate data by the specified deadlines. CSE further suggests that these EVSPs be excluded, at least temporarily, from being eligible for future grant funding opportunities from the Energy Commission. CSE recognizes that the Energy Commission references enforcement authority in Section 3135 of Appendix A of the Staff Report issued on June 27, 2025.[1] However, CSE contends that an explicit discussion of enforcement measures

[1] California Energy Commission, Staff Report – Tracking and Improving Reliability of California's Electric Vehicle Chargers: Regulations for Improved Electric Vehicle Charging Port Recordkeeping and Reporting, Reliability, and Data Sharing, June 27, 2025, page A-28.

and a clear threat of penalties is necessary to ensure compliance with the proposed reliability reporting requirements and improve EV infrastructure reliability throughout the state.

2. Adopt requirements to collect utilization data, including session and interval data, to comprehensively characterize EV infrastructure usage.

EV infrastructure utilization data can help characterize charger usage, yield insights into individuals' charging behavior, and enhance grid planning processes. During a workshop held on December 18, 2024, the Energy Commission proposed to include utilization data reporting requirements as part of the proposed regulations on EV infrastructure reliability. Specifically, the Energy Commission highlighted the need for session-level data, since aggregated data would be insufficient to understand site-level charging, the impact of TOU rates on charging behavior, and trends across hourly, diurnal, and seasonal timescales.[2] However, in the Staff Report issued on June 27, 2025, the Energy Commission removed the utilization reporting requirements from the proposed regulation without any discussion regarding why these requirements were removed.[3]

In comments submitted in response to the December 18, 2024 workshop, CSE agreed with the Energy Commission's rationale for proposing to collect EV infrastructure session data, which can help facilitate understanding of charging behavior and inform the development of EV load forecasts necessary to inform grid planning. Specifically, CSE supported the Energy Commission's proposal to collect session data on EV charger utilization, including fields such as EVSE identifying information, plug-in/unplug times, active charging start/end times, energy consumed, energy discharged, and peak power.[4]

Interval data can provide greater detail and context than session data alone. Whereas session data can help characterize individual charging events initiated by distinct customers, interval data can characterize power usage across discrete intervals of time (e.g., 15-minute intervals) and identify grid impacts at different timescales. Therefore, interval data can be more useful than session data in forecasting EV loads, which was cited in the Energy Commission's

[2] California Energy Commission, Tracking and Improving Reliability of California's Electric Vehicle Chargers: Increased granularity of reported utilization data, December 17, 2024, slide 18.

[3] California Energy Commission, Staff Report – Tracking and Improving Reliability of California's Electric Vehicle Chargers: Regulations for Improved Electric Vehicle Charging Port Recordkeeping and Reporting, Reliability, and Data Sharing, June 27, 2025, page 20.

[4] California Energy Commission, Tracking and Improving Reliability of California's Electric Vehicle Chargers: Increased granularity of reported utilization data, December 17, 2024, slide 11.

workshop as an important rationale for including utilization data in the reporting requirements.[5]

CSE highlights that the reporting of EV infrastructure utilization data, including session and interval data, are already included in the CALeVIP data reporting requirements, as detailed in Table 1 below. Major EVSPs have routinely reported these data over the last several years as a condition of receiving grant funding through CALeVIP. Moreover, utilization data has been reported more consistently and accurately than reliability data. For these reasons, CSE strongly recommends the Energy Commission update the reporting standards to require the collection of EV infrastructure utilization data, including both session and interval data. Specifically, CSE recommends the Energy Commission adopt data reporting requirements that are consistent with the CALeVIP requirements listed in Table 1 below. The collection of utilization data will enhance the Energy Commission's forecasting and grid planning processes.

Table 1: CALeVIP Data Reporting Requirements for Session and Interval Data

Data Category	Data Field	Benefits of Including these Data Fields
Session Identifier	Session ID	The "Session Identifier" data category includes data fields that characterize a charging session (e.g., individual charging event initiated by a distinct customer) in terms of duration, time of day, power consumed, and vehicle charged. This data will enable comparisons of charging behavior across station locations and charger types to understand how chargers are being used, assess usage and idle time, assess current and future charging demand, and ensure charging stations are meeting the needs of drivers.
	Site ID	
	EVSE ID	
	Port ID	
	Connector Type	
	Charge Duration	
	Charge Session Start/End Date	
	Charge Session Start/End Time	
	Disconnect Reason	
	Connection Duration	
	Idle Duration	
	Energy Consumed	
	Charge Peak Demand	
	Charge Average Demand	
	Total Transacted Amount (Driver)	
	Payment Method	
	Vehicle Make	
	Vehicle Model	
	Vehicle Year	
	Vehicle Type	

[5] California Energy Commission, Tracking and Improving Reliability of California's Electric Vehicle Chargers: Increased granularity of reported utilization data, December 17, 2024, slide 18.

Interval Identifier	Interval ID	The "Interval Identifier" data category includes data fields that will characterize power usage for a specific EVSE and/or charging station for a given time interval (e.g., 15-minute intervals). This information will yield an understanding of how EVSE usage affects overall system needs and will enable the development of load shape and forecasts, the integration of DERs into charging stations, and the management of peak demand.
	Session ID	
	Port ID	
	Interval Start/End Date	
	Interval Start/End Time	
	Interval Energy Consumed	
	Interval Peak Demand	
	Interval Average Demand	
	Interval Duration	

3. Adopt requirements to collect data from Level 2 infrastructure to understand distinct charging use cases.

Level 2 infrastructure is a key component of the EV charging ecosystem. Whereas direct current fast chargers (DCFC) provide public, high-powered charging options in a short duration of time, Level 2 infrastructure serves a greater variety of use cases, including residential, workplace, and destination charging. Additionally, Level 2 charging is often more cost-effective than fast charging and may be preferable in certain situations. Therefore, the collection and analysis of Level 2 charging data will provide a greater understanding of charging behavior and infrastructure reliability.

In the Staff Report issued on June 27, 2025, the Energy Commission removed the reporting requirements for Level 2 infrastructure[6] due to concerns around greater compliance costs and a claim that Level 2 chargers are "generally reliable".[7] CSE recognizes the Energy Commission's desire to limit the costs of the proposed regulations. Nevertheless, CSE contends that Level 2 infrastructure data is necessary to compare the reliability of EV infrastructure across use cases and assess equitable access to charging across the state, as required under AB 2061. Additionally, the Energy Commission does not provide any evidence to support the claim that

[6] California Energy Commission, Staff Report – Tracking and Improving Reliability of California's Electric Vehicle Chargers: Regulations for Improved Electric Vehicle Charging Port Recordkeeping and Reporting, Reliability, and Data Sharing, June 27, 2025, page 20.

[7] California Energy Commission, Staff Report – Tracking and Improving Reliability of California's Electric Vehicle Chargers: Regulations for Improved Electric Vehicle Charging Port Recordkeeping and Reporting, Reliability, and Data Sharing, June 27, 2025, page 46.

Level 2 infrastructure is reliable, a claim which could only be validated through the collection of data from Level 2 infrastructure. Lastly, CSE highlights that the reporting of Level 2 infrastructure data is already included in the data reporting requirements for CALeVIP and comparable programs in other states. For example, the PECO Level 2 Commercial EV Program in Pennsylvania, which is implemented by CSE on behalf of PECO, requires incentive recipients to provide data from Level 2 EV infrastructure.[8] As part of the implementation of CALeVIP, CSE has routinely collected Level 2 infrastructure reports from EVSPs over the course of several years and is unaware of any systemic or technical factors that could cause the reporting of this data to be cost-prohibitive. For these reasons, CSE recommends the Energy Commission update the reporting standards to require the collection of Level 2 infrastructure data.

4. Utilize analytical tools to streamline data collection and analysis.

CSE recommends the Energy Commission utilize analytical tools such as data warehouses and dashboards to streamline the collection, aggregation, and analysis of EV infrastructure data. These analytical tools will help the Energy Commission manage the vast amounts of data that will be collected under the reporting standards and conduct the reliability assessments required under AB 2061.

Specifically, CSE recommends the Energy Commission employ a secure and scalable data warehouse to facilitate the long-term storage and analysis of EV infrastructure data. A data warehouse can function as a centralized repository for ingesting significant amounts of data across multiple programs and storing this information over time. Moreover, storing data in a centralized location can facilitate targeted evaluations of EV infrastructure reliability and utilization at the individual site level, while also comparing charging behavior across location types, charger types, and use cases. This information can subsequently be used to develop charging usage profiles and accompanying load curves, which will enhance EV load forecasts and inform grid planning efforts.

CSE recommends that the data warehouse have the capacity to clean, standardize, and validate incoming data. Specifically, CSE suggests the warehouse be designed with automated protocols to clean data by identifying and sorting outliers, to standardize data by converting it into a consistent format, and to validate data by assessing whether the data conforms to the specified

[8] PECO, EVsmart Charging Program Handbook, January 1, 2025, page 18. https://images.go.peco-energy.com/Web/EXEPECO/%7B4f0bb9e7-30a9-4516-a8bc-80cd5fd35b46%7D_PECO_L2_Commercial_EV_Program_Handbook.pdf

requirements. These protocols will ensure that all data, regardless of the source, transfer method, or individual site characteristics, can be stored, analyzed, and visualized to consistently evaluate and improve EV infrastructure reliability and utilization.

CSE recommends the data warehouse be designed with the capacity to automatically generate periodic reports and produce both internal- and external-facing dashboards. This functionality helps track adherence to reliability goals, such as the Energy Commission's proposed 97 percent uptime standard. Dashboards can also incorporate geographic information system (GIS) overlays to develop maps that visualize charger accessibility, reliability, and utilization across the state, which could be used to identify regional barriers to equitable charger access. These outputs can facilitate the Energy Commission's assessments of EV infrastructure reliability and equitable access to charging across the state, as required under AB 2061, and aid in the development of future tools and standards.

Conclusion

CSE appreciates the opportunity to provide comments in response to the Energy Commission's proposed regulations regarding EV infrastructure reliability and reporting standards. CSE encourages the Energy Commission to strengthen the reliability and reporting standards in order to enhance reliability, understand charger utilization, assess access to charging, and accelerate widespread EV adoption.

Sincerely,

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