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SECOND DRAFT STAFF REPORT

Tracking and Improving Reliability of California's Electric Vehicle Chargers

**Regulations for Improved Electric Vehicle
Charger Recordkeeping and Reporting,
Reliability, and Data Sharing**

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California Energy Commission

Dustin Schell

Ralph Lee

Michael Dioha

Primary Authors

Taylor Marvin

Michael Nicholas

Project Managers

Hannon Rasool

Director

FUELS AND TRANSPORTATION DIVISION

Drew Bohan

Executive Director

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ABSTRACT

This California Energy Commission staff report *Tracking and Improving Reliability of California's Electric Vehicle Chargers* 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, proposed under Assembly Bill 2127 (Ting, Chapter 365, Statutes of 2018), assign the California Energy Commission the responsibility of evaluating the required number of electric vehicle chargers to meet the state's adoption objectives. This evaluation requires a detailed understanding of operational charger counts and real-world usage. Assembly Bill 2061 (Ting, Chapter 345, Statutes of 2022) directs the Commission to develop charger uptime recordkeeping standards and deliver biennial infrastructure reliability assessments starting in 2025.

Assembly Bill 126 (Reyes, Chapter 319, Statutes of 2023) further directs the Commission to adopt tools to increase charging station uptime, including requirements for operation and maintenance. Additionally, it mandates the establishment of standards for customer information regarding the availability and accessibility of public charging infrastructure by January 1, 2025.

Keywords: Charging, infrastructure, transportation electrification, electric vehicle, electric charging station reliability

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Executive Summary

Assembly Bill 2127 (Ting, Chapter 365, Statutes of 2018) directs the California Energy Commission (CEC or Commission) to assess biennially the number of electric vehicle chargers necessary to support California’s electric vehicle adoption goals.

Assembly Bill 2061 (Ting, Chapter 345, Statutes of 2022) directs the Commission to develop uptime recordkeeping and reporting standards for electric vehicle chargers and charging stations that receive an incentive from a state agency or through a charge on ratepayers and are installed on or after January 1, 2024. Assembly Bill 2061 further directs the CEC to regularly assess the reliability of California’s electric vehicle charging infrastructure beginning in 2025. This assessment will include a broad range of chargers, whether or not these chargers received an incentive from a state agency or ratepayers. This comprehensive view of the reliability of California’s electric vehicle charging infrastructure is necessary to ensure a positive driver and consumer experience regardless of the funding source of electric vehicle charging infrastructure.

Assembly Bill 126 (Reyes, Chapter 319, Statutes of 2023) directs the Commission to adopt tools to increase charging station uptime, including uptime requirements and operation and maintenance requirements. AB 126 also mandates the Commission to establish standards for how charging stations inform customers about the availability and accessibility of publicly available charging infrastructure by January 1, 2025.

Furthermore, existing law directs the CEC to release a biennial Integrated Energy Policy Report that provides a cohesive assessment of major energy trends and issues in California including transportation forecasting and assessment activities.¹

Under these and other statutes, this staff report proposes new regulations for:

1. Recordkeeping and reporting to track the number of electric vehicle chargers installed in California, the use of the chargers, and related reliability.²
2. Reliability performance standards, including a 97 percent uptime standard and 90 percent successful charge rate attempt standard.

¹ See Pub. Resources Code, § 25304.

² The usage rate of a charging station is referred to as utilization throughout this report. See California Energy Commission, [Assembly Bill 2127 Second Electric Vehicle Charging Infrastructure Assessment: Assessing Charging Needs to Support Zero-Emission Vehicles in 2030 and 2035](https://www.energy.ca.gov/publications/2024/assembly-bill-2127-second-electric-vehicle-charging-infrastructure-assessment), March 6, 2024, <https://www.energy.ca.gov/publications/2024/assembly-bill-2127-second-electric-vehicle-charging-infrastructure-assessment>, 72.

3. Sharing real-time data on the availability and accessibility of publicly available charging infrastructure.

Applicability of these proposed regulations varies:

1. Charger inventory recordkeeping and reporting regulations apply to all chargers installed in California, except those used solely for private use at a single-family home or located at a multifamily dwelling with four or fewer dwelling units.
2. Charger utilization recordkeeping and reporting regulations apply to all networked charges installed in California, except those used solely for private use at a single-family home or located at a multifamily dwelling with four or fewer dwelling units.
3. The reliability reporting and 97 percent uptime standard regulations apply to all chargers that receive an incentive from a state agency or ratepayers and are installed on or after January 1, 2024. The exception is for those chargers used solely for private use at a single-family home or located at a multifamily dwelling with four or fewer dwelling units.
4. The 90 percent successful charge rate attempt standard applies to all chargers that receive an incentive from a state agency or ratepayers and are installed on or after January 1, 2026. The exception is for those used solely for private use at a single-family home or located at a multifamily dwelling with four or fewer dwelling units.
5. The real-time availability and accessibility data-sharing regulations apply to all state- and ratepayer-funded publicly available chargers installed on or after January 1, 2024.

These regulations apply equally to chargers that serve light-duty and medium- and heavy-duty electric vehicles.

The regulatory language proposed by Commission staff is attached to this report as Appendix A. Chapter 5 of this staff report summarizes the proposed regulations.

These proposed regulations will affect entities that own, operate, or host electric vehicle charging stations in different ways. The categories of entities affected by these regulations are not mutually exclusive, and many entities that operate charging stations may simultaneously fulfill more than one role. For these regulations, a business entity may be considered a charging network provider at one charging location operated by the entity and a charging station operator or site host at another.

Table ES-1: Entities Affected By Regulation

Entity	Definition
Charging network provider	Entity that operates the digital communication network that remotely manages the chargers.
Charging station operator	Entity that owns the chargers and supporting equipment and facilities at one or more charging stations.
Site host	Electric utility customer of record for electric service to the charger and may also be the charging network provider or the charging station operator of the charger.

Source: CEC staff

The entity responsible for recordkeeping and reporting under these regulations — the recordkeeping and reporting agent — will vary depending on whether the charger is networked or nonnetworked and whether the charger is regulated under AB 2061 and AB 126.

Some data reported to the Commission under these regulations will be held confidential.

Table ES-2: Confidentiality

To Be Held Confidential ³	Entity May File a Request for Confidential Designation	Not Confidential
<ul style="list-style-type: none"> Charger address (only for private and shared private chargers) Utilization data specific to an individual charging station Total charge attempts, successful charge attempts, failed charge attempts 	<ul style="list-style-type: none"> Charger serial number Charger and port unique identification 	<ul style="list-style-type: none"> All other data Data that would otherwise be confidential if it has been sufficiently aggregated

Source: CEC staff

These proposed regulations are technically feasible and not expected to result in adverse environmental impacts or significant economic and fiscal impacts for regulated entities or state

³ As provided in Code of Regs., tit. 20, § 2505(a)(5).

agencies. Complying with the proposed uptime regulations is expected to result in a first-order cost to industry of about \$15 million in the first year the regulations take effect. Setting reliability standards and requiring the sharing of availability and accessibility data for chargers in California are expected to support consumer equity.

The Commission will incorporate data collected through these regulations into future assessments of California's electric vehicle charging needs, the equity of charger deployment, and reliability of chargers. Beginning in 2025, the Commission will release biennial reports on the reliability of California's electric vehicle charging infrastructure and equitable access to reliable chargers. To create greater transparency and driver confidence, the Commission intends to publish the reliability of electric vehicle charging networks in these assessments and on its website.

CHAPTER 1:

Introduction

More than 1.8 million electric vehicles (EVs) have been sold in California.⁴ State policy directs that all new passenger vehicle sales must be zero-emission by 2035, and new regulations mandate that medium- and heavy-duty (MDHD) vehicle fleets increasingly electrify.⁵

The California Energy Commission (CEC) estimates that by 2030 California will require about 1.01 million public and shared private⁶ light-duty EV chargers and about 114,500 MDHD EV chargers.⁷ State- and ratepayer-funded programs are installing tens of thousands of EV chargers across California. The federal National EV Infrastructure (NEVI) Formula Program is also expected to fund thousands of EV chargers across the country, including in California.

Effectively investing public dollars into EV charging necessitates a detailed understanding of how many chargers are installed today, how many additional chargers are needed to meet state goals, and where these chargers must be located to ensure equitable access to EV charging. Assembly Bill (AB) 2127⁸ (Ting, Chapter 345, Statutes of 2022) requires the CEC to prepare regular assessments of the number of EV chargers required to meet California EV adoption goals. Detailed mapping of charging infrastructure is also needed to comply with Senate Bill (SB) 1000⁹ (Lara, Chapter 368, Statutes of 2018), which directs the CEC to regularly evaluate the equity of access to EV charging and determine whether charging infrastructure is disproportionately deployed.¹⁰ These assessments will benefit from a more precise understanding of the number and location of EV chargers in California.

4 Sales through 2023. See California Energy Commission, "[New ZEV Sales in California.](#)"

5 California Air Resources Board, "[Advanced Clean Cars II Regulations.](#)" accessed August 31, 2023; California Air Resources Board, "[Advanced Clean Fleets.](#)" accessed January 11, 2024.

6 A shared private charging station has parking space(s) designated by a property owner or lessee to be available to and accessible by employees, tenants, visitors, residents, or a combination thereof.

7 California Energy Commission, [Assembly Bill 2127 Second Electric Vehicle Charging Infrastructure Assessment: Assessing Charging Needs to Support Zero-Emission Vehicles in 2030 and 2035](#), March 6, 2024, <https://www.energy.ca.gov/publications/2024/assembly-bill-2127-second-electric-vehicle-charging-infrastructure-assessment>, ii.

8 Codified at Pub. Resources Code, § 25229.

9 Codified at Pub. Resources Code, § 25231.

The CEC lacks sufficient information on the number of EV chargers in California. Public charger operators are required to report the number of EV chargers they operate to the U.S. Department of Energy Alternative Fuels and Data Center. However, this requirement is limited to publicly accessible chargers and therefore provides an incomplete picture of the total chargers in the state.¹¹ The CEC's ZEV Dashboard includes public chargers reported to the Alternative Fuels and Data Center plus shared-private chargers such as those at workplaces and multifamily dwellings reported through a voluntary survey administered by the CEC. This voluntary survey has inconsistent and limited responses and likely undercounts the number of shared private chargers operating in California. Further, these data sets do not include charger inventories for medium-duty and heavy-duty vehicles.

Thus, these methods are insufficient as California enters mainstream consumer EV adoption and scales up EV charging infrastructure. Many charging networks do not respond to voluntary surveys, leaving the CEC with an incomplete inventory of the number of chargers. As the number of electrified fleets grows, more fleet operators will also operate their own private chargers. Without new regulations that allow the CEC to collect accurate data on the number and location of EV chargers, the CEC's charger estimates are likely to grow less accurate over time. These inaccuracies will reduce the effectiveness of the investments of public, ratepayer, and private funding and make it harder to determine whether California is on track to meet state goals.

The number and distribution of EV chargers required to serve California's growing EV fleet also depend on how heavily these chargers are used. A charger with a high utilization rate can in theory support more EVs — it spends more time charging vehicles — than an equivalent station with a low utilization rate.¹² The same holds true across California's charging infrastructure. If California's EV chargers tend to be heavily used, it follows that fewer chargers can serve the state's EV fleet. However, if chargers tend to be used infrequently, then California may need more of them. The utilization rate of EV chargers — and thus the number of chargers required — may also vary across California. The CEC lacks adequate information about the utilization rate of EV chargers, reducing the accuracy of projections prepared under AB 2127 and for the Integrated Energy Policy Report (IEPR).

For California to meet its EV adoption goals, chargers must also be reliable. AB 2061 finds that increasing consumer confidence in EVs depends on access to reliable EV chargers and that the

11 Compare U.S. Department of Energy "[Alternative Fuels Data Center Alternative Fueling Station Locator](#)" with CEC "[Electric Vehicle Chargers in California](#)." Accessed August 31, 2023.

12 This staff report uses the term *utilization* to refer to the amount of electricity dispensed by a charging station as a percentage of maximum output. For further discussion, see [Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment](#), page 60, <https://www.energy.ca.gov/publications/2023/second-assembly-bill-ab-2127-electric-vehicle-charging-infrastructure-assessment>.

state must understand whether publicly or ratepayer-funded EV chargers (or both) are reliable. Unfortunately, there is a lack of robust data regarding whether public and shared private EV chargers are reliable. Despite efforts by the public and private sector to improve charger reliability, existing chargers still prove to be unreliable. Media outlets have recently run stories highlighting anecdotal evidence of poor public charging reliability.¹³ Survey data indicate that EV drivers see public charging reliability as a major difficulty, and a recent survey by J.D. Powers found that malfunctioning or out-of-service chargers can prevent drivers from successfully charging their vehicles.¹⁴

The CEC lacks sufficient data on EV charging reliability to assess the reliability of the state's charging network or whether reliability is lower in low and moderate-income communities, as directed by AB 2061. Current studies are limited in geographic scope, rely on a limited set of EV models, and do not require testers to document error codes or other indicators of specific failure modes. It will be imperative to understand failure points and determine which chargers are experiencing reliability issues.

Despite the current lack of quantitative reliability data and standards, CEC staff recognizes that poor reliability of public and shared private EV chargers is a barrier to EV adoption. The CEC is working to improve charger reliability and vehicle-charger interoperability through several avenues:

- CEC staff hosted an EV charging infrastructure reliability standards workshop October 21, 2022. Representatives from Argonne National Laboratory, the charger manufacturer ABB, charging network Electrify America, and standards organization SAE gave presentations on EV charger reliability, and numerous industry participants and advocates attended the workshop and submitted comments.¹⁵
- The CEC provided funding for the Vehicle-Grid Innovation Lab (ViGIL), which provides charger conformance and certification testing services in Concord (Contra Costa County). The CEC also funded the Vehicle Interoperability Testing Symposium

13 Garza, Mariel. April 23, 2023. "[Commentary: I'm Ready to Trade in My Electric Car. Here's Why.](https://www.latimes.com/opinion/story/2023-04-23/commentary-its-not-easy-being-a-green-motorist-in-california)" *Los Angeles Times*, <https://www.latimes.com/opinion/story/2023-04-23/commentary-its-not-easy-being-a-green-motorist-in-california>.

14 Plug In America. February 2022. [The Expanding EV Market: Observations in a Year of Growth](https://pluginamerica.org/wp-content/uploads/2022/03/2022-PIA-Survey-Report.pdf), <https://pluginamerica.org/wp-content/uploads/2022/03/2022-PIA-Survey-Report.pdf>; J.D Powers. Press release, August 17, 2022. "[Growing Electric Vehicle Market Threatens to Short-Circuit Public Charging Experience, J.D. Power Finds](https://www.jdpower.com/business/press-releases/2022-us-electric-vehicle-experience-evx-public-charging-study)," <https://www.jdpower.com/business/press-releases/2022-us-electric-vehicle-experience-evx-public-charging-study>.

15 California Energy Commission, "[Workshop on Electric Vehicle Charging Infrastructure Reliability Standards](https://www.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-EVI-04)," October 21, 2022. Submitted comments available at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-EVI-04>.

(VOLTS), which convened stakeholders for charger-vehicle interoperability testing and an industry conference in May 2023.

- The CEC has included reliability requirements in EV charging grants since 2021, which set 97 percent uptime standards, recordkeeping and reporting requirements, and maintenance requirements for recipients of CEC grants.
- The CEC has contracted with UC Davis to develop an open-source EV charger test protocol and perform field tests of 3,600 EV chargers in the next three years. This field testing program will include chargers in rural and urban areas, as well as low-income and disadvantaged communities. The study will guide the CEC's 2025 assessment of charger reliability throughout the state, regardless of how the charger was funded.

More recently, Assembly Bill 126 (Reyes, Chapter 319, Statutes of 2023) directed the CEC to adopt tools to increase charging station uptime, including uptime requirements. AB 126 additionally directed the CEC to set standards for data sharing regarding the availability and accessibility of publicly available charging infrastructure.

In September 2023, CEC staff issued an initial draft of this staff report proposing new regulations requiring operators of EV chargers to report the number, location, utilization, and reliability of EV chargers, with exceptions for single-family homes and small multifamily dwellings. The draft staff report was released before AB 126 was enacted, and the draft did not propose EV charger reliability standards. Staff hosted a public workshop soliciting feedback on the proposed regulations October 9, 2023. Following the workshop, staff received more than 30 comments from stakeholders recommending changes to the proposed regulations, most prominently the addition of a charger uptime requirement.

In consideration of the requirements of AB 126 and the valuable comments provided by stakeholders, this draft staff report includes the following additions to the September 2023 draft staff report:

1. A 97 percent uptime requirement for state and ratepayer funded chargers, effective January 1, 2024. This requirement mirrors the reliability requirements of the NEVI Formula Grant Program, was widely supported in public comment, and fulfills the requirements of AB 126.
2. A 90 percent "successful charge rate" requirement for networked state and ratepayer funded chargers, effective 2026. This proposal could significantly improve the EV driver experience since many EV charging failures such as issues initiating a charging session and payments failures can still occur at "up" chargers.
3. Requiring regulated entities to conduct charger maintenance as needed to meet the 97 percent uptime requirement.
4. A requirement that state agencies consider reliability when making EV charging funding decisions.
5. Expanding default data confidentiality provisions for certain location and utilization data for private and shared private chargers.
6. Requiring networked EV chargers that are publicly available, received state or ratepayer funding, and were installed after January 1, 2024, to share real-time availability and accessibility data with third parties.

This remainder of this staff report is organized as follows:

- Chapter 2 reviews the EV charging industry and EV charging failure modes.
- Chapter 3 describes the legislative criteria for the proposed regulations.
- Chapter 4 reviews existing regulatory approaches to EV charger reliability.
- Chapter 5 summarizes the proposed regulatory text attached in Appendix A.
- Chapter 6 describes alternative regulations considered but not proposed by CEC staff.
- Chapter 7 shows that the proposed regulations are technically feasible.
- Chapter 8 describes the costs of the regulations and potential savings.
- Chapter 9 shows that an environmental impact analysis is not required for the proposed regulations.
- Chapter 10 describes the economic and fiscal impacts of the regulations.
- Chapter 11 describes the effect of the regulations on consumer equity.
- Chapter 12 provides a conclusion.

The regulatory text proposed by CEC staff is attached to this staff report as Appendix A. The regulations proposed in this report may be adopted by the CEC at a future business meeting.

CHAPTER 2:

Background

This chapter provides a brief background on the EV charging industry and potential causes of poor EV charger reliability.

EV Charging Power Levels and Standards

California's EV charging ecosystem is made up of numerous charger types and power levels, standards, and market participants.

Alternating Current Level 1 Chargers

Alternating current (AC) Level 1 EV chargers charge an EV at 120 volts and may be portable and plug directly into a standard wall outlet. Level 1 chargers are typically not networked and not capable of connecting to a charging network provider or central management system.

Alternating Current Level 2 EV Chargers

AC Level 2 EV chargers are typically 208–240 volt chargers that can charge a light-duty EV in about 4–12 hours. Due to the charge time, AC Level 2 charges are most common in homes, workplaces, and recreational or retail locations where vehicles are parked for longer periods.

Direct Current Fast Charging

Direct current fast charging (DCFC) allows higher charging power than AC Level 2 chargers. Modern commercial DCFCs operate at 50–350 kilowatts (kW) and can charge a typical light-duty EV in less than an hour. DCFCs are vital to enabling road trips and may be a convenient charging option for EV drivers unable to charge their vehicles overnight.

In the United States, there are three DCFC connector types:

- The North American Charging Standard (NACS) is a connector specification proposed by Tesla. The specification combines the shape of Tesla's existing connector with the communication protocols used by the Combined Charging System. Most automakers have announced that they will transition to using the NACS connector on future vehicles, and multiple charging network operators have announced they will install NACS connectors.
- The Combined Charging System (CCS) standard is used by most non-Tesla EV models and DCFC charging networks. As of mid-2023, all fast chargers installed by the NEVI program must include CCS connectors. The California Air Resources Board Advanced Clean Cars II regulations require all new electric vehicles to be equipped with CCS inlets or adapter starting in 2026.

- The CHAdeMO standard is used primarily by EVs manufactured by Nissan and Mitsubishi. Vehicle manufacturers are moving away from the CHAdeMO standard, and it is being phased out of future infrastructure deployments.¹⁶

Compared to Level 2 chargers, DCFCs are capital-intensive, and deployments in California are dominated by major charging networks. The higher capital and operational costs of DCFCs mean that public fast-charging operators nearly universally require payment for charging.

EV Charging Standards and Protocols

The EV charging ecosystem uses several protocols, some of which are developed and formalized by industry bodies into standards. Open standards widely used in the EV charging industry include the following:

- SAE J1772 is a connector design standard and communications protocol for AC and DC charging. Non-Tesla Level 2 AC chargers in North America universally use J1772. The CCS DCFC connector incorporates DC conductors below the AC connector and uses this protocol for EV-to-charger communications.
- *Deutsches Institut für Normung EV* (DIN) 70121 is an EV-to-charger communications protocol for DC charging.
- CHAdeMO is a physical DC connector standard as well as an EV-to-charger communications protocol.
- Open Charge Point Protocol (OCPP) is a communications protocol between the charger and the charging network provider central management system.
- International Standards Organization (ISO) 15118 is an EV-to-charger communications standard.

EV Charging Market Participants and Business Models

Numerous businesses participate in the EV charging process, and EV charging is a diverse market with numerous different business models.

Automaker

The automaker designs and builds EVs. To charge successfully, an EV must communicate successfully with a charger using a communications protocol. Communication errors may result

16 U.S. Department of Transportation, Federal Highway Administration. February 28, 2023. [National Electric Vehicle Infrastructure Standards and Requirements](https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf), pg. 12753, <https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf>.

in a failed or faulty charging session. EVs may encounter many different charger makes and models and should optimally be able to charge at any one of them.

Charger Manufacturer

The charger manufacturer is the entity that designs and builds the charger. They may build the hardware and sell to a charging network provider or deploy the charger as part of their own network. The manufacturer may or may not provide maintenance for the charging network during a warranty period.

Charging Network Provider

The charging network provider is an entity that operates a digital communications network that remotely manages EV chargers. Charging network providers may also be referred to as *EV service providers* or *EVSPs*.

A charging network provider typically manages a group of networked EV chargers, otherwise known as a *charging network*, and may use its communication capabilities to communicate directly with drivers, share real-time station status, broadcast station locations, collect and store data, and manage payments. Charging network providers often use OCPP to communicate with the charger networks they provide communications services to.

Charging network providers may or may not provide technical and maintenance support for EV chargers, may or may not manufacture their own chargers, and are not regulated as utilities in California.

Charging Station Operator

The charging station operator is an entity that owns the chargers and supporting equipment and facilities at one or more charging stations. Both charging network providers and charging station operators can be understood to operate a charging network and often are the same entity. Major charging station operators include Electrify America, EVgo, and Tesla.

Payment Processor

Paid EV charging typically relies on a third-party payment processor to conduct transactions. Successful transactions must be communicated to the charging network provider and EV charger to authorize charging. Nayax Ltd. and Payter are the major payments processors used by the EV charging industry.

Site Host

For this report, the site host is defined as the electrical customer of record who pays the electric utility bill for an EV charger. Site hosts may or may not be the same entity as the charging station operator.

Utilities

Electricity is provided to the EV charger by an electric utility. EV chargers may rely on data services provided by a telecommunications utility for communications with charging network providers and payment processors.

EV Charging Reliability Concepts and Fault Categories

EV charger reliability can be expressed as uptime, but uptime has important limitations, and a charger considered “up” may still not provide drivers with their expected charging experience. Charger reliability is also related to the concept of EV and charger interoperability.

Uptime

EV charger reliability can be most simply measured as uptime, or the percentage of time that a charger is functional. Definitions of uptime vary, as do categories of “excluded” downtime or periods when a charger is not functional but are not counted in uptime statistics.

The NEVI Final Rule sets criteria for considering a charger “up” and establishes specific categories of excluded downtime:

“A charging port is considered ‘up’ when its hardware and software are both online and available for use, or in use, and the charging port successfully dispenses electricity in accordance with requirements for minimum power level.”¹⁷

Downtime due to electric service interruptions, failure to initiate a charge at the expected power level due to the fault of the vehicle, scheduled maintenance, vandalism, or natural disasters is excluded from the NEVI uptime calculation.¹⁸

Uptime statistics may not capture many situations where a charger is considered “up,” but drivers are still unable to charge their vehicles successfully. For example, a payment system fault may leave a driver unable to pay and authorize charging at an “up” charger.¹⁹ A

17 U.S. Department of Transportation, Federal Highway Administration. February 28, 2023. [National Electric Vehicle Infrastructure Standards and Requirements](https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf), pg. 12756, <https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf>.

18 Ibid.

19 General Motors. November 11, 2022. [“GM Comments on CEC Reliability Workshop,”](https://efiling.energy.ca.gov/GetDocument.aspx?tn=247428&DocumentContentId=81809) <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247428&DocumentContentId=81809>.

definition of downtime that excludes vandalism may leave drivers unable to charge at damaged chargers.

While real-world data are limited, it is plausible that EV chargers may report high uptime statistics but actually successfully charge vehicles with far less frequency. Other reliability statistics, such as the number of failed charging sessions and maintenance records, may provide insights in addition to charger uptime.

Interoperability

EV charger reliability is related to interoperability, or the ability of different products and systems to function together without special effort from users. In the context of EV charging, interoperability can include:

- EV chargers successfully interfacing with a broad range of EV models made by different automakers, and vice versa.
- Drivers' ability to seamlessly pay for charging at chargers operated by any charging network provider.
- The ability of EV chargers to connect to any charging network provider's software.

Interoperability problems affect EV charger reliability. For example, differing implementations of communication protocols on the EV and EV charger may result in a charging session with lower charging power than expected or the inability to start the session altogether. Failures of EVs, EV chargers, charging network provider systems, and payment systems to seamlessly interoperate produce poor charging experiences and drivers' perception that EV charging is unreliable. The EV charging industry to date has not implemented a comprehensive approach to interoperability. Some charging network operators have developed test labs intended to test and improve the ability of EV chargers to interoperate successfully with different vehicle models.

EV Charging Failure Points

The EV charging ecosystem has potential failure points. For example, to charge successfully at a fast charger, the EV charger — which is often located outdoors, can be roughly treated, and typically is unattended — must be maintained and in good working order. Further, the driver must be able to connect the charger to the vehicle charging port to establish an electrical and communication link. Then, the vehicle and charger — products that are often designed and manufactured by different entities — must recognize and interface with each other to communicate charging parameters.

The driver must also be able to submit payment information via vehicle-charger communication, a credit card, radio-frequency identification (RFID) card, or a smartphone app. The payment entity must communicate authorization to charge to the EV charger, typically over a wireless data network, and the charger and vehicle must communicate to initiate a charging session.

For a satisfying driver experience, all these steps must occur over the span of a few seconds for any EV, in any weather condition, with no faults. The charger must then maintain the expected flow of electricity for a full charging session.

There are many ways this interaction can go wrong, but EV charging failures can be classified in five broad categories:²⁰

1. Charger/Network Error

Charger/network errors are persistent failures in communication between the EV charger and the charging network provider’s central system and would typically qualify as downtime. These failures include EV charger hardware failures, charger and charging network provider software failures, and charging network provider network failures.

- *Charger hardware failures:* EV charger internal physical systems such as power electronics can break, leaving the charger inoperable.
- *Charger software failures:* Charger software can fail or require updates, which may leave chargers inoperable.
- *Charger network provider failures:* The charging network provider’s central system must communicate with the charger to authorize charging. Communications or software failures on the interface between the charger and charging network provider’s central system may leave a charger inoperable or drivers unable to pay for charging.

Preventive maintenance and timely corrective maintenance are critical to avoiding charger errors. Anecdotal evidence suggests that the entity responsible for charger maintenance — the charger manufacturer, charging network provider, charger operator, or site host — is often contested or not clearly understood by all parties. Site hosts that operate chargers and do not have maintenance contracts with third parties may not understand that they are responsible for maintaining the chargers, or lack the resources or expertise to do so.

2. Internal Payment System Failures

Processing payments and authorizing a charging session require the charger or charging network provider’s smartphone app to communicate with the charging network provider’s central system. Because the charger remains nominally operational, internal payments system failures may be reported during “uptime” but still leave drivers unable to charge.

Payment processing also may incorporate roaming between charging network providers and operators using the Open Charge Point Interface (OCPI) protocol. Failures in this exchange may occur only once a driver has attempted to initiate a charge with a charger that appears operational — a frustrating experience.

20 Schell, Dustin (California Energy Commission). October 21, 2022. “[Electric Vehicle Charging Infrastructure Reliability Workshop](https://www.energy.ca.gov/event/workshop/2022-10/workshop-electric-vehicle-charging-infrastructure-reliability-standards)” staff presentation, <https://www.energy.ca.gov/event/workshop/2022-10/workshop-electric-vehicle-charging-infrastructure-reliability-standards>.

3. External Payment System Failures

Processing payments requires the charger payment terminal or charging network provider app to communicate with an external third-party payment processor. Because the charger remains nominally operational, external payments system failures may be reported as uptime but still leave drivers unable to charge.

Physical payment terminals can also fail because of physical damage like dust entering the card reader slot. Communication faults with the third-party payment processor can leave drivers unable to pay for charging and potentially unable to charge. Some charging network providers do not require payment for charging — “default to free” — in the event of a payment failure to keep EV chargers functional, though chargers will not default to free charging if physical damage that leaves a payment terminal inoperable is not detected by the charger.

4. Charge Initiation/Interoperability Failures

Successful charging requires the EV and charger to exchange charging parameters. This communication occurs via standards such as ISO 15118, SAE J1772, DIN 70121, CHAdeMO, or others. Anecdotal evidence suggests that interoperability failures are common, though the causes of these failures are unclear. Because the charger remains nominally operational, charge initiation/interoperability failures may be reported during uptime but still leave drivers unable to charge.

5. Unmonitored Failures/Other

Chargers can be broken in ways that are not detectable by the charger itself or remotely diagnosed by the network operator. These chargers may be reported as up unless the fault is physically detected by the operator.

EV chargers are typically uncovered and unprotected from the elements. Connectors can be bent or run over by vehicles. Cables can be cut as acts of vandalism or stolen for copper. EV chargers frequently incorporate screens that are necessary for operation, but screens can fade in sunlight, break, or be smashed. Because EV chargers are typically unattended, broken hardware that the charger cannot detect itself will often be noted only by the charging network provider if a customer reports it.

Electrical utility failures, such as power outages, may also leave chargers inoperable. Since charging network providers and payment authorizers frequently use cellular data networks to communicate with chargers, communication utility failures can cause charger/network errors and payment system failures. Wireless data communication can be unreliable or unavailable entirely in certain locations, like rural areas or underground parking garages.

CHAPTER 3:

Legislative Criteria

CEC staff proposes the regulations discussed in this report under the following statutes and executive orders.

Executive Order B-48-18

Executive Order B-48-18²¹ sets the target that California installs 250,000 EV chargers by 2025, of which 10,000 are DC fast chargers. Tracking California's progress toward this goal requires an accurate understanding of the number of EV chargers operating in California, data that the CEC lacks because of poor charging station operator responses to surveys.

Assembly Bill 2127

AB 2127²² (Ting, Chapter 365, Statutes of 2018) requires the CEC to assess biennially the EV charging infrastructure required to meet the state's 2030 EV adoption and greenhouse gas reduction goals. Assessing the status of and need for charging infrastructure requires an accurate inventory of the number of EV chargers in California today. To date, the CEC and staff have produced two AB 2127 reports but have found that existing data collection is not sufficient to gather a comprehensive picture of the number of EV chargers in California. To estimate the number of needed EV chargers more accurately, CEC staff additionally requires better estimates of the real-world use of EV chargers since understanding utilization is critical to estimating the number of chargers required to serve a given number of EVs.

Senate Bill 1000

SB 1000²³ (Lara, Chapter 368, Statutes of 2018) requires the CEC to assess whether charging infrastructure is disproportionately deployed by population density, geographical area, or population income level, including low-, middle-, and high-income levels. This assessment requires accurate information on the number of EV chargers in California and related locations and utilization. To date, the CEC has produced two SB 1000 reports with the available data.

21 Governor Edmund G. Brown, Jr. [Executive Order B-48-18](https://archive.gov.ca.gov/archive/gov39/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/index.html). Issued January 26, 2018, <https://archive.gov.ca.gov/archive/gov39/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/index.html>.

22 Codified at Pub. Resources Code, § 25229.

23 Codified at Pub. Resources Code, § 25231.

More complete data on the number and location of EV chargers in California will greatly improve the analysis of charging access in future SB 1000 reports.

Assembly Bill 1926

AB 1926 (Farr, Chapter 939, Statutes of 1991)²⁴ requires the CEC to ease the development and commercialization of zero-emission electric vehicles, as well as the development of an infrastructure to support maintenance and fueling of those vehicles in California.

Assembly Bill 2061

AB 2061²⁵ (Ting, Chapter 345, Statutes of 2022) directs the CEC, in consultation with the California Public Utilities Commission (CPUC), to develop uptime recordkeeping and reporting standards for EV chargers installed after January 1, 2024, as well as a definition of charger uptime. These standards will apply to EV chargers that receive an incentive from a state agency or through a charge on ratepayers. AB 2061 also directed that the CEC, in consultation with the CPUC, may consider additional tools to increase EV charger uptime, including uptime requirements.

AB 2061 additionally directs the CEC to assess the uptime of EV chargers in California biennially, beginning January 1, 2025. This assessment must examine equitable access to reliable EV chargers, including access to reliable chargers in low-, moderate-, and high-income communities. The CEC does not collect the data required to complete a holistic assessment of the reliability of California's charging infrastructure (particularly the non-CEC funded chargers), including the number of public and shared private chargers and information on the reliability of these chargers.

Assembly Bill 126

AB 126²⁶ (Reyes, Chapter 319, Statutes of 2023) directs the CEC to adopt tools to increase charger uptime, including, but not limited to, uptime requirements and operation and maintenance requirements. AB 126 also mandates that the CEC establish standards for how charging stations inform customers about the availability and accessibility of publicly available charging infrastructure by January 1, 2025.

24 Codified at Pub. Resources Code, § 25618.

25 Codified at Pub. Resources Code, § 25231.5.

26 Ibid.

Integrated Energy Policy Report Statutes

Existing law directs the CEC to release a biennial IEPR that provides a cohesive assessment of major energy trends and issues in California. Through the IEPR, the CEC develops assessments and forecasts to conserve resources, protect the environment, ensure energy reliability, enhance the state economy, and protect public health and safety.²⁷ The purposes of the IEPR include to promote “reliable energy markets” and to “conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices.” In conducting assessments and forecasts for the IEPR, the CEC is authorized to collect data from a broad range of market participants.²⁸

EV charging stations provide energy and fall under the purview of the IEPR.²⁹ EV charging accounts for an increasing share of California’s transportation energy usage and plays an increasingly important role in the overall reliability of California’s energy infrastructure. An assessment of California energy trends and issues that includes the deployment, utilization, and reliability of EV charging will create a more comprehensive understanding and planning toward IEPR requirements and goals. Moreover, the Public Resources Code specifically requires the CEC to conduct transportation forecasting and assessment as part of the IEPR.³⁰

The recordkeeping and reporting requirements proposed in this rulemaking are necessary to prepare the IEPR because, as discussed in the Introduction above, current data collection methods are insufficient. Utilization data, such as port level data, is necessary to prepare the IEPR because the CEC needs the information to be able to forecast where more EV chargers may be needed and to make “[r]ecommendations to improve the efficiency of transportation energy use, reduce dependence on petroleum fuels, decrease environmental impacts from transportation energy use, and contribute to reducing congestion, promoting economic development, and enhancing energy diversity and security,” as directed by the Public Resources Code³¹ These statutes authorize the CEC to collect data about the deployment, utilization, reliability, and maintenance of EV chargers from participants in the EV charging

27 Pub. Resources Code, § 25301(b)(5); see Pub. Resources Code, § 25001, 25300(c) and (d) (“state government requires at all times a complete and thorough understanding of the operation of energy markets” and that “timely reporting, assessments, forecasting, and data collection activities are essential to serve the information and policy development needs of the Governor, the Legislature, public agencies, market participants, and the public.”)

28 Pub. Resources Code, § 25301(a).

29 Ibid.

30 Pub. Resources Code, § 25304.

31 Ibid.

industry. The need for participant data outweighs the low to moderate cost to the industry that these recordkeeping and reporting requirements could impose.³²

Public Resources Code Sections 25400 and 25401

Public Resources Code Sections 25400 and 25401 direct the CEC to carry out studies, research projects, data collection, and other activities required to assess the nature, extent, and distribution of energy resources to meet the needs of the state. An assessment of California energy trends and issues that includes the deployment, utilization, and reliability of EV charging will create a more comprehensive understanding.

Public Resources Code Sections 25601 and 25602

Public Resources Code Sections 25601 and 25602 direct the CEC to develop and coordinate a program of research and development in energy supply, consumption, and conservation. Additionally, it directs the CEC to carry out technical assessment studies on all forms of energy and energy-related problems to be informed on future energy options and related impacts. Such assessments may also be conducted to determine which energy systems among competing technologies are most compatible with standards established pursuant to this division. An assessment of California energy trends and issues that include the deployment, utilization, and reliability of EV charging stations will create a more comprehensive understanding of changes in transportation technology in relation to implications for energy consumption and technologies.

³² See Savings and Costs chapter, below.

CHAPTER 4:

Regulatory Approaches

Regulatory agencies in California and elsewhere have set reliability reporting requirements for EV chargers.

California State Agencies

California state agencies have set reliability and uptime reporting standards for EV chargers that receive public funds through specific agency-administered programs. For example, recent CEC grant funding opportunities for EV charging infrastructure have required that chargers be operational 97 percent of the time. Since these grant agreements are relatively recent, the CEC does not have robust data about the actual uptime of chargers installed through these programs. The CEC has not set general charger reliability standards for EV chargers that are not funded by the CEC.

The CPUC has ordered that EV chargers installed under the Transportation Electrification Framework must have uptime reliability consistent with AB 2061 and the standards adopted in this rulemaking.³³

Federal Regulations

The Federal Highway Administration has set minimum uptime requirements for chargers that receive federal funds and are located along highways, most prominently those funded through the Charging and Fueling Infrastructure Discretionary Grant and NEVI Formula Program.³⁴ States and other direct recipients of federal funds through these programs must ensure that each charging port installed under the program has an average annual uptime of greater than 97 percent as defined in regulation.³⁵

33 California Public Utilities Commission. November 21, 2022. [Final Decision 22-11-040](https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M499/K005/499005805.PDF), pg. 184, <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M499/K005/499005805.PDF>.

34 U.S. Department of Transportation, Federal Highway Administration. February 1, 2023. [Notice of Funding Opportunity for Fiscal Year \(FY\) 2022 and FY 2023 for the U.S. Department of Transportation's Charging and Fueling Infrastructure Discretionary Grant Opportunity](#), pg. 4.

35 U.S. Department of Transportation, Federal Highway Administration. February 28, 2023. [National Electric Vehicle Infrastructure Standards and Requirements](https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf), pg. 12756, <https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf>.

International Regulations

The United Kingdom Department for Transport recently set a 99 percent reliability requirement for public chargers along portions of the nation’s highway network. Regulators expect to evaluate the reliability of the United Kingdom’s entire charging network in 2024 and may impose a 99 percent reliability requirement on all public EV chargers if no improvements in reliability are seen. Regulators also plan to publicly identify networks that are not reliable in future reporting.³⁶

36 U.K. Department for Transport. March 2023. [Consumer Experience at Public Chargepoints: Government Response to the 2021 Consultation on the Consumer Experience at Public Chargepoints](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1146685/government-response-to-the-2021-consultation-on-consumer-experience-at-public-chargepoints.pdf), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1146685/government-response-to-the-2021-consultation-on-consumer-experience-at-public-chargepoints.pdf.

CHAPTER 5:

Proposed Regulatory Framework

This staff report proposes the following new category of regulations for EV chargers:

1. Recordkeeping and reporting to track the number of electric vehicle chargers installed in California, the use of the chargers, and reliability.
2. Reliability performance standards, including a 97 percent uptime standard, 90 percent successful charge rate attempt standard, and the requirement that regulated entities maintain chargers consistent with achieving the 97 percent uptime standard.
3. Sharing real-time data on the availability and accessibility of publicly available charging infrastructure.

Applicability of these proposed regulations varies:

1. Charger inventory and utilization recordkeeping and reporting regulations apply to all chargers installed in California, except those used solely for private use at a single-family home or located at a multifamily dwelling with four or fewer dwelling units.
2. Reliability reporting and reliability performance standards regulations apply to all chargers that receive an incentive from a state agency or ratepayers, except those used solely for private use at a single-family home or at a multifamily dwelling with four or fewer dwelling units.
 - a. Chargers installed on or after January 1, 2024, must meet the 97 percent uptime standard.
 - b. Chargers installed on or after January 1, 2026 must meet the 90 percent successful charge attempt rate standard.
3. Real-time availability and accessibility data sharing regulations apply to all publicly available state- and ratepayer funded chargers in California.

All these regulations apply to EV chargers serving light-duty and MDHD EVs.

These regulations are proposed following Section 25231.5 of the California Public Resources Code, and Sections 25210, 25213, 25218(e), 25229, 25301, 25303, 25304, 25400, 25401, 25601, 25602, and 25618 of the California Public Resources Code, and Sections 1220 through 1225 of Title 20 of the California Code of Regulations. The full proposed regulatory text is attached to this report as Appendix A.

EV Charger Inventory Reporting Regulations

CEC staff proposes the following regulations for tracking the number of light-duty EV and MDHD EV chargers operating in California, which are necessary to assess whether California is on track to meet state EV infrastructure goals.

Applicability

The charger inventory regulations will apply to all charging network providers, charging station operators, and certain site hosts and funding recipients of EV chargers in California, encompassing those regulated by AB 2061 and those not covered by it. This regulation applies to all chargers in the state regardless of funding source or public availability of the charger.

Exemptions

This charger inventory reporting regulation excludes chargers installed in single-family homes or multifamily residential buildings of four dwelling units or fewer.

Recordkeeping and Reporting Requirements

All recordkeeping and reporting agents subject to this charger inventory reporting regulation must report changes in the number or location of chargers they operate within the quarter through a quarterly inventory report.

All operators of EV chargers installed, except single-family homes or multifamily residential buildings of four dwelling units or fewer, are required to file an EV charger inventory report beginning on the first quarterly reporting deadline following the effective date of these regulations. Recordkeeping and reporting agents are required to submit further quarterly inventory reports only if the number, location, or characteristics of the chargers they operate changed during the previous quarter. It is expected that many networks will expand over time; therefore, many agents will report quarterly.

These reports will detail the number of chargers operated by the recordkeeping and reporting agent. The specific reporting requirements will vary depending on the networking status of each charger.

Table 1: Inventory Reporting Requirements

Charger Configuration	Inventory Reporting Requirements
Nonnetworked	<ul style="list-style-type: none"> • Charger address • Charger geographic coordinates • Model of charger • Charger nameplate power • Charger serial number • Statement of whether charger is a replacement of a former charger • Charger characteristics, including whether charger is alternating or direct current and connector standard • Primary use of the charger (e.g., public light-duty, public MDHD, private fleet charging, etc.)
Networked	<p>All information required for nonnetworked chargers, and:</p> <ul style="list-style-type: none"> • Charger ID • Port ID • Charging station network provider

Source: CEC staff

CEC staff plans to establish an online data portal to enable regulated entities to report required data seamlessly to the CEC. Staff will issue a data template specifying the data format required for reporting required data before the regulations come into effect.

Data Use

The CEC will use charger inventory data in the preparation of the AB 2127 and SB 1000 reports, the IEPR, other reports required by statute, and other analytical tasks. These data will inform estimates of the number of additional EV chargers needed to address state goals. The CEC will hold the address and location of private and shared private chargers confidential.

EV Charger Utilization Reporting Regulations

CEC staff proposes the following regulations for tracking the use of chargers operating in California. Accurate information about charger utilization is a necessary input for the CEC’s modeling of California’s EV infrastructure needs, as highly used chargers can serve more vehicles than those with lower utilization.

Applicability

This charger utilization reporting regulation will apply to all charging network providers servicing networked EV chargers in California. These apply to all chargers in the state regardless of funding source or availability of the charger to the public.

Exemptions

This charger utilization regulation will not apply to operators of chargers installed in single-family homes or multifamily residential buildings of four dwelling units or fewer. Nonnetworked chargers are also exempted from this regulation.

Recordkeeping and Reporting Requirements

All recordkeeping and reporting agents subject to this charger utilization reporting regulation must make quarterly reports to the CEC, which will report certain charger utilization information. The required reporting will vary based on the networking status of a charger.

Table 2: Utilization Reporting Requirements

Charger Configuration	Utilization Reporting Requirements
Nonnetworked	<ul style="list-style-type: none">• Not applicable
Networked	<ul style="list-style-type: none">• Average hours per day charger drew power during reporting period• Average hours per day charger was connected to an EV during the reporting period• Average kilowatt-hours per day the charger dispensed during the reporting period

Source: CEC staff

CEC staff will issue a data template specifying the data format required for reporting these data before the regulations come into effect. Charger-specific utilization data reported to the CEC following these regulations will be held confidential by the CEC, as described below.

Data Use

The CEC will use charger utilization data in preparing the AB 2127 report, other reports required by statute, the IEPR, and other analytical tasks. These data will inform estimates of the number of additional EV chargers needed to address state goals. The CEC will hold utilization data specific to a charger confidential.

EV Charger Reliability Reporting Regulations

CEC staff proposes the following regulation to establish reliability reporting requirements for EV chargers regulated by AB 2061.

Applicability

These reliability reporting regulations apply to EV charging stations operating in California that receive an incentive from a state agency or through a charge on ratepayers and are installed on or after January 1, 2024. The reliability reporting standards are effective for six years after the date of charger installation. For this reliability reporting regulation, “ratepayers” are defined as customers of any electric load-serving entity, including publicly owned utilities and community choice aggregators.³⁷

The proposed reliability reporting regulations apply only to EV chargers that receive a state incentive or ratepayer funding. However, they do not apply to EV chargers where the only public or ratepayer funding was to fund front-of-the-meter make-readies or associated infrastructure.³⁸ The regulations would still apply if a charger received public or ratepayer funding for the make-ready and public or ratepayer funding the customer-side EV charging infrastructure.

37 Community choice aggregators procure energy for electricity users in a community or region. CCAs do not operate electric distribution infrastructure, and electricity procured by CCAs is delivered via existing distribution infrastructure typically operated by a utility.

38 For the purpose of this report the front-of-the-meter make-ready is defined as electrical equipment and accompanying infrastructure located between the utility distribution system and the customer meter.

Exemptions

These regulations exempt EV chargers installed at single-family homes, buildings with four or fewer dwelling units, off-grid EV chargers, and temporary EV chargers.³⁹ Chargers that do not receive a state incentive or ratepayer funding, including chargers installed under the federal CFI Discretionary Grant Program NEVI Formula Program, are not required to comply with these regulations.

Recordkeeping and Reporting Requirement

The proposed regulations define “uptime” as the percentage of time a charging port is operational with the exception of excluded downtime periods; more details on excluded downtime periods are provided below. The excluded downtime categories proposed by staff are aligned with the excluded downtime categories in the federal NEVI program.

For calculating uptime, downtime begins when nonoperational status is remotely reported to the charging network provider or the recordkeeping and reporting agent becomes aware that a charger is not operational, whichever comes earliest. A charger will be considered not operational due to any equipment or software fault not included in categories of excluded downtime. Certain downtime categories receive a limited period during which they are considered excluded downtime.

These proposed regulations define uptime on a per-port basis. Some commenters following the October 2022 CEC reliability workshop requested that uptime be defined on a per-station rather than per-port basis.⁴⁰ Yet AB 2061 requires this uptime definition to be consistent with the federal NEVI Program guidelines.⁴¹ The NEVI Program defines a charger as “up” on a per-port basis.⁴² Further, since these are publicly funded or ratepayer-funded chargers or both, the expectation is that each port remain functional and operational for use by the public and ratepayers.

³⁹ *Off-grid chargers* are defined as a charger that does not draw power from an electric utility, at any time. *Temporary charger* is defined as a charger that is designed to be portable and available for use intermittently, is not attached at a location, and is not available for use at a single location for more than 30 days in a calendar year.

⁴⁰ Electrify America. November 14, 2022. “[O]n Electric Vehicle Charging Infrastructure Reliability Workshop,”; EVGo. November 14, 2022. “EVgo Comments on Electric Vehicle Charging Infrastructure Reliability Workshop,” <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247465&DocumentContentId=818573>; Tesla. November 14, 2022. “Tesla Comments October 2022 Reliability Workshop.” <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247434&DocumentContentId=81819>

⁴¹ PR Code Section 25231.5 (a)(3)(B)(ii).

⁴² U.S. Department of Transportation, Federal Highway Administration, [National Electric Vehicle Infrastructure Standards and Requirements](https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf), February 28, 2023, pg. 12756. <https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf>

Certain categories of downtime will be excluded from the charger uptime calculation. Staff's intention is that excluded downtime be limited only to situations that are entirely outside the charging station operator's control or remedy. Proposed exclusions include:

- Grid power loss.
- Communication network outages provided that the chargers default to free in the event of communications outages.
- Natural disasters.⁴³

The proposed excluded downtimes are in line with NEVI's exclusion criteria. Planned maintenance is excluded from downtime, as are nonoperating hours when chargers are routinely not available to drivers. Charging sessions where the charger is unable to meet the customer's expectation for power delivery due to the fault of the vehicle is also excluded from downtime.

Equipment unavailability due to supply chain delays, labor unavailability, damage, and payment system failures are not considered excluded downtime. Precluding these faults from excludable downtime recognizes the importance of the driver experience and was supported by several commenters following the 2022 CEC reliability workshop.⁴⁴

⁴³ *Natural disasters* are defined as natural events such as a flood, earthquake, or wildfire that causes great damage.

⁴⁴ ChargerHelp!. November 11, 2022. "[ChargerHelp! Comments on EV Charging Reliability Standards,](https://efiling.energy.ca.gov/GetDocument.aspx?tn=247433&DocumentContentId=81814)" <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247433&DocumentContentId=81814>; EV Charging Coalition. November 11, 2022. "[EV Charging Coalition Comments,](https://efiling.energy.ca.gov/GetDocument.aspx?tn=247431&DocumentContentId=81812)" <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247431&DocumentContentId=81812>.

Table 3: Reliability Reporting Requirements

Charger Configuration	Reliability Reporting Requirements
Nonnetworked chargers	<ul style="list-style-type: none"> • The uptime percentage rate and minutes of excluded downtime • An itemized summary of excluded downtime • Maintain maintenance records and provide them to the CEC upon request
Networked chargers	<ul style="list-style-type: none"> • The uptime percentage rate and minutes of excluded downtime • An itemized summary of excluded downtime • Charger operative status and charging attempts (total charge attempts, successful charge attempts, failed charge attempts, and percentage successful charges relative to total attempts)

Source: CEC staff

CEC staff will issue a data template specifying the data format required for reporting these data before the regulations come into effect.

Networked Chargers

Recordkeeping and reporting agents that operate networked chargers regulated by AB 2061 are required to report EV charger uptime, downtime, total charge attempts, successful charge attempts, failed charge attempts, and percentage of successful charges relative to total attempts to the CEC. Reporting charging attempt statistics is intended to help the CEC understand the number of failures customers experience that are not directly attributable to uptime, as payment system failures and interoperability failures are expected to account for a significant number of failed charge attempts. Requiring reporting on failed charging sessions was supported by commenters following the October 21, 2022, CEC reliability workshop.⁴⁵

⁴⁵ General Motors. "[GM Comments on CEC Reliability Workshop](https://efiling.energy.ca.gov/GetDocument.aspx?tn=247428&DocumentContentId=81809)," November 11, 2022, <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247428&DocumentContentId=81809>; Plug In America, "[PIA Comments on Electric Vehicle Charging Infrastructure Reliability](https://efiling.energy.ca.gov/GetDocument.aspx?tn=247428&DocumentContentId=81809)," November 10, 2022, <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247428&DocumentContentId=81809>.

Reporting requirements for networked chargers vary based on the installation date of the networked charger.

- Networked chargers installed before January 1, 2026, are required to report each quarter the operative status of the charger on a 15-minute interval.
- Networked chargers installed on or after January 1, 2026, are required to report every 15 minutes operative status and certain protocol data units using OCPP 2.0.1 or a subsequent version of OCPP.

Nonnetworked Chargers

Recordkeeping and reporting agents who operate nonnetworked EV chargers are required to report charger uptime and downtime to the CEC. Operators of nonnetworked chargers are also required to maintain maintenance records and provide them to the CEC upon request. The CEC recognizes that nonnetworked chargers cannot provide real-time reliability data in the same manner as networked chargers and seeks to create regulations that do not favor either networked or nonnetworked chargers. Requiring maintenance records for nonnetworked chargers is intended to allow the CEC to evaluate the reliability of nonnetworked chargers while recognizing the limited self-reporting capabilities of nonnetworked devices.

Data Use

The CEC will use charger reliability data in forthcoming reports on the reliability of California's EV charging infrastructure, as required by statute, the IEPR, and other analytical tasks. Reliability data collected through these regulations may be featured in other CEC publications, reports, and dashboards.

Recordkeeping and Reporting Agent

The recordkeeping and reporting agent is the entity responsible for collecting, storing, and reporting all the information required by the regulations proposed in this staff report, inclusive of charger inventory, utilization, and reliability, as applicable.

The recordkeeping and reporting agent of a charging site depends on whether the charger is networked or nonnetworked and whether it is regulated by AB 2061. For these regulations, a business entity may be considered a charging network provider at one charging location operated by the entity and a charging station operator or site host at another.

The charging network provider is by default the recordkeeping and reporting agent for networked chargers under these regulations. The CEC will hold total charge attempts, successful charge attempts, failed charge attempts at individual chargers confidential.

Table 4: Recordkeeping and Reporting Agent

Charger Configuration	Recordkeeping and Reporting Agent	Agent Definition
All networked chargers	Charging network provider	Entity that operates the digital communication network that remotely manages the chargers. A charging network provider that agrees to serve as a recordkeeping and reporting agent under these regulations using an Application Programming Interface (API) data reporting tool is considered an <i>enrolled charging network provider</i> .
Nonnetworked chargers that are either not publicly or ratepayer-funded <u>or</u> were installed before January 1, 2024	Charging station operator	Entity that owns the chargers and supporting equipment and facilities at one or more charging stations.
Nonnetworked chargers that are publicly or ratepayer-funded <u>and</u> were installed on or after January 1, 2024	Site host or their designee	Electric utility customer of record for electric service to the charger.

Source: CEC staff

For nonnetworked chargers — which by definition lack a charging network provider — the site host is the recordkeeping and reporting agent for nonnetworked chargers regulated by AB 2061. The charging station operator is the recordkeeping and reporting agent for nonnetworked chargers not regulated by AB 2061. At many EV charging stations, the charging network provider, charging station operator, and site host may be the same entity.

Recordkeeping and reporting agents are required to submit required data to the CEC executive director in quarterly reports. For any charger uninstalled from service during the reporting period, a statement must be provided. This statement, executed under penalty of perjury under the laws of the State of California, should confirm the uninstallation of the charger and specify the date on which it was uninstalled.

Recordkeeping and reporting agents may designate one or more entities to fulfill their reporting responsibilities, but the recordkeeping and reporting agent remains legally responsible for complying with the requirements of these regulations.

Recordkeeping and reporting agents are required to submit required data in a format specified by the CEC. CEC staff will issue a data template specifying the data format required for reporting these data before the regulations come into effect.

Before January 1, 2026, recordkeeping and reporting agents for networked chargers regulated by AB 2061 are required to submit required reliability data in the format specified by the CEC. Following January 1, 2026, recordkeeping and reporting agents for networked chargers regulated by AB 2061 are required to report required data to the CEC through an application programming interface (API) data portal as an *enrolled charging network provider* or retain another enrolled charging network provider capable of submitting data through an API to report this data on their behalf. An enrolled charging network provider is a charging network provider that has completed an application to the CEC and meets the technical requirements of reporting required data through the API data portal.

Equipment operated by charging network providers after January 1, 2026, are required to comply with OCPP Version 2.0.1 or a subsequent version of OCPP.

Confidentiality

Recordkeeping and reporting agents may request that the CEC hold certain data gathered under these regulations confidential. The Commission may disclose data previously designated as confidential if this disclosure is permitted by law.

Table 5: Confidentiality

To Be Held Confidential⁴⁶	May File a Request for Confidential Designation⁴⁷	Not Confidential
<ul style="list-style-type: none"> • Charger address and geographic coordinates for private and shared private chargers • Utilization data specific to a charger • Total charge attempts, successful charge attempts, failed charge attempts 	<ul style="list-style-type: none"> • Charger serial number • Charger and port unique identification 	<ul style="list-style-type: none"> • All other data • Data that would otherwise be confidential if it has been sufficiently aggregated

Source: CEC staff

46 Following proposed Section 2505(a)(5)(B)(10).

47 Request for confidential designation, [Form CEC-13](https://www.energy.ca.gov/media/3539), including instructions, may be downloaded here: <https://www.energy.ca.gov/media/3539>.

Data that would otherwise be confidential will only be publicly released by the CEC if they have been aggregated to such a level that they include data from three or more entities, to prevent viewers from backing out confidential information from the aggregated dataset.

Recordkeeping and reporting agents who wish to hold charger address and geographic coordinates, serial number, and charger and port identification data confidential must identify the data as confidential to the CEC. Charger location, serial number, and port identification data will be held confidential if requested provided the data are not already being reported to the National Renewable Energy Laboratory (NREL) or through the NEVI Program. Private and shared private charger locations will be kept confidential by default.

Reliability Standards Regulations

In consideration of the requirement of AB 126 and the valuable comments provided by stakeholders following the October 9, 2023, reliability workshop,⁴⁸ CEC staff newly proposes a charger uptime requirement and minimum successful charge attempt rate (SCAR). These regulations are essential to guaranteeing the reliability of chargers in California for the benefit of consumers and the state EV charging infrastructure goals.

Applicability

The proposed reliability standards regulations are applicable to chargers that receive state or ratepayer funding and are located outside single-family homes or multifamily dwellings of four or fewer residences. The proposed uptime requirement is applicable to chargers installed on or after January 1, 2024, and the proposed minimum SCAR is applicable to chargers installed on or after January 1, 2026.

The proposed reliability regulations apply only to EV chargers that receive a state incentive or ratepayer funding. However, they do not apply to EV chargers where the only public or ratepayer funding was to fund front-of-the-meter make-readies or associated infrastructure. The regulations would still apply if a charger received public or ratepayer funding for the make-ready and public or ratepayer funding the customer-side EV charging infrastructure.

Exemptions

Nonnetworked chargers will not be required to meet a minimum SCAR, as nonnetworked chargers are not technically capable of remotely reporting charger status.

Performance Requirements

48 California Energy Commission. October 2, 2023. "[Workshop on Proposed Regulations for Electric Vehicle Charger Inventory, Utilization, and Reliability Reporting,](https://www.energy.ca.gov/event/workshop/2023-10/workshop-proposed-regulations-electric-vehicle-charger-inventory-utilization)" <https://www.energy.ca.gov/event/workshop/2023-10/workshop-proposed-regulations-electric-vehicle-charger-inventory-utilization>.

These reliability standards set the following performance requirements.

Uptime Requirement

AB 126 requires the CEC to adopt uptime requirements. Under statute, staff proposes that EV chargers that receive state or ratepayer funding and are installed on or after January 1, 2024, meet a 97 percent minimum uptime standard. This minimum uptime requirement is in line with the requirements of NEVI funded chargers. The uptime requirement is defined on a per-port and not-site basis; each charger at a charging site must be up 97 percent of the time to comply.

Charger uptime is defined for this uptime requirement in the same manner as for uptime reporting. The excluded downtime categories defined in this chapter also apply to the 97 percent uptime minimum.

Minimum Successful Charge Attempt Rate Requirement

Networked chargers that receive state or ratepayer funding and are installed after January 1, 2026, are required to meet a minimum successful charge attempt rate (SCAR) of 90 percent. Ninety percent of the time that a customer attempts to initiate a charging session at a regulated charger the charging session must last at least five minutes, which will be considered a successful charge for this regulation. The minimum SCAR is defined on a per-port and not-site basis; each charger at a charging site must achieve a SCAR of at least 90 percent to comply.

The minimum SCAR requirement is intended to regulate the true real-world reliability of an EV charger more accurately than just an uptime requirement, since a charger that is “up” can still fail to successfully charge an EV because of charger timeouts and some technical faults. These errors at “up” chargers anecdotally appear to be common and may not be remedied by a 97 percent uptime requirement, which may even increase customer frustration at “up” chargers that still do not successfully charge vehicles.

The minimum SCAR will be implemented using OCPP, which is intended to ensure that the SCAR is implemented in the same manner for different charger models and EV charging network providers. A *successful charge* is defined as a charging session lasting for five minutes or longer, with the exclusion of charging sessions of less than five minutes that are terminated by the driver or stopped because of an emergency.

Excluded downtime categories will apply to the minimum SCAR, excluding failed charging attempts that failed for reasons outside the charging network provider, charging station operator, or site host’s control. The minimum SCAR is set at 90 percent — lower than the required 97 percent uptime standard — in recognition that some causes of failed charging sessions like vehicle faults are outside the charging network provider’s control but cannot be easily disaggregated from faults under the charging network provider’s control. Some charging session failures such as some external payments failures are not reported in OCCP and will not be counted toward the minimum SCAR.

Operation and Maintenance Requirements

Charging network providers, charging station operators, and site hosts of chargers that received state or ratepayer funding and are installed after January 1, 2024 are required to

maintain EV chargers so they will meet a 97 percent uptime requirement. These chargers must also offer a mechanism to allow EV charging customers to report outages, malfunctions, and other infrastructure-related issues.

Considering Reliability in State Funding Decisions

Starting in 2025 the CEC will issue biennial reports assessing the reliability of state charging infrastructure, including equitable access to reliable chargers. CEC staff intends to rank the reliability of major EV charging networks publicly and publish detailed network uptime information in these reports. Charging networks will have the option to dispute the published reliability metrics by submitting a letter of dispute to the executive director, and the CEC will issue a correction if inaccuracies are found.

These regular reliability reports are expected to increase public data substantially on the reliability of EV charging networks. Accordingly, CEC staff proposes regulations requiring agencies deploying state and ratepayer funding to consider charging network reliability performance data released by the CEC when making funding decisions.

Data-Sharing Requirements

AB 126 requires that the CEC set standards for notifying customers about the availability and accessibility of publicly available charging infrastructure by January 1, 2025. Under this statute, CEC staff proposes all publicly available networked Level 2 and DC fast chargers that received state and ratepayer funding and were installed on or after January 1, 2024 shall share data, consistent with the data sharing requirements for chargers funded by the NEVI Program.

Applicability

This requirement applies to all state- and ratepayer funded networked Level 2 and DC fast chargers in California that are available to and accessible by the public for any period and were installed on or after January 1, 2024.

Exemptions

This proposed regulation exempts nonnetworked chargers, private chargers, and shared private chargers.

Requirements

In line with the NEVI Program requirements, all state- and ratepayer funded publicly available Level 2 and DC fast chargers in California shall share real-time data accessibility, availability, and pricing data with third-party software developers through an API. This requirement may dramatically increase the public's ability to find operational and available chargers, significantly improving the EV driver experience.

CHAPTER 6:

Alternatives Considered

CEC staff has assessed two alternatives to the EV charger reporting, reliability, and data sharing regulations proposed in this staff report. The CEC invites public feedback on the consideration of Alternatives 1 and 2. The CEC also welcomes input on how such requirements may impact the reliability and accessibility of EV charging infrastructure in California.

Alternative 1: Require Charger Uptime Reporting and Uptime Requirements But Not Inventory and Utilization Reporting

The regulations proposed in this staff report set EV charger inventory, utilization, and reliability reporting requirements, as well as reliability and data-sharing standards for EV chargers. An alternative to this proposal would be only to require charging network providers and site hosts to report charger uptime as required by AB 2061 and not set regulations for inventorying chargers or collecting utilization data. Under this alternative, the CEC would still set uptime requirements as required by AB 126.

AB 2127 and SB 1000 require the CEC to regularly assess the number of EV chargers needed to meet state goals and the deployment distribution of charging infrastructure. Moreover, the Public Resources Code specifically requires the CEC to conduct transportation forecasting and assessment as part of the IEPR.⁴⁹ While the CEC has published AB 2127, SB 1000, and IEPR reports, the CEC lacks firm charger inventory and utilization reporting regulations, making it difficult to assess the EV infrastructure required to meet California’s EV adoption goals and the deployment distribution of charging infrastructure. Utilization data reporting proposed under these regulations are anticipated to improve CEC charger modeling to estimate more accurately the number of chargers needed to serve California’s growing EV fleet, as well as the power consumption characteristics of those chargers.

The charger inventory and utilization reporting requirements proposed in this draft report will improve the robustness of the regular assessments mandated by AB 2127, SB 1000, and the IEPR. CEC staff rejects the alternative of only setting uptime reporting regulations.

⁴⁹ Pub. Resources Code, § 25304(h).

Alternative 2: Set Reliability Standards for All EV Chargers in California

This staff report proposes that an uptime requirement and minimum SCAR apply to EV chargers that receive state or ratepayer funding. AB 126 states that the CEC shall adopt tools to increase charger uptime, including uptime requirements. An alternative regulation would be to apply the proposed uptime requirement to all EV chargers in California, regardless of funding source.

Setting a 97 percent uptime standard for all EV chargers in California would provide greater reliability benefits than only applying these requirements to state- or ratepayer-funded chargers. However, CEC staff does not propose applying reliability standards to EV chargers not funded by state or ratepayer funding at this time. CEC staff will begin to report on the reliability of California's EV charging infrastructure beginning in 2025; these reports and underlying assessments will include the reliability of all EV charging infrastructure, not just stations funded by the state or ratepayers. If these assessments reveal poor reliability of nonstate- and ratepayer-funded chargers the CEC may consider applying uptime requirements to all EV chargers in California to protect customers and ensure a positive driver experience.

CHAPTER 7:

Technical Feasibility

The regulations proposed in this staff report are technically feasible.

Recordkeeping and Reporting Regulations

Recordkeeping and reporting agents are capable of reporting the number of chargers they operate to the CEC. Charging network providers that operate networked chargers are technically capable of reporting the use and reliability of these chargers. The requirement that networked chargers regulated by AB 2061 report the status of the chargers using OCPP 1.6 or later is technically feasible.

OCPP is a broadly accepted protocol for communication between chargers and charging network providers, and CEC staff's understanding is that most charging network providers use some implementation of OCPP 1.6 or later. This requirement is consistent with other CEC EV charging programs, which require chargers to comply with OCPP 1.6 or later and comply with OCPP 2.0.1 or later after January 1, 2026.

It will be technically feasible for recordkeeping and reporting agents to retain an enrolled charging network provider to report required data through the CEC's API data portal after January 1, 2026. Enrolled charging network providers are required to collect the operative status of publicly or ratepayer-funded chargers or both using specified messages defined in OCPP 2.0.1 and transmit the specified messages directly to the CEC via an API, both of which are technically feasible.

The CEC's proposed reliability regulations for nonnetworked chargers require that site hosts operating chargers regulated by AB 2061 make maintenance records available to the CEC upon request, which reflects the limitations on remote reporting by nonnetworked chargers.

Reliability Regulations

CEC staff is confident in the technical feasibility of the proposed minimum uptime requirement of 97 percent and a minimum SCAR of 90 percent. A 97 percent uptime requirement is already being implemented in the federal NEVI program.

Successful charge attempts are equally important as charger uptime. Whether a charger is functioning as designed is immaterial if a customer is still unable to charge. As such, the minimum SCAR would ideally be set at the same 97 percent as the minimum annual uptime percentage. Staff has determined that a minimum SCAR of 90 percent is feasible as it does not unduly penalize charging station operators and charging network providers for charge failures that are outside their control but also sets a high bar for successful charge attempts for chargers installed or operated using public funding. Staff has proposed a January 1, 2026, effective date of the minimum SCAR requirement to give industry sufficient time to prepare.

Staff's understanding of charger technical capabilities indicates that meeting a minimum SCAR of 90 percent is technically feasible. Complying with the minimum SCAR regulation requires

chargers to comply with OCPP 2.0.1 or later. This is a widely accepted communication standard, and the adoption of OCPP 2.0.1 or later is likely to increase in the coming years.

Data-Sharing Regulations

It is also technically feasible for networked Level 2 and DC fast chargers to share real-time availability and accessibility data with third parties, as these requirements are already being implemented in the federal NEVI Program. Major EV charging network providers already remotely collect charger operative status data from networked chargers. Requiring these data to be shared with third parties via an API is technologically feasible and is already implemented in some commercial mapping applications.

CHAPTER 8:

Savings and Cost Analysis

Complying with the EV charger recordkeeping and reporting, reliability, and data-sharing regulations is expected to create new costs and benefits. Following a third party analysis, the CEC anticipates a first-order cost to industry of complying with the proposed reliability regulations of about \$15 million in the first full year the regulations take effect. However, the regulations are expected to produce substantial savings for California and benefits for EV drivers by increasing the reliability of EV chargers. These benefits are difficult to quantify monetarily and are not forecasted here.

Recordkeeping and Reporting Regulations

Complying with the EV charger recordkeeping and reporting regulations proposed in this staff report will have cost implications for recordkeeping and reporting agents. Recordkeeping and reporting agents' cost to comply with these regulations include one-time expenses to set up the processes and architecture necessary for data storage and APIs, as well as ongoing expenses to store data, maintain databases and APIs, and report to CEC. However, these costs may be greatly reduced for those entities who already have recordkeeping systems and processes in place for their own purposes or to report to other agencies, state or federal.

A recordkeeping and reporting agent's cost to comply with these regulations will depend on the type of chargers the regulated entity operates and the recordkeeping and reporting agent's existing infrastructure for tracking the location, use, and reliability of their chargers. CEC staff expects that large charging network providers will already have some of these systems in place or be able to absorb these expenses as a cost of doing business. Compliance costs for smaller charging station operators and site hosts who do not contract with a charging network provider to manage their chargers are expected to be low to moderate.

Reliability Regulations

The reliability regulations proposed in this staff report may impose costs on EV charging operators. These costs may include higher upfront costs of more reliable EV charging stations, increased operation and maintenance costs to increase charger reliability, and higher costs of charger testing and troubleshooting. The marginal cost impact of these proposed reliability standards on EV charging operators is lessened by the fact that the federal NEVI Program has set a similar 97 percent uptime requirement on participating EV charging vendors and operators, and recent CEC grants have also set a 97 percent uptime standard. These standards mean that many EV charging vendors and operators are likely already upgrading equipment and maintenance practices to increase the reliability of EV chargers.

The CEC engaged an economic consulting firm to assess the costs and benefits associated with implementing the 97 percent EV charger uptime requirement in the state. This analysis estimated the marginal cost of increasing the uptime of both DC fast chargers and Level 2 charging stations from an assumed baseline reliability to 97 percent uptime, and multiplying this marginal cost by the anticipated number of regulated chargers installed in the first year

the regulation takes effect. The economic consultant based the marginal cost of increased charger reliability based on a service level charger maintenance agreement, which was estimated through consultation with industry.

This analysis assumes that 2026 is the first full year the regulations are in effect. The total incremental cost of the reliability regulations for 2026 is calculated by multiplying the marginal cost of increased reliability per charger by the number of regulated chargers installed through 2026 — that is, the number of state and ratepayer funded charges installed in 2024 through 2026. According to the CEC’s estimate, the state and ratepayer funded chargers installed between 2024 and 2026 will comprise an additional 28,500 Level 2 chargers and 3,400 DCFCs.

**Table 6: Estimated Costs
2026 Inflation Adjusted Costs (2023\$)**

Total L2 Costs	\$11,521,866
Total DCFC Costs	\$3,841,659
Total Cost	\$15,363,524

Source: Evergreen Economics

The annual marginal cost of the increased reliability regulations was estimated to be about \$15 million dollars in 2026.

This analysis does not consider whether industry efforts to meet existing 97 percent uptime standards in the NEVI program or existing CEC grants reduces the marginal cost of meeting these new standards. This analysis additionally assumes that there is no marginal cost of meeting the proposed 90 percent minimum SCAR beyond the marginal cost of a service level agreement necessary to comply with the 97 percent uptime standard.

The proposed broad reliability regulations are likely to create substantial benefits for Californians. Most directly, enforcing a 97 percent uptime standard and 90 percent minimum SCAR for state- and ratepayer-funded charges will benefit EV drivers by increasing the reliability of the state’s EV charging infrastructure. Arriving at an EV charger only to find that it is not functioning is an inconvenient, unpleasant, and potentially even dangerous experience for EV drivers. Increasing station reliability will create greater public confidence in EV charging and increase EV driver convenience and security.

However, this analysis categorizes these benefits as second-order effects and are not quantified. The assumed impacts, tied to increased EV adoption rates resulting from improved charger reliability and diminished range anxiety, are deemed second-order because they are associated with the vehicle purchase rather than directly linked to the increased uptime. For instance, while increased uptime indirectly influences higher EV adoption rates, subsequent emissions reductions are a consequential outcome of the increased EV adoption, not a direct result of the uptime requirement itself. Consequently, the cumulative first-order costs of the 97 percent uptime requirement do not surpass the \$25 million threshold for first-order effects, thus not triggering a standard regulatory impact assessment (SRIA).

Data-Sharing Regulations

The proposed regulations requiring operators of publicly available EV chargers to share real-time availability and accessibility data with third parties may have some implementation costs, including the cost of developing APIs, automating data sharing protocols, and any incremental server costs. The marginal cost of these regulations is expected to be moderated by the fact that the federal NEVI Program has already implemented comparable requirements for participating EV charging network providers. Further, some, if not many, operators have these systems in place for their own data sharing.

These regulations are expected to provide significant benefits to EV drivers by increasing access to real-time information about the availability and accessibility of EV chargers. Requiring EV charging networks to share this real-time charger availability and accessibility data with third parties may enable smartphone map app developers to offer new services that automatically make EV drivers aware of, and route them to, available and functional chargers, increasing convenience and security for drivers.

CHAPTER 9:

Environmental Impacts Analysis

The EV charger recordkeeping and reporting, reliability, and data-sharing regulations proposed in this report are not expected to result in any change to the environment or any adverse environmental impacts. The proposed regulations add reporting and recordkeeping requirements and performance standards; they do not require the construction of new EV chargers. The proposed regulations would not require any new specific materials to be used in constructing EV chargers, they would not result in more chargers being constructed, nor would they result in energy waste, meaning that the regulations are not expected to produce any adverse environmental impact. Moreover, many of the subject chargers are already subject to similar requirements. The federal NEVI Program has already implemented comparable data-sharing requirements for participating EV charging network providers. Many EV charging vendors and operators are already upgrading equipment and maintenance practices to increase the reliability of EV chargers based on requirements of the federal NEVI Program, which has set a similar 97 percent uptime requirement on participating EV charging vendors and operators, and based on recent CEC grants that have also set a 97 percent uptime standard.

Ultimately, the proposed reporting regulations may have beneficial environmental impacts by improving the public's perception of charger reliability, resulting in greater adoption of EVs. Increased EV adoption results in greater use of electricity as a fuel and reduces fossil fuel consumption, reducing greenhouse gas emissions and the impact of local air pollutants.

Class 1, Class 6, and Common Sense Exemptions

The California Environmental Quality Act⁵⁰ (CEQA) generally applies to discretionary agency actions that meet the definition of a project, but CEQA provides that certain projects are exempted from its requirements. The common sense exemption applies "where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment."⁵¹ As discussed above, the regulations are not expected to result in any changes to the environment, have no potential for causing a significant effect on the environment, and are thus exempt under the common sense exemption.

If any changes were to be made to existing EV chargers as a result of the performance standards contained in these regulations, such changes would fall within the Class 1

50 Pub. Resources Code, § 21000 et seq.; CEQA Guidelines, Cal. Code Regs., tit. 14, § 15000 et seq.

51 Cal. Code Regs., tit. 14, § 15061(b)(3).

categorical exemption provided by Section 15301 of Title 14 of the California Code of Regulations (Class 1 exemptions), which exempts projects for “the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment or topographical features, involving negligible or no expansion of existing or former use. Examples of projects specifically exempted pursuant to Class 1 include: alterations involving such things as electrical conveyances; existing utility facilities used to provide electric power, or other public utility services; and the restoration or rehabilitation of deteriorated or damaged structures, facilities, or mechanical equipment to meet current standards of public health and safety.

Here, the proposed regulations include data-reporting, data-sharing, and reliability standards, including a 97 percent uptime standard and 90 percent minimum SCAR for state and ratepayer funded chargers installed after January 1, 2024, and January 1, 2026, respectively. Thus, the proposed regulations affect the operation and maintenance of EV chargers after they are installed, which will not result in more than a negligible expansion of use, within the Class 1 exemption.

The proposed regulations also fall within the Class 6 exemption under Section 15306 of Title 14 of the California Code of Regulations, which includes activities that involve data collection, research, experimental management, and resource evaluation and do not result in a serious or major disturbance to an environmental resource. Here, a major goal of the proposed regulations is to set recordkeeping and reporting standards and related administrative requirements to track the number of EV chargers installed in California and associated utilization and reliability. These proposed activities involve data collection, research, experimental management, and resource evaluation that do not result in a serious or major disturbance to an environmental resource, and thus they qualify for the Class 6 exemption.

CHAPTER 10:

Economic and Fiscal Impacts

This chapter provides an overview of possible economic and fiscal impacts of the proposed regulations.

Economic Impacts

Jobs

The effect of the proposed recordkeeping and reporting regulations and data-sharing regulations on employment in California depends on recordkeeping and reporting agents and EV charging network providers' current recordkeeping practices.

The effect of jobs from the proposed charger inventory and utilization reporting regulations is likely minimal if conducted by charging network providers, as is the default for networked chargers. Charging network providers already collect data on how many chargers are in their network, and most also collect data on charger utilization rates, which are core business metrics for these organizations. EV charging networks also likely already possess real-time availability and accessibility data for chargers they manage, and the job impact of releasing these data is likely to be minimal. Although the proposed regulation would create public benefit through increased public information about the scale, reliability, and availability and accessibility of EV charging infrastructure, it does not create a private benefit charging networks or site hosts can monetize.

The proposed reliability regulations are expected to have a positive impact on job creation due to an increased need for technicians to maintain EV chargers. The total number of jobs created is difficult to quantify and dependent on the unknown current reliability of California's EV charging infrastructure.

Business Creation and Elimination

The proposed regulations would likely not lead to the direct creation of new businesses, nor would they likely lead to the elimination of existing businesses. However, the regulations could induce the creation of additional businesses focused on operation and maintenance (O&M) of chargers, assuming that charger O&M requirements increases substantially beyond the status quo. The regulations do not limit the sale or distribution of any kind of product or service, nor do they ban a particular business arrangement used by existing firms.

It is unlikely that the costs of achieving the new reliability standards, as well as the recordkeeping and reporting requirements in the proposed regulation, would lead to the entire closure of regulated entities' core business. Charging network providers likely record the data required by these regulations in their normal course of business, and operators of nonnetworked chargers are required to report only charger inventories and retain maintenance records. EV charging operators are also expected to adapt to the new reliability requirements, which partially mirror those already adopted in the federal NEVI Program.

Business Advantages and Disadvantages

The regulations proposed in this staff report apply to recordkeeping and reporting agents regardless of the number of EV chargers they operate. Reporting, recordkeeping, and meeting the proposed reliability standards could have economies of scale. In other words, the per-charger cost of reporting to the CEC, maintaining records, and additional investments needed for the new reliability standards may be lower for recordkeeping and reporting agents that manage a large number of chargers. Furthermore, recordkeeping and reporting agents that are already collecting and maintaining data specified in the proposed regulation and those already achieving the reliability standards may be advantaged relative to businesses that are not already conducting such processes or meeting the reliability standards.

The proposed reliability and data-sharing regulations may create business advantages for operators of reliable EV chargers. Regulated entities who already operate reliable chargers may have a lower marginal cost of complying with the proposed regulations than operators of unreliable chargers, who may need to adopt increased maintenance practices to comply. The proposed data-sharing regulations may also cause drivers to prefer chargers that are shown to be reliable, increasing business for the operators of these chargers.

Because recordkeeping, reporting, and reliability standards in the proposed regulation create additional costs for businesses, it is possible this cost might be passed along to consumers in the form of modestly higher charging prices.

Investment

The proposed regulations are unlikely to generate significant investments within California, though the proposed reliability regulations may increase investment in charger operations and maintenance. However, transparent reporting on charger reliability and utilization and improved charger reliability can boost investor confidence in the EV industry. Increased investment can lead to the expansion of charging infrastructure, creating jobs, and stimulating economic growth in California.

Innovation

The proposed reliability standards may drive technological innovation that increases the reliability of EV chargers. The proposed data-sharing standards may lead to innovations by developers of online mapping applications, which may include new map features that direct drivers to reliable and available chargers.

Benefits

The proposed regulations are expected to provide modest economic benefits by increasing public information on the number, reliability, and availability and accessibility of EV chargers installed in California. In addition, the proposed regulations are expected to create significant economic benefits by improving the reliability of California's EV charging networks. Improvements in the reliability of public EV charging infrastructure may increase consumer confidence in EVs and grow EV sales, providing additional public benefits.

Fiscal Impacts

CEC staff anticipates that the proposed regulations will not create substantial additional costs for state agencies. Agencies that function as charging station operators or site hosts may incur additional costs to fulfill the reporting requirements and reliability standards of these regulations, but these costs are expected to be manageable. State agencies that operate EV charging stations will be required to meet all applicable inventory, utilization, and reliability reporting requirements. CEC staff anticipates that this reporting requirement should not pose a significant challenge, considering the existing data reporting capacity of some state agencies. Specifically, for networked chargers, the responsibility for reliability and utilization reporting will be delegated to the charging network provider. Conversely, for nonnetworked chargers, state agencies will be tasked with reporting reliability data.

Furthermore, agencies that directly own and operate EV chargers will have to comply with the proposed reliability standards. Complying with these reliability standards may incur additional costs but will provide benefits to the state from more reliable charging equipment.

CHAPTER 11:

Consumer Equity

The EV charger recordkeeping and reporting, reliability, and data-sharing regulations proposed in this report are expected to have a positive effect on low-income households and disadvantaged communities.

Electric vehicles are typically less expensive to refuel than comparable fossil fuel vehicles and have lower maintenance costs.⁵² These lower ongoing costs mean that wider EV adoption could benefit low-income households and disadvantaged communities. Yet many members of these communities are unable to adopt EVs because of a lack of reliable public charging. Wealthier communities are more likely to reside in owner-occupied homes with garages, allowing for convenient overnight charging. Low-income residents are less likely to have access to at-home charging than wealthier communities due to higher rates of living in rental housing or multifamily dwellings without home charging options.⁵³ For drivers without access to home charging to be able to adopt EVs, public and shared private charging infrastructure must be plentiful and reliable.

The regulations proposed in this staff report are intended to improve the CEC's understanding of gaps in EV charging, improve the reliability of charging infrastructure, and increase public access to EV charging. Improving EV charging reliability and accessibility may make it easier for members of low-income and disadvantaged communities to adopt EVs and provide direct benefits to these communities.

52 California Energy Commission. "[Electric Vehicle & Charging Infrastructure](https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program/clean-transportation-funding-areas-0)," accessed August 31, 2023, <https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program/clean-transportation-funding-areas-0>.

53 Alexander, Matt. January 2022. [Home Charging Access in California](https://www.energy.ca.gov/sites/default/files/2022-01/CEC-600-2022-021.pdf). California Energy Commission. Publication Number: CEC-600-2022-021, p. 5, <https://www.energy.ca.gov/sites/default/files/2022-01/CEC-600-2022-021.pdf>.

CHAPTER 12:

Conclusion

California statute tasks the CEC with assessing gaps in EV charging and the reliability of charging infrastructure. Currently, the CEC lacks key data about EV charger inventory, use, and reliability. Statute additionally directs the CEC to adopt tools to increase charger reliability and set standards for sharing data on the availability and accessibility of chargers.

This staff report proposes new regulations for reporting the number, use, and reliability of certain EV chargers. Additionally, the staff report outlines new standards for improving EV reliability and overall consumer experience. These proposed regulations are technically feasible, are not expected to impose significant new costs or fiscal impacts, and support consumer equity.

CEC staff will use the charger inventory, use, and reliability data collected under these proposed regulations in creating future AB 2127 and SB 1000 reports and will begin issuing biennial assessments of the reliability of California's EV charging infrastructure starting in 2025 under AB 2061. The CEC intends to publicly rank the reliability of major EV charging networks in these assessments.

REFERENCES

- California Energy Commission, "Home Charging Access in California," January 2022, <https://www.energy.ca.gov/sites/default/files/2022-01/CEC-600-2022-021.pdf>.
- Open Charge Alliance, "Improving Uptime Monitoring with OCPP", March 2023, https://www.openchargealliance.org/uploads/files/improving_uptime_with_ocpp-v10.pdf
- Plug In America, "The Expanding EV Market: Observations in a year of growth," February 2022, <https://pluginamerica.org/wp-content/uploads/2022/03/2022-PIA-Survey-Report.pdf>.
- SAE International, "Electric Vehicle Charging: Performance and Reporting," January 2023, 6, <https://sms.sae.org/resources/electric-vehicle-charging-data-performance-and-reporting>.
- Schell, Dustin, "Electric Vehicle Charging Infrastructure Reliability Workshop" staff presentation, October 21, 2022, <https://www.energy.ca.gov/event/workshop/2022-10/workshop-electric-vehicle-charging-infrastructure-reliability-standards>.
- U.K. Department for Transport, "Consumer Experience at Public Chargepoints: Government Response to the 2021 Consultation on the Consumer Experience at Public Chargepoints," March 2023, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1146685/government-response-to-the-2021-consultation-on-consumer-experience-at-public-chargepoints.pdf.
- U.S. Department of Transportation, Federal Highway Administration, *National Electric Vehicle Infrastructure Standards and Requirements*, February 28, 2023, <https://www.govinfo.gov/content/pkg/FR-2023-02-28/pdf/2023-03500.pdf>.

GLOSSARY

AB	Assembly Bill
AC	Alternating current — Flow of electricity that constantly changes direction. Almost all power produced by electric utilities in the United States moves in a current that shifts direction at a rate of 60 times per second.
API	Application Programming Interface — A type of software interface that offers service to other pieces of software.
CCS	Combined Charging System — A connector standard for fast charging of electric vehicles that can provide up to 350 kilowatts of power.
CEC	California Energy Commission — The state's primary energy policy and planning agency. It has seven core responsibilities: advancing state energy policy, encouraging energy efficiency, certifying thermal power plants, investing in energy innovation, developing renewable energy, transforming transportation, and preparing for energy emergencies.
CEQA	California Environmental Quality Act.
CHAdeMO	A connector standard for fast charging of electric vehicles that can provide up to 62.5 kilowatts of power.
Charger	A device with one or more charging ports and connectors for charging EVs. Also referred to as electric vehicle supply equipment (EVSE).
Charging network	A collection of chargers located on one or more property(ies) that are connected via digital communications to manage the facilitation of payment, the facilitation of electrical charging, and any related data requests.
Charging network provider	An entity that operates a digital communications network that remotely manages EV chargers.
Charging port	The system within a charger that charges one electric vehicle.
Charging station operator	An entity that owns the chargers and supporting equipment and facilities at one or more charging stations.
CCA	Community Choice Aggregator — Entities that procure energy for electricity users in a community or region. CCAs do not operate electric distribution infrastructure, and electricity procured by CCAs is delivered via existing distribution infrastructure typically operated by a utility.
CPUC	California Public Utilities Commission — A state agency created by a California constitutional amendment in 1911 to regulate the rates and services of more than 1,500 privately owned utilities and 20,000

transportation companies. The CPUC is an administrative agency that exercises legislative and judicial powers; its decisions and orders may be appealed only to the California Supreme Court. The major duties of the CPUC are to regulate privately owned utilities, securing adequate service to the public at rates that are just and reasonable to customers and shareholders of the utilities; and the oversight of electricity transmission lines and natural gas pipelines. The CPUC also provides electricity and natural gas forecasting, and analysis and planning of energy supply and resources. Its headquarters are in San Francisco.

DC	Direct current — A current of electricity that flows in one direction and is the type of power that comes from a battery
DCFC	Direct current fast charger — A electric vehicle charging station that operates using direct current and typically provides a maximum power of over 50 kilowatts.
DIN 70121	<i>Deutsches Institut für Normung</i> EV DIN 70121 — An EV-to-charger communications protocol for direct current charging.
EV	Electric vehicle — A broad category that includes all vehicles that can be fully powered by electricity or an electric motor.
EV charging station	A location where one or more electric vehicle chargers are installed.
Front-of-the-meter make-ready	For the purpose of this report the front-of-the-meter make-ready is defined as electrical equipment and accompanying infrastructure located between the utility distribution system and the customer meter.
IEPR	Integrated Energy Policy Report — A biennial California Energy Commission report that is required by statute to produce an integrated assessment of major energy trends and issues facing California and provide recommendations.
ISO 15118	International Standards Organization 15118 — An EV-to-charger communications standard.
kW	Kilowatt — One thousand watts, a measure of power. On a hot summer afternoon, a typical home — with central air conditioning and other equipment in use — might have a power demand of 4 kW.
Load-serving entity	Any company that (a) sells or provides electricity to end users located in California, or (b) generates electricity at one site and consumes electricity at another site that is in California and that is owned or controlled by the company. Load-serving entity does not include the owner or operator of a cogenerator.
MDHD	Medium-duty/heavy-duty.
NREL	National Renewable Energy Laboratory.

NCAS	North American Charging Standard — A connector standard for fast charging.
Networked charger	An electric vehicle charger capable of connecting to a charging network provider or otherwise connected to a central management system.
NEVI	National Electric Vehicle Infrastructure Formula Program.
OCPI	Open Charge Point Interface — A communications protocol between charging network providers’ central management systems intended to facilitate customers roaming between networks.
OCPP	Open Charge Point Protocol — A communications protocol between the charger and the charging network provider central management system.
Private charging station	A private charging station has parking space(s) that are privately owned and operated, often dedicated for a specific driver or vehicle (for example, a charger installed in the garage of a single-family home).
Public charging station	A public charging station has parking space(s) designated by a property owner or lessee to be available to and accessible by the public for any period.
Publicly available charging station	Publicly available charging station means a charger and associated parking space or spaces designated by a property owner or lessee to be available to, and accessible by, the public for any period.
RFID	Radio-Frequency Identification.
SAE J1772	A connector design standard and communications protocol for alternating current and direct current charging.
SB	Senate Bill
Shared private	A shared private charging station has parking space(s) designated by a property owner or lessee to be available to and accessible by employees, tenants, visitors, and/or residents. Parking spaces are not dedicated to individual drivers or vehicles.
Site Host	The electrical customer of record who pays the electric utility bill for an EV charger.
SCAR	Successful Charge Attempt Rate — The percentage of charging attempts at an EV charger that last for more than five minutes, with some exceptions.
ViGIL	Vehicle-Grid Innovation Lab — A California Energy Commission grant to expand capacity at an EV charger testing lab to ensure chargers meet published standards.

VOLTS

Vehicle Interoperability Testing Symposium — A symposium in May 2023 convened stakeholders and facilitated charger-vehicle interoperability testing.

APPENDIX A: Proposed Regulatory Language

California Code of Regulations

Title 20. Public Utilities and Energy

Division 2. State Energy Resources Conservation and Development Commission

Chapter 7. Administration

Article 2. Disclosure of Commission Records

Sections 2505 and 2507

AND

Chapter 12. Alternative and Renewable Fuel and Vehicle Technology Program Regulations

Articles 1 and 2

Express Terms:

Chapter 7. Administration

Article 2. Disclosure of Commission Records

Sections 2505 and 2507 are amended as follows:

§ 2505: Designation of Confidential Records

(a) Third Parties.

...[skipping subsection (a)(1) through (a)(4)]

(5) Automatic Designation. Information submitted by a private third party shall be designated confidential without an application for confidentiality if the requirements of subsections (a)(5)(A) and (B) of this Section are met. If the requirements of subsection (a)(5)(A) and (B) are not met, the Executive Director shall inform the private third party that the record will not be deemed confidential. Except as provided in Section 2507 of this Article, the record for which confidentiality was requested shall not be disclosed for fourteen days to allow the requirements of subsection (a)(5)(A) and (B) to be met or to allow the filing of an application pursuant to subsection (a)(1) of this section.

(A) The entity submitting the information shall label each individual item of the submittal that is entitled to be designated confidential.

(B) The entity submitting the information shall attest under penalty of perjury that the information submitted has not been previously released and that it falls within one of the following categories:

1. Information that is derived from energy consumption metering, energy load metering research projects, or energy surveys provided pursuant to Section 1343 or 1344 of Article 2 of Chapter 3, and that is one or more of the following:
 - a. for the residential customer sector and the commercial customer sector — customer identifiers, energy consumption, and any other information that could allow a third party to uniquely identify a specific respondent;
 - b. industrial major customer sector — all information;
 - c. survey design information — all information used to design a survey, stratify billing records, devise a sample scheme, select a sample, sample specific end-users for participation in a survey or a pretest of a questionnaire or interview form.

...[skipping subsections 2505(a)(5)(B)(2) through (a)(5)(B)(9)]

10. Information regarding a charger submitted pursuant to section 3123 of Article 2 of Chapter 12 if the information is one or more of the following:

- a. Information provided pursuant to section 3123(b)(2)(K), or section 3124(a)(3)(A) through 3124(a)(3)(C) or 3125(b)(5), of Article 2 of Chapter 12.
- b. Information provided pursuant to section 3123(b)(2)(A), (b)(2)(B), (b)(2)(E), or (b)(2)(I) and section 3125(b)(1) through (b)(4), of Article 2 of Chapter 12, unless the information relates to a publicly available charger or required to do one or more of the following: report to the National Renewable Energy Laboratory pursuant to Title 13, California Code of Regulations, Division 3, Chapter 8.3, Section 2360.4(k); or share data with third-parties pursuant to Title 23, Code of Federal Regulations, part 680, section 680.116(c).

...[skipping 2505(a)(6) through 2506]

§ 2507: Disclosure of Confidential Records.

...[skipping 2507(a) through 2507(d)]

- (e) Unless an application for confidentiality is granted under section 2505(a)(3) specifying a different confidentiality term, data subject to an automatic confidentiality designation under section 2505(a)(5) will remain confidential in accordance with the following timelines:

...[skipping 2507(e)(1) through 2507(e)(5)]

- (6) Confidential data provided pursuant to section 3123(b)(2)(A), (b)(2)(B), (b)(2)(E), (b)(2)(I), or (b)(2)(K), section 3124(a)(3)(A) through (a)(3)(C), or section 3125(b), of Article 2 of Chapter 12 may be released without restriction no sooner than 10 years from the date of submittal.

- (f) The Executive Director may release records previously designated as confidential in the following circumstances:

- (1) where the confidential information has been masked or aggregated at the levels described below in subdivisions (A)-(E)(D)

...[skipping 2507(f)(1)(A) through 2507(f)(1)(C)]

- (D) Confidential data provided pursuant to section 3123(b)(2)(A), (b)(2)(B), (b)(2)(E), (b)(2)(I), (b)(2)(K), section 3124(a)(3)(A) through (a)(3)(C), or section 3125(b), of Article 2 of Chapter 12 may be disclosed at any time in the following manners:

1. Data aggregated at the county level by year and customer sectors.
2. To such a level that the disclosure includes the data from three or more entities by year and customer sectors.

...[skipping the remainder of Chapter 7 through Chapter 11]

Article 1 of Chapter 12 is amended as follows:

Chapter 12. ~~Alternative and Renewable Fuel and Vehicle Technology Program Regulations~~ Fuels and Transportation

Article 1. General Provisions Regarding Clean Transportation Program Project Funding

...[skipping the remainder of Article 1]

Article 2 is added to Chapter 12 as follows:

Article 2. EV Charger Data and Reliability Standards

§ 3120: Scope.

This Article applies to all the following:

- (a) 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 or a multifamily dwelling with four or fewer dwelling units.
- (b) All entities that provide or receive any incentive from a California state agency or through a charge on California ratepayers to install one or more chargers or charging stations that are installed or are intended to be installed on or after January 1, 2024, in California other than at a residential real property containing four or fewer dwelling units.
- (c) All site hosts of any publicly and/or ratepayer funded charger as defined in section 3121 of this Article.
- (d) All charging network providers that the Commission has enrolled to be, or that have applied to the Commission to be, enrolled charging network providers pursuant to section 3127 of this Article.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3121: Rules of Construction and Definitions.

- (a) Rules of Construction.
 - (1) Where the context requires, the singular includes the plural, and the plural includes the singular.
 - (2) The use of “and” in a conjunctive position means that all elements in the provision must be complied with, or must exist to make the provision applicable. Where compliance with one or more elements suffices, or where existence of one or more elements make the provision applicable, “or” (rather than “and/or”) is used.
- (b) Definitions. In this Article, the following definitions apply:
 - (1) “AC Level 2” means a charger that operates on a circuit from 208 volts to 240 Volts and transfers alternating-current (AC) electricity to a device in an EV that converts alternating current to direct current to charge an EV battery.
 - (2) “Application programming interface” or “API” means a type of software interface that offers service to other pieces of software. An API allows two or more computer programs to communicate with each other.
 - (3) “Charge attempt” means an attempt to initiate a charging session as determined by the transmission of one or more OCPP protocol data units between the Central Management System and the charger as specified in section 3124(e)(1). “Charge attempt” is an attempt to initiate a charging session, whether successful or unsuccessful.
 - (4) “Charger” means a device with one or more charging ports and connectors for charging EVs. Also referred to as electric vehicle supply equipment (EVSE). This

definition excludes any charger used solely for private use at a single-family residence or a multifamily dwelling with four or fewer dwelling units.

- (5) "Charging network" means a collection of chargers located on one or more property(ies) that are connected via digital communications to manage the facilitation of payment, the facilitation of electrical charging, and any related data requests.
- (6) "Charging network provider" means the entity that operates the digital communication network that remotely manages the chargers. Charging network providers may also serve as charging station operators and/or manufacture chargers.
- (7) "Charging port" means the system within a charger that charges one EV. A charging port may have multiple connectors, but it can provide power to charge only one EV through one connector at a time.
- (8) "Charging session" means the period after a charge attempt during which the electric vehicle is allowed to request energy. Charging sessions can be terminated by the customer, the electric vehicle, the charger, the charging station operator, or the charging network provider.
- (9) "Charging station" means the area in the immediate vicinity of one or more chargers and includes the chargers, supporting equipment, parking areas adjacent to the chargers, and lanes for vehicle ingress and egress. A charging station could comprise only part of the property on which it is located.
- (10) "Charging station management system" means a system that may be used to operate a charger, to authorize use of the charger, or to record or report charger data, such as by using OCPP.
- (11) "Charging station operator" means the entity that owns the chargers and supporting equipment and facilities at one or more charging stations. Although this entity may delegate responsibility for certain aspects of charging station operation and maintenance to subcontractors, this entity retains responsibility for operation and maintenance of chargers and supporting equipment and facilities. In some cases, the charging station operator and the charging network provider are the same entity.
- (12) "Connector" means the device that attaches an EV to a charging port in order to transfer electricity.
- (13) "Corrective maintenance" means maintenance that is carried out after failure detection and is aimed at restoring an asset to a condition in which it can perform its intended function.
- (14) "Direct current fast charger" (DCFC) means a charger that enables rapid charging by delivering direct-current (DC) electricity directly to an EV's battery.
- (15) "Downtime" means a period of time that a charger is not capable of successfully dispensing electricity or otherwise not functioning as designed. Downtime is calculated pursuant to section 3124(c) of this Article.
- (16) "Electric utility" means any person engaged in, or authorized to engage in, generating, transmitting, or distributing electric power by any facilities, including, but not limited to, any such person who is subject to the regulation of the Public Utilities Commission.

- (17) "Electric vehicle" or "EV" means a vehicle that is either partially or fully powered on electric power received from an external power source. For the purposes of this regulation, this definition does not include golf carts, electric bicycles, or other micromobility devices.
- (18) "Enrolled charging network provider" means a charging network provider that meets the technical and administrative criteria of section 3127 of this Article and is granted the status of an enrolled charging network provider by the Commission pursuant to section 3127(c)(2) of this Article.
- (19) "Electric vehicle supply equipment" or "EVSE" means as "charger" as defined.
- (20) "Executive Director" means the Executive Director of the Energy Commission and anyone the Executive Director designates as an agent.
- (21) "Failed charging session" means, following a charge attempt, the criteria for a successful charging session were not met.
- (22) "Funding entity" means any entity that disburses funds from a California state agency or through a charge on ratepayers to install one or more chargers or charging stations that are installed or are intended to be installed on or after January 1, 2024, in California other than at a residential real property containing four or fewer dwelling units.
- (23) "Funding recipient" means any entity that receives any incentive from a California state agency or through a charge on California ratepayers to install one or more chargers or charging stations that are installed or are intended to be installed on or after January 1, 2024, in California other than at a residential real property containing four or fewer dwelling units.
- (24) "Hardware" means the machines, wiring, and other physical components of an electronic system including onboard computers and controllers.
- (25) "Incentive" means any funds received from a state agency or a charge on ratepayers to install or operate a charger or charging station, including any electrical equipment up to the first meter or submeter. Incentive excludes funds for electrical distribution infrastructure beyond the first meter or submeter, and excludes funds for other preparations of the immediate vicinity of a charger or charging station, other supporting equipment, parking areas adjacent to the chargers, or lanes for vehicle ingress and egress.
- (26) "Inoperative State" means the charger or charging port is not operational.
- (27) "Installed" means attached or placed at a location and available for a charging session. The date a charger is installed is the date it is first available for a charging session.
- (28) "Maintenance" means any instance in which preventive or corrective maintenance is carried out on equipment.
- (29) "Networked" means a charger can receive or send commands or messages remotely from or to a charging network provider or is otherwise connected to a central management system, such as by using OCPP 2.0.1, for the purposes of charger management and data reporting.

- (30) "Nonnetworked charger" means a charger that is not networked.
- (31) "Off-grid charger" means a charger that does not draw power from an electric utility as defined in PRC 25108, at any time.
- (32) "Open Charge Point Interface" or "OCPI" means an open-source communication protocol that governs the communication among multiple charging networks, other communication networks, and software applications to provide information and services for EV drivers.
- (33) "Open Charge Point Protocol" or "OCPP" means an open-source communication protocol that specifies communication between chargers and the charging networks that remotely manage the chargers.
- (34) "Operational" or "up" means both the hardware and software of a charging port are both online and available for use, or in use, and the charging port is capable of successfully dispensing electricity.
- (35) "Operative state" means the charger is operational.
- (36) "Operative status" means an electronically transmitted communication from the charger or charging port to the central system indicating whether the charger or charging port is in an operative or inoperative state. Each communication shall include fields for date-timestamp and any error codes associated with the operative status.
- (37) "Preventive maintenance" means maintenance that is performed on physical assets to reduce the chances of equipment failure and unplanned machine downtime.
- (38) "Publicly and/or ratepayer-funded charger" means a charger or charging station installed on or after January 1, 2024, except at a residential real property containing four or fewer dwelling units, for which an incentive was received from a state agency or a charge on ratepayers to install or operate the charger or charging station. An incentive from a state agency includes, without limitation, any incentive funded in whole or in part from the Greenhouse Gas Reduction Fund as defined in section 16428.8 of the Government Code. A charge on ratepayers includes, without limitation, charges on the customer of an investor-owned utilities, local publicly owned electric utility as defined in section 224.3 of the Public Utilities Code, or community choice aggregator as defined in section 331.1 of the Public Utilities Code.
- (39) "Publicly available charger" means a charger and associated parking space or spaces designated by a property owner or lessee to be available to, and accessible by, the public for any period of time. A charger designated by a lessee or a property owner to be available only to customers or visitors of the business is a publicly available charger for purposes of this chapter. Chargers and associated parking spaces located in parking garages or gated facilities are considered publicly available for purposes of this chapter if any member of the public can obtain vehicular access to the facility for free or through payment of a fee. If a charger and associated parking space is made available to the public for only limited time periods, that charger and associated parking space is considered a publicly available charger during those limited time periods only, and must comply with this chapter during those limited time periods.
- A publicly available charger does not include:

- (A) A workplace charger and its associated parking space if it is clearly marked and operated as available exclusively to employees or contracted drivers. For the purposes of this chapter, "contracted drivers" includes participating drivers, as that term is defined in Public Utilities Code section 5431, regardless of the physical accessibility of the charger to the public.
 - (B) A charger and associated parking spaces reserved exclusively to residents, tenants, visitors, or employees of a private residence or common interest development; or a residential building adjacent to a private residence; or
 - (C) A charger provided by a manufacturer of electric vehicles for the exclusive use by vehicles it manufactures.
- (40)** "Recordkeeping and reporting agent" means the entity responsible to ensure timely compliance with the recordkeeping and reporting requirements of this Article. The identity of the recordkeeping and reporting agent is determined according to section 3122 of this Article.
- (41)** "Replaced" means that the charger has been substantially modified or substituted with another unit, as indicated by a change in the serial number, ID, or the model name.
- (42)** "Site host" means the electric utility customer of record for electric service to the charger and may also be the charging network provider or the charging station operator of the charger.
- (43)** "Software" means a set of instructions, data, or programs used to operate computers and execute specific tasks.
- (44)** "Successful charging session" means, following a charge attempt, a customer's EV battery is charged to the state of charge the customer desires and is disconnected manually by the customer or by the EV's onboard software system terminating the charging session, without an additional charge attempt.
- (45)** "Temporary charger" means a charger that is designed to be portable and available for use intermittently, is not attached at a location, and is not available for use at a single location for more than 30 days in a calendar year. For the purposes of this definition, a charger that is made available for use for any portion of a day, is considered available for use for that full day.
- (46)** "Uninstalled" means the charging station operator took affirmative steps to make the charger unavailable for a charging session with intent to make it permanently unavailable, such that the number of chargers at the charging station is reduced by the number of uninstalled chargers for at least one year. Affirmative steps required to qualify as "uninstalled" include at least labeling the charger in a way that notifies drivers that it is not operational without the need to interact with the charger and updating the data field shared pursuant to section 3130(a)(6) of this Article to be consistent with uninstalled status. Mere failure to repair a malfunctioning charger does not make it "uninstalled." A charger that is replaced within one year is not "uninstalled."
- (47)** "Uptime" means the time that a charger is installed during a reporting period excluding downtime pursuant to section 3124(c) and (d) of this Article.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3122: The Recordkeeping and Reporting Agent.

- (a) The recordkeeping and reporting agent shall be responsible to ensure timely compliance with the recordkeeping and reporting requirements of this Article.
 - (1) The recordkeeping and reporting agent may designate one or more entities to fulfill the responsibilities of this Article, but the recordkeeping and reporting agent remains responsible to ensure compliance.
 - (2) If there is more than one recordkeeping and reporting agent for a charger, then compliance with any requirements of this Article by any one recordkeeping and reporting agent fulfills those requirements as to the others.
- (b) Except as to a publicly and/or ratepayer-funded charger as provided in subsection (c) of this section, the recordkeeping and reporting agent for a charger is as follows:
 - (1) Each charging network provider that operates the digital communication network that remotely manages a charger during a reporting period is its recordkeeping and reporting agent.
 - (2) If there is no charging network provider for a charger during a reporting period, then each charging station operator of the charger is its recordkeeping and reporting agent.
- (c) Publicly and/or Ratepayer-Funded Chargers.
 - (1) As to a publicly and/or ratepayer-funded networked charger installed from January 1, 2024, through December 31, 2025, except as provided in subsections (c)(1)(A) or (c)(1)(B), the site host, or the funding recipient if designated pursuant to subsection (c)(4) of this section, shall retain a charging network provider to serve as the recordkeeping and reporting agent.
 - (A) If the site host of a publicly and/or ratepayer-funded networked charger, or the funding recipient if designated pursuant to subsection (c)(4) of this section, is a charging network provider pursuant to section 3121 of this Article, then it may itself serve as the recordkeeping and reporting agent, and if so, it need not retain another.
 - (B) If a publicly and/or ratepayer-funded networked charger is not used to dispense electricity during a reporting period other than for testing or maintenance, then the site host, or the funding recipient if designated pursuant to subsection (c)(4) of this section, is not required to retain a charging network provider for that charger for the period of non-operation, but if not, then it shall itself serve as the recordkeeping and reporting agent.
 - (2) As to a publicly and/or ratepayer-funded networked charger installed on or after January 1, 2026, except as provided in subsections (c)(2)(A) or (c)(2)(B), the site host, or the funding recipient if designated pursuant to subsection (c)(4) of this

section, shall retain an enrolled charging network provider to serve as the recordkeeping and reporting agent.

- (A) If the site host of a publicly and/or ratepayer-funded networked charger, or the funding recipient if designated pursuant to subsection (c)(4) of this section, is an enrolled charging network provider pursuant to section 3127 of this Article, then it may itself serve as the recordkeeping and reporting agent and if so, it need not retain another.
- (B) If a publicly and/or ratepayer-funded networked charger is not used to dispense electricity during a reporting period other than for testing or maintenance, then the site host, or the funding recipient if designated pursuant to subsection (c)(4) of this section, is not required to retain an enrolled charging network provider for that charger for the period of non-operation, but if not, then it shall itself serve as the recordkeeping and reporting agent.
- (3) As to a publicly and/or ratepayer-funded nonnetworked charger, the site host, or the funding recipient if designated pursuant to subsection (c)(4) of this section, shall serve as the recordkeeping and reporting agent.
- (4) At any time before six years following the installation of a publicly and/or ratepayer-funded charger, a site host may, upon written or electronic notice to the funding recipient at least 60 days before the start of a reporting period, designate the funding recipient to be responsible to fulfill the requirements of the site host under this Article as to the publicly and/or ratepayer funded charger. The site host may revoke or reinstate the designation in the same manner. Any time after six years after receiving the most recent incentive for a charger, a funding recipient may terminate its duties under this subsection upon written or electronic notice to the site host at least 60 days before the start of a reporting period.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3123: Quarterly Reporting Requirement.

- (a) Except as provided in subsection (c) of this section, each recordkeeping and reporting agent or designee pursuant to section 3122(a) of this Article, shall collect and submit to the Executive Director a quarterly report as specified in subsection (b) for each charger by the following deadlines:
 - (1) Q1 Reporting Period. For the period from January 1 through March 31 of a year, by June 1 of the same year.
 - (2) Q2 Reporting Period. For the period from April 1 through June 30 of a year, by September 1 of the same year.
 - (3) Q3 Reporting Period. For the period from July 1 through September 30 of a year, by December 1 of the same year.

- (4) Q4 Reporting Period. For the period from October 1 through December 31 of a year, by March 1 of the following year.
- (b) Except as provided in subsection (d) of this section, each report required by subsection (a) shall include the following for each charger:

(1) Contact Information.

(A) **Contacts for the following roles:**

1. Each recordkeeping and reporting agent's name, address, telephone number, email address, and, if available, URL (website) address; provided, however, that if a parent entity is filing on behalf of a subsidiary entity, if a subsidiary entity is filing on behalf of a parent entity, or if an affiliate entity is filing on behalf of an affiliate entity, then each entity shall be clearly identified, and the information shall be provided for both entities.
2. A statement whether each recordkeeping and reporting agent has one or more of the following roles with respect to the charger: charging network provider, charging station operator, funding recipient, or site host, as defined in section 2131 of this Article.
3. The charging station network provider's name, address, telephone number, email address, and, if available, URL (website) address of the charging station operator, if the recordkeeping and reporting agent is not the charging station network provider.
4. The charging station operator's name, address, telephone number, email address, and, if available, URL (website) address, if the recordkeeping and reporting agent is not the charging station operator.
5. The charging funding recipient's name, address, telephone number, email address, and, if available, URL (web site) address, if the funding recipient is not the charging station operator.
6. The charging site host's name, address, telephone number, email address, and, if available, URL (website) address, if the funding recipient is not the site host.

(B) **Designee.** If the recordkeeping and reporting agent designated one or more entities to fulfill the responsibilities of this Article pursuant to section 3122(a)(1) of this Article, then each entity's name, address, telephone number, email address, and, if available, URL (web site) address of the site host; provided, however, that if a parent entity is filing on behalf of a subsidiary entity, if a subsidiary entity is filing on behalf of a parent entity, or if an affiliate entity is filing on behalf of an affiliate entity, then each entity shall be clearly identified, and the information shall be provided for both entities.

(C) **Point of contact.** The name, affiliation if any, address, telephone number, and email address of an individual to contact concerning the statements pursuant to this Article. Only one individual may be listed as the contact except that the individual may designate another contact during a temporary absence.

(2) **Inventory Report.** For each charger:

- (A) Charger address.
- (B) Geographic coordinates (latitude and longitude) of the charger in to within one ten-thousandth of a degree of exact charging station location.
- (C) Model of charger.
- (D) Charger nameplate power.
- (E) Charger serial number.
- (F) If a prior quarterly report did not list the serial number, a statement of whether the charger is in addition to or a replacement of a former charger, including the serial number of the charger replaced, if any.
- (G) A statement of whether the charger provides alternating current or direct current to the EV.
- (H) Charging Ports — number of charging ports including the number of connectors and connector types (e.g., SAE J1772, J1772 Combo, CHAdeMO, NACS) for each port available at the charger.
- (I) If networked:
 - 1. Charger ID — the unique identifier for the charger within the network provided by the charging network provider.
 - 2. Port ID — the unique identifier for each port, unique within the context of the charging network provider servicing the charger.
- (J) Identify charger’s primary use as:
 - 1. Public light duty (gross vehicle weight rating less than 10,000 lbs).
 - 2. Public medium- or heavy-duty (gross vehicle weight rating greater than or equal to Private 10,000 lbs).
 - 3. Private residential multifamily dwelling.
 - 4. Private commercial workplace charging.
 - 5. Private fleet charging (gross vehicle weight rating less than or equal to 10,000 lbs).
 - 6. Private fleet charging (gross vehicle weight rating greater than or equal to 10,000 lbs).
 - 7. Other. Specified in report.
- (K) If networked, the following utilization data:
 - 1. Average hours per day the charger drew power during the reporting period.
 - 2. Average hours per day the charger was connected to an electric vehicle during the reporting period.
 - 3. Average kWh per day the charger dispensed energy during the reporting period.
- (L) For any charger uninstalled during the reporting period, a statement that the charger has been uninstalled, as defined in section 3121 of this Article, and the date it was uninstalled.

(3) Publicly and/or Ratepayer-Funded Charger Uptime Report.

(A) For each charging port of a publicly and/or ratepayer funded charger required to report under subsection (b) of this section, for the first six years after a charger is installed, the uptime data required by section 3124 of this Article.

(c) The following are exceptions to the quarterly reporting requirement of subsection (a) of this section.

(1) A charger that was reported in a previous quarterly report as being uninstalled, as defined in section 3121 of this Article, need not be included in the quarterly report if it has not dispensed electricity since it was most recently reported uninstalled.

(2) Quarterly reporting for Q1 through Q3 may be deferred until the Q4 reporting period if the conditions in subsections (2)(A) and (2)(B) both apply to the quarterly reports to be deferred. If deferred, the Q4 quarterly report must include the utilization data required by subsection (b)(2)(k) for the Q4 reporting period plus for any deferred quarterly report not previously reported.

(A) The quarterly report to be deferred is not otherwise required to include a Publicly and/or Ratepayer-Funded Charger Uptime Report pursuant to subsection (b)(3).

(B) The quarterly report to be deferred would contain an Inventory Report pursuant to subsection (b)(2) of this section, for which Inventory Report information pursuant to subsections (b)(2)(A) through (b)(2)(J) and (b)(2)(L) of this section would be identical to information submitted previously in the most recent quarterly report.

(d) The following are exceptions to the quarterly reporting requirement of subsection (b) of this section.

(1) Contact information pursuant to subsection (b)(1), and Inventory Report information pursuant to subsections (b)(2)(A) through (b)(2)(J) and (b)(2)(L) of this section need only be submitted in the Q4 quarterly report if it would be identical to the information submitted in the most recent quarterly report.

(2) For any charger funded with funds made available under Title 23 of the United States Code and required to submit information pursuant to section 680.112 of Title 23 of the United States Code, the recordkeeping and reporting agent may, as an alternative to submitting the Inventory Report and Publicly and/or Ratepayer-Funded Charger Uptime Report pursuant to subsection (b)(2) and (b)(3) of this section, submit to the Executive Director a copy of the quarterly data submitted pursuant to section 680.112(a) of Title 23 of the United States Code for the reporting period.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3124: Publicly and/or Ratepayer-Funded Charger Uptime Report Requirements.

(a) Publicly and/or Ratepayer-Funded Charger Uptime Report. The publicly and/or ratepayer-funded charger uptime report required by section 3123(b)(3) of this Article shall include all of the following:

- (1) The uptime percentage rate and minutes of excluded downtime for each charger port during the reporting period, calculated according to subsections (b), (c), and (d) of this section.
- (2) For each period of excluded downtime being claimed for a reporting period, an itemized summary of the date, duration, and category under subsection (d)(1)-(8).
- (3) For each publicly and/or ratepayer-funded networked charging port installed on or after January 1, 2026, all of the following:
 - (A) The total number of charge attempts, as determined pursuant to subsection (e)(1) of this section, for the reporting period.
 - (B) The total number of successful charge attempts, as determined pursuant to subsection 3124(e)(3) of this section, for the reporting period.
 - (C) The total number of failed charge attempts, as defined in subsection 3124(e)(4) of this section, for the reporting period.
 - (D) The successful charge attempt rate, as defined in subsection 3124(e)(5) of this section, for the reporting period.

(b) The uptime percentage rate for a charger port shall be calculated using the following formula:

(1)
$$U = \frac{T-D+E}{T} * 100\%$$

(2) Where:

(A) U = Charging port uptime percentage rate for the reporting period.

(B) T =

1. Q1 reporting period = 129,600 minutes, except for a leap year, which is 131,040 minutes.
2. Q2 reporting period = 131,040 minutes.
3. Q3 and -Q4 reporting periods = 132,480 minutes.

(C) D = Total charging port downtime during the reporting period, in minutes, calculated according to subsection (c) of this section.

(D) E = Total charging port excluded downtime during the reporting period, in minutes, calculated according to subsection (d) of this section.

(c) **Downtime:**

(1) **Publicly and/or Ratepayer-Funded Networked Chargers:** Downtime shall be determined on a per charging port basis by summing the durations of all downtime events during the period. The duration of a downtime event shall be the longest of the following periods:

- (A) The time after the charger has transmitted an operative status indicating the charger or a charging port is in an inoperative state until a subsequent operative status is transmitted indicating the charger has returned to an operative state. The timestamps in the operative statuses shall be used to quantify the downtime.
- (B) If using OCPP Version 2.0.1 or a subsequent version of OCPP, the time after the charger has transmitted a StatusNotificationRequest indicating that the charging port associated with that charger is in a "faulted" or "Unavailable" state until a subsequent StatusNotificationRequest is transmitted by that charger indicating that the charging port has transitioned to an "available," "occupied," or "reserved" state. The timestamps in each StatusNotificationRequest shall be used to quantify downtime.
- (C) If using OCPP Version 2.0.1 or a subsequent version of OCPP, the time between a BootNotificationResponse transmitted by the Central Management System and the last HeartbeatResponse transmitted by the Central Management System prior to the BootNotificationResponse. The timestamps in the relevant BootNotificationResponse and HeartbeatResponse shall be used to quantify downtime.
- (D) The time between the earliest record that a charger is not capable of successfully dispensing electricity or otherwise not functioning as designed and the time it is available to deliver a charge. First record that a charger is not capable of successfully dispensing electricity or otherwise not functioning as designed includes, but is not limited to, consumer notification, internal diagnostics, or inspection, whichever is earliest.

(2) **Publicly and/or Ratepayer-Funded Nonnetworked Charger:** The time that a charging port is in an inoperative state or not capable of successfully dispensing electricity. This may be known by consumer notification, internal diagnostics, inspection, or other methods.

- (A) The downtime shall be calculated from the time the charging port is in an inoperative state until it is restored to an operative state.

(d) **Excluded Downtime:** Downtime accounted for pursuant to subsection (c) of this section that is caused by events outside of the control of the charging station operator is subtracted from total downtime when calculating uptime percentages. Excluded downtime is limited to the categories below:

(1) **Before Initial Installation:** Downtime before the charging port was initially installed as defined in section 3121 of this Article.

(2) **Grid Power Loss:** Downtime during which utility supplied power is not supplied at levels required for minimum function of the charging port. This may include, but is not

limited to, service outages due to utility equipment malfunction or public safety power shutoffs. This does not include power generation or storage equipment installed to serve the charger(s) exclusively. Documentation from power provider detailing outage is required to claim this as excluded downtime.

- (3) **Outage for Preventative Maintenance or Upgrade:** Downtime caused by any preventative maintenance or upgrade work that takes the charging port offline. This must be scheduled at least two weeks in advance of the charger being placed in an inoperative state. The maximum downtime that can be excluded for preventative maintenance or upgrade work is 24 hours for any 12-month period.
 - (4) **Vandalism or Theft:** Downtime caused by any physical damage to the charger or station committed by a third party unless the downtime was reasonably foreseeable and could have been avoided through reasonable repair or maintenance. This may include, but is not limited to, theft of charging cables, damage to connectors from mishandling, or damage to screens. A maximum of 5 days may be claimed as excluded downtime for each Vandalism or Theft event. A police report, timestamped photograph of the damage, or similar third-party documentation is required to claim this as excluded time.
 - (5) **Natural Disasters:** Downtime caused by any disruption of the charging port due to a natural event such as a flood, earthquake, or wildfire that causes great damage. Third party documentation such as news reporting must be provided along with a narrative of the direct impacts to the chargers(s) to claim this as excluded downtime.
 - (6) **Communication Network Outages:** Downtime caused by loss of communication due to cellular or internet service provider system outages. A Communication Network Outage can be claimed as excluded downtime provided the chargers default to a free charge state during communication losses. A free charge state is when the charger is operational and dispenses energy free of charge to any consumer.
 - (7) **Operating Hours:** Hours in which the charging port is in an operative state but that are outside of the identified hours of operation of the charging station.
- (e) **Successful charge attempt rate for publicly and/or ratepayer-funded chargers installed on or after January 1, 2026:**
- (1) **Charge Attempt.** A charge attempt occurs upon transmission of one or more of the protocol data units identified in following subsections (A) through (G) between the Central Management System and the charger as specified in OCPP Version 2.0.1 or a subsequent version of OCPP. Any number of the Protocol Data Units described in (A) through (G) of this subsection timestamped within a two-minute interval shall be counted as one charge attempt. Any number of TransactionEventRequest described in (D) through (G) of this subsection transmitted with identical identifier strings in the transactionId subfield of the transactionInfo field shall be counted as one charge attempt.
 - (A) An AuthorizeRequest message transmitted by the charger to the Central Management System.
 1. The AuthorizeRequest message shall not count as a charge attempt if the Central Management System responds with an AuthorizeResponse message

with the status subfield of the idTokenInfo field set to any of the following responses:

- a. "Blocked"
- b. "ConcurrentTx"
- c. "Expired"
- d. "Invalid"
- e. "NoCredit"
- f. "NotAllowedTypeEVSE"
- g. "NotAtThisLocation"
- h. "NotAtThisTime"
- i. "Unknown"

- (B) A RequestStartTransactionRequest message transmitted by the Central Management System to the charger
- (C) A StatusNotificationRequest message transmitted by the charger to the Central Management System with the connectorStatus field set to "Occupied"
- (D) A TransactionEventRequest message transmitted by the charger to the Central Management System with the eventType field set to "Started"
- (E) A TransactionEventRequest message transmitted by the charger to the Central Management System with the triggerReason field set to "CablePluggedIn"
- (F) A TransactionEventRequest message transmitted by the charger to the Central Management System with the chargingState subfield of the transactionInfo field set to "EVConnected"
- (G) A TransactionEventRequest message transmitted by the charger to the Central Management System with the chargingState subfield of the transactionInfo field set to "Charging"

(2) **Charging Session.** A charging session, as defined in section 3121 of this Article, begins and ends as follows:

- (A) A charging session begins when the charger transmits TransactionEventRequest to the Central Management System with the chargingState subfield of the transactionInfo field set to "Charging."
 1. In the event that multiple TransactionEventRequest protocol data units are transmitted with the chargingState subfield of the transactionInfo field set to 'Charging' AND identical identifier strings in the transactionId subfield of the transactionInfo field, the charging session shall begin when the first of those protocol data units are sent. Which protocol data unit was sent first shall be determined based on the lowest value in the seqNo field.
- (B) A charging session ends when the charger transmits a subsequent TransactionEventRequest to the Central Management System with the eventType field set to "Ended."

(C) The identifier string contained in the transactionId subfield of the transactionInfo field must be identical in the messages described in (A) and (B) of this subsection. The date and time found in the timestamp field of the messages described in (A) and (B) of this subsection shall be used to determine the start and stop time of a charging session.

(3) Successful Charge Attempt. A successful charge attempt is a charge attempt, as defined in subsection (e)(1) of this section, that is followed by either (A) or (B) of this subsection prior to another charge attempt.

(A) A charging session that lasts for 5 minutes or longer as determined by the timestamps described in section 3124(e)(2) of this Article.

(B) The stoppedReason subfield of the transactionInfo field of the TransactionEventRequest protocol data unit ending the charging session, as described in section (e)(2)(B) of this Article, is set to one of the following:

1. "EVDisconnected"
2. "EmergencyStop"
3. "Local"

(4) Failed Charge Attempt. A failed charge attempt is any charge attempt, as determined by subsection (e)(1) of this section, that is not followed by a successful charge attempt as determined by subsection (e)(3) of this section.

(5) Successful Charge Attempt Rate. The successful charge attempt rate for a charging port shall be calculated using the following formula:

(A) $SCAR = \frac{CA - FCA}{CA} * 100\%$

(B) Where:

1. SCAR = Successful Charge Attempt Rate
2. CA = Total Charge Attempts for the reporting period
3. FCA = Total failed charge attempts for the reporting period

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3125: Additional Requirements for Publicly and/or Ratepayer-Funded Networked Chargers.

- (a) For publicly and/or ratepayer-funded networked chargers installed on or after January 1, 2026, the site host, or the funding recipient if designated pursuant to section 3122(c)(4) of this Article, shall ensure the charger meets the following requirements:
- (1) Connection to a central management system using OCPP Version 2.0.1 or a subsequent version of OCPP. This does not preclude the additional use of other communication protocols.
 - (2) Transmission of the following protocol data units between the Central Management System and the charger as specified in OCPP Version 2.0.1 or a subsequent version of OCPP:
 - (A) AuthorizeRequest shall be transmitted to the Central Management System by the charger as specified in OCPP 2.0.1 or a subsequent version of OCPP.
 - (B) AuthorizeResponse shall be transmitted by the Central Management System to the charger as specified in OCPP 2.0.1 or a subsequent version of OCPP.
 - (C) HeartbeatRequest shall be transmitted to the Central Management System by the charger on a set interval.
 - (D) HeartbeatResponse shall be transmitted to the charger by the Central Management System in response to any received HeartbeatRequest.
 - (E) StatusNotificationRequest shall be transmitted by the charger to the Central Management System as specified in OCPP 2.0.1 or a subsequent version of OCPP.
 - (F) BootNotificationRequest shall be transmitted by the charger to the Central Management System any time the charger is powered on.
 - (G) BootNotificationResponse shall be transmitted by the Central Management System to the charger in response to any received BootNotificationRequest.
 - (H) RequestStartTransactionRequest shall be transmitted by the Central Management System to the charger as specified in OCPP 2.0.1 or a subsequent version of OCPP.
 - (I) TransactionEventRequest shall be transmitted to the Central Management System by the charger as specified in OCPP 2.0.1 or a subsequent version of OCPP.
- (b) For publicly and/or ratepayer-funded networked chargers installed on or after January 1, 2026, the recordkeeping and reporting agent of a publicly and/or ratepayer-funded networked charger shall automatically transmit to the Commission or the Commission's designee the data specified in the following subsections (1) through (5) within 60 minutes of generation:
- (1) Charger serial number.
 - (2) Charger ID — the unique identifier for the charger within the network provided by the charging network provider.
 - (3) Charging Port ID — the unique identifier for the charging port within the network provided by the charging network provider.

- (4) All instances of HeartbeatResponse and BootNotificationResponse for each charger.
 - (5) All instances of AuthorizeRequest, AuthorizeResponse, RequestStartTransactionRequest, StatusNotificationRequest, and TransactionEventRequest for each charging port.
- (c) For chargers installed from January 1, 2024, through December 31, 2025, the recordkeeping and reporting agent of a publicly and/or ratepayer funded networked charger may comply with subsections (a) and (b) of this section, but if not, then it shall record, and retain for six years from the date of recording, the operative status of each charging port for each publicly and/or ratepayer-funded charger on a fifteen-minute interval.
- (1) The Executive Director may electronically request (sent to the most recent email address filed pursuant to section 3123(b)(1)(D) of this Article) that a recordkeeping and reporting agent provide the Commission with copies of the records retained pursuant to subsection (c) of this section. The charging network provider shall submit the requested records to the Commission within 21 days of the date of the request.

The following documents are incorporated by reference into section 3125.

Open Charge Point Protocol

Open Charge Point Protocol version 2.0.1. <https://www.openchargealliance.org/downloads/>

Copies available from: Superintendent of Documents
U.S. Government Printing Office Washington, DC
20402 www.ecfr.gov

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400-25401, 25601-25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400-25401, 25601-25602, 25618, Public Resources Code.

§ 3126: Additional Requirements for Publicly and/or Ratepayer-Funded Nonnetworked Chargers.

- (a) The recordkeeping and reporting agent of a nonnetworked charger shall create, and retain for six years, the following maintenance records for each publicly and/or ratepayer-funded nonnetworked charger it operates:
 - (1) Date and time of any maintenance.
 - (2) Whether the maintenance was corrective or preventive in nature.
 - (3) Whether and for how long the charger was in an inoperative state prior to, during, or after the maintenance.
 - (4) Whether the charger was in an operative state following the maintenance.
- (b) The recordkeeping and reporting agent of a nonnetworked charger shall retain for six years, any customer complaint, internal diagnostic, or inspection report indicating the

occurrence or duration of a period when a charger was in an inoperative state or when an attempt to charge a vehicle failed.

- (c) The Executive Director may electronically request (sent to the most recent email address filed pursuant to section 3123(b)(1)(D) of this Article) that the recordkeeping and reporting agent provide the Commission with copies of the records retained pursuant to subsections (a) and (b) of this section. The recordkeeping agent or its designee shall submit the requested records to the Commission within 21 days of the date of the request.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3127: Customer Service Requirements for Publicly and/or Ratepayer-Funded Chargers

Charging station operators operating publicly and/or ratepayer-funded chargers must ensure that EV charging customers have mechanisms to report outages, malfunctions, and other issues with the charger.

Note: Authority cited: Sections 25210, 25213, 25218(e), 25231.5, 25618, Public Resources Code; Reference: Sections 25210, 25231.5, 25618, Public Resources Code.

§ 3128 Performance Standards for Publicly and/or Ratepayer-Funded Chargers.

- (a) Publicly and/or ratepayer-funded chargers installed on or after January 1, 2024, excluding any charger that was previously reported as uninstalled as defined in section 3121 of this Article, shall maintain a minimum annual average uptime rate of 97% for each calendar year for the first six years after the charger is installed. The annual average uptime rate shall be calculated using the calculation defined in section 3124(b)(1) using the parameters in (1) through (4) of this subsection.

- (1) U = The charging port annual uptime percentage.

- (2) T = 525,600 minutes, except for a leap year, which is 527,040 minutes.

- (3) D = Total charging port downtime, reported in minutes, during the calendar year according to section 3124(c) of this Article.

- (4) E = The total excluded downtime, reported in minutes, during the calendar year according to section 3124(d) of this Article.

- (b) Publicly and/or ratepayer-funded networked charges installed on or after January 1, 2026, excluding any charger that was previously reported as uninstalled as defined in section 3121 of this Article, shall maintain a minimum annual successful charge attempt rate of 90% for each calendar year for the first six years after the charger is installed. The annual

successful charge attempt rate shall be calculated using the calculation defined in section 3124(e)(5)(A) of this Article using the parameters in (1) through (3) of this subsection:

- (1) SCAR = The charging port annual successful charge attempt rate.
- (2) CA = The total number of charge attempts during the calendar year according to section 3124(e)(1) of this Article.
- (3) FCA = The total number of failed charge attempts during the calendar year according to 3124(e)(3) of this Article.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3129: Requirements for Funding Entities

- (a) Beginning January 1, 2026, all funding entities shall consider the reliability metrics published by the Commission pursuant to subsection (b) of this section, if any, before approving any application for funding to install a publicly and/or ratepayer-funded charger using funds from a California state agency or through a charge on ratepayers.
- (b) The Executive Director may assess and publicly report, including on the Commission’s website, the reliability metrics of individual and aggregated charging stations and charging ports associated with one or more funding recipient, charging station operator, and charging network provider. The reliability metrics may be based on any information available, including without limitation, the uptime report and protocol data units submitted pursuant to sections 3123(b)(3) and 3125 of this Article. The Executive Director's reports may assess equitable access to charging stations, including without limitation, assessing variations in reliability metrics of charging stations in low-, moderate-, and high-income communities. Nothing in this section is intended to require disclosure of otherwise confidential information.
- (c) A request to correct reliability metrics reported pursuant to subdivision (b) may be submitted to the Executive Director by the subject of the reliability metrics or its representative. For purposes of this section, the subject of the reliability metrics or its representative, if any, shall be the “requesting party.”
 - (1) The correction request must include a description of a purported inaccuracy and any evidence supporting the correction request. The correction request must contain the name and email address of the subject of the reliability metrics and its representative, if any.
 - (2) Within 30 days of receipt of a correction request, unless a later time is mutually agreed to by the Executive Director and requesting party, the Executive Director shall respond to the correction request in one of the following manners:

- (A) If the Executive Director determines that the reliability metrics published pursuant to subsection (b) were inaccurate, the Executive Director shall notify the requesting party that its request is granted in whole or in part. The Executive Director shall also publish corrected reliability metrics in a publicly accessible format.
- (B) If the Executive Director determines that the reliability metrics published pursuant to subsection (b) were accurate, the Executive Director shall notify the requesting party that the published reliability metrics were accurate, and the request is denied. The Executive Director may publish this notice in a publicly accessible format.
- (C) Within 30 days of any decision or determination made by the Executive Director pursuant to subsection (c) of this section, the requesting party may submit an appeal to the Commission pursuant to subsection 3133(d) of this Article.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400-25401, 25601-25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400-25401, 25601-25602, 25618, Public Resources Code.

§ 3130: Data-Sharing Requirements for Networked Publicly Available, Publicly and/or Ratepayer-Funded Chargers

- (a) Charging Network Providers of networked publicly available chargers operating in California must ensure that the following data fields are made available, free of charge, to third-party software developers, via application programming interface:
 - (1) Unique charging station name or identifier
 - (2) Address (street address, city, state, and zip code) of the property where the charging station is located
 - (3) Geographic coordinates in decimal degrees of exact charging station location
 - (4) Charging station operator name
 - (5) Charging network provider name
 - (6) Charging station status (operational, under construction, planned, or decommissioned)
 - (7) Charging station access information
 - (A) Charging station access type (public or limited to commercial vehicles)
 - (B) Charging station access days/times (hours of operation for the charging station)
 - (8) Charging port information
 - (A) Number of charging ports
 - (B) Unique port identifier for each port
 - (C) Connector types available by port
 - (D) Charging level by port (DCFC, AC Level 2, etc.)

- (E) Power delivery rating in kilowatts by port
- (F) Accessibility by vehicle with trailer (pull-through stall) by port (yes/no)
- (G) Real-time status by port in terms defined by Open Charge Point Interface 2.2.1. Real-time, in this instance, means this data field must be updated within 1-minute of the charging port's status changing.

(9) Pricing and Payment Information:

- (A) Pricing structure
- (B) Real-time price to charge, in U.S. dollars per kilowatt-hour or megajoule, at each charging port, in terms defined by Open Charge Point Interface 2.2.1. Real-time, in this instance, means this data field must be updated within 1-minute of a change in pricing.
- (C) Payment methods accepted at charging station

The following documents are incorporated by reference into section 3130.

Open Charge Point Interface

Open Charge Point Protocol <https://evroaming.org/app/uploads/2021/11/OCPI-2.2.1.pdf>
version 2.2.1.

Copies available from: Superintendent of Documents
 U.S. Government Printing Office Washington, DC 20402
 www.ecfr.gov

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3131: Enrolled Charging Network Providers for Publicly and/or Ratepayer-Funded Chargers.

- (a)** A charging network provider may apply to be an enrolled charging network provider by submitting an application to the Executive Director, executed under penalty of perjury of the laws of the State of California, containing the following:
 - (1)** The full legal name, address of the principal place of business, telephone number, and email address of the charging network provider submitting the application.
 - (2)** The full legal name, title, and telephone number, and email address of the person executing the declaration.
 - (3)** A statement that the person executing the declaration is authorized to do so and to submit the application on behalf of the charging network provider.

- (4) The name, title, and telephone number, and email address of a person to contact regarding the application.
 - (5) A statement that the charging network provider agrees to undertake the duties of a recordkeeping and reporting agent under this Article, including without limitation, reporting the protocol data units required to be reported to the CEC pursuant to section 3125 of this Article.
 - (6) A statement that the charging network provider meets, and will maintain so long as the charging network provider is enrolled, the following technical requirements:

 - (A) An API of the Commission's choosing to permit the charging network provider to transfer the data required to be submitted pursuant to 3125(d) of this Article.
 - (B) Subset Certification of the Charging Station Management System in the Open Charge Alliance OCPP Certification Program for OCPP version 2.0.1, published May 24, 2023, or a subsequent version of OCPP for Core, Advanced Security, and ISO 15118 Support functionalities.
- (b) Upon receipt of an application pursuant to subsection (a), the Executive Director shall provide the charging network provider with notice of receipt of the application as follows:
- (1) If the Executive Director determines that an application does not meet the requirements of subsection (a), the Executive Director shall provide the applicant with notice that the application is incomplete and a statement of what is necessary to meet the requirements of subsection (a).
 - (2) If the Executive Director determines that an application meets the requirements of subsection (a), the Executive Director shall provide the charging network provider with notice of receipt of the application and access to an API of the Commission's choosing to permit the charging network provider to demonstrate its ability to transfer the data required to be submitted pursuant to 3125(b) of this Article.
- (c) Within 60 days of the Executive Director granting a charging network provider access to an API pursuant to subsection (b)(2), the charging network provider shall demonstrate its ability to transfer the data required to be submitted pursuant to 3125(b) of this Article.
- (1) If within 60 days, the charging network provider does not successfully demonstrate transfer of data to the Commission via the API enabled in subsection (b), the Executive Director shall notify the charging network provider that the API demonstration was unsuccessful and why if known. Upon notice, the charging network provider shall have an additional 30 days to demonstrate transfer of data to the Commission via the API enabled in subsection (b). If the charging network provider does not successfully demonstrate transfer of data, the Executive Director shall issue a determination denying the application. A charging network provider may reapply at any time following a denial.
 - (2) If the charging network provider successfully demonstrates transfer of data to the Commission via the API enabled in subsection (b), the Executive Director shall deem the charging network provider an enrolled charging network provider for purposes of this Article and the Executive Director shall list the charging network provider on the Commission's website.

- (d) Revocation. The Executive Director may revoke a charging network provider's status as an enrolled charging network provider for repeated failure to meet its obligations under this section.
- (e) Appeal to Commission. A charging network provider may appeal a denial of an application, or revocation, pursuant to section 3133(d) of this Article.
- (f) Renewal. Status as an enrolled charging network provider granted under this section shall remain in effect for five years and then terminate without notice unless renewal is granted. An entity may renew the five-year period of an exemption at any time before its enrolled charging network provider status terminates by applying as set forth in subsections (a) through (c) of this section. Nothing in this section prohibits an entity whose enrolled charging network provider status has terminated from applying to be an enrolled charging network provider.

Note: Authority cited: Sections 25210, 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3132: Disclosure of Reporting Requirements for Publicly and/or Ratepayer-Funded Chargers.

Disclosure. The funding entity shall clearly disclose to the funding recipient the funding recipient's reporting requirements of this Article. If the funding recipient is a charging network provider or other third-party entity that is not the site host, the charging network provider or third-party entity shall provide a separate disclosure to the site host about the site host's right to designate the charging network provider or third-party as the entity to be responsible to ensure the data is reported on behalf of the site host. The funding recipient shall verify receipt of the disclosure by signing the disclosure, to be confirmed by the funding entity.

Note: Authority cited: Sections 25213, 25218(e), 25231.5, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25231.5, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3133: General Administration.

- (a) **Forms and Formats Specified by Executive Director.** The Executive Director may specify and require the use of any form or format for the submittal of any data, reports, or other information required by this Article, including but not limited to computer programs or formats.
- (b) **Electronic Filing.**
 - (1) Unless otherwise stated in this Article, the statements and other submittals required or allowed by this Article shall be filed electronically to the Commission's database so that the electronic filing to the Commission's database uses a format and characteristics, including without limitation appropriate formatting, that are specified by the Executive Director.

- (2) Any electronic filing to the Commission's database constitutes a representation by the person making the filing that:
 - (A) All applicable requirements of this Article have been met;
 - (B) The person will electronically acknowledge receipt through the Commission's database of all electronic communications concerning the filing from the Executive Director through the Commission's database to the person;
 - (C) All electronic communications concerning the filing from the Executive Director through the Commission's database to the person shall be deemed received by the person upon notification to the Executive Director, by the computer or other electronic device from which the Executive Director communication has been sent, that the communication has been sent; and
 - (D) All electronic communications concerning the filing from the person to the Executive Director shall be deemed received by the Executive Director only upon actual receipt.
- (3) At any time the Executive Director may forbid electronic filings by any person or enrolled charging network provider and may remove affected information from the Commission's database upon finding that an applicable requirement of this Article is not being met.

(c) Retention of Records

- (1) Recordkeeping and reporting agents shall retain all data, forms, information, and all other records required by this Article:
 - (A) For at least two years after the record was generated except as specified in section 3125(c) and section 3126(a) and (b) of this Article; and
 - (B) In a manner allowing ready access by the Executive Director on request.

(d) Appeal to Commission. Within 30 days of any decision or determination made by the Executive Director pursuant to this Article, any entity subject to the part of the decision or determination at issue may appeal the decision or determination to the Commission. The following procedures apply to the appeal:

- (1) The appeal shall be in writing and signed by the appellant and submitted to the Commission. The appeal shall consist of a written argument, stating the grounds for modifying or reversing the decision, identifying the statutes and regulations relevant to the appeal, and stating whether an oral hearing is requested, and a copy of all relevant notices, responses, correspondence, documents, and decisions.
- (2) Within 30 days after the date the appeal was filed, the Executive Director shall provide the appellant and the Commission a written argument, stating the grounds for affirming, modifying, or reversing the decision, identifying the statutes and regulations relevant to the appeal, and stating whether an oral hearing is requested. The Executive Director's written argument shall also be accompanied by any relevant notices, responses, correspondences, documents, and decisions not previously provided by the appellant.
- (3) Commission Consideration of Appeal:

- (A) The proceedings on appeal shall be conducted in a manner consistent with Chapter 4.5 of the Government Code (section 11400 et seq.) and Title 20 CCR sections 1200-1216.
- (B) The Commission shall review the decision or determination made pursuant to this section for substantial evidence.

Note: Authority cited: Sections 25213, 25216.5, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25231.5, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.

§ 3134: Confidentiality.

- (a) An entity submitting information pursuant to this Article may request confidentiality pursuant to section 2505 of Title 20 of the California Code of Regulations, including without limitation, for automatic designation pursuant to the provisions of 2505(a)(5).
- (b) The Commission may disclose information submitted under this Article that was previously designated as confidential if disclosure is permitted by law, including without limitation, pursuant to section 2507(e)(6) and (f)(1)(D) of Title 20 of the California Code of Regulations.
- (c) Nothing in this section is intended to limit or expand the confidentiality of information submitted to the Commission.

Note: Authority cited: Sections 25213, 25218(e), 25231.5, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code; Reference: Sections 25210, 25216.5, 25229, 25322, 25231.5, 25366, 25300, 25301, 25302, 25303, 25304, 25400–25401, 25601–25602, 25618, Public Resources Code.