



Proposed Electric Vehicle Supply Equipment (EVSE) Standards

June 27, 2019

What is Electric Vehicle Supply Equipment (EVSE)?



EVSE
(pump)

Connector
(nozzle)



Plug-In Electric Vehicle Infrastructure Needed

2017 Scoping Plan and Governor's Executive Order B-48-18

- 5 million ZEVs on California roads by 2030
- 250,000 chargers by 2025



CA Public Plug-in Electric Vehicle Infrastructure Today

DC Fast Charging (DCFC)

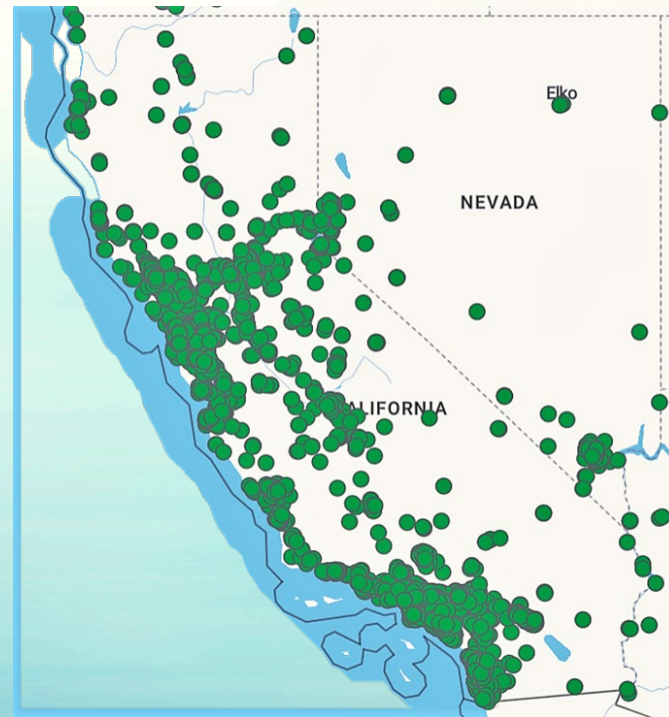
- 1,159 EVSE installations
- 1,535 connectors

Level 2 (240V)

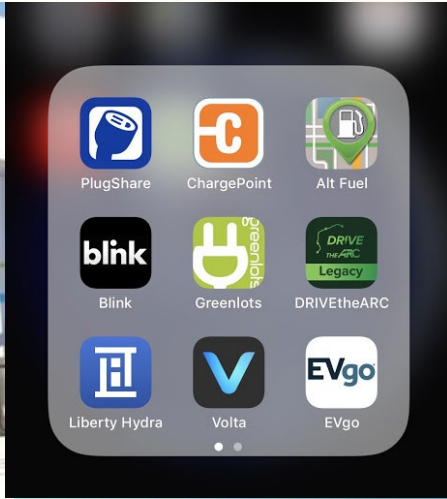
- 8,800 EVSE installations
- 15,576 connectors

Disadvantaged Communities Installations

- 566 locations



Inconsistent Driver Access



Senate Bill 454 Electric Vehicle Charging Station Open Access Act (2013)

The goal of the statute is to increase access to EVSEs to the greatest number of drivers

- Drivers using any EVSE shall not be required to pay a subscription fee or become a member
- Drivers shall have the choice to pay with credit card or mobile pay or both
- All fees associated with a charging session shall be disclosed at point of sale
- Station location reported to the Alternative Fuels Data Center (U.S. DOE)
- CARB may adopt an interoperable billing standard to facilitate use of multiple EVSE networks (Roaming)

Benefits of Improved Driver Access to EVSE

- Increased confidence that a driver will be able to use charging stations
- Potential increased EVSE utilization, and higher EV usage
- Payment options for those without an EVSE membership
- Easier fueling transition from Internal Combustion Engine to Plug-in Electric Vehicle

Public Process for Regulation Development

- Stakeholder working groups December 2017 and March 2018
- Public workshops May and November 2018
- Public Webinars July 2018 and April 2019
- Numerous group and individual stakeholder meetings



Proposed Requirements

- Payment Methods
 - New EVSE
 - Existing EVSE
- Roaming Standards
- Display of Fees
- Labeling
- Consistent Reporting
- Penalties

Payment Method Requirements

SB 454 states “an electric vehicle charging station that requires payment of a fee shall allow a person desiring to use the station to pay via credit card or mobile technology, or both.”

Staff’s Proposal

- Euro MasterCard Visa (EMV) chip
- Near Field Communications (NFC) reader
- Must comply with industry data security standards
- Payment hardware may be installed on a kiosk or individual EVSE



Payment Method Benefits

- Credit/debit cards are the most common form of payment available
- Payment industry has pushed to have EMV (Chip) as the minimum standard for data security reasons. It is ubiquitous
- Near Field Communication (NFC) technology facilitates the option for mobile payment per driver choice
- This is important because:
 - Drivers should have the choice to become a member of a network or not
 - Driver accessibility to a smart phone is not ubiquitous
 - Not all EVSE locations have strong cell service



Payment Method Requirement Compliance Dates (ISOR)

New EVSE installation compliance dates

- DCFC July 1, 2020
- Level 2 July 1, 2023

Existing EVSE compliance date

- DCFC July 1, 2020 or 5 years from open date, whichever is longer
- Level 2 July 1, 2023 or 5 years from open date, whichever is longer

Staff's Recommended Modifications

Payment Method Requirements

- New DCFC installations must be compliant starting January 1, 2022
- All existing EVSE prior to 2022 DCFC and 2023 Level 2 must comply upon replacement, and in no case later than July 1, 2033
- Preserve investment for the full useful life of the EVSE

Roaming Communication Protocol Standard Requirement

- SB 454 states “If no interoperability billing standards have been adopted by a national standards organization by January 1, 2015, the state board may adopt interoperability billing standards”
- EVSP shall install and maintain “California Open Charge Point Interface” Test Procedures for Networked EVSE
 - Implementation one year after effective date of regulation
 - Additional communication protocols may be used

Roaming Communication Protocol Standards Benefits

- Drivers sign up for individual memberships with each EVSP
 - Multiple RFID cards, phone applications, payment information inputs
- Adopting a standard enables drivers to access multiple networks with one membership if those networks create roaming agreements

Consumer Information at EVSE

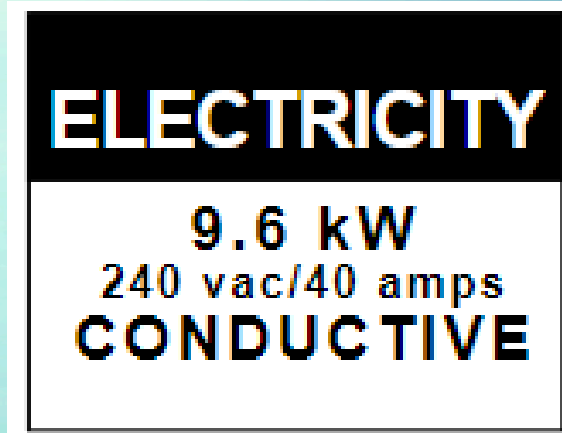
- SB 454 states *“The total actual charges for the use of an electric vehicle charging station, including any additional network roaming charges for nonmembers, shall be disclosed to the public at the point of sale.”*
- Drivers need to be informed of all costs associated with a charging session to avoid surprise bills at the end of a session
 - For example: Parking fee, Non-membership plug-in fee, Plug-in fee
- The cost of electricity to be displayed in \$/kWh or \$/MJ

Labeling Requirements

SB 454 states *“Electric vehicle charging stations shall be labeled in accordance with Part 309 of Title 16 of the Code of Federal Regulations”*

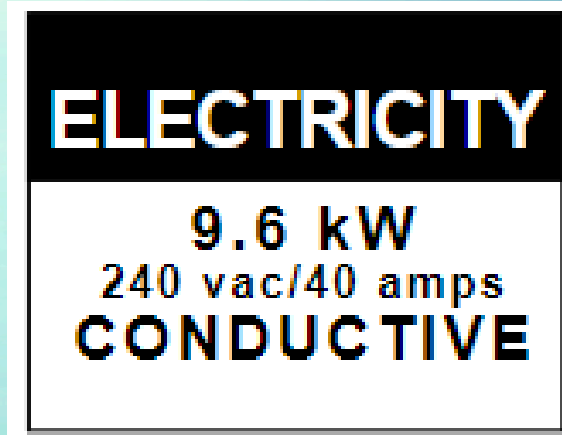
All publicly available EVSE to have Code of Fed Regulations Title 16 Part 309 Label

- DCFC by July 1, 2020
- Level 2 by July 1, 2023



Staff Proposed Modifications for Consumer Information and Labeling Requirements

- New installations of DCFC must be compliant starting January 1, 2022
- To align with proposed modifications for new DCFC installations of payment methods



Reporting Requirement

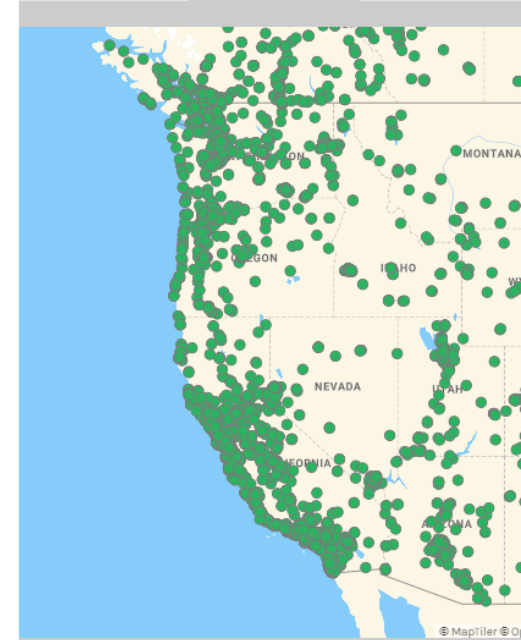
- SB 454 *“The service provider of electric vehicle service equipment at an electric vehicle charging station or its designee shall disclose to the National Renewable Energy Laboratory the electric vehicle charging station’s geographic location, a schedule of fees , accepted methods of payment, and the amount of network roaming charges for nonmembers, if any”*
- Need reporting for compliance tracking purposes
- National Renewable Energy Laboratory (NREL)
Alternative Fuels Data Center (AFDC)

Alternative Fueling Station Locator

Find alternative fueling stations in the United States and Canada. For U.S. stations, see [d](#)

Public Stations

Advanced Filters



Proposed Reporting Requirements

- U.S. Department of Energy's AFDC at NREL
- Initial Reporting 45 days after effective date of the regulation
- EVSE Model certification
 - 45 days after effective date of regulation
 - 45 days prior to installation of a new model
- Annual Reporting starting in 2021
 - Listing of new, retired, decommissioned EVSE
 - Pricing at each EVSE
 - Total # of charging sessions started with each payment method per EVSE
 - Total operational time per EVSE

Staff Recommended Modifications to Reporting Requirements

Annual report

- Total number of charging sessions started with each payment method reported in statewide aggregated number
- First report due 2022 for calendar year 2021
- Clarifying language added for EVSE that do not require a payment will not be subject to the annual reporting requirement of total number of charging sessions started with each payment method

Penalties

- Labeling \$300 per EVSE
- Payment Method \$600 per EVSE
- Roaming Standard \$1000 per EVSP
- Reporting \$600 per EVSP

Estimated Costs and Economic Impacts

- Cumulative regulatory costs ~\$115 million between 2020 and 2030 (ISOR)
- Cost of added payment hardware per EVSE \$379
- Majority of costs come from phase-in period
- Modified proposal estimated costs ~\$55 million

Staff Recommendations

- Staff recommends that the Board approve the proposal with staff's recommended modifications to standardize consumer access to EVSE
- Staff will continue working to monitor payment hardware changes and any growing market trends that promote consumer access to EVSE