

8.6 EMISSION REDUCTION CALCULATIONS

It is difficult to calculate emission reductions specifically for EVSE since the plug-in vehicle is really the emission-reducing entity. However, since most battery powered vehicles cannot operate without being recharged, it seems reasonable to share at least some of the emissions benefit with the infrastructure. In general, kilowatt hours of charge can be translated into miles driven which can be translated into emissions reduced.

For example if a Nissan Leaf charges for 2 hours at 3.3 kilowatts per hour, it has gained a total of 6.6 kilowatts of battery capacity. For the 24 kilowatt hour Leaf battery pack this equates to 27.5% of the total battery capacity. Since the Leaf gets approximately 100 miles to a charge, 27.5% of the battery pack equates to 27.5 miles. If we assume that an equivalent gasoline vehicle would get about 27.5 miles per gallon the 27.5 miles represents the emissions reduction from one gallon of gas or 19.4 lbs¹³¹ (based on California Air Resources Board inventory emissions figures). At least some of the EVSE manufacturers are including GHG calculations in their data reporting programs.

8.7 CHECKLIST FOR BUILDING INSPECTORS FOR RESIDENTIAL EVSE INSTALLATION



CITY OF [NAME OF CITY]
 [Department Name]
 [Division Name]



ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) INSTALLATION CHECKLIST

INFORMATION	PLAN CHECK NO.: _____ EXPIRATION DATE: _____ STATUS: _____
	PROJECT ADDRESS: _____
	WORK DESCRIPTION: _____
	APPLICANT'S NAME: _____ TEL. NO.: _____
	ADDRESS: _____ EMAIL: _____
INSTRUCTIONS	<p>Your application for a permit, together with plans and specifications, has been examined and you are advised that the issuance of a permit is withheld for the reasons hereinafter set forth. The approval of plans and specifications does not permit the violation of any sections of the Electrical Code or other local ordinances or state laws.</p> <p>In an effort to streamline the plan review process, please follow the steps outlined below to ensure that there is no delay in processing your application and reviewing your responses to these plan check comments.</p> <ul style="list-style-type: none"> • Comments with circled item numbers apply to this plan check. • Revised plans and calculations shall incorporate or address all comments marked on the original checked set of plans, calculations, and this plan review checklist. Provide a written response to each comment and show where and how it has been addressed. Identify the sheet number and detail or reference note on the revised plans where the corrections are made. Time spent searching for the corrected items on the revised plans or calculations will delay the review and approval process. Once all comments on the plans, calculations, and this checklist have been addressed, contact the plan check staff to schedule an appointment to review the changes made.
	PLAN REVIEWER: _____ TEL. NO.: _____
	ADDRESS: _____
	EMAIL: _____ WEBSITE: _____

	<p>may contact the plan check staff by telephone from _____ to _____ M T W T H F.</p> <ul style="list-style-type: none"> • Bring the original checked set of plans and calculations along with this checklist to the meeting. Do not schedule an appointment meeting with the plan check staff until all comments have been addressed. • Incomplete, indefinite or faded drawings or calculations will not be accepted.
NOTE	<p>Numbers within the parenthesis () refer to the section of the applicable code. 2011 Edition of the California Electrical Code (CEC).</p>

A. GENERAL PERMITTING REQUIREMENTS

1. Provide site plan of project location and identify the proposed location of the Electric Vehicle Supply Equipment.
2. Demonstrate physical protection of Electric Vehicle Supply Equipment. (CEC 110.27)
3. Provide electrical load calculations of existing and/or proposed electrical system, including EVSE model number and full load amperage.
4. Provide electrical single line diagram of proposed work.

B. ELECTRICAL INSTALLATION REQUIREMENTS

Electric Vehicles – an automotive type vehicle for on-road use, such as passenger automotive, buses, van, neighborhood electric vehicles primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electrical current. (CEC Art. 625.2)

1. LOCATION IDENTIFICATION - Identify the equipment installation location.
2. INDOOR SITES:
 - a. Installation of Electric Vehicle Supply Equipment shall comply with California Electrical Code Article 625.29
 - b. Equipment Height – The coupling means of the electric vehicle supply equipment shall be stored at a height of 18 – 48 inches above the finished floor. (CEC Art 625.29(B))
3. SYSTEM CERTIFICATION - Verify the equipment is listed by a nationally recognized testing laboratory (as recognized by the Authority Having Jurisdiction).
4. FASTEN EQUIPMENT - Electric Vehicle Supply Equipment must be permanently connected and fastened in place unless (CEC Art. 625.13):
 - a. The supply equipment is rated at 125 volts, single phase, 15 or 20 amperes; or,
 - b. Electric Vehicle Supply Equipment is provided with an interlock that de-energizes the electric vehicle connector and its cable whenever the electric connector is uncoupled from the electric vehicle.
 - c. Electrical connection per manufacturer specifications.
5. EQUIPMENT PROTECTION – Electrical Vehicle Supply Equipment operating at 50 volts or more shall be guarded against accidental contact by approved enclosures. (CEC Art. 110.27)
6. DISCONNECTING MEANS – When equipment is rated more than 60 amps or more than 150 volts to ground, the disconnecting means shall be provided and installed in a readily accessible location. (CEC Art. 625.23)