



# MEDIUM- AND HEAVY-DUTY ELECTRIC VEHICLE CHARGING INFRASTRUCTURE REQUIREMENTS

California updated its electric vehicle (EV) charging infrastructure requirements for medium- and heavy-duty vehicles in the 2022 California Green Building Standards Code Interim Update (also known as CALGreen), effective on July 2024.

## What is Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure?

Medium- and heavy-duty electric vehicle (EV) charging infrastructure is necessary for the future installation of cost-effective EV charging equipment to power electric trucks, buses, and delivery trucks.



## Why does this matter?

EV infrastructure requirements for medium- and heavy-duty vehicles in the 2022 CALGreen Interim Update will advance strategic statewide goals to reduce carbon emissions and improve air quality through the electrification of the transportation sector. These requirements will reduce the cost of adding charging capacity for EVs in future building retrofits as the state prepares to require 100% of new medium- and heavy-duty vehicle sales to be zero-emission by 2040.<sup>1</sup>

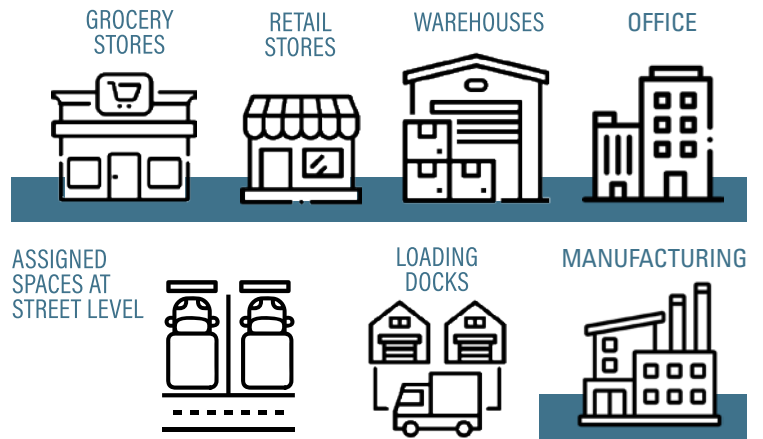
Medium- and heavy-duty vehicles contribute a quarter of the transportation sector's greenhouse gas emissions and a third of NOx emissions in California. According to the American Lung Association, electrifying medium- and heavy-duty vehicles in just four California counties would result in \$62.6 billion in health benefits, a reduction of 5,680 premature deaths, and 152,500 avoided asthma attacks.<sup>2</sup> Disadvantaged communities who live closer to transportation corridors in these counties will see the greatest benefits from the transition away from diesel trucks to a zero-emission electric fleet.

<sup>1</sup> Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation, California Air Resource Board, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf>

<sup>2</sup> Association, American Lung. "American Lung Association." Delivering Clean Air: Health Benefits of Zero-Emission Trucks, American Lung Association, 2022, <https://www.lung.org/getmedia/e1ff935b-a935-4f49-91e5-151f1e643124/zero-emission-truck-report>

## Who is affected by these requirements?

The CALGreen 2022 Interim Update adds new construction requirements for warehouses, grocery stores, retail stores, office building, and manufacturing facilities with planned off-street loading spaces for future installation of medium- and heavy-duty EV supply equipment (EVSE), with some exceptions listed below. Future EVSE will provide all the necessary charging equipment for medium- and heavy-duty vehicles, including properly sized transformers, service conductors and equipment, raceways, and distribution panels or charger cabinets.



## What are the requirements?

For these building types, the new construction project must plan for future EVSE installation by providing adequate electrical capacity and allocating space to install raceways and busways. Plans and specifications will need to meet four requirements:

1. The transformer, main service equipment, and subpanels shall meet the minimum power requirement in Table 5.106.5.4.1 to accommodate the dedicated branch circuits for the future installation of EVSE.
2. The construction documents shall indicate one or more location(s) convenient to the planned off-street loading space(s) reserved for medium- and heavy-duty EV charging cabinets and charging dispensers, and a pathway reserved for routing of conduit from the termination of the raceway(s) or busway(s) to the charging cabinet(s) and dispenser(s), as shown in Table 5.106.5.4.1.
3. Raceway(s) or busway(s) originating at a main service panel or a subpanel(s) serving the area where potential future medium- and heavy-duty EVSE will be located and shall terminate in close proximity to the potential future location of the charging equipment for medium- and heavy-duty vehicles.
4. The raceway(s) or busway(s) shall be of sufficient size to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty EVs as shown in Table 5.106.5.4.1.

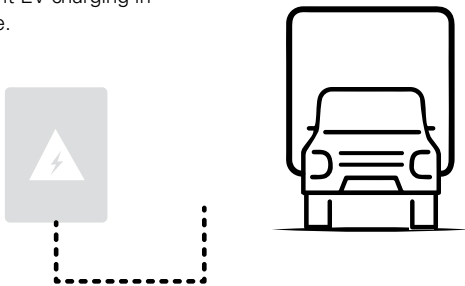


Table 5.106.5.4.1 Raceway conduit and panel power requirements for medium- and heavy-duty EVSE

Building type	Building Size	Number of Off-Street Loading Spaces	Additional Capacity Required (kVa) for Raceway & Busway and Transformer & Panel
Grocery	10,000 to 90,000	1 or 2	200
		3 or Greater	400
	Greater than 90,000	1 or Greater	400
Retail	10,000 to 135,000	1 or 2	200
		3 or Greater	400
	Greater than 135,000	1 or Greater	400
Warehouse	20,000 to 256,000	1 or 2	200
		3 or Greater	400
	Greater than 256,000	1 or Greater	400
Manufacturing Facilities	10,000 to 50,000	1 or 2	200
		3 or Greater	400
	Greater than 50,000	1 or Greater	400
Office Buildings	10,000 to 135,000	1 or 2	200
		3 or Greater	400
	Greater than 135,000	1 or Greater	400

**EV Capable**

EV space that has electrical panel capacity and conduit (called raceway). Installed to implement EV charging in the future.



**Are there any exceptions?**



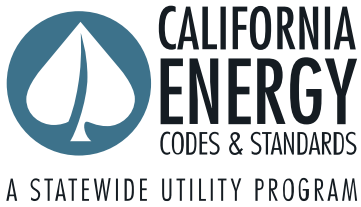
Some projects may receive an exemption on a case-by-case basis from the local enforcing agency. The local enforcing agency may determine compliance is not feasible based on one of the following conditions:

1. There is no local utility power supply.
2. The local utility is unable to supply adequate power.
3. There is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of these requirements, may adversely impact the construction cost of the project.

**For more information**

[Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure Cost Analysis for California’s CALGreen Building Code](#)





The Codes & Standards program is designed to improve compliance with the state's building and appliance energy codes and standards. The program aims to advance the adoption and effective implementation of energy efficiency measures and building practices to lock in long-term energy and GHG savings to meet California's ZNE, decarbonization and climate goals. The program recognizes that codes and standards are one of the most effective pathways to ensuring sustained market transformation—and the key to making them work well are well-informed industry professionals and consumers.



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