



## 2022 CALGreen

# LIGHT-DUTY ELECTRIC VEHICLE CHARGING INFRASTRUCTURE REQUIREMENTS

California updated its Electric Vehicle (EV) charging infrastructure requirements for light-duty vehicles (LDV) in the 2022 California Green Building Standards Code (also known as CALGreen) that became effective on January 1, 2023.

## What is Light Duty Electric Vehicle Charging Infrastructure?

Light Duty EV charging infrastructure includes both charging stations and electrical equipment to power vehicles such as cars, minivans, SUVs, and pickup trucks.



## Why does this matter?

California has laid out EV infrastructure requirements in the 2022 CALGreen, effective on January 1, 2023 to advance strategic statewide goals to reduce carbon emissions and pollutants through the electrification of the transportation sector. Including fixed infrastructure during new construction will limit costly retrofits to accommodate the charging capacity required for EVs as the state prepares to require 100% of new car sales to be zero-emission by 2035.<sup>1</sup>

## Who is affected by these requirements?

In the 2022 CALGreen, the EV charging infrastructure requirements affect new single-family homes, duplexes, townhomes, multifamily dwellings, hotels, motels, and non-residential buildings. The requirements also affect newly added or altered spaces associated with existing multifamily buildings, hotels, and motels.

<sup>1</sup> California, State of. California Enacts World-Leading Plan to Achieve 100 Percent Zero-Emission Vehicles by 2035, Cut Pollution, Office of Governor Gavin Newsom, 25 Aug. 2022, <https://www.gov.ca.gov/2022/08/25/california-enacts-world-leading-plan-to-achieve-100-percent-zero-emission-vehicles-by-2035-cut-pollution/>.

## What types of EV spaces are required in 2022 CALGreen?

2022 CALGreen defines three types of EV spaces that can meet EV infrastructure requirements:

- Level 2 EV Supply Equipment (EVSE) spaces
- EV ready spaces with low power Level 2 EV charging receptacles
- EV capable spaces



## What are the requirements for the three types of EV Spaces?

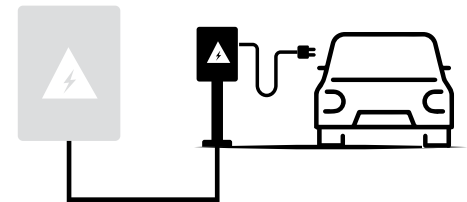
The requirements for each EV space type are shown below.

### Level 2 EV Supply Equipment (EVSE) Requirements

- 1) A 208/240 Volt 40-ampere minimum branch circuit
- 2) A Level 2 EVSE
- 3) Located adjacent to accessible parking, on an accessible route and meets requirements in Chapter 11 of the California Building Code.
- 4) Serving a charging space with a minimum length of 18 feet and minimum width of 9 feet (residential only)

#### EV Installed

EVSE fully installed from the electrical panel to the EV Space.

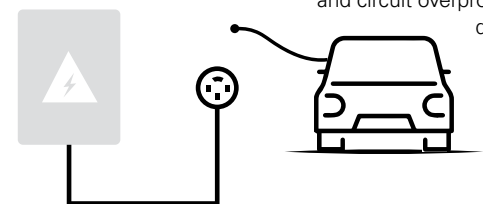


### EV Ready Spaces with Low Power Level 2 EV Charging Receptacles Requirements

- 1) A 208/240 Volt 20-ampere branch circuit
- 2) A receptacle that can be used by an EV driver to charge their vehicle.
- 3) Signage or pavement markings that meet Caltrans requirements.

#### EV Ready

EV Space that has circuit installations and panel capacity, raceway with wiring, receptacle, and circuit overprotection devices.

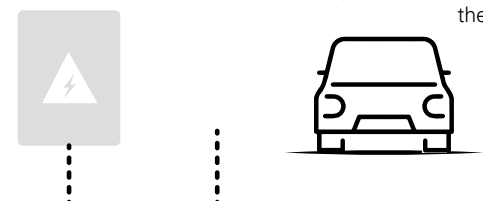


### EV Capable Space Requirements

- 1) A raceway not less than trade size 1 that can accommodate a 208/240 Volt 40-ampere branch circuit
- 2) Space on electrical panel or subpanel reserved for a 208/240 Volt 40-ampere branch circuit
- 3) Electrical capacity able to simultaneously charge future EVs at a minimum of 40-ampere.
- 4) Service panel or subpanel circuit directory identified as "EV CAPABLE"

#### EV Capable

EV Space that has electrical panel capacity and conduit, called raceway. Installed to implement EV charging in the future.





## What are the requirements for new single-family, duplex, and townhomes?



The 2022 CALGreen requirements for single-family, duplex, and townhome occupancies are the same as 2019 CALGreen requirements. All new construction must be EV Capable by installing a raceway to accommodate a future branch circuit for future EVSE installation.

Each dwelling unit must install the following:

- A raceway of at least trade size 1 in diameter to accommodate a future 208/240 Volt 40-ampere branch circuit going from the service panel or subpanel to the EV Capable space.
- The electrical service panel or subpanel must have dedicated space for an overcurrent protection device and the electrical capacity for a 208/240 Volt 40-ampere branch circuit

## What are the EV charging infrastructure requirements for new and existing multifamily and hotel/motel buildings?



The 2022 CALGreen includes significant changes to multifamily and hotel/motel occupancy requirements, including increased space requirements and a streamlined approach that defines a single set of requirements for both occupancy types.

2019 CALGreen required 10% of total parking spaces in multifamily buildings to be EV Capable and required between 0 - 10% of total parking spaces in hotels and motels to be EV Capable. 2022 CALGreen increases these requirements by requiring at least 10% of spaces regardless of building type be EV Capable and requires an additional 25% of spaces to be EV Ready with low power Level 2 receptacles. If the building has more than 20 guest rooms, 2022 CalGreen also requires the installation of Level 2 EVSE in at least 5% of spaces. New requirements for existing buildings, and the use of Automatic Load Management System (ALMS) to reduce electrical capacity requirements for EVSE or EV Ready spaces installed beyond code requirements, are also new to 2022 CALGreen.



## Summary of EV Requirements for Multifamily and Hotel/Motel Occupancies

Topic	2022 CAL Green Requirement	
Number of EV Spaces Required	New Building with <20 Dwelling Units or Guest Rooms	10% of parking spaces EV Capable, AND  25% of parking spaces are EV Ready with low power Level 2 Charging Receptacles
	New Building with ≥20 Dwelling Units or Guest Rooms:	10% of parking spaces EV Ready, AND  25% of parking spaces are EV Ready with low power Level 2 Charging Receptacles, AND  Must install Level 2 EVSE for 5% of parking spaces
	Existing Buildings	10% of newly added parking spaces EV Capable, AND 10% of altered parking spaces EV Capable
Automatic Load Management System (ALMS)	When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an ALMS may be used to reduce the maximum required electrical capacity to each space served by the ALMS.	



## Example Application for Multifamily project with 20 or more units

New Construction with 65 total parking spaces for a multifamily dwelling with 75 units.

### MANDATORY

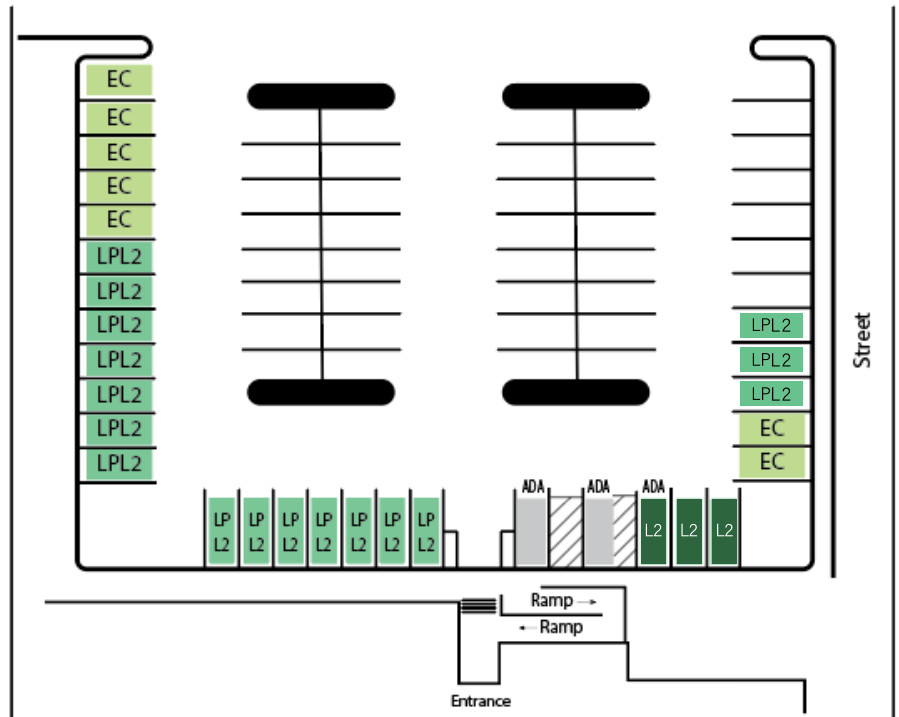
10% EV Capable = 7 spaces (EC)  
25% EV Ready with low power Level 2 charging receptacles installed = 17 Spaces (LPL2)

5% Level 2 EVSE installed = 3 spaces (L2)

*Note: One in 25 spaces that are required to have an EV charger are also required to be accessible per CALGreen requirements.*

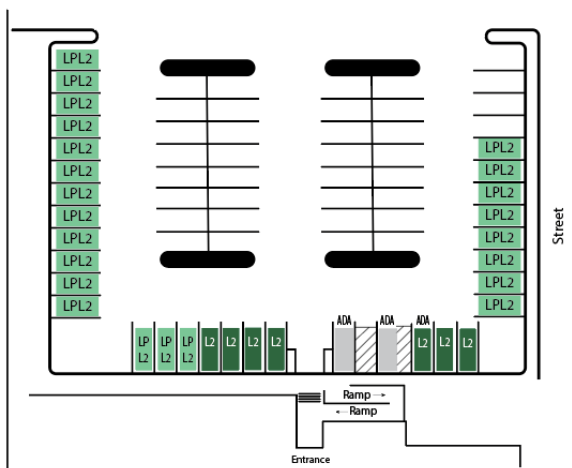
### Legend

**EC:** EV Capable  
**LPL2:** EV Ready with low power Level 2 charging receptacles  
**L2:** EV Installed with Level 2 EVSE



CALGreen includes two additional tiers of requirements that increase the number and level of required EVSE that local jurisdictions may voluntarily adopt.

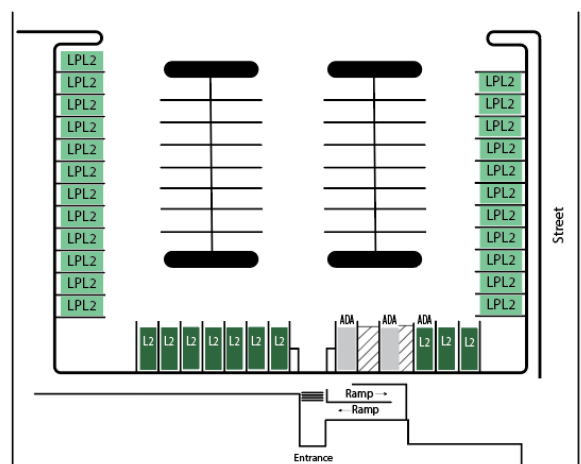
### VOLUNTARY TIER 1



35% EV Ready with low power Level 2 charging receptacles installed = 23 spaces (LPL2)

10% Level 2 EVSE installed = 7 Spaces (L2)

### VOLUNTARY TIER 2



40% EV Ready with low power Level 2 charging receptacles installed = 26 spaces (LPL2)

15% Level 2 EVSE installed = 10 Spaces (L2)

# What are the EV Charging Infrastructure Requirements for New Nonresidential Buildings?



Table 5.106.5.3.1

The 2022 CALGreen increased EV charging infrastructure requirements for newly constructed nonresidential projects to provide both infrastructure for future EVSE installation and the installation of charging equipment. Requirements are defined in Table 5.106.5.3.1.

Total Number of Actual Parking Spaces	Number Required EV Capable Spaces	Number of EVCS (EV Capable Provided with EVSE) <sup>2</sup>
0-9	0	0
10-25	4	0
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 and over	20% of total <sup>1</sup>	25% of EV Capable Spaces <sup>1</sup>

1. Calculation for spaces shall be rounded to the nearest number

2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count toward the total number of required EV capable spaces shown in column 2.

## Voluntary Tier 1 § A5.106.5.3.1

While cities and counties cannot mandate fewer EV Capable or EVSE nonresidential parking spots than required in Table 5.106.5.3, cities and counties are allowed to mandate additional EV Capable and EVSE parking spots by adopting either the Voluntary Tier 1 or Tier 2 requirements in Appendix A5 of CALGreen 2022.

Total Number of Actual Parking Spaces	Number Required EV Capable Spaces	Number of EVCS (EV Capable Provided with EVSE) <sup>2</sup>
0-9	2	0
10-25	5	2
26-50	11	4
51-75	19	5
76-100	26	9
101-150	38	13
151-200	53	18
201 and over	30% of total <sup>1</sup>	33% of EV Capable Spaces <sup>1</sup>

1. Calculation for spaces shall be rounded to the nearest number

2. The number of required EVCS (EV Capable spaces provided with EVSE) in column 3 count toward the total number of required EV Capable spaces shown in column 2.

## Voluntary Tier 2 § A5.106.5.3.2

Total Number of Actual Parking Spaces	Number Required EV Capable Spaces	Number of EVCS (EV Capable Provided with EVSE) <sup>2</sup>
0-9	3	0
10-25	8	3
26-50	17	6
51-75	28	9
76-100	40	13
101-150	57	19
151-200	79	26
201 and over	45% of total <sup>1</sup>	33% of EV Capable Spaces <sup>1</sup>

1. Calculation for spaces shall be rounded to the nearest number

2. The number of required EVCS (EV Capable spaces provided with EVSE) in column 3 count toward the total number of required EV Capable spaces shown in column 2.

# Example Application for New Nonresidential Building

Nonresidential new construction project providing 65 new parking spaces.

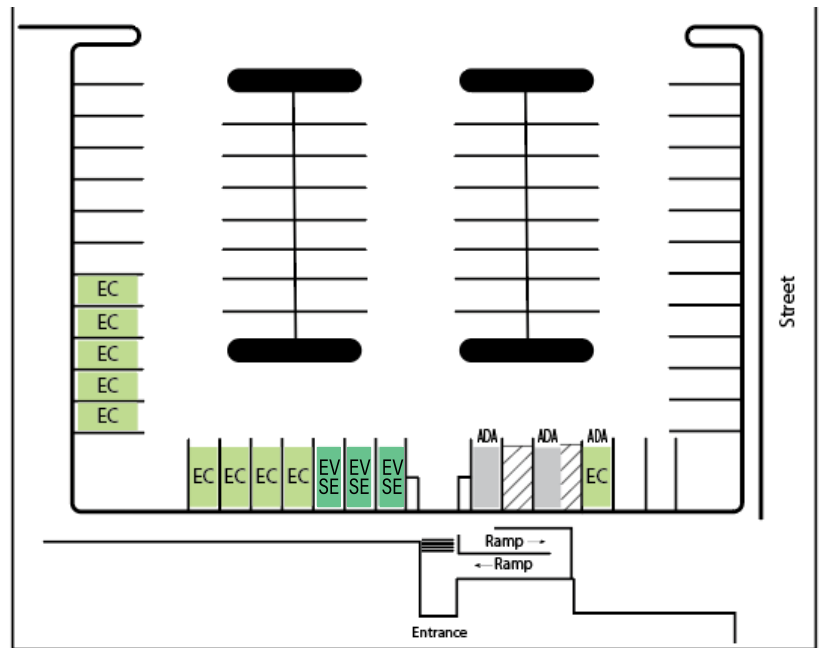
## MANDATORY

Per Table 5.106.3.1 = 10 EV Capable spaces and 3 EVSE spaces

*Note: Refer to the California building code for accessibility requirements in nonresidential applications*

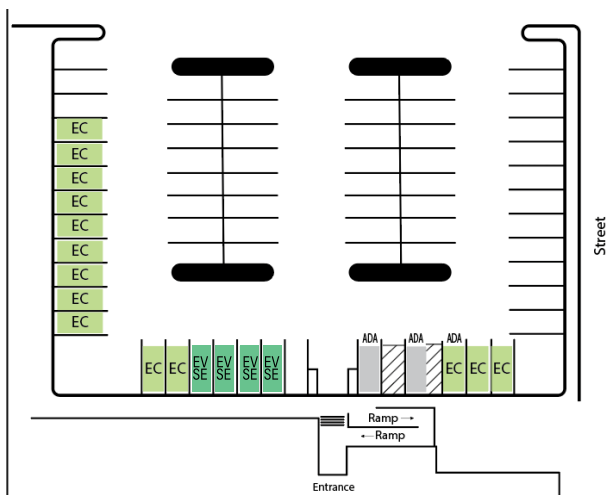
### Legend

- EC:** EV Capable
- LPL2:** EV Ready with low power Level 2 charging receptacles
- L2:** EV Installed with Level 2 EVSE



CALgreen includes two additional tiers of requirements that increase the number and level of required EVSE that local jurisdictions may voluntarily adopt.

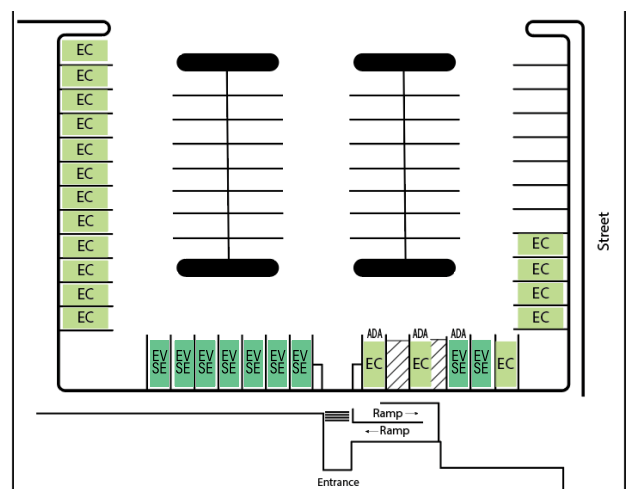
## VOLUNTARY TIER 1



### Voluntary Tier 1:

Per Table A5.106.3.1 = 14 EV Capable spaces and 5 EVSE spaces

## VOLUNTARY TIER 2



### Voluntary Tier 2:

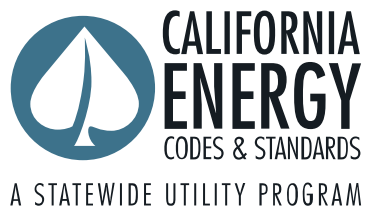
Per Table A5.106.3.2 = 19 EV Capable spaces and 9 EVSE spaces





For more information:

<https://newbuildings.org/resource/electric-vehicle-supply-equipment-energy-storage-and-solar-permitting-and-inspection-guidelines/>



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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