

CALIFORNIA BUILDING STANDARDS COMMISSION
November 28, 2023
CALGREEN EV WORKSHOP #2
Agenda Items 2e

DRAFT EXPRESS TERMS
CALIFORNIA GREEN BUILDING STANDARDS CODE,
(CALGreen), PART 11,
CALIFORNIA BUILDING STANDARDS CODE,
TITLE 24, CALIFORNIA CODE OF REGULATIONS

If using assistive technology, please adjust your settings to recognize underline, strikeout and ellipsis.

LEGEND for EXPRESS TERMS

- Existing amendments appear upright
- Amendments appear underlined
- Repealed California language appears ~~upright and in strikeout~~

SECTION 5.106, SITE DEVELOPMENT

...

AGENDA ITEM 2e

RATIONALE: BSC-CG is proposing to amend Tables 5.106.5.3.1 and Table 5.106.5.3.6 by amending column 3 and adding an additional footnote. The specific amendments to the tables are as follows:

BSC-CG is proposing to amend EV Table 5.106.5.3.1 column 3 to increase the EVCS requirements for parking spaces between 0-25 actual parking spaces from 0 to 2. For more than 25 parking spaces, the number of required EVCS will be increased by 100 percent which doubles the requirement. For 201 and over actual parking spaces, the increase in column 3 will be based on the calculated number in column 2 multiplied by 50 percent. As proposed, the EVCS numbers and percentages would be doubled and would be deducted from the EV capable spaces shown in column 2. Basically, the proposal would maintain the required 20 percent EV capable spaces but would double the required number or percentage of installed chargers. This would create a balance of 50 percent EV capable and 50 percent EVCS. Further changes to Table 5.106.5.3.1 include removing the words "EV capable space provided with EVSE" from the title in column 3. Footnote 2 is being amended to clarify that each EVCS shall reduce the number of required EV capable spaces by the same number. To address office and retail buildings specifically, a new column 4 is being added to the table specific to these occupancies with an increased required number of EVCS. This proposal would increase the required number of EVCS to 75 percent of the EV capable spaces shown in column 2. For 201 and over actual parking spaces, the increase will be based on the calculated number in column 2 multiplied by 75 percent. To clarify that column 4 is independent from column 3, the words "non-office & retail" were added to the title.

BSC is proposing to make similar amendments, as noted above, to related EV Table 5.106.5.3.6 which is based on the power allocation method. Footnote 3 is being changed to mention that the maximum allowed kVA to be utilized for EV capable spaces from 75 percent to 50 percent. This proposed change would reduce the total required kVA that can be used for EV capable spaces (rated at 6.6 kVA) by 50 percent. This doubles the available kVA required to be used for EVCS which creates a scenario where 50 percent of the kVA can be used for EV capable spaces and remaining 50 percent for EVCS.

To address office and retail building specifically; a new column 4 is being added to the table for these occupancies with required increased in kVA power allocation for EVCS. This proposal would increase the required number of EVCS for those occupancies. Footnote 5 is being added to set the maximum kVA power allowed to be utilized for EV capable spaces to 25 percent. As a result of added footnote, the proposed change would reduce the total kVA that can be used for EV capable spaces (rated at 6.6kVA) to 25 percent of the total available kVA. This leaves 75 percent of the available kVA required to be used for EVCS. For 201 and over actual parking spaces, the maximum kVA allowed for EV capable is based on the calculated number using the formula in column 4, and multiplying the number by 25 percent (as stated in footnote 5), which leaves 75 percent required kVA available for EVCS. To clarify that column 4 is independent from column 3, the words “non-office & retail” were added to the title.

These amendments are consistent with the proposed changes made to Table 5.106.5.3.1 mentioned above.

These proposed changes are meant to address the comments received at the recent CEVW#1 workshop held October 19, 2023. Similar comments were mentioned in various prior CEVW workshops during the 2022 Intervening Code Adoption Cycle expressing the need for additional installed chargers to fill the gap between multifamily EV charging with supplemental workplace charging for those occupancies.

These proposed changes are to address the need for additional installed charger for nonresidential occupancies and the need for increased chargers for office and retail buildings. These increased number and percentages of EVCS will help in meeting the EV goals set for California by favoring the installation of actual chargers during new construction.

[Changes are shown in underline and/or strikeout for all code sections below]

Section 5.106 SITE DEVELOPMENT, Section 5.106.5.3

5.106.5.3 Electric vehicle (EV) charging. [N] [BSC-CG] Construction to provide...
California Electrical Code. [No change to text.]

Exceptions: *[No change to text.]*

5.106.5.3.1 EV capable spaces. [N] EV capable spaces ... the following requirements: *[No change to text.]*

Note: *[No change to text.]*

5.106.5.3.2 Electric vehicle charging stations (EVCS). EV capable spaces...shall be provided. *[No change to text.]*

One EV charger...EV charger. *[No change to text.]*

5.106.5.3.2.1 Receptacle Configurations. [See Item 4c]

5.106.5.3.2.2 EV Charger Connectors. [See Item 4c]

5.106.5.3.2.4 3The installation of...panel or subpanel. [No change to text.]

5.106.5.3.2.2 4 The installation of two Low Power Level 2 EV charging receptacles shall be permitted to reduce the minimum number of required EV capable spaces without EVSE in Table 5.106.5.3.1 by one.

5.106.5.3.2.4.1 Raceway Capacity Requirements. [See Item 4d]

5.106.5.3.3 Use of automatic load management systems (ALMS). ALMS shall be permitted...multiple EVs. [No change to text.]

5.106.5.3.4 Accessible electric vehicle charging station (EVCS). When EVSE is installed, ...11B Section 11B-228.3. [No change to text.]

5.106.5.3.5 Electric vehicle charging station signage. Electric vehicle charging stations shall be identified by signage or pavement markings in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

TABLE 5.106.5.3.1

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CAPABLE SPACES	NUMBER OF REQUIRED EVCS^{2 & 3} (EV CAPABLE SPACES PROVIDED WITH EVSE)^{2 & 3} (Non-Office & Retail)	NUMBER OF REQUIRED EVCS (Office & Retail)
0-9	0	0	<u>0</u>
10-25	4	0 <u>2</u>	<u>3</u>
26-50	8	2 <u>4</u>	<u>6</u>
51-75	13	3 <u>6</u>	<u>8</u>
76-100	17	4 <u>8</u>	<u>13</u>
101-150	25	6 <u>12</u>	<u>19</u>
151-200	35	9 <u>18</u>	<u>26</u>
201 and over	20 percent of actual parking spaces ¹	25 <u>50</u> percent of EV capable spaces ¹	<u>75 percent of EV capable spaces¹</u>

1. Calculation for spaces shall be rounded up to the nearest whole number.
2. Each EVCS shall reduce the number of required EV capable spaces by the same number.
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.
3. At least one Level 2 EVSE shall be provided.

5.106.5.3.6 Electric vehicle charging stations (EVCS)-Power allocation method.

The Power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table 5.106.5.3.1. Use Table 5.106.5.3.6 to determine the total power in kVA required based on the total number of actual parking spaces.

Power allocation method shall include the following:

1. Use any kVA combination of EV capable spaces, Low Power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

TABLE 5.106.5.3.6

TOTAL NUMBER OF ACTUAL PARKING SPACES	MINIMUM TOTAL kVA @ 6.6 kVA	TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE^{3 & 4}, LOW POWER LEVEL 2, LEVEL 2^{1, 2}, OR DCFC (Non-Office & Retail)	<u>TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE^{4 & 5}, LOW POWER LEVEL 2, LEVEL 2^{1, 2}, OR DCFC (Office & Retail)</u>
0-9	0	0	<u>0</u>
10-25	26.4	26.4	<u>26.4</u>
26-50	52.8	52.8	<u>52.8</u>
51-75	85.8	85.8	<u>85.8</u>
76-100	112.2	112.2	<u>112.2</u>
101-150	165	165	<u>165</u>
151-200	231	231	<u>231</u>
201 and over	20 percent of actual parking spaces x 6.6	Total required kVA = $P \times .20 \times \frac{6.6}{6.6}$ Where P=Parking spaces in facility	<u>Total required kVA = $P \times .20 \times \frac{6.6}{6.6}$</u> <u>Where P=Parking spaces in facility</u>

1. Level 2 EVSE @ 6.6 kVA minimum.
2. At least one Level 2 EVSE shall be provided.
3. Maximum allowed kVA to be utilized for EV capable spaces is 75 50 percent.
4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.
5. For Office and Retail buildings the maximum allowed kVA to be utilized for EV capable spaces is 25 percent.

5.106.5.3.6.1 Receptacle Configurations. [See Item 4c]

5.106.5.3.6.2 EV Charger Connectors. [See Item 4c]

5.106.5.3.6.3 Raceway Capacity Requirements. [See Item 4d]