

CALIFORNIA BUILDING STANDARDS COMMISSION
October 19, 2023
CALGREEN EV WORKSHOP
Agenda Items 4e, 4f & 4g

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- Repealed California language appears ~~upright and in strikeout~~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

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AGENDA ITEMS 4e, 4f & 4g

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 additional footnotes. The specific amendments for the three listed items are as follows:

Item 4e: BSC-CG is proposing to amend EV Table 5.106.5.3.1 column 3 to change the EVCS requirements for parking spaces between 10-25 from 0 to 1. This will require one EVSE to be install between the 10-25 parking space range. This proposed amendment will align with DSA's current requirement of one which was codified during the 2021 Intervening Code Adoption Cycle found in their Table 5.106.5.6.1. This proposed change also maintains consistency for both nonresidential occupancies for public schools and community colleges and for nonresidential occupancies within BSC's authority. This provides clarity for the code users and the regulated community.

Item 4f: BSC-CG is proposing to amend EV Table 5.106.5.3.1 footnote to add a new footnote 4 and to amend column 3 to add the related superscript 4 to address the increased required number and percentages of EVCS specific to office and retail buildings. This proposal will increase the required EVCS by 25 percent from the revised numbers of EVCS shown in column 3 and for 201 and over, the increase will be based on the calculated number in column 3 by 25 percent. Please note that the 25 percent could change based on the actions taken on Item 4e which proposes to increase percentages for EVCS. BSC is also proposing to amend related EV Table 5.106.5.3.6 footnote to add a new footnote 5 and to amend column 3 to add the related superscript 5 for total kVA required to address the increased required total kVA for EVCS specific to office building and retail buildings. The proposal for Table 5.106.5.3.6 will increase the required total kVA for EVCS by 25 percent more than the current kVAs shown in column 3 and for 201 and over, the increase will be based on the calculated total kVA in

column 3 by an additional 25 percent. Likewise, the 25 percent may change based on actions taken for Item 4g which proposed to increase the total kVA for EVCS and reduce the for the EV capable space percentages. This proposed change is to address the comments received at various CEVW workshops during the 2022 Intervening Code Adoption Cycle and the need for additional installed chargers to fill the gap between multifamily EV charging with supplemental workplace charging for those occupancies.

Item 4g: As mentioned above on Item 4f; BSC is proposing to amend EV Table 5.106.5.3.1 column 3 to increase number and percentages of required EVCS. This proposal will increase the required number of EVCS, currently shown in column 3, by 100 percent essentially doubling the requirement. For 201 and over actual parking spaces, the increase will be based on the calculated number in column 3 by 50 percent. This proposal is meant to address the need for the installation of additional chargers while reducing the number of EV capable spaces. 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 will maintain the required 20 percent EV capable spaces but would double required number or percent of installed chargers making for a 50 percent EV capable and 50 percent EVCS. The proposal for Table 5.106.5.3.6 will increase the required total kVA for EVCS by 25 percent more than the current kVAs shown in column 3. For 201 and over actual parking spaces, the increase will be based on the calculated total kVA in column 3 by an additional 25 percent. The reduction in EV capable and the increased number for EVCS requirements is shown in table footnote 3 with the amendment from 75 to 50 percent.

This proposed change is to address the need for additional installed charger to meet the EV goals set for California by favoring the installation of actual chargers during new construction.

[Changes are shown in underline and/or strike-out 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 electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 Electric vehicle charging stations (EVCS)-Power allocation method and associated Table 5.106.5.3.6 and shall be provided in accordance with regulations in the *California Building Code* and the *California Electrical Code*.

Exceptions:

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
 - a. Where there is no local utility power supply.
 - b. Where the local utility is unable to supply adequate power.
 - c. Where there is evidence suitable to the local enforcement agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

5.106.5.3.1 EV capable spaces. [N] EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and the following requirements:

1. Raceways complying with the *California Electrical Code* and no less than 1-inch (25 mm) diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the EV capable space and into a suitable listed cabinet, box, enclosure or equivalent. A common raceway may be used to serve multiple EV capable spaces.
2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.
3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.
4. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

Note: A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by an enforcement agency. See Vehicle Code Section 22511.2 for further details.

5.106.5.3.2 Electric vehicle charging stations (EVCS). EV capable spaces shall be provided with electric vehicle supply equipment (EVSE) to create EVCS in the number indicated in Table 5.106.5.3.1. The EVCS required by Table 5.106.5.3.1 shall be provided with Level 2 EVSE or DCFC as permitted in Section 5.106.5.3.2.1. At least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.3.1 for each EV capable space is accumulatively supplied to the EV charger.

5.106.5.3.2.1 The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.3.2.2 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.

5.106.5.3.3 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, accessible EVCS shall be provided in accordance with the California Building Code Chapter 11B Section 11B-228.3.

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 EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE) ^{2 & 3, & 4}
0-9	0	0
10-25	4	0 1
26-50	8	2 4
51-75	13	3 6
76-100	17	4 8
101-150	25	6 12
151-200	35	9 18
201 and over	20 percent of actual parking spaces ¹	25 50 percent of EV capable spaces ¹

1. Calculation for spaces shall be rounded up to the nearest whole 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.
3. At least one Level 2 EVSE shall be provided.
4. For Office and Retail buildings increase the EVCS by 25 percent from the number of EVCS shown in column 3. For 201 and over, increase the calculated number in column 3 by 25 percent.

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 REQUIRED⁵ IN ANY COMBINATION OF EV CAPABLE^{3,4}, LOW POWER LEVEL 2, LEVEL 2^{1,2}, OR DCFC
0-9	0	0
10-25	26.4	26.4
26-50	52.8	52.8
51-75	85.8	85.8
76-100	112.2	112.2
101-150	165	165
151-200	231	231
201 and over	20 percent of actual parking spaces x 6.6	Total required kVA =P x .20 x 6.6 Where P=Parking spaces in facility

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 increase the total kVA for EVCS by 25 percent shown in column 3. For 201 and over, increase the calculated number in column 3 by 25 percent.