

**INITIAL STATEMENT OF REASONS  
FOR PROPOSED BUILDING STANDARDS  
OF THE CALIFORNIA BUILDING STANDARDS COMMISSION  
REGARDING THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE  
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11**

**(BSC 03/21)**

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

**STATEMENT OF SPECIFIC PURPOSE, PROBLEM, RATIONALE and BENEFITS**

Government Code Section 11346.2(b)(1) requires a statement of specific purpose of each adoption, amendment, or repeal and the problem the agency intends to address and the rationale for the determination by the agency that each adoption, amendment, or repeal is reasonably necessary to carry out the purpose and address the problem for which it is proposed. The statement shall enumerate the benefits anticipated from the regulatory action, including the benefits or goals provided in the authorizing statute.

This proposed action by the California Building Standards Commission (BSC)

New amendments and existing amendments (some shown for context): Item numbers used to coordinate with the items listed in the Express Terms.

**ITEM 1**

**Chapter 2 definitions, AUTOMATIC LOAD MANAGEMENT SYSTEMS (ALMS)**

**Statement of specific purpose, problem, rationale and benefits:**

BSC added a definition for AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS).

BSC is proposing a definition for Automatic Load Management System (ALMS) which is needed to allow for the use of energy savings systems to promote EV expansion. Additionally, ALMS regulations are being proposed in the mandatory and voluntary sections of the code. This proposed definition is being coordinated with other state agencies that are also proposing similar amendments. The proposed definition will add consistency for the various occupancies within the CALGreen code. The intent is to make the definition generic in nature to allow for the actual code section for ALMS to dictate the code requirements.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

**ITEM 2**

**Chapter 2 definitions, EV CAPABLE SPACES**

**Statement of specific purpose, problem, rationale and benefits:**

BSC added a definition for EV capable space.

BSC is proposing a definition EV capable. These amendments will clarify the language for EV capable space found in Chapters 4 and 5, and in Appendices A4 and A5. Additionally, EV CAPABLE language is being proposed in the mandatory and voluntary applicable code sections. This proposed definition is being coordinated with other state agencies that are also proposing similar amendments. The proposed definition will add consistency for the various occupancies within the CALGreen code.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

### ITEM 3

#### Chapter 2 definitions, **LOW-EMMITING AND FUEL EFFICIENT VEHICLES**

##### **Statement of specific purpose, problem, rationale and benefits**

BSC proposes to repeal the definition for LOW-EMMITING AND FUEL EFFICIENT VEHICLES since the related code Sections 5.106.5.2 and A5.106.5.1 and related subsections for Clean air vehicles which mentions low-emitting and fuel-efficient is proposed for repeal. This amendment will maintain consistency within the CALGreen Code.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

### ITEM 4

#### Chapter 2 definitions, **NONWATER URINAL WITH DRAIN CLEANSING ACTION**

##### **Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to amend the definition for Urinal, Hybrid to align with newly defined term for Nonwater Urinal found in the 2021 Uniform Plumbing Code. This amendment will provide consistency between CALGreen and the Plumbing Code.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

### ITEM 5

#### Chapter 2 definitions, **OFF-STREET PARKING SPACES**

##### **Statement of specific purpose, problem, rationale and benefits:**

BSC is proposing a definition for off-street loading space because it is needed since it is being used in a new proposed code language for EV charging for medium-duty and heavy-duty vehicles.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 6

### Chapter 2 definitions, VANPOOL VEHICLE

#### Statement of specific purpose, problem, rationale and benefits:

BSC proposes to repeal the definition for VANPOOL VEHICLE since the related code Section 5.106.5.2 for Clean air vehicles which mentions vanpool is proposed for repeal. This amendment will maintain consistency within the CALGreen Code.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 7

### 5.106.5.2 Designated parking for clean air vehicles

#### Statement of specific purpose, problem, rationale and benefits:

BSC proposes to repeal Section 5.106.5.2, Table 5.106.5.2 with footnote, and "Note" below Table 5.106.5.2.

Since EV capable spaces can be used to comply with the clean air vehicles requirement percentages and the EV capable percentages are being significantly increased; BSC has determined that Section 5.106.5.2 Designated parking for clean air vehicles, is no longer needed. This amendment will help mitigate the impact to smaller parking lots by decreasing the amount of specially designated spaces, offsetting the increase percentage of EV capable spaces and of the new requirement that Electric Vehicle Supply Equipment be installed.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 8

### CHAPTER 5, NONRESIDENTIAL MANDATORY MEASURES,

#### Section 5.106.5.3 Electric Vehicle (EV) charging

#### Statement of specific purpose, problem, rationale and benefits:

BSC is proposing to amend this code section, which includes an increase of EV capable spaces along with mandatory requirement for Level 2 charging stations in new nonresidential buildings.

Under a mandate from Assembly Bill 1092 (Chapter 410, Statutes of 2013) authored by Assembly Member Levine, CBSC was directed to develop mandatory EV standards for nonresidential buildings during the 2016 Intervening Cycle.

Health and Safety Code Section 18930.5(b) as amended by Assembly Bill 341 allows BSC and other state agencies that propose building standards to allow for input by state agencies that have expertise in green building subject areas. The California Air Resources Board (CARB) has expertise in air quality, climate change, and EV charging infrastructure.

BSC is moving forward with the CARB suggested changes and proposes to include a mandatory requirement for 5% of new parking spaces to be equipped with Level 2 charging stations (electric vehicle supply equipment or EVSE, rated at 208/240 Volts with a 40 amp supply circuit) in new nonresidential buildings with 26 or more parking spaces. The existing code requires 10% of actual parking spaces be equipped with EV capable spaces (EV infrastructure). A recent analysis shows that roughly 30% of existing Electric Vehicle (EV) capable spaces are being converted to EV chargers see attachment A. Therefore, the proposed provisions require Level 2 EVSE chargers be installed at the time of new construction. The proposed mandate will increase visibility and availability of Level 2 chargers. This code change is necessary to support the implementation of 5 million ZEVs by 2030, and to achieve 100% sales of electric vehicles by 2035.

BSC is proposing to include an alternative compliance pathway for DC fast charging that would allow for the installation of one 50 kW minimum DC fast charger in exchange for up to five Level 2 charging stations. Projects that propose DC fast charging in exchange for required Level 2 charging stations must still install at least one Level 2 charging station in addition to the proposed DC fast charger. This will provide flexibility for property owners to choose EV charging options that maximize the business case for their facilities, particularly for occupancy types that may typically have shorter dwell times. Additionally, the California Energy Commission's AB 2127 report indicates a need of 30,500 to 32,100 public DC fast chargers to support California's 5 million ZEV deployment goal in 2030. As of September 2020, there were less than 5,000 public DC fast chargers available statewide. This alternative compliance pathway provides flexibility within the code to help meet this gap.

BSC is proposing to include automated load management systems (ALMS) as an optional strategy to reduce the amount of required power when additional chargers are installed beyond the minimum required in the code. ALMS systems shall be designed to provide a minimum 3.3 kw power to each EVSE space. Both ALMS and the DC Fast charge compliance option give property owners options for code compliance and may provide incentives to install more chargers than the minimum required by the code.

BSC is proposing to increase the EV capable provisions from 10% to 15% of actual parking spaces at nonresidential buildings. The California Energy Commissions' Assembly Bill AB 2127 report indicated only 61,000 Level 2 public and shared private chargers were installed through September 2020. In order to support the 5 million ZEV deployment goal in 2030, a total of 710,000 to 752,000 Level 2 chargers are needed at workplace and public settings. The increase in EV capable provisions is necessary to help meet this gap. Together, the proposed 5% EV charger equipped spaces requirement and the percentage increase for EV capable spaces will contribute an additional 66,000 to 83,000 Level 2 chargers between the beginning of 2023 and the end of 2025. See Attachment A.

In addition to supporting the Administration's directives, BSC's goal is to increase charging capability at new nonresidential buildings. The combined efforts of the proposed mandatory provisions will further encourage the purchase and use of EVs for routine transportation. These changes will help improve air quality and reduce an estimated 409,000 to 516,000 metric tons of carbon dioxide equivalent (CO<sub>2e</sub>) annually between

2023 and the end of 2025 refer to Attachment A.

**Specific Proposed Regulatory Actions:** BSC-CG proposes to amend Section 5.106.5.3 to make the section applicable to EV Capable regulations only and remove the verbiage pertaining to EVSE.

“Exceptions” from Section 5.105.3.3. are being relocated below Section 5.106.5.3 with editorial amendments along with a new additional exception 2 for automated mechanical car parking systems.

Section 5.106.5.3.1 Single charging space requirements is being repealed as the 2019 Intervening Code Cycle increased the percentages for EV Capable spaces that no longer allows for a single EV capable space which makes this section obsolete.

Existing Section 5.106.5.3.2 for multiple charging space requirements is being renumbered to the available Section 5.106.5.3.1 with editorial amendments to requirements 1-4. Requirement 5 has been relocated from Section 5.106.5.3.4 Identification. Section 5.106.5.3.4 and title “Identification” are being repealed. The “Note” is being relocated with amendments from Section 5.106.5.3.5.

Available Section 5.106.5.3.2 is being used for new proposed code language specific to EV charging spaces with Level 2 EVSE. Line 1 has been added to allow the use of an ALMS and line 2 has been added to allow the use of DCFC. Additionally, code sub-sections for Accessible EVCS and EVCS signs have been added to advise the code user of signage requirements for both accessible EV stalls and EV parking signage requirements under the vehicle code.

Section 5.106.5.3.3 Charging space calculation is being repealed as it references Table 5.106.5.3.3 (proposed Table 5.106.5.3.1) which no longer allows for single charging space requirements and the “Exceptions” below Section 5.106.5.3.3 will be relocated under section 5.106.5.3.

Table 5.106.3.3 is being renumbered to Table 5.106.5.3.1 to allow for it to be referenced by the new EV Capable and EVSE code sections and to maintain its sequence numbering location in the printed code. This table has also been amended to increase the percentages for EV Capable spaces and to add a column for installed Level 2 EV chargers. The table has been changed to capture 20% of the total number of actual parking spaces to be either EV capable or Level 2 EVSE. 25 % of the EV capable will be Level 2 EVSE, equating to approximate 5% of the total number of actual parking spaces. This increase is in response to the comments received during the January 7, 2021 and March 30, 2021 workshops. To calculate the required number of EVSE’s for 201 or more parking spaces, multiply e.g., 201 x 20% and then multiply the summation by 25%.

Based on a brief cost analysis, increasing to 20% EV capable with 5% EVSE of the total

number of actual parking spaces will cost approximately \$627 million. The total avoided retrofit costs for 20% is \$2.57 billion. Note: All costs are relative to current code requirements of 10% L2 EV capable and the totals are base over 8-year horizon (2023-2030).

Section 5.106.5.3.4 Identification is being relocated under Section 5.106.5.3.1 as line 5 with editorial amendments.

Section 5.106.5.3.5 [N] future charging spaces is being repealed as the reference to clean air vehicles Section 5.106.5.2 is no longer needed since said code section is being repealed. Lastly, the Note under Section 5.106.5.3.5 is also being repealed and relocated to Section 5.106.5.3.1 with minor edits.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 9

### 5.106.5.5 Electric Vehicle (EV) charging-Medium-duty and Heavy-duty Vehicles[N].

#### **Statement of specific purpose, problem, rationale and benefits:**

BSC proposes this section for adoption, which includes a mandatory requirement to install additional infrastructure to support later addition of chargers up to 400kW ZEV fueling in new warehouses, grocery stores, and retail buildings with off-street loading spaces that will support the future addition of chargers for medium- and heavy-duty vehicles.

Under a mandate from Assembly Bill 1092 (Chapter 410, Statutes of 2013) authored by Assembly Member Levine, CBSC was directed to develop mandatory EV standards for nonresidential buildings during the 2016 Intervening Code Cycle.

Health and Safety Code Section 18930.5(b) as amended by Assembly Bill 341 allows CBSC and other state agencies that propose building standards to allow for input by state agencies that have expertise in green building subject areas. The California Air Resources Board (CARB) has expertise in air quality, climate change, and EV charging infrastructure.

BSC-CG is moving forward with the CARB suggested changes and proposes to include a mandatory requirement for EV capable infrastructure to support installation of EV chargers for either depot, or opportunity charging in new warehouses, grocery stores, and retail buildings with off-street loading spaces, such as loading docks or parking spaces set aside for loading and unloading of motor vehicles. Recent analysis shows that EV capable infrastructure must support 180,000 medium- and heavy-duty zero-emission vehicles (ZEV) by 2030. CARB has adopted, and continues to adopt regulations requiring sales and purchases of medium- and heavy-duty ZEVs. While it is too early to mandate design of depot- or fleet-size battery electric vehicle (BEV) charging locations given the lack of data about ZEV fleet operations, it is foreseeable that with the ongoing development of

regulations for medium- and heavy-duty ZEVs, there will be a need for charging opportunities throughout daily operations that include stops at multiple buildings for loading and unloading. The proposed mandate will increase medium- and heavy-duty ZEV access to EV chargers throughout their daily operations, which will ultimately be necessary to support the addition of 180,000 medium- and heavy-duty ZEVs by 2030, and to support the additional need from 100 percent sales of medium- and heavy-duty EVs by 2045.

In addition to supporting California zero-emission policies and directives such as Executive Order N-79-20, CBSC's goal is to enable future charging capability at warehouses, grocery stores, and retail buildings with off-street loading spaces in an effort to increase access to currently existing ZEV charging stations. These proposed code changes support CARB's regulatory requirements for medium- and heavy-duty ZEVs.

CBSC proposes to include a mandatory requirement to install EV capable infrastructure to support later addition of charging stations in new warehouses, grocery stores, and retail buildings with off-street loading spaces for charging medium- and heavy-duty ZEVs. This change will help improve air quality and support the estimated emissions reductions from current CARB regulations which include: 19 million metric tons of carbon dioxide equivalent (MMTCO<sub>2e</sub>) total by 2050 from the Innovative Clean Transit Regulation, 0.5 MMTCO<sub>2e</sub> total by 2040 from the Airport Shuttle Bus Regulation, and 1.7 MMTCO<sub>2e</sub> per year by 2040 from the Advanced Clean Trucks Regulation. These estimated emissions reductions do not include those from the Advanced Clean Fleets Regulation currently under development. The proposed infrastructure additions could also be used to support zero-emission material handling equipment, and additional requirements to increase infrastructure for this equipment will be revisited in future code cycles.

**Specific Proposed Regulatory Actions:** BSC-CG is proposing to add new code Section 5.106.5.4 Electric vehicle (EV) charging: medium-duty and heavy-duty. [N] and related subsections and a table for the advancement of EVSE for medium-duty and heavy-duty vehicles.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 10

### 5.504.7 Thermal Insulation

#### **Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to relocate Section A5.504.4.8 Thermal Insulation from voluntary Tier 1, to a new mandatory code Section 5.504.4.7 with amendments. New relevant code Section 5.504.4.7.1 Verification of compliance, was added to provide constancy with similar existing requirements for acoustical ceilings and wall panels.

Adding these amendments will afford greater protection of public health by requiring that installed thermal insulation meet the more restrictive California department of Public Health (CDPH) standard. This amendment has limited impact on the affected building

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community in California. A majority of these products already meet the required limits, and LEED v4 gives low-emitting material credits for these products. Considering the availability of these products in the market, such requirements will be readily accepted by the current market and many manufacturers. BSC is proposing to only reference the new CDPH volatile organic compounds (VOC) limits standard for these materials and proposes to repeal all other certification programs and testing labs listed as those programs and testing labs all reference the CDPH testing standard criteria. The CDPH website contains a list approved certification programs and testing labs. BSC is proposing to provide a web link to CDPH's website for certification programs and testing labs that meet the CDPH standard.

Updating the reference to the new CDPH standard and by only using the CDPH standard for VOC limits will aid the code user in properly applying the most recent reference standard. Using one single source for the most current information will also aid the code user and the enforcing agencies. These amendments have been recommended and have the support from California Air Resources Board (CARB), and CDPH.

Lastly, these proposed amendments are needed for consistency with similar amendments to related products found in Sections 5.504.4.4 Carpet systems; 5.504.4.4.1 Carpet cushion; 5.504.4.6 Resilient flooring systems codified in the 2019 Intervening Code cycle.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## **ITEM 11**

### **5.504.4.8 Acoustical ceilings and wall panels**

#### **Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to relocate Section A5.504.9 Acoustical ceilings and wall panels, and related sub-section A5.504.4.9.1 Verification of compliance, from the voluntary measures to mandatory into new code Sections 5.504.4.8 and 5.504.4.8.1.

Adding these amendments will afford greater protection of public health by requiring that installed acoustical ceiling and wall panels meet the more restrictive CDPH standard. This amendment has limited impact on the affected building community in California. A majority of these products already meet the required limits, and LEED v4 gives low-emitting material credits for these products. Considering the availability of these products in the market, such requirements will be readily accepted by the current market and many manufacturers. BSC is proposing to only reference the new CDPH VOC limits standard for these materials and proposes to repeal all other certification programs and testing labs listed as those programs and testing labs all reference the CDPH testing standard criteria. The CDPH website contains a list approved certification programs and testing labs. BSC is proposing to provide a web link to CDPH's website for certification programs and testing labs that meet the CDPH standard.

Updating the reference to the new CDPH standard and by only using the CDPH standard for VOC limits will aid the code user in properly applying the most recent reference standard. Using one single source for the most current information will also aid the code user and the regulatory agencies. These amendments have been recommended and

have the support from California Air Resources Board (CARB) and the California department of Public Health (CDPH).

Lastly, these proposed amendments are needed for consistency with similar amendments to related products found in Sections 5.504.4.4 Carpet systems; 5.504.4.4.1 Carpet cushion; 5.504.4.6 Resilient flooring systems codified in the 2019 Intervening Code cycle.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 12

### A5.102.1, Definitions, LOW-EMITTING AND FUEL EFFICIENT VEHICLES

**Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to repeal the definition for LOW-EMMITING AND FUEL EFFICIENT VEHICLES since the related code Sections 5.106.5.2 and A5.106.5.1 and related subsections for Clean air vehicles which mentions low-emitting and fuel-efficient is proposed for repeal. This amendment will maintain consistency within the CALGreen Code.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 13

### A5.106.5.1 Designated parking for clean air vehicles

**Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to repeal Section A5.106.5.1, A5.106.5.1.1 Tier 1, Table 5.106.5.1.1 with footnote 1, and “Note” below Table 5.106.5.1.1. BSC also proposes to repeal Section A5.106.5.1.2 Tier 2, Table 5.106.5.1.2 with footnote 1, and “Note” below Table 5.106.5.1.2.

Since the EV capable spaces can be used to comply with meeting the clean air vehicles requirement percentages and the EV capable percentages are being significantly increased; BSC has determined that the Designated parking for clean air vehicles requirement is no longer needed. This amendment will allow for small parking lots to not be unjustly impacted by the increased EV Capable and EVSE proposed changes in ITEM 6.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 14

### A5.106.5.3 [N] Electric Vehicle (EV) charging.

**Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to include a voluntary Tier 1 provision for Level 2 chargers in 10% of total new parking spaces for buildings with 10 or more spaces in an effort to further advance the potential for EV preparedness, as well as increase the EV capable provisions to 20% of total new parking spaces. There is no fiscal impact associated with this provision since Tier 1 is a voluntary measure available for adoption by local agencies. However, if all local governments adopted Tier 1 as mandatory, it may add 0.3-1.0% to total costs for nonresidential new construction beyond the proposed mandatory provisions. An estimated incremental GHG reduction of 492,000 to 597,000 metric tons CO<sub>2e</sub> emissions could be achieved annually by 2025 through the new Tier 1 provisions.

BSC proposes to include a voluntary Tier 2 provision for Level 2 chargers in 15% of total new parking spaces for buildings with 10 or more spaces in an effort to further advance the potential for EV preparedness, as well as advance the EV capable provisions to 30% of total new parking spaces. There is no fiscal effect since Tier 2 is a voluntary measure available for adoption by local agencies. However, if all local governments adopted Tier 2 as mandatory, it may add 0.6% - 2.1% to total costs for nonresidential new construction beyond the proposed mandatory provisions. An estimated incremental GHG reduction of 1,047,000 to 1,280,000 metric tons CO<sub>2e</sub> emissions could be achieved annually by 2025 through the new Tier 2 provisions.

Section A5.106.5.3 is amended to clarify the application for EVSE.

Section A5.106.3.1 Tier 1 and A5.106.3.2 Tier 2 are amended to add the requirements for installed EVSE's when applicable and to add the reference to the requirements found in the mandatory code Section 5.106.5.3.1. Additionally, a reference has been added to the allowed use of an ALMS and/or DCFC.

Table A5.106.5.3.1 and Table A5.106.5.3.2 are amended to provide an incremental percentage increase for EV Capable spaces above the proposed mandatory respective code Table 5.106.5.3.1. from 20% to 30% for Tier 1 and 45% for Tier 2. Additionally, a column for installed EVSE's has been added which provide an incremental percentage increase above the proposed mandatory respective code Table 5.106.5.3.1 from 5% to 10% for Tier 1 and 15% for Tier 2.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

**ITEM 15**

**SECTION A5.303.4.1, Nonwater supplied urinals,**

**Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to amend Section A5.303.4.1 title from Nonwater supplied urinals to NONWATER URINAL WITH DRAIN CLEANSING ACTION and the associated language to properly reflect the new proposed definition for Nonwater Urinal found in the 2021 Uniform Plumbing Code. This amendment will provide consistency between CALGreen and the Plumbing Code.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

#### ITEM 16

##### **SECTION A5.504, POLLUTANT CONTROL, Thermal insulation**

##### **Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to relocate Section A5.504.4.8 Thermal Insulation Tier 1, from voluntary to a new code Section 5.504.4.7 found in ITEM 9. Section A5.504.4.8.1 Thermal insulation, Tier , has been renumbered to A5.504.4.8 with the Tier 2 moving to Tier 1 and Section A5.504.4.8.2 Verification of compliance, has been renumbered to Section A5.504.4.8.1.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

#### ITEM 17

##### **A5.504.4.9 Acoustical ceilings and wall panels**

##### **Statement of specific purpose, problem, rationale and benefits:**

BSC proposes to relocate Section A5.504.9 Acoustical ceilings and wall panels, and related sub-section A5.504.4.9.1 Verification of compliance from the voluntary measures to new code Sections 5.504.4.8 and 5.504.4.8.1. found in ITEM 10.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

#### ITEM 18

##### **Division A5.6 – VOLUNTARY TIERS**

##### **TABLE A5.601 NONRESIDENTIAL BUILDINGS:**

BSC-CG is proposing to update the table in Sections A5.601 to include the proposed mandatory and voluntary proposed code updates as shown in items 1 through 14 as applicable to the affected code section shown in the table.

These tables are not regulatory and are to be used as checklist for compliance with the mandatory, and voluntary measures.

These amendments are needed to maintain consistency with between the proposed code language and the checklist table which will benefit the code user and the local enforcing agencies.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

**BSC Response:**

## ITEM 19

### **CALGreen VERIFICATION GUIDELINES (Mandatory, Tier 1 and Tier 2)**

#### **A5.602**

#### **CALGreen VERIFICATION GUIDELINES MANDATORY MEASURES CHECKLIST**

##### **A5.602.1**

#### **CALGreen VERIFICATION GUIDELINES TIER 1 CHECKLIST**

##### **A5.602.2**

#### **CALGreen VERIFICATION GUIDELINES TIER 2 CHECKLIST**

BSC is proposing to update the verification guidelines tables in sections A5.602, A5.602.1, and A5.602.2 to include the proposed mandatory and voluntary proposed code updates as shown in items 1 through 14.

These tables are not regulatory and are to be used as checklist for compliance with the mandatory, and voluntary measures.

These amendments are needed to maintain consistency with between the proposed code language and the checklist which will benefit the code user and the local enforcing agencies.

**CAC Recommendation:** The GREEN Code Advisory Committee recommended

#### **BSC Response:**

#### **TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS**

Government Code Section 11346.2(b)(3) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).

See attachment A for estimated costs.

#### **STATEMENT OF JUSTIFICATION FOR PRESCRIPTIVE STANDARDS**

Government Code Section 11346.2(b)(1) requires a statement of the reasons why an agency believes any mandates for specific technologies or equipment or prescriptive standards are required.

The California Building Standards Code has historically been a mix of performance and prescriptive provisions and reference standards. The CALGreen code is no different, and wherever possible, a performance option is included to provide flexibility to the code user.

#### **CONSIDERATION OF REASONABLE ALTERNATIVES**

Government Code Section 11346.2(b)(4)(A) requires a description of reasonable alternatives to the regulation and the agency's reasons for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment

or prescribe specific action or procedures, the imposition of performance standards shall be considered as an alternate. It is not the intent of this paragraph to require the agency to artificially construct alternatives or describe unreasonable alternatives.

1. CBSC considered the following two alternatives in an effort to further advance the potential for EV preparedness.
  - a) **Alternative 1:** Adopt an additional 5 percent Level 2 EV Charging requirement and 5 percent Level 2 capable spaces requirement for new nonresidential buildings with 10 or more spaces.
  - b) **Alternative 2:** Adopt an additional 10 percent Level 2 EV Charging requirement and 15 percent Level 2 capable spaces requirement for new nonresidential buildings with 10 or more spaces.

**Alternative 1:** CBSC considered adoption of a requirement for an additional 5 percent Level 2 EV Chargers and additional 5 percent Level 2 capable spaces above the proposed mandatory requirement for new nonresidential buildings with 10 or more spaces. This alternative, though can still be adopted by local governments as mandatory at the local level, was rejected at this time as a mandatory requirement at the state level because it is more costly. This alternative would have added 0.3 – 1.0 percent to total costs for nonresidential new construction above the proposed mandatory provisions. This requirement would have resulted in the installation of an additional 56,135 to 69,248 Level 2 EV capable spaces and 62,924 to 75,778 Level 2 EV chargers over the proposed mandatory provisions during the 3-year life of the amendments. Initial construction costs for Alternative 1 were estimated to total an additional \$188 to \$353 million with avoided retrofit costs of \$833 to \$1,160 million resulting in a statewide benefit of \$481 to \$972 million over the 3-year life of the amendments compared to the proposed mandatory provisions. An additional 492,000 to 597,000 metric tons CO<sub>2</sub>e emission reduction annually could be achieved compared to the proposed mandatory provisions.

**Alternative 2:** CBSC considered adoption of a requirement for an additional 10 percent Level 2 EV Chargers and additional 15 percent Level 2 capable spaces above the proposed mandatory requirement for new nonresidential buildings with 10 or more spaces. This alternative, though can still be adopted by local governments as mandatory at the local level, was rejected at this time as a mandatory requirement at the state level because it is more costly. This alternative would have added 0.6 – 2.1 percent to total costs for nonresidential new construction above the proposed mandatory provisions. This requirement would have resulted in the installation of an additional 168,404 to 207,745 Level 2 EV capable spaces and 119,058 to 145,027 Level 2 EV chargers over the proposed mandatory provisions during the 3-year life of the amendments. Initial construction costs for Alternative 2 were estimated to total an additional

\$398 to \$752 million with avoided retrofit costs of \$2,012 to \$2,822 million resulting in a statewide benefit of \$1,260 to \$2,424 million over the 3-year life of the amendments compared to the proposed mandatory provisions. An additional 1,047,000 to 1,280,000 metric tons CO<sub>2</sub>e emission reduction annually could be achieved compared to the proposed mandatory provisions.

### **REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS**

Government Code Section 11346.2(b)(4)(B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business.

No alternatives were identified to lessen the adverse impact on small business, but most of the modifications to the code are proposed for facilitation of understanding and compliance by the code user. Those proposals that are new to the code or are made more stringent have been thoroughly vetted through stakeholder outreach and have been justified by proposing parties as to cost/benefit.

### **FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS**

Government Code Section 11346.2(b)(5)(A) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies to support an initial determination that the action will not have a significant adverse economic impact on business.

BSC has determined that this regulatory action would increase costs marginally to California business enterprises representing less than 0.1 percent of the total new construction costs of nonresidential buildings over the 4-year life of the amendments and between 1 and 4 percent of the \$20,000 to \$80,000 initial construction cost per parking space with significant benefits to Californians due to improved air quality and GHG emissions reduction. See Attachment A.

### **ASSESSMENT OF EFFECT OF REGULATIONS UPON JOBS AND BUSINESS EXPANSION, ELIMINATION OR CREATION**

Government Code Sections 11346.3(b)(1) and 11346.5(a)(10)

The Building Standards Commission has assessed whether or not and to what extent this proposal will affect the following:

- A.** The creation or elimination of jobs within the State of California.  
These regulations may cause some jobs to be created for the installation, maintaining and manufacturing of Electric Vehicle Supply Equipment (EVSE). No jobs are expected to be eliminated within the State of California.
- B.** The creation of new businesses or the elimination of existing businesses within the State of California.  
These regulations may cause the creation of businesses that expand into the EV market. These regulations will not affect the elimination of jobs within the State of California.
- C.** The expansion of businesses currently doing business within the State of California.

These regulations will likely promote the expansion of businesses currently involved with EV manufacturing, installation, maintenance and technology development within the State of California.

- D. The benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.

These regulations will increase the sustainability of California's natural resources by reducing fuel use, GHG emissions, criteria pollutants, and fossil fuel dependence. Additionally, updating and clarifying the minimum current CALGreen codes will provide increased protection of public health and safety, worker safety and the environment.

### **ESTIMATED COST OF COMPLIANCE, ESTIMATED POTENTIAL BENEFITS, AND RELATED ASSUMPTIONS USED FOR BUILDING STANDARDS**

Government Code Section 11346.2(b)(5)(B)(i) states if a proposed regulation is a building standard, the initial statement of reasons shall include the estimated cost of compliance, the estimated potential benefits, and the related assumptions used to determine the estimates.

1. Estimated Statewide Dollar Costs for Businesses and Individuals

The proposed amendments would require new nonresidential buildings with 10 or greater parking spaces to install Level 2 EV capable infrastructure in 15 percent of parking spaces. The cost of Level 2 EV capable infrastructure (raceway and panel capacity) is estimated to range from approximately \$675 to \$1,021 in 56,135 to 69,248 parking spaces. This results in an estimated statewide cost of \$37.9 million (\$675 x 56,135 parking spaces) to \$70.7 million (\$1,021 x 69,248 parking spaces) over the 3-year life of the amendments above the currently required 10 percent EV capable requirement in CALGreen.

The proposed amendments would also require new nonresidential buildings with 26 or greater parking spaces to install Level 2 EV chargers in 5 percent of parking spaces. The cost of level 2 EV chargers ranges from \$1,389 to \$1,895. The cost of other components (wiring, panel capacity, conduit, protective bollards) adds another \$998 - \$1828 per L2 EVSE space, bringing the total cost for L2 EVSE to \$2,387 - \$3,723 in 49,346 to 62,719 parking spaces. This results in an estimated statewide cost of \$118 million (i.e. \$2,387 x 49,346 parking spaces) to \$233 million (i.e. \$3,723 x 62,719 parking spaces) over the 3-year life of the amendments to add the Level 2 EVSE requirements. See Attachment A.

### **DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS**

Government Code Section 11346.2(b)(6) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public

safety, public welfare, or the environment.

These regulations do not duplicate nor conflict with federal regulations.