EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
CALIFORNIA ENERGY COMMISSION

REGARDING ADOPTION OF AMENDMENTS FOR THE 2013 CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR), PART 11, CALIFORNIA GREEN BUILDING STANDARDS CODE

LEGEND FOR EXPRESS TERMS
1. New California language and modified language is underlined.
2. Repealed text: All such language appears in ~~strikeout~~.
3. *[Information for the reader is bracketed and in red italics]*

The California Energy Commission (CEC) proposes to amend the 2010 edition of the California Green Building Standards Code (CGBSC) for the 2013 edition as shown on the following pages. Adopt new text as follows:

APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES

DIVISION A4.2 – ENERGY EFFFICIENCY

SECTION A4.201
GENERAL

A4.201.1 Scope. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards. It is the intent of these voluntary standards to encourage buildings to achieve exemplary performance in the area of energy efficiency.

SECTION A4.202
DEFINITIONS [Note: These definitions will be moved into Chapter 2 by the Building Standards Commission.]

A4.202.2 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

Design Rating. The sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Building (Energy Budget) and the annual TDV energy consumption for lighting and components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics) and accounting for the annual TDV energy offset by an on-site renewable energy system. The Design Rating is calculated by Compliance Software certified by the Energy Commission.

Energy Budget. The sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Building, as established in the Alternative Calculation Method Reference Manual approved by the Energy Commission and calculated by Compliance Software certified by the Energy Commission.

SECTION A4.203
PERFORMANCE APPROACH FOR NEWLY CONSTRUCTED BUILDINGS

A4.203.1 Energy Efficiency. Newly constructed low-rise residential buildings shall comply with Sections A4.203.1.1 and either A4.203.1.2.1 or A4.203.1.2.2.

A4.203.1.1 Prerequisites. Each of the following efficiency measures is required for all applicable components of the building project.

A4.203.1.1.1 Design Rating. A design rating for the Proposed Design Building shall be calculated by Compliance Software certified by the Energy Commission and this rating shall be included in the Certificate of Compliance documentation.

A4.203.1.1.2 Quality Insulation Installation (QII). The QII procedures specified in the Building Energy Efficiency Standards Reference Residential Appendix RA3.5 shall be completed.

A4.203.1.1.3 Lighting. Each dwelling unit shall comply with all applicable requirements of Title 24, Part 6 Section 150.0(k), except as indicated below.

1. All permanently installed indoor lighting shall be high efficacy as defined in and controlled as required by Title 24, Part 6 Section 150.0(k). Permanently installed indoor lighting shall be installed in kitchens, bathrooms, utility rooms, and private garages at a minimum.

2. All permanently installed lighting in bathrooms is controlled by a vacancy sensor.

   Exception: One high efficacy luminaire with total lamp wattage rated to consume no greater than 26 watts of power is not required to be controlled by a vacancy sensor.

3. Every room which does not have permanently installed lighting shall have at least one switched receptacle installed.

4. Permanently installed night lights shall comply with Title 24, Part 6 Section 150.0(k)1E.

5. Lighting integral to exhaust fans shall comply with Title 24, Part 6 Section 150.0(k)1F.

6. For single family residences, all permanently installed outdoor lighting is high efficacy as defined in Title 24, Part 6 Section 150.0(k) and is controlled as required in Title 24, Part 6 Section 150.0(k)9Ai-iii. For multi-family residential buildings, all permanently installed outdoor lighting for private patios, entrances, balconies, and porches is high efficacy as defined in Title 24, Part 6 Section 150.0(k) and is controlled as required in Title 24, Part 6 Section 150.0(k)9Ai-iii.

A4.203.1.2 Performance Standard. Buildings shall comply with one of the advanced efficiency levels indicated below.

A4.203.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is no greater than 85 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission. For single family residences, total net building electricity consumption of the Proposed Design Building as determined by the Design Rating shall be no greater than 10,000 kWh per year. A Proposed Design Building determined by the Design Rating to consume more than this amount of grid supplied electricity shall use additional energy efficiency measures or an on-site renewable energy system to reduce the total net building electricity consumption, as determined by the Design Rating, to a level that is no greater than 10,000 kWh per year. Buildings complying with Section A4.205 are deemed to meet the Tier 1 requirements.

A4.203.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is no greater than 70 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission. For single family residences, total net building electricity consumption of the Proposed Design Building as determined by the Design Rating shall be no greater than 8,500 kWh per year. A Proposed Design Building determined by the Design Rating to consume more than this amount of grid supplied electricity shall use additional energy efficiency measures or an on-site renewable energy system to reduce the total net building electricity consumption, as determined by the Design Rating, to a level that is no greater than 8,500 kWh per year. Buildings complying with Section A4.205 are deemed to meet the Tier 2 requirements.

Note: For Energy Budget calculations high-rise residential and hotel/motel buildings are considered nonresidential buildings.

SECTION A4.204
PERFORMANCE APPROACH FOR ADDITIONS AND ALTERATIONS

A4.204.1 Energy Efficiency. Additions and alterations to low-rise residential buildings shall comply with Sections A4.204.1.1 and either A4.204.1.2.1 or A4.204.1.2.2.

A4.204.1.1 Prerequisites. Each of the following efficiency measures is required for all applicable components of the addition or alteration building project.

A4.204.1.1.1 Lighting. Each dwelling unit shall comply with all applicable requirements of Title 24, Part 6 Section 150.0(k), except as indicated below.

1. All permanently installed new indoor lighting shall be high efficacy as defined in and controlled as required by Title 24, Part 6 Section 150.0(k).

2. All permanently installed new lighting in bathrooms is controlled by a vacancy sensor.

   Exception: One high efficacy luminaire with total lamp wattage rated to consume no greater than 26 watts of power is not required to be controlled by a vacancy sensor.

3. Every new room which does not have permanently installed lighting shall have at least one switched receptacle installed.

4. Permanently installed new night lights shall comply with Title 24, Part 6 Section 150.0(k)1E.

5. Lighting integral to new exhaust fans shall comply with Title 24, Part 6 Section 150.0(k)1F.

6. For single family residences, all permanently installed new outdoor lighting is high efficacy as defined in Title 24, Part 6 Section 150.0(k) and is controlled as required in Title 24, Part 6 Section 150.0(k)9Ai-iii. For multi-family residential buildings, all permanently installed new outdoor lighting for private patios, entrances, balconies, and porches is high efficacy as defined in Title 24, Part 6 Section 150.0(k) and is controlled as required in Title 24, Part 6 Section 150.0(k)9Ai-iii.

A4.204.1.2 Performance Standard. Additions or alterations to buildings shall comply with one of the advanced efficiency levels indicated below.

A4.204.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the number of mechanical systems added or modified. Space heating systems, space cooling systems and water heating systems are each separate mechanical systems for the purpose of complying with this requirement. If the addition or alteration changes only the envelope with no change to any mechanical system, then no additional performance requirements above Title 24, Part 6 are required. Buildings complying with Section A4.205 are deemed to meet the Tier 1 requirements.

1. For one and only one mechanical system: No greater than 95 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.

2. For two or more mechanical systems: No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.

A4.204.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the number of mechanical systems added or modified. Space heating systems, space cooling systems and water heating systems are each separate mechanical systems for the purpose of complying with this requirement. If the addition or alteration changes only the envelope with no change to any mechanical system, then no additional performance requirements above Title 24, Part 6 are required. Buildings complying with Section A4.205 are deemed to meet the Tier 2 requirements.

1. For one and only one mechanical system: No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.

2. For two or more mechanical systems: No greater than 85 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.

Note: For Energy Budget calculations high-rise residential and hotel/motel buildings are considered nonresidential buildings.

SECTION A4.205
ZERO NET ENERGY: ELECTIVE PERFORMANCE APPROACH

A4.205.1 Zero Net Energy (ZNE). ZNE low-rise residential buildings shall comply with all Tier 2 requirements and have a Design Rating of zero or less. The ZNE level of energy efficiency requires that all energy expected to be consumed, as determined by the Design Rating and calculated by the Compliance Software, is offset by an on-site

renewable energy system.

APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES

DIVISION A4.6 – TIER 1 AND TIER 2

SECTION A4.601
GENERAL

A4.601.4.2 Prerequisite and elective measures for Tier 1.

2. From Division A4.2, Energy Efficiency.

   2.1 For newly constructed low-rise residential buildings, comply with the energy efficiency requirements in Section A4.203.1.1 and Section A4.203.1.2.1.

   2.2 For additions and alterations to low-rise residential buildings, comply with the energy efficiency requirements in Section A4.204.1.1 and Section A4.204.1.2.1.

A4.601.5.2 Prerequisite and elective measures for Tier 2.

2. From Division A4.2, Energy Efficiency.

   2.1 For newly constructed low-rise residential buildings, comply with the energy efficiency requirements in Section A4.203.1.1 and Section A4.203.1.2.2.

   2.2 For additions and alterations to low-rise residential buildings, comply with the energy efficiency requirements in Section A4.204.1.1 and Section A4.204.1.2.2.

APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES

DIVISION A4.6 – TIER 1 AND TIER 2

SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives [1]		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	☐ All	☐ All	☐ All
ENERGY EFFICIENCY						
General						
4.201.1 Low-rise residential buildings meet or exceed the requirements of the California Energy Standards.	☒			☐	☐	☐
Performance Approach for Newly Constructed Buildings						
A4.203.1.1.1 A Design Rating for the Proposed Design Building is included in the Certificate of Compliance documentation.		☒[2]	☒[2]	☐	☐	☐
A4.203.1.1.2 QII procedures specified in Title 24, Part 6 are completed.		☒[2]	☒[2]	☐	☐	☐

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives [1]		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	☐ All	☐ All	☐ All
A4.203.1.1.3 All permanently installed lighting is high efficacy and has required controls.		☒[2]	☒[2]	☐	☐	☐
A4.203.1.2.1 The Energy Budget is no greater than 85 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building and total net building electricity consumption of the Proposed Design Building as determined by the Design Rating is no greater than 10,000 kWh per year.		☒[2]		☐	☐	☐
A4.203.1.2.2 The Energy Budget is no greater than 70 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building and total net building electricity consumption of the Proposed Design Building as determined by the Design Rating is no greater than 8,500 kWh per year.			☒[2]	☐	☐	☐
Performance Approach for Additions and Alterations						
A4.204.1.1.1 All new permanently installed lighting is high efficacy and has required controls.		☒[2]	☒[2]	☐	☐	☐
A4.204.1.2.1 When one and only one mechanical system is added or modified, the Energy Budget is no greater than 95 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building. When two or more mechanical systems are added or modified, the Energy Budget is no greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building.		☒[2]		☐	☐	☐
A4.204.1.2.2 When one and only one mechanical system is added or modified, the Energy Budget is no greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building. When two or more mechanical systems are added or modified, the Energy Budget is no greater than 85 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building.			☒[2]	☐	☐	☐
A4.205.1 Zero Net Energy (ZNE) low-rise residential buildings comply with all Tier 2 requirements and have a Design Rating of zero or less. All energy expected to be consumed, as determined by the Design Rating and calculated by the Compliance Software, is offset by an on-site renewable energy system.				☐	☐	☐

1. Green building measures listed in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7.
2. Required prerequisite for this Tier.

APPENDIX A5
NONRESIDENTIAL VOLUNTARY MEASURES

DIVISION A5.2 – ENERGY EFFFICIENCY

SECTION A5.203
PERFORMANCE APPROACH

A5.203.1 Energy Efficiency. Nonresidential, high-rise residential and hotel/motel buildings that include indoor lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and either A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings as well as additions and alterations are included in the scope of these sections. Buildings permitted without indoor lighting or mechanical systems shall comply with Section A5.203.1.1.1 but are not required to comply with Sections A5.203.1.1.2 or A5.203.1.2.

A5.203.1.1 Prerequisites. Each of the following efficiency measures is required for all applicable components of the building project.

A5.203.1.1.1 Outdoor Lighting. Newly installed outdoor lighting power shall be no greater than 90 percent of the Title 24, Part 6 calculated value of allowed outdoor lighting power.

A5.203.1.1.2 Service Water Heating in Restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater shall install a solar water-heating system with a minimum solar savings fraction of 0.15.

Exceptions:

1. Buildings with a natural gas service water heater with a minimum of 95 percent thermal efficiency.

2. Buildings where greater than 75 percent of the total roof area has annual solar access that is less than 70 percent. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

A5.203.1.2 Performance Standard. Buildings shall comply with one of the advanced efficiency levels indicated below.

A5.203.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building, addition or alteration does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required.

1. For building projects that include indoor lighting or mechanical systems, but not both: No greater than 95 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission; or

2. For building projects that include indoor lighting and mechanical systems: No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.

A5.203.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building, addition or alteration does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required.

1. For building projects that include indoor lighting or mechanical systems, but not both: No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission; or

2. For building projects that include indoor lighting and mechanical systems: No greater than 85 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.

Note: For Energy Budget calculations high-rise residential and hotel/motel buildings are considered nonresidential buildings.

APPENDIX A5

NONRESIDENTIAL VOLUNTARY MEASURES

DIVISION A5.6 – VOLUNTARY TIERS

SECTION A5.601
CALGREEN TIER 1 AND TIER 2

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A5.601.2.2 Energy Performance. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

A5.601.2.3 Tier 1. Comply with the energy efficiency requirements in Section A5.203.1.1 and Section A5.203.1.2.1.

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A5.601.3.2 Energy Performance. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

A5.601.3.3 Tier 2. Comply with the energy efficiency requirements in Section A5.203.1.1 and Section A5.203.1.2.2.

APPENDIX A5
NONRESIDENTIAL VOLUNTARY MEASURES

DIVISION A5.6 – VOLUNTARY TIERS

SECTION A5.602
NONRESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST

APPLICATION CHECKLIST FOR BSC	MANDATORY	VOLUNTARY	
		CALGreen Tier 1	CALGreen Tier 2
Energy Efficiency			
Performance Requirements			
5.201.1 Scope. The California Energy Commission will continue to adopt mandatory building standards.[1]	☒		
A5.203.1.1.1 Outdoor Lighting. Newly installed outdoor lighting power shall be no greater than 90 percent of the Title 24, Part 6 calculated value of allowed outdoor lighting power.		☒	☒
A5.203.1.1.2 Service Water Heating in Restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater shall install a solar water-heating system with a minimum solar savings fraction of 0.15.		☒	☒

APPLICATION CHECKLIST FOR BSC	MANDATORY	VOLUNTARY	
		CALGreen Tier 1	CALGreen Tier 2
A5.203.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building, addition or alteration does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required. ~~1.~~3. **For building projects that include indoor lighting or mechanical systems, but not both:** No greater than 95 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission; or ~~2.~~4. **For building projects that include indoor lighting and mechanical systems:** No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.		☒	
A5.203.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building, addition or alteration does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required. ~~1.~~3. **For building projects that include indoor lighting or mechanical systems, but not both:** No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission; or ~~2.~~4. F**or building projects that include indoor lighting and mechanical systems:** No greater than 85 percent of the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.			☒

These measures are currently required elsewhere in statute or in regulation.