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CALIFORNIA ENERGY COMMISSION

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**NINE-POINT-CRITERIA ANALYSIS****ADOPTED BUILDING STANDARDS
OF THE CALIFORNIA ENERGY COMMISSION:****CALIFORNIA CODE OF REGULATIONS,
TITLE 24, PART 11 (2019 CALIFORNIA GREEN BUILDING STANDARDS CODE)****CALIFORNIA ENERGY COMMISSION
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Health and Safety Code section 18930, subdivision (a), requires that building standards submitted to the California Building Standards Commission (CBSC) for approval be accompanied by an analysis which will, to the satisfaction of the CBSC, justify their approval. This document is the required analysis for the California Energy Commission's proposed updates to its energy efficiency standards in Part 11, Appendix A4 Division A4.2 and Appendix A5 Division A5.2 of Title 24. The 9-Point Criteria Analysis for the Energy Commission's amendments to the mandatory standards in Parts 1 and 6 (the California Energy Code) are being submitted as part of a separate rulemaking package.

Summary of the Adopted Standards

The Green Building Standards in Part 11 of Title 24 (also known as the CALGreen Code or CALGreen Standards) are composed of several chapters, some of which apply to all buildings and all types of construction, while others apply to specified subsets. Part 11 is further divided into mandatory measures that must be met by a qualifying building (primarily specifying the other Parts and Sections of Title 24 that apply) and voluntary measures that are not mandatory unless adopted by a local jurisdiction. The Energy Commission is responsible for adopting both mandatory and voluntary energy provisions in Part 11 of Title 24 with other state agencies being responsible for approving and adopting the other portions of Part 11. The Energy Commission is responsible for adopting the energy provisions found in the following sections of Part 11:

- Chapter 4, Division 4.2, Section 4.201, which states that the Energy Commission will adopt mandatory standards for residential green buildings through its adoption of Part 6 of Title 24.
- Chapter 5, Division 5.2, Section 5.201, which states that the Energy Commission will adopt mandatory standards for nonresidential green buildings through its adoption of Part 6 of Title 24.

- Appendix A4, Division A4.2, which describes the voluntary energy provisions for residential buildings that may only become mandatory when adopted by a local jurisdiction.
- Appendix A5, Division A5.2, which describes the voluntary energy provisions for nonresidential buildings that may only become mandatory when adopted by a local jurisdiction.

The Energy Commission adopted deletions, additions, and amendments solely to the voluntary provisions in Appendices A4 and A5. These voluntary provisions apply to residential, nonresidential, high-rise residential, and hotel and motel buildings.

The Energy Commission has a separate process which allows local adoption of energy standards that are more stringent than the statewide Standards. (Public Resources Code, § 25402.1, subd. (h); Cal. Code Regs., tit. 24, pt. 1, ch. 10, §§ 10-106, 10-110.)

The Energy Commission adopted these standards under the authority established by the Warren-Alquist State Energy Resources Conservation and Development Act, in the following sections of the Public Resources Code: 25218, subdivision (e), 25402, 25402.1, 25402.4, 25402.5, 25402.8, 25910, and 25943. The standards were also adopted under the authority in the Building Standards Law, in Health and Safety Code sections 18930.5 and 18941.5.

The standards implement, interpret and make specific the Warren-Alquist Act, in the following sections of the Public Resources Code: 25402, subdivisions (a)-(c), 25402.1, 25402.4, 25402.5, 25402.5.4, 25402.8, 25910, and 25943. The standards also implement and interpret the Building Standards Law, in Health and Safety Code sections 18930.5 and 18941.5.

Prior to the start of the formal rulemaking, the Energy Commission filed with the CBSC on December 18, 2017, the following:

- A Notice of Proposed Action (NOPA), which described the proceeding, summarized the proposed Standards, and explained how interested persons could participate;
- An Economic and Fiscal Analysis (Form 399);
- An Initial Statement of Reasons (ISOR), which presented the rationales for the Standards; and
- Proposed Express Terms (45-Day Language) of the 2019 CALGreen Standards.

The CBSC subsequently submitted the necessary materials to the Office of Administrative Law on January 9, 2018. On that same date, the Energy Commission published the above referenced documents on the Energy Commission website. OAL

published the NOPA in the California Regulatory Notice Register on January 19, 2018, beginning the formal rulemaking phase, and at that time the Commission began to receive comments on the proposed CALGreen Standards.

In response to public comments, the Energy Commission may publish revisions to the 45-Day Language. Those revisions, called 15-Day Language, are also made available for public comment.

The Energy Commission will present the proposed 2019 CALGreen Standards to the Green Code Advisory Committee on **[INSERT DATE], 2018**. The Committee will review the technical merit of building standards proposed by the Energy Commission, and provide its recommendations to the CBSC.

Adoption of the proposed 2019 Building Energy Efficiency Standards occurs at a publicly noticed public hearing. Once adopted, the 2019 Standards become effective on January 1, 2020, if they are approved by the California Building Standards Commission.

1) The proposed building standards do not conflict with, overlap, or duplicate other building standards.

There is no overlap or duplication with other regulations because the Energy Commission is the only state agency authorized to set efficiency standards for buildings, and for the same reason there should be no conflict with other building standards (i.e., no situation in which it is impossible to comply with both an Energy Commission standard and another building standard). For example, considering the lighting energy efficiency standards and the electrical code:

- There are no conflicts between the Energy Code and the Electrical Code on lighting requirements. The Electrical Code requires illumination to be provided for all working spaces, whereas the Energy Code has requirements on the allowable maximum amount of lighting power to be used for the building space and also how the lighting system shall be controlled and switched.
- There are no conflicts between the Energy Code and Electrical Code on receptacle requirements. The Electrical Code contains requirement of the whereabouts of receptacles whereas the Energy Code contains the requirements for controlled receptacles for spaces including private offices, open office areas, reception lobbies, conference rooms, kitchenette in office spaces, copy rooms, hotel and motel guest rooms.
- There are no conflicts between the Energy Code and Building Code on egress lighting requirements. Other parts of the Building Code contain means of egress requirements and the Energy Code contains express allowance for means of egress for lighting area controls and shut-OFF controls.

Additionally, Article 1, Section 10-101(b), of the Standards explicitly states that nothing in them lessens any necessary qualifications or responsibilities of licensed or registered building professionals or other designers or builders, or the duties of enforcement agencies that exist under state or local law.

Finally, the California Energy Commission is considering the adoption of deletions, additions, and amendments solely to the voluntary provisions in Appendices 4 and 5 of Part 11. These voluntary provisions in and of themselves do not have the force and effect of law. Local jurisdictions adopting these voluntary provisions as mandatory local energy efficiency standards shall submit the required application and receive the required approval of the California Energy Commission in compliance with Title 24, Part 1, Section 10-106. Prior to enforcement, local jurisdictions adopting these or other provisions as mandatory local energy efficiency standards shall submit a required application package and receive the required approval of the California Energy Commission in compliance with Title 24, Part 1, Section 10-106.

2) The proposed building standards are within the parameters established by enabling legislation and are not expressly within the exclusive jurisdiction of another agency.

The Energy Commission has statutory authority under Public Resources Code sections 25213, 25402, 25402.1, 25402.4, 25402.5, 25402.8, and 25910 to promulgate and update energy- and water-efficiency standards for residential and nonresidential buildings, including both newly constructed buildings and additions and alterations to existing buildings. The Energy Commission is the only state agency with the authority to set efficiency standards for buildings. The Building Standards Law allows agencies in addition to the Building Standards Commission to adopt CalGreen provisions. (Health and Safety Code, §§ 18930.5, 18941.5)

3) The public interest requires the adoption of the building standards.

The Building Standards Law states that the “public interest includes, but is not limited to, health and safety, resource efficiency, fire safety, seismic safety, building and building system performance, and consistency with environmental, public health, and accessibility statutes and regulations.” (Health & Safety Code, § 18930, subd. (a)(3).) The 2019 CALGreen voluntary efficiency provisions are in the public interest, increase resource efficiency, building and building system performance, and are consistent with environmental, public health, and accessibility statutes and regulations.

When the Legislature created the Energy Commission over 40 years ago, it stated that the California economy, and indeed the well-being of all California citizens, depends on an adequate, reasonably-priced, and environmentally-sound supply of energy.¹ The Legislature also stated that growth in electricity demand has strained the reliability of California’s electricity system, created potential environmental stresses, and

¹ Pub. Resources Code, § 25001; see also § 25300, subd. (a).

contributed to a substantial rise in electricity prices.² Finally, the Legislature recognized that improvements in energy efficiency are among the most cost-effective and environmentally-friendly methods to help bring demand and supply into balance.³ These facts remain as true today as they were then, and they make clear that adoption of the 2019 CALGreen voluntary efficiency provisions is required for the public interest.

The 2019 CALGreen voluntary efficiency provisions will continue to improve upon the existing mandatory Building Energy Efficiency Standards and continue to address policy directives that influenced the past Standards updates. These policy directives include:

- The 2003 Energy Action Plan (EAP) which established a “loading order” of energy resources and strategies to address the State’s growing energy demands (through conservation and energy efficiency to minimize energy demand first, followed by electricity generation from renewable energy resources and distributed generation).⁴
- The Climate Action Initiative (Executive Order S-3-05, June 2005) which sets greenhouse gas (GHG) emission reduction targets for California, as follows: by 2020, reduce GHG emissions to 1990 levels, and by 2050, reduce GHG emissions to 80 percent below 1990 levels.
- The Global Warming Solutions Act of 2006, (Assembly Bill 32, Núñez, Stats. 2006, Ch. 488) codified the 2020 GHG emission reduction target into law. AB 32 requires the Air Resources Board (ARB) to report and verify statewide greenhouse gas emissions. The Act further requires that the ARB, in coordination with other State agencies, achieve the maximum technologically feasible and cost-effective GHG emission reductions, setting the stage for the State’s transition to a sustainable, clean-energy future. Improving the energy efficiency of buildings is the single most important activity to reduce greenhouse gas emissions in the electricity and natural gas sectors. Thus expanding and strengthening building standards is a key recommendation of the Climate Change Proposed Scoping Plan.⁵ Proposed strategies include zero net energy buildings, more stringent building codes and appliance-efficiency standards, broader standards for new types of appliances and for water efficiency, improved compliance and enforcement of existing standards, and voluntary efficiency and green building targets beyond mandatory codes. In 2016, Senate Bill 32, Chapter 249, codified the goal to reduce the State’s greenhouse gas emissions to 40 percent below 1990 levels by 2030.⁶

² See Public Resources Code, § 25002.

³ See Public Resources Code, §§ 25001, subds. (a) & (b), 25007.

⁴ http://www.energy.ca.gov/energy_action_plan/2003-05-08_ACTION_PLAN.PDF.

⁵ http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

⁶ See Health and Safety Code § 38566.

- The Energy Commission's 2011 Integrated Energy Policy Report (IEPR) includes many greenhouse gas emission reduction and energy-efficiency strategy recommendations.⁷ Energy efficiency is identified as the first strategy for accomplishing significant greenhouse gas reduction targets because it is a fast and inexpensive solution. The 2011 IEPR reiterated the statewide goal that new building standards achieve zero net energy levels by 2020 for residences and by 2030 for commercial buildings.
- The California Public Utility Commission's (CPUC) California Long Term Energy Efficiency Strategic Plan, endorses the Energy Commission's zero net energy goals for all newly-constructed homes by 2020, and 2030 for all newly-constructed commercial buildings.⁸ The Investor Owned Utilities (IOUs) authored the plan under the direction of the CPUC, and these utilities are now developing public goods incentive programs for the 2013-2015 program period that support the implementation of this strategic plan.
- Governor Brown's Clean Energy Jobs Plan establishes the priorities of his Administration to aggressively pursue clean energy jobs in California through renewable energy and energy efficiency, extending the success of programs established in his first Administration and the ensuing 30 years, which have triggered innovation and creativity in the market. The Clean Energy Jobs Plan calls for the development of 12,000 megawatts of localized, renewable electric generation by 2020, new energy efficiency standards for buildings to achieve dramatic energy savings, creating a path for making newly constructed residential and commercial buildings "zero net energy" through high levels of energy efficiency combined with onsite renewable electric generation, stronger appliance standards for lighting, consumer electronics and other products, in conjunction with increased public education and enforcement efforts so the gains promised by the efficiency standards are in fact realized.⁹
- The Air Resource Board, Energy Commission, CPUC, the California Environmental Protection Agency (CalEPA) and the Independent System Operator collaborated in 2008 to develop California's Clean Energy Future Vision, accompanied by an implementation plan and roadmap. California's Clean Energy Future underscored the need to continue investing in energy efficiency and clean technologies to maintain California's leadership as the most energy efficient and forward-thinking state in the nation. The document integrates energy efficiency with the monumental effort required to attain California's renewable energy and other environmental objectives. California's Clean Energy Future re-confirmed energy efficiency as California's top priority electric generation resource, and identified renewable energy as the electric generation supply-side

⁷ <http://www.energy.ca.gov/2011publications/CEC-100-2011-001/CEC-100-2011-001-CMF.pdf>.

⁸ http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.

⁹ http://gov.ca.gov/docs/Clean_Energy_Plan.pdf.

resource of choice. The document identified the major two goals for energy efficiency as: 1) achieving zero net energy in newly constructed residential and commercial buildings, and 2) decreasing energy consumption by 30 to 70 percent in existing residential and commercial buildings. The Building Energy Efficiency Standards play a major role in achieving these goals.

- Executive Order B-18-12, April 25, 2012¹⁰ and its accompanying Green Building Action Plan¹¹ which set more stringent energy efficiency, renewable on-site generation, and greenhouse gas emission and water consumption reduction requirements for State agencies and State buildings as follows:
 - State agencies, departments, and other entities under direct executive authority must take actions to reduce entity-wide greenhouse gas emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline.
 - New State buildings and major renovations beginning design after 2025 must be constructed as Zero Net Energy facilities with an interim target for 50% of new facilities beginning design after 2020 to be Zero Net Energy.
 - State agencies shall take measures toward achieving Zero Net Energy for 50% of the square footage of existing state-owned building area by 2025.
 - State agencies must continue taking measures to reduce grid-based energy purchases for State-owned buildings by at least 20% by 2018, as compared to a 2003 baseline, and reduce other non-building, grid-based retail energy purchases by 20% by 2018, as compared to a 2003 baseline.
 - Proposed new or major renovation of State buildings larger than 10,000 square feet must use clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies, if economically feasible.
 - New and existing State buildings must incorporate building commissioning to facilitate improved and efficient building operation.
 - State agencies must identify and pursue opportunities to provide electric vehicle charging stations, and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings.
 - State agencies must reduce overall water use at the facilities they operate by 10% by 2015 and by 20% by 2020, as measured against a 2010 baseline.

¹⁰ <http://gov.ca.gov/news.php?id=17508>.

¹¹ http://gov.ca.gov/docs/Green_Building_Action_Plan_B.18.12.pdf.

- The Clean Energy and Pollution Reduction Act of 2016 (Senate Bill 350, Chapter 547, October 7, 2015) directed the Energy Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. The bill also required that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50% by December 31, 2030.¹²

All of these enactments and policy statements demonstrate that the energy efficiency advances that will be produced by the 2019 CALGreen voluntary efficiency provisions are crucial to the state's energy reliability and economic and environmental health.

4) The proposed building standards are not unreasonable, arbitrary, unfair, or capricious, in whole or in part.

The 2019 CALGreen voluntary efficiency provisions are not unreasonable, arbitrary, unfair, or capricious, in whole or in part. As discussed in section 3 of this Analysis, the Building Energy Efficiency Standards respond to the mandates of the Warren-Alquist Act, the Global Warming Solutions Act of 2006, California's Energy Action Plan 2008 Update, the California Energy Efficiency Long-Term Strategic Plan, the 2011 Integrated Energy Policy Report, the California's Clean Energy Futures Initiative, Governor Brown's Clean Energy Jobs Plan and the Clean Energy and Pollution Reduction Act of 2016.

The express terms of the 2019 CALGreen voluntary efficiency provisions and the record of the rulemaking proceeding through which the language is adopted shows that this criterion is met.

5) The cost to the public is reasonable, based on the overall benefit to be derived from the building standards.

The Energy Commission is considering the adoption of deletions, additions, and amendments solely to the voluntary provisions in Appendices A4 and A5 of Part 11. These voluntary provisions in and of themselves do not have the force and effect of law. Local jurisdictions adopting these voluntary provisions as mandatory local energy efficiency standards are required to submit an application and receive approval of the California Energy Commission prior to enforcement. CALGreen Chapter 1, Section 101.7.1 notes that the city, county, or city and county shall obtain California Energy Commission approval for any energy related ordinances consistent with Public Resources Code (PRC) Section 25402.1(h)(2) and Title 24, Part 1, Section 10-106.

¹² See Public Resources Code § 25310.

The noted PRC Section 25402.1(h)(2) states:

The enforcement of city or county energy conservation or energy insulation standards, whenever adopted, with regard to residential and nonresidential buildings on which actual site preparation and construction have not commenced prior to the effective date of rules and regulations adopted pursuant to subdivisions (a) and (b) of Section 25402 and this section, if the city or county files the basis of its determination that the standards are cost effective with the commission and the commission finds that the standards will require the diminution of energy consumption levels permitted by the rules and regulations adopted pursuant to those sections. If, after two or more years after the filing with the commission of the determination that those standards are cost effective, there has been a substantial change in the factual circumstances affecting the determination, upon application by any interested party, the city or county shall update and file a new basis of its determination that the standards are cost effective. The determination that the standards are cost effective shall be adopted by the governing body of the city or county at a public meeting. If, at the meeting on the matter, the governing body determines that the standards are no longer cost effective, the standards shall, as of that date, be unenforceable and no building permit or other entitlement shall be denied based on the noncompliance with the standards.

Title 24, Part 1, Section 10-106 requires:

10-106. Locally adopted energy standards.

- (a) Requirements. Local governmental agencies may adopt and enforce energy standards for newly constructed buildings, additions, alterations, and repairs provided the Commission finds that the standards will require buildings to be designed to consume less energy than permitted by Part 6. Such local standards include, but are not limited to, adopting the requirements of Part 6 before their effective date, requiring additional energy conservation measures, or setting more stringent energy budgets. Local adoption of the requirements of Part 6 before their effective date is a sufficient showing that the local standards meet the requirements of this section and Section 25402.1(f)(2) of the Public Resources Code; in such a case only the documentation listed in Section 10-106(b), and a statement that the standards are those in Part 6, need be submitted.
- (b) Documentation application. Local governmental agencies wishing to enforce locally adopted energy conservation standards shall submit four copies of an application with the following materials to the Executive Director:
 - 1. The proposed local energy standards.
 - 2. A study with supporting analysis showing how the local agency determined energy savings.
 - 3. A statement that the local standards will require buildings to be designed to consume less energy than permitted by Part 6.
 - 4. The basis of the agency's determination that the standards are cost effective.

In summary, local governmental agencies may adopt and enforce energy standards for newly constructed buildings, additions, alterations and repairs, provided the Energy Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by Part 6. Such local standards include, but are not limited to, adopting the requirements of Part 6 before their effective date, adopting CALGreen voluntary provisions in whole or in part, requiring additional energy conservation measures, or setting more stringent energy budgets. Prior to enforcement, local jurisdictions adopting mandatory local energy efficiency standards shall submit a required application package and receive the required approval of the California Energy Commission in compliance with Title 24, Part 1, Section 10-106.

The number of local jurisdictions that may choose to adopt CALGreen voluntary provisions is unknown and unknowable, as is the extent to which any local jurisdictions choose to adopt the specific language provided by the voluntary appendices (as they may be adopted in whole or in part by the local jurisdiction, and the local jurisdiction may also adopt efficiency measures not specified in these provisions). Therefore, to the extent that the voluntary provisions do not mandate but nonetheless encourage adoption of efficiency ordinances by local jurisdictions, the effective costs and benefits associated with the CALGreen provisions are unknown and unknowable. However, the local agency approval processes and requirements insure that whatever is adopted will be cost effective for the community.

6) The proposed building standards are not unnecessarily ambiguous or vague, in whole or in part.

The Energy Commission has proposed many changes in the Draft Express Terms that ensure clarity and prevent ambiguity, and anticipates making other changes throughout the rulemaking proceeding to improve the proposed language. Proposals or comments suggesting further clarity improvements are incorporated into the CALGreen Standards where staff determines that they provide a benefit to clarity without otherwise changing the application or effect of the regulatory language. The Energy Commission's assessments of applicable comments are discussed in the Comments & Responses section of the Final Statement of Reasons prepared following the formal public comment period(s).

7) The applicable national specifications, published standards, and model codes have been incorporated into the proposed Building Standards as required by the State Building Standards Law, where appropriate.

There are no federal laws applicable to nonfederal buildings in their entirety, so nothing in this realm could have been incorporated into the 2019 CALGreen voluntary provisions. However, the adopted CALGreen Standards do incorporate (as previous editions of the Standards have for decades incorporated) federal energy standards for particular appliances that may be installed in buildings. In addition, the Energy Commission included model and national codes and specifications in the 2019 CALGreen voluntary provisions wherever appropriate.

Staff anticipates receiving comments during the rulemaking proceeding that address the incorporation of various specifications, standards, and codes into the proposed CALGreen Standards. The Energy Commission's assessments of applicable comments are discussed in the Comments & Responses section of the Final Statement of Reasons prepared following the formal public comment period(s).

8) The format of the proposed building standards is consistent with that adopted by the Building Standards Commission.

The 2019 CALGreen voluntary provisions continue to use the format of the other building standards in the State Building Code.

9) The proposed building standards, if they promote fire and panic safety, as determined by the State Fire Marshal, have the written approval of the State Fire Marshal.

The Energy Commission will obtain the written approval of the State Fire Marshal and determination that the proposed 2019 CALGreen voluntary provisions do not promote fire or panic safety.