

CALIFORNIA ENERGY COMMISSION 1516 Ninth Street Sacramento, California 95814Main website: www.energy.ca.gov**FINAL STATEMENT OF REASONS
UPDATED INFORMATIVE DIGEST****PROPOSED BUILDING STANDARDS
OF THE CALIFORNIA ENERGY COMMISSION:
CALIFORNIA CODE OF REGULATIONS, TITLE 24,
PART 11 (CALIFORNIA GREEN BUILDING (CALGREEN) STANDARDS CODE)****CALIFORNIA ENERGY COMMISSION DOCKET NUMBER 12-BSTD-1:
2013 BUILDING ENERGY EFFICIENCY STANDARDS****SUBMITTED TO THE CALIFORNIA BUILDING STANDARDS COMMISSION
NOVEMBER 19, 2012****Introduction**

This Final Statement of Reasons ("FSOR") and Updated Informative Digest (UID) fulfills the requirements of California's Administrative Procedure Act¹ for the California Energy Commission's proposed amendments to its voluntary building energy efficiency standards, which would go into effect on January 1, 2014, following approval by the California Building Standards Commission.

The voluntary standards are called the "2013 Energy Provisions of CALGreen". They are also known as the California Green Building Standards Code or CALGreen, and are codified in Part 11 of Title 24 of the California Code of Regulations.

I. Final Statement of Reasons**A. A Brief History of the Energy Commission's Building Standards**

The Warren-Alquist Act gives specific directives to the California Energy Commission to, among other things, develop and adopt building energy and water efficiency standards. The Act states what the standards are to address, what criteria are to be met in developing standards, and what implementation tools, aids, and technical assistance are to be provided.² Since adopting its first building energy efficiency standards in 1976, the Commission has regularly updated the standards in conjunction with the publication by the Building Standards Commission (BSC) of all the State's building codes, typically every three years. The updates incorporate the most advanced developments in energy conservation (e.g., new lighting technologies and new types of roofs that reflect unneeded heat) to ensure that new construction in California will be as energy-efficient as possible, consistent with the requirement that the standards be cost-effective for

¹ Government Code § 11340 et seq.

² Public Resources Code § 25000 et seq.; §§ 25402(a)-(b), 25402.1 - 25402.8.

consumers. Today, the Standards contain energy efficiency and, as recently required by statute, water efficiency requirements for newly constructed buildings, additions to existing buildings, alterations to existing buildings, and, in the case of nonresidential buildings, repairs to existing buildings.

The Energy Commission's building energy efficiency standards are known as the California Energy Code, and are codified in two parts of Title 24 of the California Code of Regulations. Administrative regulations, such as how the standards' requirements are integrated with local governments' building permit processes, are in Part 1 of Title 24, and the substantive requirements for building construction are in Part 6 of Title 24.

The 2013 Energy Provisions of CALGreen are contained in Part 11 of Title 24 of the California Code of Regulations. These voluntary standards go beyond the minimum allowable standards in the Energy Code. They were developed and adopted in response to policy directives from the Governor. (See *CALGreen, The 2010 California Green Building Standards Code Are you ready?*, pp. 2-3, available at: <http://www.documents.dgs.ca.gov/bsc/CALGreen/The-CALGreen-Story.pdf>.) Some of the aspects adopted here are extensions of certain aspects of the Energy Code and were included in the larger overall development process for the 2013 update to the Energy Code. Others restore provisions that were previously in other sections of CALGreen, that had been adopted by the Building Standards Commission and the Department of Housing and Community Development. As part of the Building Standards Commission's comprehensive update of CALGreen and other aspects of the California Building Code, these provisions are essentially being moved to the sections of CALGreen administered by the Energy Commission. In sum, the 2013 Energy Provisions of CALGreen promote sustainable building practices that are more protective of the environment than the minimum allowable building energy efficiency standards contained in the Energy Code.

B. How the Standards Work

The standards in Part 11 are divided into requirements for residential and nonresidential buildings. Each category is further divided into mandatory and voluntary sections. The mandatory building energy efficiency standards in Part 11 are simply a reference to the minimum allowable building energy efficiency standards in the Energy Code. In other words, they are identical to those standards.

The voluntary building energy efficiency standards include prerequisites, which are efficiency measures that are recommended to be installed in any project striving to meet advanced levels of energy efficiency, and a performance approach for Tier 1 and Tier 2 advanced levels of energy efficiency. The voluntary building energy efficiency standards are applicable to additions and alterations to existing buildings, as well as for newly constructed buildings.

Although voluntary in nature, the standards in Part 11 have the potential to reduce the use of energy in buildings. If the measures are voluntarily implemented by builders or adopted in local building codes by a local jurisdiction, they will increase the energy efficiency and reduce the energy consumption of the building. Any local jurisdiction proposing to adopt these measures into its local building code must first seek approval from the Energy Commission³. One of the requirements for approval is demonstration of cost-effectiveness for the proposed local building code.

C. Summary of the Changes Proposed in This Rulemaking Proceeding

The existing text for the energy efficiency divisions of the Part 11 voluntary appendices has been entirely replaced by the 2013 Energy Provisions of CALGreen which include a performance

³ California Code of Regulations, Title 24, Part 1 § 10-106; Public Resources Code § 25402.1 subdivision (h)(2).

standard and a limited number of prerequisites. As in previous editions of CALGreen, the residential and nonresidential performance standards each include two levels (specified as “Tier 1” and “Tier 2”) of advanced energy efficiency compared to the requirements in the Energy Code. The 2013 Energy Provisions of CALGreen include, for the first time, prerequisites, which are voluntary energy efficiency measures recommended for installation in any building project striving to meet the Tier 1 or Tier 2 levels of advanced energy efficiency. The 2013 Energy Provisions of CALGreen, include, for the first time, requirements for additions and alteration projects to existing buildings. The structure and organization of these measures makes it easier for local jurisdictions to adopt them in local building codes. Additionally, if adopted in local building codes by a local jurisdiction, these changes will minimize the energy use of buildings and make significant strides toward the state’s zero net energy building goals.

D. FSOR Analyses Required by the Administrative Procedure Act

(1) Update of the Information Contained in the Initial Statement of Reasons.

- (i) The Specific Purpose of Each Adoption, Amendment, or Repeal; the Problem the Energy Commission Intends to Address; and the Rationale for the Energy Commission’s Determination Is Reasonably Necessary to Carry Out the Purpose and Address the Problem for Which It Is Proposed.

The Initial Statement of Reasons (“ISOR”) describes, among other things, the purposes of the initially-proposed voluntary standards (the “45-Day Language”), the problems they were designed to address, and the necessity for their adoption to carry out their purposes and address the specified problems.⁴ As a result of the oral and written comments made on the 45-Day Language during the Energy Commission’s extensive public review process, many changes were made to the 45-Day Language; those modifications were published in 15-Day Language and most were adopted by the Energy Commission.

This section of the FSOR re-states and elaborates upon the ISOR’s material on the 45-Day Language and adds descriptions of the purposes, of problems addressed, and rationales of the 15-Day Language.

A. The Problem the Energy Commission Intends to Address, and the Purpose, Rationale, and Necessity of the Proposed Amendments in General

The Legislature has found that

electrical energy is essential to the health, safety and welfare of the people of this state and to the state economy, and that it is the responsibility of state government to ensure that a reliable supply of electrical energy is maintained at a level consistent with the need for such energy for protection of public health and safety, for promotion of the general welfare, and for environmental quality protection.

[T]he present rapid rate of growth in demand for electric energy is in part due to wasteful, uneconomic, inefficient, and unnecessary uses of power and a continuation of this trend will result in serious depletion or irreversible commitment of energy, land and water resources, and potential threats to the state's environmental quality.

(Pub. Resources Code, §§ 25001, 25002.) Accordingly,

⁴ See Initial Statement of Reasons for Proposed Building Standards of the California Energy Commission, Regarding the California Code of Regulations, Title 24, Parts 1 and Part 6, and Part 11, Feb. 7, 2012, pp. 4-5, 30.

[i]t is further the policy of the state and the intent of the Legislature to employ a range of measures to reduce wasteful, uneconomical, and unnecessary uses of energy, thereby reducing the rate of growth of energy consumption, prudently conserve energy resources, and assure statewide environmental, public safety, and land use goals.

(Pub. Resources Code, § 25007.)

Improvements in energy efficiency are among the best and often the cheapest and most environmentally-friendly methods to address the problem of balancing the state's electricity demand and supply. The benefits of building energy efficiency standards may be enumerated as follows (see Gov. Code, § 11346.2, subd.(b)(1)):

- A more reliable electrical system;
- Mitigation of wasteful, uneconomic, inefficient, and unnecessary uses of electricity;
- Reduction in the trend of increasing electricity consumption;
- Protection of energy, land and water resources, and the state's environmental quality;
- Creation of jobs; and
- Reduced energy costs for consumers and businesses.

The 2013 Energy Provisions of CALGreen provide example building energy efficiency standards that will lead to additional energy and water savings than would be achieved by complying with the Energy Code. Interested persons may choose to follow these voluntary measures, or local jurisdictions may elect to make the measures mandatory, to realize the potential energy and cost savings and other benefits. By encouraging the reduction of building energy consumption, the 2013 Energy Provisions of CALGreen will deliver the benefits described above.

The existing text for the energy efficiency divisions of the Part 11 voluntary appendices have been entirely replaced by language that includes a performance standard and a limited number of prerequisites. The residential and nonresidential performance standards each include two levels (specified as "Tier 1" and "Tier 2") of advanced energy efficiency compared to the requirements in the Energy Code. The prerequisites are energy efficiency measures that are recommended to be installed in any building project striving to meet the advanced levels of energy efficiency specified in these voluntary performance standards. The proposed language introduces new requirements in the voluntary performance standards for additions and alteration projects. This organization and structure of the performance-based advanced energy efficiency standards make it easier for local jurisdictions to adopt these voluntary measures in local building codes.

By adopting the 2013 Energy Provisions of CALGreen, the Energy Commission provides an example of measures that may voluntarily be implemented or made mandatory by local jurisdictions that want to achieve greater energy savings than would be achieved by complying with the Energy Code. The Commission adopted these provisions to help address two problems.⁵ One, the provisions further the State's goals described above, including reducing energy consumption and greenhouse gas emissions associated with energy production, and having zero net energy buildings (i.e., buildings whose energy consumption is balanced by on-site generation). Secondly, and related to the first, the provisions serve as a way to test provisions for future inclusion in the Energy Code, so that the Energy Code will better achieve those goals.

This organization and structure, and the text of the measures, are necessary for three reasons. They harmonize Part 11 with the Energy Code and make it more stringent., They are responsive to stakeholder comments. They add clarity in accordance with the purpose and rationale described in the Initial Statement of Reasons ("ISOR")⁶ to facilitate adoption by local jurisdictions.

⁵ See Gov. Code § 11346.2, subd. (b)(1).

⁶ Initial Statement of Reasons for Proposed Building Standards of the California Energy Commission

If implemented, these standards will further reduce energy use by buildings and make significant strides toward the State's zero net energy building goals.

B. The Specific Purpose, Rationale, and Necessity of Each Section of the Proposed Amendments

The specific purpose, rationale, and necessity of each section of the proposed amendments, in accordance with Government Code section 11346.2, subd. (b)(1), is provided below.

1. Title 24, Part 11, Chapter 4 Residential Mandatory Measures, Division 4.2 Energy Efficiency

Section 4.201 General (heading only)

Subsection 4.201.1 Scope

This subsection describes the scope of the Part 11 Residential Mandatory Measures for energy efficiency. This subsection restores existing language repealed by the department of Housing and Community Development (HCD). HCD repealed the existing language related to energy efficiency to facilitate the Energy Commission adopting the energy efficiency provisions of Part 11.

The changes eliminate ambiguities and simplify regulatory language to facilitate their use.

2. Title 24, Part 11, Appendix A4 Residential Voluntary Measures, Division A4.2 Energy Efficiency

Section A4.201 General (heading only)

Subsection A4.201.1 Scope

This subsection describes the scope of the Part 11 Residential Voluntary Measures for energy efficiency. This subsection restores existing language repealed by HCD. HCD repealed the existing language related to energy efficiency to facilitate the Energy Commission adopting the energy efficiency provisions of Part 11, and their use or adoption by local jurisdictions.

Subsection A4.202 Definitions

The regulations add new energy efficiency related definitions for Part 11 that are consistent with related changes to definitions in Part 6 to facilitate their use and eliminate ambiguities .

Subsection A4.203 Performance Approach For Newly Constructed Buildings (heading only)

Subsection A4.203.1 Energy Efficiency

This subsection describes the voluntary energy efficiency requirements for newly constructed low-rise residential buildings in order to meet Tier 1 or Tier 2 levels of energy efficiency.

The language creates voluntary requirements which can save energy if voluntarily implemented or adopted in local building codes by local jurisdictions.

Regarding the California Code of Regulations, Title 24, Part 1 and Part 6 (California Energy Code) and Title 24, Part 11 (California Green Building Standards), Feb. 7, 2012, http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2012-02-24_ISOR_2013_Building_Efficiency_Standards.pdf.

Subsection A4.203.1.1 Tier 1 and Tier 2 Prerequisites

The regulations add a subsection describing the voluntary energy efficiency prerequisites for newly constructed low-rise residential buildings in order to meet Tier 1 or Tier 2 levels of energy efficiency. The prerequisites are recommended energy efficiency measures for newly constructed low-rise residential buildings which meet the Tier 1 or Tier 2 energy efficiency requirements.

The measure will save energy if voluntarily implemented or adopted in local building codes by local jurisdictions.

Subsection A4.203.1.1.1 Energy Design Rating

This subsection adds a prerequisite for computing and reporting a whole building energy metric.

This will provide additional information on and increases awareness of energy usage in a building, and encourage additional voluntary energy efficiency.

Subsection A4.203.1.1.2 Quality Insulation Installation (QII)

This subsection adds a voluntary prerequisite for quality insulation installation, and references consistent methodology in Part 6, to ensure proper installation and performance of insulation materials in newly constructed low-rise residential buildings.

The measure creates a voluntary prerequisite which can save energy, by improving the performance of the building envelope if implemented or adopted by local jurisdictions in local building codes.

Subsection A4.203.1.1.3 Lighting

This subsection adds a voluntary prerequisite which would allow only high efficacy lighting for permanently installed indoor and outdoor lighting in newly constructed low-rise residential buildings. This will reduce the amount of lighting energy used, if voluntarily implemented or adopted by local jurisdictions in local building codes.

Subsection A4.203.1.2 Performance Standard

This subsection describes the voluntary energy efficiency performance standard for newly constructed low-rise residential buildings.

The measure can save energy if voluntarily implemented or adopted by local jurisdictions in local building codes.

Subsection A4.203.1.2.1 Tier 1

This subsection describes the voluntary energy efficiency performance standard for newly constructed low-rise residential buildings in order to meet the Tier 1 level of energy efficiency. The Tier 1 voluntary performance standard represents a 15% reduction in the energy budget allowance for the newly constructed low-rise residential building than would otherwise be allowed by Part 6.

The measure can save energy, by reducing the energy budget allowance for a newly constructed low-rise residential building if voluntarily implemented or adopted by local jurisdictions in local building codes.

Subsection A4.203.1.2.2 Tier 2

This subsection describes the voluntary energy efficiency performance standard for newly constructed low-rise residential buildings in order to meet the Tier 2 level of energy efficiency. The Tier 2 voluntary performance standard represents a 30% reduction in the energy budget

allowance for the newly constructed low-rise residential building than would otherwise be allowed by Part 6.

The measure can save energy, by reducing the energy budget allowance for a newly constructed low-rise residential building if voluntarily implemented or adopted by local jurisdictions in local building codes.

Section A4.203 Performance Approach For Additions And Alterations (heading only)

Subsection A4.204.1 Energy Efficiency

This subsection describes the voluntary energy efficiency requirements for additions and alterations to existing low-rise residential buildings in order to meet Tier 1 or Tier 2 levels of energy efficiency. The measure can save energy if voluntarily implemented or adopted by local jurisdictions in local building codes.

Subsection A4.204.1.1 Tier 1 and Tier 2 Prerequisites

This subsection describes the voluntary energy efficiency prerequisites for additions and alterations to existing low-rise residential buildings in order to meet Tier 1 or Tier 2 levels of energy efficiency. The prerequisites are recommended energy efficiency measures for every addition or alteration to an existing low-rise residential building which meets the Tier 1 or Tier 2 energy efficiency requirements. The measure can save energy if voluntarily implemented or adopted by local jurisdictions in local building codes.

Subsection A4.204.1.1.1 Lighting

This subsection adds a voluntary prerequisite which would allow only high efficacy lighting for newly installed, permanently installed indoor and outdoor lighting in additions or alteration to existing low-rise residential buildings.

The measure will save energy, by reducing the amount of lighting energy used if voluntarily implemented or adopted by local jurisdictions.

Subsection A4.204.1.2 Performance Standard

This subsection describes the voluntary energy efficiency performance standard for additions and alterations to existing low-rise residential buildings.

The measure can save energy if voluntarily implemented or adopted by local jurisdictions in local building codes.

Subsection A4.204.1.2.1 Tier 1

This subsection describes the voluntary energy efficiency performance standard for additions and alterations to existing low-rise residential buildings in order to meet the Tier 1 level of energy efficiency. The Tier 1 voluntary performance standard represents a reduction in the energy budget allowance for the addition or alteration to a low-rise residential building than would otherwise be allowed by Part 6. The magnitude of the energy budget reduction is based on the number of mechanical systems added or altered during the building project.

The measure can save energy, by reducing the energy budget allowance for an addition or alteration to an existing low-rise residential building, if voluntarily implemented or adopted by local jurisdictions in local building codes.

Subsection A4.204.1.2.2 Tier 2

This subsection describes the voluntary energy efficiency performance standard for additions and alterations to existing low-rise residential buildings in order to meet the Tier 2 level of energy

efficiency. The Tier 2 voluntary performance standard represents a reduction in the energy budget allowance for the addition or alteration to an existing low-rise residential building than would otherwise be allowed by Part 6. The magnitude of the energy budget reduction is based on the number of mechanical systems added or altered during the building project.

The measure creates a voluntary performance standard for Tier 2 energy efficiency requirements which can save energy, by reducing the energy budget allowance for an addition or alteration to an existing low-rise residential building if voluntarily implemented or adopted by local jurisdictions.

3. Title 24, Part 11, Appendix A4 Residential Voluntary Measures, Division A4.6 Tier 1 and Tier 2

Section 4.601 General (heading only)

Subsection A4.601.4.2 Prerequisite and elective measures for Tier 1

This subsection references the energy efficiency requirements in Division A4.2 for complying with the voluntary Tier 1 requirements. This subsection restores existing language repealed by HCD. HCD repealed the existing language related to energy efficiency to facilitate adoption by the Energy Commission of the energy efficiency provisions of Part 11.

The changes establish the voluntary Tier 1 energy efficiency requirements which can save energy if voluntarily implemented or adopted by local jurisdictions.

Subsection A4.601.5.2 Prerequisite and elective measures for Tier 2.

This subsection references the energy efficiency requirements in Division A4.2 for complying with the voluntary Tier 2 requirements. This subsection restores language repealed by HCD. HCD repealed the existing language related to energy efficiency to facilitate adoption by the Energy Commission of the energy efficiency provisions of Part 11.

The measures will save energy if voluntarily implemented or adopted by local jurisdictions.

Section 4.602 Residential Occupancies Application Checklist

This section adds the energy efficiency portions of the residential occupancies application checklist. This section restores existing language repealed by HCD. HCD repealed the existing language related to energy efficiency to facilitate adoption by the Energy Commission of the energy efficiency provisions of Part 11.

The checklist assists an owner, builder, permit applicant or an enforcement agency in determining the Tier 1 or Tier 2 requirements.

4. Title 24, Part 11, Appendix A5 Nonresidential Voluntary Measures, Division A5.2 Energy Efficiency

Section A5.202 Definitions

The regulations add new energy efficiency related definitions for Part 11 that are consistent with related changes to definitions in Part 6 to facilitate their use and eliminate ambiguities .

Section A5.203 Performance Approach (heading only)

Subsection A5.203.1 Energy Efficiency

This subsection describes the voluntary energy efficiency requirements for nonresidential buildings in order to meet Tier 1 or Tier 2 levels of energy efficiency.

The measure creates voluntary requirements which can save energy if voluntarily implemented or adopted by local jurisdictions.

Subsection A5.203.1.1 Tier 1 and Tier 2 Prerequisites

This subsection describes the voluntary energy efficiency prerequisites for nonresidential buildings in order to meet Tier 1 or Tier 2 levels of energy efficiency. The prerequisites are recommended energy efficiency measures for a nonresidential building which meets the Tier 1 or Tier 2 energy efficiency requirements.

The measure can save energy if voluntarily met or adopted by local jurisdictions.

Subsection A5.203.1.1.1 Outdoor Lighting

This subsection adds a voluntary prerequisite which represents a 10% reduction in the installed outdoor lighting power allowance for nonresidential buildings than would otherwise be allotted by Part 6.

The measure can save energy, by reducing the amount of outdoor lighting energy used, if voluntarily met or adopted by local jurisdictions.

Subsection A5.203.1.1.2 Service Water Heating in Restaurants

This subsection adds a voluntary prerequisite for installation of a solar water heating system in newly constructed restaurants which are 8,000 square feet or larger.

This section saves energy by reducing the amount of energy used for water heating, if voluntarily met or adopted by local jurisdictions.

Subsection A5.203.1.1.3 Functional Areas where Compliance with Residential Lighting Standards is required

This subsection adds a voluntary prerequisite which describes functional areas in nonresidential buildings which should comply with the lighting requirements for residential buildings. For newly constructed high-rise residential dwelling units and hotel and motel guest rooms, this creates a consistent analog in Parts 6 and 11.

The measure can save energy by reducing the amount of lighting energy used, if voluntarily met or adopted by local jurisdictions.

Subsection A5.203.1.2 Performance Standard.

This subsection describes the voluntary energy efficiency performance standard for nonresidential buildings.

The section creates a voluntary performance standard which can save energy if voluntarily met or adopted by local jurisdictions.

Subsection A5.203.1.2.1 Tier 1

This subsection describes the voluntary energy efficiency performance standard for nonresidential buildings in order to meet the Tier 1 level of energy efficiency. The Tier 1 voluntary performance standard represents a reduction in the energy budget allowance for the nonresidential building than would otherwise be allowed by Part 6. The magnitude of the energy budget reduction is based on the type of energy systems included in the building project.

The section can save energy, by reducing the energy budget allowance for nonresidential building, if voluntarily met or adopted by local jurisdictions.

Subsection A5.203.1.2.2 Tier 2

This subsection describes the voluntary energy efficiency performance standard for nonresidential buildings in order to meet the Tier 2 level of energy efficiency. The Tier 2 voluntary performance standard represents a reduction in the energy budget allowance for the nonresidential building than would otherwise be allowed by Part 6. The magnitude of the energy budget reduction is based on the type of energy systems included in the building project.

The section creates a voluntary performance standard for Tier 2 energy efficiency requirements which can save energy, by reducing the energy budget allowance for nonresidential building, if voluntarily met or adopted by local jurisdictions.

5. Title 24, Part 11, Appendix A5 Nonresidential Voluntary Measures, Division A5.6 Voluntary Tiers

Section 5.601 CALGreen Tier 1 and Tier 2 (heading only)

Subsection A5.601.2.2 Energy Performance

This subsection clarifies that a nonresidential building complying with the voluntary Tier 1 energy efficiency requirements must also comply with mandatory energy efficiency requirements in the Energy Code. This subsection restores existing language repealed by BSC. BSC repealed the existing language related to energy efficiency to facilitate adoption by the Energy Commission of the energy efficiency provisions of Part 11.

The section ensures that nonresidential buildings complying with the voluntary Tier 1 energy efficiency requirements continue to comply with mandatory energy efficiency requirements in the Energy Code.

Subsection A5.601.2.3 Tier 1

This subsection references the energy efficiency requirements in Division A5.2 for complying with the voluntary Tier 1 requirements. This subsection restores existing language repealed by BSC. BSC repealed the existing language related to energy efficiency to facilitate adoption by the Energy Commission of the energy efficiency provisions of Part 11.

The subsection can save energy if voluntarily met or adopted by local jurisdictions.

Subsection A5.601.3.2 Energy Performance

This subsection clarifies that a nonresidential building complying with the voluntary Tier 2 energy efficiency requirements must also comply with mandatory energy efficiency requirements in the Energy Code. This subsection restores existing language repealed BSC. BSC repealed the existing language related to energy efficiency to facilitate adoption by the Energy Commission of the energy efficiency provisions of Part 11.

The section ensures that nonresidential buildings complying with the voluntary Tier 2 energy efficiency requirements continue to comply with mandatory energy efficiency requirements in the Energy Code.

Subsection A5.601.3.3 Tier 2

This subsection references the energy efficiency requirements in Division A5.2 for complying with the voluntary Tier 2 requirements. This subsection restores existing language repealed BSC. BSC repealed the existing language to facilitate adoption by the Energy Commission of the efficiency provisions of Part 11.

The subsection can save energy if voluntarily met or adopted by local jurisdictions.

Section A5.602 Nonresidential Occupancies Application Checklist

This subsection adds a checklist for energy efficiency measures for nonresidential occupancies. This section restores existing language repealed by BSC. BSC repealed the existing language related to energy efficiency to facilitate adoption by the Energy Commission of the energy efficiency provisions of Part 11.

The nonresidential occupancies application checklist assists a building owner, builder, permit applicant or an enforcement agency in determining the Tier 1 or Tier 2 requirements.

(2). Determination of Mandates on Local Agencies or School Districts

The Administrative Procedure Act requires the Energy Commission to determine if the 2013 Energy Provisions of CALGreen impose a mandate on local agencies or school districts.⁷ The Energy Commission previously determined that the Energy Code (and the provisions of CALGreen that were initially proposed) would not impose a new mandate on local agencies and school districts.⁸ The provisions of CALGreen adopted by the Commission do not differ from those initially proposed in any material way that would alter this finding. Accordingly, the finding of no mandate is undisturbed.⁹

(3). Summary of and Response to Comments

A summary of the objections or recommendations made regarding the adoption of the 2013 Energy Provisions of CALGreen, along with responses thereto, are contained in the attached worksheet.

(4). Consideration of Reasonable Alternatives, Including Those That Would Lessen Any Adverse Impact On Small Business

For more than thirty-five years, legislative enactments and state energy policies have directed the Energy Commission to adopt cost-effective building standards to improve energy efficiency and thereby improve the state's economy, energy security, and environment. (See, e.g., Public Resources Code sections 25007 and 25402(a)(1), (a)(3), & (b)(3); 2007 Integrated Energy Policy Report.) The 2013 Energy Provisions of CALGreen, make significant strides toward achieving the State's policy goals of reducing greenhouse gas emissions and having new buildings that require annual zero net energy consumption. Any alternatives that lessen any adverse economic impacts, but likewise do not achieve the energy savings of the proposed regulations, would not be a reasonable fulfillment of the Energy Commission's obligations.

At this time the Commission is not aware of alternatives to the proposed regulations that would be more effective than the proposed regulations in achieving the energy-efficiency goals of these

⁷ Gov. Code § 11346.9, subd. (a)(2).

⁸ Order Adopting Proposed Regulations and Negative Declaration, Order No. 12-0531-5, May 31, 2012, p. 8, http://www.energy.ca.gov/title24/2013standards/rulemaking/notices/2012-05-31_Adoption_Order_No_12-0531-5_TN-65677.pdf; Notice of Proposed Action, Revisions to the California Building Energy Efficiency Standards, Feb. 7, 2012, p. 25, http://www.energy.ca.gov/title24/2013standards/rulemaking/notices/2012-02-07_NOPA_2013_Building_Efficiency_Standards.pdf.

⁹ Resolution Adopting Proposed Regulations [2013 Energy Provisions of CALGreen], Resolution No. 12-1010-4, Oct. 10, 2012, p. 7, http://www.energy.ca.gov/title24/2013standards/green_building/documents/2012-10-10_Resolution_Adopting_Proposed_Regulations_CALGreen.pdf.

directives, would be as effective and less burdensome to affected private persons, or that would be more cost effective to affected private persons and equally effective in implementing the State's policy goals. Further, the Commission is not aware of any alternatives that would achieve the State's goals but have a lower adverse impact on small businesses (or any other economic interests). (See Gov. Code, § 11346.2, subd. (b)(4) and (5)).¹⁰

A number of alternatives to the initially developed regulations were considered and accepted as part of the mandatory pre-rulemaking public participation process. (See Public Resources Code § 25402, subd. (c)(2)).

During the initial, informal stage of the rulemaking process, the Commission conducted an extensive public process, considered many suggestions from stakeholders about (1) alternatives that could improve the feasibility of the Commission's preliminary versions of the proposed regulations or could reduce their adverse impacts; (2) the technical analyses of those preliminary proposals; and (3) the language in those proposals. Although the voluntary measures include some elements that are described as "mandatory" if implemented or adopted by a local jurisdiction, the measures also include performance-based elements. Considering that the 2013 Energy Provisions of CALGreen are intended to achieve greater energy savings and other benefits than the Energy Code, it is necessary to include these minimum mandatory measures.¹¹

Some of the measures in the proposed voluntary standards were developed by the Codes and Standards Enhancement (CASE) Program of California's Investor-Owned Utilities, a statewide program that is funded with a surcharge on energy bills and that is dedicated to the advancement of California's building and appliance energy efficiency standards. In 2010 and 2011 CASE representatives held numerous meetings with building industry stakeholders to vet potential code updates, identify industry concerns, and resolve issues. In the spring of 2011, the Energy Commission began a series of 13 pre-rulemaking public workshops for all interested parties to build upon and continue this process. Additional measures in the proposed voluntary standards were developed by the Energy Commission and presented during the pre-rulemaking public workshops to vet potential code updates, identify industry concerns, and resolve issues.

During the Commission's pre-rulemaking workshops, which focused on the feasibility of potential revisions to the voluntary standards and the cost effectiveness of the recommended prerequisites in the voluntary standards, the Commission received a number of comments. Based on the comments the Commission developed Preliminary Draft Standards and held two more public workshops and several webinars to obtain public comment on those; in turn, more comments were received and in response to them the Commission produced the proposed regulations that accompany this FSOR.

Thus in the pre-rulemaking process there has already been an extraordinarily detailed consideration of suggested alternatives, many of which have been incorporated into the proposed regulations in order to increase flexibility and reduce costs for the building industries. The following material summarizes the major suggestions and the Commission's responses, including changing the Preliminary Draft Standards to arrive at the language of the proposed regulations.

In response to comments from the California Association of Building Energy Consultants (CABEC) expressing concern that the proposed voluntary requirements for the performance approach for addition and alteration projects to existing residential buildings set energy budget targets what were not likely to be achievable in a significant number of existing residential buildings, the voluntary requirements were substantially modified. The revised voluntary

¹⁰ See Resolution Adopting Proposed Regulations [2013 Energy Provisions of CALGreen], Resolution No. 12-1010-4, Oct. 10, 2012, pp. 6-7, http://www.energy.ca.gov/title24/2013standards/green_building/documents/2012-10-10_Resolution_Adopting_Proposed_Regulations_CALGreen.pdf.

¹¹ See Gov. Code § 11346.2, subd. (b)(5)(A).

requirements, based on additional energy modeling, set energy budget targets that are expected to be achievable in a broad cross-section of existing residential buildings.

In response to comments from the CABEC expressing concern that the proposed voluntary requirements for the performance approach for nonresidential buildings set energy budget targets that were not likely to be achievable in a significant number of nonresidential buildings, the voluntary requirements were substantially modified. The revised voluntary requirements, based on additional energy modeling, set energy budget targets that are expected to be achievable in a broad cross-section of nonresidential buildings

In response to comments from the home builder industry, a plumbing manufacturer association, representatives for the plumbing trades, and HCD, expressing concern that a proposed voluntary prerequisite for limiting the maximum volume of hot water in the piping of residential buildings was possibly in conflict with other Parts of Title 24, the proposed voluntary prerequisite was withdrawn.

In response to comments from the home builder industry and interagency discussions expressing concern that a proposed voluntary elective performance approach for zero net energy residential buildings required additional coordination and discussion, the proposed voluntary elective was withdrawn.

In response to comments from commercial refrigeration system designers, supermarket engineers, and the U.S. Environmental Protection Agency, a voluntary prerequisite limiting CO2 emissions from specified refrigeration systems was withdrawn. These comments urged the Energy Commission to develop a comprehensive performance compliance approach to meet refrigeration system efficiency requirements, rather than specifying prescriptive requirements that might limit design flexibility and product choice. The Energy Commission plans to propose such an approach in the future.

The Energy Commission withdrew a voluntary performance standard for meeting a specific threshold of expected net electricity consumption in residential buildings so that additional technical analysis could be performed.

(5). Facts, Evidence, Documents, Testimony, or Other Evidence of No Significant Adverse Impact On Business

The discussion in the immediately preceding section on the consideration of alternatives demonstrates that the Commission has already made extensive changes in preliminary versions of the proposed regulations in order to reduce impacts on businesses, especially small businesses.¹² The proposed regulations are voluntary; however, if adopted by local jurisdictions in local building codes there would be an increase in the costs of construction – but those costs will generally be passed on to the people who purchase and own buildings. Any local building code proposed by a local jurisdiction must be approved by the Energy Commission. One of the requirements for approval is demonstration of cost-effectiveness for the proposed local building code. Therefore, if the voluntary requirements are adopted in local building codes by local jurisdictions, the people who ultimately pay the increased costs of construction – building purchasers and owners -- will *save more* money on their energy bills. For owners and operators of commercial buildings, those savings will translate directly into increased profits (or expanded business operations, which in turn will create more jobs). Businesses that provide energy efficiency products and services associated with the voluntary requirements will have sales and service opportunities if the voluntary requirements are adopted in local building codes by local jurisdictions. Thus if the proposed voluntary regulations are adopted in local building codes by local jurisdictions, it will result in the creation of new jobs and an increase in California business

¹² See Gov. Code, §§ 11346.2, subd. (b)(5), 11346.9, subd. (a)(5).

competitiveness.

(6). Duplication or Conflicts with Federal Regulations

The proposed revisions to the Standards do not duplicate or conflict with any federal regulations. (See Gov. Code, 11346.2, subd. (b)(7)). There are no federal laws applicable to nonfederal buildings in their entirety.

There are no national specifications, published standards, or model codes, beyond those which were previously included in the 2013 Building Energy Efficiency Standards in Part 6, which are applicable to the 2013 Energy Provisions of CALGreen.

II. Updated Informative Digest

This section updates the Informative Digest¹³ that was published in the Notice of Proposed Action¹⁴ for these regulations and the 2013 California Energy Code.¹⁵

A. Summary of Existing Laws and Regulations Related Directly to the Proposed Action or to the Effect of the Proposed Action

There have been no changes in applicable laws or regulations related directly to these regulations and their effects from those described in the Notice of Proposed Action.¹⁶

B. Consistency with Existing Comparable Federal Regulations and Statutes

As stated in the Informative Digest in the Notice of Proposed Action, there are no federal energy standards applicable to nonfederal buildings.¹⁷ The 2013 Energy Provisions of CALGreen do not differ substantially from any existing comparable federal regulations or statutes.

There is, however, a voluntary federal program for energy efficiency in residential buildings that has similar goals as the Energy Provisions of CALGreen which bears mention. The California Energy Star Guidelines for New Homes are developed as a regional specification by the U.S. Environmental Protection Agency (EPA) and have similar voluntary energy efficiency requirements to those found in CALGreen. Both require a performance approach to achieve advanced levels of energy efficiency. Typically, the advanced level of energy efficiency targeted by Energy Star will be met by employing a combination of efficient walls, windows, air duct systems, space heating, space cooling, water heating equipment, and lighting.

Version 3 of the California Energy Star Guidelines for New Homes is currently in place, and is applicable to homes with a building permit date after September 30, 2012. The voluntary requirement for energy efficiency performance is 15% better than the 2008 California Energy Code. This matches the "Tier 1" voluntary energy provisions found in the currently-applicable 2010 iteration of CALGreen.

The 2013 Energy Provisions of CALGreen will be effective on January 1, 2014. At that time the "Tier 1" voluntary energy provisions in CALGreen will become 15% better than the 2013

¹³ See Gov. Code §§ 11346.2, subd. (a)(3), 11346.9, subd. (b).

¹⁴ Notice of Proposed Action, Revisions to the California Building Energy Efficiency Standards, Cal. Code of Regulations, Tit. 24, Parts 1 and 6 (California Energy Code), Feb. 7, 2012 (NOPA).

¹⁵ Building Energy Efficiency Standards, Cal. Code of Regulations, Tit. 24, Parts 1 and 6.

¹⁶ See NOPA, pp. 4-7.

¹⁷ NOPA, p. 25.

California Energy Code.¹⁸ Because of this, the 2013 Energy Provisions of CALGreen have the potential to save significantly more energy than version 3 of the California Energy Star Guidelines for New Homes. In the Summary of Public Comment Period for Draft Version 3 California Guidelines¹⁹, it is stated that “EPA intends to examine new codes as they are released in order to develop above-code program requirements that are both achievable and cost-effective. Therefore, EPA will continue to reference the 2008 Building Energy Efficiency Standards and will update the guidelines as needed upon release of revised editions of the code.” Thus, EPA may issue a new version of Energy Star that complements the 2013 Energy Provisions of CALGreen after they become effective. But regardless, because both these programs are voluntary and complementary, they are not inconsistent.

C. Policy Statement Overview and Specific Benefits of the Proposed Regulations

The 2013 Energy Provisions of CALGreen employ a range of voluntary energy efficiency measures to reduce wasteful, uneconomical, and unnecessary uses of energy, thereby reducing the rate of growth of energy consumption, prudently conserve energy resources, and assure statewide environmental, public safety, and land use goals are met.

The benefits of building energy efficiency standards may be enumerated as follows:

- A more reliable electrical system;
- Mitigation of wasteful, uneconomic, inefficient, and unnecessary uses of electricity;
- Reduction in the trend of increasing electricity consumption;
- Protection of energy, land and water resources, and the state's environmental quality;
- Creation of jobs; and
- Reduced energy costs for consumers and businesses.

The 2013 Energy Provisions of CALGreen provide example building energy efficiency standards that will lead to additional energy and water savings than would be achieved by complying with the Energy Code. Interested persons may choose to follow these voluntary measures, or local jurisdictions may elect to make the measures mandatory,²⁰ to realize the potential energy and cost savings and other benefits. These provisions help address three problems:²¹ (1) achieving the State's goals described above, including of reducing energy consumption and greenhouse gas emissions associated with energy production; (2) having zero net energy buildings (i.e., buildings whose energy consumption is balanced by on-site generation), which helps reach the aforementioned goals, and; (3) testing energy efficiency-related measures for future inclusion in the Energy Code, so that the Energy Code will better achieve the aforementioned goals.

D. Evaluation of Consistency with Existing State Regulations

The regulations' organization, structure, and text harmonizes Part 11 with the Energy Code and makes it more stringent. This makes it easier for local jurisdictions to adopt the voluntary measures in local building codes. If adopted in local building codes by a local jurisdiction, these changes will minimize the energy use of buildings and make significant strides toward the state's zero net energy building goals.

¹⁸ On average, the 2013 California Energy Code represents a 27% increase in energy savings for residential buildings compared to the 2008 California Energy Code.

¹⁹

http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/California_EPA_Responses_to_Comments_v6_2011-09-16_clean_508.pdf?4876-a83a

²⁰ Pub. Resources Code § 25402.1, subd. (h)(2), Cal. Code Regs., tit. 24, Part 1, § 10-106.

²¹ See Gov. Code § 11346.2, subd. (b)(1).

As stated in the Resolution adopting the regulations,²² the Energy Commission has determined that the regulations are consistent with the Energy Code, the California Building Code,²³ the Warren-Alquist Act²⁴ and the California Building Standards Law.²⁵

²² Resolution Adopting Proposed Regulations, 2013 Title 24 Building Energy Efficiency Standards Rulemaking Proceeding Cal. Code Regs., Tit. 24, Part 11, Reso. No. 12-1010-4, Oct. 10, 2012, pp. 3-10.

²³ Cal. Code Regs., tit. 24.

²⁴ Pub. Resources Code § 25000 et seq.

²⁵ Health & Safety Code § 18901 et seq.