STATE OF CALIFORNIA

STATE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

2016 Title 24 Building Energy Efficiency Standards Rulemaking Proceeding California Code of Regulations, Title 24, Parts 1 and 6	)	**Docket No. 15-BSTD-1** **Order No. 15-0610-5**

RESOLUTION ADOPTING NEGATIVE DECLARATION AND PROPOSED REGULATIONS

I. INTRODUCTION

The California Energy Commission has, as directed by Section 25402 of the California Public Resources Code, developed and undertaken a proceeding to adopt revisions to its Building Energy Efficiency Standards.

These standards apply to residential, nonresidential, high-rise residential, and hotel and motel buildings. The standards are in Part 6 (also known as the California Energy Code) and in the associated administrative regulations in Part 1, Chapter 10, of Title 24 of the California Code of Regulations. The standards are called the "2016 Building Energy Efficiency Standards" (2016 Standards), as proposed on May 26, 2015, for a 15-day review, and as further revised by the errata set forth in Appendix A of this Resolution. The 2016 Standards will go into effect on January 1, 2017, following approval by the California Building Standards Commission.

As adoption of the revised regulations is a discretionary project under the California Environmental Quality Act (CEQA)[1], the Energy Commission has determined that CEQA applies to this project and, pursuant to CEQA, has prepared an Initial Study of its environmental effects and proposed Negative Declaration.

Therefore the Energy Commission, based on the Initial Study analyzing the environmental impacts of the proposed revisions to the Building Energy Efficiency Standards together with comments received during the public participation process, finds that:

(1) There is no substantial evidence, in light of the whole record, that adopting the revisions to the Building Energy Efficiency Standards, in Parts 1 and 6 of Title 24 of

[1] Pub. Resources Code, § 21000 et seq.

the California Code of Regulations, as described below, will have a significant effect on the environment; and

(2) The Negative Declaration reflects the Energy Commission's independent judgment and analysis.

Accordingly, the Energy Commission adopts the provisions of the Negative Declaration pertaining to the proposed additions and amendments to the Building Energy Efficiency Standards described below.

The Energy Commission additionally and subsequently adopts the proposed additions and amendments, as described below, to its energy and water efficiency standards for buildings.

The Energy Commission takes this action under the authority given by Public Resources Code sections 25218, subdivision (e), 25402, 25402.1, 25402.4, 25402.5, 25402.5.4, 25402.8 and 25910, to implement, interpret and make specific Sections 25402, subdivisions (a)-(c), 25402.1, 25402.4, 25402.5, 25402.5.4, 25402.8 and 25910.

II. HISTORY OF THE PROCEEDING

To develop the 2016 Standards, the Energy Commission conducted an open, transparent, and extensive public process. Between April 2014 and today, the Energy Commission has held over 11 workshops and other public events. We began with a presentation of the overall plan and schedule for this rulemaking, and the fundamental building blocks that would be used in the Standards. Subsequent workshops addressed various aspects of the 2016 Standards in detail. During this process, more than 45 stakeholder groups assessed, analyzed, discussed, and helped to improve numerous versions of the proposed Standards, and the Energy Commission staff considered more than 300 public comments.

On February 13, 2015, the formal rulemaking phase was initiated when the Energy Commission (1) filed with the California Building Standards Commission (CBSC) and the Office of Administrative Law (OAL), and (2) published, the following:

- A Notice of Proposed Action (NOPA), which described the proceeding, summarized the proposed Standards, and explained how interested persons could participate;
- Economic and Fiscal Analysis (Form 399);
- An Initial Statement of Reasons (ISOR), which presented the rationales for the Standards;
- Proposed Express Terms (45-day language) of the 2016 Standards; and
- The Initial Study and Proposed Negative Declaration for the 2016 Standards.

OAL published the NOPA in the California Regulatory Notice Register on February 13, 2015.[2]

The Energy Commission also provided the NOPA to:

- Every contact on the Energy Commission's mailing lists for: *The Blueprint* (an Energy Code newsletter), appliance efficiency standards, nonresidential and residential building energy efficiency standards, city and county building officials, and county clerks;
- The Energy Commission's *Efficiency* and *Building Standards* electronic mail list serves; and
- Every person who had requested notice of such matters.

The NOPA, the ISOR, the Initial Study, and the 45-day and 15-day language (discussed below) were also posted on the Energy Commission's website.[3]

On March 2 and 3, 2015, the Lead Commissioner for Energy Efficiency of the Energy Commission, held a public hearing, pursuant to Government Code section 11346.8 and Public Resources Code section 25402, to accept both oral and written comments on the 2016 Standards and the Initial Study. On March 27, 2015, the Energy Commission published notice that Energy Commission staff were developing revisions to the proposed 2016 Standards to address comments received, and would publish proposed changes to the proposed Standards, and would not consider adopting the proposed Standards as initially thought.

As stated in the NOPA, p. 3, the Energy Commission welcomed comments on any of the proposed provisions – and, as we have noted above, many were received. In anticipation of comments, the NOPA stated:

> Interested persons should be aware that any of the provisions of the amendments under consideration by the Energy Commission could be substantively changed as a result of public comment, staff recommendations, or discussions at the Energy Efficiency Lead Commissioner or Full Commission Hearings. The proposed regulations could be changed, withdrawn, or replaced with different proposals.

Accordingly, the Energy Commission on May 26, 2015, published proposed changes to the 45-day language (and identified additional documents beyond those identified in the NOPA upon which it is relying to adopt the 2016 Standards). These changes are called 15-day language because they are sufficiently related to the 45-day language and thus only subject to an abbreviated 15-day notice requirement. The Energy Commission also

[2] California Regulatory Notice Register, Feb. 13, 2015, vol. no. 7-Z, p. 268.
[3] See http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/.

identified additional documents upon which it was relying to adopt the proposed Standards. The 15-day language and additional documents were made available for public comment for 15 days, through June 10, 2015.[4] The public notice of the 15-day language also stated that the Energy Commission would consider adopting the proposed regulations and negative declaration at a public hearing during its business meeting on Wednesday, June 10, 2015.[5]

III. FINDINGS AND CONCLUSIONS

Several different statutory schemes govern the Energy Commission's adoption of building standards: the Warren-Alquist State Energy Resources Conservation and Development Act,[6] the administrative rulemaking provisions of the Administrative Procedure Act,[7] and the Building Standards Law.[8] Pursuant to these statutes, the Energy Commission has reviewed the entire record of this proceeding, including public comments, reports and other documents, transcripts of public events, and all other materials that have been filed in this proceeding (Docket No. 15-BSTD-1). Based on that record, the Energy Commission makes the following findings and conclusions.

A. The California Environmental Quality Act, Public Resources Code Section 21000 et seq.

CEQA requires that state agencies consider the environmental impact of their discretionary decisions, including the adoption of regulations. The Energy Commission began its compliance with CEQA's mandate by preparing an Initial Study. (See Cal. Code Regs., tit. 14, §§ 15060 - 15065.) The Initial Study addressed matters such as air emissions, water use, indoor air pollution, and the use of materials such as wood, glass, aluminum, copper, fiberglass, mercury, lead, steel, plastic silicon, gold, and titanium.

As CEQA requires, the Energy Commission then published a Notice of Intent to adopt a Negative Declaration.[9] The Notice, Initial Study, and the Proposed Negative Declaration, were made available to the following responsible agencies:

- The California Air Resources Board,
- The Department of Housing & Community Development,

[4] Gov. Code § 11346.8; Cal. Code Regs., tit. 1, § 42.
[5] See http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/15-day_language/2016-05-26_Notice_of_Availability_of_15-Day_Language.pdf.
[6] Pub. Resources Code, § 25000 et seq.
[7] Gov. Code, § 11340 et seq.
[8] Health & Safety Code, § 18901 et seq.
[9] See Pub. Resources Code, §§ 21091, 21092 and 21092.3, and Cal. Code Regs., tit. 14, § 15072(g).

- The Office of School Construction,
- The California Public Utilities Commission,
- The California Resource Agency,
- The California Department of Resources Recycling and Recovery,
- The California Department of Toxic Substance Control,
- The California Department of Water Resources, and
- The California State Fire Marshal.

The Notice of Intent was sent to all 58 county clerks in California, as well as more than 10,000 people and entities that had previously requested such notice.[10] Finally, a legal notice was published on February 27, 2015 in:[11]

- The Los Angeles Times,
- The Sacramento Bee,
- The San Diego Union Tribune,
- The San Francisco Chronicle, and
- The San Jose Mercury News.

The Energy Commission provided a comment period on the Initial Study and Proposed Negative Declaration beginning on February 27, 2015, and ending March 30, 2015 (a total of 31 days).[12]

Accordingly, based on the Initial Study, together with comments received during the public participation process, the Energy Commission finds[13] that:

(1) In light of the whole record, there is no substantial evidence that the 2016 Building Energy Efficiency Standards in Parts 1 and 6 of Title 24 of the California Code of Regulations, as adopted today, will have a significant effect on the environment; and

(2) The Proposed Negative Declaration reflects the Energy Commission's independent judgment and analysis.

And the Energy Commission adopts the provisions of the Negative Declaration pertaining to the proposed additions and amendments to the Building Energy Efficiency Standards described below.

[10] Cal. Code Regs., tit. 14, § 15072(a).
[11] Cal. Code Regs., tit. 14, § 15072(b)(1).
[12] Cal. Code Regs., tit. 14, § 15073(a).
[13] Pub. Resources Code, § 21082.1.

B. The Warren-Alquist Act

1. Public Resources Code Sections 25402, subdivisions (a)-(b)

The Standards we adopt today satisfy the requirements of Public Resources Code section 25402, subdivisions (a) and (b). Those provisions require the Energy Commission to adopt building design and construction standards that increase the efficiency in the use of energy and water for new residential and new nonresidential buildings, and energy and water conservation design standards. By law, these standards must be "cost effective when taken in their entirety, and when amortized over the economic life of the structure when compared with historic practice."

The 2016 Standards fulfill these directives. They increase the efficiency of and conserve the use of energy and water. Moreover, they are cost-effective.

Buildings constructed pursuant to the 2016 Standards are projected to:

- Save about $2.98 billion in energy over a 30-year life;
- Save 106.2 million gallons of water per year; and
- Avoid more than 160 thousand metric tons of greenhouse gas emissions per year.

To further illustrate the anticipated savings, in the residential context, the estimated 25.6 percent natural gas and 11.7 percent electricity efficiency improvements in the 2016 Standards will provide about a 3.5:1 return on a typical homeowner's investment. If factored into a 30-year mortgage, the standards will add approximately $14.50 per month to the cost of the average home (assuming all costs are first costs and the full costs are financed at 5 percent for 30 years), but will save approximately $20.50 on monthly heating, cooling, and lighting bills (net present savings, nominal savings will be higher). On average, the 2016 Standards will increase the cost of constructing a new residential building by $2,700 but will return more than $7,400 in energy savings over 30 years.

For complete details of the Energy Commission's fiscal and economic analysis of the 2016 Standards, see the Economic and Fiscal Analysis (Form 399), previously published with the NOPA.

Therefore, we find and conclude that the 2016 Standards are cost-effective.

5. Public Resources Code Section 25402.8.

Section 25402.8 of the Warren-Alquist Act directs the Energy Commission, when adopting new building energy conservation standards to "include in its deliberations

the impact that those standards would have on indoor air pollution problems."

The Energy Commission must take into account both the indoor air quality concerns embodied in Section 25402.8 and the mandate to achieve cost-effective energy conservation in Sections 25402 subdivisions (a) and (b). This alone requires a delicate balancing of issues and concerns because, among other reasons, by improving indoor air quality through increased ventilation, energy use will increase, which means that the adverse health impacts of outdoor air pollution may also increase.

Staff considered the impact that the proposed changes to the regulations would have on indoor air quality, and found that neither the residential nor the nonresidential provisions would negatively impact indoor air quality. The 2016 Standards leave intact the air quality provisions of the current (2013) Standards, which were developed in coordination with other agencies with expertise in indoor air quality, including the California Air Resources Board, California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA), and the California Department of Health Care Services. Staff therefore finds that both the current and the proposed regulations:

- Ensure adequate outdoor air ventilation;
- Require that the minimum outdoor air quantities be provided during regular and pre-occupancy periods; and
- Require documentation showing that ventilation systems provide the minimum required outdoor air quantities.

We find and conclude that such provisions are reasonably necessary to carry out the mandate of Section 25402.8, and that they strike an appropriate balance between the requirements of this Section and the energy-savings and cost-effectiveness mandates of Sections 25402, subdivisions (a) and (b).

C. **The Administrative Procedure Act**

The California Administrative Procedure Act (APA) requires all state agencies to take certain steps and assess several matters when adopting regulations. Many of these matters, analyses, and findings are required to be addressed in the ISOR, prepared as part of the NOPA, or in the Final Statement of Reasons (FSOR) that is required to be prepared after the regulations are adopted. In support of those documents, the Energy Commission makes the following findings and determinations here in adopting the 2016 Standards.

1. Reports Required of Businesses, Government Code section 11346.3, subdivision (d)

In addition to the economic analysis required by Section 11346.3 of the APA, dis-

cussed further below, subdivision (d) of this statute mandates that agencies that require the preparation of reports by businesses find that such reports are necessary to protect the health, safety or welfare of the people of California.

The 2016 Standards require completion of certain reports, called compliance documentation, regarding the efficiency measures incorporated into buildings. The reports collect the information necessary for local building officials, building owners and occupants, and contractors to ensure that the measures are properly installed and operating correctly, so that the anticipated energy, environmental and cost benefits will actually be achieved. Accordingly, we find and conclude that it is necessary that these reporting requirements apply to businesses, in order to protect the health, safety and welfare of the people of California, as required by Government Code section 11346.3, subdivision (d).

2. Public Participation, Government Code section 11346.45

State agencies must "involve parties who would be subject to the proposed regulations in public discussions regarding those proposed regulations, when the proposed regulations involve complex proposals or a large number of proposals that cannot easily be reviewed during the comment period." As described above, the Energy Commission conducted extensive outreach with industry and other stakeholders, over the course of the past 18 months on the structure and contents of the regulations. We therefore find and conclude that the Energy Commission has complied with Government Code section 11346.45.

3. Economic Impact Assessment, Government Code sections 11346.3, 11346.5 and 11346.9

Sections 11346.3, 11346.5, and 11346.9 of the APA require State agencies to assess various potential economic and fiscal impacts of proposed regulations and potential alternatives. Briefly stated, the Energy Commission finds that the 2016 Standards:

a) Will not result in a significant statewide adverse impact directly affecting business (including small businesses), including the ability of California businesses to compete with businesses in other states, and job creation;
b) Will not have significant impacts on housing costs;
c) Do not have alternatives that would be more effective in implementing the policies and provisions of the Warren-Alquist Act without increasing burdens, or that would be as effective and less burdensome to affected private persons in implementing the policies and provisions; and
d) Will not impose any direct costs or direct or indirect requirements on state agencies, local agencies, or school districts, including but not limited to costs that are required to be reimbursed under Part 7 (commencing with Section 17500) of the Government Code.

These matters are discussed below.

a) No Significant Economic Impact on Businesses and Job Creation

The Energy Commission has determined that adopting the 2016 Standards will not have a significant statewide adverse economic impact on businesses, including the ability of California businesses to compete with business in other states.

The Standards will require energy efficiency measures for all new nonresidential and residential construction, and for certain additions and alterations to existing buildings as well. However, those measures are cost-effective, so businesses will experience a positive economic impact. In addition, the Standards will indirectly require changes in practice, and the retraining of employees, in businesses that are involved in the design and construction of buildings, in compliance analysis and documentation, and in field verification. Any costs attributable to such changes and retraining would be short-term in nature, since the incremental cost increases for new technologies will not persist once these technologies become mainstream, and building practice changes requiring retraining will not result in ongoing cost increases. In any case, these incremental construction cost increases would ultimately be borne by the beneficiaries of the Standards: the people and businesses benefitting from reduced energy bills.

In addition, new jobs may be created as a result of the new compliance procedures, or to provide compliance-related services and energy-efficiency products. Also, because the Standards will save hundreds of millions of dollars in energy costs, there will be more money in the economy that can be used for job creation.

For the same reasons, the Energy Commission finds that the 2016 Standards will not have any significant adverse impact on small or other businesses or other affected persons. By making compliance with the standards easier, the proposed regulations will help building designers, architects, contractors, and similar professionals. Most importantly, by causing overall reductions in the costs of owning and operating residences and buildings, the 2016 Standards will reduce costs for all businesses and persons throughout the state.

b) Impact on Housing Costs

The 2016 Standards will affect housing costs. By requiring the installation of energy efficiency measures that would otherwise not be included in buildings, the 2016 Standards will result in small increases in the initial cost of housing. The Energy Commission estimates that an average of approximately $2,700 in additional costs for single family residential buildings will result from the 2016 Standards, and an incremental construction increase of about $33,650 for a 15,000 square foot building (such as a multi-family residential building), less than 2 percent of typical construction costs

for this building size. As described above, these increases will be recouped by the reduced energy costs to operate the buildings. Further, this estimate is likely more than what will be realized, since it does not account for volume pricing or reductions in technology costs once these technologies are provided to a mass market. Therefore, we find and conclude that there will be no significant increase in housing costs.

c) Consideration of Alternative Proposals; Necessity

The 2016 Standards are the result of a process that lasted fourteen months, involved almost a dozen publicly-noticed hearings and workshops, relied upon input from numerous representatives of all aspects of the building industry and from building officials, and produced detailed and sophisticated technical analyses. Moreover, the resultant 2016 Standards carefully harmonize the statutory requirements of energy conservation, cost-effectiveness, and other aspects of the public health and welfare.

Many alternatives suggested to the Energy Commission have been included in the Standards; those that are not incorporated into the Standards either (1) were more expensive than the proposed Standards, (2) were infeasible, or (3) would save less energy than the proposed Standards. Discussions of all the specific alternatives considered are in the public comments and reports in the record of this rulemaking proceeding, and will be discussed in more detail in the FSOR prepared after adoption.

Therefore, the Energy Commission has determined that (1) no reasonable alternative considered by it or that has otherwise been identified and brought to its attention (a) would be more effective in implementing the policies and provisions of the Warren-Alquist Act, (b) would be as effective and less burdensome to affected private persons than the adopted regulations, or (c) would be more cost-effective to affected private persons and equally effective in implementing the Warren-Alquist Act; and (2) the 2016 Standards are necessary to carry out the purposes for which they are proposed – cost-effective energy savings and environmental improvements – because without the Standards, those purposes will not be achieved.

d) Mandates and Costs on State or Local Agencies and School Districts

By requiring new or improved energy efficiency measures to be installed, the 2016 Standards will result in small increases in the cost of new construction. However, those construction costs will be more than offset by reductions in energy costs, so that over the life of a building, total costs will be reduced. Therefore, although the 2016 Standards will result in direct costs (for construction) and savings (in energy bills) for local and state agencies and school districts (to the extent that those agencies and districts construct buildings or pay energy bills), the Energy Commission finds that they will not impose a mandate on local agencies or school districts or impose increased or new costs that are reimbursable by the state under Part 7 (beginning with section 17500) of Division 4 of the Government Code. In addition, because the 2016

Standards will make enforcement easier, local and state agencies responsible for enforcing the building 2016 Standards are likely to enjoy savings.

As required by Government Code section 11346.9, subdivision (a)(2), the Energy Commission finds and concludes that there will be no costs or savings to local or state agencies or school districts. Finally, we find and conclude that there will be no costs or savings to federal agencies, and no costs or savings in federal funding to the State.

For complete details of the Energy Commission's fiscal and economic analysis of the 2016 Standards, see the Economic and Fiscal Analysis (Form 399), previously published with the NOPA.

D. The State Building Standards Law, Health & Safety Code Section 18930.

The 2016 Standards must be submitted to the California Building Standards Commission (CBSC) for approval, and are required by Health and Safety Code section 18930, subdivision (a), to be accompanied by an analysis which will, to the satisfaction of the CBSC, justify their approval. For the reasons described below, we find, determine, and conclude that the 2016 Standards comply with each one of the applicable criteria. Further explanation of the Nine Point Criteria and additional supporting analysis will accompany the 2016 Standards when they are submitted for approval to the Building Standards Commission.

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

There is no overlap or duplication with other building standards 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 2016 Standards and the Electrical Code on lighting requirements. The Electrical Code requires illumination to be provided for all working spaces, whereas the 2016 Standards have 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 2016 Standards and Electrical Code on receptacle requirements. The Electrical Code contains requirement of the whereabouts of receptacles whereas the 2016 Standards contain the requirements for controlled receptacles for spaces including private offices, open office areas, re-

ception lobbies, conference rooms, kitchenette in office spaces, copy rooms, hotel and motel guest rooms.

- There are no conflicts between the 2016 Standards and California Building Code on egress lighting requirements. Other parts of the Building Code contain means of egress requirement and the 2016 Standards contain exception 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. This ensures the 2016 Standards do not lessen any obligation to comply with the other parts of the California Building Code.

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

The California 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 state agency with the authority to set efficiency standards for buildings. The analysis to date shows nothing in the record to suggest otherwise.

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 2016 Standards are in the public interest, as they increase resource efficiency, improve building and building system performance, and are consistent with environmental, public health, and accessibility statutes and regulations.

When the Legislature created the Energy Commission more than forty 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.[14] The Legislature also stated that growth in electricity demand has strained the reliability of California's electricity system, created potential environmental

[14] Pub. Resources Code, § 25001; see also § 25300, subd. (a).

stresses, and contributed to a substantial rise in electricity prices.[15] 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.[16] These facts remain as true today as they were then, and they make clear that adoption of the 2016 Energy Standards is required for the public interest.

The 2016 Standards will continue to improve upon the existing 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).[17]

- 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.[18] 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.

- The Energy Commission's 2011 Integrated Energy Policy Report (IEPR) includes many greenhouse gas emission reduction and energy-efficiency strategy

[15] See Pub. Resources Code, § 25002.
[16] See Pub. Resources Code, §§ 25001, subds. (a) & (b), 25007.
[17] http://www.energy.ca.gov/energy_action_plan/2003-05-08_ACTION_PLAN.PDF.
[18] http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

recommendations.[19] 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.[20] 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.[21]

- 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[22] and roadmap.[23] 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 re-

[19] http://www.energy.ca.gov/2011publications/CEC-100-2011-001/CEC-100-2011-001-CMF.pdf
[20] http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf
[21] http://gov.ca.gov/docs/Clean_Energy_Plan.pdf
[22] http://www.cacleanenergyfuture.org/documents/CCEFImplementationPlan.pdf
[23] http://www.cacleanenergyfuture.org/documents/CCEFRoadmap.pdf

newable 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 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, 2012[24] and its accompanying Green Building Action Plan[25] 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 take actions to reduce entity-wide greenhouse gas emissions by at least 10 percent by 2015 and 20 percent 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 percent of new facilities beginning design after 2020 to be Zero Net Energy.
  - State agencies shall take measures toward achieving Zero Net Energy for 50 percent of the square footage of existing state-owned building area by 2025.
  - State agencies continue taking measures to reduce grid-based energy purchases for State-owned buildings by at least 20 percent by 2018, as compared to a 2003 baseline, and reduce other non-building, grid-based retail energy purchases by 20 percent by 2018, as compared to a 2003 baseline.
  - Proposed new or major renovation of State buildings larger than 10,000 square feet 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 incorporate building commissioning to facilitate improved and efficient building operation.
  - State agencies 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 reduce overall water use at the facilities they operate by 10 percent by 2015 and by 20 percent by 2020, as measured against a 2010 baseline.

[24] http://gov.ca.gov/news.php?id=17508
[25] http://gov.ca.gov/docs/Green_Building_Action_Plan_B.18.12.pdf

All of these enactments and policy statements demonstrate that the energy efficiency advances that will be produced by the 2016 Standards are crucial to the state's energy reliability and economic and environmental health.

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

The analysis of the record to date found nothing to demonstrate that the 2016 Standards are unreasonable, arbitrary, unfair, or capricious, in whole or in part. As discussed above, the 2016 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, and Governor Brown's Clean Energy Jobs Plan.

The express terms of the 2016 Standards and the process through which the language was adopted show that this criterion was met. Some comments suggested additional measures or revisions to existing language, or challenged, or proposed modifications to, various provisions of the proposed measures. The Energy Commission analyzed such comments fully and either accepted the changes proposed by the comments or determined that the proposed changes were not appropriate to make. A complete discussion of the comments will be included in the Comments and Responses section of the Final Statement of Reasons for the rulemaking.

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

The record demonstrates that the 2016 Standards are cost-effective. The added construction costs that the proposed revisions to the Standards will impose are reasonable based on the economic, environmental, and other benefits that will be derived from the Standards, and these benefits will substantially outweigh the costs. In other words, although building owners and operators will see increases in the costs of purchasing buildings, the savings in natural gas and electricity costs will outweigh these initial costs.

In addition, the Standards will require changes in some construction practices, including in the post-construction testing of building components. This in turn may require the retraining of employees, but any costs attributable to such changes and retraining will be short-term in nature (e.g., one-time costs for training classes) and are expected costs associated with continual improvements to building codes generally, as new protocols and technologies become mainstream. The Energy Commission provides ongoing training in the Standards in conjunction with Investor Owned Utilities and professional organizations, such as the California Association of

Building Energy Consultants, to encourage this reduction in costs. Moreover, the changes will increase employment and profit opportunities for segments of the construction industry involved with the production of advanced energy efficiency technologies implemented by the Standards, and those responsible for conducting post-construction testing.

The 2016 Standards will reduce the energy use of typical new buildings by around 25 percent compared to buildings constructed under the current standards. In 2017, buildings constructed and retrofitted pursuant to the 2016 Standards are projected to:

- Have a statewide cost of an additional $1 billion to build or retrofit;
- Have a state savings of over $4 billion in initial, maintenance and energy costs over 30 years;
- Have decreased water consumption of approximately 106.2 million gallons (roughly 326 acre-feet) per year;
- Reduce statewide annual electricity consumption by about 281 gigawatt-hours per year (GWh/yr), and natural gas consumption by about 16 million therms per year;
- Result in about a net reduction in the emission of nitric oxides (NOx) by ~~roughly~~ 508 tons per year, sulfur oxides (SOx) by 13 tons/year, carbon monoxide (CO) by 41 tons/year and particulate matter less than 2.5 microns in diameter (PM2.5) by 13.75 tons per year; and
- Reduce statewide carbon dioxide equivalent (CO2e) emissions by about 160 thousand metric tons per year.

The 25.6 percent natural gas and 11.7 percent electricity efficiency improvements in the 2016 Standards will provide a 3:5:1 return on a typical homeowner's investment. If factored into a 30-year mortgage, the standards will add approximately $14.50 per month to the cost of the average home (assuming call costs are first costs and the full costs are financed at 5 percent for 30 years), but will save approximately $20.5 on monthly heating, cooling, and lighting bills (net present savings, nominal savings will be higher). On average, the 2016 Standards will increase the cost of constructing a new residential building by $2,700 but will return more than $7,400 in energy savings over 30 years.

The Energy Commission estimates average increases in construction costs of about $2,700 for single family residential buildings and about $33,650 for a 15,000 square foot commercial building. These are less than 1.5 percent of typical construction costs for typical buildings and these increases will be more than recouped by the energy cost savings. Furthermore, the construction cost increases are likely higher than will be realized because they do not fully account for volume pricing or anticipated reductions in costs once new energy-efficiency technologies are provided to a mass market.

There was, as one might expect, a fair amount of discussion about the cost-effectiveness of various provisions of the Standards during the Energy Commission's rulemaking proceeding. The Energy Commission's assessments of the applicable comments will be discussed in the Comments and Responses section of the Final Statement of Reasons submitted to the Building Standards Commission.

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

Throughout the year-and-a-half-long rulemaking process, the Energy Commission made many changes to proposed draft language of new measures to ensure their clarity, as well as proposed changes to existing regulations to improve their clarity. Any proposals suggesting clarity improvements that were rejected by the Energy Commission will be discussed in the Comments and Responses section of the FSOR. The analysis to date has found no unresolved comments on this issue.

7. The applicable national specifications, published standards, and model codes have been incorporated in the standards as provided in 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 2016 Standards. However, the adopted Standards do incorporate (as have previous editions of the Standards) 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 2016 Standards wherever appropriate. For example, the Standards require heating and cooling systems to meet minimum efficiency requirements for space conditioning equipment that are as or more stringent than the minimum efficiency requirements in ASHRAE 90.1-2013.

Some of the comments received during the rulemaking proceeding addressed the incorporation into the proposed Standards of various specifications, standards, and codes. The Energy Commission either accepted the recommendations or had sound rationales to reject them, as will be fully explained in the Comments and Responses section of the accompanying FSOR submitted to the Building Standards Commission.

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

The 2016 Standards 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 obtained the approval of the State Fire Marshal for the 2016 Standards. The State Fire Marshall has determined that the proposed 2016 Building Energy Efficiency Standards do not promote fire or panic safety. This document is included in the record (see Docket Log for this proceeding, document Transaction Number 75653).

IV. ADOPTION OF NEGATIVE DECLARATION AND AMENDMENTS TO REGULATIONS; DELEGATION TO EXECUTIVE DIRECTOR

The California Energy Commission adopts a Negative Declaration for the provisions of the Building Energy Efficiency Standards described in the next paragraph, based on the content of the Initial Study dated February 27, 2015, as it pertains to the provisions being adopted today, and based on consideration of the full record of this proceeding.

The California Energy Commission adopts the amendments in the 15-day language dated May 26, 2015, in Title 24, Parts 1 and 6, of the California Code of Regulations, as further revised by the errata set forth in Appendix A of this Resolution, with the exception of the following proposed changes. The current language of the following provisions will remain in effect: California Code of Regulations, part 6, sections 141.0(b)2.I., J., K., and L., and Tables 141.0-E and –F.

The California Energy Commission directs the Executive Director to take, on behalf of the Commission, all actions reasonably necessary to have the adopted regulations approved by the California Building Standards Commission and go into effect, including but not limited to preparing and filing all appropriate documents, such as the Final Statement of Reasons and the Notice of Determination of a Negative Declaration, and correcting grammatical, typographical, and other nonsubstantial errors, and publishing corrected versions of the 2016 Standards that reflect the errata below, retain the existing provisions of California Code of Regulations, part 6, sections 141.0(b)2.I., J., and K., and Tables 141.0-E and –F, and make any additional nonsubstantial changes in order to ensure that the regulations are internally consistent in light of the decision to retain these existing provisions.

CERTIFICATION

The undersigned Secretariat to the Energy Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on June 10, 2015.

AYE:
NAY:
ABSENT:
ABSTAIN:

_____
Harriet Kallemeyn,
Secretariat

Appendix A: Errata to the 2016 Standards 15-Day Language

Page 52, Table 110.2-D: Remove the parenthetical "Reciprocating" entry in the Equipment Type column. This entry is an erroneous duplication of part of the prior cell, and subsequent columns do not include a separate row for this entry.

Page 52, Table 110.2-D: Correct the Path A IPLV efficiency for "Water Cooled, Electrically Operated Positive Displacement < 75 Tons" to 0.600, from 0.6. This correction adds trailing zeroes necessary for consistency with the other entries in the Table.

Page 57, Table 110.2-G: Remove unneeded quotation marks. These marks serve no purpose and have no effect where found in this Table.

Page 59, Table 110.2-I: Add footnote "a" to entry for VRF Groundwater source (cooling mode) < 135,000 Btu/h. This is a typographical error: this footnote applies to all of the entries in this column, and is erroneously absent from this cell.

Page 82, Section 110.11: Correct spelling of “Distribution” in the section title, where it is misspelled “Distibution”.

Page 88, Section 120.2: Correct the reference to Section 120.2(i) to reference Section 120.2(k). 120.2(k) is the last subsection of Section 120.2.

Page 91, Section 120.2(i)8: Correct reference to Section 100(h) to reference Section 110.0. There is no "Section 100(h)", following renumbering of the Sections in 2013; certification to the Energy Commission is specified in Section 110.0.

Page 92, Table 120.0-A: Correct spelling of "design" in second to last row, where it is misspelled "desing".

Page 107, Sections 120.7(b)7A and B: Remove text occurring after the stated U-factor in each Section. This text, describing a wall assembly equal to the stated U-factor, is a specification for modeling an equivalent wall as a description of how the U-factors were determined. It was not intended to remain in the final document and does not have a regulatory effect: the word “shall” relating to ½ inch gypsum board specifies “or an equivalent layer”, meaning any layer that results in the stated U-factor.

Page 110, Section 120.8(d)1: Correct "documentation author" to "signer". The referenced Section of Part 1, Section 10-103(a)1, uses the term "signer" to refer to the signers of the two noted certificates, not the term "documentation author" (the documentation author is not the only signer of the document).

Page 113, Section 130.0(b): Correct the reference to Section 130.5(d)5 to reference

Section 130.5(d)4. There is no Section 130.0(d)5 as there are only four numbered parts of Section 130.5(d); Section 130.5(d)4 contains the specifications for hotel and motel guest rooms being referred to.

Page 118, Section 130.1(c)1, Exception 2: Remove the added number 6. This is a typographical error; the language in Section 130.1(c)6 is explicit in stating that the requirements of the Section shall be met "in addition to complying with Section 130.1(c)1".

Page 119, Section 130.1(c)1: Correct “multi-control lighting controls” to “multi-level lighting controls”, where the phrase refers to Section 130.1(b). Section 130.1(b) is titled “Multi-Level Lighting Controls”.

Page 121, Section 130.1(d)2iv: Correct the added word "combined" to the word "daylight". The change to this section is grammatical, not substantive, and the word “combined” was inadvertently borrowed from the preceding Section.

Page 129, Section 130.5: Correct the reference to Section 130.5(d) to reference Section 130.5(e). 130.5(e) is the last subsection of Section 130.5.

Page 214, Section 150.0(m)13A: Revert the change immediately following the addition of the section title. The striking of this language is inadvertent, and leaves the sentence without a verb. Additionally, this language is necessary for specifying the meaning of the acronym HSPP, an acronym also (and identically) specified and used in RA 3.3.1.

Page 224, Section 150.1(c)7Aic: Correct the numbering of the subsections of this Section to use I, II, and III. These subsections erroneously re-use a, b, and c.

Page 241, Section 150.2(b)1G: Correct the reference to Section 150.0(j)2i to reference 150.0(j)2Ai. This is a typographical error; Section 150.0(j)2 contains subsections A, B, and C, and the referenced items i, iii, and iv are under subsection A.

Page JA1-37 of the Joint Appendix, Section JA1 (Glossary): Add the word “sales” to the defined term “outdoor canopy” to match the term defined in the Standards (“outdoor sales canopy”). The revision of the definition for “sales canopy” was intended to add the word “outdoor” to match the term as defined in the Standards; the word “sales” was inadvertently lost in the edit. The definition text, which is unchanged from 2013, is explicit in specifying that the canopy is a sales canopy, and the term “outdoor canopy” is not used within the Joint Appendix.

Page 79 of the Nonresidential Appendix, Section NA 7.15.2(d): Remove the word "above". Section 120.6(g)1 specifies that an escalator "shall automatically slow <u>to</u> the minimum permitted speed", and the purpose of the test in Section NA 7.15.2(d) is to demonstrate compliance with this standard. (Underline added.)