

<b>DOCKETED</b>	
<b>Docket Number:</b>	21-BSTD-01
<b>Project Title:</b>	2022 Energy Code Update Rulemaking
<b>TN #:</b>	237719
<b>Document Title:</b>	Notice of Proposed Action - 2022 Energy Code Changes
<b>Description:</b>	Notice that the California Energy Commission proposes to adopt changes to the California Code of Regulations, Title 24, Part 1, Chapter 10 and Part 6 (2022 California Energy Code).
<b>Filer:</b>	Adrian Ownby
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	5/6/2021 12:22:25 PM
<b>Docketed Date:</b>	5/6/2021

**CALIFORNIA ENERGY COMMISSION**1516 Ninth Street  
Sacramento, California 95814[energy.ca.gov](http://energy.ca.gov)

CEC-057 (Revised 1/21)

**NOTICE OF PROPOSED ACTION****PROPOSED REVISIONS TO THE CALIFORNIA  
BUILDING ENERGY EFFICIENCY STANDARDS****2022 CALIFORNIA ADMINISTRATIVE CODE  
2022 BUILDING ENERGY EFFICIENCY STANDARDS  
CALIFORNIA CODE OF REGULATIONS, TITLE 24,  
PART 1, CHAPTER 10,  
and PART 6  
(2022 CALIFORNIA ENERGY CODE)****California Energy Commission****Docket No. 21-BSTD-01  
Notice Published on May 7, 2021****INTRODUCTION**

Notice is hereby given that the California Energy Commission (CEC) proposes to adopt changes to the California Energy Code contained in the California Code of Regulations (CCR), Title 24, Part 6 (also known as the California Energy Code), and associated administrative regulations in Chapter 10 of Part 1, after considering all recommendations, comments, and objections regarding the proposed action. A description of the proposed standards is provided in the Informative Digest below.

The CEC has prepared this Notice of Proposed Action (NOPA) and an Initial Statement of Reasons (ISOR) regarding the need for the proposed revisions and has made available all the information upon which its proposal is based. The CEC has also published the Express Terms (45-Day Language) of the proposed amendment language. These documents can be obtained from the contact persons designated below or from the CEC website at: <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.

**PUBLIC HEARING AND ADOPTION BY COMMISSION**

The CEC will hold a public hearing for the purpose of hearing comments on the proposed standards at the date and time listed below. Interested persons, or their authorized representative, may present oral and written statements, arguments, or contentions relevant to the proposed standards at the public hearing.

The public hearing will be held remotely, consistent with Executive Orders N-25-20 and N-29-20 and the recommendations from the California Department of Public Health to encourage physical distancing to slow the spread of COVID-19. Instructions for remote participation are below.

Public Hearing and Proposed Adoption Date  
Wednesday, August 11, 2021  
10:00 a.m. (Pacific Time)

## **REMOTE ATTENDANCE**

The workshop may be accessed by clicking the Zoom link below or visiting Zoom at <https://join.zoom.us> and entering the ID and password for the workshop listed below. If you experience difficulties joining, you may contact Zoom at (888) 799-9666 ext. 2, or the Public Advisor's Office at [publicadvisor@energy.ca.gov](mailto:publicadvisor@energy.ca.gov) or (800) 822-6228.

Link: <https://energy.zoom.us/j/93869230237?pwd=Zm96c09ULzdXTjd4eldtUXdnUGErdez09>  
Webinar ID: 93869230237  
Password: mtg@10am

To participate by telephone dial (213) 338-8477 or 1-888-475-4499 (toll free). When prompted, enter the Webinar ID and password listed above. To comment or ask a question over the telephone, dial \*9 to "raise your hand" and \*6 to mute/unmute your phone line.

## **PUBLIC ADVISOR**

The CEC's Public Advisor's Office provides the public assistance in participating in CEC proceedings. For information on participation or to request interpreting services or reasonable accommodations, reach out via email at [publicadvisor@energy.ca.gov](mailto:publicadvisor@energy.ca.gov), by phone at (916) 654-4489, or toll free at (800) 822-6228. Requests for interpreting services and reasonable accommodations should be made at least five days in advance. The CEC will work diligently to accommodate all requests.

Zoom: If you experience difficulties with the Zoom platform, please contact the Public Advisor's office via email or phone.

## **MEDIA INQUIRIES**

Direct media inquiries to the Media and Public Communications Office to (916) 654-4989 or [mediaoffice@energy.ca.gov](mailto:mediaoffice@energy.ca.gov).

## **WRITTEN COMMENT PERIOD**

Written and oral comments, attachments, and associated contact information (including address, phone number, and email address) will become part of the public record of this proceeding with access available via any internet search engine.

The public comment period for the 2022 Building Energy Efficiency Standards will be held from May 7, 2021 through June 21, 2021. Any interested person, or their authorized representative, may submit written comments to the CEC for consideration on or prior to June 21, 2021. The CEC appreciates receiving written comments at the earliest possible date.

The CEC encourages use of its electronic commenting system. Visit the e-commenting page at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>, which links to the comment page for this docket. Enter your contact information and a comment title describing the subject of your comment(s). Comments may be included in the “Comment Text” box or attached as a downloadable, searchable document consistent with 20 California Code of Regulations Section 1208.1. The maximum files size allowed is 10 MB.

Written comments may also be submitted by email. Include docket number 21-BSTD-01 and “2022 Energy Code” in the subject line and email to [docket@energy.ca.gov](mailto:docket@energy.ca.gov).

A paper copy may be sent to:

California Energy Commission  
Docket Unit, MS-4  
RE: Docket No. 21-BSTD-01  
1516 9th Street, MS-4  
Sacramento, CA 95814

## **POST-HEARING MODIFICATIONS TO THE TEXT OF THE REGULATIONS**

Pursuant to Government Code Section 11346.8, following the written public comment period and the public hearing, the CEC may adopt the proposed building standards substantially as proposed in this notice or with modifications that are sufficiently related to the original proposed text and notice of proposed changes. If modifications are made, the full text of the proposed modifications, clearly indicated, will be made available to the public for at least 15 days prior to the date on which CEC adopts, amends, or repeals the regulation(s). The CEC will accept written comments on the modified building standards during the 15-day period.

## **AUTHORITY AND REFERENCE**

The CEC proposes to adopt the regulations under the authority granted by Public Resources Code Sections 25213, 25218, 25218.5, 25402, 25402.1, and 25605.

The CEC proposes to implement, interpret, or make specific Public Resources Code Sections 21080.4, 21153, 25007, 25008, 25218.5, 25310, 25402, 25402.1, 25402.4, 25402.5, 25402.8, 25605, 25910, 25942, and 25943, and Health and Safety Code Sections 18930, 18934, and 18935.

## **INFORMATIVE DIGEST**

### **Summary of Existing Laws and Regulations**

The Warren-Alquist Act (California Pub. Res. Code Sections 25001 *et seq.*) establishes the CEC as California's primary energy policy and planning agency. Public Resource Code Sections 25213, 25402, 25402.1, 25402.4, 25402.5, 25402.8, 25910, 25942, and 25943 mandate and/or authorize that the CEC adopt rules and regulations, as necessary, to reduce the inefficient consumption of energy and water in newly constructed buildings and certain additions and alterations to existing buildings. One of the ways the CEC satisfies this requirement is through the California Energy Code (California Code of Regulations, Title 24, Part 6) found in the California Building Standards Code, which are adopted pursuant to Health and Safety Code Sections 18930, 18934, and 18935 and, where applicable, the California Environmental Quality Act, California Public Resources Code Sections 21000 *et seq.* The Energy Code includes all the energy efficiency requirements applicable to newly constructed buildings and additions and alterations to existing buildings. As a part of the California Building Standards Code, the Energy Code follows the same three-year update cycle.

The proposed standards are significant to the state of California in that they support state clean energy goals, policies, and mandates. The amendments will increase the deployment of on-site renewable energy generation, reduce carbon emissions from new buildings (building decarbonization), reduce growth in energy demand, increase energy demand flexibility, and ensure that California buildings are as energy efficient as is found to be technically feasible and cost-effective.

### **Summary of the Proposed Standards and Effect**

Therefore, the CEC proposes the following amendments to the Energy Code:

- Revise the prescriptive compliance path available for building projects to include only heat pump technology in specific circumstances;
- Revise the “standard design” used for the modeling-based performance compliance path available for building projects to establish the performance baseline based on heat pump technologies in specific circumstances;
- Improve existing residential energy efficiency standards for solar photovoltaic systems, including battery storage, and associated compliance options;
- Add new prescriptive solar photovoltaic and battery requirements for the following newly constructed nonresidential building types: high-rise multifamily, hotel-motel, tenant-space, office, medical office or clinic, restaurant, grocery store, retail store, school, and theater/auditorium/convention center buildings;

- Add new requirements that mixed fuel buildings be electric ready, meaning that electrical connections and other features needed to allow use of non-combustion equipment options are installed at the time of initial construction;
- Establish new energy efficiency standards for lighting, envelope, and space conditioning systems serving controlled environment horticulture spaces;
- Improve energy efficiency standards for commercial and industrial process loads, including, computer room air conditioning, refrigerated areas, fan systems, compressed air systems, and steam traps;
- Improve nonresidential and multifamily efficiency standards for building envelopes (e.g., exterior walls, windows, roofs, and floors), fan and duct systems, HVAC controls, boilers and service water heating systems, indoor and outdoor lighting systems, and grid integration equipment such as demand responsive controls;
- Improve minimum standards for residential kitchen ventilation;
- Update and enhance requirements relating to duct sealing and ventilation;
- Added language for requiring operational guides and maintenance of local exhaust systems in a multifamily building;
- Added language to require data registries to submit electronic data along with paper compliance documents to the CEC Repository;
- Revised the language to reduce the burden for local jurisdictions to designate Outdoor Lighting Zones;
- Revise the community shared solar compliance option for clarity with additional requirements for location, size, and opt-out;
- Require the Commission to make specified findings before reviewing an application for a nonresidential data registry; and
- Make numerous minor revisions to existing provisions to improve the clarity of the regulations.

The CEC proposes to adopt these amendments for publication in 2022 with an effective date of January 1, 2023.

### **Comparable Federal Statute or Regulations**

The CEC has determined that there are no existing comparable federal regulations or statutes.

### **Policy Statement Overview**

The broad objective of the regulations is to increase energy efficiency savings in the state by carrying out the CEC's statutory mandate to provide energy efficiency and conservation standards for newly constructed buildings and certain alterations and additions to existing buildings. By saving large amounts of energy, the standards will make a major contribution in meeting the state's goals for reductions in greenhouse gas emissions. By making buildings more affordable to operate, the standards

encourage investment in new construction, making capital available for other investments, to stimulate economic growth.

The specific benefits of the proposed standards are cost savings to California residents and businesses, lower statewide energy use, and lower greenhouse gas emissions from lower energy use. The total lifetime savings for the 2022 Energy Code costs incurred in 2023 are estimated to be \$8.778 billion.

Beyond the monetary benefits, the CEC estimates that the implementation of the 2022 Energy Code updates will reduce anticipated increases in statewide annual electricity demand and natural gas consumption. This will, in turn, result in a net reduction in the emissions of greenhouse gases, nitrous oxide, sulfur oxides, carbon monoxide, and particulate matter attributable to electricity generation and on-site combustion (compared to the current Energy Code requirements). Reduced air pollution and reductions in greenhouse gases will result in health benefits to Californians and help mitigate health and other costs associated with climate change. The reduction in statewide electricity demand will also marginally decrease water consumption in the electricity generation sector.

### **Evaluation of Inconsistency or Incompatibility with Existing State Regulations**

The CEC has conducted an evaluation for other state regulations in this area and has determined that the proposed standards are neither inconsistent nor incompatible with existing state regulations.

### **OTHER MATTERS PRESCRIBED BY STATUTE APPLICABLE TO THE AGENCY OR TO ANY SPECIFIC REGULATION OR CLASS OF REGULATIONS**

None

### **MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS**

The CEC has determined that the proposed regulatory action would not impose a new mandate on local agencies or school districts.

### **ESTIMATE OF COST OR SAVINGS**

The CEC has prepared an estimate in accordance with instructions adopted by Department of Finance, of cost or savings to any state agency, local agency, or school district.

- A. Cost or savings to any state agency: Yes. Buildings owned and occupied by state agencies are required to comply with the standards.
- B. Cost to any local agency required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4: No. Buildings owned or operated by local agencies are required to comply with the standards.
- C. Cost to any school district required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4: No. School buildings are covered by the

standards, and the Administrative regulations of the Division of State Architect require public school buildings to comply with the standards. However, costs of complying with the standards are not required to be reimbursed.

- D. Other nondiscretionary cost or savings imposed on local agencies: No.
- E. Cost or savings in federal funding to the state: No. While the CEC receives federal State Energy Program funding for the building standards program, the updates proposed to the standards do not alter or affect the state's ongoing participation in federal State Energy Program.

**SIGNIFICANT STATEWIDE ADVERSE ECONOMIC IMPACT ON BUSINESSES, INCLUDING ABILITY OF CALIFORNIA BUSINESSES TO COMPETE WITH BUSINESSES IN OTHER STATES**

Based on the information and evidence in the record, the CEC has made an initial determination that the proposed standards are unlikely to have a statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

California's Energy Code is part of the California Building Standards Code and therefore impacts nearly all newly constructed buildings, as well as certain additions and alterations to existing buildings. As a result, the Energy Code may eventually impact all businesses in the state that own buildings because California's Energy Code applies to buildings built in the state of California. Therefore, no California construction businesses should be at a disadvantage versus businesses in other states when all builders and manufacturers have to meet the same standards to build or sell building products in California.

While there are initial up-front costs imposed by the Energy Code, there are long-term savings that typically repay those costs by a significantly positive ratio. In the case of the 2022 Energy Code that ratio is approximately 3.5:1. Past changes to the Energy Code continue to generate benefits even as the latest version of Energy Code increases initial costs. More simply, the Energy Code helps create long-term economic growth and stability by increasing the disposable income of Californians and California businesses in the longer term. These long-term benefits far outweigh the initial upfront costs and, therefore, California businesses are not disadvantaged in competing with businesses from other states by these regulations. California has aggressively pursued environmental and energy regulations for well over a decade, while simultaneously out-performing the overall United States growth in per-capita personal income.

Additional facts, data, and evidence supporting this initial determination are included in the CEC's Economic and Fiscal Analysis (STD. 399) and in the rulemaking docket (21-BSTD-01).

## **DECLARATION OF EVIDENCE**

The basis for the CEC's findings on economic impacts is that the standards are cost-effective, and therefore will have a beneficial economic impact on the owners and occupants of buildings built to comply with the standards. Evidence for the cost-effectiveness of the standards requirements is contained in the formal rulemaking docket (21-BSTD-01).

## **DOCUMENTS INCORPORATED BY REFERENCE**

The existing Energy Code incorporates a number of industry test standards by reference. The amendments proposed for the 2022 Energy Code include updates to these standards as needed to maintain currency. The test standards are therefore incorporated by reference as a part of the proposed 2022 update:

All documents are available for review at the CEC located at 1516 Ninth Street, Sacramento, California 95814.

Any document that is not copyrighted will be available on the CEC's building standards website found at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.

## **FINDING OF NECESSITY FOR THE PUBLIC'S HEALTH, SAFETY, OR WELFARE BUSINESS REPORT:**

The regulations do not impose a new reporting requirement.

## **COST IMPACT ON REPRESENTATIVE PRIVATE PERSON OR BUSINESS**

The CEC is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. California's Energy Code is part of the California Building Standards Code and therefore impacts nearly all newly constructed buildings, as well as to certain additions and alterations to existing buildings. As a result, the Energy Code may eventually impact all businesses in the state that own buildings because California's Energy Code applies to buildings built in the state of California. While the increased energy efficiency in California's buildings may have short term initial costs, there are long-term benefits from reduced utility costs. For individuals this will result in increased disposable income and for businesses lower costs and potentially additional profit. The proposed standards are cost-effective over the life of the measure.

In addition, the CEC estimates that the implementation of the proposed standards will reduce anticipated increases in statewide annual electricity demand and natural gas consumption. This will, in turn, result in a net reduction in the emissions of greenhouse gases, nitrous oxide, sulfur oxides, carbon monoxide, and particulate matter attributable to electricity generation and on-site combustion (compared to the current Energy Code requirements). Reduced air pollution and reductions in greenhouse

gases will result in health benefits to Californians and help mitigate health and other costs associated with climate change. The reduction in statewide electricity demand will also marginally decrease water consumption in the electricity generation sector.

## **SMALL BUSINESS**

The proposed standards may affect small business. The Energy Code does not differentiate between a small business and a typical business but rather impact construction that may occur in nearly all public and private buildings in California.

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

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

### **A. The creation or elimination of jobs within the State of California**

The evidence in the record indicates that employment impacts based on the implementation of the 2022 Energy Code may result in an estimated 781 jobs created and 6,868 jobs eliminated. California businesses producing energy efficient products and technology that meet or exceed the proposed standards are likely to expand sales of those products and technologies due to the implementation of these proposed standards. Construction related jobs and occupations, and companies that provide energy efficient products and services, will likely benefit from increased demand for those products and services likely creating jobs. Any jobs eliminated may be the result of a single measure that will reduce indoor nonresidential lighting power requirements. This estimate is based on an analysis by Evergreen Economics, which can be found in the rulemaking docket (21-BSTD-01). Therefore, the CEC concludes that the proposal may both create and eliminate jobs within California.

### **B. The creation of new businesses or the elimination of existing businesses within the State of California.**

California's Energy Code is part of the California Building Standards Code and therefore impacts nearly all newly constructed buildings, as well as to specific additions and alterations to existing buildings. As a result, the Energy Code may eventually impact all businesses in the state that own buildings. However, while the increased energy efficiency in California's buildings may have short term initial costs, there are long-term benefits from reduced utility costs. California's Energy Code applies to buildings built in the state of California. As such, no California construction businesses should be at a disadvantage when all builders and manufacturers have to meet the same standards to build or sell building products in California. More broadly, while there are initial up-front costs imposed by the Energy Code, there are long-term savings that typically repay those costs by a significantly positive ratio. The Energy Code helps create long-term economic growth and stability by increasing the disposable

income of Californians and California businesses in the longer term making it possible that new businesses may be created to provide compliance services and to supply energy efficient products. Therefore, the CEC concludes that it is likely the proposal may create new businesses and unlikely the proposal may eliminate existing businesses within the state of California.

**C. The expansion of businesses currently doing business within the State of California.**

California businesses producing energy efficient products and technology that meet or exceed the proposed standards are likely to expand sales of those products and technologies due to the implementation of these proposed standards. Therefore, the CEC concludes that it is likely that businesses currently doing business in California to provide energy efficient products and services, including the sale and installation of solar photovoltaic systems are likely to be expanded.

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

The benefit of this proposed action is energy and water cost savings to California residents and businesses, lower statewide energy use, and lower statewide greenhouse gas emissions.

The proposed regulation will not adversely affect the health and welfare of California residents, worker safety, or the state's environment.

**ESTIMATED COST OF COMPLIANCE OF STANDARDS THAT WOULD IMPACT HOUSING**

The CEC has made an initial determination that the proposed standards are likely to have an effect on housing costs. California's Energy Code is part of the California Building Standards Code and therefore impacts newly constructed buildings and certain additions and alterations to existing buildings. However, the energy bill savings over the life of the building will be greater than any increased construction costs that will result from the standards.

**CONSIDERATION OF ALTERNATIVES**

The CEC has determined that no reasonable alternative considered by the CEC or that has otherwise been identified and brought to the attention of the CEC would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law.

The CEC invites interested persons to present statements, arguments, or data concerning alternatives to the proposed standards at the scheduled hearing or during the written comment period.

## **AVAILABILITY OF RULEMAKING DOCUMENTS**

The CEC maintains a website to facilitate public access to documents prepared and considered as part of this rulemaking proceeding. Documents prepared by the CEC for this rulemaking have been posted at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.

The CEC will have the entire rulemaking file available for inspection and copying throughout the rulemaking process at the address below. As of the date this notice is published in the Notice Register, the rulemaking file consists of this Notice, the Express Terms, the Initial Statement of Reasons (ISOR), the Economic and Fiscal Impact Statement (STD. 399), any documents relied upon, and any documents incorporated by reference. Copies may be obtained by contacting Corrine Fishman at the phone number below or accessed through the CEC website at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.

At the conclusion of the rulemaking, persons may obtain a copy of the Final Statement of Reasons (FSOR), once it has been prepared, by visiting the CEC's website at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency> or by contacting the contact person listed below.

## **CONTACT PERSON FOR PROCEDURAL AND ADMINISTRATIVE QUESTIONS**

Please direct general inquiries concerning aspects of the rulemaking process including requests for copies of the proposed text (Express Terms), the Initial Statement of Reasons (ISOR), any modified version of the regulations, the substance of the proposed regulations, or any other information upon which the rulemaking is based to:

Corrine Fishman  
Regulations Manager  
California Energy Commission  
Efficiency Division  
(916) 654-4287  
[corrine.fishman@energy.ca.gov](mailto:corrine.fishman@energy.ca.gov)

## **PROPOSING STATE AGENCY CONTACT PERSON FOR SUBSTANTIVE AND/OR TECHNICAL QUESTIONS ON THE PROPOSED CHANGES TO BUILDING STANDARDS**

Specific questions regarding the substantive and/or technical aspects of the proposed changes to the building standards should be addressed to:

Primary Contact:

Payam Bozorgchami, PE  
Senior Civil Engineer  
California Energy Commission  
Building Standards Office, Efficiency Division

(916) 931-9765  
[payam.bozorgchami@energy.ca.gov](mailto:payam.bozorgchami@energy.ca.gov)

Secondary Contact:

Peter Strait, Supervisor  
California Energy Commission  
Building Standards Office, Efficiency Division  
(916) 805-7427  
[peter.strait@energy.ca.gov](mailto:peter.strait@energy.ca.gov)