

CEC CALBO Update

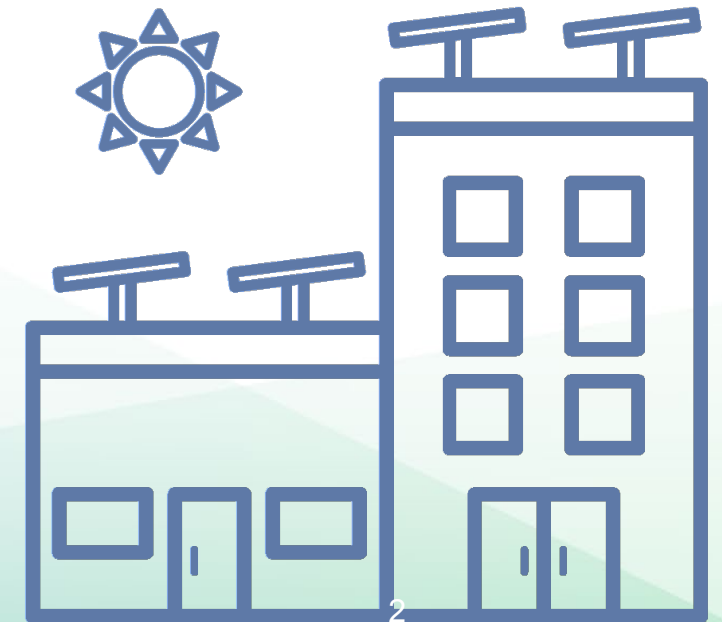


Michael J. Sokol, Deputy Director
Efficiency Division
May 11, 2022



2022 Energy Code Goals

- Increase building energy efficiency cost-effectively
- Contribute to California's greenhouse gas (GHG) reduction goals
- Enable pathways for all-electric buildings
- Reduce residential building impacts on the electricity grid
- Promote demand flexibility and self-utilization of photovoltaic (PV)
- Provide tools for local government reach codes





2022 Energy Code Schedule

DATE	MILESTONES
August 2019 - October 2020	Stakeholder meetings, workshops, and final staff workshops
August 2020 - October 2020	CASE reports submitted to the CEC
May 2021	45-day language hearings
August 11, 2021	Adoption of 2022 Energy Code at CEC Business Meeting
July 2021 - November 2021	Staff updates software, compliance manuals, electronic documents
<i>December 2021</i>	<i>Approval of the 2022 Energy Code by CBSC</i>
<i>February - June 2022</i>	<i>Software, compliance manuals, electronic documents available to industry</i>
<i>January 1, 2023</i>	<i>Effective date of 2022 Energy Code</i>



2022 Energy Code

Effective January 1, 2023

- Building permit applications submitted on or after effective date
- Must use 2022 software and forms





2022 Documents Online

2022 Building Energy Efficiency Standards

The Building Energy Efficiency Standards (Energy Code) apply to newly constructed buildings, additions, and alterations. They are a vital pillar of California's climate action plan. The 2022 Energy Code will produce benefits to support the state's public health, climate, and clean energy goals.

The California Energy Commission (CEC) updates the Energy Code every three years. On August 11, 2021, the CEC adopted the 2022 Energy Code. In December, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. The 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

Expand All

Rulemakings	+
Environmental Impact Report	+
Pre-Rulemaking	+
Post Adoption	+
Public Participation	+

BUILDING ENERGY EFFICIENCY STANDARDS - TITLE 24

2022 Building Energy Efficiency Standards

Climate Zone tool, maps, and information supporting the California Energy Code

2019 Building Energy Efficiency Standards

2016 Building Energy Efficiency Standards

Online Resource Center

Solar Assessment Tools

Past Building Energy Efficiency Standards

PROCEEDING INFORMATION

Docket Log (21-BSTD-04)

Submit e-Comment (21-BSTD-04)

CONTACT

[Building Energy Efficiency Standards - Title 24](#)

Toll-free in California: 800-772-3300

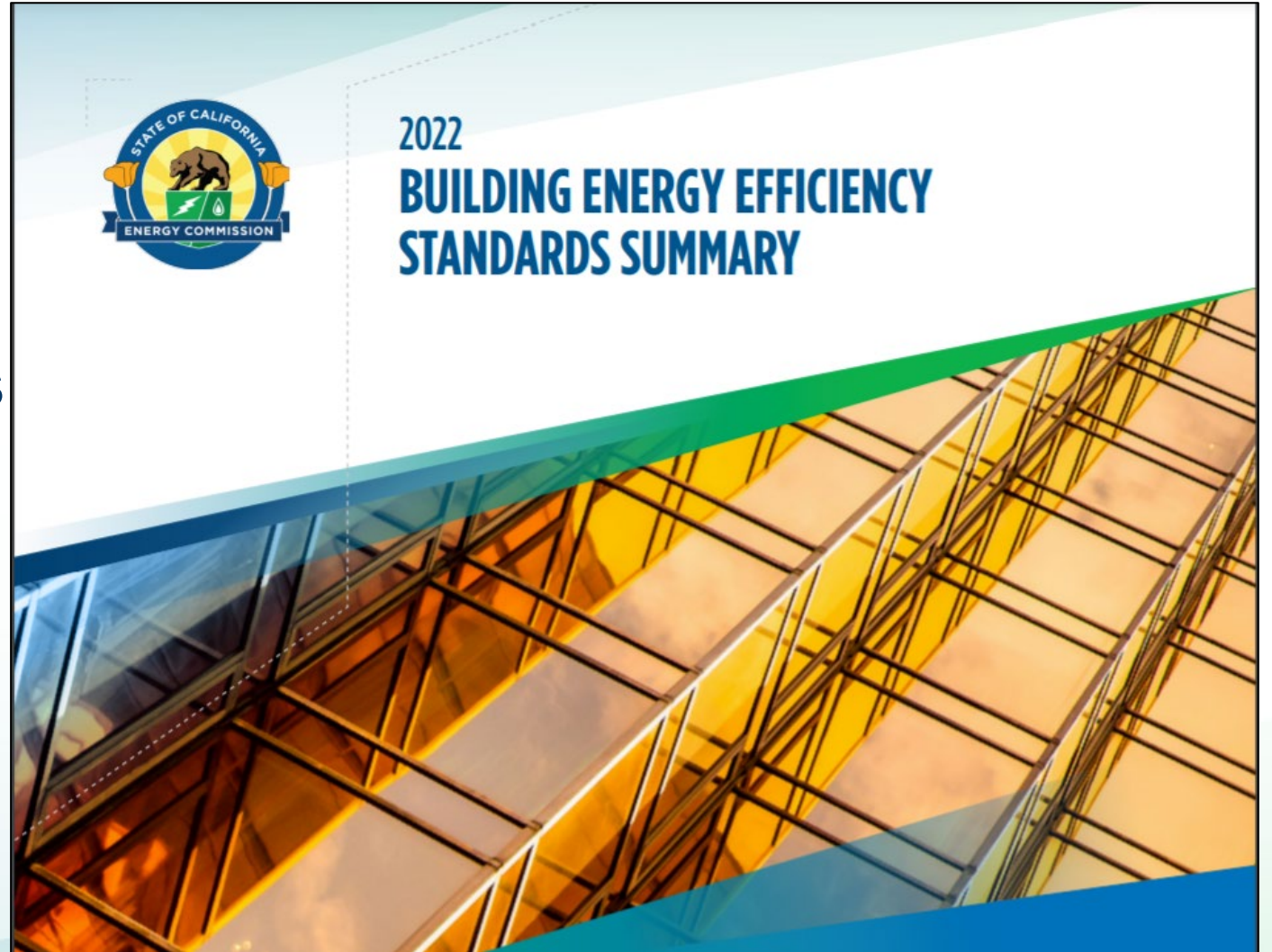
Outside California: 916-654-5106

- Energy Code
- Reference Appendices
- Draft Compliance Manuals



2022 Energy Code Highlights

- Heat pump baselines
- Solar and battery storage
- Electric-ready requirements
- Ventilation requirements
- Multifamily restructuring





Nonresidential Summary

- Baselines for performance and prescriptive compliance to encourage heat pump technology for schools, offices, banks, libraries, retail, grocery
- Solar PV, battery storage prescriptive requirements for grocery, office, financial, unleased tenant space, retail, school, warehouse, auditoriums, convention center, hotel and motel, library, medical office, restaurant, theater
- Updates for improved indoor air quality
- New efficiency requirements for commercial greenhouses
- Improves efficiency for demand-responsive controls
- Updates to indoor and outdoor lighting, LED baseline
- Updates to cool roof, air barrier and building leakage testing, metal-framed wall assembly U-factors, fenestration per climate zone



Single-family Summary

- Revise baselines to encourage heat pump technology
- Establish electric-ready requirements
- Improve provisions for solar PV, battery storage, with exceptions
- Update kitchen ventilation requirements to improve indoor air quality
- Make general improvements to clarity and consistency
- Relocate multifamily provisions into new dedicated set of chapters



Multifamily Summary

- Consolidate multifamily provisions into dedicated chapters
- Heat pump baseline
- Electric ready requirements for dwelling units
- PV and battery storage depends on number of habitable stories
- Indoor air quality for dwelling units





Blueprint Newsletter

Energy Code Newsletter

- Published quarterly
- Updates
- Clarifications
- Frequently asked questions

Issue 133 | January - March 2021

BLUEPRINT

CALIFORNIA ENERGY COMMISSION
EFFICIENCY DIVISION

IN THIS ISSUE

- Snow Load and PV
- New Fact Sheets on ORC
- Virtual Compliance Assistant for NRCC Forms
- Updated Lighting Videos
- Q&A
 - Accessory Dwelling Unit (ADU) Scenarios
 - Kitchen Range Hood HERS Verification for Alterations

Snow Load and PV

The 2019 Building Energy Efficiency Standards (Energy Code) includes solar photovoltaic (PV) system requirements for all newly constructed low-rise residential buildings per [Section 150.1\(c\)14](#). The California Building Code (CBC, Title 24, Part 2) and the California Residential Code (CRC, Title 24, Part 2.5) require PV systems, including modules, supports, and attachments, to meet the design and installation requirements for high snow loads in American Society of Civil Engineers (ASCE) Standard 7-16. Simultaneous compliance with the code requirements of the Energy Code, CBC, and CRC should be met, when feasible, in all newly constructed low-rise residential buildings.

The California Energy Commission (CEC) has confirmed that the solar PV system requirement does not apply to buildings that cannot meet the PV system structural requirements in the CBC and CRC due to high snow loads.

Site-specific conditions will determine whether a PV system can be installed safely to meet

high snow loads. Building permit applicants must address the issues under their control to meet PV system high snow load structural requirements. These include the specific characteristics of the PV modules, method of installation, roof slope and design, and PV module location.

Steps that can be taken to meet high snow load structural requirements include the following:

- Use three-rail mounting or other installation practices to make PV modules resilient to high snow loads.
- Design roof slopes and PV module locations to maximize the roof slope and allow the PV system to qualify as unobstructed slippery surfaces.
- Modify roof designs, roof locations, or PV module mounting to avoid unnecessary snow accumulation or snow sliding off the roof to undesirable locations on the site.

Local enforcement agencies should ensure that practical approaches are taken to design homes that facilitate the installation of PV systems whenever possible.

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Energy Code Hotline



Monday through Friday

8:00 a.m. to 12:00 p.m.

1:00 p.m. to 4:30 p.m.

Call

800-772-3300 in CA

916-654-5106 outside CA

Email

Title24@energy.ca.gov



2025 Energy Code Potential Themes

- Heat pump baselines and refrigerants
 - 6 million heat pumps by 2030
- Energy storage and load flexibility
- Additions, alterations, and ADUs
- Covered process loads and embodied carbon
- Electric vehicle (EV) readiness and EV credits
- Energy code accounting: prototypes, weather data, metrics, and utility rates
- Focus on compliance strategies and tools
- Affordable housing program integration
- Interagency coordination



2025 Energy Code Milestones

Milestone	Tentative Dates
2025 Energy Code Kickoff – Compliance Tools & Templates	March 22, 2022
Deadline to Submit New Measures (title24stakeholders.com)	April 15, 2022
Measure Identification & Selection	April 2022
Update Energy Code Accounting Metrics	Now through July 2022
Research Version of Compliance Software	September 2022
Utility Sponsored Workshops	August 2022 – March 2023
Draft CASE Measure Reports to CEC	March 2023 – June 2023
CEC Pre-Rulemaking Workshops	April 2023 – July 2023
Final CASE Measure Reports to CEC	July 2023 – August 2023
Draft Express Terms Review	October 2023
Open Formal Rulemaking	January 2024



Thank you