



# 2022 Nonresidential Building Commissioning

Presenter: Allen Wong, Associate Energy Specialist

Date: December 2023



# 2022 Energy Code Basics



# Energy Code History

## Warren-Alquist Act established CEC in 1974

- Authority to develop and maintain Building Energy Efficiency Standards (Energy Code)
- Requires CEC to update periodically, usually every 3 years
- Requires Energy Code to be cost-effective over economic life of building

### WARREN-ALQUIST ACT

Warren-Alquist  
State Energy Resources  
Conservation and  
Development Act

Public Resources Code  
Section 25000 et seq.



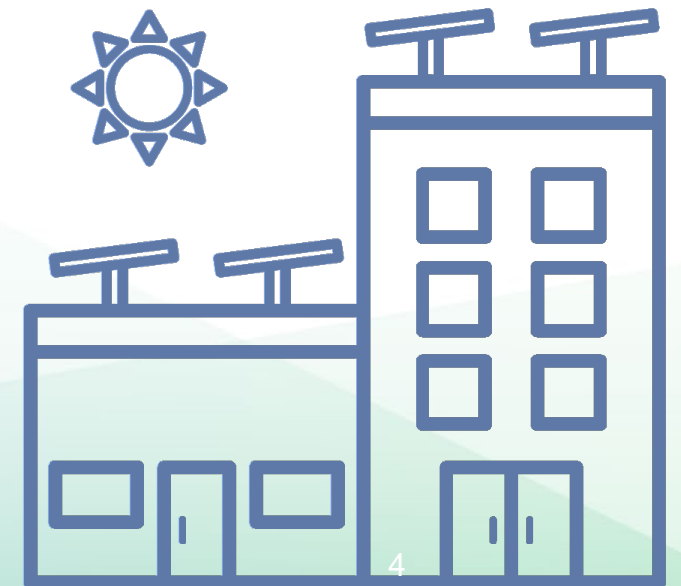
CALIFORNIA  
ENERGY COMMISSION  
Gavin Newsom, Governor

2022 EDITION  
JANUARY 2022  
CEC-140-2022-001



# 2022 Energy Code Goals

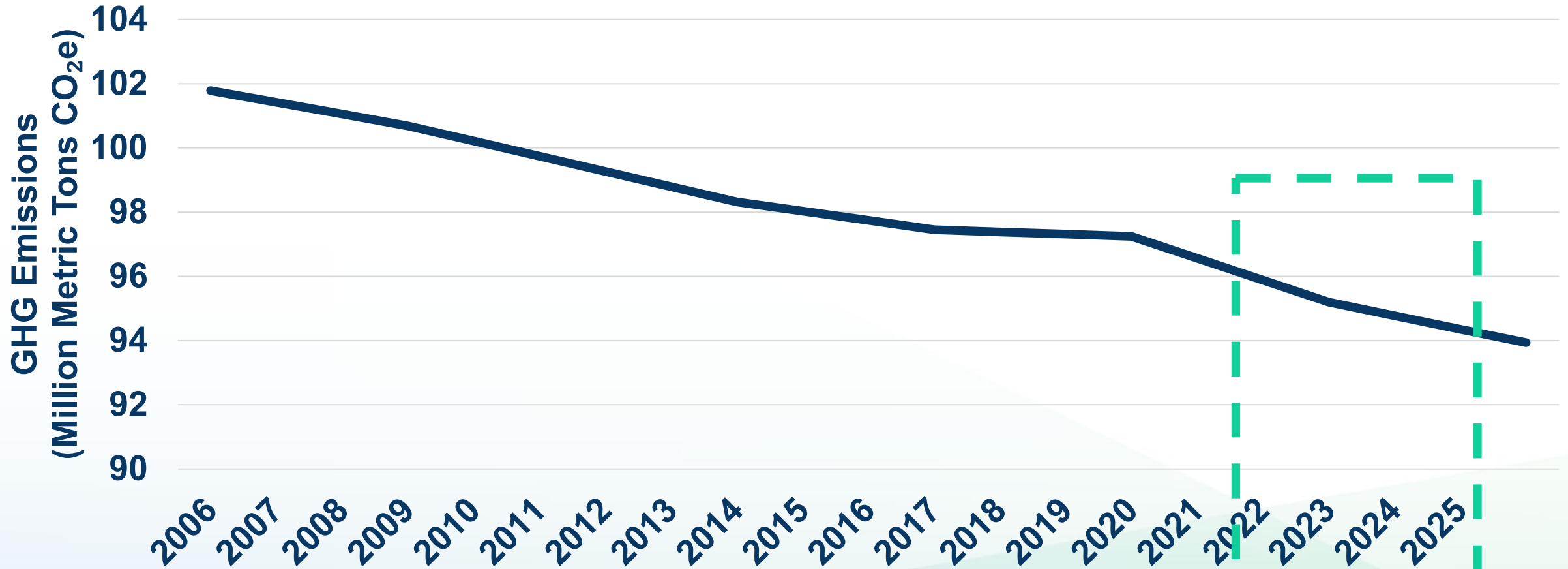
- Increase building energy efficiency cost-effectively
- Contribute to California's greenhouse gas (GHG) reduction goals
- Enable pathways for all-electric buildings
- Reduce residential building impacts on the electricity grid
- Promote demand flexibility and self-utilization of photovoltaic (PV)
-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





# Energy Code Environmental Benefit

## Reduced Statewide Emissions



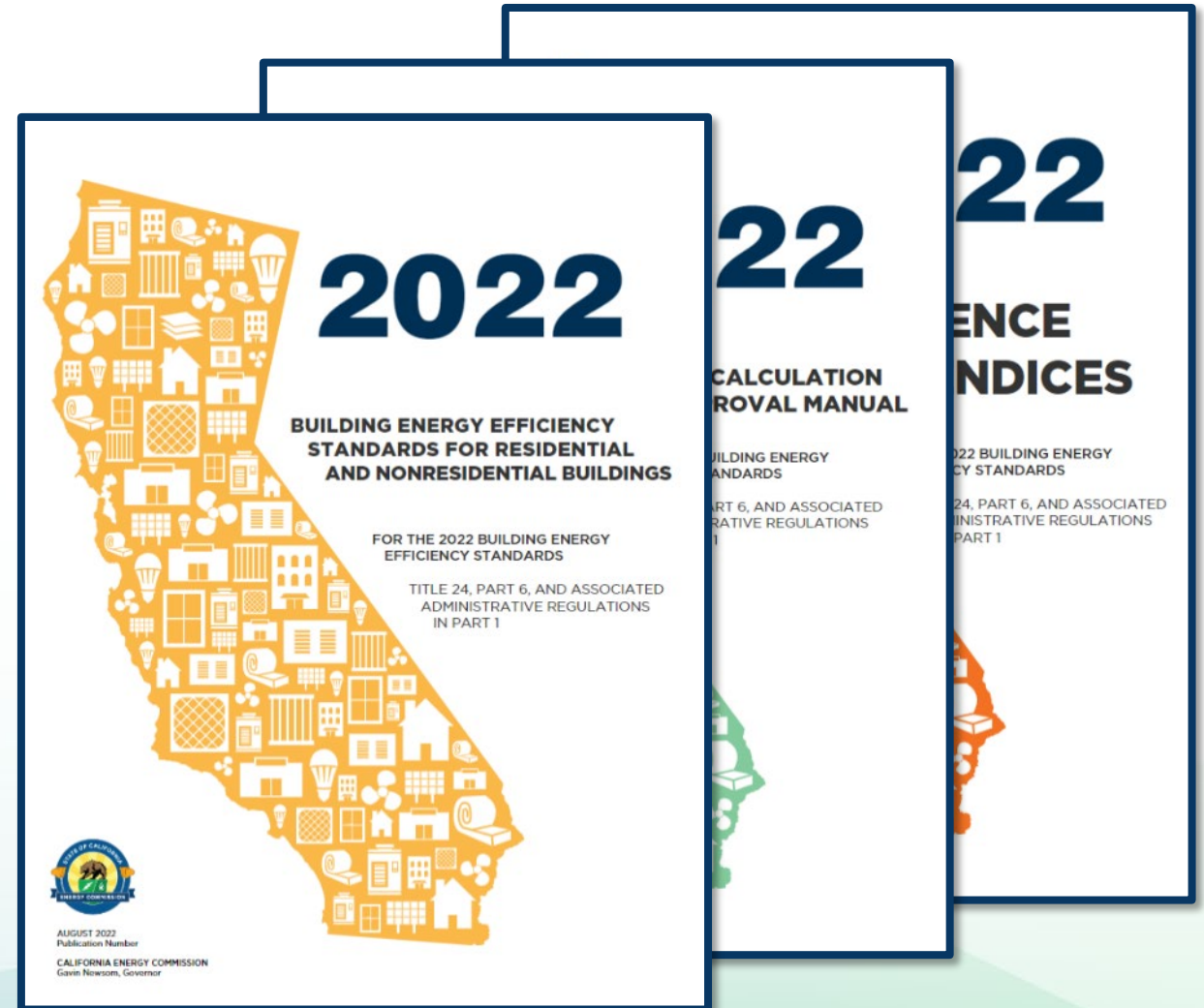
Source: CEC Impact Analysis 2005, 2008, 2013, 2016, 2019, 2022



# 2022 Energy Code

## Effective January 1, 2023

- Building permit applications submitted on or after Jan 1, 2023
- Must use 2022 tools
  - Software
  - 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.

2022 Energy Code for Residential and Nonresidential Buildings

2022 ENERGY CODE >



Expand All

Supporting Documents – Appendices, Compliance Manuals, and Forms +

Software – Compliance Software, Manuals, and Tools +

### BUILDING ENERGY EFFICIENCY STANDARDS - TITLE 24

2025 Building Energy Efficiency Standards

2022 Building Energy Efficiency Standards ^

— Workshops, Notices, and Documents

2019 Building Energy Efficiency Standards

2016 Building Energy Efficiency Standards

Past Building Energy Efficiency Standards

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

Online Resource Center

Solar Assessment Tools

### RELATED LINKS

Workshops, Notices, and Documents

### CONTACT

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

Toll-free in California: 800-772-3300

Outside California: 916-654-5106

### SUBSCRIBE

Building Energy Efficiency Standards

Email \*

SUBSCRIBE

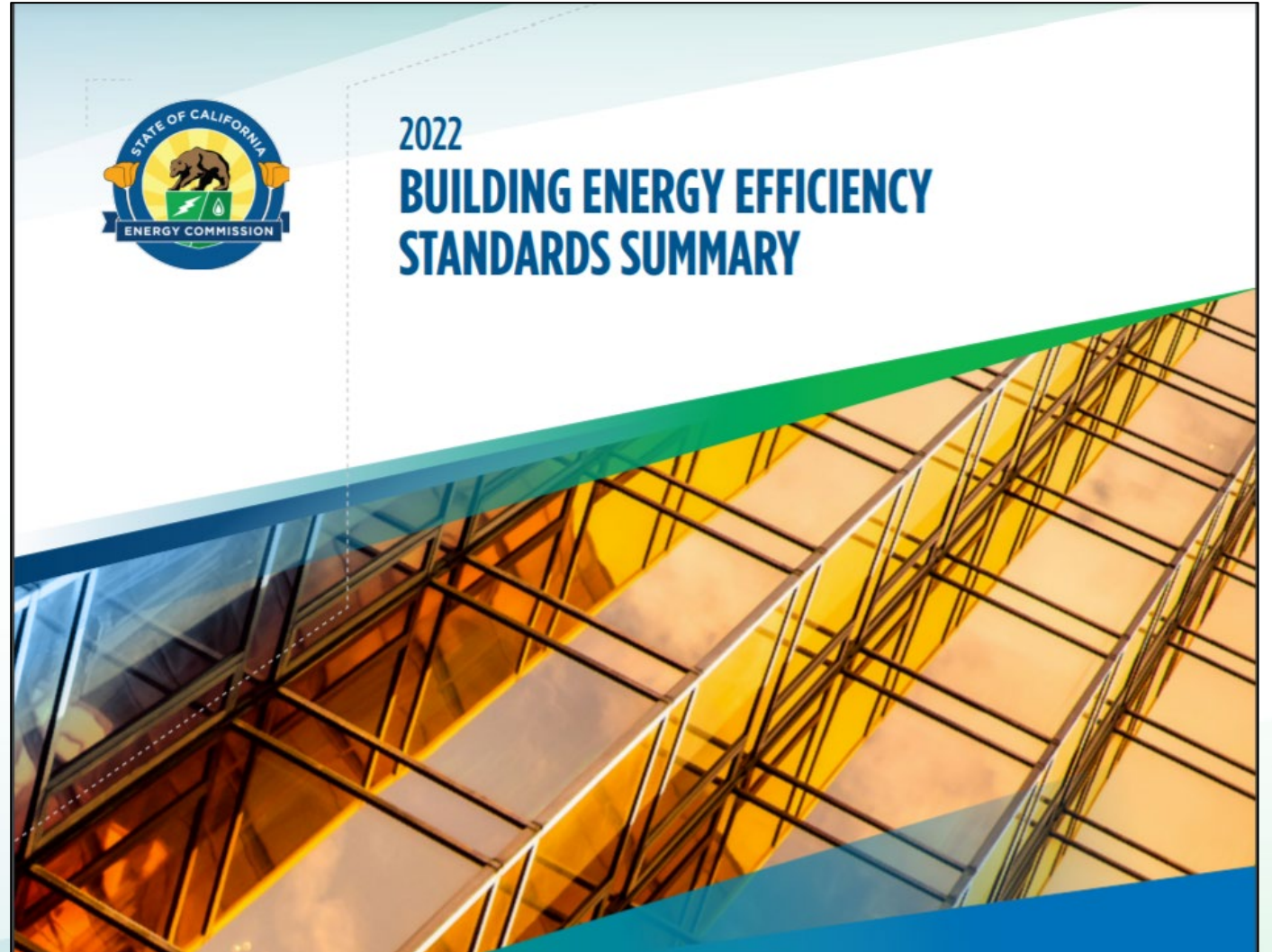
- Energy Code
- Reference Appendices
- Compliance Manuals
- Software
- Forms





# 2022 Energy Code Highlights

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







# 2022 Compliance Software

Performance approach must use approved compliance software versions

- Nonresidential and multifamily
  - CBECC 2022.3.0
  - EnergyPro 9.2
  - IES 1.1



# **Commissioning Requirements, §§10-103, 100.1, 120.8**



# Definitions (§100.1)

- Building Commissioning (often abbreviated “Cx”)
  - Systematic quality assurance process
    - Verify and document building systems are planned, designed, installed, tested, operated and maintained per owner’s requirements
  - Spans entire design and construction process



# Definitions (§100.1), cont.

Complex Mechanical Systems are systems that...

## Include One Of These:

- Fan systems each serving multiple thermostatically controlled zones
- Built-up air handler systems (non-unitary or nonpackaged HVAC equipment)
- Hydronic or steam heating systems
- Hydronic cooling systems

## But Are Not These:

- Single-zone unitary or packaged equipment listed in Tables 110.2-A, -B, -C, & -E
- Two-pipe, heating only systems serving one or more zones



# §120.8 – Applicability

## Applies to...

- Newly constructed nonresidential spaces, including in mixed occupancy buildings
  - Requirements are based on square footage of nonresidential spaces
- Healthcare facilities must meet Title 24, Part 1, Chapter 7

## Does Not Apply to...

- Single-family and multifamily dwelling units or Hotel/Motel spaces
- Covered Processes
- Cx of existing buildings is not required for additions and alterations



# §10-103(a)1 – Signature Requirements

- NRCC-CXR-E reviewed and signed by a **licensed** professional:
  - Engineer
  - Architect
  - Contractor under direct supervision of licensed engineer/architect

	Engineer or Architect of Record	Qualified In-House Engineer or Architect (No Other Project Involvement)	Third-Party Engineer, Architect, or Contractor
< 10,000 sq ft	Yes	Yes	Yes
10,000 – 50,000 sq ft	No	Yes	Yes
> 50,000 sq ft OR Complex mech sys serving > 10,000 sq ft	No	No	Yes



# Code Quiz 1

- **When do commissioning requirements apply?**
  - a) Nonresidential buildings and spaces greater than 10,000 ft<sup>2</sup>
  - b) Nonresidential buildings and spaces less than 10,000 ft<sup>2</sup>
  - c) Both a) and b)
- **Who can conduct a design review for a building > 50,000 ft<sup>2</sup>?**
  - a) A third-party engineer, architect, or contractor
  - b) In-house engineer or architect not associated with the project
  - c) Both a) and b)
- **Who can conduct a design review for a 15,000 ft<sup>2</sup> building that has a complex mechanical system?**
  - a) A third-party engineer, architect, or contractor
  - b) In-house engineer or architect not associated with the project
  - c) Both a) and b)



# Typical Commissioning Team

- Commissioning coordinator
- Energy consultant
- Owner or owner's representative
- Design review sign off authority
- Acceptance test technicians
- Prime contractor and Architect
- Building maintenance personnel
- Manufacturer reps





# §120.8 - Summary of Commissioning Requirements

	§120.8	< 10,000 ft <sup>2</sup>	≥ 10,000 ft <sup>2</sup>
Owner's or Owner Representative's Project Requirements (OPR)	(b)		X
Basis of Design (BOD)	(c)		X
Design Phase Design Review	(d)	X	X
Commissioning measures shown in the construction documents	(e)	X	X
Commissioning Plan	(f)		X
Functional performance testing	(g)		X
Documentation and training	(h)		X
Commissioning report	(i)		X



# §120.8(b) - Owner's Project Requirements (OPR)

- Owner's expectations for building features; required for permit application
  - Expected hours of occupancy
  - Environmental and future expansion considerations
  - Budget and operational constraints
  - Equipment – type, controls, technologies, maintenance, manufacturers, lifespan
  - Special characteristics (e.g., breakrooms, kitchens, snack bars)
  - Energy Efficiency Goals (NRCC-CXR-E Table G)



# §120.8(c) - Basis of Design (BOD)

- Explains how system designs meet OPR and why they were selected
  - HVAC and water heating systems
  - Lighting systems (e.g., controls, power densities, fixture types)
  - Envelope efficiencies
  - Cost effectiveness of chosen systems
  - Systems O&M requirements
- NRCC-CXR-E Table H



# §120.8(d) – Design Phase Design Review

- Required for **all** newly constructed nonresidential buildings
- Improves Energy Code compliance, and encourages best design practices
- Two design reviews during design phase:
  1. Design Review Kickoff
  2. Construction Documents Design Review
- Design reviewer per §10-103(a)1 reviews and signs NRCC-CXR-E



# §120.8(d) - Design Reviewer

- NRCC-CXR-E must be signed off by same reviewer
- Design reviews conducted by licensed professional per §10-103(a)1

	Engineer or Architect of Record	Qualified In-House Engineer or Architect (No Other Project Involvement)	Third-Party Engineer, Architect, or Contractor
< 10,000 sq ft	Yes	Yes	Yes
10,000 – 50,000 sq ft	No	Yes	Yes
> 50,000 sq ft OR Complex mech sys serving > 10,000 sq ft	No	No	Yes



# §120.8(d) - Design Review Kickoff

- In-person meeting between owner/ representative, design team, and design reviewer to review and discuss:
  - OPR and BOD ( $\geq 10,000$  ft<sup>2</sup>)
  - Energy efficiency goals – [NRCC-CXR-E](#) Table F ( $< 10,000$  ft<sup>2</sup>)
  - Commissioning Plan ( $\geq 10,000$  ft<sup>2</sup>)
  - Energy Efficiency measures
  - Schedule and team coordination
  - Documentation and issue tracking
  - Responsibilities
  - NRCCs



# §120.8(d) - Construction Documents Design Review

- Review and document changes in OPR, BOD, Commissioning Plan, schedule, etc.
- Reviewer verifies construction documents meet design requirements and signs NRCC-CXR-E
  - All newly constructed nonresidential buildings, regardless of compliance approach or building size, requires NRCC-CXR-E
- Review applicable NRCCs



# §120.8(e) – Commissioning Measures Shown in the Construction Documents

- Cx measures included in plans and specifications and be clear, detailed, and complete:
  - Systems and assemblies to be commissioned
  - Acceptance testing to be completed
  - Contractor roles and responsibilities
  - Meetings requirements
  - Issues management
  - Commissioning schedule
  - O&M manual development and training
  - NRCC-CXR-E, Table I





# §120.8(f) – Commissioning Plan

- Documents how project will be commissioned
- Must be started in design phase, and include:
  - Roles and responsibilities
  - Commissioning goals that ensure OPR and BOD are met
  - Project schedule
  - Equipment functional test requirements & verification, and test schedule
  - List of required documentation to support testing
  - Description of how issues will be logged
  - Description of how maintenance staff training will be facilitated
- Required for permit application



# §120.8(g) – Functional Performance Testing

- Ensures installed equipment, systems, and inter-system interfaces operate as required:
  - Acceptance test requirements per §§120.5 & 130.4
  - Testing of systems described in BOD
- Reports must contain testing methods used, readings, and adjustments made
- Test reports and acceptance test forms (NRCA) required for final inspection



# §120.8(h) – Documentation and Training, cont.

- **Systems Manual** delivered to owner and facilities operator; must include:
  - Site information (facility description, historical and current requirements, site contacts)
  - Instructions for basic O&M, general site operations, basic troubleshooting; recommended maintenance requirements; and site events log
  - Description of major systems
  - Site equipment inventory and maintenance notes
  - Copies of special inspection verifications required by the enforcing agency or codes



# §120.8(h) – Documentation and Training

- **Systems Operations Training** completed with appropriate staff for each equipment type or system; documented in Cx report
- Training materials must include:
  - System and equipment overview (i.e., what the equipment is, what it does, and other systems interfaced with)
  - Review and demonstration of operation, servicing and preventive maintenance
  - Review of information in Systems Manual
  - Review of record drawings on systems and equipment



# §120.8(i) – Commissioning Report

- Complete report of commissioning activities through design, construction and reporting recommendations for post-construction phases
  - Commissioning process and test results
  - Confirmation of how commissioned systems meet OPR, BOD, and Contract Documents
  - Change and issue logs
  - Summary of O&M training completed and scheduled
- Required for final or before building occupancy
- Provided to owner or owner’s representative



# Code Quiz 2

- **Which of the following require the NRCC-CXR-E form?**
  - a) Nonresidential projects using the performance compliance approach
  - b) Nonresidential projects using the prescriptive compliance approach
  - c) Nonresidential projects greater than 10,000 ft<sup>2</sup>
  - d) Nonresidential projects less than 10,000 ft<sup>2</sup>
  - e) b) and c)
  - f) a), b), and c)
  - g) All the above**



## Code Quiz 3

- **Which commissioning measures are mandatory for a new, 9,000 ft<sup>2</sup> nonresidential building? Choose all that apply.**
  - a) Owner's or owner representative's project requirements
  - b) Basis of design
  - c) Design phase design review
  - d) Commissioning measures shown in the construction documents
  - e) Commissioning plan
  - f) Functional performance testing
  - g) Documentation and training
  - h) Commissioning report
  - i) None



## Code Quiz 4

- **A mixed occupancy building has both residential and nonresidential spaces. The water heating system serves both the residential and nonresidential spaces of the building. Is the water heating system included in the building commissioning?**
  - a) Yes
  - b) No
- **Do the commissioning requirements apply to tenant improvements (first time buildouts) for multi-tenant buildings such as a strip mall?**
  - a) Yes
  - b) No
  - Yes but..., depending on the local AHJ policy, commissioning may be completed for the entire building prior to tenant improvements, or for each individual tenant improvement.





# Requirements Summary

	< 10,000 ft <sup>2</sup>	≥ 10,000 50,000 ft <sup>2</sup>	> 50,000 ft <sup>2</sup>	< 10,000 ft <sup>2</sup> Complex System	≥ 10,000 ft <sup>2</sup> Complex System
OPR		X	X		X
BOD		X	X		X
Kickoff Design Review	X	X	X	X	X
Construction Document Design Review	X	X	X	X	X
Commissioning Plan		X	X		X
Functional Performance Testing		X	X		X
Documentation and Training		X	X		X
Commissioning Report		X	X		X
Signed by Engineer or Architect of Record	X			X	
Signed by Non-Affiliated Engineer or Architect	X	X		X	
Signed by Third Party Engineer or Architect	X	X	X	X	X



# When Commissioning Items Need to be Completed

	< 10,000 ft <sup>2</sup>	≥ 10,000 50,000 ft <sup>2</sup>	> 50,000 ft <sup>2</sup>	< 10,000 ft <sup>2</sup> Complex System	≥ 10,000 ft <sup>2</sup> Complex System
OPR		Permit	Permit		Permit
BOD		Permit	Permit		Permit
Kickoff Design Review	Permit	Permit	Permit	Permit	Permit
Construction Document Design Review	Permit	Permit	Permit	Permit	Permit
Commissioning Plan		Permit	Permit		Permit
NRCC-CXR-E	Permit	Permit	Permit	Permit	Permit
Functional Performance Testing		Final	Final		Final
Documentation and Training		Final/ Occupancy	Final/ Occupancy		Final/ Occupancy
Commissioning Report		Final/ Occupancy	Final/ Occupancy		Final/ Occupancy



# Enforcement – Plans Review (1 of 4)

- NRCC-CXR-E Commissioning Document:
  - Verify Table **A. GENERAL INFORMATION** matches plans (area, occupancy type, HVAC type, climate zone...etc.)

## CERTIFICATE OF COMPLIANCE

*This document is used to demonstrate compliance with mandatory commissioning requirements in §120.8 for nonresidential buildings and hotel/motel or mixed-use buildings with nonresidential spaces. This document does not demonstrate compliance with commissioning requirements within Title 24, Part 11, which need to be documented separately if they apply.*

Project Name:	Enforcement Agency:
Dwelling Address:	Permit Number:
City and Zip Code:	Permit Application Date:

## A. GENERAL INFORMATION

01	Project Location (city)		04	Building Size (ft <sup>2</sup> )	
02	Occupancy Type		05	Nonresidential Conditioned Floor Area (ft <sup>2</sup> )	
03	Project Type		06	HVAC System Type	
			07	Climate Zone	



# Enforcement – Plans Review (2 of 4)

- **NRCC-CXR-E** Commissioning Document:
  - Table **B. PROJECT SCOPE** will populate automatically based on nonresidential area and equipment type. For buildings < 10,000 ft<sup>2</sup> only 01 and 04 apply:

<b>B. PROJECT SCOPE</b>			
<i>Based on project information provided in Table A, Table B indicates which commissioning related requirements apply per §120.8. Table B is not editable by the user.</i>			
<b>Commissioning Requirements per §120.8</b>			
01	Table F: Design Review Kickoff	§120.8(d)1 and §120.8(d)2	The design review kickoff meeting establishes who will play the role of the design reviewer, the project schedule and identify owner's requirements. This meeting should be conducted during schematic design.
02	Table G: Owner's Project Requirements (OPR)	§120.8(b)	The owner's project requirements establish the owner's goals, requirements, and expectations for everything related to energy consumption and operation. This should be completed during schematic design.
03	Table H: Basis of Design (BOD)	§120.8(c)	The basis of design documents the design elements such as calculations and product selections that meet the owner's project requirements and applicable regulatory requirements. This should be completed during schematic design.
04	Table I: Design Review	§120.8(d) and §120.8(e)	The design reviewer(s) reviews the construction documents for clarity, completeness, and adherence to the owner's goals. Commissioning measures must be included in the construction documents to facilitate the design review and commissioning process. For projects with ≥ 10,000 ft <sup>2</sup> of nonresidential conditioned floor area, the design review is for adherence with the Owner's Project Requirements (OPR) and Basis of Design (BOD). This should be conducted during design.
05	Table J: Commissioning Plan	§120.8(f)	The commissioning plan is developed by the commissioning provider with input from the designer and defines the scope of commissioning the project. This should be drafted during design and completed during early construction.
06	Table K: Functional Performance Testing	§120.8(g)	Functional performance testing is conducted on building systems to demonstrate correct installation and operation.
07	Table L: Documentation and Training	§120.8(h)	Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner or representative and facilities operator.
08	Table M: Commissioning Report	§120.8(i)	A complete report of commissioning process activities undertaken through the design, construction, and reporting recommendations for post-construction phases of the building project shall be completed and provided to the owner or representative.



# Enforcement – Plans Review (3 of 4)

- NRCC-CXR-E Commissioning Document:
  - Verify Table **C. COMPLIANCE RESULTS** shows **COMPLIES** and all required items show **Yes**. For buildings < 10,000 ft<sup>2</sup>, only 01 & 04 apply:

<b>C. COMPLIANCE RESULTS</b>								
Table C will indicate if the project data input into the compliance document is compliant with commissioning requirements per §120.8. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.								
01	02	03	04	05	06	07	08	09
Design Review Kickoff	Owners Project Requirements	Basis of Design	Design Review	Commissioning Plan	Functional Performance Testing	Documentation and Training	Commissioning Report	<b>Compliance Results</b>
Table F	Table G	Table H	Table I	Table J	Table K	Table L	Table M	
YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	<b>COMPLIES or DOES NOT COMPLY</b>
10	Design Reviewer(s) for the project include:							<b>COMPLIES or DOES NOT COMPLY</b>



# Enforcement – Plans Review (4 of 4)

- NRCC-CXR-E Commissioning Document:
  - Table **D. EXCEPTIONAL CONDITIONS** and Table **E. ADDITIONAL REMARKS** are information tables to assist the AHJ at permit and plan check

## **D. EXCEPTIONAL CONDITIONS**

*This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.*

--

## **E. ADDITIONAL REMARKS**

*This table includes remarks made by the installer to the Authority Having Jurisdiction.*

--



# Enforcement – Inspection

- **Inspection:**
  - Verify NRCC-CXR-E and the following documents are present and completed:
    - May either be separate documents or completed in NRCC-CXR-E:
      - Owner’s Project Requirements (OPR)
      - Basis of Design (BOD)
      - Commissioning plan
    - Stand alone documents:
      - All acceptance testing documents are complete and passed
      - Other BOD commissioning tests documents are complete and show passing
      - Systems Manual
      - Evidence of training
      - Commissioning Report





# Commissioning Key Takeaways

- Some commissioning measures are required regardless of building size
- Commissioning does not apply to hotel/motel or residential spaces
- Commissioning only applies to newly constructed nonresidential buildings
- Level of design review sign-off determined by nonresidential area and equipment type
- NRCC-CXR-E always required, regardless of compliance method
  - Tables A-C for accuracy, completeness, and compliance results
- Verify all documentation at final





# Resources



# Online Resource Center

[www.energy.ca.gov/orc](http://www.energy.ca.gov/orc)



## Handouts

- Fact sheets
- Guides

## Tools

- Checklists
- Blueprint newsletter

## Training

- Presentations
- Videos

## Links

- Internal resources
- External resources



# 2022 Energy Code Handouts

- Solar PV and battery fact sheets
- Covered processes fact sheets
- Envelope fact sheets
- Summary of significant changes
- Summary of mandatory requirements
- Download from the [Online Resource Center](#)





# Blueprint Newsletter

## Energy Code quarterly newsletter

- Updates
- Clarifications
- Frequently asked questions



Issue 138
April - June 2022

# BLUEPRINT

CALIFORNIA ENERGY COMMISSION  
EFFICIENCY DIVISION

### IN THIS ISSUE

- 2022 Energy Code: Multifamily Summary
- 2022 Energy Code: Compliance Software
- 2019 Energy Code: HERS Verifications
- Q&A
  - Solar PV for Multifamily Buildings
  - Multifamily Water Heating
  - Multifamily Common Use Areas

For additional help with the Energy Code see Energy Code Ace's **online offerings** of trainings, tools, and resources.

### 2022 Energy Code: Multifamily Summary

The 2022 Building Energy Efficiency Standards (Energy Code) reorganizes low-rise (three or fewer habitable stories) and high-rise (four or more habitable stories) multifamily buildings into one building type, updates the multifamily buildings definition in § 100.1, and moves all requirements for multifamily buildings to §§ 160.0-180.4. This and other significant changes include:

*Mandatory Requirements*

- Updates minimum efficiencies for HVAC equipment; adds minimum efficiency requirements for dedicated outdoor air systems (DOAS), heat pump, and heat recovery chiller packages. § 110.2
- Changes demand responsive lighting controls trigger to 4,000 watts or more; adds requirements for controlled receptacles. §§ 110.12, 160.5(b)4E

- Unifies envelope insulation, vapor retarder, and fenestration requirements. § 160.1
- For dwelling units
  - Adds requirements for central fan integrated ventilation systems requiring a motorized controlled damper, damper controls, and variable ventilation. § 160.2(b)2Aii
  - Requires vented kitchen range hoods ventilation rates or capture efficiencies based on conditioned floor area and fuel type per Tables 160.2-E, F, G. § 160.2(b)2Avic2
  - Requires a HERS-verified maximum fan efficacy of 1.0 Watts per cfm for heat recovery ventilation (HRV) and energy recovery ventilation (ERV) systems. § 160.2(b)2Biii
  - Adds mechanical acceptance testing requirements. § 160.3(d)2
  - Adds electric-ready requirements when gas equipment is installed for space heating, cooking, and clothes dryers. § 160.9(a-c)



# Stay Connected

## Receive Energy Code updates

- [Subscribe to Efficiency Division emails](#)
  - Appliances
  - Blueprint
  - Building Standards
- Respond to confirmation email

## Follow the California Energy Commission





# 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

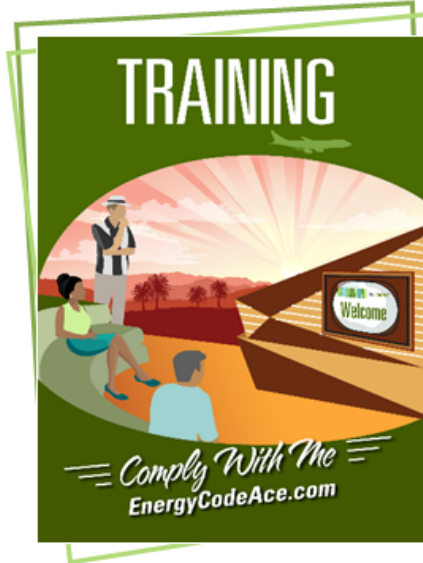


Email

- [Title24@energy.ca.gov](mailto:Title24@energy.ca.gov)



# Energy Code Ace



- Tools help automate tasks:**
- ✦ Energy Code Product Finder
  - ✦ Forms Ace
  - ✦ Image Ace
  - ✦ Navigator Ace
  - ✦ Nonres. Indoor Lighting Wheel
  - ✦ Q&Ace
  - ✦ Reference Ace
  - ✦ Timeline Ace
  - ✦ Virtual Compliance Assistant

- Training is activity based and delivered in a variety of formats:**
- ✦ Live Online instructor-led
  - ✦ Online self-study
  - ✦ Recorded webinars
  - ✦ YouTube — live streaming & videos

- Resources provide quick, useful guidance:**
- ✦ Fact Sheets
  - ✦ Checklists
  - ✦ Application Guides
  - ✦ Submit a Question
  - ✦ Trigger Sheets
  - ✦ Useful Links

Join us at [EnergyCodeAce.com](http://EnergyCodeAce.com)



# 3C-REN

The screenshot shows the homepage of the 3C-REN website. At the top left is the 3C-REN logo. To its right is a navigation menu with four items: 'ABOUT 3C-REN', 'HOME ENERGY SAVINGS', 'BUILDING PERFORMANCE TRAINING', and 'ENERGY CODE CONNECT'. A search icon is located to the right of the menu. Below the navigation is a large banner image of a mountain range. Overlaid on the bottom of the banner is the text: '3C-REN (Tri-County Regional Energy Network) reduces energy use in our region's buildings for a more affordable, healthy, resilient and sustainable community.' Below the banner are three columns of content. The first column is titled 'HOME ENERGY SAVINGS' with a house icon and the text 'Save energy and improve your property', with a 'Start Saving Today!' button. The second column is titled 'BUILDING PERFORMANCE TRAINING' with a person at a computer icon and the text 'Develop your skills in building performance', with a 'Find a Course' button. The third column is titled 'ENERGY CODE CONNECT' with a house and document icon and the text 'Personalized coaching and educational events to simplify the energy code', with a 'Submit Your Inquiry' button.

**3C-REN**

**ABOUT 3C-REN** **HOME ENERGY SAVINGS** **BUILDING PERFORMANCE TRAINING** **ENERGY CODE CONNECT** 🔍

**3C-REN (Tri-County Regional Energy Network) reduces energy use in our region's buildings for a more affordable, healthy, resilient and sustainable community.**

**HOME ENERGY SAVINGS**  
Save energy and improve your property  
[Start Saving Today!](#)

**BUILDING PERFORMANCE TRAINING**  
Develop your skills in building performance  
[Find a Course](#)

**ENERGY CODE CONNECT**  
Personalized coaching and educational events to simplify the energy code  
[Submit Your Inquiry](#)





# BayREN

The screenshot shows the BayREN website interface. At the top left is the BayREN logo with the tagline "Local Governments Empowering Our Communities". To the right of the logo is a navigation menu with links: "» HOW TO GET STARTED", "» FIND A CONTRACTOR", "» FIND AN ASSESSOR", and "» PARTNER WITH US". Further right is an accessibility icon (A) and a search bar with a magnifying glass icon and the text "Search".

On the left side, there is a vertical menu with the following items: "REBATES & FINANCING", "HOME LEARNING CENTER", "EVENTS & TRAINING", "LOCAL GOVERNMENT RESOURCES", and "ABOUT". Below this menu are social media icons for Facebook, LinkedIn, Twitter, Instagram, and YouTube.

The main content area features a large background image of a park with people sitting at tables. Overlaid on the right side of this image is a dark purple circular callout box. Inside the box, at the top right, is an icon of a stack of coins with a dollar sign. Below the icon, the text reads: "Score big with smart energy upgrades." Underneath this, in smaller text, it says: "Upgrade your multifamily building and earn cash back — starting at \$750/unit." At the bottom of the callout box is a yellow button with the text "Learn More".



# Other Available Resources – Inland Regional Energy Network (I-REN)



**iren.gov**  
**info@iren.gov**

## Codes and Standards

### Training and Education Program

- Free ICC-approved training sessions for 2022 Energy Code (Title 24, Part 6) requirements → [www.iren.gov/161/CS-Trainings](http://www.iren.gov/161/CS-Trainings)
- Requested training courses can also be scheduled

### C&S Technical Support Program

Request Free Technical Assistance from Local Code Experts—Reach Code Development, Permit Guides, Etc. → [www.iren.gov/162/CS-Technical-Support](http://www.iren.gov/162/CS-Technical-Support)

### Ask a Code Mentor an Energy Code Question

Submit queries online and receive a personalized response addressed by energy code experts within two business days! → [www.iren.gov/162/CS-Technical-Support](http://www.iren.gov/162/CS-Technical-Support)



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Coachella Valley Association of Governments (CVAG)  
San Bernardino Council of Governments (SBCOG)  
Western Riverside Council of Governments (WRCOG)

\* Not affiliated with, or endorsed by, the CEC



# New Resource Hub

## Homeowners and renters

- Information about water and space heating, cooking, EV charging, incentives

## Contractors

- Information about training, tools, incentives

## Local government representatives

- Information about model policies, permitting, training, incentives

Links on the [Building and Home Energy Resource Hub](#)





**Thank you**