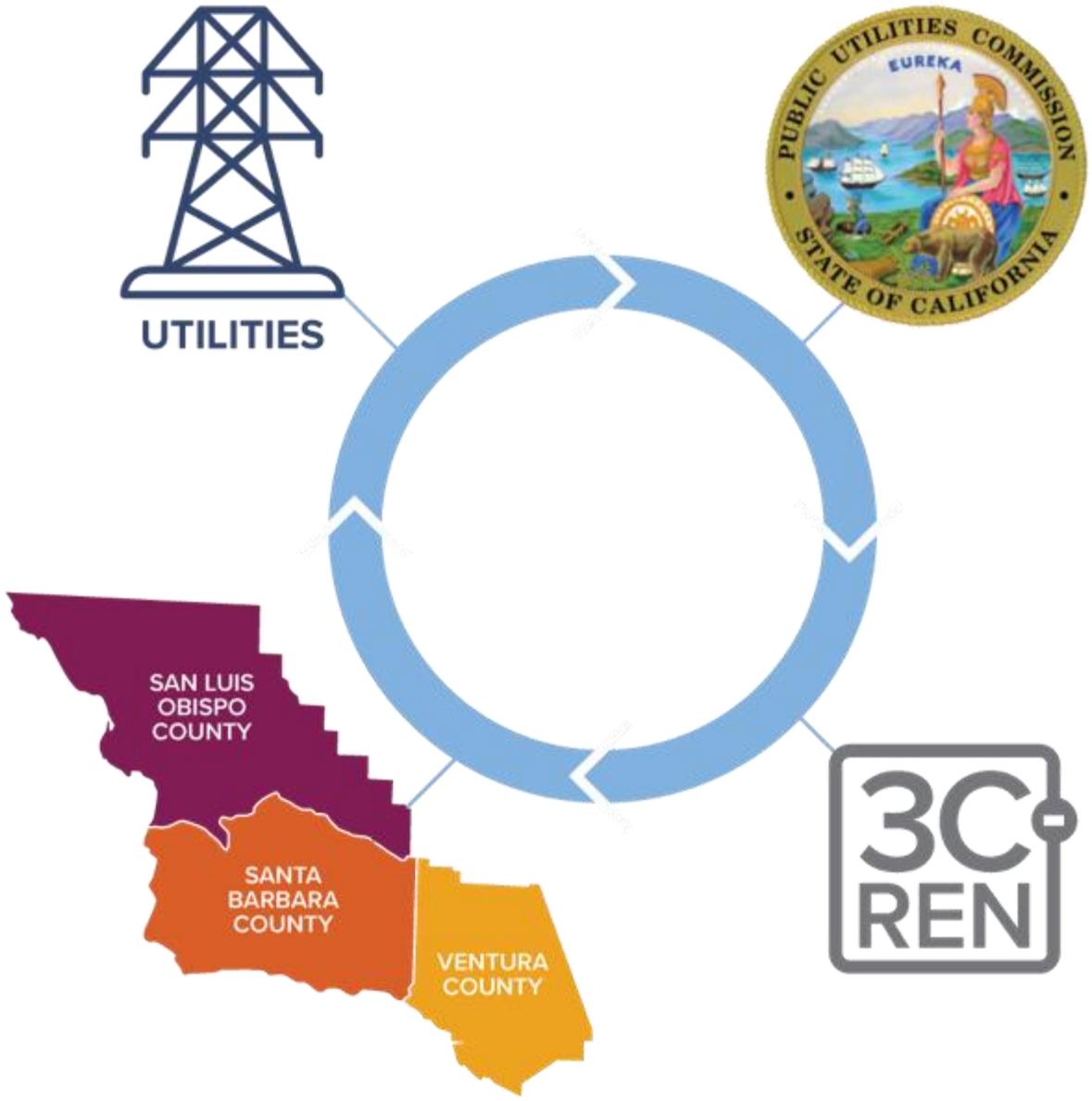
TRI-COUNTY
REGIONAL ENERGY NETWORK
SAN LUIS OBISPO • SANTA BARBARA • VENTURA

Building for the Future: Preparing for the 2025 Energy Code

Regional Forum

April 30, 2025



Tri-County Regional Energy Network

3C-REN is a collaboration between the tri-counties

Our programs reduce energy use for a more sustainable, equitable and economically vibrant Central Coast

Our free services are funded via the CPUC, bringing ratepayer dollars back to the region

Our Services

Incentives

HOME ENERGY SAVINGS

3c-ren.org/for-residents
3c-ren.org/multifamily

COMMERCIAL ENERGY SAVINGS

3c-ren.org/commercial

Contractors can enroll at
3c-ren.org/contractors

Training

BUILDING PERFORMANCE TRAINING

3c-ren.org/events
3c-ren.org/building

ENERGY CODE CONNECT

3c-ren.org/code

View past trainings at
3c-ren.org/on-demand

Technical Assistance

AGRICULTURE ENERGY SOLUTIONS

3c-ren.org/agriculture

ENERGY ASSURANCE SERVICES

3c-ren.org/assurance

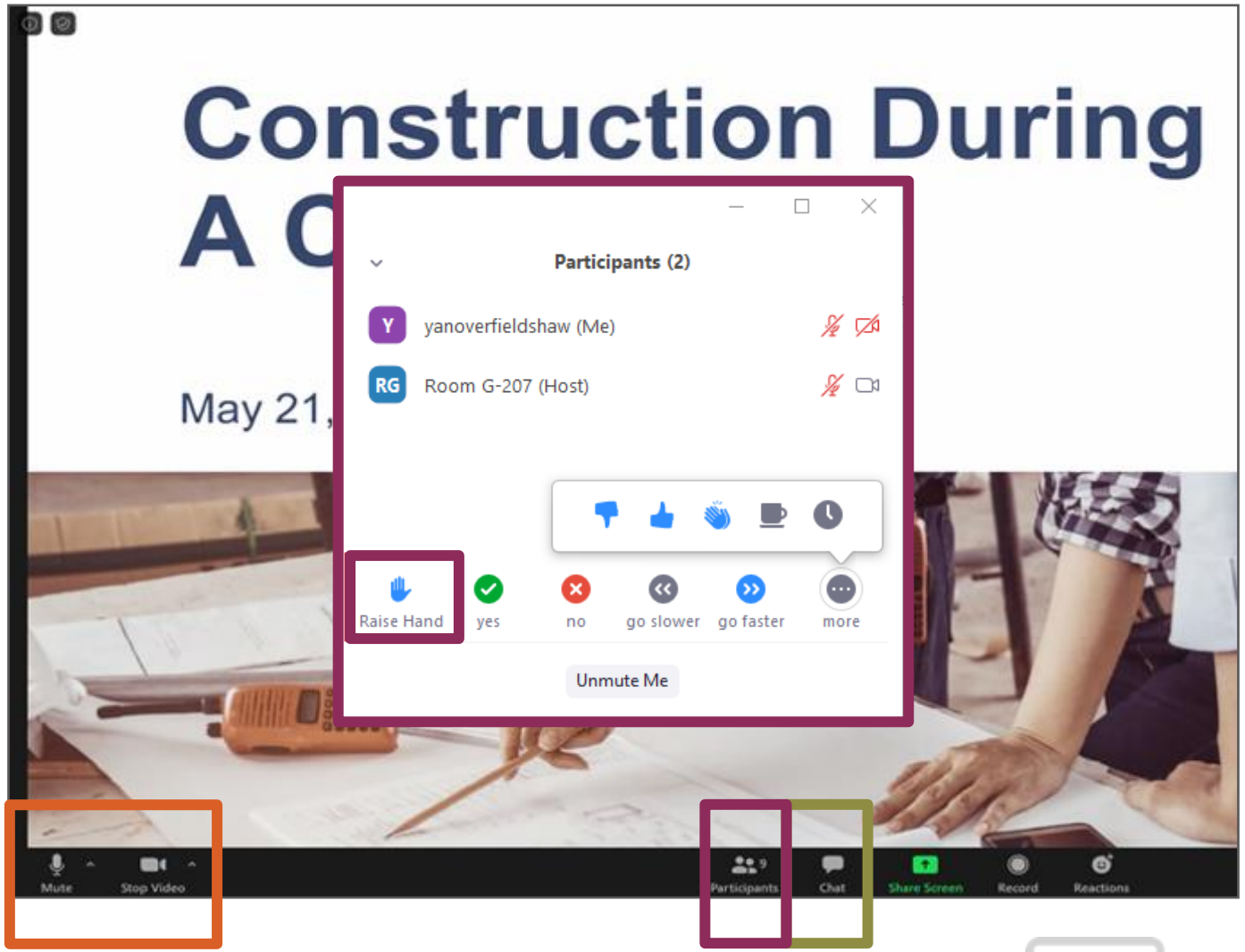
3C REN

Welcome, Introduction, and Survey

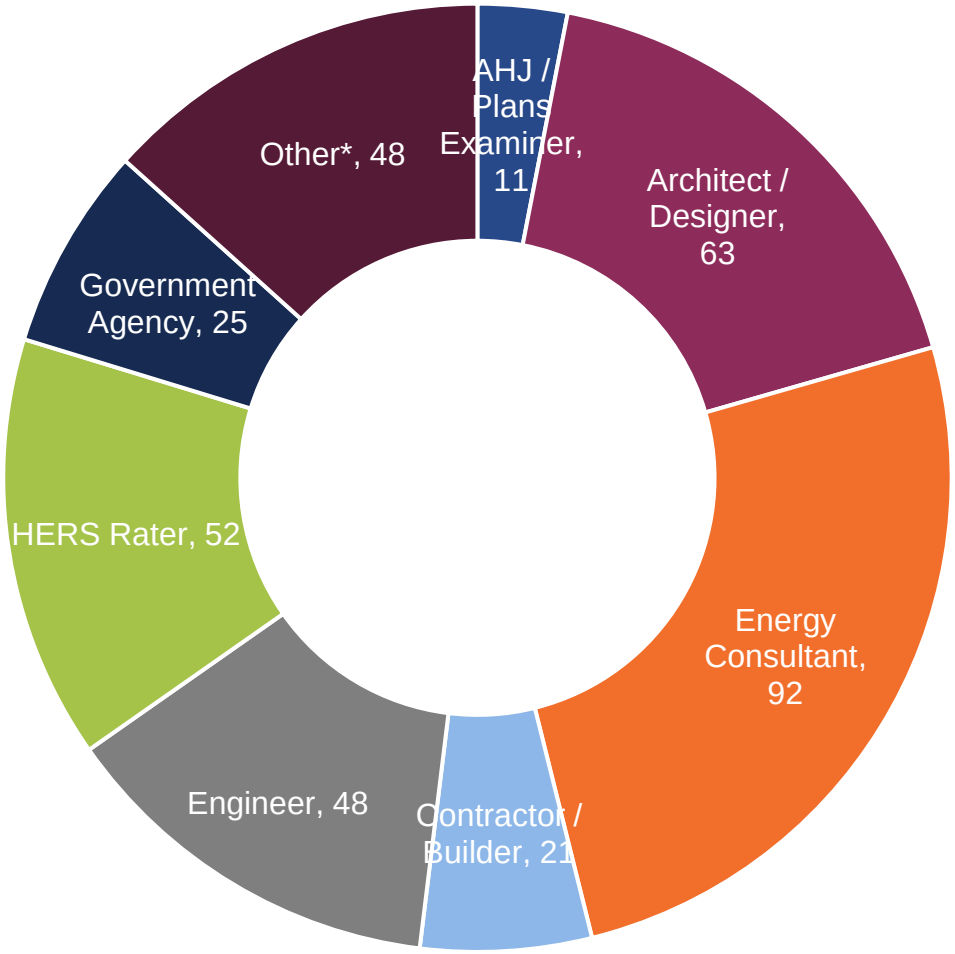
Mindy Craig
BluePoint Planning

Zoom Orientation

- Use the “**Q&A**“ to share questions which will be answered by the speakers during the two Q&A portions of the forum.
- This forum will be **recorded** and posted to 3C-REN's on-demand page
- Slides/recording will be **shared** a few days after the forum.



Registration Demographic



- AHJ / Plans Examiner
- Architect / Designer
- Energy Consultant
- Contractor / Builder
- Engineer
- HERS Rater
- Government Agency
- Other*

*Developer, Manufacturer, Real Estate, Homeowner, Utility/CCA Staff, etc.

Data as of 4/29/2025
360 Total Registered

AGENDA

INTRODUCTIONS

Overview of 2025 Code Updates	Jennifer Rennick, *In Balance Green Consulting*
2025 Energy Code Goals and Metrics	Amie Brousseau & RJ Wichert, *California Energy Commission*

Q&A PART 1

CHEERS Registry Updates	Mauricio Morales, *CHEERS*
HERS to ECC-Rater Change	Paul Dunn, *Central Coast Energy Compliance*
CEA / AEA Program	Gina Rodda, *Energy Code Ace / Gabel Energy*

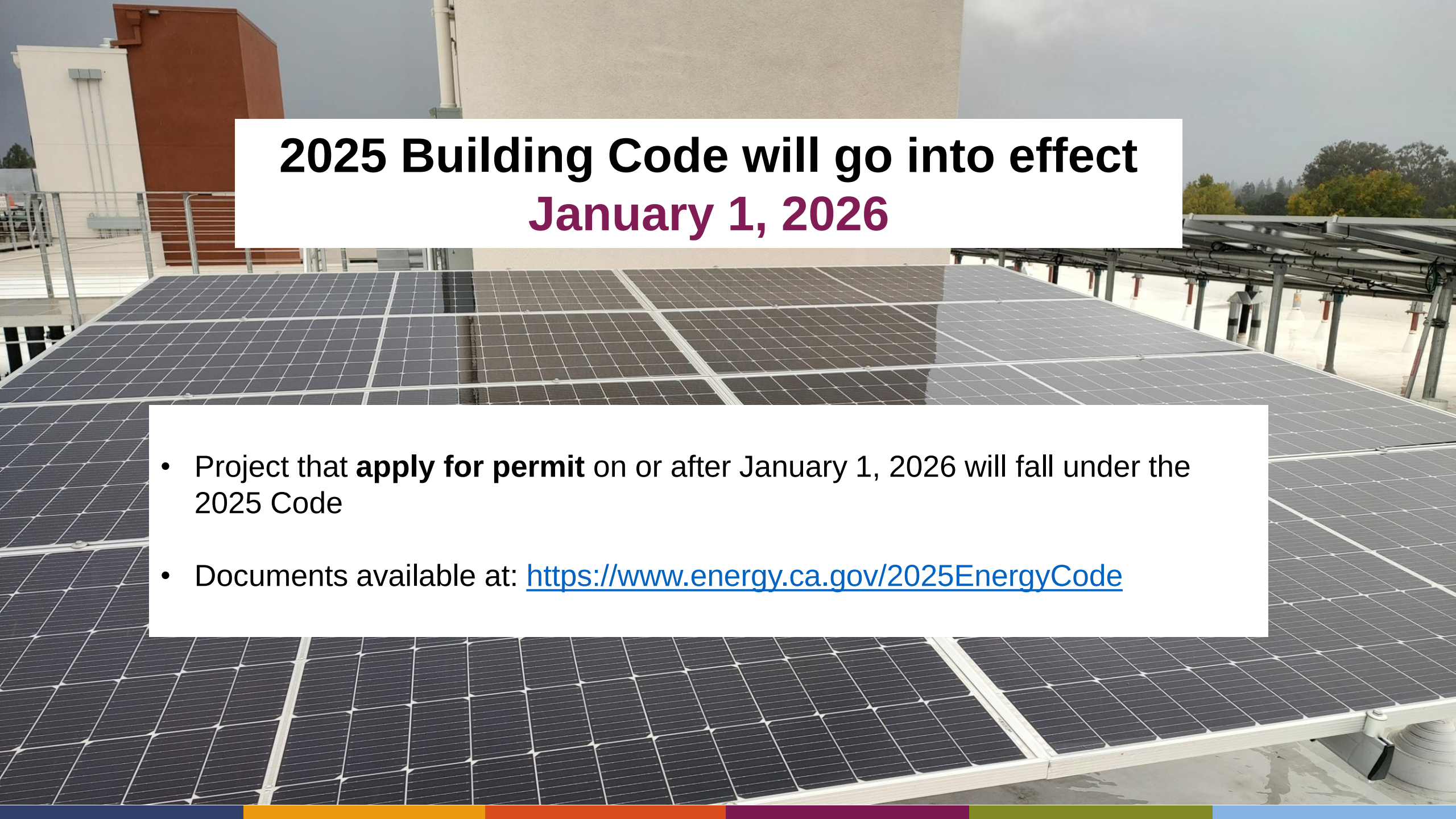
Q&A PART 2

CLOSING REMARKS

Overview of 2025 Energy Code Updates

Jennifer Rennick

In Balance Green Consulting



2025 Building Code will go into effect
January 1, 2026

- Project that **apply for permit** on or after January 1, 2026 will fall under the 2025 Code
- Documents available at: https://www.energy.ca.gov/2025EnergyCode

Heat Pump Water Heater Types Defined

WATER HEATER definitions include the following:

- **CONSUMER WATER HEATER** is a water heater that meets the definition of a consumer product under USDOE 10 CFR 430.
- **HEAT PUMP WATER HEATER (HPWH)** is a water heater that transfers thermal energy from one temperature level to another temperature level for the purpose of heating water, including all ancillary equipment such as fans, storage tanks, pumps, or controls necessary for the device to perform its function.
    - **INTEGRATED** HEAT PUMP WATER HEATER is a HPWH which has all components, including fans, storage tanks, pumps, or controls necessary for the device to perform its function contained in a single factory-made assembly.
    - **SPLIT-REFRIGERANT** HEAT PUMP WATER HEATER is a HPWH which has a single outdoor section and one or more indoor sections connected to the outdoor section via a refrigerant circuit.
    - **SPLIT-HYDRONIC** HEAT PUMP WATER HEATER is a HPWH that consists of multiple separate sections. One section houses all the refrigerant components, while one or more additional sections are designated for water storage. These sections are interconnected through a hydronic circuit.
- **MULTI-PASS** WATER HEATER is a water heater which the cold water passes through multiple times. The water temperature increases with each pass, until the storage tank reaches the intended storage temperature.
- **SINGLE-PASS** WATER HEATER is a water heater which the cold water passes through once and is heated to the intended use temperature.

Integrated

A. O. Smith - Residential

AO Smith –Small Commercial

Aegis A -- Lync by Watts Large-Scale Commercial

Sanden – Multifamily – Grouped or Single Split System

Lochinvar Commercial Scale

Nyle –Industrial or Large Central Systems

3C REN

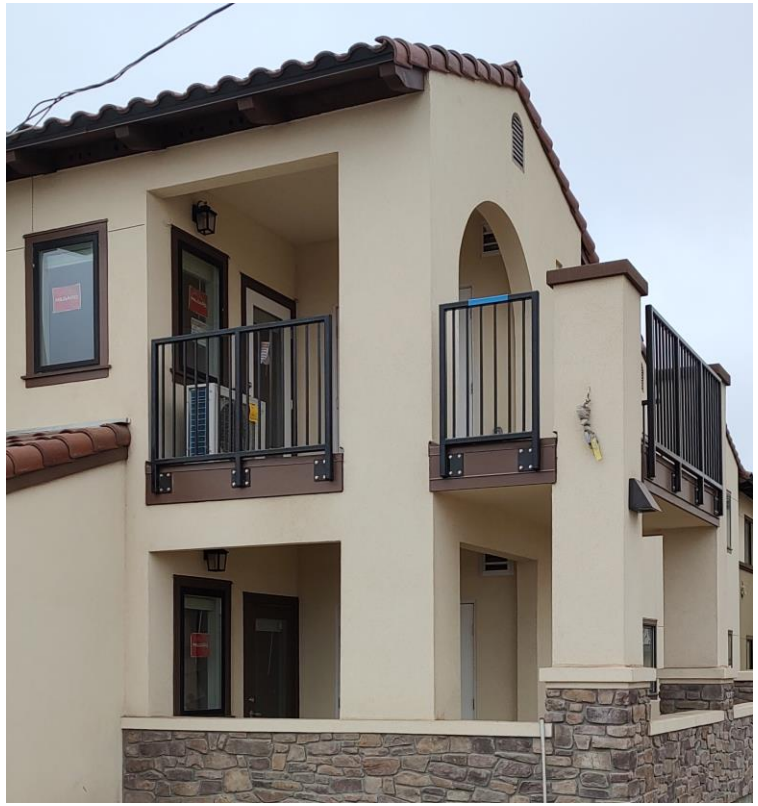
New Mandatory Requirements for HPWH

Heat Pump Water Heaters –Integrated

- Back-Up Heat. Can be internal or external to the HPWH
- Ventilation Requirements
  - Volume of Space
  - Net Free Area – Permanent Openings
  - Ducted Systems – Permanent Openings
- Duct Requirements, where Ducts are Installed

Residential High-Level Changes

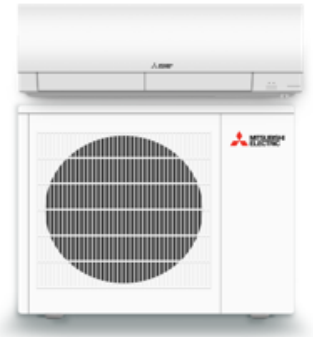
- EDR Metric is Replaced
- Prescriptive requirements expanded
  - Fenestration
  - Heat Pumps
  - ERV/HRV
- Roof/Attic Insulation Increased for some climate zones
- IAQ Ventilation –Balanced / Supply new requirements



New Prescriptive Requirements – Applies to CZ 1-16

- **Heat Pump Space Conditioning**; Gas no longer applicable for Prescriptive compliance
- Heat Pumps **Refrigerant Charge Verification**; ECC-Rater to verify –formerly a HERS Rater
- **Fault Indicator Display** (FID) required, if ERV/HRV is installed –ECC field verified.
- **Heat Pump Water Heaters** (Note: Gas water heaters allowed only under the Performance method.)

Ducted Heat Pump



Ductless Mini-Split Heat Pump

ERV/HRV

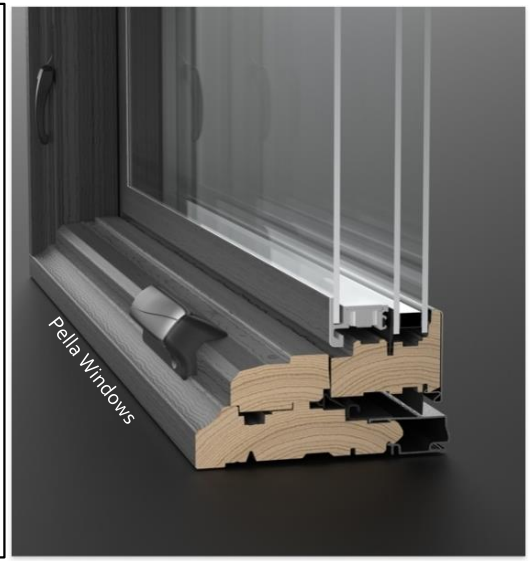
HPWH

Windows Performance Values – Prescriptive Update

Just about all brands of windows offer dual or triple paned options

Options:

- Dual Paned Low-e
- Triple paned Low-e
- Air/Argon/Krypton
- Thermally Broken
- Visible Transmittance
- Sound Transfer



2022 Prescriptive:

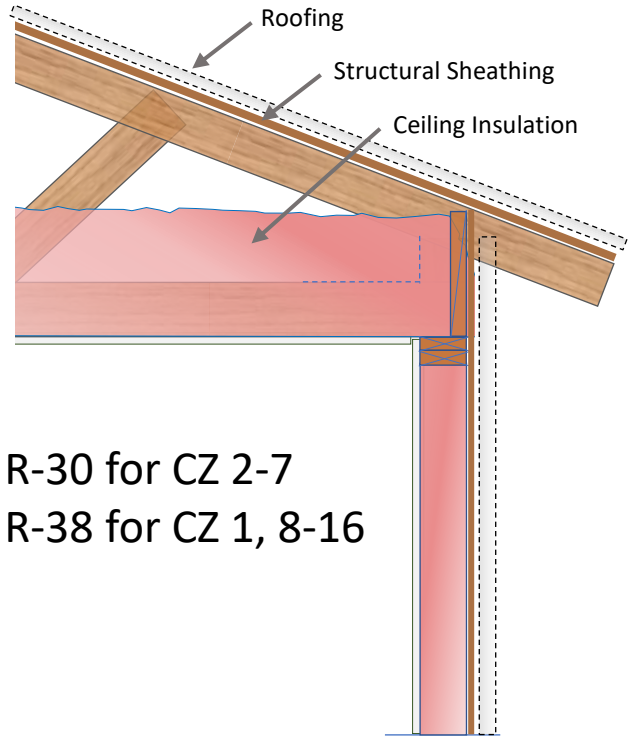
- **U-0.30** for all CZ

2025 Prescriptive:

- **U-0.27** decreased for CZ 1-5, 11-14, and 16
- **U-0.30** no change for CZ 6-10 and 15

Vented Attics and Cathedral Roof Assemblies with *Ducts in Conditioned Space*

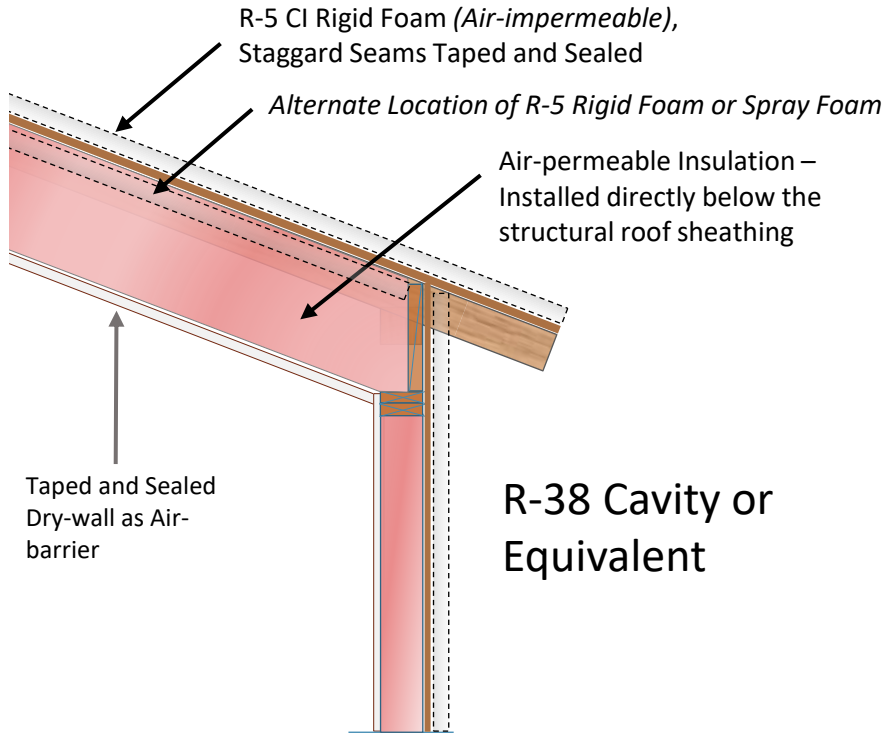
Climate Zones (CZ) 8, 9, and 10 got an upgrade to R-38



R-30 for CZ 2-7
R-38 for CZ 1, 8-16

Vented Attic with Ceiling Insulation (Option C)

New Prescriptive Option:
All Climate Zones are R-38



R-38 Cavity or Equivalent

Unvented Cathedral / Rafter Roof (Option B)

New for 2025: Mandatory Measures for IAQ and HRV/ERV Systems

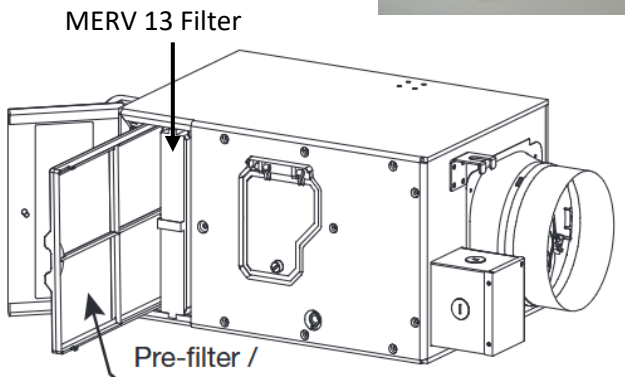
Applicable to balanced and supply-only systems:

Air Filters and HRV/ERV Recovery Cores:

- Accessible from occupiable spaces
- Located no more than 10 feet above a walking surface
- Attic locations require Fault Indicator Display (FID) and have walkway to the HRV/ERV.

Outdoor Air Intakes:

- Be “weather/rain proof”
- Located no more than 10 feet above a walking surface, or utilize FID
- Roof locations have additional access requirements



Multifamily High-Level Changes

- Envelope: Fenestration
- HVAC –Heating, Cooling, and Fans
- Outside Air Ventilation Updates
- Compartmentalization Testing, i.e. Blower Door
- Water Heating –HPWH Electric-Readiness Updates

Window Performance Values – Multifamily

Mandatory Minimums:

Allowable U-factor **maximum** is **U-0.58** per Sec 160.1(e)*

Prescriptive:

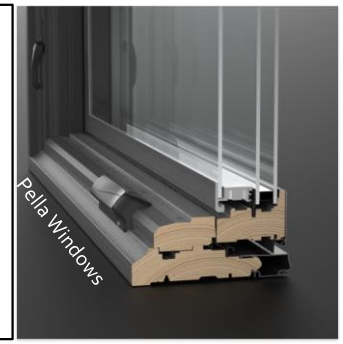
Curtain wall minor change, i.e. combined low-rise and high-rise.

Other Windows:

- **U-0.28** decrease for CZ 1, 3-5, 11, and 13-16.
- **U-0.30** no change for CZ 2, 8-10, and 12
- **U-0.34** no change for CZ 6 and 7

Some exceptions apply.

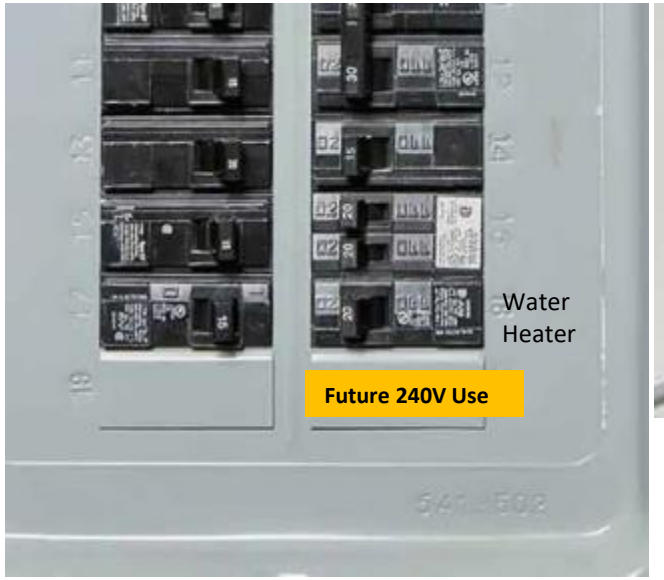
Non-Res –no change



***Exception to Section 160.1(e):** Fenestration installed in buildings meeting Part 7 of the California Building Code, California Wildland-Urban Interface Code, where the building is located in *Fire Hazard Severity Zones or Wildland-Urban Interface **(WUI)** Fire Areas* as designated by the local enforcement agency.

Title 24 Energy Code – Gas use is allowable, but code requires ‘Electric Ready’ in New Construction

- Most of the ‘Electric Ready’ requirements are the same as the 2022 Code…i.e. physical space, breaker, electrical feeds, etc
  - Furnaces
  - Water Heaters
  - Cooktops
  - Dryers
- Multi-family Update:
  - Water Heating for Individual Dwelling Units specify 39”x39”x96 for future HPWH, and
  - Ventilation strategies are described in detail
  - Electric panel, breaker space, electrical feed prepared and labeled



Key Concept:
Intent is to remove known cost barriers that prevent house holds from transitioning to energy efficient electric appliances

Central Heat Pump Water Heater “Ready” for Multifamily

Added electric-HPWH “Ready” requirements to Multifamily projects installing central gas water heating systems:

- Allocation of physical space for HPWH/Tanks, etc
- Provide for ventilation path/strategy
- Provide condensate drainage piping/receptacle
- Reserve physical space for electrical power and bus system of the main/distribution electrical switchboard

Gas Water Heating is Allowable, but …

Non-Residential High-Level Changes

- Electric-readiness for commercial kitchens
- Ventilation –Outdoor Air (OA)
- Exhaust Systems –Added Animal/Veterinary
- Lighting Controls Updates
- Envelope –Walls and Roofs/Ceilings, and Vestibule Entries
- Photovoltaic (PV) and Battery Systems

Electric Ready for Commercial Kitchens

Mandatory requirements for commercial kitchens. Electric Readiness for Newly Constructed

Commercial Kitchens shall meet the following requirements:

1. *Quick-service commercial kitchens* and *institutional commercial kitchens* shall include a dedicated branch circuit wiring and outlet that would be accessible to cookline appliances and shall meet all of the following requirements:

a. The branch circuit conductors shall be rated at 50 amps minimum.

b. The electrical service panel shall have a minimum capacity of 800 connected amps.

2. The electrical service panel shall be sized to accommodate an additional either 208v or 240v 50-amp breaker.

EXCEPTION 1 to Section 120.6(k): healthcare facilities.

EXCEPTION 2 to Section 120.6(k): all-electric commercial kitchens.

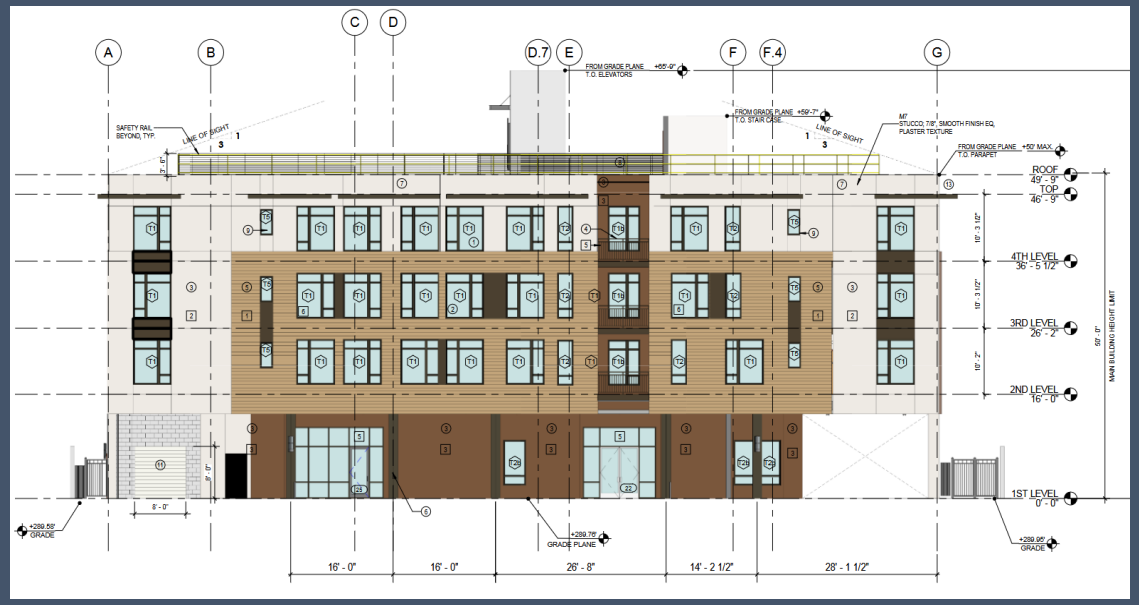
Southbend

Model P36T-III shown

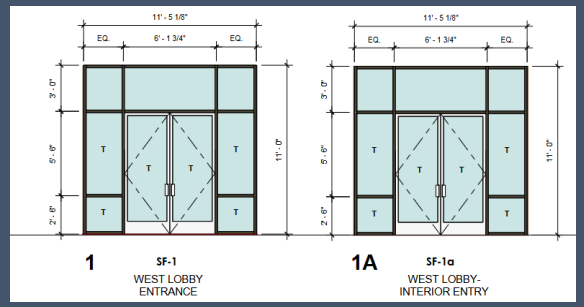
For use with induction safe cookware ONLY.

Induction Electrical Data	Amps*	
Elements	1 Phase	3 Phase
(6) 3.5 KW Heating Elements Total 21 KW	88	51
P36N-III with TVES/10SC	*Reference Electric TruVection Spec Sheet	

New Construction Public Entrances – Vestibules Required for Assembly, Business, Educational, Institutional, and Mercantile



Mixed Use Building



Vestibule entry is equipped with self-closing doors opening into and out of the vestibule.

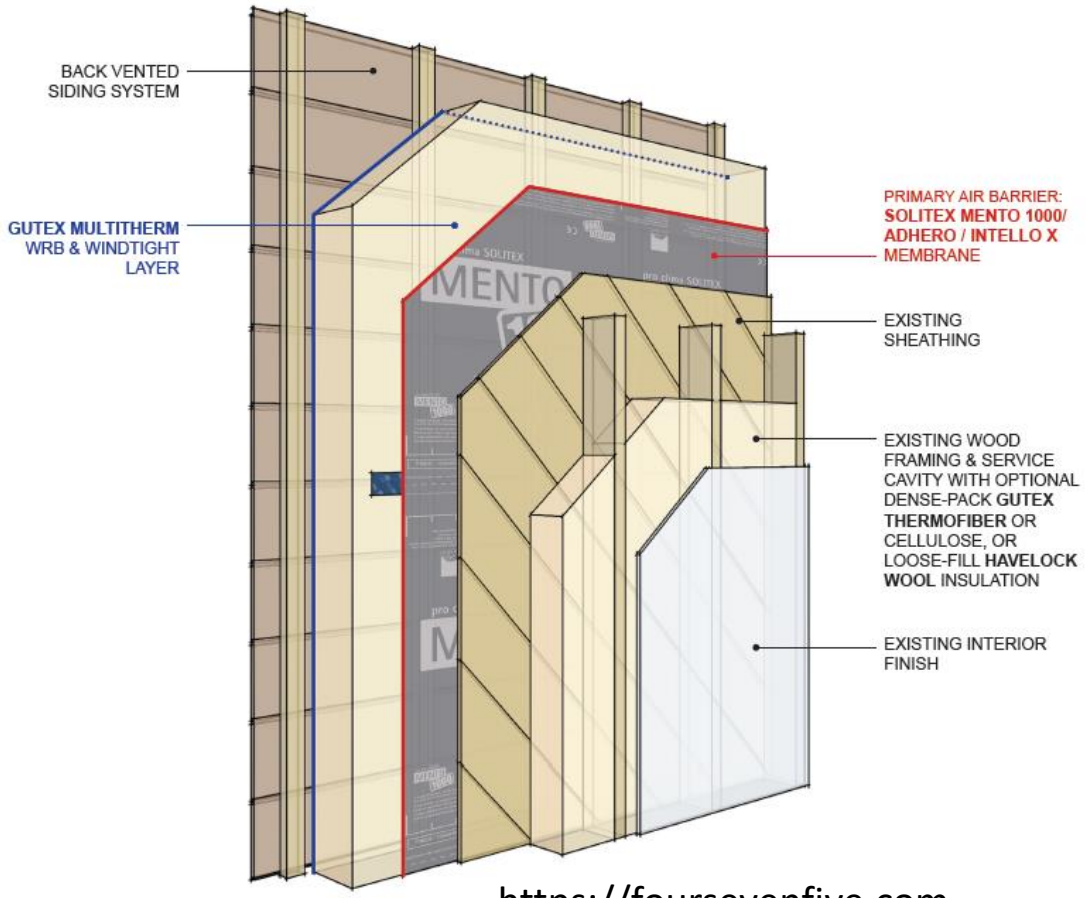
Enclosed Vestibules:

- Public entrances
- New construction
- Occupancy types A, B, E, I, and M
- Self-closing doors
- Air-curtains, if vestibule is conditioned

Exceptions:

- Less than 4 stories and less than 10,000 sf in CZ's 2 – 13
- Opens to Area less than 3000 sf
- Air-curtains with velocity greater than 6.56 feet per second

Non-Res Wall Assembly Example



https://foursevenfive.com

Mandatory Min —Wall no change:
R-11 for 2x4 Wood Stud
R-13 w/ CI R-2 for 2x4 Metal Framed

Non-Res –Wall small insulation increased for nearly all climate zones

Hotel/Motel –no change

Prescriptive Code and Mandatory Min Metal Framed Walls includes a layer of continuous insulation (CI).

Solar and Battery – Highrise and Non-Res

Applicable Occupancy Types:

- High-Rise Residential
- Grocery, Retail
- Restaurants
- School
- Library
- Warehouse
- Religious Worship
- Sports and Recreation
- Events and Exhibits
- Hotel-Motel
- Office, Financial Institution, Unleased Tenant Space, Medical Office Building/Clinic

Under the 2025 Code some occupancies types were added and some will have increased Solar PV and Battery requirements. Restaurants, for example, had a dramatic increase.

- **Solar PV System size will depend on Occupancy Type, Conditioned Floor Area, etc.**
- **Battery System size will depend on Solar System Size.**

2025 Energy Code Goals and Metrics

Amie Brousseau & RJ Wichert

California Energy Commission

2025 Energy Code Goals, Metrics, and Software.

3C-REN Forum

Amie Brousseau and RJ Wichert

April 30, 2025

2025 Energy Code Goals

2025 Energy Code Goals

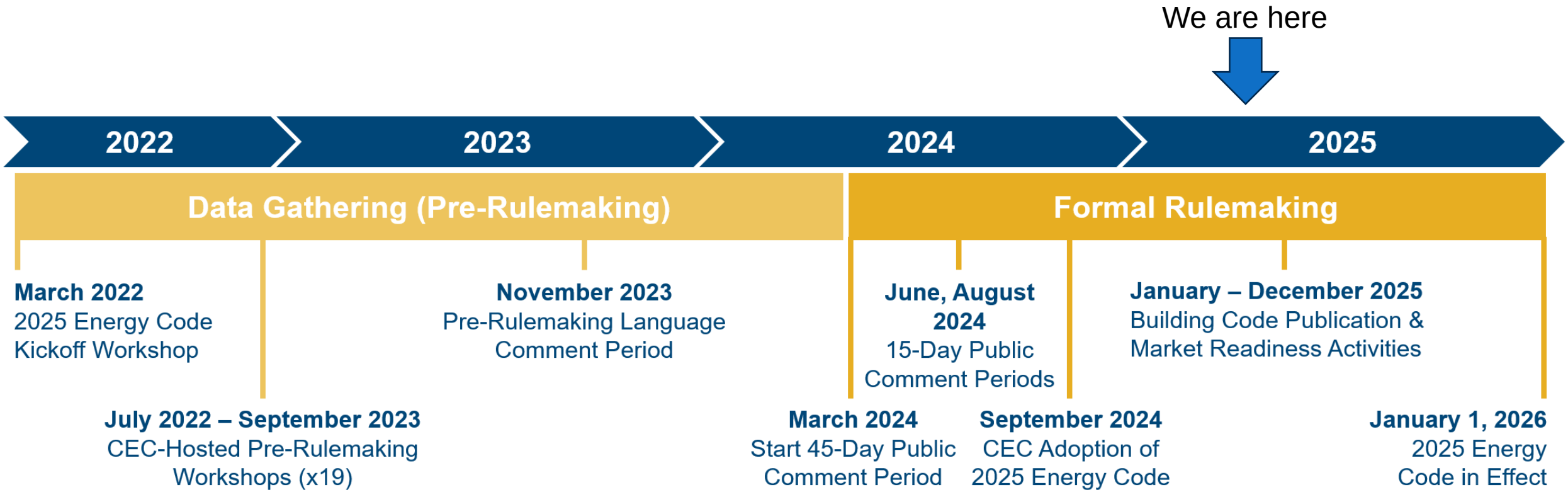
State goals

- Contribute to GHG reduction
- Increase building energy efficiency cost-effectively

2025 Energy Code goals

- Increase heat pump baselines
- Promote demand flexibility, solar PV, and battery energy storage systems
- Improve covered process load efficiencies
- Focus on existing buildings and ADUs

Where are we – 2025 Energy Code



2025 Energy Code Benefits by the Numbers

Energy cost savings: $4.8B	Avoided GHG Emissions: 4.1M MT CO_2e	Benefit to Cost Ratio: 7
Electricity Savings: 392 GWh/yr	Natural Gas Savings: 23 MM Therms/yr	Water Savings: 68+ MM gallons/yr

Heat pumps:
Leads to installation of over 500k heat pumps over 3 years

PV/Battery:
Saves on average 300 GWh/year; reduces power demand on average 0.88MW/year. Minimizes grid exports.

Electric-ready:
Sets up owners of newly constructed commercial kitchens to use cleaner electric equipment when they are ready

Source: CEC

2025 Energy Code Webpage

- Final express terms
  - Part 1 and Part 6
  - Reference Appendices
- Final statement of reasons
- Responses to comments
- Hard copies available July 1
- Effective date January 1, 2026

2025 Energy Code Metrics

California Metric History

Code Cycle	Low-rise Residential	Low-rise Multifamily	Highrise Multifamily	Nonresidential
1978-2003	Source*	Source*	Source*	Source*
2005-2016	TDV	TDV	TDV	TDV
2019	EDR: Total and Efficiency	EDR: Total and Efficiency	TDV	TDV
2022	EDR: Source, Total, and Efficiency	Source, TDV Total, and TDV Efficiency	Source, TDV Total, and TDV Efficiency	Source, TDV Total, and TDV Efficiency
2025	Source, LSC Total, LSC Efficiency, Peak Cooling	Source, LSC Total, and LSC Efficiency	Source, LSC Total, and LSC Efficiency	Source, LSC Total, and LSC Efficiency

*Pre-2019 Source based on powerplant heat rates and transmission losses. Not the same methodology as 2022+ Source metric.

California Metrics Purpose

1. **Cost Effective Energy Code:**

   Warren-Alquist Act:

   PRC 25402(b)3:The standards… shall be **cost-effective when taken in their entirety** and when amortized **over the economic life of the structure** compared with historic practice. When determining cost-effectiveness, the commission shall consider the **value of the water or energy saved**, impact on product efficacy for the consumer, and the **life-cycle cost of complying with the standard**.

2. **Greenhouse Gas (GHC) Emission Reduction**

"California's Climate Plan" https://www.gov.ca.gov/2022/11/16/california-releases-worlds-first-plan-to-achieve-net-zero-carbon-pollution/

2025 Metrics Updates Summary

- **Terminology:** Updated terminology for the Energy Code cost-effectiveness metric from Time Dependent Valuation (TDV) to Long-term System Cost (LSC).
- **Units:** Time dependent metric unit, LSC, simplified to $/kWh and $/therm. Previous code cycles did extra steps to convert to energy only units, kBtu/kWh and kBtu/therm.
- **Clean-up:** Switching from Energy Design Rating (EDR) for single-family to LSC and Source aligning with nonresidential and multifamily.
- **Additions:** New peak cooling metric for single-family residential.

Long-term System Cost

Long-term System Cost (LSC) hourly factors are used to convert predicted site energy use to long-term 30-year dollar costs to California's energy system.

- Includes long-term costs associated with policies needed to meet our state's urgent climate actions goals – such as 100% renewable generation, proliferation of electric vehicles, and drastically reducing combustion of fossil fuels in buildings. Today's fixed energy costs do not adequately account for this long-term value to the state.
- Weighs the long-term value of each hour differently. Peak times are more valuable, non-peak times are less valuable.
- Are not utility rates, are not rate forecasts, and cannot be used to predict first year utility bills.

Source Energy

Source Energy hourly factors are used to convert predicted site energy use to long-run marginal source energy of fossil fuels combusted to meet energy demand.

- Considers:
  - Fuels combusted as a result of building energy consumption either directly at the building site or caused to be consumed to meet the electrical demand of the building.
  - Long-term effects of changes in Commission-projected energy resource procurement to meet future energy demand.
- This metric focuses specifically on the amount of fossil fuels that are combusted in association with demand-side energy consumption.
- Provides a pathway for state regulators to align building codes and standards with the state's environmental goals.

Peak Cooling

Peak cooling energy in proposed model limited to 120% of standard design peak cooling energy in climate zones 4 and 8 through 15.

- Single-family residential only.
- Peak cooling energy is the total annual mechanical cooling site energy, in kWh, that occurs at peak hours between 4 pm and 9 pm.
- **Intent:** Ensure that newly constructed buildings do not unnecessarily exacerbate challenges related to weather-driven peak events.

2025 Metrics Summary

Single family:

1. **LSC Efficiency:** LSC for all efficiency measures (no PV/Battery)
2. **LSC Total:** LSC for all efficiency measures (efficiency LSC) and the LSC for all flexibility measures (PV/Battery).
3. **Source Energy**
4. **Peak Cooling < 120% of Standard Design**

Nonresidential and Multifamily:

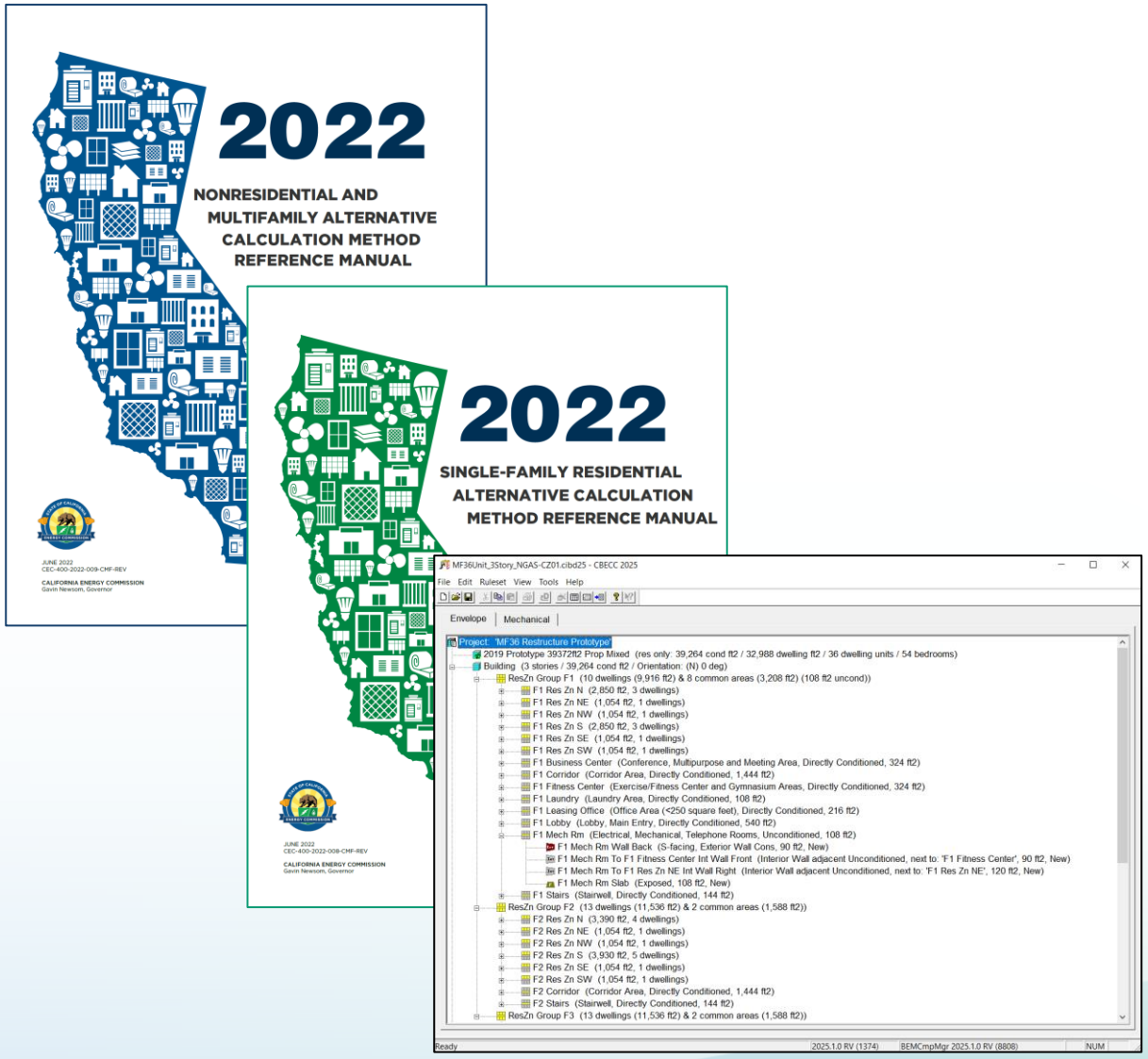
1. **LSC Efficiency:** LSC for all efficiency measures (no PV/Battery)
2. **LSC Total:** LSC for all efficiency measures (efficiency LSC) and the LSC for all flexibility measures (PV/Battery).
3. **Source Energy**

2025 Energy Code Software

2025 Software Highlights

- **Nonresidential**
  - Multizone space conditioning system standard designs
  - Removal of Tailored Lighting Method
- **Multifamily**
  - Ventilation updates including balanced or supply only, HRV/ERV, and FID requirements
  - Common area lighting updates
- **Single Family**
  - Variable capacity heat pump modeling
  - Heat pump standard design in all climate zones
  - Switch from EDR to LSC, Source, and Peak Cooling metrics

2025 Software Timing



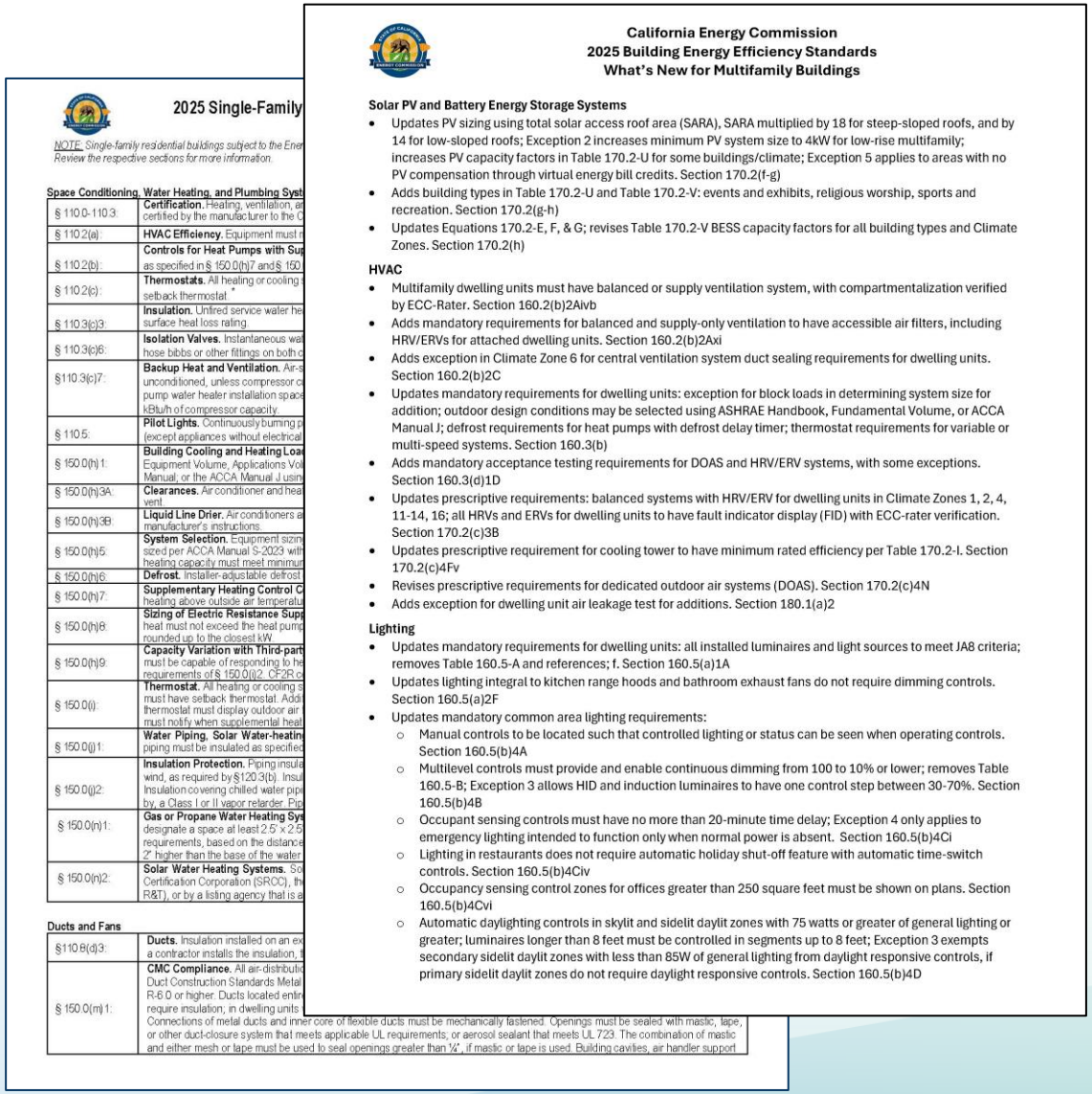
Milestone	Timing
2025.1.0 RV's (Research Versions)	4/25/25
2025.1.0 RC's (Release Candidates)	End of May '25
2025 ACM Reference Manual Adoption and **CBECC 2025.1.0 Approval**	June '25
2025.1.0 CBECC and CBECC-Res	End of June '25
2025 Energy Code Effective Date	January '26

Software Resources

- Building Energy Efficiency Standards Subscription
  - Notification for docketed material, workshops, software releases and approvals, business meeting notices
- 2022 Building Energy Efficiency Standards Homepage
  - Links to dockets, presentations, important dates, backup material
- CBECC and CBECC-Res Support
- 2025 Compliance Software Webpage
- 2022 Compliance Software Webpage
- Industry Groups: CABEC, CalBEM, IBPSA-USA

Energy Code Resources

2025 Energy Code What's New Summaries



2025 Single-Family

NOTE: Single-family residential buildings subject to the Ener
Review the respective sections for more information.

Space Conditioning, Water Heating, and Plumbing Syst

§ 110.0-110.3:	**Certification.** Heating, ventilation, ar certified by the manufacturer to the C
§ 110.2(a):	**HVAC Efficiency.** Equipment must r
§ 110.2(b):	**Controls for Heat Pumps with Sup** as specified in § 150.0(h)7 and § 150
§ 110.2(c):	**Thermostats.** All heating or cooling setback thermostat.
§ 110.3(c)3:	**Insulation.** Unfired service water he surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous wat hose bibbs or other fittings on both c
§110.3(c)7:	**Backup Heat and Ventilation.** Air-s unconditioned, unless compressor c pump water heater installation space kBtu/h of compressor capacity.
§ 110.5:	**Pilot Lights.** Continuously burning p (except appliances without electrical
§ 150.0(h)1:	**Building Cooling and Heating Loa** Equipment Volume, Applications Vol Manual, or the ACCA Manual J usin
§ 150.0(h)3A:	**Clearances.** Air conditioner and hea vent
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners a manufacturer's instructions.
§ 150.0(h)5:	**System Selection.** Equipment sizin sized per ACCA Manual S-2023 with heating capacity must meet minimur
§ 150.0(h)6:	**Defrost.** Installer-adjustable defrost
§ 150.0(h)7:	**Supplementary Heating Control C** heating above outside air temperatu
§ 150.0(h)8:	**Sizing of Electric Resistance Supp** heat must not exceed the heat pump rounded up to the closest kW.
§ 150.0(h)9:	**Capacity Variation with Third-part** must be capable of responding to he requirements of § 150.0(j)2. CF2R c
§ 150.0(i):	**Thermostat.** All heating or cooling s must have setback thermostat. Addi thermostat must display outdoor air must notify when supplemental heat
§ 150.0(j)1:	**Water Piping, Solar Water-heatin** piping must be insulated as specified
§ 150.0(j)2:	**Insulation Protection.** Piping insula wind, as required by §120.3(b). Insul Insulation covering chilled water pipi by, a Class I or II vapor retarder. Pip
§ 150.0(n)1:	**Gas or Propane Water Heating Sys** designate a space at least 2.5' x 2.5 requirements, based on the distance 2" higher than the base of the water
§ 150.0(n)2:	**Solar Water Heating Systems.** So Certification Corporation (SRCC), th R&T), or by a listing agency that is a

Ducts and Fans

§110.8(d)3:	**Ducts.** Insulation installed on an ex a contractor installs the insulation,
§ 150.0(m)1:	**CMC Compliance.** All air-distributio Duct Construction Standards Metal R-6.0 or higher. Ducts located entir require insulation; in dwelling units Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets applicable UL requirements; or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support

California Energy Commission
2025 Building Energy Efficiency Standards
What's New for Multifamily Buildings

Solar PV and Battery Energy Storage Systems

- Updates PV sizing using total solar access roof area (SARA), SARA multiplied by 18 for steep-sloped roofs, and by 14 for low-sloped roofs; Exception 2 increases minimum PV system size to 4kW for low-rise multifamily; increases PV capacity factors in Table 170.2-U for some buildings/climate; Exception 5 applies to areas with no PV compensation through virtual energy bill credits. Section 170.2(f-g)
- Adds building types in Table 170.2-U and Table 170.2-V: events and exhibits, religious worship, sports and recreation. Section 170.2(g-h)
- Updates Equations 170.2-E, F, & G; revises Table 170.2-V BESS capacity factors for all building types and Climate Zones. Section 170.2(h)

HVAC

- Multifamily dwelling units must have balanced or supply ventilation system, with compartmentalization verified by ECC-Rater. Section 160.2(b)2Aivb
- Adds mandatory requirements for balanced and supply-only ventilation to have accessible air filters, including HRV/ERVs for attached dwelling units. Section 160.2(b)2Axi
- Adds exception in Climate Zone 6 for central ventilation system duct sealing requirements for dwelling units. Section 160.2(b)2C
- Updates mandatory requirements for dwelling units: exception for block loads in determining system size for addition; outdoor design conditions may be selected using ASHRAE Handbook, Fundamental Volume, or ACCA Manual J; defrost requirements for heat pumps with defrost delay timer; thermostat requirements for variable or multi-speed systems. Section 160.3(b)
- Adds mandatory acceptance testing requirements for DOAS and HRV/ERV systems, with some exceptions. Section 160.3(d)1D
- Updates prescriptive requirements: balanced systems with HRV/ERV for dwelling units in Climate Zones 1, 2, 4, 11-14, 16; all HRVs and ERVs for dwelling units to have fault indicator display (FID) with ECC-rater verification. Section 170.2(c)3B
- Updates prescriptive requirement for cooling tower to have minimum rated efficiency per Table 170.2-I. Section 170.2(c)4Fv
- Revises prescriptive requirements for dedicated outdoor air systems (DOAS). Section 170.2(c)4N
- Adds exception for dwelling unit air leakage test for additions. Section 180.1(a)2

Lighting

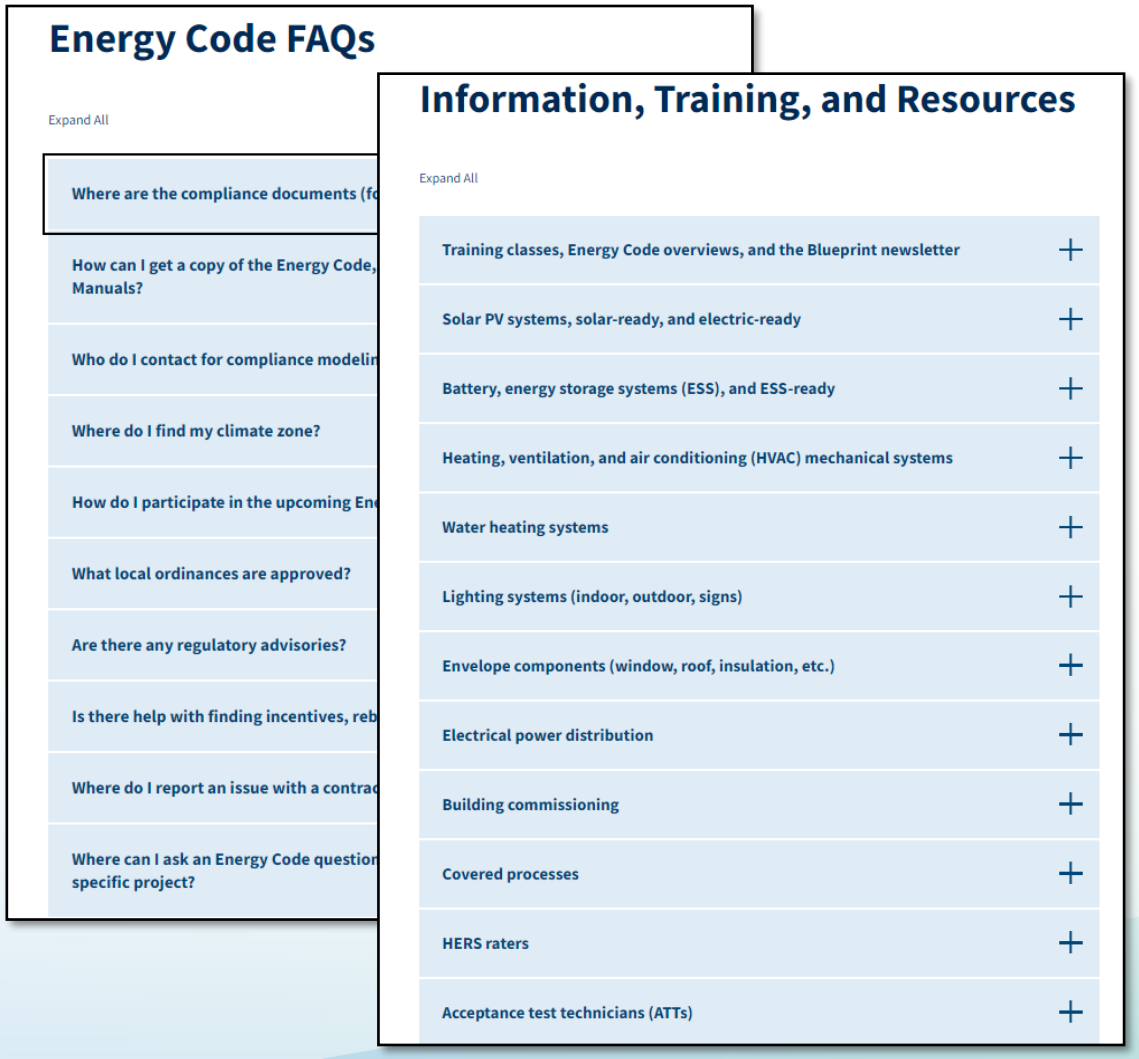
- Updates mandatory requirements for dwelling units: all installed luminaires and light sources to meet JA8 criteria; removes Table 160.5-A and references; f. Section 160.5(a)1A
- Updates lighting integral to kitchen range hoods and bathroom exhaust fans do not require dimming controls. Section 160.5(a)2F
- Updates mandatory common area lighting requirements:
  - Manual controls to be located such that controlled lighting or status can be seen when operating controls. Section 160.5(b)4A
  - Multilevel controls must provide and enable continuous dimming from 100 to 10% or lower; removes Table 160.5-B; Exception 3 allows HID and induction luminaires to have one control step between 30-70%. Section 160.5(b)4B
  - Occupant sensing controls must have no more than 20-minute time delay; Exception 4 only applies to emergency lighting intended to function only when normal power is absent. Section 160.5(b)4Ci
  - Lighting in restaurants does not require automatic holiday shut-off feature with automatic time-switch controls. Section 160.5(b)4Civ
  - Occupancy sensing control zones for offices greater than 250 square feet must be shown on plans. Section 160.5(b)4Cvi
  - Automatic daylighting controls in skylit and sidelit daylit zones with 75 watts or greater of general lighting or greater; luminaires longer than 8 feet must be controlled in segments up to 8 feet; Exception 3 exempts secondary sidelit daylit zones with less than 85W of general lighting from daylight responsive controls, if primary sidelit daylit zones do not require daylight responsive controls. Section 160.5(b)4D

Energy Code Support Center Overview webpage

- 2025 What's new Single-Family
- 2025 What's New Multifamily
- 2025 What's New Nonresidential
- 2025 Single-family Mandatory Requirements Summary

Energy Code Support Center

https://www.energy.ca.gov/energy-code-support-center



- **FAQs**
  - ADUs, solar PV, battery storage, electric-ready
- **Handouts**
  - Fact sheets
  - Guides
- **Tools**
  - Checklists
  - Blueprint newsletter
- **Training**
  - Presentations
  - Videos
- **Links**
  - Internal resources
  - External resources

2022 ADU FAQs

Accessory Dwelling Units (ADUs)

2022 Energy Code Accessory Dwelling Units (ADU) FAQs

General Information on ADUs

Expand All

- What is an accessory dwelling unit (ADU)?
- What is a Junior ADU?
- When is an ADU considered a newly constructed building?
- When is an ADU considered an addition?
- When is an ADU considered an alteration?
- Can a factory-built house be an ADU?
- Does unpermitted work in an ADU with new a permit need to comply with Energy Code requirements?

Solar Photovoltaic (PV) System Requirements for ADUs

Expand All

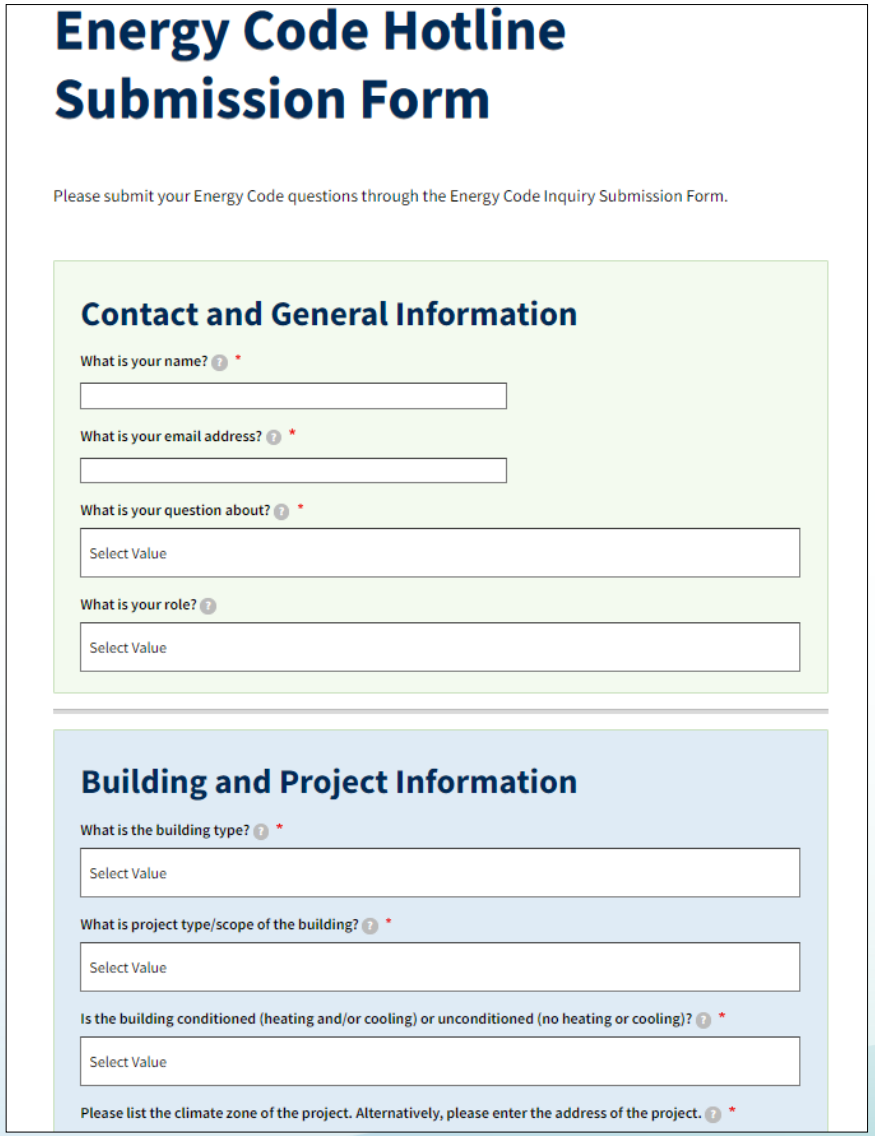
- Can an existing solar PV system be used to meet the solar PV requirements for a newly constructed detached ADU?
- Can new PV modules be added to an existing PV system to meet the PV requirement for a newly constructed, detached ADU?
- Can a newly constructed, detached ADU add PV modules to the existing PV system on a separate meter?
- Does a newly constructed, detached ADU need to meet the solar-ready requirements if PV is not required?

Energy Storage System (ESS) Ready Requirements for ADUs

Expand All

- Does a newly constructed detached ADU need to comply with the ESS-ready requirements in Section 150.0(s)?
- Could a 200 amp panel meet the mandatory ESS-ready requirements in Section 150.0(s)1B?

Energy Code Hotline



Energy Code Hotline Submission Form

Please submit your Energy Code questions through the Energy Code Inquiry Submission Form.

Contact and General Information

What is your name? *

What is your email address? *

What is your question about? *

Select Value

What is your role?

Select Value

Building and Project Information

What is the building type? *

Select Value

What is project type/scope of the building? *

Select Value

Is the building conditioned (heating and/or cooling) or unconditioned (no heating or cooling)? *

Select Value

Please list the climate zone of the project. Alternatively, please enter the address of the project. *

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

Contact

- Hotline Submission Form

Blueprint Newsletter

Energy Code quarterly newsletter

- Updates
- Clarifications
- Frequently asked questions
- New webpage coming soon

Issue 149 | Spring 2025

BLUEPRINT

CALIFORNIA ENERGY COMMISSION

EFFICIENCY DIVISION

In This Edition

- 2025 Energy Code: Single-Family Summary of Changes
- Compliance Software Updates
- Energy Code Support Center Updates
- Q&A
  - Single-Family Outdoor Lighting

2025 Energy Code: Single-Family Summary of Changes

One of the significant changes in the 2025 Energy Code for single-family buildings is the prescriptive requirement for both water heating and space heating to be heat pumps. The 2025 Energy Code updates increase the building envelope efficiency, refine solar photovoltaic calculations, clarify the requirements for lighting, and increase the efficiency of pool and spa heating equipment.

Solar PV and Battery Energy Storage System Ready

- Updates mandatory battery energy storage system (BESS) readiness for newly constructed, single-family, one or two dwelling units with electrical service over 125A. BESS-ready is not required if BESS is installed. Section 150.0(s)
- Updates PV sizing when using total solar access roof area (SARA): SARA multiplied by 18 for steep-sloped roofs and SARA multiplied by 14 for low-sloped roofs. Section 150.1(c)14

Envelope

- Updates mandatory wall insulation maximum U-factor of 0.095 for 2x4 wood framed (minimum R-15) and maximum U-factor of 0.069 for 2x6 or greater wood-framed (minimum R-21). Section 150.0(c)
- Updates prescriptive Table 150.1-A Option C for ventilated attic minimum R-38 in climate zones 1, 8-16, minimum R-30 climates zones 2-7; adds cathedral ceilings minimum R-38 in all climate zones. Section 150.1(c)1Aiii
- Updates mandatory weighted average maximum U-factor of 0.40 for all fenestration, including skylights. Section 150.0(q)
- Updates prescriptive maximum U-factor of 0.27 for fenestration in Climate Zones 1-5, 11-14, 16, and maximum U-factor of 0.30 in Climate Zones 6-10, 15; some exceptions may apply. Section 150.1(c)3A

1

Thank you

What is back up heat for heat pump water heaters?	For example, an integrated heat pump water heater could have electric resistance elements in the tank.	Jennifer Rennick
Heat-Pump Water Heaters: can they be installed outdoor, at least in some zones?	Integrated heat pump water heaters are not rated for outdoor exposure, and need to be sheltered	Jennifer Rennick
Is extract-only ventilation still legal for SFR?	Exhaust only IAQ for SFR is still allowable.	Jennifer Rennick
What is the rationale for the exception for glazing in WUI areas?	Many WUI rated windows have higher U-values than the mandatory minimum.	Jennifer Rennick
Is there going to be any information on changes in the alterations code?	This topic is very nuanced. 3C-REN will have future classes addressing residential existing, additions, and alterations.	Jennifer Rennick
Also, there are requesst by real estate comunity for HERS/ECC field verification to be phased out; is this to be anticipated in the future ?	This is the first I've heard of this. As far as I know it is unlikely HERS/ECC FVDT will be phased out.	Mauricio Morales/David Choo/D
Will Cheers.org publish additional guidance?	Michael, we have update training currently being prepared for all Raters.	Mauricio Morales/David Choo
What means LSC ?	Lifetime System Cost	Gina Rodda
Have above code programs revised their requirements based on the LSC?	I don't see how they can until the software is available	Gina Rodda
Does "Standard Design" HP penalize FAU's?	Gas furnace systems can still comply with the new HP standard designs, but compliance targets are now based on HP's so compliance may require different measures packages than in 2022 to get a compliant design. Best bet is to get the new 2025 software and see how these changes affect designs you're familiar with from previous code cycles.	RJ Wichert
Regarding "Integrated heat pump water heaters are not rated for outdoor exposure, and need to be sheltered" There are only indoor and outdoor options in the current Energypro software. Will an option for "sheltered" in upcoming update for Energypro?	The location options for indoors is conditioned space and the outdoor option is for ducted to the outdoors or a closet that utilizes outdoor air.	Jennifer Rennick
For ADUs, using a 10sqft of indoor space for water heater is an issue. Can tankless electric be used ?	Currently that is a choice depending on the size of the ADU and plubing distribution configuration. 2025 changes that to a tank ekectric resistance option. You can always try the performnace approach but it always at a large compliance penalty. Considering the electrical sizing needed to support tankless electric resitance is also a big concern.	Gina Rodda

See recording for questions answered live

CHEERS Registry Updates

Mauricio Morales

CHEERS

CHEERS Registry Updates

CHEERS

The Energy Code Compliance Program (ECC)

Title 24 Part 1 – Section 10-103.3

The ECC Program is a continuation of the HERS Program with significant changes and updates that will take effect on **January 1, 2026**.

- All HERS Providers will now be known as **ECC-Providers**.
- All HERS Raters will now be known as **ECC-Raters**.

ECC Program Changes that affect Providers & Registries

- **Formally Recognizes Rater Companies -***10-103.3(a)*
- **Conflicts of Interest -***10-103.3(b)(1)*
  - Declaration of Separation of Service – *10-103.3(b)1.A.ii*
  - Consumer Information Forms -*10-103.3(b)1.A.vii*
  - Project Owner Report -*10-103.3(b)1.A.vi*
  - Rater of Record - *10-103.3(b)1.A.viii*
- **Quality Assurance -***10-103.3(d)5*
- **Conflicted Data -** *10-103.3(b)1.B*
- **Rater and Rater Company Discipline–** *10-103.3(d)7 & 8*

ECC Providers & Rater Companies

Providers must:

- Provide training and certification of Rater Companies
- Provide Quality Assurance & Oversight
- Resolve Complaints
- Public List of Rater Companies
- Reporting to CEC

ECC Providers & Rater Companies

Rater Companies:

- At least one Principal per Rater Company must be a certified ECC Rater.
- A Company Applicant must compete the Rater Company Training and sign the Rater Company Agreement.

ECC Registry and Conflict of Interest

The ECC Program requires that Rater Companies be independent from the Responsible Person.

- Rater Companies will have **"view only"** access to projects - *Section 10-103.3(f)2.B.*
- Rater Companies **cannot** sign documents on behalf of a Rater - *Section 10-103.3(f)2.D.*
- Rater Companies **cannot** change data entered in the registry for certificates of verification - *Section 10-103.3(f)2.C.*

ECC Registry and Conflict of Interest

Declaration of ECC Company Separation of Service

- Rater Company may not provide additional project support – unless the Rater Company submits a **Declaration of Separation of Service** – *10-103.3(f)2.D.ii*.
- This declaration provides proof that the Rater employed by the Company to provide FV & DT is independent from the person employed by the Company to provide additional project support services such as design, construction management, permitting, or "Responsible Person" signatories on the same project - *10-103.3(f)2.D.iii*

ECC Registry and Conflict of Interest

Consumer Information Forms – *10-103.3(b)1.A.vii*

Providers must develop a **Consumer Information Form** that details:

- The ECC Program
- Roles and Responsibilities of all entities involved
- The consumer's information
- The process for the consumer to file a complaint

ECC Registry and Conflict of Interest

Consumer Information Forms – *10-103.3(b)1.A.vii*

Raters or Rater Companies are responsible for:

- Providing a copy of the Consumer Information Form to the building or project owner.
- Registering a completed and correct Consumer information form with the ECC Provider.

ECC Registry and Conflict of Interest

Project Owner Report - *10-103.3(b)1.A.vi*

The Rater or Rater company is required to provide a report to the building or project owner. This is not the same as the Project Status Report and must include the following:

- Rater Company Information
- Data Registry Information
- List of FV&DT & Services
- Results of Tests
- Amount Charged

ECC Registry and Conflict of Interest

Rater of Record – *10-103.3(b)1.A.viii*

- Once a Rater registers a failed field verification or diagnostic test, that Rater becomes the Rater of record (ROR) for that field verification or diagnostic test.
- Once failed results have been registered, the project compliance documentation will be locked by the registry.
- Only the Rater of Record may register passing results after the initial failure has been registered.

ECC Registry and Conflict of Interest

How to release a project from the Rater of Record

- The ROR agrees to release the project
- The ROR is physically unable to continue work on the project due to injury, misfortune or availability
- The ROR's certification has been suspended
- The ROR is unwilling to continue work on the project

Providers and Quality Assurance

Quality Assurance - *10-103.3(d)5*

ECC Providers are responsible for oversight and implementation of a Quality Assurance Program. The ECC Program includes various quality assurance audits, including:

- Onsite Audits
- Shadow Audits
- Desk Audits

Providers and Quality Assurance

Quality Assurance requirements for sampling – *10-103.3(d)5.*C.i.f

- Onsite audits shall be performed for every 100 dwelling unit or residence in a development by a single developer that utilizes sampling.
- CHEERS QA must perform an onsite Tested & Untested Unit
- If a Provider is refused access to a development the project's data will be considered conflicted data. Conflicted data is flagged and reported.

Conflicted Data

The ECC Program and Conflicted Data– *10-103.3(b)1.B*

The ECC Program addresses conflicted data and has strict prohibitions on false, inaccurate, or incomplete information which can result in:

- Rater or Rater Company Discipline
- Flagged Data
- Disclosures to Everyone

Discipline

Rater and Rater Company Discipline– *10-103.3(d)7 & 8*

The ECC Program provides specific disciplinary actions for Raters and Rater Companies.

Step 1: Notice of Violation

Step 2: Probation

Step 3: Suspension

Step 4: Decertification

Conclusion

The ECC Program

The new ECC Program brings massive updates and revisions to the old HERS program with a focus on:

- Consumer Protection
- Conflicts of Interest
- Quality Assurance
- Data Accuracy and Access

CHEERS

HERS to ECC-Rater Change

Paul Dunn

Central Coast Energy Compliance

HERS — Gets a New Name

HERS Rater Work:

- Duct Leakage Testing
- Blower Door / Envelope Leakage Testing
- QII –Quality Insulation Installation
- Field Verifications:
  - Refrigerant Charge
  - Exhaust Fan and Kit Hood Fans
  - HVAC Efficiency and Capacity
- Assist/Complete: CF-2R and CF-3R, etc

And so much more!!!

Review: Current Process for Residential Permitting

CF-1R Compliance created and uploaded to HERS Registry

CF-2R Installation completed and uploaded to HERS Registry

CF-3R Verification completed and uploaded to HERS Registry

Building Official Confirms CF-2R's and CF-3R's are uploaded and signed (PSR)

Similar Process for Multifamily Permitting

Overview of Forms for Residential Single Family and Low-Rise Multifamily Construction

Single Family (Duplexes and Townhouses)

- **CF1R** – Forms used to show ***Compliance*** with the energy code at initial plan submittal
- **CF2R** – Forms used during construction to demonstrate that the energy code features met ***Installation*** requirements
- **CF3R** – Forms used after installation to confirm that the energy code features met the ***Verification*** requirements

Low-Rise Multifamily (3 Stories or Less)

- **LMCC** – Forms used to show ***Compliance*** with the energy code at initial plan submittal
- **LMCI** – Forms used during construction to demonstrate that the energy code features met ***Installation*** requirements
- **LMCV** – Forms used after installation to confirm that the energy code features met the ***Verification*** requirements

Residential and Multifamily – *HERS* will be replaced by *ECC*

OLD

HERS

- Title 20 (Ch 4, Art 8, Sec 1670)
- 2022 and Prior Code Cycles
- HERS –Home Energy Rating System
- HERS Rater
  - HERS Field Verification and Diagnostic Testing

NEW

ECC Program

- Title 24, Art 1, Sec 10-103.3
- 2025 Code
- ECC –Energy Code Compliance
- ECC-Rater
  - **FV&DT** –Field Verification and Diagnostic Testing

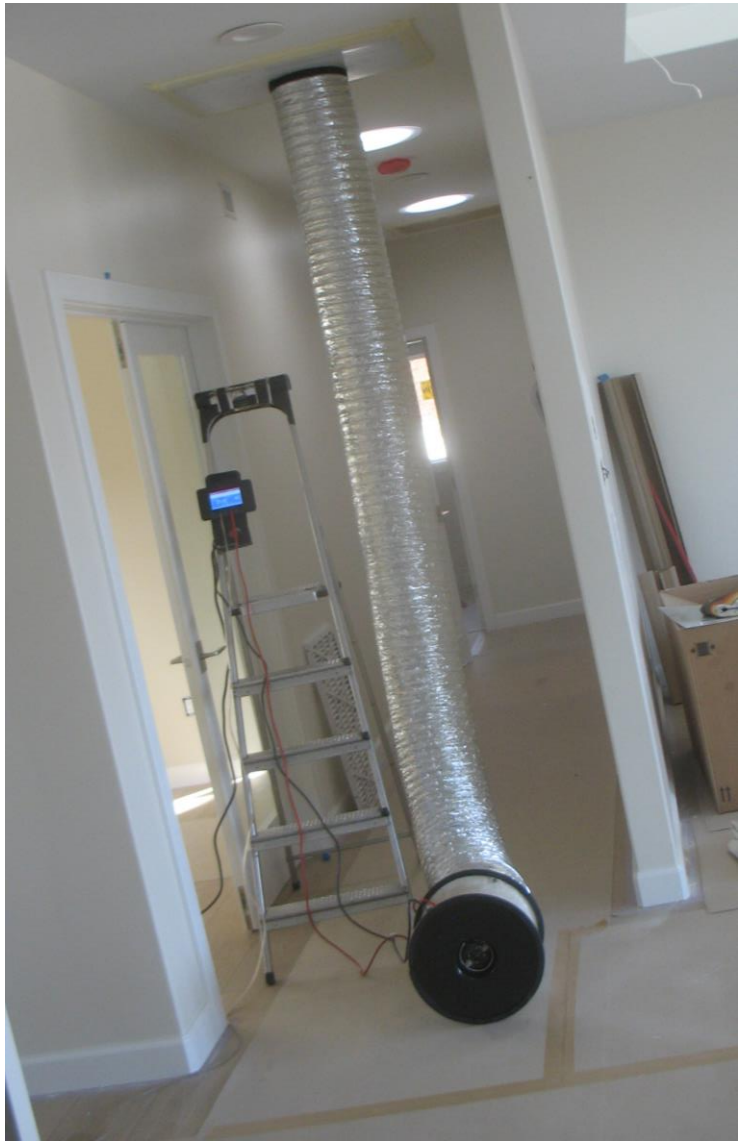
How will a ~~HERS~~ ECC Rater's Work Change Under 2025

Procedural:

- Participation in Quality Assurance Program
- Interface with the New ECC Data Registry
- Meet New Photo Documentation Requirements
- Meet New CEC Annual Reporting Requirements
- *Other stuff? …We'll See*

Potentially, New Scope of Work:

- Multifamily Compartmentalization Testing – Now Mandatory
- Fault Indicator Display Verification for ERV/HRV –New Prescriptive Component
- Heat Pumps Refrigerant Charge Verification –New Prescriptive Component
- Consumer Summary Sheet/Report
- New / Added Testing Procedures and New CF2R's



Duct Leakage Testing in Progress

New Annual Reporting Requirements 10-103.3(e)2G

Independent Raters (i.e. not employed by a Rater-Company):

Independent ECC-Raters shall submit an **Annual Activity Report** no later than the end of **March of each year starting in 2027 to the Commission** that includes the information listed in Section10-103.3(f)2Fiii and Section 10-103.3(f)2Fiv.

Section10-103.3(f)2Fiii: The total number of field verifications and diagnostic tests performed by ECC-Raters working for the ECC-Rater Company during the prior calendar year, organized by enforcement agency.

Section 10-103.3(f)2Fiv: The total and average cost of services charged for each type of field verification and diagnostic test performed by ECC-Raters working for the ECC-Rater Company during the prior calendar year.

Note: *Rater-Companies will have slightly different reporting requirements.*

New Summary Report for the Consumer 10-103.3(b)1Avi

ECC-Raters or ECC-Rater Companies shall provide a report to the building or project owner for field verification or diagnostic testing services performed on the project site. The report may be provided through a contractor or other project representative to the building or project owner but must be a conspicuous and separate document from other documents provided by the contractor or project representative. The report must include all of the following elements:

a. The ECC-Rater's or ECC-Rater Company's name, logo (if any), contact information, and certification number.

b. The ECC-Provider data registry link and registry numbers for all compliance documents registered by the ECC-Rater or ECC- Rater Company for the project.

c. An itemization of each field verification or diagnostic test, as well as any other services performed for the project, the amount charged, and the results in terms of pass or fail.

Field Work and…
more Office Work

Update to JA7 – Data Registry

New Code Language:

JA7.5.6.3 Photographic Documentation for Registered Documents

If a registered compliance document is associated with photographic evidence, the photograph shall be stored as a Joint Photographic Experts Group (JPEG) file and comply with the following requirements:

(a) Photographs shall not to be issued with registered compliance documents.
(b) Photographs shall be stored by the ECC-Provider and made available to the Commission upon request.
(c) Photographs shall show the specific equipment being tested, or measure being verified.
(d) Photographs shall include sufficient background to identify the location of the project site.
(e) Photographs shall include a time and location stamp.

ECC Program –Quality Assurance Review

- **Ref Section 10-103.3(d)5B**
- **Audit Program for all ECC-Raters**
  - ECC-Provider maintains the audit program
  - Audit program staff may not be an active ECC-Rater
- **Exemplary ECC-Rater**
  1) Continuously certified for min 5 years
  2) Pass all audits within a 12-month period:
     - Quality insulation installation (QII) shadow audit
     - Non-QII shadow audit
     - In-lab audit
     - A desk audit

HVAC Design Air Flow. Rater testing proper air flow of a wall register with a flow hood.

Mechanical IAQ Ventilation for Multifamily – New Construction

2025 Code

Outside air (OA) ventilation:

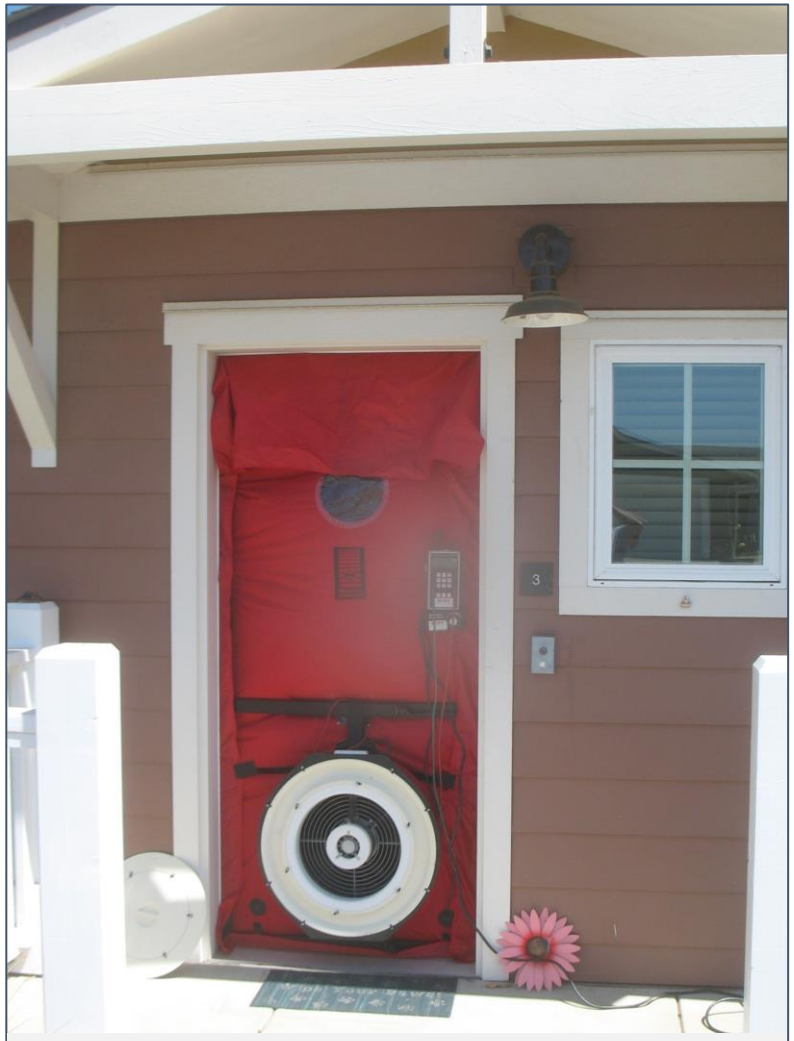
- Balanced Ventilation, or
- Supply Only Ventilation

New Requirement:

- Compartmentalization Testing – ECC-Rater

Note:
For ***new construction***, exhaust only IAQ ventilation is **no longer an option**.

For **additions**, balanced, supply or exhaust only IAQ ventilation remains **allowable**.



Compartmentalization Testing, i.e. Blower Door Testing

New Item for SF Prescriptive Compliance Approach

Prescriptive single family and duplexes new construction:

- All HRV/ERV systems serving individual dwelling units
- Fault Indicator Display (FID)
- ECC-rater field verified
- Manufactures shall certify to the CEC that the FID systems meet the requirements of JA17

A listing of certified products:

https://www.energy.ca.gov/media/7020

Panasonic Example

- Supply and Exhaust CFM settings
- Displays Indoor / Outdoor temperature and humidity
- Filter reset and maintenance notifications
- Active fault indicator alerts to notify user when maintenance is needed
- Complies with ASHRAE 62.2, Indoor airPlus, California Title-24, and Washington State Residential Energy Code

Summary High Level Change

Ref **Section 10-103 of Title 24 Part 6**

Energy Code Compliance (ECC) replaces "HERS" acronym

- HERS Rater ⟶ **ECC Rater**
- HERS Provider ⟶ **ECC Provider**
- HERS Measures ⟶ **ECC Measures**

Key Take-Away:

From a HERS Rater's perspective ***not*** a lot will change in the day-to-day duties and activities performed in the field*, but*…

…with a few minor changes in how the architect and builder work, the proposed changes and HERS/ECC work flow could be much easier for the builder, architect, energy consultant …

HERS / ECC Work Flow – Make your projects easier!

"Pre-con meetings will become more imperative"

HERS QII Work Flow:

- Triggered on CF1R
- Job Site Meeting "Review Requirements"
- HERS Inspection: Framing
  - Envelope Measures
  - HVAC/Duct Measures
- HERS Inspection: Insulation Install
  - Envelope Measures

QII Building Envelope Measures. Rater identifying improperly installed raised floor insulation.

Duct and HVAC Leakage Testing – MCH-20 Series

CF1R-PRF-01-E

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Verified SEER/SEER2
- Fan Efficacy Watts/CFM
- Duct leakage testing
- Low-leakage Air Handling Unit

Note: These other HERS items are also triggered (MCH-01, MCH-22 and MCH-23)

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Required	No

HERS Work Flow:

- Triggered on CF1R
- "Kick-off" Job Site "Review" Meeting
- "Pre-Test(s)" can be performed after:
  - HVAC/Duct Sealing
- Final Duct Leakage Test

CF2R and CF3R Forms

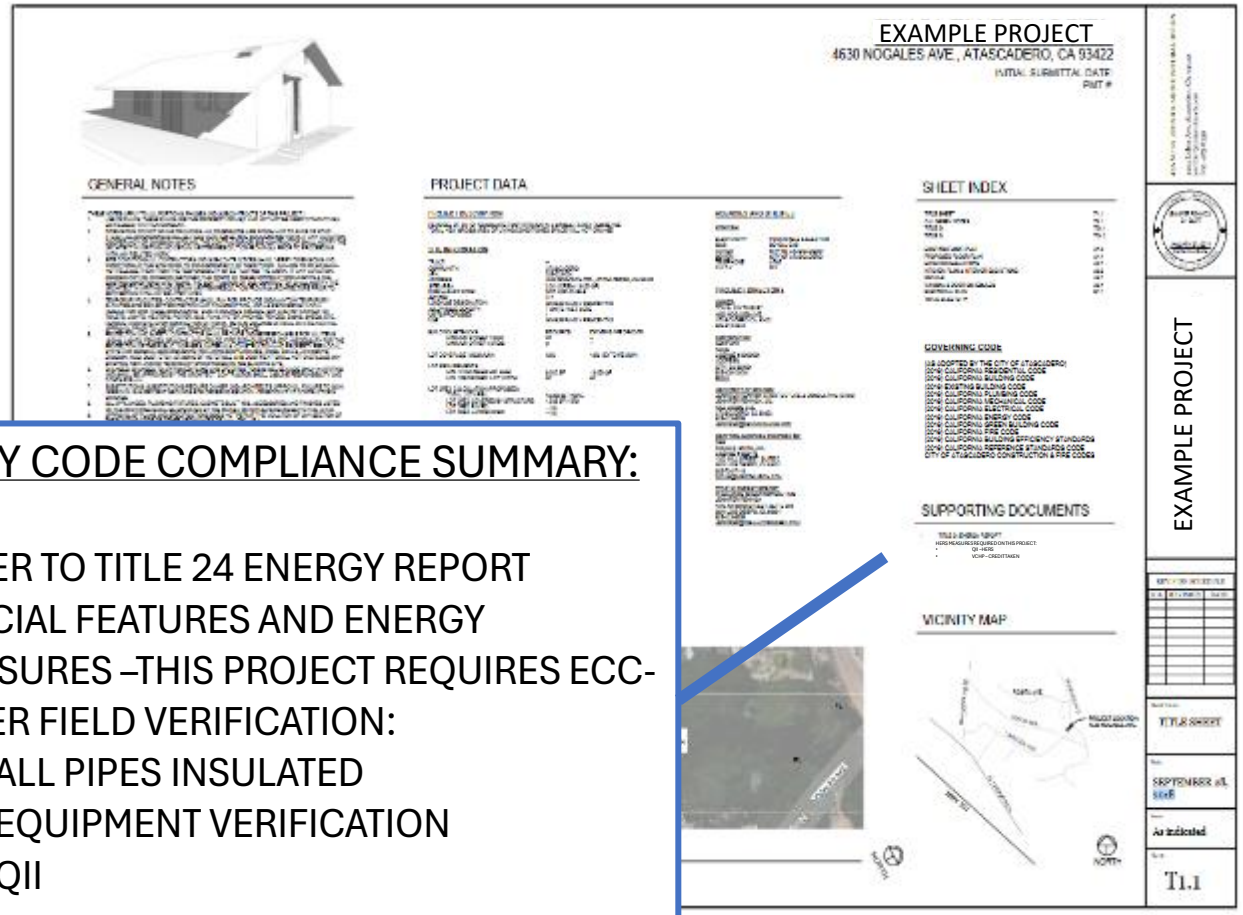
- CF2R-MCH-20a-H Duct Leakage Diagnostic Test - New Construction
- CF2R-MCH-20b-H Duct Leakage Diagnostic Test - LLDCS (Low Leakage Ducts in Conditioned Space)
- CF2R-MCH-20c-H Duct Leakage Diagnostic Test - LLAHU (Low Leakage Air Handler Unit)

- CF3R-MCH-20a Duct Leakage Diagnostic Test - New Construction
- CF3R-MCH-20b Duct Leakage Diagnostic Test - LLDCS (Low Leakage Ducts in Conditioned Space)
- CF3R-MCH-20c-H Duct Leakage Diagnostic Test - LLAHU (Low Leakage Air Handler Unit)

HERS / ECC – Show the Special Features and Field Inspections on the Cover Sheet

When a project includes ECC (*HERS*)-special features and energy efficiency measures (See CF1R or LMCC), call that out on the Cover Sheet, i.e.:

- ‘Code Summary’
- ‘Code Analysis’
- ‘Supporting Documents’
- ‘Energy Code Compliance (ECC) Summary’



ENERGY CODE COMPLIANCE SUMMARY:

- REFER TO TITLE 24 ENERGY REPORT
- SPECIAL FEATURES AND ENERGY MEASURES –THIS PROJECT REQUIRES ECC-RATER FIELD VERIFICATION:
  - ALL PIPES INSULATED
  - EQUIPMENT VERIFICATION
  - QII

CEA / AES Program

Gina Rodda,

Energy Code Ace & Gabel Energy

Certified Energy Analyst (CEA) Program

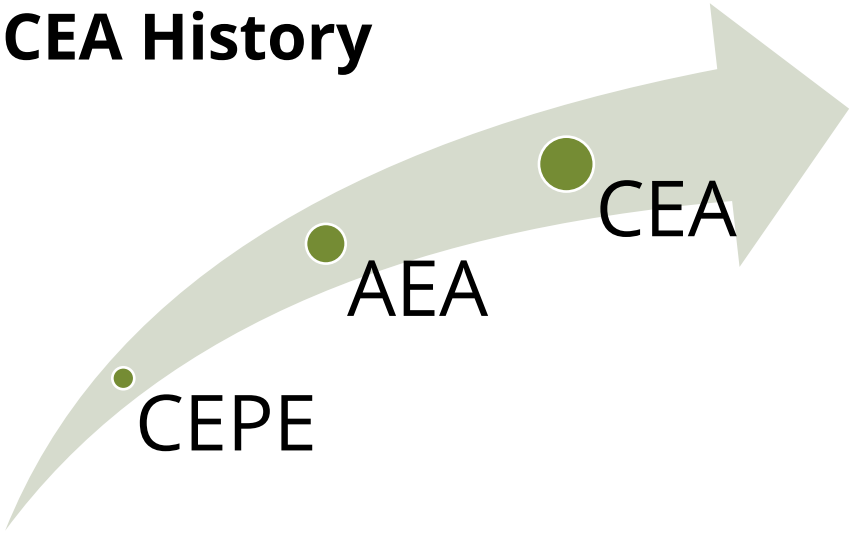
Gina Griffiths Rodda
Energy Code Ace Instructor
Gabel Energy

Certified Energy Analyst (CEA) Program

1. History

2. CEA Competencies
3. Training
4. Next Steps

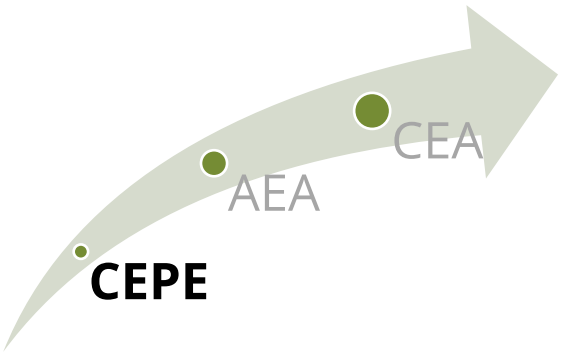
CEA History



Certified Energy Plans Examiner (CEPE)

CABEC
California Association of Building Energy Consultants

https://cabec.org/



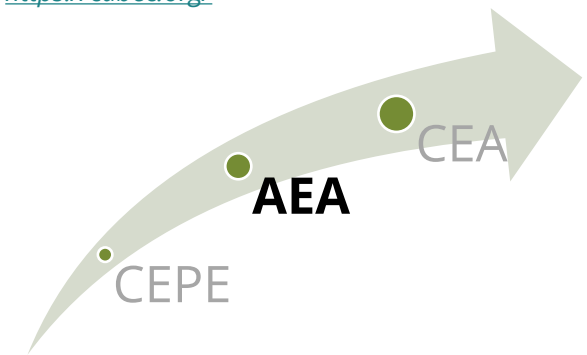
The first organizing meeting of the California Association of Building Energy Consultants (CABEC) occurred in Oakland in September **1985**.

- The need grew to clarify how energy consultants should correctly interpret and implement the Building Energy Efficiency Standards; and the lack of certification among individuals preparing performance calculations and compliance documentation.
- In **1987**, the California Energy Commission contracted with CALBO to establish a Certified Energy Plans Examiner (CEPE) examination for enforcement personnel. Residential and Nonresidential CEPE exams were in place in July 1988 for the start of that set of Standards.
- In **1998**, the Energy Commission discontinued funding the CEPE program and CALBO declined to keep the CEPE certification going. The CEC informally asked CABEC if they would assume the administration and support of the CEPE trainings, exam and certification.
  - With the assistance of Douglas Beaman Associates, and limited financial support from the IOUs, CABEC took over as administrator of the CEPE program. The CEPE and CEA programs have continued since in the same form up to and including the **2008** Standards.

Associate Energy Analyst (AEA)

California Association of Building Energy Consultants

https://cabec.org/

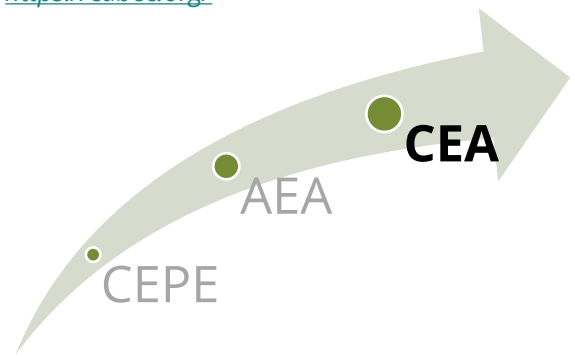


- The AEA provides professional recognition for passing the multiple-choice portion of the rigorous CEA exams without CEU's or direct work experience requirement.
  - This helps serve candidates new to the energy industry, California Energy Commission staff, utility staff, Building Officials, Architects, Engineers, Manufacturers and similar. There will be separate AEA accreditations for the residential and nonresidential energy standards.
- Requirement Qualifications:
  - Be a current CABEC Member in good standing
  - Pass the multiple-choice portion of the CEA exam for the current code cycle
  - Take the Professional Practices Workshop on the CABEC website
  - No application or maintenance fees as long as applicant is a CABEC Member in good standing.

Certified Energy Analyst (CEA)

CABEC
California Association of Building Energy Consultants

https://cabec.org/



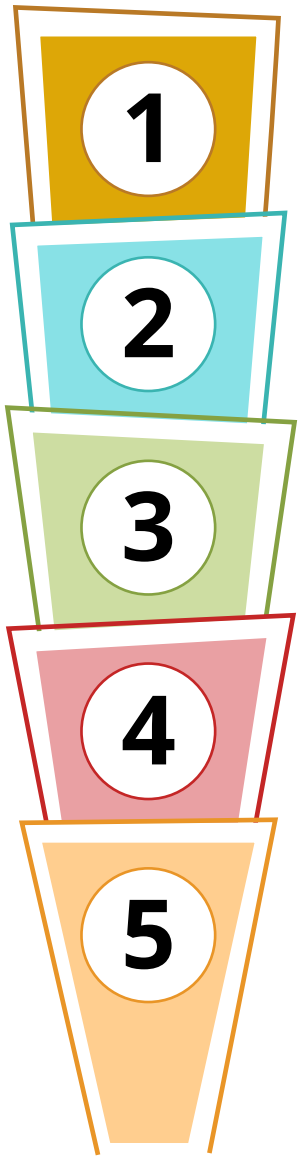
- In late 2010, the IOUs Codes and Standards team, led by PG&E, assembled a team of Subject Matter Experts and certification testing experts to develop an entirely new CEA exam tailored to energy analysts. The new CEA exam tests five core competencies of what energy analysts must be able to do in analyzing, modeling and documenting a building for compliance with the Standards. New CEA exams are created for each code cycle.
- Certification demonstrates a commitment on the part of the energy analyst to maintain a high degree of professional excellence pertaining to the Building Energy Efficiency Standards. Separate certification is offered for the Residential and Nonresidential Standards.
  1. Pass the appropriate two-part (Multiple Choice and ACM Modeling) CEA Exam for Residential and/or Nonresidential
  2. Have verified experience and/or education and other certifications related to Title 24 compliance work
  3. Participate in a Professional Practices Workshop (PPW), sponsored by CABEC
  4. Attend at least nine hours per year of continuing education training

Certified Energy Analyst (CEA) Program

1. History
2. **Competencies**
3. Training
4. Next Steps

- CEA Competencies

CEA Exam Competencies



Energy Basics
Comprehend Key Residential Energy Efficiency Design Concepts and Issues

Project Assessment
Conduct Initial Project Assessment and Determine How to Apply the 2022 Energy Standards

Project Take-Offs
Gather, calculate and organize all information needed for energy modeling

Modeling and Troubleshooting Results
Modeling the building with approved energy compliance software

Energy Consulting
Consider recommendations for improving energy performance and comfort

Certified Energy Analyst (CEA) Program

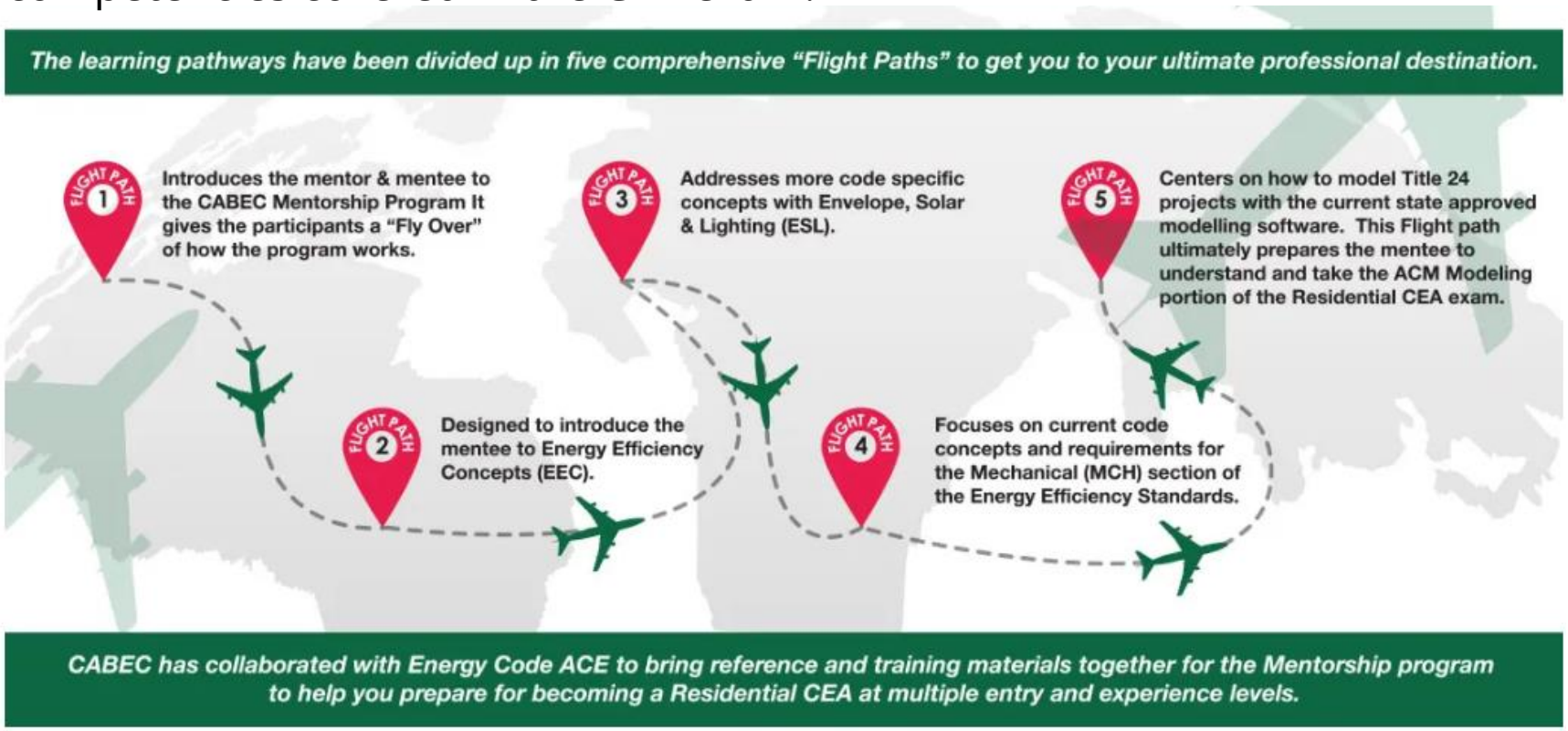
1. History
2. CEA Competencies
3. **Training**
4. Next Steps

- Training
  - Mentoring Program
  - Energy Code Ace

CABEC Mentoring Program

The goal of the CABEC Mentoring Program is to pair seasoned and certified CEAs who are also CABEC Members with individuals currently in pursuit of certification.

While the mentoring program is intended to be customized to the preferences of the mentorship pairing, it is structured around Monthly Mentoring Meetings, which are a series of courses and application activities tied to the five competencies covered in the CEA exam.



Certified Energy Analyst (CEA) Program

1. History
2. CEA Competencies
3. Training
4. **Next Steps**

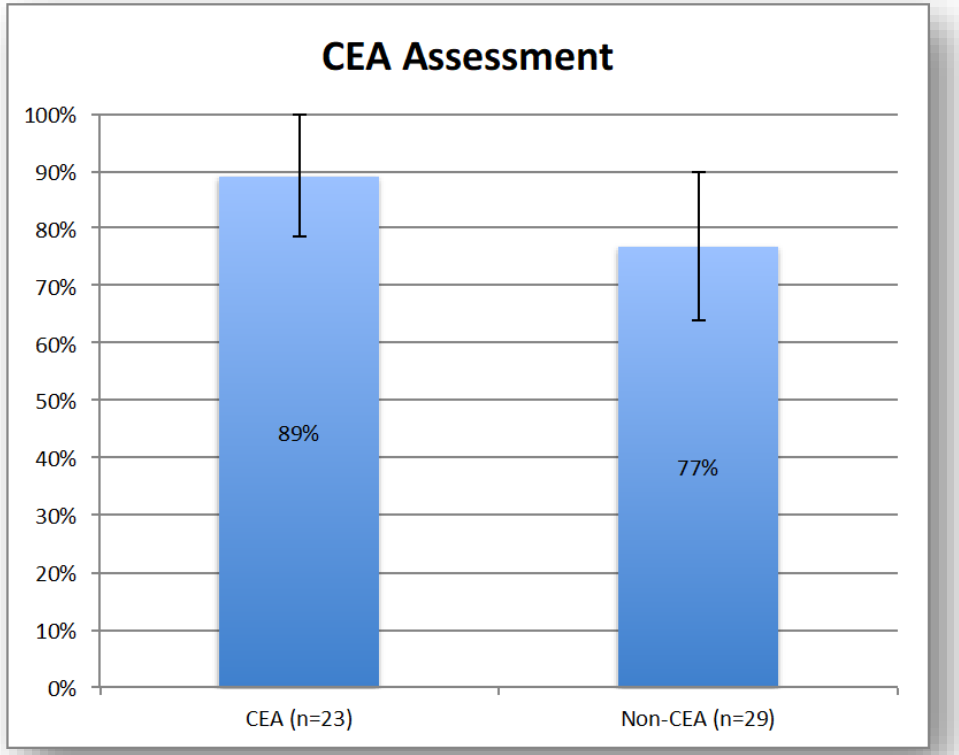
Next Steps

- Acknowledging Value of CEA
- Establishing Goals with CEA's

CEA Assessment Research Project

Where we're at with the CEA Assessment research project

- Meticulously collected data for approx. 75 residential new construction projects
  - 9 different building departments in Northern CA



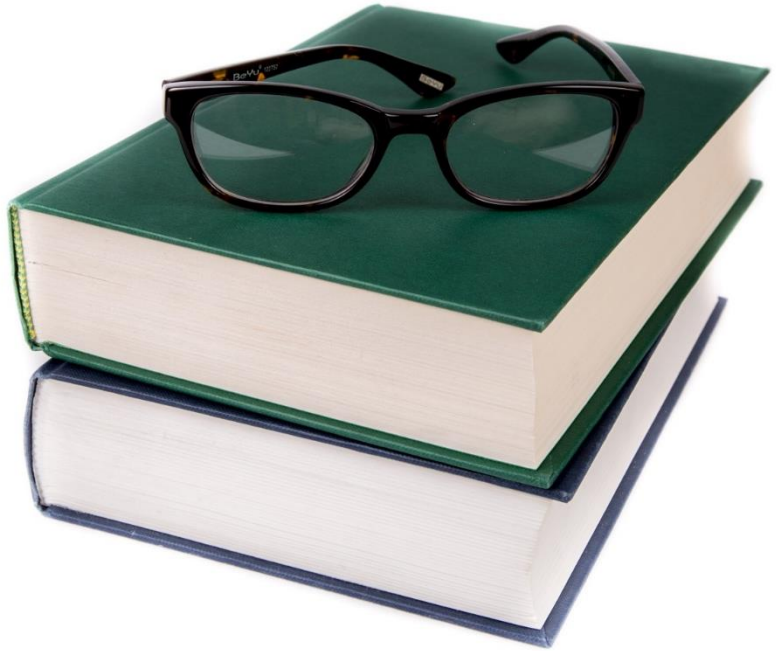
- Preliminary data indicates on average CEAs are more accurate than non-CEAs.

However, the data did not indicate a statistically significant difference after factoring the margin of error based on the very small sample size (50 projects at the time of the analysis).

CEA Assessment Research Project

We received more information than we set out to collect.

- Compiling a database of common modeling and compliance errors
  - Aid in training development
  - Assess the impact of compliance
  - Help identify potential energy savings
- Research data also indicated there's typically not enough information on the plans to adequately plan check energy documentation.



Establishing Goals with CEA Requirements

- Currently, the CEA is a voluntary program, with a few programs supporting the need for a CEA:
  - Most utility rebate programs require the work be done, or be reviewed, by a CEA
  - Some Reach Codes (local ordinances) allow flexibility in how the requirements are met when using a CEA
  - There is a pilot program via PG&E exploring the benefit of Building Departments having Plans Examiner staff members accredited as AEA's and utilizing CEA's for Certificate of Compliance documentation.
    - Our next group starts in June, 2025, let us know if you are interested!

Thank you

Please feel free to reach out to us with your questions and comments!

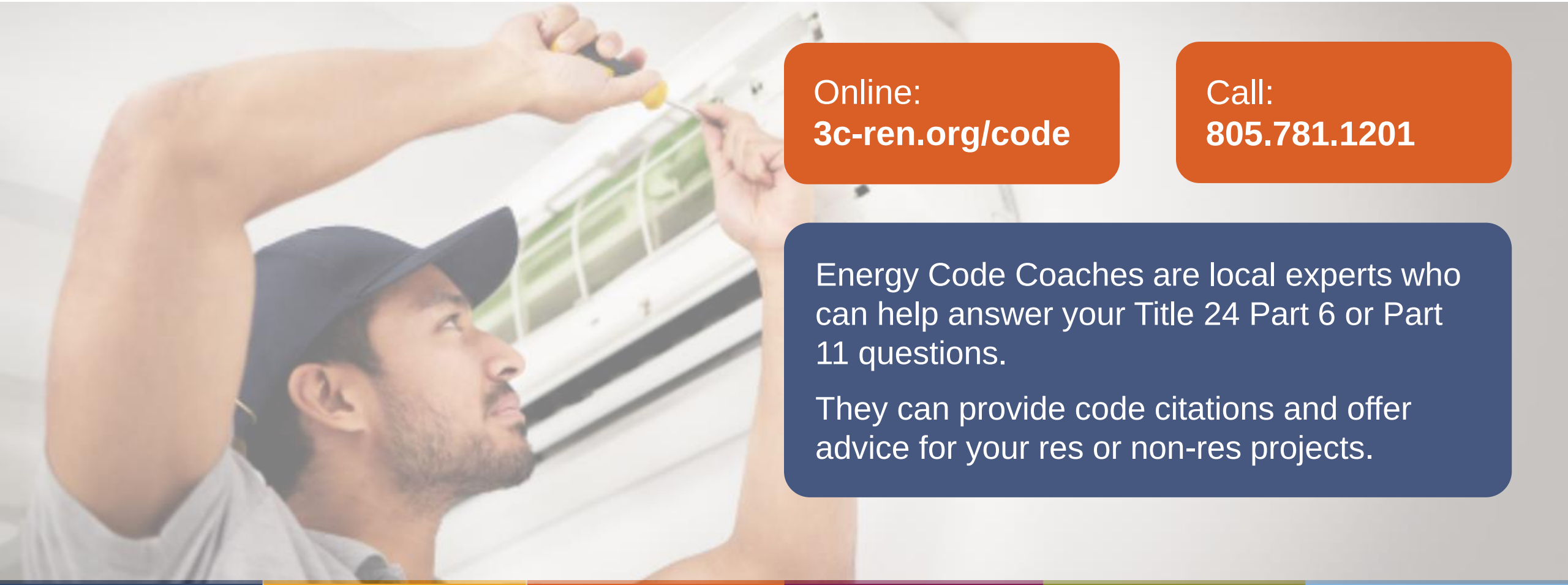
Contact	Role	Email	Phone
Gina Rodda	Instructor	Use the Energy Code Ace Helpdesk!	
Dave Intner	Senior Advisor Building Electrification & Codes and Standards	Dave.Intner@sce.com	(626) 995-7431
Jill Marver	Energy Code Ace Program Manager	Jill.Marver@PGE.com	(925) 415-6844
Jeremy Reefe	Codes & Standards Project Manager	JMReefe@sdg&e.com	(619) 676-8811
Energy Code Ace	Multiple	http://energycodeace.com/content/contact	
Linda Pierce	CABEC Executive Director	linda@cabec.org	

I'm assuming all these are applicable to Golden State Registry once it is approved.	Provided they are approved, it will be applicable.	Mauricio Morales/David Choo
Does T24 modeling fall under additional project support?	As we understand it, it does, especially if you sign as the responsible party. The idea I think is that there needs to be a separation between Modeler and Rater in a way that the modeler doesn't have supervising authority over the Rater.	Mauricio Morales/David Choo
Why is there a conflict of interest between ECC and the designers? The conflict is with the contractor who built the system being verified, right? Why does this seem so backwards?	Correct. I believe the concern that the CEC has is that the designer has the ability to "fire" the Rater because the Rater is holding the builder to the requirements. They want to create a separation.	Mauricio Morales/David Choo
What is the timing of the onsite Audit? Is this after occupancy?	It can happen at anytime. Typically with production housing, it occurs before occupancy. In the alterations/change-out market, since most homes already are occupied, it occurs after occupancy.	Mauricio Morales/David Choo
Multi family? Affordable housing is generally 100% occupied within 30 days of CO	Carol, QA onsite audits typically occur before that. With multifamily, since it is often built in phases, a QA has likely already occurred by occupancy.	Mauricio Morales/David Choo
Will CHEERS be providing detailed compliance training to Rater Companies and Raters	Absolutely!	Mauricio Morales/David Choo
Are rating companies allowed to have employees or staff out of state? How is data allowed to be shared and are out of state consultants still allowed to register CF1Rs?	I don't see why not. The new rules are not specific in terms of geography.	Mauricio Morales/David Choo
Where can we find the rules for ECC Raters and raters companies so we can read more detailed the rules and consequiences, and resposibilities	2025 Building Energy Efficiency Standards Section 10-103.3	Mauricio Morales/David Choo
Why did CalCerts drop out, what is the fundamental change that happened when transitioning to ECC, to me everything sounds very logical, am I missing something?	The fundemental change in transitioning to ECC is the confusion that the term HERS created. HERS is commonly used nationally for a somewhat different purpose. Within CA, there were two types of HERS, HERS I and HERS II. It confused folks. The CEC decided to separate the FVDT portion of it and rename it ECC and keep the HERS II as it is, which is more specific to Whole House Ratings.	Mauricio Morales/David Choo
Do the new HERS requirement prohibit the energy consultants from completing existing condition verification on alterations?	David, really good question, something I haven't considered personally. We'll have to do some research and think this one through.	Mauricio Morales/David Choo
Do dormitories fall under Multifamily Residential requirements?	Yes	Gina Rodda
will there be a separate training provided to rater about the Summary Report for customer?	Yes, CHEERS will be providing training on all of these aspects.	Mauricio Morales/David Choo
I'm assuming that the consumer report would be requied for mulifamily projects as well, correct?	As we understand it, yes.	Mauricio Morales/David Choo
Are the ENERGY STAR geo tag requirements sufficient for the photo documentaion?	If they align with the requirements by the CEC. Above code often has different requirements. I'd simply choose the more stringent.	Mauricio Morales/David Choo
There needs to be more educational outreach to installers. For duct leakage, and mandatory HERS, but most importantly weigh-in refrigerant charge. The number of times I have seen installers that have no clue what they are doing or have already incorrectly installed systems is abhorent. The negligence and malpractice is not talked about enough, and it is not my job to teach them how to do their job.	I agree whole heartedly.	Mauricio Morales/David Choo
when will the training be available?	We're shooting for Sept/Oct. We're working as fast as we can. The changes are significant.	Mauricio Morales/David Choo
Can we sample blower door?	Yes, in New Construction you can but all sampling rules apply including self test by the builder.	Mauricio Morales/David Choo
Will the CHEEERS webiste be ready on 1/1/26 to accept 2025 XML files for uploading?	We're doing our very best to make that happen. A lot of it is waiting on completion of modeling software and programming schemas.	Mauricio Morales/David Choo
I may have missed this as I was a little late, buy is this PP	I do not understand your question. Do you want a copy of the PPT? The recording and PPT will be available after the meeting on the website in a few days.	Mindy Craig
Are there any MF builders doing BD test?	Yes.	Mauricio Morales/David Choo
Apologies for al the questions, David Choo, can we schedule a call?	Sure, shoot me an email at dchoo@cheers.org	Mauricio Morales/David Choo
How do you get the work experience?	We help support that with a variety of projects while you are in the mentoring program.	Gina Rodda
But to get the CEA you need to have the experience and it sounds like the mentoring program is after you get CEA certification. Im a little confused.	The mentoring program should be taken BEFORE taking the CEA exam, we are here to get you prepared for the test. Throughout that program you will be doiing a lot of modeling of example projects, and some of the projects can be used towards your work experience since it is was under the supervision of a mentor	Gina Rodda
Can licenses CE/PE become a CEA or get ceritification?	Yes!!!	Gina Rodda
if a project does not have any CF3Rs on their Project Status Report, but does have CF2Rs, are they required by the Energy Code to upload/finish the CF2Rs?	No, only if HERS measures are required	Gina Rodda
If I build a home and rent for five years then sell, do I have to go through all testing all over?	Only if you change equipment out.	Mauricio Morales/David Choo
Why is taylored method w/ indoor lighting being dropped ?	It was a very complicated method very few people were using. Wattage allowances of the tailored approach are being brought into the area category approach	Gina Rodda
is there a code section that requires the project to obtain the project status COMPLETE and all green dots when there are HERS measures?	Title 24 Part 1 supports the documentation requirements of the Energy Code	Gina Rodda

See recording for questions answered live

Questions about Title 24?

3C-REN offers a *free* Code Coach Service



Online:
3c-ren.org/code

Call:
805.781.1201

Energy Code Coaches are local experts who can help answer your Title 24 Part 6 or Part 11 questions.

They can provide code citations and offer advice for your res or non-res projects.

Closing

Continuing Education Units Available

- Contact dresurreccion@co.slo.ca.us for AIA HSW and ICC LUs

Coming to Your Inbox Soon!

- Slides & Recording

Energy Code Implementation Series:

- May 14 - Single Family Additions and Alterations
- June 25 - Additional Dwelling Units (ADUs)
- July 23 - Multifamily

Other Upcoming 3C-REN Courses:

- May 1 – Practical Ways to Address Embodied Carbon
- May 6 – Electrification Products for the Central Coast Climate
- June 5 – Understanding HERS Registries

Any phone numbers who joined? Please share your name!

2025 Energy Code Resources

Energy Code Ace Resources
Fact Sheet: Multifamily Buildings: What's New in 2025
Fact Sheet: Multifamily Buildings: What's Changed in 2025
Fact Sheet: Single-family Buildings: What's New in 2025
Fact Sheet: Single-family Buildings: What's Changed in 2025
Fact Sheet: Nonresidential Buildings: What's New in 2025
Fact Sheet: Nonresidential Buildings: What's Changed in 2025
Fact Sheet: Nonresidential, Single-family, and Multifamily Pool and Spa Heating 2025

California Energy Commission Resources
2025 California Energy Code Fact Sheet
2025 California Energy Code Executive Summary
2025 What's New, Single Family
2025 Single Family Mandatory Requirements Summary
2025 What's New, Multifamily
2025 What's New, Nonresidential
Blueprint Newsletter Issue 149, Spring 2025

Thank you!

More info: **3c-ren.org**

Questions: **info@3c-ren.org**

Email updates: **3c-ren.org/newsletter**

3C-REN

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