2025 Energy Code Overview

California Energy Commission
Amie Brousseau and Jessica Arroyo
Central Coast ICC
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Agenda

- 2025 Energy Code basics
- All Buildings Overview
- Nonresidential Overview
- Single-family Overview
- Multifamily Overview
- Resources

2025 Energy Code Basics

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
- Promote equity and affordable housing program
- Focus on existing building and ADUs

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 Fact Sheet

CALIFORNIA ENERGY COMMISSION

2025 California Energy Code FACT SHEET

The Energy Code Background

As California's primary energy policy and planning agency, the California Energy Commission (CEC) was mandated by the Warren-Alquist Act to update and adopt building standards that reduce wasteful, uneconomic, inefficient, or unnecessary energy consumption and reduce greenhouse gas (GHG) emissions. That's because homes and businesses use nearly 70 percent of California's electricity! They are also responsible for about 25 percent of the state's GHG emissions. Every three years, the CEC updates the Energy Code, which is published by the California Building Standards Commission as part of the California Building Standards Code (itself, known as Title 24 of the California Code of Regulations). The CEC's efficiency standards for buildings and appliances together have saved Californians more than $100 billion in avoided energy costs over the last 50 years. Thanks to efficiency measures, California — the U.S. state with the highest population and largest economy (almost $3.9 trillion GDP in 2023) — has the second-lowest per capita energy use in both the residential and commercial sectors.[1]

Meeting State Climate Goals Through Better Buildings for Californians

The Energy Code governs the energy-saving features of newly constructed buildings, building additions, and alterations to existing buildings. The proposed standards for 2025 are cost-effective and are estimated to provide over $4 billion in statewide energy cost savings.

The 2025 updates strongly contribute to California's efforts to "decarbonize" its buildings: reducing their carbon emissions. The Energy Code reduces emissions by making buildings more energy efficient; encouraging the use of energy efficient heat pumps for space and water heating; using clean energy generated onsite by solar panels in combination with battery storage; and shifting times of energy use to avoid peak periods of the day when dirty and inefficient powerplants are supplying more power to the grid.

The 2025 Energy Code Update Focuses on:

- Expanding the use of heat pumps for space conditioning and water heating in newly constructed single-family, multifamily, and select nonresidential buildings. The standards also allow for flexibility in taking alternative but equally efficient approaches.
  - For homes, use heat pumps for both space heating and water heating, expanding on the single heat pump baselines in the 2022 update.
  - For nonresidential building types, expanding on the single-zone heat pump baselines in the 2022 update.
  - For low-rise multifamily buildings with individual water heaters in dwelling units, use heat pump water heater baselines, expanding on the space heating heat pump baselines in the 2022 update.
- Encouraging electric-ready buildings to set up owners to use cleaner electric water heating and cooking when they are ready to invest in those technologies.
- Updating photovoltaic and battery energy storage system standards for low-rise and high-rise multifamily and nonresidential buildings to achieve cost effective installations in consideration of revised net billing and virtual net billing rules.
- Updating space conditioning system efficiency and control standards for homes and nonresidential buildings.
- Updating ventilation requirements in multifamily buildings to improve indoor air quality.

Reminder: The CEC does not mandate specific fuel types. California's Energy Code is founded on the principle of enabling building designers to use a range of options for complying with energy requirements.

[1] US Energy Information Administration

Process and Timeline

The Energy Code measures are updated with extensive input from the public, many stakeholders, and experts who participate in the CEC's process. Over the course of each three-year cycle, CEC staff and technical consultants evaluate each measure. The standards must be technologically feasible and cost-effective over the life of the building. The measures are discussed in public workshops and in online comments before being revised. This year, the proposed standards are slated to go to a CEC business meeting for adoption in September of 2024. It will then go to the California Building Standards Commission for approval as part of California's Building Standards Code before the end of 2024.

After approval, there is a one-year period for the CEC to provide supporting information, training, and technical assistance that brings builders, code officials, and technicians up to speed on the updates before they take effect. Local building departments start enforcing the 2025 Energy Code on January 1, 2026. These measures not only save energy and reduce energy bills, but also help Californians breathe easier and be more comfortable where they live and work. They are a critically important tool for advancing the state's climate and energy goals.

BY THE NUMBERS

$100 BILLION
avoided energy costs over the last 50 years from the CEC's efficiency standards for buildings and appliances

70% amount of California's electricity used by homes and businesses

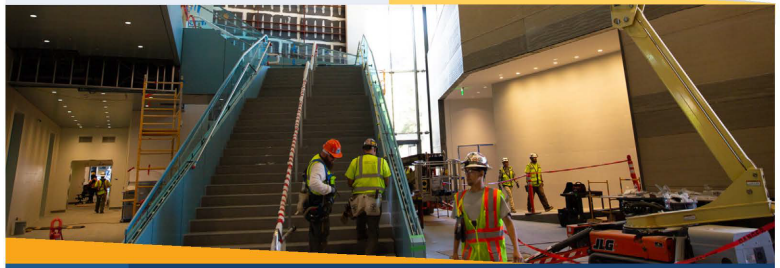
25% amount of the state's total greenhouse gas (GHG) emissions that homes and businesses are responsible for

$4 BILLION
statewide energy cost savings expected from the proposed standards for 2025

For more information on:

The current Energy Code updates, please go to www.energy.ca.gov/2025EnergyCode

Please direct media questions to mediaoffice@energy.ca.gov



September 2024

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2025 Energy Code

Effective January 1, 2026

- Building permit applications submitted on or after effective date
- Must use 2025 software and forms

2025 Energy Code

- 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 Compliance Software

- Download research versions of CBECC-Res and CBECC at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2025-energy-code-compliance-software

All Buildings Overview

Administrative § 10-102, 10-103

Mandatory § 100, 110

Energy Code Compliance Program

All Buildings § 10-102

New for 2025

Adds definitions

- Energy Code Compliance (ECC) Program - program for field verification and diagnostic testing for residential construction per Section 10-103.3 to verify newly constructed buildings, additions and alterations to existing buildings
- ECC-Provider - organization approved by Energy Commission to administer ECC program per Section 10-103.3
- ECC-Rater - person trained, tested, and certified by ECC-Provider to perform field verification and diagnostic testing for ECC program per Section 10-103.3
- ECC-Rater Company - organization certified by ECC-Provider to offer field verification and diagnostic testing services by ECC-Rater Company's ECC-Raters for ECC program per Section 10-103.3
- Exemplary ECC-Rater - ECC-Rater that has achieved the status of "Verified Exemplary" per Section 10-103.3(d)5B

Energy Code Compliance Program Formerly HERS

All buildings § 10-103.3

Updated for 2025

- Moves Home Energy Rating System (HERS) program to Title 24
- Rename to the Energy Code Compliance program
- Focuses on consumer protection
- Advances conflict of interest protections
- Strengthens quality assurance process
- Clarifies field verification and diagnostic testing (FV&DT) responsibilities

Performance Approach Summary

All buildings § 100.2, 140.1, 150.1, 170.1

Updated for 2025

Performance energy budget

- Energy budget includes source energy and long-term system cost (LSC)
  - Compliance determined by applying mandatory and prescriptive requirements of standard design to proposed design building
- Updates long-term system cost (LSC) energy budget with two components
  - Efficiency LSC - includes space-conditioning, water heating, mechanical ventilation
  - Total LSC - includes efficiency LSC plus LSC energy from PV system, battery energy storage systems (BESS), demand flexibility
- Source energy is the total annual source energy

Water Heating Mandatory Requirements

All Buildings § 110.3(c)7

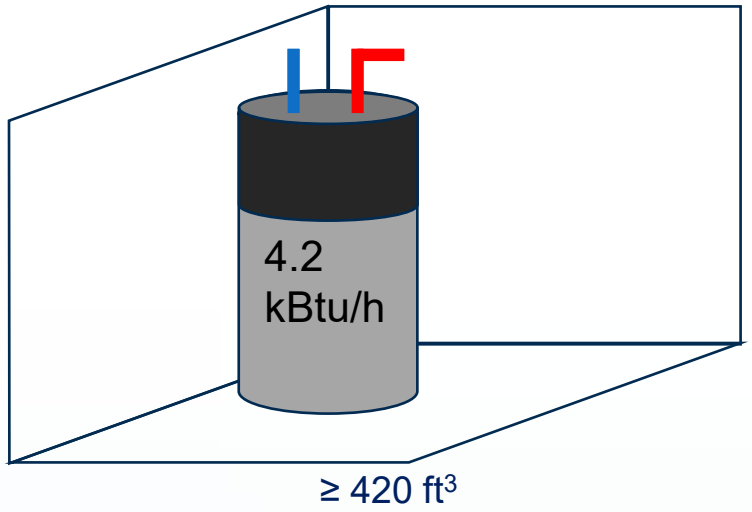
New for 2025

Heat pump water heaters

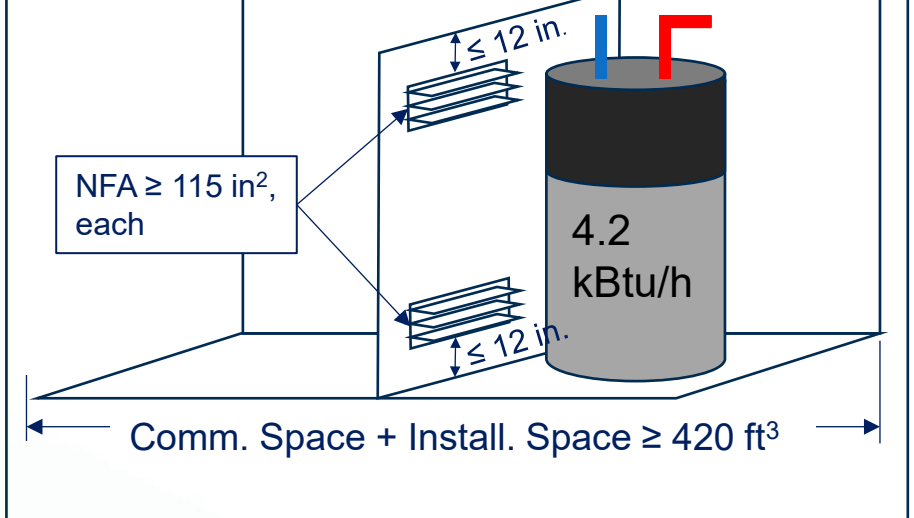
- § 110.3(c)7A - Adds external or internal backup heat required when
  - Inlet air unconditioned
  - Compressor cutoff temperature > winter median of extremes (JA2 Table 2-3)
- § 110.3(c)7B - Adds ventilation requirements
  - Installation space plus ventilation space ≥ 100 ft^3 per kBtu/h or per manufacturer requirement, whichever is greater
  - Louvered/grilled permanent openings or doors with minimum net free area
  - When ducts used
    - R-6 insulation for exhaust ducts and ducts crossing pressure boundaries
    - Air seal all connections and boundary crossings

Examples HPWH Ventilation

All Buildings § 110.3(c)7B



§110.3(c)7B2 installation space meets minimum ft^3



§110.3(c)7B3 using two equal louvered openings (can also use louvered door)

Pool and Spa Heating Mandatory Requirements

All Buildings § 110.4

Updated for 2025

Pool and spa heating

- § 110.4(a)3 – Updates manufacturer certification to have energy efficiency rating on plate or card that is permanent, easily readable, weatherproof with instructions for energy-efficient heater operation
- § 110.4(a)4 removed – allows electric resistance heating
- § 110.4(b)1 – Adds Table 110.4-A for heating equipment standards
- § 110.4(b)2 – Updates minimum 18 inches of horizontal or vertical pipe between filter and heater
- § 110.4(b)3 – Outdoor heated pools/spas shall have a pool cover
- § 110.4(c) – Heater must be solar and/or heat pump (sized per JA16) or use 60% site-recovered or renewable energy
- § 110.4(d) – Adds controls for heat pump with supplementary heating to prevent supplementary heating when heat pump alone meets load

2025 Nonresidential Overview

Mandatory § 120, 130

Performance and Prescriptive § 140

Additions and Alterations § 141

Nonresidential Defined

All buildings § 100.0, 100.1

Updated for 2025

Nonresidential building

- All buildings in California Building Code (CBC) occupancies of group A, B, E, F, H, I, L, M, S, U
- Adds L occupancy for laboratory
- Updates definition for healthcare facility
- Adds definitions for commercial kitchens
- Updates definitions for nonresidential building types:
  - Events & exhibits, sports & recreation, warehouse
  - Functions areas for laboratories

Envelope Summary

Nonresidential §§ 120.7, 140.3, 141.0

New for 2025

Fenestration

- § 120.7(d) – adds mandatory U-factor 0.47 for vertical fenestration
- § 141.0(b)1E – adds mandatory requirements for vertical fenestration replacements over 150 ft^2 U-factor 0.58

Vestibules

- § 120.7(e) – adds mandatory requirements for vestibules at public entrances that open into spaces 3,000 ft^2 or more for newly constructed occupancies types A, B, E, I, M

Insulation

- 140.3(a) - updates prescriptive U-factors for roofs/ceilings and walls in Table 140.3-B

Insulation Prescriptive Requirements

Nonresidential § 140.3(a), Table 140.3-B

Updated for 2025

TABLE 140.3-B Roof and Ceiling Insulation Maximum U-Factors for Nonresidential Buildings

Climate Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Metal Building	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038
Wood Framed and Other	0.028	0.028	0.028	0.028	0.028	0.047	0.047	0.047	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028

TABLE 140.3-B Wall Insulation Maximum U-Factors for Nonresidential Buildings

Climate Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Metal Building	0.098	0.053	0.098	0.053	0.053	0.098	0.098	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.050	0.053
Metal-framed	0.060	0.055	0.071	0.055	0.055	0.060	0.060	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
Mass Light[1]	0.170	0.138	0.227	0.196	0.364	0.364	0.364	0.364	0.364	0.138	0.138	0.138	0.138	0.138	0.138	0.138
Mass Heavy[1]	0.211	0.650	0.650	0.650	0.650	0.690	0.690	0.690	0.690	0.650	0.160	0.211	0.184	0.160	0.160	0.153
Wood-framed and Other	0.078	0.053	0.102	0.053	0.095	0.102	0.102	0.095	0.053	0.053	0.042	0.053	0.053	0.053	0.038	0.053

Lighting Summary

Nonresidential §§ 130.1, 130.2, 130.4, 140.6, 140.8

Updated for 2025

- §130.1(b) – Removes multilevel control uniformity Table 130.1-A
- §130.1(d) - Lowers trigger for mandatory daylighting controls to 75W; adds daylighting control exception for secondary sidelit daylit zones < 85W; updates linear luminaires controllable in up to 8-ft segments
- §130.2(c) – Updates exception from motion sensors for building façade, ornamental hardscape, and outdoor dining area lighting
- §130.4(a) – Adds mandatory acceptance testing for controlled environmental horticulture lighting
- §140.6 – Removes prescriptive tailored method; moves mounted and wall display lighting allowances to area category method
- §140.8(b) – Removes most automatically compliant sign light sources; may use LED or neon

Mechanical Summary

Nonresidential §§ 120.1, 120.3, 140.4, 141.0

Updated for 2025

- §120.1 - Updates mandatory requirements for ventilation and indoor air quality
- Table 120.1-B - Adds mandatory exhaust rates for laboratory categories
- Table 120.3-A – Splits into Tables 120.3-A1 & -A2 for mandatory pipe insulation thickness
- §140.4 – Updates prescriptive requirements per ASHRAE 36 for variable air volume (VAV) systems, economizers, supply air temperature reset controls, DDC control logic
- §140.4(a)3 – Adds prescriptive options for multizone HVAC in offices and schools not greater than 150,000 ft^2 or 5 habitable stories in most climate zones
- §140.4(h)5 - Revises prescriptive requirements for cooling tower efficiency
- §140.4(r) – Adds ASHRAE G36 requirements for DDC controllers
- §140.4(s) - Revises prescriptive requirements for heat recovery
- §141.0(b)2Cii – Updates requirements for HVAC alterations: Single Zone Heat Pump or Single Zone Air conditioner per Table 141.0-E-1 with some exceptions

Covered Processes Summary

Nonresidential §§ 120.3, 120.6, 140.9

Updated for 2025

- §120.3(a) – adds mandatory pipe insulation for process heating and process cooling
- Table 120.3-A – splits into Tables 120.3-A1 & -A2 for mandatory pipe insulation thickness
- §120.6(a) – Adds mandatory efficiency requirements for fan-powered evaporators using volatile refrigerants
- §120.6(h) – Updates mandatory controlled environment horticulture to increase lighting efficiency
- §120.6(k) – Adds mandatory electric-ready for new commercial kitchens
- §140.9(c) - Adds prescriptive requirements for laboratory and factory exhaust systems

PV and Battery Summary

Nonresidential § 140.10

Updated for 2025

- § 140.10(a)
  - Updates formula for PV sizing using solar access roof area (SARA) for steep and low slope roofs
  - Exception 5 – Updates for multitenant building tenant spaces < 2000 ft^2 with separate meter and HVAC to be excluded from PV calculation
- Tables 140.10-A & -B – Adds building types
  - Events and exhibits, religious worship, sports and recreation
- Table 140.10-A - Increases PV capacity factors
  - Libraries in climate zones 2-16
  - Hotel/motel, medical office building/clinic, restaurants, retail, and grocery in all climate zones
- Equations 140.10-B, C, & D – updates BESS sizing equations
- Table 140.10-B
  - Updates BESS capacity factors for all building types and climate zones
  - No requirements in climate zone 1 for schools and offices, financial institutions, unleased tenant space, and medical office buildings/clinics

2025 Single-family Overview

Mandatory § 150.0

Performance and Prescriptive § 150.1

Additions and Alterations § 150.2

Envelope Summary

Single-family § 150.0(q), 150.1(c)

Updated for 2025

Insulation

- §150.0(c) – Updates mandatory wall insulation
  - 2x4 walls U-factor 0.095 or R-15
  - 2x6 walls U-factor of 0.069 or R-21
- § 150.1(c)1A – Adds to prescriptive Option C - Table 150.1-A
  - Cathedral ceiling insulation R-38 all climate zones
  - Ceiling insulation for vented attic
    - R-38 climate zones 1, 8-16 (adds 8, 9, 10)
    - R-30 climate zones 2-7

Fenestration

- § 150.0(q) – Updates mandatory U-factor 0.40 in all climate zones
- § 150.1(c)3 – Updates prescriptive U-factor 0.27 in climate zones 1-5, 11-14, 16
  - Adds exception for new dwelling units 500 square feet or less in climate zone 5 U-factor 0.30

Lighting Mandatory Summary

Single-family §§ 150.0(k), JA8

Updated for 2025

- §150.0(k)1A – Removes Table 150.0-A, adds automatically high-efficacy light sources under Exception 4
  - All luminaires and light sources must meet JA8 requirements
- Reference appendices JA8
  - Removes luminous efficacy and CCT tests, except for LEDs, HIDs, and induction lamps
  - Removes ENERGY STAR specifications; updated reference for elevated temperature tests to federal procedures at higher ambient temperatures
  - Adds JA8.7, JA8.8 start time and noise test methods

HVAC and IAQ Mandatory Summary

Single-family § 150.0(h, i, o)

Updated for 2025

HVAC

- §150.0(h)5 – limits equipment selection, systems sized based on ACCA
- §150.0(h)6 – adds defrost requirements for heat pumps with defrost delay timer
- §150.0(h)7 – adds supplemental heating control requirements
- §150.0(h)8 – adds supplemental electric resistance heat sizing requirements
- §150.0(h)9 – adds thermostat requirements for variable or multi-speed systems
- §150.0(i)2 – adds thermostat requirements for heat pumps with supplemental heating

Indoor air quality

- §150.0(o)1Civ – Updates for balanced and supply-only ventilation to have accessible air filters, including HRV/ERVs

HVAC Prescriptive Summary

Single-family § 150.1(c)6, 9, 15

Updated for 2025

Heat-pumps and HRV/ERV

- § 150.1(c)6 - Updates prescriptive space heating heat pump in all climate zones; gas space heating only if using performance
- § 150.1(c)9 – updates duct systems and air handles to be entirely conditioned space and ECC-rater verified; below ceiling if not high performance attic per Option B in Table 150.1-A
- § 150.1(c)15 – Updates fault indicator display only for heat recovery ventilation (HRV) and energy recovery ventilation (ERV) with ECC-rater verification
- Table 150.1-A – Adds refrigerant charge verification for heat pumps in all climate zones with ECC-rater verification

Water Heating Summary

Single-family §§ 150.0(n), 150.1

Updated for 2025

Water heaters

- §150.0(n)1A – Updates mandatory branch circuit requirement to 30A for HPWH electric-ready if installing gas
- §150.1(c)8 – Removes gas water heating exception from prescriptive, allowed in performance approach

BESS-Ready Summary

Single-family § 150.0(s)

Updated for 2025

Battery energy storage system ready (BESS)

- §150.0(s) – Updates mandatory BESS-ready applies to newly constructed single-family buildings with dwelling unit electrical service over 125A
- §150.0(s) – Adds exception for buildings with BESS installed not required to meet §150.0(s)

Solar PV Summary

Single-family § 150.1(c)14

Updated for 2025

Solar PV

- §150.1(c)14 – Updates prescriptive PV sizing using Solar Access Roof Area (SARA) for steep and low slope roofs
  - SARA multiplied by
    - 18 Watts per ft^2 for steep sloped roofs
    - 14 Watts per ft^2 for low sloped roofs

Additions Summary

Single-family § 150.2(a)

Updated for 2025

- §150.2(a)1D – Removes gas water heating prescriptive option
- §150.2(a)1E – Adds HVAC load calculations and system capacity requirements
- Adds Table 150.2-A for maximum heating capacity
- Adds Table 150.2-B for maximum cooling capacity
- Adds Table 150.2-C for maximum infiltration air changes per hour for load calculations

Alterations Summary

Single-family § 150.2(b)

Updated for 2025

- § 150.2(b)1A-B – Updates exceptions for new fenestration or replacement vertical fenestration maximum SHGC 0.23 allowed in climate zone 15
- § 150.2(b)1F – Clarifies air-cooled conditioners in climate zones 2, 8-15 and air source heat pumps in all climate zones meet subsections a & b; removes fault indicator display requirement

2025 Multifamily Overview

Mandatory § 160

Performance and Prescriptive § 170

Additions and Alterations § 180

Envelope Summary

Multifamily § § 160.1, 170.2

Updated for 2025

Insulation

- § 160.1(b) - Updates mandatory wall insulation U-factors
  - Metal-framed U-factor 0.151
  - Wood-framed 2x4 U-factor 0.095
  - Wood-framed 2x6 U-factor 0.069

Roofing products

- Table 170.2-A - Updates prescriptive requirements
  - Option B: Steep-sloped roof aged solar reflectance(SR) 0.25 in climate zones 10, 11, 13, 15, aged SR 0.20 in climate zones 12, 14
  - Option D: Low-sloped roof aged solar reflectance 0.63 in climate zones 2, 4, 6-15
  - Option D: Low-sloped roof thermal emittance 0.75 in climate zones 2, 4, 6-15

Fenestration

- Table 170.2-A - Updates to U-factor varies by climate zone. Removes number of stories designation for U-factors, SHGC. VT applicable only to common areas

HVAC and IAQ Summary

Multifamily §§ 160.2, 160.3, 170.2

Updated for 2025

Dwelling units

- § 160.2(b)2Axi – Updates mandatory balanced and supply-only ventilation to have accessible air filters, including HRV/ERVs
- § 160.3(b)7 – Adds mandatory defrost requirements for heat pumps with defrost delay timer
- § 160.3(b)8 – Adds mandatory thermostat requirements for variable or multi-speed systems
- § 170.2(c)3Biv – Adds prescriptive HRV/ERV for balanced systems in climate zones 1, 2, 4, 11-14, 16
- § 170.2(c)3Bvi – Updates prescriptive fault indicator display only for heat recovery ventilation (HRV) and energy recovery ventilation (ERV) with ECC-rater verification

HVAC Summary

Multifamily § 170.2

Updated for 2025

Common use areas

- §170.2(c)4Fv - Revises prescriptive requirements for cooling tower efficiency, adds Table 170.2-I
- §170.2(c)4N2 – Revises prescriptive requirements for dedicated outdoor air systems (DOAS)

Water Heating Summary

Multifamily § 160.4, 170.2

Updated for 2025

- § 160.4(e) – Adds mandatory piping insulation requirements, including continuous insulation, pipe supports must be on outside of insulation, insulation required for hot water plumbing appurtenances
- § 170.2(d)1 – Changes prescriptive options for dwellings with individual water heaters
  - Removed gas tankless water heaters (low-rise multifamily buildings only)
  - Adds 120V HPWH
- § 170.2(d)2A – Updates central HPWH may meet NEEA Advanced Water Heater Specification for Commercial HPWH Tier 2; main HPWH must prescriptively be single-pass
- § 170.2(d)2C – All hot water pipes must meet CA Plumbing Code Appendix M
- § 170.2(d)2D – central systems must have recirc. system w/ thermostatic master mixing valve on each supply & return loop, unless building has no more than 8 dwellings
- § 170.2(d)2E – Pipe insulation must be ECC-rated per RA3.6.3

Lighting Summary

Multifamily §§160.5, 170.2, JA8

Updated for 2025

- §160.5(a)1 – Removes Table 160.5-A , moves automatically high-efficacy light sources under Exception 4, All luminaires and light sources must now meet JA8 requirements
- §160.5(b)4B – Removes uniformity requirements under Table 160.5-B
- §160.5(b)4D – Reduces trigger for daylighting controls to 75W; adds daylighting control exception for secondary sidelit daylit zones < 85W; updates linear luminaires controllable in up to 8-ft segments
- §160.5(c)2C – Updates building façade, ornamental hardscape, and outdoor dining area lighting exempt from motion sensors
- §170.2(e) – Removes prescriptive tailored method; moves mounted and wall display lighting allowances to area category method; removes most automatically compliant sign light sources
- Reference appendices JA8
  - Removes luminous efficacy and CCT tests, except for LEDs, HIDs, and induction lamps
  - Removes ENERGY STAR specifications; references elevated temperature tests federal procedures at higher ambient temperatures
  - Adds JA8.7, JA8.8 – Start time and noise test methods

Electric-Ready Summary

Multifamily § 160.9(e, f)

New for 2025

Water heating

- § 160.9(e) – Adds mandatory requirements for individual HPWH-ready, including dedicated receptacle, condensate drain, designated space, and ventilation
- § 160.9(f) – Adds mandatory requirements for central HPWH-ready, including dedicated receptacle, condensate drain, designated space, and ventilation

PV and Battery Summary

Multifamily § 170.2(f-h)

Updated for 2025

Low-rise and high-rise multifamily

- §170.2(f-g) – Updates PV sizing using solar access roof area (SARA)
  - Multiply by 18 for steep-slope and 14 for low-slope
- §170.2(f-g) – Updates Exception 2 for minimum PV system size < 4kW

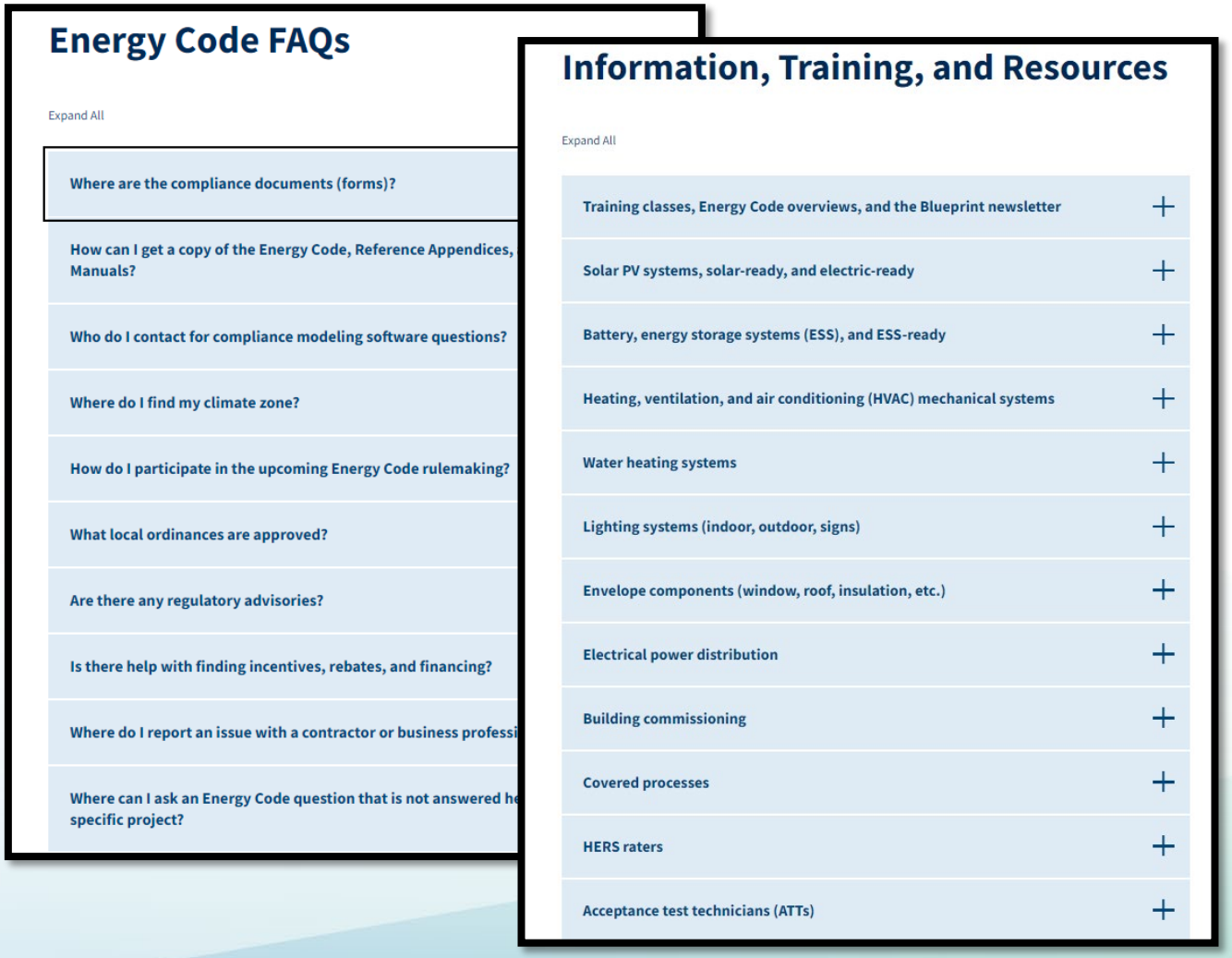
High-rise multifamily

- §170.2(g) – Updates Exception 5 in areas with no program for PV compensation through virtual energy bill credits
- Tables 170.2-U & -V – Adds building types for events and exhibits, religious worship, sports and recreation
- Table 170.2-U – Updates PV capacity factors for libraries, hotel/motel, medical office building/clinic, and warehouse
- §170.2(h) – Updates BESS Equations 170.2-E, F, G
- Table 170.2-V – Updates BESS capacity factors for all building types; no BESS in climate zone 1 for offices, financial institutions, unleased tenant space, and medical office buildings/clinics

Resources

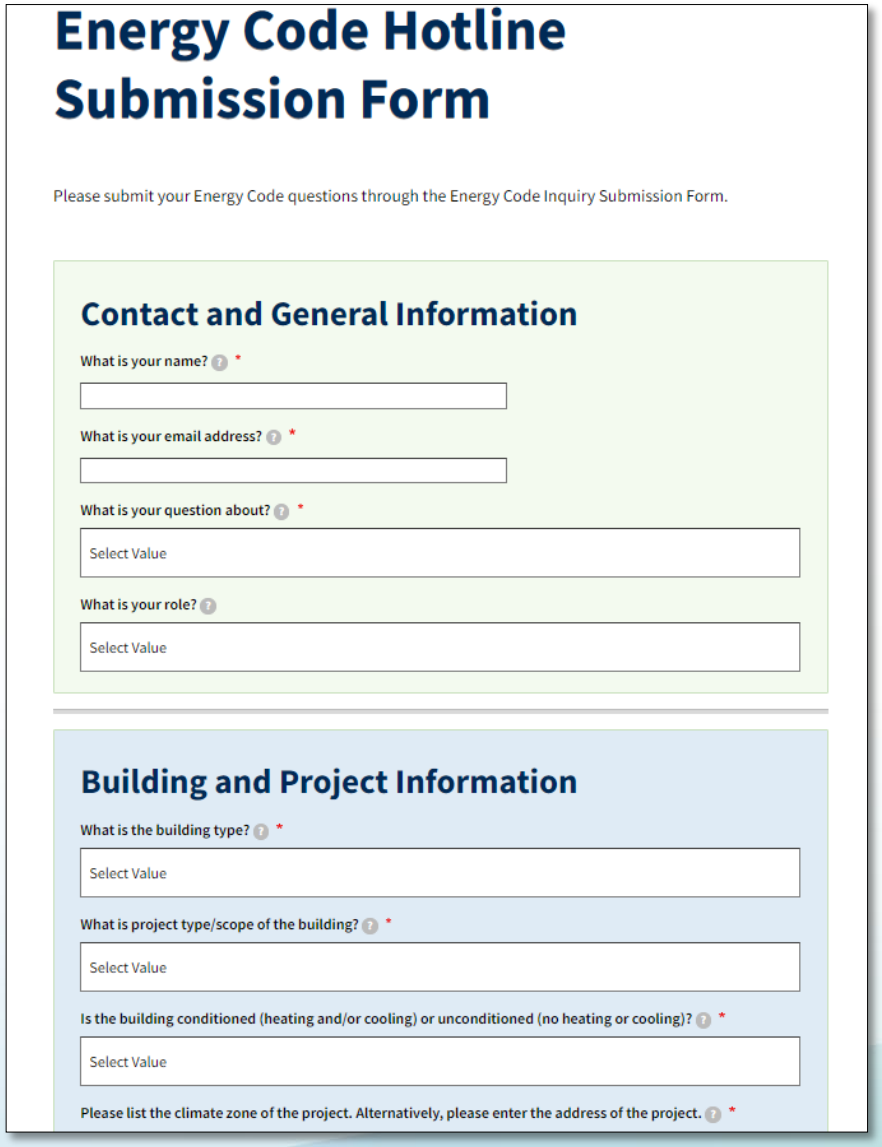
Energy Code Support Center

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



- **FAQs**
- **Handouts**
  - Fact sheets
  - Guides
- **Tools**
  - Checklists
  - Blueprint newsletter
- **Training**
  - Presentations
  - Videos
- **Links**
  - Internal resources
  - External resources

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

Issue 148 | October - December 2024

BLUEPRINT

CALIFORNIA ENERGY COMMISSION

EFFICIENCY DIVISION

In This Issue

- 2022 Energy Code: HVAC Efficiencies
- HERS Program Updates
- JA8 Lighting Test Updates
- Energy Code Support Center
- Q&A
  - Single-Family Ductless Mini-Splits
  - Single-Family Solar Photovoltaic (PV) Exceptions
  - Nonresidential Solar PV and Battery Storage Systems

The CEC welcomes feedback on Blueprint. Please contact the editor at **Title24@energy.ca.gov**

2022 Energy Code: HVAC Efficiencies

The **2022 Energy Code Section 110.2** includes minimum efficiency requirements for variable refrigerant flow (VRF) air conditioners and heat pumps. The efficiency metrics were based on an AHRI test procedure that was updated. Effective January 1, 2024, the US Department of Energy (DOE) adopted new minimum integrated energy efficiency ratio (IEER) efficiencies for VRF equipment with cooling capacity of 65,000 Btu/h or greater based on the updated testing procedures.

The California Energy Commission (CEC) has published an advisory on the **VRF minimum efficiency requirements** to assist the authorities having jurisdiction (AHJ) in confirming that the proposed equipment on the certificate of compliance forms and the installed equipment on the certificate of installation forms meet the updated efficiencies. Please see the advisory on the **Regulatory Advisories webpage** for additional guidance.

HERS Program Updates

The CEC adopted the **2025 Energy Code** which includes updates to HERS field verification and diagnostic testing (FV&DT) requirements to support compliance. The FV&DT program regulations were migrated from Title 20 to Title 24 under the **2025 Energy Code**.

The FV&DT compliance program will become the Energy Code Compliance (ECC) Program. A new **ECC Program webpage** has been launched to provide guidance on the upcoming ECC program, including frequently asked questions. For more information about the new ECC program please visit the **Energy Code Compliance program webpage**.

The current HERS FV&DT program will remain in place until the **2025 Energy Code** is effective January 1, 2026. For more information about the existing HERS program please visit the **HERS program webpage**.

1

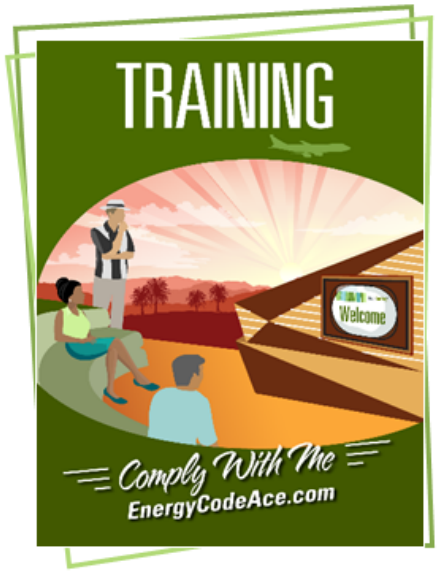
Stay Connected

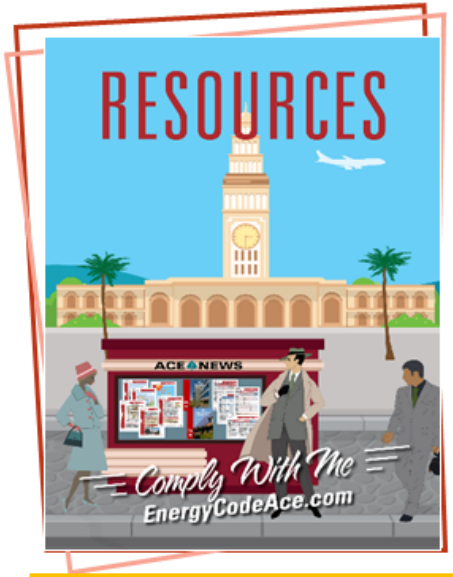
Receive Energy Code updates

- Subscribe to Efficiency Division emails
  - Appliances
  - Blueprint
  - Building Standards
- Respond to confirmation email

Follow the California Energy Commission

Energy Code 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:

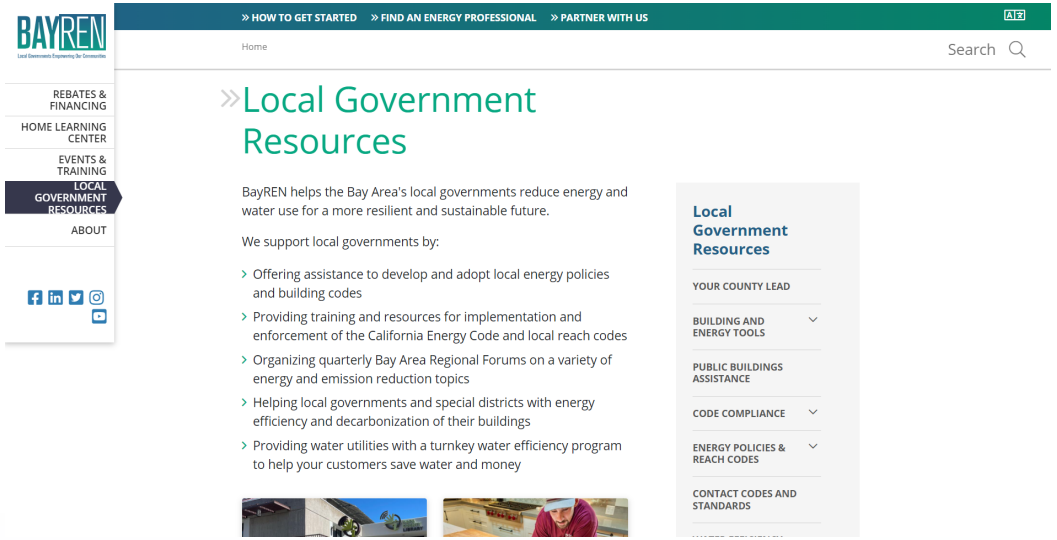
- Live Online instructor-led
- Online self-study
- Recorded webinars
- YouTube — live streaming & videos

Resources provide quick, useful guidance:

- Fact Sheets
- Checklists
- Application Guides
- Submit a Question
- Trigger Sheets
- Useful Links

Join us at EnergyCodeAce.com

Local RENs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BayREN helps the Bay Area's local governments reduce energy and water use for a more resilient and sustainable future.
We support local governments by:
Offering assistance to develop and adopt local energy policies and building codes
Providing training and resources for implementation and enforcement of the California Energy Code and local reach codes
Organizing quarterly Bay Area Regional Forums on a variety of energy and emission reduction topics
Helping local governments and special districts with energy efficiency and decarbonization of their buildings
Providing water utilities with a turnkey water efficiency program to help your customers save water and money
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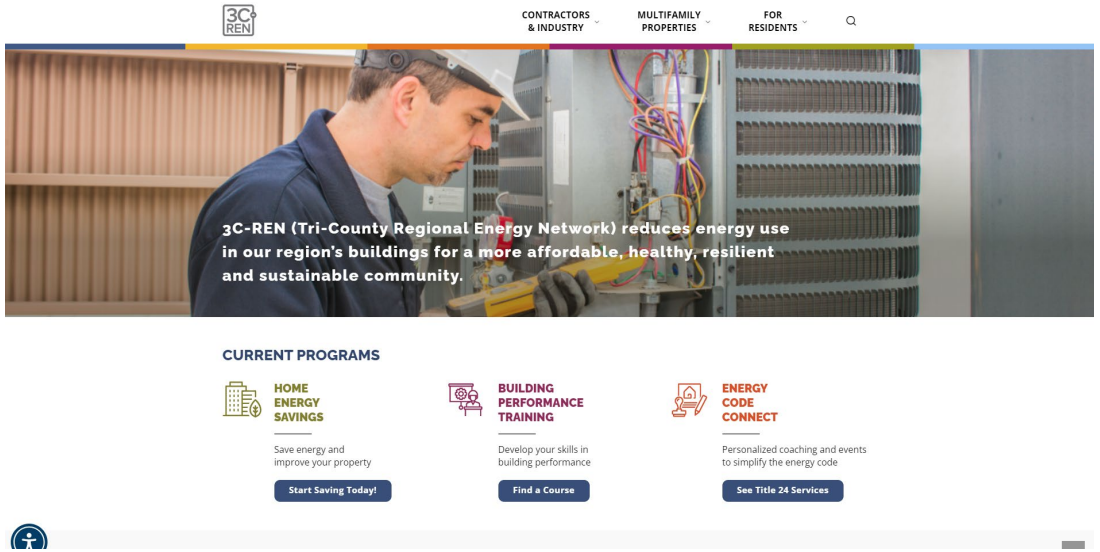
YOUR COUNTY LEAD
BUILDING AND ENERGY TOOLS
PUBLIC BUILDINGS ASSISTANCE
CODE COMPLIANCE
ENERGY POLICIES & REACH CODES
CONTACT CODES AND STANDARDS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3C-REN (Tri-County Regional Energy Network) reduces energy use in our region's buildings for a more affordable, healthy, resilient and sustainable community.
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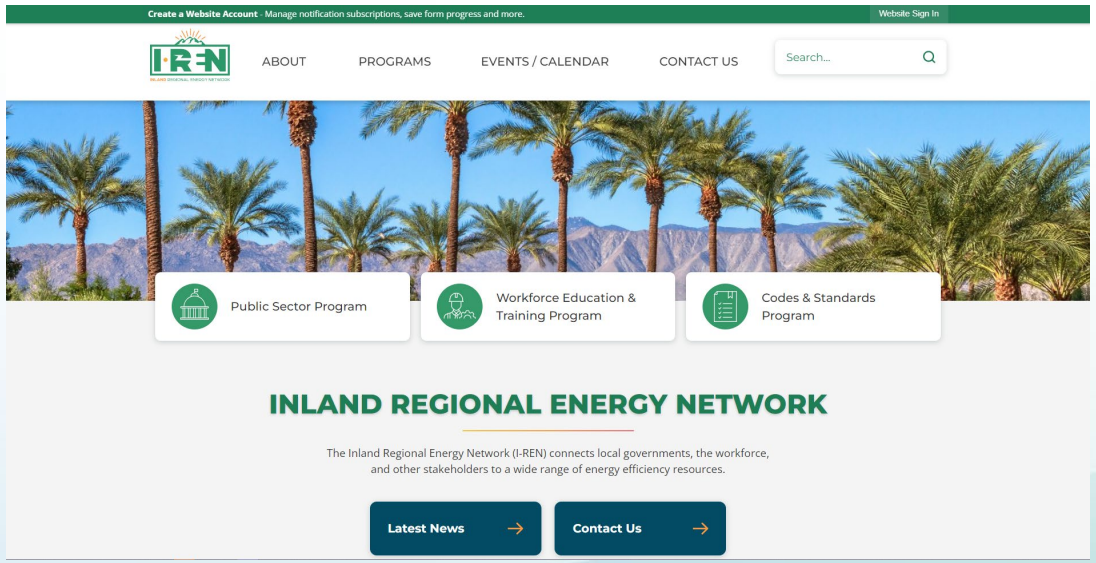
ENERGY CODE CONNECT
Personalized coaching and events to simplify the energy code
See Title 24 Services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The Inland Regional Energy Network (I-REN) connects local governments, the workforce, and other stakeholders to a wide range of energy efficiency resources.
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Thank you