2025 Energy Code Overview

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

- Increase building energy efficiency cost-effectively
- Reduce greenhouse gas emissions
- Support housing and affordability

2025 Energy Code goals

- Encourage heat pump baselines
- Promote load flexibility
- Improve covered process load efficiencies
- Focus on existing buildings and ADUs

2025 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 300 GWh/year; reduces power demand 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

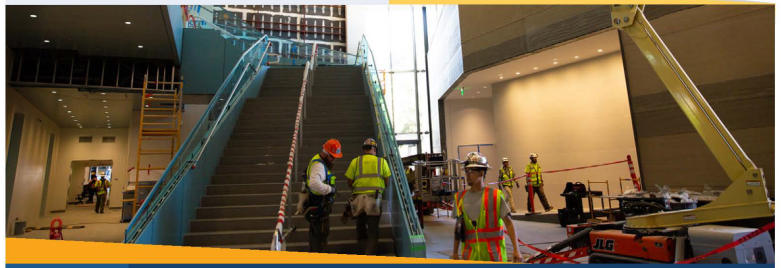
25% amount of the state's total greenhouse gas (GHG) emissions that homes and businesses are responsible for

$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 compliance documents

2025 Energy Code Webpage

- CEC adopted on Sept. 11, 2024
- CBSC approved Dec. 17, 2024
- 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 the 2025 Energy Code Compliance Software webpage

All Buildings Overview

Administrative § 10-102, 10-103

Mandatory § 100, 110

Energy Code Compliance Program Formerly HERS

All Buildings § 10-103.3

Updated for 2025

- Moves Home Energy Rating System (HERS) program to Title 24, Part 1
- Renames 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

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

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 either:
    - Standard design building assumes mandatory and prescriptive requirements
    - Proposed design must have LSC and source energy equal to or less than the standard design
- 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
- New construction must meet both source energy and LSC, additions and alterations are required to meet only LSC

Water Heating Mandatory Requirements

All buildings § 110.3(c)7

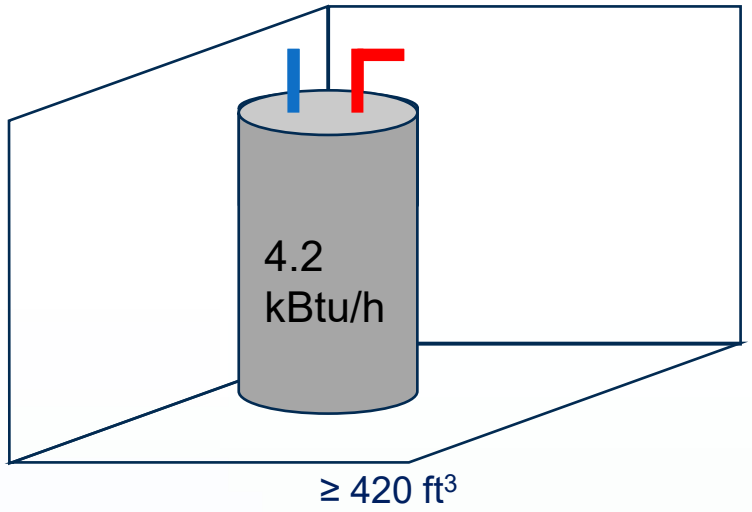
New for 2025

Heat pump water heaters

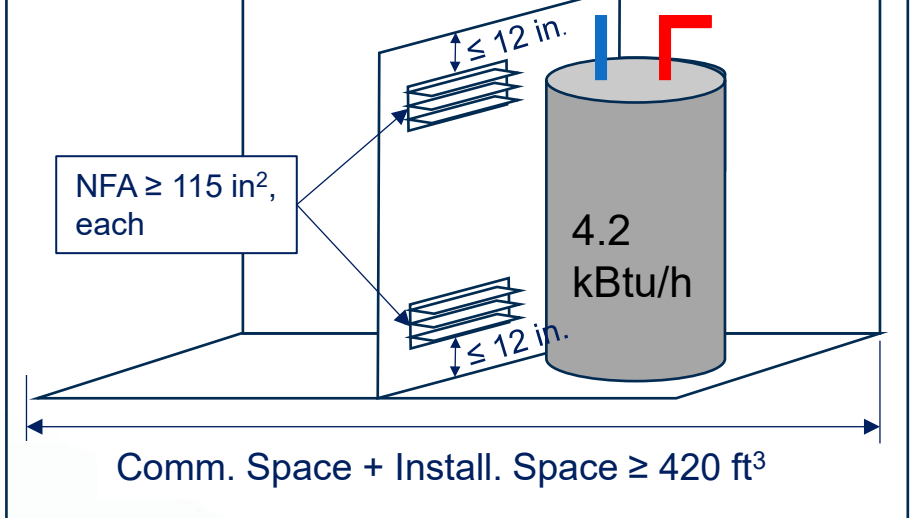
- § 110.3(c)7A – Adds external or internal backup heat required when
  - Inlet air unconditioned, and
  - Compressor cutoff temperature > winter median of extremes (JA2 Table 2-3)
- § 110.3(c)7B – Adds ventilation requirements
  - Installed per manufacturer's method to meet or exceed performance standards in § 110.3(c)7B2-B4
  - 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 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 Definitions

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
- Adds definitions for commercial kitchens
- Updates definition for healthcare facility
- Updates definitions for nonresidential building types
  - Events & exhibits, sports & recreation, warehouse
- Updates definitions for nonresidential function 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 U-factor 0.58 for vertical fenestration replacements over 150 ft^2

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 occupancy of assembly, business, education, institutional, and mercantile

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 illuminance uniformity from the multilevel lighting control requirements
- §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, adds display lighting power allowances to area category method
- §140.8(b) – Removes legacy light source types of HID and fluorescent

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(r) – 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 in most climate zones, except those over 150,000 ft^2 or more than five stories
- §140.4(h)5 – Revises prescriptive requirements for cooling tower efficiency
- §140.4(r) – Adds ASHRAE G36 requirements for DDC controllers
- §140.4(s) – Adds 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
  - Table 141.0-E-1 - Adds new or replacement single zone heat pump or air conditioner requirements

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 & Table 120.3-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) – Updates 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 –Multitenant building tenant spaces < 2000 ft^2 with separate meter and HVAC are 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 battery energy storage system (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, warehouse 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 U-factor 0.30 exception for new dwelling units 500 square feet or less in climate zone 5

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 residential luminaires and light sources must meet JA8 requirements
- Reference Joint Appendix JA8
  - Removes incandescent lamps and fluorescent lamps from JA8 (no longer allowed for sale in California)
  - Removes discontinued ENERGY STAR specifications, updates reference for elevated temperature tests to federal procedures at higher ambient temperatures
  - Adds JA8.7 and JA8.8 - Start Time Test Method and Noise Test Method

HVAC and IAQ Mandatory Summary

Single-family § 150.0(h, i, o)

Updated for 2025

HVAC

- §150.0(h)2 – adds sources to select for outdoor design conditions
- §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, 7, 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)7 – Removes fault indicator display (FID) as an option for refrigerant charge verification
- § 150.1(c)9 – Updates duct systems and air handlers to be entirely in 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 FID 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 and §150.2(a)2D – 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 maximum SHGC 0.23 exceptions for new fenestration or replacement vertical fenestration 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 option
  - a – minimum air flow requirements
  - b – refrigerant charge verification

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-factors vary by climate zone, removes number of stories designation for U-factors and SHGC (Visible transmittance, 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, and 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)2 – Adds additional sources for selecting outdoor design conditions
- §170.2(c)3B – Removes FID as an option for refrigerant charge verification
- §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 fittings and accessories
- § 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 recirculation system with thermostatic master mixing valve on each supply and return loop, unless eight or less dwelling units
- § 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

Dwelling units

- §160.5(a)1 – Removed Table 160.5-A ; moves automatically high-efficacy light sources under Exception 4. All luminaires and light sources must now meet JA8 requirements.

Common areas

- §160.5(b)4B – Removed illuminance uniformity from the multilevel lighting control requirements.
- §160.5(b)4D – Reduced trigger for daylighting controls to 75W; adds daylighting control exception for secondary sidelit daylit zones < 85W; updated linear luminaires controllable in up to 8-ft segments
- §160.5(c)2C – Added building façade, ornamental hardscape, and outdoor dining area lighting to the exception to outdoor motion sensor controls
- §170.2(e) – Removed the prescriptive, tailored method; added display lighting power allowances to area category method. Sign Lighting: Removed legacy light source types of HID and fluorescent.
- Reference Joint Appendix JA8
  - Removed incandescent lamps and fluorescent lamps from JA8 as they are no longer allowed to be for sale in California.
  - Removed discontinued ENERGY STAR specifications; references elevated temperature tests federal procedures at higher ambient temperatures
  - Added 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 less than 4 kW

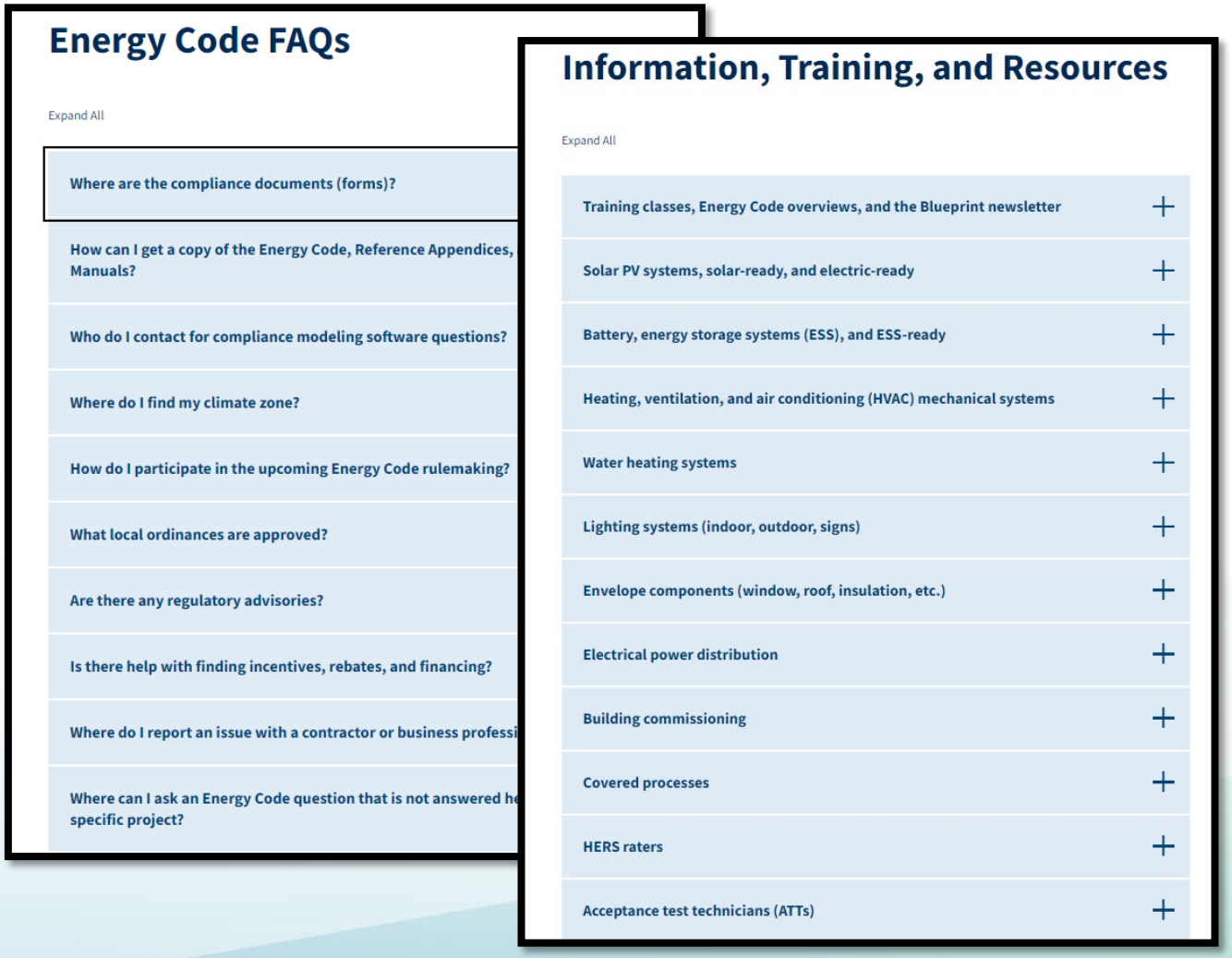
High-rise multifamily

- §170.2(g) – Updates Exception 5 in areas with no program for PV compensation through virtual energy bill credits with no netting of energy generation and consumption
- §170.2(h) – Updates battery energy storage system (BESS) Equations 170.2-E, F, G
- 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
- 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, warehouse, and medical office buildings/clinics

Resources

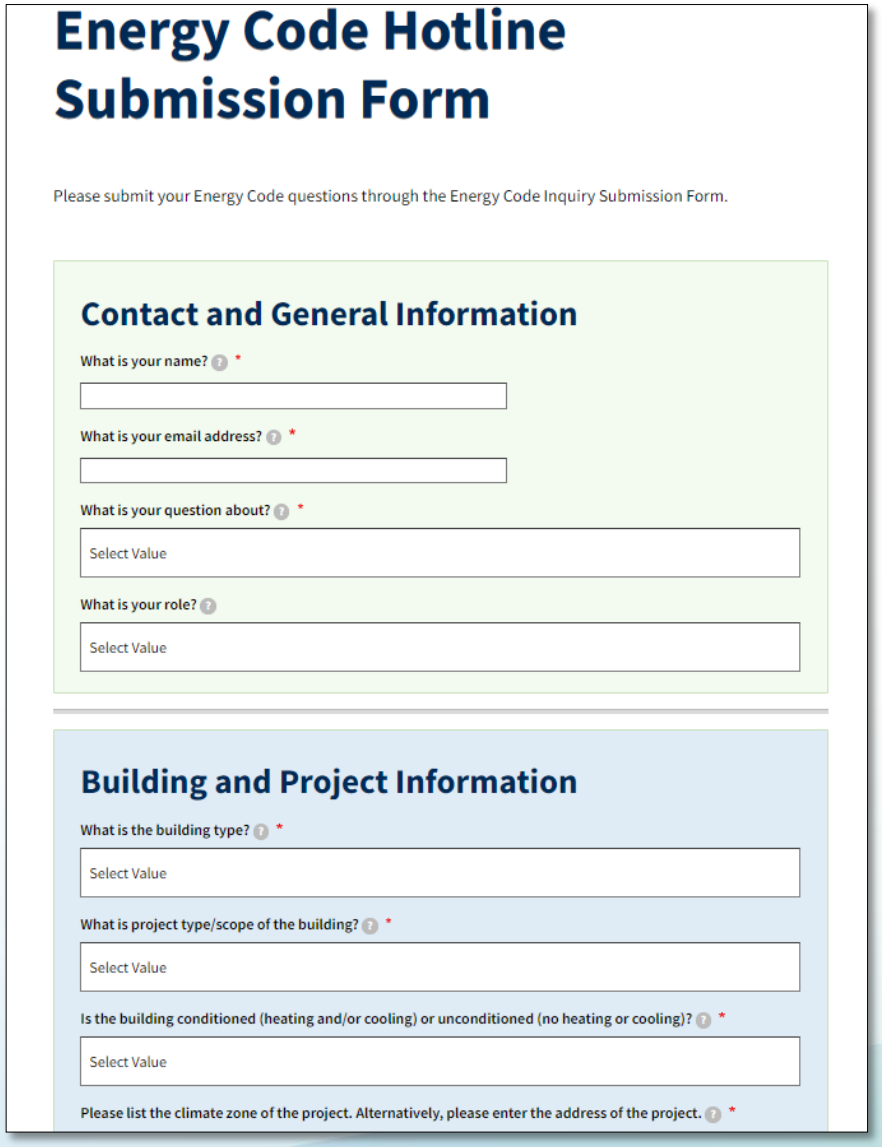
Energy Code Support Center

Visit the webpage



- **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

Compliance Software Support

- CBECC-Res
  - cbecc.res@energy.ca.gov
- CBECC
  - cbecc@energy.ca.gov

Blueprint Newsletter

Energy Code quarterly newsletter

- Updates
- Clarifications
- Frequently asked questions

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)1Aii
- 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

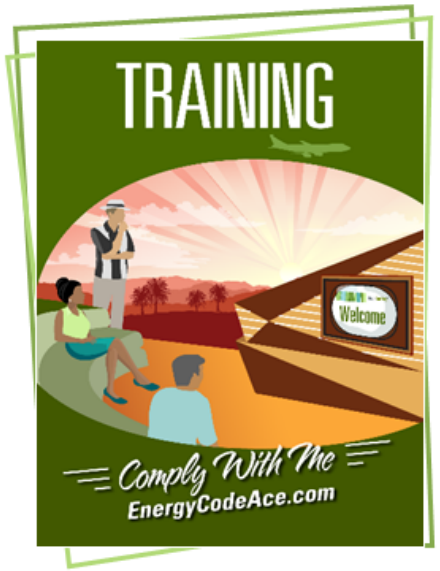
Stay Connected

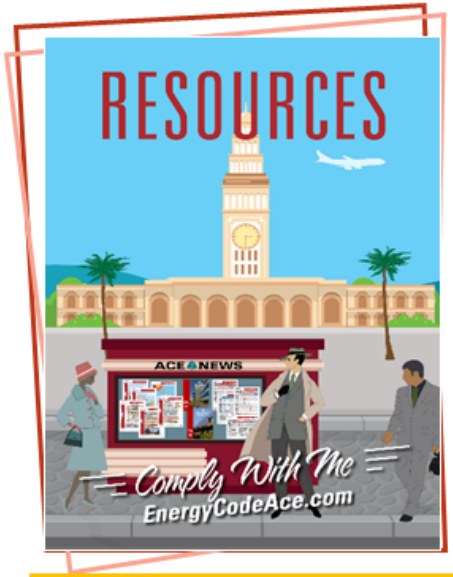
Receive Energy Code updates

- 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:

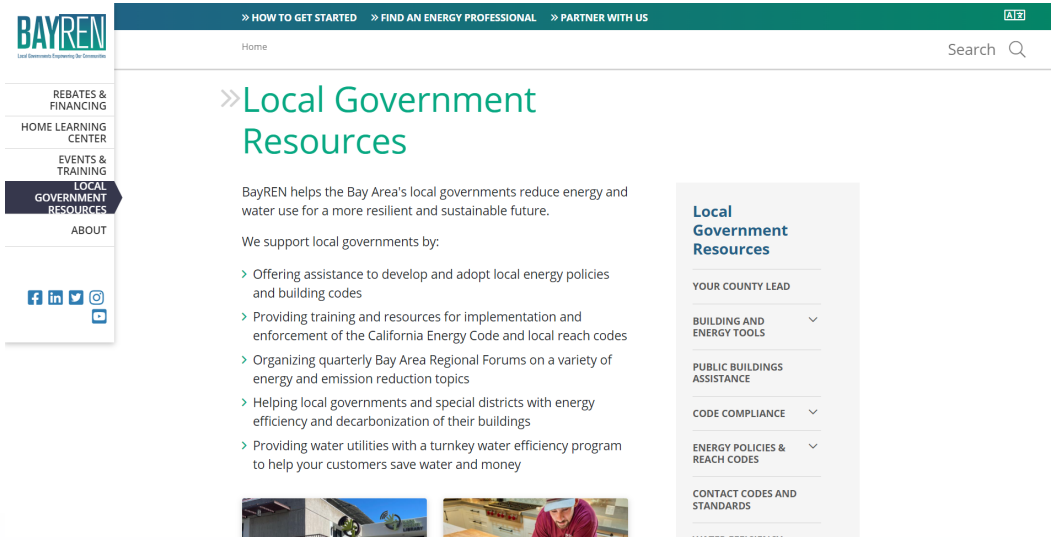
- Live Online instructor-led
- Online self-study
- Recorded webinars
- YouTube — live streaming & videos

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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We support local governments by:
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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
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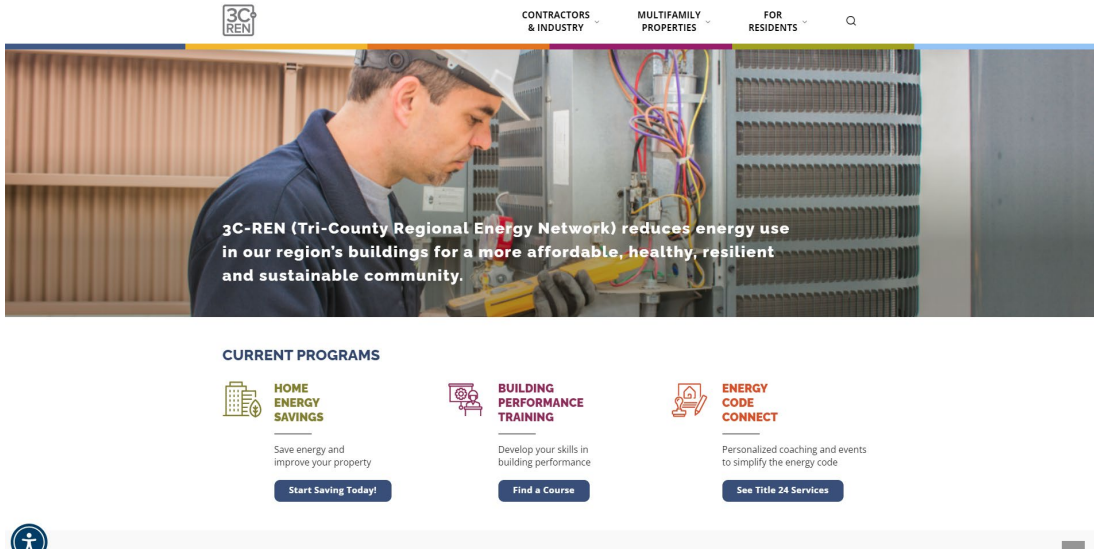
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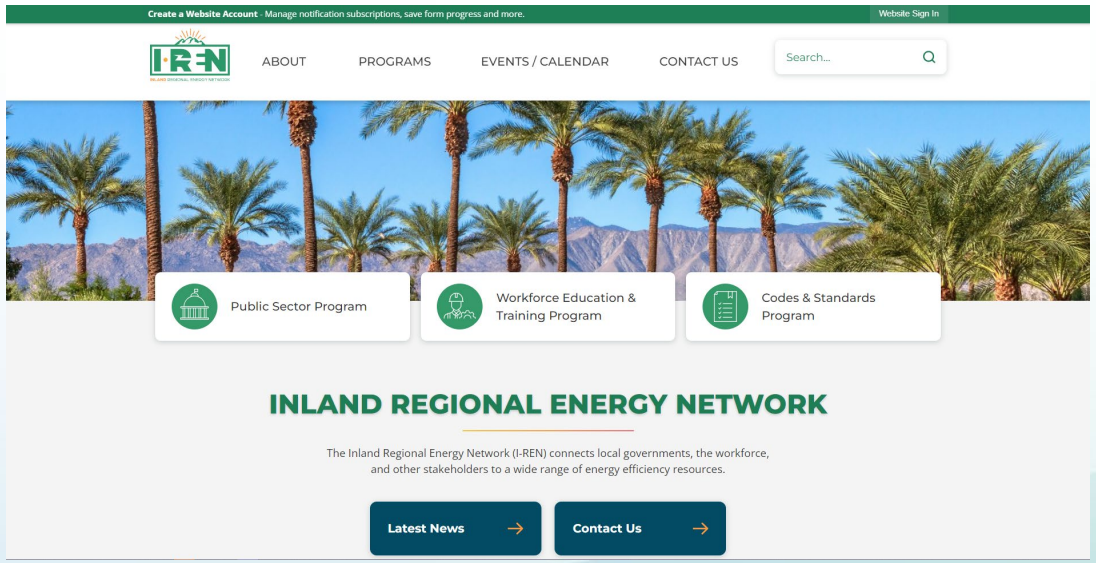
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Thank you