Reach Codes 101

CPAreachcodes.org

CPA CLEAN POWER ALLIANCE

V 1.0

CPA Reach Codes Program

Advancing safer, healthier and more affordable buildings and vehicles

Slide Deck Topics

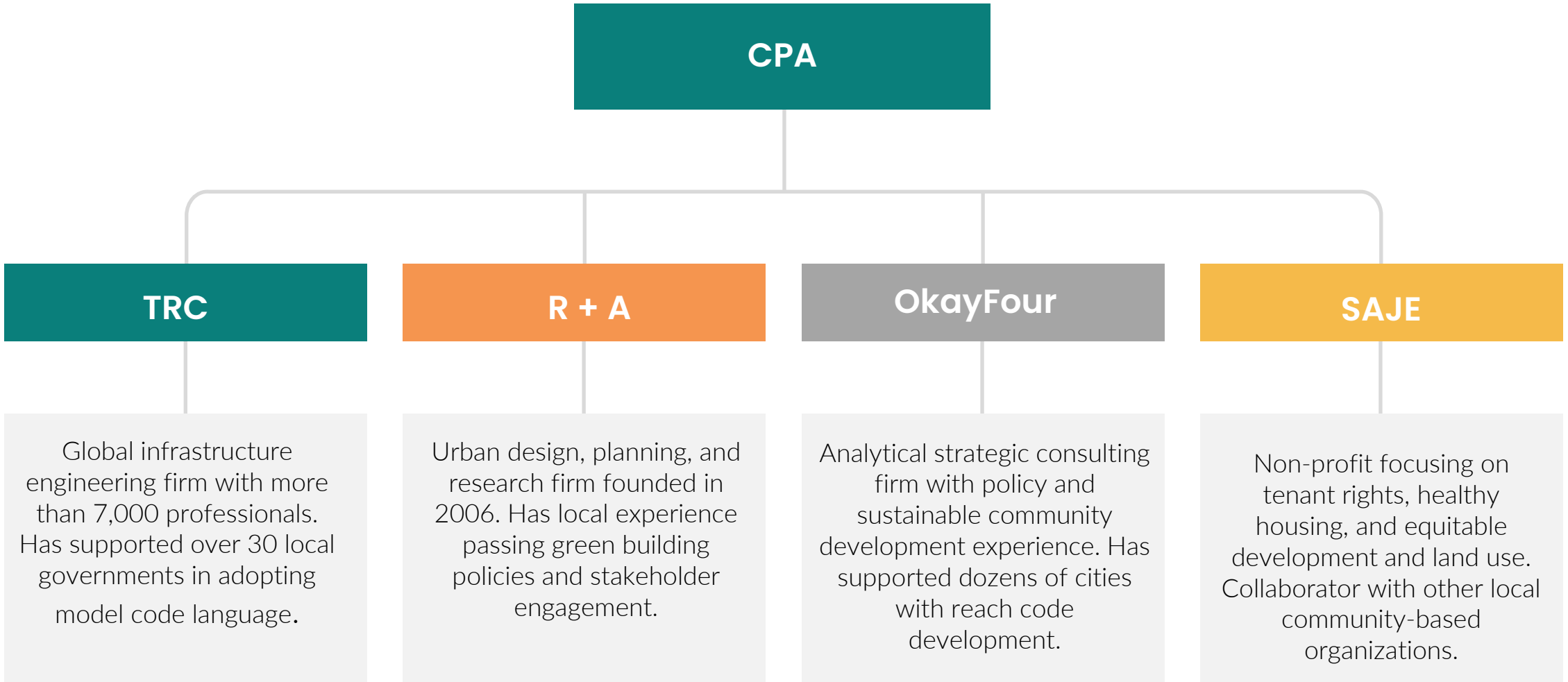
- Program Overview
- Adoption Process
- California Building Standards Codes
- Reach Code Examples
- Local Reach Codes
- Regional and Statewide Air Quality Rules
- Building Electrification
- Home Hardening
- FAQs
- Additional Resources

Reach Codes Program Overview

- What is the purpose of the CPA Reach Codes Program?
- What is the program's service offering?
- What are the incentive requirements?

CPA CLEAN POWER ALLIANCE

Program Team



Program Purpose

Increase Reach Codes

- **Equitably decarbonize** Los Angeles and Ventura regions
- Improve community, **economic and environmental indicators**
- Support regional and State electrification goals

Support Member Agencies

- **Develop tools and templates**, leveraging what has been successfully used in other regions
- Share **lessons learned** from other local governments
- Offer financial assistance to offset municipal staff time
- **On-Call technical support**
- Outreach assistance

Collaboration

- **Collaborate with regional partners** (utilities, RENs, CCAs, building industry, advocates)
- Streamline support and resources to member agencies

Key Offerings

Templates and Tools

- Model ordinances and adoption resources developed through years of municipal support and stakeholder engagement
- Resource library, tools, templates, and presentations
- Streamlined delivery models based on lessons learned

Customization

- Diverse needs ≠ one size fits all
- Provide local research and specific tools to support municipal staff
- Interpret statewide CA code cost-effectiveness studies related to climate zones and goals
- Integrate feedback regarding unique building stock and community feedback

Adoption Support

- Technical assistance
- Present at City Council meetings
- Facilitate public workshops
- Provide financial support for members agencies

Reach Code Support

Reach Code Development Support

- Regionally specific reach codes that promote electrification and decarbonization
- Compliance pathways included for both all-electric and mixed fuel buildings to avoid legal risk while increasing electric equipment readiness
- Can include EV Infrastructure

Technical Assistance and Resources

- On-Call Technical Assistance
- Educational Resources (PPT slides and FAQs)
- Adoption Templates (Checklists and Submittal Forms)

Regional and Statewide Collaboration

- Ensures information sharing and drives collaboration among stakeholders
- Helps drive impactful change
- Aligns with other regional efforts, air quality, resiliency efforts, and climate planning

Consultants

- NegaWatt
- Clean Energy Policy Advisors
- Misti Bruceri & Associates – Statewide Local Energy Codes Team

Community

- Climate advocates
- Affordable housing
- Real estate

Utility Partners

- SoCal Edison
- Los Angeles Dept of Water & Power
- Glendale Water & Power

Regional Energy Networks

- SoCal REN
- 3C-REN
- CCCE
- I-REN

CCA Partners

- Peninsula Clean Energy
- Silicon Valley Clean Energy

State Agencies

- California Energy Commission
- California Building Standards Commission

Financial Offerings

Award Type	Award Value	Requirements
New Construction: Prospective Adopter*	**$12,500**	• Executed Program Participation Agreement • Participant must submit a New Construction reach code to City Council or Board of Supervisors("BOS") for consideration during the Participation Agreement term. • Program Award Application after submittal of code to City Council or BOS for approval
Existing Building Pilot	**$25,000 total**	

	Milestone 1: $12,500	• Executed Program Participation Agreement
		• Applicant must obtain a directive from City Council or BOS committing Applicant to investigate Existing Building reach codes. Directives include:
		  • Letter of Intent approved by City Council or BOS - or -
		  • Resolution passed by City Council or BOS to evaluate Existing Building reach codes - or -
		  • Adopted Climate Action Plan**
		• Program Award Application

	Milestone 2: $12,500	• Executed Program Participation Agreement • Program Award Application • Applicant must submit an Existing Building reach code to City Council or BOS for consideration of adoption during Reach Code Program term

* New Construction: Prospective Adopter awardees are also eligible for the Existing Building Pilot award, subject to meeting all applicable award requirements
** A Climate Action Plan or similar document that has been adopted by City Council or BOS that includes an existing building reach code measure with a timeline of implementation that overlaps with CPA's 2-year Reach Code Program.

Participation Agreement

General Obligations:

- Must designate primary contacts
- Must engage with program team throughout process
- Primary contact or city/county representative must attend at least one model code workshop hosted by the program to help create new construction/existing building reach code templates.
- All tools, templates, and other resources generated by the program team during the development reach codes will be the intellectual property of CPA.
- Any adopted reach code may be posted on Reach Code Program websites by CPA.
- Participants who wish to receive a financial award must complete a Program Award Application and submit the required documentation.

- Participation does not obligate the jurisdiction to adopt the developed reach code
- Adoption of a reach code is done at the risk of the jurisdiction
- Participant agrees to conduct its own due diligence and review, including any technical or legal review of any proposed reach code it wishes to consider.

Reach Codes

What are reach codes?

How does it work?

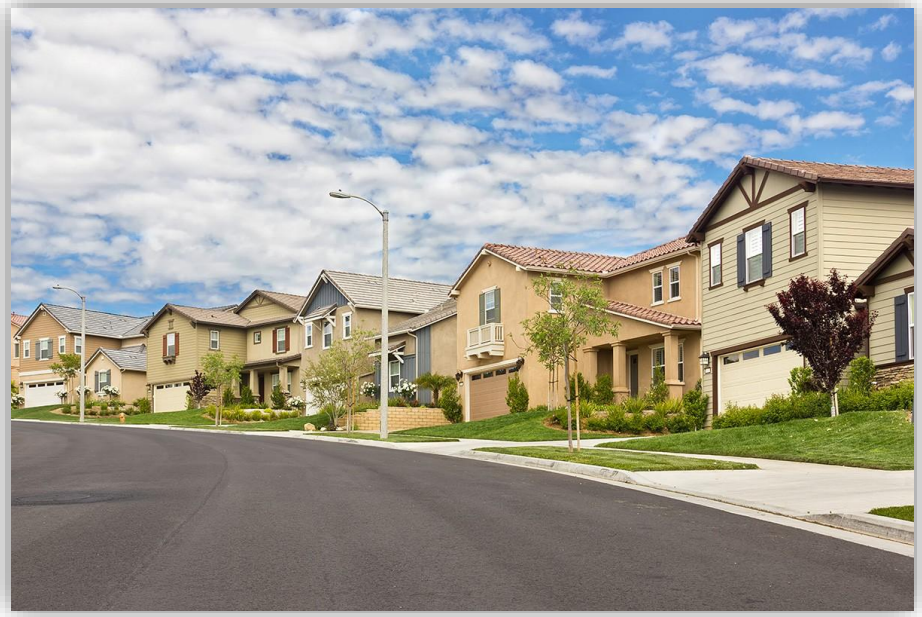
What are the benefits?

CPA CLEAN POWER ALLIANCE

What are reach codes?

Local ordinances adopted by the local government that exceed and enhance the state's building standards.

Types of Reach Codes:



Building Decarbonization New & Existing Buildings

Electric Vehicle Infrastructure (EVI)

What are Reach Codes?

CPA CLEAN POWER ALLIANCE

Reach Codes are local ordinances adopted by the local government that exceed and enhance the state's building standards.

Reach Codes can apply to the following:

New Construction

Alterations

Additions

Equipment Replacement

Reach Code Basics

Reach Codes Do Not

- Ban gas appliances
- Apply to every building or permit
- Add unnecessary difficulty for residents

Reach Codes Do

- Encourage electrification and sustainable buildings
- Focus on specific, common-sense opportunities
- Allow exceptions when it's too difficult or costly

What do Reach Codes Accomplish?

CPA CLEAN POWER ALLIANCE

Climate & Health

Support Local Goals

- Climate Action Plans
- Greenhouse Gas Reduction Goals
- Health and Safety

Prevent Air Pollution

- Gas appliances increase asthma and respiratory illness risk, especially for vulnerable residents.

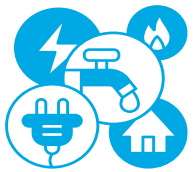
Limit Local Climate Risk

- Carbon emissions feed local catastrophes like wildfire and drought & flooding cycles.

Cost Savings

Lower Construction Costs

- All-electric buildings have lower construction costs and streamline construction.
- Rebates reduce retrofit costs.



Forward-Thinking

Prepare for Upcoming Rules

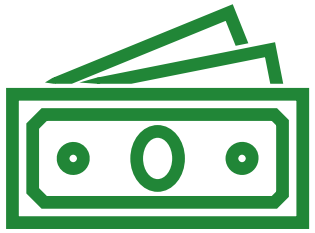
- California to be carbon neutral by 2045.
- SCAQMD Adopted 1146.2, Proposed 1111, and Proposed 1121

Future Proofing

- Help residents get homes ready during common-sense upgrades.
- Provide education on cost savings of electric options.

Reach Code Requirements

1. **Must not require more energy use than the Energy Code**
2. Energy efficiency/conservation measures **must be cost-effective***
3. Local governments must make findings that the reach code is needed for local climatic, geological, or topographical reasons and must file with the California Building Standards Commission (CBSC)
4. Can't require equipment that exceeds federal standards (federal preemption)



***Key Points of Cost-Effectiveness**

- Something is cost-effective when the value of benefits exceeds the costs
- Must be approved by the California Energy Commission (CEC) (when cost-effectiveness required)
- Can be cost-effective on-bill or using the CEC's societal metric (TDV or LSC)
- Can be used to assess policy impacts as well as to document legal compliance
- Can mean different things to different stakeholders (developers, building owners, tenants, society)
- Studies available at Local Energy Codes and through the Cost-Effectiveness Explorer

What are the Main Benefits?

Minimize Construction Costs all-electric new construction is the cheapest option.

Promote community safety by electrifying to reduce GHG emissions and global warming.

Promote healthy homes by eliminating indoor emissions and fuel for wildfire from gas lines.

Why Establish Reach Codes?

Continuous Signal to the Market	• Send clear, continuous message to market • Avoid stranded asset cost of continued gas investment
Local Control	• Enables innovative approaches for cost-effective decarbonization policy • Ability to design customized exemptions • Jurisdictions with more progressive climate targets can pass more progressive reach codes
State and Regional Air District Codes are Limited	• Lack of specific existing building measures • No regulation or triggers for cost-effective building electrification • Methane appliances ignored
Local Reach Codes Influence the State	• Statewide electrification codes incorporate elements from local reach codes • Smoother implementation of SCAQMD rules if similar requirements are adopted before 2027
Allows More Action, Sooner	• Greenhouse gas emissions are cumulative, early action has exponential savings • Existing building policy is needed immediately to meet 2030, 2035, and 2040 climate goals

CPA's 100% Green Power Makes Electrification Even Better

- 100% Green Power (renewable clean energy) provided by CPA, can be the most beneficial to our communities when buildings and vehicles are electrified to only use that clean energy.

- Electrification reach codes transition buildings and vehicles away from natural gas and gasoline— both of which are extremely harmful to the environment, health, and safety of our communities

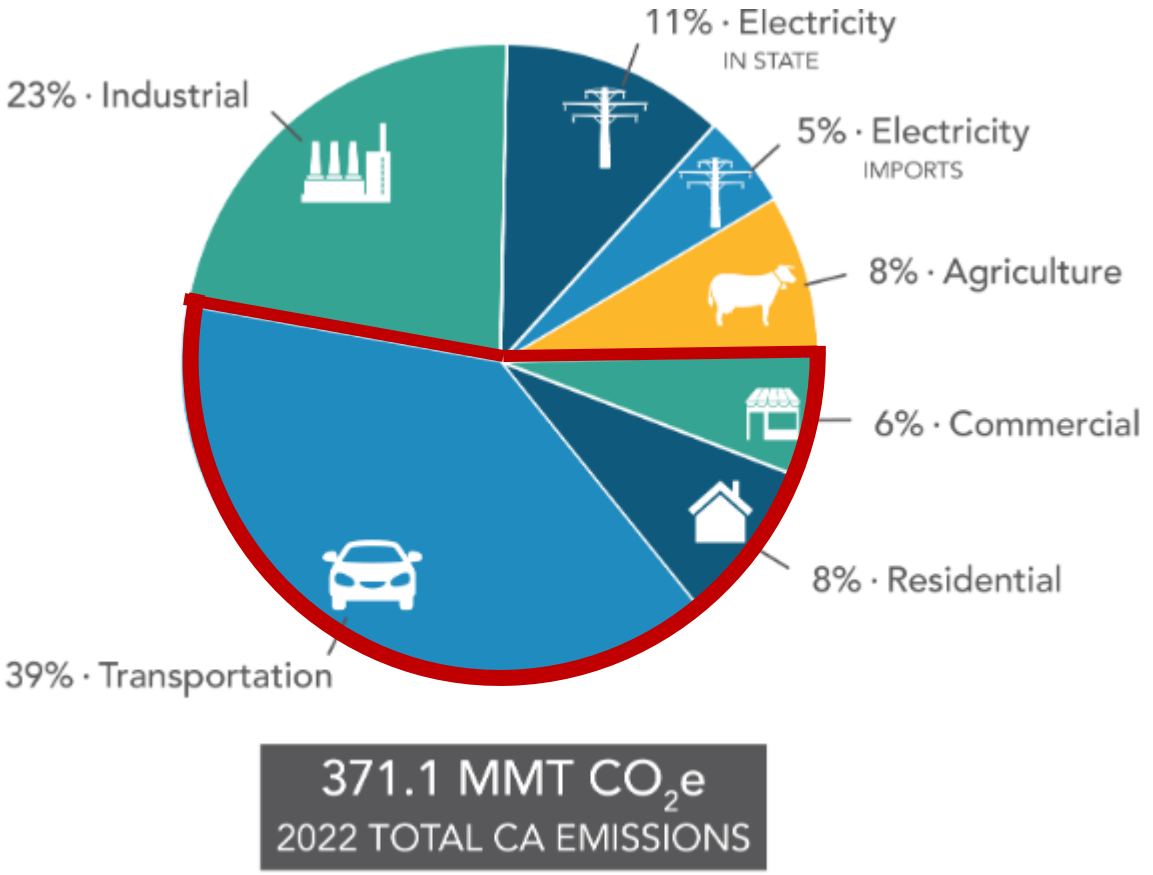
- All-electric buildings are **cost effective**, especially when adopted at the new construction stage.

California Carbon Emissions by Economic Sector

Emissions from Transportation and Commercial and Residential buildings accounted for 48% of the CA inventory in 2022

- Mostly fossil fuel combustion
- Nearly all gas appliances can be electrified, except some high-temperature industrial applications.

2022 California GHG Emission Inventory



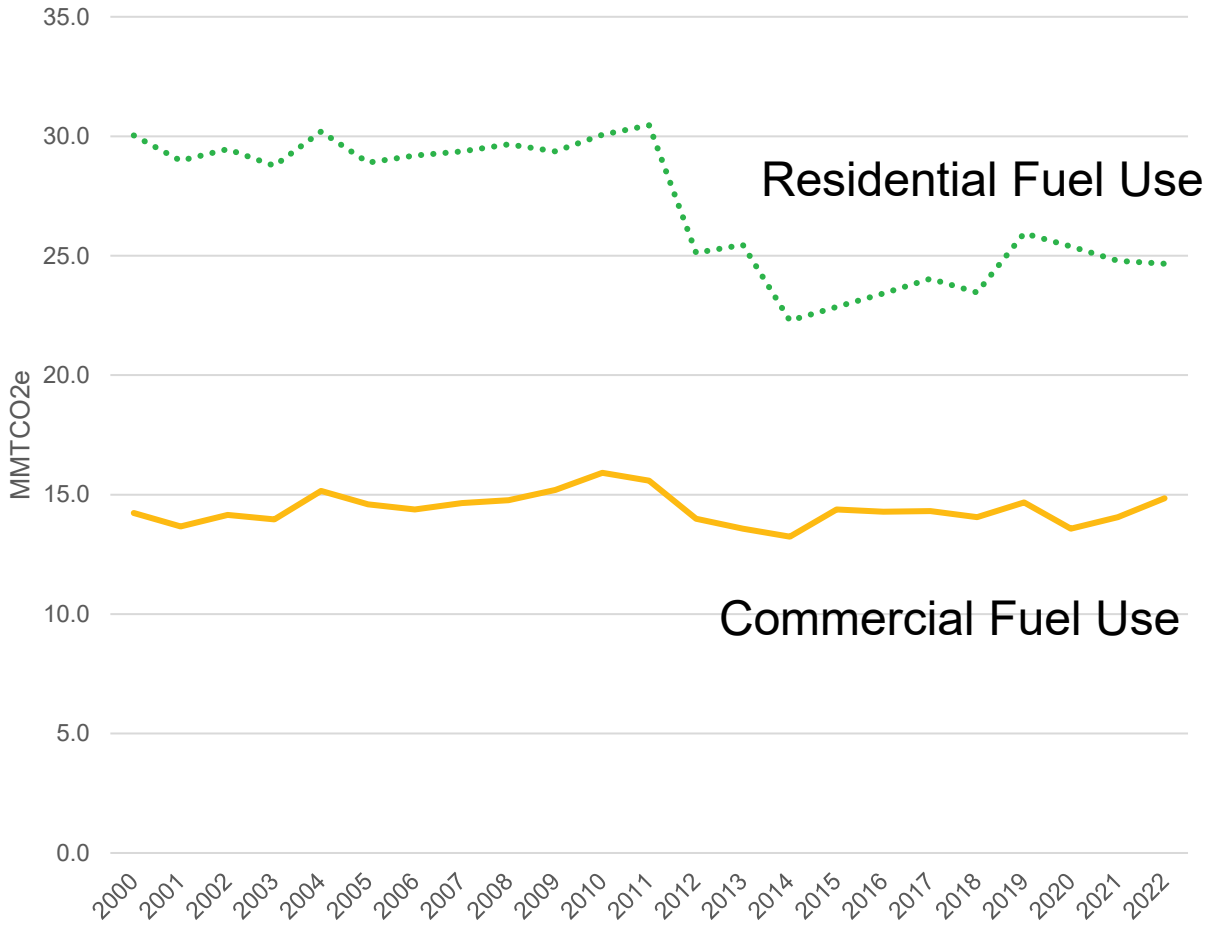
Source: *California Air Resources Board GHG inventory*

Building Emissions

14% of the CA GHG inventory in 2022 came from Commercial and Residential Buildings

- **Residential** has fallen modestly since 2000
- **Commercial** fuel emissions are steady
- Nearly all residential and commercial gas appliances can be electrified

2000-2022 California Building Emissions



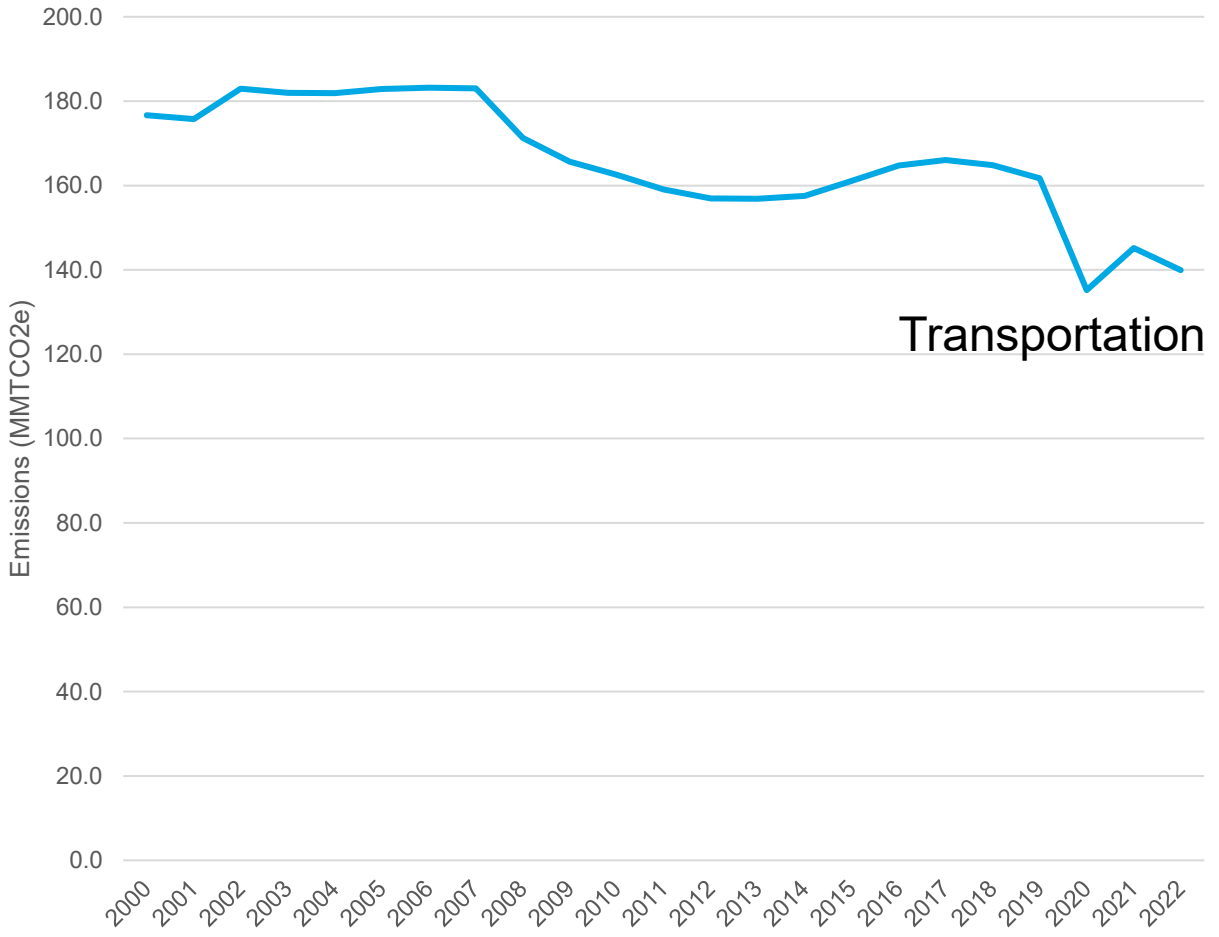
Source: California Air Resources Board, 2022

Transportation Emissions

39% of the CA GHG inventory in 2022 came from Transportation

- Electrifying transportation while greening the grid is a unique and impactful opportunity to cut emissions in California

2000-2022 California Transportation Emissions

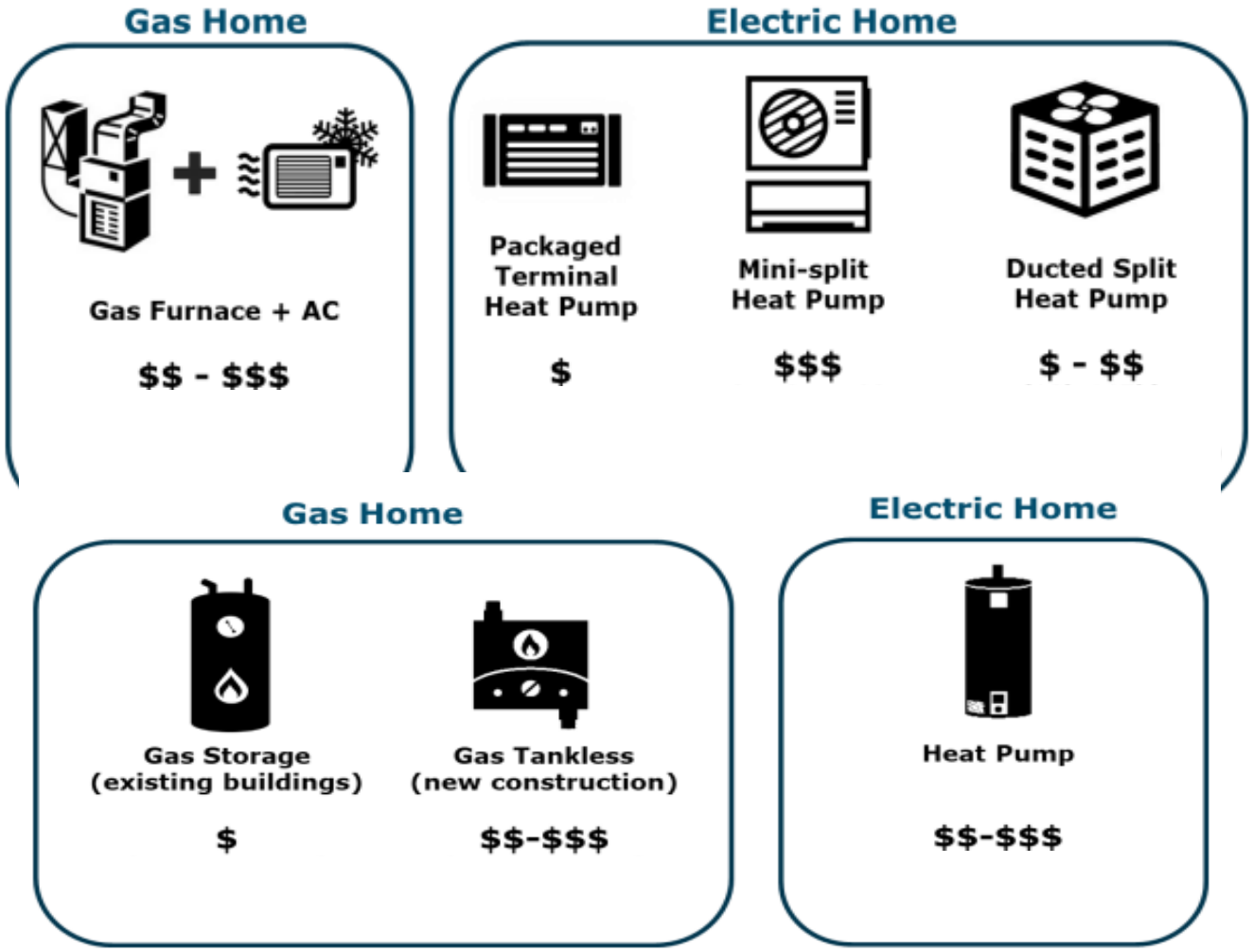


Source: California Air Resources Board, 2022

Building All Electric is Cost Effective

In Los Angeles, all-electric homes cost $3,000 to $10,000 less to build than mixed-fuel homes

- Savings come from lower equipment costs and the avoidance of gas infrastructure and interconnection costs and easier Energy Code Compliance.



Source: E3_Residential_Building_Electrification_in_California_April_2019.pdf

CPA Reach Code Adoption Process

CPA CLEAN POWER ALLIANCE

Reach Code Adoption Process (Part 1)

Member Agency Contacts CPA for Support

Email CPAReachCodes@cleanpoweralliance.org to start the process

Introductory Meeting with TRC and CPA (1-2 weeks)

High level discussions of member agency goals and program offerings

Member Agency Signs Participation Agreement

Kick-Off Meeting with Program Team and Essential Jurisdiction Staff

In-depth discussions of specific member agency goals, policies, support needed, and next steps

Research, Education, and Support for Council Approval (1-3 months)

CPA team researches relevant policies, local policies and stakeholders, and provides technical assistance to the city/county and education at stakeholder events

Council Study/Information Session

City/county staff presents the reach code topic to council for information only. TRC requests presenting duties at the study session. Council may direct staff to conduct further research and stakeholder engagement before presenting a reach code ordinance to council.

Develop Draft Code for Review (1-3 months)

TRC will deliver a first draft of the model code

Reach Code Adoption Process (Part 2)

Stakeholder Engagement (1-3+ months)

Solicit feedback from the community. TRC answers technical questions. Option for multiple meetings targeted at specific groups.

Customize Code (1-3 months)

TRC continues code edits based on feedback from city/county departments and local stakeholders

1st Council Reading (1+ month after study session)

City/county staff present the reach code ordinance to council. There is a public comment period and council vote to advance the reach code to a 2nd reading. TRC is available to answer technical questions.

2nd Council Reading (2 weeks after 1st reading)

Council votes to pass the reach code. Usually, this is on consent but may go through public comment if the item is pulled from the consent calendar. TRC is available to answer technical questions.

Submittal to the CBSC and/or CEC (up to 1-3 months)

Once the ordinance is approved, staff file it with the state so the code can take effect

Reach Code Goes Into Effect! (Total of ~ 4-8 months)

California Building Codes: Energy and Green Building Codes

- What are the current state codes?
- What are recent updates?

CPA CLEAN POWER ALLIANCE

Title 24 - CA Energy Code & CALGreen

- Title 24 California Code of Regulations (California Building Standards Code) standardizes the construction of residential and non-residential buildings in California
- It is updated every 3 years, with an Intervening Code Adoption 18 months into each update
- Part 6 and 11 of Title 24 of the govern energy efficiency in California's buildings

Part 6

The California Building Energy Code

- Regulates the energy efficiency for new residential and nonresidential buildings
- Regulated by the California Energy Commission (CEC)

Part 11

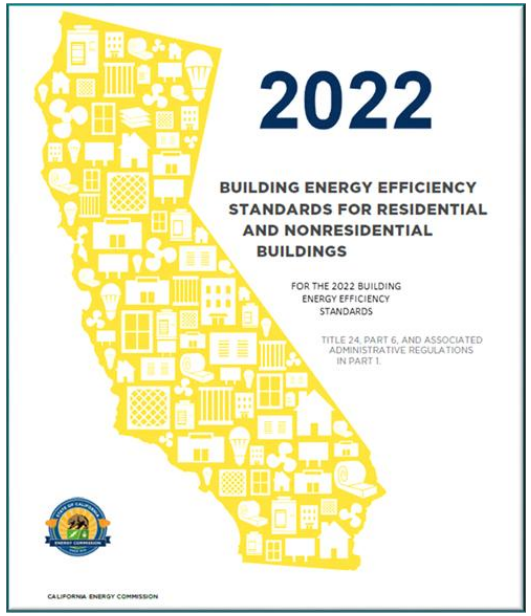
The CA Green Building Standards Code

- Regulates the use of electric vehicle charging, energy, water, and materials during and after construction
- Regulated by several state agencies including California Building Standards Commission (CBSC)and Housing and Community Development (HCD)

Resource: https://www.dgs.ca.gov/bsc

Introduction to State Codes

2022 Energy Code

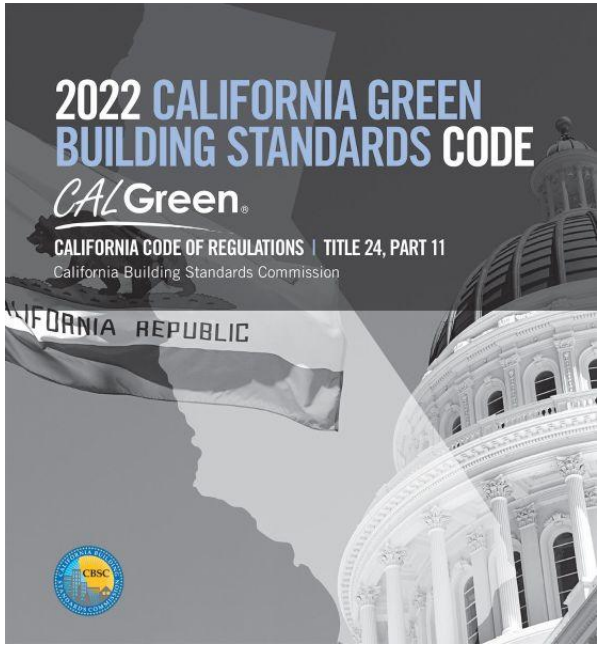


Other names:
- Title 24, Part 6
- Building Energy Efficiency Standards

Scope:
- Energy efficiency
- Load flexibility (PV, battery)
- Single Family, Multifamily, and Nonresidential

Pathways to amend:
- Mandatory
- Prescriptive
- Performance

2022 CALGreen Code



Other names:
- Title 24, Part 11
- Green Building Standards

Scope:
- EVI, water use, waste, pollution, etc.
- Residential and Nonresidential

Pathways to amend:
- Mandatory
- Voluntary

2025 Energy Code

2025 CALGreen Code

Prescriptive: Checklist of specific energy efficiency and renewable energy measures.

Performance: Allows builders to tradeoff specific measures as part of a custom design while meeting the overall energy budget set by the Prescriptive pathway, allowing applicants flexibility.

Title 24, Part 6 – CA Energy Code

- Part 6 -The Energy Code- is a set of mandatory building requirements
- Regulates the efficiency of window and doors, insulation, lighting, solar, HVAC, hot water heaters, electrical panels, faucets, and more.

There are 2 pathways to compliance:

- Prescriptive: Checklist of specific energy efficiency and renewable energy measures.
- Performance: Allows builders to tradeoff specific measures as part of a custom design while meeting the overall energy budget set by the Prescriptive pathway, allowing applicants flexibility.

Energy Code Benefits

- Accelerates heat pump adoption for space and water heating
- Increases on-site renewable energy generation from solar
- Increases electric load flexibility to support grid reliability
- Reduces emissions from newly constructed buildings
- Reduces air pollution for improved public health
- Encourages adoption of environmentally beneficial efficient electric technologies.

Find the CA Energy Codes here:
California Building Energy Efficiency Standards

Title 24, Part 11 – 2022 CALGreen

- Part 11- CALGreen - is a set of mandatory minimum green building standards driven by California's goal to:
  - **Reduce greenhouse gas emissions from buildings**
  - **Promote healthier environments**
  - **Prevent wastage of energy and water resources.**
- Focusing on energy efficiency, water efficiency, material conservation, resource efficiency, and environmental quality.
- Standards include cost-effective reductions to greenhouse gases
- Includes Electric Vehicle Infrastructure and charging

Voluntary Tiers

- Local governments may opt for more restrictive regulations to achieve higher degree of compliance with Green Building principles.
- This approach reduces energy usage even further than State requirements

CALGreen

California Green Building Standards Code

Source: ICC Codes; Section A5.203.1.2.2 Tier 1 and Tier 2

What's new with the 2025 Energy Code?

CPA CLEAN POWER ALLIANCE

Heat Pump Adoption Emphasis

- Single-family: Use heat pumps for both space and water heating
- Multifamily: Wider use of heat pump for space heating, plus heat pump water heaters for individual units.
- Nonresidential: Expanded baseline from 2022

Electric-ready Emphasis

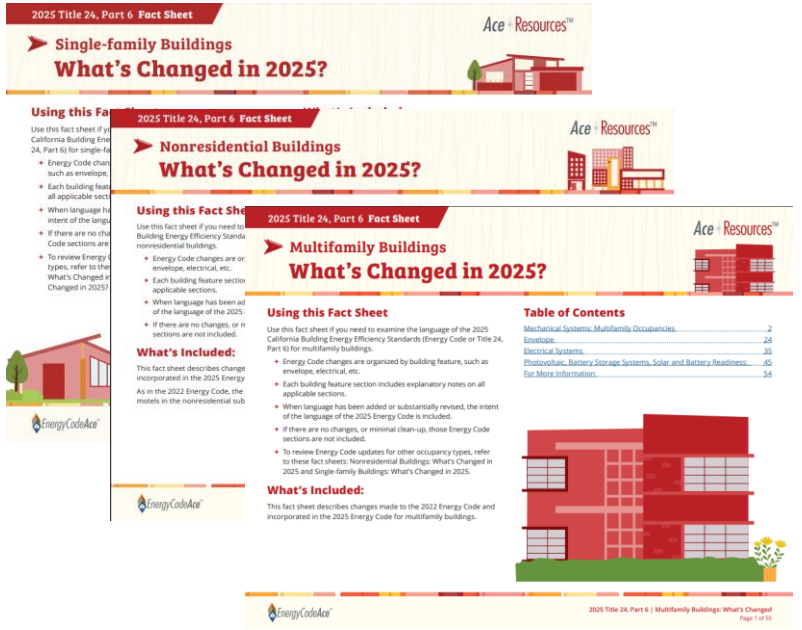
- Allows owners flexibility to upgrade to electric cooking and water heating when the investment works for them

Cost Effectiveness Change

- 2025 Calculations will switch from EDR and TDV to Longterm Systemwide Cost (LSC)

Summary Fact Sheets from Energy Code Ace:

- Single-family Buildings: What's Changed in 2025
- Multi-family Buildings: What's Changed in 2025
- Non-residential Buildings: What's Changed in 2025



The 2025 Energy Code is effective Jan 1, 2026.

Reach Code Examples

- What are some examples of building reach codes?
- Who has implemented them?
- How did they perform?

CPA CLEAN POWER ALLIANCE

What are the Types of Reach Codes?

New Construction & Existing Buildings

- **Goal:** to reduce the use of methane gas, ensure buildings are operating efficiently, and to prepare the market for statewide electrification goals

There are two pathways when amending the energy code:

- **Prescriptive Codes:** Require one or more specific energy efficiency or renewable energy measures.
- **Performance Codes:** Require buildings to meet an energy budget/performance score through a custom design, allowing applicants flflexibility.

Electric Vehicle Infrastructure (EVI)

- **Goal:** to improve market readiness and increase equitable access to clean transportation EV charging stations

New Construction Policy Comparison

Approach	Description	Advantages	Challenges	Who's done it?
Energy Performance 	Requires a higher *Source Energy* compliance margin than what the state requires through the performance path of the Energy Code, Part 6.	• Mitigates legal risk by allowing methane gas pathways • Can provide an all-electric cost-effective pathway • Enforcement process is already in place, the compliance margin is increased	• Limited to regulating space heating/cooling and water heating • Likely lower carbon savings compared to all-electric only pathways	East Palo Alto Encinitas Palo Alto Santa Cruz San Jose San Luis Obispo
Other Strategies				
Air Quality 	Regulates building or appliance emissions through CALGreen, Part 11.	• Uses Clean Air Act authority rather than Energy Policy and Conservation Act • Regulates all emitting equipment (cooking, fireplaces, dryers, etc.) • Likely to result in all-electric construction, which includes construction cost savings • Direct benefit to air quality / health • High impact on emissions reduction	• Legally untested • Potentially new enforcement approach	Los Altos Hills New York City

Ordinance Objectives

- Capture GHG reductions during certain projects through:
  - Electrification
  - Energy efficiency
  - Solar PV
- Prepare homes for future electrification
- Provide flexibility for applicants
- Meet Federal and State requirements

Residential Existing Building Policy Examples

***Must qualify for AB130 exception to adopt after Sept. 30th , 2025**

Single Family			Multifamily
AC to Heat Pump	Electric Readiness	FlexPath	Similar Options
			
› *"Time of Installation"* › Requires property owners installing AC to install either: 1. A heat pump 2. Efficiency measures › CALGreen Voluntary Pathway	› *"Time of Renovation"* › Targeted to permit applicants completing a relevant addition or alteration. › Requires electric readiness (circuits or conduit).	› *"Time of Renovation"* › Applies to projects completing major additions or alterations to select 1-3: 1. Energy efficiency measures 2. Electrification measures 3. Solar PV	› *Available late 2025/Early 2026*

CPA

Non-Res Existing Building Policy Examples

Potential for Emissions Savings

High Savings

AC to Heat Pump

- *"Time of Installation"*
- *Requires property owners installing AC to install either:*
- A heat pump
- Efficiency measures
- *Model code language available*

High-Medium Savings

FlexPath

- *"Time of Renovation"*
- Targeted to permit applicants completing a relevant addition or alteration.
- Requires electric readiness (circuits or conduit).
- Model language in development

Lower Savings

Electric Readiness

- *"Time of Renovation"*
- Targeted to permit applicants completing a relevant addition or alteration.
- Requires electric readiness (circuits or conduit).
- Model language in development

Efficiency Only

Cool Roof

- *"Time of Replacement"*
- If replacing or roofing over an existing roof use an advanced cool roof product
- *Model code language available*

Lower Savings

Electric Vehicle Infrastructure

- *"Time of Renovation"*
- Require certain property owners to increase EV receptacles
- Update triggers and exceptions to ensure equitable installations
- Model language can be developed upon request

CPA

Building Performance Standards

- *Compliance timelines*
- Require property owners to regularly report energy- or emissions- use intensity (EUI).
- Policies require incremental reductions in EUI over a set time horizon.
- Custom policy needed

High Potential Savings

Existing Building Policy Comparison

	Description	Advantages	Challenges	Who's done it?
Time of Replacement	Require that property owners at the time of equipment replacement (upgrades or burnouts) abide by zero-NOx requirements and/or electric readiness requirements.	• Simple policy • Replacements occur more frequently than major renovations	• Emergency replacements • May result in some bypassing the permit process	San Mateo, Portola Valley, Marin County, Palo Alto
Time of Renovation	Require applicants that are already pulling a permit for a renovation project to abide by certain energy efficiency measures and/or electric readiness requirements.	• Customizable triggers • Unlikely to impact small or low-cost renovation projects • Unlikely to bypass the permit process	• More complex policy • Clarity of permit data • Low permit/renovation rates can increase time to make impact	San Mateo, Portola Valley, Piedmont, Marin County, San Luis Obispo
BPS	Require property owners to regularly report energy- or emissions- use intensity (EUI). In addition, the policies require incremental reductions in EUI over a set time horizon.	• Targets larger emitters • Monitor building stock • Customizable triggers • Regular enforcement cycles	• Large administrative burden (cost/time)	**Cities:** Denver, Reno, Chula Vista, St. Louis, etc. **States:** Oregon, Washington, Maryland, Colorado
Time of Property Transfer	Leverage real estate transactions to disclose relevant information on, incentivize, or require, certain home improvements. *We do not recommend policies which inhibit or delay the sale of a property.*	• Leverages major financial transaction • Allows responsibility to be shared between buyer and seller	• Limited precedence for jurisdictional authority • Jurisdiction regulation of property transfer process • Low transfer rates can increase time to make impact	Piedmont, Berkeley, Davis

Who has adopted previously?

AC to Heat Pump	Electric Readiness	FlexPath
California (nonresidential)	Atherton	Carlsbad
Portola Valley	Fairfax	Corte Madera
San Mateo	Mountain View	Encinitas
Sunnyvale	Portola Valley	Fairfax
Menlo Park	San Anselmo	Marin County
	San Luis Obispo	Piedmont
	San Mateo	San Anselmo
	Sunnyvale	Santa Cruz
	Menlo Park	San Luis Obispo
		San Rafael
		Ojai
		Menlo Park

A list of adopted ordinances is available on the LocalEnergyCodes.com web site

CPA Reach Code Jurisdictions

Previously Adopted

- LA County
- Ventura County
- Thousand Oaks
- West Hollywood
- Santa Monica
- Ojai

Actively Exploring New Reach Codes

- LA County
- City of Ventura
- West Hollywood
- Santa Monica
- City of Carson
- Ojai

Current 2025 Jurisdiction Building Policies

Participating Member	New or Existing Buildings	Policy Type	Status
Ojai	Existing	Single Family FlexPath	Adopted
Santa Monica	New and Existing	Energy Performance Approach, Single Family and Multifamily FlexPath Building Performance Standards	Adopted, Actively Evaluating
West Hollywood	Existing	Building Performance Standards Single Family and Multifamily FlexPath	Actively Evaluating
LA County	New and Existing	Building Performance Standards Reach Codes	Actively Evaluating
Carson	New and Existing	Building Performance Standards Reach Codes	Actively Evaluating
Beverly Hills	New and Existing	Reach Codes	Actively Evaluating
City of Ventura	New and Existing	Reach Codes	Actively Evaluating

Source: [Adopted Ordinances (localenergycodes.com))]

Current 2025 Reach Code Adoption Status

Adopted Recently	
Jurisdiction	Reach Code
San Francisco	All Electric Major Renovations
Menlo Park	Single Family FlexPath, AC to HP, Electric Readiness
Sunnyvale	Single Family AC to HP and Electric Readiness

Actively Adopting	
Jurisdiction	Reach Code
Mountain View	AC to HP and Electric Readiness
San Jose	Electric Readiness
City of San Mateo	Single Family FlexPath, AC to HP – Single Family and Non-Res
Santa Cruz	FlexPath
Glendale	AC to HP

2024 Adopted Reach Codes

Jurisdiction	Type	Single	Multifamily	Nonresidential	Exceptions
Brisbane	Energy Performance Approach	X	X	X	
Encinitas	Energy Performance Approach and PV	X	X	X	Yes
Burlingame	Energy Performance Approach	X	X	X	
East Palo Alto	Energy Performance Approach	X	X	X	
Fairfax	FlexPath	X			Yes
Napa County	Energy Performance Approach	X	X		Yes
Palo Alto	Energy Performance Approach	X	X	X	
San Luis Obispo	Flex Path and Energy Performance Approach	X	X	X	Yes
San Mateo	Energy Performance Approach	X	X	X	
San Rafael	FlexPath	X			Yes
Santa Cruz	FlexPath				
Goleta	Energy Performance Approach	X	X	X	Yes

Source: [Adopted Ordinances (localenergycodes.com)]

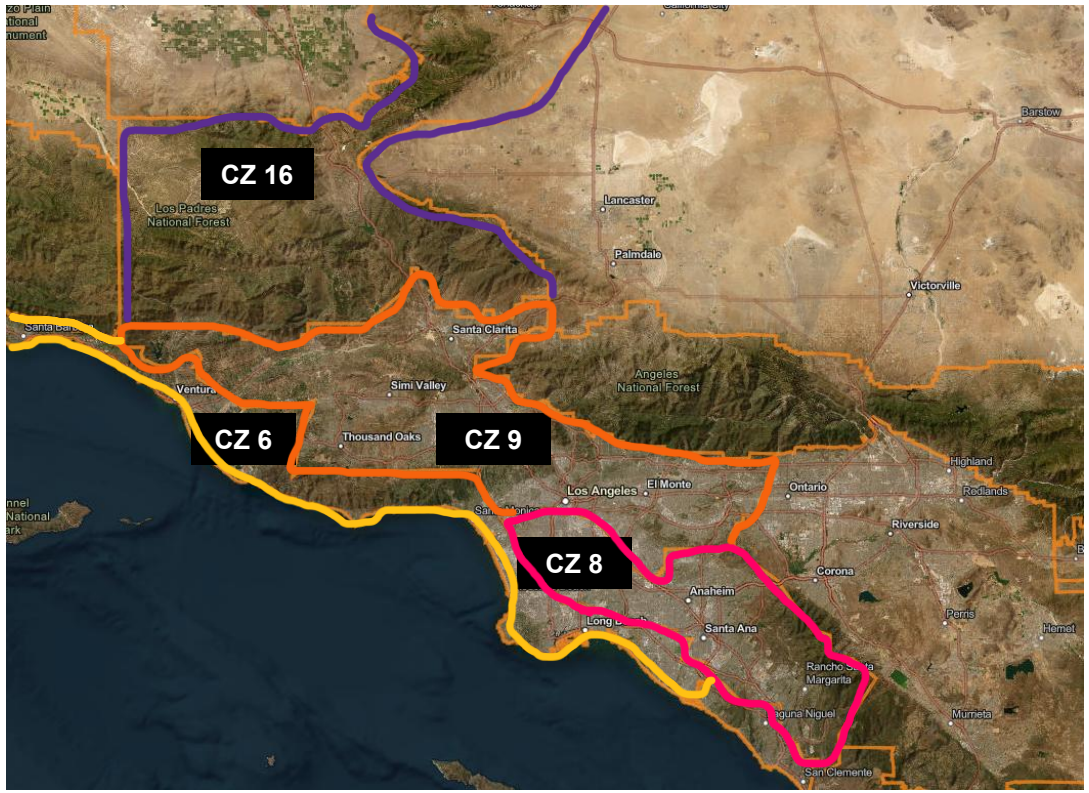
Reflections on 2022 Reach Codes

Los Angeles County and Ventura County Cities

Jurisdiction	Type	Single	Multifamily	Nonresidential	EV Infrastructure	Exceptions
Agoura Hills	All-Electric CALGreen Amendment	X	X	X	X	Yes
Glendale	All-Electric CALGreen Amendment	X	X	X	X	No
Los Angeles (City)	All-Electric Municipal Code	X	X	X		Yes
Ojai	All-Electric Municipal Code	X	X	X		Infeasibility Only
Pasadena	All-Electric Municipal Code	X	X	X		Yes
Santa Monica	All-Electric Municipal Code	X	X	X	X	Yes
West Hollywood	EE, Cool Roofs Energy Ordinance	X	X	X		Yes
Ventura, County	All-Electric CALGreen Amendment	X	X	X		Yes

Source: Adopted Ordinances (localenergycodes.com))

CPA Climate Zone Reference Map



Los Angeles County

- CZ 6, 8, 9 & 16

Ventura County

- CZ 6, 9, 12, & 16

CZ 6

- Camarillo
- Carson
- Hermosa Beach
- Malibu
- Manhattan Beach
- Oxnard
- Redondo Beach
- Rolling Hills Estates
- Santa Monica
- Ventura

CZ 8

- Culver City
- Downey
- Hawaiian Gardens
- Hawthorne
- Paramount
- Lynwood

CZ 9

- Agoura Hills
- Alhambra
- Arcadia
- Beverly Hills
- Calabasas
- Claremont
- La Cañada Flintridge
- Monrovia
- Moorpark
- Santa Paula
- Sierra Madre
- Simi Valley
- South Pasadena
- Temple City
- Thousand Oaks
- West Hollywood
- Westlake Village
- Whittier

CZ 12

- Port Hueneme

CZ 16

- Ojai

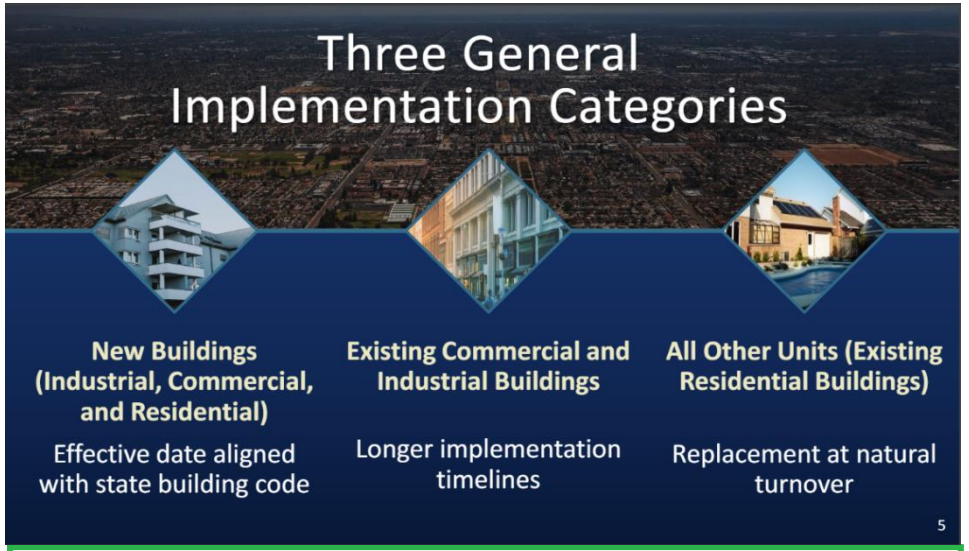
Source: [EZ Building Climate Zone Finder]

Zero-NO_X Air Regulations

- Adopted SCAQMD Rule 1146.2
- Proposed CARB Standards
- Proposed SCAQMD Rules

CPA CLEAN POWER ALLIANCE

SCAQMD Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters, Small Boilers and Process Heaters



Equipment Category	Compliance Schedule Start Dates
Smaller Units	New Buildings **January 1, 2026** → All Buildings **January 1, 2029**
Larger Units and Pool Heaters	New Buildings **January 1, 2028** → All Buildings **January 1, 2031**
High Temperature Units	New Buildings **January 1, 2029** → All Buildings **January 1, 2033**

- ~5.6 tons of NOx emissions reductions/day
- Applies to ~1,070,000 units
- New and existing buildings
- Adopted June 7, 2024

Approved Rule

Source: SCAQMD Proposed Amended Rule 1146.2

SCAQMD Proposed Amended Rule 1111

Last Proposed Rule: Being Amended as of 2025

Rule 1111– Reduction Of NOx Emissions From Natural-Gas-Fired Central Furnaces

Option 1: Sales Compliance Dates			
Equipment Category	**Building Type**	**NOx Emission Limit (ng/J)**	**Compliance Date**
Residential Fan-Type Central Furnace	New	14	January 1, 2027
Residential Fan-Type Central Furnace	Existing	14	January 1, 2029
Mobile Home Furnace	New	14	January 1, 2027
Wall Furnace and Floor Furnace	New	14	January 1, 2027
Wall Furnace and Floor Furnace	Existing	14	January 1, 2029

Option 2: Sales Targets				
Compliance Phase	**1**	**2**	**3**	**4**
Calendar Year	**2027-2028**	**2029-2032**	**2033-2035**	**2036 and after**
Zero-NOx Emission Unit Sales Target	30%	50%	75%	90%
Furnace Sales Target	70%	50%	25%	10%

CPA *Source:* SCAQMD Proposed Amended Rule 1111

SCAQMD Proposed Amended Rule 1121

Last Proposed Rule: Being Amended as of 2025

Rule 1121– Reduction Of NOx Emissions From Residential Type, Natural Gas Fired Water Heaters

Option 1: Sales Compliance Dates				
Equipment Category	Building Type	NOx Emission Limit (ng/J)		Compliance Date
		(ng/J)	ppmv	
Water Heater	new	10	15	January 1, 2027
Water Heater	existing	10	15	January 1, 2029
Mobile Home Water Heater	new	40	55	January 1, 2027

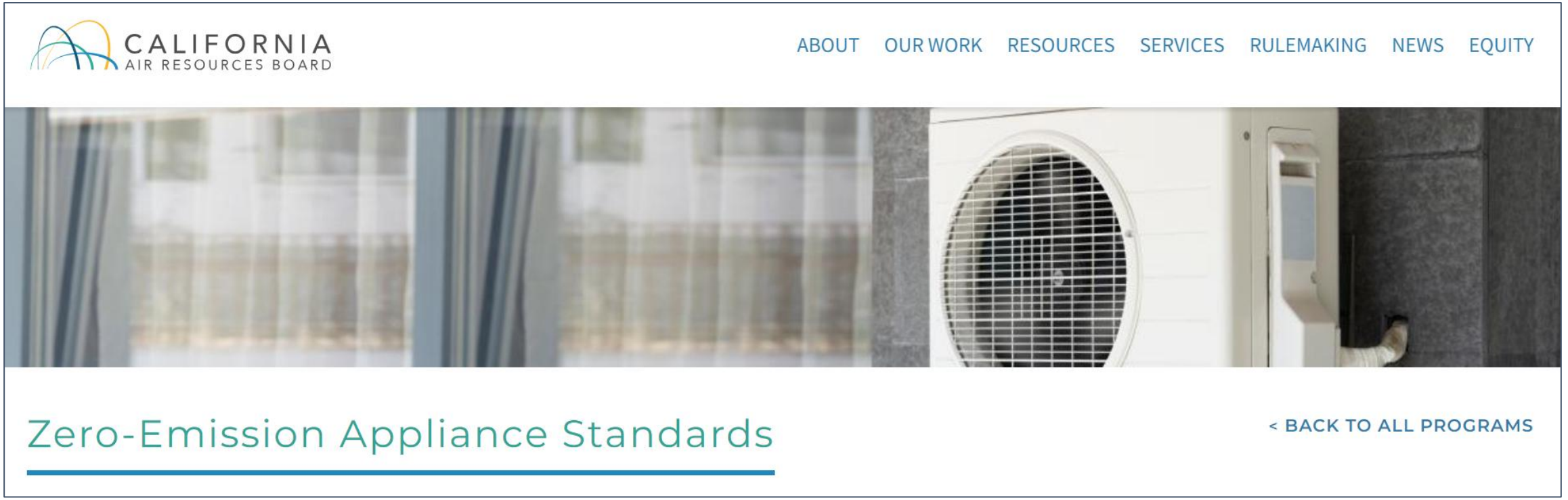
Option 2: Sales Targets				
Compliance Phase	1	2	3	4
Calendar Year	2027-2028	2029-2032	2033-2035	2036 and after
Zero-NOx Emission Unit Sales Target	30%	50%	75%	90%
Water Heater Sales Target	70%	50%	25%	10%

CPA *Source:* SCAQMD Proposed Amended Rule 1121

CARB's Zero-Emission Space and Water Heater Standards

Proposed Rule in Development

CARB is exploring a regulation that would require that all new space and water heaters sold in California meet zero GHG emission standards by 2027-2030.



Source: CARB Zero-Emission Space and Water Heater Standards & May2024 CARB Workshop Update

CARB's Zero-Emission Space and Water Heater Standards

Proposed Rule: Latest Developments

- Continue to focus on new sales of space and water heating.
- Staggered compliance dates based on technological feasibility
- Align with Bay Area (adopted) and South Coast Air District (Rule 1146.2 adopted) zero-NOx rules for implementation consistency

Effective Date	Equipment Type	Capacity/Size Limits
2027	Boilers and water heaters	< 75,000 Btu/hr
2029	~~Central~~ Furnaces	< 175,000 Btu/hr
2029	Boilers and water heaters	≤ 400,000 Btu/hr
2029	Instantaneous water heaters	≤ 200,000 Btu/hr
2029 ~~TBD~~	~~Central~~ Furnaces	≤ 2MM Btu/hr
2031	Boilers and water heaters	≤ 2MM Btu/hr
2031	Instantaneous water heaters	≤ 2MM Btu/hr
2031	Pool heaters	≤ ~~400,000~~ 2MM Btu/hr
2033	High temperature (>180°F) boilers and water heaters	≤ 2MM Btu/hr

Slide Provided By: Southern California Edison

CPA

Source: May2024 CARB Workshop Update

Anticipated State & Regional Zero Emission Appliance Regulations

CPA CLEAN POWER ALLIANCE

Agency & Rule	Status	Appliance	2026	2027	2028	2029	2031	2033	2036
CARB	In-Process	Boilers and Water Heaters		< 75 kbtu/hr		< 400 kbtu/hr	< 2000 kbtu/hr		
		Tankless Water Heaters				< 400 kbtu/hr	< 2000 kbtu/hr		
		Other/ Specialty				Furnaces < 175 kbtu/hr	Pool heaters < 2000 kbtu/hr	High-temp boilers and water heaters	
BAAD Rule 9-4	Adopted	Furnaces				All furnaces			
BAAD Rule 9-6	Adopted	Boilers and Water Heaters		< 75 kbtu/hr				Large commercial	
SCAQMD Rule 1111	Being Revised	Furnaces		**New construction:** residential furnaces **OR**: 30% sales target		**Existing buildings:** residential furnaces **OR**: 50% sales target		75% sales target	90% sales target
SCAQMD Rule 1121	Being Revised	Residential Water Heaters		**New construction:** residential furnaces **OR**: 30% sales target		**Existing buildings:** residential furnaces **OR**: 50% sales target		75% sales target	90% sales target
SCAQMD Rule 1146.2	Adopted	Large Water Heaters, Small Boilers and Process Heaters	**New construction:** Boilers, storage water heaters, and process heaters ≤ 400 kbtu/hr; tankless ≤200 kbtu/hr		**New construction:** boilers, storage water heaters, and process heaters ≤ 2000 kbtu/hr; tankless >200 kbtu/hr; pool heaters ≤ 400 kbtu/hr	**New buildings:** high temperature units **Existing buildings:** apply 2026 new construction rule	**Existing buildings:** apply 2028 new construction rules	**Existing buildings:** high temperature units	

Building Electrification

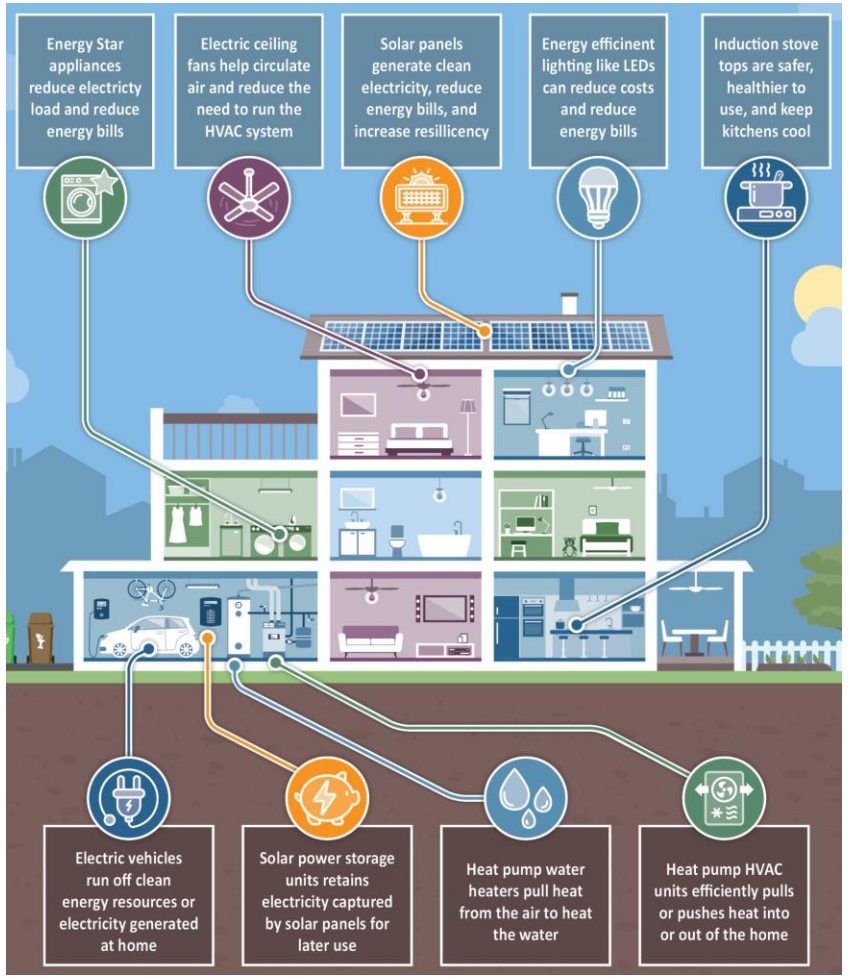
- What is it?
- Why should we implement Building Electrification Reach Codes?

CPA CLEAN POWER ALLIANCE

What is Building Electrification?

- Building electrification is the process of converting our buildings to use electric appliances and measures rather than ones that run on natural gas or other fossil fuels.

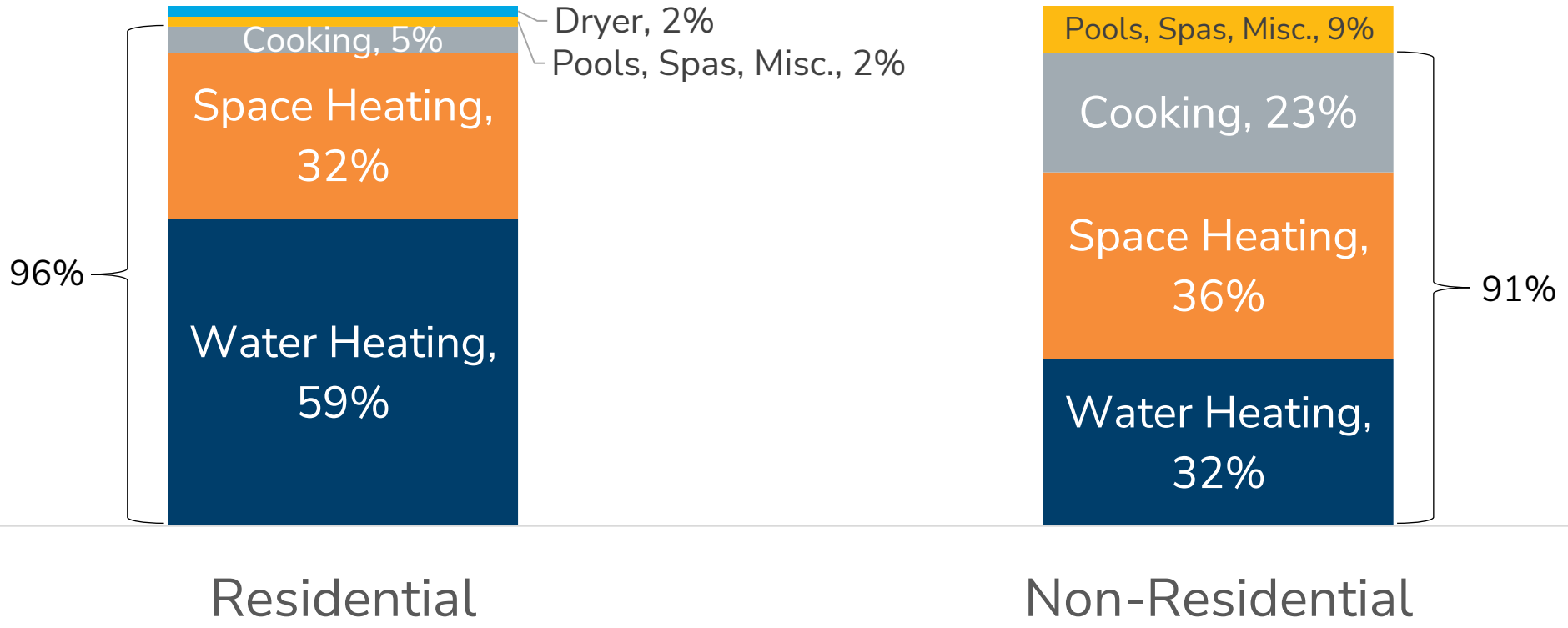
- **This includes the electrification of:**
  - Heating, Ventilation, and Air Conditioning
  - Hot water heater
  - Clothes dryers
  - Kitchen appliances
  - Vehicles



Source: Rincon Consultants

California Buildings Gas Usage

The combined gas usage for **cooking, water heating,** and **space heating** accounts for 96% in residential and 91% in non-residential sectors.

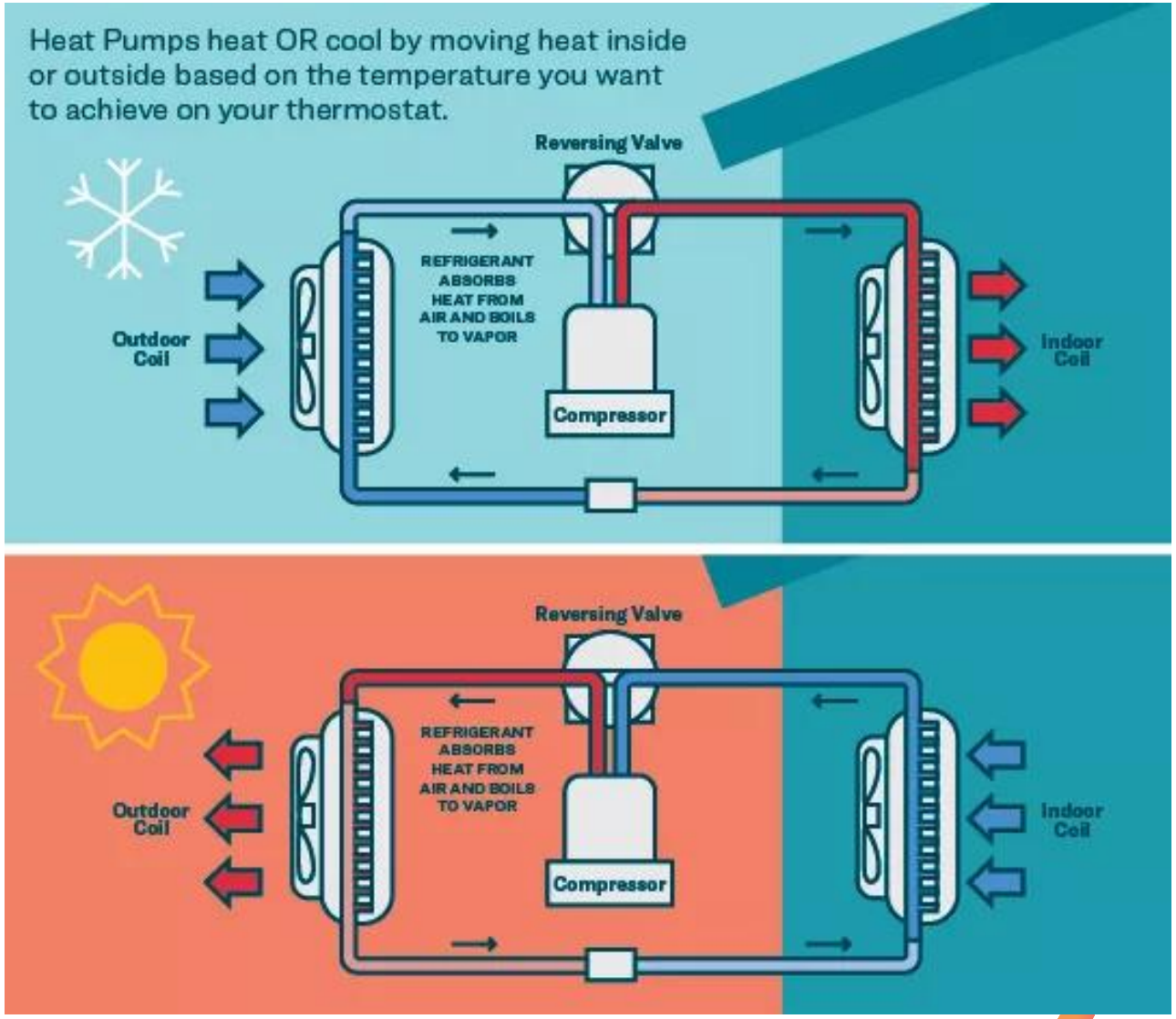


Sources: 2019 Residential Appliance Saturation Survey and California Building Decarbonization Assessment

Heat Pump 101

Heat pumps are dual purpose and work by moving heat from one place to another, rather than generating heat directly. **This makes them highly efficient for both heating and cooling.**

- **Future-Proof:** Heat pumps comply with upcoming clean air heating standards, saving homeowners from future replacement costs.
- **Dual functionality:** One device for both heating and cooling simplifies home climate control.
- **Energy Saver:** Heat pumps use less energy during hot summer days when power demand is highest.
- **No Panel Upgrade Needed:** Homes with central AC already have the electrical capacity for heat pumps, so no costly upgrades to the power system are needed.



CPA

Sources: [Why Replace Air Conditioners with Heat Pumps? | Sierra Club]

Heat Pump Benefits

- **More Efficient:** 3-4 times more so than conventional heaters and air conditioning units.
- **Energy Savings:** $335* in annual savings for single-family homes served by LADWP that currently heat with gas
- **Reduced Emissions:** For the average US home, installing electric heat pumps in place of a gas furnace and gas water heater would reduce heating emissions more than 45 percent over the next 10 years. That's the equivalent of cutting a gas-powered car's carbon pollution by more than half.
- **Climate winners:** Heat pumps can reduce emissions from space heating by 88% compared to gas furnaces.

Sources: Why Replace Air Conditioners with Heat Pumps? | Sierra Club

**These estimates are based on modeling installation of a heat pump of approximately SEER 18, 10 HSPF centrally ducted heat pump with electric resistance backup, and sized using Home Energy Rating System methodology, an electric rate of $0.23/kWh and a gas rate of $1.90/therm. The building stock used in the analysis comes from the National Renewable Energy Laboratory's ResStock building dataset.*

CPA

Heat Pump Costs, Incentives, and Contractor Resources

- **Incremental cost of replacing AC and furnace with a heat pump is about $600-3600***
- **THE SWITCH IS ON** provides free resources to identify incentives and contractors

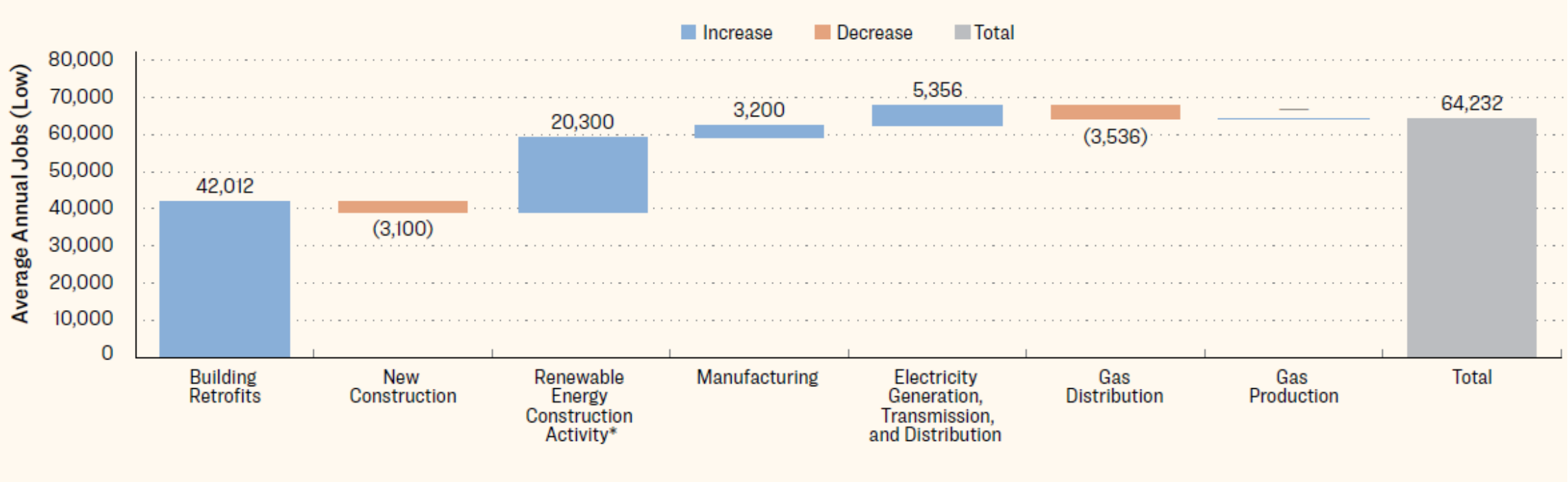
Incentive	Amount
Federal tax credit* ending December 31, 2025	$2,000
LADWP rebate	$275
California HEEHRA/TECH program rebate	$1,000
SCAQMD Go-Zero Program	Up-To $3,000 for Single Family Homes Up-To $5,000 for Small Businesses

**Using TECH installation data for total incremental cost of replacement of AC and furnace with 3-ton heat pump and incremental cost of higher efficiency heat pump qualifying for federal tax credit.*

Electrification Benefits

Job Creation

- The shift towards electrification generates new employment opportunities in manufacturing, construction, and electricity generation, transmission and distribution.



Sources: UCLA 2019, UMass 2021

Fire Hardening

Energy/Fire hardening Intersection

CPA CLEAN POWER ALLIANCE

Electrification Increases Fire Hardening

Firefighters excavate and shut off a natural gas service line in Altadena, January 2025

All-electric construction is reliable

- Electric homes depend on only one infrastructure system, mixed homes depend on two, which increases outage susceptibility, according to the Sierra Club. Nearly all gas appliances also need electricity to operate.

Many energy-efficient upgrades are fire hardening upgrades

- Air sealing/vent sealing
- Cool roofs
- Double-paned tempered windows
- Insulation

Minimizing emissions reduces catastrophic warming and wildfire

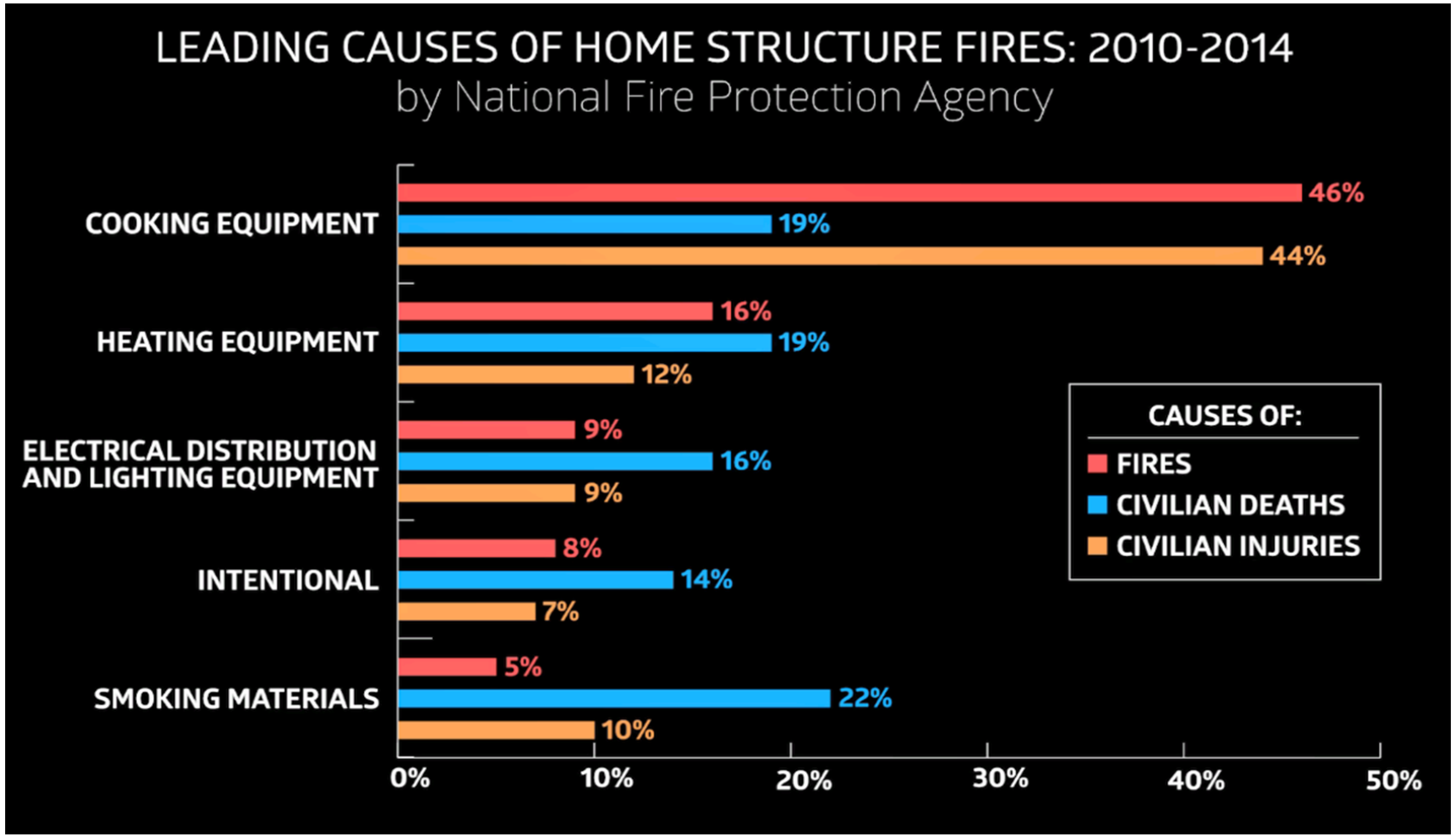
- Warmer conditions doubled the area burned in forest fires from 1984-2015. Burning fossil fuels increases the concentration of greenhouse gases, creating warmer conditions. Researchers have been able to model the influence of these warmer conditions on wildfire burn area.
- High fire risk days in California autumns have doubled since the early 1980's. Warmer conditions increase the chances of wildfire by drying out more vegetation to fuel extreme fire.

Gas exacerbates wildfire

- Natural gas will burn along with a home, adding fuel, and meters may require manual shut off by firefighters after a fire, adding another obstacle to clearing, recovery, and rebuild.

Sources: Sierra Club, California Wildland-Urban Interface Code, Abatzoglou & Williams (2016), Stanford Woods Institute for the Environment, NBC Stay Tuned

Gas Issues: Gas is a Fire Risk



Sources: https://drscleanup.com/2017/10/house-fire-causes-be-safe/
https://www.nfpa.org/News-and-Research/Data-research-and-tools/Building-and-Life-Safety/Home-Structure-Fires

AB130

Overview of impacts and exception options

CPA CLEAN POWER ALLIANCE

General Overview

- Intent
  - Allow for more housing to be built quickly after the fires and to address housing crisis
- Impacts
  - Residential reach codes must be adopted and submitted to the BSC by September 30th, 2025.
  - Freezes any New Construction and Existing Building Residential State Code Updates (including local Reach Codes) until 2031
- Taking Action
  - Understand policy options (Focus on Non-Residential buildings or qualify for AB130 exceptions)
- Resources
  - Latest Bill: AB130
  - Original Bill: Bill Text: CA AB306 | 2025-2026 | Regular Session | Amended | LegiScan
  - California Building Officials and ICC Opposition Letter

AB130 Bill Text and Exceptions

(b) Commencing October 1, 2025, to June 1, 2031, inclusive, a city or county shall not make changes that are applicable to residential units in the provisions adopted pursuant to Section 17922 and published in the California Building Standards Code or the other regulations thereafter adopted pursuant to Section 17922 to amend, add, or repeal ordinances or regulations which impose the same requirements as are contained in the provisions adopted pursuant to Section 17922 and published in the California Building Standards Code or the other regulations adopted pursuant to Section 17922 or make changes or modifications in those requirements upon express findings pursuant to Sections 17958.5 and 17958.7, unless one of the following conditions is met:

(1) The changes or modifications are substantially equivalent to changes or modifications that were previously filed by the governing body of the city or county and were in effect as of September 30, 2025.

(2) The commission deems those changes or modifications necessary as emergency standards to protect health and safety.

(3) The changes or modifications relate to home hardening.

(4) The building standards relate to home hardening and are proposed for adoption by a fire protection district pursuant to Section 13869.7.

(5) The changes or modifications are necessary to implement a local code amendment that is adopted to align with a general plan approved on or before June 10, 2025, and that permits mixed-fuel residential construction consistent with federal law while also incentivizing all-electric construction as part of an adopted greenhouse gas emissions reduction strategy.

(6) The changes or modifications are related to administrative practices, are proposed for adoption during the intervening period pursuant to Section 18942, and exclusively result in any of the following:

(A) Reductions in time for a local agency to issue a postentitlement permit.

(B) Alterations to a local agency's postentitlement fee schedule.

(C) Modernization of, or adoption of, new permitting platforms and software utilized by the local agency.

(D) Reductions in cost of internal operation for a local agency.

(E) Establishment, alteration, or removal of local programs related to enforcement of building code violations or complaints alleging building code violations.

Frequently Asked Questions and Common Concerns

- Typical questions and concerns answered

CPA CLEAN POWER ALLIANCE

Will Electrification Reduce Resilience?

Most gas appliances already require the use of electricity to operate

Gas furnaces require electric fans (but fireplaces still work).

Space Heating

Gas water heaters require electronic ignition or pumps

Water Heating

Gas stoves will work without electricity, but can be unsafe due to lack of proper ventilation

Cooking

Gas dryers use electric motors to run tumbler

Clothes Drying

Can the Grid Handle the Load Increase?

- Reliability is a concern only during summer peak cooling times. Increases in cooling demand are **primarily due to climate change** increasing summer temperatures.

- California Energy Commission's AB3232 analysis indicates that *aggressive* electrification will result in **20 percent additional summer peak load** through 2030. Summer load will continue to be greater than winter peak load.*

- All-electric technologies can **draw power flexibly**. Electric vehicles can charge during off-peak periods, water heating tanks can increase temperature ahead of peak periods, thermostat setbacks can reduce space conditioning demand, and several other approaches will avoid power outages.

- **Over the long-term, utilities and local jurisdictions have opportunities to make upgrades and implement strategies to produce, store, and manage clean energy to provide grid resiliency**

**Represents PG&E territory. Assumes all-electric for 100% new construction, 90% replace on burnout, and 70% early retirement for remaining existing buildings.*

Source: 1) AB3232 Decarbonization Assessment 2021

Will the Grid be Reliable?

1. CEC has determined that **electrification is the lower cost, lower risk approach** to decarbonization, compared to all alternatives.

2. CA-ISO has performed a 20-year study and has recommended **over $30B in transmission investments** to account for increased renewables and decommissioned gas power plants

3. Utility-scale **battery power installation increased 10-fold** during heatwaves from 2020 to 2023. Having diversity in electrical power sources has already improved grid performance.

4. The electricity suppliers have a **service obligation** to meet your needs. "**PG&E fully expects to meet the needs** that all-electric buildings will require" -Robert S. Kenney, Vice President, PG&E

Sources: 1) CA Energy Commission 2018 2) CA-ISO 3) CAISO 4) 2) CPUC R1901011 2022

Additional Resources

To help you on your journey towards electrification

CPA CLEAN POWER ALLIANCE

The CPA Energy Team

Clean Power Alliance's Energy Team are experts ready to help residential and small business customers with energy upgrades.

They offer guidance on rebates and electrical upgrades like EV chargers and heat pump water heaters — all at no charge. Their goal is to provide clear, unbiased information to help you save energy, lower costs, and contribute to a cleaner, more sustainable future.

Click here to reach out or schedule an Energy Team appointment.

Free services include:

- Guidance on available rebates, incentives, and tax credits to maximize savings.
- Virtual energy assessments to identify energy efficiency and electrification opportunities
- Home hardening support for members who also get a virtual energy assessment
- Customized electrification plans tailored to individual homes and businesses

Incentives

Find Incentives by zip code with Switch is ON

TECH Clean California

- Heat pump water heaters – Up to $5,700
- Heat pump space heaters – Up to $4,000

Golden State Rebate

- Heat pump water heater - $900

Multifamily Energy Savings

- Up to 100% cost of Heat Pumps

Energy Smart Homes

- Up to $6,500 for whole-home electrification

SCAQMD Go-Zero Program

- Heat Pump Space Heaters and Water Heaters
- Up-To $3,000 for Single Family Homes
- Up-To $5,000 for Small Businesses

SoCal Edison Rebates and Bill Assistance

- Programs, rebates, and financial incentives;
- Third party programs

National Energy Improvement Fund

- 100% financing up to $35,000

Go Green Financing

- Up to 100% of project

Federal Tax Credits*

- Heat pump space heaters – Up to $2,000
- Air sealing, insulation, ductwork – Up to $1,200
- Heat pump water heaters – Up to $2,000
- Solar Panels – Up to 30% of Project Cost

*expiring 12/31/2025

CPA

Industry Resources

- **Building and Home Energy Resource Hub** -provided by the California Energy Commission. Includes a comprehensive list of information, guidance, and rebates
- **LocalEnergyCodes.com** - provides comprehensive list of adopted model codes and cost effectiveness studies
  - **Cost Effectiveness Explorer Tool –** provides estimates of building stock, potential emissions savings, and policy options
- **Building Electrification Technology Roadmap** - covers the technical capabilities of a variety of end-uses
- **Ecosizer** - guides engineers and energy consultants for proper design of central heat pump water heating systems
- **Building Standards Commission Resources** - Title 24 guidebooks for local jurisdictions
- **California Air Resources Board 2022 Scoping Plan Appendix F Building Decarbonization** - overview of efficient building decarbonization research, important benefits, cost and cost savings, and strategies
- **Redwood Energy Electrification Guides and Research** - a series of comprehensive guides ranging in electrification topics including construction, retrofits, electric transportation, appliances, and strategies
- **The Switch Is On** – developed by the Building Decarbonization Coalition (BDC), this website provides a wealth of educational resources for communities, contractors, and residents to understand the benefits, incentives, and contractor support available for electric appliances

Contact Us

CPA Reach Code Program
cpareachcodes@cleanpoweralliance.org

Xico Manarolla
Electrification Program Manager
(213) 376-4850 Ext. 139
xmanarolla@cleanpoweralliance.org

Tim Mensalvas (TRC)
Program Manager
(916) 844-0171
tmensalvas@trccompanies.com

CPA CLEAN POWER ALLIANCE