Air Quality Reach Code

- What is it?
- How do we implement Air Quality Codes?
- What are the benefits?

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What is an Air Quality Reach Code?

- The Air Quality Approach focuses on regulating **building or appliance emissions** rather than the type of fuel used.
- Specifies the emissions limit of nitrogen oxides (NOx) or greenhouse gases (GHG).
- Air Quality codes are being pursued by:
  - California Air Resources Board (CARB)
  - Bay Area Air Quality Management District (BAAQMD)
  - South Coast Air Quality Management District (SCAQMD).
- Los Altos Hills and NYC implemented air quality-based policies.

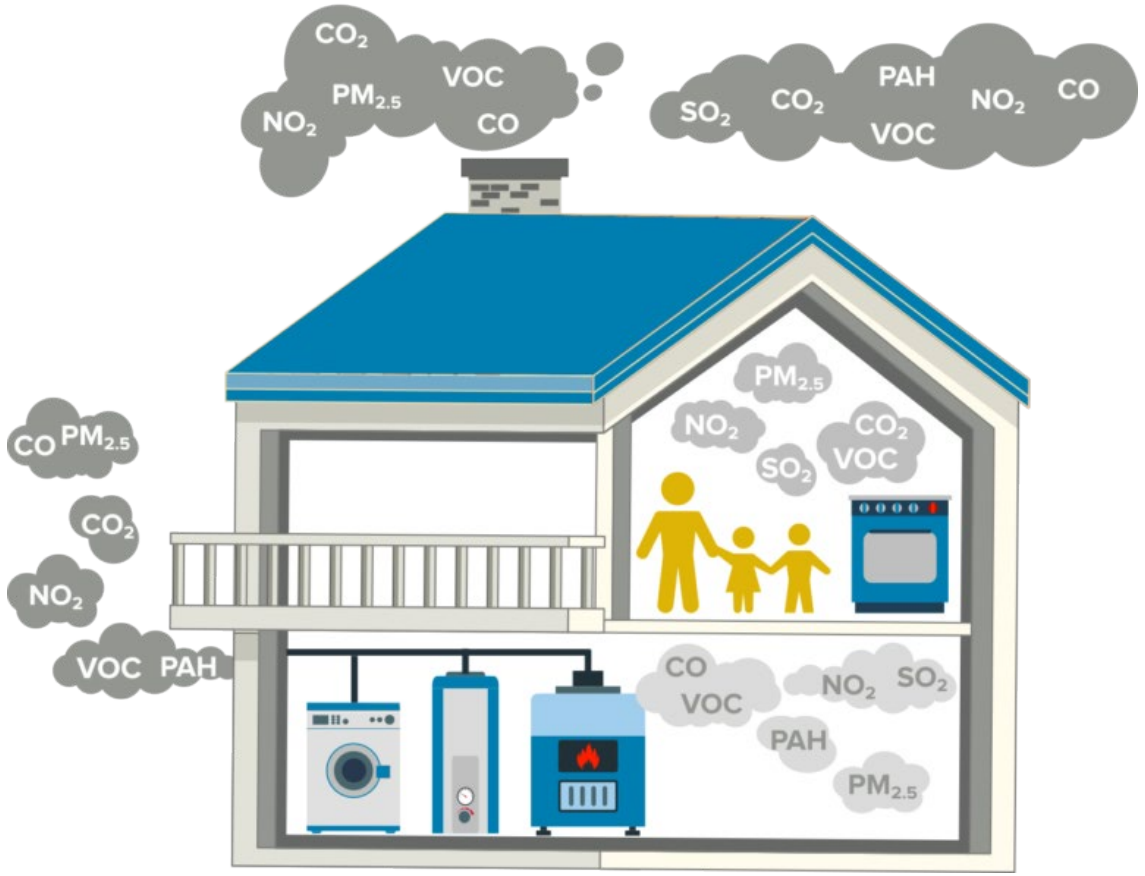

Image Source: [Fresh Energy]

How Does an Air Quality Reach Code Work?

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Example Ordinance: Los Altos Hills

ZERO-NOX EMISSION BUILDING. A building with zero NOx emissions that utilizes zero NOx equipment or appliances.

ZERO-NOX EMITTING EQUIPMENT. Any equipment or appliance that emits no more than 0.0 nanograms of nitrogen oxides (expressed as NOx) per joule of heat and/or light output. Equipment and appliance uses include, but are not limited to, space heating, water heating, cooking, clothes drying, and lighting.

(b) Chapter 4, **Residential Mandatory Measures**, is amended by amending the following sections to read:

DIVISION 4.1 PLANNING AND DESIGNSECTION

4.106 SITE DEVELOPMENT

4.106.5.1. New construction. All newly constructed buildings, newly constructed detached accessory dwelling units, and other newly constructed detached habitable structures shall be Zero-NOx Emission Buildings.

Exemptions:

1. Outdoor cooking equipment, outdoor fireplaces, portable space heaters, generators, and pool/spa heaters for residential building projects are exempt from the requirements of 4.106.5.1, or

2. Indoor cooking equipment for residential building projects is exempt from the requirements of 4.106.5.1. The applicant shall comply with Section 4.106.5.3.

Takes effect through amendments to CALGreen Title 24, Part 11.

Building applicants specify equipment that meets emissions criteria.

Can select a low or zero emissions compliance margin.

Reach Codes 101

- What are they?
- Why should we implement them?
- What's the process?
- Who else has done it in our region?

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What are Reach Codes?

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

Important Facts:

- Can be adopted at any time
- Improves economic and energy performance of buildings
- Reduces Greenhouse Gas (GHG) emissions, pollutants, and improves indoor air quality
- Helps to reduce energy use and improve grid resiliency
- Allows local governments to be leaders in climate solutions
- Helps to fulfill local Climate Action Plan, Energy Plan, or other policy goals

What are the Types of Reach Codes?

Building Electrification (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 main 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 flexibility

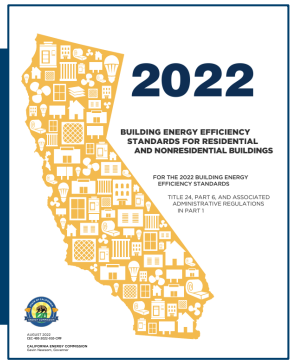
Electric Vehicle Infrastructure (EVI)

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

Reach Code Context in 2024

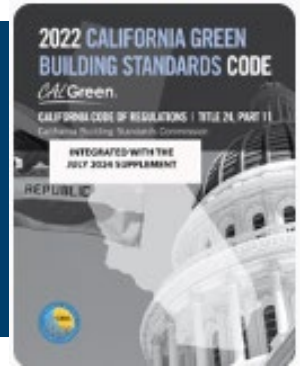
Building Electrification (New Construction & Existing Buildings)

Recent Context: Due to the latest decision for the CRA v Berkeley Ruling, some jurisdictions are re-assessing their approach to building electrification reach codes to mitigate the risk of litigation.



Electric Vehice Infrastructure (EVI)

Recent Context: The CALGreen EV code goes through triennial updates (2022, 2025, etc.) and intervening updates at the mid point between triennial updates. Currently, the CALGreen EV code has intervening updates to the 2022 code that will be in effect on July 1, 2024. Jurisdictions may want to update their reach code according to the new baselines.



What are the Main Benefits?

Reduce Greenhouse Gas Emission in line with state/agency goals and Climate Action Plans.

Provide Financial Benefits related to lower-cost electric construction.

Support Public Health by improving indoor air quality and decreasing air pollution emissions.

Mitigate Legal Risk by providing compliance pathways for all-electric and mixed-fuel buildings.

Reach Code Litigation

California Restaurant Association v. City of Berkeley

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July 2019

The City of Berkeley adopts a municipal gas ban/all-electric Ordinance.

The Ordinance prohibits, with some exceptions, natural gas infrastructure in newly constructed buildings.

Nov 2019

Four months after the Ordinance was passed, the California Restaurant Association sued the City of Berkeley on the grounds that the Ordinance was preempted by the federal Energy Policy and Conservation Act (EPCA).

July 2021

The District Court originally rejected the CRA challenge because the ordinance does not directly regulate either energy use or energy efficiency of covered appliances.

The CRA appealed that decision.

April 2023

The Ninth Circuit reversed the District Court decision.

The appeals court concluded that EPCA preempted Berkeley's ban because it prohibited the onsite installation of natural gas infrastructure necessary to support covered natural gas appliances.

May 2023

The City of Berkeley filed a petition for an En Banc rehearing.

January 2024

The Ninth Circuit denied an En Banc rehearing.

The last remaining option for the City of Berkeley is to raise the issue to the Supreme Court.

Some jurisdictions are evaluating new building reach code approaches.

Next Steps: For cities looking for an alternative reach code that could mitigate legal risk, there are several approaches available.

Source: Climate Case Charts, Columbia Law blog and Earthjustice blog; "Gloom Not Doom: The Latest in the Berkeley Decarbonization Case."

The Bay Area and California's Upcoming Electrification Changes

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2026

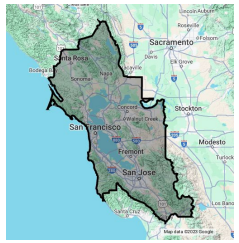
CA State Energy Code Update

Replacements of air conditioning systems in existing buildings will be heat pumps

2027

BAAQMD Low NOx water heater requirements

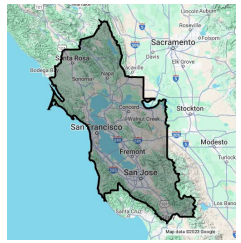
Tank-type gas water heaters no longer sold in Bay Area



2029

BAAQMD Low NOx space heater requirements

Gas furnaces no longer sold in Bay Area



2045

California Achieves Carbon Neutrality

Statewide gas piping projected decommissioning date

Why We Need Reach Codes

Continuous Signal to the Market	• Avoid a progress gap for new construction from 2024-2026 • 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 BAAQMD Codes are Limited	• Lacks specific existing building measures • Cannot regulate remodels or other types of triggers for cost-effective building electrification • Ignores many methane appliances
Local Reach Codes Influence the State	• Statewide electrification codes incorporate elements from local reach codes • Statewide EV charging codes have been inspired by San Mateo's EV Reach Codes • Smoother implementation of BAAQMD ruling if similar requirements are adopted before 2027
Allows More Action, Sooner	• Greenhouse gas emissions are cumulative, so earlier actions have exponential savings • Existing building policy is needed immediately to meet 2030, 2035, and 2040 climate goals

Reach Code Options

- What choices are there for new construction?
- What choices are there for existing construction?
- What are the pros and cons?

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New Construction Policy Comparison

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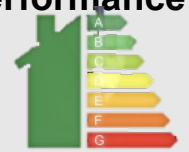
Approach	Description	Advantages	Challenges	Who's done it?
Air Quality 	Regulates building or appliance emissions through CALGreen, Part 11.	• Uses Clean Air Act authority rather than Energy Policy and Conservation Act • Regulates all emitting equipment (cooking, fireplaces, dryers, etc.) • Likely to 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
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	Santa Cruz San Jose San Luis Obispo

Existing Building Decarbonization Policy Comparison

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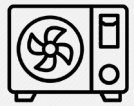
	Description	Advantages	Challenges	Who's done it?
Time of Replacement 	Require that property owners at the time of equipment replacement (upgrades or burnouts) abide by zero-NOx requirements and/or electric readiness requirements.	• Simple policy • Replacements occur more frequently than major renovations	• 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
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.	• 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