Air Quality Reach Code

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

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 DESIGN SECTION

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?
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
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
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 Vehicle 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

<table>
<thead>
<tr>
<th>July 2019</th>
<th>Nov 2019</th>
<th>July 2021</th>
<th>April 2023</th>
<th>May 2023</th>
<th>January 2024</th>
</tr>
</thead>
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<tr>
<td>The City of Berkeley adopts a municipal gas ban/all-electric Ordinance.</td>
<td>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).</td>
<td>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.</td>
<td>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.</td>
<td>The City of Berkeley filed a petition for an En Banc rehearing.</td>
<td>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.</td>
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**Next Steps:** For cities looking for an alternative reach code that could mitigate legal risk, there are several approaches available.

Source: [Climate Case Charts](https://climatecasecharts.org), [Columbia Law blog](https://law.columbia.edu) and [Earthjustice blog](https://earthjustice.org); “Gloom Not Doom: The Latest in the Berkeley Decarbonization Case.”
The Bay Area and California’s Upcoming Electrification Changes

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?
<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
<th>Who’s done it?</th>
</tr>
</thead>
</table>
| 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                                      |
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| **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 |