



Update on Reach Codes 2024

Community Advisory Committee
February 8, 2024

What Are Reach Codes



- 1. **Reducing greenhouse gas emissions** in line with the Town's Climate Act Plan;
- 2. **Providing financial benefits** related to lower-cost electric construction;
- 3. **Supporting public health** by decreasing air pollution emissions and exposure.




2023 Climate Action Plan <

The Atherton Climate Action Plan was updated in June 2023. The plan is a roadmap of the priority strategies to meet 49% emissions reduction by 2030 and to achieve carbon neutrality in both the Atherton Community and Government Operations by 2045. Carbon neutrality means reducing greenhouse gas (GHG) emissions 100% from the 2005 baseline.

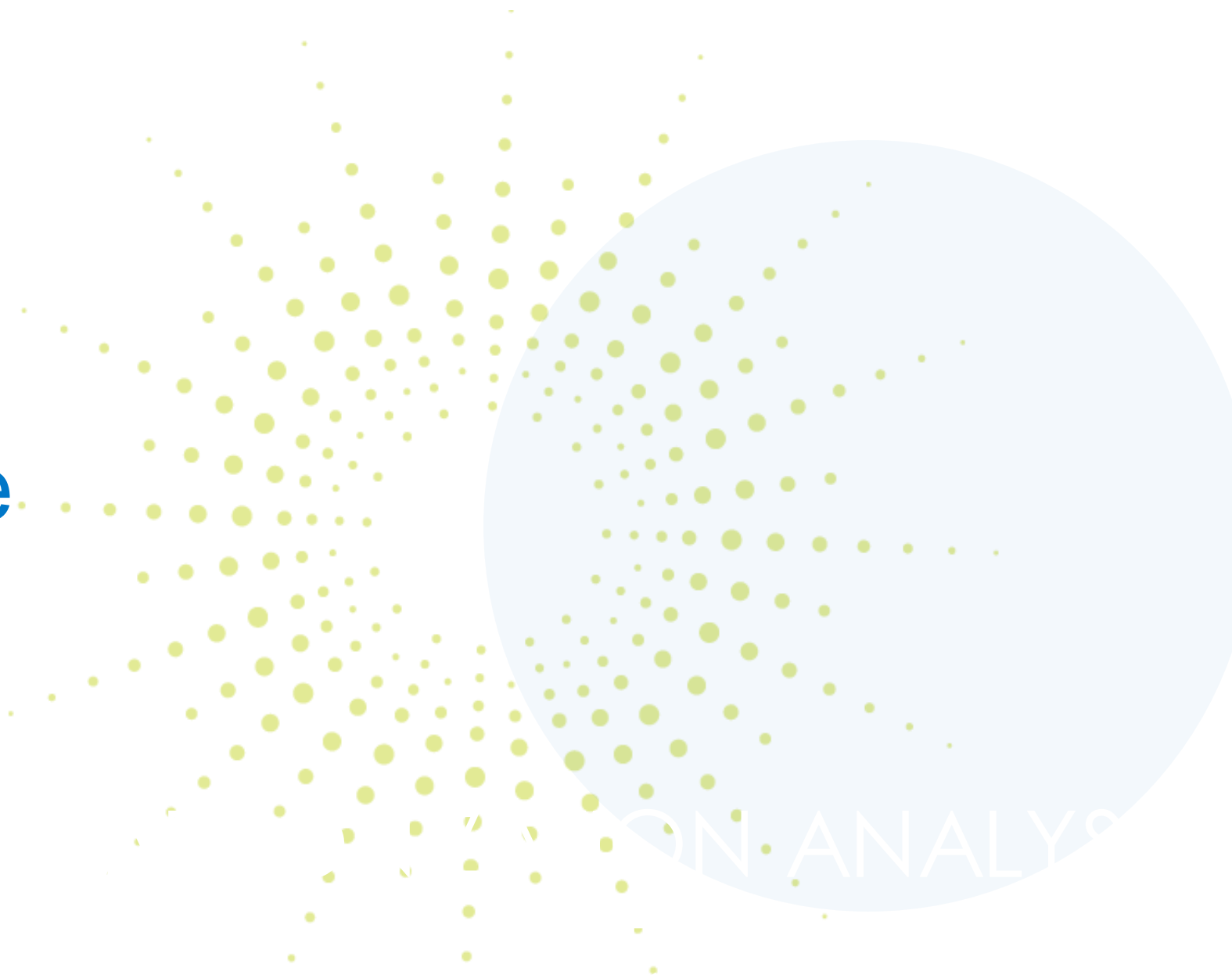
The following icons are used to indicate the status of each action.

-  Awaiting Resources
-  In Progress
-  Complete

 **BUILDING ENERGY** 

- BE-1** Electrify 100% of new construction projects by 2030. 
- BE-2** Electrify 31% of existing residential buildings by 2030 and 80% by 2045 through passage of a reach code by 2024. 
- BE-3** Promote the use of Clean Energy by Maintaining a 3% or Less opt Out Rate 

All-Electric Buildings Update



The State is Moving Forward

2026

CA State Energy Code Update

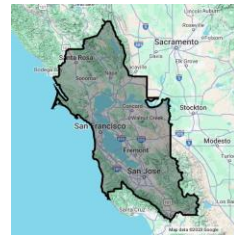
Replacements of air conditioning systems in existing buildings will be heat pumps



2027

BAAQMD Low NOx water heater requirements

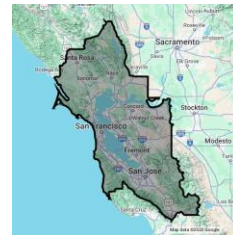
tank-type gas water heaters no longer sold in Bay Area



2029

BAAQMD Low NOx space heater requirements

Gas furnaces no longer sold in Bay Area



2030

CARB Low NOx Standards

Gas water heaters and space heaters no longer sold, statewide



2045

California Achieves Carbon Neutrality

Statewide gas piping projected decommissioning date



Why We Still Need Reach Codes

Continued signal to the market

- Make sure there is not a gap for new construction from 2024-2026
- Send clear, continuous message to market
- Avoid stranded asset cost of continued gas investment

Local control

- Allows for innovative approaches to cost-effective decarbonization policy
- Ability to design catered exemptions
- Cities with more progressive climate targets can pass more progressive reach codes

State and BAAQMD codes can't do enough

- Ignore many methane appliances
- Are limited in scope
- Cannot regulate remodels or other types of triggers for cost-effective building electrification
- Lack specific existing building measures

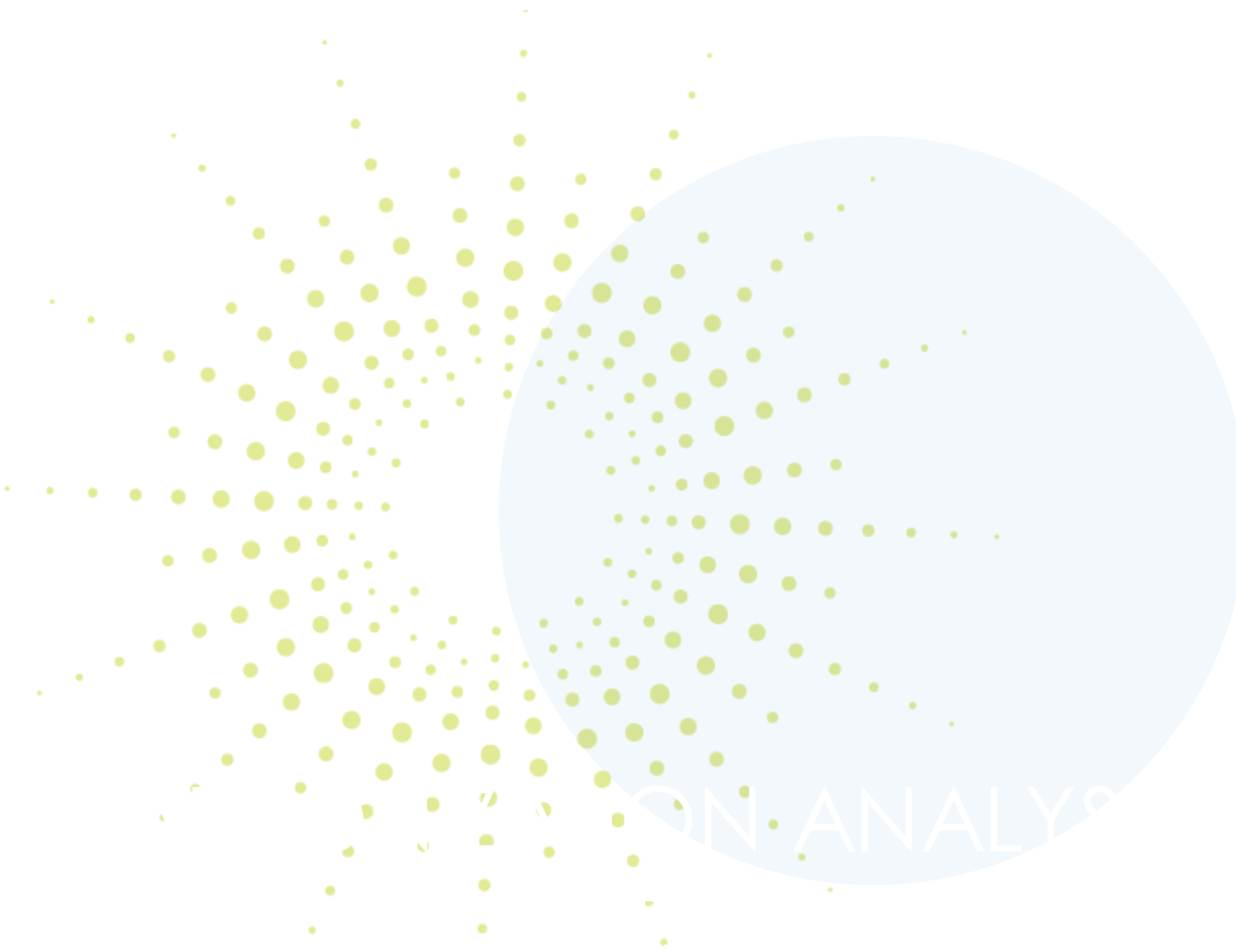
Local reach codes enable state agencies to move forward

- Statewide electrification codes have been guided by local reach codes
- Statewide EV charging codes have been influenced and inspired by San Mateo's EV Reach Codes
- BAAQMD ruling will be smoother if some cities pass existing building requirements ahead of 2027

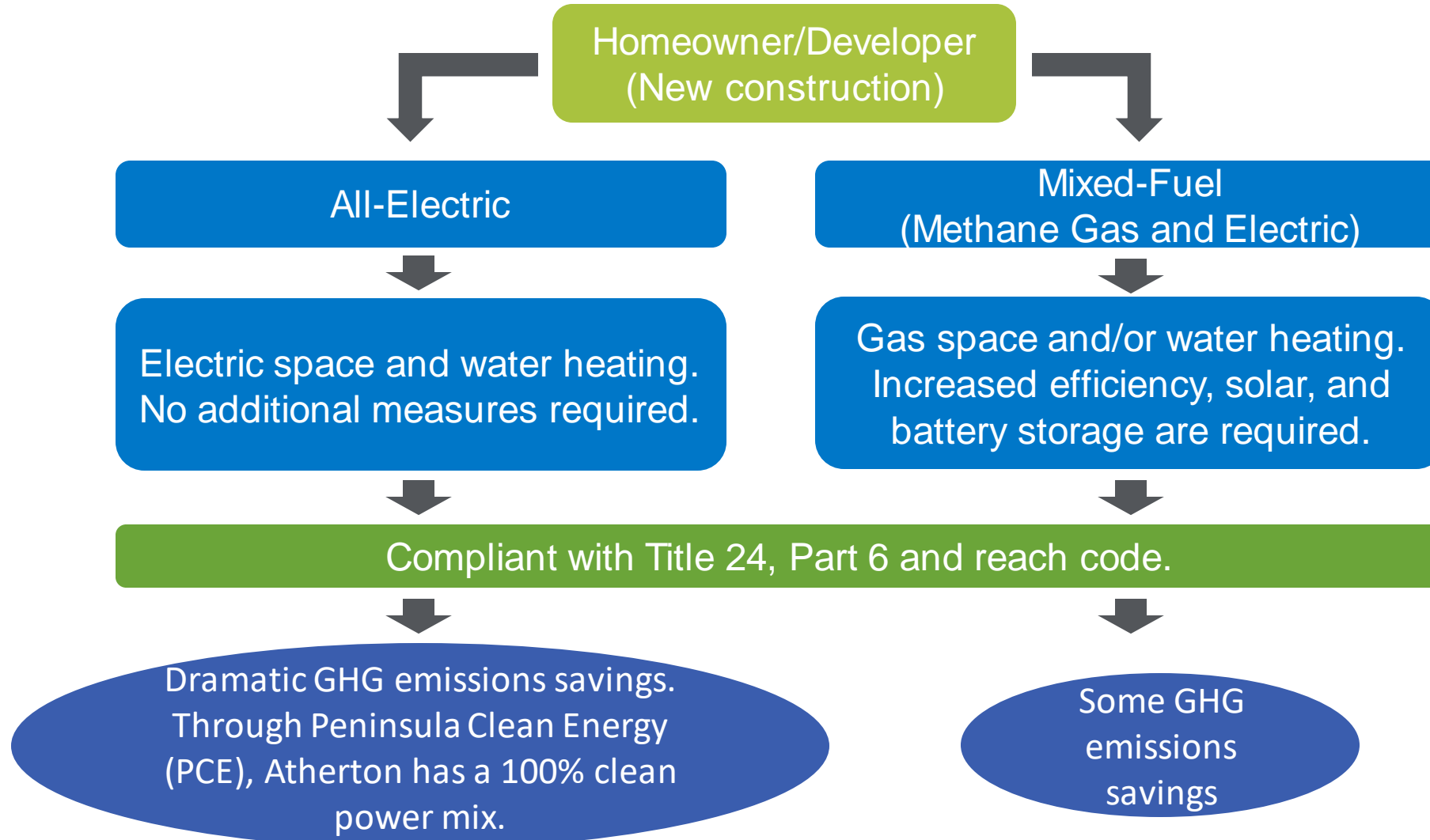
Allows more action, sooner

- Greenhouse gas emissions are cumulative - earlier action has exponential savings
- Existing building policy is needed immediately to meet 2030, 2035, and 2040 climate goals

Model Code Updates



Energy Performance Approach



Energy Performance Approach

What's included?

- Space heating/cooling
- Water heating



What's not included?

- Stoves
- Laundry
- Pools
- Fireplace/pit



Energy Performance Approach

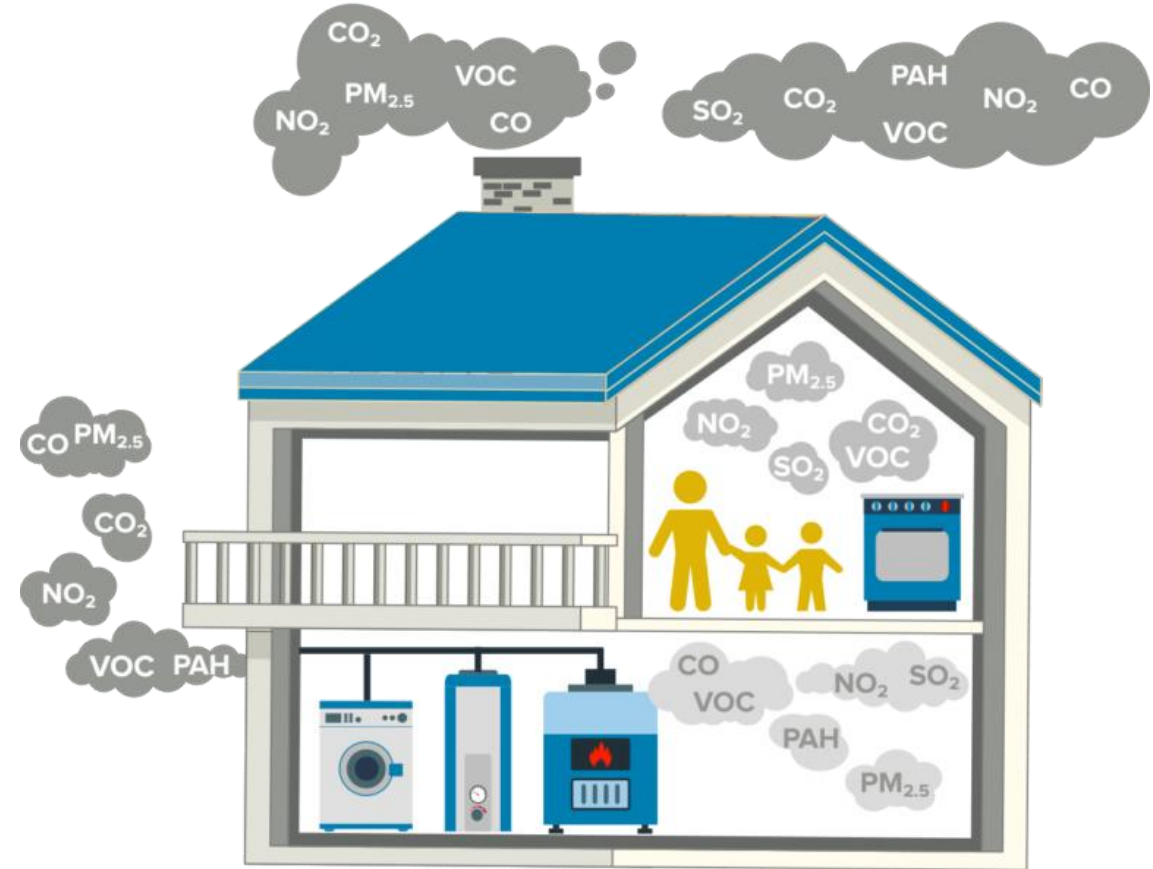
A compliance margin of “x” or higher is required for Single Family, Multifamily (low & high rise) and Nonresidential buildings.

Single Family Example:

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)
Standard Design	35.6	45.8	31.3			
Proposed Design	26.5	39.6	28.4	x	6.2	2.9
RESULT ³ : PASS						
¹ Efficiency EDR includes improvements like a better building envelope and more efficient equipment ² Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries ³ Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded						
<ul style="list-style-type: none"> EDR2efficiency & EDR2total must achieve a score of “0” or higher to pass (per 2022 Title 24, Part 6). 						

Air Quality Approach

- The Air Quality Approach focuses on regulating **building or appliance emissions** rather than the type of fuel used. This type of code can focus on reducing emissions of nitrogen oxides (NO_x) or eliminating emissions of greenhouse gases (GHG).
- Zero Emission Codes are currently being pursued by:
 - California Air Resources Board (CARB)
 - Bay Area Air Quality Management District (BAAQMD)
 - South Coast Air Quality Management District (South Coast AQMD).
- Los Altos Hills and NYC implemented air quality-based policies.



Air Quality Approach

- 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.

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.

Comparison

Approach	Description	Advantages	Challenges	Who's done it?
Air Quality 	Regulates building or appliance emissions through CALGreen, Part 11.	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Legally untested • Potentially new enforcement approach 	Los Altos Hills New York City CA Air Resources Board has proposed a Part 11 building standard for Housing and Community Development consideration
Energy Performance 	Requires a higher <i>Source Energy</i> compliance margin than what the state requires through the performance path of the Energy Code, Part 6.	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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