

# EVI Model Code

- What EV code terminology do I need to know?
- For each building type, what are the CALGreen new construction requirements?
- For each building type, what is the new construction model code?
- What is the alterations & additions model code?

# EVI Code Terminology

## Speed

### Level 1

3-4 miles per charging hour



### Level 2

10-20 miles per charging hour



### Level 3

150+ miles per charging hour



## Readiness

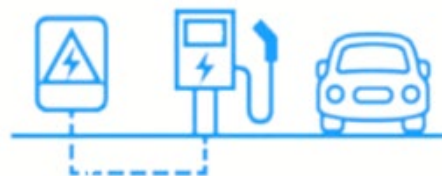
### EV Capable



### EV Ready

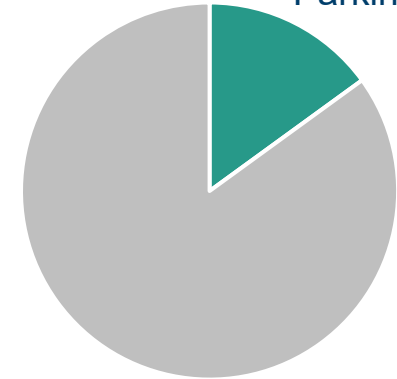


### EV Charging Station Installed



## Number

Percent of Parking Spaces



## kVA Calculation

**kVA** = Voltage \* Amperage / 1000

**Total kVA =**  
L2 EV Capable +  
LP L2 EV Ready +  
L2 EV Ready +  
L2 EVCS

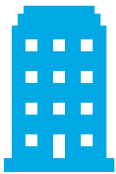
*Source: [Cleanenergy.org](https://www.cleaneconomy.org) EV Readiness*

# What Changed for EVI in the 2022 Intervening CALGreen Code?



## Code Context

- The [2022 Intervening CALGreen Code](#) was adopted in January. It will be effective on 7/1/2024.
- There will also be a 2025 CALGreen Triennial Cycle Update in 2025 (effective Jan. 1, 2026), which has proposed language (subject to change).



## Increased Percentage Requirements

- Multifamily
- Hotel & Motel







## Technical Requirement Changes

- “Direct Billing” in Multifamily projects requires EV charging circuits to be tied directly to each dwelling unit’s meter
- “Power Allocation Method” in non-residential projects adds flexibility for different levels of charging stations installed
- New requirements for medium/heavy duty charging capacity in Manufacturing and Office buildings
- New requirements for specific Nonresidential Alterations and Additions (LP L2 Receptacle)
- Receptacle type updates
- Other minor clarifications

# Single Family Homes and Two-Family Townhomes

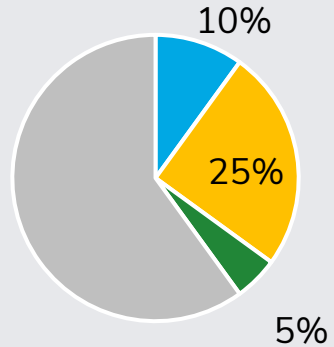
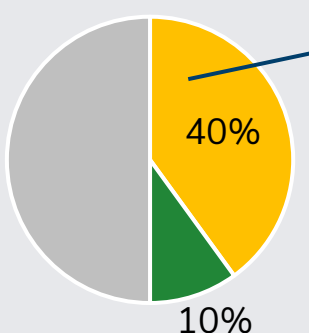
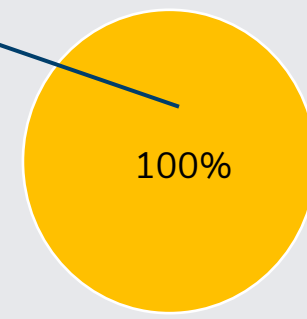
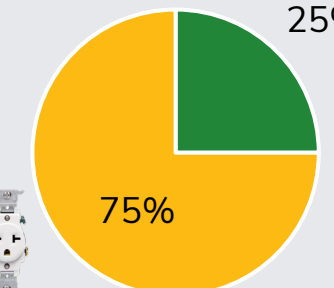


2022 CALGreen	2022 CALGreen Intervening (July 1st 2024)	Model Code
Mandatory	Mandatory	<p>2 EV spaces total:</p> <div data-bbox="1610 505 1819 674" style="border: 1px solid gray; padding: 5px; text-align: center;">ELECTRIC VEHICLE OUTLET</div> <ul style="list-style-type: none"> <li>• 1 Level 2 EV Ready circuit</li> </ul> <div data-bbox="1314 772 1658 876">   </div> <ul style="list-style-type: none"> <li>• 1 Level 1 EV Ready circuit</li> </ul> <div data-bbox="1368 986 1651 1079">   </div>

**Takeaway:** The model code modifies the L2 EV Capable requirement to be a L2 EV Ready circuit and adds 1 L1 EV Ready circuit (if there is a second parking space).

# Multifamily

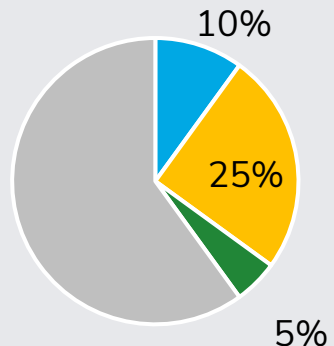
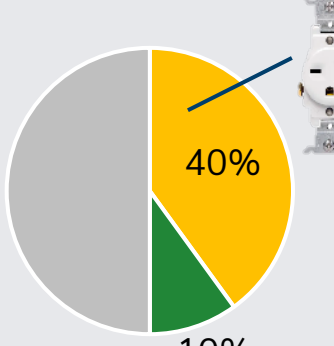
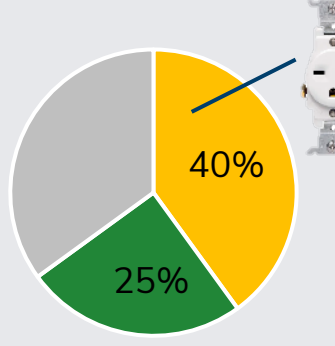


2022 CALGreen	2022 CALGreen Intervening (July 1 <sup>st</sup> 2024)	Model Code	
Mandatory	Mandatory	Proposed 2025 CALGreen Mandatory	
 <p>10% Level 2 EV Capable 25% Level 2 EV Ready (low-power) 5% Level 2 EVCS</p> <p><b>% of Parking Spaces</b></p>	 <p>40% Level 2 EV Ready (low-power) + Direct Wiring 10% Level 2 EVCS</p>	 <p>100% Level 2 (low-power) EV Ready + Direct Metering</p> <p><b>% of Spaces for Residents</b></p>	 <p>25% Level 2 EVCS 75% Level 2 (low-power)</p> <p><b>% of Spaces for Common Use Parking</b></p>

**Takeaway:** The model code increases the amount of LP L2 EV Ready (for resident spaces). The model code aligns with proposed 2025 CALGreen code.

# Hotels & Motels

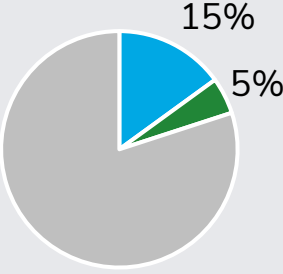
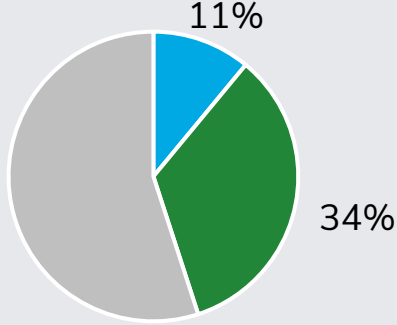
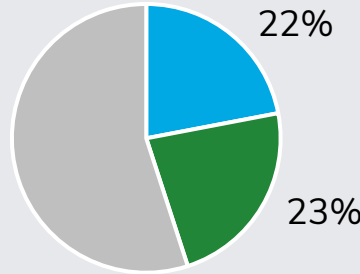


2022 CALGreen	2022 CALGreen Intervening (July 1 <sup>st</sup> 2024)	Model Code (Proposed 2025 CALGreen)
Mandatory	Mandatory	Proposed 2025 CALGreen Mandatory
 <p> <b>10%</b> Level 2 EV Capable  <b>25%</b> Level 2 EV Ready (low-power)  <b>5%</b> Level 2 EVCS                 </p> <p><b>% of Parking Spaces</b></p>	 <p> <b>40%</b> Level 2 EV Ready (low-power)  <b>10%</b> Level 2 EVCS                 </p> <p><b>% of Parking Spaces</b></p>	 <p> <b>40%</b> Level 2 EV Ready (low-power)  <b>25%</b> Level 2 EVCS                 </p> <p><b>% of Parking Spaces</b></p>

**Takeaway:** The model code increases the amount of EVCS, in alignment with the proposed 2025 CALGreen Mandatory code.

# Non-residential



2022 CALGreen	2022 CALGreen Intervening (July 1st 2024)	Model Code	
Mandatory	Mandatory	Proposed 2025 CALGreen Tier 2	
 <p data-bbox="369 935 853 1035"> <b>15% Level 2 EV Capable</b>  <b>5% Level 2 EVCS</b> </p>	 <p data-bbox="1082 921 1554 1078"> <b>Offices &amp; Retail (45%):</b>  <b>11% Level 2 EV Capable</b>  <b>34% Level 2 EVCS</b> </p>	 <p data-bbox="1694 928 2178 1085"> <b>All Other (45%):</b>  <b>22% Level 2 EV Capable</b>  <b>23% Level 2 EVCS</b> </p>	
<b>% of Parking Spaces</b>			

**Takeaway:** The model code splits nonres into two categories with distinct requirements based on the proposed 2025 CALGreen code, Tier 2. Both of these categories reflect increases compared to the 2022 CALGreen Intervening code.

# EVI Requirements for Alterations & Additions



CURRENT CODE	1 to 2 FAMILY	Meet new construction requirements for parking additions or electrical panel upgrades.
	MULTIFAMILY	When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added/alterd and the work requires a permit: <ol style="list-style-type: none"><li>1. 10% of the total number of parking spaces added or altered shall be L2 EV Capable.</li><li>2. Identify reserved panel space for overcurrent device as "EV Capable"</li></ol>
	NON-RESIDENTIAL	Meet the new construction requirements under the following situations: <ol style="list-style-type: none"><li>1. Increasing power supply as part of a parking facility addition or alteration.</li><li>2. Adding new PV added over existing parking.</li><li>3. Increasing power supply to an electric service panel.</li></ol>
MODEL	MODEL CODE CHANGES	<ul style="list-style-type: none"><li>• Increases percentages/EV requirements for new construction for all building types.</li><li>• Utilizes the 3 triggers from non-residential alterations for multifamily.</li><li>• Adds a breaking ground alteration/addition trigger.</li><li>• Amends exception 1(c) to include maximum utility service cost of \$4500/space.</li></ul>



# Reach Codes 101

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

# 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

## 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

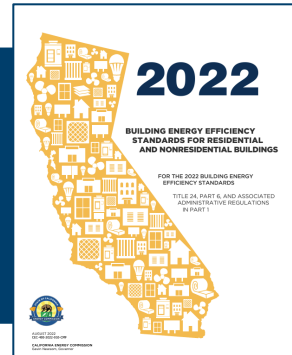
## Electric Vehicle Infrastructure (EVI)

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



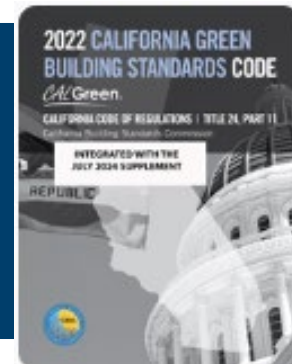
## Building Electrification (New Construction & Existing Buildings)

**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.



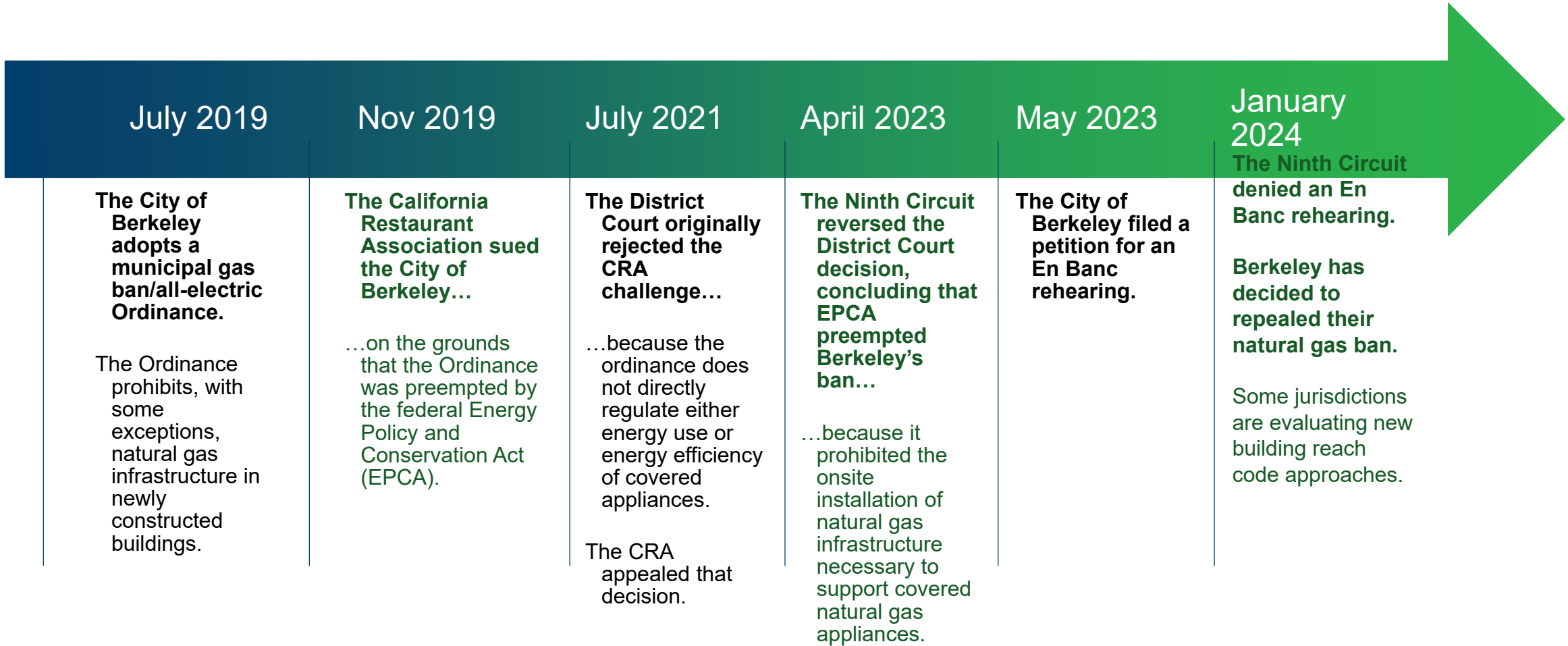
**Support Public Health** by improving indoor air quality and decreasing air pollution emissions.



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

# Reach Code Litigation

California Restaurant Association v. City of Berkeley



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

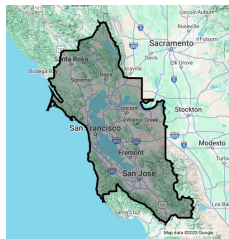
# The Bay Area and California's Upcoming Electrification Changes



2027

## BAAQMD Low NOx water heater requirements

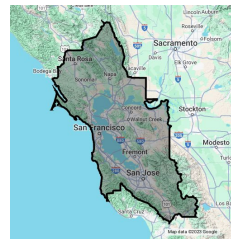
Tank-type gas water heaters no longer sold in Bay Area



2029

## BAAQMD Low NOx space heater requirements

Gas furnaces no longer sold in Bay Area



2030

## CARB Zero-Emission Appliance Standards

Gas water heaters and space heaters no longer sold, statewide



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