San Leandro Climate Action Plan (CAP)

- June 2021 - Staff presented CAP at Planning Commission
  - Reach codes were recommended
- July 2021 - City Council adopted CAP
  - Commitment to reach codes
- Nov 2021 - First conversation of several to identify San Leandro’s reach code strategy
- East Bay Community Energy (EBCE) has offered technical support around reach codes for local governments
What are Reach Codes

• Local enhancements to state code, adopted at any time during the triennial building code cycle
• Addresses:
  1. Building electrification – reduced use of natural gas
  2. Electric vehicle (EV) charging – increased EV readiness
• Improves economic and energy performance for new construction
• Mitigates climate change impacts
Benefits of Electrification

**Cleaner Air**
All-electric buildings mean no natural gas combustion that generates toxic pollutants

**More Affordable Housing**
All-electric homes cost less to build and operate than homes powered by natural gas

**Lower Climate Impact**
Powering buildings with renewable energy is better for the climate
Benefits of Electrification

**Utility Bills**
Renewable energy is becoming cheaper while natural gas prices are rising rapidly in many states.

**Safer Buildings**
In case of building damage from an earthquake or wildfire, all-electric buildings are not exposed to fires from gas pipe ruptures.

**Improved Public Health**
Electrification avoids prolonged exposure to natural gas fumes, which can lead to respiratory issues like asthma.
Bay Area cities with reach codes
All Electric Building Measures

- Space Heating
- Water Heating
- Cooking
- Clothes Drying
What is the 2022 Statewide Code?

**New Construction Energy Code**

- All Buildings - Easier performance compliance for all-electric
- Residential
  - Electric heat pumps are the standard for residential HVAC
  - Gas appliances must be pre-wired for electrification
  - Gas cooking appliances require higher ventilation rates
- Nonresidential - Solar PV and Battery Storage prescriptive
Reach Code Concepts

• **Building Code: Electric-preferred**
  – All-electric → Meet code
  – Mixed-fuel → High performance required
  – Model closest to 2022 Statewide Energy Code

• **Building Code: All-electric** (with limited gas usage)
  – All-electric required
  – Limited exceptions (i.e., residential cooking, infeasibility)

• **Land Use Code: Natural Gas Infrastructure Ban**
  – All-electric required
  – Limited exceptions (i.e., emergency operation centers, public interest)
  – Municipal code amendment

• **High Energy Efficiency Performance Standard for Mixed Fuels**

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50 cities, >13% of CA population adopted a 2019 building electrification code

2022 State Energy Code already electric-preferred, starting Jan 1, 2023
### 51 CA Jurisdictions Adopted in 2019

<table>
<thead>
<tr>
<th>New Construction</th>
<th>Existing Building Alterations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electric-Preferred</strong></td>
<td></td>
</tr>
<tr>
<td>~9 jurisdictions</td>
<td></td>
</tr>
<tr>
<td>Ex: Albany, Hayward (nonresidential), Milpitas</td>
<td></td>
</tr>
<tr>
<td><strong>All-Electric</strong></td>
<td></td>
</tr>
<tr>
<td>34 jurisdictions</td>
<td></td>
</tr>
<tr>
<td>Ex: Hayward (residential), Oakland, Alameda</td>
<td>Ex: Berkeley, San Francisco, San Jose</td>
</tr>
<tr>
<td><strong>Natural Gas Ban</strong></td>
<td></td>
</tr>
<tr>
<td>5 jurisdictions</td>
<td></td>
</tr>
<tr>
<td>Ex: Berkeley, San Francisco, San Jose</td>
<td></td>
</tr>
<tr>
<td><strong>Existing Building Alterations</strong></td>
<td></td>
</tr>
<tr>
<td>2 jurisdictions</td>
<td></td>
</tr>
<tr>
<td>Piedmont, Chula Vista</td>
<td></td>
</tr>
</tbody>
</table>

Represents 14% of state’s population. Excludes dozens of adopted EV ordinances. Full list available by [Sierra Club](https://sierraclub.org).
## Common Concerns

<table>
<thead>
<tr>
<th>Concern</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution grid upgrades are expensive</td>
<td>Sometimes true. Costs offset from the savings of all-electric construction. PG&amp;E will and must supporting sufficient grid capacity. Grid hardening already a determined need.</td>
</tr>
<tr>
<td>Resilience, power-shutoffs</td>
<td>Real problem, gas does not help. Natural gas does not help as gas equipment depends on electricity. In emergencies gas is also shut-off. State policy for grid hardening is key.</td>
</tr>
<tr>
<td>All-Electric heating uses too much energy or can’t work in our cool climate</td>
<td>False. All-electric heat pumps are highly efficient and effective in weather far colder than ours. DOE studies show heat pump space heaters as highly efficient at as little as 5 degrees Fahrenheit. California Energy Commissions cost effectiveness studies also show high efficiency.</td>
</tr>
<tr>
<td>Commercial kitchen appliances</td>
<td>Technically feasible, uncertain cost-effectiveness. EBCE has a rebate with induction range. Benefits extend to indoor air quality and lower ambient temperatures.</td>
</tr>
</tbody>
</table>
Electric Vehicle Reach Code Options

**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**

**Number**

Percent of Parking Spaces
## Single Family EV Reach Code

<table>
<thead>
<tr>
<th></th>
<th>2019 CALGreen</th>
<th>2022 CALGreen</th>
<th>EBCE Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Single Family</strong></td>
<td>Mandatory</td>
<td>Mandatory</td>
<td></td>
</tr>
</tbody>
</table>
| **Two-Family Townhome**   | (1) Level 2 EV Capable for one parking space per dwelling unit | 2 EV spaces total:  
• 1 Level 2 EV Ready circuit  
• 1 Level 1 EV Ready circuit |                         |
## Multi-Family EV Reach Code

<table>
<thead>
<tr>
<th>Multi-Family (buildings with ≥20 units)</th>
<th>2019 CALGreen</th>
<th>2022 CALGreen</th>
<th>EBCE Proposed (Draft)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mandatory</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**Multi-Family (buildings with ≥20 units)**

- **10% Level 2 EV Capable**
- **10% Level 2 EV Capable**
- **25% L2 EV Ready (low-power)**
- **5% Level 2 EVCS**

**EBCE Proposed (Draft)**

- **40% Level 2 EVCS**
- **60% Level 1 EV Ready**

LOAD SHARING ENCOURAGED
<table>
<thead>
<tr>
<th>Category</th>
<th>Building Sector</th>
<th>Possible Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>High energy efficiency with natural gas option</td>
<td>New construction</td>
<td></td>
</tr>
<tr>
<td>All-electric new buildings or Natural gas infrastructure ban</td>
<td>New construction</td>
<td>Residential/commercial cooking, laboratories, public interest, emergency operations</td>
</tr>
<tr>
<td>2 EV spaces total:</td>
<td>New residential for single family, 2-unit, townhome</td>
<td></td>
</tr>
<tr>
<td>• 1 Level 2 EV Ready circuit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 1 Level 1 EV Ready circuit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>40%</strong> Level 2 EV Charging Station</td>
<td>Parking for new apartments with &gt; 20 units</td>
<td></td>
</tr>
<tr>
<td>• <strong>60%</strong> Level 1 EV Ready</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reach Code Options Summary**
San Leandro Timeline

**Nov-21**
Begin stakeholder engagement

**Feb-22**
Model 2022 code language available

**April-22**
Cost effectiveness studies available

**Q3-22**
Adoption of Building and EV reach codes

**Jan-23**
New building codes take effect

Community Engagement occurs throughout the timeline
Recommendation

1. Council hear an All-Electric or Natural Gas Ban reach code by September 2022
   a. May include exemptions for limited end-uses

2. Council hear an Electric Vehicle Infrastructure Charging reach code by September 2022

3. San Leandro review internal permitting processes in advance of January 2023 to identify and address barriers for electrification
Discussion Questions (Developers)

1. What sustainability items are consumers requesting?
   a. Rental units?
   b. For-sale units?

2. Have you developed projects in a jurisdiction with a reach code in place? How was the experience? What worked well? What would you have changed?

3. Are there any key topics you would like to see included or excluded from San Leandro’s reach code?
   a. All electric?
   b. Energy performance requirements?
   c. Minimum EV Charging %?
Thank you

City of San Leandro Reach Code Team

Avalon Schultz, Principal Planner, aschultz@sanleandro.org
Hoi-Fei Mok, Sustainability Manager, hfmok@sanleandro.org
Joyce Mok, CivicSpark Fellow, jmok@sanleandro.org
Katie Bowman, Economic Development Manager, kbowman@sanleandro.org
Michael Jeffrey, Chief Building Official, mjeffrey@sanleandro.org