







# 2022 Reach Codes Initiative

Advancing safer, healthier and more affordable buildings and vehicles

Kickoff Meeting - January 26, 2022

BayAreaReachCodes.Org



# Team Introductions



**PENINSULA CLEAN ENERGY** 



### **LEADERSHIP**



Peninsula Clean Energy

Rafael Reyes

Blake Herrschaft

Phillip Kobernick



Zoe Elizabeth



Peyton

Parks

### Peter **Mustacich**

Eryn

Kim



Beckie Menten

### **CONSULTANTS**





**Farhad Farahmand** Mayra Vega DNV

East Bay Community Energy



Thor Frantz

### **COLLABORATORS**





**Breann Boyle** 



**Denise Lin** 

## 2022 Initiative







## Timeline



# Kickoff Meeting Overview

## Topics

- Building electrification
- Electric vehicle charging infrastructure
- New construction and Alterations

### Agenda

- 1. Reflections on 2019 Reach Code Initiative
- 2. Overview of 2022 CA Energy Code, Green Building Stds
- 3. Introduction to 2022 Reach Code Initiative
- 4. Your feedback ← most important!

15 min 10 min 20 min 30+ min

EAST BAY COMMUNITY ENERGY





PENINSULA

**CLEAN ENERGY** 

4

SILICON VALLEY CLEAN ENERGY

# Electrification, Compared to Fossil Fuels

• Carbon-free



Source: Peninsula Clean Energy 2021



# Electrification, Compared to Fossil Fuels

• Carbon-free

 Lowest-cost, lowest-risk pathway



PENINSULA CLEAN ENERGY

SILICON VALLEY CLEAN ENERGY

Sources: 1) <u>AB3232 Decarbonization Assessment</u> 2021 2) <u>CA Energy Commission 2018</u>



# Electrification, Compared to Fossil Fuels

• Carbon-free

- Lowest-cost, lowest-risk pathway
- Healthier indoor air



PENINSULA CLEAN ENERGY

SILICON VALLEY CLEAN ENERGY

Sources: <u>RMI 2020</u>, <u>CEC 2019</u>





# Electrification, Compared to Fossil Fuels

• Carbon-free

- Lowest-cost, lowest-risk pathway
- Healthier indoor air
- Job creation



Sources: UCLA 2019, UMass 2021



PENINSULA CLEAN ENERGY

SILICON VALLEY CLEAN ENERGY











# 2019 Reach Code Initiative – Reflections



**Bob Lennen** 

**Acting Building Official** 

City of Campbell | Community Development Department

bobl@campbellca.gov 408.866.2133





## 2019 Reach Code Initiative – Adoption



- 61% of member agencies have adopted some form of Reach Code
- 57% of electrification Reach Codes statewide are our member agencies
- Of the 30 cities adopting building electrification codes, **20 also had EV infrastructure codes** (existing or newly adopted)





### City staff support

- 2-hour trainings for city staff at 11+ agencies (led by BayREN)
- Counter checklists, customized for each city
- Code interpretation support to building/planning staff

### **Building industry support**

- Supported 50+ inquiries from residents, contractors, developers, design engineers
- Hosted 3 developer roundtables and 2 contractor trainings
- <u>AllElectricDesign.org</u> houses several tools including
  - All-Electric System Options matrix
  - Case studies
  - Pool Heat Pump design guide ·

Pool Heat Pump Design Strategies and Bay Area Resources

SILICON VALLEY





# 2019 Reach Code Initiative - Litigation



SILICON VALLEY

- Berkeley Municipal all-electric ordinance: Federal court rejected the plaintiff challenge because the ordinance does not directly regulate either energy use or energy efficiency of covered appliances. Plaintiff has appealed.
- 2. Windsor Energy Code (Part 6) amendment: Agency repealed reach code because the Town could not sufficiently fund legal defense of all-electric reach code.
- 3. Santa Rosa Energy Code (Part 6) amendment: CA court rejected plaintiffs claims regarding CEQA analysis for all-electric reach code. Plaintiff has appealed.

Takeaway: Pending appeals, both a municipal code or building code amendment seem legally defensible.







# Audience Poll

## 2022 California Code Overview

Energy Code (Part 6)
 CALGreen (Part 11)

LANCE EAST BAY

PENINSULA





## 2022 CA Energy Code

### **New Construction**

- Heat pumps are prescriptive baseline
  - Residential
    - Space heating in climate zone 3, 4
    - Water heating in climate zone 12
  - Nonresidential most building types include waterand/or space-heating
  - Performance credit for all-electric design
- Residential
  - Pre-wiring required for gas appliances
  - Higher ventilation rate for gas stoves
  - Energy storage readiness
- Nonresidential Solar PV and Battery Storage prescriptive

### **Existing Buildings**

- Restricts newly installed electric resistance heating
- Simplified language for heat pump retrofits









## 2022 CALGreen

### **Energy Efficiency**

- Performance based on heat pump for both space and water heating
- However, a mixed-fuel compliance path is allowed (e.g., with battery storage)
- Does not mandate or encourage on electric cooking/laundry

### **EV Infrastructure**

Multifamily (>20 DUs)	EV Capable (L2)	EV Ready (Low-power L2)	EVCS (L2)	Total
Mandatory	10%	25%	5%	40%
Non- residential	EV Capable (L2)		EVCS (L2)	Total
Mandatory	15%		5%	20%

#### Notes:

1- Load management allowable in certain conditions.

2- Non-residential includes EV Capable (make-ready) requirements for Mediumand Heavy-duty EVs in new grocery, warehouse, and retail buildings.

## 2022 Reach Code Initiative Offerings

- 1. Key Concepts
  - A. Building electrification
    - i. New construction
    - ii. Existing Building
  - B. Electric Vehicle infrastructure
    - i. New construction
    - ii. Existing Building
- 2. Tools and resources
- 3. Timeline

COMMUNITY ENERGY







Code Approach	Pros	Cons
All-Electric Municipal Ordinance <i>Posted on</i> <i>BayAreaReachCodes.Org</i>	<ul> <li>Most effective</li> <li>Flexible (i.e., time-certain or existing buildings policies can be included)</li> <li>Avoids triennial cycle</li> </ul>	Limited efficiency options





PENINSULA CLEAN ENERGY

Code Approach	Pros	Cons
All-Electric Municipal Ordinance <i>Posted on</i> <i>BayAreaReachCodes.Org</i>	<ul> <li>Most effective</li> <li>Flexible (i.e., time-certain or existing buildings policies can be included)</li> <li>Avoids triennial cycle</li> </ul>	Limited efficiency options
CALGreen Code – All- Electric amendment	<ul><li>Effective</li><li>Does not require CEC approval</li></ul>	<ul> <li>Requires triennial update or more if intervening cycle</li> <li>Limited efficiency options</li> </ul>





PENINSULA CLEAN ENERGY

Code Approach	Pros	Cons
All-Electric Municipal Ordinance <i>Posted on</i> <i>BayAreaReachCodes.Org</i>	<ul> <li>Most effective</li> <li>Flexible (i.e., time-certain or existing buildings policies can be included)</li> <li>Avoids triennial cycle</li> </ul>	Limited efficiency options
CALGreen Code – All- Electric amendment	<ul><li>Effective</li><li>Does not require CEC approval</li></ul>	<ul> <li>Requires triennial update or more if intervening cycle</li> <li>Limited efficiency options</li> </ul>
Energy Code – All-Electric + efficiency amendment	<ul><li>Effective</li><li>May include efficiency and load management</li></ul>	Requires CEC approval

EAST BAY COMMUNITY ENERGY



PENINSULA CLEAN ENERGY

Code Approach	Pros	Cons
All-Electric Municipal Ordinance <i>Posted on</i> <i>BayAreaReachCodes.Org</i>	<ul> <li>Most effective</li> <li>Flexible (i.e., time-certain or existing buildings policies can be included)</li> <li>Avoids triennial cycle</li> </ul>	Limited efficiency options
CALGreen Code – All- Electric amendment	<ul><li>Effective</li><li>Does not require CEC approval</li></ul>	<ul> <li>Requires triennial update or more if intervening cycle</li> <li>Limited efficiency options</li> </ul>
Energy Code – All-Electric + efficiency amendment	<ul><li>Effective</li><li>May include efficiency and load management</li></ul>	Requires CEC approval
Energy Code – Electric- preferred amendment	May include efficiency and load management	<ul> <li>CA Energy Code is already electric- preferred</li> <li>Requires CEC approval</li> <li>Enforcement complexity</li> </ul>

EAST BAY COMMUNITY ENERGY



PENINSULA

# Building Electrification – New Construction

#### **All-Electric Municipal Ordinance**

All-electric construction required

• Also restricts extension of any existing gas infrastructure

#### New construction definition

- If either of the below are replaced over 3 years for purposes other than repair or reinforcement
- 50% of above-sill framing, or
- 50% of foundation

#### **Optional exceptions**

- Infeasible to construct according to CA Energy Code
- "Public interest"
- Technology-specific exceptions expiring in 2025
- Electric-readiness required
- Pre-wiring
- Physical space







# Building Electrification – Existing Buildings



COMMUNITY ENERGY

#### PENINSULA CLEAN ENERGY

SILICON VALLEY

# Building Electrification – Existing Buildings

### Our Approach →

## Summarize codes and development processes

- Point of permit
- Building performance standards
- Point of sale

#### Prioritize

- Stakeholder engagement
- Building stock assessment
- Financing strategy
- Policy considerations

### Develop code for "lowhanging fruit"

- Air-conditioning installations, new pool permits
- "End of flow" date

### Reference useful tools

- Statewide Utility Program
  - Cost-effectiveness studies
  - Electric-preferred retrofit ordinance
- BayREN Policy Calculator

EAST BAY COMMUNITY ENERGY



# EV Infrastructure – New Construction

Code Approach	Pros	Cons
Zoning Code amendment <i>Posted on</i> <i>BayAreaReachCodes.Org</i>	<ul> <li>Flexible (i.e., time-certain policy can be included)</li> <li>Developer is aware at time of land-use permit</li> <li>Alignment with other land use regulations</li> </ul>	<ul> <li>Should comprehensively replicate or exceed all CALGreen mandatory req's</li> </ul>
CALGreen amendments	<ul> <li>May be adopted simultaneously with CALGreen All-electric building amendments</li> </ul>	<ul><li>Complex strikethrough/underlines</li><li>Requires triennial adoption</li></ul>

### **Considerations**

- How does your city commonly perform on-site EV infrastructure inspections?
- What is the best approach given your city's staff and community culture?

## EV Code Terminology







## Speed

### Level 1

3-4 miles per charging hour



## Readiness

## EV Capable



```
Level 2
10-20 miles per
charging hour
```



**Level 3** 150+ miles per charging hour





## EV Ready



### **EV Charging Station**



## Number



COMMUNITY ENERGY



# EV Infrastructure – New Construction

	2019 CALGreen	2022 CALGreen	Model Code
	Mandatory	Mandatory	
Single Family Homes and	(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
Townhomes			Image: Second secon



## EV Infrastructure – New Construction



LOAD SHARING ENCOURAGED

EAST BAY COMMUNITY ENERGY

PENINSULA CLEAN ENERGY



## EV Infrastructure – New Construction



EAST BAY COMMUNITY ENERGY



# EV Infrastructure – Existing Buildings

### **Alterations or additions**

- Single Family Parking additions or electrical panel upgrades must meet new construction requirements
- Multifamily  $\rightarrow$
- Nonresidential →

When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten percent (10%) of the total number of parking spaces added or altered shall be EVCS.

### **Time certain policy**

 By January 1st, 2025, multifamily and nonresidential properties shall upgrade existing EV Capable spaces required by the locally adopted codes at the time the building was permitted to a minimum of Level 1 EV Ready.







# Tools, Services, and Resources

- 1. Model codes
- 2. Stakeholder meetings
  - Please reach out when you would like support
  - We may hold regional public meetings
- 3. On-going technical assistance via email / phone
  - Code customization
  - Permit simplification support
- 4. BayAreaReachCodes.Org repository for resources
  - Templates (i.e., staff reports, PPT decks) available Q1 2022
  - Cost-effectiveness studies available Q2 2022
- New Adopters in PCE/SVCE service area: \$10k grant for city-staff time if reach codes are brought to a vote at your Council

## 2022 Initiative







## Timeline



# Please share your opinions

## Please review the codes posted on BayAreaReachCodes.org and share feedback

#### Model Reach Codes Recommendations

The following building electrification reach code language is based on the anticipated Investor-Owned Utilities Codes and Standards Program (IOU's C&S) cost effectiveness studies. These studies will be listed under Supporting Resources.

Do you have any feedback you would like to share on our model codes or other aspects of our Initiative? We would appreciate your input!

PROVIDE FEEDBACK



- What opportunities and challenges do you expect in 2022-23?
- Are the code concepts appropriate for your City/County?
- What support will you need more/less of?





# Thank you! Next Meetings:

<u>February 15</u> – Building Industry: Deep Dive into Model Codes (invite-only)

<u>February 16</u> – Community: Deep Dive into Model Codes (open invitation)

<u>February 17</u> – City Staff: Deep Dive into Model Codes, feedback from previous two meetings

March 8 – ICC Tri-Chapter briefing

March 9 – CALBIG briefing

Visit us at: <u>BayAreaReachCodes.Org</u>









