



# Reach Codes 101: Reach Code Options

Reach Code Newcomers Series 2022

# Agenda

- **Welcome**
- **Review from Previous Sessions**
- **New Construction Options**
- **Existing Building Options**
- **Related Policy Efforts**
- **Q&A/Discussion**
- **Conclusion**

# Logistics



## Recordings

- We will be recording today
- Recordings of the presentations will be available online

## Questions

- Raise hands during presentations to ask for clarifications
- We will pause for quick questions throughout
- Put comments or more involved questions in the chat



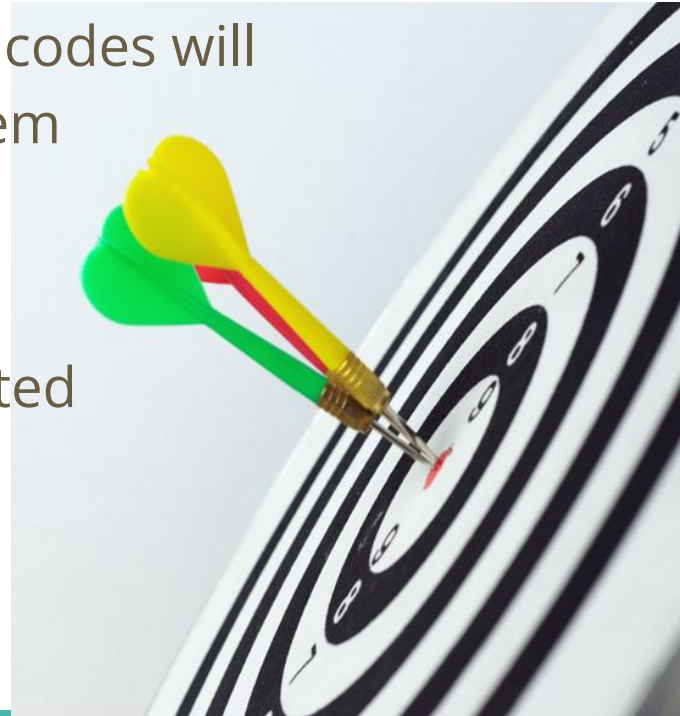
# Purpose of this webinar series

To provide background and technical information that local government staff who are new to reach codes will need in order to understand and work on them

**NOT** intending to:

- Encourage any particular reach code
- Discuss how to advocate to get one adopted
- Go into technical calculations and details
- Discuss how to comply with a reach code

*Poll: Who's in the room?*



# Session 1: Introduction

## What is a reach code?

- Amendment to California Energy Code (Title 24 Part 6)

## Reach code requirements

- Must be at least as restrictive as the Energy Code
- Must be cost-effective
- Local governments must make findings that the reach code is needed for local climatic, geological, topographical, or environmental reasons
- Must be approved by CEC and filed with BSC
- Can't require equipment that exceeds federal standards (federal preemption)

## Other policy tools are also available

- Different legal bases and requirements
- Sometimes informally also called “reach codes”

Reach Codes

2019  
California  
Building Code

2020

2021

2022

# Session 2: Reach Code Process

Identify goal  
and options  
to explore

Technical  
information  
& analyses

Develop  
proposed  
reach code

Formal public  
process &  
adoption

State  
agency  
review /  
approval

Implement

Local stakeholder input & public process

# Session 3: Cost-Effectiveness



## Key Points:

- Something is cost-effective when the value of benefits exceeds the costs
- Can be cost-effective on an on-bill or Time Dependent Valuation basis
- Can use to assess policy impacts as well as to document legal compliance
- Can mean different things to different stakeholders (developers, building owners, tenants, society)
- Can be used to help balance different interests
- Many studies available at [localenergycodes.com](http://localenergycodes.com) and through the Cost-Effectiveness Explorer
- It's complicated but help is available!

# Local Government Legal Options

	Applicability			Example Ordinances Exist
	New Construction	During Retrofits	Existing Buildings	
→ Reach Codes	◆	◆		Yes
→ Natural Gas Moratorium (Municipal Ordinance)	◆		◆	Yes
Emission Limit on Appliances	◆	◆	◆	*
Require Appliance Replacement <ul style="list-style-type: none"> <li>- on Burnout / Retrofit</li> <li>- at Time of Sale</li> </ul>		◆	◆ ◆	Developing
Community Scale Phase Out	◆		◆	*
Building Emissions Standards	◆	◆	◆	Yes

**New Construction efforts started here in 2019**



# New Construction



**BUILDING  
DECARBONIZATION  
COALITION**

# Local Government Options

**Local government-specific additional requirements to state code**

**Energy Code**

**Part 6 of Title 24**

**Green Building Code (CALGreen)**

**Part 11 of Title 24**

**Municipal Ordinance  
Natural Gas Moratorium**

# California Code Structure - New Construction

## Building Code with Triennial updates

### Energy Code

#### Part 6 of Title 24

#### Energy Efficiency

- insulation
- windows
- equipment

Solar PV / battery storage

### Green Building Code

#### Part 11 of Title 24

Indoor Air Quality

Water Efficiency

Planning and Design

- electric vehicle charging

Beyond Code Energy Efficiency

Materials - Embodied Carbon

# Local Government Options

## Local Government-specific additional requirements

### Energy Code

Part 6 of Title 24

Single family homes  
Multifamily dwellings  
Commercial buildings  
Industrial buildings

### Green Building Code

Part 11 of Title 24

Residential  
Non-residential  
Voluntary Tiers

# Local Government Options

## Local Government-specific additional requirements

Energy Code

Part 6 of Title 24

Green Building Code

Part 11 of Title 24

And can also include many types of **exemptions**:

- For specific buildings, e.g. attached accessory dwelling units
- For specific equipment, e.g. industrial equipment

# New Construction Electrification Approaches

		Green Building Code - Part 11 of Title 24	
		Energy Code - Part 6 of Title 24	
	Natural Gas Moratorium (Municipal Ordinance)	All-Electric Ordinance	Electric-Preferred Ordinance
Mechanism	Uses Jurisdictional Authority	Uses Energy Reach Code	Uses Energy Reach Code
Requirements	No New Gas Hookups or Piping	No New Gas Appliances -or- No New Gas Space and Water Heating	Electric Buildings Meet Code Mixed Fuel Buildings Must Exceed Energy Code
Considerations	Hardest Politically, Longest Lasting	Easier Politically, Must be Renewed	Preserves Choice Hardest to Enforce Lowest GHG Savings

# New Construction Approaches

	Natural Gas Moratorium (Municipal Ordinance)
Mechanism	Uses Jurisdictional Authority / police powers - prohibition based on local conditions
Requirements	No New Gas Hookups or Piping
Considerations	Hardest Politically Longest Lasting - Does not require triannual update Doesn't require cost effectiveness study, but most jurisdictions will still use one Does not require CEC approval as it does not modify Title 24, Part 6 May be immediately enforceable
Example Jurisdictions:	Alameda, Berkeley, Fairfax, Half Moon Bay, Morgan Hill, Oakland, Petaluma, San Francisco, San Jose, Santa Barbara, Santa Cruz

# New Construction Approaches

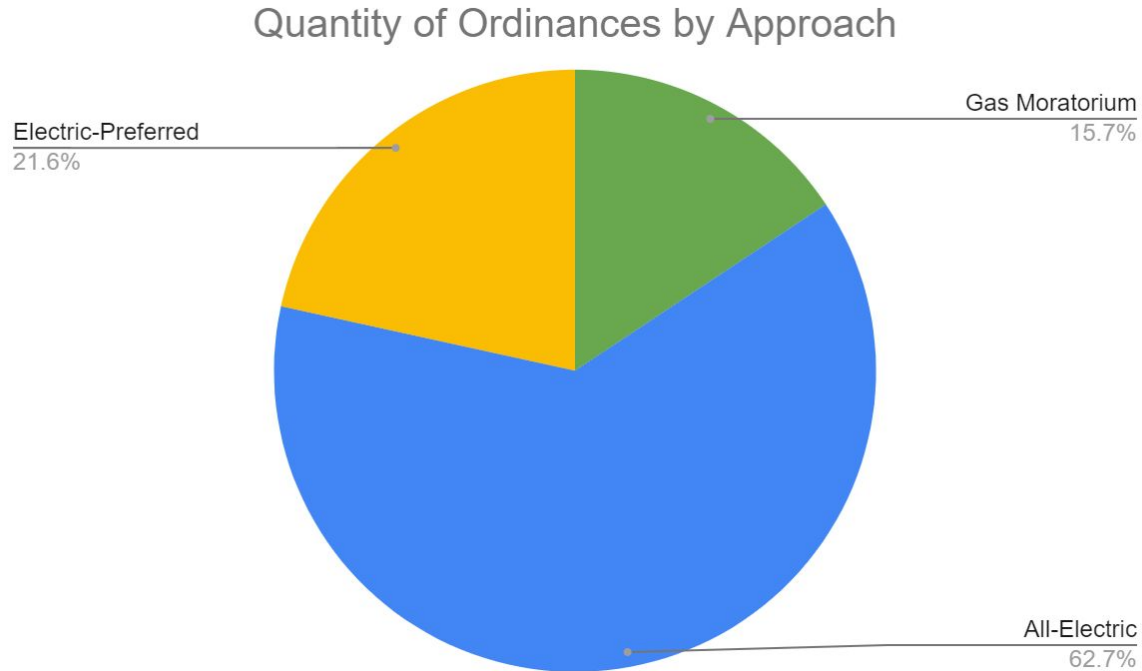
	All-Electric Ordinance
Mechanism	Uses Energy Reach Code Can be tied to Title 24, Part 6 or Part 11
Requirements	No New Gas Appliances -or- No New Gas Space and Water Heating
Considerations	Easier Politically Must be Renewed Triannually Subject to Legal requirements for energy reach code
Example Jurisdictions: (sample)	Alameda, Brisbane, Cupertino, Encinitas, Menlo Park, Pacifica, Richmond, Sacramento, Solana Beach, Santa Clara, Santa Rosa, Sunnyvale



# New Construction Approaches

	Electric-Preferred Ordinance
Mechanism	Uses Energy Reach Code Can be tied to Title 24, Part 6 or Part 11
Requirements	Electric Buildings Meet Code Mixed Fuel Buildings Must Exceed Energy Code
Considerations	Hardest to Enforce, Lowest GHG Savings, Must be Renewed Triannually Subject to legal requirements for energy reach code The 2022 code - heat pump baseline
Example Jurisdictions: (sample)	Albany, Davis, Hayward, Palo Alto, San Luis Obispo, Santa Monica

# 56 Local Governments in California have taken action on New Construction



Most cities have opted to use a reach code

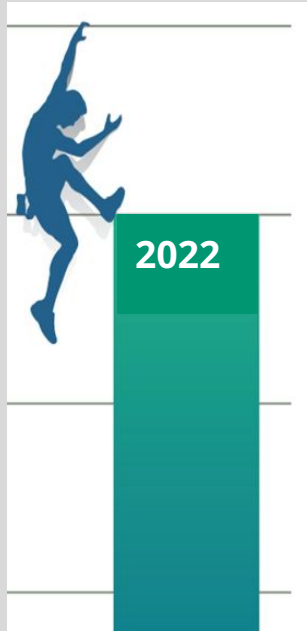
# Additional (and Layerable!) Options

## Energy Code

### Part 6 of Title 24

#### Energy Additions

- Energy Efficiency
- Passive House Standards
- Additional Solar and Batteries
- Cool Roofs



## Green Building Code

### Part 11 of Title 24

#### Indoor Air Quality, Water Efficiency

#### Site and Planning

- electric vehicle charging

#### Beyond Code Energy Efficiency

#### Embodied Carbon

#### Voluntary Tier 1 and Tier 2

# City of San Jose

## September 2019

*Electric-preferred*, solar-readiness on nonresidential buildings, and (EV)-readiness and EV equipment installation.

**Electric-Preferred  
Ordinance  
Title 24, Part 6**

**Electric Vehicle  
Requirements  
Title 24, Part 11**

## October 2019

*Prohibiting natural gas infrastructure* in new detached accessory dwelling units, single-family, and low-rise multi-family buildings.

**Natural Gas  
Moratorium  
(Municipal Code)**

## December 1, 2020,

Updated ordinance *prohibiting natural gas infrastructure* in all new construction.

**Natural Gas  
Moratorium  
(Municipal Code)**

# Existing Buildings Options



**BUILDING  
DECARBONIZATION  
COALITION**

# Residential “Electrofits”

- Point based menu
  - Efficiency and electrification options

<https://explorer.localenergycodes.com/>

# Challenges

- Equity, eviction protections
- Permit avoidance
- Politics
- Regional inconsistency
- Possible starting place:
  - Existing Building studies

# Local Government Trigger Points

	Trigger Point				Examples Exist
	Upon Replacement	During Retrofits	At Time of Sale	Date Certain	
→ Reach Codes		◆			Yes
→ Emission Limit on Appliances	◆	◆		◆	*
→ Require Appliance Replacement	◆	◆	◆	◆	Developing
→ Community Scale Phase Out	◆			◆	*
→ Building Emission Standards	◆	◆		◆	Yes

Interest seems to be converging here

With longer term planning here



# Exemptions and Waivers

- Exemptions
  - By building occupancy
  - By appliance type
  - By % of remodel
- Waivers
  - For cost burden
  - For technical infeasibility

# Additional Context



**BUILDING  
DECARBONIZATION  
COALITION**

# 2022 Code Changes for New Construction

- New Building Code for New Construction - starts January 2023
- Big Movement in Energy Code
  - Electric Baselines
  - Source Energy - Starting to use climate metrics
  - Fuel-based Differences
- Hints at What's Coming
  - Grid Integration Controls and Demand Responsiveness
  - Global Warming Potential and Low-GWPs
  - Universal Prewiring, Electric-Readiness

# Emissions Limits on Appliances

- BAAQMD
  - Regulation 9, Rules 4 and 6 delayed until Q4 2022
    - Low NOx 2023
    - Zero NOx water heaters by 2027
    - Zero NOx HVAC by 2029
  - CEQA Guidelines
- CARB
  - Scoping Plan as required by AB32
    - Scenarios:
      - Carbon Neutrality in Building Sector 2035-2045
      - Electric Appliance Sales Goals 2025-2030
  - May 2022: Draft Scoping Plan
  - Nov 2022: Adopt final Scoping Plan

Source CARB Technical Workshop Presentation 9/30/2021:

[https://ww2.arb.ca.gov/sites/default/files/2021-09/carb\\_presentation\\_sp\\_scenarioinputs\\_september2021.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-09/carb_presentation_sp_scenarioinputs_september2021.pdf)

# Discussion / Q&A



# Resources

- [California Energy Commission Local Ordinance page](#)
- Local Energy Codes: <https://localenergycodes.com/>
  - [Cost effectiveness explorer](#)
- [BayREN Energy Policies & Reach Codes](#)
- Switch is On: <https://www.switchison.org/>
- [Clean Building Compass](#)
- <https://bayareareachcodes.org/>



# Contact Information

Lawrence Garber  
Building Decarbonization Coalition  
Lawrence @ buildingdecarb.org

Amy Rider  
Building Decarbonization Coalition  
Amy @ buildingdecarb.org

Misti Bruceri  
Statewide IOU Reach Code Team  
[https://localenergycodes.com/  
info@localenergycodes.com](https://localenergycodes.com/info@localenergycodes.com)

Karen Kristiansson  
BayREN Codes & Standards Program  
[www.bayren.org/local-government-resources](http://www.bayren.org/local-government-resources)  
[codes@bayren.org](mailto:codes@bayren.org)

Angela Hacker  
California Climate and Energy Collaborative  
[https://eecoordinator.info/  
eecoordinator@lgc.org](https://eecoordinator.info/eecoordinator@lgc.org)

# Webinar Series

*Introduction to Reach Codes – January 25*

*Reach Code Process and Timing – February 22*

*Cost-Effectiveness Analyses – March 22*

*Reach Code Ordinance Options – April 26*

**Implementation – September 27**



**Thank you!**

