REACH CODE COMMUNITY ENGAGEMENT MEETING

CITY CULVER CITY

DATE: August 25th, 2022

SPEAKERS: ID360

Welcome

Tim Koutsouros

Building Official

Building and Safety Division

Facilitators

Melanie Jacobson

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Housekeeping

- There will be a Q&A Session after the presentation, please hold questions until then.
- Please submit questions via the chat function.
- Please use the hand-raising function if you have a question or would like share feedback in real-time.

Scan QR Code for access to presentation materials and supplemental resources.

AGENDA

1. Sustainability Initiatives
2. Reach Code Background
3. Introduction to Electrification
4. Electrification Reach Codes
5. 2022 Energy Code Highlights
6. 2022 Statewide Reach Codes Initiative
7. Electrification Reach Code Strategy
8. Common Questions

OBJECTIVE

- Provide educational background on Energy Reach Codes.
- Review Energy Reach Code Adoption Process.
- Respond to your questions and comments regarding the local Energy Reach Code pathways.
- Discuss next steps.

SUSTAINABILITY INITIATIVES

Sustainability Initiatives

Committed to Sustainability

- In 2009, the City implemented its Mandatory Green Building Program.
- Phase one of the City's reach code efforts went into effect in 2021.
- Green building measures address: light pollution reduction, water use, construction waste reduction, shower facilities for bike parking, and defensible space in wildland-urban interface areas.
- Culver City has joined the Clean Power Alliance; a community choice aggregation formed to deliver power generated by renewable sources.
- City maintains a Platinum Level leadership in SCE's Energy Leader Partnership Mode, reducing energy consumption by over 28% since 2006.
- Reduce greenhouse gas (GHG) emissions.

REACH CODE BACKGROUND

Global & Domestic Context

- Climate Change in CA: extreme weather, wildfires, coastal erosion, and sea level rise
- Efforts related to climate action and decarbonization:
  - Paris 2015: 192 Parties agreed to limit the temperature increase and reduce GHG emissions
  - President Biden signed EO 14008: “government-wide approach to the climate change”
  - Gov. Brown issued EO B-30-15: reduce GHG emissions 40% below 1990 levels by 2030
  - Gov. Newsom issued EO N-79-20: 100% in-state sales of new passenger cars/trucks to be zero-emission by 2035
  - California is committed to becoming carbon-neutral by 2045
- CA jurisdictions are adopting local reach codes in support of climate goals

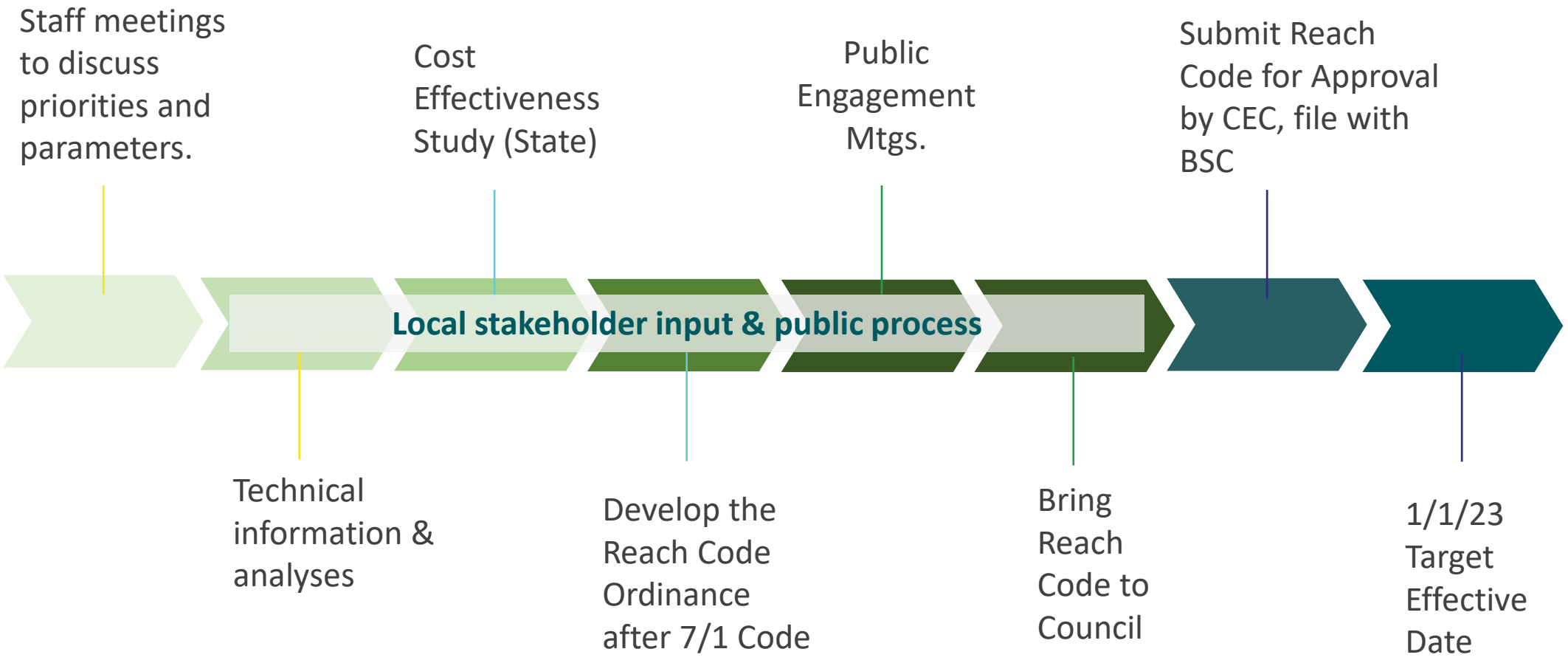
Why Reach Codes?

- Supports local governments reach various policy goals.
- Benefits:
  - Save energy
  - Reduce greenhouse gas emissions
  - Contribute to climate goals
- Furthers decarbonization efforts when clean energy is available

What is a Reach Code?

- Statewide Code updated every three years. (2022 code will take effect 1/1/23)
- Reach Code is a voluntary code that “reaches” beyond baseline requirements
- Based on local prototypes built within CEC-approved energy modeling software
- Requires cost-effectiveness studies that outline modeling assumptions
- Must not preempt federal appliance efficiency standards

Reach Code Process: Development to Implementation



Introduction to Building Electrification

What is Building Electrification?

- Uses electric appliances and equipment in homes and businesses.
  - Induction cooktops
  - Heat pump water heaters
  - Heat pump heating and air ventilation (HVAC) systems

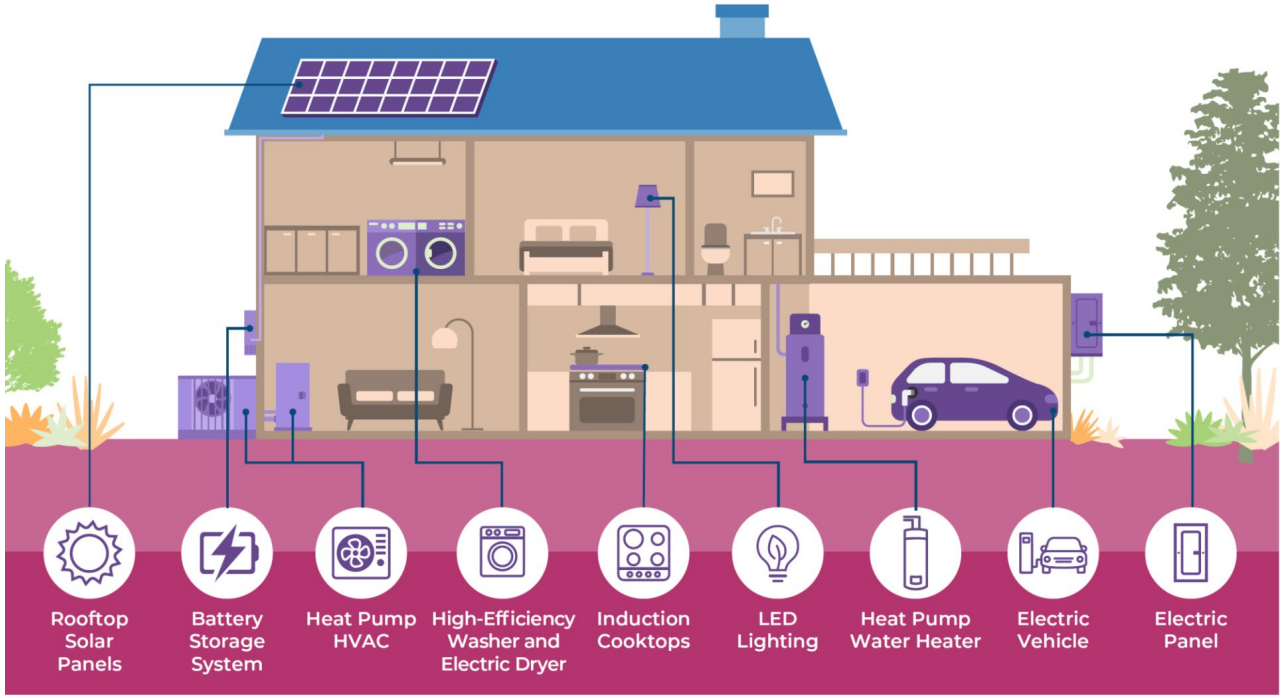
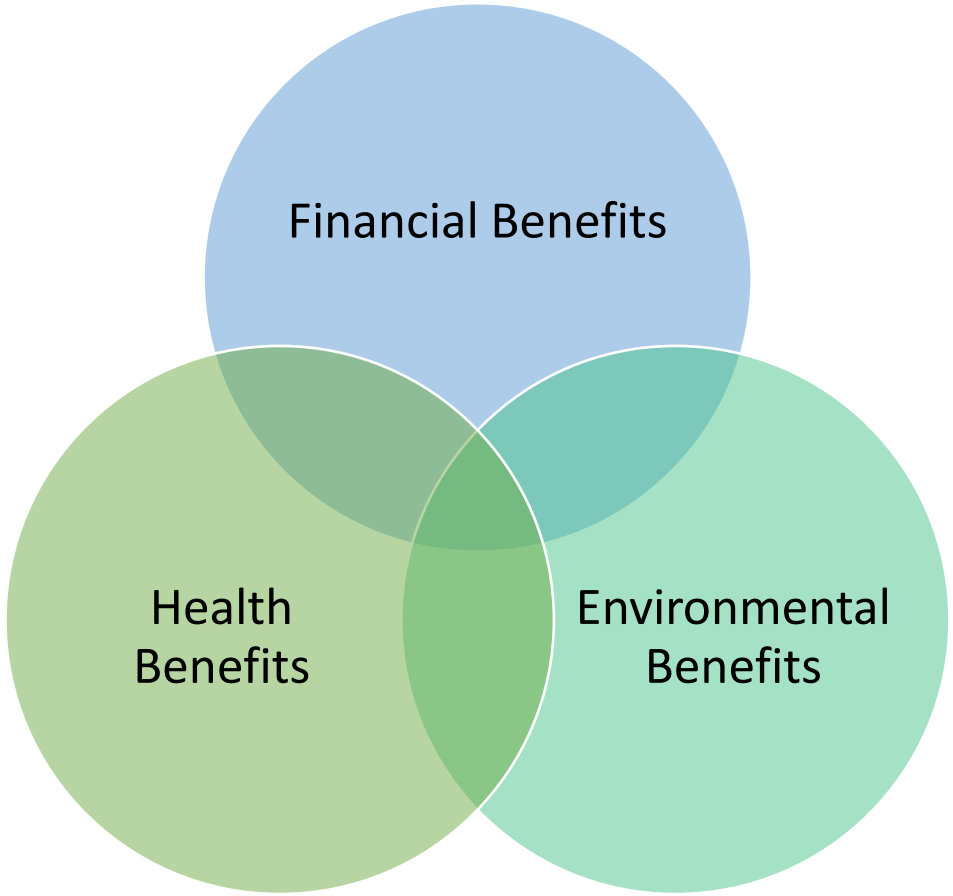


Photo Credit: City of Palo Alto Utilities

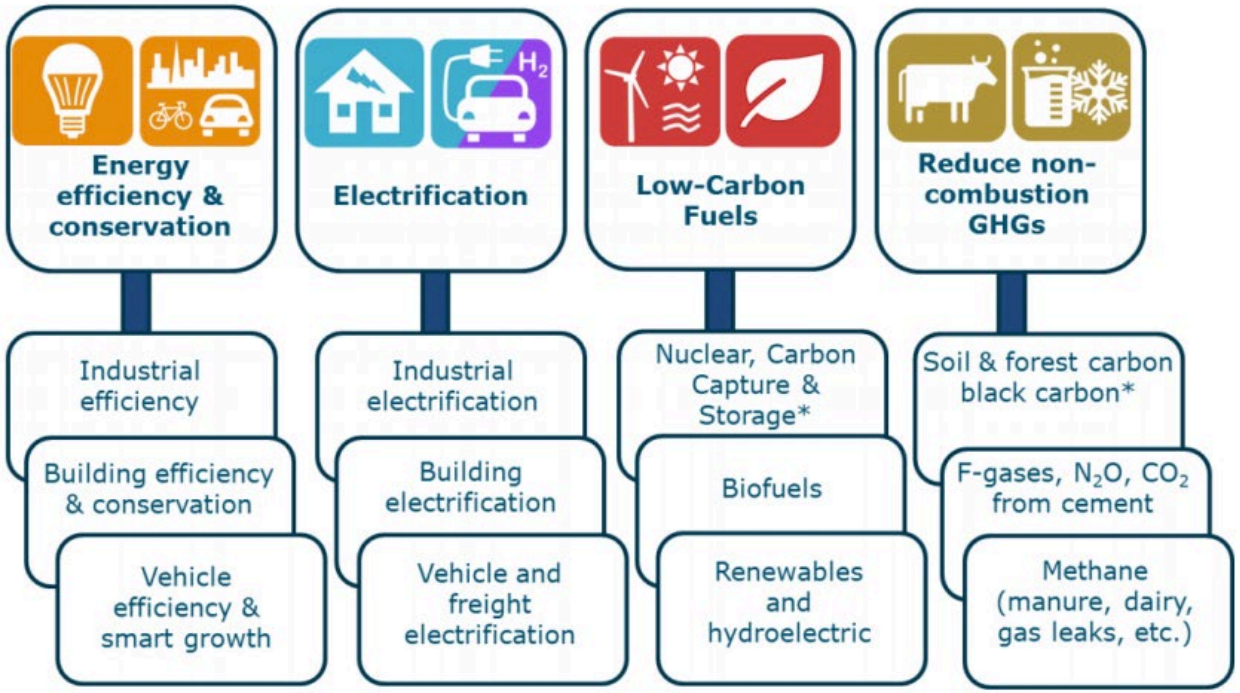
Why Building Electrification?

- Offers financial, health, and environmental benefits.
  - Better for indoor air quality
  - Electric appliances are more efficient than gas counterparts (saves money)
  - Electric appliances can be powered by clean energy (carbon-free/renewable)



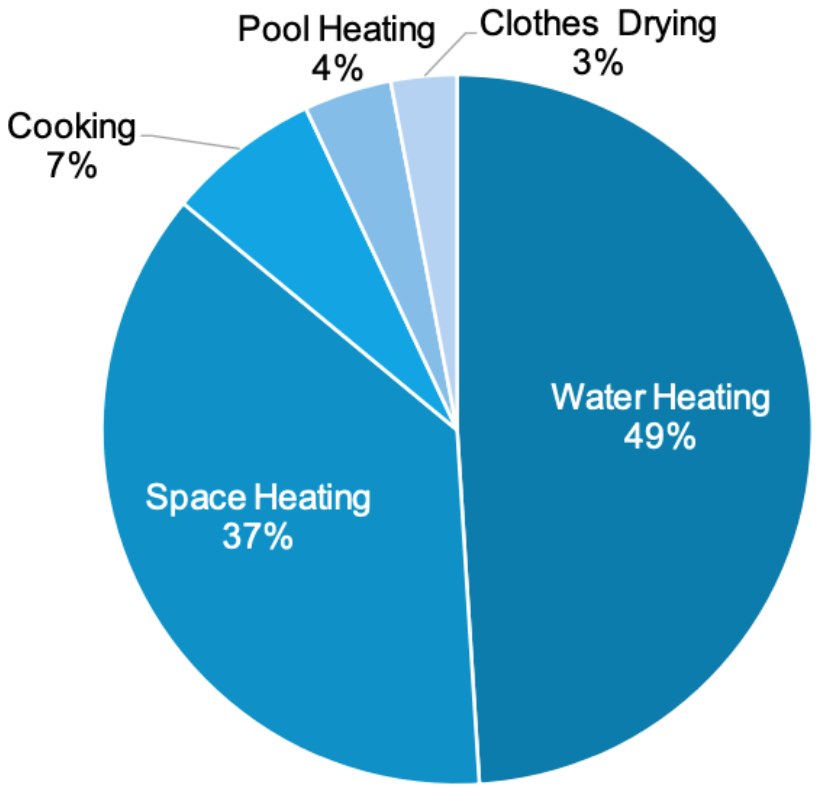
Electrification Compared to Fossil Fuels

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

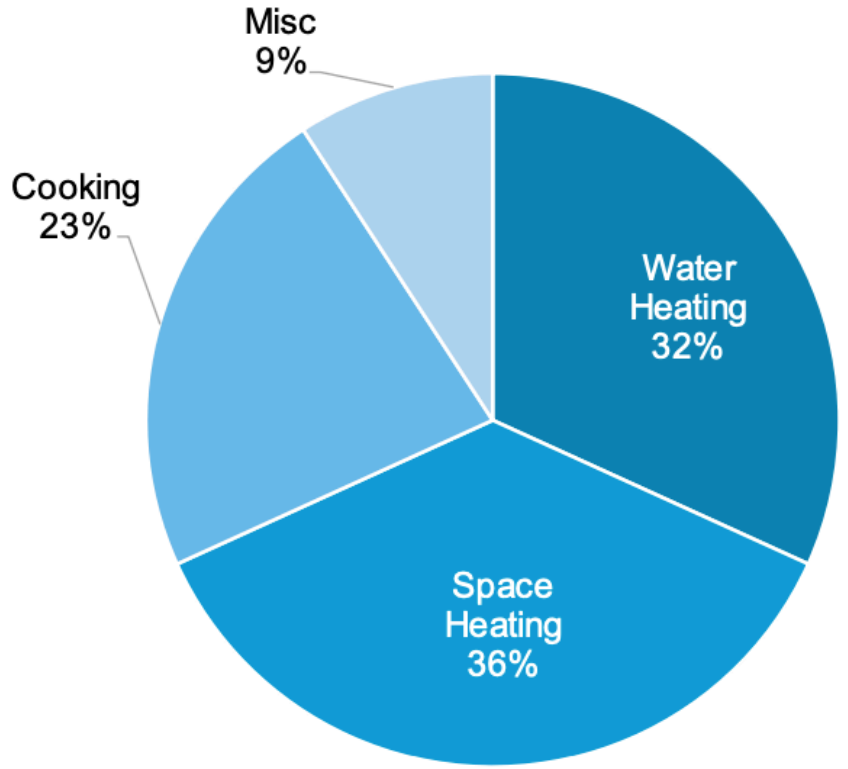


Sources: 1) AB3232 Decarbonization Assessment 2021 2) CA Energy Commission 2018 3) CPUC 2021

California Buildings Gas Usage



Residential



Non- Residential

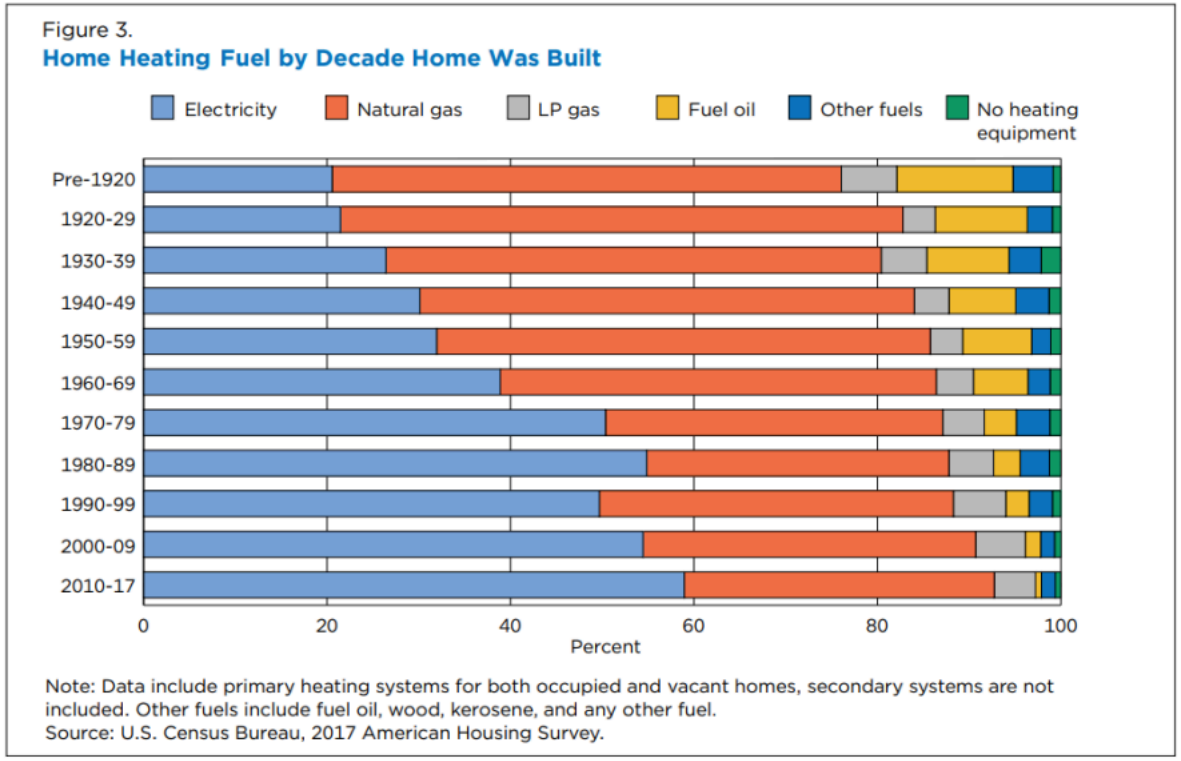
2009 Residential Appliance Saturation Survey

2006 California Commercial End Use Survey

Electric is already the majority

Of national new construction homes:

- 60% use electric space heating
  - 40% of which are heat pumps
- 55% use electric water heating
- 62% use electric cooking
- 75% use electric clothes drying



Sources: 1) 2017 American Community Survey 2) 2017 IEA Heat Pump Conference Proceedings

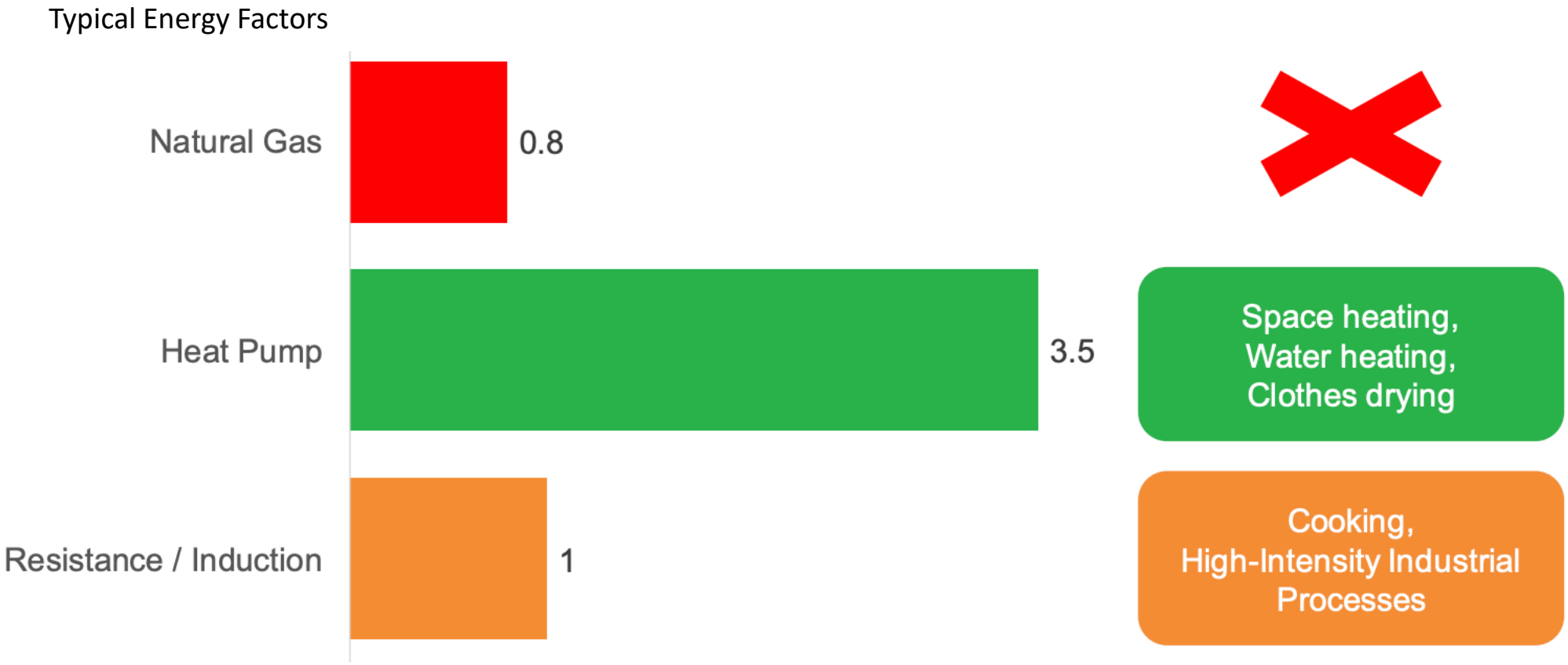
Equipment

	Space Heating	Water Heating	Cooking	Clothes Drying
Residential				
Commercial				

Source: BayAreaReachCodes.Org

Equipment Efficiency

Energy Efficiency Comparison of Technology

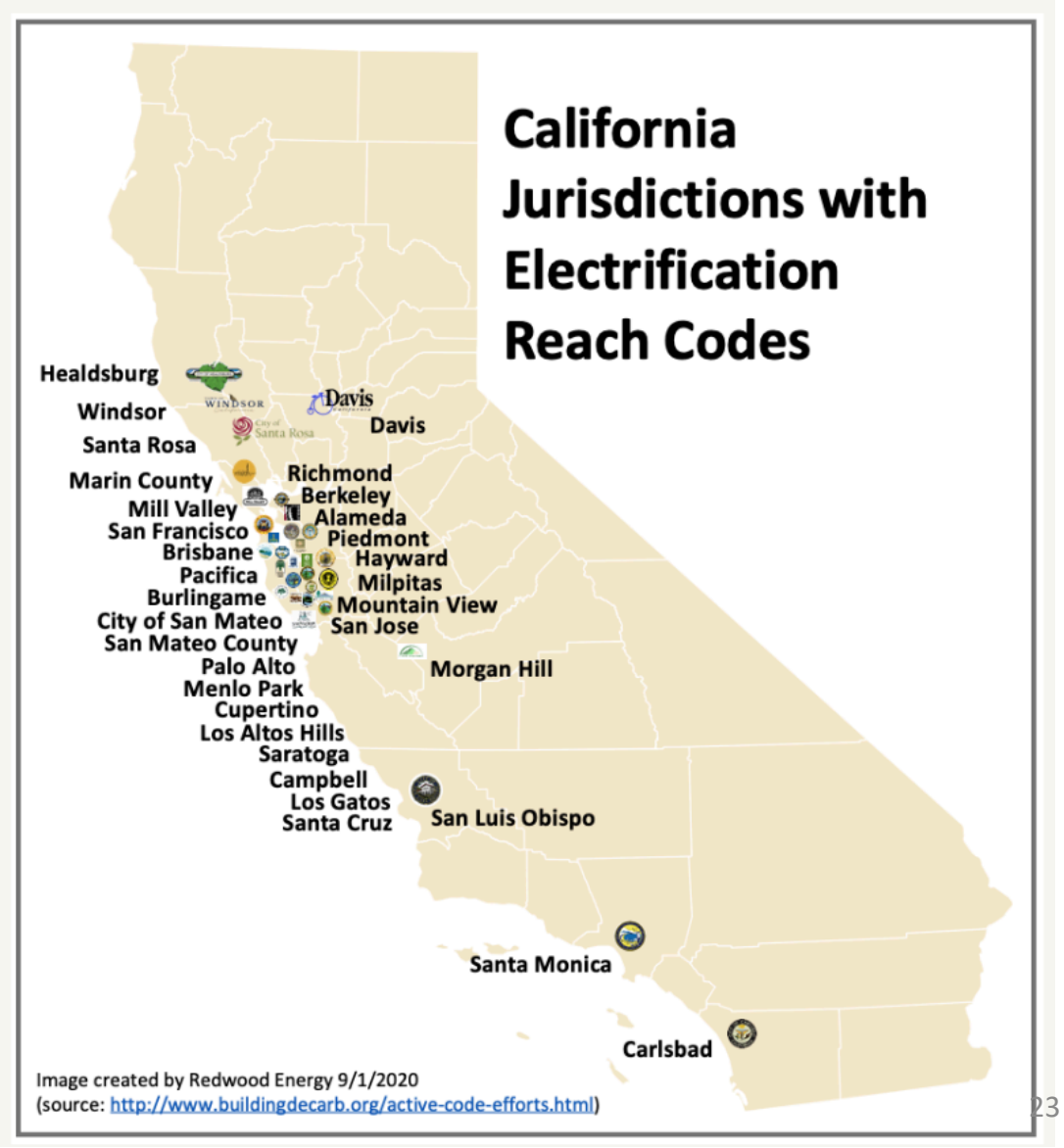


Source: BayAreaReachCodes.Org

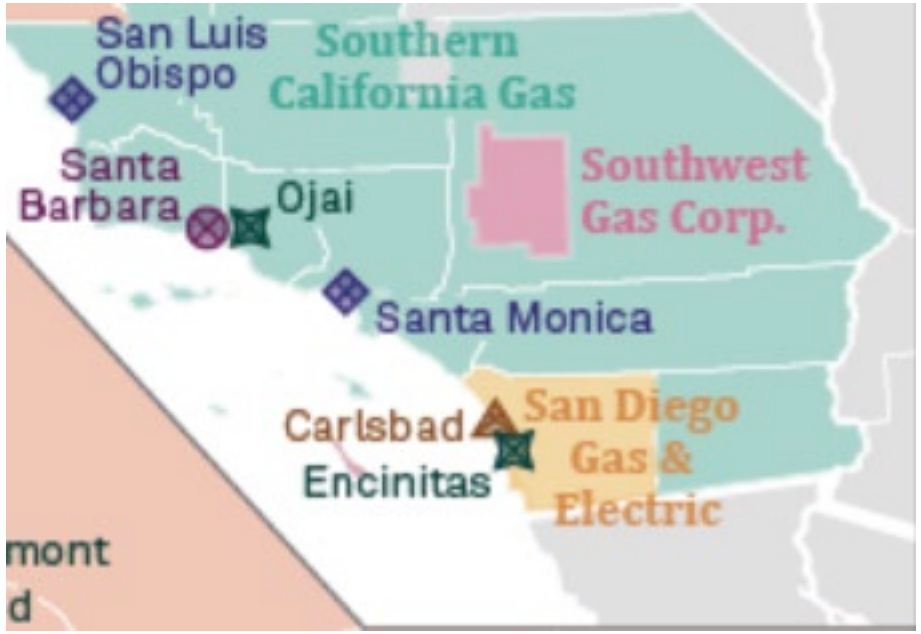
ELECTRIFICATION REACH CODES

Adoption of Electrification Reach Codes

- 54 California Jurisdictions (as of 12/10/21)
- Variety of policy approaches to reach codes:
  - All-Electric Only Whole Building
  - All-Electric Only Specific Systems
  - Electric-Preferred
  - Electric Vehicle Charging Infrastructure



Neighbors with Local Reach Codes



Highlighted local cities:

- Santa Monica (electric Preferred, PV, EV)
- West Hollywood (PV, Cool Roofs)
- Ojai (All Electric)
- Los Angeles County (Cool Roofs)
- City of Los Angeles (All Electric)

Source: S&P Global

2022 CALIFORNIA ENERGY CODE HIGHLIGHTS

2022 California Energy Code: Highlights

Residential

- Heat pumps = prescriptive baseline
  - Residential: space heating or water heating
  - Performance credit for all-electric design
- Pre-wiring required for gas appliances
- Higher ventilation rate for gas stoves
- Energy storage systems (ESS) ready

Nonresidential

- Heat pumps = prescriptive baseline
  - Nonresidential: water and/or space heating for most building types
  - Performance credit for all-electric design
- Solar PV prescriptive
  - Requirements based on building type
- Battery Storage system prescriptive
  - Requirements based on building type

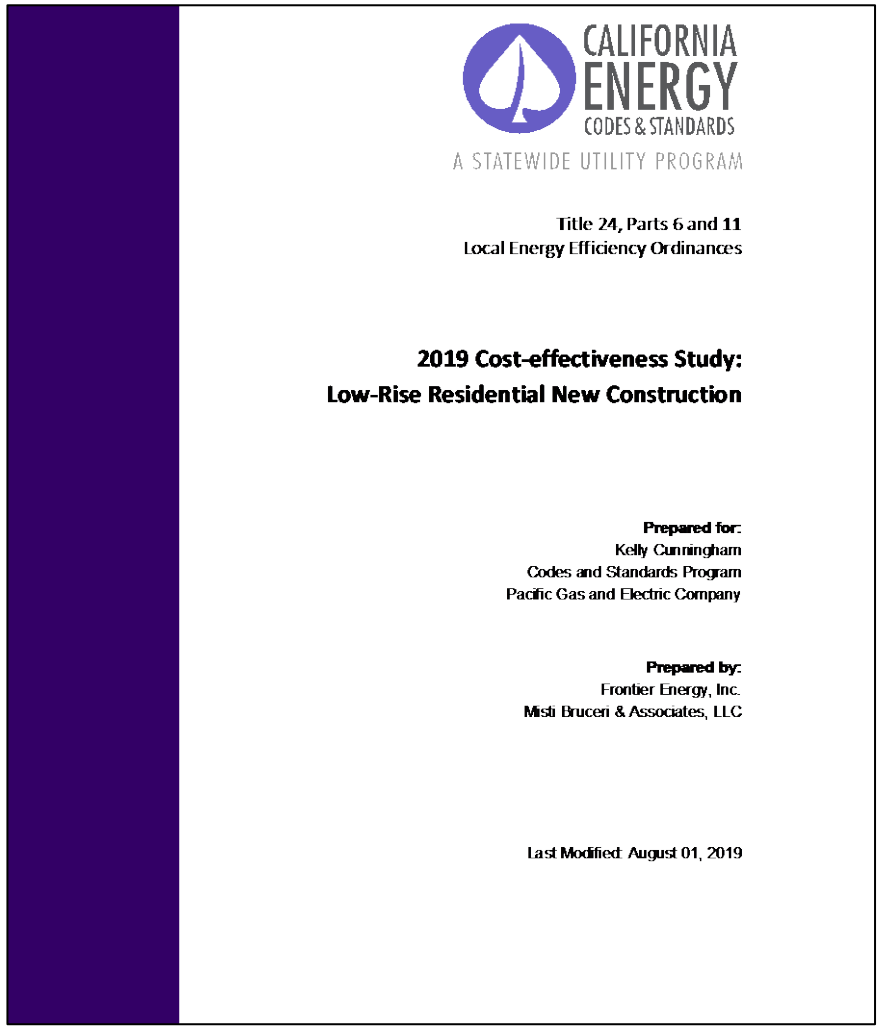
2022 STATEWIDE REACH CODES INITIATIVE

2022 Statewide Reach Codes: Updates

- Preliminary C/E results for new single-family, new multi-family, and new nonresidential are published now.
- Final results anticipated to be available at the end of August 2022.
- Additional C/E Studies coming soon:
  - Electric Pool Heating analysis
  - Accessory Dwelling Unit (ADU) analysis is underway
- Statewide Reach Codes Webinar Series:
  - Reach code implementation – **Upcoming on 9/27**

Cost-Effectiveness Study Overview

- C/E Study required for local amendments to California Energy Code
- Two metrics/methodologies
  - “On-bill” (individual consumer, utility rates)
  - ”Time Dependent Valuation” (code, societal)
- Jurisdiction makes final determination if reach code is cost-effective
- May not preempt Federal appliance standards
- Measures assembled into packages


CALIFORNIA ENERGY CODES & STANDARDS

A STATEWIDE UTILITY PROGRAM

Title 24, Parts 6 and 11
Local Energy Efficiency Ordinances

2019 Cost-effectiveness Study:
Low-Rise Residential New Construction

Prepared for:
Kelly Cunningham
Codes and Standards Program
Pacific Gas and Electric Company

Prepared by:
Frontier Energy, Inc.
Misti Bruceri & Associates, LLC

Last Modified: August 01, 2019

2022 REACH CODE PATHWAYS

Triggers & Buildings Impacted by Reach Code

Triggers
- New Construction

Building Types Impacted
- New Residential Single-family and ADUs
- New Multi-family
- New Non-residential
  - Hotel
  - Office
  - Retail
  - Restaurant

Exemptions for building types
- H or I Occupancy Types
- Existing Buildings

Ordinance Pathways: New Construction

	☑ Efficiency	☑ Electric-Preferred	☑ Electric Only	☑ Electric Only	☑ Electric Only Plus Efficiency
			Electric Only	Natural Gas Moratorium	
Mechanism 	Energy Code	Energy Code	CALGreen	Jurisdictional authority	Jurisdictional authority or CALGreen plus Energy Code
Requires 	All new construction exceeds minimum energy code	Only mixed fuel buildings exceed minimum energy code	All new construction is electric only	No new gas infrastructure (Hookups or Piping)	All new construction is electric only AND exceeds minimum
Considerations 	Simplicity, preserves choice, specific measures	Preserves choice, lower GHG savings	Must be renewed	Longest lasting	Biggest impact, must be renewed

2022 Statewide Reach Codes: Residential Exceptions

- Emergency backup power
- MF Residential building projects that have approved entitlements before the effective date may use fuel gas for water heating systems
- New swimming pools and spas
- New indoor and outdoor fireplaces
- Water heating or space heating in ADUs
- Outdoor BBQs
- When combustion equipment is allowed, require electric ready

- Waivers
  - For cost burden
  - For technical infeasibilities
- Other exemptions
  - By building occupancy
  - By appliance type
  - By % of remodel

2022 Statewide Reach Codes: Non-Residential Exceptions

- Emergency backup power
- Commercial kitchens located in a place of public accommodation
- Hotels/motels w/ 80+ guestrooms may utilize fuel gas in on-site commercial clothes drying equipment
- If all-electric is not feasible, local enforcing agency may grant modifications
- New swimming pools and spas
- New indoor and outdoor fireplaces
- Outdoor BBQs
- When combustion equipment is allowed, require electric ready

- Waivers
  - For cost burden
  - For technical infeasibilities
- Other exemptions
  - By building occupancy
  - By appliance type
  - By % of remodel

ELECTRIFICATION REACH CODE STRATEGY

Reach Code Policy Considerations

- Reach Code Adoption Approach
  - Natural Gas Moratorium
  - All-Electric Reach Code
  - Electric Preferred Reach Code
  - Electric Only Plus Efficiency Reach Code
  - Efficiency Reach Code
- Applicable Systems and Appliances
  - Whole Building
  - Specific Appliances
    - Heat Pump Water Heater
    - Cooking Appliance
    - Electric Dryer
    - Heat Pump Space Heating and Cooling

Reach Code Policy Considerations

- Building Types Impacted
  - New Residential Single-family and ADUs
  - New Multi-family
  - New Non-residential
    - Hotel
    - Office
    - Retail
    - Restaurant
- Exemptions for building types
  - H or I Occupancy Types
  - Existing Buildings
- Nonresidential Specific Exemptions
  - Commercial Kitchen
  - Laboratory
  - Generator
- Residential Specific Exemptions
  - Attached ADU/JADU
  - Fireplaces
  - Swimming Pool
  - Generator

COMMON REACH CODE QUESTIONS

Common Questions

Will my existing building be affected?

- No. The City is considering reach codes for new construction.

In Culver City, electricity costs more per unit of energy than natural gas, so electrification may result in higher utility bills.

- Starting January 1, 2020, all new homes are required to have on-site solar PV.
- Thereby resulting in either a net-zero electrical bill or a very small electrical bill to cover any excess consumption.
- Starting January 1, 2022, new nonresidential buildings will also be required to install solar PV.

Common Questions:

How would I cook meals in a 100% electrified building during an electrical power outage?

- During an electrical power outage, all electric appliances would be compromised, unless the building is equipped with solar PV, a batter back-up system or an electrical generator.
- Since all new residential buildings are now required to have solar PV, electrical cooking appliances would only be compromised at night or on days without sufficient sun exposure.

Electricity is not a clean power source. Off-site power generation produces pollution.

- Culver City is supplied by a high proportion of renewable electrical energy.
- CA Energy Code requires all homes to be provided with on-site solar PV systems sized to address the annual energy demand of the building.
- Culver City participates in the local CCA that delivers a percentage of power generated by renewable sources.

Common Questions

Which target building categories are most prevalent in Culver City?

- Low-rise residential buildings account for most existing and new buildings in Culver City.
- Low-rise buildings include single family residential buildings and apartment buildings up to 4-stories in height.

Will reach codes increase the cost of utilities?

- The cost-effectiveness analyses demonstrate that if there is any increased costs associated with implementation of a local standard, the associated savings in energy cost would eventually result in cost recovery during the reasonable life expectancy of the building.

DISCUSSION

Next Steps

- Develop local code based on statewide model code language and community and industry feedback. (ongoing)
- State finalizes the cost-effectiveness studies. (August 2022)
- Bring reach code to City Council. (October 2022)
- Undergo state approvals and begin local enforcement. (Dec. 2022-January 2023)

THANK YOU.

Speakers:

ID360

SUPPLEMENTAL SLIDES