Reach Codes 101: Introduction

Reach Code Newcomers Series 2022

Agenda

- Welcome
- What is a Reach Code?
- Why Reach Codes?
- Overview of Reach Code Process
- Introduction to Building Codes
- Summary of Legal Requirements
- 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

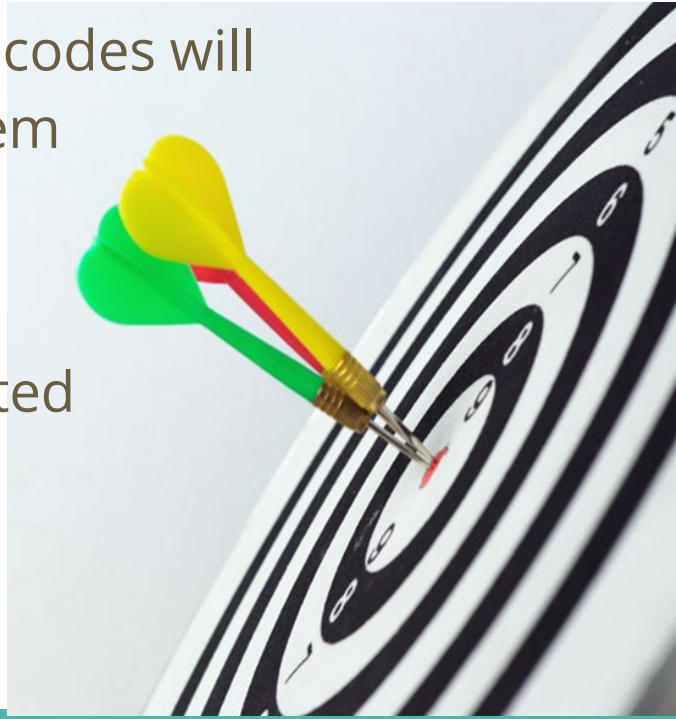
Purpose of this webinar series

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?



California Energy Commission & Reach Codes

Local Ordinance Exceeding the 2019 Energy Code

Local jurisdictions wishing to enforce locally adopted energy standards are required to apply to the California Energy Commission (CEC) for approval. Local jurisdictions must establish a process to adopt building efficiency ordinances that are more stringent than statewide Energy Code requirements.

Expand All

Approved Local Energy Standards +

How to Apply +

CONTACT

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RELATED LINKS

Docket Log (19-BSTD-06)

CATEGORIES

Program
Building Energy Efficiency Standards - Title 24

What is a Reach Code?

A reach code is an ordinance adopted by a local government that requires something in addition to the requirements of the state's building code.

Some types of reach codes

Subject Addressed	"Base" Code Exceeded
Water Efficiency	CALGreen (Title 24 Part 11)
Green Materials & Recycling	CALGreen (Title 24 Part 11)
Electric Vehicle Charging	CALGreen (Title 24 Part 11)
Energy (buildings)	**Energy Code (Title 24 Part 6)**

Green Building Ordinance: Local ordinance with one or more requirements for improving the environmental performance of buildings

A few words about CALGreen (Title 24 Part 11)

- Also known as the California Green Building Standards Code
- Contains *mandatory* requirements for all types of buildings, such as:
  - Stormwater runoff & drainage requirements
  - Grading requirements
  - EV charging requirements
  - Water efficiency
- Contains *voluntary* measures in appendices
  - Including Tier 1 and Tier 2 energy reach codes
  - Local governments can adopt these voluntary tiers as reach codes – everything we'll talk about in this webinar series still applies

CALGreen is online at: https://codes.iccsafe.org/content/CGBC2019P4

And a few words about the Energy Code (Title 24 Part 6)

- Also known as the California Building Energy Efficiency Standards
- Contains mandatory measures for residential buildings (single family and multi-family) and non-residential buildings
- Also sets an "energy budget" for each type of building
  - Buildings can comply by incorporating specific measures (prescriptive path)
  - Or comply by determining a customized approach that meets the energy budget (performance path)
- Reach codes can:
  - Require particular energy-related measures
  - Require a lower "energy budget"

The Energy Code and related documents are online at: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency

Varieties of Energy Reach Codes

Energy reach codes can address all types of buildings

- New buildings
- Existing buildings

- Single family homes
- Multifamily dwellings
- Commercial buildings
- Industrial buildings

And can also include many types of exemptions

- For specific buildings, like accessory dwelling units
- For specific equipment, like stoves
- For specific situations, like a historic or unique building

What is NOT a Reach Code?

CEQA Mitigation Measures

Required changes to a project in order to mitigate an environmental impact under the California Environmental Quality Act (CEQA)

Taxes or Fees

Taxes or fees imposed to pay for related improvements or impacts

Gas Bans or Phase Outs

Prohibitions against use of natural gas

Emissions Limits on Appliances (regional or state agencies)

Limits on the amount of certain types of emissions from appliances

… so we won't be discussing these during this webinar series

Why Reach Codes?

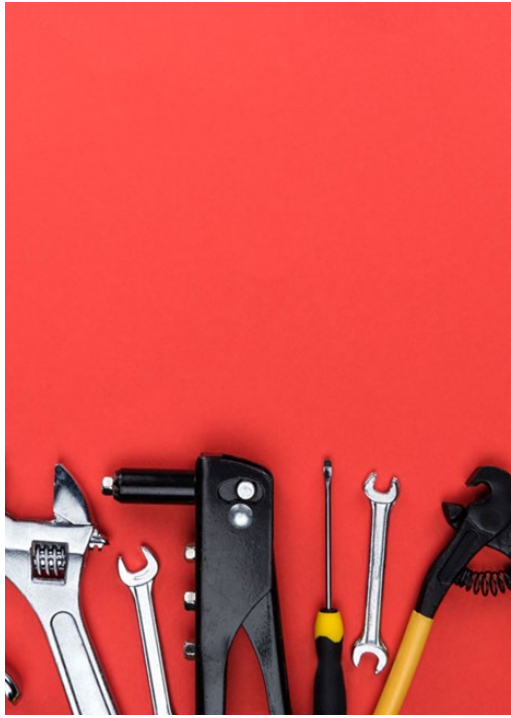
Reach codes are tools local governments can use to help them reach various policy goals.

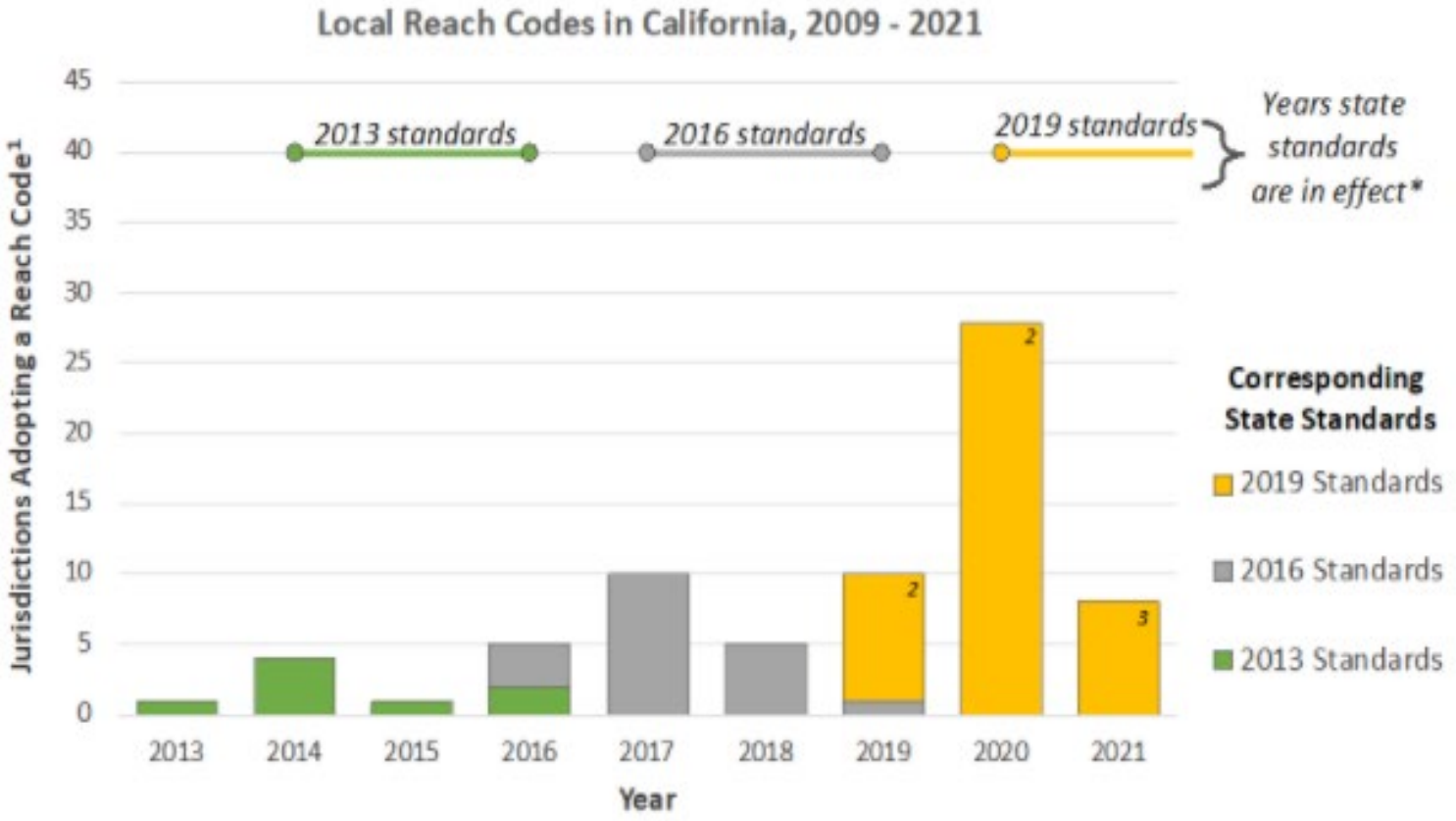
Energy reach codes:

- Save energy
- Reduce greenhouse gas emissions
- Help meet Climate Action Plan goals & state climate goals

Some reach codes:

- Save money over time
- Increase building resilience





[1] Some jurisdictions may adopt more than 1 reach code in a given year. Reach codes are counted in the year they are approved by the CEC.

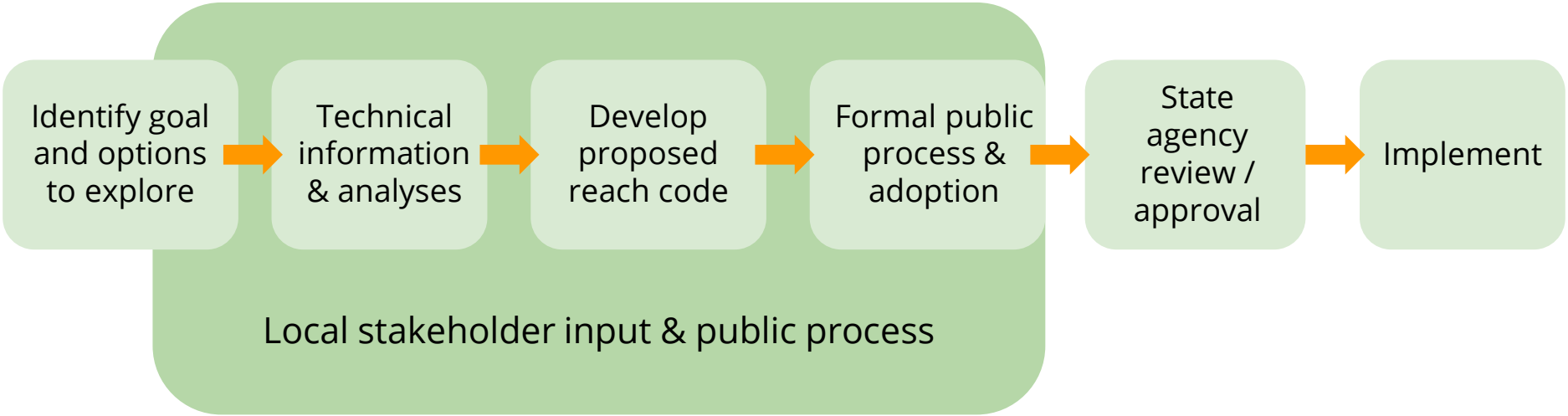
[2] Includes 4 local ordinances (3 in 2019 and 1 in 2020) implemented outside of the typical reach code adoption process (e.g., through local executive order) that impose building energy requirements similar to a local reach code.

[3] Includes only those reach codes approved by the CEC in 2021 through June.

* Some reach codes are adopted the year prior to the corresponding state standards go into effect.

Source: EPIC Energy Blog, 8/16/21

How does the reach code process work?



More information to come in Session 2!

Required State Agency Review

California Energy Commission (CEC)

- Once adopted, local governments need to submit reach codes, supporting materials, and findings to the CEC
- The CEC will have a comment period and consider the local reach code at a business meeting
- The CEC will approve the reach code if the local government demonstrated that it is cost-effective and finds that the reach code will not allow buildings to use more energy than the base code

(2019 Building Energy Efficiency Standards, Section 10-106 and Public Resources Code Section 25402.1(h)2)

Required State Agency Review

Building Standards Commission (BSC)

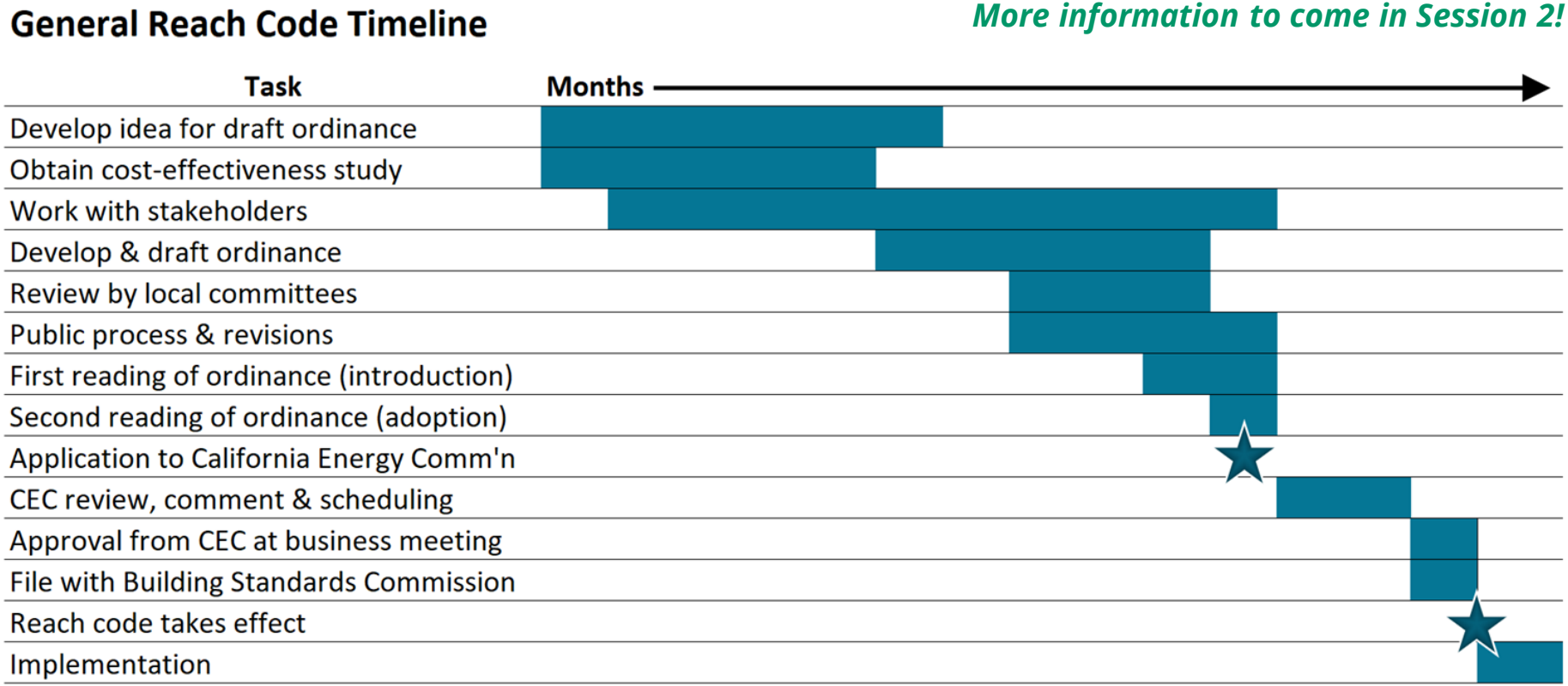
- Local governments also need to send adopted reach codes with the BSC
- Must include finding that the amendment is necessary because of local climatic, geological, or topographical conditions

  (Health & Safety Code, Sections 17958.7 & 18941.5)

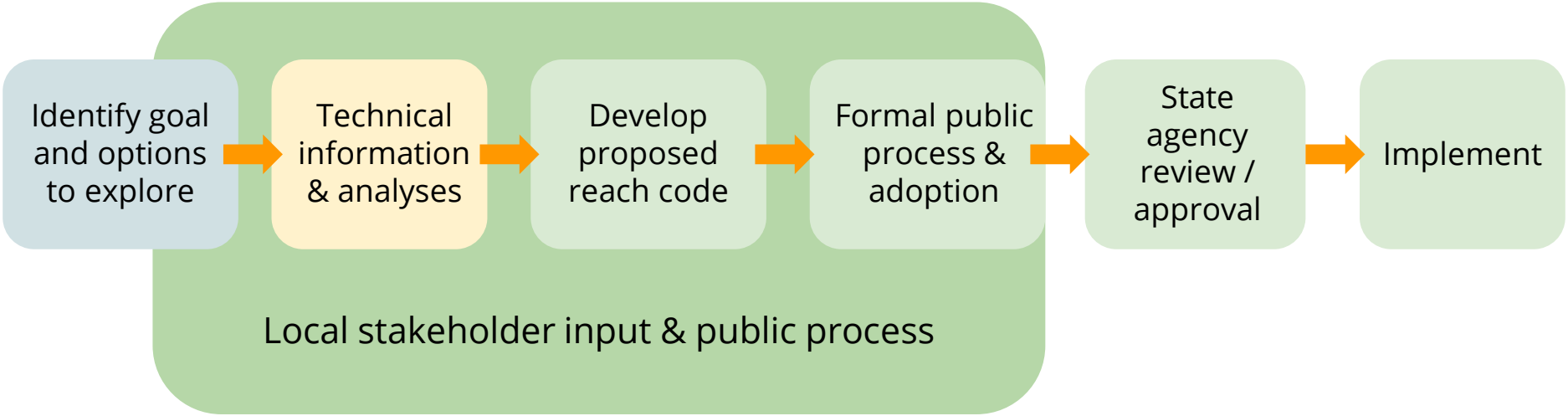
More information can be found here: https://www.dgs.ca.gov/BSC/Codes/Local-Amendments-to-Building-Standards---Ordinances

More specifically …

More information to come in Session 2!



Ways to start

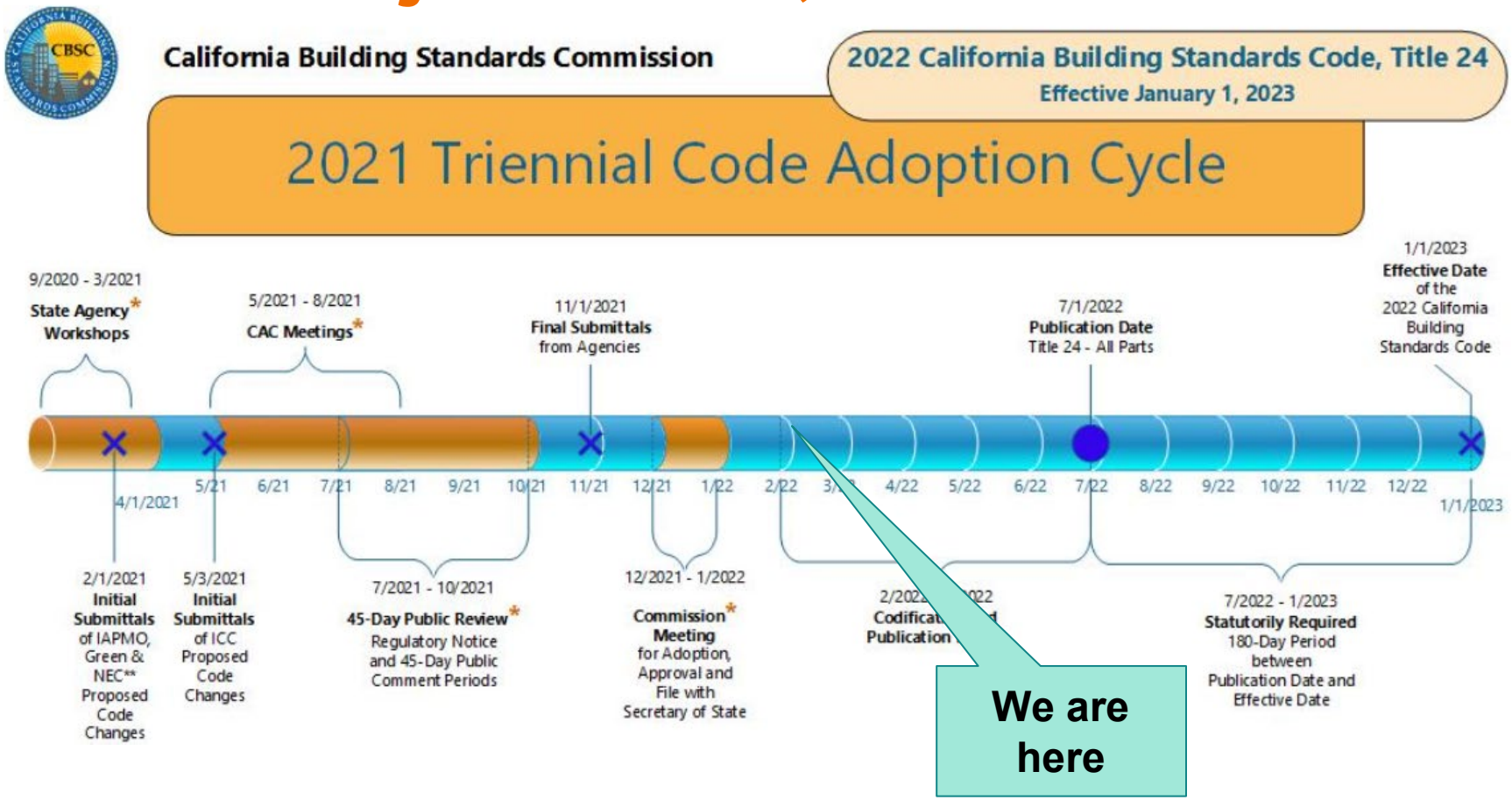


- Identify goals – General Plans, Climate Action Plans
- Explore options – Construction types and volumes, ordinance options
- Gather information – Existing cost-effectiveness analyses, model ordinances
- Talk with people – City staff, committees, community members, neighboring jurisdictions, developers, contractors

Any Questions about the What, Why, or How of Energy Reach Codes?

Building and Energy Codes 101

California Building Standards Code, Title 24



California Building Standards Code, Title 24

Part 1: CA Administrative Code	Part 7: VACANT
Part 2: CA Building Code Part 2.5: CA Residential Code	Part 8: CA Historical Building Code
Part 3: CA Electrical Code	Part 9: CA Fire Code
Part 4: CA Mechanical Code	Part 10: CA Existing Building Code
Part 5: CA Plumbing Code	**Part 11: CA Green Building Standards Code (CALGreen)**
Part 6: CA Energy Code	Part 12: CA Referenced Standards Code

Focus on Title 24, Part 6

- Scope includes single family, multifamily, nonresidential occupancies, some process loads (e.g., compressed air)
- Must be cost-effective
- Performance-based to allow flexibility
- Includes field verification requirements
  - (HERS Raters and Acceptance Testing Technicians)

Some Important Energy Code Terms

- CEC Compliance Software (CBECC-Res, CBECC-Com)
- Time Dependent Valuation (TDV)
- Basecase
- Climate Zones
- Compliance Margin

Local Governments May Amend the Building Code

Enabling legislation:

- All Parts (1-12):
  - HSC 18941.5*: building standards shall not limit the authority of a local jurisdiction to adopt more restrictive standards
- Part 6:
  - PRC 25402.1**: Energy Commission may not prohibit enforcement of local codes for which jurisdiction has completed required adoption process
  - Sec. 10-106: documents requirements for the local standards and the approval application package.

* HSC 18935 - 18944.18: CA Health and Safety Code, Division 13, Chapter 4, CA Building Standards Code
**PRC 25400-25405.6: CA Public Resources Code, Division 15, Chapter 5 Energy Resources Conservation

Legal Requirements for Amendments to the Building Standards (Title 24)

All Parts (1-12):	In addition, Part 6 (Energy):
Finding that amendment is reasonably necessary because of local climatic, geological, topographic or environmental conditions	More stringent than state requirements (diminution of energy consumption)
Compliance with local requirements for ordinances	Cost-effective (as determined by local jurisdiction)
Compliant with all state laws	May not preempt federal regulations (appliances for which there is a federal efficiency standard)
Updated for each new building code cycle	
Filed with the State	
Accessible to the public	

Disclaimer: *We're not lawyers and nothing here is legal advice. Local government staff should discuss any questions with their city or county attorney.*

CBSC: Guide for Local Amendments of Building Standards

Cost-effectiveness

A cost-effective investment yields greater benefits (savings) than costs over the lifecycle of an analysis.

- A cost-effectiveness study is required for amendments to the Energy Code
- City or County makes final determination whether a reach code is cost-effective.
- "On-bill" (individual consumer) and Time Dependent Valuation (code, societal) methodologies
- Acquiring a study
  - Use statewide studies available at no cost
  - Request a new study (electric pool heating)
  - Complete your own analysis

More about cost-effectiveness in Session 3!

A note about Time Dependent Valuation (TDV):

TDV values energy use differently depending on the fuel source (natural gas, electricity, and propane), time of day, and season. Electricity used (or saved) during peak periods has a much higher value than electricity used (or saved) during off-peak periods.

Source: Horii, B., E. Cutter, N. Kapur, J. Arent, and D. Conotyannis. 2014. "Time Dependent Valuation of Energy for Developing Building Energy Efficiency Standards."

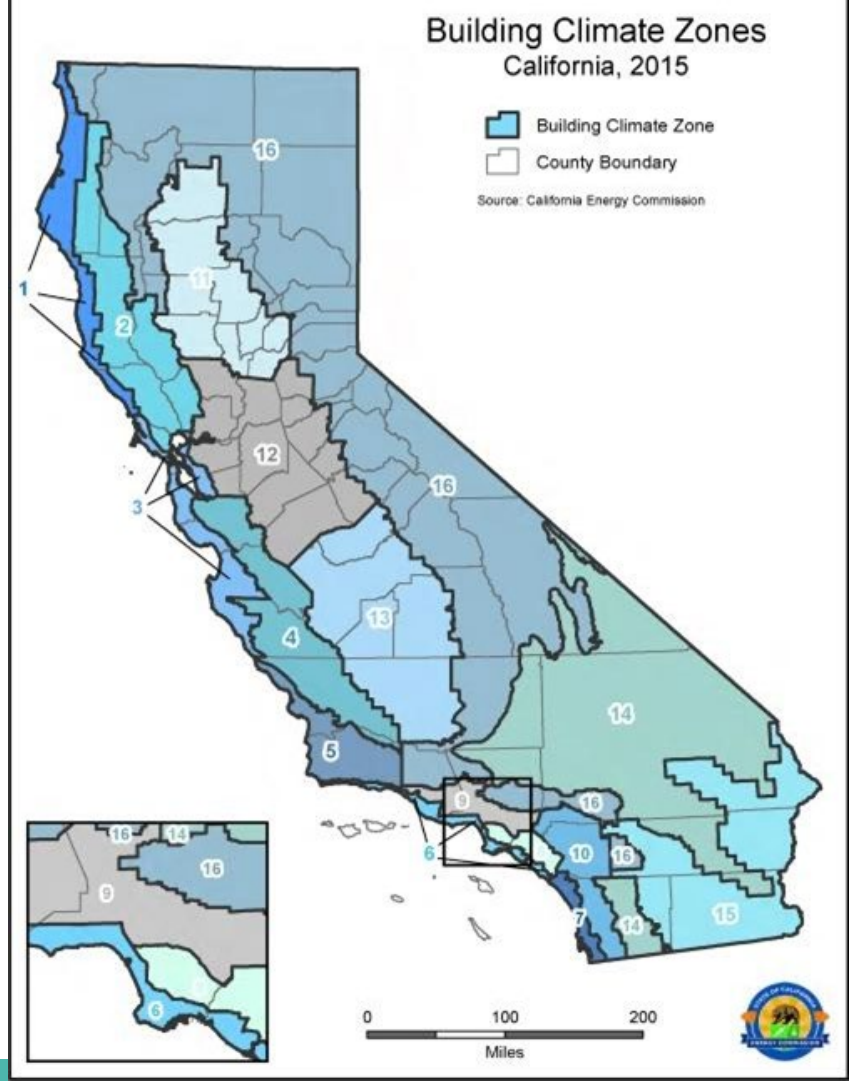
Climate Zones & Cost-Effectiveness

Reach codes can be adopted anywhere in California

The reach code will need to work for that climate zone

- If a measure is *cost-effective* for one city in a climate zone, it will (usually!) be cost-effective for the entire climate zone
- Something that is cost-effective in one climate zone may not be cost-effective in another

CEC Climate Zone tool & zip code search: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/climate-zone-tool-maps-and



What is Federal Preemption?

- DOE regulates efficiency of approximately 60 types of appliances, including HVAC and water heating equipment
- DOE establishes one uniform federal standard for each product
  - Preempts state & local ability to regulate those appliances
- Applies to state and local building codes concerning the energy efficiency or energy use of covered products
  - Exception for building codes that meet specific requirements

More about preemption in Session 3!

Any Questions about the Building Code or Legal Requirements?

Key Points and Takeaways

- Energy reach codes are amendments to (and reach above the requirements of) the California Energy Code (Title 24, Part 6)
  - Energy reach codes are subject to the legal requirements for all amendments to the building code, and also requirements specific to Energy Code amendments
  - When the Energy Code is updated (every 3 years), reach codes must also be updated (or at least re-adopted)
- Other policy tools are available that have different legal bases & requirements
- The reach code process can take 6-12 months depending
  - Don’t forget to factor in CEC approval and BSC filing!
  - Session 2 will focus on the reach code process

Key Points and Takeaways

- Local governments must make certain findings when adopting energy reach codes:
  - Reach code is cost-effective (Session 3 to focus on cost-effectiveness analyses)
  - Reach code is more stringent than state requirements
  - Reach code is needed for local climatic, geological, or topographical reasons
- Local reach codes may not pre-empt federal appliance standards
- First steps are to determine goals, gather technical information, and start informal discussions with stakeholders

Resources

- California Energy Commission Local Ordinance page: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency-3
- Local Energy Codes: https://localenergycodes.com/
- BayREN Energy Policies & Reach Codes: https://www.bayren.org/local-government-resources/energy-policies-reach-codes
- California Building Standards Commission Local Amendments page: https://www.dgs.ca.gov/BSC/Codes/Local-Amendments-to-Building-Standards---Ordinances

Next Webinar & Contact Information

Next webinars in series

Reach Code Process and Timing – February 22
Cost-Effectiveness Analyses – March 22
Reach Code Ordinance Options – April 26
Implementation – September 27

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