



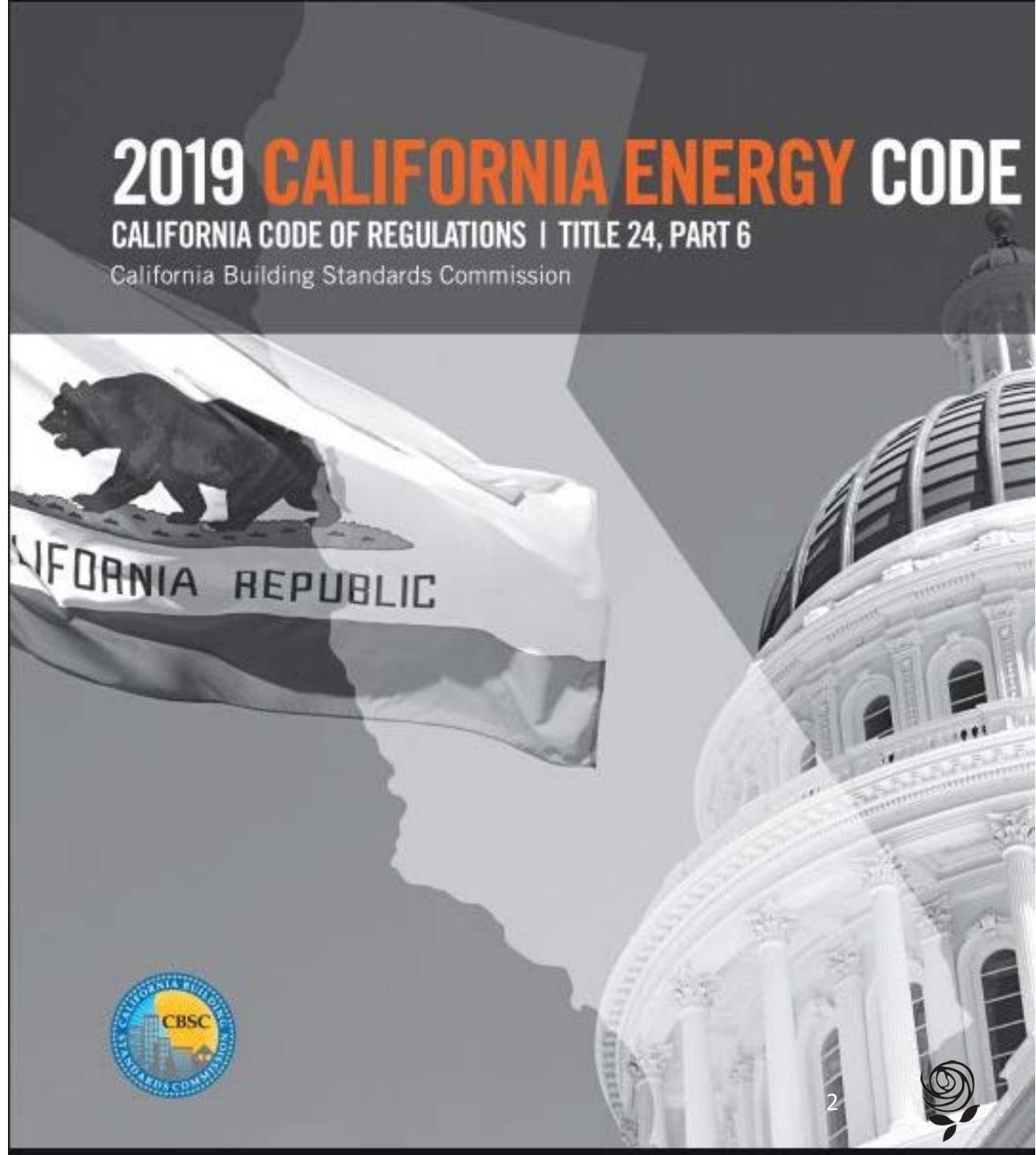
2019 California Energy Code  
Introduction of Ordinance for  
All-Electric Reach Code  
*California Code of Regulations Title 24, Part 6*

**CITY COUNCIL | NOVEMBER 19, 2019**

Jesse Oswald, Chief Building Official

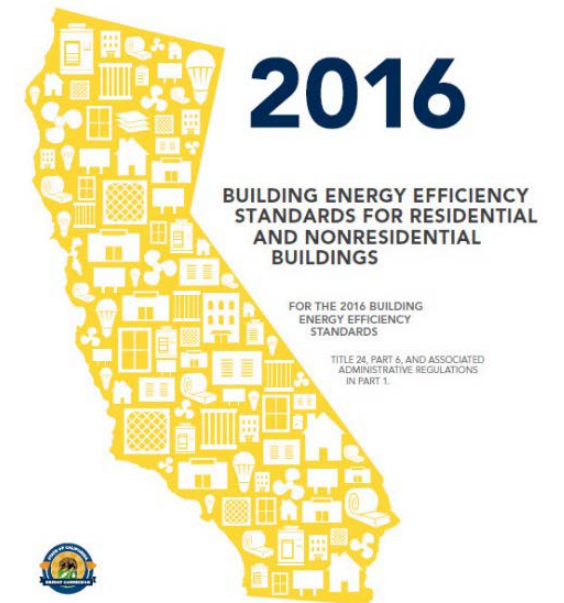
# BACKGROUND

- California's building standards are published in their entirety every three (3) years. The California Energy Code is included in this series of standards.
- The California Energy Code is a statewide standard for all public and private building construction in California.
- The 2019 California Energy Code (California Code of Regulations, Title 24, Part 6) published as of July 1, 2019.
- Effective date of the 2019 Code will be January 1, 2020 upon successful adoption.
- Local jurisdictions may amend the State Energy Code only upon an express finding that such amendments can be supported with analysis showing that the proposed local standard will save more energy than the current provisions in Title 24, Part 6, and be cost-effective.



# California Energy Code

- Part 1 - California Building Standards Admin Code
- Part 2 - California Building Code
- Part 3 - California Electrical Code
- Part 4 - California Mechanical Code
- Part 5 - California Plumbing Code
- **Part 6 - California Energy Code**
- Part 7 - California Elevator Safety Construction Code
- Part 8 - California Historical Building Code
- Part 9 - California Fire Code
- Part 10 - California Code for Building Conservation
- Part 11 – California Green Building Standard



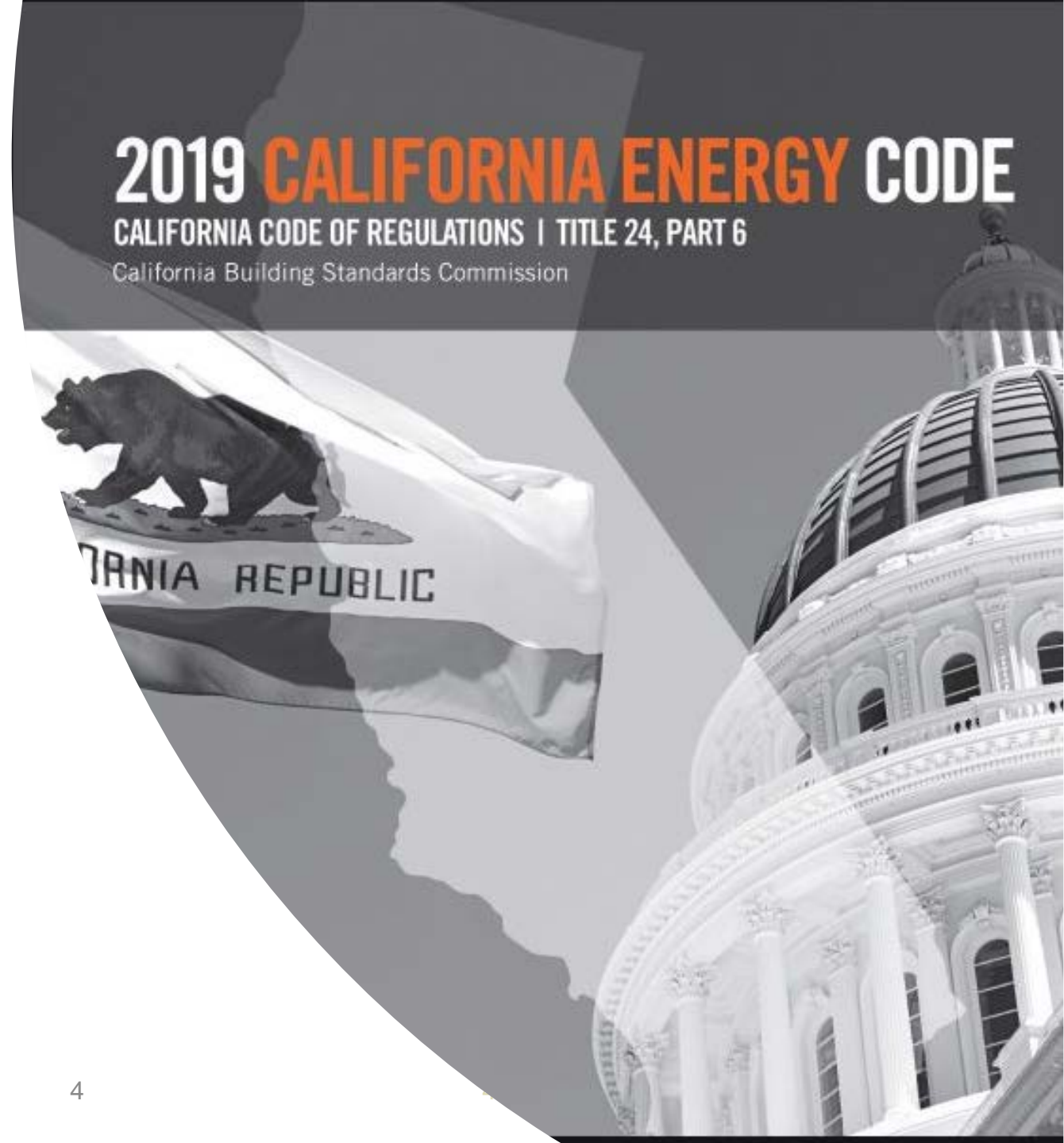
JUNE 2015  
CIC 400.2015-037 CWP  
CALIFORNIA ENERGY COMMISSION  
Edmund G. Brown, Jr., Governor



# New Code (2019)

Effective January 1, 2020

- Lighting efficiencies increased – no incandescent lighting (few exceptions)
- 2 x 6 exterior wall framing – standard – (R-20 insulation)
- Efficiency for doors must now be addressed (not just windows)
- HERS Verified Quality Insulation Installation prescriptively required
- PV installation prescriptively required
- Natural Gas is not eliminated from code



# BUILDING ENERGY EFFICIENCY STANDARDS

CALIFORNIA ENERGY COMMISSION

The state's energy efficiency standards for new buildings and appliances have saved consumers billions in lower electricity and natural gas bills. The 2019 Building Energy Efficiency Standards for residential buildings includes a first-in-the-nation requirement to install solar photovoltaic systems. Other features enable homes to reduce the electricity demand from the grid, helping to reduce energy bills and the carbon footprint.

**\$19,000**

SAVINGS OVER A  
30 YR. MORTGAGE

INITIAL COST  
\$9,500



## SOLAR PHOTOVOLTAIC SYSTEM

Promote installing solar photovoltaic systems in newly constructed residential buildings. The systems include smart inverters with optional battery storage. This will increase the self-utilization of the electricity generated to power the home's electricity loads including plug-in appliances. California is the first state in the nation to require smart systems on homes.



## DEMAND RESPONSE COMPLIANCE OPTIONS

Encourage battery storage and heat pump water heaters that shift the energy use of the house from peak periods to off-peak periods. Utilities moving to time-of-use pricing assists the grid to meet the state's climate change goals and helps homes reduce energy bills.



## HEALTHY INDOOR AIR QUALITY

Enable using highly efficient filters that trap hazardous particulates from both outdoor air and cooking and improve kitchen ventilation systems. Moving air around and in and out of the home while filtering out allergens and other particles makes the home healthier.



## BUILDING ENVELOPE

Strengthen insulation in attics, walls and windows to improve comfort and energy savings. Keeping the heat out during the summer and warm air during the winter makes a home more resilient to climate change.



# What is a Reach Code?

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In California, Title 24 of the Code of Regulations sets the building code standards for all jurisdictions statewide. However, local governments can **adopt more stringent requirements**, which are known as reach codes.

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All energy efficiency-related reach codes must be proven to be **cost effective**.

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All reach codes must go through a **public process** for approval.

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All reach codes must be **re-approved with each Energy Code update** (~every 3 years)



Options  
Evaluated by  
Climate Action  
Subcommittee

Direction:  
All Electric Reach  
(6/11/2019)

### All Electric Ready

- Would require that buildings be wired for an eventual switch from gas/propane to electric appliances.

### All Electric Favored

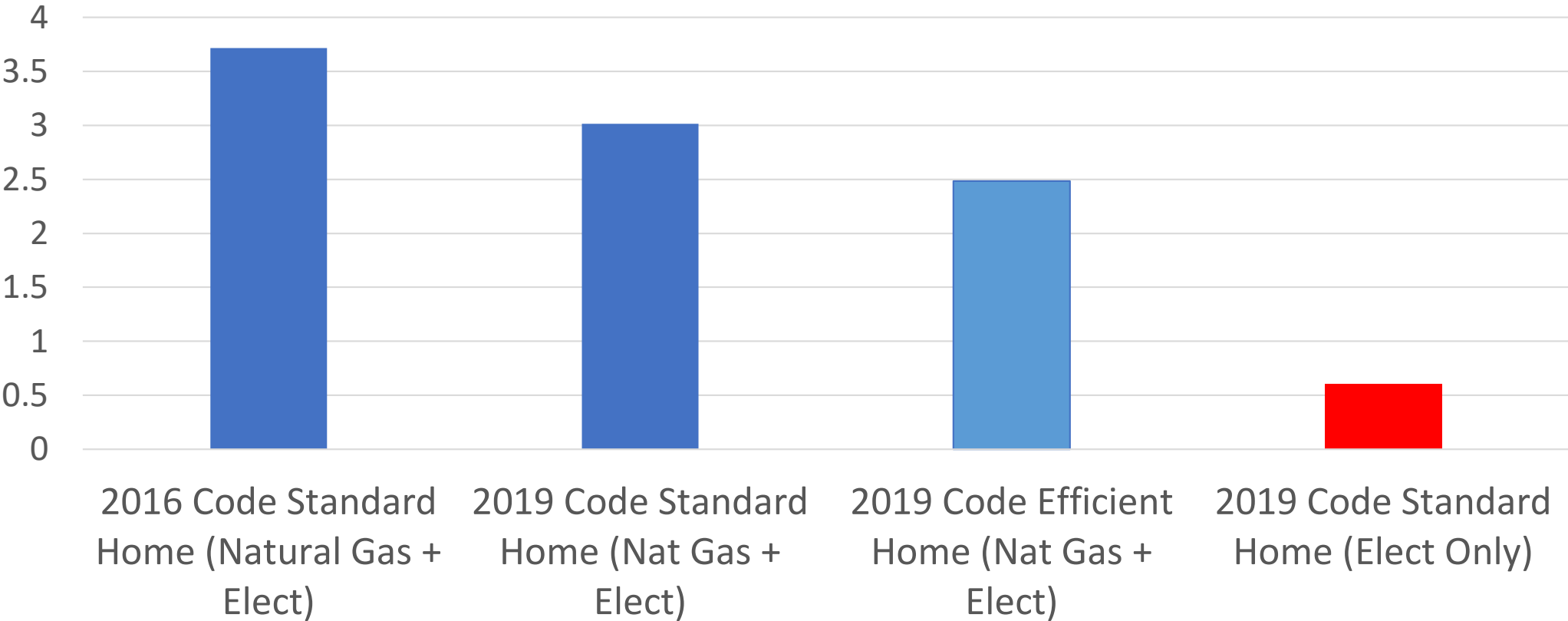
- Would require homes using natural gas/propane must meet energy efficiency requirements of CalGreen Tier 1 (approximately 10-20% more efficient than energy code requirements) and be pre-wired for eventual switch to electric appliances

### All Electric Reach

- Would require new single family residential and low-rise (less than 4 story) construction to use only high efficiency electric appliances.



# Yearly Per Home Emissions (MT CO2e)





# Review and Analysis of Cost Effectiveness Study

Cost-Effectiveness Study for Low-Rise Residential New Construction, prepared by Frontier Energy, Inc., Misti Bruceri & Associates, LLC as showing the implementation of an All-Electric Reach Code is cost-effective

- Reviewed By:
  - Bay Area Regional Energy Network (BayREN),
  - Regional Climate Protection Authority (RCPA) and
  - Sonoma Clean Power
- Accepted By:
  - The California Energy Commission (CEC)



# Costs Effectiveness Study Results for All Electric

Required Measure	Average Cost versus Gas Appliance
Heating/Cooling (Heat Pump)	\$221 in cost savings
Water Heating (Heat Pump Water Heater)	\$0 in cost savings
Dryer (Electric)	\$0 in cost savings
Cooking (Induction)	\$0 in cost savings
Electric Service Upgrade	<b>\$600 in additional costs</b>
Gas Infrastructure	\$6,550 in cost savings
<b>Total Costs</b>	<b>\$6,171 in cost savings</b>



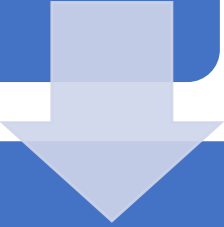
Source: California Energy Codes and Standards Cost-effectiveness Study - Low-Rise Residential

([https://localenergycodes.com/download/800/file\\_path/fieldList/2019%20Res%20NC%20Reach%20Codes](https://localenergycodes.com/download/800/file_path/fieldList/2019%20Res%20NC%20Reach%20Codes))




# 2017 Fire Rebuild Exemption

AB 178 was signed by Governor Newsom on September 06, 2019. It exempts those rebuilds that were in an area proclaimed by the Governor as an emergency, prior-to January 2, 2020 from installing photovoltaic systems required at the time of repair, restoration, or replacement.



The Cost-Effectiveness Study accepted by the CEC requires the installation of photovoltaic (PV) systems on Low-Rise Residential new construction to be cost-effective.



Therefore, the Chief Building Official has determined that the exemption by AB 178 for the installation of PV systems for rebuilds EXEMPTS 2017 Fire Rebuild projects from an All-Electric Reach Code.

# Outreach & Input

## Building Officials Input

- Updates for the 2019 California Energy Code were developed at monthly Redwood Empire Association of Code Officials (REACO) meetings *(Includes Building officials from jurisdictions in Marin, Sonoma, Napa and Mendocino Counties)*

## Rebuild Meetings:

- North Coast Builders Exchange “Regular Builder/Building Officials Meeting”
- Coffey Strong meeting
- Coffey Neighborhood (AKA Standing Homes) group meeting
- 10/15/2019 Redwood Empire Rebuilders Association (RERA) Annual Dinner Presentation

## Public Outreach:

- City Website: [www.srcity.org/AllElectric](http://www.srcity.org/AllElectric)
- Multiple radio interviews and articles in the Press Democrat

## Public Meetings:

- 06/11/2019 – Climate Action Subcommittee
- 07/16/2019 – City Council Building and Fire Code adoption study session
- 08/14/2019 – North Coast Builders Exchange “What the Impending New Building Codes and Electric-only Residential Construction Requirements Will Mean to YOU!”
- 09/03/2019 – Climate Action Subcommittee
- 09/19/2019 – Builder Roundtable @ UFO
- 09/24/2019 – City Council Building and Fire Code adoption study session



# 50+ Cities and Counties Interested in 2020 Electric Reach Codes

- Cloverdale
- Santa Rosa
- Windsor
- Petaluma
- Berkeley
- Fremont
- Hayward
- San Mateo
- Arcata
- Carlsbad
- Cupertino
- Davis
- Healdsburg
- Hillsborough
- Los Altos
- Los Angeles
- Monte Sereno
- Mountain View
- Marin County
- Menlo Park
- Morgan Hill
- Oakland
- Pacifica
- Palo Alto
- Portola Valley
- San Francisco
- San Jose
- San Luis Obispo
- Santa Clara County
- Santa Cruz
- Santa Monica



# RECOMMENDATION

It is recommended by the Planning and Economic Development Department that the Santa Rosa City Council:

- 1) Adopt an Ordinance by reference the 2019 California Energy Code (California Code of Regulations, Title 24, Part 6) as adopted and amended by the State of California, and further amended based on local conditions, for use in Chapter 18-33 of the Santa Rosa City Code. To modify the Santa Rosa City Code to reflect the new model code.

