

# City of San Diego Climate Advisory Board

Date: September 10, 2024

Chair: Tanisha-Jean Martin

# Announcements



- The Current Bicycle Master Plan is over 10 yrs old
- There have been significant advances in bicycle facility planning and design
- The BMPU will promote and advance the goals of other related City plans, including our CAP mode share goal of 10% daily trips made by bike by 2035
- The BMPU will have a focus on Equity and All Ages and Abilities

Please visit [www.sandiego.gov/bmpu](http://www.sandiego.gov/bmpu)



# Climate Advisory Board

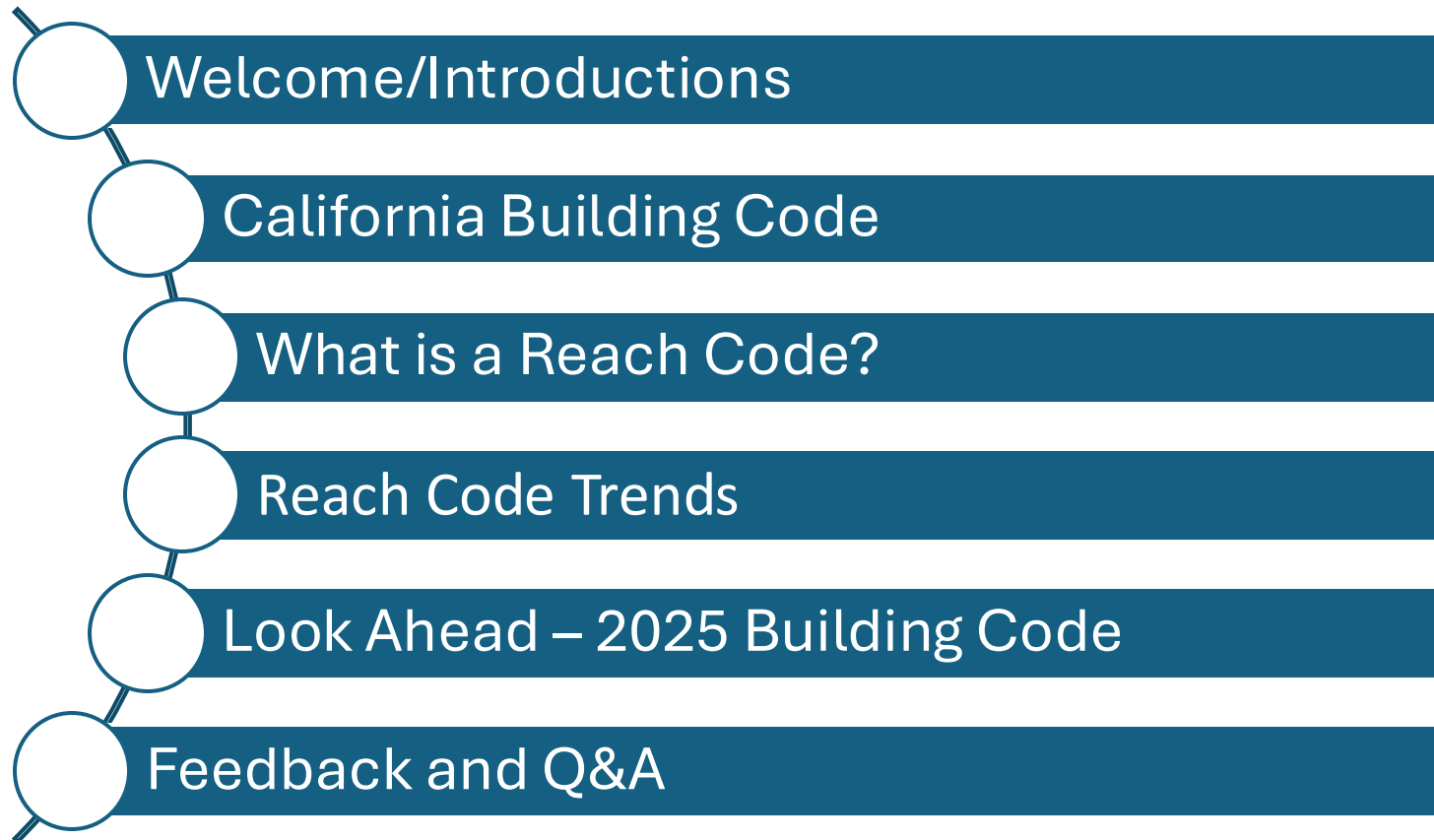
## High-Performance Reach Code for Building Decarbonization

Josh Dean  
Jeff Hoyos

9/10/2024



# Agenda





# Net Zero by 2050: A roadmap for the global energy system

International  
Energy Agency

Greentech Media

## California's Big 2021 Decision on Grid Reliability: Expand Supply or Manage Demand?

Right now, the California Public Utilities Commission is moving more ... sources of load flexibility to participate in California's power markets, ...  
Jan 5, 2021

Home » Policy » Economics » It's Hard to Quantify the Value of Resilience Accurately, but California is Trying

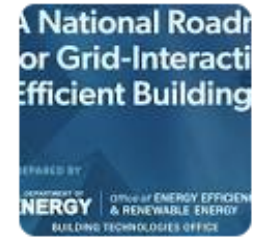
## It's Hard to Quantify the Value of Resilience Accurately, but California is Trying



Environment + Energy Leader

## DOE Issues Roadmap for Grid-Interactive Efficient Buildings

The guidance, titled "A National Roadmap for Grid Interactive Efficient Buildings," outlines the DOE's goal for the nation to triple the energy ...  
6 days ago



Utility Dive

## Biden decarbonization focus shifts to buildings, with goal to ...

DOE's GEB goals include tripling the energy efficiency and demand flexibility of the buildings sector by 2030, relative to 2020 levels.  
6 days ago



The World Economic Forum

## Why the US Inflation Reduction Act is an important step in the transition to clean energy | World Economic Forum

On August 16, 2022, American President Joe Biden signed the Inflation Reduction Act (IRA) into law. The IRA is the most meaningful climate...



CALIFORNIA  
ENERGY COMMISSION



CALIFORNIA  
natural  
resources  
AGENCY

California Energy Commission  
**DRAFT STAFF REPORT**

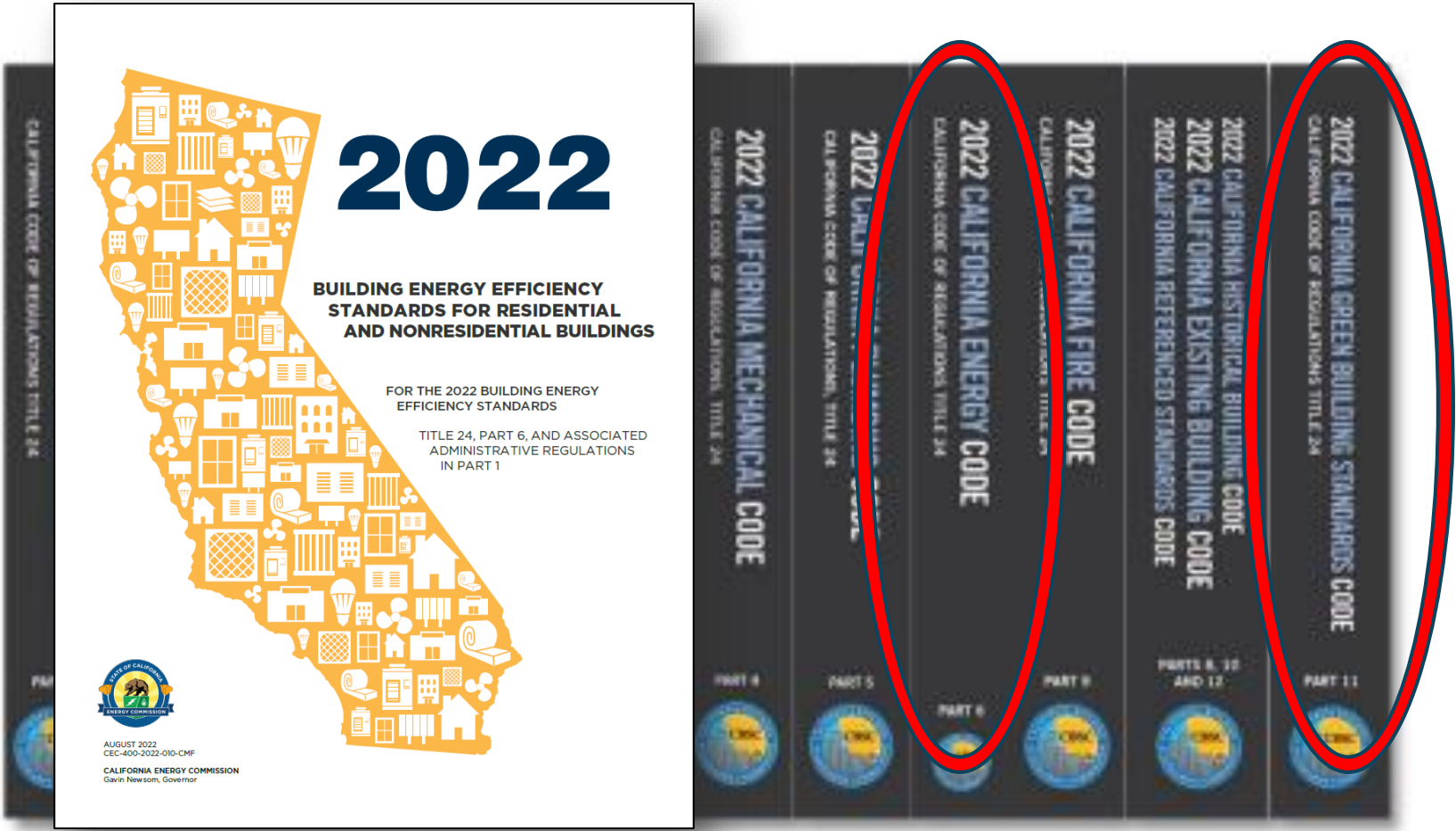
## California Building Decarbonization Assessment

Electrek

## EGEB: California governor earmarks \$3.2B to boost EV adoption

California governor Gavin Newsom's new proposal devotes \$3.2 billion to boost EV adoption goals. John Kerry says technology to reduce ...  
1 week ago

# California Building Standards Commission



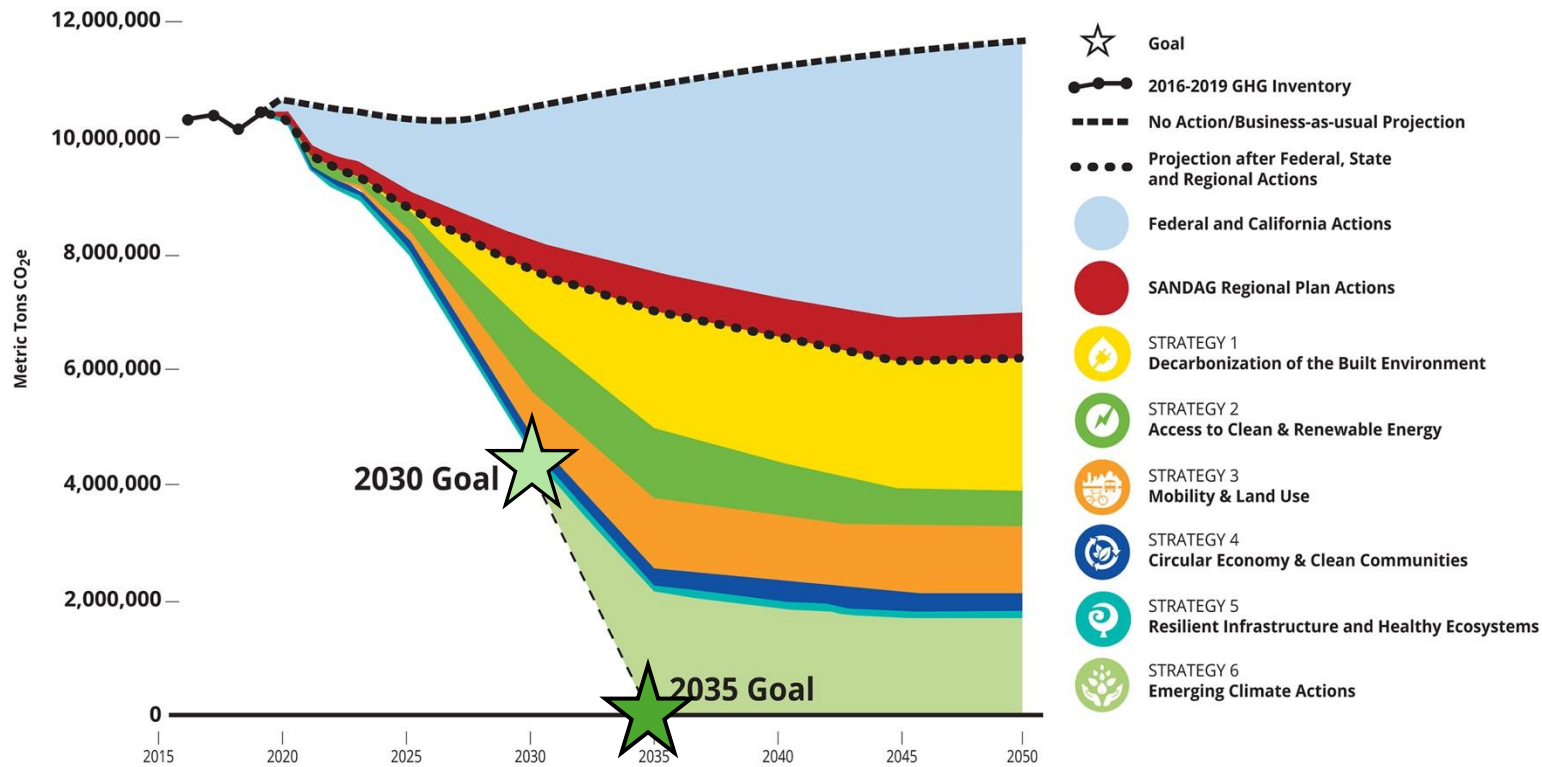
The 2022 edition of Title 24



# What does the State Require?

California State Code Update: 2022 Building Energy Code and CALGreen (effective 1/1/2023)			
Building Type	Single-Family (SF)	Multi-Family (MF)	Non-Residential
EV Capable	X	X	X
EV Ready	X	X	X
Electric Vehicle Supply Equipment (EVSE)	X	X	X
Electric Space Heating		Standard has shifted to Heat Pump Technology	
Electric Water Heating	Baseline Case is a Heat Pump		
Cooking/Appliances	Electric Hook-ups Required		

# SD A Pathway to Net Zero Emissions - City of San Diego



A combination of federal, state and local actions are necessary to achieve Net Zero Emissions Goals



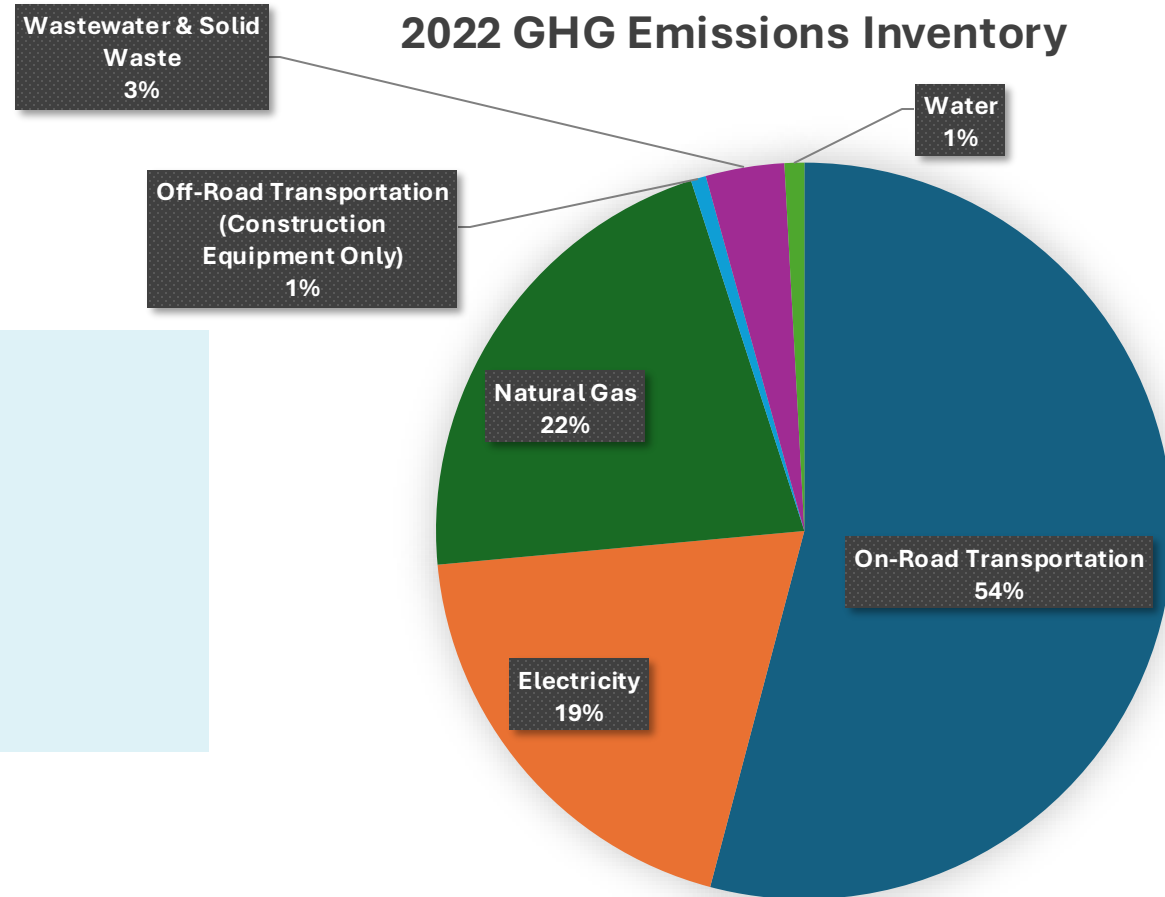
## Strategy 1:

# Decarbonization of the Built Environment

2030 Target	2035 Target
Phase out <b>45%</b> of natural gas usage from existing buildings	Phase out <b>90%</b> of natural gas usage from existing buildings
All-electric reach code starting 2023 at new residential and commercial development	
Phase out <b>50%</b> of natural gas usage in municipal facilities	Phase out <b>100%</b> natural gas usage in municipal facilities

# Why a San Diego “Reach Code”?

2022 GHG Emissions Inventory



**Buildings contribute to climate change:**

Figure 1: 2024 CAP Annual Report Draft

# What is a Reach Code?

Local building code that goes beyond the minimum requirements set by the state for **energy efficiency and energy performance** of New Construction buildings.

Reach codes can also indirectly **support reduction of GHG emissions** through requirements related to EV and electric readiness.



# Why adopt a Reach Code?

- Step towards meeting city's net zero goals
- Reduce GHG emissions from buildings
- Provide water and energy savings
- Improve indoor air quality



# All Electric Construction: Cost Savings

- All-electric homes are less expensive to build
- Save \$7,500–\$8,200 on construction costs
- All-electric medium office buildings in the study area were only slightly more expensive
- Avoided cost of not installing fossil-fuel infrastructure
- More cost effective to electrify upfront

# Reach Code Legal Challenges

**CRA v. Berkeley:** In April 2023, a three-judge panel from the Ninth Circuit Court of Appeals wrote that the City of Berkeley's reach code ordinance, which prohibited the installation of natural gas plumbing in new construction, was preempted by the Energy Policy and Conservation Act (EPCA).





# Implications of CRA v. Berkeley

As a result of the court striking down Berkeley's ordinance, cities cannot require all electric construction.

- January 2024 Ninth Circuit upheld its opinion
- Reach codes can incentivize, but not require, all electric new construction when cost effective.



# A Path Forward

- A single requirement
  - Applies to all-electric and mixed-fuel buildings alike
- Requirement is based on energy
  - Total Source Energy
- Same mechanism as CALGreen Tiers
- Must be cost effective



# High Performance Approach

- Requires higher energy performance for new single family, low-rise multifamily buildings, and ADUs
- Provides a strong metric for encouraging electrification AND providing grid/emissions benefits in projects with gas appliances
- Avoids potential for backsliding of efficient building envelope features
- Does not prohibit or penalize gas technologies
- Includes option to encourage use of Certified Energy Analysts to document compliance

# How to meet high-performance compliance:

- All-Electric Construction: Few or no additional efficiency measures
- Mixed-Fuel Construction: More significant measures
- Different margins for each building type in Climate 7 and Climate 10

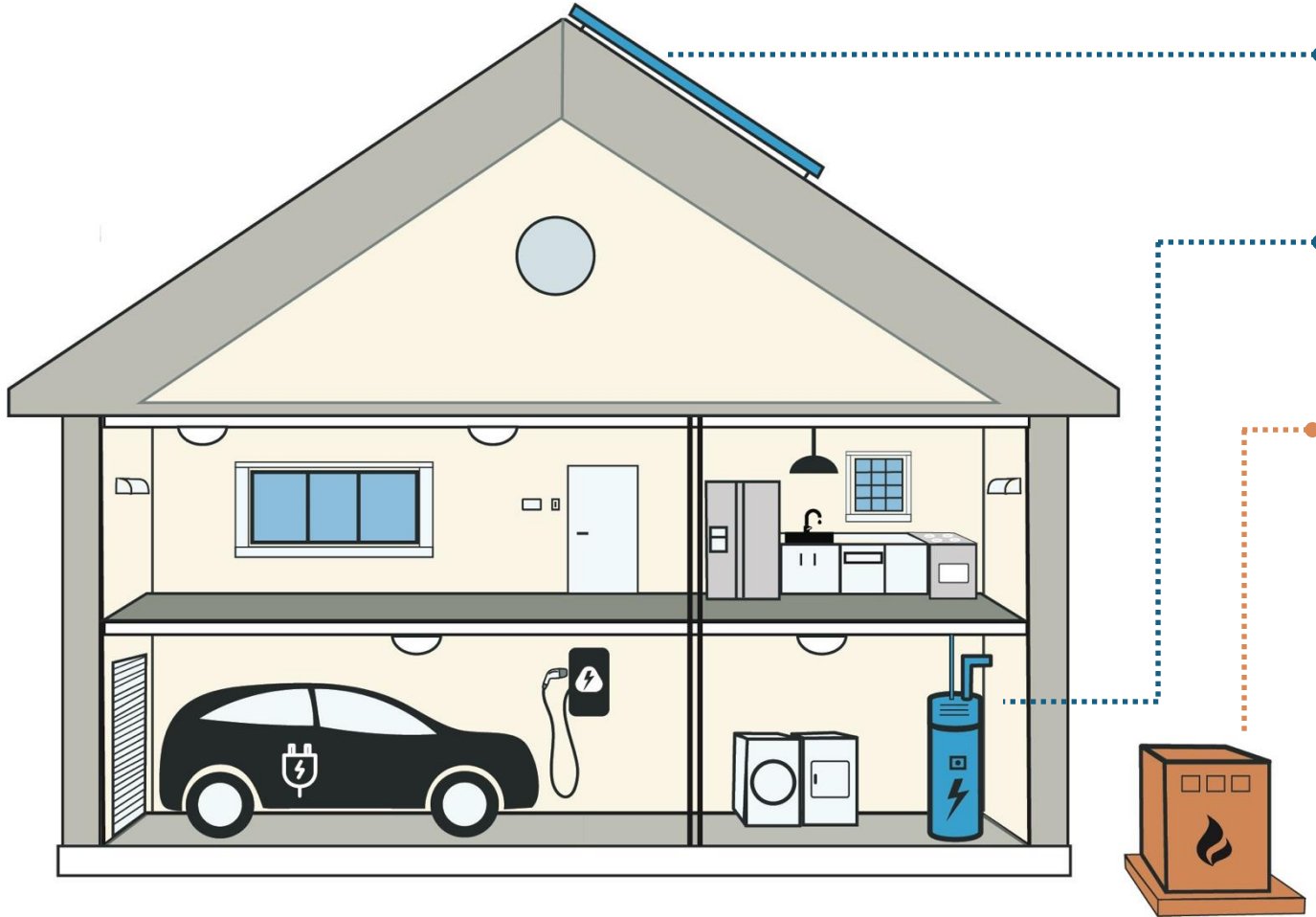
## Cost-effectiveness:

- Compliance margins are cost-effective
- All-electric is most economical option



# Base Code: Minimum Prescriptive Margin

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**Solar PV**

+

**Heat Pump** Water Heater

+

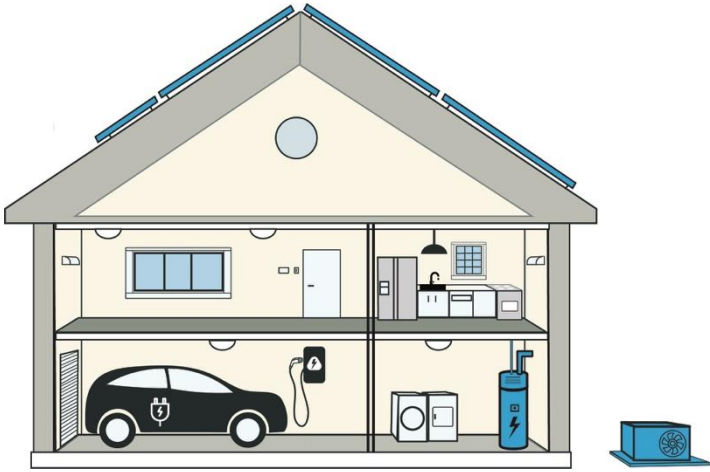
High efficiency **HVAC (18 SEER2)**

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No Minimum  
Margin Required

\* Market Standard is higher than federal minimum efficiency but is standard for units that are actually available in the marketplace.

## All-Electric 2



PV to offset 80% electric usage

+

High efficiency HPWH (NEEA Tier 4)

+

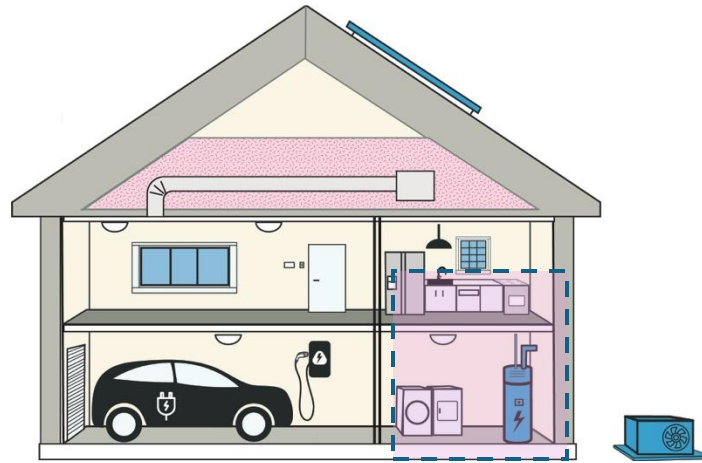
High efficiency HP HVAC (16 SEER2)

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EDR Margin: 5.9

## All-Electric 3



R-49 attic insulation with buried ducts

+

Compact Water Heating Distribution

+

High efficiency HPWH (NEEA Tier 4)

+

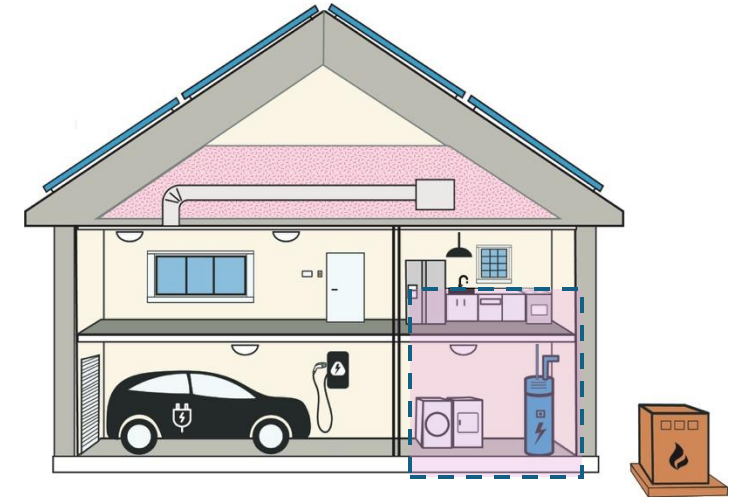
High efficiency HP HVAC (16 SEER2)

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EDR Margin: 5.2

## Mixed-Fuel



PV to offset 100% electricity use

+

R-49 attic insulation with buried ducts

+

Efficient air distribution

+

Compact Water Heating Distribution

+

High efficiency HPWH (NEEA Tier 4)

+

~~High efficiency HVAC (18 SEER2)~~

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EDR Margin: 4.8

# CEC 2025 Energy Code Strategies

- Heat pump baselines
- Promote demand flexibility, solar PV generation, and energy storage
- Covered process loads
- Equity & affordable new housing program integration
- Additional, alterations, and smaller homes. (e.g., ADUs)
- Electric vehicle readiness support
- Interagency coordination



# Feedback and Q&A





# San Diego Measure G

Transportation, Infrastructure & Safety Projects Initiative

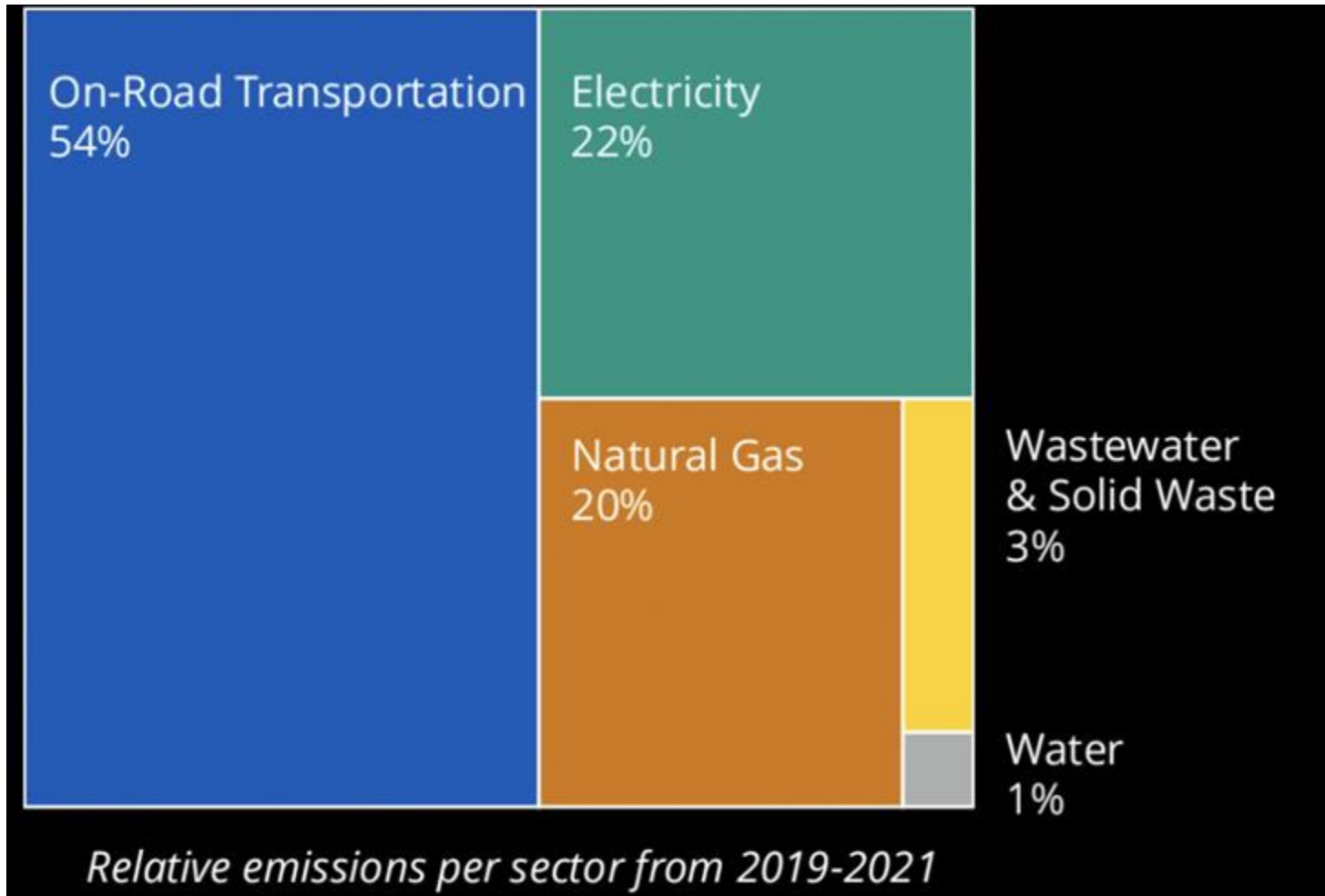
State law prohibits the CSU or any campus from engaging in political advocacy efforts to influence a vote.

California law requires that the CSU remain:

“Entirely independent of all political and sectarian influence.”

(Cal. Educ. Code §66607.)

# San Diego GHG Emissions by Sector



# What is Measure G?

Measure G would place a one-half cent sales tax on the 2024 ballot for **transportation, infrastructure & safety projects**

- ❖ Highway improvements on 56, 76, 78, 94, 125, 67 and I-5, I8, I-15, I-805
- ❖ Blue Line Express from South County to Downtown
- ❖ Moving Rail Line off the Del Mar Bluffs
- ❖ Airport Transit Connector
- ❖ More frequent service and extended hours on bus and trolley routes
- ❖ Habitat preservation, stormwater upgrades, active transportation
- ❖ Keeping fares affordable and/or free for seniors, youth, disabled, veterans
- ❖ Road improvements including fixing potholes.

# What its included on Measure G

- Investment in San Diego's transportation and stormwater systems
- Potential reduced commute times and congestion
- Improved fire evacuation routes
- Additional dedicated funding stream for expanded transit operations, affordable fares
- Local jobs increase and career training for San Diego County residents
- **Leverage State and Federal Infrastructure**



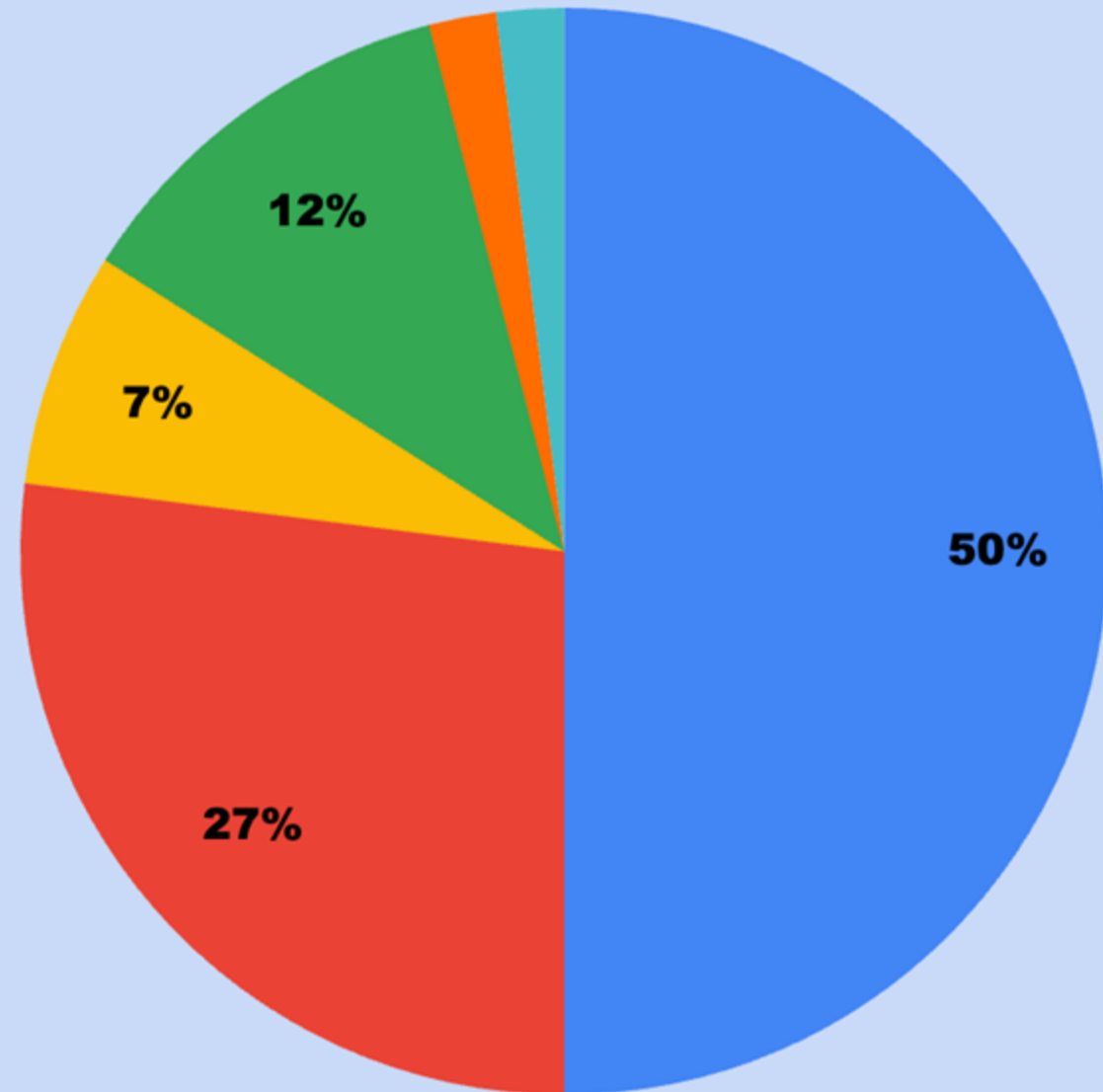
# What does ½ cent additional sales tax look like?

- \$4 coffee: \$.02
  - \$50 in groceries: \$0.25
  - New \$400 TV: \$2
- 1 Cent= \$0.01
  - ½ Cent=\$0.5\*\$0.01
- = ½ cent is equal to \$0.005



## Where Would The Money GO

- **Transit & Capital Projects**
- **Highway Capital Projects**
- **Streets, Sidewalks, Bike**
- **Transit Fares, Frequency & Safety**
- **Rail Transit Repair**
- **Administration**





# Workplan Ad Hoc Committee Report





# Workplan Survey Results

	S1	S2	S3	S4	S5	S6
Madi Swayne		3	5	5	5	
Amy Ly	5	1	5	3	5	3
Whitney Pearce	5		3			3
JD Weidman	3	1	5	3	3	3
Kelly Lyndon	5	1	1	1	1	1
Jason Anderson	3	5	3	1	3	5
Tanisha-Jean Martin	5	5	5	5	5	5
Mahayla Slackerelli	3	5	3	5	3	5
Josh Dean	5	5	3	3	5	5
	34	26	33	26	30	30
Rank	1	3	2	5	4	4
# Verys	5	4	4	4	4	4

Workplan Committee S1-2 **Decarb of the Built Env + Access to Clean & Renewable Energy** :

Whitney, Kelly, Josh,

Workplan Committee S3 **Mobility & Land Use**:

JD , Tanisha-Jean,

Workplan Committee S4: **Circular Economy & Clean Communities**

Mahayla, Amy

Workplan Committee S5: **Resilient Infrastructure & Healthy Ecosystems**

Madi, Amy

Workplan Committee S6: **Emerging Climate Actions**

Jason

# Tentative meeting dates and locations

- 10/1/24 – D2
- 11/5/24 – D3
- 12/3/24 – D4
- 1/7/25 – D5
- 2/4/25 – D6
- 3/4/25 – D7
- 4/1/25 – D8
- 5/6/25 – D9
- 6/1/25 – D1
- 7/1/25 (or move to 7/8/25?) – D2
- 8/5/25 – D3