



County of San Diego

# Draft Local Policy Opportunity Analysis Regional Decarbonization Framework Update



Board of Supervisors

February 9, 2022

Item # 6

# Integrated Regional Decarbonization Framework



Technical Report  
led by UC San  
Diego

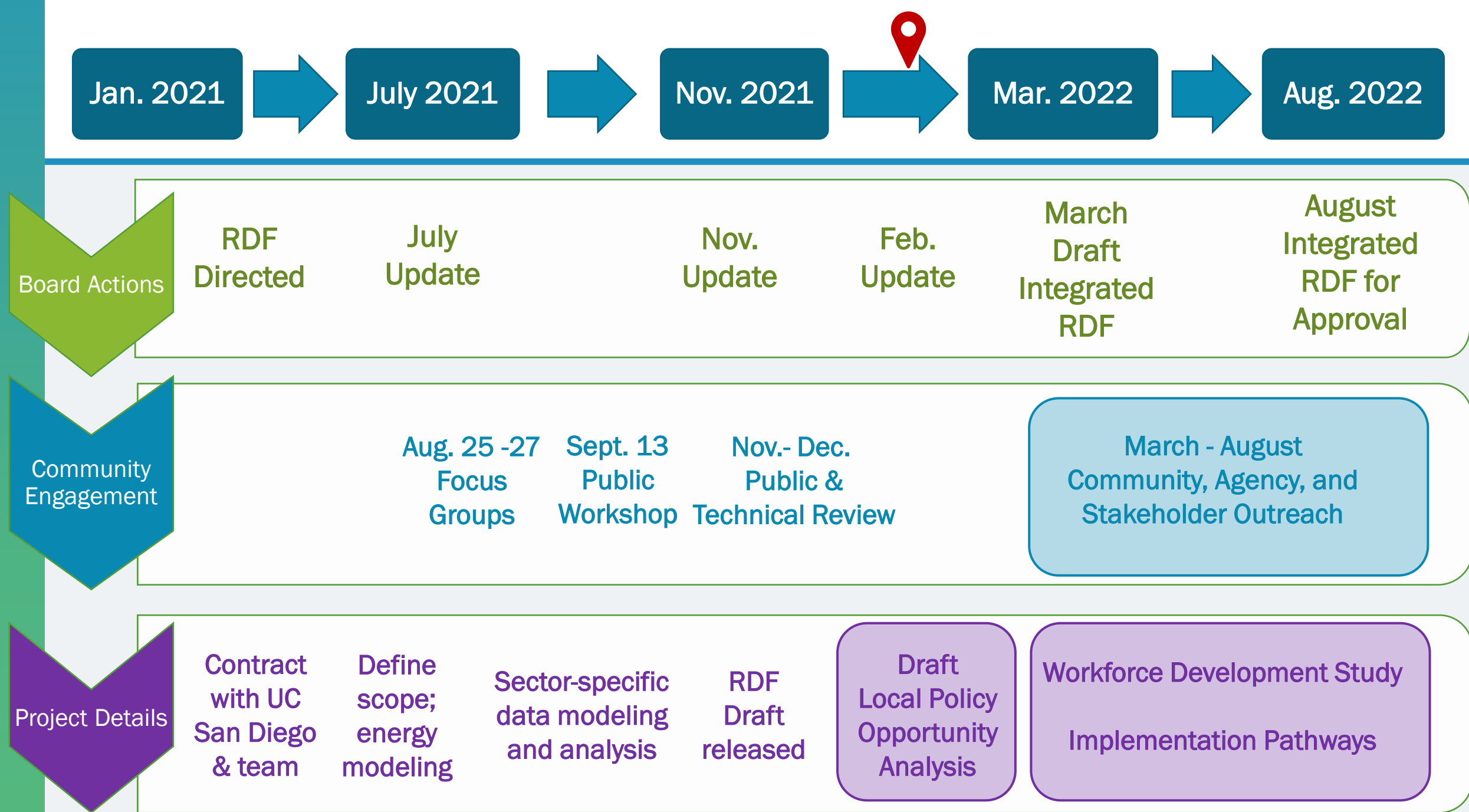


Workforce  
Development Study  
by Inclusive  
Economics



Implementation  
Pathways

The components of the Integrated Regional Decarbonization Framework



# Local Policy Opportunity Analysis

- Purpose of studying Climate Action Plans (CAPs):
  - Evaluate what is currently being done across our region
  - Uncover any gaps
  - Discover opportunities to reach our goal of zero carbon emissions
- Assumes all CAPs are achieving the commitments
- Not intended to evaluate, score or rank any particular CAP
- First study of its kind in the region

# Regional Decarbonization Framework Project

## Local Policy Opportunity

Feb. 9, 2022

# EPIC Contributors

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  - Decarbonize Buildings, Decarbonize Electricity Supply
- **Nilmini Silva-Send, Associate Director**
  - Decarbonize Transportation, Scenario Analysis of CAPs
- **Joe Kaatz, Staff Attorney**
  - Local Authority to Act, Natural Climate Solutions
- **Yichao Gu, Technical Policy Analyst II**
  - Scenario Analysis of CAPs
- **Marc Steele, Technical Policy Analyst II**
  - Comparative Analysis of CAPs, Natural Climate Solutions

# Regional Decarbonization Technical Report

1. Study Framework
2. Geospatial Analysis of Renewable Energy Production
3. Accelerating Deep Decarbonization in the Transportation Sector
4. Natural Climate Solutions and Other Land Use Considerations
5. Decarbonization of Buildings
6. Employment Impacts through Decarbonization for the San Diego Region
7. Key Policy Considerations for the San Diego Region
8. Local Policy Opportunity
9. San Diego as a Model

# Overall Key Takeaways



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- 1 Achieving Net Zero GHG Emissions will be Difficult, Regardless of Timeframe

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- ④ Numerous Opportunities and Examples Exist for Further Local Action

# Overall Key Takeaways

- ① Achieving Net Zero Emissions will be Difficult, Regardless of Timeframe
- ② Local Jurisdictions Have Legal Authority to Do More
- ③ Current CAP Commitments are not Sufficient to Reach Net Zero
- ④ Numerous Opportunities and Examples Exist for Further Local Action
- ⑤ Opportunities also Exist for Regional Collaboration

# Project Approach

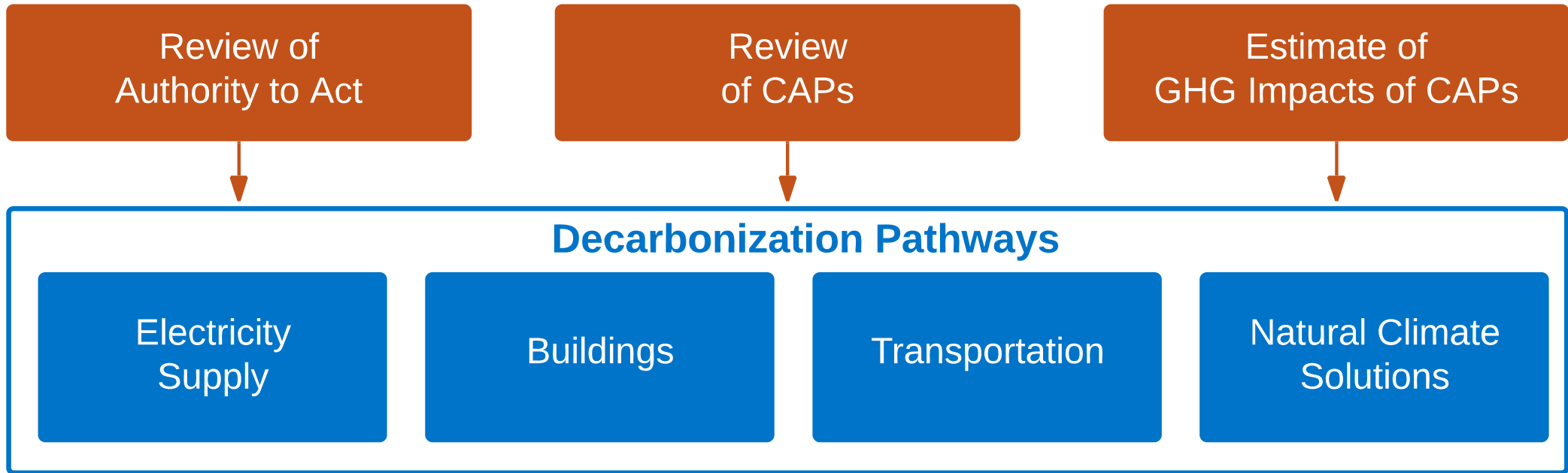
# Project Approach

Review of  
Authority to Act

Review  
of CAPs

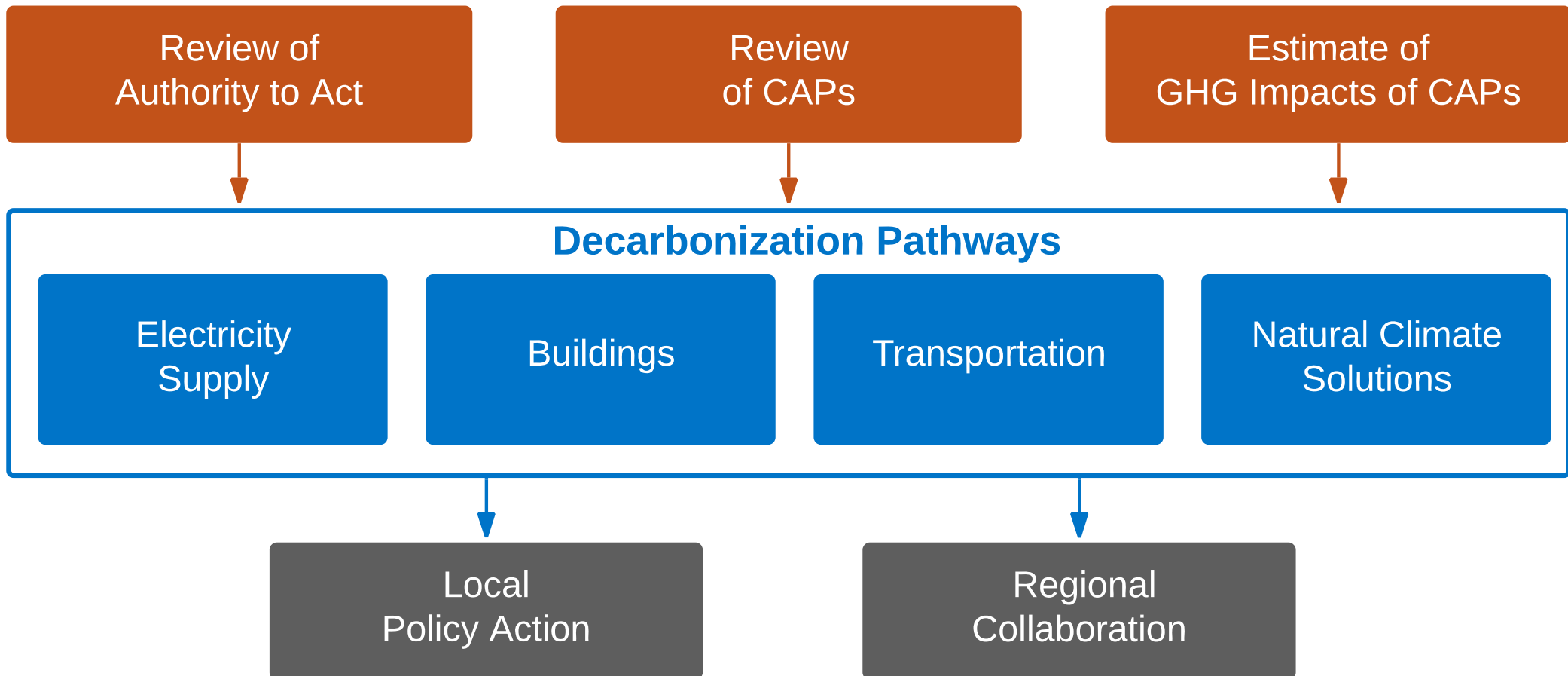
Estimate of  
GHG Impacts of CAPs

# Project Approach

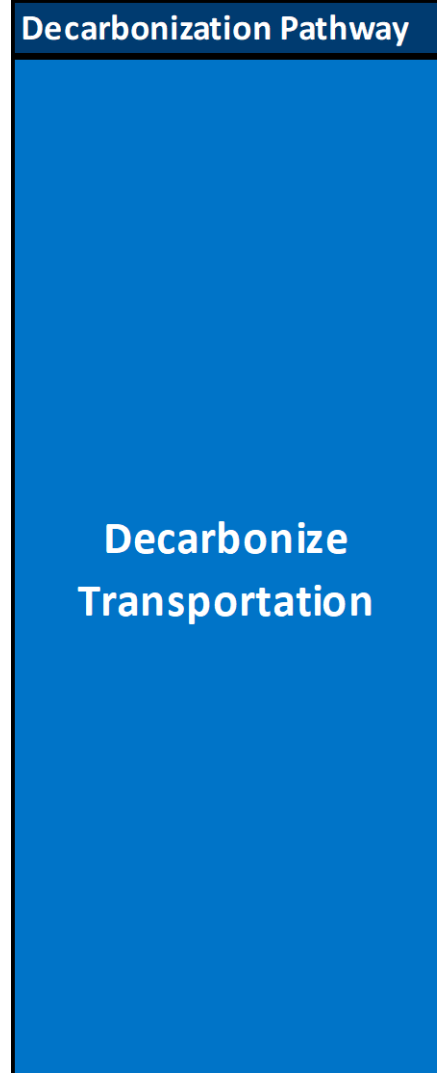




# Project Approach



# Policy Framework



# Policy Framework

Decarbonization Pathway	Policy Category
Decarbonize Transportation	VMT Reductions
	Fuel Use Reductions
	Alternative Fuel Vehicles and Equipment

# Policy Framework

Decarbonization Pathway	Policy Category	Policy Subcategory
Decarbonize Transportation	VMT Reductions	Bike, Walk, & Complete Streets
		Mass Transit
		Parking Reductions
		Commuter TDM
		Smart Growth Development
		Micromobility (excluding bicycles)
	Fuel Use Reductions	
	Alternative Fuel Vehicles and Equipment	

# Policy Framework

Decarbonization Pathway	Policy Category	Policy Subcategory
Decarbonize Transportation	VMT Reductions	Bike, Walk, & Complete Streets
		Mass Transit
		Parking Reductions
		Commuter TDM
		Smart Growth Development
		Micromobility (excluding bicycles)
	Fuel Use Reductions	Traffic Signal Synchronization
		Traffic Calming Infrastructure
		Vehicle Retirement
		Driver Behavior
	Alternative Fuel Vehicles and Equipment	Electric Vehicles
		Low Carbon Fuel Vehicles
		Hybrid Vehicles
		Preferred Parking
		EV Charging Infrastructure
		Low Carbon Fuel Infrastructure
		Low Carbon Fuel Equipment (Off-Road)
		Electric Equipment (Off-Road)

# Climate Action Plans Included

## Adopted and Pending CAPs

- 14 adopted
- 1 pending
- County of San Diego 2018 CAP
- City of El Cajon Sustainability Plan

## Not Included

- City of National City
  - 2011 CAP with 2020 target year
- City of San Diego 2021 CAP update
  - Draft for comment released Nov. 2021

## No CAP

- City of Poway

Jurisdiction	Year Adopted	Included?
Carlsbad	2020	Y
Chula Vista	2017	Y
Coronado	Pending	Y
County of San Diego	2018*	Y
Del Mar	2016	Y
El Cajon	2020	Y
Encinitas	2020	Y
Escondido	2021	Y
Imperial Beach	2019	Y
La Mesa	2018	Y
Lemon Grove	2020	Y
National City	2011	N
Oceanside	2019	Y
Poway	N/A	N/A
San Diego	2015*	Y
San Marcos	2020	Y
Santee	2020	Y
Solana Beach	2017	Y
Vista	2021	Y

\*Update in progress

# Analysis of Authority

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California  
Constitution

Statutes

Regulations

Agencies



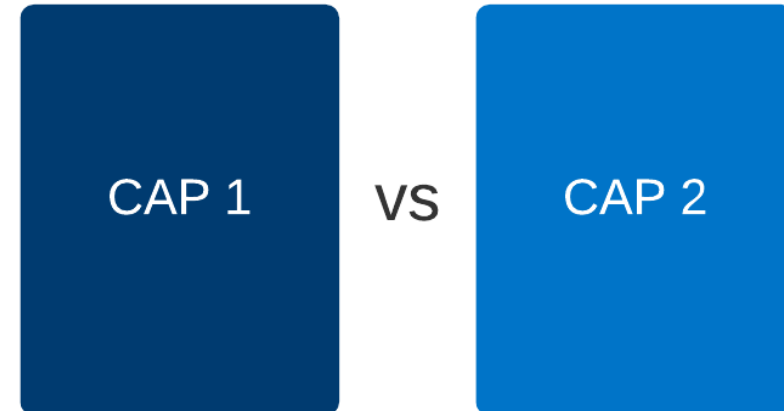
# Analysis of Local Authority – Key Takeaways

- **Local Jurisdictions have Authority to Influence and Regulate GHG Emissions**
  - Broad constitutionally-derived authority related to health, safety, and general welfare
    - primacy over land use
  - Delegated authority under state or federal law
  - Some authority is subject to state and federal preemption
- **Full Extent of Constitutional Authority is Unclear**
  - Challenge against City of Berkeley's natural gas ban in 9<sup>th</sup> Circuit
- **Based on CAP Analysis, Local Jurisdictions are not Exercising Full Authority**
  - Additional opportunities exist using known authority to act locally in all pathways
  - Natural climate solutions pathway requires additional effort to develop options
- **Opportunity to Accelerate State and Federal Efforts Under Existing Authority**
  - e.g., increasing renewable electricity supplies and electric vehicle uptake

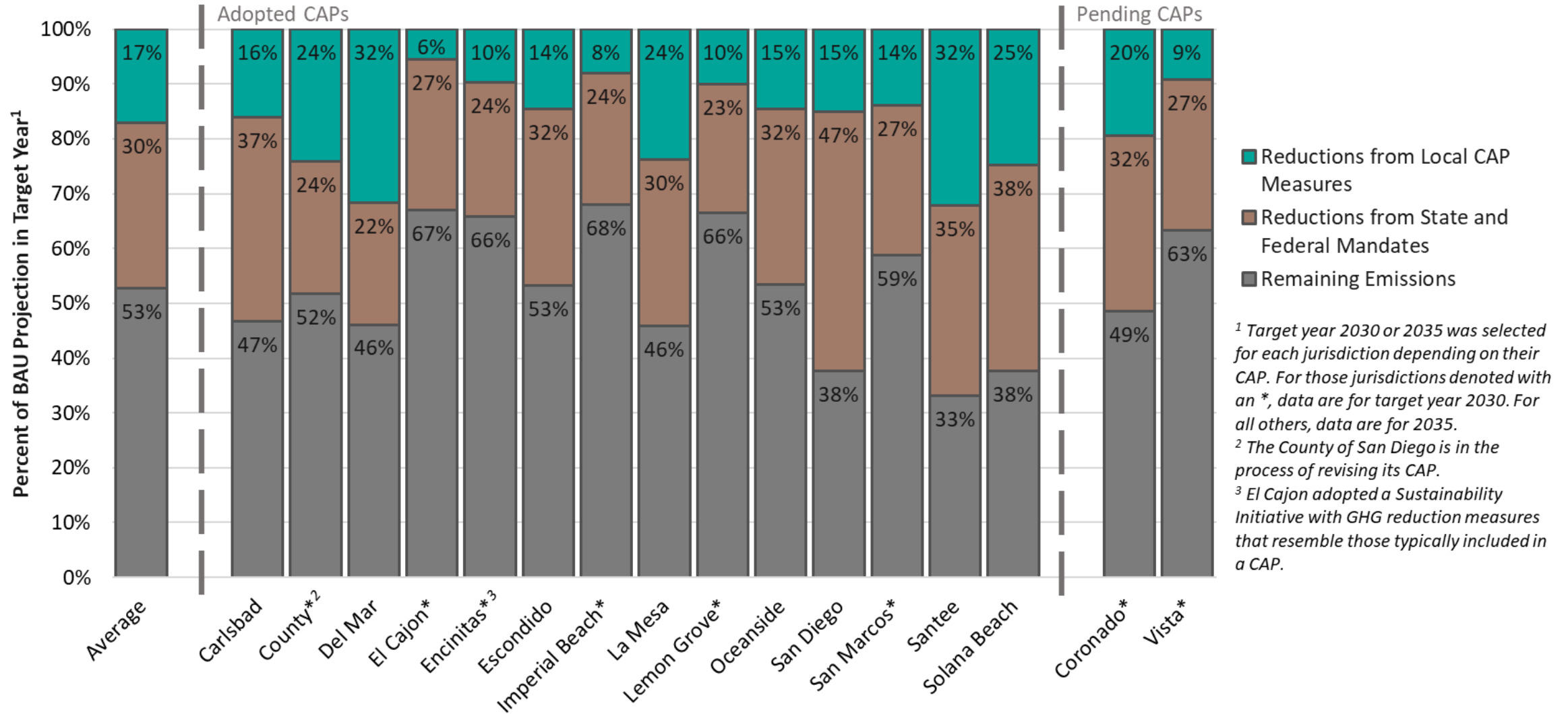
# Review of Climate Action Plans

# Comparative Analysis

- Used EPIC CAP Mitigation Database to Compare Across CAPs
  - Update year
  - Targets
  - Implementation mechanisms
    - e.g., requirements, education, incentives
  - Decarbonization pathways
    - electric supply, buildings, transportation
  - Policy categories and subcategories
  - How often CAP measures are used
  - GHG reductions in CAPs
    - % contribution to local CAP reduction

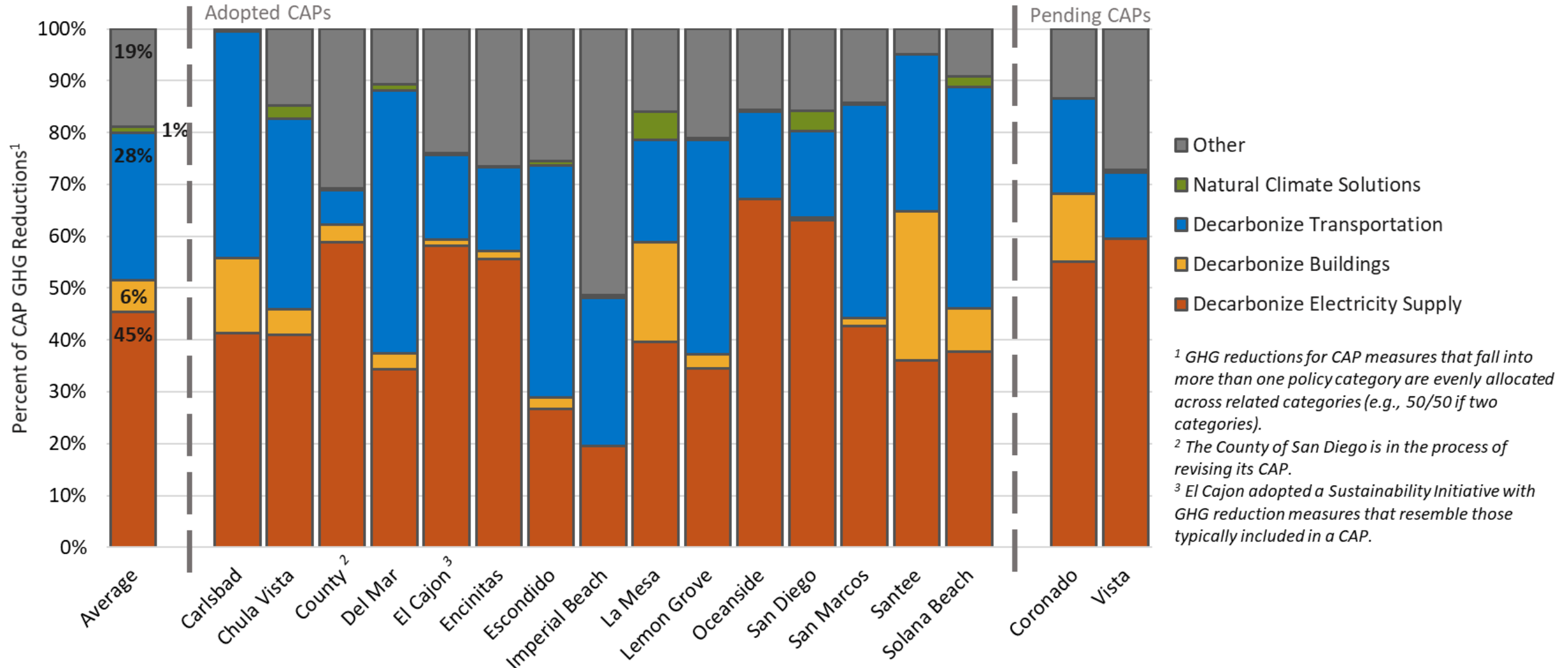


# Review of Climate Action Plans – All Measures

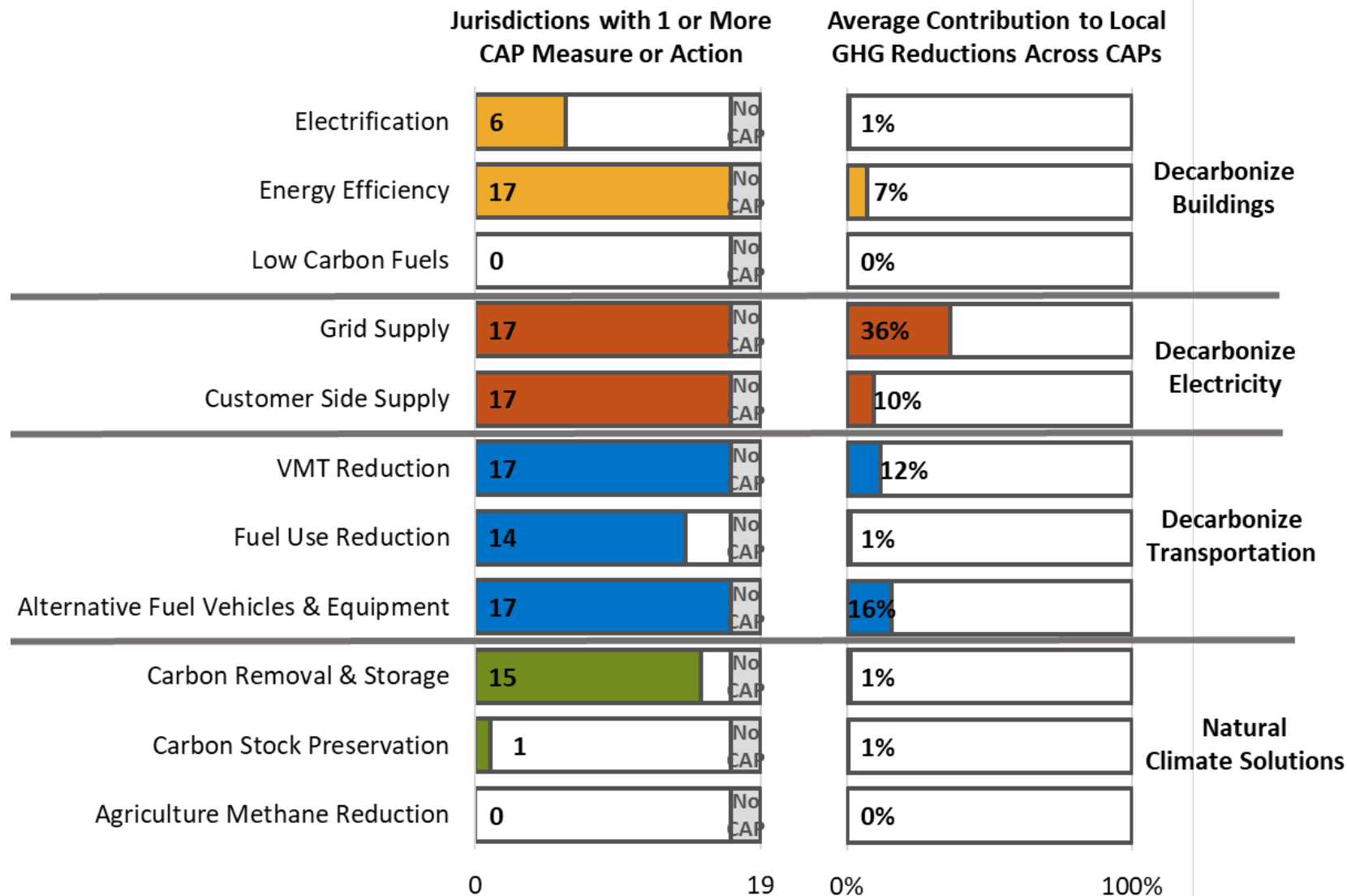


# Review of Climate Action Plans – Local Measures

## CAP GHG Reductions by Decarbonization Pathway, Target Year 2030/2035

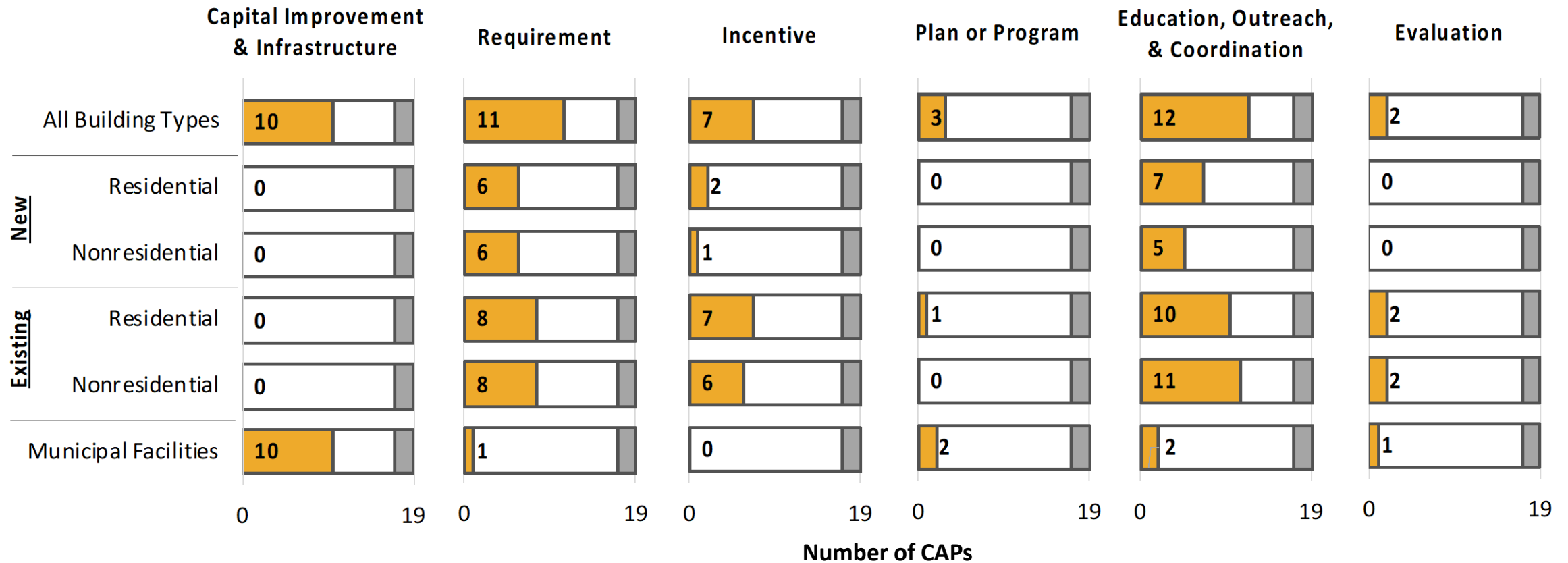


# Review of Climate Action Plans



# Review of Climate Action Plans

## Decarbonize Buildings Pathway – Energy Efficiency



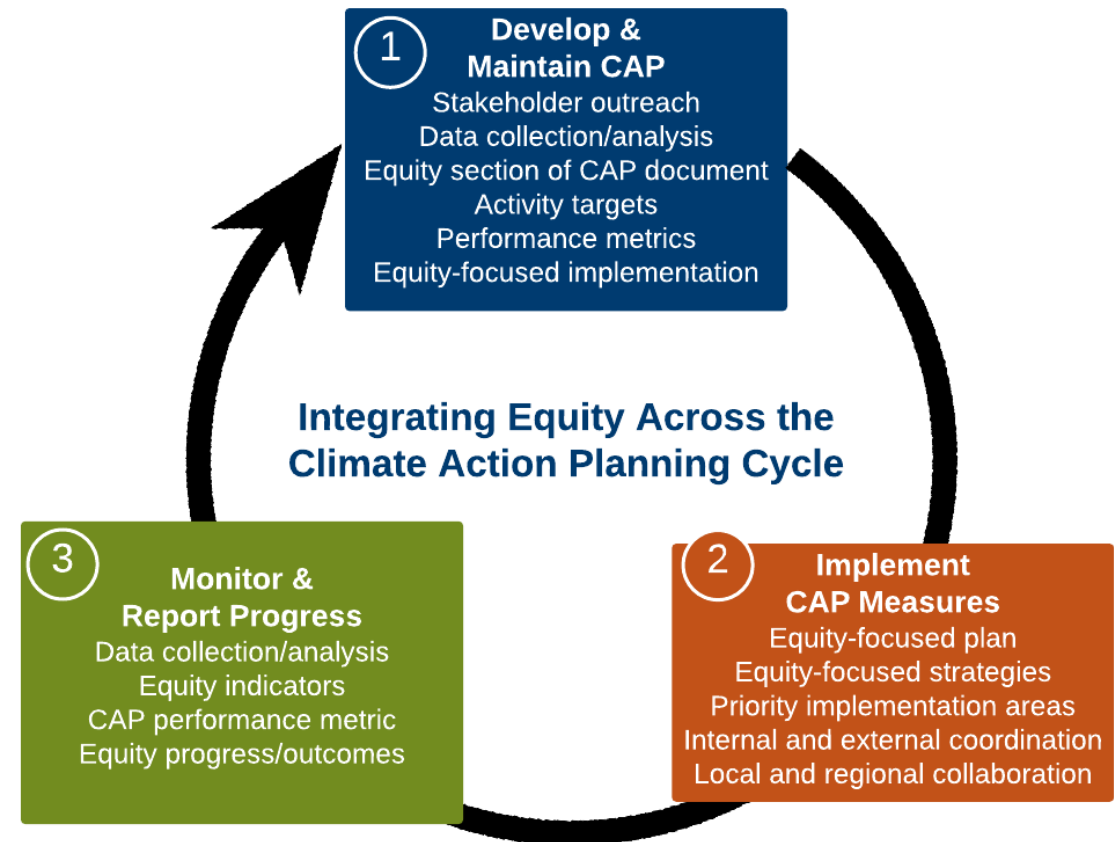
# Review of Climate Action Plans – Key Takeaways

- Eight CAPs are Scheduled to be Updated between 2021 and 2025
- No Adopted or Pending CAP has a Net Zero GHG Emissions Target
- GHG Impact of Decarbonization Pathways Varies Across CAPs
- GHG Reductions in CAPs not always Proportionate to Emissions
  - Decarbonize electricity represents about 45% of reductions but 20% of emissions
  - On-road transportation represents about 28% of reductions but 45% of emissions
- CAP Measures Use a Combination of Implementation Mechanisms
  - Education, outreach, and collaboration
  - Financial incentives and financing
  - Plans or programs
  - Requirements



# Review of Climate Action Plans – Key Takeaways

- **Social Equity in CAPs**
  - Limited, inconsistent, lacks specificity
  - No clear definition of “equity” in CAPs
- **Opportunities**
  - Social equity across climate planning cycle
    - e.g., shade trees
  - Regional support and guidance
    - Support for smaller jurisdictions
    - Guidance document for equity
  - Regional social equity data and indicators
  - Regular reporting on climate equity issues
    - Local and regional levels

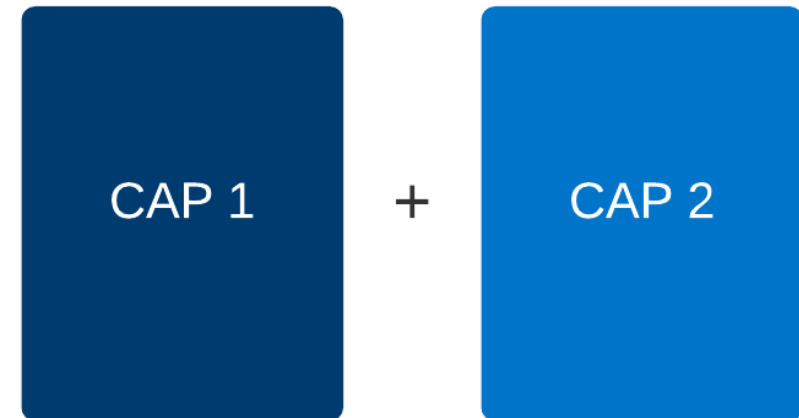


Energy Policy Initiatives Center, 2021

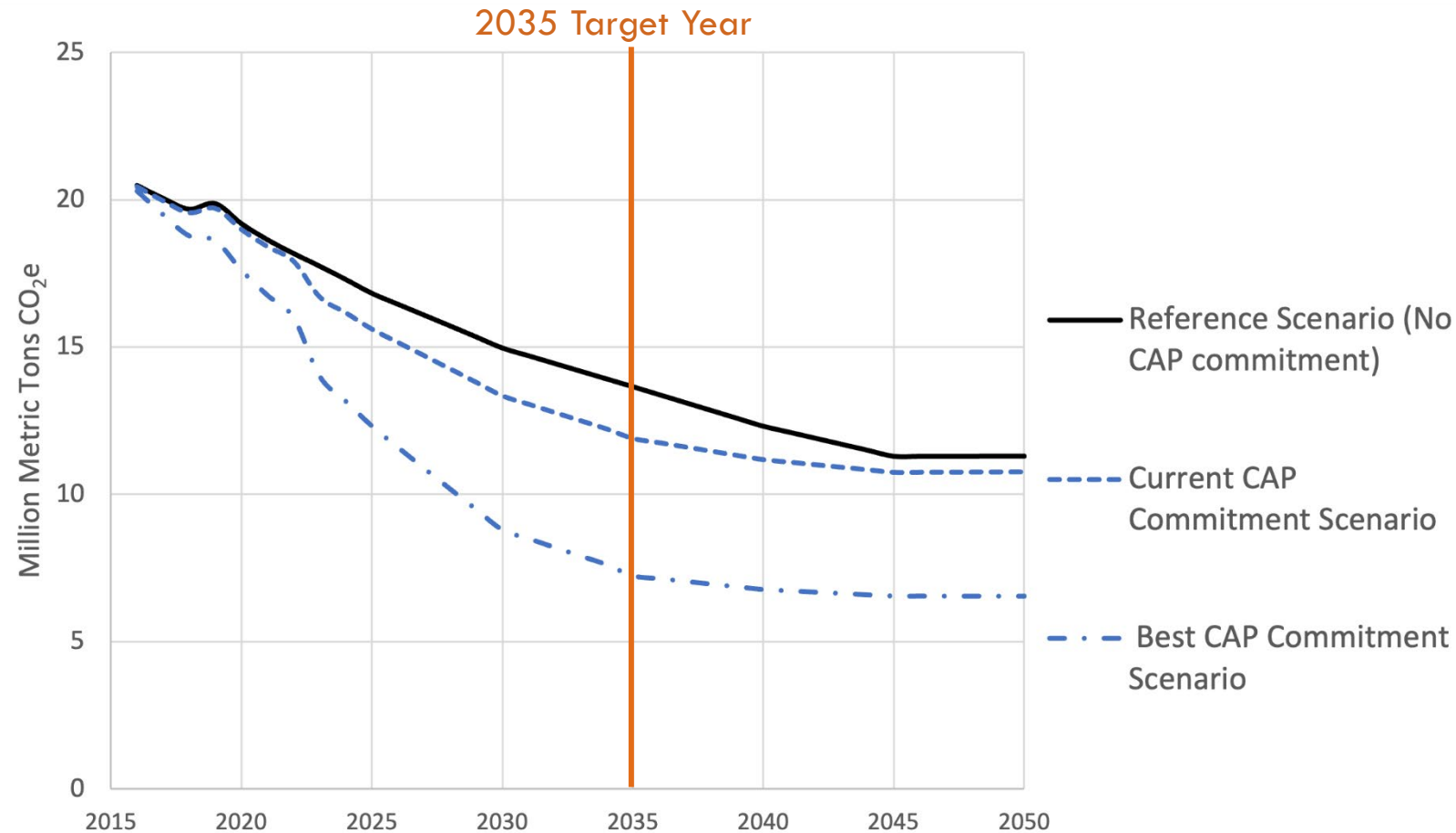
# Scenario Analysis

# Scenario Analysis

- **Estimates Combined GHG Reduction Impact of All CAPs**
  - Only considers GHG emissions
  - From a subset of total emissions
    - On-road transportation, electricity, natural gas
    - 80% of total regional emissions 2016
    - 90%+ of typical city and county inventories
  - Aggregated CAP commitments
    - e.g., total VMT reduction from all CAPs
  - Recalculated GHG impacts
    - Using same method across all jurisdictions
    - Avoids challenges of summing CAPs



# Scenario Analysis



Projected GHG emissions from on-road transportation, electricity, and natural gas after accounting for state and federal policies in place in 2021

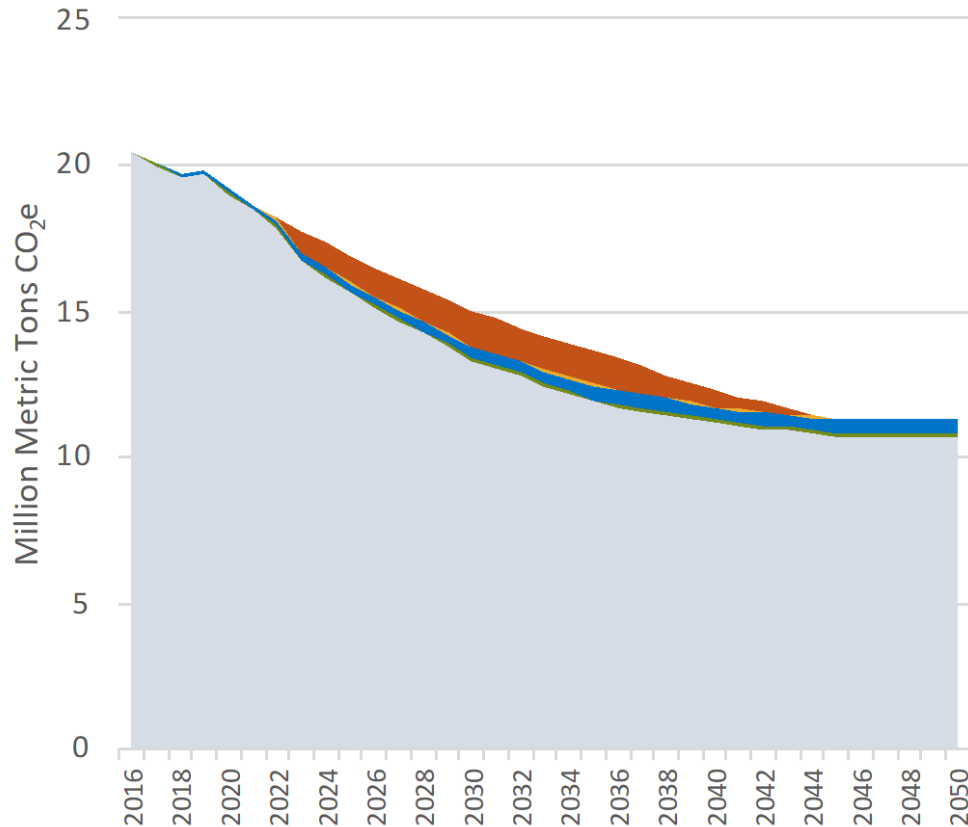
Combined GHG impact of 17 adopted and pending CAPs

Applies the most aggressive policy to all jurisdictions

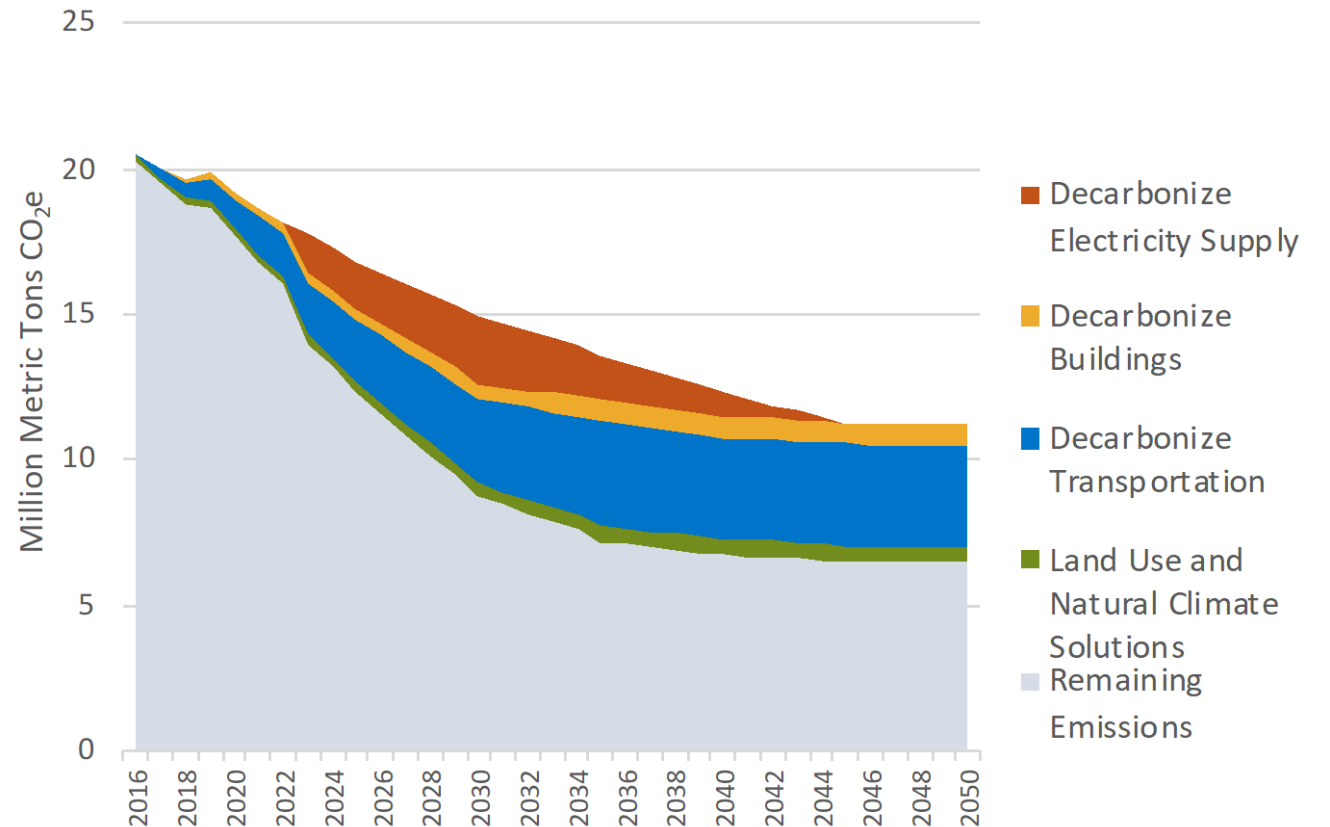
Note: This figure does not include all GHG emitting activities in San Diego Region, or future state and federal actions

# Scenario Analysis – Reductions by Decarbonization Pathway

On-Road Transportation, Electric, and Natural Gas Emissions with Current CAP Commitment



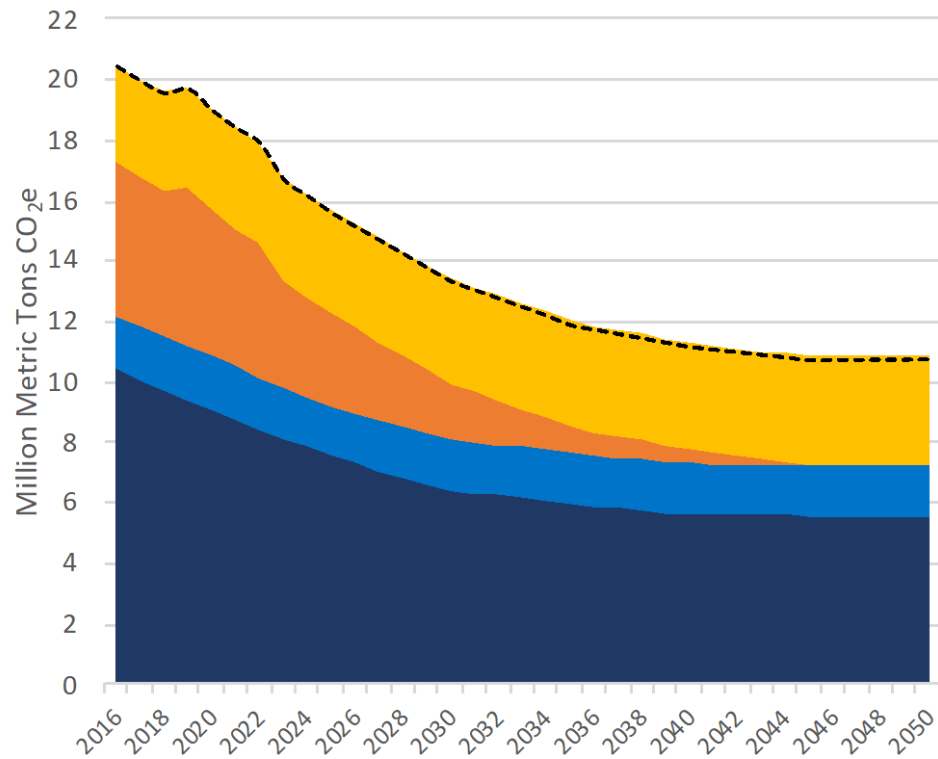
On-Road Transportation, Electric, and Natural Gas Emissions with Best CAP Commitment Applied to All Jurisdictions



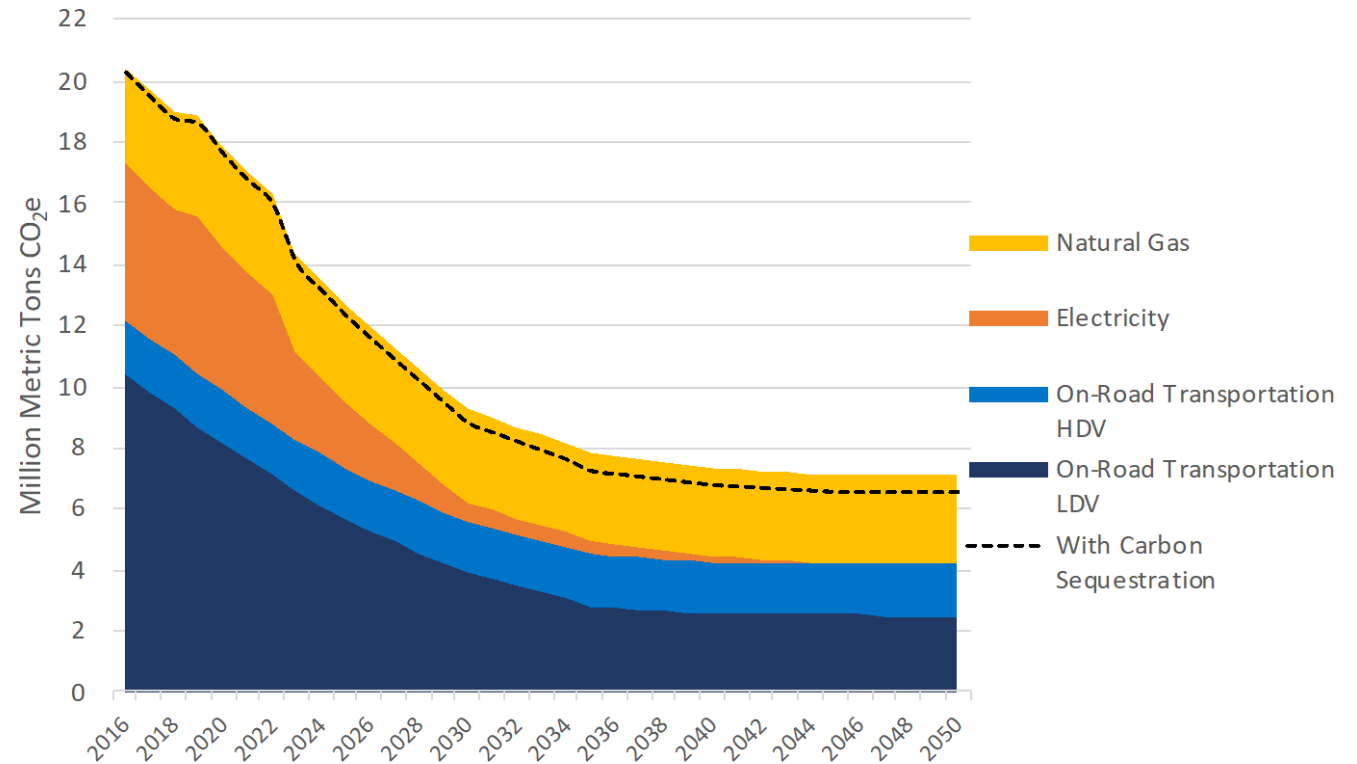
Note: These figures do not include all GHG emitting activities in San Diego Region, or future state and federal actions

# Scenario Analysis – Remaining Emissions

GHG Emissions from On-road Transportation, Electricity, and Natural Gas in San Diego Region with Current CAP Commitments



GHG Emissions from On-road Transportation, Electricity, and Natural Gas in San Diego Region with Best CAP Commitment Applied to All Jurisdictions



Note: These figures do not include all GHG emitting activities in San Diego Region, or future state and federal actions

# Scenario Analysis – Key Takeaways

- **Current Local CAP Commitments are not Sufficient for Deep Decarbonization Goals**
  - Transportation, electricity, and natural gas emissions only
- **CAP Measures to Decarbonize Electric Supply Reduce Most GHG Emissions**
  - Measures to increase renewable electricity to 80–100%, mainly through CCA programs
  - Early achievement of statewide goal leads to larger cumulative GHG reduction
- **Even with the Most Aggressive CAP Measures, Significant Emissions Remain**
  - Mostly from natural gas combustion and cars and trucks
  - Reducing VMT has the largest impact on GHGs in this scenario
  - Limited GHG reductions from building electrification in Best CAP Commitment Scenario
    - City of San Diego draft CAP building electrification measure would affect results

# Opportunities in the Decarbonization Pathways



# Decarbonize Transportation Pathway

- **Reduce Vehicles Miles Traveled**
  - Promote mass transit
  - Increase bike/walk infrastructure
  - Increase connectivity through land use changes
  - Manage transportation demand
    - e.g., density bonuses for reduced parking, voluntary trip reduction, cash out parking
- **Decrease Fuel Use**
  - Traffic calming
    - e.g., roundabouts, traffic signal synchronization
  - Anti-idling
  - Accelerate vehicle retirement

# Decarbonize Transportation Pathway

- **Increase Use of Alternative Fuels and Vehicles**
  - Increase use of alternative fuel vehicles in municipal fleets
  - Assess the social equity tradeoffs between ZEVs and mass transit
  - Assess the use of LCFS funding to promote transition to lower carbon fuels
  - Develop a regional ZEV implementation plan to meet state targets
- **Regional Collaboration**
  - Assess transportation system efficiency and improvements
  - Explore expansion of regional mechanisms
    - CCAs and/or other JPAs
      - e.g., to support EV uptake, etc.
  - Increase regional cooperation to integrate social equity
    - e.g., CAPs and ZEV implementation plans

# Decarbonize Buildings Pathway

- **Decarbonize New Buildings**
  - Local ordinances for energy efficiency and electrification
- **Decarbonize Existing Buildings**
  - Audits, Benchmarking, and Disclosure
  - Encourage/Require Energy Efficiency and/or Electrification
    - e.g., building performance standards
  - Retro-commissioning or building tune ups
- **Decarbonize Municipal Facilities**
- **Regional Support of Building Decarbonization**
  - e.g., policy development and implementation, technical support, regional data analysis, etc.
- **Regional Capacity and Tools to Assess Social Equity Considerations**
  - e.g., data collection, indicators, monitoring, cost implications, etc.

80% of buildings that will  
exist in 2050, already exist  
today

# Decarbonize Electricity Supply Pathway

- **Increase Carbon-Free Grid Supply**
  - More jurisdictions can join CCA programs
  - Commit to 100% carbon-free default service option for municipal accounts and community
- **Increase Customer-Side Supply**
  - Solar requirement for new nonresidential and existing buildings
  - CCAs can encourage customer side projects via net metering, financial incentives, etc.
  - Encourage solar plus energy storage projects
- **Additional Work to Make Access to Renewable Electricity More Equitable**
  - Incentive and financing options for customer side supply projects
  - Increasing access to 100% carbon-free grid supplies
    - Communities Solar Green Tariff Program
    - Subsidizing CARE and FERA customers to opt up to 100% carbon

# Natural Climate Solutions Pathway

- **Regional Analysis to Identify Suitable Tree Planting Locations**
  - Considering many factors, including social equity
- **Continue to Develop/Integrate both State/Local Research on Carbon Valuation**
  - Estimate carbon stocks and rates of removal
    - Including blue carbon
  - Integrate natural and working lands into CAPs and other land use plans
- **Identify Land for Conservation, Preservation, and Restoration Projects**
  - Collaboration with tribes, state and federal land managers, and private land owners
  - California is developing a natural and working lands project registry
- **Develop and Regularly Update a Regional Carbon Stock Inventory**
  - Integrate San Diego specific values

# Next Steps

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# Regional Collaboration



Transportation

Electricity

Social Equity

Buildings

Nature



# Next Board Updates

## MARCH 2022

### *DRAFT* Integrated Regional Decarbonization Framework:

- Technical Report
- Preliminary Workforce Development Study
- Implementation Pathways design and public outreach

## AUGUST 2022

### Integrated Regional Decarbonization Framework:

- Technical Report
- Workforce Development Study
- Implementation Pathways





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