

Draft 2022 Scoping Plan



LISTENING SESSIONS - SUMMER 2022



Who We Are

Leads California's fight against air pollution and climate change

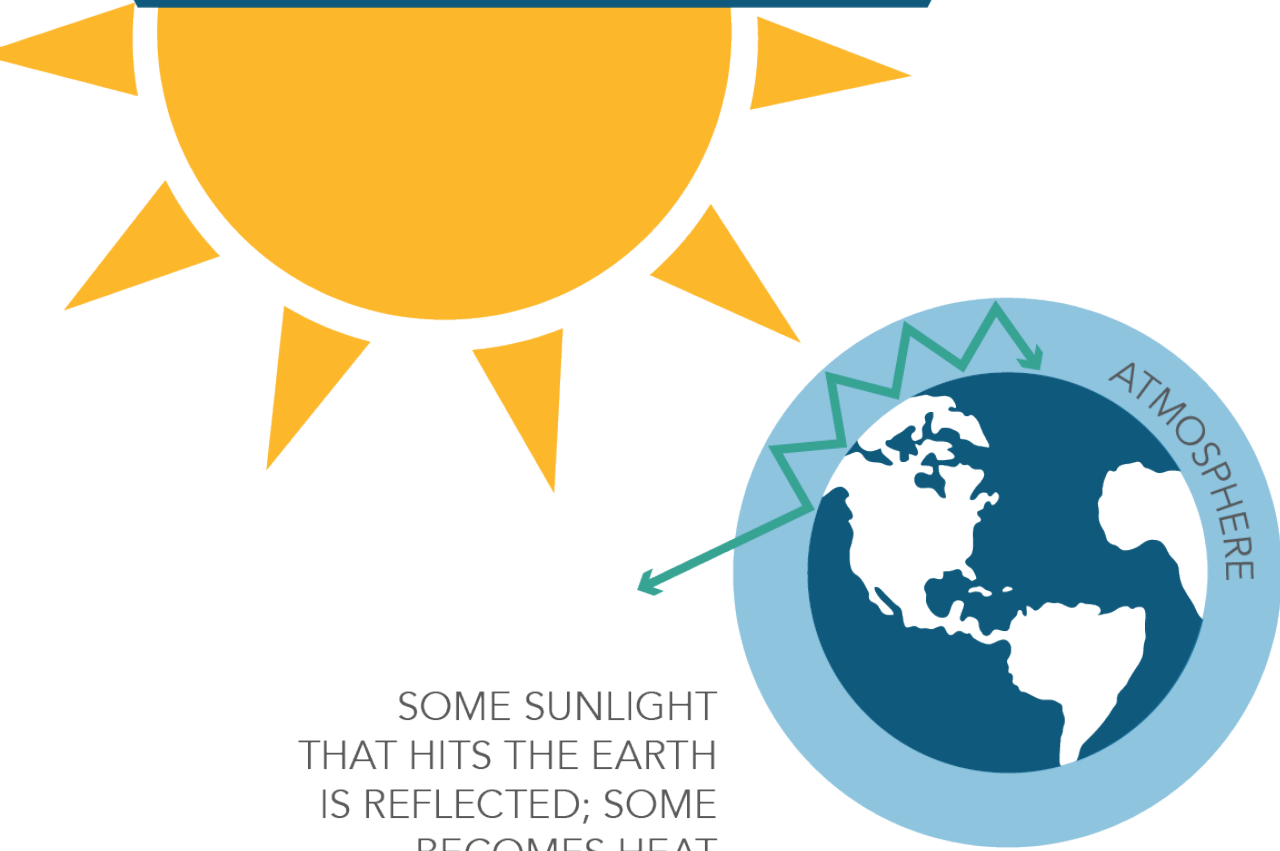
Protects public health

Promotes clean, energy-efficient fuels and technology with benefits for all Californians



Climate Change

The Greenhouse Gas Effect

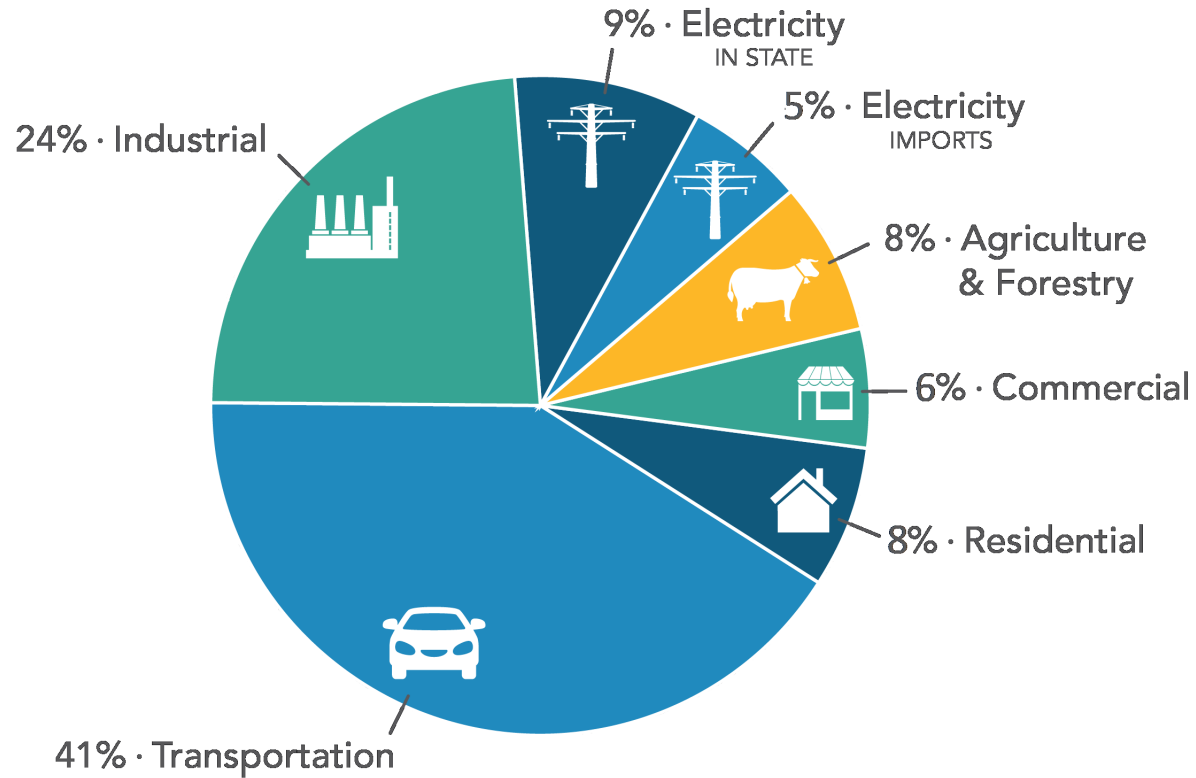


SOME SUNLIGHT THAT HITS THE EARTH IS REFLECTED; SOME BECOMES HEAT

CO₂ AND OTHER GASES IN THE ATMOSPHERE TRAP MORE HEAT FROM THE SUN, RAISING GLOBAL TEMPERATURES

CLIMATE CHANGE
is caused by a build up of
GREENHOUSE GASES
in the atmosphere generated primarily by
BURNING FOSSIL FUELS
and other human activities

Sources of Greenhouse Gases



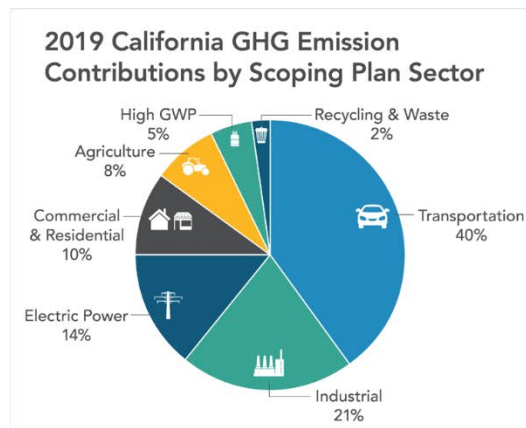
418.2 MMT CO₂e
2019 TOTAL CA EMISSIONS

California's Climate Policy Framework



GHG Targets & Goals

Legislation & Executive Orders: Total GHGs (AB 32/SB 32) or sector targets (SB 1383/SB 100), etc.



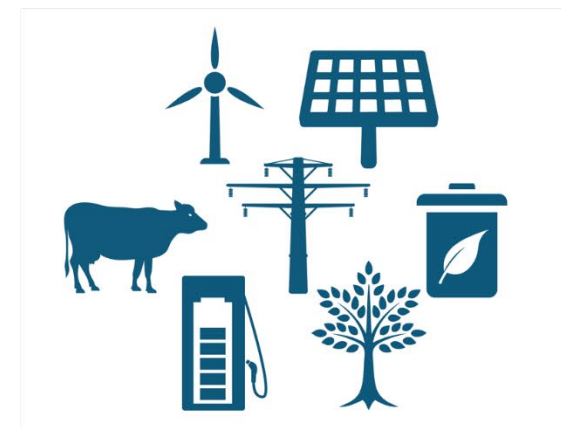
Scoping Plan

Actionable plan across all sectors



Action

Regulations & Incentives: Advanced Clean Cars, climate change investments, etc.



Projects

Examples: Zero-emission trucks, energy infrastructure and renewables, compost facilities, digesters, etc.

Incorporation of EJ Advisory Committee Recommendations



Over a dozen
EJAC meetings since
summer 2021



EJAC provided
feedback on
modeling inputs



Over 200 draft
EJAC recommendations
to inform Draft
2022 Scoping Plan



5 dozen references
to EJAC recommendations
in Draft 2022 Scoping Plan

Draft 2022 Scoping Plan Proposal



Carbon neutrality by 2045, deploy a broad portfolio of existing and emerging fossil fuel alternatives and clean technologies, and align with statutes and Executive Orders







Land management activities that prioritize restoration and enhancement of ecosystem functions to improve resilience to climate change impacts, including more stable carbon stocks

July 22nd Letter from Governor Newsom




- Increase ambition and action called for in the draft Scoping Plan
- Directed CARB to include the following:
 - 20 GW of offshore wind by 2045
 - Avoid need for new gas plants
 - 3 million climate-ready and climate-friendly homes by 2030/ 7M by 2035
 - 6 million heat pumps statewide by 2030
 - Increase LCFS stringency, accelerate refinery transitions to clean fuels
 - Increase a clean fuels target for aviation
 - Address oil and gas methane leaks near communities
 - Carbon dioxide removal and capture target of 20 MMT in 2030/ 100 MMT in 2045

Overview of the Draft 2022 Scoping Plan

Unprecedented Deployment of Clean Technology

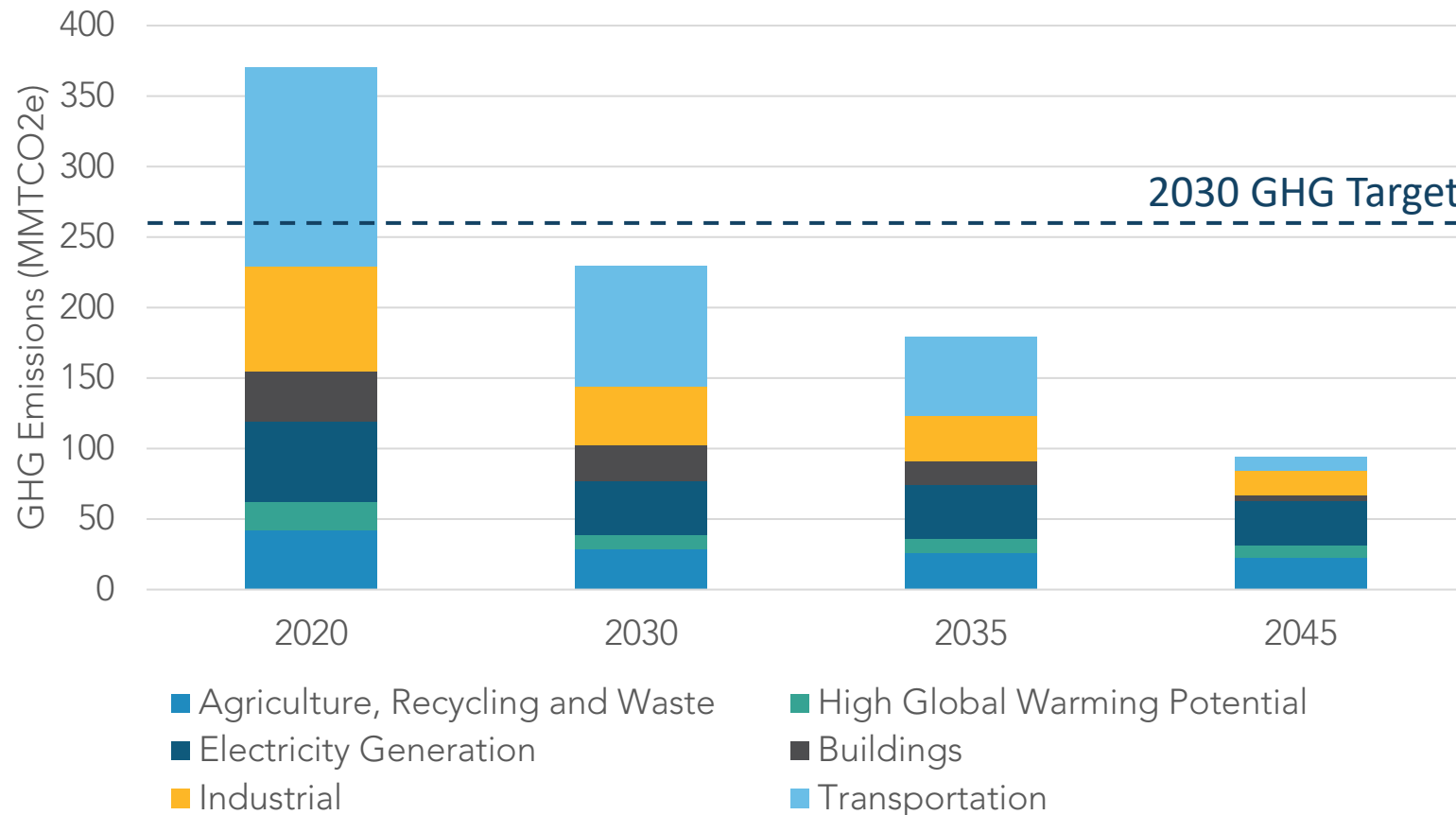
-  30x total on-road ZEVs
-  6x electric appliances in residences
-  60x hydrogen supply
-  4x installed wind/solar generation capacity

Significant GHG Reductions

-  91% decrease in petroleum demand
-  91% decrease in fossil natural gas used in buildings
-  66% decrease in methane emissions from agriculture

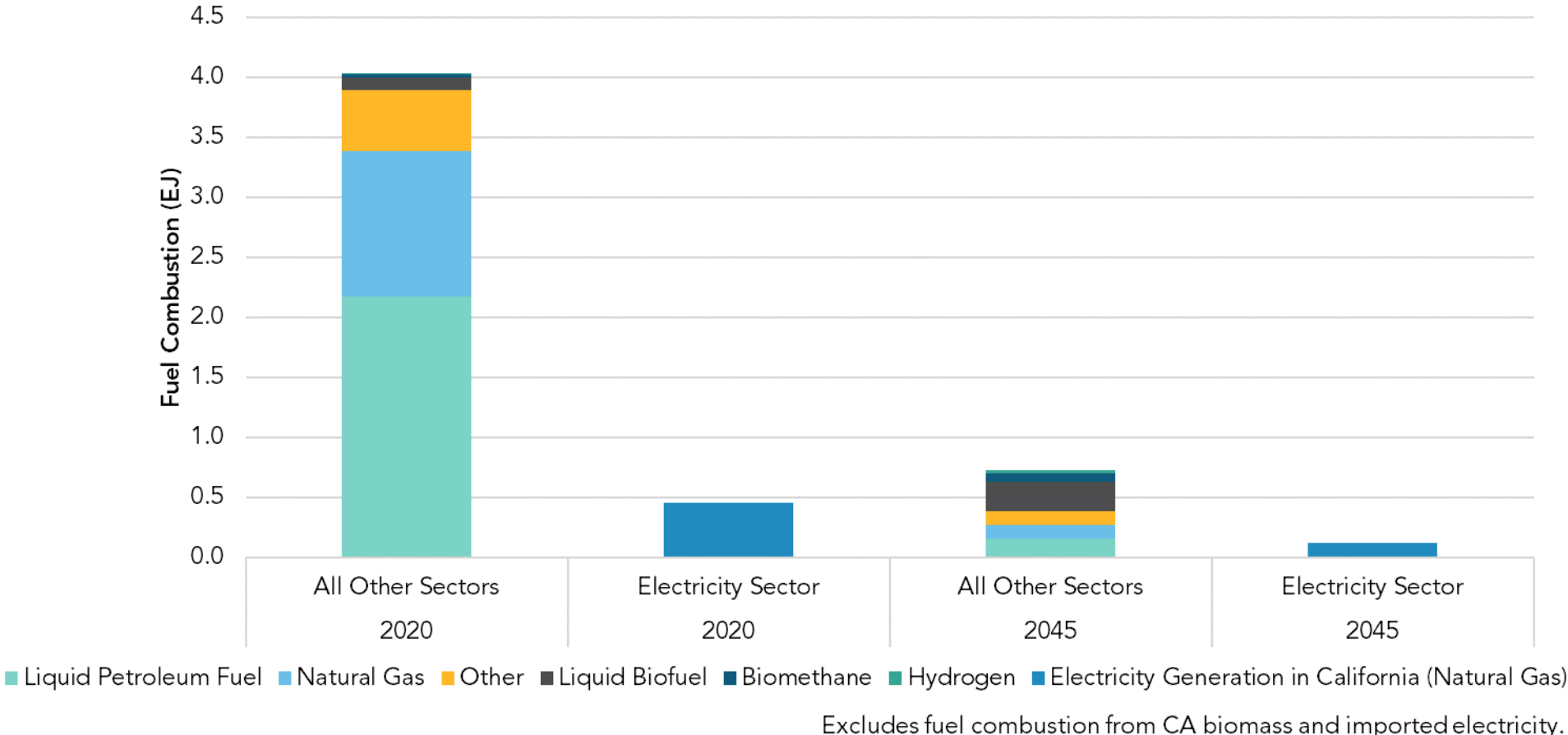
In 2045 relative to 2022

Proposed Scenario: Significant GHG Reductions at Sources



Successful implementation of the Proposed Scenario would exceed the SB 32 GHG Target of 40% below 1990 levels by 2030

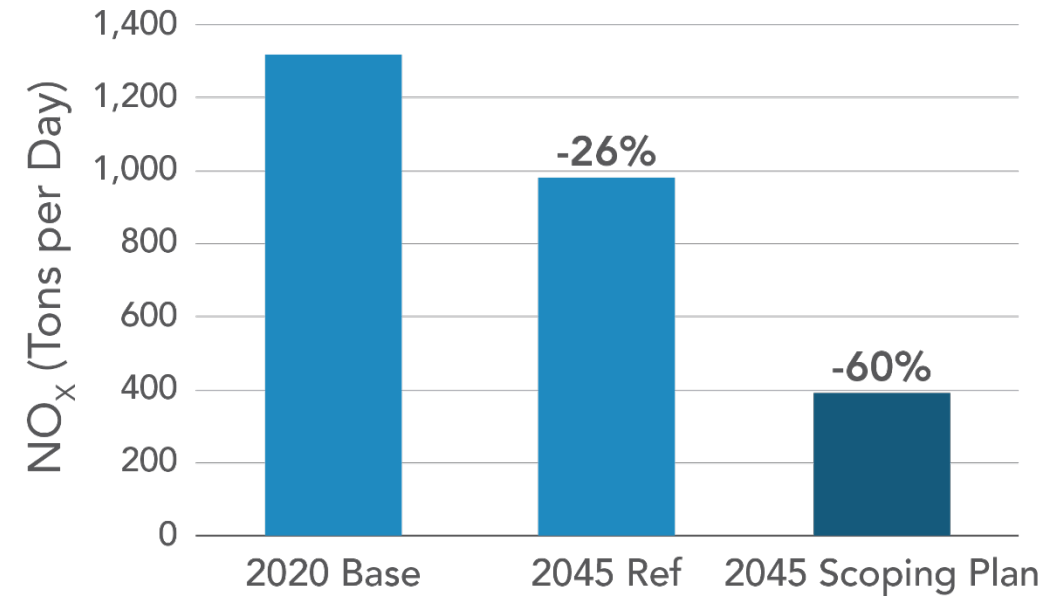
Proposed Scenario: Fossil Fuel Combustion Declines Significantly Across all Sectors



Significant Air Quality Benefits Statewide

New atmospheric and transport modeling

- 60% reduction in NO_x in January and July
- 25% fewer exceedance days for PM_{2.5} standard (35 µg/m³) in January
- 12.5% fewer exceedance days for ozone standard (70 ppb) in July
- 17 health end points evaluated
 - 4 evaluated in 2017 Scoping Plan Update



State-wide reductions relative to 2045 Reference

Benefits for Hardest Hit Communities

Drastic reductions in fossil fuel combustion will provide health benefits to overly burdened communities located adjacent to freeways and freight hubs like ports, railyards and warehouses.



Significant Public Health Benefits

New robust public health analysis evaluates benefits of community resiliency

Benefits of VMT reduction and reduced wildfire smoke

- ↓ VMT, ↑ Walking, biking and active transport* (almost 8000 avoided deaths from chronic illness)
- ↓ Wildfire smoke from NWL scenarios (hundreds of avoided deaths, ER visits, and hospitalizations)

Overall Directional Benefits

- ↓ Mortality, ER visits, asthma, cardiovascular and respiratory disease, cancers, mental illness, infectious diseases, diabetes, and adverse birth outcomes
- ↑ Children’s overall physical, respiratory, and mental health and cognition
- ↑ Health status and life expectancy

*Illustrative scenario based on California Transportation Plan 2050

Health and Economic Metrics



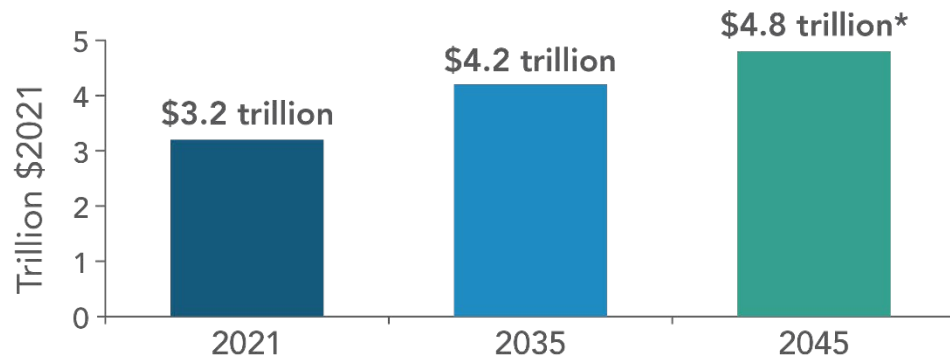
Social cost of carbon (avoided economic damages) of **\$9.9 billion** in 2045



Health benefits (avoided incidence of health effects) over **\$10 billion**
2045 episodic modeling

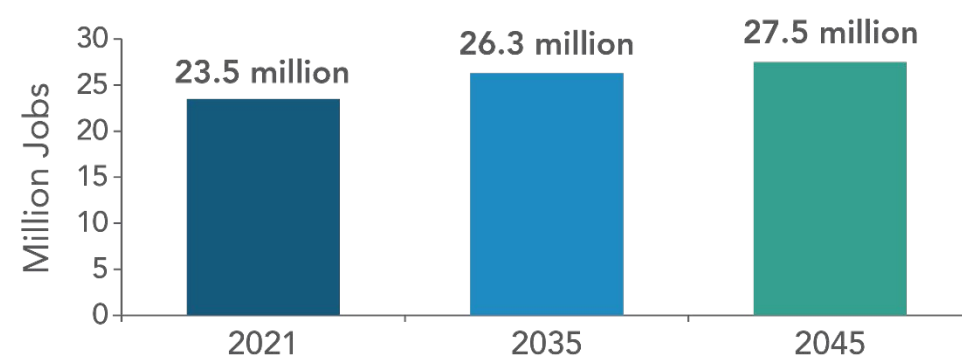
Economic Analysis of CA Climate Action

Continued Growth of California Economy



* Minimum forecast under the economic analysis

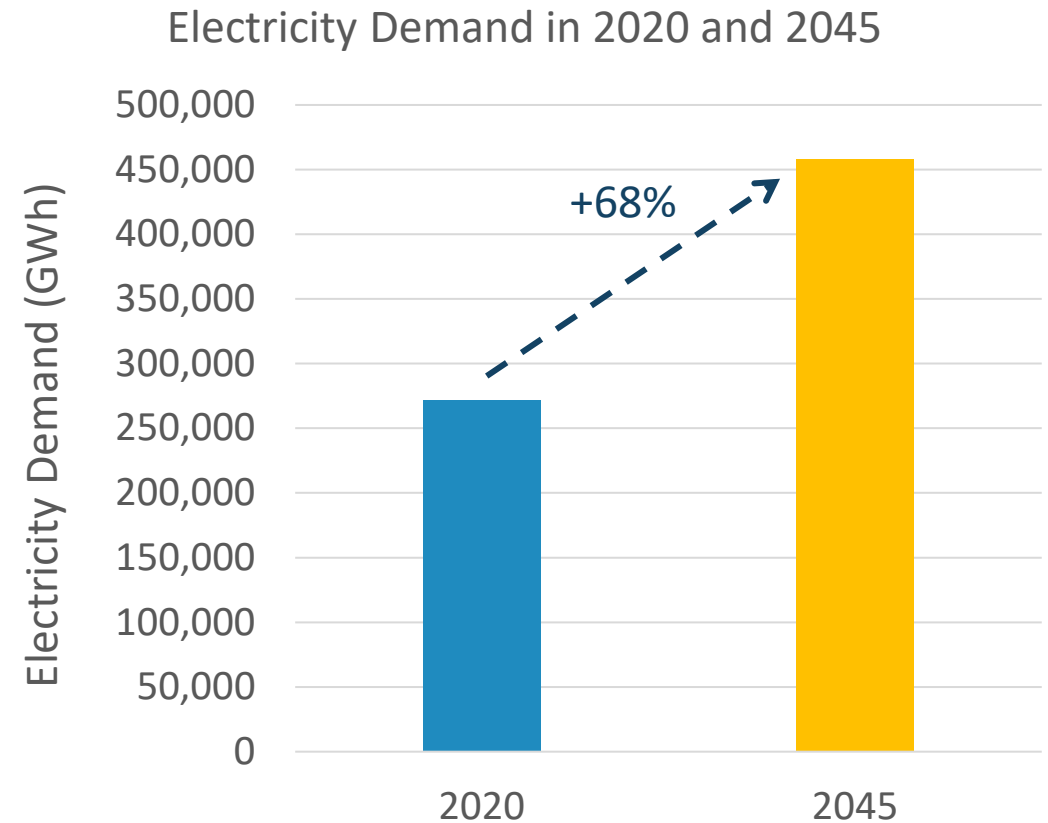
At Least 4 Million New Jobs in 2045



*Reference economy and jobs indicate continued growth from now through 2045

Affordable, Reliable, and Clean Electricity Grid

- Electricity demand 68% higher by 2045 as power sector plays bigger role
- Opportunities to increase storage and increase energy efficiency can reduce need for new gas capacity builds



Replacing Gas Generation: Solar Energy

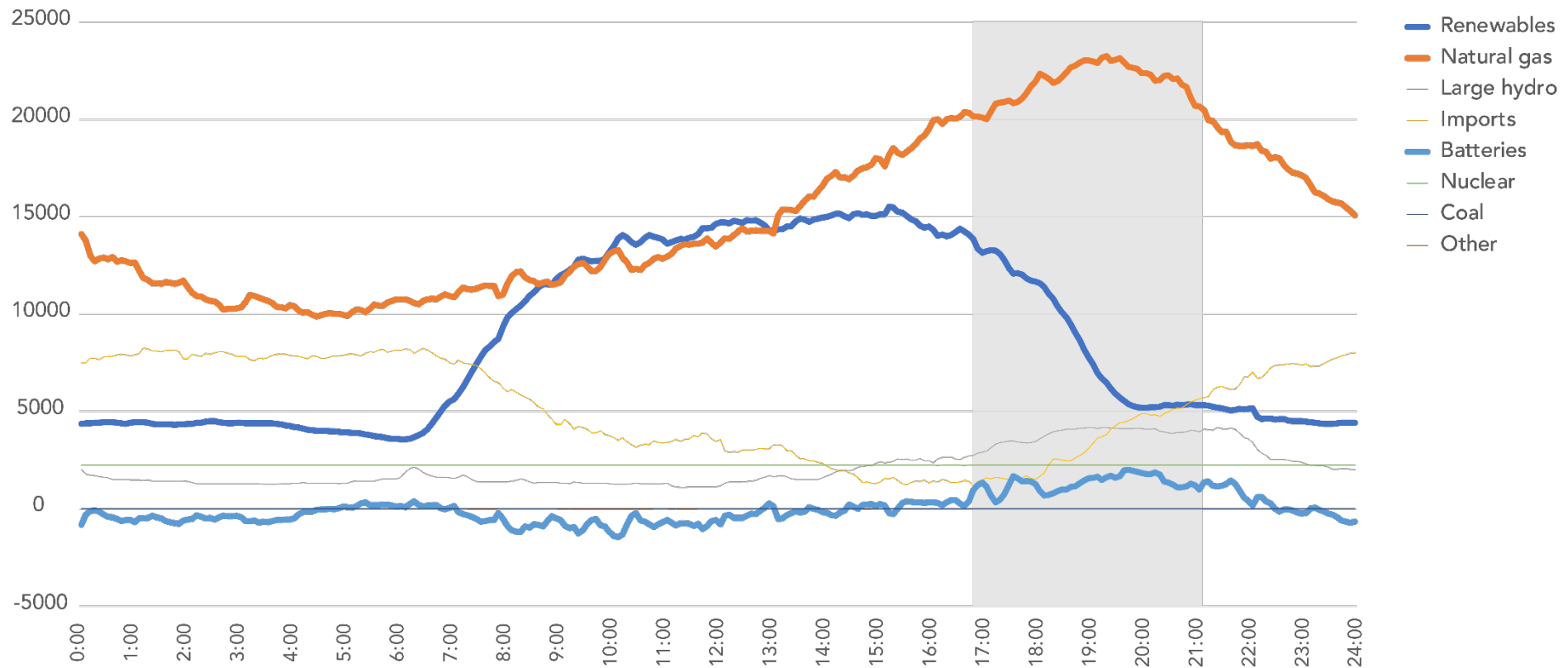


Replacing Gas Generation: Onshore and Offshore Wind Energy



Renewables and Reliability: Evening Demand

Energy in megawatts broken down by resource in 1-hour increments on July 18, 2022.



Reliability: Fast Build out of Battery Storage

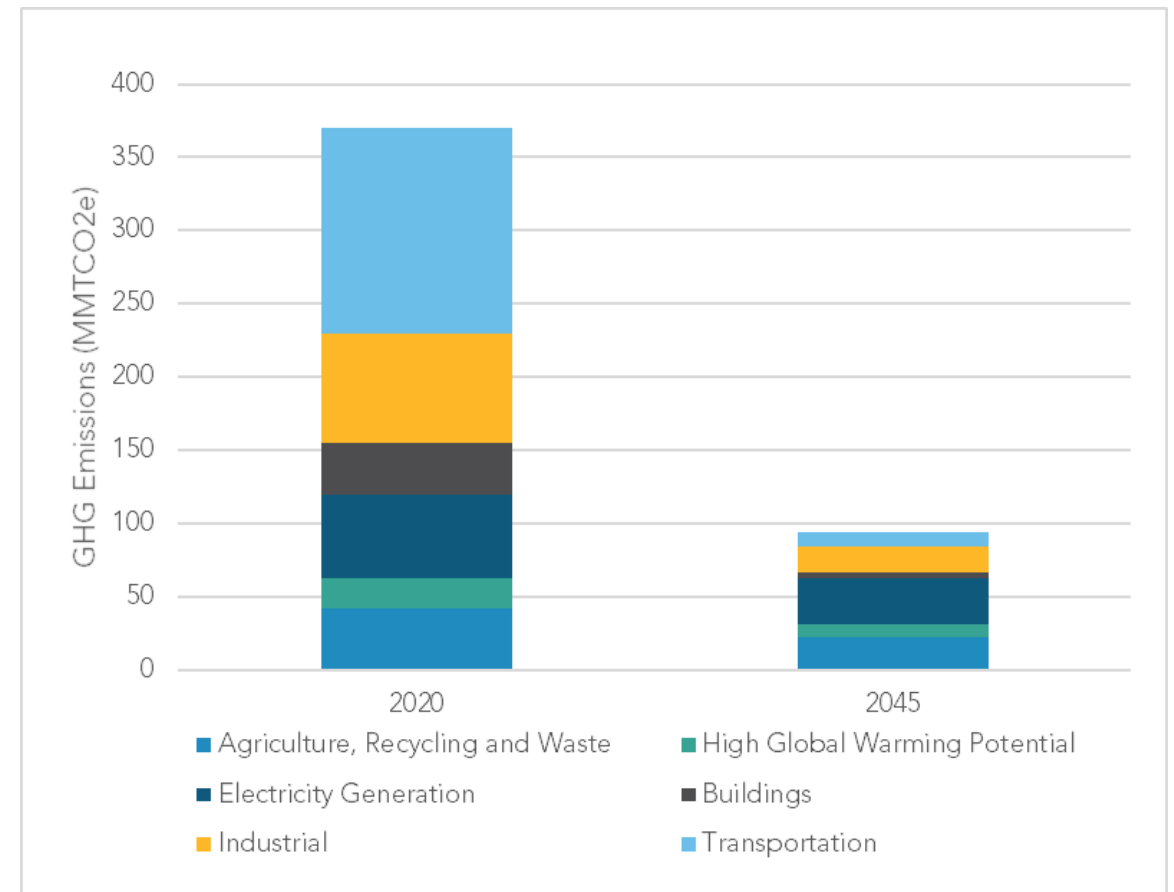


CALIFORNIA IN 2045: Remaining Emissions

Despite all reductions by programs, some emissions will remain in 2045:

- “Legacy” trucks and cars
- Aviation, ships
- HFCs: Refrigerants, insulating foam
- Hard to reduce sectors: e.g. cement.

In order to reach Carbon Neutrality, we need to remove an equivalent amount of carbon dioxide from the atmosphere to bring total emissions to zero.

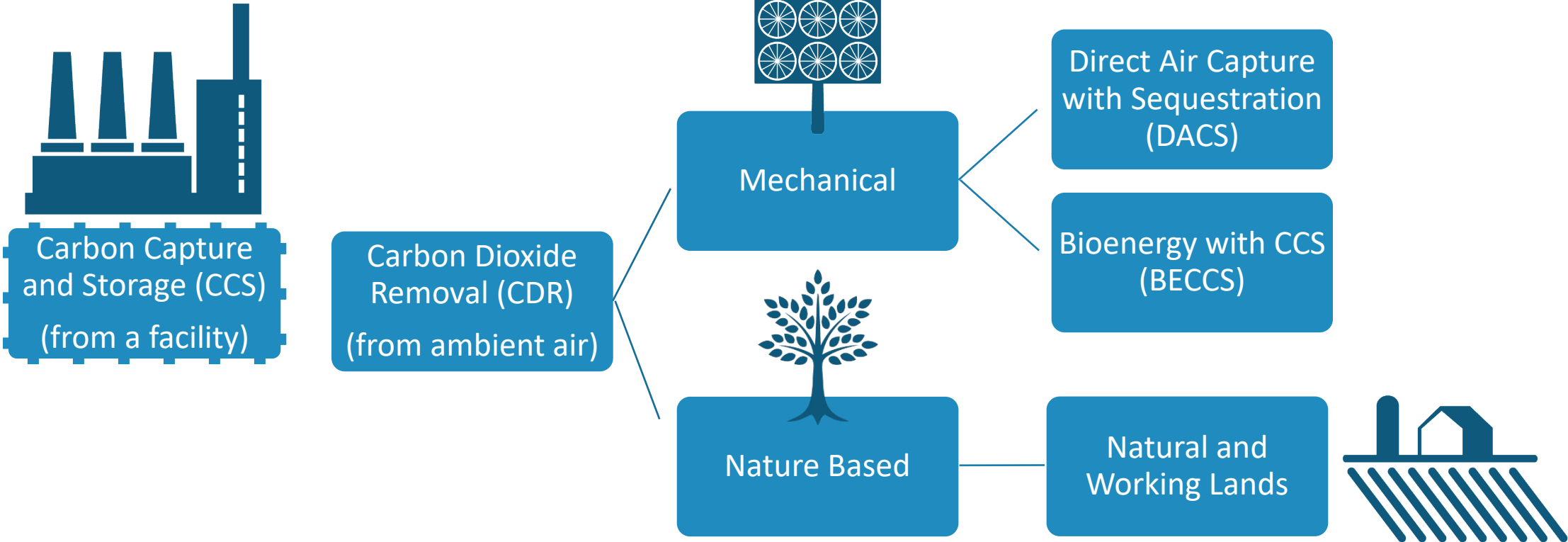


Role of Carbon Removal

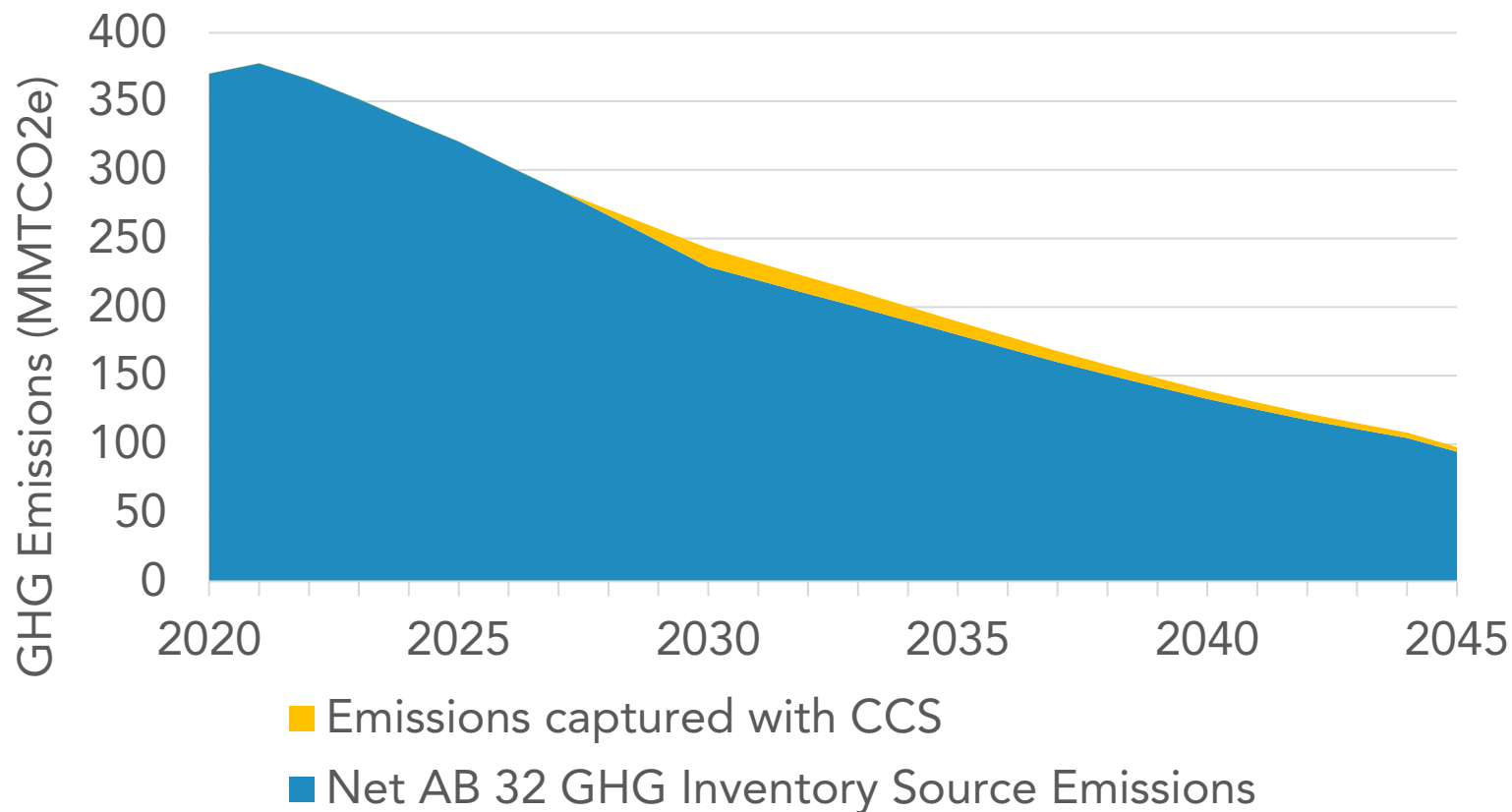


- **Role of CDR is reduced if:**
 - We reduce the emissions from the AB 32 Sectors faster
 - NWL is able to become a sink

Carbon Removal and Sequestration



Targeted Deployment of CCS



- Modeled for refineries and cement facilities only
- Convening of multiagency group with communities to discuss options to ensure safe, reliable deployment of CCS

Strategic deployment of CCS on hard to decarbonize sectors

Natural and Working Lands and the Scoping Plan



Natural and Working Lands

Healthy trees, plants, and soils can support our greenhouse gas reduction goals in two primary ways:

1. Serving as carbon sinks through sequestration.
2. Avoiding releases of emissions from their substantial existing carbon stocks.

We are not focusing on maximizing carbon across all landscape types.

We are focusing on supporting carbon management that fosters ecosystem health, resilience and many other ecosystem services.

Landscapes Included in the Draft



Forests, shrublands, and grasslands



Annual and perennial croplands



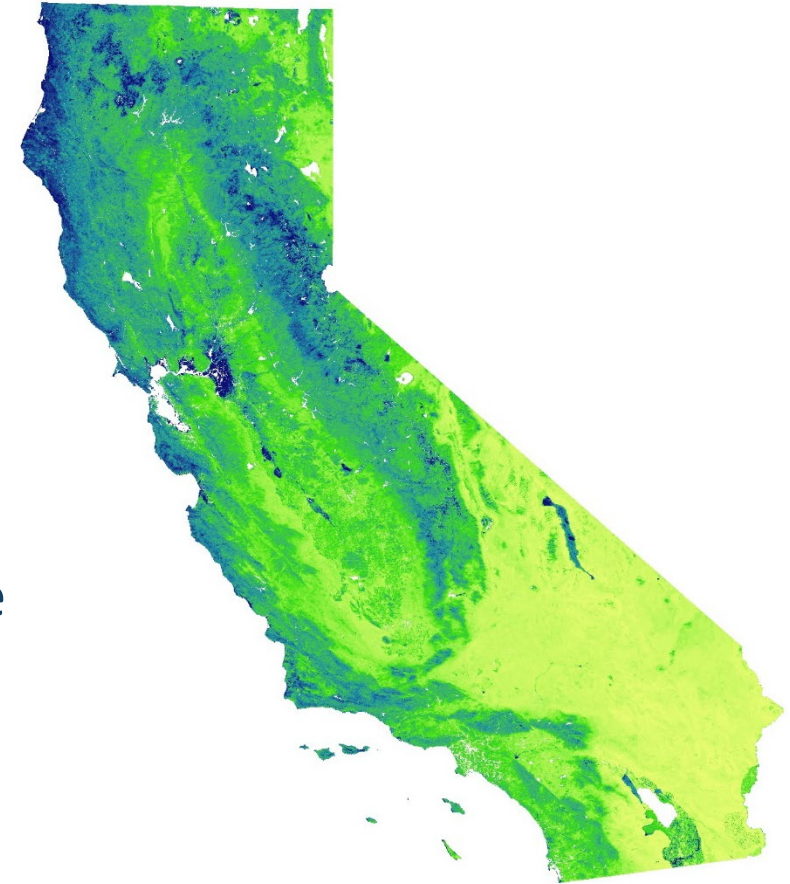
Sacramento-San Joaquin Delta



Urban forests and wildland urban interface



Deserts



Metrics for Natural and Working Lands



10x increase in forest management



5x increase in climate smart agricultural practices



50% reduction in conversion of sparsely vegetated lands to another land use



10% decrease in annual wildfire emissions



20% increase in urban forest investment

Pesticides and the Draft 2022 Scoping Plan



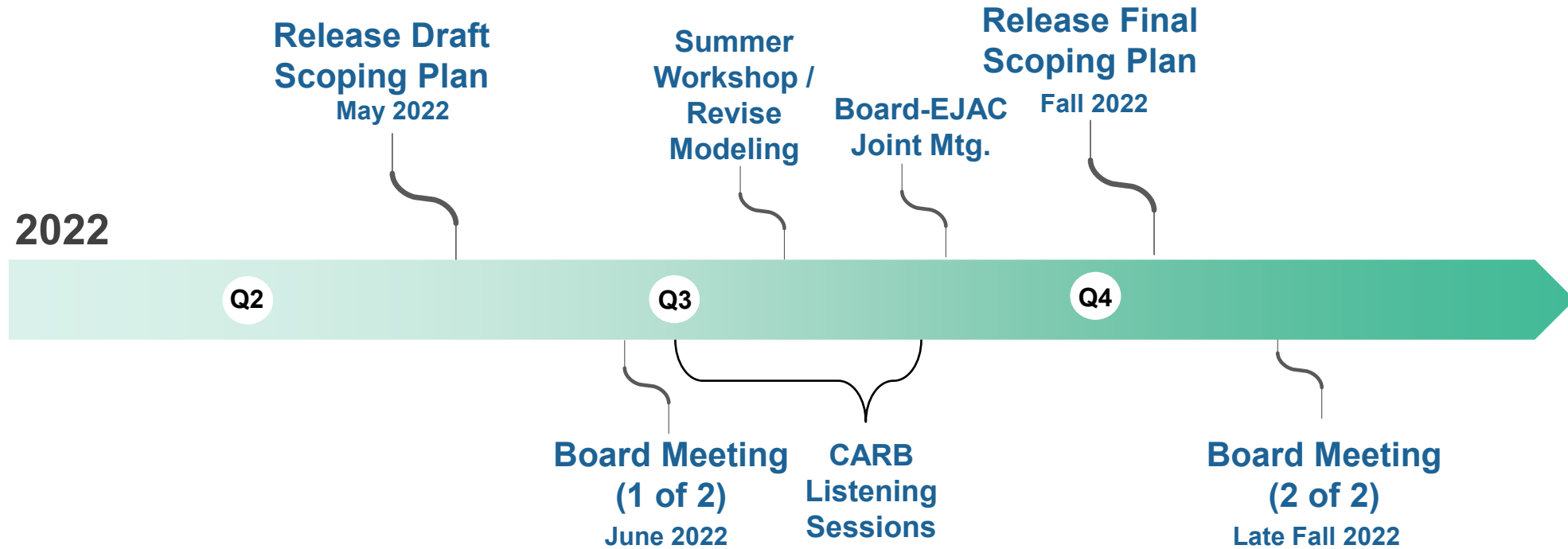
Pesticides

- Not included as a greenhouse gas in the AB 32 GHG Inventory
- Draft 2022 Scoping Plan includes organic farming target which avoids use of pesticides and synthetic fertilizers
- Department of Pesticide Regulation, CA Environmental Agency and Department of Food and Agriculture convened Sustainable Pest Management Workgroup
 - Release draft recommendations and goals this summer focused on a holistic, systemwide approach to sustainable pest management that addresses concerns in the agricultural and urban areas of the state

Cap and Trade and the Scoping Plan

- Cap-and-Trade role in achieving 2030 target is reduced due to following:
 - New legislation: SB 350, SB 596
 - More stringent programs: LCFS, proposed ACC 2
 - Reductions in emissions due to pandemic related impacts
- \$20.3 billion in Cap-and-Trade auction proceeds generated since 2014
 - 50% of implemented projects benefitting the State's disadvantaged and low-income communities

2022 Scoping Plan Update Schedule



EJAC Meetings and Community Meetings (ongoing)

Scoping Plan Workshops (ongoing)