

2022 Scoping Plan Update: Modeling Workshop



OCTOBER 28, 2022

Agenda

- CARB Overview
- AB 32 GHG Inventory Modeling
- NWL Modeling
- Public Comments
- Climate Vulnerability Metric
- Public Comments
- Closing Comments

Today's Workshop Objectives

- Provide an overview of revised Scoping Plan Scenario to be included in the Final 2022 Scoping Plan
- Share updated modeling results for AB 32 Sources and Natural and working Lands including macroeconomic analysis, and air quality and health impacts
- Share more information on the Climate Vulnerability Metric
- Hear from stakeholders in preparation for Final 2022 Scoping Plan release

Transparency on Oral Comment Process

- Dedicated time for EJAC Members
- During general comment period:
 - CARB staff will periodically announce approximate number of hands raised
 - No ceding of time to others
 - Any EJAC Members should use the dedicated time to make any comments to ensure they are heard
 - Please do not email us directly to ask that we give you priority

Public Participation

- Staff Presentation
- Questions and Feedback
 - Use the “**Raise Hand**” function in the GoToWebinar toolbar, which should be located to the right of your screen as shown by a hand icon
 - When staff call your name, please “**Unmute**” yourself by clicking the red button shown by a microphone icon, and proceed to introduce yourself

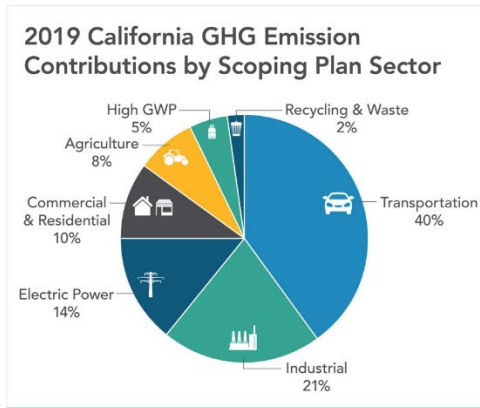


California's Climate Policy Framework



GHG Targets & Goals

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



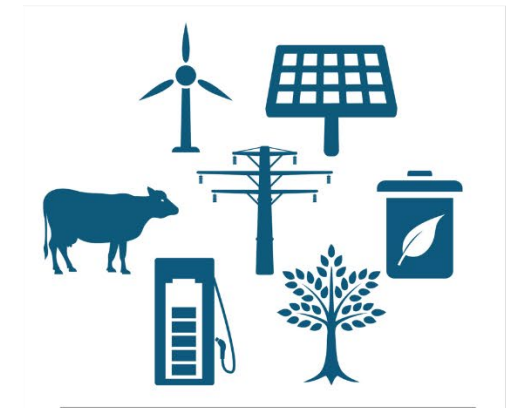
Scoping Plan

Actionable plan across all sectors



Action

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



Projects

Examples: Building compost facilities, digesters, renewables, energy infrastructure, etc.

June 2022 Board Hearing

- CARB Staff presented a draft Scoping Plan with a proposed scenario
- Board members directed staff to include the following:
 - Increase VMT to align with alternative 1
 - Household economic impacts by income level, race if possible
 - Climate Vulnerability Metric
 - Text to consider need for safety for pipelines, injections sites, and capture of carbon dioxide

Feedback on Draft Scoping Plan

- 980 written comments
- 141 oral comments during the board hearing
- Environmental Justice Advisory Committee Draft Recommendations
 - <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2022/090122/ejacrecs.pdf>
- Environmental Justice Advisory Committee Final Recommendations
 - <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2022/090122/finalejacrecs.pdf>
- Various stakeholder engagements and meetings

Scoping Plan Engagement Process

- Before June Board Hearing
 - 21 Environmental Justice Advisory Committee meetings
 - 15 Public workshops
 - 2 Tribal focused workshops
- Since June Board Hearing
 - 4 Public listening sessions
 - 1 Tribal listening session
 - Formal government-to-government request for consultation with California Tribes. 8 responses for consultation so far.

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
 - A 20% clean fuels target for aviation
 - Carbon dioxide removal and capture target of 20 MMT in 2030/ 100 MMT in 2045
 - Increase LCFS stringency, accelerate refinery transitions to clean fuels

Legislation Passed in 2022

- New legislation that informs the Scoping Plan:
 - AB 1279 establishes the policy of the State to achieve carbon neutrality as soon as possible and to ensure that by 2045 Statewide anthropogenic greenhouse gas emissions are reduced at least 85 percent below 1990 levels.
 - SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program.
 - SB 846 extends the Diablo Canyon Power Plant's sunset date
 - SB 1020 adds interim renewable energy and zero carbon energy targets set at 90 percent in 2030 and 95 percent in 2040
 - SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones
 - SB 1075 requires CARB to prepare an evaluation of the role of hydrogen in California
 - AB 1757 requires agencies to determine a range of targets for natural carbon sequestration
 - AB 2251 sets a target for increasing urban tree cover by 10% by 2035

Climate Vulnerability Metric

- Not all communities face same impacts from climate change
- Not all communities are equal in resiliency
- CVM will identify additional social carbon costs at census tract level experienced due to disparate climate impacts (heat, drought, etc.)
- Assist in identifying where and how to build community resiliency
- Will be incorporated into the final plan

The Scoping Plan Scenario

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 statewide stocks

Natural and Working Lands Scoping Plan Scenario

Increasing Ambition for Natural and Working Lands (NWL)

- Need for permanent carbon dioxide removal from NWLs to support carbon removal and capture targets of 20 MMT in 2030/100 MMT in 2045.
- Board direction to accelerate action on agricultural lands
- New legislation (AB 1757, AB 2251)
- Funding from the Inflation Reduction Act

NWL Scoping Plan Scenario Updates

Increased ambition in annual croplands and urban forests (acres/year)

Action	Previously Proposed Scenario (50K acres)	Updated Scoping Plan Scenario (80K acres)
Cover cropping (legumes)	6411	9617
Cover cropping (non-legumes)	6411	9617
No Till	3589	5383
Reduced Till	9220	13830
Compost Amendment	26761	40142
Establishing Riparian Forest Buffers	38	56
Alley Cropping	11	17
Establishing Windbreaks/Shelterbelts	12	17
Establishing Tree and Shrubs in Croplands	8	12
Establishing Hedgerows	44	65
Urban Forestry Investment Increase(% of Reference Funding)	20	200

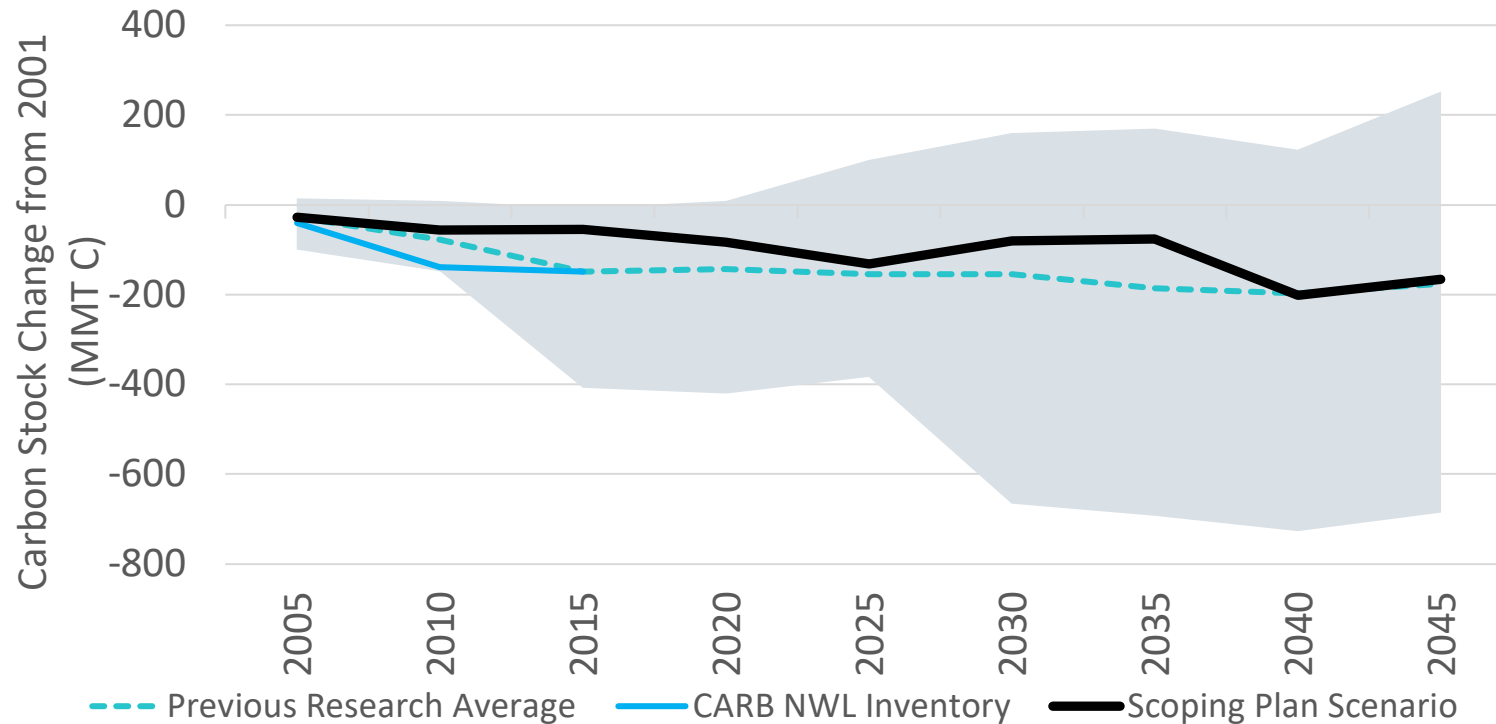
NWL Scoping Plan Scenario Updates

2022 NWL Scoping Plan Scenario

Action	Level of Action
Forest, shrubland, and grassland fuel reduction and restoration (acres/year)	2,300,000
Regenerative agriculture and cropland conservation above BAU (acres/year)	150,000
Urban Forest investment increase above current investment (annual % increase)	200%
Defensible space establishment in wildland urban interface (properties/year)	50,000
Delta wetland restoration (total acres by 2045)	60,000
Desert Conservation above current conservation (acres/year)	15,000

NWL Scoping Plan Scenario Updates

Carbon Stock Results



Note: Grey shadow shows range of results from previous independent research

NWL Scoping Plan Scenario Updates

- 2045 NWL Carbon Stock **Target**
 - 4% below 2014 NWL total
- Contribution of NWL to carbon neutrality
 - Carbon stock loss equivalent to emissions of 7 MMT CO₂e/year
 - This includes all gains and losses of carbon from all NWL
- Carbon Dioxide Removal from NWL
 - Increased carbon stocks equivalent to 1.5 MMT CO₂/year
 - This includes carbon stock increases in urban forests

NWL Scoping Plan Scenario Updates

- NWL total annual direct costs = \$6.5Billion
- Change in statewide employment by 2045 = 0.1%
- Almost no change to Gross State Product by 2045
- Change in statewide per capita disposable income = 0.15%
- Annual health cost saving from improved wildfire emissions = \$3Billion
- Innumerable unquantified benefits from NWL climate action

NWL Key Messages and Next Steps

- California does not have complete control over its NWL
- NWL overall are expected to lose carbon into the future
- Through this loss we can improve environmental quality, security, and public health
- The action called for by the Scoping Plan in NWL is an unprecedented level of investment
- This level of action will again be adjusted through AB 1757