2017 Scoping Plan Update
The Proposed Strategy for Achieving California’s 2030 Greenhouse Gas Target

December 14, 2017
Sacramento, California
Outline

- Background and Process
- Proposed Scoping Plan
- Next Steps
- Staff Recommendation
Background and Process
Scoping Plan Background

- Scoping Plan required by Assembly Bill 32
  - Must be updated at least every 5 years
- Initial Scoping Plan (2008) and First Update (2014)
  - Current data shows the portfolio of policies is working
- Senate Bill 32 codifies 2030 GHG target
- AB 197 provides additional direction in development of the Scoping Plan
- AB 398 directs CARB to update Scoping Plan no later than January 1, 2018
GHG Emissions Trends

GHG Inventory
MRR Total Reported GHG Data
Per Capita GHG

2020 Target


million tonnes CO2e

tonnes CO2e per person

5 10 15 20

250 300 350 400 450 500 550

California Air Resources Board
California’s Economy is Growing

Gross Domestic Product and Carbon Intensity of California’s Economy

- Increasingly efficient production

- Trillion dollars (2009 $) on the Y-axis
- Tonnes CO₂e per million $ GDP on the X-axis

Years from 2000 to 2015 are shown on the X-axis.
Natural & working lands are **not** included in the scope of the statewide limit.

~898 MMT carbon in “live stocks” – forests, grasses, scrub
2017 Scoping Plan Update Process

- Over 2 year development process
- Coordination with State agencies and Legislature since 2015
- 5 Board meetings
- 15 Public Workshops
- Over 20 Environmental Justice Advisory Committee (EJ AC) Meetings and 19 EJ AC Statewide Community Meetings
- Consultation with economic reviewers
- Over 500 public comments received and reviewed
2017 Scoping Plan Update Objectives

- Achieve 2030 target
- Provide direct GHG emissions reductions
- Provide air quality co-benefits (reductions in PM and NOx)
- Protect public health
- Minimize emissions “leakage” – increase to non-CA GHG emissions
- Support climate investment in disadvantaged communities
- Facilitate sub-national and national collaboration
- Support cost-effective and flexible compliance
- Support Clean Power Plan and other federal action
2017 Legislation AB 398

- Direction on Scoping Plan Update
- Direction on post-2020 Cap-and-Trade Program
  - CARB has initiated a new rulemaking to design a post-2020 program that conforms to the requirements in AB 398
2017 Legislation AB 617

- Requires CARB to develop and implement a program to reduce exposure to criteria and toxic pollutants in California’s most burdened communities

- Implementation will be in partnership with air districts/CAPCOA

- Work underway to implement new community-focused air quality program including monitoring and emission reduction plans
Proposed Scoping Plan
Scoping Plan Strategy: A suite of complementary measures

- SB 350 - increase renewable energy and energy efficiency
- SB 1383 - Short-Lived Climate Pollutant Plan
- Mobile Source Strategy - help State achieve its federal and state air quality standards
- Enhanced Low Carbon Fuel Standard
- Sustainable Freight Action Plan
- SB 375 – support sustainable community development
- Post-2020 Cap-and-Trade Program

Based on an evaluation of alternatives and an uncertainty analysis, this suite of policies has the highest certainty of achieving the 2030 target.
Alternatives Considered

- **No Cap-and-Trade (Prescriptive Regulations)**
  - Need new statutory authority
  - Fewer options to minimize leakage and higher cost than Scoping Plan

- **Carbon Tax**
  - No firm emissions limit and difficulty in setting right price to incent reductions
  - Difficult to make up unrealized reductions

- **All Cap-and-Trade**
  - No enhancement to LCFS may impede transportation fuel diversification

- **Cap and Tax**
  - Highest direct costs resulting in loss of industry, jobs, and GDP
GHG Emissions Modeling Updates

- Final modeling changes needed emission reductions from Scoping Plan
  - Removal of coal contracts results in lower emissions in the reference scenario
  - Renewables Portfolio Standard (RPS) over performs and achieves 40 percent RPS in 2020
  - Per AB 398, refinery combustion CO2 reductions are under Cap-and-Trade (30 MMTCO2e)

- Net results for cumulative analysis
  - Need less reductions to achieve 2030 target (-60 MMT CO2e)
  - RPS has less to do from 2020 to 2030 to achieve 50 percent
  - Expected reductions from Cap-and-Trade go up by 45 MMTCO2e
Estimated changes in GHG Emissions by Sector

In 2030, Cap-and-Trade is expected to deliver 34-79 MMTCO$_2$e of additional emissions reductions beyond what is shown in the sector bar chart.

High GWP and Waste emissions reductions targets are 40% from 2013 levels.
Natural and working lands play a critical and complementary role in addressing climate change.

Objectives

- Net zero or negative GHG emissions, and
- Minimize, where appropriate, net GHG and black carbon emissions

Target

- Preliminary intervention-based goal for sequestering and avoiding emissions by at least 15-20 MMT CO$_2$e by 2030 through existing pathways and new incentives

- Higher target to be evaluated as part of NWL Implementation Plan development
AB 197 Analyses

- For each measure evaluated, Scoping Plan includes:
  - Cost per metric ton
  - GHG and air quality benefits
  - Cost savings of avoided damages

- Suite of policies provides for instate, direct GHG reductions in mobile and stationary sources and fulfills other mandates, including cost-effectiveness and reducing leakage
### Estimated Avoided Health Impacts Due to Emissions Reductions in 2030

<table>
<thead>
<tr>
<th>Health Impact</th>
<th>Reduction in incidents</th>
<th>Value of avoided incidents ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>140 to 210</td>
<td>$1,200 to $1,810</td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>20 to 31</td>
<td>$1.0 to $1.5</td>
</tr>
<tr>
<td>ER Visits</td>
<td>58 to 88</td>
<td>$0.04 to $0.07</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$1,200 to $1,800</td>
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</tbody>
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- **Economic Valuation** includes avoided health impacts related to reductions in diesel particulate matter and NOx relative to the reference case.
- **Does not include** carbon-related disease health impacts included in the Social Cost of Carbon.
- **Potential benefit** associated with active transport: 2,100 fewer deaths.
Scoping Plan: 2030 Macroeconomic Impacts

- Relative to Reference scenario in 2030
  - California GDP: $3.4 trillion
  - Employment 23,500,000
  - Personal Income: $3.0 trillion

- The average growth rate of State GDP, employment, and personal income are essentially unchanged relative to the Reference scenario

- Using the social cost of carbon and methane: avoided damages are $1.9 -11.2 billion

<table>
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<tr>
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<th>Percentage Change</th>
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<tbody>
<tr>
<td>California GDP (Billion $2015)</td>
<td>-0.3% to -0.6%</td>
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<tr>
<td>Employment (Thousand Jobs)</td>
<td>-0.2% to -0.3%</td>
</tr>
<tr>
<td>Personal Income (Billion $2015)</td>
<td>-0.1%</td>
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This plan provides an achievable path for reaching the State’s 2030 GHG target.

2030 target is a milestone on the way to achieve greater reductions needed to stave off the catastrophic impacts of climate change.

We need to continue to evaluate and incorporate additional opportunities to reduce GHGs, criteria, and air toxics emissions as they become cost-effective and technologically feasible.

Implementation of the SP measures must not disproportionately impact low-income communities.

Continue to monitor, adjust, and enforce existing air quality programs, in addition to implementing AB 617.
Environmental Analysis

- Draft Environmental Analysis (EA) completed
  - Potentially significant impacts found for some resource areas
- Released for public comment
  - January 20, 2017 – April 10, 2017
- CARB prepared the Final EA and written responses to comments received on the Draft EA
  - Released in December 2017
Next Steps
Scoping Plan Implementation

- Develop and implement measures identified in the Scoping Plan
  - Each measure will be developed through its own focused public process with additional detailed analyses
- Continue to look for additional opportunities to reduce GHGs and criteria and air toxics emissions
- Convene interagency workgroups
- Develop NWL Implementation Plan by 2018
- Implement AB 617 and AB 197 to improve access to air emissions data and improve air quality in the most burdened communities
- Continue process to integrate public health analyses in program development process
- Revisit California Climate Investments guidance to address 17/18 budget appropriations
Reporting and Oversight

Ongoing monitoring and reporting provides opportunities for public input, Board feedback, and adjustments if needed

- CARB annual Greenhouse Gas Inventory (data) and annual Mandatory GHG Reporting Data
- Annual status report to the Board on Scoping Plan implementation
- Update to AB 32 Scoping Plan at least once every 5 years (written report)
- SB1018 (written reports)
  - Semi-annual update on key climate programs
  - Semi-annual report on actions proposed by WCI, Inc.
  - Annual fiscal report on prior fiscal year
  - Annual resource report on resources by major program area
Reporting and Oversight, cont.

- **AB 197**
  - Annual informational report by CARB Chair on emissions covered by Scoping Plan

- **AB 398**
  - Annual report by the Independent Market Advisory Committee on environmental and economic performance of relevant climate policies
  - Annual report by the Legislative Analyst Office on the economic impacts and benefits of specified greenhouse gas emissions targets
Staff Recommendation

- Approve the proposed Resolution which includes:
  - Approval of written responses to environmental comments, certification of the Final EA, and making the required CEQA findings
  - Approval of the 2017 Scoping Plan Update