2022 Scoping Plan Update
Kick-off Workshop

JUNE 8, 2021
Introductory Comments

- Secretary Blumenfeld, California Environmental Protection Agency
- Chair Randolph, California Air Resources Board
- Executive Officer Corey, California Air Resources Board
- Environmental Justice Advisory Committee Member
California’s Trends

AB 32 Climate Change Scoping Plan

- Scoping Plan(s) are action plans to ensure CA meets statewide GHG reduction targets (mandated in AB 32)
  - Scoping Plan(s) rely on a suite of climate policies to address emissions across all sectors
  - Required to be updated at least every 5 years
  - 2017 SP (most recent) – cost-effective and technologically feasible path to achieve the 2030 target

- Provide direct GHG emissions reductions and air quality benefits
- Minimize emissions “leakage” – increase to non-CA GHG emissions
- Facilitate sub-national and national collaboration
- Support cost-effective and flexible compliance
2017 Scoping Plan Portfolio
40% below 1990 levels by 2030

- Double building efficiency
- More clean, renewable fuels
- Cleaner zero or near-zero emission cars, trucks, and buses
- Walkable/bikeable communities with transit
- Cleaner freight and goods movement
- 60% renewable power
- Slash potent “super-pollutants” from dairies, landfills and refrigerants
- Cap emissions from transportation, industry, natural gas, and electricity
- Invest in communities to reduce emissions
- Protect and manage natural and working lands
2022 Scoping Plan Update: Key Objectives

- **2022**: Late 2022, Board consideration of 2022 Scoping Plan
- **SB 32**: Assess progress towards achieving the 2030 target
- **Science**: Lay out a path for achieving carbon neutrality no later than 2045
2022 Scoping Plan Update: Key Objectives, cont.

- Longest planning horizon of any Scoping Plan
- Identify endpoints for transition
- Technology and fuel deployment paths
GHG Emissions Modeling

- Forecast Reference Scenario out to 2045
  - What happens to GHG emissions if we take no further action
- Design several mitigation scenarios
  - Develop and model different paths to reduce emissions out to 2045

Illustrative example of Reference Scenario and GHG Mitigation targets
Designing Mitigation Scenarios

- All scenarios must at least:
  - be consistent with existing Legislative Mandates and Executive Orders
  - meet GHG goals
  - work in concert with existing and emerging air quality programs

- Factors weighed in staff proposed scenario for CARB Board consideration:
  - Demonstrate consistency with statutes and EOs
  - Identify trade-offs for balancing several factors including: benefits, costs, minimizing leakage, technological feasibility
Example Inputs for Modeling

- Available technology types and deployment rates over a time period
- Fuel type and deployment rates over a time period
- Economic growth
- Population growth
- Energy and fuel costs
- Costs for infrastructure and capital investments
- Any fuel feedstock constraints
Data from E3 PATHWAYS Model

<table>
<thead>
<tr>
<th>State-level (aggregate &amp; by sector)</th>
<th>GHGs</th>
<th>Fuel Demand</th>
<th>Costs</th>
</tr>
</thead>
</table>

- Emissions modeling must be completed at least 5 months prior to publication of drafts to allow sufficient time for air quality, health, economic, and other analyses.
**Example of 2017 Scenario Comparisons**

*Draft Estimated Reductions in Health Impacts Due to Emissions Reductions in 2030*

<table>
<thead>
<tr>
<th></th>
<th>Proposed Scenario</th>
<th>Alt 1- Prescriptive Regulations</th>
<th>Alt 2- Carbon Tax</th>
<th>Alt 3- All Cap- and-Trade</th>
<th>Alt 4- Cap- and-Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>140-170</td>
<td>140-190</td>
<td>140-170</td>
<td>120-150</td>
<td>120-160</td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>21-26</td>
<td>21-28</td>
<td>21-26</td>
<td>18-22</td>
<td>19-23</td>
</tr>
<tr>
<td>ER Visits</td>
<td>59-73</td>
<td>59-78</td>
<td>59-73</td>
<td>51-63</td>
<td>53-66</td>
</tr>
</tbody>
</table>
## Example of 2017 Scenario Comparisons

Draft Estimated Economic Impacts Due to Emissions Reductions in 2030

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>California GDP</strong></td>
<td>-$13.2 to -$22.5</td>
<td>-$40.0</td>
<td>-$21.3</td>
<td>-$8.3 to -$17.7</td>
<td>-$67.8</td>
</tr>
<tr>
<td>(Billion $2015)</td>
<td>(-0.4% to -0.6%)</td>
<td>(-1.2%)</td>
<td>(-0.6%)</td>
<td>(-0.2% to -0.5%)</td>
<td>(-2.0%)</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td>-67.7 to -104.1</td>
<td>-271.6</td>
<td>-103.6</td>
<td>-34.7 to -74.3</td>
<td>-356.3</td>
</tr>
<tr>
<td>(Thousand Jobs)</td>
<td>(-0.3% to -0.4%)</td>
<td>(-1.2%)</td>
<td>(-0.4%)</td>
<td>(-0.2% to -0.3%)</td>
<td>(-1.5%)</td>
</tr>
<tr>
<td><strong>Personal Income</strong></td>
<td>-$6.4 to -$4.2</td>
<td>-$27.5</td>
<td>-$2.9</td>
<td>-$3.1 to -$1.0</td>
<td>-$30.6</td>
</tr>
<tr>
<td>(Billion $2015)</td>
<td>(-0.2% to -0.1%)</td>
<td>(-0.9%)</td>
<td>(-0.1%)</td>
<td>(-0.1% to 0.0%)</td>
<td>(-1.0%)</td>
</tr>
</tbody>
</table>
Analyses for 2022 Scoping Plan Update

- Cost per ton of policy (AB 197)
- Social cost of carbon (AB 197)
  - New values expected in coming months
- Estimated air quality benefits (AB 197)
  - Building off of CARB input for SB 100 report
  - New health end points
  - Use health econ valuation to better demonstrate benefits
- Public health
  - Status quo vs Action

- Environmental (CEQA)
- Economic (health, macro, household, jobs)
Final Scoping Plan

- Actionable statewide blueprint to align efforts to achieve the state’s climate goals
- 2017 Scoping Plan is underpinned by statutes and dozens of individual regulations and actions across state agencies
- Considered and adopted by the CARB Board
- Annual implementation updates to the CARB Board
- Does not go into details in individual program or regulation design
- Does not supplant or create new statutes or regulations
Post Scoping Plan Update Adoption

- Agencies and CARB start to look at their regulations, programs, and policies to align with outcomes identified in the scoping plan

- CARB actions
  - Scoping Plan implementation takes the form dozens of regulations, plans, and policies brought to the Board for consideration and adoption
  - Each has their own detailed public process and more detailed health, economic, and environmental analyses
Science-based Target: Achieve Carbon Neutrality (CO$_2$e) Mid-Century

- Continue to reduce emissions from sources in AB 32 GHG Inventory
- Reduce emissions and increase sequestration in Natural and Working Lands
- Maximize all sinks with goal of achieving net negative
2022 Scoping Plan Update Guideposts

- Key statutes
  - AB 32, SB 32, AB 197, AB 398, SB 350, SB 100, SB 1383, SB 375, AB 617, AB 1504, SB 1386
- Key Executive Orders
  - S-03-05, B-52-18, B-55-18, N-79-20, N-82-20
- EJAC Recommendations
- Public feedback
- Key Reports
  - AB 74 Transportation Carbon Neutrality
  - AB 398 Jobs & Climate Action Plan
  - SB 100 100% Renewable & Zero-Carbon Electricity
  - Achieving Carbon Neutrality for California
  - Forest Carbon Plan and Wildfire and Forest Resilience Action Plan