



2017 Scoping Plan Update

The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target



December 14, 2017
Sacramento, California

Outline

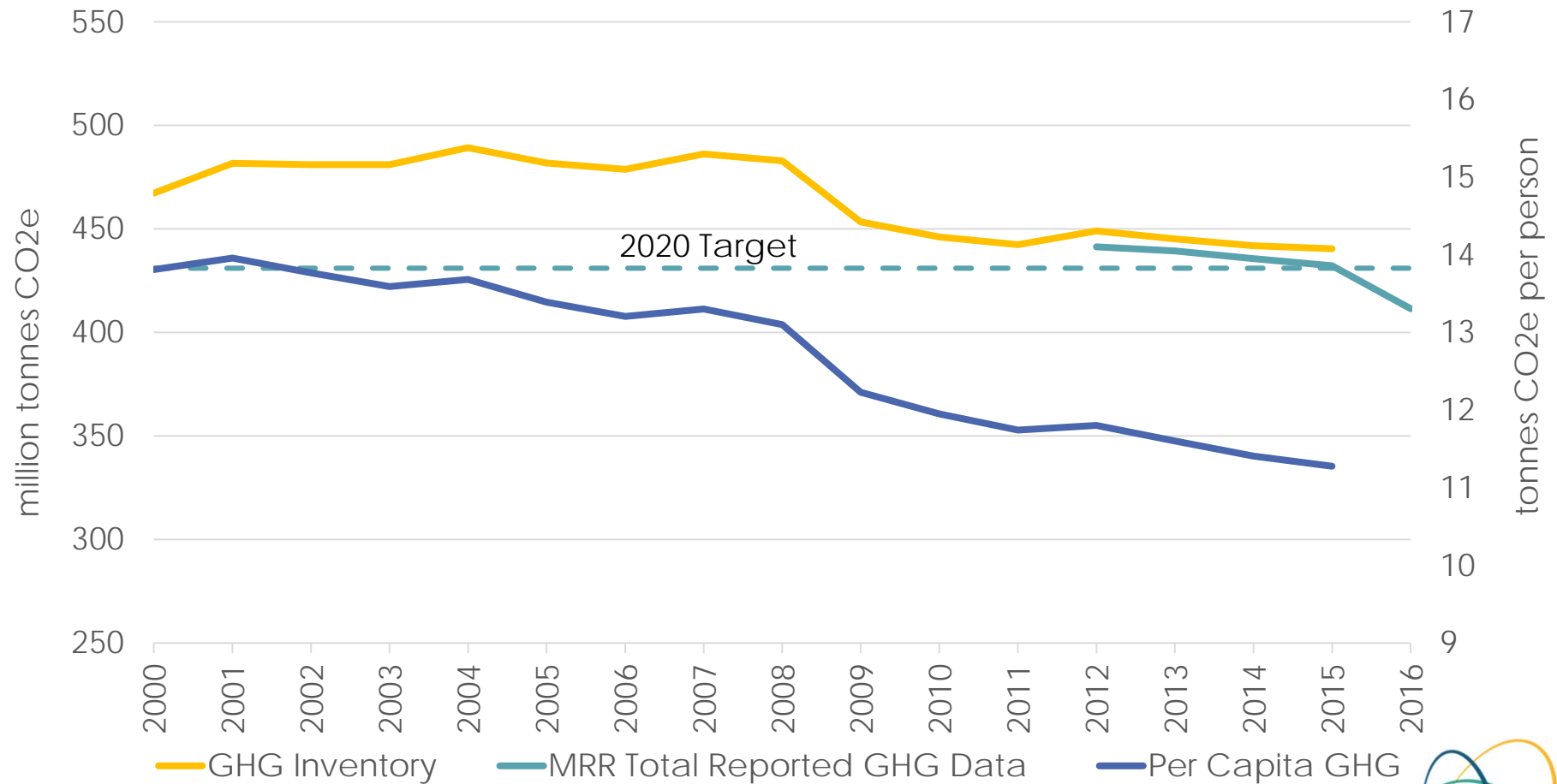
- ▣ Background and Process
- ▣ Proposed Scoping Plan
- ▣ Next Steps
- ▣ Staff Recommendation

Background and Process

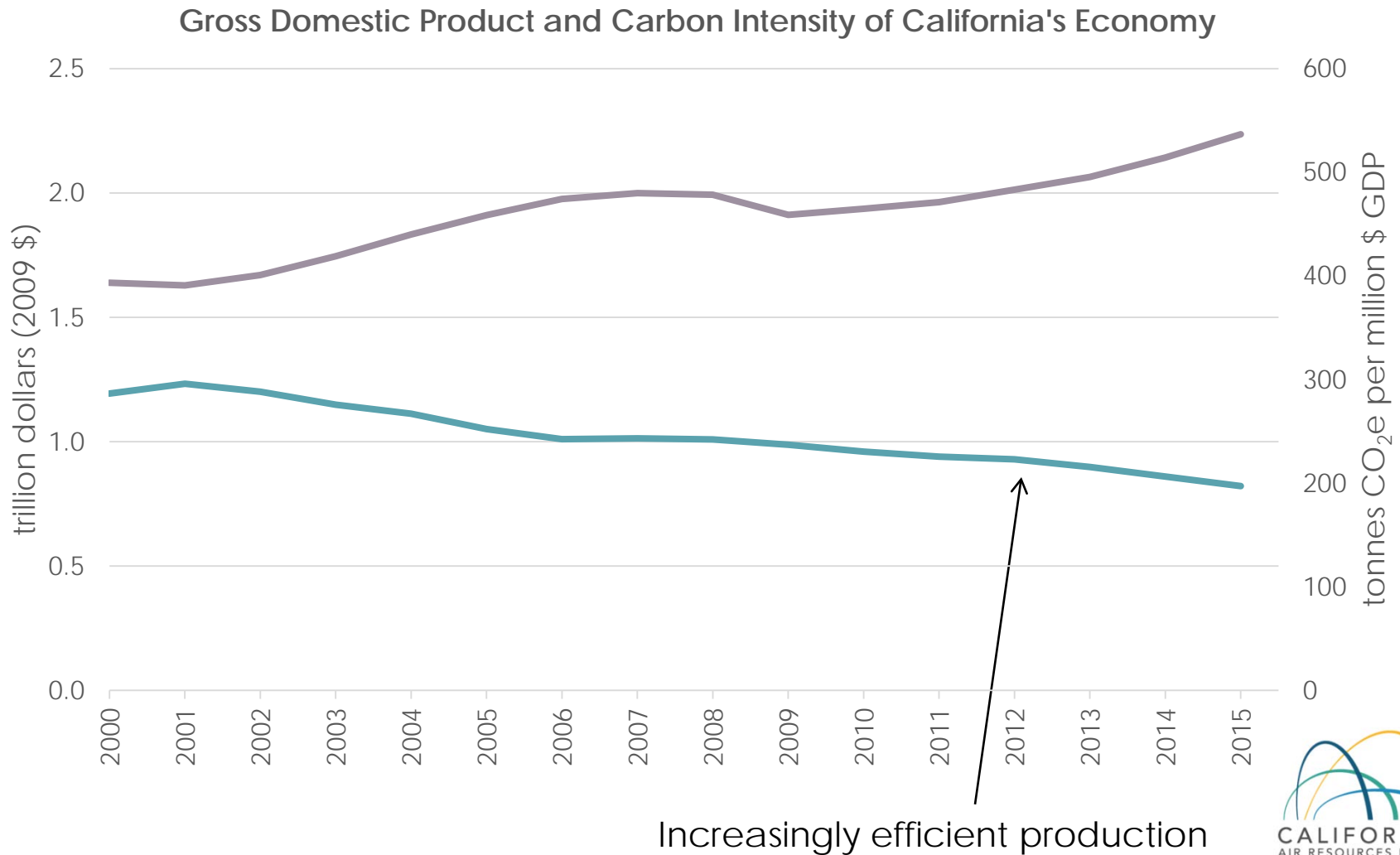
Scoping Plan Background

- 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

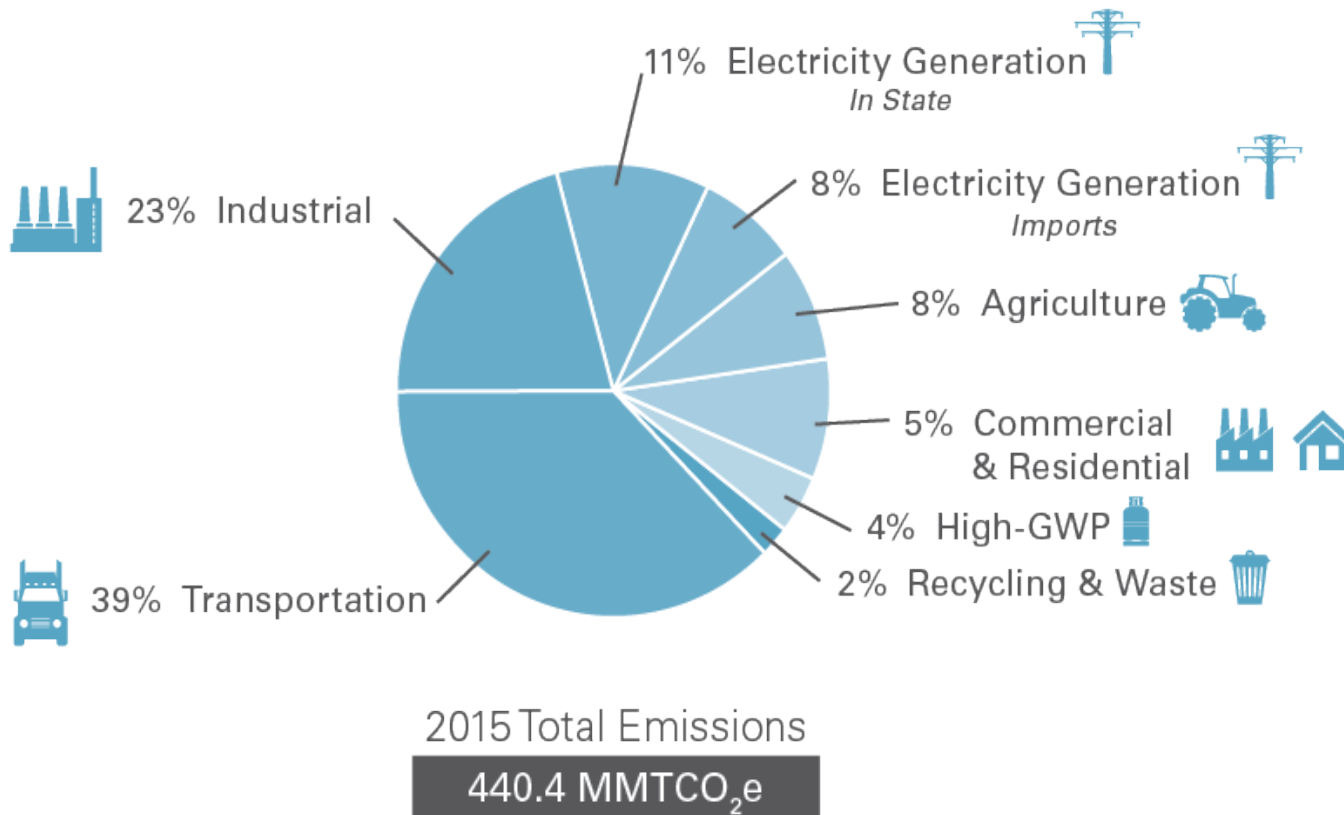
GHG Emissions Trends



California's Economy is Growing



GHG Emissions Sources by Sector



- 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 (EJAC) Meetings and 19 EJAC 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

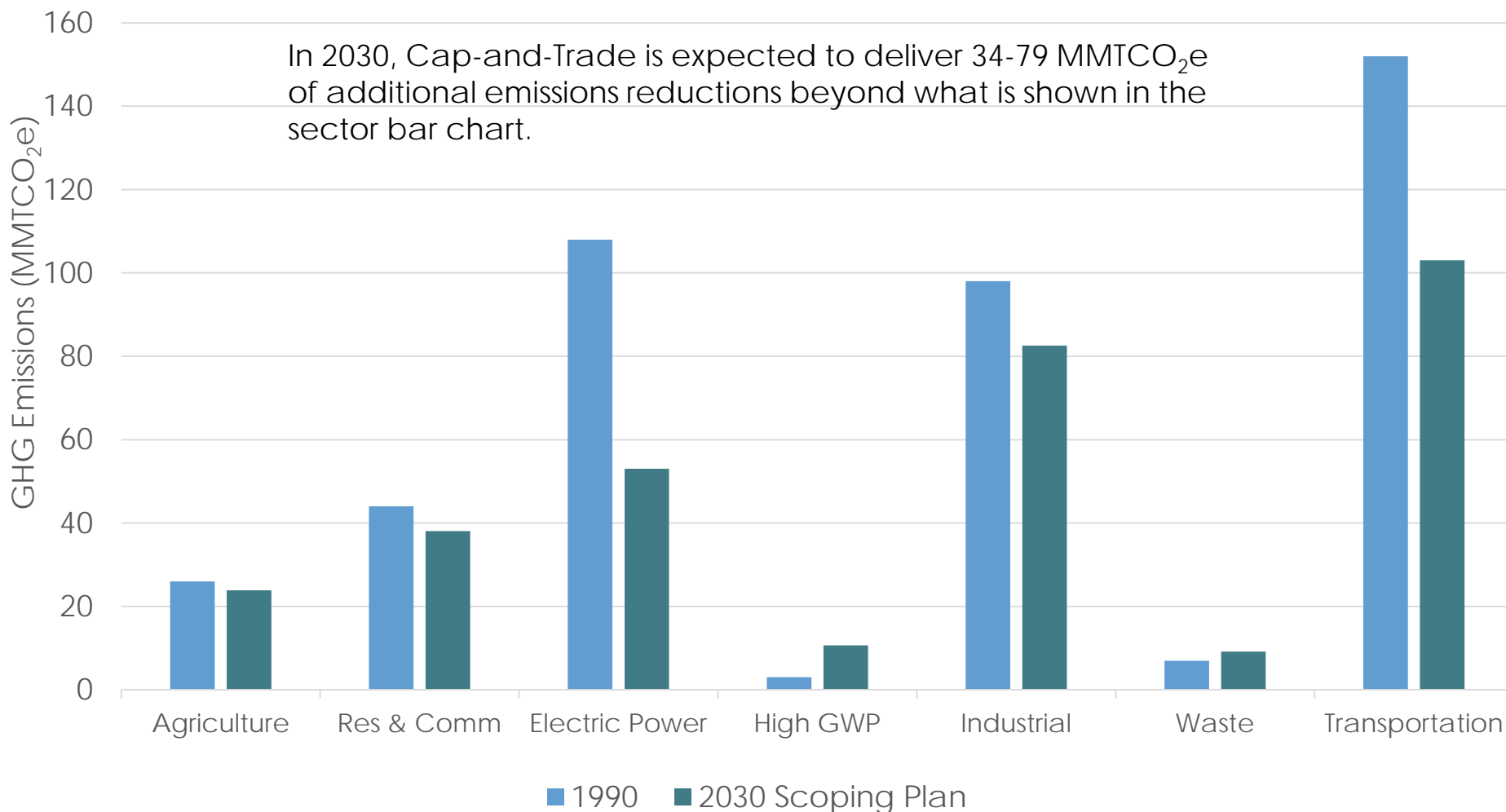
- ▣ No Cap-and-Trade (Prescriptive Regulations)
 - ▣ Need new statutory authority
 - ▣ Fewer options to minimize leakage and higher cost than Scoping Plan
- ▣ Carbon Tax
 - ▣ No firm emissions limit and difficulty in setting right price to incent reductions
 - ▣ Difficult to make up unrealized reductions
- ▣ 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 MMT CO₂e)
- 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 MMT CO₂e

Estimated changes in GHG Emissions by Sector

In 2030, Cap-and-Trade is expected to deliver 34-79 MMTCO₂e 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 (NWL)

- ▣ 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 CO₂e 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

Health Impact	Reduction in incidents	Value of avoided incidents (\$ million)
Mortality	140 to 210	\$1,200 to \$1,810
Hospitalizations	20 to 31	\$1.0 to \$ 1.5
ER Visits	58 to 88	\$0.04 to \$0.07
Total		\$1,200 to \$1,800

- 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

	Percentage Change
California GDP (Billion \$2015)	-0.3% to -0.6%
Employment (Thousand Jobs)	-0.2% to -0.3%
Personal Income (Billion \$2015)	-0.1%

Key Points Summary

- 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