



SB 350 Integrated Resource Plan Workshop

March 2, 2018



CALIFORNIA
AIR RESOURCES BOARD

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Workshop Materials and Submitting Comments

- This presentation is posted:
<https://www.arb.ca.gov/cc/sb350/sb350.htm>
- The presentation webcast is available:
<https://video.calepa.ca.gov/>
- Written comments may be submitted until 5 pm (PDT)
Friday, March 23, 2018, at this site:
<https://www.arb.ca.gov/cc/sb350/sb350.htm#meetings>
- During this workshop, e-mail questions to:
auditorium@calepa.ca.gov



Agenda

- ▣ Background
- ▣ Public Utilities Commission (CPUC) Staff Presentation
- ▣ Energy Commission (CEC) Staff Presentation
- ▣ Approach Under Consideration by CARB
- ▣ Next Steps
- ▣ Questions



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SB 350

- ▣ SB 350 (2015) requires CARB, in coordination with CPUC and CEC, to:
 - ▣ Establish GHG emissions reduction targets for the electricity sector and for each load serving entity (LSE) or publicly-owned electric utility (POU)*
 - ▣ Ensure that targets reflect electricity sector's percentage in achieving economy-wide greenhouse gas emissions specified in SB 32

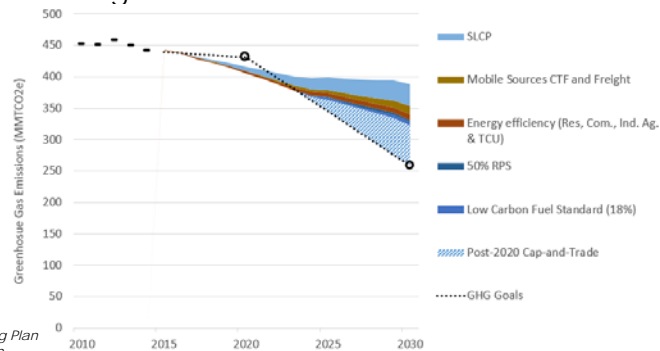
* Exceeding 700 GWh annual threshold



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SB 32 and Scoping Plan

- SB 32 (2016) requires emissions levels of 40% below 1990 levels by 2030
- Scoping Plan (2017) describes how economy-wide greenhouse gas emissions reductions can be achieved



Scoping Plan Measures Affecting Electricity Sector

- 50% RPS by 2030 (SB 350)
- Doubling energy efficiency savings (SB 350)
- Widespread transportation electrification (SB 350, LCFS)
- Transition to zero-emission vehicles, buses, and trucks (Mobile Source Strategy)
- Transition to zero-emission freight vehicles (CA Sustainable Freight Action Plan)
- Post-2020 Cap-and-Trade Program




CARB Board Resolution

Board Resolution 17-46

“...the Board hereby determines that the Final Plan should inform the preliminary 2030 GHG planning target range for the electricity sector, which in coordination with the California Public Utilities Commission and the California Energy Commission, will be evaluated and revised, as appropriate, as part of the Board’s process to establish GHG planning targets for the electricity sector and each load-serving entity for use in Integrated Resource Plans pursuant to SB 350.”

	1990	2030 Scoping Plan Ranges ¹⁷
Agriculture	26	24-25
Residential and Commercial	44	38-40
Electric Power	108	30-53¹⁷
High GWP	3	9-11 ¹⁸
Industrial	98	83-90 ¹⁹
Recycling and Waste	7	8-9 ²⁰
Transportation (Including TCU)	152	103-111
Natural Working Lands Net Sink*	-7 ²¹	TBD
Sub Total	431	294-339
Cap-and-Trade Program	n/a	34-79
Total	431	260

Source: 2017 Scoping Plan, Table 3.



GHG Planning Target Range

Sources of Uncertainty in Electric Supply and Demand

Electricity Sector GHG Emissions


Additional Wind, Solar, Geothermal, Biomass, Hydropower, Storage, Regionalization

Electricity Demand

ZEVs
Building Electrification
Industrial Electrification
Population Growth
Increased Industrial Production

Residential and Commercial Energy Efficiency
Industrial Energy Efficiency
Decreased Industrial Production

- An acceptable electricity sector GHG emissions planning target range can accommodate an uncertain future for the sector and individual entities
- Increased electricity demand can coincide with reduced electricity sector GHG emissions and/or reduced statewide GHG emissions



Objectives of Integrated Resource Plans

- SB 350 requires load-serving entities and publicly owned electric utilities to develop integrated resource plans (IRPs) that:
 - **Meet greenhouse gas reduction targets**
 - Achieve 50% RPS
 - Serve customers at just and reasonable rates
 - Minimize impacts on ratepayers' bills
 - Ensure system and local reliability
 - Strengthen diversity, sustainability, and resilience of bulk transmission and distribution systems and local communities
 - Enhance distribution systems and demand-side energy management
 - Minimize localized air pollutants and other GHG emissions with early priority on disadvantaged communities
- CPUC and CEC have initiated proceedings with their respective stakeholders



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CPUC Staff Presentation

CEC Staff Presentation

Approach Under Consideration by CARB

CARB proposes to:

- Establish range for the electricity sector GHG planning target used in IRPs based on Scoping Plan modeling
- Use Cap-and-Trade Electrical Distribution Utility (EDU) Allocation Methodology for 2021-2030 as basis to apportion electricity sector planning targets among individual EDUs
- Apportion planning target ranges to Community Choice Aggregators (CCAs), Electric Service Providers (ESPs), and EDUs based on load



Electricity Sector GHG Emission Range in Scoping Plan

- Scoping Plan provides scenarios that achieve SB 32 target—economy-wide 2030 GHG emissions of 260 MMTCO₂e
- Energy demand and supply measures not specified in all scenarios to allow market forces to determine cost-effective options
- Electricity sector GHG emissions range from 30 - 53 MMTCO₂e reflecting uncertainty in both electricity demand and supply

Scoping Plan Scenario

GHG Emissions

53 MMTCO₂e

Market forces reducing electricity sector GHG emissions not prescribed


51% reduction from 1990

Scoping Plan Alternative 1 Scenario

30 MMTCO₂e

72% reduction from 1990


Source: 2017 Scoping Plan, Table 3



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Questions to Stakeholders

- Does this range reflect the appropriate breadth for planning purposes given the factors affecting electricity demand and supply?
- How and on what basis might a more fine-tuned range be developed?
- What factors should be considered in picking a point estimate within the range for implementation purposes?
- What other assumptions about future electricity demand and supply should be considered?



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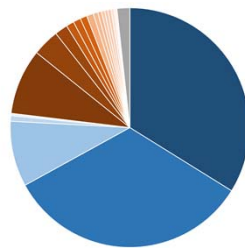
Cap-and-Trade EDU Allocation Methodology for Initial Targets

- Estimates the cost burden to electric ratepayers of compliance with the Cap-and-Trade Program
 - Cost burden is the anticipated incremental cost of power to serve load due to the requirement to surrender compliance instruments in the Cap-and-Trade Program
- Utilizes EDUs specific demand and supply forecasts and resource specific emission factors to estimate future emissions and cost burden
- Provides a transparent and consistent methodology as the basis for apportioning the 2030 planning targets ranges among EDUs



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Apportionment of GHG Planning Targets



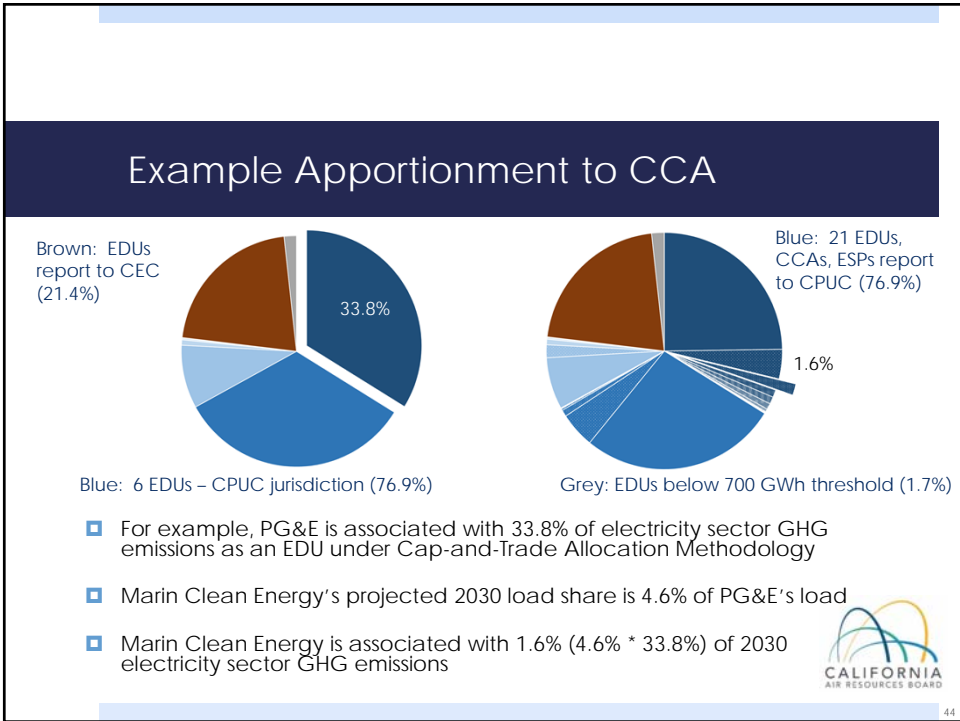
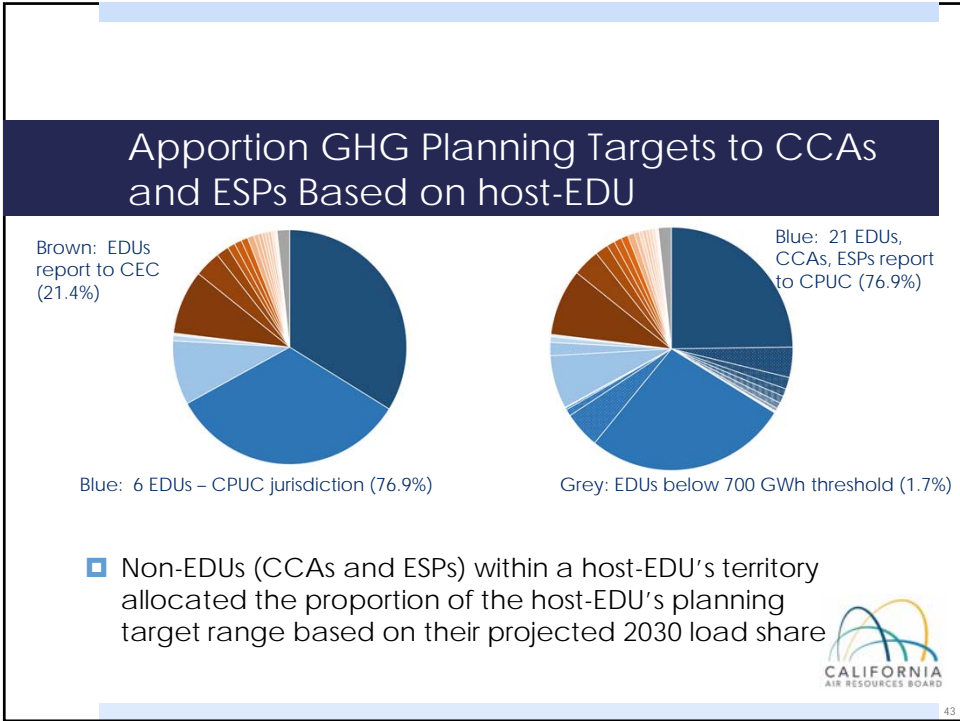
Blue: 6 EDUs – CPUC jurisdiction (76.9%)
Brown: 16 EDUs report to CEC (21.4%)
Grey: 32 EDUs below 700 GWh threshold (1.7%) of which four EDUs (0.07%) are CPUC jurisdictional

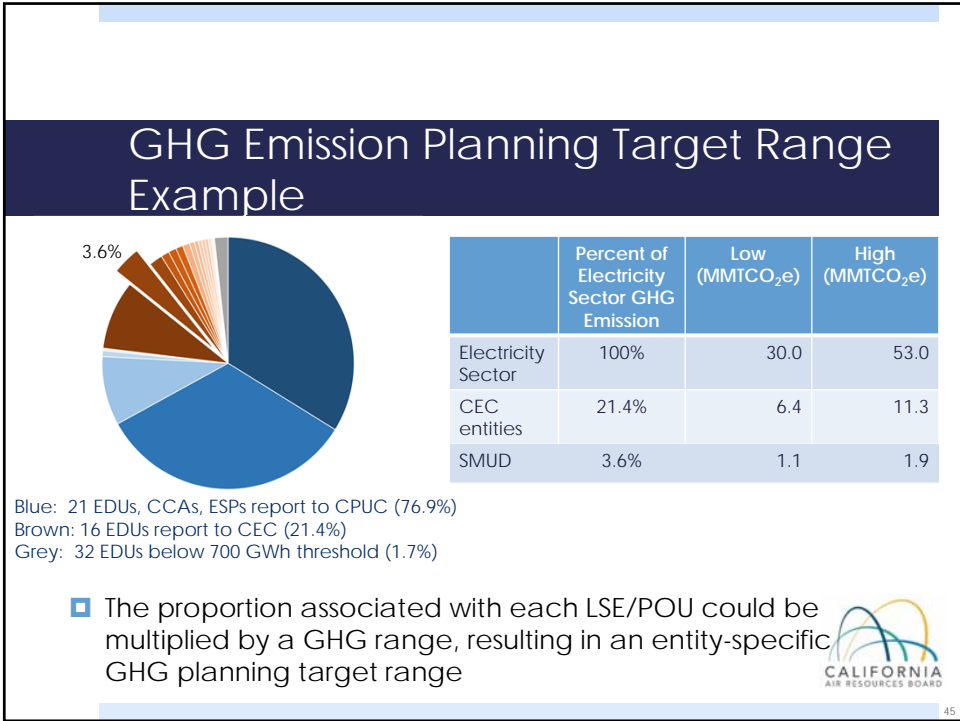
CARB's Cap-and-Trade EDU Allocation Methodology for 2021-2030* apportions electricity sector GHG emissions among 6 EDUs reporting to CPUC and 16 EDUs reporting to CEC

*utilizing the year 2030, adjusted to include covered industrial entity electricity demand



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- ## GHG Planning Target Setting Process
- Utilize the CARB approved 2017 Scoping Plan
 - CARB SB 350 IRP public workshops
 - Integrate work completed at CPUC and CEC
 - Staff Report and Recommendations
 - CEQA analysis
 - Formal Public Comment
 - Board Approval
-

Updates to IRP Targets

- ▣ CARB proposes to update the electricity sector GHG planning target ranges on a five-year cycle, as needed
- ▣ POUs required to submit updated IRPs to CEC at least once every five years
- ▣ CPUC IRP process repeats every two years
- ▣ Individual LSE and POU GHG planning target ranges can change without triggering a change in the electricity sector range
 - ▣ Delegation of authority to CARB Executive Officer
- ▣ CARB may revise electricity sector range in advance of a planned update based on materially changed circumstances
- ▣ CPUC and CEC may use their inherent regulatory authority to further implement or impose IRP requirements on LSE and POUs within the GHG ranges established by CARB



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Questions for Stakeholders

- ▣ Is there a need to apportion the GHG planning target to CEC and to CPUC as well as to LSEs and POUs?
- ▣ How should the electricity sector GHG target be evaluated with respect to the entities not subject to SB 350 IRP requirements (i.e., 1.7% of sector emissions)?



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Environmental Analysis

- ▣ Environmental Analysis (EA) being prepared, analyzing potentially significant adverse impacts caused by reasonably foreseeable actions
- ▣ Meets requirements of CARB's certified program under the California Environmental Quality Act (CEQA)
- ▣ The CEQA Environmental Checklist (CEQA Guidelines Appendix G) is used to identify and evaluate potential indirect impacts
- ▣ The EA will be an appendix to the Staff Report



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Environmental Analysis to be Prepared

- ▣ The EA will include:
 - ▣ Description of reasonably foreseeable actions taken in response to the proposal
 - ▣ Programmatic level analysis of potential adverse impacts caused by reasonably foreseeable actions
 - ▣ Beneficial impacts
 - ▣ Feasible mitigation measures to reduce/avoid significant impacts
 - ▣ Alternatives analysis
- ▣ Input invited at this early stage on appropriate scope and content of the EA
- ▣ Draft EA will be released for 45 day public comment period



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Next Steps and Tentative Schedule

- ▣ Written comments may be submitted until 5 pm (PDT) Friday, March 23, 2018, at this site:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- ▣ Workshop 2 (Spring)
- ▣ Informal public comment period on Staff Proposal (Spring)
- ▣ Final Staff Proposal (Spring) with formal comment period
- ▣ Board Hearing (Summer)

