Bay Area Air Quality Management District

COUNCIL MEETING

February 3, 2016

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Welcome

Jack P. Broadbent

Executive Officer / APCO

Agenda

- Public Comment on Agenda Matters
- Assembly Bill (AB) 32:
  - CA Global Warming Solutions Act of 2006 and the Cap-and-Trade Program
- Review of Refinery Regulation
- Council Deliberation

Public Comment on Agenda Items

First Key Question:

What is the efficacy of imposing numeric caps on Greenhouse Gas emissions from Bay Area refineries?

Richard Corey

Executive Officer
California Air Resources Board





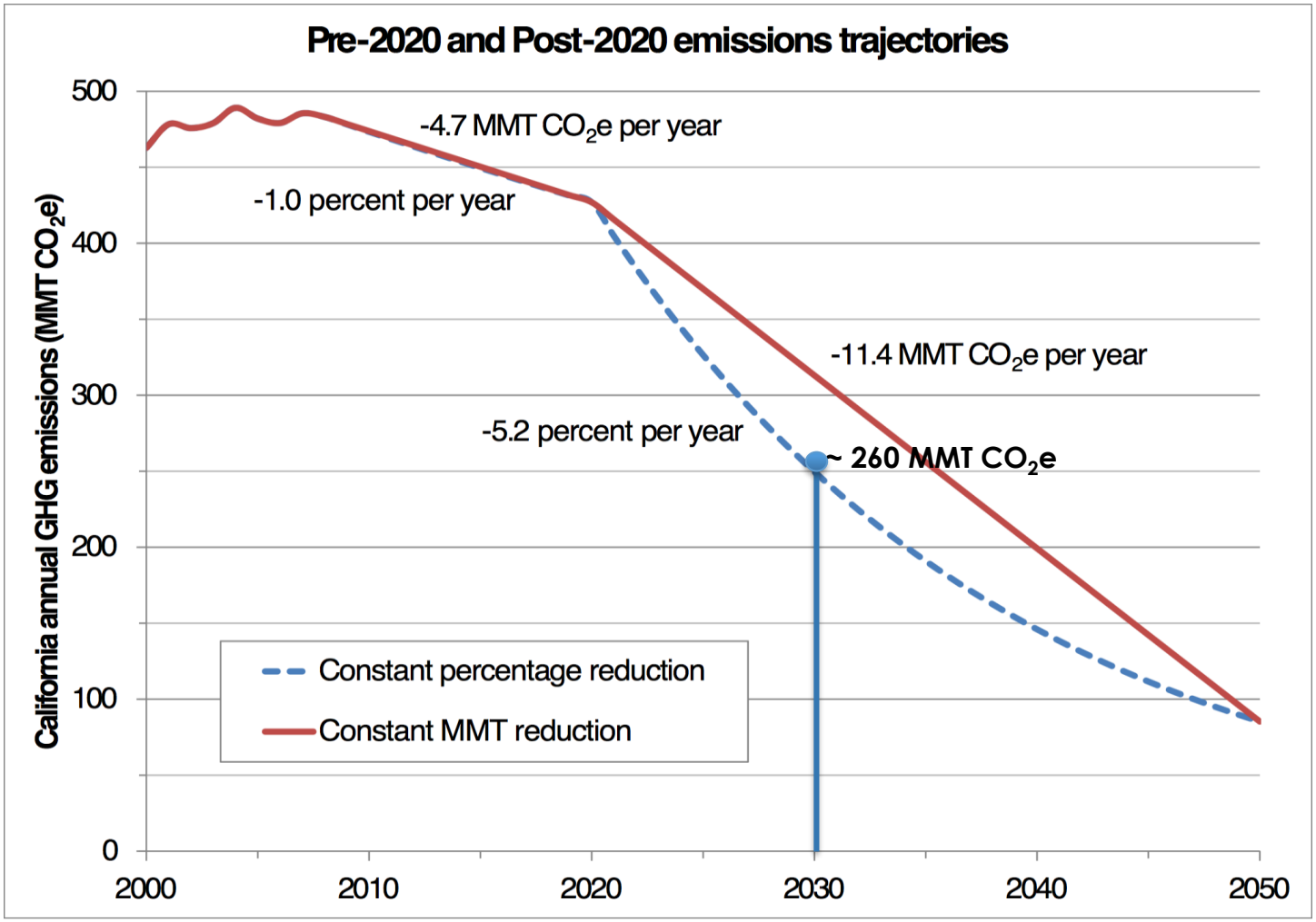
Air Resources Board's 2016 Priorities and Objectives

February 3, 2016

Key Challenges for ARB

- Attain health-based air quality standards by 2023 and 2031
- Minimize health risk from exposure to air toxics
- Meet key climate goals by 2030:
  - Reduce GHG emissions 40 percent below 1990 levels
  - Reduce petroleum use by 50 percent
  - Increase energy efficiency and derive 50 percent of electricity from renewable sources
  - Reduce short-lived climate pollutants
  - Increase carbon sequestration in natural and working lands

2030 and 2050 GHG Targets



Overarching 2016 Priorities

- Continue to design and coordinate strategies to achieve climate and air quality goals
- Effective ongoing implementation of current programs
- Strengthen environmental justice efforts

2016 Integrated Planning

- Achieving California's ambitious goals requires transforming the fuels and energy infrastructure, which necessitates integrated planning:
  - Climate Change Scoping Plan Update
  - State Implementation Plans
  - Cap-and-Trade Regulation Amendments
  - Compliance with the Federal Clean Power Plan
  - Sustainable Freight Action Plan
  - Short-Lived Climate Pollutant Reduction Strategy
  - Update SB 375 regional targets for GHG emissions reductions from passenger vehicle use

Key Ongoing Efforts

- Truck and Bus Regulation
- Low Carbon Fuel Standard
- Cap-and-Trade Program
- Advanced Clean Cars
- Sustainable Communities Strategies
- Investments in alternative vehicle fuel infrastructure
- Incentives for clean vehicles and fuels
- Coordination with local air districts

Interaction Between California's Cap-and-Trade Program and Local GHG Measures

What Is the Cap-and Trade Program?

- One of a suite of measures to reduce greenhouse gas (GHG) emissions under AB 32
- The economy-wide cap limits annual GHG emissions from all regulated sources, and it declines each year
- Covered entities must acquire and surrender allowances and offset credits to match emissions at the end of each compliance period
- Participants may buy and sell State-issued allowances and offset credits
  - Trading provides flexibility and reduces compliance costs

Definitions

- **Covered entity**: A regulated party under the Cap-and-Trade Regulation
- **Compliance instrument**: An allowance or offset credit that is issued by the State and equal to one metric ton of GHG emissions
  - **Offset credit**: A compliance instrument derived from GHG emissions reductions that take place outside of the Program
- **Annual cap**: The limit on GHG emissions from all covered sources in a given year, which is set by the number of allowances issued each year
- **Leakage**: Emission increases outside California that result from activities moving out of California due to policies within California

Cap-and-Trade Program Goals

- Reduce GHG emissions by putting a firm limit on total emissions from all covered sources
- Allow the price of carbon to motivate the most cost-effective reductions and spur innovation
- Complement existing programs to reduce smog and air toxics
- Ensure AB 32 emissions goals for GHGs are realized through a strict limit
- Facilitate integration of regional, national, and international GHG reduction programs

Who Is Covered by the Program?

- Stationary sources with GHG emissions at or above 25,000 metric tons of CO_2e per year, imports of electricity, and supplied fuels:
  - Large industrial sources
  - Electricity generators
  - Electricity importers
  - Transportation fuel providers
  - Natural gas and propane providers
- These sources are about 85% of California's GHG emissions

Distribution of Allowances

- Free allocation to industrial producers to provide transition assistance and to minimize emissions leakage
  - Started at 90% of the average emissions intensity for most industrial sectors and declines each year with the cap
- Free allocation to electric utilities and natural gas suppliers on behalf of ratepayers
- Allocation to a 'reserve' to contain prices
- Remaining allowances are sold at auction, with proceeds going to the State to be appropriated during the budget process
  - ~45% of the market in 2015

Cap-and-Trade Program Efficiencies

- Emissions reductions are program-wide; reductions are not required for any specific facility
  - Facilities with relatively low costs to reduce emissions may focus on reducing emissions to comply
  - Facilities with relatively high costs to reduce emissions may purchase allowances and offset credits
- Compliance instrument trading enables all emitters collectively to reduce emissions most cost-effectively
- Limited use of offset credits motivates emission reductions outside of the Program and contains Program compliance costs

Local GHG Limits

- GHG emissions are not traditional air contaminants with local health impacts
  - GHG emissions are a global pollutant
  - Local GHG limits do not reduce statewide GHG emissions, which are set by the statewide cap
  - Reductions from a local limit will be compensated by emissions increases elsewhere in California
- Local GHG limits reduce Cap-and-Trade Program efficiencies
  - Emission reductions are forced to occur where they may not be most cost-effective
  - Increases the cost of statewide GHG emission reductions

Refinery GHG Emissions

- The Cap-and-Trade Program and the Low Carbon Fuel Standard send strong, complementary signals to refineries throughout the state to reduce GHG emissions
  - Any onsite combustion and process emission reductions count towards compliance in both programs
  - Actions taken by refineries to blend in more biofuels to reduce their LCFS obligation also count towards compliance with the Cap-and-Trade Program
- Compliance flexibility allows refineries to choose the most cost-effective compliance plan to minimize emissions leakage

Opportunities for Local Action

- Transportation
  - Clean vehicle and biofuel incentives
  - Clean vehicle infrastructure
  - Implement Sustainable Communities Strategy
- Energy
  - Local building codes
  - Energy efficiency programs
  - Fuel cell deployment
- Incentivize adoption of low-global warming potential refrigerant systems
- Capture waste methane for renewable fuel

Criteria Pollutant and Air Toxics

- The Cap-and-Trade Program is designed to reduce GHG emissions
- Emissions of criteria and toxic pollutants are best reduced through:
  - Best available control technology
  - Toxics rules
  - Criteria pollutant programs
- Criteria and toxic pollutant emissions should be addressed by strengthening these measures

Additional Information

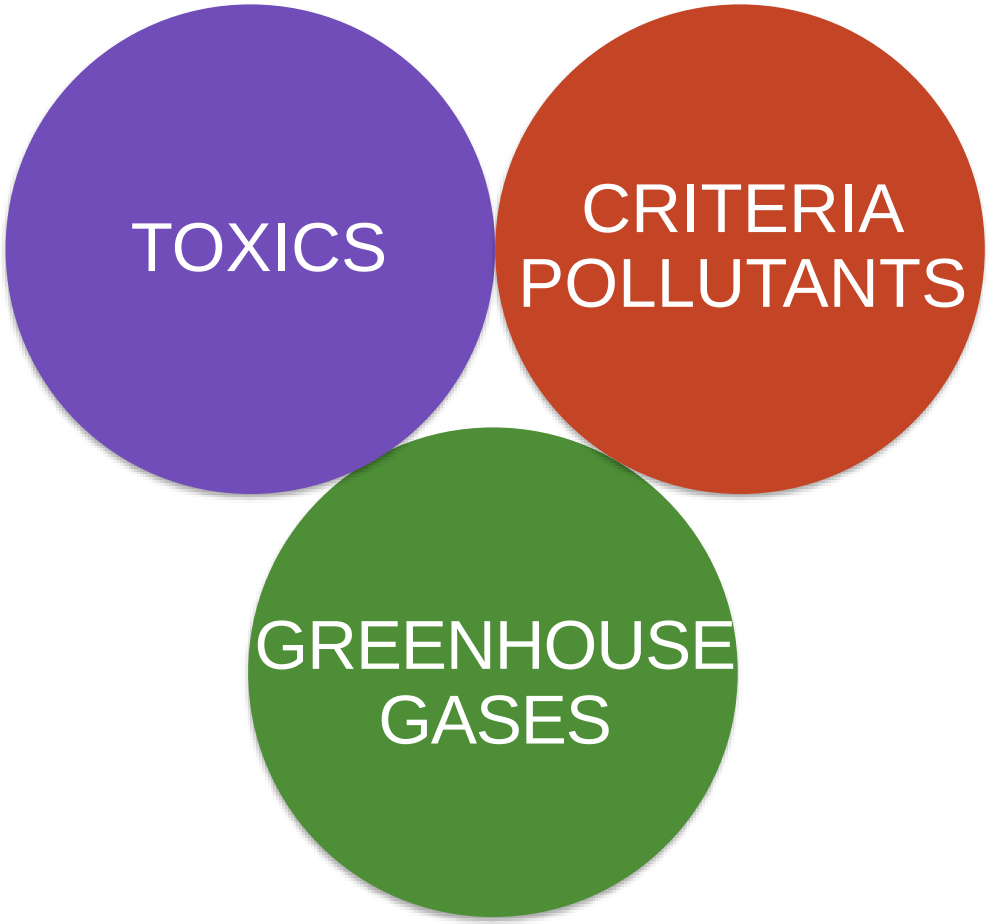
- California Cap-and-Trade Program webpage:

  http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm

Break

Air District Refinery Rules: Overview

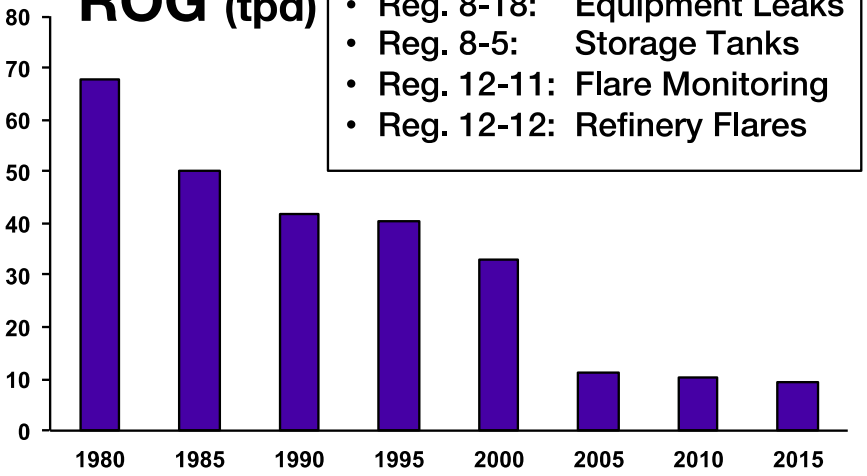
Local Districts' Role in Climate Change



Refinery Emission Trends 1980-2015 and Main Causes of Reductions

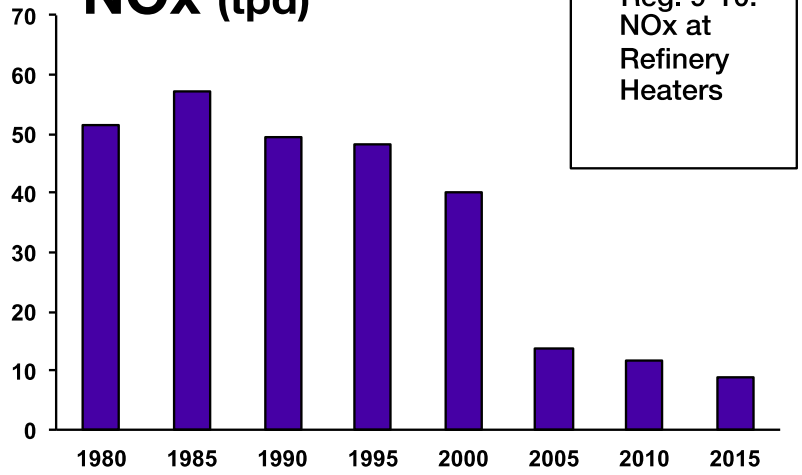
ROG (tpd)

- Reg. 8-18: Equipment Leaks
- Reg. 8-5: Storage Tanks
- Reg. 12-11: Flare Monitoring
- Reg. 12-12: Refinery Flares

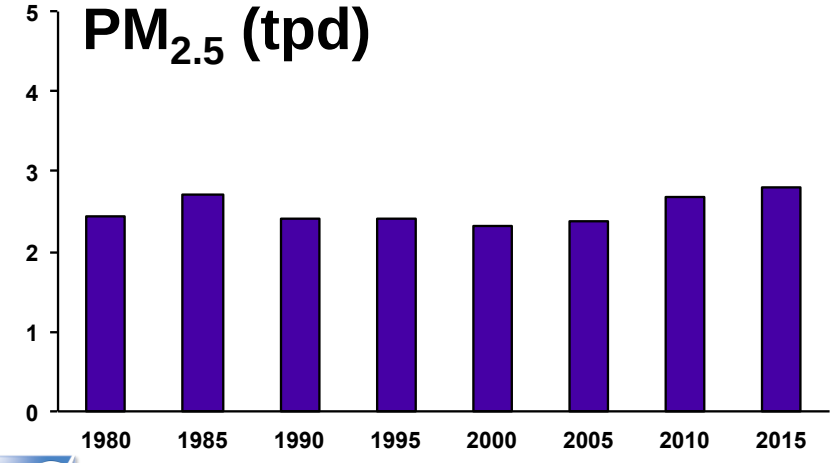


NOx (tpd)

- Reg. 9-10: NOx at Refinery Heaters

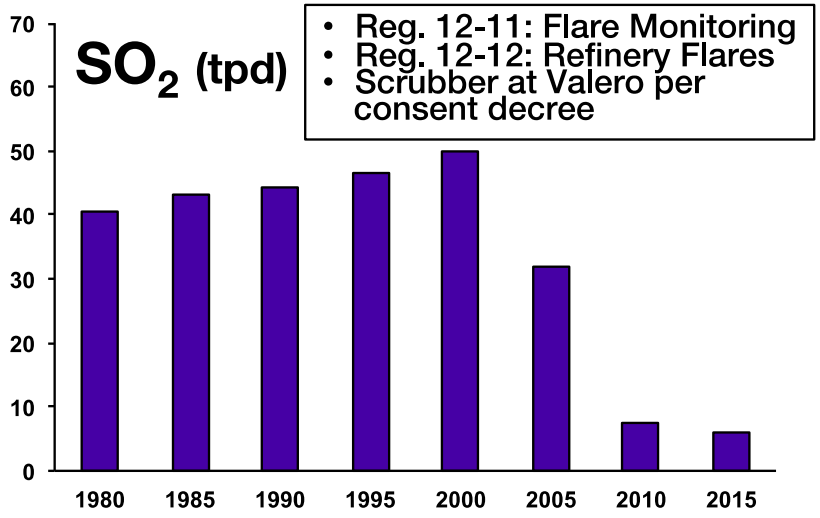


$PM_{2.5}$ (tpd)



SO_2 (tpd)

- Reg. 12-11: Flare Monitoring
- Reg. 12-12: Refinery Flares
- Scrubber at Valero per consent decree



Current "Cap-Like" Requirements At Refineries: Outline

Criteria Pollutants

- District Total Emissions:
  - ➢ New Source Review Restricts emission **mass**
- Individual District Rules
  - ➢ Restrict emission **rates**
- Individual Facilities Permit Conditions
  - ➢ Restrict both **mass** and **rates**

Toxic Pollutants

- ➢ Limits on **risk**

Criteria Pollutants
"No Net Increase"

New Source Review

- Caps Non-attainment Pollutants
  - Emission Offsets
  - Offset ratio requires 115% offsets

Criteria Pollutants
Example of Rate Cap by Rule (All Refineries)

NOx Cap for Refineries

- Regulation 9, Rule10 :Caps Rate
- Burners < 0.033lbs/MMBTU NOx

- Modified sources removed from cap
  - Meet BACT ~(2-5ppm)

Criteria Pollutants
Example Cap by Condition (Specific Refineries)

Permit Conditions Cap Mass Emissions

- Refinery installs source with 100 TPY NOx:
  - Must accept a condition to reduce 100 TPY
  - Alternatively can purchase offsets

Air Toxics Program
Risk Caps

Implements a Risk Level Cap for Projects

- 1 in a million risk, BACT
- 10 in a million risk, Not permitted

Implements a Risk Level Cap for Facilities

- 10 in a million risk – Notification level
- 100 in a million risk – Action level

Lunch

Council Deliberation

- Key Question
- Resources for Next Meeting

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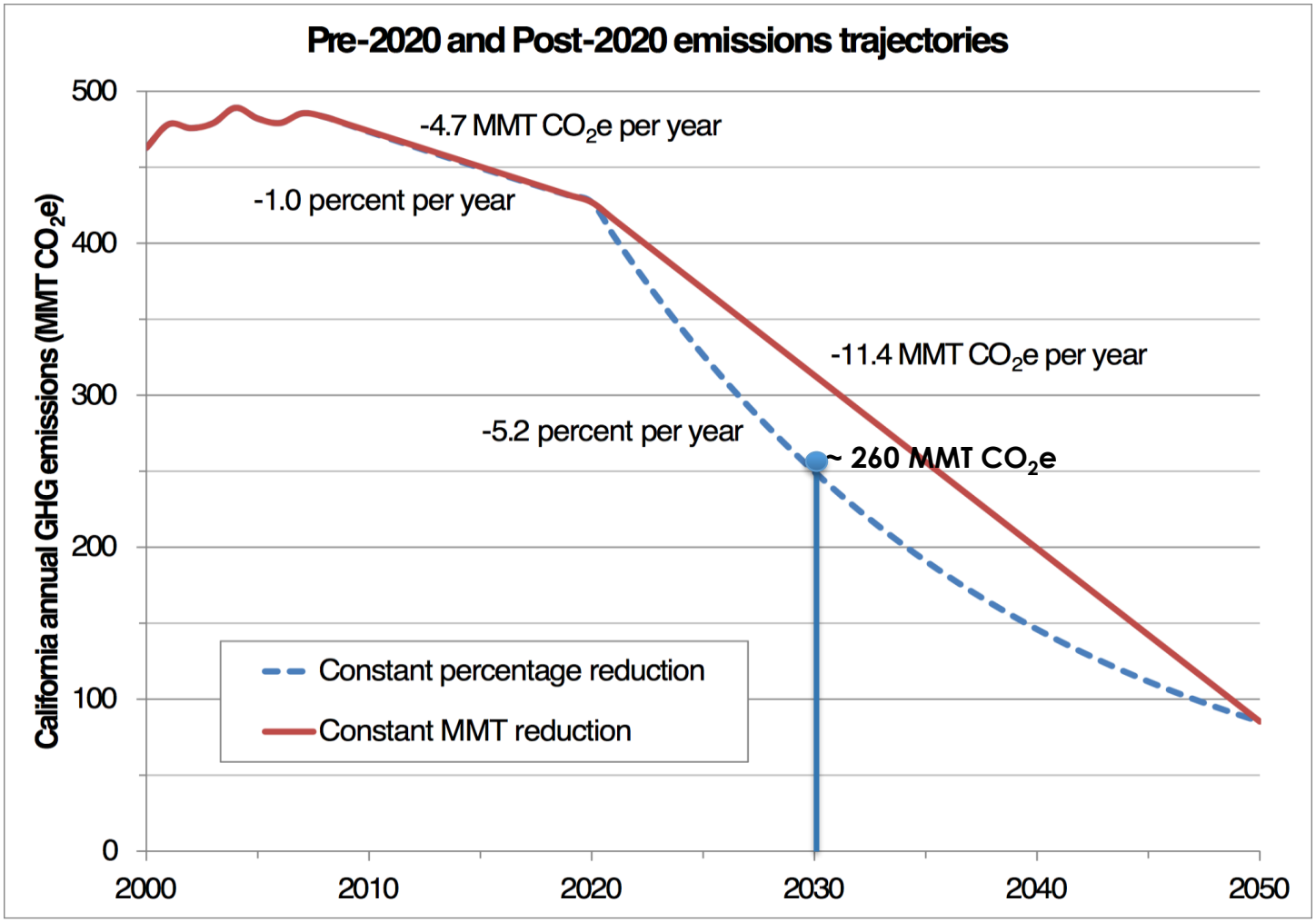

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