



# **Proposed Amendments to the Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities**

Board Hearing  
June 22, 2023

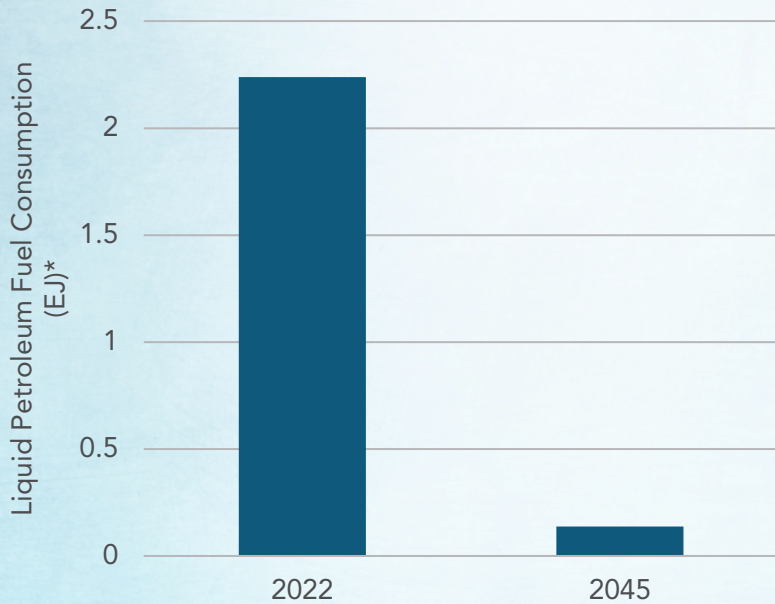
# Agenda

- Background
- Proposed Amendments
- Costs and Benefits
- Staff's Recommendations

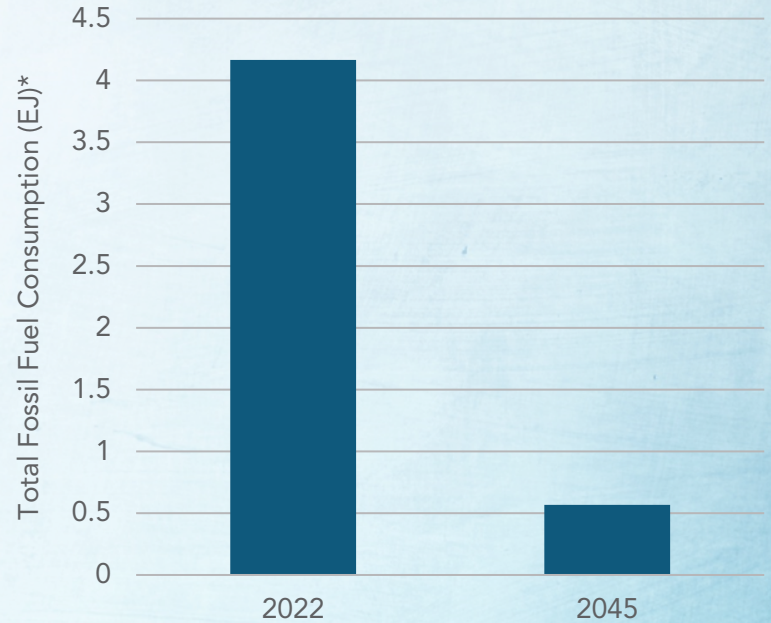


# Scoping Plan: Reductions in Fossil Fuel Demand

*94% reduction in liquid petroleum*



*86% reduction in total fossil fuel*

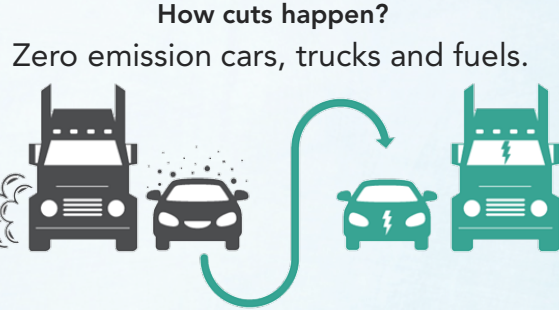


# The Road to Zero Emissions

CARB has put a roadmap in place to drastically reduce our dependence on petroleum in the transportation sector by 2045.

## AB 32

Requires we cut GHGs. To reach goals, fuel use must be cut by 94%.



## ACT ACC ACF

CARB rules that make that possible:  
Advanced Clean Trucks, Advanced Clean Cars, Advanced Clean Fleets

- ACT: Phases out sales of most fuel-powered trucks by 2035
- ACC: 100% ZEV sales requirement by 2035
- ACF: Requires that trucks in CA be zero emissions by 2045

## LCFS

All together, these actions will help us build a cleaner, healthier California for current and future generations.

Governor Newsom creates new oversight committee to monitor oil companies.

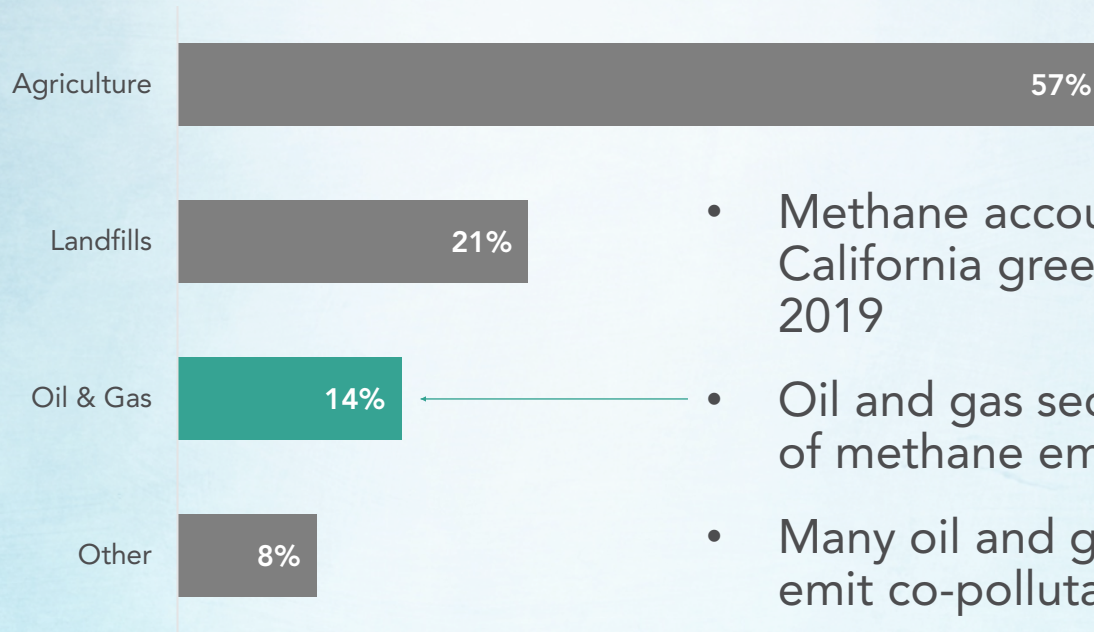


Makes fuel less polluting and encourages production of cleaner alternatives.

How it works:



# California's 2019 Methane Emissions by Sector



- Methane accounted for ~10% of total California greenhouse gas emissions in 2019
- Oil and gas sector accounted for 14% of methane emissions
- Many oil and gas sector sources also emit co-pollutants

# Oil and Gas Sector Emission Reduction Efforts

- Local Air District Rules and Requirements
- Natural Gas Leak Abatement Program (CPUC/CARB)
- Methane Task Force (CARB/CalGEM)\*
- US EPA's Proposed Emissions Guidelines\*
- CARB's Oil and Gas Methane Regulation

# The Oil and Gas Methane Regulation

- Adopted in 2017 as an early action measure for AB 32
- Addresses methane emissions from oil and gas facilities
- Builds off local air district rules
- Jointly implemented and enforced by CARB and local air districts



# Coverage of the Regulation

## Production & Processing

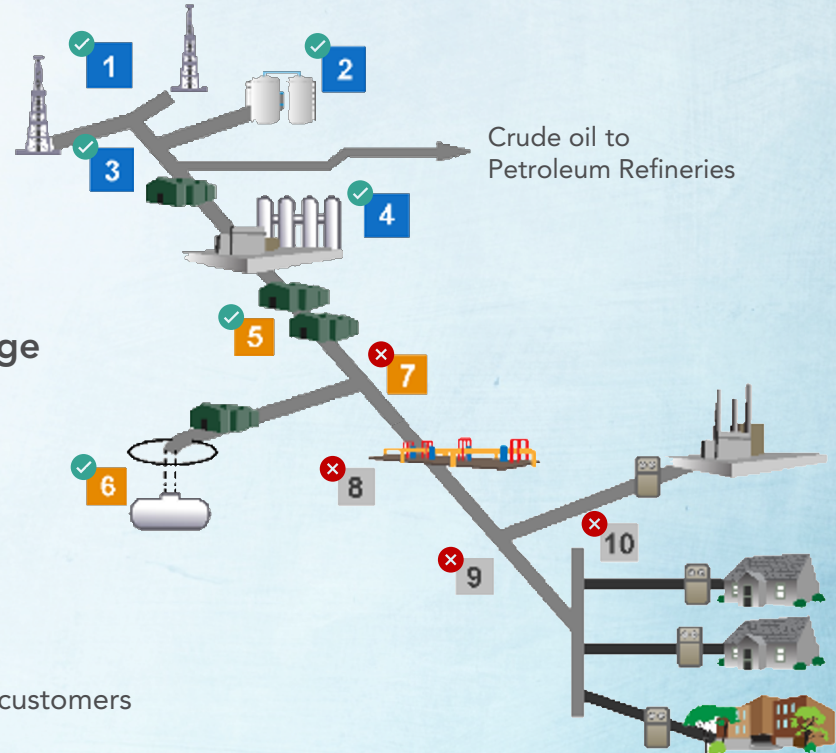
- ✓ 1. Onshore and offshore well sites
- ✓ 2. Storage tank batteries
- ✓ 3. Gathering and boosting compressor stations
- ✓ 4. Natural gas processing plants

## Natural Gas Transmission & Storage

- ✓ 5. Transmission compressor stations
- ✓ 6. Underground storage facilities
- ✗ 7. Transmission pipeline

## Distribution

- ✗ 8. City Gate
- ✗ 9. Distribution mains/services
- ✗ 10. Regulators and meters for customers









✓ Covered

✗ Not covered



# Existing Requirements in the Regulation

-  Leak detection and repair (LDAR)
-  Vapor collection and control
-  Equipment replacement and repair
-  Emissions measurement
-  Natural gas underground storage facility monitoring
-  Recordkeeping and reporting

# Pre-rulemaking Public Process

## Two Public Workshops

Introduction:  
September 2022

Draft Text:  
January 2023

## Individual Meetings

Industry

Environmental  
groups

## Interagency Discussions

US EPA

Local air districts

# Factors Driving the Proposed Amendments



Meet State Implementation Plan (SIP) Requirements



Utilize Remote Emission Plume Monitoring Data



Make Other Clarifying and Cleanup Adjustments

# US EPA's SIP Decision

2016

US EPA issued Control Techniques Guidelines for the Oil and Natural Gas Industry (CTG)

2018

CARB submitted Oil and Gas Methane Regulation into California SIP

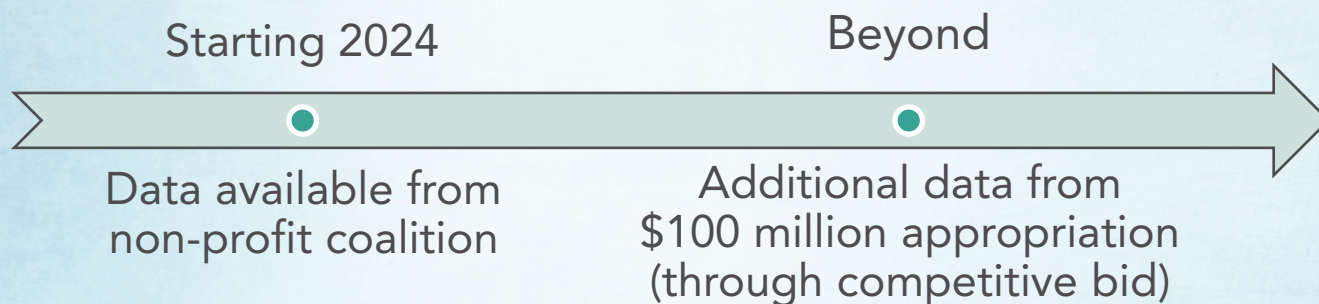
2022

US EPA issued *limited approval, limited disapproval* of SIP submittal and sanctions clock started

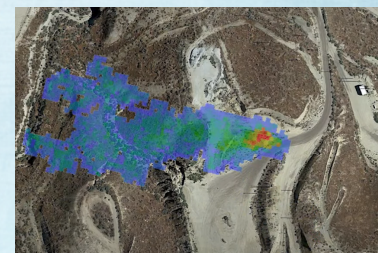
# Changes to Align with the CTG

- Require LDAR plans
- Additional requirements for vapor collection and control systems
- More rigorous process for delay-of-repair approval
- Air district rules listed as basis for exemptions
- Other changes, such as:
  - Repair timeframes, definitions, exemptions, Executive Officer's discretion, measurement procedures, recordkeeping, etc.

# Action Based on Methane Emission Plume Data from Satellites



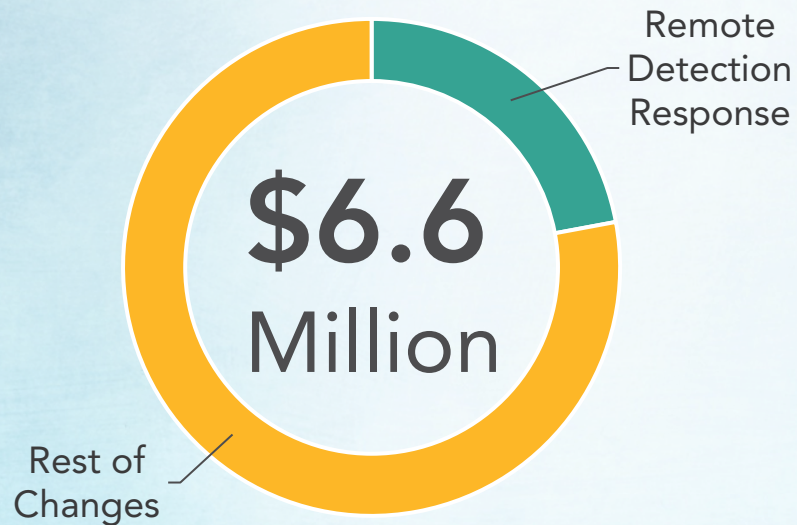
Proposed notification system and response requirements will enable early detection and mitigation of emission plumes



Source: Carbon Mapper  
([upper image](#)) ([lower image](#))

# Estimated Costs of the Proposed Amendments (2021\$)

Five-year total cost\*



Fraction of industry sales in sectors covered by the regulation\*\*

**~0.02%**

\*Five-year period runs from 2024-2028

\*\*California oil & gas extraction and natural gas transmission & storage

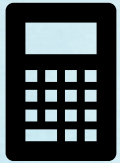
# Benefits of the Proposed Amendments



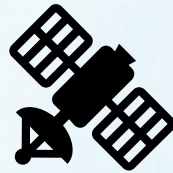
Necessary for  
SIP approval



Greater compliance  
assurance



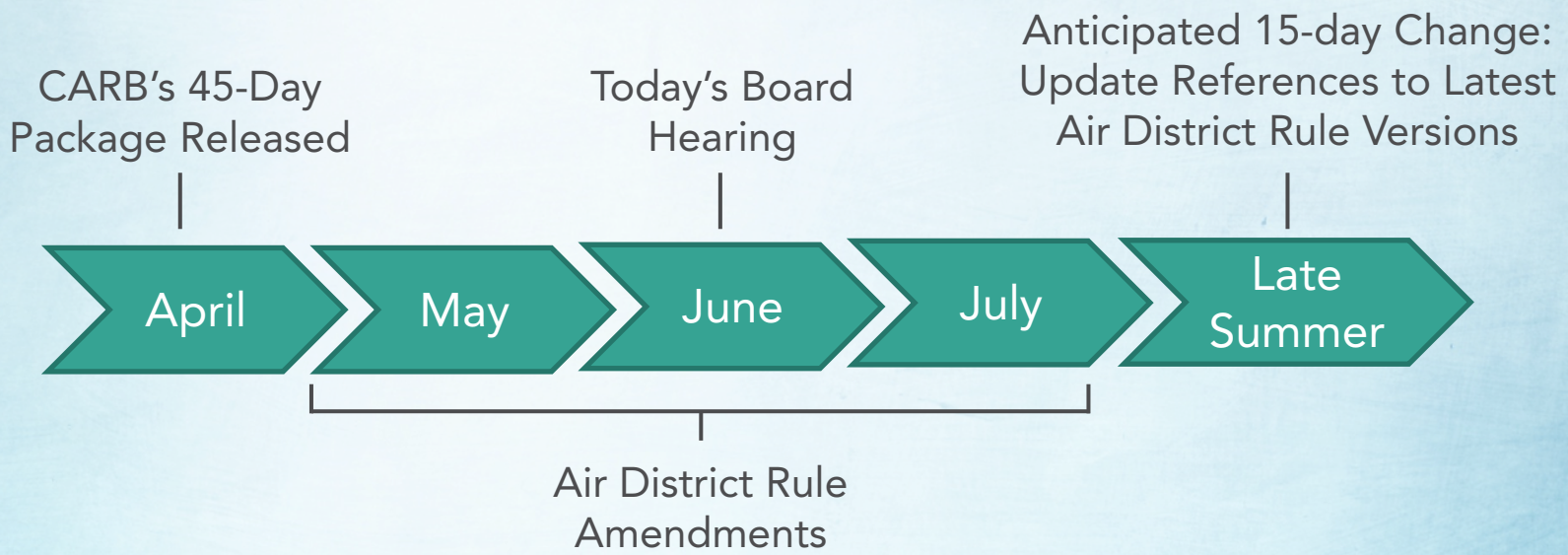
More accurate  
emissions  
calculations



Emission reductions  
from remote plume detection  
response (currently unquantified)



# Procedural 15-day Change Needed





# Staff Recommendation

- Adopt Resolution 23-18