CALIFORNIA
AIR RESOURCES BOARD

# Public Workshop: Landfill Methane Emissions in California

**Location**

Remote Only - Zoom

**START DATE**

December 5, 2022 11:00 am

**END DATE**

December 5, 2022 2:00 pm

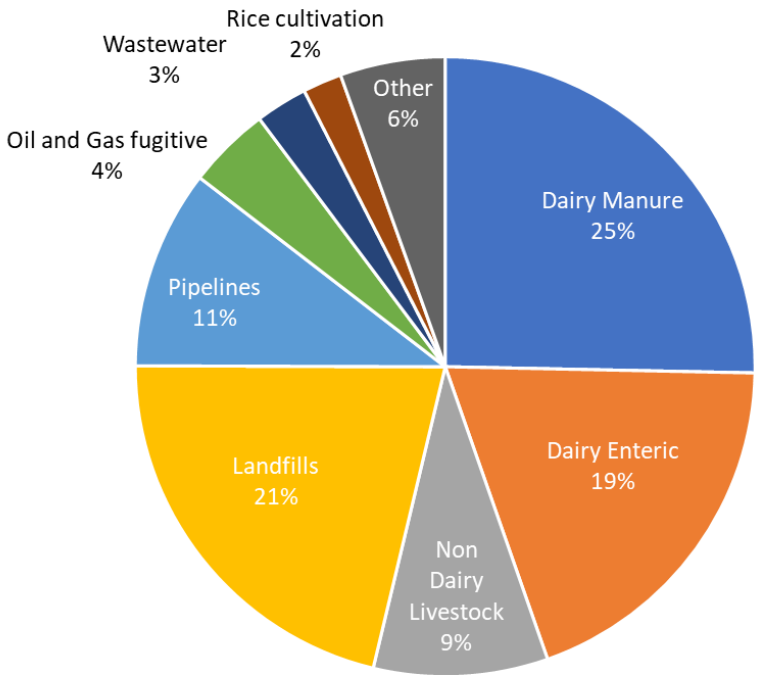
AGENDA

- Welcome and house keeping
- Opening Remarks
- Overview presentation
- Emission measurements at landfills
- Short break
- Plume measurements
- Summary and Q&A

# Why Methane?

**California 2019 Methane**

**39 MMTCO$_2$e**




Methane is an important GHG, and a Short Lived Climate Pollutant

- About 11% of both California and US total GHG emissions
- But has accounted for 30% of global warming since pre-industrial times

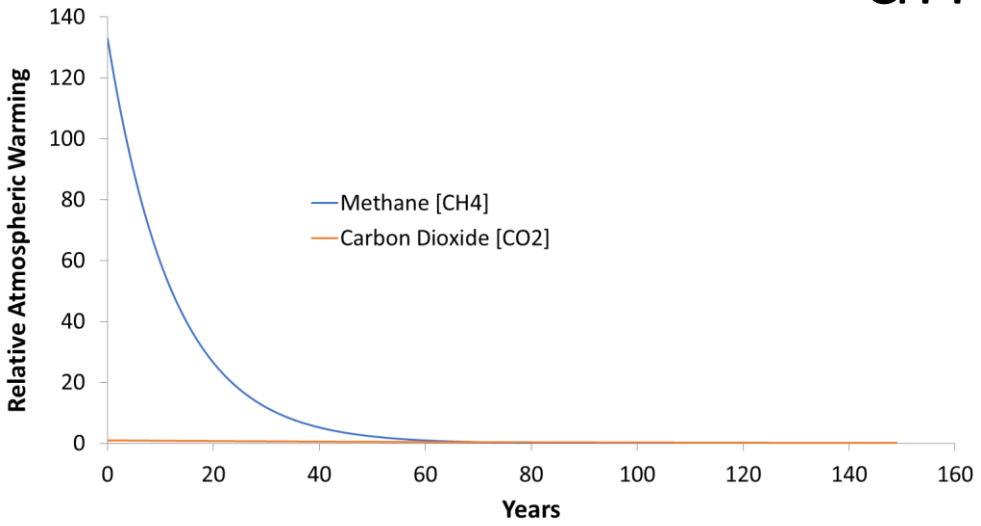
Global Warming Potentials (GWPs):

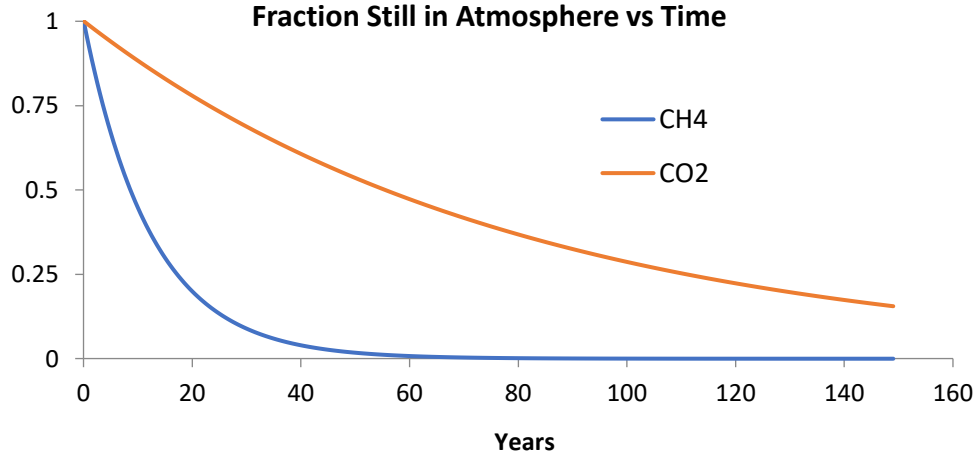
- 100 year – 25
- 20 year – 86

Atmospheric removal times:

- Methane – 50% removed every 8 years
- Carbon Dioxide – 50% removed every 53 years

# How much heat does $CH_4$ absorb compared to $CO_2$ and when

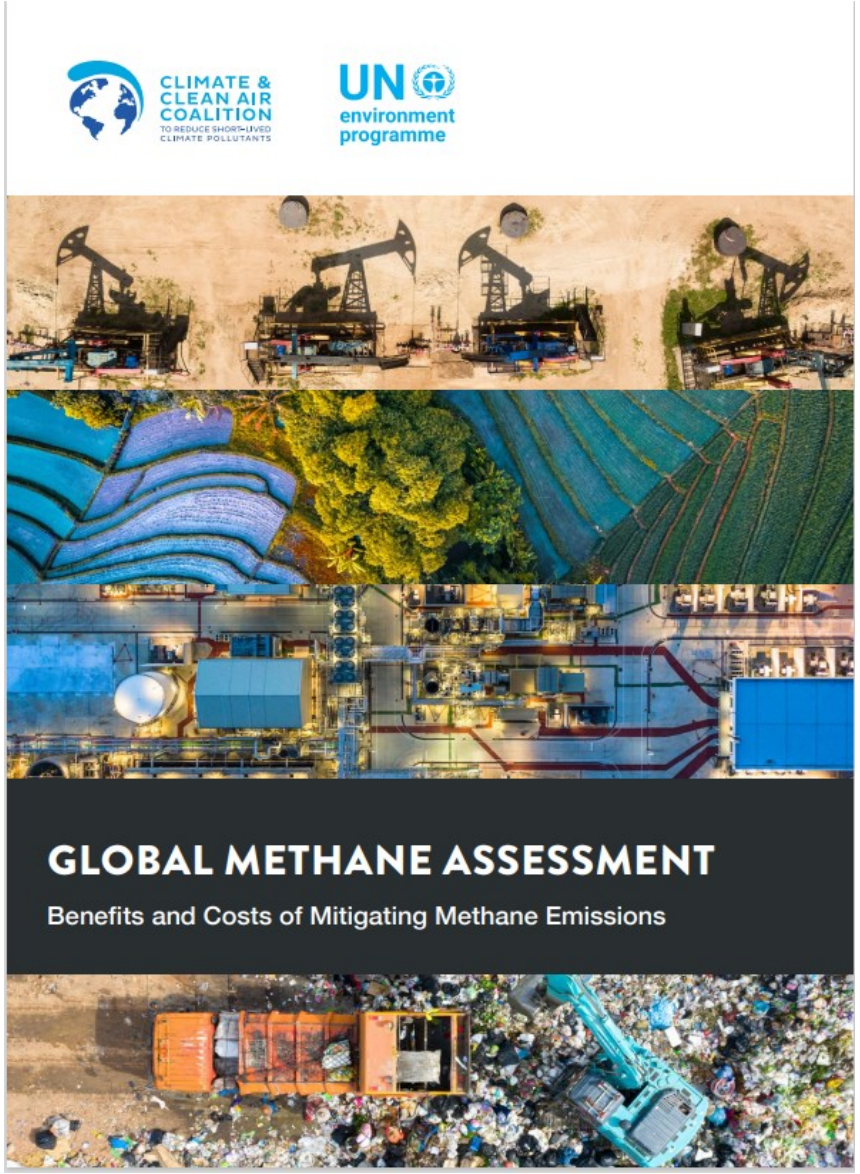



<u>Implications:</u>

- Reductions in methane will lead to relatively quick reduction in warming, especially compared to reductions in $CO_2$
- Reducing methane will allow measures for reducing effect of $CO_2$ to take effect

# Global Attention to Methane




*Fast and ambitious methane mitigation is one of the best strategies available today to deliver immediate and long-lasting multiple benefits for climate, agriculture, human and ecosystem health. (UN Global Methane Assessment)*

THE WHITE HOUSE

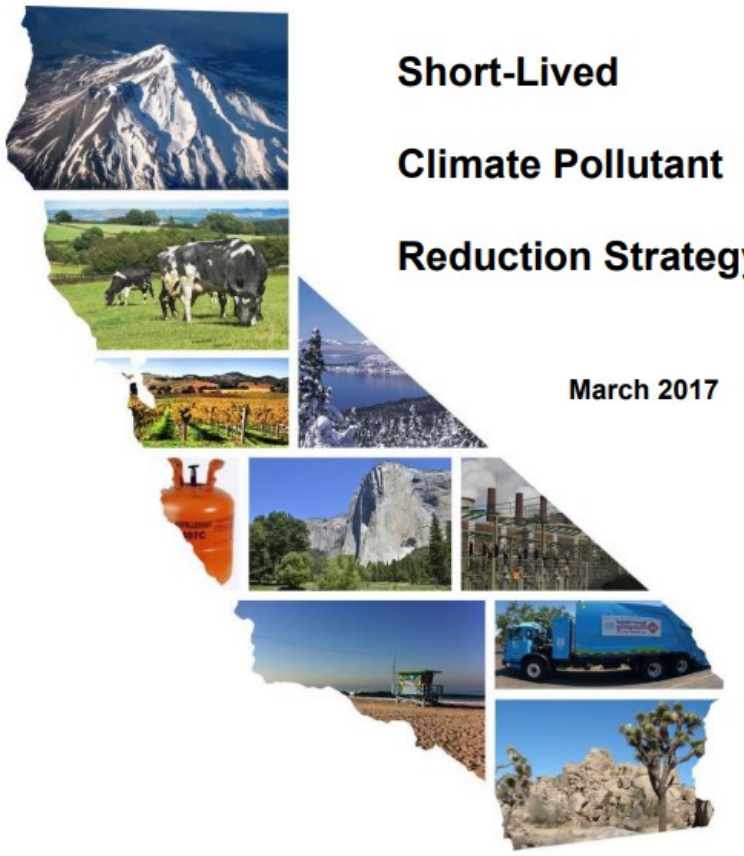
SEPTEMBER 18, 2021

## Joint US-EU Press Release on the Global Methane Pledge

BRIEFING ROOM › STATEMENTS AND RELEASES

The United States and European Union announced today the Global Methane Pledge, an initiative to reduce global methane emissions to be launched at the UN Climate Change Conference (COP 26) in November in Glasgow. President Biden and European Commission President Ursula von der Leyen urged countries at the U.S.-led Major Economies Forum on Energy and Climate to join the Pledge and welcomed those that have already signaled their support.

# California Methane Policy




2022 SCOPING PLAN FOR ACHIEVING CARBON NEUTRALITY

NOVEMBER 16, 2022

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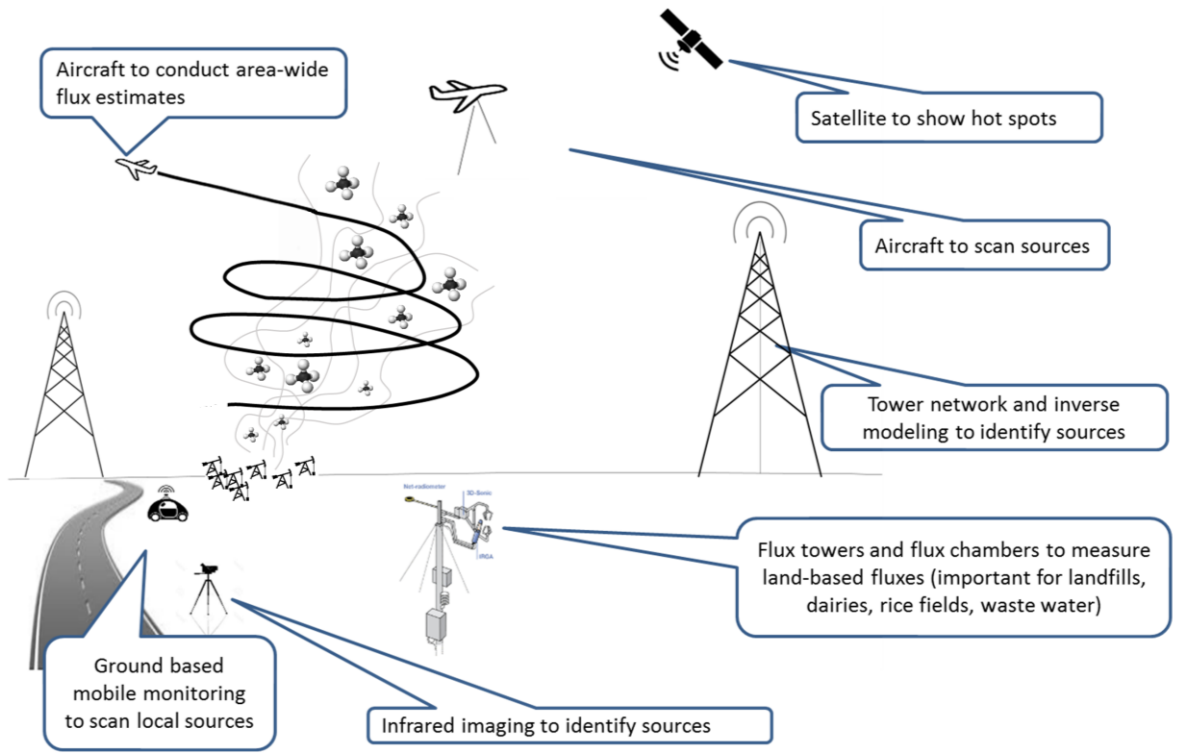
Senate Bill 1383 (2016) – Requires reductions in SLCPs

- 40% reduction from 2013 levels by 2030 for $CH_4$ and HFCs
- 50% reduction from 2013 levels by 2030 for BC
- For landfills it requires 75% organic waste diversion

Research has shown that landfills are complex systems and a wide range of conditions (e.g., atmospheric, operational, biological, chemical, and physical) may contribute to variability in rates of organic waste degradation, methane generation, and capture efficiency,

# Atmospheric Measurements of Methane

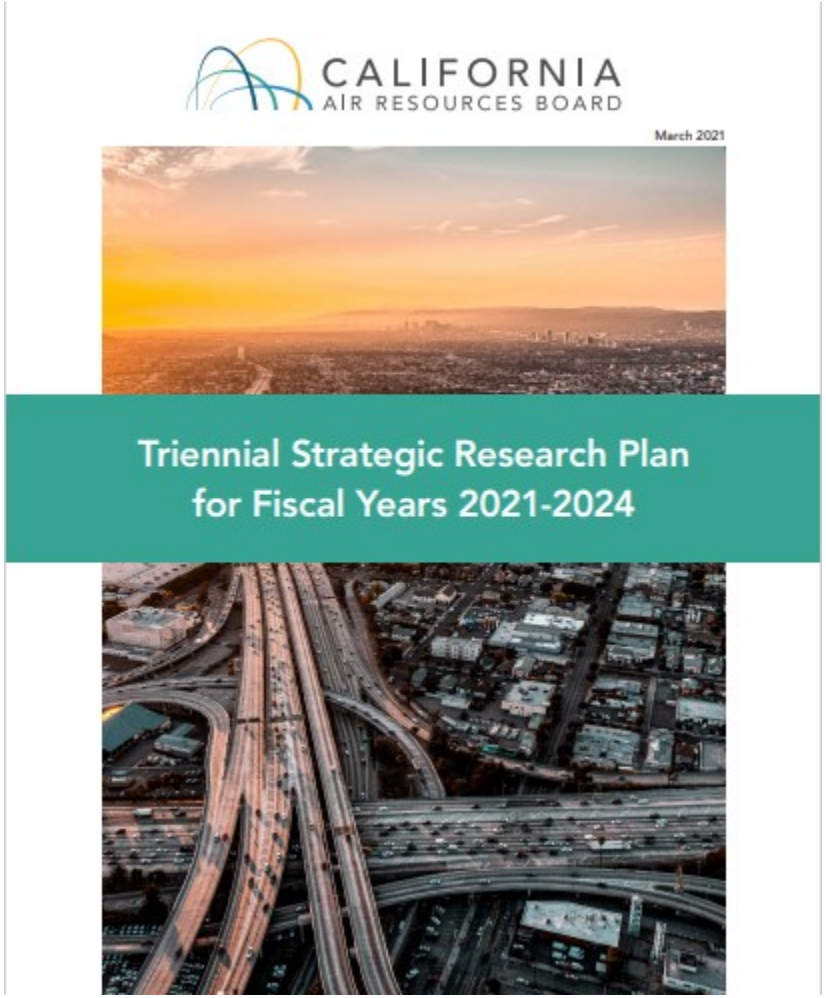



Each measurement has its own purpose and limitations

- For detecting plumes or informing emissions
- Point in time or space

Need to consider all measurements for complete understanding

# CARB Research Program – Landfill Methane




https://ww2.arb.ca.gov/our-work/programs/research-planning

Triennieal Plan lays out key research themes and questions for the agency to focus on. The current plan includes a focus on methane including those emissions from landfills:

Research Questions in the Plan:

- What are the GHG emission trends for specific sources and how can they inform future GHG policies?
- How can new technologies, such as remote sensing that can pinpoint individual leaks, be used to achieve further methane mitigation?

To address the themes and specific research questions laid out in the plan CARB draws on internal research performed by our staff and our annual extramural research portfolio

Our current methods for observing methane emissions from landfills are all important and useful for their specific purpose. But we do not yet have the complete picture