

**DOCKETED**

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# Short-Lived Climate Pollutants

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# Overview – Short-Lived Climate Pollutants

- SLCPs are potent climate forcing gases with relatively short atmospheric lifetimes
  - Methane
    - Dairy & Livestock
    - Landfill Organic Waste
    - Oil & Gas
  - Hydrofluorocarbons (HFC)
  - Black carbon



# Short-Lived Climate Pollutants Policy Framework

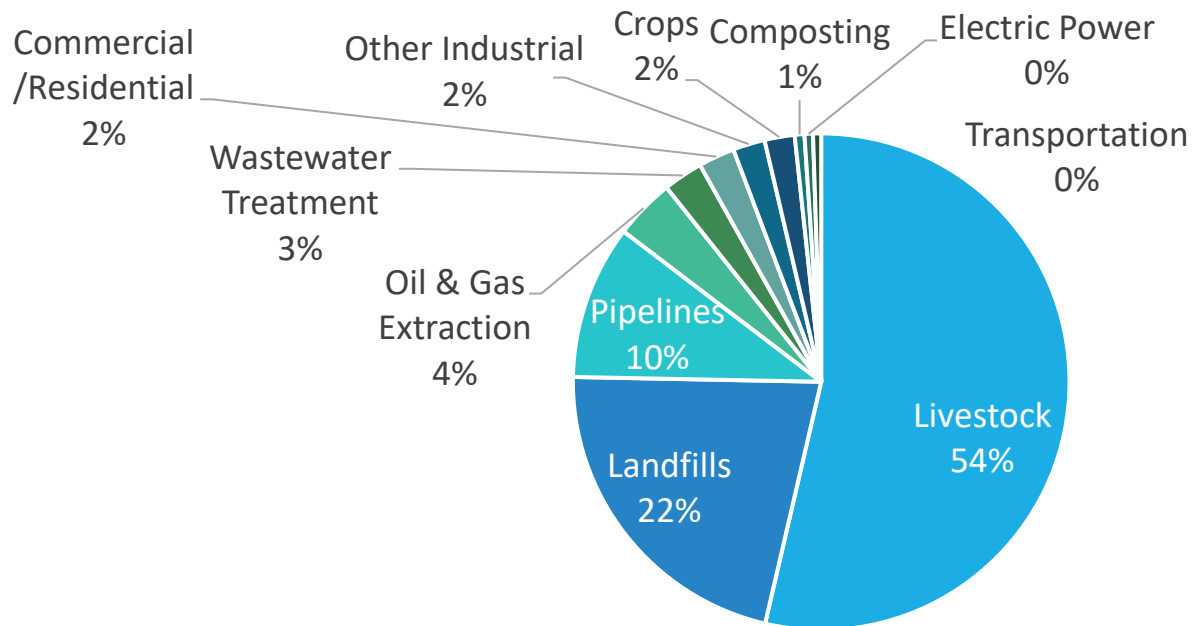
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- Senate Bill 1383 (Lara, 2016) requires CARB to adopt and begin implementing the Short-Lived Climate Pollutant (SLCP) Reduction Strategy
- In 2017, CARB approved and began implementing the comprehensive SLCP Reduction Strategy to reduce statewide emissions to below 2013 levels by 2030 for:
  - methane by 40 percent
  - hydrofluorocarbon gases by 40 percent, and
  - anthropogenic black carbon by 50 percent

# Methane Emissions

Statewide Total Methane Emissions in 2018: 39.8 MMTCO<sub>2</sub>e

- Leading emission sources:
  - Dairy and Livestock Sector (54%)
  - Landfilled Organic Waste (22%)
  - Oil & Gas (14%)

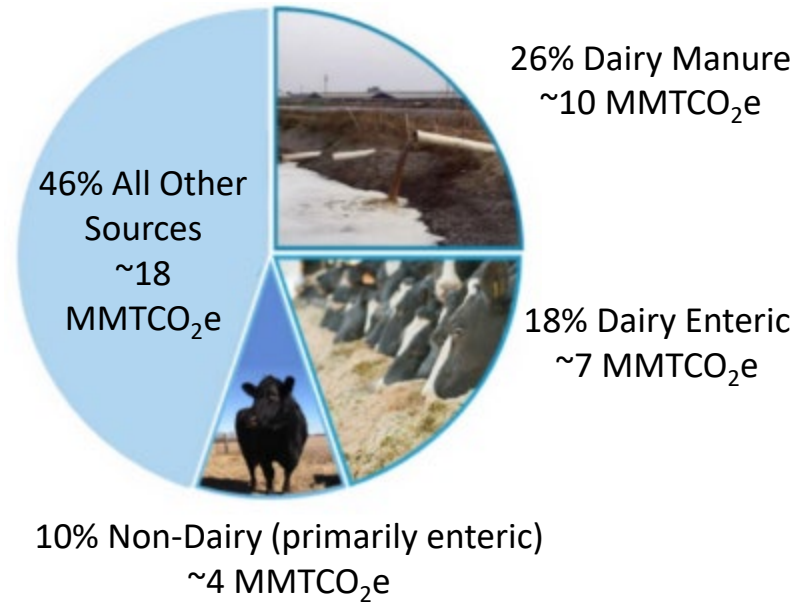


\* California Methane Inventory for 2000-2018; using 100-year AR4 Global Warming Potential

# Dairy and Livestock Methane Sources

- Dairy and livestock methane comprises 54% of the annual 40 MMTCO<sub>2</sub>e methane emissions
  - 10 MMTCO<sub>2</sub>e from manure management
  - 11 MMTCO<sub>2</sub>e from enteric fermentation

## 2018 Methane Emissions



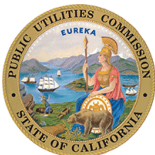
# Dairy and Livestock Methane Emissions Reduction Programs



Cap-and-Trade  
Low Carbon Fuel Standard



Dairy Digester Research and Development Program  
Alternative Manure Management Program

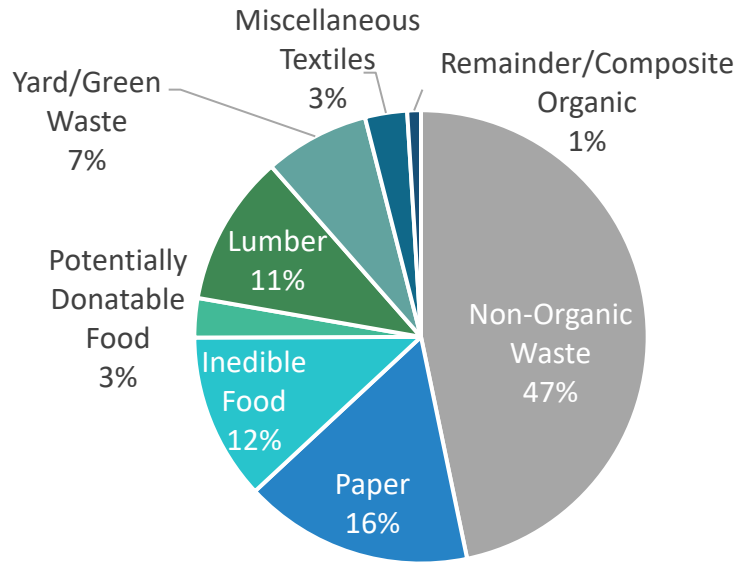


Bioenergy Market Adjusting Tariff (BioMAT)  
SB 1383 Dairy Biomethane Pipeline Injection Pilot Projects  
AB 2313



Renewable Fuel Standard (RFS)

# Landfill Methane



- Californians disposed of approximately 22 million tons of organic waste in 2018, making up over half of all landfilled waste
  - Landfill gas capture systems (required under CARB's Landfill Methane Regulation) avoid the release of up to 80% of methane generated
  - Landfill fugitive methane makes up over 8 MMTCO<sub>2</sub>e statewide, the second largest source of methane emissions (22%)

CalRecycle (May 2020) 2018 Characterization of Solid Waste in California



# Actions to Reduce Methane Emissions from Organic Waste



## Prevention

- Food waste prevention and rescue programs to recover edible food



## Recycling

- Expand Organics Recycling and Recovery Infrastructure
- Ensure best management practices are instituted at compost and AD facilities; promote use of compost to restore soil health and reduce fertilizer use.



## Gas Capture

- Improve landfill operations and cover practices to control fugitive emissions
- Explore automated monitoring and control systems to improve capture efficiency



## Monitor and Respond

- Develop remote sensing capabilities to monitor and respond to methane leaks
- Methane Source Finder and Carbon Mapper Projects

# Organic Waste Methane Emissions Reduction Programs



**Organic Waste Grants and Loans**

**Organic Waste Methane Emissions Reductions Regulation (2020)**

**Landfill Methane Regulation (2010)**

**Low Carbon Fuel Standard**

# AB 32 Climate Change Scoping Plan

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- Scoping Plan(s) are action plans to ensure CA meets statewide GHG reduction targets (mandated in AB 32)
  - Scoping Plan(s) rely on a suite of climate policies to address emissions across all sectors
  - Required to be updated at least every 5 years
  - 2017 SP (most recent) – cost-effective and technologically feasible path to achieve the 2030 target
- Goals for Scoping Plan:
  - Provide direct GHG emissions reductions and air quality benefits
  - Minimize emissions “leakage” – increase to non-CA GHG emissions
  - Facilitate sub-national and national collaboration
  - Support cost-effective and flexible compliance

# AB 32 Climate Change Scoping Plan

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- Key Objectives for 2022 Scoping Plan:
  - Assess progress towards achieving the 2030 target
  - Lay out a path for achieving carbon neutrality no later than 2045
  - Identify endpoints in transition to clean technology and energy deployment
- Timeline:
  - Workshops and EJ Advisory group meetings and workshops began in June and are ongoing
  - Draft SP released in Spring 2022, followed by CARB Board discussion
  - Final SP release in Fall 2022, followed by CARB Board decision in Winter 2022

# SLCPs in the Scoping Plan

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- The upcoming Scoping Plan Workshop (Sept 8<sup>th</sup>):
  - Evaluation of progress towards the 2030 targets for SLCPs and challenges to achieving those targets
  - Identification of post-2030 SLCP emissions and mitigation opportunities
  - Discussion on ways to achieve deeper emission reductions and on pathways for fugitive methane end-uses for deep decarbonization

# Thank You

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