

California's Short-Lived Climate Pollutant Reduction Strategy

Maryland Climate Change
Commission

Mitigation Working Group

March 14, 2016

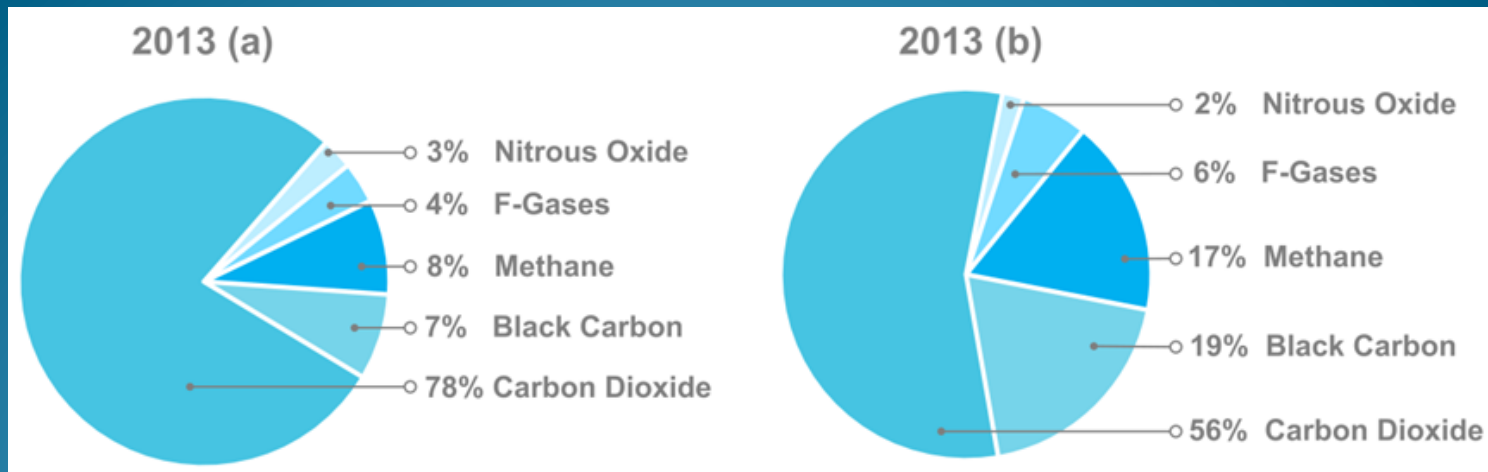
California Environmental Protection Agency

 **Air Resources Board**

Short-Lived Climate Pollutants

- Black carbon, methane, hydrofluorocarbons (HFCs)
- Lifetimes of a few days to a few decades
- GWP can be tens to thousands of times greater than CO₂
- Account for about 40% of current global warming
- Strong, immediate action to cut emissions of both CO₂ and SLCPs is critical for mitigating climate change

California's 2013 Greenhouse Gas Inventory Using (a) 100-year and (b) 20-Year Global Warming Potential Values



Development of a SLCP Strategy

- Recommended action in the 2014 Scoping Plan Update
- Required by Senate Bill 605
- One of Governor's five pillars to meet 2030 GHG emissions goal of 40 percent below 1990 levels
- Concept Paper released in May 2015
- Draft Strategy released in September 2015

Senate Bill 605 Requirements

- Complete an inventory of sources and emissions
- Identify existing and new control measures
- Identify research needs to address data gaps
- Coordinate with other state agencies and local air districts
- Consult with academic, industry, and community experts
- Hold public workshops during development of strategy
- Develop strategy by January 1, 2016

California Already a Leader in Reducing SLCP Emissions

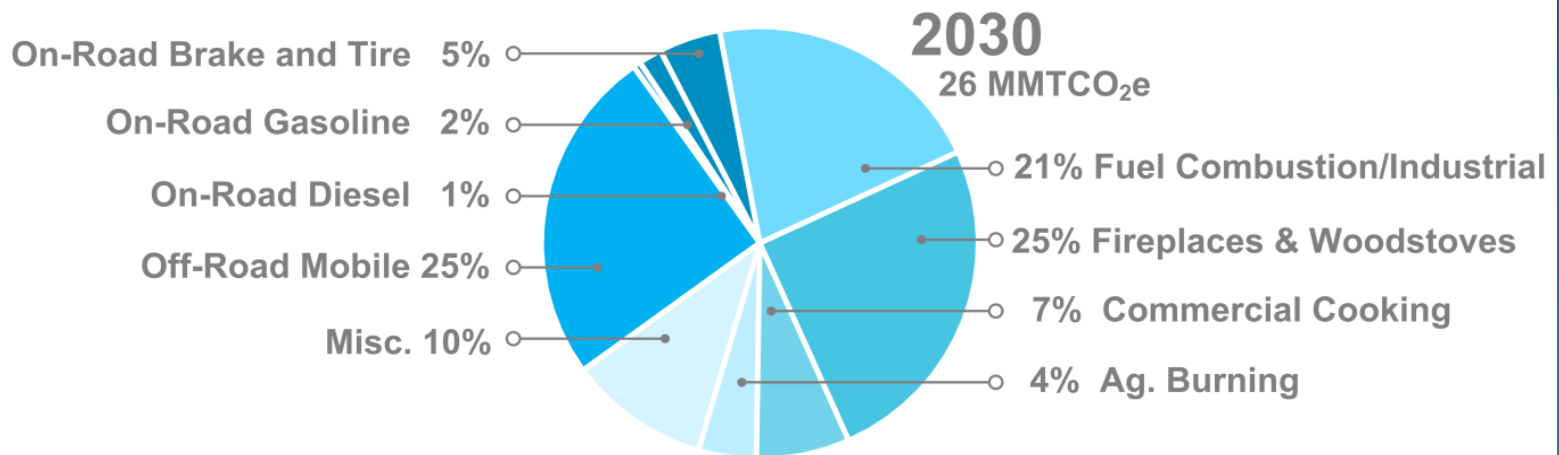
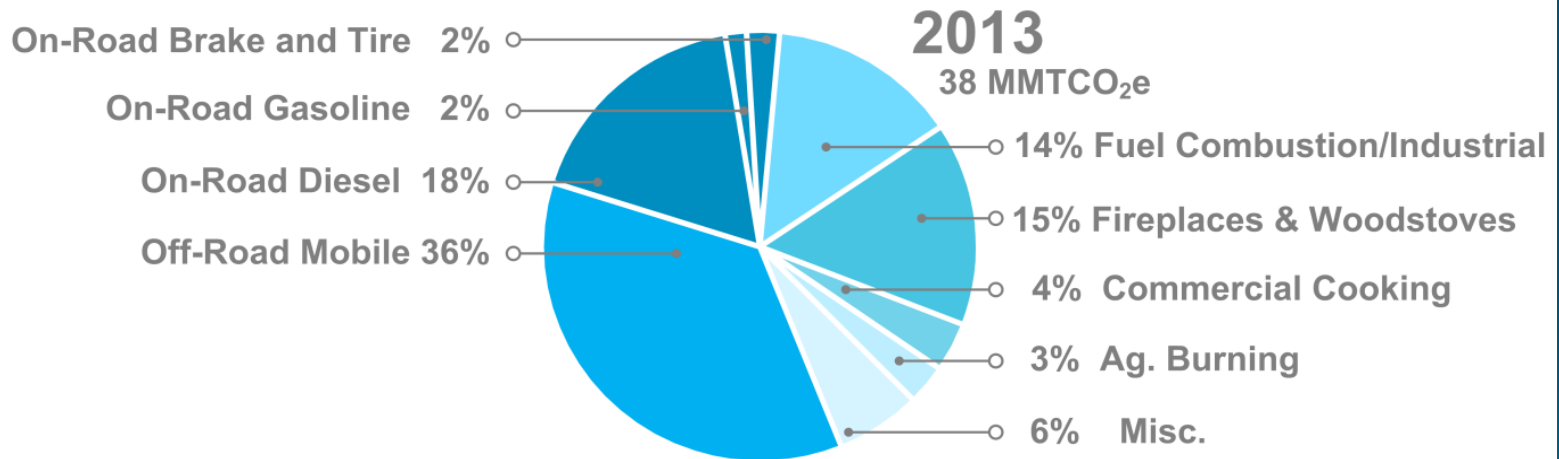
- Black carbon emissions from anthropogenic sources are 90% lower than in the 1960s, and will be cut in half again by 2020
- Methane emissions are regulated at landfills; Cap-and-Trade offset protocols encouraging reduction of methane emissions; and methane leaks will be reduced from oil and gas rules under development
- F-gas emissions are being reduced from refrigerants, motor vehicle air-conditioning, and consumer products that together will cut these emissions by 25 percent in 2020

Proposed SLCP Emission Targets

Proposed Target Emission Levels (MMTCO₂e)

Pollutant	Inventory	Forecast	Targets	Percent Reduction from 2013 Levels
	2013	2030	2030	
Black Carbon (Non-forest)	38	26	19	50%
Methane	118	117	71	40%
HFCs	40	65	24	40%

Black Carbon Emissions



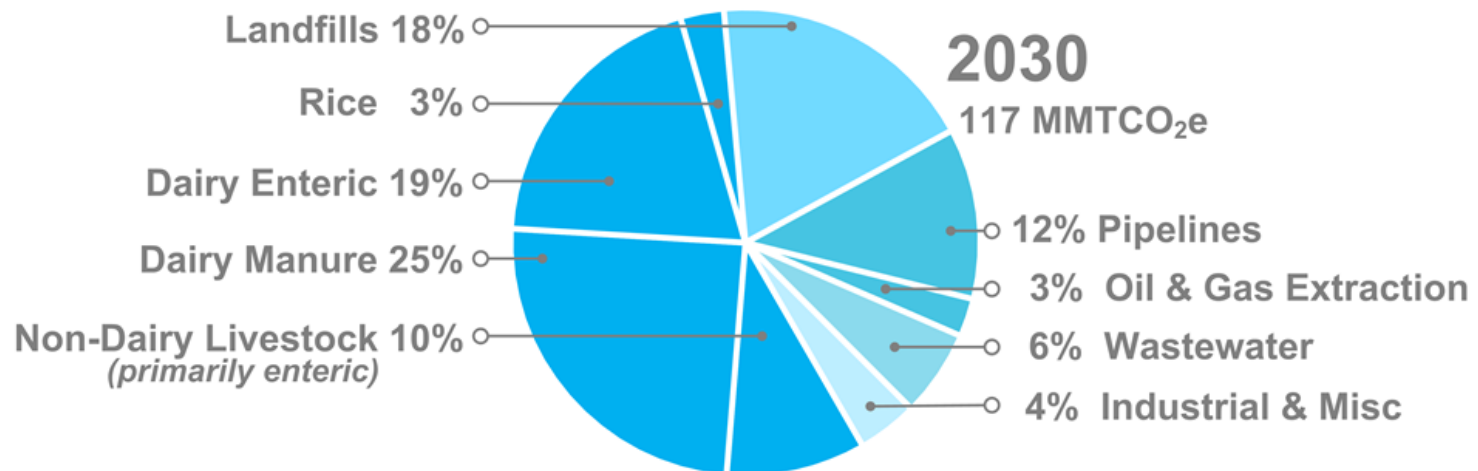
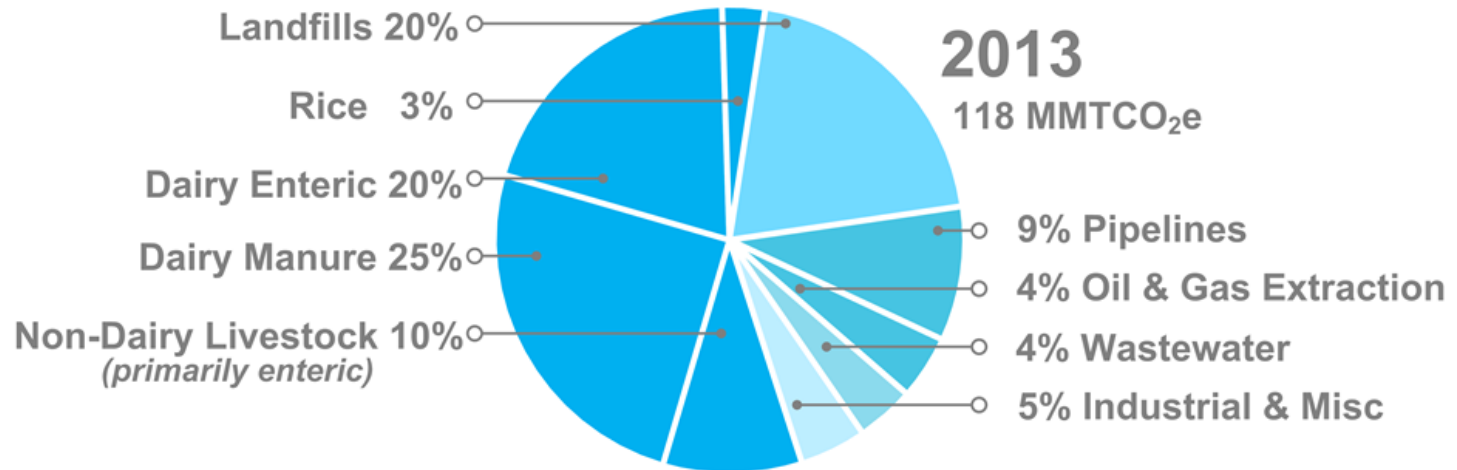
Black Carbon Proposed Emission Reduction Measures

- Significant reductions already achieved from on-road mobile sources, primarily from diesel engine regulations
- Other jurisdictions can achieve similar reductions by following California's example
- Additional reductions to be realized:
 - Sustainable Freight Strategy
 - Updates to SIPs to achieve federal air quality standards

Black Carbon Proposed Emission Reduction Measures (cont.)

- ARB and local air districts to evaluate methods to reduce residential wood combustion emissions
- Revising forest-related recommended actions to reduce wildfire risk by improving forest management practices and putting woody waste resources to beneficial use. Part of integrated planning with 2016 Scoping Plan Update and State's Forest Carbon Plan currently under development

Methane Emissions



Proposed Methane Emission Reduction Measures

Dairies

- Reduction targets for manure methane emissions at dairies (20 percent in 2020, 50 percent in 2025, and 75 percent in 2030)
- Revising reduction measures based on comments received. Collection of data on dairy manure management practices and near-term financial incentives and market support essential before implementing regulations
- State to support research and monitor progress on industry goals to reduce enteric emissions

Proposed Methane Emission Reduction Measures (cont.)

Landfills

- ARB and CalRecycle to develop a regulation by 2018 to facilitate meeting existing 75 percent landfill diversion by 2020 target and virtually eliminate organic disposal in landfills by 2025

Wastewater Treatment Plants

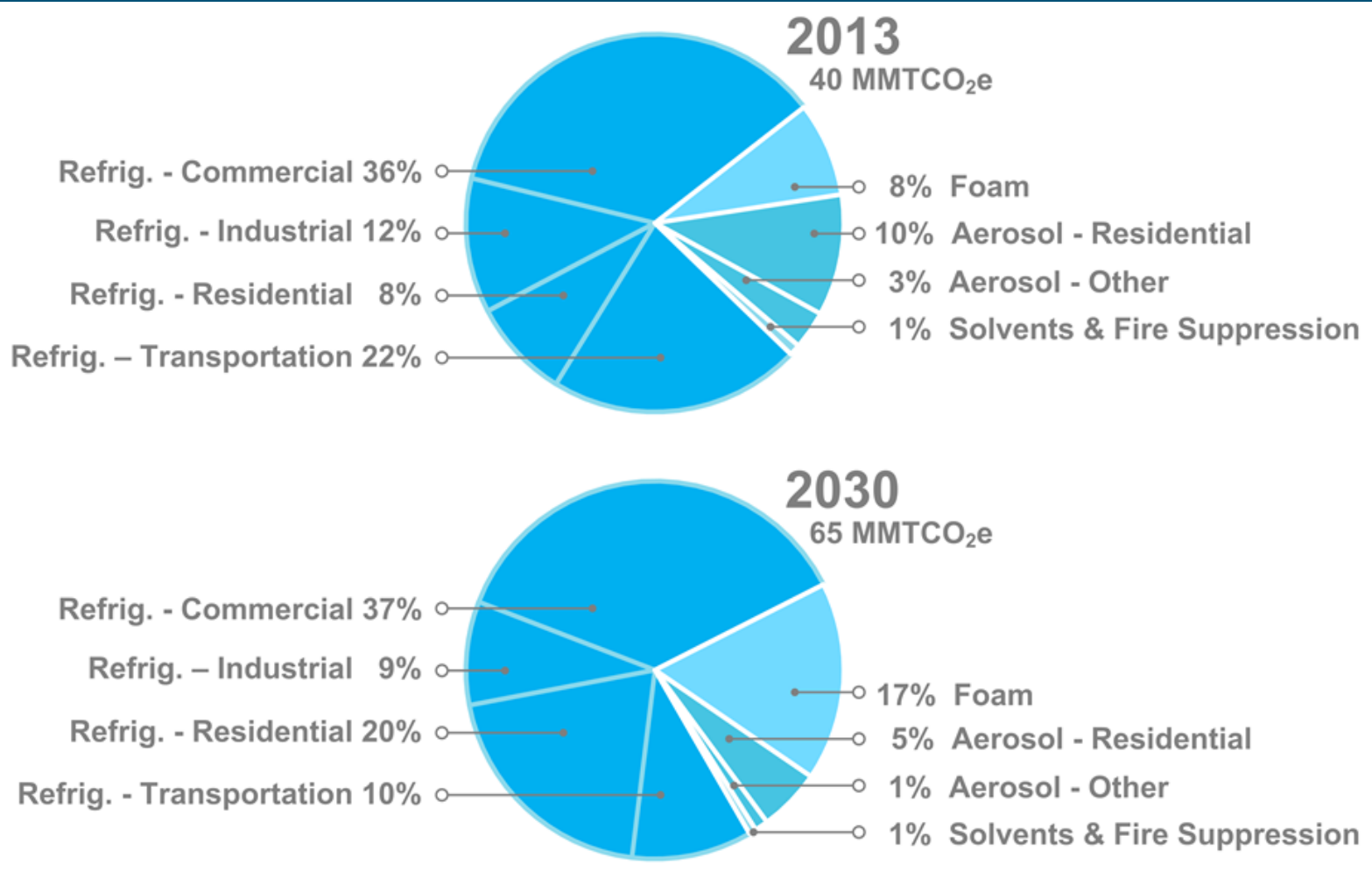
- ARB and other agencies to assess actions to require capturing and utilizing methane
- Additional measures may focus on food rescue and recovery programs and co-digestion of food-related waste streams at existing and new digester facilities

Proposed Methane Emission Reduction Measures (cont.)

Oil and Gas

- ARB developing a regulation by 2016 to reduce fugitive methane emissions from oil and gas production, processing, and storage
- CPUC to complete rulemaking by 2017, pursuant to Senate Bill 1371, to minimize methane leaks from natural gas pipeline system

F-Gas Emissions



F-Gas Emission Reduction Concepts

- International or national agreements best way to phase down the production and use of HFCs
- If no agreement in 2016, ARB will evaluate the feasibility of a phasedown for California that aligns with similar efforts in other jurisdictions
- Also proposing financial incentives for early adoption of low-GWP refrigeration, prohibition on the sale of new refrigerants with very-high GWPs, and prohibition of high-GWP refrigerants in new stationary systems

Next Steps

April 2016	<ul style="list-style-type: none">• Release Proposed Strategy and draft Environmental Analysis (EA)• Hold public workshop
May 2016	Present Proposed Strategy to Board
Fall 2016	Present final Strategy and responses to EA comments to Board for approval

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SLCP Website:

<http://www.arb.ca.gov/cc/shortlived/shortlived.htm>