Public Workshops to Discuss Draft Short-Lived Climate Pollutant Reduction Strategy

October 13, 2015 Sacramento
October 14, 2015 Diamond Bar
October 19, 2015 Fresno

Industrial Strategies Division
Air Resources Board

Purpose of Workshop

- Discuss requirements for a Short-Lived Climate Pollutant (SLCP) Strategy
- Discuss proposed new measures for reducing SLCP emissions in recently released Draft Strategy
- Elicit feedback on the proposed emission reduction strategies
- Use comments received to inform development of Proposed Strategy that will be presented to Board in December

Short-Lived Climate Pollutants

- Methane, black carbon, fluorinated gases (F-gases, including hydrofluorocarbons)
- Lifetimes of a few days to a few decades
- GWP can be tens to thousands of times greater than CO_2
- Account for about 40% of current global warming
- Strong, immediate action to cut emissions of both CO_2 and SLCPs is critical for mitigating climate change

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 developed, after considering comments received, in coordination with other state and local agencies

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

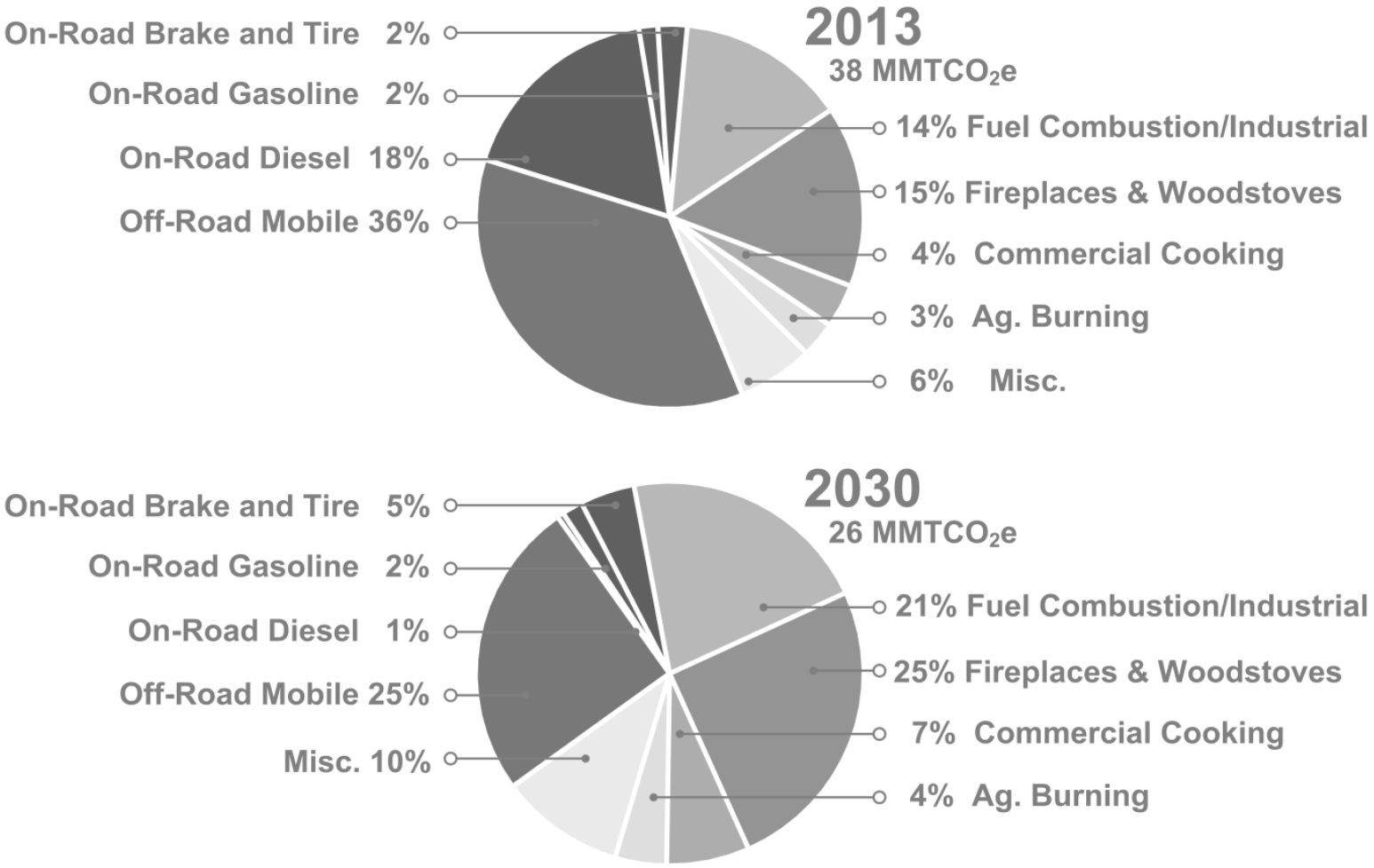
- Black carbon emissions from anthropogenic sources are 90% lower than in the 1960s, and will be cut in half again by 2020
- Methane emissions are regulated at landfills, offset protocols under the Cap-and-Trade program are encouraging the reduction of methane emissions, and methane leaks will be reduced from oil and gas production and processing and the natural gas pipeline system from 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 ($MMTCO_2e$)

Pollutant	Inventory	Forecast	Targets
	2013	2030	2030
Black Carbon	38	26	19
Methane	118	117	71
F-gases	40	65	24

Black Carbon Emissions



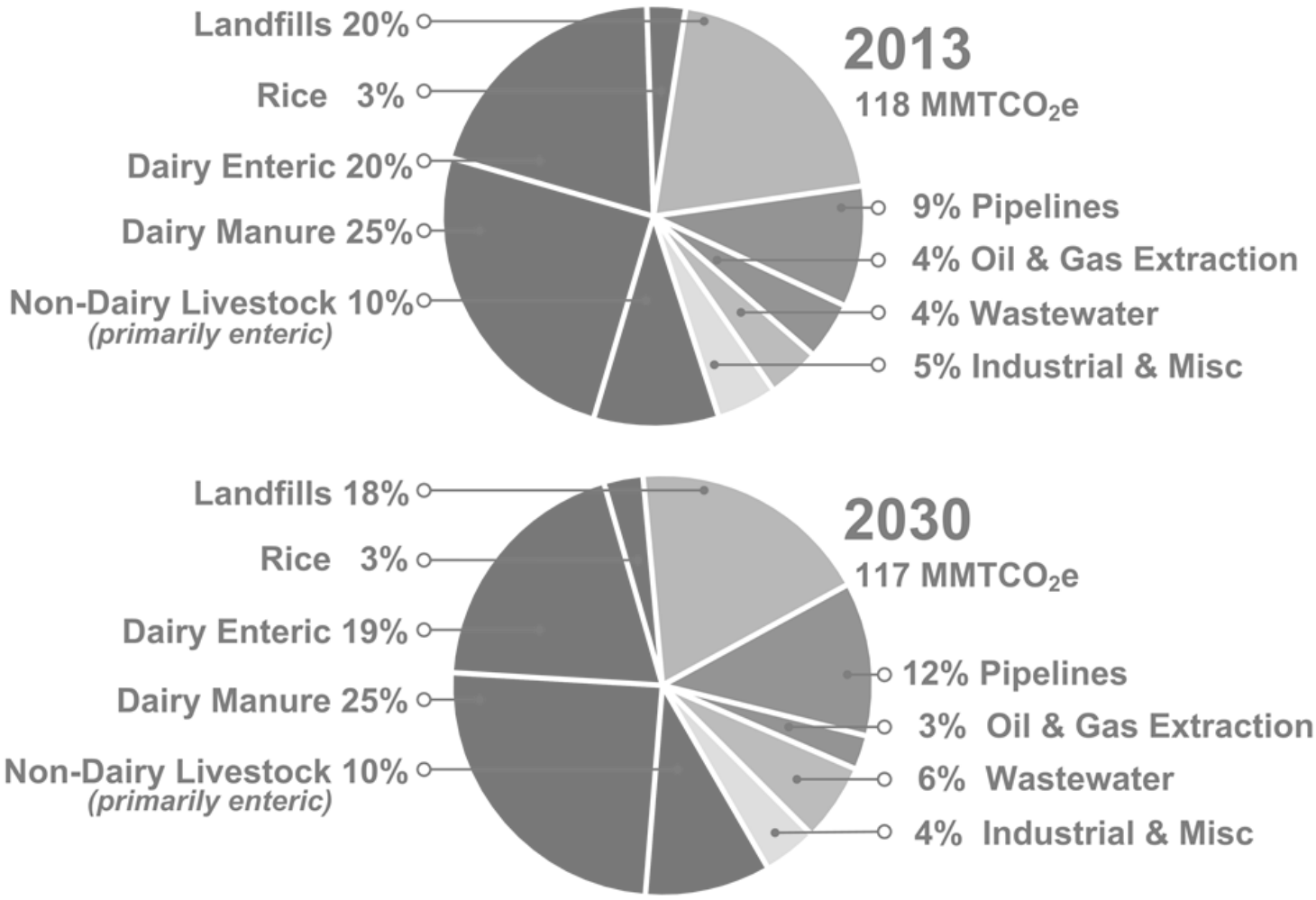
Black Carbon Proposed Emission Reduction Measures

- 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
- Inclusion of holistic forest management recommendations to reduce catastrophic wildfire, open biomass burning, and black carbon emissions in the State Forest Carbon Plan currently under development

Methane Emissions



Proposed Methane Emission Reduction Measures

Dairies

- ARB and CDFA to develop regulation and financial incentives by 2018 to require best manure management practices at new and expanded dairies
- Voluntary reduction targets for emissions from manure at existing dairies (20 percent in 2020, 50 percent in 2025, and 75 percent in 2030)
- ARB and CDFA to evaluate progress to determine appropriate regulatory timeline to accelerate progress and/or ensure reductions
- 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 landfill diversion targets and virtually eliminate organic disposal in landfills by 2025

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

Proposed Methane Emission Reduction Measures (cont.)

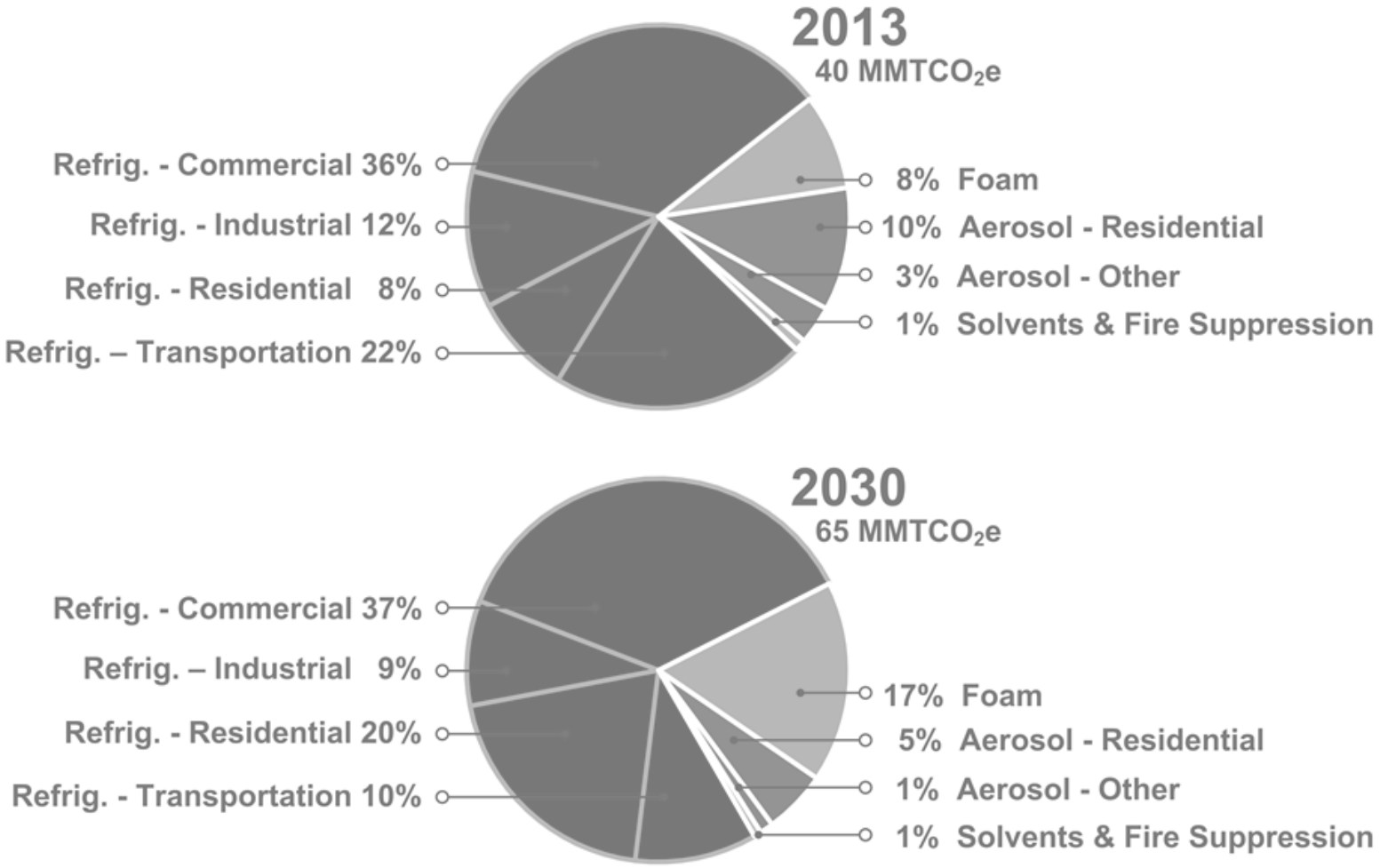
Wastewater

- ARB, State and local water boards, CalRecycle, and local air districts to assess actions to require capturing and utilizing methane generated from wastewater treatment plants

All Sources

- Emission monitoring to accelerate leak detection and facilitate emission reductions from all sources

F-Gas Emissions



F-Gas Emission Reduction Concepts

- National actions and international agreements being discussed to control F-gas emissions
- If no international agreement is reached on an HFC phasedown amendment to the Montreal Protocol in November 2015, ARB will consider developing a phasedown for California
- ARB will also consider an incentive program to encourage the use of low-GWP refrigerants, a sales ban of very-high GWP refrigerants, and prohibition of new equipment with high-GWP refrigerants

Evaluations of Strategy

- Environmental analysis
- Economic analysis
- Public health impacts

Environmental Analysis

- Environmental Analysis (EA) developed for proposed actions that may result in significant impacts on the environment
- EA prepared according to the requirements of ARB's certified program under the California Environmental Quality Act (CEQA)
- The CEQA Environmental Checklist (CEQA Guidelines Appendix G) is used to identify and evaluate potential impacts to the environment.

Environmental Analysis

- The EA will include:
  - Beneficial impacts
  - Foreseeable methods of compliance
  - Potential for adverse impacts
  - Feasible alternatives and mitigation measures to reduce/avoid significant impacts
- Input welcomed on appropriate scope and content of EA
- Draft EA will be released for 45 day public comment period

Economic Analysis

- Conduct a rigorous analysis of economic impacts
  - Assessment of the costs and benefits of proposed measures will be included in the Proposed Strategy that is presented to the Board in December
  - Full macroeconomic assessment in upcoming Scoping Plan
  - Subsequent regulatory action will be subject to the Administrative Procedure Act rulemaking process
  - Data and input on the analysis welcomed

Economic Analysis

- Assess the benefits of near-term commitments and investments in SLCP emission reduction projects
  - Impact on disadvantaged communities
  - Co-benefits in meeting existing air quality, climate, and water goals
- Identify costs and funding needs
  - Market penetration of existing technologies
  - Scaling solutions across sectors and industries
  - Research and development
  - Leverage existing public funds and encourage private investment

Next Steps

October 30, 2015	Due date for comments on Draft Strategy
December 2015	• Release Proposed Strategy • Release draft EA
December 17, 2015	Present Proposed Strategy to Board
Spring 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