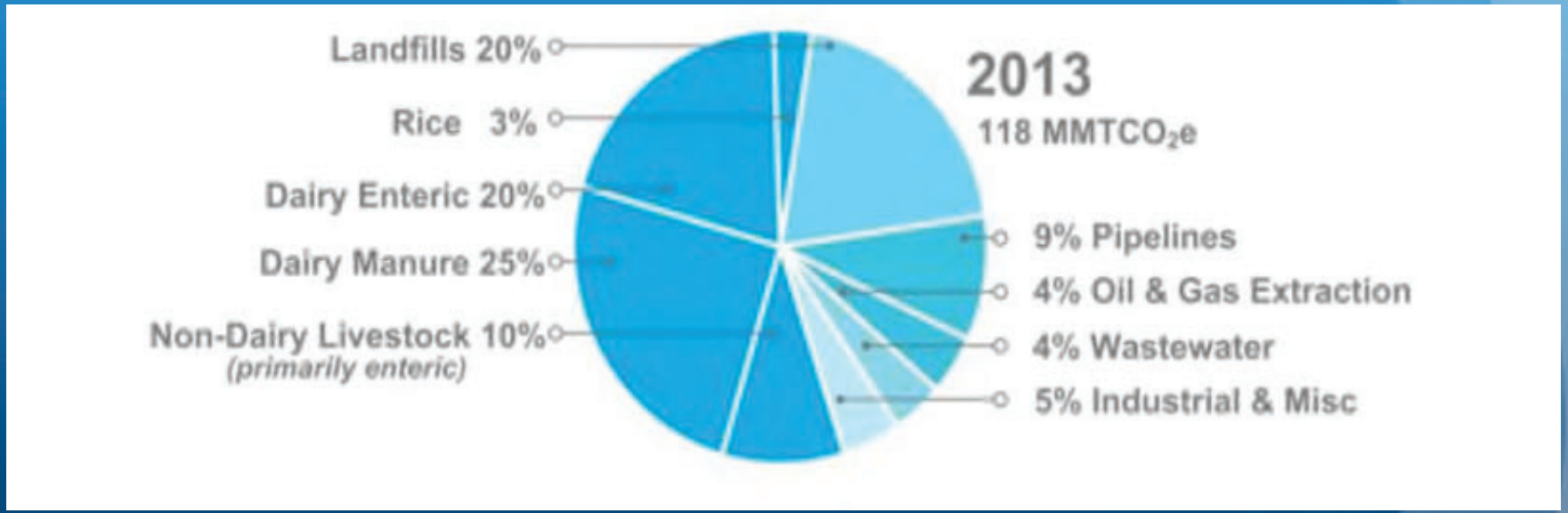
ARB Overview

- SLCP Strategy
- SB 1383 requirements for dairy and livestock sector
- Common terminology
- Digesters as air pollution control devices
- ARB dairy-related research

SLCP Strategy

- Approved by the Air Resources Board in March 2017
- Identifies measures for reducing SLCPs
  - 40 percent reduction of methane from 2013 levels by 2030
- SB 605 (Lara, 2014) directed development of SLCP Strategy to reduce emissions
- SB 1383 (Lara, 2016) directed approval and implementation of SLCP reduction measures
- SLCP emission reductions support 2030 statewide GHG reduction target of 40 percent below 1990 levels (SB 32, Pavley, 2016)

Dairy and Livestock Methane Emissions



SB 1383 Requirements for Dairy and Livestock Sector

- Reduce dairy and livestock methane emissions by 40 percent from 2013 levels by 2030
- Form dairy and livestock sector working group
  - Identify and address technical, market, regulatory, and other barriers to development of methane reduction projects
  - Include broad range of stakeholders
  - Focus of today's meeting

SB 1383 Requirements for Dairy and Livestock Sector

- CPUC – develop selection criteria and cost recovery guidelines for gas corporation selection of at least five dairy biomethane pipeline injection projects
  - By January 1, 2018
- CEC – develop recommendations for development and use of renewable gas in 2017 Integrated Energy Policy Report (IEPR)
  - By early 2018
- ARB – improve predictability of revenue streams for renewable gas:
  - Establish pilot financial mechanism
  - Provide guidance on regulatory impact on credit revenues
  - By January 1, 2018

SB 1383 Requirements for Dairy and Livestock Sector

- ARB report on progress dairy and livestock sector have made in meeting reduction goals in SLCP Strategy
  - By July 1, 2020
- ARB implement methane reduction regulations
  - On or after January 1, 2024
- Regulatory considerations:
  - Technological/economic feasibility, cost-effectiveness
  - Potential to minimize / mitigate leakage
  - Evaluation of incentive based programs
  - Avoidance of impacts to disadvantaged communities

SB 1383 Requirements for Dairy and Livestock Sector

- Near-term: Voluntary, incentive-based approaches to enteric fermentation reductions until cost-effective and scientifically-proven reduction methods available
- Assure future reduction measures:
  - Pose no threat to animal welfare
  - Do not compromise human health, or consumer acceptance
- Enteric fermentation emissions is one key focus of Research Needs sub-group

Common Terminology

- Biogas
- Biomethane
- Renewable gas

Digesters as Control Devices

- Lagoons source of air emissions
- Digesters control methane emissions
- Biomethane can be injected into common carrier pipeline to avoid criteria and toxic air emissions from electrical generation use
- Leverages economic incentives such as LCFS and RFS credits
- Provides public health benefits particularly in disadvantaged communities

ARB Dairy-Related Research

- Current
  - Characterize California-specific Cattle Feed Rations and Improve Modeling of Enteric Fermentation for California's GHG Inventory
  - Characterize Physical and Chemical Properties of Manure in California Dairy Systems to Improve Greenhouse Gas (GHG) Emission Estimates
  - Statewide Airborne Methane Emission Survey from California Dairy Infrastructure
- Future proposals
  - Strategies To Reduce Methane Emissions From Enteric And Lagoon Sources
  - Multiple Pollutant Mitigation Strategies from Dairy Sources