

# Introduction

## Technology and Fuels Assessments

September 9, 2014  
Sacramento, California

California Environmental Protection Agency

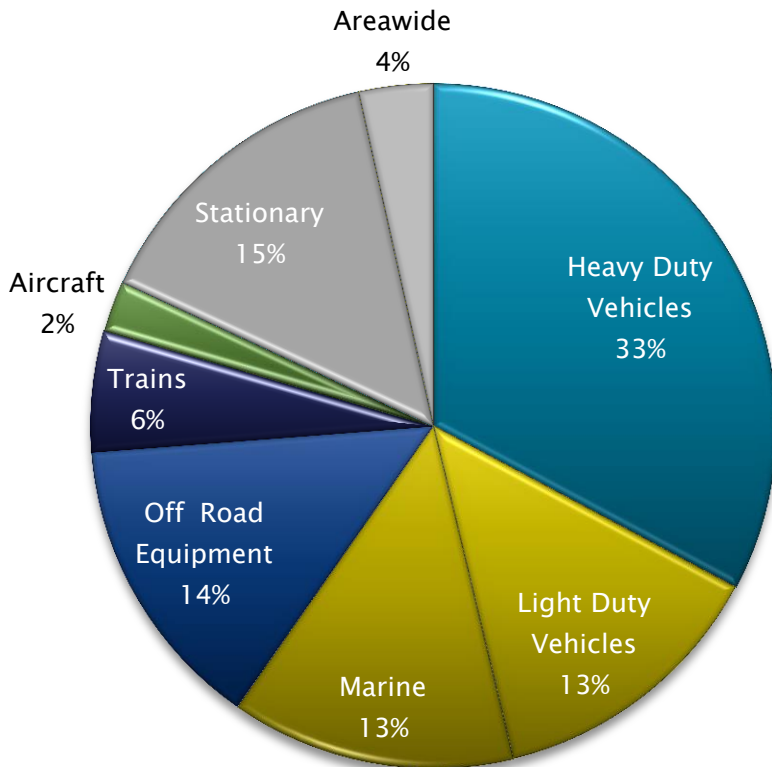
 **Air Resources Board**

# Purpose of Technology Assessments

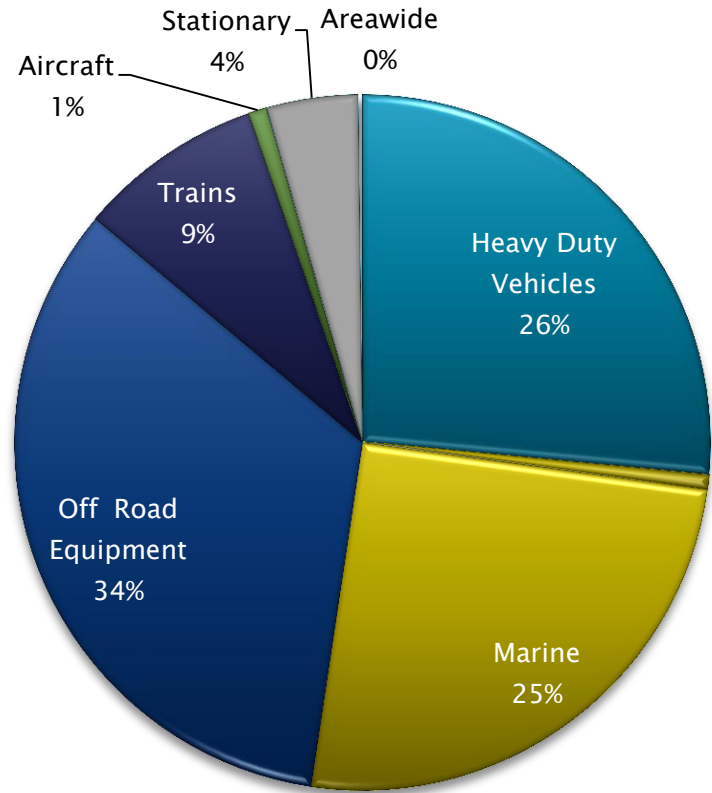
- ▶ Assess current and emerging technologies to reduce criteria pollutants and GHG
- ▶ Sources
  - Trucks and locomotives
  - Port, rail yard, and distribution center sources
  - Airport Sources
  - Fuels
- ▶ Assess compatibility with each sector
  - Operational constraints
  - Economics
  - Time to market
- ▶ Lay technical stage for freight plan and SIPs

# Statewide Emission Sources

## 2014 Statewide NOx Emissions

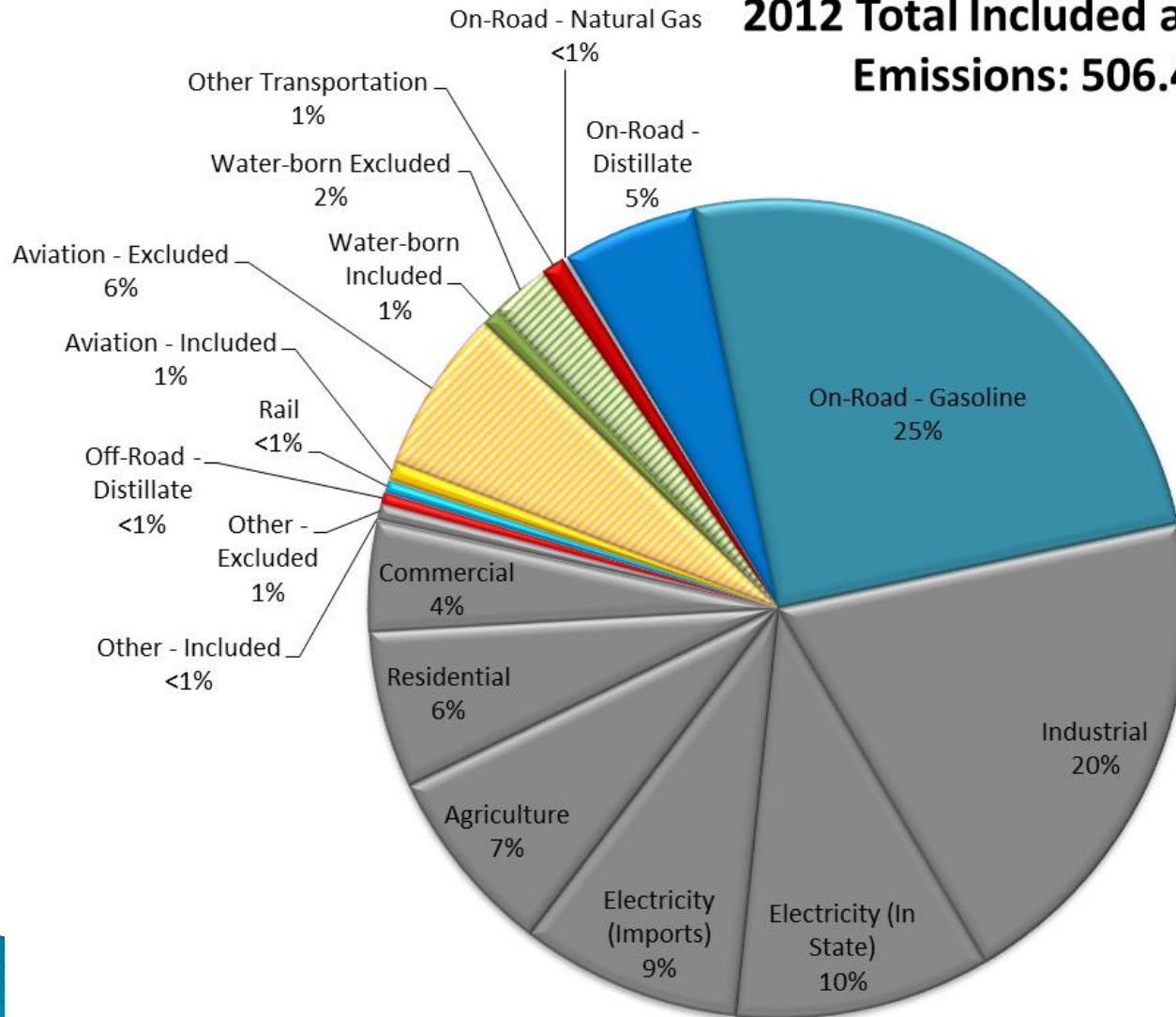


## 2014 Statewide Diesel PM2.5 Emissions



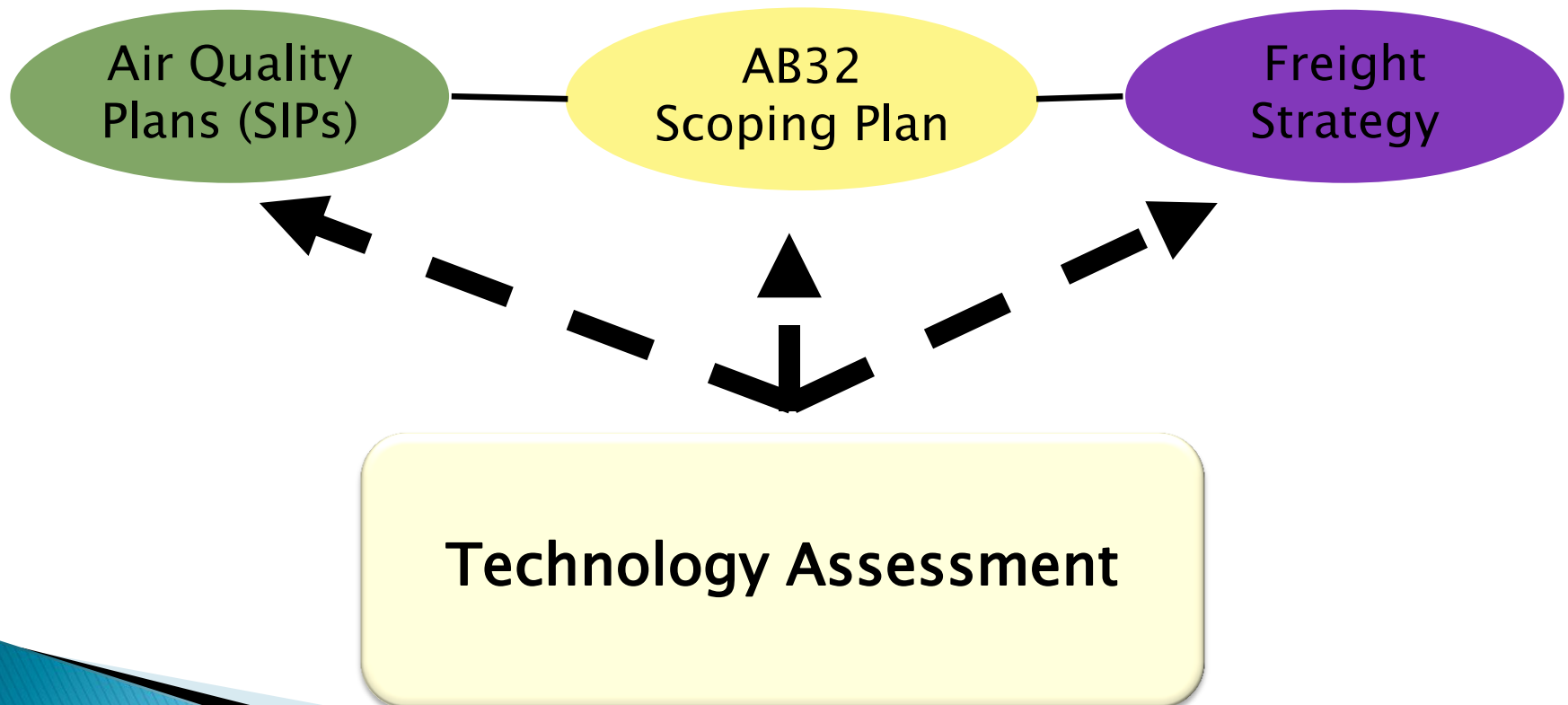
# Statewide GHG Emissions

**2012 Total Included and Excluded GHG Emissions: 506.4 MMTCO<sub>2</sub>e**



# Technology Assessments Underway

Developed in partnership with air districts



# Workshop Goals

- ▶ Solicit public comment on our understanding of current technologies
- ▶ Highlight key issues identified in technology assessments
- ▶ Provide opportunity for public review and comment
- ▶ Solicit input to help close data gaps

# ARB Staff Seeking Input

- ▶ We are presenting our current understanding of technology and fuels
- ▶ We are seeking input on gaps and areas where we can improve, including but not limited to:
  - Technology and fuels characterization
  - Current and future vehicle and equipment costs
  - Path and timeline to future technologies
  - Additional areas to consider

# Multiple Opportunities to Comment

- ▶ Submit written comments on workshop slides by October 1st:
  - <http://www.arb.ca.gov/msprog/tech/comments.htm>
- ▶ Technology Assessment draft document released end of October
- ▶ Submit written comments on draft document by November 28<sup>th</sup>
- ▶ Meet with staff at any time to provide input



# Technology Assessment Sector Workshops



- ▶ Sept. 2 --Trucks
- ▶ Sept. 3 -- Transport Refrigeration Units, Rail, Fuels
- ▶ Sept. 9 – Ocean Going Vessels, Commercial Harbor Craft, Cargo Handling Equipment. Aviation, Assessment Overview



# Timeline – Technology Assessments, Sustainable Freight, SIPs

- ▶ Sustainable Freight workshops Sept. 11, 15, 16, 23, 24
- ▶ Technology Assessment draft document for public comment end of October
- ▶ Sustainable Freight/Technology Assessment Board Hearing in December
- ▶ SIP Development 2015–2016

# Technology Assessment Elements

- ▶ Technology description
- ▶ Readiness – current development status
- ▶ Fueling needs, strengths and limitations, key performance parameters
- ▶ Cost and new vehicle emission levels (per vehicle)
- ▶ Conclusions and findings – technology status, cross-sector findings