

# Proposed Amendments to the Large Spark-Ignition (LSI) Engine Fleet Requirements Regulation



July 21, 2016

California Environmental Protection Agency

 **Air Resources Board**

# Background

- Engine emission standards approved in 1998 (amended 2006)
- Fleet regulation approved in 2006 (amended 2010)
- Forklifts, sweeper/scrubbers, industrial tow tractors, airport ground support equipment
- >1 liter and  $\geq 25$  horsepower engines
- Approximately 96,000 pieces of equipment in California, including electric equipment



# Existing Fleet Requirements

Fleet Type	Fleet Size	Compliance Dates and HC+NOx Fleet Average Emission Level Standards (g/bhp-hr)		
		1/1/2009	1/1/2011	1/1/2013
Large Forklift Fleet	26+	2.4	1.7	1.1
Medium Forklift Fleet	4 - 25	2.6	2.0	1.4
Non-Forklift Fleet	4+	3.0	2.7	2.5

- Fleets < 4 exempt from Fleet Requirements
- Fleets retain records until June 30, 2016

# Emission Benefits

- 2003 Ozone State Implementation Plan commitment
- Oxides of nitrogen and hydrocarbons (NO<sub>x</sub>+HC) emissions from LSI equipment ~20 tons per day (tpd)
- New engine standards and fleet regulation
  - Combined benefit of ~6 tpd NO<sub>x</sub>+HC reduction
  - Equivalent to removing 750,000 gasoline cars from the road

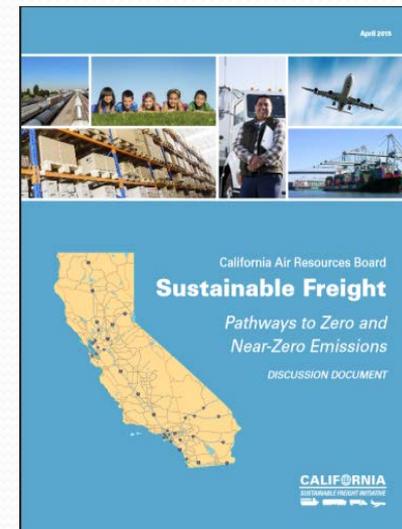


# Proposed Regulatory Amendments

- Three key proposed requirements:
  - Recordkeeping
  - Reporting
  - Labeling
- Recordkeeping ended June 30, 2016
- Reporting and labeling consistent with other ARB fleet regulations

# Benefits of the Proposed Requirements

- Increase enforcement effectiveness and compliance rates
- Update fleet emissions inventory
- Sets the stage for future action



# Closer Look at the Proposed Amendments

- Require reporting of LSI equipment subject to the current LSI fleet average emission level standard
- Label each piece of LSI equipment
- Expand the Diesel Off-Road On-line Reporting System (DOORS) with an LSI portal

# Agricultural Fleets

- In-field equipment not subject to the current regulation, exemption continues
- Agricultural Crop Preparation Service equipment
  - Currently subject to emission control requirements
  - Would not be subject to the proposed reporting and labeling amendments
  - ARB coordinating an extensive equipment and usage survey through the agricultural industry

# Estimated Costs

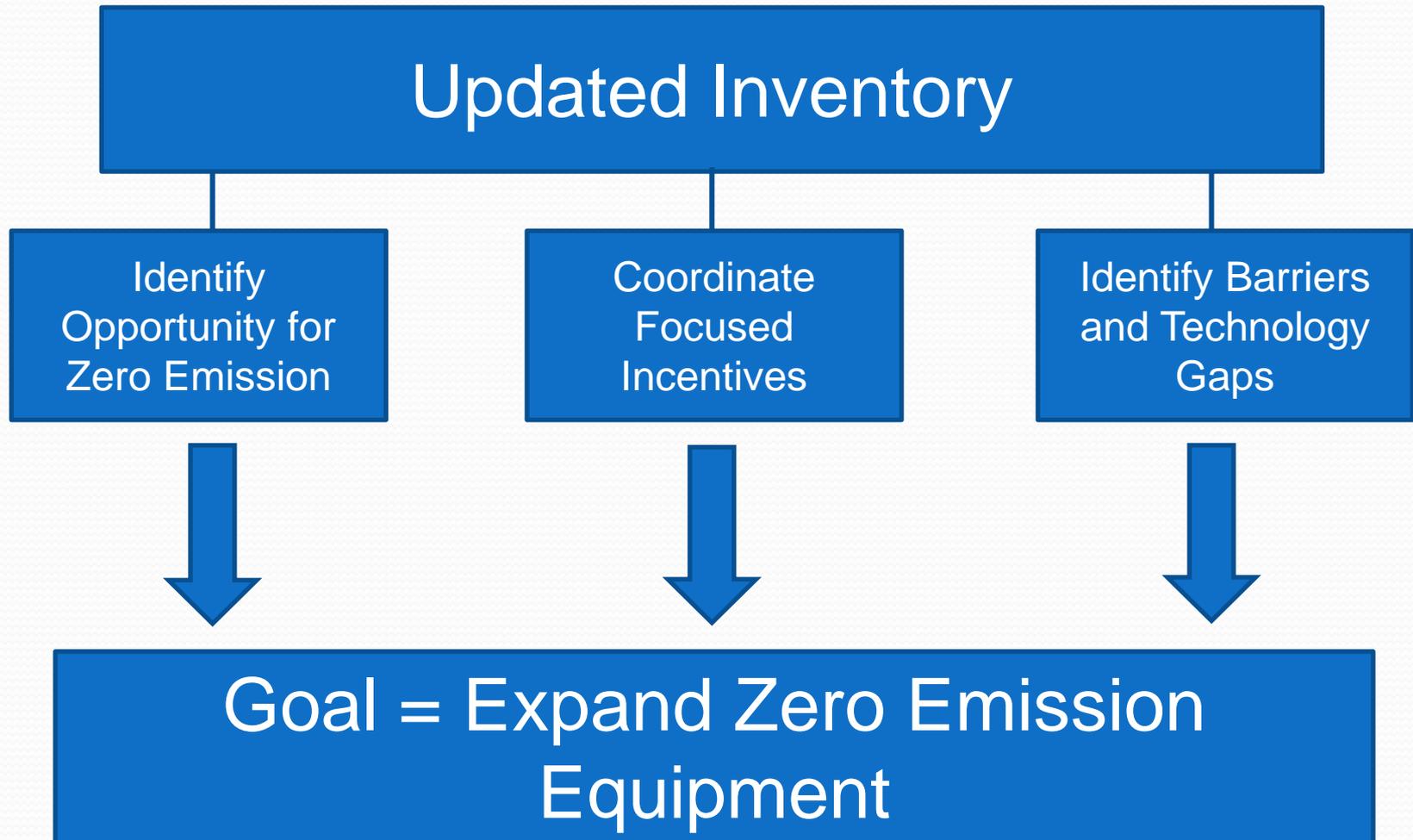
- Cost for each piece of equipment
  - One hour to collect and report information (\$57)
  - One label (\$10)
- Estimated fleet cost
  - Small fleet (4 pieces of equipment) \$270
  - Large fleet (100 pieces of equipment) \$6,700
- Additional future costs
  - Adding equipment
  - Turnover

# Extensive Stakeholder Input

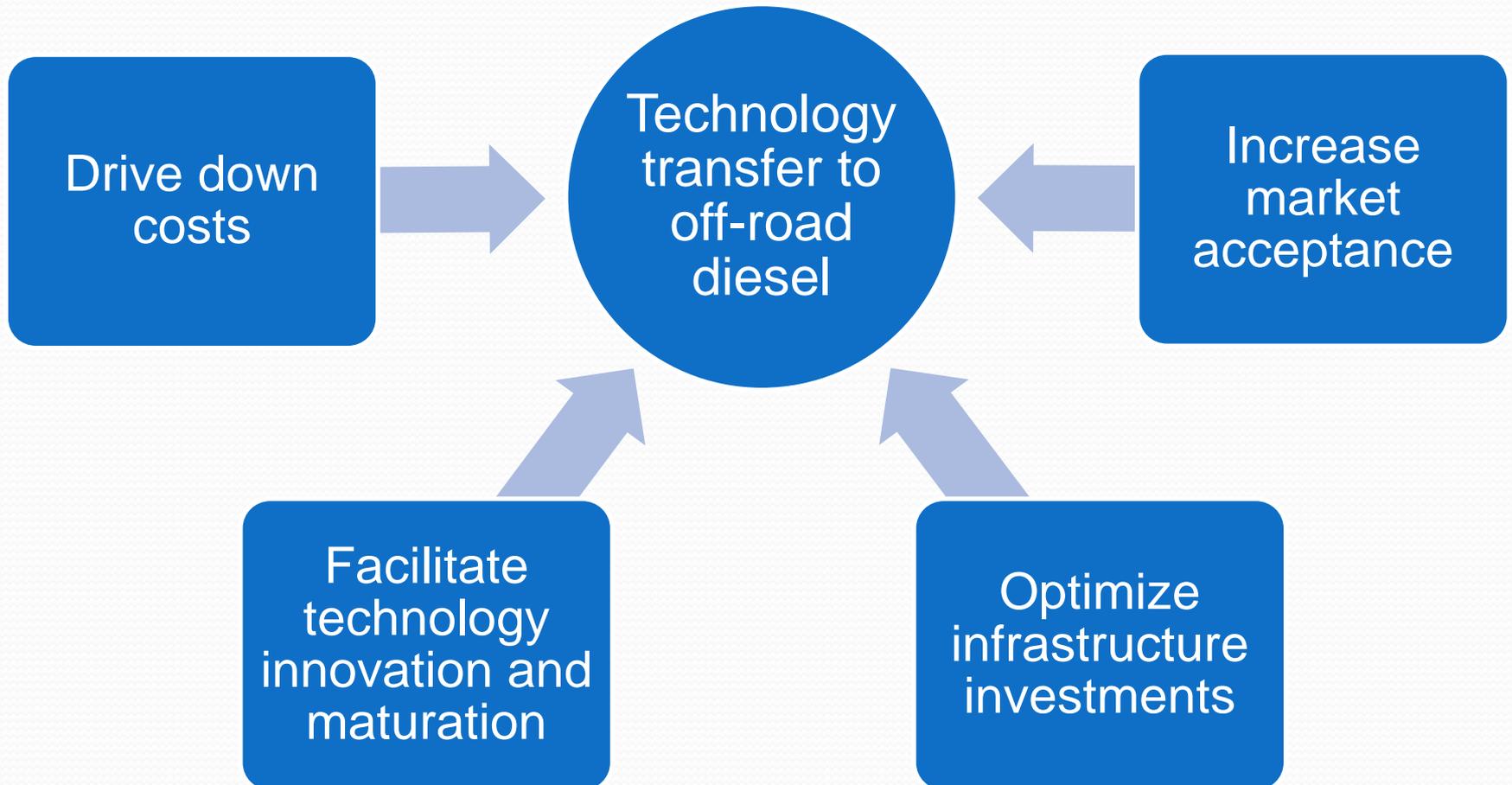
- Multiple workshops throughout California
- One Stop Truck Events
- Continue free ARB 505 (LSI) training class
- Collaborative process to address stakeholder concerns



# How will the New Information be Used?



# The Path to Zero Emission Off-Road Starts with LSI



# Staff Recommendation

- Approve amendments to the LSI Fleet Regulation to retain recordkeeping requirements and require reporting and labeling

