Recent Developments: Mobile Source Regulation in California

AAPCA 2020 Virtual Fall Meeting Series

Tung Le
CAPCOA Executive Director

Who We Are

- Members include all 35 Air Districts
- Districts created through state law
- Governing Board made of 14 APCOs
- Representing over 2,500 Air Quality professionals

Who We Are

- Large, Medium and Rural districts represent diversity of state
- Districts regulate stationary source emissions
- CAPCOA coordinates district activities to respond to legislative, state, and federal programs and advocates for clean air programs

Air Quality Needs in California

- Attainment of National and State air quality standards
  - South Coast and San Joaquin Valley air basins are Extreme non-attainment
- Community Health
  - AB 617
  - Disadvantaged Communities and Environmental Justice
- Climate Change
  - Wildfires

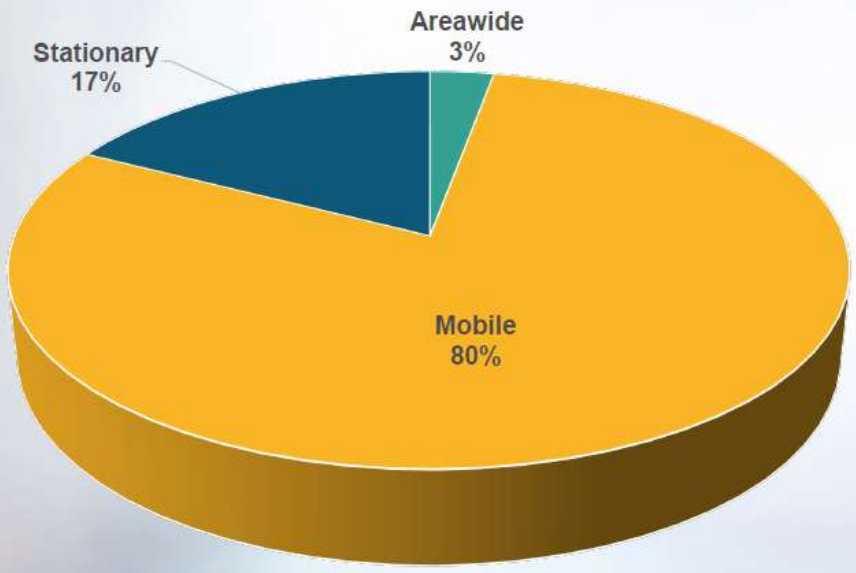
Health Impacts of PM2.5 Pollution*

- 5,400 premature deaths
- 2,800 hospitalizations for cardiovascular and respiratory diseases
- 6,700 emergency room visits for asthma
- Exposure to diesel PM increases cancer risk

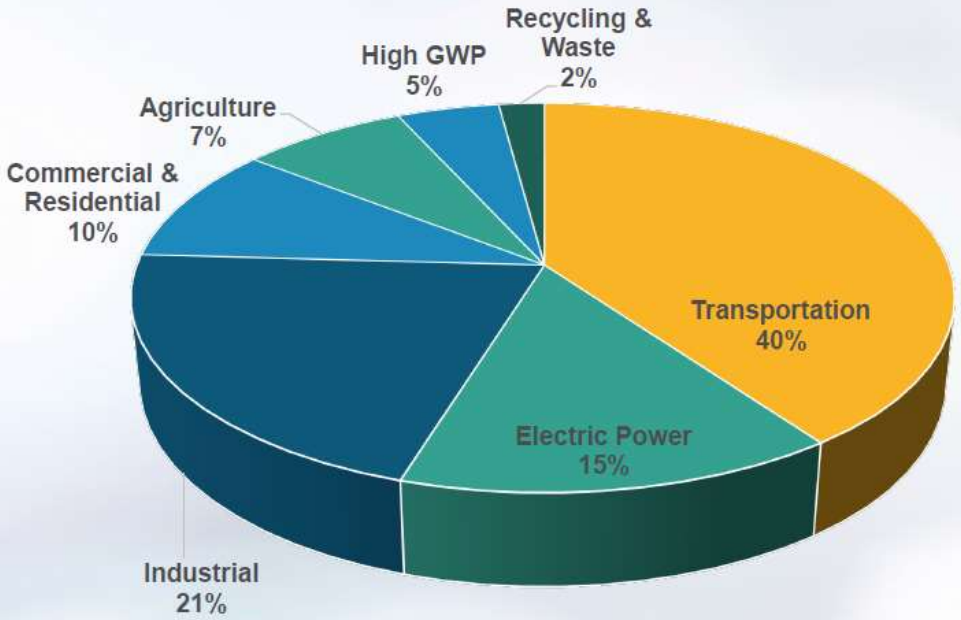
*CARB 2014-2016 air quality data

Need for Mobile Source Emission Reductions

Mobile Source Contribution



2017 Statewide NOx Emissions
Total = 1294 tons per day



2017 Statewide GHG Emissions
Total = 424 MMTCO2e

Need for Mobile Source Emission Reductions

- Stationary source emissions have been significantly reduced
- Fewer opportunities to reduce stationary source emissions – low hanging fruit has been picked
- Additional reductions from stationary sources will be more expensive

Incentives:
Carl Moyer Program

- Provides grant funding for cleaner than required engines and equipment
- Funded by smog abatement fees, tire fees and DMV fees
- Air districts implement in collaboration with CARB and stakeholders
- Over $1B has been invested since program inception in 1998

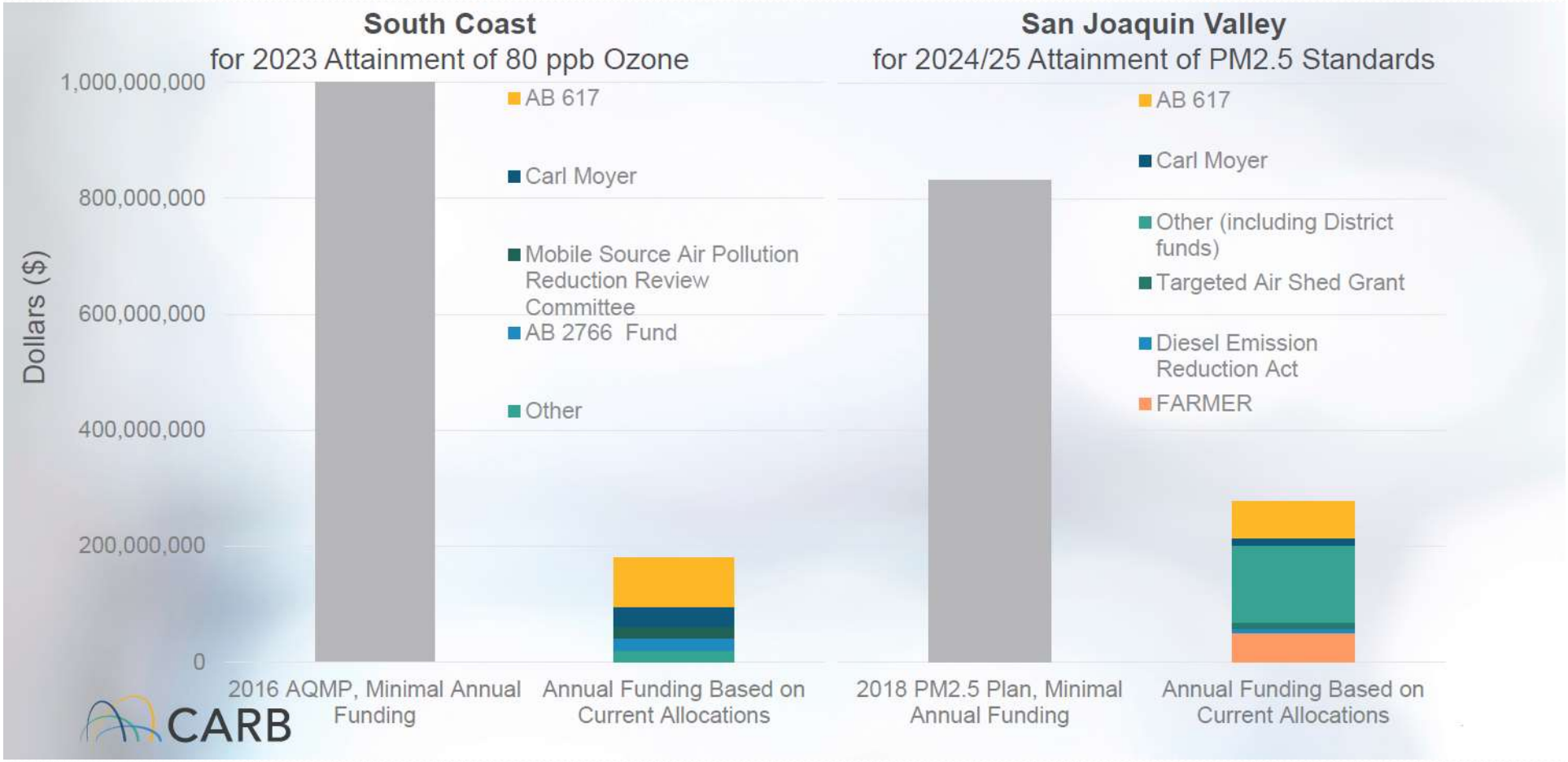
Carl Moyer Program Categories

- On Road
  - Heavy duty trucks
  - School buses
  - Transit vehicles
  - Public agency and utility vehicles
- Off Road
  - Diesel equipment
  - Ag equipment
  - Large spark-ignited equipment

Carl Moyer Program Categories

- Locomotives
- Marine Vessels
- Light duty vehicles
- Infrastructure (e.g. charging stations and alt fuel stations)

Near-Term Incentive Funding Needs



CARB's 2016 Comprehensive Mobile Source Strategy

- Outlines existing programs in California

- Addresses emissions from:
  - Light and heavy duty on road
  - Off road equipment
  - Fuels

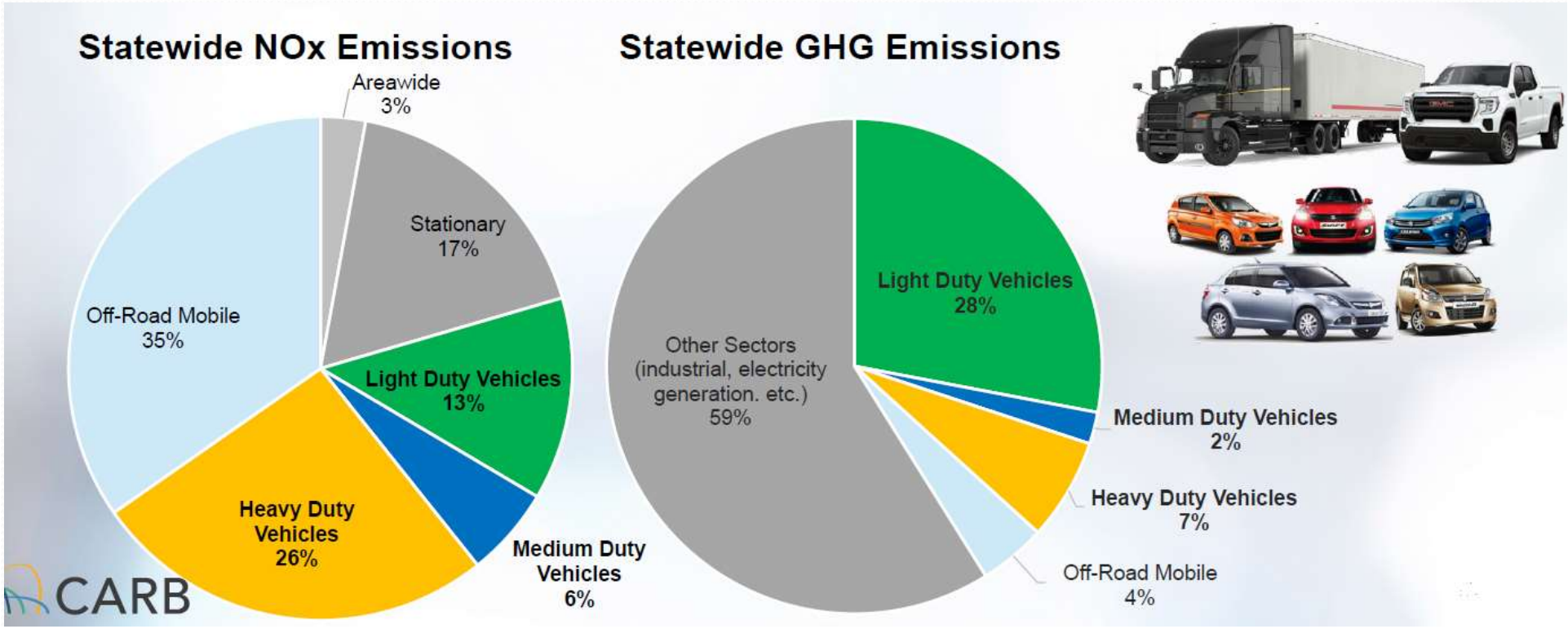
https://ww3.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf

CARB's 2020 Comprehensive Mobile Source Strategy

- Builds on much of the 2016 Strategy

On Road Sector

- In 2017, on road mobile sources contributed 45% of statewide NOx emissions and 37% of GHG emissions



Light Duty On Road Sector

- Clean Miles Standards
  - GHG reduction program for ride hailing companies beginning 2023
    - Electrification, carpooling, connections to transit, reduce deadhead miles

- Advanced Clean Cars 2
  - Enhanced ZEV and LEV regulations (Post 2025)

Medium Duty On Road Sector

- Medium duty includes 8,501 – 14,000 lbs GVWR
- Strategies include
  - Zero-emissions transformation starting in 2024
  - Enhanced LEV regulations through Advanced Clean Cars 2

Heavy Duty On Road Sector

- Heavy duty vehicles are above 14,000 lbs GVWR
- Strategies include
  - Zero-emissions transformation starting in 2024
  - Cleaner diesel technology starting in 2024
  - Renewable fuels when electrification not possible
  - Energy efficiency improvements
    - Tractor-trailer GHG standards

Heavy Duty On Road Sector

- In-use performance measures include
  - Inspection/maintenance program starting in 2023
  - More stringent in-use performance standards
  - Lengthening engine useful life, warranty and durability requirements
  - CARB's Low NOx Omnibus

Off Road Sector

- General strategies for this sector include
  - Zero emissions technologies where feasible
  - Combustion engines as low emitting as possible through service life (Tier 5, OBD and GHG standards)
  - Use of renewable fuels where electrification not feasible
  - Accelerated turnover of older equipment
  - Retrofits with after-treatment technology

Off Road Sector

- Cargo Handling – Especially important to communities in South Coast and Bay Area located near ports
  - Work towards transitioning to full electric operation starting in 2026

- Small Off Road Engines – includes lawn and garden and small generators/compressors
  - Tighten emission standards
  - Electrification options

Off Road Sector

- Full turnover of construction, industrial and mining Tier 0/1/2 engines by 2031
  - Current regulations allow indefinite use of Tier 0/1/2 if meeting fleet average requirements

- Agriculture – Especially important in the San Joaquin Valley
  - Turnover of Tier 0/1/2 tractors to Tier 4f
  - Replace diesel all terrain vehicles with electric

Off Road Sector

- Transport Refrigeration Units – especially important to local communities
  - Zero emissions for truck TRUs
  - Zero emissions while stationary for trailer TRUs
  - More stringent emission standards

- Locomotives
  - Increase purchase of Tier 4
  - Reduce use of Tier 3 by mid 2020s
  - Increase turnover of Tier 0 switchers

Off Road Sector

- Commercial harbor craft
  - In-use short run ferries electrified by 2028
  - Turnover all vessels and retrofit with DPF
  - Enhanced efficiency standards for new tugs and zero emission capability for excursion vessels (i.e. plug-in hybrid)

- Ocean-going vessels At-Berth
  - Tier 4 marine standards in 2028
  - Significant Tier 3/4 penetration by 2025

Executive Order N-79-20

- Signed by Governor Newsom on September 23, 2020
- All new cars and passenger trucks sold in California are to be zero emission by 2035
- Will accelerate significant development of infrastructure

Questions?

Tung Le
Executive Director
tung@capcoa.org