South Coast AQMD
Clean Fleet Vehicle Rules:
Key Environmental & Policy Drivers

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Breakout Session #4: NGV Policy Initiatives
2014 ACT EXPO
Long Beach, CA
May 7, 2014
California’s South Coast Air Basin

- Substantial Air Quality Progress, But Still Serious Health Impacts
- Nation’s Largest Containerized Freight Gateway

4-county Region
16+ Million People

261,000+ Diesel Vehicles
11+ Million Gasoline Vehicles
Key Air Quality Challenges

Ozone, Fine Particulates
Multiple Targets

Air Toxic Exposure

Climate Change

New Health Studies
Public Health Issues

- Respiratory Disease
  - Ozone and Fine Particulates (PM$_{2.5}$)
- Cancer Risk, Mainly from Diesel Exhaust
- Children’s Health – High Asthma Incidents
- Environmental Justice
  - Disproportionate Community Impacts
Key Pollutants and Federal Attainment Deadlines in South Coast Air Basin

- **PM$_{2.5}$** - 2015 (Annual & 24-Hr); 2020+ (new Annual)
- **Ozone** - 2024 (New 8-Hour Ozone – 2032)
- **Air Toxics**
- **Ultrafine Particles**
- **Climate Change**
2004 Health Impact Estimates

- 6,500 premature deaths/yr
  - 2,400 from goods movement
- 9,000 hospitalizations/yr
- 1.7 million cases respiratory illness/yr
- 1.3 million school absences
- 2.8 million lost workdays/yr

Source: CARB 2004, California Estimates
2004 MATES III Monitoring

- General Trend is Down for Air Toxics Levels
- Estimated Basinwide Lifetime Risk – 1,200 per million
- Mobile Source Toxics Account for 94% of Risk
- Diesel Accounts for 84% of Air Toxics Risk

MATES III Air Toxics Risk

- Diesel PM: 83.6%
- Benzene: 4.5%
- 1,3 Butadiene: 3.3%
- Carbonyls: 2.9%
- Other: 5.7%

Basinwide Risk: 1194 per million
Based on Average at Fixed Monitoring sites
Model Estimated Risk From All Emission Sources
The Need for Vehicle Fleet Rules

• Primary Exposure from Mobile Sources Operating on Surface Streets

• Contribution to Ozone and Particulate Air Quality

• Significant Contributors to Localized and Regionwide Air Toxic Exposures

• Reduce Emissions as Early as Possible
Fleet Rule Construct

- Purchase Cleanest Vehicles Available
- Alternative Fuel Application Niches
- Need for Feasible Implementation
- Long-Term Perspective
SCAQMD Fleet Vehicle Rules

- 1191 - Light- and Medium-Duty Public Fleets
- 1192 - Transit Buses
- 1193 - Refuse Collection Vehicles
- 1194 - Commercial Airport Ground Access
- 1195 - School Buses
- 1196 - Heavy-Duty Public Fleet Vehicles
- 1186.1 - Less-Polluting Sweepers
Fleet Rule Provisions

- Purchase Cleaner-Burning Gasoline or Alternative-Fueled Vehicles
- Implementation Began Mid-2001/2002
Initial Challenges to Reducing Fleet Vehicle Emissions

- Familiarity with New Technologies
- Willingness to Deploy New Technologies
- Cost of Alternative-Fueled Vehicles
- Need for Expansion of Alternative Fuel Refueling Infrastructure
Road to Success

- Working Together
- Public Outreach/ Education
- Vehicle Availability and Enhancements
- Expanding Fueling Station Infrastructure
- Sustained Funding Assistance
- Government/Early Adopters Provide Leadership Role
- Public/Private Sector Partnerships
California Natural Gas Vehicle Partnership

- Partnership Between Government, Engine Manufacturers, End-Users, and Non-Governmental Organizations
- Working Together to Promote Early Deployment of Natural Gas Vehicles
- Outreach to Decision Makers on Benefits of Alternative Fuel as a Transportation Fuel
- More Information - www.cngvp.org
Over 14 Years of Implementation

- Acceptance By Majority of Fleets on the Use of Alternative Fuel Vehicles
- Recognition that Alternative Fuels May Not be Applicable in Specific Vocations
- Private Sector Fleets are Benefiting from the Use of Alternative Fuel Vehicles
Natural Gas Vehicles Operating in the AQMD

**Year 2004**
- Around 3,430 Light- and Medium-Duty Public Fleet Vehicles
- Around 2,830 Transit Buses
- Around 943 Refuse Trucks
- Around 320 School Buses
- Around 665 Heavy-Duty Public Fleet Vehicles
- Around 151 Street Sweepers
- Around 500 Taxicabs and Airport Shuttles

**Year 2014**
- Around 3,710 Light- and Medium-Duty Public Fleet Vehicles
- Around 4,540 Transit Buses
- Around 2,060 Refuse Trucks
- Around 2,000 School Buses
- Around 690 Heavy-Duty Public Fleet Vehicles
- Around 340 Street Sweepers
- Around 860 Taxicabs and Airport Shuttles
South Coast AQMD CNG/LNG Stations

Year 2000

23 Stations Existing

~109 CNG, 19 LNG Public Access Stations
~106 CNG, 16 LNG Private Stations
Fleet Rule Future

- Next Generation of Alternative Fueled Engines – 90% Cleaner than Today’s Engines

- Increase Use of Biomethane

- Expanding Alternative Fuel Use in Different Vocations
Principal Policy Drivers

- Momentum is Critical
- Need Sure, Near-Term Emission Reductions to Reduce Health Impacts and Cancer Risk, and to Avoid Additional Economic Harm to Region
- Historic Under-Estimation of Mobile Source Emissions - Must Exercise Due Precaution
- Awareness of Necessary Niche Flexibility and Need for Compliance Options
Three Take-Away Messages

• Cleaner Alternative-Fueled Vehicles are Needed to Meet Future Air Standards

• Progress Demands Persistent Dialog and Persistent Responsiveness.

• *Clean air can’t wait.*