Outline of Today’s Presentation

- Background
- Regulatory Proposal
- Zero Emission Bus Program
- Non-Urban Bus Survey
BACKGROUND
70% of Air Toxic Risk is From Diesels

Diesel PM (70%)

Other Air Toxics (30%)
- 1,3 Butadiene (10%)
- Benzene (8%)
- Carbon Tetrachloride (4%)
- Formaldehyde (3%)
- Hexavalent Chromium (2%)
- All Others (3%)

540 / million risk

220 / million risk

70%

30%
Health Impacts of Diesels in California

- Annual health impacts
  - 2,900 premature deaths
  - 3,600 hospital admissions
  - 240,000 asthma attacks/respiratory symptoms
  - 600,000 lost days of work

- By comparison
  - 3,700 deaths from car accidents
  - 2,000 homicides
Statewide Mobile Source PM10 Emissions - 2001

123 tons per day*

- Off-Road: 34%
- HDD Trucks/Buses: 14%
- All Other On-Road Vehicles: 29%
- Recreational Marine: 6%
- Planes/Trains/Ships: 17%

*Does not include tire and brakewear PM
Diesel PM is a Toxic Air Contaminant

- **Identification**
  - August 1998

- **Diesel Risk Reduction Plan**
  - September 2000

- **Airborne Toxic Control Measures**
  - Ongoing Since 2000
Diesel Risk Reduction Plan - 2000

- On-Road Measures
  - Solid Waste Collection Vehicles
  - Public HDV Fleets
  - Private HDV Fleets, incl. cargo fuel tankers

- Off-Road Measures

- Diesel PM Reduced 75% from 90% of Vehicles (Expected) by 2010
SIP Measures: PM Retrofit

- ON-ROAD HVY-DUTY-3
- OFF-ROAD CI-2
  - Adopt 2004-2008; Implement 2006-2010
- ROG and NOx Reductions Accompany PM Reductions
Proposed Rulemaking
Schedule - Mobile Sources

- Board Adoption Dates:
  - Solid Waste Collection Vehicles: Sept. 2003
  - Transit Agencies, Non-Urban Buses: 2004
  - Public On- and Off-road Vehicles: 2004
  - Private On- and Off-road Vehicles: 2005
REGULATORY PROPOSAL
Scope
Fleet Rule for Transit Agencies

- Transit Agencies
  - Urban bus (heavy heavy-duty engines)
  - Non-urban bus

Not Covered

- Public Agencies
  - Shuttles: airport, universities, tourism
  - Other buses: non-transit

- Private (2005)
  - Charters
  - Tourism
Proposed Amendments

- Exhaust Emission Standards
- Fleet Rule for Transit Agencies
  - Urban Buses
  - Non-Urban Buses
Modification of 1956.1: Urban Bus Engine Certification

- Eliminate 1956.1 (a)(12)
  - Match the National 2007 HHD Truck Engine Standards
- Allow 2007 Advanced Technology Early
  - Cap at 1.2 g/bhp-hr NOx and 0.01 g/bhp-hr PM
Modification of 1956.1: Urban Bus Engine Certification

- Additional Options:
  - No Modification of Engine Standards
  - Eliminate Diesel Path and Require All Alternative-Fuel Engines
  - Re-Open the Alternative NOx Strategy Exemption (13 CCR 1956.2)
Proposed Changes to Fleet Rule for Transit Agencies

- Move to New Sections
- Modify Urban Bus Definition
- Increase Flexibility in Meeting PM Reductions
- Add Non-Urban Bus Definition
- Add Non-Urban Bus NOx and PM Fleet Requirements
New Sections

New Section for all in-use fleet rules: title 13 section 2020-2027

1956.1 - Does Not Move
2020: Purpose and Definitions
2023.1: 1956.2 (Urban Bus)
2023.2: New Non-Urban Bus
2023.3: 1956.3 (ZEB)
2023.4: Reporting (urban and non-urban)
Modify Urban Bus Definition

- Passenger-carrying vehicle powered by a heavy heavy-duty diesel engine, or of a type normally powered by a heavy heavy-duty diesel engine, with a load capacity of fifteen (15) or more passengers and intended primarily for intra-city operation, i.e., within the confines of a city or greater metropolitan area. Urban bus operation is characterized by short rides and frequent stops.

- Delete remaining text from the definition.
Urban Bus PM Reduction Flexibility

- Allow Transit Agencies to Meet an Average of 0.01 g/bhp-hr PM
- Applies in lieu of 85% Reduction in Final Compliance Year
New Requirements: Non-Urban Buses

Brings in Transit Agencies and Buses Not Previously Subject to Rule

- Define Non-Urban Bus
- NOx Reduction
- PM Reduction
- Reporting Requirements
Non-Urban Bus: Proposed Definition

“Non-urban bus” means a passenger-carrying vehicle powered by a medium or heavy heavy-duty diesel engine, or of a type normally powered by a medium or heavy heavy-duty diesel engine; with a load capacity of fifteen or more passengers owned or operated by a transit agency; and which is not an urban bus.
Non-Urban Bus: Proposed NOx Requirements

- NOx Fleet Average Reduction
  - Two Step Reduction
    - 3.2 g/bhp-hr in 2007
    - 2.4 g/bhp-hr in 2010
  - Similar implementation as for Urban Buses
    - Based on Engine Certification
Non-Urban Bus: Proposed PM Requirements

- Total PM Reduction
  - Baseline January 1, 2005
  - Same Method as for Urban Buses
  - Implementation Schedule:
    • 25% Reduction by 2007
    • 50% Reduction by 2009
    • 80% Reduction by 2011, or average of 0.01 g/bhp-hr PM
Non-Urban Bus: Proposed Reporting Requirements

- Reporting Requirements Mirror Existing Transit Fleet Rule
- Initial Report of Baseline Due 1/31/2006
- Annual Reports of Reductions Due Each 1/31 though 2016.
NON-URBAN BUS SURVEY
Survey

- Better Data = Better Inventory
- Inventory Required to Understand Emission Reductions Gained
- Survey Response Low Thus Far
  - 26 out of 68 transit agencies
- Outreach
ZERO EMISSION BUS PROGRAM
Summary of Current Rule

- 7/1/03 - Start ZEB Demonstration Project
- 1/31/05 - Final Project Report to ARB
- 1/31/06 - ZEB status report to the Board

Requires 15% of purchases to be ZEB
- 2008-15, Diesel Path
- 2010-15, Alternate Fuel Path
Zero-Emission Bus Rule

Status

- ZEB demonstration 18 to 32 months behind schedule
- Bus cost greater than anticipated during February 2000 rulemaking
NEXT STEPS
Public Process

- First Public Workshop 04/03/03
- Second Public Workshops
  - 12/2/03 - El Monte
  - 12/3/03 - Sacramento
- Comments Requested by 1/16/04
- Board Hearing 06/24/03
COMMENTS REQUESTED

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- Or Mail To: 1001 I Street, P.O. Box 2815, Sacramento, CA 95812
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Zero Emission Bus Contact

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Get on the e-mail List Serve for all transit notifications
http://www.arb.ca.gov/listserv/listserv.htm
list name: diesel-retrofit
Our Goals: Clean Air

And Healthy Citizens