Transit Bus Fleet Rule Implementation Update

November 7, 2002

California Environmental Protection Agency
Air Resources Board
Today’s Presentation

- Changes to the Regulation
- Requirements for 2003
  - Reports Due 1/31/03
  - Retrofit
  - Zero Emission Bus
  - Alternative NOx Strategy Demo
Regulation Changes

- Compliance Path Change for TA in SCAQMD
- Definitions
  - Alternative Fuel
  - Active Fleet
  - Emergency Contingency
  - Spare Bus
Regulation Changes, con’t

- Alternative Fuel Bus Purchases by Diesel Path T.A.
- Reducing Total Diesel PM Emissions
  - PM Reductions
  - Technology Delay
  - Verified Fuel Use
  - Small T.A. Delay
  - DECS Allowances
Regulation Changes, con’t

- Reducing Total Diesel PM Emissions
  - Use of ARB Verified DECS or ARB Certified Rebuild Kit
- Financial Hardship Delay for Small T.A.
- Reporting Requirements
- Deleting Certification Procedures for PM Retrofit Devices
- Adding Interim Certification for HEB
Reports Due in 2003

For 2002
Reporting Requirements

- Reports Due by January 31, 2003 for 2002
- Annual Report, as of 1/1/02:
  - Number, Engine Mftr & Make, Engine Model Year For All Engines in Buses, and Fuel Used
  - Alt.-Fuel Path List Bus Purchases & Leases, and Percentage of Alt. Fuel Buses Purchased or Leased
Reporting Requirements
(Cont’d)

- T.A. Changing Fuel Path from Diesel to Alt.-Fuel Must Report Change by January 31, 2004 (SCAQMD Only)
Reporting Requirements (Cont’d)

- NOx Fleet Average, 4.8 g/bhp-hr
  - Final Report Due 1/31/03
  - Detail Fleet Average AS OF 10/1/02
  - Describe Actions Taken to Achieve Standard (retirements, repowers, purchases)
Reporting Requirements (Cont’d)

- Total Diesel PM Emission Reduction
  - Initial Report Due 1/31/2003
  - No., Mft., Make, & Model Year of all Diesel-fueled, Dual-fuel, Bi-fuel, and Diesel HEB
  - PM Engine Cert. Values & Total PM
  - Total Diesel PM Baseline as of 1/1/02
Total Diesel PM Emission Reduction
- For Each Bus that has a DECS: DECS Product Serial No., the Diesel Emission Control Strategy Family Name, and Date of Installation
- Subsequent Annual Reports Include Percentage Reduction Achieved
Actions Required in 2003

By Transit Agencies
Low-Sulfur Diesel Fuel

- Continue Using Low Sulfur Diesel Fuel
  - <15 parts per million (ppm) Sulfur
  - July 1, 2002
- May Use a Fuel that is Verified as a DECS Instead to Meet PM Reductions
  - None Verified Yet
• Maintain NOx Fleet Average
  › Applies to all transit agencies
  › 4.8 g/bhp-hr NOx
  › October 1, 2002
Total Diesel PM Reduction

- By January 1, 2004, Reduce Total PM:
  - Diesel Path by 40%
  - Alternative Fuel Path by 20%
  - Relative to January 1, 2002, Baseline
## Total Diesel PM Reduction Schedule

<table>
<thead>
<tr>
<th>Fuel Path</th>
<th>2004</th>
<th>2005</th>
<th>2007</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel Path</td>
<td>40%</td>
<td>60%</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td>Alt-Fuel Path</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>85%</td>
</tr>
</tbody>
</table>

Note: Percentages of retrofit requirements must be met by January 1 of each year.
Diesel PM Reduction (Cont’d.)

- Compliance Extension
  - Agencies with <20 Buses in 1-Hr. Ozone Attainment Districts May Delay 100% Implementation to 1/1/2007 (Diesel Path) or 1/1/2009 (A-F Path)
PM Retrofit (Cont’d.)

- Delays
Alternative NOx Strategy Exemption

Applies to 7 Transits
“The Executive Officer may exempt transit agencies on the diesel path from the requirements” of 1956.2 (d)(4) provided that:

Alternative NOx Strategy

- (2) Final Date For Plan Approval Is 12/31/2001 (extension granted by Board)
- (3) Advanced NOx Aftertreatment Demonstration
  - Commit Resources by 12/31/2001
  - Demonstration in Progress by 12/31/2002
Alternative NOx Strategy

- T.A. May Not Purchase Buses with Diesel* Engines Exceeding 0.5 g/bhp-hr NOx 2004-2006 MY
- Engine Manufacturer May Not Sell Diesel* Engines Exceeding 0.5 g NOx 2004-2006 MY to T.A.
- UNLESS Approved for Alt NOx Strategy Exemption - Only Seven Are
Hybrid Electric Buses

Interim Test and Certification Procedures
Hybrid Electric Buses

- Hybrid design incorporates a Renewable Energy Storage System (RESS)
- RESS allows for a smaller engine = improved fuel economy
- Stop-&-Go duty cycle ideal for regenerative braking typical of hybrid systems
- Lower fuel consumption and emissions
Board Directives to Staff

October 24, 2002
Directions from Board
October 2002
ARB Website:
www.arb.ca.gov/msprog/bus/bus.htm

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