



## Transit Bus Fleet Rule Implementation Update

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**Air Resources Board**

## Today's Presentation

- June 2004 Changes to the Regulation
- Non-compliance
- Reports Required January 31, 2005
- Actions Required in 2005
- Future Updates to the Regulation

## **June 2004 Regulation Changes**

- Diesel Hybrid Electric Bus (HEB)
- Amendments to ZEB Requirements

## **HEB Regulation Changes**

- Hybrid Electric Bus Definition
  - ▶ 2 Energy Sources on Board
  - ▶ Auxiliary Power Unit to Convert Fuel Energy
  - ▶ Electric Motor Must Drive Wheels
- Diesel HEB Interim Standard
  - ▶ 1.8 g/bhp-hr NO<sub>x</sub>
  - ▶ 0.01 g/bhp-hr PM

## **HEB Regulation Changes (continued)**

- Only Diesel Path Transit Agencies May Purchase Diesel HEBs
- Must Offset NOx Emissions
  - ▶ 1.8 g/bph-hr NOx vs. 0.5 g/bph-hr NOx
    - NOx Aftertreatment for Other UB in Fleet
    - Repower Other UB w/ Lower NOx
  - ▶ Offsets Must Be Surplus

## **ZEB Regulation Changes**

- Zero Emission Buses (ZEB)
  - ▶ 3 ZEB per Demonstration Project
  - ▶ Interim Project Status Report 7/31/05
  - ▶ Project Start Deadline 2/28/06
  - ▶ Final Project Report 7/31/07

## **Compliance**

## **ARB Actions**

- ▶ NOx Fleet Average Violations Settled
  - All Transit Agencies are in Compliance
- ▶ PM Compliance Violations (2004) Being Investigated
- ▶ Late Reports and PM Non-Compliance Will Result in Notices of Violation in 2005

## **Reports Due in 2005**

**For 2004**

## **Diesel HEB Purchase Application**

- Application for Approval Due 1/1/05
  - ▶ Must Demonstrate Surplus Emission Reductions to Offset Excess NOx
  - ▶ No., Manufacturer, Make, MY
  - ▶ Specific Identification of Buses and Measures to Offset
  - ▶ Schedule for Implementation of Measures

## Annual Reporting

- Annual Report Due 1/31/05:
  - ▶ Number, Engine Mfr & 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 (continued)

- Total Diesel PM Emission Reduction
  - ▶ Annual Report Due 1/31/2005
  - ▶ No., Mft., Make, & MY Diesel UB
  - ▶ PM Engine Cert. Values & Total PM
  - ▶ Identification for DECS Used
  - ▶ Percentage Reduction Achieved by Jan. 1
    - 60 % Diesel Path; 40 % A-F Path

## **Reporting Requirements (continued)**

- Alternative NOx Strategy Exemption
  - ▶ Initial Report Due 1/31/2005
  - ▶ Shall Demonstrate Achievement of NOx Emission Benefits
  - ▶ Provide Update of Compliance Plan
  - ▶ Annual Reports Due Through 2016
- Applies to Seven Transit Agencies only

## **ZEB Report Required**

- Preliminary Report Due 7/31/05
  - ▶ ZEB Mfr & Technology Used
  - ▶ Describe ZEB Specifications
  - ▶ Miles/Bus in Non & Revenue Service
  - ▶ Safety Incidents & Maintenance
  - ▶ Quality of Experience: Riders & TA Staff
  - ▶ Capital Costs for Purchase/Lease & Fueling Infrastructure

## **Actions Required in 2005**

### **By Transit Agencies**

## **Total Diesel PM Reduction**

Relative to the January 1, 2002 Baseline

<b>Fuel Path</b>	<b>2004</b>	<b>2005</b>	<b>2007</b>	<b>2009</b>
<b>Diesel Path</b>	<b>40%</b>	<b>60%</b>	<b>85%</b>	<b>85%</b>
<b>Alt-Fuel Path</b>	<b>20%</b>	<b>40%</b>	<b>60%</b>	<b>85%</b>

Percentages of retrofit requirements must be met by January 1 of each year.

## Low-Sulfur Diesel Fuel

- Continue Using Low Sulfur Diesel Fuel
  - ▶ <15 parts per million (ppm) Sulfur
- May Use a Fuel that is Verified as a DECS Instead to Meet PM Reductions
  - ▶ PuriNOx now available

## NOx Fleet Average

- Maintain NOx Fleet Average
  - ▶ Applies to all transit agencies
  - ▶ 4.8 g/bhp-hr NOx
  - ▶ October 1, 2002

## **Idling Restrictions**

- Effective January 1, 2005
- Five Minute Limit for Idling
- Except:
  - ▶ Not while operating wheelchair or people lifts
  - ▶ Not when passengers are on board
  - ▶ May idle for 10 minutes prior to passenger boarding for climate control

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## **Potential Amendments in 2005**

**Transit Fleet Vehicles  
Urban Bus Engine Stds.**

## **Fleet Rule for Transit Agencies**

- Add Transit Fleet Vehicles to the Scope
  - ▶ New NOx and PM Fleet Emission Reductions
- Add New Definition of Commuter Service Bus
  - ▶ Categorized as a Transit Fleet Vehicle
- Add Requirements for New Transit Agencies
- Modify Urban Bus PM Fleet Reduction Standard
  - ▶ To Allow for Fleet Growth
- Move Rule from §1956.2-1956.4 to §2023

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## **Public Process**

- 1st Public Workshop
  - ▶ 04/03/03 (EI Monte)
- 2nd Public Workshops
  - ▶ 12/2/03 (EI Monte); 12/3/03 (Sacramento)
- 3rd Public Workshops
  - ▶ 5/17/04 (Sacramento); 5/18/04 (EI Monte)
- 4th Public Workshops
  - ▶ 10/7/04 (EI Monte); 10/8/04 (Sacramento)
- Board Hearing January 20-21, 2005

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## Proposal What Will it Affect?

- “Transit Fleet Vehicles”
  - ▶ Vehicle < 8,500 lb GVWR, not “urban bus” operated with a heavy-duty engine fueled by diesel or alternative fuel operated by a transit agency
  - ▶ Includes charter, dial-a-ride, paratransit, inter-city, tow trucks, etc.
  - ▶ Owned or operated by a transit agency. Vehicles owned by private or non-profit that provide transit services for a public transit agency

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## Truck Engine Certification

- Service Class
  - ▶ Heavy-duty (HD) Engine Is Used in a Heavy-duty Vehicle
    - Light HD <19,500 lbs. GVWR
    - Medium HD 19,500-33,000 lbs. GVWR
    - Heavy HD >33,000 lbs. GVWR
- Emission Stds: title 13, CCR, §1956.8

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## **Proposal Changes Since October**

- Modified “Transit Fleet Vehicle” Definition
- Modified Definition of “Commuter Service Bus”
- Added Extension for “Contract Fleet”
- Other changes may be made prior to the public notice set for early December 2004 Based on Comments Being Reviewed.

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## **“Commuter Service Bus”**

Defined as Transit Fleet Vehicle if:

- **Powered by a heavy HD diesel engine or of a type normally powered by a heavy HD diesel engine**
- **Operates on a fixed route primarily during peak commute hours**
- **No passenger-initiated stops**
- **No more than 10 stops per day, excluding Park-and-Ride lots.**

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## **“Transit Fleet Vehicle”**

“Transit Fleet Vehicle” means a vehicle greater than 8,500 (lbs) GVWR, **powered by heavy-duty engine fueled by diesel or alternative fuel**, owned or operated by a transit agency, and which is not an urban bus.

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## **Extensions**

- Financial Hardship
  - ▶ Section 2023(e)
  - ▶ <20 in transit fleet
- Unavailability of Technology for PM
  - ▶ Section 2023(f)
- Delay of Implementation for PM
  - ▶ Section 2023(g)
  - ▶ <20 in transit fleet in 1 hour Ozone attainment

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## New Proposed Extension TFV Contract Fleets

- Only for TFV, Apply to Executive Officer for Up to 1 year delay
- For the termination of equipment or equipment and service contracts defined by FTA:
  - ▶ vehicle lease, maintenance/lease, turnkey
- Show compliance at end of extension
- Explain why

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## Compliance Deadlines

Date	% PM reduction from baseline	Fleet NOx Average
January 1, 2005	0%	na
December 31, 2007	40%	3.2 or retire 1997 and earlier MY
December 31, 2010	80%	2.4 or retire 2001 and earlier MY

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## Reports due January 31st 2006 through 2016

<b>Every Year</b>	<b>For all TFV - vehicle MY, engine MY &amp; model, fuel used</b>
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**In addition:**

<b>2006</b>	<b>Plans for meeting 2007 NOx Ave., 2005 PM Baseline</b>
<b>2008</b>	<b>12/31/2007 NOx Ave. and PM Reduction</b>
<b>2009</b>	<b>Plans for meeting 2010 NOx Ave.</b>
<b>2011</b>	<b>12/31/2010 NOx Ave. and PM Reduction</b>

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## Urban Bus Engine Standards

- Decision on 2007 Engine Standards
  - ▶ California UB NOx is 0.2 g/bhp-hr
  - ▶ Federal & California Truck NOx is ~1.2 g/bhp-hr
- Scheduled for Mid-2005

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**ARB Website :**

**[www.arb.ca.gov/msprog/bus/bus.htm](http://www.arb.ca.gov/msprog/bus/bus.htm)**

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**list name: diesel-retrofit**