Proposed
On-Road Heavy-Duty Diesel Vehicle Regulation

School Bus

Breakout

Session

School Bus Breakout Session

- Need for Emission Reductions
- The Proposed Regulation
- How Will Regulation Affect School Buses
- School Bus Compliance Options
- Funding Opportunities
- Questions and Contacts

Need for Emission Reductions

- Reduce Diesel Particulate Matter (PM)
  - Diesel PM responsible for 70% of known cancer risk from all air toxics
- Reduce oxides of nitrogen (NOx)
  - NOx leads to ozone and secondary PM
- Attain health based 8-hour ozone and PM2.5 standards
  - Federal Clean Air Act
- Reduce greenhouse gas emissions

Potential Health Benefits from Truck and Bus Regulation can be Significant

- Proposed regulation would reduce health risks and costs
- Without regulation from 2010 and 2020
  - Expect 11,000 premature deaths
  - Health care costs
  - Valued at $70 to $89 billion
- Local health risk
  - West Oakland health risk from trucks is 2 to 3 times higher than background levels
  - 2/3 of this increase is from non-port trucks

ARB In-Use Diesel Engine Regulations

• Urban buses	2000
• School bus idling	2002
• Solid waste collection vehicles	2003
• Transport refrigeration units	2004
• Stationary compression ignition engines	2004
• Truck idling	2004
• Portable engines	2004
• Locomotive and harbor craft fuel	2004

ARB In-Use Diesel Engine Regulations

• Transit fleet vehicles	2005
• Public agencies and utility on-road fleets	2005
• Port/rail cargo handling equipment	2005
• Ship auxiliary engine fuel	2005
• Off-road vehicles	2007
• Drayage trucks	2007
• Commercial harborcraft	2008
• Statewide trucks and buses	Planned 10/2008
• Agricultural off-road engines	Possible 2009

The Proposed Regulation

- Affects most diesel vehicles in the state
- The regulation requires PM retrofits and accelerated fleet turnover
  - School buses only have to comply with PM
- Annual reporting requirements
- School bus fleets are a separate fleet

School Buses

- All diesel school buses >GVWR 14,000 lbs
- Retrofit with highest VDECS device available
- Replace engine if not retrofittable
- Pre-77's removed from service by December 31, 2011
- Compliance Options: 1st milestone is end of 2010
- Reporting and record retention requirements
- Historic and low-use exemptions

Compliance Option 1

School bus BACT Compliance Schedule

Compliance Deadline As of December 31	Engine Model Year
2010	Pre-1987
2011	1987 - 1994
2012	1995 - 1999
2013	2000 and newer

Note: Exemption delay until 2013, if engine not retrofittable, reporting requirement only.

Compliance Option 2

PM BACT Percentage Limits

Compliance Deadline as of December 31	Percent of Total Fleet Complying with PM BACT
2010	25%
2011	50%
2012	75%
2013	100%

Compliance Option 3 Fleet Average

- Calculate emissions from all your buses

ARB Help Hotline
1-866-634-3735

May 2008 Draft Proposed Regulation Statewide Heavy Duty Truck and Bus Fleet Calculator

Help Help Help Help Help Help

Vehicle ID	Current Engine Model Year	Projected Engine Model Year	GVWR Over 33,000 lbs (Y or N)	PM Emissions Control	Adjusted PM Factor
1	1977	1977	y	85%	0.50
2	1985	1985	y	85%	0.50
3	2000	2000	y	85%	0.12
4	2005	2005	y	85%	0.12
5	2008	2008	Y	0%	0.11
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00

BACT Schedule
Help Help

Fleet Average (Index)	
	PM
Average	0.272
Meets BACT	100%
No. in calc.	5

Fleet Target Rate (g/mile)	
End of Year	PM
2010	0.710
2011	0.530
2012	0.320
2013	0.000

Meets fleet average target
Complies with BACT criteria

Exemptions

- Historic vehicles
- Low-Use vehicles
  - 1000 miles or less per year

    AND
  - 100 hours or less per year
- Reporting requirements

1961 Thomas

Funding Opportunities

- Lower-Emission School Bus Program
- CDE Small School District School Bus Replacement Program
- Air District funds
- Other sources

California 2008 Lower-Emission School Bus Program

- Prop 1B: $200 million
- Replace oldest school buses and clean up middle-aged in-use buses
- 2008 Guideline revisions
  - Record retention and reporting requirements

Goals of the School Bus Program

- Benefit Children's Health
- Provide Safer School Transportation
- Reduce Toxic Diesel Pollutants
- Provide Funds to Accelerate Replacement and Retrofit Before Regulation

School Bus Replacements

- Apply to Air Districts or ARB
  - Public School Districts only
- Eligible Buses
  - 1986 model year and older buses
  - CHP Certification as of 12/31/05 and still current
  - > 14,000 GVWR
- Old Bus Must Be Scrapped

School Bus Replacements
(continued)

- New Bus:1.4 gram NOx engines or below only
- Up to $140,000 per bus
- 10% of funds can be used for eligible infrastructure
- $0 Buy-In for Pre-1977 MY replacements
- $25,000 Buy-In for 1977-1986 MY replacements
  - Districts may use local funds for match (i.e. $2, or $4 DMV fee)

Retrofit Funding

- Retrofits Are Vital
  - Most cost effective option
  - Assist School Districts: With proposed regulation
- Air Districts set local program retrofit goal
  - ARB proposes 25% of funds to retrofits in districts using State-Implementation
- Up to $20K per retrofit
  - Maintenance
  - Back-Up filter
  - Data logging

Retrofit Program Requirements

- Eligible applicants
  - Public School Districts
  - Private Schools Contracting to Provide Public School Transportation
- Eligible School Buses
  - 1987 and Newer Model Year Diesel Buses
- Eligible Devices
  - ARB-Verified Level-3 Devices

Retrofits and Engine Maintenance

- Retrofits are most cost-effective option
  - Consider engine model
- Engine maintenance a must
- Proper filter maintenance
- No fuel additives or conditioners

Questions

Lower-Emission School Bus Program
Lead Staff, Earl Landberg
elandber@arb.ca.gov, 916 323-1384