



Truck and Bus Regulation

Clean Technologies Forum

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California Environmental Protection Agency



Air Resources Board

Presentation Overview

- Regulation Status
- Applicability
- Regulation Overview
- Reporting and Disclosure
- Fleet Calculator

Status

- Approved by board in December 2008
- Proposed 15 day changes
- Office of Administrative Law approval expected November 2009

Applicability

- Diesel trucks and buses operating in California
 - Greater than 14,000 GVWR
 - Shuttle buses that frequent transit centers of any GVWR
 - Agricultural use yard trucks with off-road engines
 - Interstate, intrastate, international, and other
- Any person, business, or government agency who owns, leases, rents, or sells a vehicle in California
- California based brokers and dispatchers

Applicability Continued

- Excludes:
 - Emergency vehicles
 - Military tactical vehicles
 - Personal use motor homes
 - Historic vehicles
 - Two engine cranes
 - Public utility owned vehicles
 - Solid waste collection vehicles
- Drayage and private utility trucks are subject to other regulations and exempt until 2021

Some Diverse Vehicle Types Covered



Concrete Mixer



Tow Truck



Drill Rig



Water Truck



Hay Squeeze



Truck Tractor



Reefer Van



Yard Truck



Passenger Bus

Regulation Overview

- All vehicles must have particulate matter (PM) filters by January 2014
 - Phased in over four years
 - first compliance date January 2011
- By 2023 all vehicles must have 2010 model year engines or equivalent
 - Phased in starting 2013
- Special provisions, credits
- Fleet calculator available to assist fleet



Terminology

- PM Filter
 - Aftermarket verified by ARB to reduce PM by highest level
 - Level 2 = 50%
 - Level 3 = 85%
 - Originally equipped (2007 model year or newer)
- 2010 Engine
 - Engine meeting 2010 MY emissions standard
 - 2004-2006 with 85% NOx reduction
 - 2007-2009 engine with 70% NOx reduction

Option 1 - BACT Schedule

No Reporting Required

- Fleets with engines less than 7 years old always ahead of schedule
- Replace with 2010 engine or one with a later compliance date on schedule

Compliance Date January 1st:	Engine Model Year	Required Actions
2011	Pre-1994	PM Filter
2012	2003-2004	PM Filter
2013	2005-2006	PM Filter
	1994-1999	Replace
2014*	2000-2002	Replace
2015	Pre-1994	Replace
2016	2003-2004	Replace
2017	2005-2006	Replace
2018	No new requirements	
2019		
2020		
2021	2007	Replace
2022	2008	Replace
2023	2009	Replace

* PM filter required for all vehicles

Option 2 - BACT Percentage Limits

Reporting Required

- By 2011, 25% of the fleet needs to have PM filters
- By 2013, 25% of the fleet needs to have 2010 engines

January 1st	PM Filter	2010 Engine*
2011	25%	NA
2012	50%	NA
2013	75%	25%
2014	100%	50%
2015	“	50%
2016	“	60%
2017	“	80%
2018	“	80%
2019	“	80%
2020	“	90%
2021	“	90%
2022	“	90%
2023	“	100%

*Emissions equivalent to 2010 MY engine

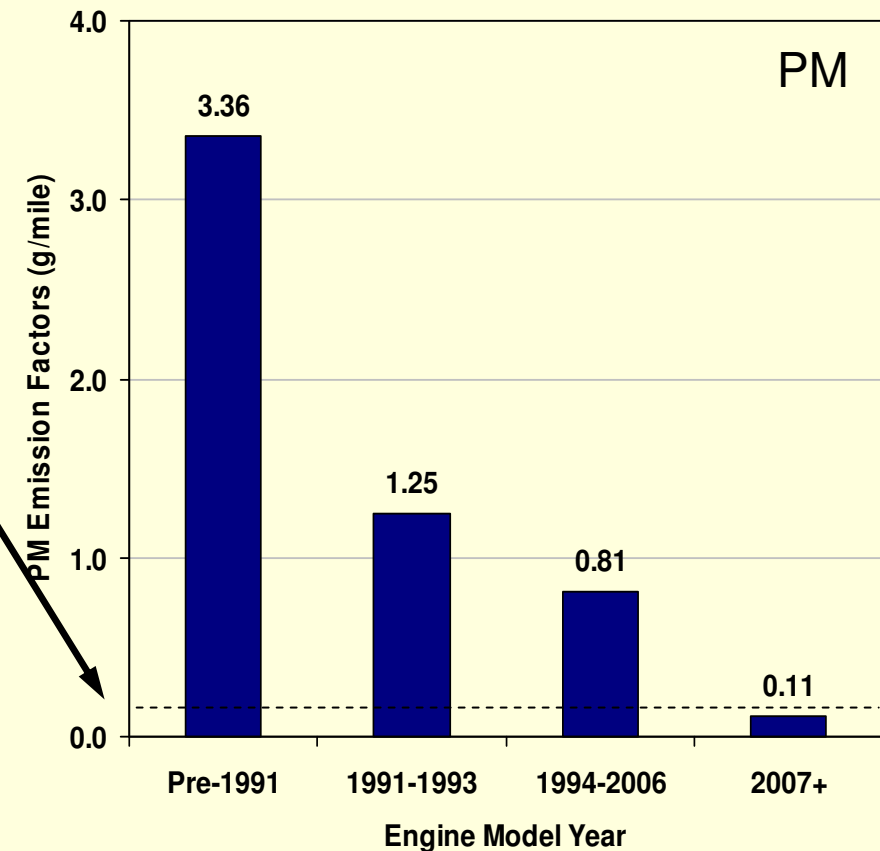
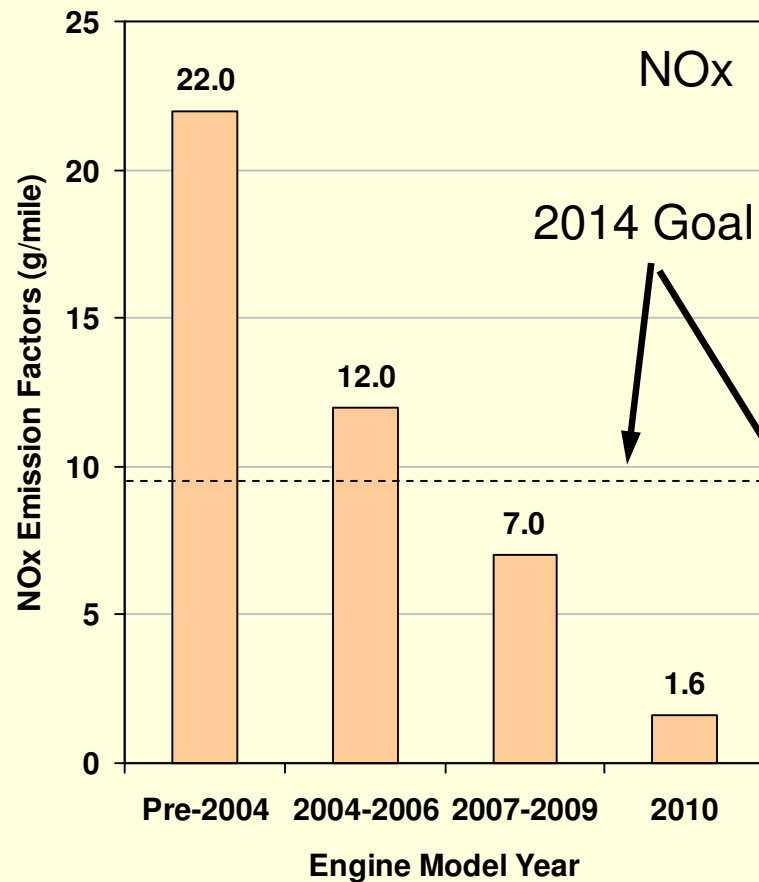
Option 3 – Fleet Averages

Reporting Required

- Can be met by any combination
 - Allows widest variety of engine model years
 - Allows widest variety of NOx control options
- Emissions factors specified in regulation
- Fleet emissions targets decline



Fleet Average Emission Factors By Engine Model Year



Note: For tractors and vehicles with a gross vehicle weight rating (GVWR) greater than 33,000 lbs. Separate emission factors for smaller vehicles.

Special Provisions Summary

- Small fleets
- Low usage
- Lower usage
- Retirement credits
- Attainment area operation
- Agricultural vehicles
- Early PM retrofit credits
- Unique vehicles
- PM retrofit safety
- Manufacturer delays
- Certain cab-over engine truck tractors
- Hybrid and alternative fueled vehicles credits
- Three day pass
- School buses
- Motor coaches
- Two engine sweepers

Small Fleets

- Three 3 vehicles or fewer
- Reporting starts in 2011
- No retrofit or vehicle replacement requirements until 2014
 - One 2004-2006 MY engine with PM filter until 2019
 - All other trucks must meet the BACT schedule
- 2010 engine delays action for one other truck
 - Two trucks; delays replacement of 2nd until 2017
 - Three trucks; delays clean-up of 3rd until 2016



Low Use Vehicles

- Exempt from all clean-up requirements
 - Below 1000 miles and 100 hours in California
 - Vehicles must document usage in California
 - Reporting required
 - Three day pass
 - Report prior to operating in California
 - One vehicle per year per company
 - Exempt from clean-up requirements for a 3 days
-
- Heavy vehicles - GVWR over 33,000 lbs. and truck tractors
 - Hours limitation also applies for yard goats

Lower Usage Vehicles

- Exempt from replacements until 2021
 - Must meet PM filter requirements
- Heavy* vehicles below 7,500 miles per year
 - Below 250 hours if stationary PTO use or if yard goat
- Smaller vehicles below 5,000 miles per year
 - Below 175 hours per year if stationary PTO use
- Based on total annual miles or hours on engine whether or not in California
- Reporting required

* Truck tractors and vehicles with GVWR over 33,000 lbs.

Vehicle Retirement Credits

- For reducing fleet size from baseline fleet registered on July 1, 2008
 - Same as if replacing with a 2010 model year engine
 - Delays requirements by about one year for another vehicle
- Credit expires prior to January 1, 2014

Attainment Area Operation

- Any vehicle operated exclusively in attainment areas
- No replacements until 2021
- PM filters 2011-2014
- No mileage limits
- GPS tracking or other method
- Reporting required



Attainment Area Counties - Alpine, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, and Yuba

Agricultural Vehicles

- Farmer owned vehicle used exclusively for Ag operations*
- Trucks designed solely for farm use
 - Silage harvest, spreaders, feed mixers, and other
- Certain agricultural chemical supply trucks
- Haul exclusively from farm to first processing



* Forestry operations are also considered to be agriculture.

Agricultural Vehicle Provisions

- Baseline fleet as of January 1, 2009
- Exempt until 2017
 - 2006 or newer engines less than 25,000 miles per year
 - 1996 through 2005 engines less than 20,000 miles per year
 - Pre-1996 engines less than 15,000 miles per year
- Exempt until 2023
 - Any Ag truck operating below 10,000 annual miles since 2010
 - Limited number of specialty farm trucks
- Vehicles must be labeled with an “AG” on doors
- Annual reporting required by March 31, 2010

Motor Coaches*

- Exempt from NOx requirements until 2017
 - Meets same requirements as others by 2021
- Same PM requirements
- Reporting required

* For hire bus, with under floor luggage compartment, at least 35 feet in length, designed for 40 or more passengers.



Cab-over Engine Tractor Trailer Combinations

- Exclusively pull 57' trailers
- May keep 2004-2006 engines until 2018
- Still counts in fleet average percentage of fleet requirements
- Same PM requirements
- Reporting required



Two Engine Sweepers

- Drive engine treated same as for other trucks
- Auxiliary engine requirements
 - PM filter same time as drive engine
 - Tier 0 engines limited to 450 hrs per year until 2014
 - No longer subject to Portable ATCM or Cargo Handling Regulation
 - Remain subject to Portable Equipment Registration
- Must have “SW” label if Tier 0 auxiliary engine
- Reporting required

Hybrid and Alternative Fueled Vehicles

- Alternative fueled vehicle credit
 - PM emission factor is 0 and NO_x is same as diesel trucks (based on engine emissions standard)
 - Include only if beneficial to fleet
- Hybrid vehicle credit
 - Must achieve 20% fuel economy improvement
 - Treated as two vehicles in fleet average or percent limits compliance options
 - Exemption expires in 2018

Other Provisions

- Early PM exhaust retrofits installed by 2010
 - Makes vehicle exempt from replacement until 2014
- Unique vehicles delay replacement until 2021
 - Unique if no similar vehicle with 2007 MY engine
 - Install NOx/PM exhaust retrofit if available
- Exhaust retrofit not required if not safe
- No penalty for manufacturer delays if filter, engine, or replacement vehicle ordered 4 months before compliance date

Fleet Calculator

- Excel spreadsheet available to assist fleet owners in determining potential compliance paths
- www.arb.ca.gov/msprog/onrdiesel/calculators.htm
- or
- arb.ca.gov/dieseltruck select fleet calculator

The screenshot displays the Fleet Calculator interface. At the top, there is a search bar with the text "Type a question for help". Below this, a table summarizes compliance options for PM and NOx. The table indicates that the fleet does not comply with any of the three options (BACT Schedule, Percent Limits, or Fleet Average). A retirement credit is also shown as zero. A final summary box states "Does Not Comply With Requirements".

Meet any one of three options			PM	NOx
Option 1 - BACT Schedule			Not Comply	No MDE if Replacement Requirement
Option 2 - Percent Limits	Fleet	10%		
	Goal	25%		
Option 3 - Fleet Average	Fleet	1.007		
	Goal	0.644		
Retirement Credit	HD	0		
	MD	0		
# of vehicle used in % limit & fleet average calc.			10	

Below the table, a red box states "Does Not Comply With Requirements" and "Does Not Meet".

At the bottom, a table titled "January 1, 2011" shows emission control details for various engine models. The table includes columns for Engine Model Year, Heavy-Duty or Tractor (Y or N), Exemptions (Select), Emission Control (PM Control, NOx Control), and Adjusted Emissions (PM Factor, NOx Factor).

Engine Model Year	Heavy-Duty or Tractor (Y or N)	Exemptions (Select)	Emission Control		Adjusted Emissions	
			PM Control	NOx Control	PM Factor	NOx Factor
1989	Y				3.36	22.0
1993	Y				1.25	22.0
1993	Y	Retired			1.25	22.0
1994	Y	Less than 1000 mi			0.81	22.0
1994	Y	Less than 7,500 mi			0.81	22.0
1994	Y	NOx Attainment Area			0.81	22.0
1999	Y	Early Action			0.81	22.0
1999	Y	Farm - Specialty			0.43	14.2
1999	N	Farm - Below 10,000 mi			0.43	14.2
2000	N				0.81	22.0
2001	Y				0.11	7.0
2007	Y					

Reporting

- No reporting if fleet meets BACT schedule
- Reporting required March 31, 2010
 - Agricultural vehicle provisions
 - Retirement credits
 - Two engine sweepers
- All other must report January 31, 2011
- Records must be kept

Disclosure

- Requirement for disclosure on bill of sale
- Disclosure language:

“An on-road heavy-duty diesel or alternative-diesel vehicle operated in California may be subject to the California Air Resources Board Regulation to Reduce Particulate Matter and Criteria Pollutant Emissions from In-Use Heavy-Duty Diesel Vehicles. It therefore could be subject to exhaust retrofit or accelerated turnover requirements to reduce emissions of air pollutants. For more information, please visit the California Air Resources Board website at <http://www.arb.ca.gov/dieseltruck>.”

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