

# On-Road Heavy-Duty Diesel Emissions Control Measures



**West Coast Collaborative  
Trucking Work Group  
June 2007**

**California Environmental Protection Agency**



**Air Resources Board**

# Need for Emission Reductions

- Health Risk – Reduce premature deaths, asthma, etc.  
Diesel PM responsible for 70% of known cancer risk from all air toxics.
  - Diesel Risk Reduction Plan
    - 85% Reduction in diesel PM by 2020
  - Goods Movement Action Plan
    - ARB's emission reduction plan – 2006
- Federal Clean Air Act - Attain ozone and PM standards.
  - State Implementation Plan (SIP)
    - 15 local areas violate the federal 8-hour ozone standard
    - 2 areas violate the federal annual PM2.5 standard

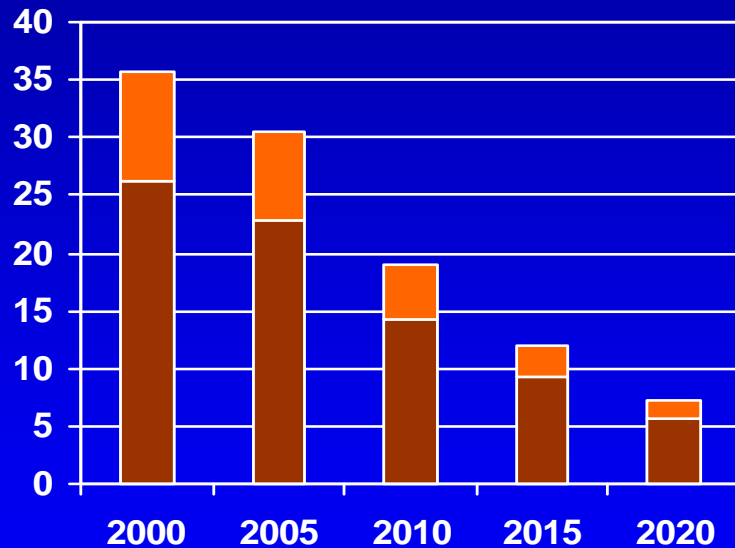
# 2008 Inventory by Model Year Heavy Duty Diesel Vehicles

Group	Model Year	Number of CA Registered Class 8 Trucks	Number of CA Registered Class 4-7 Trucks
1	1965-87	16,810	18,386
2	1988-93	22,011	26,296
3	1994-98	35,092	35,253
4	1999-02	25,007	45,358
5	2003-06	17,272	43,699
6	2007+	11,021	22,873
<i>Total</i>		<i>127,213</i>	<i>191,865</i>

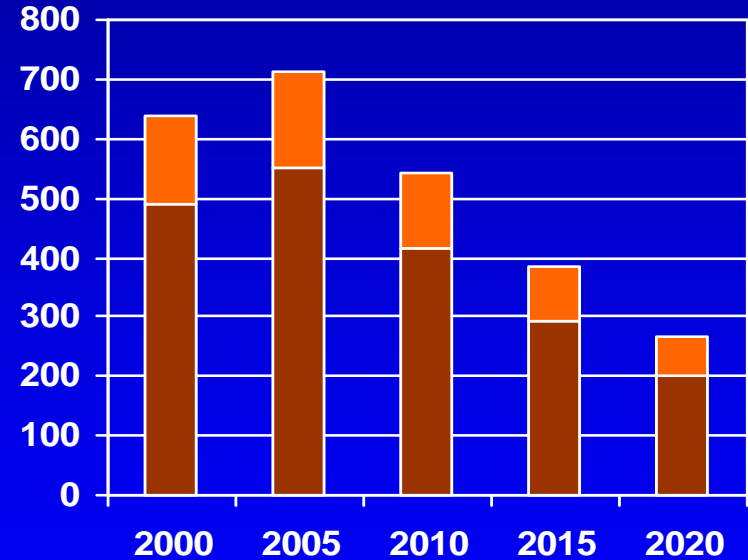
\* Does not include public fleets, urban buses, or solid waste collection vehicles.

# 2006 On-Road Heavy-Duty Diesel Emissions Inventory

## Diesel PM (tons/day)



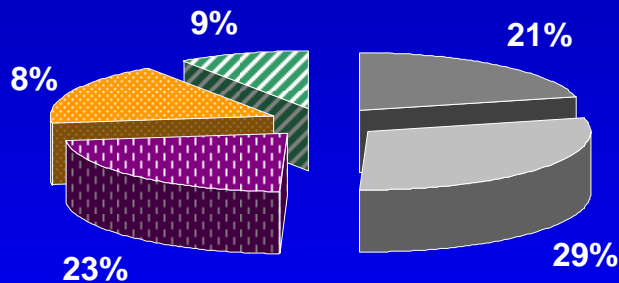
## NOx (tons/day)



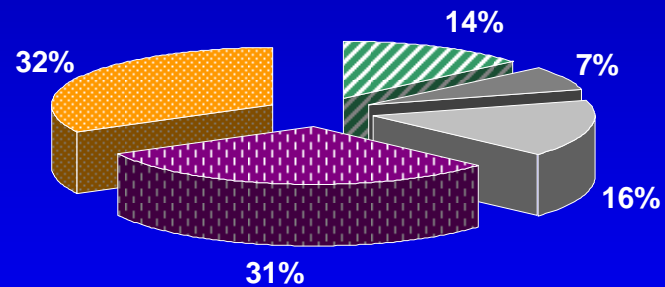
■ Out-of-State  
■ CA

# 2006 Heavy Duty Diesel Emissions Inventory Distribution by Model Year

Diesel PM (28 tons / day)



NOx (680 tons / day)



- MY 1965-87
- MY 1988-93
- MY 1994-98
- MY 1999-02
- MY 2003-06

\*Includes out-of-state and CA registered

# Scope of Regulations

- Reduce emissions of diesel particulate matter (PM) and oxides of nitrogen (NOx)
- Will apply equally to all heavy-duty diesel vehicles traveling in California including:
  - Out of state vehicles
  - International vehicles
  - California vehicles
- Achieve SIP, Diesel Risk Reduction Plan and Goods Movement commitments

# Private Fleet

## Preliminary Regulatory Concept

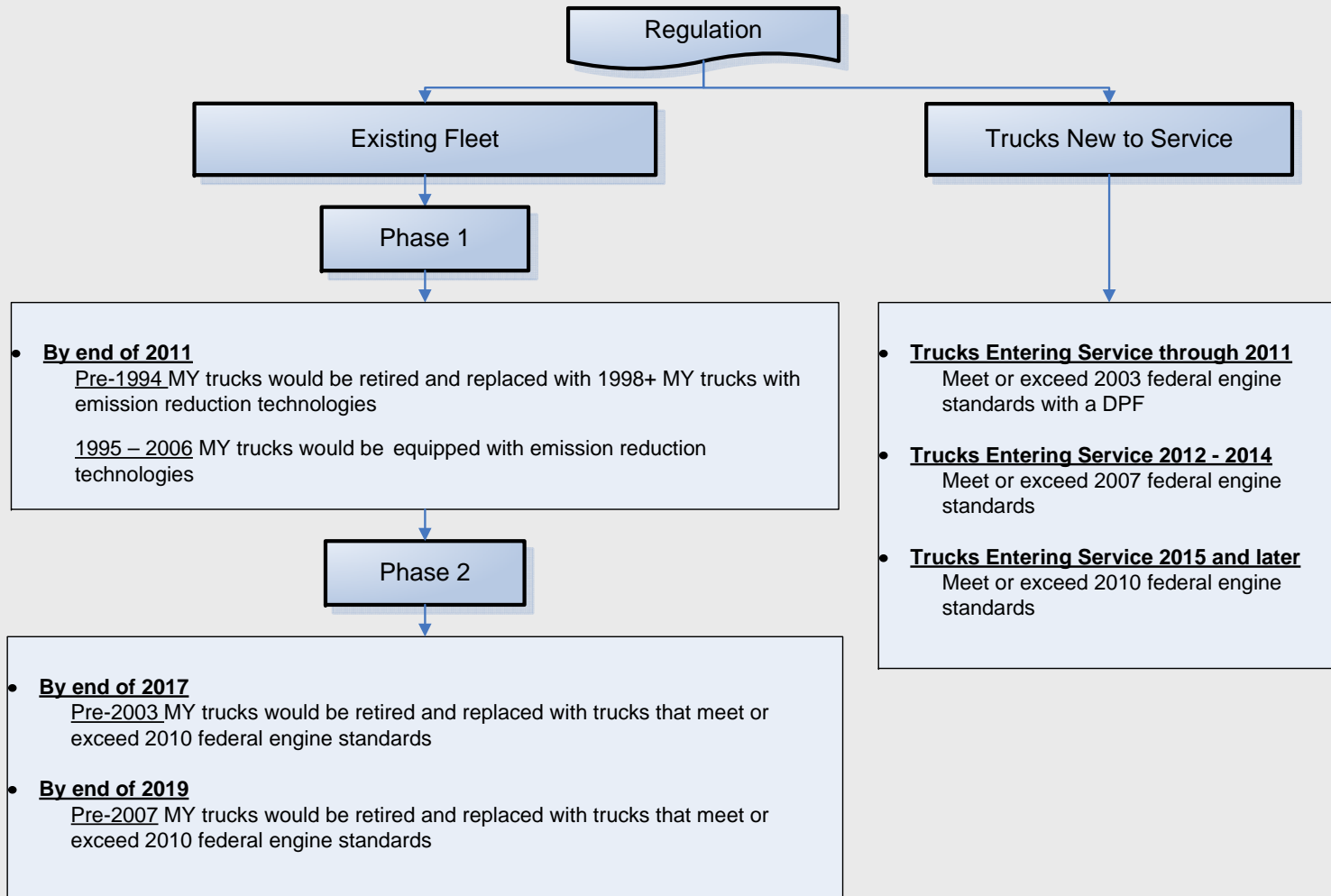
- Heavy-Duty Diesel GVWR > 14,000 lbs
- BACT (Best Available Control Technology) – Retrofits, Repower, and Replacements.
- Fleet Averaging – Fleets of five or more vehicles
- Grouped by Model Year
  - Compliance deadlines would begin with vehicle groups.
    - Starting 2009
  - No requirements for 2007 or newer model year vehicles.
  - Phase out pre-2004 MY engines beginning 2014 w/ 2004 and DPF
  - Phase out pre-2007 MY engines beginning 2020
- All Vehicles not Covered Under a Current ARB Regulation for Heavy-Duty Diesel-Fueled Vehicles

# Port/Railyard Fleet Preliminary Regulatory Concept

- Heavy-Duty Diesel GVWR > 33,000 lbs
- Minimum Reduction Standards
  - Retrofit
  - Replace with newer vehicle
- Grouped by Model Year
  - Compliance deadlines use populations/model year groupings and available control technologies (2008 – 2011)
  - No requirements for 2007 or newer model year vehicles
  - Phase out pre-1994 vehicles

# Regulation Concept

## Draft Port / Intermodal Truck Regulatory Concept – Major Milestones



# Phase 1

## Replacement and Retrofit Schedule

Truck Model Year	Due Date	Replacement Truck Model Year	Retrofit
<b>Pre-1986</b>	<b>By the end of 2008</b>	<b>1998 or newer</b>	<b>DPF + NOx catalyst</b>
<b>1986, 1987, 1988,1989</b>	<b>By the end of 2009</b>	<b>1998 or newer</b>	<b>DPF + NOx catalyst</b>
<b>1990, 1991</b>	<b>By the end of 2010</b>	<b>1998 or newer</b>	<b>DPF + NOx catalyst</b>
<b>1992, 1993</b>	<b>By the end of 2011</b>	<b>1998 or newer</b>	<b>DPF + NOx catalyst</b>

## Retrofit Schedule

Truck Model Year	Due Date	Retrofit
<b>2003, 2004, 2005, 2006</b>	<b>By the end of 2008</b>	<b>DPF</b>
<b>2000, 2001, 2002</b>	<b>By the end of 2008</b>	<b>DPF + NOx catalyst</b>
<b>1998, 1999</b>	<b>By the end of 2009</b>	<b>DPF + NOx catalyst</b>
<b>1996, 1997</b>	<b>By the end of 2010</b>	<b>DPF + NOx catalyst</b>
<b>1994, 1995</b>	<b>By the end of 2011</b>	<b>DPF + NOx catalyst</b>

# Port/Railyard Fleet Preliminary Regulatory Concept

## *Responsibilities*

- Truck Owner
  - Responsible for modernization of vehicle.
  - Present port registration card at terminal gate.
  - Install RFID tag if utilizing ARB funding.
- Motor Carrier
  - Dispatch only compliant trucks to port
  - Register “Port” drivers in ARB database.
- Terminal/Railyards
  - Turn away all non-registered or non-emission compliant trucks.
  - Install RFID readers and submit data to ARB monthly.
- ARB/Ports
  - Implementation and enforcement
  - Maintain registration database

# Next Steps

## Private Fleet & Port/Rail Fleet Regulations

- Gather Additional Data
  - Surveys (Model Year, VMT, Operational Costs, Useage)
- Outreach
- Workgroup/Stakeholder Meetings
- Public Workshops
- Statement of Reasons
- ARB Board Meeting
  - Late 2007/Early 2008

# Contacts

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**Port trucks:** <http://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>

**Private Fleet:** <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>