Diesel Vehicle Regulations Overview

http://www.arb.ca.gov/webtraining/videos/512/512.pdf

California’s Mobile Source Diesel Risk Reduction Enforcement Programs

Presentation Overview

• Air Quality Overview and Health Impacts
• Diesel Vehicle and Equipment Enforcement Programs
  – HDV Inspections (HDVIP)
  – Periodic Smoke Inspection Program (PSIP)
  – Idling
  – Emission Control Label (ECL)
• Recently Implemented and Upcoming Programs
  – How To Comply
  – Contact Information

What’s in Diesel Exhaust?

Particulate Matter

HOW SMALL IS PM?

Human Hair (60 μm diameter)

PM10 (10 μm)

PM2.5 (2.5 μm)
Public Concerns

- Emissions from diesel-fueled engines are mainly composed of Particulate Matter (PM-10, PM 2.5) and gases which contain cancer-causing substances such as:
  - Arsenic
  - Benzene
  - Formaldehyde
  - Nickel
  - Polycyclic aromatic hydrocarbons

Health Benefits

- Each year in California, diesel PM contributes to more than 2,000 premature deaths and thousands of hospital admissions

Why Have Air Pollution Control Regulations?

- Clear day in LA
- Smoggy day in LA
The Problem

- HDDV: 2%
- LDV & MDV: 98%

% of Total On-Road Vehicles

- HDDV: 2%
- LDV & MDV: 98%

% of Total On-Road Vehicle Emission Inventory

- NOx: 30%
- PM10: 65%

Most Polluted Regions In the United States*

<table>
<thead>
<tr>
<th>Ozone (smog)</th>
<th>Particulates (PM$_{2.5}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Los Angeles Region</td>
<td>1. Bakersfield, CA</td>
</tr>
<tr>
<td>2. Bakersfield, CA</td>
<td>2. Fresno-Madera, CA</td>
</tr>
<tr>
<td>3. Visalia, CA</td>
<td>3. Pittsburgh, PA</td>
</tr>
<tr>
<td>4. Fresno-Madera, CA</td>
<td>4. Los Angeles Region</td>
</tr>
<tr>
<td>5. Sacramento, CA</td>
<td>5. Salt Lake City, UT</td>
</tr>
<tr>
<td>7. San Diego, CA</td>
<td>7. Visalia, CA</td>
</tr>
<tr>
<td>8. Houston, TX</td>
<td>8. Birmingham, AL</td>
</tr>
<tr>
<td>9. Merced, CA</td>
<td>9. Hanford, CA</td>
</tr>
</tbody>
</table>

*American Lung Association “State of the Air” Report 2011

Strategies to Reduce Diesel Engine Emissions

- Diesel Risk Reduction Plan
  - 75% by 2010 and 85% by 2020
- Stringent Engine Certification Standards (2007-2010)
- Stringent Fuel Standards
  - 15 ppm sulfur diesel 2006
- In – Use Programs

Legacy Programs

- Heavy Duty Inspection Program (HDVIP)
- Periodic Smoke Inspection Program (PSIP)
- Emission Control Labels (ECL)
- Commercial Idling
**Legacy Programs**

### Heavy Duty Vehicle Inspection

**Program Smoke Emissions and Engine Tampering Inspections**

- Updated regulations adopted by ARB in December 1997
- Opacity cutpoints retained
  - 1991+ engines: 40%
  - pre-1991 engines: 55%
- Use of SAE J1667 test protocol
- Inspect for tampered engines & emission control equipment (gasoline & diesel engines)
- Citations appealed through Administrative Law Judge (ALJ) hearings

### Diesel Fleet Inspections

**Periodic Smoke Inspection Program**

- Authorized by SB 2330 of 1990
- Same cut points as roadside program
- Uses SAE J1667 test protocol
- Four-year rolling exemption for HDDEs
- Fleets must test trucks & buses every year and keep the records for two years or in violation (applies to fleets with two or more)
- Regulations codified at: 13 CCR 2190 et seq.

### Snap-Acceleration Test (SAE J1667)

### Emission Control Label (ECL)

- Regulations prohibit HDDVs with non-USEPA certified engines from operating in California
- All HDDEs must have a factory engine emissions control label (ECL)
- ARB and CHP enforcing regulations starting Feb. 15, 2007
Legacy Programs

**Engine Emission Control Label**

**HDD Vehicle Idling Regulations**

- School buses and delivery vehicles – 2003;
- Commercial vehicle – 2005;
- Applicable to vehicles GVWR > 10,000 lbs;
- $100 to $10,000 fine amount;
- 5 minute idling limit under most circumstances;
- Additional limitations 100 feet from residence or school; and,
- Additional requirements for 2007 & newer vehicles

For more information...

- Enforcement Program Website: www.arb.ca.gov/enf/enf
- List serves: www.arb.ca.gov/listserv listserv_grp.php?listtype=E1
- TruckStop: www.arb.ca.gov/truckstop
Engine Standards and Diesel Emission Control Strategies (DECS)

Controlling Pollutants from Engines

- **New Engine Certification**
  - Vehicle or engine emission standard
  - Engine family name
  - Executive Order issued

Off-Road Engine Emission Standards By Tier

- By horsepower group called a Tier
- Dirtiest is Tier 0 (white)
  - uncontrolled
- Cleanest is Tier 4 (final)
  - Interim Tier 4 starts the cleanest PM standard by horsepower (blue)
  - Tier 4 (final) starts the cleanest NOx standard by horsepower (purple)
Off-Road Emission Factors

On-Road Engine Emission Standards By Model Year

• Particulate Matter (PM): 2007 and newer model year is the lowest
  – Most federal and CA 2007 and newer model year engines meet standard
  – Some 2007 and newer engines do not have a filter (do not meet the strict standard)

• Nitrogen Oxides (NOx): 2010 and newer model year is the lowest

On-Road Emission Standards

Heavy-Duty Engine Certification

Off-Road Engine Certification
http://www.arb.ca.gov/msprog/offroad/offroad.htm

Executive Orders Listing
http://www.arb.ca.gov/msprog/offroad/cert/cert.php

On-Road Engine Certification
http://www.arb.ca.gov/msprog/onroad/cert/cert.php

Executive Orders Listing
http://www.arb.ca.gov/msprog/onroad/cert/cert.php#6
Engine and Emission Control Systems from EO

Exhaust Emissions Standards

Pursuant to the authority vested in the Air Resources Board by Sections 39015 and 39016 of the Health and Safety Code and Executive Order D-691. This Executive Order is based upon comprehensive evaluation which demonstrates that the device when installed on an OBD-II 1996 model year vehicle equipped with appropriate refinements and modifications, does not reduce emissions from the evaporative system vented back into the intake air system.

BE IT FURTHER RESOLVED: Certification to the FEL(s) listed above, applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in lieu of any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

BE IT FURTHER RESOLVED: The listed engine models have been certified to the split engine family standards under 13 CCR 1965(b)(Diesel) engines or 13 CCR 1965(b)(6) (Otto engines) and the incorporated 40CFR 60.037-15(m)(6).

BE IT FURTHER RESOLVED: For the listed engine models the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR 1966 (emission control labels) and 13 CCR 2032 et seq. (emission control warranty).

Aftermarket Parts

http://www.arb.ca.gov/msprog/aftermkt/aftermkt.html#additional
- Part certified to meet OEM requirements (Does not increase emissions)
- EO issued
- Does not qualify for emission reductions

Aftermarket Parts

http://www.arb.ca.gov/msprog/aftermkt/aftermkt.html#additional
Diesel Emission Control Strategy

- What is it?
  - Diesel Emission Retrofit
  - Soot Filter
  - DECS
  - VDECS
  - DPF
  - PM BACT
  - “Special muffler that cleans up the air”

ARB Verification Program

- Protects the buyer
  - ensures reductions are real and durable, and
  - requires a warranty for DECS and engine
- Verified products based on model year/tier and engine family
- Unique for each engine type (on-road, off-road, TRU, stationary, etc.)

ARB Verification Program (cont’d)

- Executive order issued specifies specific operating condition for each verified system
  - fuel
  - engine exhaust temperature
  - model year, tier, or engine size
  - associated technology
  - others

http://arb.ca.gov/diesel/verdev/verdev.htm

PM Verification Levels

- PM Emission Reduction
  - Level 3 ≥ 85%
  - Level 2 ≥ 50 to 85%
  - Level 1 ≥ 25 to 50%
  - 0%
### Verification of NOx Reductions

Allow NOx only under strict conditions, categorized as “Mark”

- Mark 1 ≥ 25%
- Mark 2 ≥ 40%
- Mark 3 ≥ 55%
- Mark 4 ≥ 70%
- Mark 5 ≥ 85%

### Verified Technology

**Level 1 (25 - 50% Reduction)**
- Diesel Oxidation Catalyst, some with crankcase filter.

**Level 2 (50 - 85 % Reduction)**
- Flow-Through-Filter, Emulsified Diesel Fuel

**Level 3 ( > 85 % Reduction or ≤ 0.01 g/bhp-hr )**
- Active and Passive Wall Flow Filter

### Wall Flow Filters: Highest Filtration Efficiency (Passive)

- Level 3 PM reduction (>85%)
- Generally applicable to 1994 and newer engines
- Exhaust temperature dependent
- Similar filter technology to new 2007 diesel trucks

### Wall Flow Filters: Highest Filtration Efficiency (Active)

- Level 3 PM Reduction (>85%)
- Suited for applications with low exhaust temperatures
- Example: Uncatalyzed wall-flow filter with electrical regeneration
- Example: Uncatalyzed wall-flow filter with a fuel burner
Diesel Emission Control Strategy Family Name

CA/MMM/YYYY/PM##/N##/APP/XXXXX
- CA – California verified strategy
- MMM – Manufacturer code, usually the company’s initials
- YYYY – Year of verification
- PM# - Level of PM reduction (I, II, III)
- N## - Percentage of NOx reduction (if any)
- APP – Application or use such as: stationary, on-road, off-road
- XXXXX – Alphanumeric code describing device technology

Labeling Requirements
CCR, title 13, 2706(g)
- Legible, durable, and visible
- On device and engine, unless an alternative is approved by the Executive Officer
- Required information
  Name, Address, and Phone Number of Manufacturer
  Diesel Emission Control Strategy Family Name
  Product Serial Number
  ZZ-ZZ (Month and Year of manufacture, e.g., 06-02)*
  * May not be included if determined through the serial number
- Approved label in Executive Order

Sample DECS Label

What Do I Need to Know to Install an Exhaust Retrofit?
What You Need

- Engine in good repair
- Engine model year
- Engine family name
- Vehicle duty cycle
  - Exhaust temperature
  - Data logging

DECS Install Page

www.arb.ca.gov/msprog/decsinstall/decsinstall.htm

- Program background
- Overview of installations
- List of DECS installers
- Managing hazardous waste from DECS
- Related advisories
- Currently verified retrofits

http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

Currently Verified Technologies

www.arb.ca.gov/diesel/verdev/vt/cvt.htm
DECS Supplier Should Supply

• Equipment warranty
• Installation warranty
• User manual
• Reporting information
• VDECS EO

Maintenance and Cleaning

• Keep engine in good working order
• Operate vehicles within the conditions listed on the DECS executive order
• Check DECS installation and labeling
• Do not operate the vehicle without the filter core or any other DECS component
• Follow DECS manufacturer cleaning directions
• Manage the ash as a California hazardous waste

Maintenance and Cleaning

• Keep engine in good working order
• Check DECS installation and labeling
• Follow DECS manufacturer cleaning directions
• Do not operate the vehicle without the filter core or any other filter component
• Manage the ash as a California hazardous waste

Contact Information

• For issues regarding installation and operation
  – Contact installer or DECS manufacturer
• For issues regarding California hazardous waste
  – Contact DTSC duty desk at 800-728-6942 or RAO@dtsc.ca.gov
• General Information on verification
  – http://www.arb.ca.gov/diesel/verdev/verdev.htm
Drayage Truck Regulation

Affects diesel-fueled trucks transporting California’s ports and intermodal rail yard cargos

Drayage Trucks

- Trucks that transport port and intermodal rail yard cargos
- Class 7 & 8 - heavy-duty:
  - GVWR > 26,000 lbs
  - On-road diesel-fueled
- Applies to all trucks, Including:
  - Out-of-state
  - Out-of-country

Ports

- Serviced by ocean going vessels
- Typically have terminals used for the loading or unloading of water borne commerce
- Serviced by drayage trucks
Intermodal Rail Yards

- Intermodal - serviced by drayage trucks
- Largest rail freight operators (Class 1 - Revenues of $250 million or more)
- Within 80 miles of an affected port or
- Rail facility has 100 or more drayage truck visits per day and is outside the 80 mile radius of an affected port

Exemptions

- Emergency vehicles
- Military tactical support vehicles
- Regulation would not affect dedicated use trucks of uni-body design
- Port areas that do not have drayage truck traffic (port must apply for exemption)

Drayage Truck Regulation Status

- Became law December 2008
- In effect and enforceable
- December 17, 2010 changes:
  - Inclusion of Class 7 trucks
    - PM filters January 1, 2012 in South Coast Air Basin
    - 2007+ engine standard by January 1, 2014
  - Include drayage trucks operating off of port and rail yard grounds
  - Sunset regulation on Dec. 31, 2022.

Emission Control Terminology

- “Level 3 VDECS”
  - Most effective PM filter retrofit on existing engines
  - Verified Diesel Emission Control Strategy (VDECS)
    - www.arb.ca.gov/msprog/decsinstall/decsinstall.htm
- “2007 model year engine”
  - Engine that meets or exceeds federal 2007 model year PM and NOx emission standards
    - 0.01 gram/bhph particulates
    - 1.2 grams/bhph NOx
Basic Requirements

• Must register in Drayage Truck Registry
  – Prior to port or rail yard entry
• Phase 1 Requirements and Deadlines
  • January 1, 2010
    – Pre-1994 Class 8 trucks prohibited from ports and intermodal rail yards
    – 1994 to 2003 class 8 trucks require Level 3 VDECS
  • January 1, 2012/2013
    – 2004/2005-2006 MY class 8 trucks require Level 3 VDECS

Drayage Truck Registry (DTR)

• All trucks registered prior to entry
• Required for enforcement
• Optional truck labels available
  

Basic Requirements

• Phase 2 Requirements and Deadlines
  • January 1, 2014
    – Must have 1994 or newer engine that meets 2007 engine MY emission standards
  • January 1, 2023
    – Meet Truck and Bus requirements
      • 2010 engine MY emission standards

Truck Owner/Operator

• Truck owner responsibilities:
  – Meet emission standard requirements
  – Register with the DTR
  – Maintain emission control device
  – Ensure truck operator has motor carrier contact information
• Truck operator responsibilities:
  – Provide motor carrier contact information upon request by enforcement personnel
  – Identify origin and destination of cargo

• Check compliance status online - available to public
• [www.arb.ca.gov/drayagetruck](http://www.arb.ca.gov/drayagetruck)
Other Port Requirements

• Ports of Los Angeles and Long Beach
  – Have some stricter requirements
  – Currently Implemented
• Port of Oakland
  – Currently Implemented

For More Information…

• Drayage truck regulation website: www.arb.ca.gov/drayagetruck
• Drayage truck phone number: 1-888-247-4821
• Drayage truck registry: www.arb.ca.gov/arber/arber.htm
• Truck stop website: www.arb.ca.gov/truckstop

Truck and Bus Regulation

Affects private and federally-owned diesel-fueled trucks and buses greater than 14,000 pounds GVWR
Applicability

- Diesel trucks and buses operating in California
  - Greater than 14,000 pounds gross vehicle weight rating (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

Excludes:
- Emergency vehicles
- Military tactical vehicles
- Personal use motor homes
- Personal use pickup trucks ≤ 19,500 lbs GVWR
- Historic vehicles
- Two engine cranes, two engine drill rigs & workover rigs
- Local and state government owned vehicles
- 1960-2006 MY solid waste collection vehicles
- Public urban buses/transit fleet vehicles
- Private utility vehicles until 2021

Examples of Vehicle Types

- Concrete Mixer
- Dump Truck
- Single Engine Drill Rig
- Water Truck
- Hay Squeeze
- Tow Truck
- Reefer Van
- Fuel Tank Truck
- Passenger Bus

Status

- Initially considered December 2008
- Currently in effect
- Amendments considered December 17, 2010
  - Regulatory language modified
  - No additional changes
- Office of Administration Law approval of amendments forthcoming
Emission Control Terminology

• “PM filter”
  – Originally equipped on engines since 2007, or
  – Most effective PM filter retrofit verified by ARB
    • Verified Diesel Emission Control Strategy (DECS)
    • Must achieve 50% or 85% PM reduction.
• “Replace with 2010 engine”
  – Engine manufactured 2010 or later
  – Existing engine retrofit with PM/NOx retrofits
    • High efficiency NOx retrofits not currently available

Regulation Overview

• Lighter vehicles (≤ 26,000 GVWR)
  – Compliance schedule by engine MY
• Heavier vehicles (> 26,000 GVWR)
  – Compliance schedule by engine MY
  – Phase-in option
• Added flexibility with reporting
• Provisions for special cases and lower use
• Credits for early action and cleaner vehicles

Truck and Bus Regulation

Compliance Schedule for Lighter Trucks*

<table>
<thead>
<tr>
<th>Engine Model Year</th>
<th>Replace with 2010 engine by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995 &amp; older</td>
<td>January 1, 2015</td>
</tr>
<tr>
<td>1996</td>
<td>January 1, 2016</td>
</tr>
<tr>
<td>1997</td>
<td>January 1, 2017</td>
</tr>
<tr>
<td>1998</td>
<td>January 1, 2018</td>
</tr>
<tr>
<td>1999</td>
<td>January 1, 2019</td>
</tr>
<tr>
<td>2003 &amp; older</td>
<td>January 1, 2020</td>
</tr>
<tr>
<td>2004-2006</td>
<td>January 1, 2021</td>
</tr>
<tr>
<td>2007-2009</td>
<td>January 1, 2023</td>
</tr>
</tbody>
</table>

*Vehicles 14,001 to 26,000 lbs GVWR

Lighter Trucks & Buses
GVWR 14,001 to 26,000 pounds
Compliance Credit for Lighter Trucks*

- PM retrofit before July 1, 2011 counts towards a heavier truck until 2017
- PM retrofit by 2014, delays the vehicle replacement until 2020
- PM filters on all lighter vehicles by 2014 delays their replacements until 2023
- Reporting required

*Vehicles 14,001 to 26,000 lbs GVWR

Provisions Applicable to Lighter Trucks

- Agricultural vehicle extension
- Low use exemption
- NOx exempt area operation
- Manufacturer delays

Compliance Schedule for Heavier Trucks*

- PM filters on newer trucks comply for 8 years
- Older trucks replaced with
  - 2010 engine or
  - Used truck with future compliance date
- No reporting

<table>
<thead>
<tr>
<th>Engine Year</th>
<th>PM Filter</th>
<th>2010 MY Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-1994</td>
<td>Not required</td>
<td>January 1, 2015</td>
</tr>
<tr>
<td>2000-2004</td>
<td>January 1, 2013</td>
<td>January 1, 2021</td>
</tr>
<tr>
<td>2005 or newer</td>
<td>January 1, 2014</td>
<td>January 1, 2022</td>
</tr>
<tr>
<td>2007-2009</td>
<td>Already equipped</td>
<td>January 1, 2023</td>
</tr>
</tbody>
</table>

*More than 26,000 lbs GVWR
Provisions for Heavier Trucks if Complying with Model Year Schedule

- PM filter by 2014 delays replacement until 2020
- PM filters on all heavier vehicles by 2014 delays their replacements until 2023
- Agricultural vehicle extension
- Low use exemption
- NOx exempt area operation
- Manufacturer delays
- Reporting required

Phase-In Option for Heavier Trucks*

- Provides flexibility
- Report all heavier trucks by January 31, 2012
- Originally equipped PM filters count
- Upgrade to 2010 engines starting 2020
- Replace engines that cannot retrofit by 2018

<table>
<thead>
<tr>
<th>Compliance Date</th>
<th>Vehicles with PM Filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2012</td>
<td>30%</td>
</tr>
<tr>
<td>January 1, 2013</td>
<td>60%</td>
</tr>
<tr>
<td>January 1, 2014</td>
<td>90%</td>
</tr>
<tr>
<td>January 1, 2015</td>
<td>90%</td>
</tr>
<tr>
<td>January 1, 2016</td>
<td>100%</td>
</tr>
</tbody>
</table>

*More than 26,000 lbs GVWR

Phase-in Option Credits for Heavier Trucks*

- Early PM retrofits
- Fleet size reduction since 2006
- Fleet age reduction since 2006
- Adding fuel efficient hybrids & alternative fueled engines
- Excess PM filters on off-road vehicles

*More than 26,000 lbs GVWR

Early PM Filter Credits for Heavier Trucks

- PM filter retrofit before July 1, 2011* delays clean-up of another truck until 2017
  - No credit if still under public funding contract
- Vehicle retrofit by 2014 complies until 2020
- PM filter on all heavy trucks by 2014 delays their replacements until 2023
- Reporting required

*Credit applies if retrofit filter ordered by May 1 and installed by October 1
Fleet Size Reduction Credit for Heavier Trucks

- Delays clean-up until January 1, 2016 if fewer trucks operating than on October 1, 2006
  - Credit if retired or if vehicles are not being operated

<table>
<thead>
<tr>
<th>By January 1</th>
<th>PM Filter Phase-in</th>
<th>Fleet Size Reduction</th>
<th>Adjusted Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>30%</td>
<td>25%</td>
<td>5%</td>
</tr>
<tr>
<td>2013</td>
<td>60%</td>
<td>25%</td>
<td>35%</td>
</tr>
<tr>
<td>2014</td>
<td>90%</td>
<td>25%</td>
<td>65%</td>
</tr>
<tr>
<td>2015</td>
<td>90%</td>
<td>25%</td>
<td>65%</td>
</tr>
<tr>
<td>2016</td>
<td>100%</td>
<td>--</td>
<td>100%</td>
</tr>
</tbody>
</table>

Fleet Age Reduction Credit for Heavier Trucks

- Delays clean-up until January 1, 2017 if fleet age younger than on October 1, 2006
  - Maximum credit established January 1, 2012
    - Equal to difference in fleet age multiplied by 5%
    - Up to percent of fleet with OEM filters
    - Credit declines if fleet gets older

<table>
<thead>
<tr>
<th>By January 1</th>
<th>PM Filter Phase-in</th>
<th>If Fleet 2.2 Years Younger (2.2*5%)</th>
<th>Adjusted Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>30%</td>
<td>11%</td>
<td>19%</td>
</tr>
<tr>
<td>2013</td>
<td>60%</td>
<td>11%</td>
<td>49%</td>
</tr>
<tr>
<td>2014</td>
<td>90%</td>
<td>11%</td>
<td>79%</td>
</tr>
<tr>
<td>2015</td>
<td>90%</td>
<td>11%</td>
<td>79%</td>
</tr>
<tr>
<td>2016</td>
<td>100%</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>2017</td>
<td>100%</td>
<td>--</td>
<td>100%</td>
</tr>
</tbody>
</table>

Hybrids and Alternative Fueled Engine Credits for Heavier Trucks

- Delays clean-up of another truck until 2017
- Adding fuel efficient hybids
  - 20% fuel efficiency improvement compared to conventional diesel vehicle
- Replacing with alternative fueled engines

Credits for PM Filters on Off-Road Equipment Count Towards Trucks

- Excess PM filters on off-road vehicles can delay clean-up for heavier trucks until January 1, 2017
- Counts towards phase-in option for trucks
- Excess PM filters on trucks can delay clean-up for off-road vehicles
- Reporting required
Small Fleet Option for Heavier Trucks*

- One to three trucks more than 14,000 pounds
- Small fleet phase-in option for heavier trucks
  - First PM filter by 2014
  - Second PM filter by 2015
  - All must have PM filter by 2016
- Reporting starts 2012
- Upgrade to 2010 engines starting 2020
- Replace engines that cannot be retrofit by 2018

*Vehicles more than 26,000 lbs GVWR

Other Options for Heavier Trucks*

- Option to comply with original model year schedule
- Meet model year schedule starting January 1, 2020

<table>
<thead>
<tr>
<th>Compliance Date</th>
<th>PM filter on Engine Model Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2012</td>
<td>2003 – 2004</td>
</tr>
<tr>
<td></td>
<td>Pre-1994</td>
</tr>
<tr>
<td></td>
<td>1994 – 1999</td>
</tr>
<tr>
<td>January 1, 2014</td>
<td>All Engines</td>
</tr>
</tbody>
</table>

Low Use Vehicles

- Low use exemption
  - Less than 1000 miles in California and
  - Less than 100 hours if used for stationary work
    - Not required if solely used for loading and unloading vehicle
    - Emergency use excluded
- Three day pass
  - 3 day permit to operate a non-compliant truck
  - One vehicle per year per company
- Reporting required
Attainment Area Operation

- Vehicle operated exclusively in NOx exempt areas
- PM filters 2014 to 2016 for heavier trucks
- Label on both doors or electronic tracking
- Report by January 31, 2012
- No replacements if equipped with PM filter (report for exemption)

NOx Exempt 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, Sonoma (northern), Trinity, Tehama, and Yuba

Other Provisions

- No penalty for manufacturer delays if filter, engine, or replacement vehicle is ordered 4 months before the compliance deadline
- Leased trucks
  - Contract less than 1 year – vehicle responsibility of Lessor
  - Contract 1 year or more – Lessor or as written in contract

Agricultural Vehicle Provision Summary

- Opt-in period closed April 29, 2011
- Annually reporting by January 31
- Delays clean-up until 2017 or 2023
- Must stay below the mileage thresholds or have specialty body types
- Replacements with newer trucks
- Total number eligible may not increase
- Label both doors with “AG”
Log Truck Provision

- Opt-in by January 31, 2012
- Phase-in 2010 engines
- No PM retrofits
- No mileage limits statewide
- “AG” label on both doors
- Cannot exceed number of trucks in January 1, 2009
- Total number cannot increase

<table>
<thead>
<tr>
<th>January 1</th>
<th>2010 engines</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>10%</td>
</tr>
<tr>
<td>2015</td>
<td>20%</td>
</tr>
<tr>
<td>2016</td>
<td>30%</td>
</tr>
<tr>
<td>2017</td>
<td>40%</td>
</tr>
<tr>
<td>2018</td>
<td>50%</td>
</tr>
<tr>
<td>2019</td>
<td>60%</td>
</tr>
<tr>
<td>2020</td>
<td>70%</td>
</tr>
<tr>
<td>2021</td>
<td>80%</td>
</tr>
<tr>
<td>2022</td>
<td>90%</td>
</tr>
<tr>
<td>2023</td>
<td>100%</td>
</tr>
</tbody>
</table>

Low-Mileage Construction Truck Definition

- Must have GVWR more than 26,000 lbs
- Dump trucks
  - Up to 20,000 miles per year
  - Transfers, bottom dumps, end dumps, side dumps
- Other trucks
  - Up to 15,000 miles per year
  - Concrete mixer, concrete pump, water truck, single engine crane (>35 ton capacity), low-boy
  - Or any contractor owned truck

Low-Mileage Construction Trucks

- PM filters delayed 2014 to 2016
  - Single low mileage construction truck owner delays PM filter until January 1, 2016
- Must opt-in by January 31, 2012
- Up to 10 trucks per fleet
  - More can be approved for 2013 compliance year
- Label “CT” on both doors
- Meet model year schedule starting January 1, 2020

Low Mileage Construction Trucks

- Count all vehicle in fleet to determine minimum PM filter percentage
  - Exclude low-usage vehicles (less than 1000 miles)

<table>
<thead>
<tr>
<th>Compliance by January 1</th>
<th>Minimum Percent of Fleet Complying with PM BACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>33%</td>
</tr>
<tr>
<td>2015</td>
<td>66%</td>
</tr>
<tr>
<td>2016</td>
<td>100%</td>
</tr>
</tbody>
</table>

Comply with model year schedule starting January 1, 2020
School Buses

- Phase in PM filters if more than 14,000 pounds GVWR
- No PM filter requirement for 1988-1993 MY engines until 2014
- Pre-1977 MY engines replaced by 2012
- No reporting required*, must keep records
- Replace engine by 2018, if cannot be equipped with PM filter

<table>
<thead>
<tr>
<th>January 1</th>
<th>PM filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>33%</td>
</tr>
<tr>
<td>2013</td>
<td>66%</td>
</tr>
<tr>
<td>2014</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Reporting triggered when a school bus cannot be retrofit by deadline

Street Sweepers

- Tier 0 auxiliary engines 50hp or greater
  - 450 hours per year until 2014; 100 hours per year thereafter
  - Initial reporting March 2010
  - Annual reporting January 31
  - Must have “SW” label
- Auxiliary engine must meet PM BACT at same time main engine cleaned-up
- Option to include lighter sweepers to determine fleet size reduction credit

Reporting Requirement

- No reporting if using model year compliance schedule
  - Exception for vehicle specific exemptions
- January 31, 2012 for most flexibility options
- Truck Regulations Upload and Compliance Reporting System (TRUCRS) online
  - Compliance certificate
- Motor carriers and California brokers must verify compliance or reported compliance
Disclosure Requirement

- Disclosure is currently required on the bill of sale

“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.”
Truck Stop - Online Resource

[Image of Truck Stop - Online Resource]

www.arb.ca.gov/truckstop 866-6DIESEL or 866-634-3735

Heavy Duty Vehicle Greenhouse Gas (Tractor Trailer GHG) Regulation

[Image of Heavy Duty Vehicle Greenhouse Gas (Tractor Trailer GHG) Regulation]

Early Action Measure under AB 32 – The Global Warming Solutions Act of 2006

Affects 53 foot and longer box-type trailers and the tractors that pull them.
Reduce Greenhouse Gas Emissions by Improving:

- Tractor Aerodynamics
  - Streamlined hood, sleeper cab roof fairings, gap fairings, fuel tank fairings, aerodynamic bumper and mirrors
- Trailer Aerodynamics
  - Side skirts, front gap fairings, rear trailer fairings
- Tire Rolling Resistance
  - Low rolling resistance (LRR) tires
- SmartWay Program Information: [http://epa.gov/smartway/](http://epa.gov/smartway/)

Applicability

- 53 foot or longer box-type trailers (dry-van & refrigerated-van trailers) and the tractors that pull them
- Responsible for compliance: owner, driver, motor carrier, California-based broker, and California-based shipper
- All affected vehicles operating in California regardless of where they’re registered

Status of the Regulation

- Codified into California Code of Regulations (CCR) title 17, subarticle 1, sections 95300 to 95312
- Became effective on January 1, 2010
- December 17, 2010 Board modifications
  - Option 2 Large Fleet Compliance Schedule
  - Delay low rolling resistance tire requirements (LRR) for 2010 and older trailers and tractors
  - Ability to report annually
  - Storage trailer exemption
  - Other

Regulation Overview

- Requirements for new and existing tractors
  - Aerodynamic equipment and LRR tires on new
  - LRR tires on existing
- Requirements for new and existing trailers
  - Aerodynamic equipment and LRR tires on both new and existing
- Reporting requirements for optional compliance and exemptions
- Local haul, short haul, storage and other exemptions
- Temporary passes
- Lease agreements and disclosure requirements
Tractor Requirements

- 2011+ model year (MY) sleeper cabs: SmartWay certified as of 1/1/2010
- 2011+ MY day cabs: low rolling resistance tires by 1/1/2010
- All pre-2011 MY sleeper cabs & day cabs: low rolling resistance tires by 1/1/2013

Trailer Requirements

- 2011+ MY 53-ft+ box-type: SmartWay certified or retrofitted with SmartWay technologies by 1/1/2010
  - Low rolling resistance tires (1.5%+ fuel efficiency improvement)
  - Aerodynamic devices
    - 5%+ fuel efficiency improvement for dry van
    - 4%+ fuel efficiency improvement for reefer van
- Pre-2011 MY 53-ft+ box-type
  - Same requirements as 2011+ MY trailers
  - Aerodynamic requirements by 1/1/2013 or choose delayed compliance option
  - LRR tire requirement delayed until January 1, 2017

Optional Large Fleet Compliance Plan

- Large fleet – 21 or more trailers
- Registration: Option 1 by July 1, 2010; Option 2 by July 1, 2011 (extended to August 1, 2011)
- Allow fleets to report their compliance activity upfront to ARB or on an annual basis

<table>
<thead>
<tr>
<th>Option 1 % of Trailers</th>
<th>Option 2 % of Trailers</th>
<th>Compliance Before</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>--</td>
<td>January 1, 2011</td>
</tr>
<tr>
<td>15%</td>
<td>20%</td>
<td>January 1, 2012</td>
</tr>
<tr>
<td>30%</td>
<td>40%</td>
<td>January 1, 2013</td>
</tr>
<tr>
<td>50%</td>
<td>60%</td>
<td>January 1, 2014</td>
</tr>
<tr>
<td>75%</td>
<td>80%</td>
<td>January 1, 2015</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td>January 1, 2016</td>
</tr>
</tbody>
</table>

Optional Small Fleet Compliance Plan

- Small fleet – 20 or fewer trailers
- Phase-in: 2013 through 2016
- Submit compliance plan by July 1, 2012
- Fleets may report compliance activity upfront to ARB or on an annual basis

<table>
<thead>
<tr>
<th>Percentage of Trailers</th>
<th>Compliance Before</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>January 1, 2014</td>
</tr>
<tr>
<td>50%</td>
<td>January 1, 2015</td>
</tr>
<tr>
<td>75%</td>
<td>January 1, 2016</td>
</tr>
<tr>
<td>100%</td>
<td>January 1, 2017</td>
</tr>
</tbody>
</table>
**Provisions for Refrigerated Vans**

- Applicable to 2003 - 2009 MY reefer trailers with 2003 or newer TRUs
- Delayed compliance from both aerodynamic and LRR tire requirements
- **No reporting** required for these trailers

<table>
<thead>
<tr>
<th>Trailer Model Year</th>
<th>Compliance Before</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2004</td>
<td>January 1, 2018</td>
</tr>
<tr>
<td>2005-2006</td>
<td>January 1, 2019</td>
</tr>
<tr>
<td>2007-2009</td>
<td>January 1, 2020</td>
</tr>
</tbody>
</table>

*This is applicable for the Tractor-Trailer GHG Rule only and does not change or delay any of the engine requirements under the separate Transport Refrigeration Unit Regulation.

**Short-Haul Exemption**

**Tractors only**
- 50K miles or less per year
- Exempted from both the aerodynamic and LRR tires
- Must register vehicle with annual updates on mileage to ARB
- On-line TRUCRS to register

**Local-Haul Exemption**

**Tractors and trailers**
- Operation restricted to within a 100-mile radius of registered home base
- Exemption from aerodynamic requirement only
- LRR tires still required
- Relocation Pass for local-haul
- Must register vehicle and home base information with ARB prior to operation using ARB’s on-line TRUCRS

**Local-Haul Base: Tijuana**

[Map showing a 100-mile radius around Tijuana]
**Storage Trailer Exemption**

- Exempt from aerodynamics and tire requirements
- Relocation pass required for storage trailers when traveling with freight*
- Must register vehicle and storage location information with ARB prior to operation using ARB’s on-line TRUCRS

*All trailers are exempt from the regulation if traveling empty of freight

**Drayage Exemption**

- Drayage exemptions apply if:
  - Trailer pulled by drayage tractor is off-loaded from ship or rail car just prior to being pulled by drayage tractor
    - Must show evidence of port/rail yard of origin
  - Trailer pulled by drayage tractor is taking the trailer to a port or rail yard to be loaded onto ship or rail
    - Must show evidence of port/rail yard destination

**Exempt Tractors and Trailers (No registration required)**

- Drayage tractors & trailers
  - Operate within a 100 mile radius of port or intermodal rail yard
- Container-chassis trailers
- Drop-frame van trailers
- Curtain-side van trailers
- Emergency vehicles
- Solid waste vehicles
- Military vehicles

**Temporary Passes**

<table>
<thead>
<tr>
<th>Pass Description</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relocation Pass for Local-Haul and Storage Trailers</td>
<td>Allows movement of loaded exempt local-haul trailers and exempt storage</td>
</tr>
<tr>
<td>(4 passes a year per tractor/trailer; 5 day pass; must</td>
<td>trailers within California</td>
</tr>
<tr>
<td>operate the local haul/storage for 30 days)</td>
<td></td>
</tr>
<tr>
<td>Transfer of Ownership Pass for Trailers</td>
<td>Allows delivery of loaded trailers from transferee’s location to</td>
</tr>
<tr>
<td>(5 day pass with longer time upon Executive Officer</td>
<td>transferee’s location</td>
</tr>
<tr>
<td>approval)</td>
<td></td>
</tr>
<tr>
<td>Non-Compliant Tractor Pass</td>
<td>Allows a non-compliant tractor to pull a trailer in California</td>
</tr>
<tr>
<td>(5 day pass; one tractor per fleet per year) sunsets 2015</td>
<td></td>
</tr>
</tbody>
</table>
Definition of Owner

The “Owner” is the person registered as the owner by the DMV, except in the following situations:

<table>
<thead>
<tr>
<th>Situation</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor/trailer under third-party maintenance contract</td>
<td>Person contracted to maintain/install aero/LRR tires</td>
</tr>
<tr>
<td>Tractor/trailer owned by Federal government (not registered by DMV)</td>
<td>Federal Government</td>
</tr>
<tr>
<td>Leased tractor</td>
<td>Lessee: If lease or contract includes disclosure, otherwise lessor</td>
</tr>
<tr>
<td>Leased trailer</td>
<td>Lessee: If lease or contract includes disclosure and allows modification/ exchange of trailer for pre 1/1/2013 leases, otherwise lessor is owner</td>
</tr>
</tbody>
</table>

Sales Disclosure

- Requirement for disclosure on bill of sale
- Disclosure language:
  “A heavy-duty tractor and 53-foot or longer box-type trailer operated in California may be subject to the California Air Resources Board Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure. These vehicles may be required to use low-rolling resistance tires and meet aerodynamic equipment requirements to reduce greenhouse gas emissions. For more information, please visit the California Air Resources Board website at www.arb.ca.gov/cc/hdghg/hdghg.htm”

Tractor Leasing Disclosure

“The lessee of this heavy-duty tractor understands that when using a heavy-duty tractor to pull a 53-foot or longer box type trailer on a highway within California compliant with sections 95300-95311, title 17, California Code of Regulations, and that it is the responsibility of the lessee to ensure this heavy-duty tractor is compliant. The regulations may require this heavy-duty tractor to have low rolling resistance tires that are U.S. Environmental Protection Agency (U.S. EPA) Verified SmartWay Technologies prior to current or future use in California, or may entirely prohibit use of this tractor in California if it is a model year 2011 or later tractor and is not a U.S. EPA Certified SmartWay Tractor.”

Trailer Leasing Disclosure

“The lessee of this box type trailer understands that when using a heavy-duty tractor to pull a 53-foot or longer box type trailer on a highway within California, the box-type trailer must be compliant with sections 95300-95311, title 17, California Code of Regulations, and that it is the responsibility of the lessee to ensure this boxtype trailer is compliant. The regulations may require this trailer to have low rolling resistance tires and aerodynamic technologies that are U.S. Environmental Protection Agency Verified SmartWay Technologies prior to current or future use in California”.

Tractor-Trailer GHG Regulation Page

Heavy-Duty (Tractor and Trailer) Greenhouse Gas Regulation

Transport Refrigeration Units (TRU) Regulation

Regulation Status

- Became law January 16, 2009
- Enforcement delayed until January 2010
- Amended November 18, 2010
- Amended October 21, 2011
  - Designed to:
    - Provide flexibility
    - Improve compliance rates and enforceability
    - Clarify existing requirements
- More information at TRU Website at: http://www.arb.ca.gov/diesel/tru/tru.htm
Who and What is Affected

• TRUs equipped on trucks, trailers, shipping containers, or railcars that operate in California
  – Includes those that enter California from out-of-state, Canada, or Mexico
• California-based TRUs
• Operators of California terminals

In-Use Performance Standards (PM)

• Low-Emission TRU (LETTRU)
  – Level 2 VDECS retrofit
  – Tier 4f (<25 hp), Tier 4i (25-50 hp) engine
• Ultra-Low-Emission TRU (ULETRU)
  – Level 3 VDECS retrofit
  – Use Alternative Technology (hybrid electric)
  – Tier 4f (25-50 hp) engine (available in new 2013 units)
• Alternative Technology
  – Must eliminate diesel PM emissions at distribution centers and limit engine operation at retail delivery point facilities to less than 30 minutes

Compliance Options for Meeting In-Use Performance Standards

• Retrofit exhaust with required level of VDECS
  – Level 2 VDECS meets LETTRU (50% PM reduction)
  – Level 3 VDECS meets ULETRU (85% PM reduction)
• Use Alternative Technology
• Replace in-use engine with new engine
  – New compliance date based on effective model year (based on emissions standard met)
• Replace in-use engine with rebuilt engine
  – Must be rebuilt to more stringent standard
  – New compliance date based on effective model year (based on emissions standard met)
  – See TRU Advisory 08-05
• Replace unit
  – New compliance date based on engine model year

In-Use Compliance Schedule

<table>
<thead>
<tr>
<th>Engine Model Year</th>
<th>Step 1 Compliance Date¹</th>
<th>Step 2 Compliance Date²</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001 and older</td>
<td>LETTRU original 12-31-2008</td>
<td>ULETRU by 12-31-2017</td>
</tr>
<tr>
<td></td>
<td>LETTRU delayed 12-31-2009</td>
<td>ULETRU by 12-31-2016</td>
</tr>
<tr>
<td>2002</td>
<td>LETTRU by 12-31-2009</td>
<td>ULETRU by 12-31-2017</td>
</tr>
<tr>
<td>2003</td>
<td>LETTRU or ULETRU by 12-31-2010</td>
<td>ULETRU by 12-31-2018</td>
</tr>
<tr>
<td>&lt;25 hp, 2004</td>
<td>LETTRU or ULETRU by 12-31-2011</td>
<td>ULETRU by 12-31-2018</td>
</tr>
<tr>
<td>&gt;25 hp, 2004</td>
<td>ULETRU by 12-31-2011</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2012</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2013</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2014</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2015</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2016</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2017</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2018</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2019</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>ULETRU by 12-31-2020</td>
<td>None</td>
</tr>
</tbody>
</table>

Note 1: The first compliance date is December 31st of model year plus 7 years. MY 2001 and older delayed 1 year.
Note 2: 2010 Amendments gave MY 2003 and >25 hp MY 2004 engines the option of meeting LETTRU or ULETRU, but if LETTRU is chosen, must still meet ULETRU at step 2 compliance date.
Note 3: 2011 Amendments extended the second compliance dates as shown, if LETTRU was met at step 1.
Registration Requirements

• What TRUs must be registered?
  – California-based TRUs
  – Leased units – see TRU Advisory 08-04 at:
    http://www.arb.ca.gov/diesel/tru/tru.htm
  – Out-of-state TRUs registration is voluntary
    • Will reduce inspection time
• Register online at ARB’s Equipment Registration (ARBER) system at:
  – http://www.arb.ca.gov/arber/arber.htm
  – Obtain identification numbers (IDN)
  – Affix to both sides of unit within 30 days

What is a California-Based TRU?

• TRUs equipped on trucks, trailers, shipping containers, or railcars that a reasonable person would find to be regularly assigned to terminals within California

Registration Website - ARBER

http://www.arb.ca.gov/arber/arber.htm

Registration – Identification Numbers (IDNs)
How do I affix the ARB IDNs to my TRU?

• Affix to both sides of TRU housing, after the letters “ARB”
  – May be horizontal (one or two lines)
  – May be vertical (read from top to bottom)
  – See TRU Advisory 08-10
• Letter color contrasts sharply with housing color
• Sized to be able to read from 50 feet
Who Must Submit Operator Reports

- Operators of California terminals where California-based TRUs are regularly garaged, maintained, operated, or dispatched from, including a dispatch office, cross-dock facility, maintenance shop, business, or private residence
  - Excludes a third-party maintenance and repair facility

Submitting Operator Reports

- Reporting deadline was July 31, 2009
  - Update within 30 days of new TRU registration (add IDN)
  - Update within 30 days of TRUs sold/scrapped/removed
- What information do I need to submit?
  - Terminal address
  - List of IDNs assigned to the terminal
  - Help page at: http://www.arb.ca.gov/arber/trureg/operator.htm
- Submit electronically by logging into ARBER
  - http://www.arb.ca.gov/arber/arber.htm
  - Select “Operator Report” tab
  - Follow directions
2011 Amendments

- Freight brokers, forwarders, shippers, and receivers
  - Requires the party that arranges the transport of perishable goods to only hire carriers that will dispatch compliant TRUs
- Electric standby/hybrid-electric recordkeeping
  - Manual recordkeeping phased out and replaced by automated GPS tracking and recordkeeping
- Clarifications
  - Compliance by repowering with new or rebuilt engine
  - Dealer allowances for noncompliant equipment
  - Lessor and lessee requirements
  - Engine rebuilder requirements

Enforcement

- Inspections at distribution centers, border crossings, scales, roadside inspection stations, terminals, and delivery points
- Failure to register or submit Operators Report
  - Subject to citation, penalty, and
  - Must comply within 30 days
- Failure to comply with in-use performance standards - started January 1, 2010
  - Subject to citation, penalty, and
  - Must comply within 60 days

TRU Regulation Contact Information

- TRU website: http://www.arb.ca.gov/diesel/tru/tru.htm
- TRU List Serve: http://www.arb.ca.gov/listserv/tru.htm
- ARBER website: http://www.arb.ca.gov/arber/arber.htm
- ARBER email: arber@arb.ca.gov
- TRU Help Line: 1-888-878-2826 (1-888-TRU-ATCM)
**Off-Road Regulation Requirements**

**Outline**
- Regulation Background
- Who and What is Affected?
- Regulation Requirements
- Other Provisions
- Early Credits
- Funding Opportunities
- Contacts

**In-Use Off-road Diesel Vehicle Regulation Background**
- Adopted on July 26, 2007, major revisions December 2010
- Will reduce diesel particulate matter (PM) and oxides of nitrogen (NOx) emissions
- Affects existing off-road heavy-duty diesel vehicles in California
- Vehicles used in construction, mining, industrial operations and others

**Who & What is Affected?**
- Who is affected?
  - Businesses, individuals, government agencies
- What is affected?
  - Diesel and alternative diesel fueled vehicles that are:
    - Off-road vehicles that operate within CA
    - Self-propelled (no portable equipment!)
    - 25 horsepower or greater
    - “drive” engines only (no auxiliary engines!)
      - exception: both engines of 2 engine cranes and 2 engine water-well drilling rigs
  - Excludes vehicles used only for agricultural and forest operations
  - Excludes personal use vehicles
What is Subject to the Off-road Regulation?

- Vehicles intended to be used off-road
- Designed for off-road use, have off-road engines
- Cannot be registered to operate on-road regardless of use
  - Exceptions: Workover rigs, 2 engine cranes, 2 engine water-well drilling rigs

On-road vehicle, even if not currently licensed

Requirements Vary by Fleet Size

<table>
<thead>
<tr>
<th>Fleet Size Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Fleet &lt;= 2,500 hp, or Municipality &lt;= 2,500 hp, or Municipality fleet in low population county, Captive attainment area fleet, or Non-profit training center, regardless of total hp</td>
</tr>
<tr>
<td>Medium</td>
<td>Fleet with 2,501 to 5,000 hp</td>
</tr>
<tr>
<td>Large</td>
<td>Fleet with more than 5,000 hp All state and federal government fleets</td>
</tr>
</tbody>
</table>

Captive Attainment Area Fleets

- Fleets captive to listed attainment counties
  - Considered small fleets, regardless of total hp
- Fleets can travel within multiple attainment counties
- Captive attainment area fleets or sub-fleets in which all of the vehicles operate exclusively within the following counties: Alpine, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Monterey, Northern Sonoma, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, and Yuba

Parts of Regulation in Effect Now

- Limit on Idling
- Idling Policy
- Sales Disclosure
- Reporting
- Labeling
5 Minute Limit on Idling

• Exemptions include:
  – Queuing, testing, and servicing
• Can apply to ARB Executive Officer to idle > 5 minutes
• Enforcement of 5 minute idling
  – Enforcement advisory at:
    www.arb.ca.gov/enf/advs/advs377.pdf

Written Idling Policy

• Required for medium and large fleets only
• Policy must be available to all vehicle operators
• Guidance document for idling policy available at:
  www.arb.ca.gov/msprog/ordiesel/knowcenter.htm
• Enforcement advisory:
  www.arb.ca.gov/enf/advs/advs391.pdf

Disclosure of Applicability (Sales Disclosure)

• Disclosure of regulation to buyer:
  – Persons selling in California to California buyer
  – Keep disclosure records for 3 years
  – Not required for manufacturers selling to dealers
  – Must be included on the bill of sale, invoice*, or price quote*
  – Enforcement advisory:
    http://www.arb.ca.gov/enf/advs/advs378.pdf

* Not included in regulation language, guidance given by off-road staff

Disclosure Language

“When operated in California, any off-road diesel vehicle may be subject to the California Air Resources Board In-Use Off-road Diesel Vehicle Regulation. It therefore could be subject to 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/msprog/ordiesel/ordiesel.htm”
Reporting

- Vehicles added or sold/retired must be reported to ARB within 30 days
  - Includes purchases/sales, or bringing vehicles in or out of CA
- Reporting can still be done by submitting hard copy forms, or online at: https://secure.arb.ca.gov/ssldoors/doors_reporting/doors_login.html
- Annual reporting required:

<table>
<thead>
<tr>
<th>Fleet Size</th>
<th>Annual Reporting (due by March 1st of year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>2012 - 2023</td>
</tr>
<tr>
<td>Medium</td>
<td>2016 - 2023</td>
</tr>
<tr>
<td>Small</td>
<td>2018 - 2028</td>
</tr>
</tbody>
</table>

What is DOORS?

- Diesel Off-road On-line Reporting System
  - On-line reporting tool
  - Compiles and reports fleet data
  - Meets ARB’s reporting requirements
  - Retains fleet data for future reporting
  - Includes automated compliance planning
  - Enforcement staff will be able to access data from DOORS
  - Website: https://secure.arb.ca.gov/ssldoors/doors_reporting/doors_login.html

Vehicle Labeling

- See
  - Off-road homepage
  - Knowledge Center
  - Labeling FAQ
- Knowledge Center: www.arb.ca.gov/msprog/ordiesel/knowcenter.htm

Upcoming Requirements

- Amended December 2010
- Restrictions on adding vehicles
- Performance requirements (to reduce emissions)
  - Must be met by January 1st of each compliance year
  - Fleet must meet either the fleet average target, or the Best Available Control Technology requirements (BACT)

<table>
<thead>
<tr>
<th>Fleet Size</th>
<th>Compliance Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>2014-2023</td>
</tr>
<tr>
<td>Medium</td>
<td>2017-2023</td>
</tr>
<tr>
<td>Small</td>
<td>2019-2028</td>
</tr>
</tbody>
</table>
Restrictions on Adding Vehicles

- Ban on adding Tier 0s and unregistered Tier 1s
  - Does not begin until recent amendments are certified by Secretary of State, and US EPA authorization granted
  - “unregistered” means those Tier 1s not in DOORS by March 1, 2011
- Ban on adding Tier 1s
  - Begins 2013 for large and medium fleets, 2016 for small fleets
- Ban on adding Tier 2s
  - Begins 2018 for large and medium fleets, 2023 for small fleets

Performance Requirements

- Fleet average targets
  - Different for each fleet
  - Based on fleet’s NOx emissions
- BACT
  - Fleet must retire, repower, designate low-use, or retrofit certain % of horsepower
  - Varies from 4.8% to 10% per year

Alternative Compliance Option for Smallest Fleets

- Optional path (i.e., not required)
- For small fleets with less than 500 hp (must include exempt vehicles)
- Phase out Tier 0 and 1 vehicles

<table>
<thead>
<tr>
<th>Compliance Date: January 1 of Year</th>
<th>Percent of Fleet (by horsepower) Which Must Have a Tier 2 or Higher Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>25</td>
</tr>
<tr>
<td>2022</td>
<td>50</td>
</tr>
<tr>
<td>2026</td>
<td>75</td>
</tr>
<tr>
<td>2029</td>
<td>100</td>
</tr>
</tbody>
</table>

Exemptions

- Exempt from all but recordkeeping / reporting / labeling (i.e., exempt from the performance requirements)
  - Low-use vehicles operated < 200 hrs/yr
    - non-resettable hour meter required
  - Emergency vehicles
  - Dedicated snow removal vehicles
  - Equipment used a majority of the time for agricultural purposes (>50%)
    - 100% ag use equipment completely exempt
Compliance Extensions
- Compliance extensions
  - Manufacturer delays for retrofits or new engines (2 month provision)
  - Delay of Tier 4 interim or final vehicles

Rental and Leased Vehicles
- Rented/leased < 1 year
  - Owner’s responsibility
- Rented/leased >= 1 year
  - Owner’s responsibility, unless stated otherwise in contract
- Leases occurring before June 15, 2008
  - If in a year long “lease” (or more) starting on or before June 15, 2008, vehicle must be included in the lessee’s fleet (not owner)

Early Credits
- Full credit given for previous repowers
- Some credit given for fleets that have reduced their total horsepower, or replaced vehicles
- Double credit deadline for PM and NOx exhaust retrofits:
  - Large fleets: January 1, 2013
  - Medium fleets: January 1, 2016
  - Small fleets: January 1, 2018

For More Information…
- General Off-Road Regulation Questions:
  Diesel vehicle information hot line:
  (866) 6-DIESEL
  (866) 634-3735
  Email: 8666diesel@arb.ca.gov
- Off-Road Reporting (DOORS) Questions:
  DOORS hot line:
  (877) 59-DOORS
  (866) 593-6677
  Email: doors@arb.ca.gov
- Websites:
  Off-Road Regulation - www.arb.ca.gov/ordiesel
  DOORS Reporting - https://secure.arb.ca.gov/sldoors/doors_reporting/doors_login.html