OVERVIEW

• Need for Emissions Reductions
• Strategies to Reduce Emissions
• Overview of the Truck and Bus Regulation
Diesel PM Identified as a TAC

- In 1998 the Air Resources Board identified particulate matter (PM) as a toxic air contaminant (TAC).
  - 500 potential cancer risks per million statewide
  - 1,000 potential risks associated with diesel pm emissions per million in the South Coast Air Basin.
Statewide Average Potential Cancer Risk from Outdoor Ambient Levels of TACs

- Diesel Exhaust PM: 71%
- 1,3-Butadiene: 10%
- Benzene: 7%
- Carbon Tetrachloride: 4%
- Formaldehyde: 3%
- Hexavalent Chromium: 2%
- All Others: 3%
Many Areas of California Do Not Meet Federal Air Quality Standards
Diesel Risk Reduction Plan (DRRP)

• Comprehensive plan to reduce diesel PM emissions.
• Goal: Reduce PM emissions.
  • 75% by 2010
  • 85% by 2020
• Strategy:
  • Increase standards for newer engines.
  • Retrofit current engines with diesel particulate filters (DPF).
  • Truck and Bus regulation is a critical component of DRRP
  • Integrate with NOx reduction efforts (SIP)
State Implementation Plan (SIP)

• Federal clean air laws set standards for exposure levels over time
  • PM2.5, Ozone, other Criteria Pollutants

• Areas with exposure to unhealthy emission levels required to develop plans
  • State Implementation Plan
Heavy-Duty Diesel Engine Emissions Standards 1994 to Present
PM Filter Technology

• Level 3 is verified to reduce at least 85% of diesel PM emissions.
  • Typically reduce by 98%
  • Level 3 filters are currently used for on-road engines.

• Captures soot inside the filter.
• Excess soot is burned through the process of regeneration.
• Available for nearly all engines and duty-cycles
# In-Use Diesel Fleet Regulations

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Transit Fleet Vehicles (2005)</td>
<td></td>
</tr>
<tr>
<td>Public Fleets &amp; Utilities (2005)</td>
<td></td>
</tr>
</tbody>
</table>
The Truck and Bus Regulation

• Applies to:
  • Diesel trucks and buses operating in California with a gross vehicle weight rating (GVWR) over 14,000 lbs
  • Affects over 1 million vehicles operating in CA
  • Almost all vehicles must meet PM BACT with an OEM or retrofit PM filter by 2018
  • All engines must meet 2010 model year engine standards by 2023
Heavy-Duty Diesel Trucks are the Largest Mobile Source of Emissions

Note: 2010 Mobile Source Emissions
## General Requirements

### Engine Model Year Schedule

**Heavier Vehicles 26,001 lbs or more**

<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>-</td>
<td>January 1, 2015</td>
</tr>
<tr>
<td>2000- 2004</td>
<td>January 1, 2013</td>
<td>January 1, 2021</td>
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<tr>
<td>2005 or newer</td>
<td>January 1, 2014</td>
<td>January 1, 2022</td>
</tr>
<tr>
<td>2007 – 2009</td>
<td>-</td>
<td>January 1, 2023</td>
</tr>
<tr>
<td>(PM Equipped)</td>
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</tbody>
</table>

**Lighter Vehicles 14,000 – 26,000 lbs**

<table>
<thead>
<tr>
<th>Engine Year</th>
<th>2010 MY Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre - 1996</td>
<td>January 1, 2015</td>
</tr>
<tr>
<td>1996</td>
<td>January 1, 2016</td>
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<tr>
<td>1997</td>
<td>January 1, 2017</td>
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<tr>
<td>1998</td>
<td>January 1, 2018</td>
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<tr>
<td>1999</td>
<td>January 1, 2019</td>
</tr>
<tr>
<td>2000 – 2003</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>
Flexibility Options Available

Agricultural Vehicle Provisions
- Limited annual mileage until 2023
- Log trucks phase-in 2010 MYE replacements from 2014 to 2023

Small Fleet Option
- Fleets with 3 or fewer vehicles
- First PM filter 2014
- Second PM filter 2017
- Third PM filter 2018

Low-Use Exemption
- Up to 1,000 miles per year in CA

Annual Fleet Phase-In Option
- Heavier vehicle filter percentage requirement until 2018

Low-Mileage Construction Truck
- PM filter requirements until 2018
- Limited mileage per year until replacement requirement

NOx Exempt Area Extension
- Annual PM filter requirements until 2019
- Must operate in cleaner areas of state
- No replacement requirement
Truck Regulation Upload Compliance and Reporting System (TRUCRS)

- Not required if following engine model year schedule
- Required to report in TRUCRS to claim flexibility options
- Assists with fleet compliance planning
Decline in emissions due to natural attrition of newer engines with particulate filters.

Decline in emissions due to Truck and Bus Regulation.
Questions?