California’s Proposed Strategy to Reduce Emissions from On-Road Diesel Vehicles

December 11, 2008
California Environmental Protection Agency

Air Resources Board
Today’s Presentation

• Introduction and overview
• Truck and Bus Regulation
• Truck and Trailer Efficiency Regulation
• Integration of the proposed regulations
• Availability of incentive funding
• Recap and closing
We Cannot Afford to Wait to Cleanup Exhaust Emissions

- Largest source of emissions
- State Implementation Plan (SIP)
  - Majority of reductions from trucks
- Cancer risk from diesel PM is high
- Thousands of lives lost each year
- No equivalent federal programs
- California leadership is critical
We Cannot Afford to Wait to Reduce Greenhouse Gas Emissions

- Discrete early action measure in Scoping Plan
- Progress towards meeting AB32 commitment
- Demonstrates California’s leadership
- Substantial cost savings
- Benefits environment and economy
Timing is Challenging but the Need is Great

• Cost of inaction outweighs costs of clean-up
• Actions not required for several years
• Significant flexibility provided
• Minimizes costs and meets air quality goals
• Minimizes potential overlap of costs
Staff’s Proposals

• Shaped by input from stakeholders
• Provisions to reduce costs
• Savings from improved efficiency
• Incentives
• No barriers to technology
Proposed Truck and Bus Regulation
Truck and Bus Regulation Overview

- Need for emissions reductions
- Proposed requirements
- Emissions benefits and costs
- Alternatives considered
Significant Contributors to Statewide Emissions: 2005

**NOx**
- Stationary and Other, 15%
- Other On-Road, 25%
- Off-Road, 22%
- Marine, 6%
- Locomotives, 5%
- Trucks and Buses, 28%

**Diesel PM**
- Stationary and Other, 3%
- Other On-Road, 2%
- Off-Road, 37%
- Marine, 16%
- Locomotives, 5%
- Trucks and Buses, 37%
Diesel Particulate Matter Exposure

• Trucks and buses largest source of diesel PM
• 70% of known cancer risk from all air toxics
• Diesel Risk Reduction Plan adopted in 2000
  – Risk reduction goals by 2010 and 2020
Area Designations for National Ambient Air Quality Standards for Ozone and PM2.5

8-Hour Ozone

- 15 areas violate the standard

PM2.5 Annual

- 2 areas violate the standard

- Nonattainment
- Unclassified/Attainment
State Implementation Plan

- Approved in September 2007
- Trucks largest component of SIP
  - Most significant measure
- Critical to attaining ozone and PM standards
  - South Coast: 2014 and 2023
  - San Joaquin Valley: 2014, 2017, and 2023
## Significant Health Impacts from Trucks and Buses (2008)

<table>
<thead>
<tr>
<th>Effect</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature deaths</td>
<td>4,500</td>
</tr>
<tr>
<td>Asthma related and lower respiratory symptoms</td>
<td>71,000</td>
</tr>
<tr>
<td>Work loss days</td>
<td>450,000</td>
</tr>
<tr>
<td>Restricted activity days</td>
<td>2,600,000</td>
</tr>
</tbody>
</table>
Truck and Bus Regulation: Proposed Requirements
Proposed Truck and Bus Regulation

• Diesel vehicles operating in California
  – Interstate, intrastate, international, and other
• Vehicles over 14,000 GVWR and shuttle buses
• Any person, business, or government agency who owns, leases, rents, or sells a vehicle in California
• Excludes certain vehicles
Diverse Vehicle Types Covered

Concrete Mixer

Dump Truck

Drill Rig

Water Truck

Hay Squeeze

Tow Truck

Reefer Van

Fuel Tank Truck

Passenger Bus
Overview of Proposed Regulation

• Phase-in most PM requirements 2011-2014
  – No action if not available or not safe
• Phase-in NOx requirements 2013-2023
  – New vehicles never required
• Certain special provisions
• Three compliance options
Compliance Options

• Best available control technology (BACT) schedule
• Percentage limits
• Fleet averaging
Only Older Vehicles Replaced

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Engine Age To Be Replaced (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>14 - 19</td>
</tr>
<tr>
<td>2014</td>
<td>12-14</td>
</tr>
<tr>
<td>2015</td>
<td>21+</td>
</tr>
<tr>
<td>2016</td>
<td>12-13</td>
</tr>
<tr>
<td>2017</td>
<td>11-12</td>
</tr>
<tr>
<td>2018</td>
<td>No replacement requirements</td>
</tr>
<tr>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>14</td>
</tr>
<tr>
<td>2022</td>
<td>14</td>
</tr>
<tr>
<td>2023</td>
<td>14</td>
</tr>
</tbody>
</table>
Accelerated Replacement Not Required for Every Truck

Number of Different Trucks Operating in California in 2008 = 941,000
How Emissions Change with Engine Model Year

Note: For Heavy Heavy-Duty Vehicles (GVWR >33,000 lbs)
Percentage of California Trucks by Fleet Size

- > 100 Trucks: 16%
- 51 ~ 100 Trucks: 4%
- 21 ~ 50 Trucks: 8%
- 11 ~ 20 Trucks: 8%
- 6 ~ 10 Trucks: 9%
- 5 Trucks: 3%
- 4 Trucks: 4%
- 3 Trucks: 6%
- 2 Trucks: 10%
- 1 Truck: 32%

2006 DMV DATA: Heavy Heavy-Duty & Medium Heavy-Duty vehicle population
Optional Small Fleet Provisions

• Additional time for fleets up to 3 vehicles
• No clean up requirements before 2013
  – First vehicle with 2004 model year engine and filter until 2018
• Remaining vehicles upgraded 2014-2016
• Cleanest engines by 2023
Provisions to Delay Replacement Requirements

- Unique vehicles
- Cab-over engine truck tractors
- Early credit for filters
- Lower usage vehicles
- Attainment area operation

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
Other Key Provisions

• Very low use vehicles exempt from clean-up
• Credits for hybrid and alternative fueled vehicles
• Retrofit safety
• Manufacturer delays
• Three day pass for out-of-state trucks
Agricultural Vehicle Provisions

• Used exclusively in agricultural operations
• Exempt below mileage thresholds
  – 15,000/20,000/25,000 annual miles until 2017
  – 10,000 miles starting 2017
• Specialty farm vehicles exempt until 2023
• All trucks cleaned up by 2023
Screening Evaluation of Localized Risk

- Analysis of first processing center
- Potential for localized risk
  - Dependent on uncontrolled truck activity
- Further analysis and report to Board

Risk greater than 10 in 1 million

Assumes 80 trips per day

First Processor

Roadway

280 meters
School Buses

• PM requirements necessary
  – Pre-1977 bus replacements

• $200 million in Lower-Emission School Bus Program funding
  – Sufficient for 95% of costs

• Staff will monitor implementation
Technology Already Exists

• PM control technology
  – New engines equipped with filters nationwide
  – Thousands of retrofit filters in use

• NOx control technology
  – 2010 model year engines on schedule
  – SCR retrofit systems being demonstrated

• Sufficient new and used trucks available
Changes to Existing Regulations

• Improve enforceability and clarity
• Includes:
  – Drayage truck regulation
  – Public fleet and utility regulation
  – Off-road vehicle regulation
  – Cargo handling regulation
  – Idling provisions
  – Portable Engine Registration Program
  – Portable engine regulation
Truck and Bus Regulation: Emissions Benefits and Cost
Updated Truck and Bus Emissions

- Builds on EMFAC2007
- Reflects multiple new data sources
- More detailed truck and bus categories
- Category-specific population, age distribution, and mileage accrual
Statewide NOx Emissions

- Without Regulation: 124 tpd
- With Proposed Regulation: 98 tpd
Statewide PM2.5 Emissions

PM2.5 Emissions (tpd)

Without Regulation

With Proposed Regulation

12.8 tpd

5.2 tpd
Overall Health Benefits

• Provides major health benefits
  – About 9,400 fewer premature deaths
  – 150,000 fewer lower respiratory and asthma-related symptoms
  – 950,000 fewer lost work days
• Value estimated to range from $48 to $68 billion
• Meets combined PM and NOx SIP targets for all years
• No other measures can provide same benefits
Statewide Costs

• Estimate at $5.5 billion (2010-2025)
  – $4.5 billion for California registered vehicles
  – $1.0 billion for out-of-state vehicles

• Cost effective compared to other regulations
Vehicle Prices Vary by Age

Conventional Truck Without Sleeper

Vehicle Age vs. Price (thousands of $)
### PM Retrofit Costs

<table>
<thead>
<tr>
<th>PM Retrofits</th>
<th>Installed Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994 and newer</td>
<td>$12,000*</td>
</tr>
<tr>
<td>Pre-1994</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

* $11,000 for medium heavy-duty vehicles

Wall Flow Filter

![Wall Flow Filter Diagram]
Potential Cumulative Costs

• Evaluated impact with other rules
  – Transportation Refrigeration Units
  – Off-Road Regulation
• Evaluated several individual fleets
• Impacts relatively small
• Little overlap with Truck GHG regulation
• Lowered costs
  – Sweepers
  – Cranes
Impact on California’s Economy is Small

- California is a $3.1 trillion economy
  - Could reduce GDP by 0.014 percent
  - May slow job growth in some sectors, increase others
- Impact on consumers not noticeable
  - $0.01-$0.02 per pair of shoes
  - $3 to $10 for new car
Compliance Example:
Actual Trucking Company

- Regional haul trucking fleet
  - Average age of vehicles 11 years
  - Normally replaces 2-3 per year
  - Normally buys 4 year old used
  - Annual revenue $3,500,000

<table>
<thead>
<tr>
<th>Truck Engine Age</th>
<th>Number of Trucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
</tr>
</tbody>
</table>
What Actions Would be Needed?

Number of Replacements or Retrofits

Calendar Year

- PM Retrofit
- Replacement with Regulation
- Normal Replacements


Number of Replacements or Retrofits

0 2 4 6 8 10 12 14

Capital Investments

Capital Costs (Current Year Dollars)

- PM Retrofit
- Replacement with Regulation
- Normal Replacement Costs

Calendar Year

Implementation, Outreach, and Education

• Committed to work with industry
• Extensive outreach and education
• Compliance assistance
• Planning tools
Truck and Bus Regulation: Alternatives Considered
Fewer Benefits with Industry Proposal

- Baseline
- Proposed Regulation
- DTCC Proposal
Impact of Recession on Emissions

- Recession has resulted in fewer miles driven, lower diesel fuel sales, and reduced new truck sales
- Fewer miles driven lowers emissions
- But reduced truck sales means older higher-emitting trucks stay on the road
- Higher emission rates associated with older trucks may offset lower emissions due to less driving
Staff Recommended Modifications
Proposed 15-Day Changes

• Add retirement credit provisions
• More operating time for back-up sweepers
• Delay replacements for motor coaches
• Other clarifying and corrective changes
Proposed Truck and Trailer Efficiency Regulation
California GHG Emissions
2002-2004 Average

CA GHG Emissions
(469 MMTCO2E\(^1\))

- Transportation: 38%
- Electricity: 23%
- Commercial & Residential: 9%
- Industrial: 20%
- Recycling & Waste: 1%
- High GWP: 3%
- Agriculture: 6%

1\(^{\text{MMTCO2E}} = \text{million metric tons carbon dioxide equivalent emissions}\)
California GHG Emissions
2002-2004 Average

Transportation
(179 MMTCO2E)

Aviation (Intrastate Only)
2%
Ships
2%
Heavy-Duty Trucks
19%
Rail
2%
Passenger Cars
75%

1MMTCO2E = million metric tons carbon dioxide equivalent emissions
Goals of Proposed Regulation

• Reduce GHG emissions from long haul tractors by reducing
  – Tractor and trailer aerodynamic drag
  – Tire rolling resistance
• Tractor aerodynamics
  – Streamlined hood, sleeper cab roof fairings, gap fairings, fuel tank fairings, aerodynamic bumper, and mirrors
• Trailer aerodynamics
  – 53-foot or longer box-type trailers
  – Side skirts, front gap fairings, rear trailer fairings
• Low rolling resistance tires
Goals of Proposed Regulation (continued)

• U.S. EPA SmartWay Program
  – Voluntary partnership
  – Test protocols and guidelines
  – Certifies fuel efficient tractors, trailers, and technologies

• Staff proposal establishes a California mandatory program based on SmartWay Program
## Impacted Tractors and Trailers

<table>
<thead>
<tr>
<th></th>
<th>Calendar Year 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CA</td>
</tr>
<tr>
<td>Tractors</td>
<td>37,000</td>
</tr>
<tr>
<td>Trailers</td>
<td>93,000</td>
</tr>
</tbody>
</table>
Available Technology (New)

New SmartWay Certified Tractors

- Fully aerodynamic tractor with low rolling resistance tires
- Manufacturers:
  - Freightliner, International, Kenworth, Mack, Peterbilt, Volvo
- Fuel efficiency improvement 3% - 4.5% - resulting in annual fuel cost savings of $1,800
- Average incremental cost: $2,100
Available Technology (New)

**NEW SmartWay Certified Trailers**

- Purchased directly from trailer manufacturer/dealer:
  - Great Dane, Hyundai Translead, Manac, Stoughton Trailers, Strick Corp., Trailmobile Canada, Utility Trailer Manufacturing, Wabash National Corp.
- Fuel efficiency improvement of 6.5% minimum - resulting in annual fuel cost savings of $1,300 to $3,300
- Trailer incremental cost: $2,900
- Refrigerated-van certification coming soon
Available Technology (In-Use Retrofit)

SmartWay Verified

Aerodynamic Technologies

• Side skirts
  – 4% or greater fuel efficiency improvement
  – Fleets have experienced positive results
  – Average cost: $1,900
Available Technology (In-Use Retrofit)
**SmartWay Verified**
**Aerodynamic Technologies**
(continued)

- **Front gap fairings**
  - 1% or greater fuel efficiency improvement
  - Average cost: $870

- **Rear trailer fairings**
  - 1% or greater fuel efficiency improvement
  - Average cost: $2,800
Available Technology (New and In-Use Retrofit)

**SmartWay Verified Low Rolling Resistance Tires**

- Dual or single wide tires
  - 3% or greater fuel efficiency improvement (tractor-trailer combination)
  - Incremental cost: $0 to $50 per tire ($0 to $900 per tractor-trailer)
Emerging Technologies

- Manufacturers continuously developing & improving product functionality & durability
  - Retractable skirts
  - Flexible skirts
  - Double channel skirts
  - Flow control devices

Flow Control Devices
Double Channel Skirts
Flexible Skirts
Scope of Regulation

• Tractors that pull box-type trailers that are 53-foot or longer
  – Greater than 26,000 pounds (Class 7 and 8)
  – Operate in California

• 53-foot or longer box-type trailers
  – Dry van and Refrigerated van

• California and out-of-state registered

• Primary responsible parties: Owners

• Other responsible parties: drivers, motor carriers/ CA-based brokers, and CA-based shippers
Proposed Requirements

Tractors

- 2011+ model year (MY) sleeper cab tractors
  - SmartWay certified
  - January 1, 2010

- 2011+ MY day cab tractors
  - SmartWay verified low rolling resistance tires
  - January 1, 2010

- All pre-2011 MY tractors
  - SmartWay verified low rolling resistance tires
  - January 1, 2012
Proposed Requirements
Trailers

• 2011+ MY 53-foot or longer box-type
  – SmartWay certified *or*
  – Retrofitted with SmartWay Technologies:
    • Low rolling resistance tires
      – Minimum of 1.5% fuel efficiency improvement
    • Aerodynamic devices
      – Minimum of 5% fuel efficiency improvement for a dry van, and
      – Minimum of 4% fuel efficiency improvement for a refrigerated van
Proposed Requirements

Trailers (continued)

- Pre-2011 MY 53-foot or longer box-type
  - Same requirements as 2011+ MY trailers
  - Delayed compliance until January 1, 2013
  - Three Optional Plans
    - Small Fleet Compliance Plan
    - Large Fleet Compliance Plan
    - Reefer Van Compliance Plan
Proposed Requirements

Optional Compliance Schedule
- 2010 and Older MY Trailers -

• Small fleet – 20 or less trailers
• Large Fleet – 21 or more trailers
  – Phase-in: 2010 - 2015
  – Early compliance credit
• Refrigerated van – 2003-2008 MY
  – Phase-in: 2017 - 2019
Proposed Requirements

Exemptions

• Short haul tractors and trailers
  – 100 mile radius or less than 50,000 miles per year

• Drayage tractors and trailers
  – Operate 100 mile radius of port or intermodal rail yard

• Container chassis

• Drop frame vans

• Curtain side vans

• Authorized emergency vehicles

• Military tactical vehicles
GHG Emission Benefits (MMTCO2E)

2020 GHG Emission Benefits

- California: 1
- Nationwide: 6.7

Cumulative GHG Benefits 2010-2020

- California: 7.8
- Nationwide: 52.1
Additional Benefits

• NOx reductions in California
  – 2014 = 4.3 tons per day
  – 2020 = 1.4 tons per day
• Contribute towards SIP commitments
• Cumulative fuel savings (2010-2020)
  – California = 750 million gallons diesel fuel
  – Nationwide = 5 billion gallons diesel fuel
## Costs and Benefits

<table>
<thead>
<tr>
<th>Tractor-Trailer Combination</th>
<th>New SmartWay Certified</th>
<th>In-Use Retrofitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Savings (%)</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Tractor incremental cost</td>
<td>$2,100</td>
<td>$250</td>
</tr>
<tr>
<td>Trailer incremental cost</td>
<td>$2,900</td>
<td>$2,900</td>
</tr>
<tr>
<td>Fuel savings (gallons/year)</td>
<td>1293</td>
<td>1034</td>
</tr>
<tr>
<td>Annual Savings @ $3.14/gallon</td>
<td>$4,060</td>
<td>$3,250</td>
</tr>
<tr>
<td>Payback period in years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Trailer : Tractor = 1:1)</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>(Trailer : Tractor = 2.5:1)</td>
<td>2.3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Assume: baseline fuel economy of 5.8 miles per gallon, and an average long haul annual mileage accrual rate of 100,000 miles.
Economic Impacts

• Initial capital cost to businesses significant
  – But so are the fuel savings
• Costs and savings to businesses 2010-2020
  – Costs $8.5 billion
  – Savings $17.1 billion
• Net savings (2010-2020) $8.6 billion
Proposed 15-Day Changes

- Remove 100-mile operating range exemption for tire requirement
- Remove reporting requirements for refrigerated van compliance provision
- Exempt solid waste trailers
- Other minor modifications
Integration of Proposed Regulations
Each Regulation Targets Different Fleets

- Truck and Trailer GHG Regulation
  - Newer long haul fleets
- Truck and Bus Regulation
  - Older in-state fleets
- Different compliance timelines
- Incentives available for both
Potential Overlap is Minimal
In-State and Out-of-State Tractors

- Population of Truck Tractors

- Efficiency Only

- Potential Overlap

- Ahead of Regulation

- Exhaust Clean-up Only

- Truck Tractor Age (Years)

- Truck Tractor Age

- More

- Less

- 50,000 Miles
Few Trucks Have Overlapping Costs

- No Impacts: 24%
- Truck and Trailer GHG Only: 40%
- Potentially Affected by Both: 5%
- Truck and Bus Only: 31%
Enforcement to Ensure Equity

- Expand existing inspection efforts
  - Weigh stations, random roadside, and fleet
- Web based database for vehicle records
- Crosscheck other programs
- Record audits
- Additional resources requested
Availability of Incentive Funds
Incentive Funding Will Play An Important Role

• Economic challenges
• Obtaining traditional credit difficult
• Substantial grants available
• Couple with loan guarantees
• Funding provides critical role
Incentives Portfolio

- **Carl Moyer Program**
  - About $140 million per year
  - Funds available for grants and vouchers

- **Proposition 1B**
  - $1 billion over several years
  - Funds available for grants and loan guarantees

- **Assembly Bill (AB) 118**
  - $350+ million for low interest loans

- **Lower Emission School Bus Program**
  - About $200 million for replacements and retrofits
Selected 2009 Changes to Carl Moyer Guidelines

- Facilitate funding for small fleets
- Add three years of model year eligibility
- Add additional flexibility for minimum project life
- Add “Two Vehicles to One” option
- Grantees: use BACT Compliance Schedule during contract
Carl Moyer Program: Vouchers

- New grant option beginning in 2009
- Provides approx. $30,000 - $35,000 per truck
- Simplified requirements
  - Quick turn around (1 week)
  - Voucher good at participating truck dealers
  - Available statewide
- Can be combined with loan guarantee
AB118 Loan Guarantee Program

- Priority for small fleets and those with “financial hardship”
- Target “nearly bankable” small businesses

\[\text{bankable} \quad \text{target} \quad \text{unbankable}\]

- Loans available by Spring 2009
- Loans for used trucks, new trucks, SmartWay products and exhaust retrofits
Proposition 1B Funding

- $1 billion over several years
  - First installment of $250 million in 2007-2008
  - Second installment of $250 million in 2008-2009
- Replacement funds available for 2003 and older trucks
- Available for large and small fleets
- Grants competitive: cost-effectiveness & reductions
- Loan guarantee program for small fleets in development
- Guideline revisions scheduled for February 2009
  - Add funding options for Class 7 trucks (over 31,000 GVWR)
  - Fund small fleets 2 years before compliance deadline
Funding Options for Small Fleets
(1-3 trucks)

• Fleet Modernization Grants (old truck 1993 or older)
  – Up to $50,000 for 2007-2009 replacement truck
  – Up to $75,000 for 2010+ replacement truck
  – Exhaust retrofits (up to 100% of cost)

• Voucher Program (old truck 1993 or older)
  – Approx. $30,000 - $35,000 for replacement truck
  – Focus on quick turn-around (one week)

• Truck Replacement Grants (old truck 2003 or older)
  – Up to $35,000 for 2007-2009 used replacement truck
  – Up to $45,000 for 2007-2009 new replacement truck
  – Up to $50,000 for 2010+ replacement truck
  – Funding also available for retrofits and repowers

• Loan Guarantees
  – Lower interest rates and qualification criteria
  – Loans for new & used trucks and SmartWay products
Funding Options for Large Fleets
(4 or more trucks)

• Truck Replacement Grants (old truck 2003 or older)
  – Up to $35,000 for 2007-2009 used replacement truck
  – Up to $45,000 for 2007-2009 new replacement truck
  – Up to $50,000 for 2010+ replacement truck
  – Funding also available for retrofits and repowers

• Loan Guarantees
  – Potential funding for fleets in “financial hardship”

• Retrofits
  – Limited funding for Level 3 exhaust retrofits
  – Future funding opportunities for NOx retrofits that bring used trucks into compliance
Funding Options for Other Fleets

• Agricultural Vehicles
  – Limited use vehicles: through 2013
  – Low use & specialty vehicles: through 2019

• School Buses
  – $200 million Lower Emission School Bus Program
    • At least 3,500 exhaust retrofits
    • Funding could retrofit every eligible public school bus
  – Additional local and state funds
Program Provides Multiple Access Points

- Air Resources Board
- Truck Dealerships
- Air Districts
- Truck Stops
- Banks

Truck Owner
### Incentives Portfolio Summary

<table>
<thead>
<tr>
<th>Fleet Type</th>
<th>Programs</th>
<th>For What</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small fleet (1-3 trucks)</td>
<td>Grants; Vouchers; Loan guarantee</td>
<td>Replacement of 1993 or older truck with 2007 or newer truck; Exhaust retrofit</td>
<td>Carl Moyer AB 118</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replacement of 1993 or older truck with 2010 or newer truck</td>
<td></td>
</tr>
<tr>
<td>Fleets moving goods in a trade corridor</td>
<td>Grants</td>
<td>Replacement of 2003 or older truck with 2007 or newer truck; Exhaust retrofit</td>
<td>Proposition 1B</td>
</tr>
<tr>
<td>1-10 trucks (financial hardship)</td>
<td>Loan guarantee</td>
<td>2007 or newer truck; Exhaust retrofit; GHG Efficiency</td>
<td>AB 118</td>
</tr>
</tbody>
</table>
Tying it all Together

- Many funding options, significant aid
- Coordinated programs: grant programs as down-payment, loans can complement
- Integrated outreach to best assist affected fleets
- Coordinated approach can get new truck ~ $800 per month
Recap and Closing
Importance of Proposed Truck and Bus Regulation

- Largest component of SIP reductions
  - Cannot attain PM and ozone standards
- Billions in transportation funding at risk
- Thousands of lives at stake
- Benefits outweigh costs
- State’s obligations cannot be delayed
  - Industry alternatives do not meet SIP targets
Importance of Proposed Truck GHG Regulation

• Key early action measure in Scoping Plan
• Investment pays for itself
• Environmental benefits
Needed Technology is Available Now

- Numerous retrofits verified
- New trucks already have filters
- 2010 engines on track
- Low-rolling resistance tires common
- Smartway tractors available
- Trailer retrofits now in use
Minimizes Economic Impacts

• No actions required until 2010
• Significant flexibility provided
• Small fleets have additional time
• Newer trucks ahead of exhaust requirements
• Little overlap from both regulations
Incentives Will Play an Important Role

• Over $1 billion is available
• Will target those most in need…small fleets
• Numerous ARB programs being coordinated
• Private lenders will be key partners
Recommendation

• Adopt staff proposal with 15-day changes
• Direct staff to:
  – Evaluate and report on localized impacts from agricultural provisions by end of 2009
  – Monitor potential impacts on pupil transportation