National Clean Diesel Campaign: Clean Diesel Funding

November 2, 2010
Trina Martynowicz, U.S. EPA
PRESESENTATION OUTLINE

- Why Diesel Matters
- Regulatory Efforts
- National Clean Diesel Campaign
- West Coast Collaborative
- SmartWay Transport
- Tools, Resources, Links
Health Effects of Diesel Emissions

- Decreased lung function
- Aggravated asthma
- Respiratory ailments
- Premature death

Sensitive populations such as children and the elderly are particularly susceptible to these effects.
Particulate Matter Levels in the US
PRESENTATION OUTLINE

- Health Effects Overview
- **Regulatory Efforts**
  - National Clean Diesel Campaign
  - West Coast Collaborative
  - SmartWay Transport
- Tools, Resources, Links
EPA Greenhouse Gas (GHG) Rules

2010 US GHG Inventory (data 2008), US EPA
Total GHG Emissions: 6,950 Million Metric Tons

- GHG Tailoring Rule
- GHG Reporting Rule
- Renewable Fuel Standard 2
- Light Duty Rule
- Heavy Duty Rule

Electricity Production 35%
Transportation 27%
Industrial 19%
Commercial 6%
Agriculture 7%
Residential 5%
U.S. Territories 1%

- Passenger Cars 9%
- Light-Duty Trucks 8%
- Heavy-Duty Vehicles 6%
- Aircraft 2%
- Boat/Ship 1%
- Locomotive 1%
EPA Activities Around Transportation GHG Emissions

1. Engine and Vehicle Efficiency
   - Light, Medium and Heavy-Duty Vehicles Rules

2. Fuel Type
   - Renewable Fuel Standard 2 Rule

3. Activity Levels
   - Vehicle Miles Traveled and Partnership Programs
1. Engine & Vehicle Efficiency

**Final Rule: Light-Duty Vehicles**

- Joint rulemaking by DOT and EPA
- Set fuel economy and vehicle emission standards to start in model year 2012, ramp up by 2016
- Shift national standard from 27.5 to 38 MPG
Proposed: Medium and Heavy-Duty

- New GHG and fuel efficiency standards starting 2014
- Proposing fleetwide corporate average standards (like light-duty)
  - Phasing in gradually over 2014-2018 model years
- CO$_2$/fuel consumption reductions vary pending type of vehicle
- Technologies that May be Used to Comply with Rule:
  - Fuel-efficient engines
  - Reduction in extended idle operation (for tractors with sleeper cabs)
  - Vehicle speed limiter (not assumed for standard-setting)
  - Reduced tire rolling resistance, for “steer” tires and “drive” tires
  - Aerodynamic packages
  - Weight reduction
2. Final Renewable Fuel Standard (RFS 2)

Lifecycle GHG Thresholds in Energy Independence & Security Act (EISA) (reductions using 2005 baseline)

<table>
<thead>
<tr>
<th>Renewable fuel</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced biofuel</td>
<td>50%</td>
</tr>
<tr>
<td>Biomass-based diesel</td>
<td>50%</td>
</tr>
<tr>
<td>Cellulosic biofuel</td>
<td>60%</td>
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</tbody>
</table>

Advanced Biofuel: Unspecified
Advanced Biofuel: Biomass-Based Diesel
Advanced Biofuel: Cellulosic Biofuel
Conventional Biofuel

Billion Gallons

Year


RFS1
2. Support for Alt Fuels & Electrification

- Federal Government Incentives
  - EPA: Diesel Emission Reduction Act (DERA)
  - DOE: $2.4B ARRA Battery, Electrification
  - DOE $300M ARRA Clean Cities
3. Vehicle Miles Traveled

- Department of Transportation (DOT), Housing and Urban Development (HUD), and EPA Partnership
  - $75M Joint DOT/HUD Funding: Integrate Transportation, Housing and Economic Development
  - National City Sustainability Project

- SmartWay Transport
Presentations Outline

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Innovative Strategies: National Clean Diesel Campaign

*But what about the remaining 11 million engines in the legacy existing fleet?*

- Incentive-based, non-regulatory approach
  - Began with just a few projects (urban and rural school bus fleets, and delivery type vehicles)
- Focuses on five main sectors
  - School Buses
  - Ports
  - Construction
  - Agriculture
  - Freight (SmartWay Transport Partnership)
- Broad support from large group of stakeholders
  - Environmental organizations and other NGOs
  - Industry, fleet owner/operators
  - State/regional/local government
Strategies for the 11 Million Diesel Engines Currently in Use

• Use Cleaner Fuels
• Retrofit
• Repower
• Replace
• Reduce Idling
• Maintenance
Summary of the Diesel Emissions Reduction Act (DERA) Funding

- Fiscal Year 2008: $49.2M Awarded
- ARRA Stimulus Bill 2009: $294M Awarded
- Fiscal Years 2009 & 2010: $120M Awarded
- Fiscal Year 2011: ~$60M RFP out Nov.

EPA Administrator Lisa Jackson and CA Governor Schwarzenegger, Port of Long Beach, June 2009
Diesel Emission Reduction Act (DERA) Funding - DRAFT

Proposed $60M for FY2011 - pending the final EPA budget

**National**
- Estimated $42 Million (70%)

**State**
- Estimated $18 Million (30%)

**National Clean Diesel Funding Assistance Program**
- $32 Million

- **Clean Diesel Emerging Technologies Program**
  - $4 Million

- **SmartWay Clean Diesel Finance Program**
  - $6 Million

- **State Clean Diesel Grant Program**
  - $18M
  - Matching Bonus

Budget amounts for FY 2011 are estimated
National Clean Diesel Funding Assistance Program

- Anticipating ~$60M again throughout the nation

- National Clean Diesel Funding Assistance Program
  - One national RFP
  - Target date for posting = Nov.
  - Applications due mid Jan.

- Automatic state program continuation
  - ~ Jan-May 2011 timeframe
National Clean Diesel Funding Assistance Program: In EPA Region 9

Diesel Emission Reduction Act (DERA) Funding - DRAFT
Proposed $60M for FY2011

**National**
Estimated $42 Million (70%)

National Clean Diesel Funding Assistance Program
$32 Million

$500,000 - $3,000,000
Anticipated that 3-6 grants awarded
National Clean Diesel Funding Assistance Program: Priority Projects

Project proposals that align with these priorities may rank higher in the evaluation process:

- Maximize public health benefits
- Are the most cost-effective
- Are in areas with high population, air quality issues, and air toxic concerns
- Are in areas that receive a disproportionate quantity of air pollution (i.e. truck stops, ports)
Regional, state, local, tribal or port agency with jurisdiction over transportation or air quality; and

Nonprofit organization or institution which

- Represents or provides pollution reduction or educational services to persons or organizations that operate diesel fleets; or

- Has, as its principal purpose, the promotion of transportation or air quality
Technologies and engines must be verified and/or certified by U.S. EPA or CARB

www.epa.gov/cleandiesel

Verified Retrofit Technologies include:
- Exhaust Controls
- Engine Upgrades
- Cleaner Fuels
- Idling Reduction Technologies
National Clean Diesel Funding Assistance Program: How can Funds be Spent?

- Incremental cost of engine/vehicle replacement (old engine must be remanufactured or scrapped), engine repower, engine rebuild

- Covers incremental costs of cleaner fuel versus conventional diesel fuel

- Funds may **NOT** be used for the following:
  - Projects required under Federal, State or Local law
  - Emissions testing (except for the Emerging Technologies Program)
  - Fueling infrastructure costs, (i.e.: acquisition cost of tanks, construction or acquisition costs of fuel depot or biodiesel manufacturing facilities)
National Clean Diesel Funding Assistance Program: Applying

- One national Request for Proposals

- Submit proposals to EPA regional office for projects that take place solely within that EPA Region

- There is a recommended format for the narrative proposal

- See Request for Proposals for how to apply
National Clean Diesel Funding Assistance Program: Region 9 Priorities

- Achieves and clearly quantifies fuel savings, greenhouse gas reductions and diesel criteria pollutant reductions

- Reduces emissions along interstate and international goods movement corridors

- Clearly demonstrates inclusion of community, neighborhood, and/or tribal organizations in disproportionately impacted areas as active partners in the project
Examples National Clean Diesel Funding Assistance grant projects that have been funded in the past...
Electrified Parking Spaces at Truck Stops Near Ports of Entry and Along Interstates in Arizona

Deployed truck stop electrification facilities with HVAC, to reduce engine idling by heavy-duty diesel trucks and helped reduce toxic diesel emissions in Arizona counties adjacent to the U.S.-Mexico border.

Annual Emission Reduction:
- 282 tons PM
- 25 tons NOx

Funding Sources: $1.7M

EPA

Overhead truck stop electrification system
Clean Delivery Trucks Program

- Replace 10 heavy-duty trucks with compressed natural gas (CNG)
- Replace 2 medium-duty with battery-electric, zero-emission trucks
- Retrofit 48 trailers and tractors with SmartWay low-rolling tires
- The fleets operate in the greater Phoenix area in AZ

Annual Emission Reduction
- 0.1 tons PM
- 6.5 tons NOx
- 203 tons CO2

Funding Sources

- EPA
- Leveraged

$1.4M

$611K
Trailer Aerodynamics Project

- Retrofitting 1,801 heavy-duty trailers with verified aerodynamic technologies.
- Fleet partner: Gordon Trucking, Pacific, WA, traveling primarily on Interstate 5 in ID, OR, and WA
- The grant paid ⅓ cost of trailer skirts, saving seven percent of fuel at highway speed.

Annual Emission Reduction
0.5 tons PM
19.2 tons NOₓ

Funding Sources

EPA  Leveraged
$1.5M  $907K

FreightWing Aeroflex skirts on Gordon Trucking trailers
Tools and Resources

- Webinar Wednesday, November 10 @ 12 pm PST (see web site for call-in number)
- Tips for a Successful Diesel Retrofit Project
- Diesel Emissions Quantifier
- State and Local Toolkit
- List of Funded Projects
- Helpline: 1-877-623-2322
- E-mail: cleandiesel@epa.gov

epa.gov/cleandiesel
Diesel Emission Reduction Act (DERA) Funding - DRAFT
Proposed $60M for FY2011

**National**
Estimated $42 Million (70%)

- National Clean Diesel Funding Assistance Program $32 Million
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  - SmartWay Clean Diesel Finance Program $6 Million

**State**
Estimated $18 Million (30%)

- State Clean Diesel Grant Program $18M
  - State Base
  - Matching Bonus

Budget amounts for FY 2011 are estimated
DERA Also Funds

- **Emerging Technology Grants**
  - Innovative, non-verified technologies
  - Eligible entities apply to use technologies listed on Emerging Technologies List
  - 14 emerging technologies listed

- **SmartWay Finance Grants**
  - Over-the-road and regional truck fleet upgrade
  - APU rebates for independent owner-operators
  - CNG retrofits of school buses
  - Retrofit and repower of port, construction, and agricultural equipment

- **Automatic State DERA Grants** – All states and DC
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What is the Collaborative?

The Collaborative is a public-private partnership that aims to reduce diesel emissions in the most impacted communities by:

- Supporting and bringing attention to the many highly successful existing efforts
- Creating a forum for information sharing along major transportation corridors in the West
- Leveraging new resources
- Developing and implementing projects
Other Projects

Examples projects
EPA has supported...
Cow Manure to Fuel

- Generate purified biomethane produced from cow manure at Hilaride Dairy
- Converted diesel trucks to biomethane
- Trucks haul milk to the processor, over 300 miles roundtrip
- Significant environmental benefits
Altamont Landfill Gas to LNG Fuel

- Worlds largest landfill gas to liquefied gas plant
- Produce more than 10,000 gallons/day ultra low-carbon biofuel
- Currently powering over 300 of Waste Management’s trash trucks and Southern CA trucks
- “Closed loop” approach to managing waste
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The SmartWay Transport Partnership

Promoting cleaner, more efficient transportation options
Proposal Builds on SmartWay Transport Partnership

- A non-regulatory program launched in 2004 to improve the efficiency of freight transportation while reducing fuel consumption and emissions
- SmartWay programs encourage the use of key truck technologies including idle reduction, aerodynamics, efficient tires
- Number of Partners has grown to over 2,600 members
  - 660,000 trucks (partners operate > 10% of all trucks)
  - Reduced CO₂ by nearly 15 million metric tons, NOx by 215,000 tons, and PM by 8,000 tons since beginning of program
  - Saved 1.5 billion gallons of diesel fuel
  - Saved the freight industry $3.6 billion in fuel costs

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The Partnership Dynamics

**Carriers:**
- Save fuel & money
- Attain preferred shipper status
- Get recognition
- Improve public image

**EPA:**
- Reduce emissions
- Improve energy security
- Establish agency / industry relationships

**Shippers:**
- Get better data on operations
- Understand options for increasing efficiency
- Shrink carbon foot print
- Get recognition
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In Closing…

- **Encourage you to:**
  - Apply for DERA grant funding
  - Partner with key stakeholders to provide clean diesel strategies

- **EPA is committed to:**
  - Provide assistance to state and local governments
  - Test, certify and deploy the cleanest diesel technologies
  - Develop innovative financing approaches

- **We need your help to:**
  - Secure continued funds for emission reduction activities
Tools and Resources

www.epa.gov/cleandiesel

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Other Resources

- **Grant Opportunities**
  - www.grants.gov

- **EPA Renewable Fuels and GHG**
  - www.epa.gov/climatechange

- **EPA National Clean Diesel/DERA**
  - www.epa.gov/cleandiesel

- **EPA SmartWay**
  - www.epa.gov/smartway

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