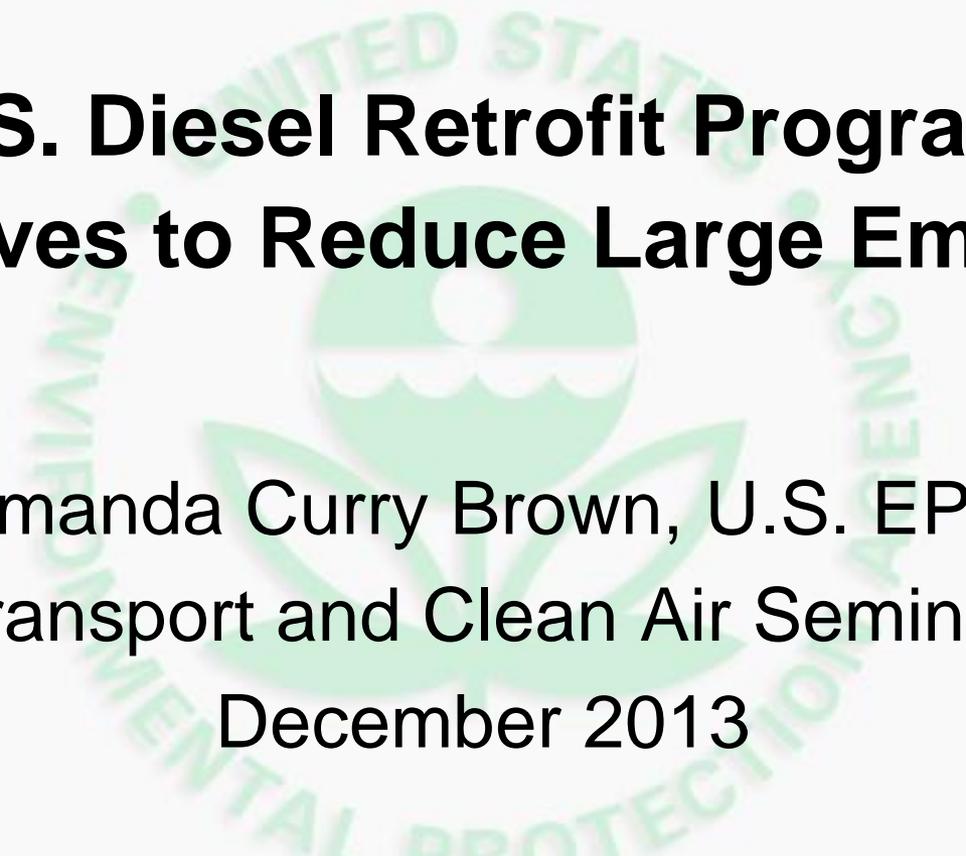




# **U.S. Diesel Retrofit Program: Incentives to Reduce Large Emitters**



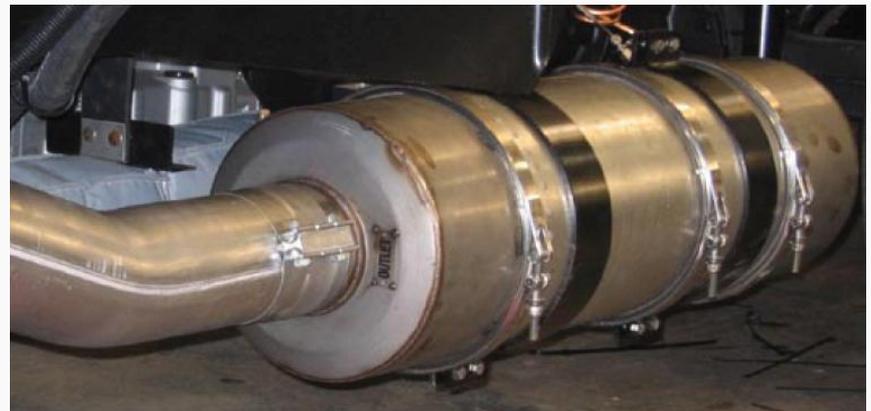
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- Regulations on the manufacture of new diesel engines are projected to significantly reduce emissions of black carbon (BC) as older engines reach the end of their useful lives. However, the tightest standards on new diesel engines can not clean up the existing fleet
- Diesel engines last a very long time, many for several decades. As a result, while these standards are very strict, it will take several more years for these PM reductions to be realized.
- Retrofit programs are implemented through the National Clean Diesel Campaign to achieve emission reductions from in-use mobile diesel engines.
  - Diesel Emissions Reduction Act (DERA) – Install exhaust control devices
  - SmartWay Transport Partnership Program – Promote fuel-saving technologies



- Cost-effective verified and certified clean diesel strategies maximize public health benefits and provide immediate, quantifiable emissions reductions.
  - Key technologies include:
    - Exhaust controls (DOCs, DPFs, CCVs, SCRs)
    - Engine upgrade kits, engine repowers
    - Cleaner fuels
    - Vehicle replacements
    - Idle reduction technologies
    - Hybrid vehicle technologies





- Require ultra-low sulfur diesel fuel
- Must be very carefully matched to the vehicle and engine by vendor
- Require monitoring of temperature and backpressure
- Engine and vehicle maintenance critical
- Require occasional cleaning for ash



- An alternative to vehicle or equipment replacement and engine repower is “engine upgrade.”
  - An engine upgrade is the process by which parts of an in-use engine are replaced with newer components, resulting in lower emissions.
- Results in improved fuel economy and lower NO<sub>x</sub> and lower PM emissions
  - Verified kits in US reduce PM and NO<sub>x</sub> 25% or more for specific engines.



- Since 2008, EPA has funded nearly 60,000 pieces of clean diesel technology through the National Clean Diesel Campaign.
  - These technologies include emissions and idle control devices, aerodynamic equipment, engine and vehicle replacements, and alternative fuel options.
- The projects meet critical local air quality needs by deploying both proven and emerging technologies much earlier than would otherwise occur.

# Diesel Emissions Reduction Act (DERA)



- Project funding for the National Clean Diesel Campaign comes from the Diesel Emissions Reduction Act (DERA).
- Under the Energy Policy Act (EPAAct 2005) the Diesel Emission Reduction Program was appropriated funds from 2008-2011.
  - DERA was reauthorized in January, 2011 for FY 2012 – FY 2016.
- Funding supports projects in all transportation sectors.
  - 2012 School Bus Replacement Funding Opportunity – 28 school districts and fleet owners received rebates to replace nearly 80 older school buses.
  - 2013 Funding: National Competition – all sectors
  - Upcoming funding opportunities
    - 2013 Construction Equipment Funding Opportunity
    - Ports-only RFP



- EPA estimates that projects funded through DERA have reduced well over 12,500 tons of PM, 203,900 tons of NO<sub>x</sub> and 2,300,000 tons of CO<sub>2</sub>.
- As a result of these pollution reductions, EPA estimates up to \$8.2 billion of health benefits annually.
  - For every dollar invested in reducing diesel exhaust, a community may achieve an estimated 13 dollars in public health benefits.
  - Additionally, there are climate benefits from these projects from reductions in black carbon and CO<sub>2</sub>.
- DERA American Recovery and Reinvestment Act funded projects are estimated to have created or retained more than 3,000 clean diesel related jobs, as reported by the grant recipients.

# SmartWay Transport Partnership Program



- The SmartWay Transport Partnership is an innovative collaboration between EPA and the freight industry. This voluntary partnership program uses strong market-based incentives to challenge companies to improve the environmental performance of their freight operations.
- Through their collaboration with EPA, SmartWay Transport partners improve their energy efficiency, save money, reduce greenhouse gas emissions, and improve air quality.
- The goals of the Partnership are to reduce:
  - Fuel consumption from trucks and rail delivering freight;
  - Operating costs associated with the delivery of freight;
  - Emissions of carbon dioxide, a greenhouse gas; and
  - NOx emissions and particulate matter, and air toxics that adversely affect air quality and contribute to health problems, especially in densely populated urban areas.



# SmartWay Transport Partnership Program



- Currently, there are five categories of SmartWay partners.
  - Freight Shippers
  - Logistics Companies
  - Truck Carriers
  - Rail Carriers
  - Truck Stops
- SmartWay vehicles meet voluntary equipment specifications that can reduce fuel consumption by 10 to 20 percent for 2007 long-haul tractors and trailers.
  - Each qualified tractor/trailer combination can save between 2,000 to 4,000 gallons of diesel per year.
  - Models that meet these equipment specifications save operators money and emissions of BC and other pollutants.
- The SmartWay Technology Program is responsible for testing, verification, and designation of SmartWay technologies.

# SmartWay Accomplishments



- To date, the partnership includes nearly 2,900 companies and associations committed to improving fuel efficiency.
- Since 2004, SmartWay Partners report:
  - Saving 65 million barrels of fuel (\$8.1 billion in fuel costs saved)
  - Eliminating 22,000 tons of PM
  - Eliminating 28 million metric tons of CO<sub>2</sub>
  - Eliminating 478,000 tons of NO<sub>x</sub>



## More information

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