

Voluntary Emission Reduction Program in U.S.

The 4th SINO-US Workshop on Motor Vehicle Pollution Prevention and Control

U.S. Environmental Protection Agency
Office of Transportation and Air Quality



OTAQ's Legacy Fleet Programs

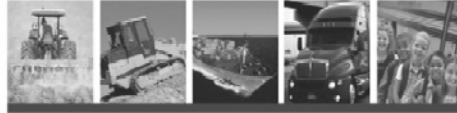
The National Clean Diesel Campaign



National Clean Diesel Campaign

SmartWay Transport Partnership





National Clean Diesel Campaign

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Existing Diesel Engines & Emissions

- Standards for new engines, no matter how tight, cannot clean up the existing fleet
- Reducing emissions from diesel engines remains one of the most important air quality challenges facing the country
- Even with more stringent standards set to take effect in the next decade, over the next 20 years, millions of existing engines will continue to emit large amounts of pollution
- This pollution will continue to contribute to numerous instances of premature mortality, asthma attacks, lost work days and many other health impacts

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Legislative Support for the National Clean Diesel Campaign

- Congress passed The Diesel Emissions Reductions Act (DERA), which was originally part of the Energy Policy Act of 2005.
- This law provided funding for grants and low-cost revolving loans to reduce diesel emissions from the “legacy fleet” of existing engines.
 - Authorized up to \$200m annually (2007 to 2011)
- Reauthorized in 2010
 - Authorized up to \$100m annually (2012 to 2016)
 - Added authority to provide rebates to individual vehicle owners

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The U.S. Experience: Focus on Key Sectors

- We target our efforts based on:
 - Levels of emissions
 - Public health impacts
 - Non-attainment zones
 - Proximity to sensitive populations
 - Cost-effectiveness of reduction strategies
 - Timely opportunities
 - e.g. Expansion of ports and major road construction
 - Support from stakeholders and the public



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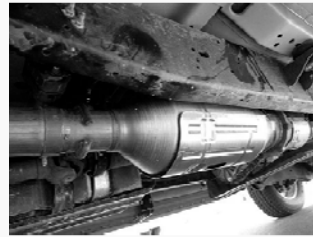


Diesel “Retrofit” Solutions

Retrofit Technologies can be:

any change to an engine system above and beyond that required by EPA regulations that improves the engine’s emission performance:

- Catalyst or filter
- Early engine or vehicle replacement
- Other devices or systems like SCR, CCV
- Engine upgrade (generally at rebuild)
- Cleaner fuels
- Idling reduction
- Combination of above



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Key Elements of the National Clean Diesel Campaign

- Technology Verification
- Competitive Request for Proposals
- Rigorous project review and selection
- Onsite visits, monitoring activities
- Training for Regional EPA staff and Grantees
 - Webinars
 - Technical information
 - Trouble shooting
- Implemented reporting requirements
- Partnerships, Collaboratives and Stakeholder Support

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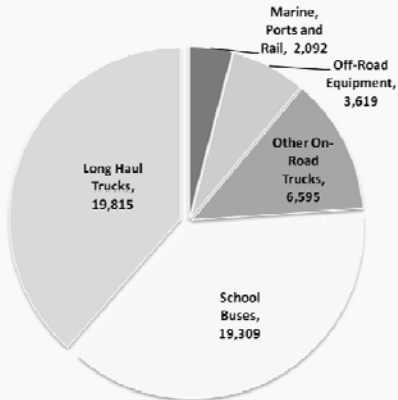
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Results of EPA's National Clean Diesel Campaign

DERA Funding
Retrofitted or Replaced Diesel Engines



- ❖ Over \$500 Million funded approximately 420 projects
- ❖ Over **50,000 vehicles and equipment** retrofitted, replaced or repowered
- ❖ For every dollar invested in reducing diesel exhaust, a community may achieve up to \$13 in public health benefits
- ❖ For every dollar invested in the program, as many as three dollars are invested by other government agencies, private organizations, industry and non-profit organizations

<https://www.epa.gov/diesel>

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SmartWay Drivers: Freight Sector Environmental Impacts

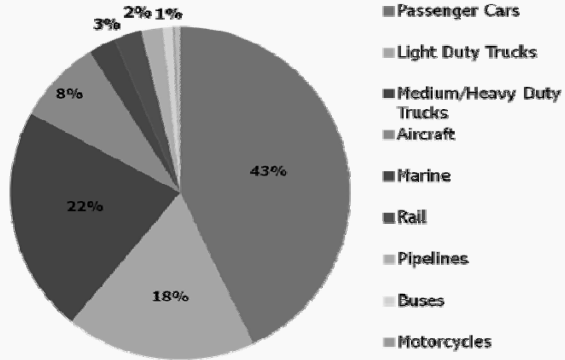
Transportation Greenhouse Gases

Transportation in U.S.:

- Over 1/4 total GHG emissions
- About 2/3 petroleum-based fuel use

In Transport Sector:

- Freight accounts for over 25% of all fuel consumed and GHGs emitted
- Freight is fastest growing source of transport GHGs



2011 Data - Inventory of U.S. Greenhouse Gas Emissions and Sinks (EPA 2013)

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SmartWay Drivers: Economic Impacts of Freight

- **Freight transportation is cornerstone of U.S. economy**
 - Trucking & rail deliver goods and materials that drive economic growth and development
 - Domestic commodity and consumer goods shipments
 - Exports and Imports
 - Freight system moves:
 - 17.6 billion tons of freight per year
 - 48.3 million tons of freight daily
 - 57 tons of freight per person each year
 - \$16.8 trillion worth of freight yearly
 - \$46 billion worth of freight daily
- **Transportation logistics costs \$836 billion (5.4% of GDP)**

US DOT Transportation Statistics Annual Report, 2012
CSCMP Annual State of Logistics, 2013

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SmartWay Drivers: Changing Needs of Industry

- **Customer and Consumer awareness**
 - Demanding corporate citizenship and accountability
- **Investor, Lender and Insurer requirements**
 - Assessing climate risk and business opportunities
- **Rising and volatile energy prices**
 - Fuel and driver wages continue to be largest cost centers for truck carriers: 62% of operating costs in 2011
- **Globalization of supply chains**
 - Increasing global opportunities and global competition
 - Other countries' carbon reporting requirements

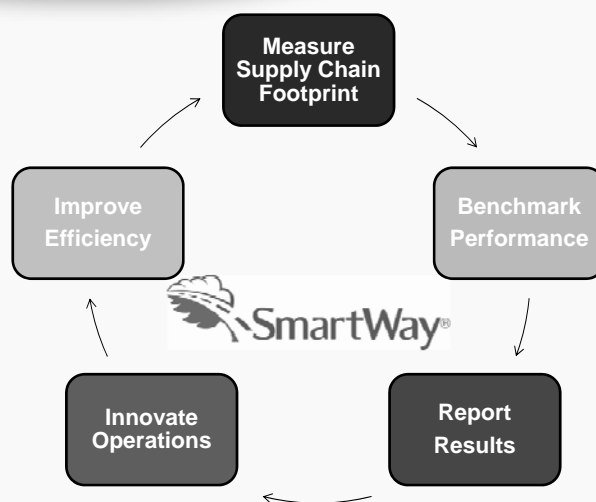
ATRI: An Analysis of the Operational Costs of Trucking: A 2012 Update

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How Does SmartWay work?



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SmartWay Snapshot Today

- Since 2004, SmartWay has grown to about 3,000 partners with broad freight industry support
 - Top 100 U.S. truck carriers and Major logistics firms
 - All Class 1 rail lines
 - Fortune 500 shippers from every major business sector
- Since 2004, SmartWay Partners saved:

51.6 million metric tons of CO ₂	738,000 tons NOx
120.7 million barrels of oil	37,000 tons PM
\$ 16.8 billion dollars in fuel costs	
- *Equivalent to taking over 10 million cars off the road for 1 year*

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SmartWay Serving as Global Role Model

- In 2012, NRCan adopted SmartWay into Canada
 - Joint US/Canada SmartWay program
- Mexico implemented a green freight program, *Transporte Limpio* (“Clean Transportation”) modeled after SmartWay
- Green Freight Europe modeled on SmartWay
- China implementing a multimillion dollar China Green Freight Initiative based on SmartWay
- Climate and Clean Air Coalition selected “Green Freight” as key transportation project to reduce climate emissions
 - Green Freight Call to Action and Action Plan in development
 - Green Freight initiative to be modeled after SmartWay
 - EPA developing training workbook to implement green freight programs
 - Other approaches are low sulfur fuel and cleaner vehicles

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For more information:

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