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

SmartWay Transport Partnership

June 9, 2014
U.S. Environmental Protection Agency
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
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

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
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

June 9, 2014
U.S. Environmental Protection Agency

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

June 9, 2014
U.S. Environmental Protection Agency
Results of EPA’s National Clean Diesel Campaign

- 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
SmartWay Drivers:
Freight Sector Environmental Impacts

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)

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)

CSCMP Annual State of Logistics, 2013
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

June 9, 2014 U.S. Environmental Protection Agency

---

How Does SmartWay work?

1. **Measure Supply Chain Footprint**
2. **Improve Efficiency**
3. **Benchmark Performance**
4. **Innovate Operations**
5. **Report Results**

June 9, 2014 U.S. Environmental Protection Agency
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 CO₂
  - 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

June 9, 2014  U.S. Environmental Protection Agency

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

June 9, 2014  U.S. Environmental Protection Agency
For more information:

www.epa.gov/smartway
smartway_transport@epa.gov

Buddy Polovick 734-214-4928
SmartWay Helpline 734-214-4767