



**Freight Movement and the Environment  
EPA SmartWay™ Transport Partnership**

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**Overview**

- Freight Background
- SmartWay Transport Partnership Intro
- SmartWay Initiatives
- Opportunities to Participate in SmartWay



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## Freight Background

- **Transportation accounts for 67% of fuel consumption in the US**
  - Freight accounts for 20% of energy use in transportation
- **Annually the 7 Million freight trucks and 20,000 locomotives:**
  - Travel over 200 billion miles
  - Consume over 35 billion gallons of fuel
  - Produce approximately 350 million metric tons of CO<sub>2</sub>
  - Will increase usage dramatically over next decade




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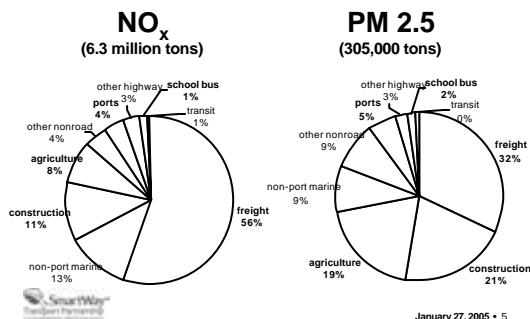
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## Mobile Source Diesel Emissions Inventory by Sector (2004)




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## What is the SmartWay Transport Partnership?

- **Voluntary partnership between EPA and the freight industry:**
  - Launched February 9, 2004
  - Developed jointly by EPA and 15 Charter Partners
  - No fees to participate, and open to companies of all sizes.
  - Freight industry interests: reduce fuel consumption, public recognition, improved public image.
  - EPA interests: reduced emissions (CO<sub>2</sub>, NO<sub>x</sub>, PM) and improved energy security.



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## The Charter Partners



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## 3 Major SmartWay Transport Components

- **Corporate Partnerships**
  - carriers and shippers working to reduce fuel consumption and emissions.
- **National Transportation Idle-Free Corridors**
  - goal to eliminate unnecessary idling along major transportation routes.
- **Rail/Intermodal**
  - promote greater use of appropriate intermodal strategies.



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## How Does the Partnership Work?

- **Carriers (e.g., Schneider, Norfolk Southern):**
  - Agree to work toward improved efficiency, reduced emissions and fuel consumption over a 3 year period.
  - Implementation of various technologies and strategies will help these partners reach their goals: idle reduction, advanced aerodynamics, single wide tires, driver training, improved logistics, etc.
- **Shippers (e.g., JC Penney):**
  - Agree to work toward shipping more of their product with SmartWay Carrier Partners, as well as improving their operations over a 3 year period.
- **Logistics (e.g., NYK)**
  - Agree to work toward shipping more freight with SmartWay Carrier Partners, as well as bringing more of their contracted carriers into the Partnership.
- **Affiliates (e.g., American Trucking Associations)**
  - Work to promote the Partnership to their members and support the activities of the Partnership. NJMTA was the first SmartWay Affiliate.



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## The SmartWay Transport Partnership Today

- **297 Partners – 215 Trucking Carriers, 8 Rail Carriers, 26 Shippers, 7 Shipper-Carriers, 11 Logistics, 30 Affiliates**
  - Represent nearly 5 percent of the trucking industry, with over 300,000 tractors and 500,000 trailers traveling over 14 billion miles per year.
- **Shippers incorporating SmartWay participation into carrier hiring decisions**
  - IKEA North America shipping only with SmartWay Partners.
  - Sharp Electronics strongly encouraging carriers to become Partners.



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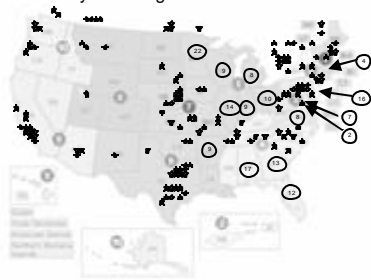
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## SmartWay Transport Partners

(as of 1/1/06)

⇒ Headquarters locations of 297 SmartWay Transport Partners by EPA Region



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## Raising Industry and Public Awareness About SmartWay

- Placements in dozens of publications/outlets (e.g., Business Week, Forbes)



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## SmartWay Initiatives

- Goal: deploy highly efficient, low -emitting trucks
  - The Technology Package
    - Tires, aero, idling, catalyst or filter
  - Innovative Air Quality Guidance for PM and NOx Emission Reductions
    - Deals with interstate trucking (trucks moving in and out of non-attainment areas)
  - Innovative Financing
    - State programs, national, CMAQ



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## Technology Package

- **“SmartWay Upgrade Kit”**: Suite of technologies that result in significant fuel savings and substantial emission reductions
  - Idle Reduction Device (e.g., Bunk Heater or Auxiliary Power Unit)
  - Trailer Aerodynamics
  - Aluminum Wheels for Single-Wide Tires
  - Emission Control Devices (e.g., Diesel Oxidation Catalyst)



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## Innovative Air Quality Guidance

- Long haul Class 8 trucks produce more emissions than any other diesel class
  - However, difficult to credit because they are interstate
- Historical obstacle has been demonstrating the amount of time a truck operates in a state or nonattainment area
  - Can't rely on GPS or RFID technology pinpointing location of trucks at all times
- New air quality guidance could:
  - Encourage multi-state funding of SmartWay Upgrade Kits (e.g., multi-state CMAQ awards for trucks traveling I-95)
  - Allow States to 'share' air emission credits in SIPs or Transportation Conformity
  - Quantify the NOx benefits of improving fuel economy



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## Innovative Financing Programs

- Companies often lack the capital to purchase these types of technologies
- To assist them, SmartWay is developing two types of programs
  - Straight loans offered with terms that are more attractive than currently available commercial loans.
    - Working to develop loan packages with State agencies, banks, and other federal entities.
    - Partnering with programs in Arkansas and Minnesota, and developing programs in Oregon and Pennsylvania
  - Performance Contracting arrangement based on the Energy Service Company (ESCO) model.
    - Pursuing a grant program to create pilot project for ESCO
    - Technologies would be given to companies, who will pay a portion of the energy savings they achieve from the technologies



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## SmartWay Upgrade Kit Loan Calculator

Technology	Cost <sup>1</sup>	Monthly Loan Payment @ 6% for 48 months	Benefits <sup>2</sup> (Monthly Fuel Savings)	Net Monthly Savings
Idle Reduction Device – Blank Heater	\$1,500	\$33	\$195	\$166
Idle Reduction Device – Auxiliary Power Unit (APU)	\$7,000	\$161	\$300	\$139
Aluminum Wheels for Single Wheel Tires	\$1,000	\$23	\$190	\$167
Trailer Aerodynamics	\$2,000	\$45	\$188	\$143
Emission Control Device – Diesel Oxidation Catalyst (DOC)	\$1,000	\$23	\$0 (20-50% PM emission reduction)	—
Emission Control Device – Particulate Matter (PM) Filter	\$6,000	\$138	\$0 (90% PM emission reduction)	—

<sup>1</sup> Equipment cost may vary depending on vendor, equipment specifications, quantities purchased, etc.  
<sup>2</sup> Monthly fuel savings are estimated for a long-haul Class 8B tractor-trailer using 18,000 gallons of diesel per year and idling 1,200 hours per year for heat and 2,400 hours per year for heating and cooling. Fuel cost is \$2.50/gallon.



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## SmartWay Upgrade Kit Loan Calculator

Possible SmartWay Upgrade Kit Options	Total Cost	Monthly Loan Payment @ 6% for 48 months	Benefits (Monthly Fuel Savings)	Net Monthly Savings
Heater, Tires, APU, DOC	\$7,500	\$179	\$490	\$311
APU, Tires, APU, DOC	\$11,400	\$269	\$600	\$331
Heater, Tires, APU, PM Filter	\$11,500	\$271	\$495	\$224

<sup>1</sup> Equipment cost may vary depending on vendor, equipment specifications, quantities purchased, etc.  
<sup>2</sup> Monthly fuel savings are estimated for a long-haul Class 8B tractor-trailer using 18,000 gallons of diesel per year and idling 1,200 hours per year for heat and 2,400 hours per year for heating and cooling. Fuel cost is \$2.50/gallon.



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## State Infrastructure Banks

- Many State DOTs have used Federal Highway funding to create State Infrastructure Banks (SIBs), which are revolving loan funds for transportation projects
- According to DOT, SIBs can fund anything that CMAQ could fund
- Relationships between our diesel programs and SIB officials are not well developed
- Trucking industry can apply for SIB funding
  - Currently only one trucking/emissions reduction project has been done through SIBs (New York Thruway Authority received funds for a stationary idle reduction center)



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## How can you get involved?

- Support loan and grant programs
  - Direct capital investment for fuel saving and emission reduction technologies in ground freight transportation sector
- Join the SmartWay as a partner:
  - Promote SmartWay fuel saving and environmental goals
  - Adopt strategies to cut fuel costs and improve environmental performance of city and state fleet operations



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## For More Information

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