



A **stronger** economy.

A **healthier** environment.

**SmartWay**  
**Transport Partners**

**DELIVER.**



Improving Efficiency of Freight Movement with  
EPA's SmartWay® Transport Partnership

## What is the SmartWay Transport Partnership?

- **Launched February 9, 2004**
- **Voluntary partnership between EPA and the freight industry:**
  - Developed jointly by EPA and 15 Charter Partners
  - 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
  - No fees to participate
  - Open to companies of all sizes



## What is the SmartWay Transport Partnership?

- **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:**
  - 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:**
  - 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:**
  - Logistics companies, such as CH Robinson, serve as intermediaries between carriers and shippers
  - Agree to work toward shipping more freight with SmartWay Carrier Partners, as well as bringing more of their contracted carriers into the Partnership.
- **Affiliates:**
  - Affiliates are not-for-profit organizations, such as Lane Regional Air Pollution Agency and California Trucking Association, that promote the Partnership
  - Agree to promote the Partnership to their members through workshops, press releases, etc.



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## How do Trucking Companies Achieve Goals Under Partnership?

- Idle Reduction\*
- Single Wide Tires\*
- Improved Aerodynamics\*
- Emission Control Devices
- Driver Training
- Improved Freight Logistics
- Automatic Tire Inflation Systems
- Reducing Highway Speed
- Low Viscosity Lubricants
- Intermodal Shipping



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## Idle Reduction Technologies

- **Automatic Shut-Down/Start Up System**
- **Battery Powered HVACs**
- **Direct-Fired Heater**
- **Auxiliary Power Unit/Generator Set**
- **More information on available on-board idle reduction technologies can be found at**  
<http://www.epa.gov/otaq/smartway/idlingtechnologies.htm>



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## Idle Reduction—SmartWay Partners

- From data for 42 SmartWay trucking companies, the following devices are projected for purchase between 2004 and 2007:
  - 15,000 new direct-fired heaters
  - 6,660 new auxiliary power units/generator sets
  - 177 new battery-powered HVAC systems
  - Truck stop electrification: IdleAire \$320M bond sale for deployment of 210 sites representing ~13,000 parking spaces over the next 15 months.



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## Trailer Aerodynamics

- **Gap Fairing:** Attaching aerodynamic equipment to the front of the trailer to reduce the gap between the tractor and trailer can improve fuel economy by up to 2%.
- **Side Skirt:** Attaching aerodynamics to the sides of the trailer reduces the space between the lower edge of the trailer sides and the ground, and can improve fuel economy by up to 4%.
- Examples - <http://www.freightwing.com/> and <http://www.laydoncomp.com>



Gap fairing



Side Skirt



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## SmartWay Partners with Side Skirts and Gap Fairings



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## Trailer Aerodynamics (cont.)

### Nose Cone and Trailer Tail:

- Attached to front or back of trailer to reduce aerodynamic drag: fuel savings up to 3%.
- Example - <http://www.nosecone.com/>



Curtain Van Trailers

### Nose Cone



Enclosed Auto Trailers

### Trailer Tail



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## SmartWay Partner with Nose Cone



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## Single-Wide Tires with Aluminum Wheels

- **Single-wide tires and aluminum wheels**
  - Michelin X-One XDA - drive axles
  - Bridgestone-Firestone Greatec - trailer axles
  - Estimated cost - \$3,000 for complete retrofit
- **Single-wide tires improve FE through reduced rolling resistance with improved materials and architecture and less weight**
- **Fuel savings of approx. 4% to 7%**



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## SmartWay Partner with Single-Wides



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## Innovative Financing— the SmartWay Upgrade Kit

- **Goal: deploy highly efficient, low-emitting trucks**
- **“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
  - Single-Wide Tires with Aluminum Wheels
  - Emission Control Devices (Diesel Oxidation Catalyst or PM Filter)



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## Upgrade Kit 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.
    - Implemented 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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## The SmartWay Upgrade Kit Loan Calculator

- Investing in the technologies in the Upgrade Kit makes good financial sense.
- For an average long-haul trucker, purchasing these technologies will result in a **positive net cash flow** from the very first day of installation.
- Monthly fuel savings greater than the loan payment on the equipment.
- SmartWay has developed a simple, interactive calculator to demonstrate how purchasing these technologies will put cash in your pocket.



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# SmartWay Upgrade Kit Loan Calculator

## Calculator for fleet owners (multiple truck):

Equipment	Total Cost	% Fuel Savings	Annual Fuel Savings	Monthly Fuel Savings	Monthly Loan Payment	Net Monthly Savings
Heater, Tires, Aero, DOC	\$7900	13%	\$5346	\$446	(\$182)	\$264*

### STEP 1: ENTER YOUR TRUCK AND LOAN INFORMATION.

Enter your basic vehicle and loan numbers here. See below\* for help with numbers.

Total Number of Trucks in Fleet:

Total Fuel Use for Fleet:  (Gallons)

Average Annual Fuel Use:  (Gallons)

Cost of Fuel:

Yearly Fuel Cost: \$ 40500

Monthly Fuel Cost: \$ 3375

Average Annual Idling per Truck:  (Hours)

Loan Period:  (Months)

Loan Interest Rate:  %

### STEP 2: SELECT TECHNOLOGIES OF YOUR TRUCK.

Check the technology box below to test at various combinations of technologies for your truck. You can check one or as many items as you want.

Technology	Quantity	Cost
<input checked="" type="checkbox"/> <a href="#">Bunk Heater (Heater)</a>	<input type="text" value="1"/>	\$ 1500
<input type="checkbox"/> <a href="#">Auxiliary Power Unit (APU)</a>	<input type="text" value="1"/>	\$ 7000
<input checked="" type="checkbox"/> <a href="#">Aluminum Wheel Sets for Single Wide Tires (Tires)**</a>	<input type="text" value="1"/>	\$ 3000
<input checked="" type="checkbox"/> <a href="#">Trailer Aerodynamics (Aero)</a>	<input type="text" value="1"/>	\$ 2400
<input type="checkbox"/> <a href="#">Automatic Tire Inflation (ATI)</a>	<input type="text" value="1"/>	\$ 900
<input checked="" type="checkbox"/> <a href="#">Oxidation Catalyst (DOC)</a>	<input type="text" value="1"/>	\$ 1000

\*Click  to insert "typical" number of most long-haul truck trips and loan amounts. These are just suggested numbers to help you get started. You can change these numbers as you wish.

## For More Information

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