

The SmartWaySM Transport Partnership is a voluntary public-private initiative designed to improve the environmental performance of the freight delivery system in the United States through money saving, market-based approaches.

The Challenge

From ports to manufacturing facilities and distribution centers to your front door, trucks and rail systems are part of a sophisticated, fast moving ground freight delivery system that delivers products safely and on time. Ground freight is an integral part of the United States economy. According to government and industry statistics, 85 percent of the total value of United States cargo is trucked, accounting for 66 percent of all freight by weight. Trucking-related occupations employ about 10 million people. Railroads represent four percent of the total value of all freight by weight, carrying another 16 percent of the nation's freight by weight.

However, ground freight is a major source of greenhouse gas emissions, responsible for approximately 20 percent of carbon dioxide (CO₂) emissions from all transportation sources. Ground freight is also a significant source of smog-forming emissions and other harmful air pollutants that impact public health, particularly the young and the elderly. Ground freight accounts for 40 percent of the oxides of nitrogen emissions (NO_x) and 31 percent of the particulate matter emissions (PM) from transportation sources. These emissions can impact air quality and contribute to climate change.

The Solution

The U.S. EPA's SmartWay Transport Partnership is a voluntary public-private partnership that addresses greenhouse gas emissions, fuel consumption, criteria pollutants (NO_x and PM), and operating costs associated with ground freight transportation operations. The SmartWay Transport Partnership addresses other key national concerns: energy security, energy savings, and environmental justice.

- **Freight vehicles consume approximately 20 percent of energy consumed by the U.S. transportation sector. By conserving fuel from these vehicles, we reduce our dependence on imported oil, thereby safeguarding our nation's energy security.**
- **Promoting new strategies and technologies that improve fuel economy will improve efficiency and reduce fuel costs for freight fleets.**
- **Reducing idling at truck stops addresses community health and environmental justice issues prevalent in certain urban areas.**

Through this voluntary partnership, EPA and its partners expect to eliminate 33 to 66 million metric tons of CO₂ emissions and up to 200,000 tons of NO_x emissions per year by 2012. This represents savings of as much as 150 million barrels of oil per year – equivalent to taking about 12 million cars off the road.

Working together, SmartWay Transport Partners can incorporate various strategies and technologies to achieve these goals.

Carriers can integrate cost saving, fuel efficient technology and strategies into their fleet:

- Idle Reduction
- Improved Aerodynamics
- Improved Freight Logistics
- Automatic Tire Inflation Systems
- Driver Training
- Advanced Lubricants
- Advanced Powertrain Technologies

Shippers can implement facility measures that improve efficiency and reduce emissions:

- Intermodal Shipping
- Pick-up and Delivery Scheduling
- Full Truck Loads
- Preferential Docking
- Warehouse Improvements
- Electric Forklifts
- Driver Comfort Stations
- Idle Reduction at Docks

Partnership Design

SmartWay Transport Partners are progressive corporations and organizations that recognize they can improve their business and the environment at the same time. Companies that provide and hire freight delivery services (carriers and shippers, respectively) become SmartWay Transport Partners by committing to improve the environmental performance of their freight delivery operations. SmartWay Transport Carriers commit to integrate innovative cost saving strategies into their fleet operations. SmartWay Transport Shippers commit to ship the majority of their goods with SmartWay Transport carriers. Companies that meet SmartWay Transport Partnership requirements will benefit from reduced operating costs and enhanced visibility.

Partners that demonstrate superior performance will earn the right to display the SmartWay Transport logo.

By defining clear and achievable goals and committing to ambitious strategies, participants in the SmartWay Transport Partnership are actively addressing concerns about greenhouse gas reductions and air quality.

Partner Enrollment

To become a SmartWay Transport Partner, carriers must:

- Measure current environmental performance with the SmartWay Transport F.L.E.E.T. (Fleet Logistics Energy and Environmental Tracking) Performance Model for carriers.
- Commit to improve that performance within three years.
- Sign the SmartWay Transport Partnership Agreement.

To become a SmartWay Transport Partner, shippers must:

- Assess the current proportion of goods dispatched with SmartWay Transport Partner Carriers using the FLEET Performance Model for shippers.
- Commit to ship at least 50 percent or more of their goods with SmartWay Transport Partner Carriers.
- Assess and commit to improve their facility transportation emissions within three years.
- Sign the SmartWay Transport Partnership Agreement.

To meet their goals, all Partners must:

- Create and submit an Action Plan describing how shipper or carrier will achieve commitment.
- Report progress toward achieving the goal to EPA annually.

The complementary relationship between shippers and carriers maximizes the opportunities for Partners to support one another in achieving mutual environmental goals. To join the SmartWay Transport Partnership, simply send the completed FLEET Performance Model and signed Partnership Agreement to EPA.

Partner Benefits

Participation in the SmartWay Transport Partnership provides tangible benefits for companies:

Shippers can:

- better understand their environmental transportation impact.
- reduce the environmental impacts of freight operations by simply choosing to do business with SmartWay Transport Carriers.
- join a community of leaders and enhance their public image by joining the SmartWay Transport Partnership.

Carriers can:

- better understand the environmental impact of their fleet operations.
- reduce their environmental impact by using recommended technologies and strategies.
- save money by incorporating fuel saving strategies into their fleet operations.
- become preferred carriers of SmartWay Transport Shippers.
- join a community of leaders and enhance their public image by joining the SmartWay Transport Partnership.

Using the SmartWay Partner Logo

Shippers and carriers that demonstrate superior environmental performance will be able to advertise their status as SmartWay Transport Partners using the official SmartWay Transport Partner logo.



Logo eligibility is determined based upon results of the FLEET Performance Model for either carriers or shippers. The FLEET Performance Model for both carriers and shippers generates a score, which EPA uses to determine if a company qualifies to use the SmartWay Transport Partner logo.

To qualify to use the SmartWay Transport Partner logo:

- Carrier Partners must have a FLEET Performance Model Composite score of 1.0 or higher.
- Shipper Partners must have a FLEET Performance Model score of 50 percent or higher.

Companies that qualify must adhere to EPA's SmartWay Graphics Standards and Use Guide (available at www.epa.gov/smartway), as well as sign and return the Logo Use Signature Page before using the SmartWay Transport Partner logo.

EPA Assistance

EPA provides software models to assist carriers and shippers with assessing the current emissions and fuel efficiency of fleets and freight operations (e.g. the SmartWay Transport FLEET Performance Model). These tools also allow fleets and companies to evaluate the efficiency improvements and emission reductions available through application of various technologies and strategies. EPA staff is available to answer questions concerning the models and to provide technical assistance.

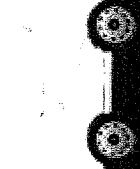
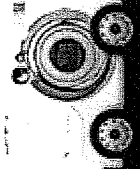
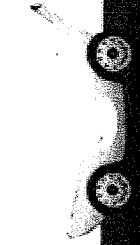
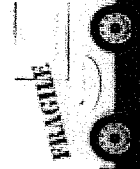
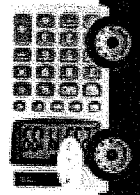
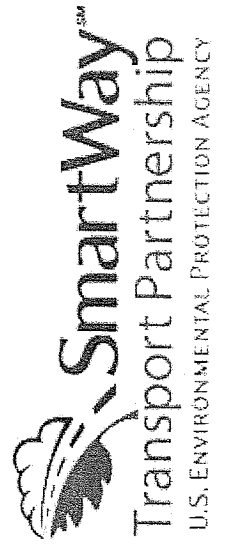
For More Information

Visit www.epa.gov/smartway for more information on the Partnership.

SmartWay Transport: Fuel Saving Technologies

Ken Adler
US Environmental Protection Agency

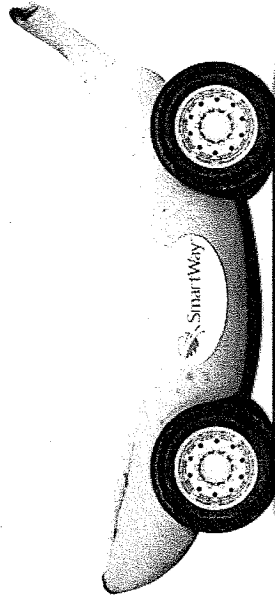
August 16, 2007



What is SmartWaySM?

- SmartWay Transport Partnership designation = commitment to conserve fuel and reduce emissions in transportation sector
 - By 2012, the program aims to save between 3.3 and 6.6 billion gallons of diesel fuel per year which translates to eliminating between 33 - 66 million metric tons of CO₂ emissions and up to 200,000 tons of NOx emissions per year
- SmartWay is free to join & open to companies of any size
 - Shipping companies join partnership and commit to ship 50% or more of their product with SmartWay trucking partners, as well as improving their freight operations over 3 year period
 - Trucking companies join partnership and commit to improve fuel efficiency and reduce emissions over a 3 year period

SHIP SMARTER



An environmentally appealing way to transport goods that's also deliciously profitable.

SmartWay Transport helps shippers and for-hire carriers lower greenhouse gases and other emissions, while at the same time giving the average truck a fuel savings of \$2,000 per year.

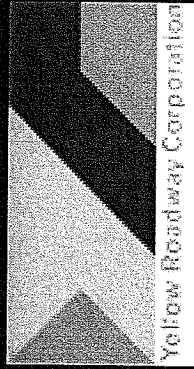
To find out more about this new partnership, call for your info kit at 1-734-214-4767 or visit www.epa.gov/smartwayshipper.

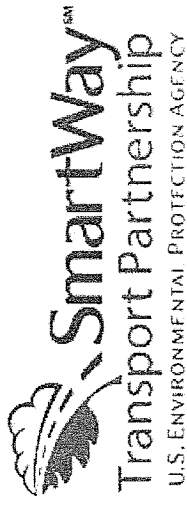


An incentive program from the U.S. Environmental Protection Agency

SmartWay Partners Today

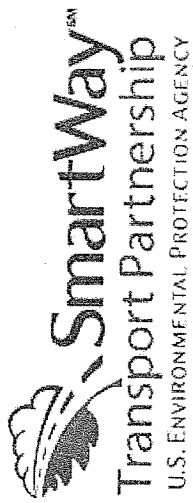
- Over 500 SmartWay Partners
 - Drive approximately 330,000 trucks and nearly 23 billion miles per year
- Reduce over 3 million tons of CO2 emissions per year
 - Equivalent to emissions from 523,000 cars
- Save over 272 million gallons of diesel fuel per year or \$728 million dollars in annual fuel costs





Benefits for Partners

- Carriers:**
 - Gain competitive advantage as shippers strive to move more goods with SmartWay Transport carriers
 - Track emissions and fuel consumption
 - Do cost benefit analyses for different technologies and/or strategies
- Shippers and Logistics Companies:**
 - Better info about transportation footprint
 - Demonstrate corporate citizenship by hiring environmentally minded carriers
- Affiliates:**
 - Access to tools for marketing and outreach
 - Public recognition for promoting environmental goals



Types of Carrier Strategies For New and Existing Trucks & Locomotives

- Idling Reduction
- Improved Aerodynamics for tractors and trailers
- Low rolling resistance tires including super singles
- Speed management
- Increased/improved inter-modal operations
- Exhaust after-treatment devices
- Lightweight materials
- Advanced lubes
- Alternative and sustainable fuels
- Hybrid technologies

Idle Reduction Technologies

For Trucks and Locomotives

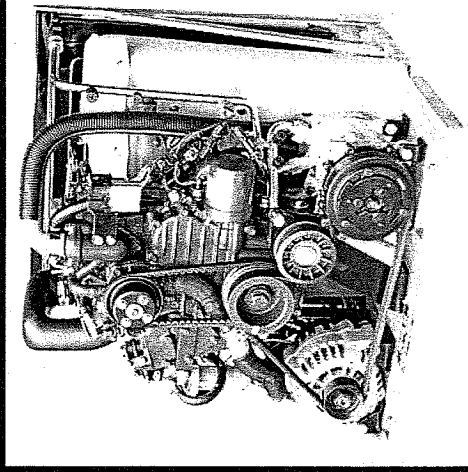
Average fuel savings Emissions Controlled

Trucks: 1 gal/hr

CO₂, NOx, and PM

Rail: 4 - 12 gal/hr

- Automatic Shut-Down/Start Up System
- Battery Powered Systems
- Diesel Driven Heating System
- Auxiliary Power Unit/Generator Set
- Truck Stop Electrification



Trailer Aerodynamics

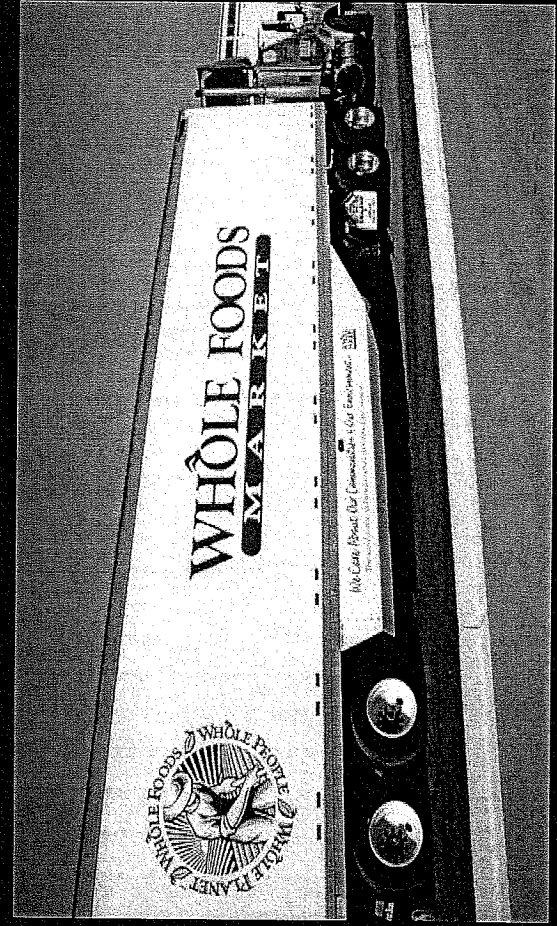
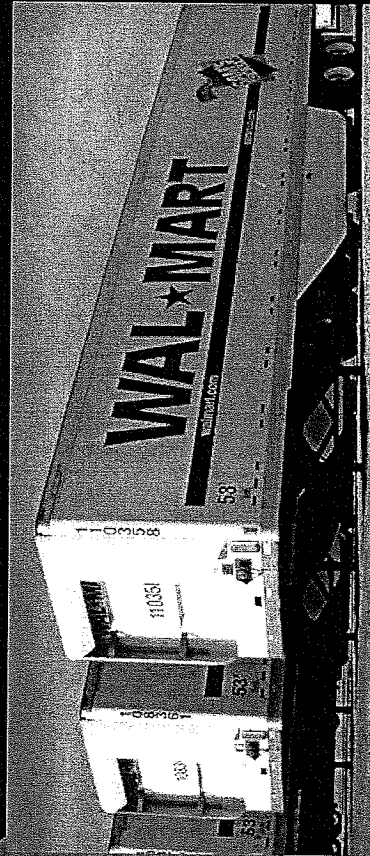
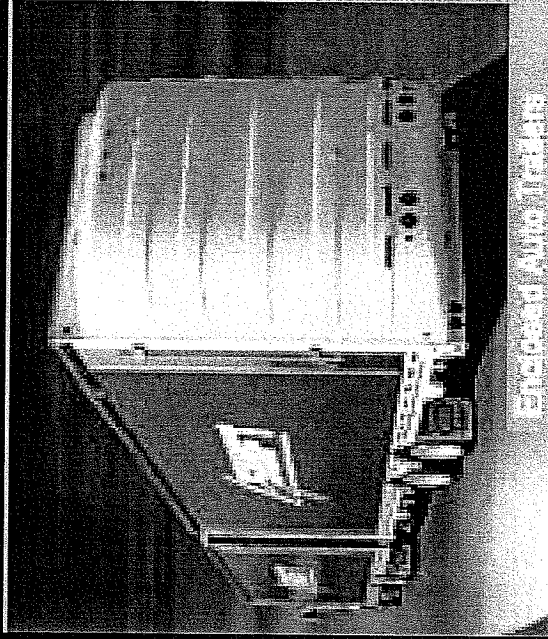
Average fuel savings

Trucks: 5%

Emissions Controlled

CO₂, NOx

- Trailer Fairings, Side-skirts
- Nose Cone and Trailer Tail



Low Rolling Resistance Tires

Single Wide Base and Improved Duals

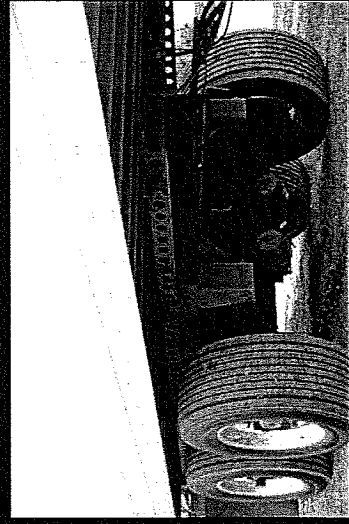
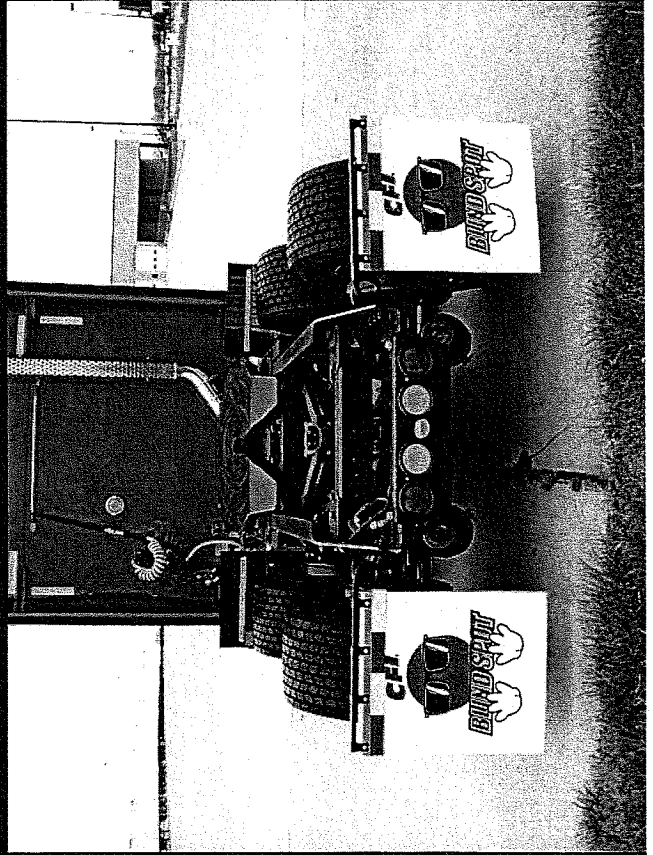
Average fuel savings

Trucks: 4 - 5%

Emissions Controlled

CO₂, NOx

- Single-wide tires and aluminum wheels
 - Reduced rolling resistance
 - Reduced weight
- Low rolling resistance duals can be as effective as singles



Exhaust After-Treatment Devices

Average fuel savings

Emissions Controlled

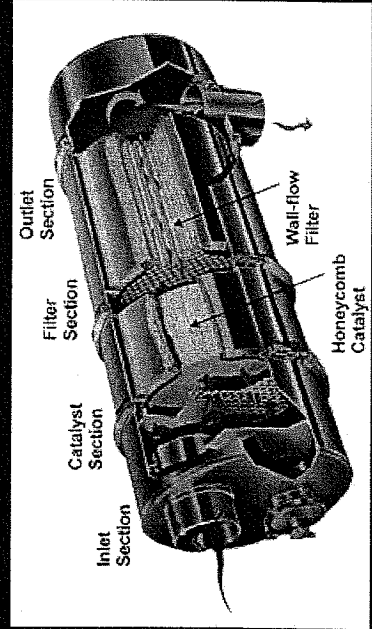
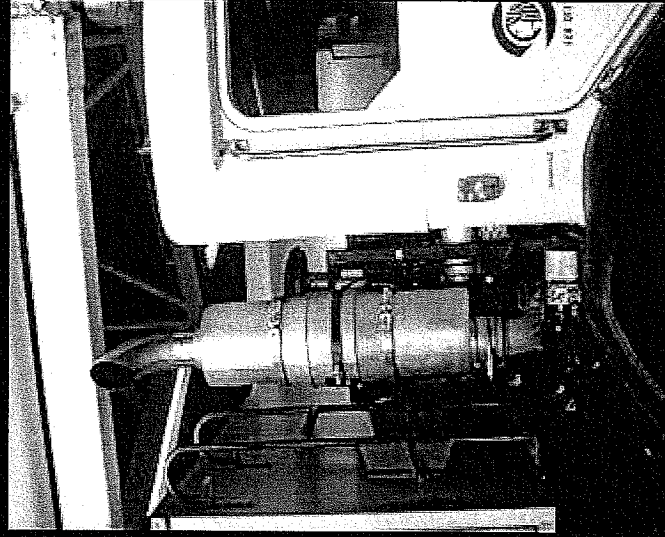
PM

❑ Diesel Flow Through Filter

- Estimated cost: \$5,500
- Reduce PM by 50%

❑ Particulate Matter Filters

- Estimated cost \$10,000
- Reduce PM by 80% – 90%



The SmartWay Truck and Trailer

Required for SmartWay Tractor Designation
 3.9% Improvement

Tractor Mounted Gap Reducers

Integrated Cab Roof Fairing

Aero Mirror

Aero Profile Tractor

2007 MY Engine

Aero Bumper

Fuel tank Side Fairings

Low Rolling Resistance Tires

Trailer Mounted Gap Reducers

Required for SmartWay Trailer Designation
 8.8% Improvement

Side Reduction Technology

Trailer Rear

Fairings or Boattail

Or

Tractor Side Fairings

Low Rolling Resistance Tires

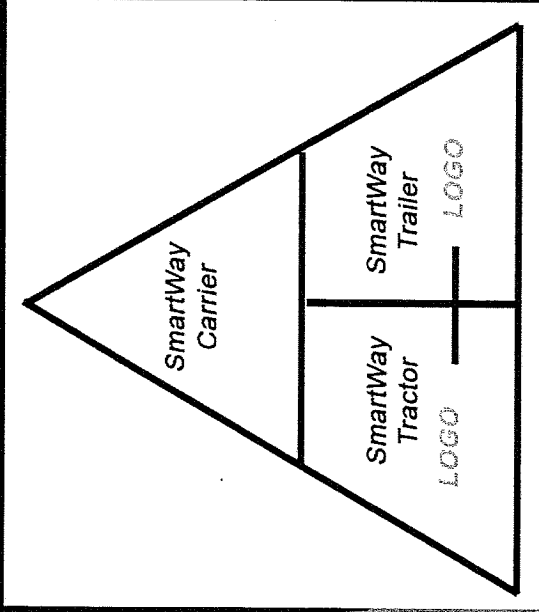
A SmartWay Truck will be 22.6% More Efficient than an Average Truck on the Road Today
 The Expected Fuel Economy of a SmartWay Truck will be 7.4 mpg Compared to the Current Average of 6.0 mpg



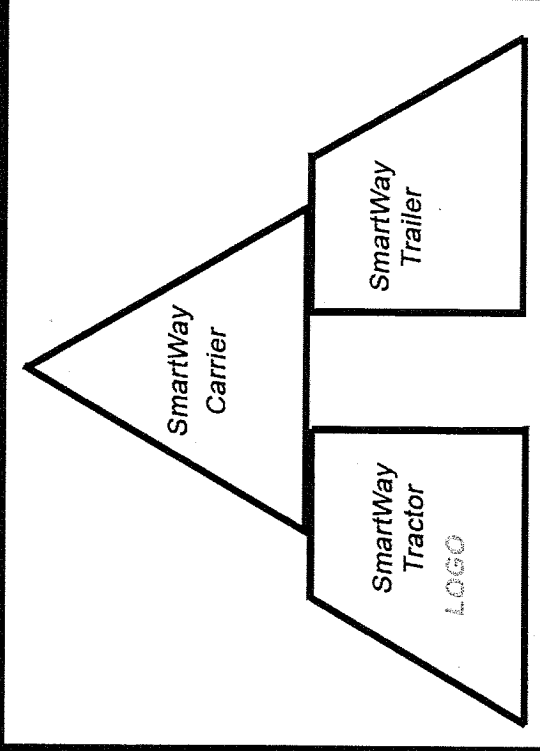
The SmartWay Truck: Logo Usage

To operate a SmartWay Truck, a carrier needs to buy BOTH a SmartWay Tractor and a SmartWay Trailer and fulfill the carrier requirements and be a SmartWay Member

SmartWay tractors and SmartWay Trailers can be labeled as such at point of sale in: Sales literature, inside the vehicle, company website



If the tractor and trailer are guaranteed to operate together, the logo may be placed on the tractor and trailer



If the trailer is not guaranteed to operate with the tractor, then ONLY the tractor may be labeled

SmartWay Calculator

RESULTS:

Equipment	Total Cost	% Fuel Savings	Annual Fuel Savings	Monthly Fuel Savings	Monthly Loan Payment	Net Monthly Savings
APU, Tires, Aero	\$825000	17%	\$381337	\$31778	(\$20141)	\$11637

STEP 1: ENTER YOUR TRUCK AND LOAN INFORMATION.

Enter your basic vehicle and loan numbers here **OR** Click the "Load Typical Values" button below for help with typical long haul truck numbers.

Total Number of Trucks in Fleet

Total Fuel Use for Fleet (Gallons)

Average Annual Fuel Use (Gallons)

Cost of Fuel

Average Yearly Fuel Cost

Average Monthly Fuel Cost

Average Annual Idling per Truck (Hours)

Loan Period (Months)

Loan Interest Rate %

STEP 2: SELECT TECHNOLOGIES OF YOUR TRUCK.

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

Technology

Bunk Heater (Heater) **Quantity** **Cost**

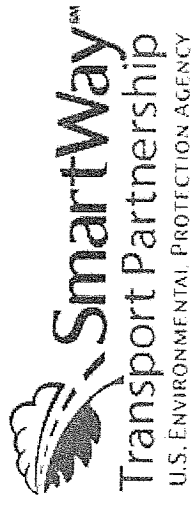
Auxiliary Power Unit (APU) **Quantity** **Cost**

Aluminum Wheel Sets for Single Wide Tires (Tires) **Quantity** **Cost**

Trailer Aerodynamics (Aero) **Quantity** **Cost**

Automatic Tire Inflation (ATI) **Quantity** **Cost**

Oxidation Catalyst (DOC) **Quantity** **Cost**

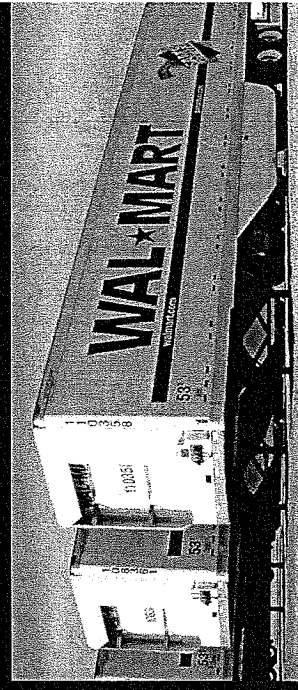
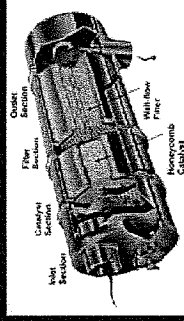
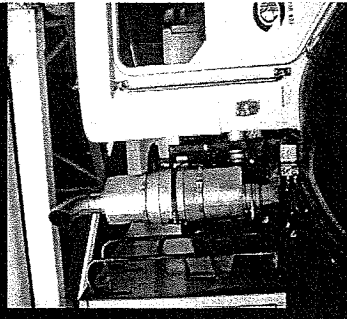


How do Partners Measure Progress?

- Freight Logistics Environmental and Energy Tracking (FLEET) Performance Model
 - Calculate tons of CO₂, NO_x, and PM
 - Determine effectiveness of strategies used in the fleet (e.g., aerodynamics, idling reduction)
 - Project the effectiveness of strategies a fleet could add in the future
 - Estimate cost savings and payback period for strategies

Innovative Financing

- Goal is to increase access to capital with loan programs and other innovative financing concepts for SmartWay Upgrade Kits and upgraded used trucks
 - SmartWay Upgrade Kits “package” together bundles of tested technologies for ready installation and access
 - Fuel Saving Devices:
 - Aerodynamic fairings for tractors and trailers
 - Low-rolling resistance tires
 - Tire inflation systems
 - Idle reduction devices
 - Exhaust After-treatment Devices:
 - Particulate Matter Filters
 - Diesel Oxidation Catalysts

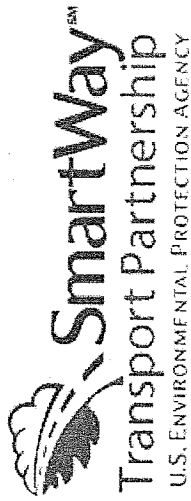


SmartWay Upgrade Kit Example

Device	Cost/Unit (Retrofit)	PM Reduction	NOx Reduction	FE/CO ₂ Change
Super Single Tires w/ alum. wheels	\$5,600	--	4%	4%
Trailer Aero Kit	\$2,400	--	5%	5%
APU	\$8,500	10%	9%	9%
Totals:	\$16,500	10%	17%	17%

- Assume 100,000 miles/year @ 6 mpg = 16,667 gallons/year
- Fuel savings: 2,833 gallons @ \$2.50/gallon = \$7,083/year
- Payback 2.3 years \$16,500/\$7.083
 - Or can do a five year loan @ 12% APR:

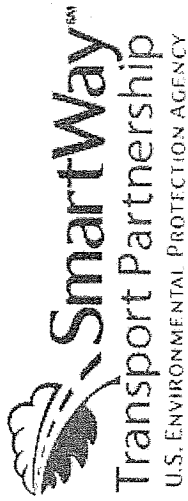
Monthly Fuel Savings:	\$578
Monthly Loan Payment	(\$367)
Monthly Cash for Driver:	\$211



SmartWay Plus Loan Program

- SmartWay “Plus” Loans for Used Trucks
 - Very favorable loan terms for upgraded used trucks
 - Focus is on emission controls
 - Must use EPA- or CARB-verified emissions equipment
- Provides the potential to leverage more funding opportunities
 - Carl Moyer (California)
 - USDA Community Development Banks
 - State tax exempt bonds
 - TERC (Texas)
 - Federal loan guarantee programs
 - DOT SIBs, Private Activity Bonds

2004 MY Truck on the Used Market	
Purchase Price:	\$75,000
Term (12%/ 6% Interest):	36 Months
Monthly Payment:	\$2,242
Total Cost:	\$80,712
Extend loan by 12 months and lower interest to 6%	\$80,500
	48 Months
	\$1,701 (\$540 less)
	\$81,648



Marketing: Public Awareness Campaign

- Industry-friendly PSA campaign
- Multiple channels
 - Web site and E-Updates
 - Print and Radio PSA
 - Airport kiosks
- Delivered directly to trucking industry
 - Radio interviews (XM Satellite)
 - "Trick my Truck" TV show and DVD
 - Industry events and conferences
- Partner Awards for top-performers
 - Awards presented at industry events

CALCULATE YOUR SAVINGS
TO THE ENVIRONMENT. TO YOUR BOTTOM LINE.



For logistics managers, SmartWay can add up to 7% in fuel savings.

SmartWay Transport helps shippers and for-hire carriers lower greenhouse gases and other emissions, while at the same time giving the average truck a fuel savings of \$2,000 per year.

To find out more about this new partnership, call for your info kit at 1-734-214-4767 or log onto www.epa.gov/smartway.



A new voluntary program from the U.S. Environmental Protection Agency

includes some of the latest technologies: APUs, single-wide tires and aerodynamic fairings. Upgrades save you money on fuel...up to \$4,000 per truck per year...and also lower your emissions.

SmartWay Transport Partnership at 1-734-214-4767 or epa.gov/smartway. Tell them The Chrome Shop Mafia sent you!



Carrier Appreciation

Thanks s...

**Thanks for saving energy.
Thanks for cleaner air.
Thanks for being a SmartWay Transport Partner.**

The following companies and truck carriers are leading the way in reducing emissions and fuel consumption:

- Freight Carriers (trucks)
- AAA Cooper Transportation
- A&A Express, Inc.
- Advanced Freight Solutions, Inc.
- Accurate Express, Inc.
- ADM Trucking, Inc.
- AI Sanguera Trucking Company, Inc.
- Alabama Motor Express, Inc.
- Alma Express, Inc.
- Alton Motor Freight
- American Cargo, Inc.
- AMI Transport Service
- Aussen Transfer, Inc.
- Aurora Express, Inc.
- Arrow Transportation Services
- Arnold Trucking Company
- ASI Transportation
- Atlason Freight Lines
- ATL Express
- ATL Trucking
- ATW Trucking, Inc.
- B&B Truck Line, Inc.
- Banner Healthcare
- Beart Carriage & Intermodal, Inc.
- Bel City Transport Systems
- Bentley Transport
- Brown's Express, Inc.
- Brubaker Transport
- Burns Motor Freight, Inc.
- Cambridge C.T., Inc.
- Can-Am Express, Inc.
- Carroll Freight Group, Inc.
- Celebron Trucking Services, Inc.
- Central Freight Lines
- Circle City Transport, Inc.
- Coastal Transport, Inc.
- Comcast Business Solutions, LLC
- Conover Transport, Inc.
- Conway Freight, Inc.
- Coyne's Express, Inc.
- C.R. England, Inc.
- Conroy-Walsh Corp.
- Cornwall Transport, Inc.
- Cowan Transport
- Craig Transport, Inc.
- Crawford Transport, Inc.
- Davis Express, Inc.
- Davis Spence, Inc.
- Dayton Freight
- Day's South Freight
- Denmark Express, Inc.

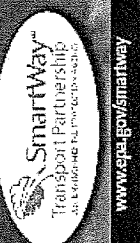
- DHL Express
- Diak Easy Trucking, Inc.
- Dimensional Transportation
- Direct Express
- Double Day Express, Inc.
- Double NN Transport Ltd.
- Douglas Distributing Carriers
- Drury Transport
- Duff Transport
- East Coast Express, LLC
- Eastway Express
- Express Services
- Farmax Transportation
- Farrington Express
- Federal Express
- Federal Express Corp.
- Floyd & Beatty Transfer Company, Inc.
- Floyd Wild Trucking, Inc.
- F.M. Wick LLC
- Fred's Transport
- Fred's Freight Lines, Inc.
- Frisco Inc.
- Frode Bros. Trucking, Inc.
- Frontier Industries, Inc.
- Gannett Logistics, LLC
- Genie Express, Inc.
- G.I. Trucking & Express, Inc.
- Golden Trucking, Inc.
- Green Mountain Coffee Roasters
- Gresham's Logistics, Inc.
- Griffin Transport
- GTL Transportation
- Gunn's Transport
- Hagerdorn Trucking Co., Inc.
- H.F. Campbell & Son, Inc.
- Hilco Transportation, Inc.
- Hilco Transport, Inc.
- Homebased Motor Lines, Inc.
- Hudson's Bay Company
- Humes Transfer, Inc.
- Hupac Fleet Services, LLC
- C.R. England, Inc.
- I.G. Wolking, Inc.
- Integrating Freight
- International Motor Freight
- Inverness Distributor Co.
- ITC Trucking
- J.G. Wilcox Transportation, Inc.
- J.F. Williams
- John Challenger Trucking, Inc.
- Johns Brothers Trucking, Inc.
- Joseph John Benavethy, Jr.

- Schneider National, Inc.*
- Shaw Transport, Inc.
- Shenandoah Truck Lines, Inc.
- Shenandoah Valley Transportation Co., Inc.
- Sidwell & Co., Inc.
- Southwestern Freight Lines, Inc.
- Spinna Recycling
- Stamps Transport
- Statewide Express, Inc.
- Sub Zero Transportation, Inc.
- Swift Transportation Co., Inc.*
- TDJ Trucking
- Terra Reclamation Services
- Telex-Sub Express
- Thorn Transport
- Trans-Logistics
- Transocean America
- Transway Motor Express Co., Inc.
- Transport Robert LLC
- Transwest Express, Inc.
- Trust Motor Freight
- Trust Motor Freight Corp.
- Trusts Worldwide, Inc.
- UPS*
- USA Express, Inc.
- USA Truck, Inc.
- USA Truck, Inc.
- Vaughan Transport, Inc.
- Vega Logistics
- Veri-Group
- VFL Group
- Walgreen Co.
- Wachter Bros. Inc.
- Wadsworth Motor Lines, Inc.
- Wagner Trucking, Inc.
- Wausau Freight
- Wesleyan Express, Inc.
- Wheeler Enterprises, Inc.
- Wheeler Enterprises, Inc.
- Wissman ATEC, LLC
- Wood Truck USA, Inc.
- Whole Foods Market, Midwest Distribution
- YRC Worldwide, Inc.*

- Louisiana Comsatel
- APNT (Arizona Freight Network)
- APL Logistics
- Bayliner Logistics
- Blue Ridge Systems, Inc.
- Calix International
- CH Robinson Worldwide, Inc.
- CAST Logistics, Inc.
- Central Express, Inc.
- NYK Line USA Management, Inc.
- Bayer Global Logistics
- The Italian Group, LLC
- Real Logistic Control, LLC
- Alliances
- Alliance to Save Energy
- Association of American Railroads
- Businesses for the Bay
- California Trucking Association
- Central Trucking Association
- Iowa Motor Truck Association
- Iowa State University Center for Transportation
- Research and Education Center for the Motor Industry, Industry
- Michigan Trucking Association
- Michigan Motor Truck Association
- Michigan Trucking Association
- Middle West Trucking Association
- New Jersey Motor Truck Association
- Ohio Trucking Association
- Pennsylvania Motor Truck Association
- Texas Motor Transportation Association
- Washington Trucking Association, Inc.
- Wisconsin Motor Carriers Association
- Wisconsin Veterans for Clean Air

* Current list as of 12/20/05
* Indicates SmartWay Transport Charter Partner

To become a SmartWay Transport Partner, save fuel, save money and protect the environment, please call 1-724-371-4767 or email us at SmartWay.transport@epa.gov. SmartWay is a voluntary program from the U.S. Environmental Protection Agency.



www.epa.gov/smartway



Questions? Thank you!

Ken Adler
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