

SmartWay Transport Partnership

**U.S.-Mexico Border 2012 Air Policy Forum
Ad Hoc Subgroup Meeting
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The Smart Way To Save Fuel, Money and the Environment

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 CO₂
 - Will increase usage dramatically over next decade

2003

35 Billion Gallons



2012

45 Billion Gallons



SmartWay Transport History

- EPA developed SmartWay cooperatively with industry
- Charter Partnership group worked directly with EPA to finalize details

Carriers

FedEx
UPS
Schneider National
Roadway Express
Yellow Transportation
Swift Transport
Coca Cola
CSX

Shippers

Canon USA
IKEA
Nike
Interface
The Home Depot
Norm Thompson Outfitters
HEB Grocery

Associations

American Trucking Associations
Business for Social Responsibility

- Partnership opened for business February 2004 at ATA's Winter Leadership Conference in Washington, DC
 - EPA welcomed 50 companies into the Partnership
- SmartWay is designed to create a market demand throughout the freight industry for cleaner more efficient freight transportation

The SmartWay Transport Partnership Goals

Carrier Goals:

- Reduce fuel consumption
- Lower emissions
- Better public image
- Better relationship with government

What carriers do:

- Measure and benchmark their environmental performance
- Integrate innovative strategies into their fleet operations to improve performance
- The better a carrier's environmental performance, the more valuable they are to shippers

Shipper Goals:

- Better understand and control their transportation foot print
- Promote corporate citizenship and sustainable business practices
- Green marketing to the public

What shippers do:

- Agree to ship 50% of goods with SmartWay carriers
- Improve transportation operations in their control: loading dock efficiency, no idling policies, electric equipment

EPA goals:

- Reduced CO₂, NO_x, and PM emissions
- Reduced national fuel consumption

What EPA does:

- Recognize, publicize, and market corporate involvement
- Reward best performers with SmartWay logo
- Provide technical support, Verify new innovative technology

SmartWay Transport Progress

- **211 companies and organizations have joined**

- 169 Trucking Carriers, 24 Shippers, 7 Shipper/Carriers, 8 Railroads, 3 Affiliates

	Industry Totals	SmartWay Carriers	% Industry
Total No. of Companies	525,000	176	0.04%
# of Trucks (Heavy and Medium)	5,400,000	300,000	5.00%
Gallons Consumed	35 billion	2.27 billion	6.48%
Tons CO₂	385,000,000	25,000,000	6.47%
Tons NO_x	2,800,000	226,000	8.00%
Tons PM	90,000	5,300	5.87%

- **53 Idling Reduction projects in the US either active or developing**
- **International agreement with Canada**
- **Public Service Announcement campaign in industry/trade journals and mainstream financial magazines**

National Idling Program

Counter

- **Goal: To eliminate all unnecessary diesel engine idling**
 - Truck stops, travel centers, borders, ports, rail yards, loading docks, markets, roadside, etc.
- **2004: \$1 Million grant program for 9 TSE locations**
- **2005: \$5 Million grant program**
- **2006: \$95 million authorized in Energy bill**
- **Hosting workshops to create model idling law**
 - Create consistency among the various state and local idling laws
 - Baltimore (May 6th), Atlanta (June 16th, 17th), Chicago (June 28th), San Francisco (July 14th), Connecticut (July 27th)
- **Hosting workshops to create standardized design specifications for truck stop electrification:**
 - Power, voltage, safety considerations, wiring, and plugs

Opportunities for Increased Efficiency

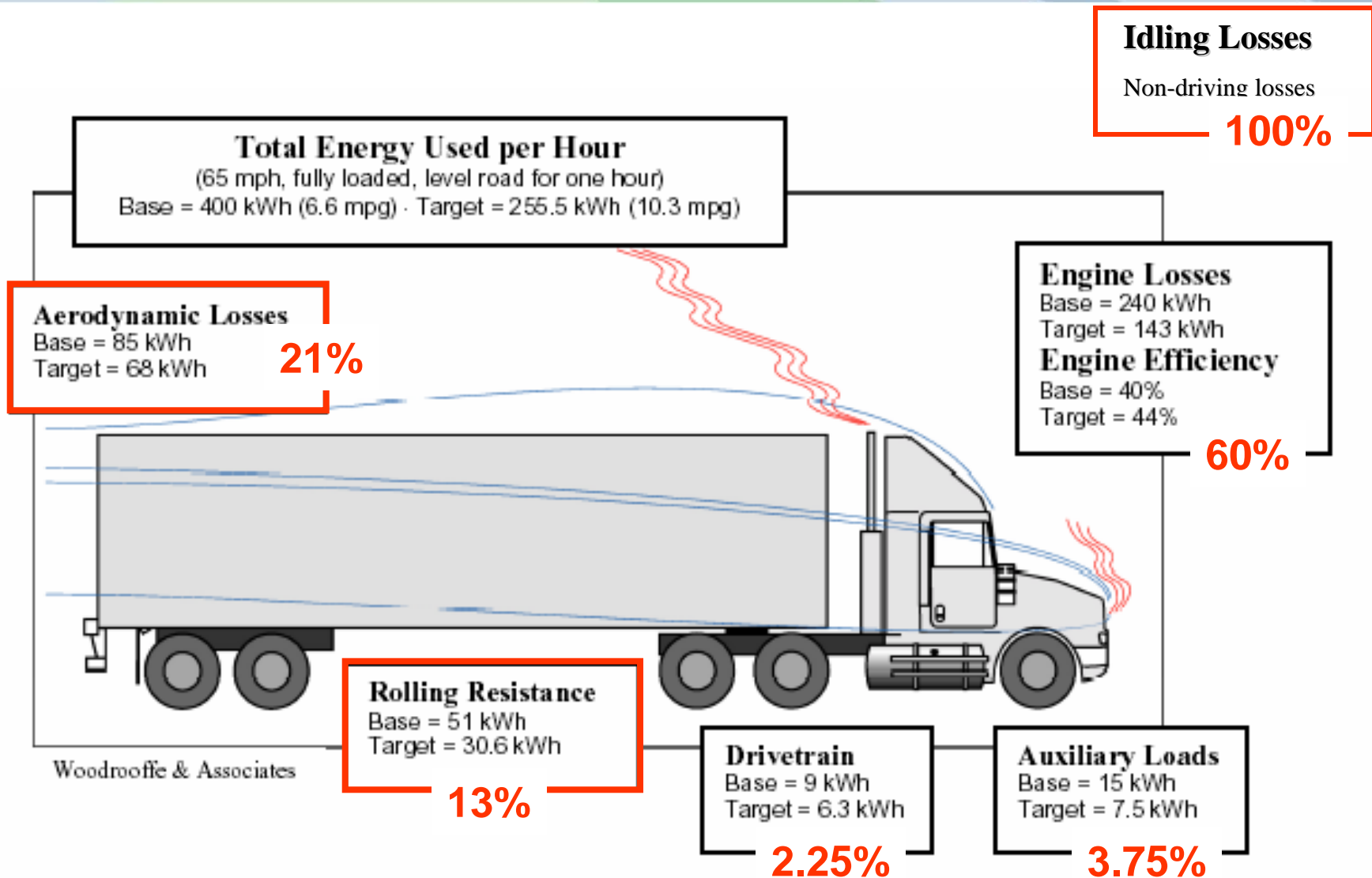





Fig. 4.1. Class 8 truck energy audit.

What is Needed to Improve FE

A Quick Look at Class 8 Long Haul Tractor-Trailers

	Today's Typical Technology	Near-term Goals (OTAQ Perspective)	21 st Century Truck Goals
FE full load @ SS 65 mph: <i>Typical Overall FE:</i>	6.6 mpg 6.0 mpg	7.7 – 8.6 mpg 7.0 – 7.9 mpg	10.3 mpg 9.4 mpg
Components	% improvements needed to achieve goals		
Engine	--	0% until post-2010	37%
Aerodynamics	--	5 – 7%	7 – 10%
Tires	--	5 – 10% (inc. weight)	8 - 10% (inc. weight)
Auxiliary	--	.5 – 1%	2%
Drive Train	--	.5 – 1%	2%
Idle Reduction	--	5 – 12%	n/a
Total	--	16 – 31%	56%
			

Capitalization & Innovative Deployment Strategies:

- **Creation of SmartWay Upgrade Kits:**
 - Technology bundle of idling control, wide base tires, trailer aerodynamics, and PM control device
 - Capital needed for Upgrade Kit is offered to owner and re-paid over time
 - **Monthly Fuel savings exceed the monthly loan payment**
- **Capitalization Programs:**
 - Arkansas and Minnesota (other states will follow shortly)
 - EPA is currently creating a national capitalization program
 - Could expand to private lending institutions
 - Could begin to evolve into Energy Service Companies (ESCOs) contracts
- **Potential DOT Financing:**
 - CMAQ:
 - State Infrastructure Banks (SIBs)
 - Transportation Infrastructure Finance and Innovation Act (TIFIA) funds

Capitalization & Innovative Deployment Strategies:

The Business Case for SmartWay Upgrade Kits

1. High FE Truck w/ Oxidation Catalyst:

Device	Cost/Unit (Retrofit)*	PM Reduction	NOx Reduction	FE Change
Direct Fired Heater	\$1,000	5%	7%	7%
Super Single Tires w/ alum. wheels	\$3,500	--	5%	5%
Trailer Aero Kit	\$2,400	--	5%	5%
Oxidation Catalyst	\$1,000	25%	--	--
Totals:	\$7,900	30%	17%	17%

For a truck traveling 100,000 miles/year @ 6 mpg (16,667 gallons /year)

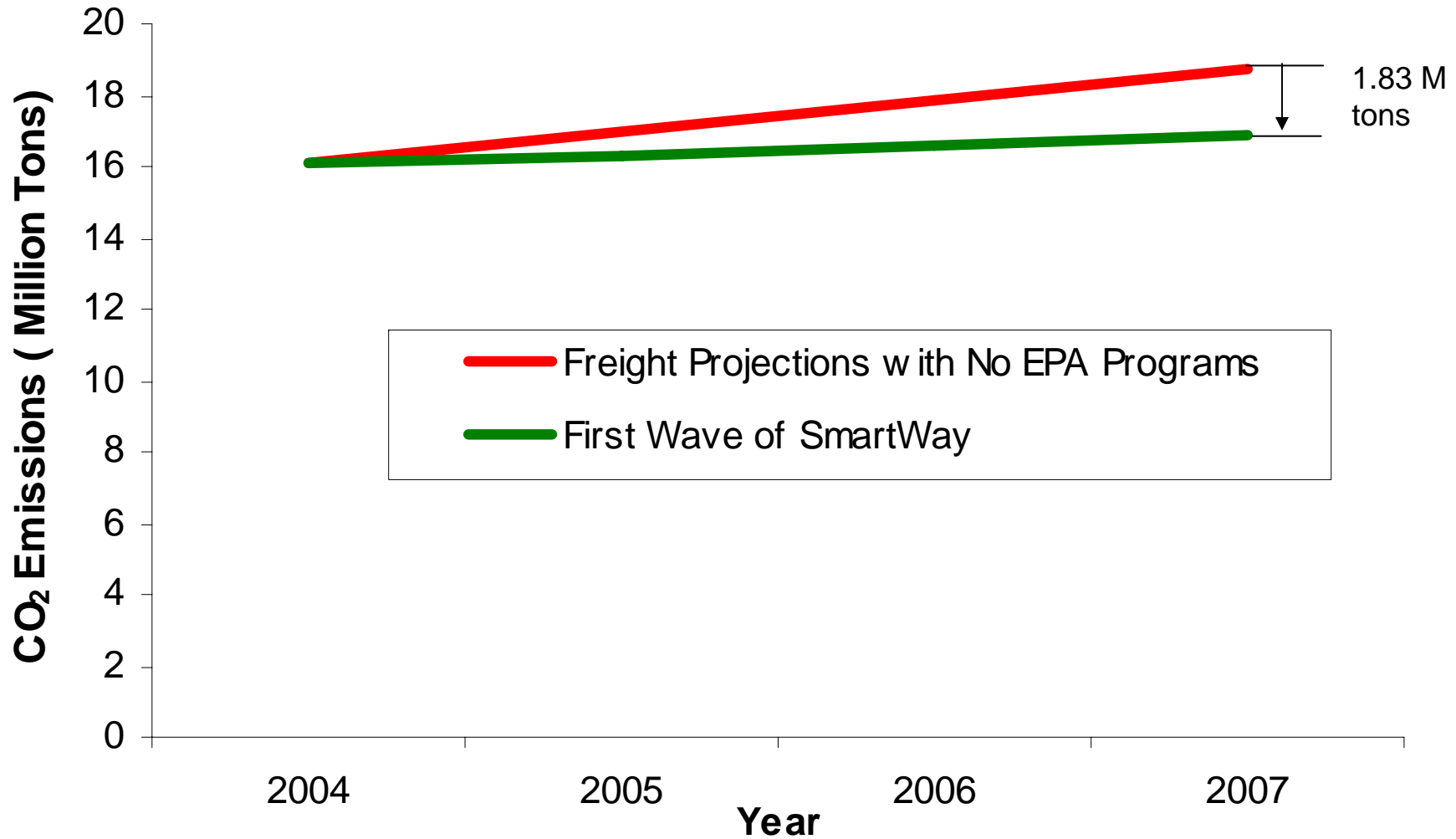
- Fuel savings: 2,833 gallons @ \$2.75/gallon → **\$7,790/year**
- Payback period: \$7,900 / \$7,790 → **~1 year**
- or a 3 year loan @ 4.8% APR:

Monthly Fuel Savings: \$649

Monthly loan payment: (\$236)

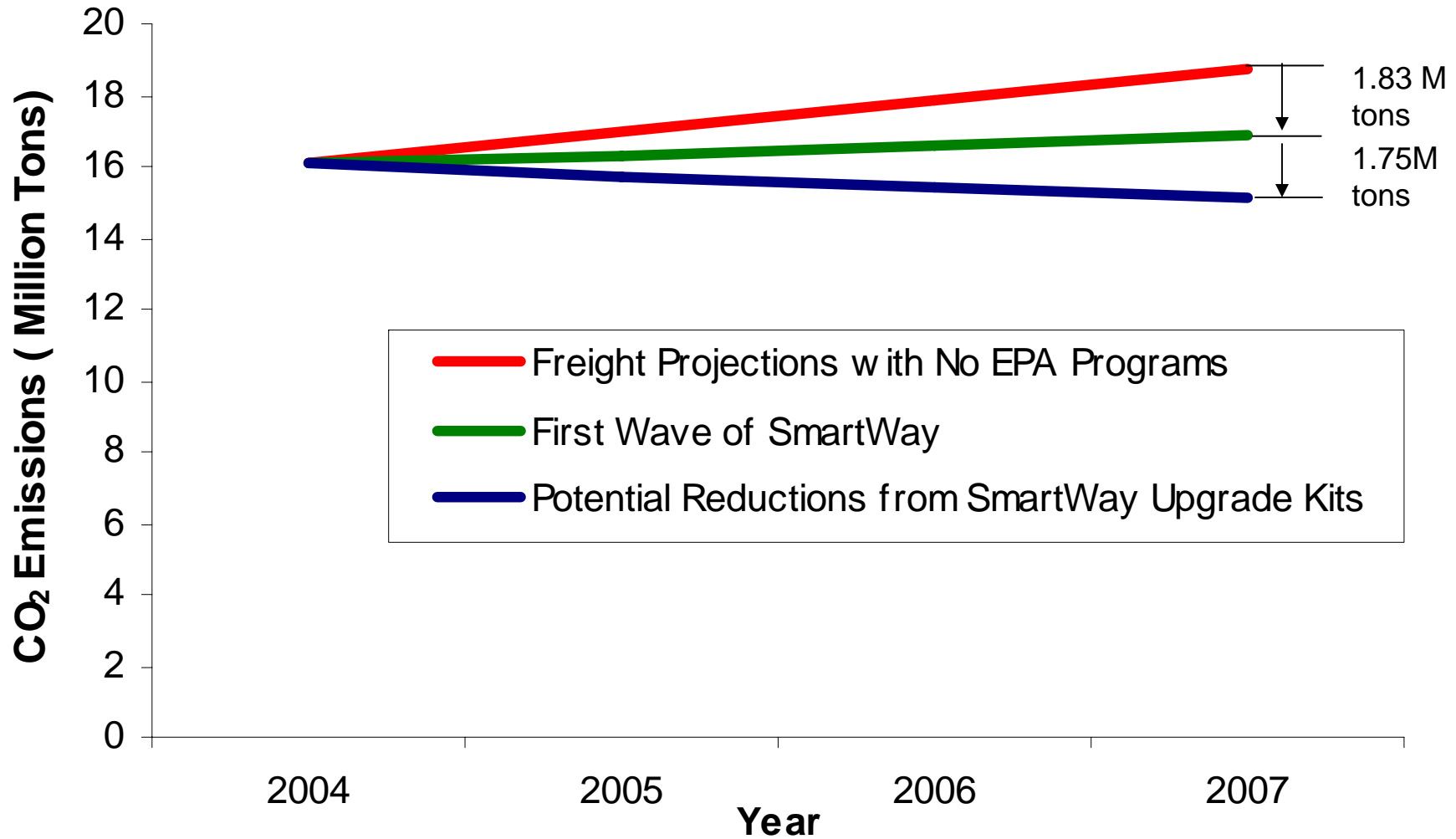
Monthly cash for driver: \$413

What have These Companies Done?



Results based on 42 reviewed Action Plans

What Could These Companies Do?



Results based on 42 reviewed Action Plans