Designing and Implementing a Freight Sustainability Program: Tools, Best Practices, and Lessons Learned

Workshop Course Book

SmartWay Workshop

June 3, 2010

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Introduction

Background of Freight Transportation in the United States

Freight transportation is invaluable to businesses, consumers, and the US economy, but is not without costs. Of all the energy consumed in the transportation sector, moving freight accounts for 20 percent of all energy consumed.

35 Billion Gallons a Year…

Together, rail and truck transport consume over 35 billion gallons of diesel fuel per year. Translated into emissions, this represents over 350 million metric tons of carbon dioxide annually.

…and Growing

As the economy grows and technology improves, the numbers become more staggering. Just-in-time manufacturing, faster delivery services, and increasing internet shopping have increased mileage—and emissions—from ground freight transportation.

Based on current trends:

- By 2012 ground freight transportation will consume over 45 billion gallons of diesel fuel.
- Freight transport is expected to produce over 450 million metric tons of carbon dioxide—a 25 percent increase over today's levels.

Making Sense of Emissions

While burning fuel is necessary to move goods efficiently by truck and rail, some of that fuel is wasted due to inefficient practices. And wasted fuel translates to wasted money as well as increased emissions of air pollutants, such as:

- Carbon dioxide (CO_2), the most prevalent greenhouse gas. Ground transportation contributes 30 million metric tons of carbon dioxide.
- Nitrogen oxides (NO_x), which contribute to ozone formation, commonly known as smog. Domestic ground freight accounts for 50 percent of NO_x emissions.
- Particulate matter (PM) also has serious health and environmental effects. Ground freight transportation contributes 30 percent of all PM emissions.

Summary of SmartWay Transport Partnership

To address these trends, EPA developed SmartWay Transport—an innovative collaboration between the freight industry and government to reduce air pollution and greenhouse gas emissions, improve fuel efficiency and energy security, and strengthen the freight sector.

SmartWay Transport's goals are to reduce the impact of freight transport on the environment, and to help our partners see the rewards to their business. Working together, we aim to reduce:

- Fuel consumption from trucks and rail delivering freight.
- Operating costs associated with freight delivery.
- Emissions of CO_2.
- Emissions of NO_x, PM, and air toxics.

Companies that participate in the SmartWay Transport Partnership save money, reduce fuel consumption, and are recognized for their social responsibility and environmental leadership.

EPA projects savings of between 3.3 and 6.6 billion gallons of diesel fuel per year, representing a savings of as much as 150 million barrels of oil per year. This is the equivalent of taking 12 million cars off the road, leading our partners to save nearly $10 billion in operating costs.

Detailed Timeline of Significant Events

2001

- Initial discussions with stakeholders for design/development of a Ground Freight Transportation Initiative.
- "Industry Options for Improving Ground Freight Fuel Efficiency"—Dec, 2001—Report on Freight Trucking/Rail Sectors, Efficiency Strategies, and Fleet/Industry Characteristics.
- Consider common voluntary program elements and freight industry trends to design the program.

2002

- Industry responds to initial Report.
- Charter Partners join.
- Design and Development of Program including FLEET Model; Partnership commitments and goals; Logo development, guidance, and usage; Begin planning outreach and marketing.

2003

- FLEET Model –develop as a Partner tool/resource.
- Discussions with Charter Partners to plan program specifics and performance metrics.
- Program Launch Planning.
- Development of Partnership Tools and Outreach Materials – Overview, Fact Sheets, Strategies, etc.
- Development of Partnership Agreements for Carriers and Shippers.

2004

- SmartWay Program Launch with 50 partners – February 2004.
- Public Service Campaign. Outreach and Recruiting Focus.
- 100 SmartWay Partners by year end.

2005

- Recruiting Focus - 300 Partners by year end.
- New Partnership Categories created – Affiliates and Logistics.
- Marketing and Outreach to trade and industry media.
- Technology Verification Program; Grants to support real-world tests.
- Innovative Financing Opportunities Sought.
- Development of SmartWay Upgrade Kit and SmartWay Truck.

2006

- Partner Management Focus.
- Approaching 500 Partners.
- Tool Refinement, Program Expansion and Process Refinement.
- Innovative Capitalization Efforts.
- First Annual SmartWay Awards.
- SmartWay Light-Duty Designation Launched.
- SmartWay Grow and Go launched.

2007

- Supply Chain Concepts Introduced.
- Launched SmartWay Tractors and Trailers.
- Launched SmartWay Certified Vehicles.
- SmartWay Finance Center Opens.
- Second Annual Awards Held.
- Accelerating Partner Growth.

2008

- Over 1,000 Partners.
- Begin Development of Heavy-Duty Fuel Economy Test Program.
- Supply Chain/SmartWay Transport 2.0 development begins.
- Package Labeling Pilots Begin.
- Consumer Awareness Marketing Begins.
- New Web Portal.
- US/Canada Partner Networking Forum.
- Launch Partner Webinar Series.

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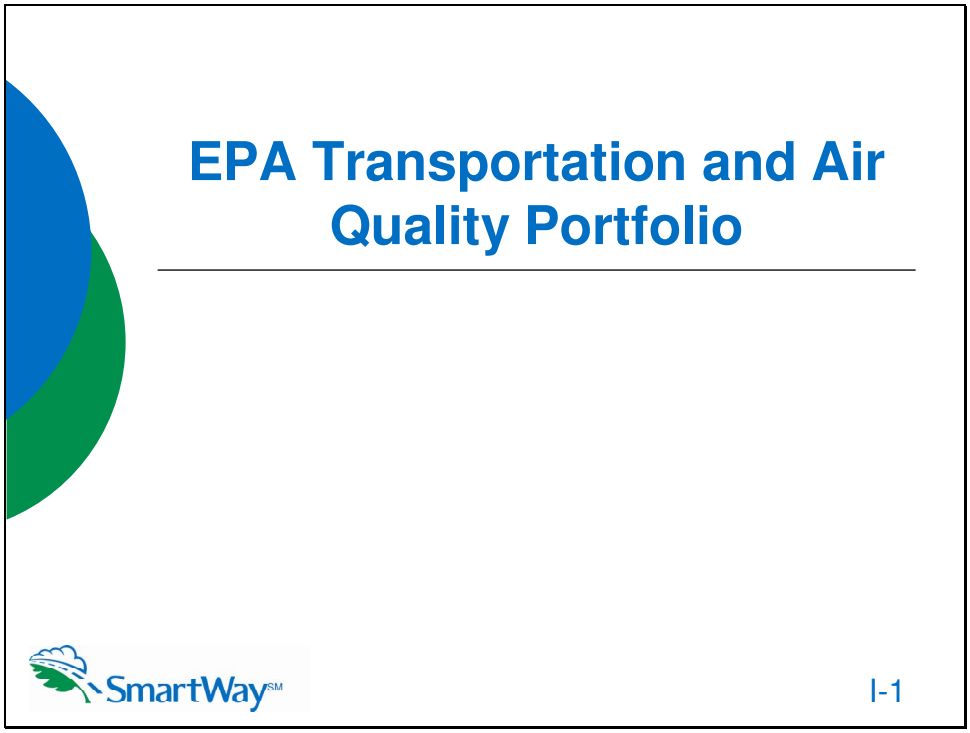
Module I. Exploratory Stage



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U.S. Environmental Protection Agency

Transportation and Air Quality Strategy

- SmartWay is part of broad EPA strategy to address transportation sector emissions and energy use
  - Regulatory framework
    - Vehicles (on road and off-road)
    - Engines
    - Fuels and fuel additives
  - Modeling, testing and research
  - Grant programs
  - Public-private partnerships
    - Market mechanisms
  - Public education and awareness

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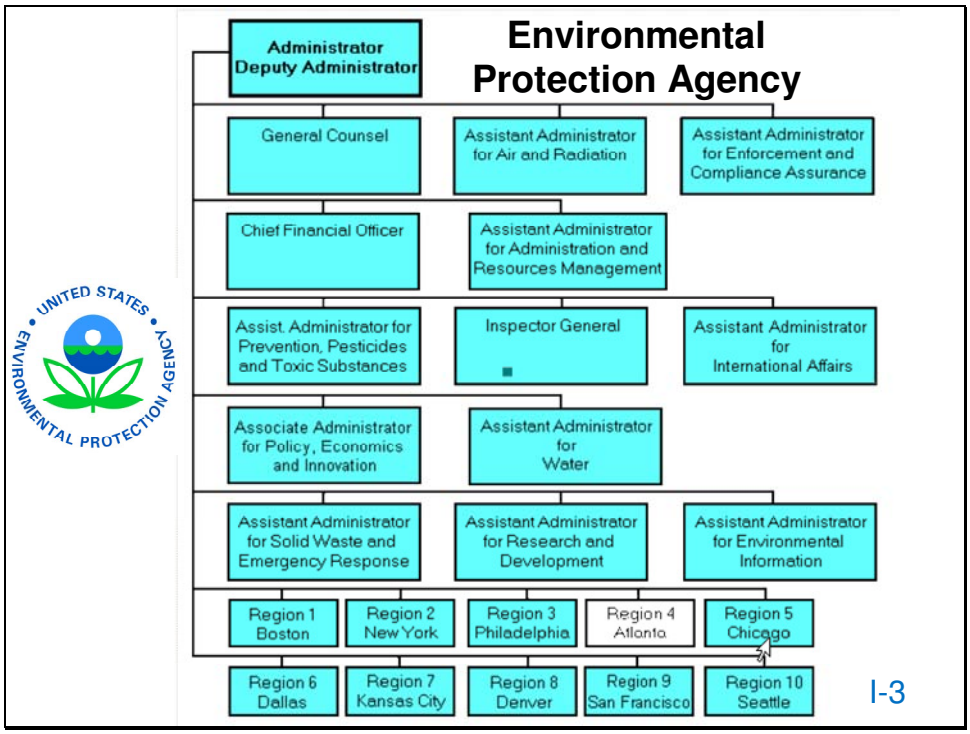

Why do we care about vehicle emissions?

Ozone and PM2.5 contribute to serious public health problems:

- Premature mortality,
- Aggravation of respiratory and cardiovascular disease
  - increased hospital admissions and emergency room visits, school absences, loss work days, and restricted activity days
- Changes in lung function and increased respiratory symptoms,
  - altered respiratory defense mechanisms, and chronic bronchitis
- Diesel exhaust is of special public health concern,
  - Since 2002 EPA has classified exposure to diesel exhaust as likely to be carcinogenic to humans by inhalation from environmental exposures*
- Transportation sector is a major source of greenhouse gas emissions

* Source: U.S. EPA (2002) Health Assessment Document for Diesel Engine Exhaust. EPA/600/890/057F. ORD, Washington DC. http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060.

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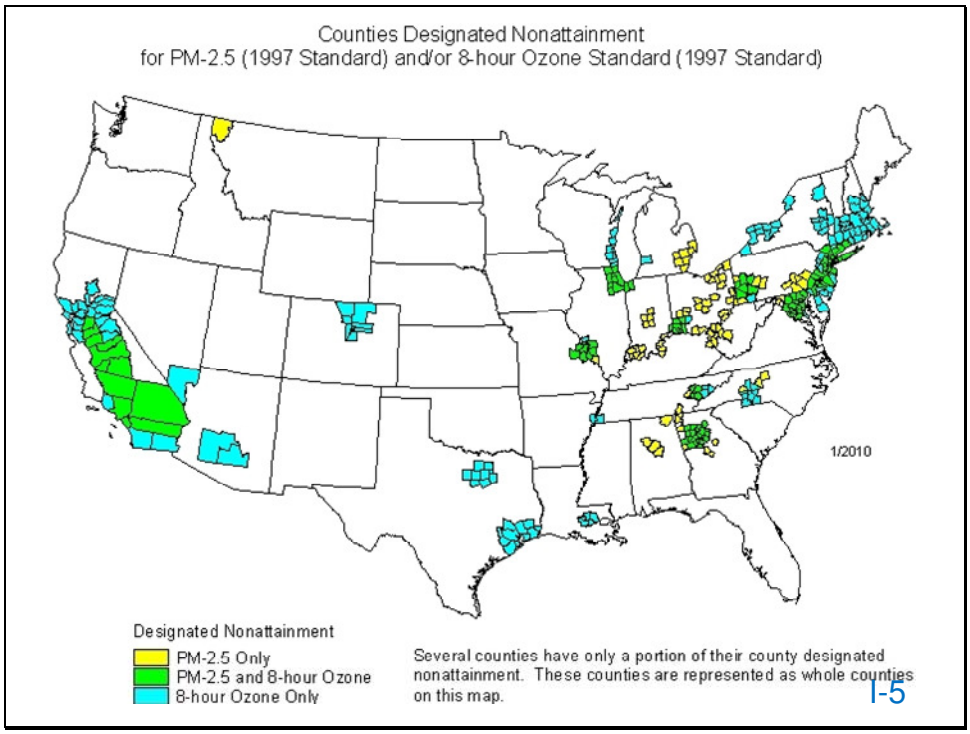

The Clean Air Act requires EPA to set National Ambient Air Quality Standards for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are found all over the United States. They are particle pollution (often referred to as particulate matter), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. These pollutants can harm your health and the environment, and cause property damage. Of the six pollutants, particle pollution and ground-level ozone are the most widespread health threats. EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels.

U.S. Comprehensive Regulatory Approach on Clean Fuels and Vehicles

- **Clean Cars and Passenger Trucks (1999 rulemaking)**
  - Tier 2 Standards
  - Gasoline sulfur control (30 ppm avg / 80 ppm max, 2006 for most refiners)
  - 77-95% lower light-duty vehicle standards (beginning in 2004)
  - Same standards for light trucks and cars; gasoline and diesel

- **Clean Heavy-Duty Trucks and Buses (2000 rulemaking)**
  - Heavy-Duty 2007 Standards
  - Diesel sulfur control (15 ppm maximum, beginning in 2006)
  - 90% lower heavy-duty gasoline & diesel vehicle standards
  - PM filter forcing standards, NOx catalyst based standards

- **Clean Nonroad Diesel Engines and Equipment (2004 rulemaking)**
  - Nonroad Tier 4 Standards
  - Diesel sulfur control (2 steps - 500 ppm in 2007, 15 ppm in 2010)
  - 90-95% lower emission standards - based on highway technology

- **Locomotive and Marine Diesel Standards (2008)**
  - Marine diesel sulfur control (15 ppm maximum) in 2012
  - 90% cut in PM emissions; 80% cut in NOx emissions

We know that technologies exist to decrease the sulfur content of diesel, that this technology works and is widely deployed, and that the costs of reducing sulfur in diesel are far outweighed by the public health benefits. The benefits of ultra-low sulfur (15 parts per million - ppm) diesel fuel (ULSD) are multiplied many times over when combined with advanced emission control devices on trucks and buses. These devices, which make use of ULSD, are now used in the United States and the costs of reducing the sulfur content of diesel did not lead to major price increases for U.S. consumers.

In the U.S., current regulations call for 15ppm ULSD content, because we strongly believe that the ultra-low sulfur content, along with clean engines and appropriate advanced emission control devices, significantly reduces particulates and enables the control technology to work optimally.

Reducing Sulfur Levels in Fuel is Critical

- **Sulfur is a catalyst poison**
- Removing sulfur, like removing lead from gasoline, allows for maximum catalyst efficiency
- Reductions in fuel sulfur provide immediate PM reductions and is very cost-effective
- U.S. Low Sulfur Gasoline
  - New Tier 2 vehicles have near zero running emissions
  - Existing vehicles see significant improvement from the new fuel
- U.S. Ultra-Low Sulfur Diesel Fuel (Highway and Nonroad)
  - Enables PM filters that can eliminate 99% of carbonaceous PM
  - Enables advanced NOx catalysts giving 90+% reductions
  - Allows for retrofit of existing vehicles with highly efficient control devices

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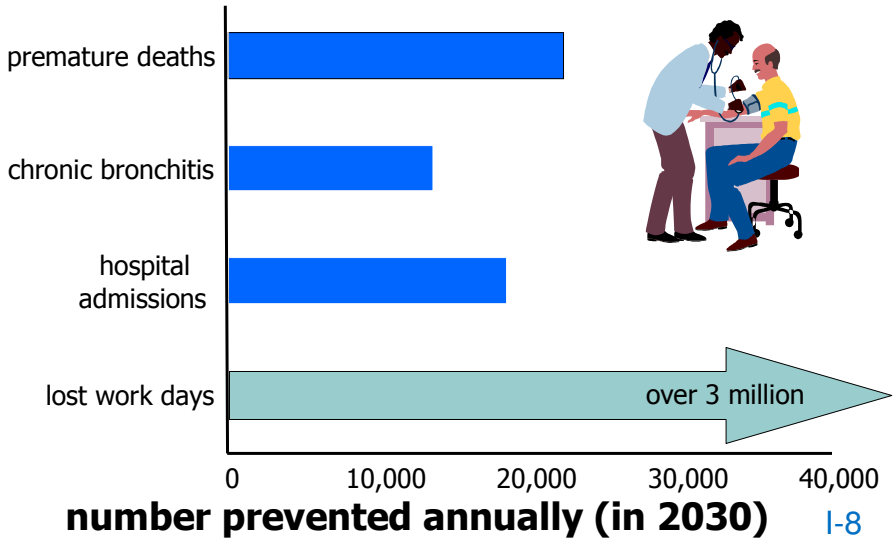
Tremendous Health Benefits



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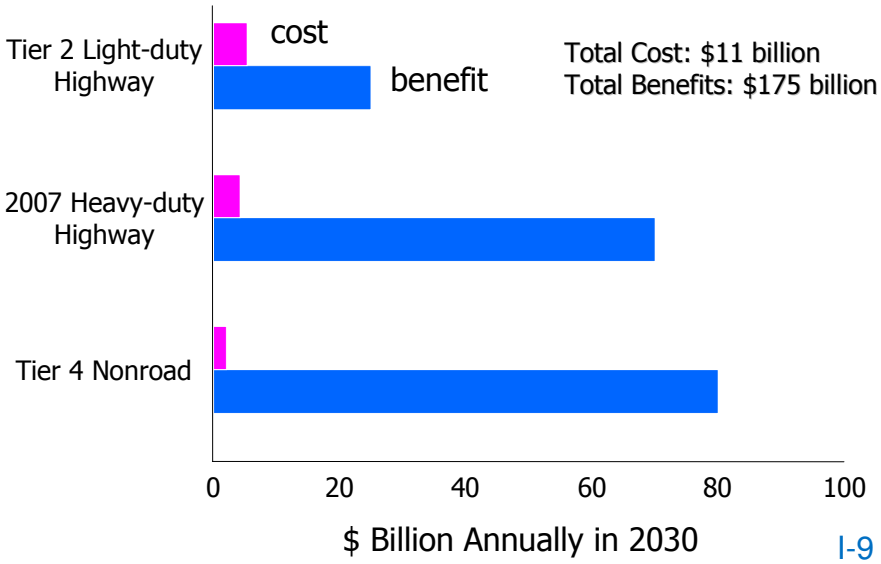
EPA Programs Are Cost-Effective



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Summary Benefits and Costs of EPA's Diesel Regulatory Programs

2030 Annual	Tier 2 Standards	Heavy Duty 2007	Non-Road Tier 4	Total
Cost	$5 billion	$4 billion	$2 billion	**$11 billion**
Net Benefits	$25 billion	$70 billion	$80 billion	**$175 billion**
Premature Mortality	4,300	8,300	12,000	**24,600**
Hospital Admission	3,000	7,100	8,900	**19,000**
Lost Work Days	0.7 million	1.5 million	1.0 million	**3.2 million**

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Additional Information: EPA's 2007 Heavy-Duty Highway Diesel Regulations

EPA's Clean Air Highway Diesel final rule required a 97 percent reduction in the sulfur content of highway diesel fuel, from 500 ppm, to 15 ppm.

The U.S. and many other countries approached the regulation of sulfur in diesel fuel and in clean diesel engines simultaneously.

The regulations require:

15 ppm sulfur in diesel fuel

Cleaner engines and particulate filters

Once this action is fully implemented, environmental benefits include annual reductions of 2.6 million tons of smog-causing oxides of nitrogen (NOx) emissions and 110,000 tons of PM.

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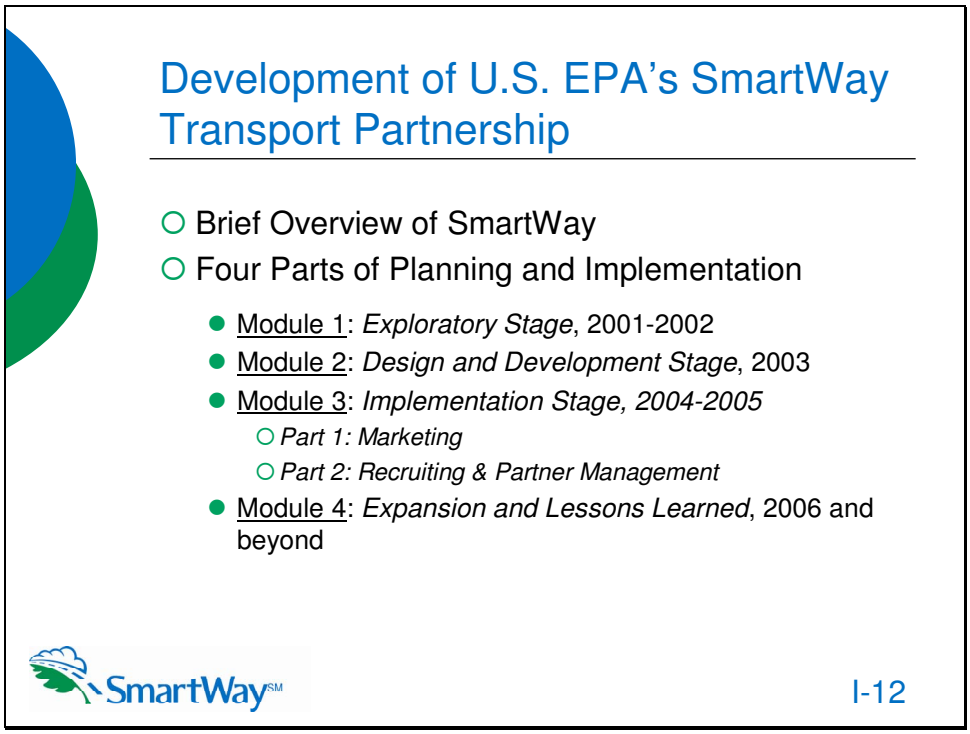

The initial idea of SmartWay started in 2001, and it officially launched in February 2004. As the Partnership approached 500 partners towards the end of 2006, EPA considered how to sustain the growth, improve the Partnership, and ensure that Partners are successfully meeting goals.

Overview
SmartWay Transport Partnership

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U.S. Environmental Protection Agency

US Domestic freight

- Currently, truck and rail:
  - Travel over 220 billion miles
  - Consume over 40 billion gallons of fuel
  - Account for over 20% of transportation related energy use
  - Produce approximately 380 million metric tons of CO2
  - Will increase usage dramatically over next decade

2006

38 Billion Gallons

2012

45 Billion Gallons

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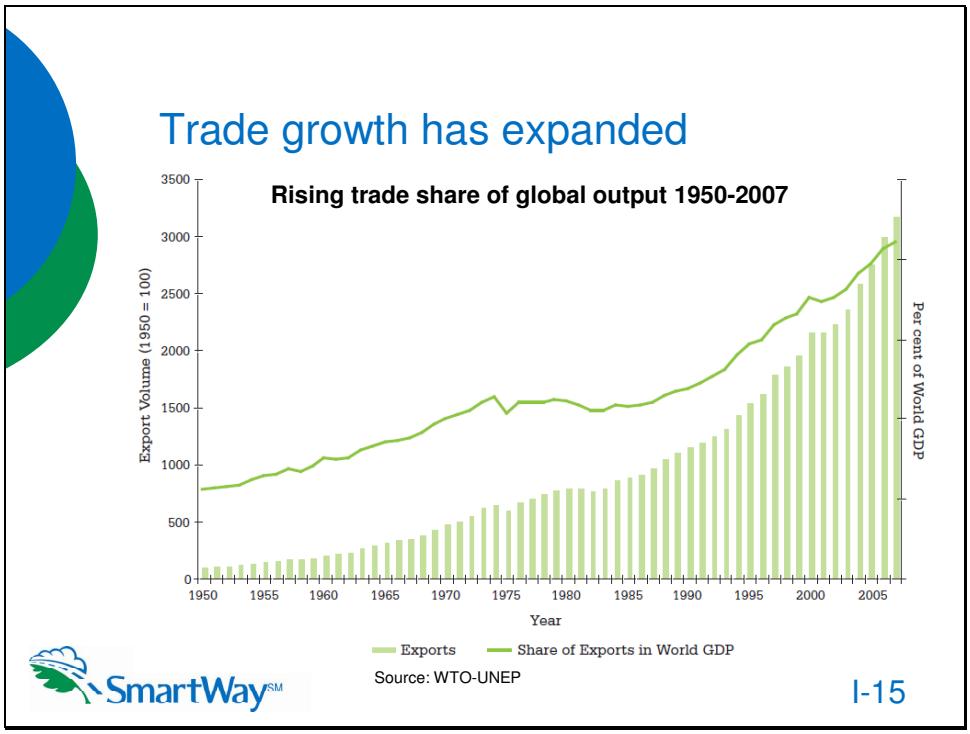

In 2007, developing countries accounted for 34% of world merchandise trade – double the rates of the 1960s.

How did SmartWay Transport Partnership begin?

- **Freight carrier goals**
  - Reduced fuel consumption
  - Public recognition
  - Better public image
  - Benefits for carriers
  - Better relationship with government

- **EPA goals**
  - Reduced CO2 emissions
  - Improve energy security
  - Better relationship with the trucking industry

- **Freight shipper goals**
  - Better understanding and control of transportation foot print
  - New ways to promote corporate citizenship and sustainable business practices

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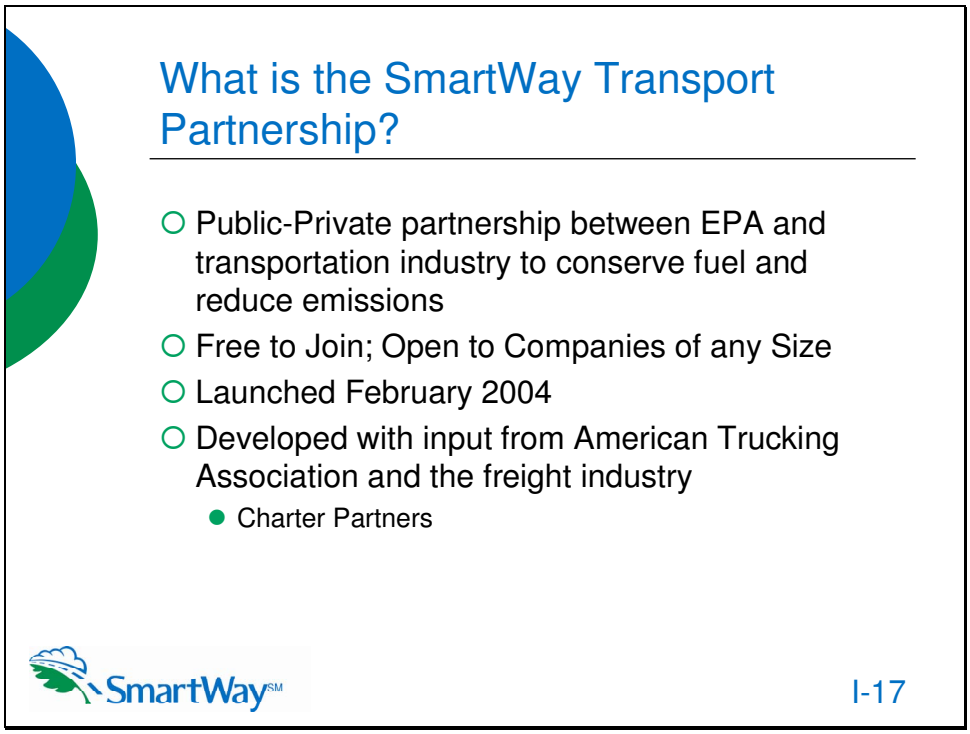

EPA approached ATA about jointly developing a program that would benefit both the freight industry and the environment

SmartWay Transport Partnership:
Best Practices for Sustainable Goods Movement

1. **Partnership**
   - Assess, benchmark and track emissions of carriers, shippers, and logistics companies
   - National idle reduction program
   - New carbon assessment tools
   - Partner support (PAM, helpline)
   - GHG and fuel savings
2. **Technology Program**
   - Test program
   - SmartWay Tractor/Trailer
   - SmartWay-verified technologies
   - Test methods
3. **Finance Program**
   - Innovative finance programs (grant programs, banks, retailers)
   - SmartWay Finance web site
4. **Outreach and Education**
   - Partner recognition - SmartWay web site, logo, and awards
   - Partner education – webinars, fact sheets, e-update, web site, workshops, events
   - Innovative pilot programs
   - Brand marketing – PSAs, media campaigns, events
5. **International Activities**
   - Conferences
   - Role model
   - Projects
   - Global supply chain
6. **Light Duty Vehicles**
   - SmartWay certified vehicles
   - Preferential leasing, purchasing
   - Consumer education

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How Does SmartWay Work?

- **Shippers:**
  - Top of the supply chain, drive marketplace demand
  - Give preferred status to SmartWay Carrier Partners
  - Get better data to improve their own shipping operations
  - Modify logistics operations to improve efficiency and reduce emissions, for example:
    - Inter-modal Shipping
    - Full Truck Loads
    - Warehouse Improvements
    - Idle-Reduction at Docks
  - Get recognition and PR value with SmartWay brand

Carriers:

- Gain competitive advantage:
  - Preferred status, plus
  - Fuel efficiency, savings
- Reduce emissions
- Integrate fuel saving technologies and strategies into fleets, such as:
  - Idle Reduction
  - Improved Aerodynamics
  - Efficient Tire Systems
  - Driver Training
  - Renewable Fuels
  - Advanced Lubricants
- Get recognition and PR value with SmartWay brand

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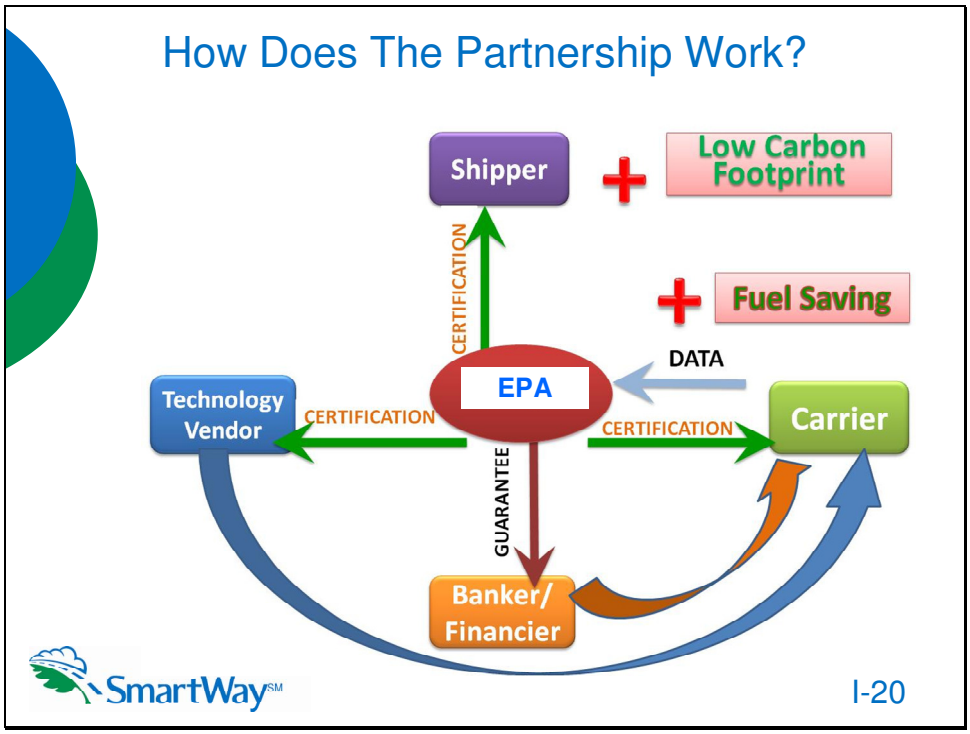
How Does The Partnership Work?
Shipper
Low Carbon Footprint
CERTIFICATION
Fuel Saving
DATA
EPA
Technology Vendor
CERTIFICATION
CERTIFICATION
Carrier
GUARANTEE
Banker/ Financier
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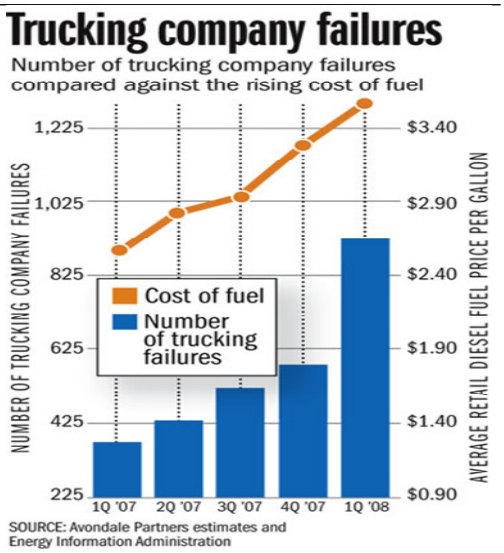
Why Do Companies Join SmartWay Transport Partnership?

- SAVE FUEL
- SAVE MONEY
- REDUCE EMISSIONS



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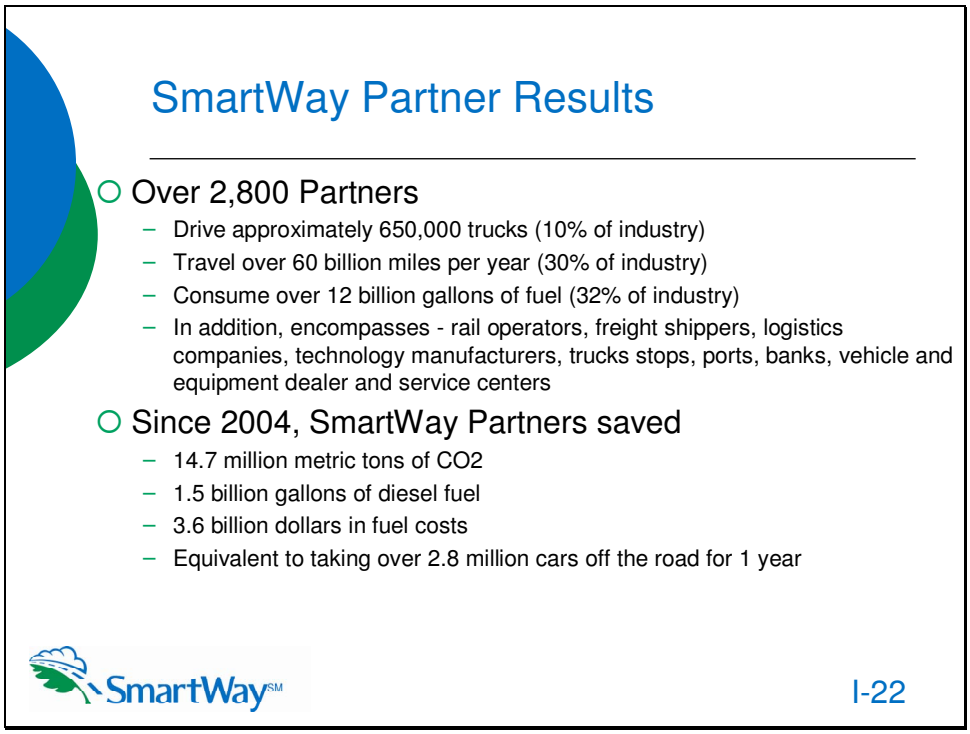
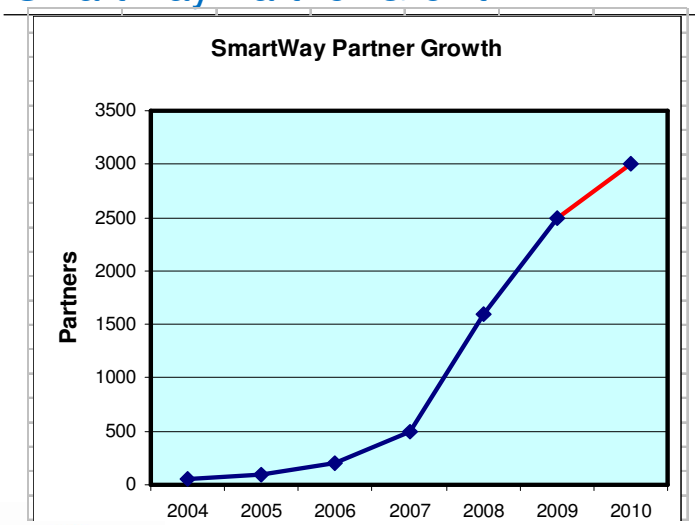


	Industry	Partners	% Industry
# of Companies	500,000	1,228	.22%
# of Trucks	4,200,000	600,000	7%
Gallons Consumed	29 billion	12 billion	24%
Miles Traveled	122 billion	51 billion	24%

Have saved the freight industry over $2 billion in annual fuel and maintenance costs.

SmartWay Partner Growth



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Some of the over 1,000 SmartWay Partners
Con-way FREIGHT
SHARP
NAVISTAR
POWERING INGENUITY
ATA
NYK LOGISTICS
lenovo
ups
SWIFT
AN ISO 9002 CERTIFIED COMPANY
Coca-Cola Enterprises Inc.
THE HOME DEPOT
CSX TRANSPORTATION
SCHNEIDER NATIONAL
FedEx Express
ROADWAY Express
IKEA
H-E-B
Canon
INTERFACE
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Important to note that EPA does not promote any particular company or brand, nor do they promote one technology type over another. It's all about flexibility, and what works for each Partner

Idle reduction includes Shore power, APUs, TSE

Single Wides, still controversial, there are significant pros: Weight reduction, rolling reduction, stability. Some SmartWay Partners have helped disseminate real-world data showing these benefits.

Driver Training includes many different things, but EPA signed an MOU with NRCan (discussed later) to allow SmartWay Partners to use NRCan's driver training materials.

Public Recognition

- The SmartWay Transport logo
  - The EPA SmartWay logo is a mark of cleaner transportation
  - The SmartWay Transport Partner logo identifies the Partner as a responsible corporate citizen and environmental steward

SmartWay℠ Transport Partner
Getting There With Cleaner Air

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The SmartWay Transport Partnership Brand

- SmartWay Partner Logo
  - No-idle signs at distribution centers
  - Letterhead
  - Websites
  - Other business-to-business publicity

- Lets the public and potential customers know that the Partner is a high environmental performer
- FLEET model score determines eligibility to use the logo

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Logo Use Criteria:

Carriers – FLEET score of 1 or better (combination of CO2, NOx and PM fleet emissions)

Shippers/Logistics – Ship 50% or more of freight with Partner Carriers (calculated by metric that company chooses – ton-miles, annual transportation spend, # of trips)

Affiliates – Upon joining the Partnership

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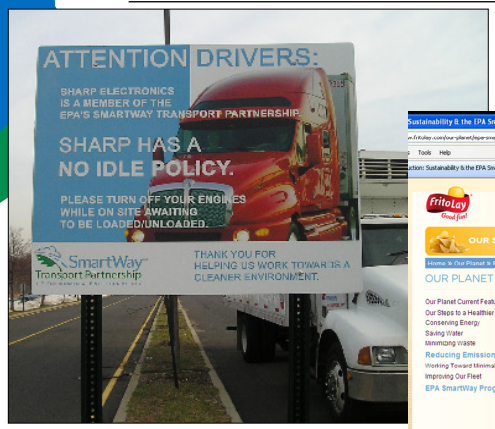
The SmartWay Transport Partnership Brand



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SmartWay Web Portal

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New PSA Campaign
Multi-media: TV, Radio, Print

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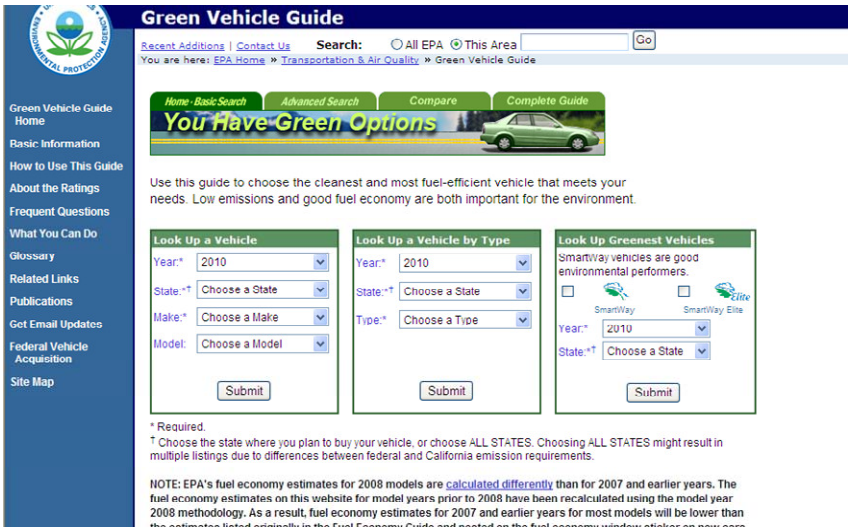
SmartWay Certified Vehicles



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SmartWay Certified Tractors &Trailers

Introducing SmartWay Certified Tractors & Trailers From These Manufacturers

Tractor makers:
- Freightliner
- International
- Kenworth
- Mack
- Peterbilt
- Volvo

Trailer makers:
- Great Dane
- Trailmobile
- Utility
- Wabash

To learn more visit epa.gov/smartway

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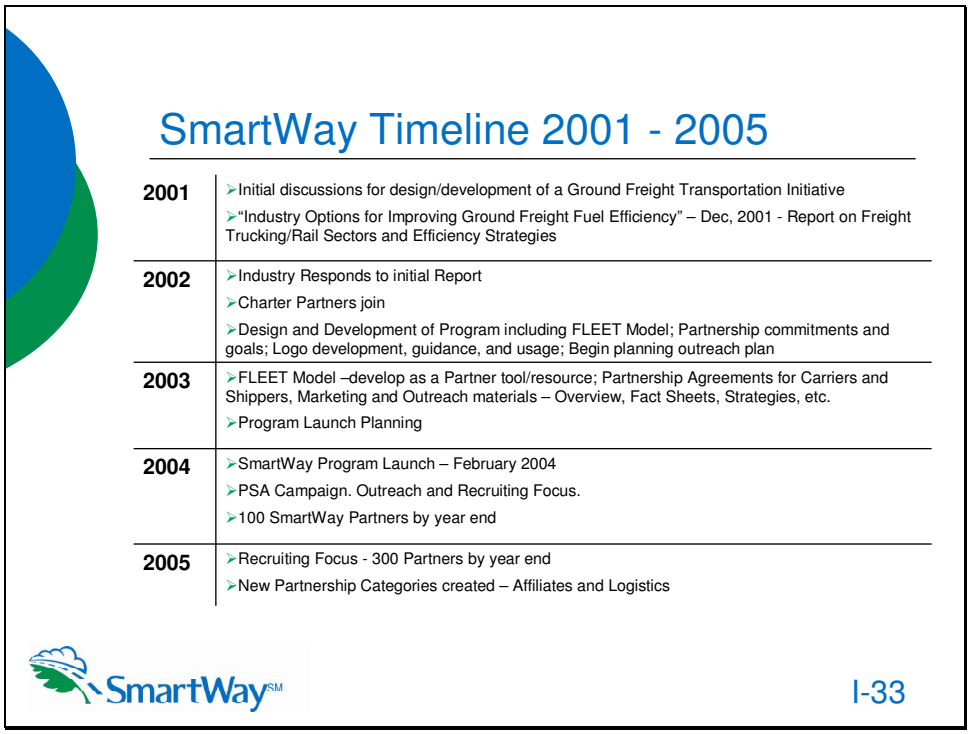
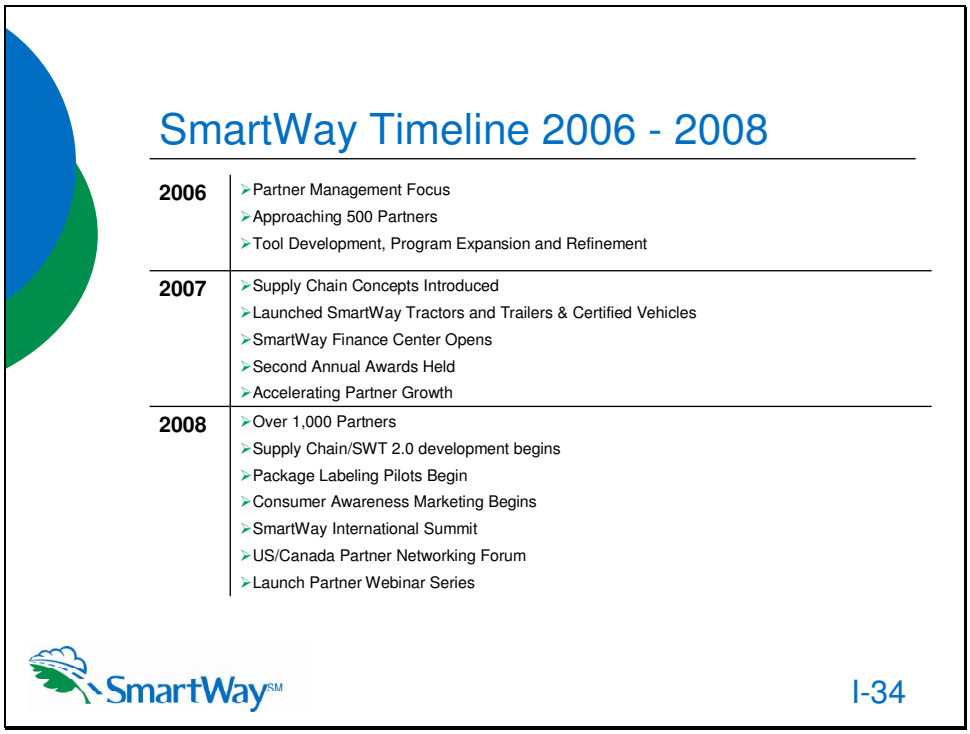


This timeline includes a few key events from each year. The module-specific timelines include additional points for each year.



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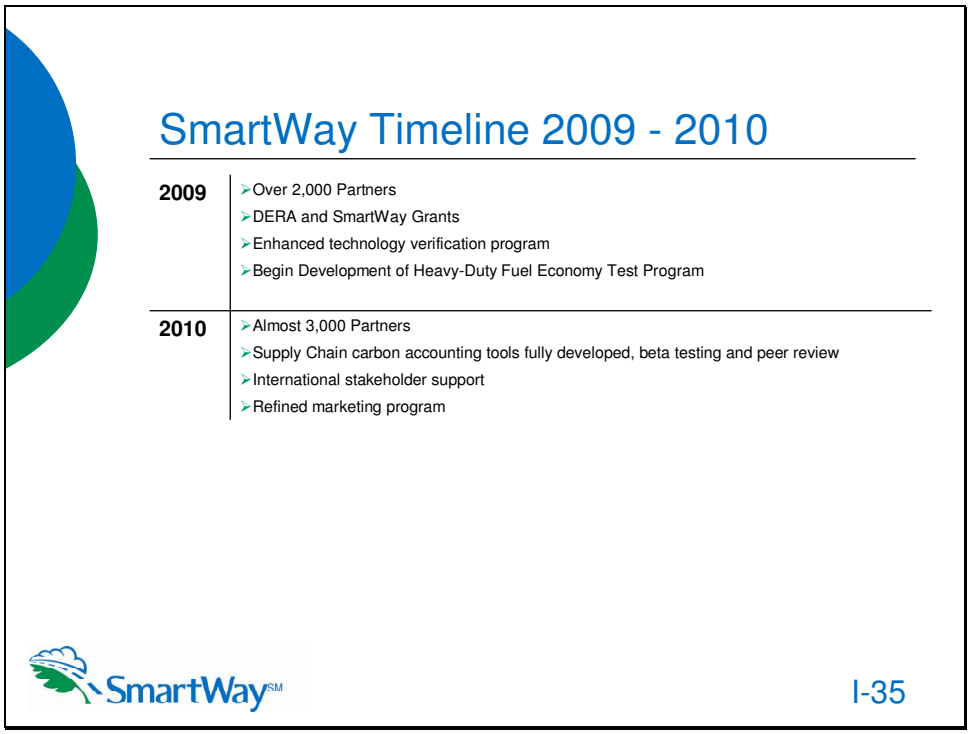

This timeline includes a few key events from each year. The module-specific timelines include additional points for each year.

Module 1
Exploratory Stage (2001-2002)

2001	Initial discussions for design/development of Ground Freight Transportation Initiative ➢"Industry Options for Improving Ground Freight Fuel Efficiency" – Dec, 2001 - Report on Freight Trucking/Rail Sectors, Efficiency Strategies, and Fleet/Industry Characteristics ➢Consider common voluntary program elements and freight industry trends to design the program
2002	➢Identifying Stakeholders and Champions ➢Charter Partners join ➢Design and Development of Program including FLEET Model; Partnership commitments and goals; Logo development, guidance, and usage; Begin planning outreach plan

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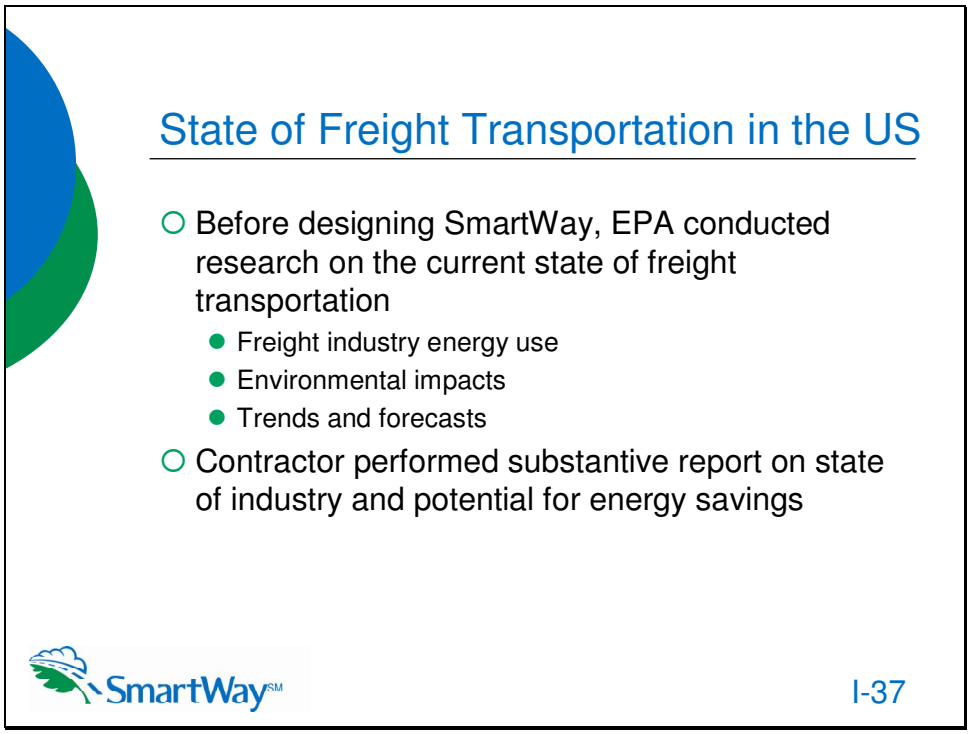
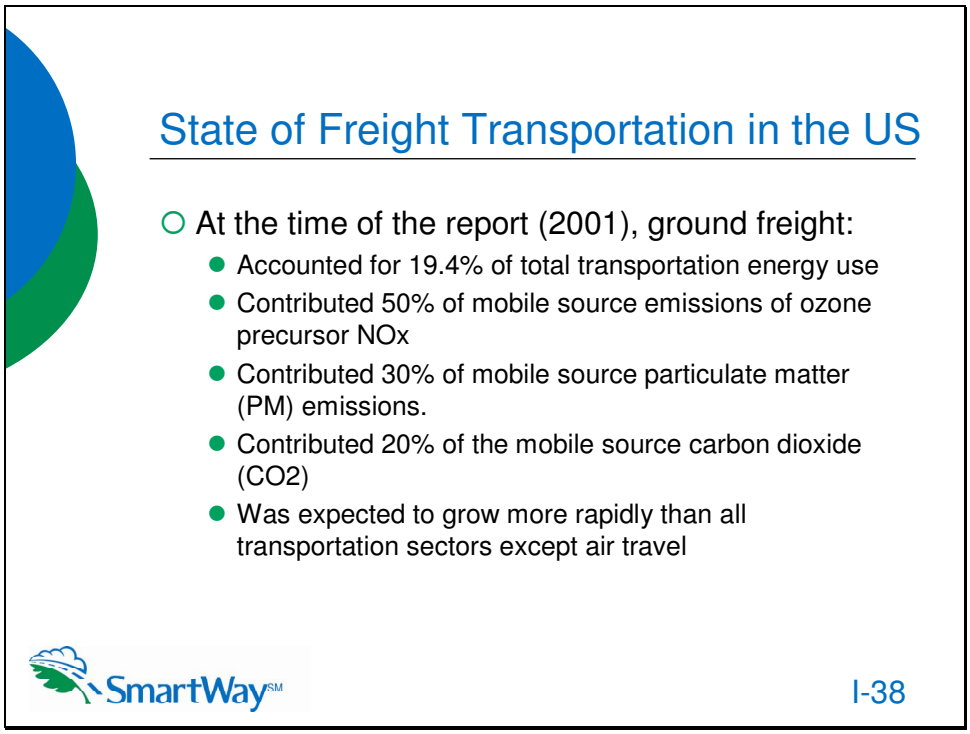


An initial report was written about the freight industry, and included ways to improve its efficiency.

EPA then developed the Partnership with input from industry and began to design program elements.



This is a significant portion of total transportation emissions, and creates a large opportunity for improvement.

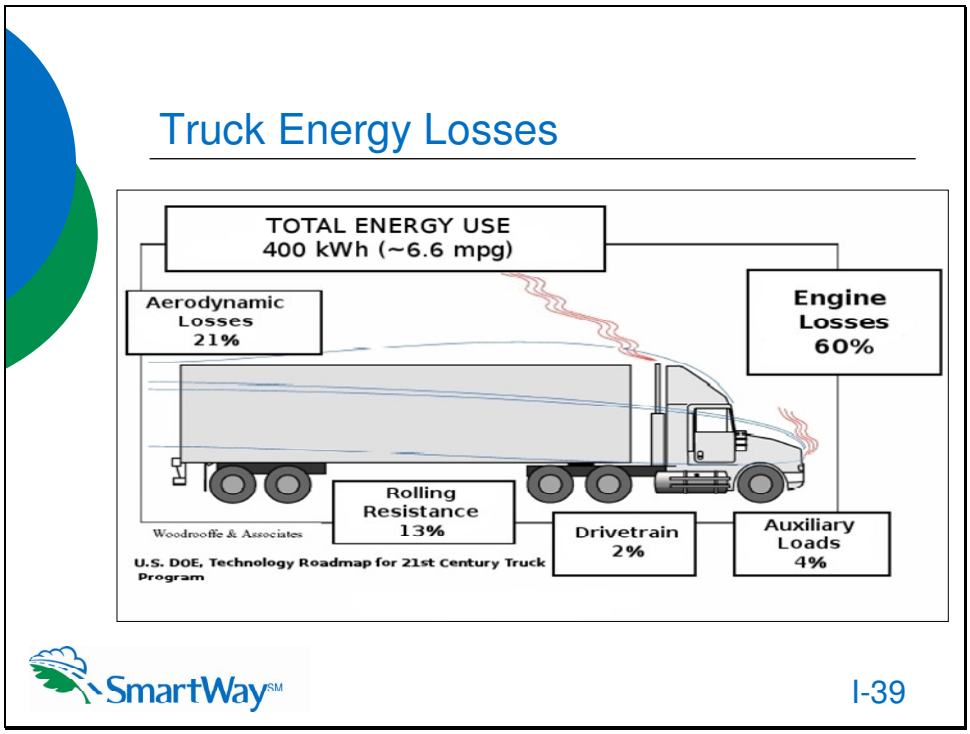
Freight trucks make up a significant portion of mobile source emissions, and the sector is expected to grow significantly. With fuel remaining one of the biggest operational expenses to most fleets, a program that reduces fuel use while reducing emissions should be embraced by the industry and the regulators.

Ground freight accounts for:

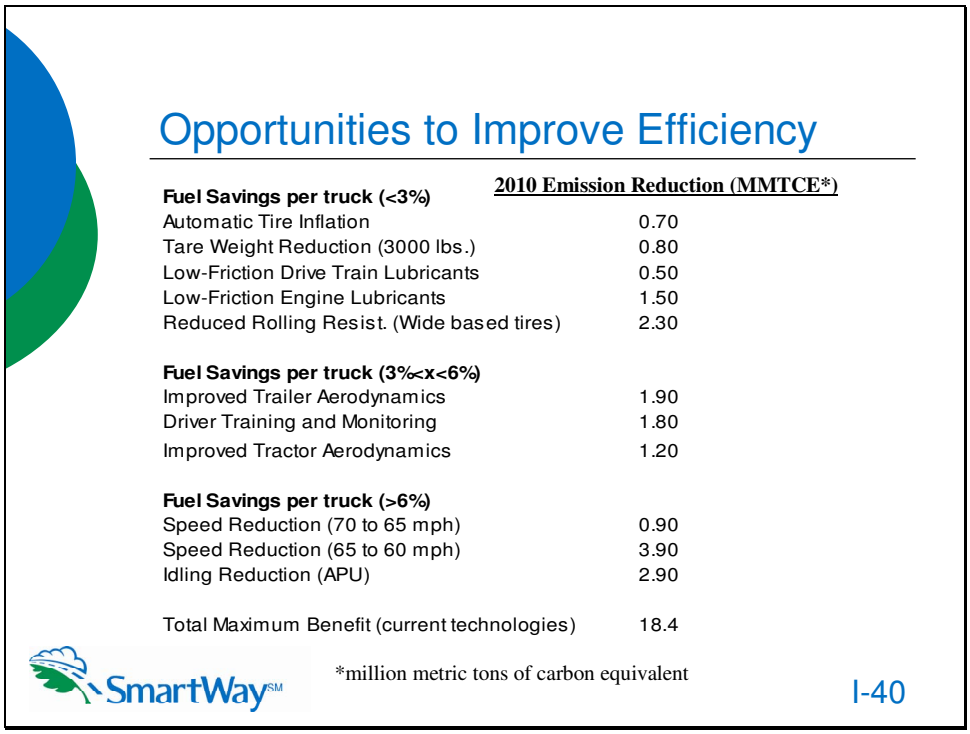
About 50 percent of transportation NOx

About 27 percent of transportation PM

About 18 percent of transportation CO2



A significant portion of the energy a truck loses while in motion can be recouped with advanced technologies. This saves fuel and reduces emissions (a win-win for EPA and the industry).



These MMTCE savings estimates consider:

All trucks across entire fleet

All trucks are 'perfect,' using all technologies as a package

Retrofitting existing trucks with these technologies

Idle Reduction Technologies

Average fuel savings	**Emissions Controlled**
Trucks: 1 gal/hr Rail: 4 - 12 gal/hr	CO_2, NO_X, and PM

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

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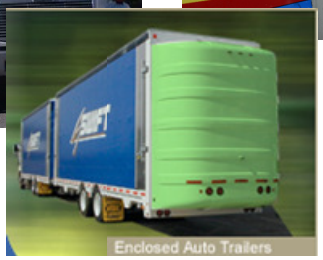
Trailer Aerodynamics

Average fuel savings	Emissions Controlled
Trucks: 5%	CO_2, NOx

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



Low Rolling Resistance Tires

Single Wide Base and Improved Duals

Average fuel savings	**Emissions Controlled**
Trucks: 4 - 5%	CO_2, NOx

- Single-wide tires
  - Reduced rolling resistance
  - Reduced weight
- Low rolling resistance dual tires

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Wheel and Tire Inflation Improvements

Aluminum Wheels, Tire Pressure Monitoring and Inflation

Average fuel savings		Emissions Controlled
Trucks:	3 - 5%	CO_2, NOx

- Tire pressure monitoring and inflation
  - Ensure appropriate pressure for efficiency
  - Reduced maintenance and extended tire life
- Aluminum wheels save weight and inertia energy

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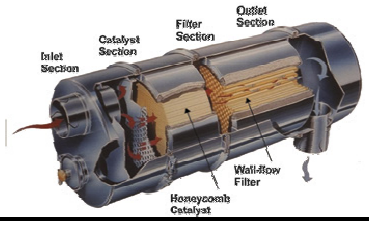
Exhaust After-Treatment Devices

Average fuel savings	Emissions Controlled
----	PM

- Diesel Oxidation Catalysts
  - Estimated cost: $1,000
  - Reduce PM by 25% – 40%
- Particulate Matter Filters
  - Estimated cost $6,000
  - Costs expected to drop sharply after 2007
  - Reduce PM by 80% – 90%



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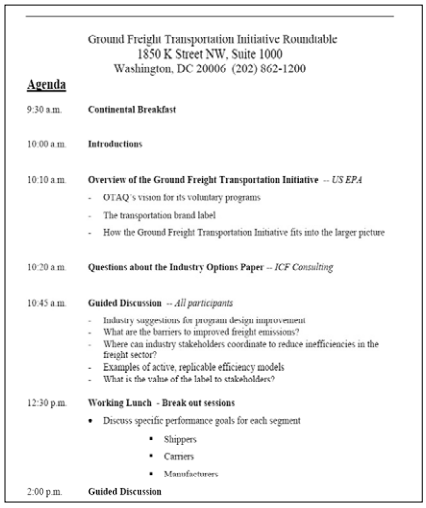
Intermodal Shipping

Response to Industry Report

- In December, 2001, EPA distributed the report to industry experts during a day-long workshop
- In January, 2002, a larger roundtable event was held to unveil the idea to industry stakeholders
- Began process of stakeholder outreach and input from industry leaders



Ground Freight Transportation Initiative Roundtable
1850 K Street NW, Suite 1000
Washington, DC 20006 (202) 862-1200

Agenda

9:30 a.m. **Continental Breakfast**

10:00 a.m. **Introductions**

10:10 a.m. **Overview of the Ground Freight Transportation Initiative** -- *US EPA*
- OTAQ's vision for its voluntary programs
- The transportation brand label
- How the Ground Freight Transportation Initiative fits into the larger picture

10:20 a.m. **Questions about the Industry Options Paper** -- *ICF Consulting*

10:45 a.m. **Guided Discussion** -- *All participants*
- Industry suggestions for program design improvement
- What are the barriers to improved freight emissions?
- Where can industry stakeholders coordinate to reduce inefficiencies in the freight sector?
- Examples of active, replicable efficiency models
- What is the value of the label to stakeholders?

12:30 p.m. **Working Lunch - Break out sessions**
- Discuss specific performance goals for each segment
  - Shippers
  - Carriers
  - Manufacturers

2:00 p.m. **Guided Discussion**

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Industry Experts were from Academic, Government and non-profit organizations: Massachusetts Institute of Technology, Argonne National Laboratory, Burlington Northern Santa Fe, California Trucking Association

The January 2002 workshop included groups that eventually became Charter Partners: Home Depot, FedEx, UPS, Roadway Express

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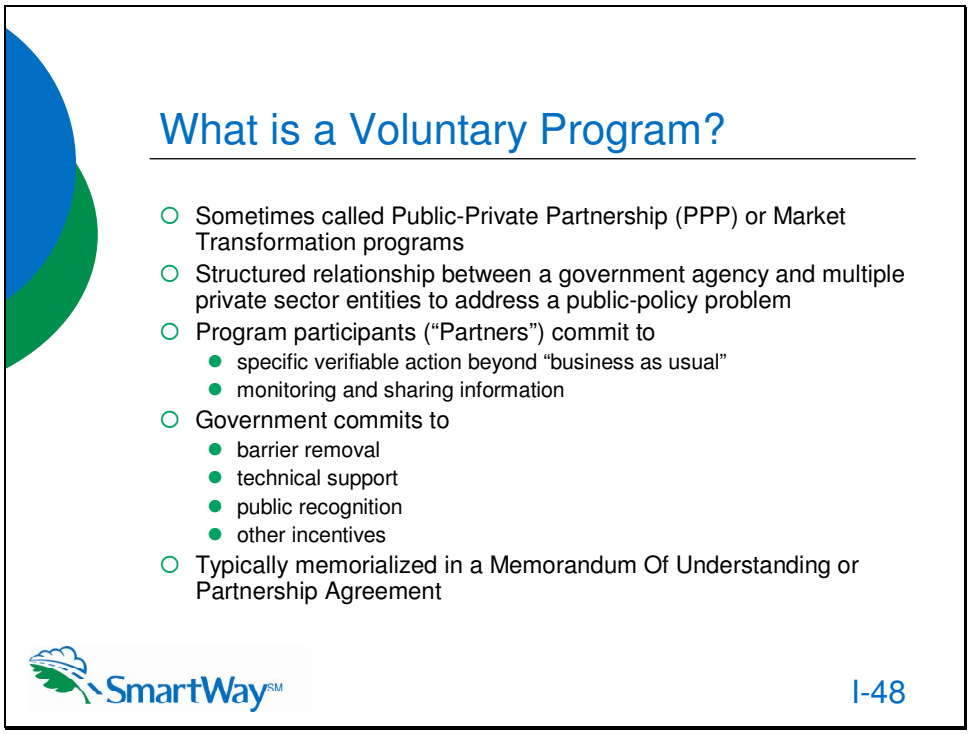


All voluntary partnerships fit within these design elements. This presentation will discuss how SmartWay was designed within these elements.

Energy Star, the most established EPA partnership, paved the way for EPA to explore more voluntary efforts. ENERGY STAR has over 60% brand awareness with consumers today. ENERGY STAR has over 40 different product categories they label – appliances, windows, electronics, buildings (homes and commercial), etc.

All of these logos are EPA voluntary programs, except:

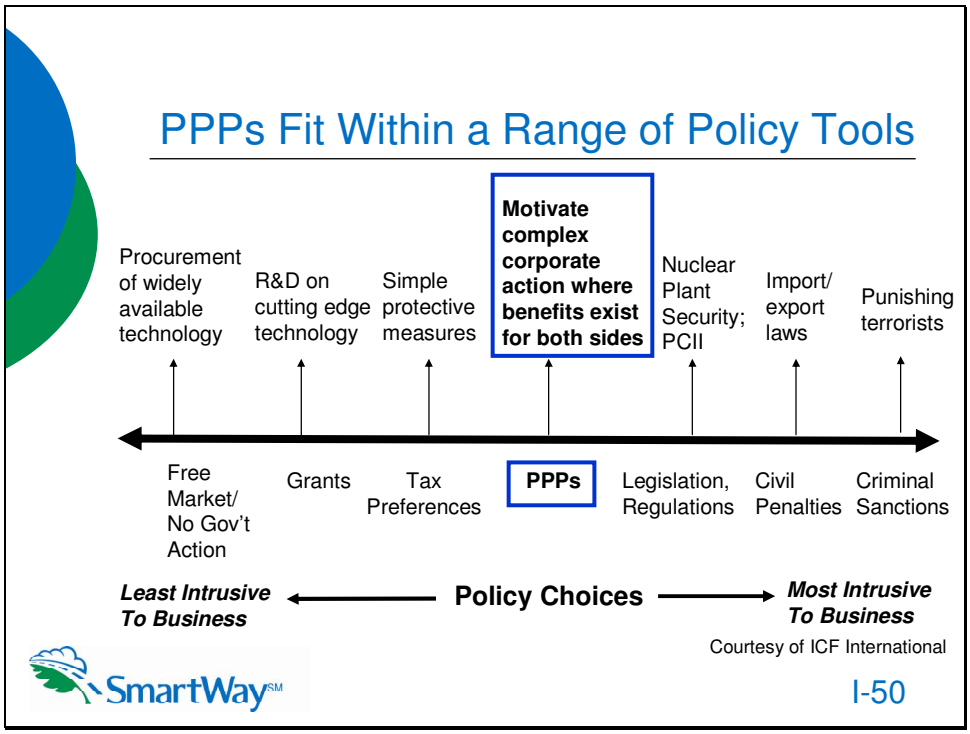
VPP (Voluntary Protection Programs), which is OSHA

Methane to Markets, which is an international partnership with 14 countries. EPA chairs the steering committee.

CHP = Combined Heat and Power Partnership

AgStar = Agricultural-based Partnership

C2P2 = Coal Combustion Products Partnership


PPPs Fit Within a Range of Policy Tools
Procurement of widely available technology
R&D on cutting edge technology
Simple protective measures
Motivate complex corporate action where benefits exist for both sides
Nuclear Plant Security; PCII
Import/ export laws
Punishing terrorists
Free Market/ No Gov't Action
Grants
Tax Preferences
PPPs
Legislation, Regulations
Civil Penalties
Criminal Sanctions
Least Intrusive To Business
Policy Choices
Most Intrusive To Business
Courtesy of ICF International
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PPPs Fit Within a Range of Policy Tools

- Establishing a program that provides value to participants
  - The "value proposition" is a key drivers of success… is it compelling enough?
- Setting goals and measuring performance
  - How do you balance the need for evaluation with limiting burden on partners?
- Recruiting partners
  - How do you get Partners to commit? Are your communications materials effective?
- Getting partners to implement program
  - How do you keep Partners interested?
- Staffing the program and maintaining over time
  - What are the initial staffing needs? Range of services and expertise required?
- Moving the Market
  - Does the program have the cache to continue to attract partners?

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Voluntary Programs – Lessons Learned

- Challenge 1: Establishing a Program that Provides Value
  - Identify any barriers (e.g., regulatory, informational, etc.) and develop program support to overcome barriers
  - Create a "value proposition" (e.g., how will it benefit participants?)
  - Identify motivators and design program to capitalize on them (e.g., Recognition, Business Opportunities):
  - Involve potential partners in the design of the program
  - Use feedback loops to regularly measure and evaluate the current costs and benefits of participation; and adjust program as needed

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Voluntary Programs – Lessons Learned

- Challenge 2: Setting Goals and Measuring Performance
  - Set measurable goals up front, evaluate and modify program
  - Set up ways to estimate (and possibly inhibit) “free riders”
  - Simplify the data collection – the more onerous the data collection, the less likely Partners will want to participate

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Voluntary Programs – Lessons Learned

- Challenge 3: Recruiting Partners
  - Identify and understand target audience and create effective communication materials
  - Use experienced business marketers rather than analytical staff for recruiting and use professional sales techniques
  - Reach out to the appropriate person (e.g., Decision-making authority, "Champion" within organization)
  - Your partners are businesses - "Don't waste their time"
  - Identify and recruit low-hanging fruit at first, but beware of free-riders
  - Use third party recruiters effectively

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Voluntary Programs – Lessons Learned

- Challenge 4: Getting Partners to Implement the Program
  - Link rewards to successful completion of project
  - Take advantage of momentum when the partners first join
  - Set long- and short-term goals and milestones
  - Constantly resell the program to partners and communicate often
  - Provide training and other needed support

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Voluntary Programs – Lessons Learned

- Challenge 5: Staffing the Program and Maintaining Over Time
  - Use consistent core staff throughout program, adding expertise as needed
  - Be ready to invest in training for core staff to shore up skills they do not have
  - Use IT (e.g., sales tracking systems, computer-based training, etc.) to maximize your results

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Voluntary Programs – Lessons Learned

- Challenge 6: Moving the Market
  - Focus on long-run behavioral change for real, sustained market transformation
  - Recognize the value of market leaders as early adopters of the program in moving the market
  - Use a sector-based approach to identifying triggers and motivators
  - Develop program messages and value statements than can endure market and economic fluctuations.
  - Constantly use feedback loops to evaluate and adjust your approach

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Benefits for the Environment and Economy

Fuel Consumption, CO2, NOx, and PM

- Lessen health impacts from diesel emissions:
  - Exacerbates asthma, respiratory and cardiac illness
  - Possible human carcinogen
- Improve air quality:
  - 474 counties are out of compliance with the 8-hour ozone standard
  - 225 counties are out of compliance with the particulate matter standard
- Lessen the impacts on our most vulnerable populations:
  - Children, the elderly and people with existing health conditions
- Reduce CO2 emissions that contribute to climate change:
  - Every gallon of diesel consumed creates 22.2 pounds of CO2
- Improve energy security:
  - Fuel prices, availability

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Benefits for Carriers and Shippers

- Reduced fuel consumption and fuel costs
- Improved business relationships
- Create incentives for drivers
- Access to EPA technical and financial support:
  - Testing and verification programs for the latest technologies
  - Financial assistance programs around the country
- Create Recognition for your company and industry
- Marketing opportunities
  - EPA markets SmartWay Partners
- Attract socially responsible investors
  - Huge increase in number of corporations publishing sustainability reports
- Measure and improve your environmental footprint

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Staffing Needs (Program Initiation) 2001 - 2002

- 2 – 3 FTEs (full-time equivalents)
- Staff should have:
  - Experience in freight industry, able to develop a profile of the national trucking industry
  - Staff with experience in voluntary program design and implementation

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These are the primary staffing needs for program initiation and exploration.

Discussion: Examining the Exploratory Stage for Your Country

Discussion about Potential Partners/Leaders

1. Who are the industry leaders and nonprofit associations that can serve as leaders?
2. What are the opportunities to leverage existing programs and initiatives?
3. Are there groups in the financial services sector that can provide innovative financing to trucking companies and owner-operators?

Discussion about Freight Industry Structure

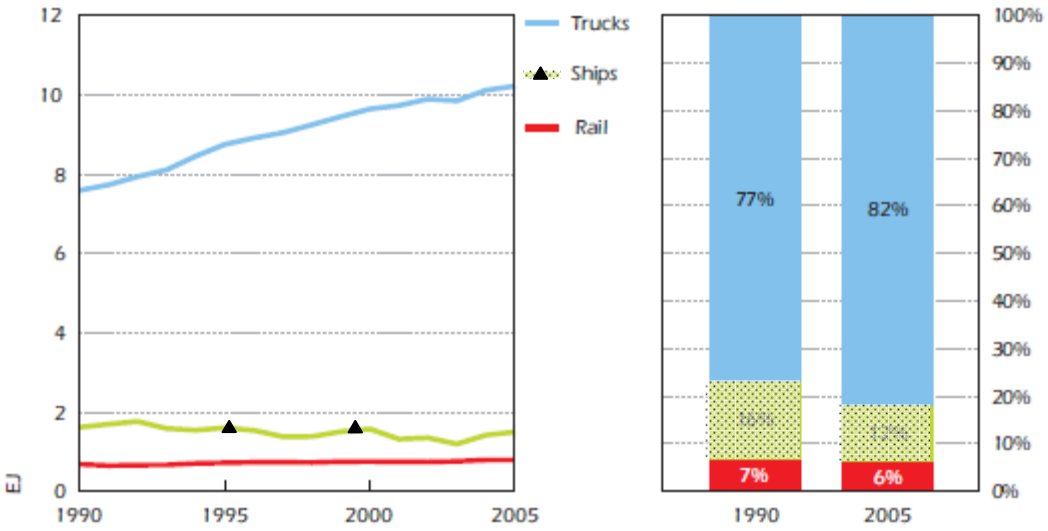
1. Review supplemental information on freight transport and energy use (see page I-47).
2. How significant is trucking and other modes in freight GHG emissions in your country? What are the trends in freight activity, emissions, and efficiency?

Discussion about Technology Opportunities

1. Review supplemental information on U.S. truck and rail technologies to improve energy efficiency (see page I-50).
2. Which efficiency strategies are most common in your country? Which are not?
3. Where are the greatest opportunities to increase market penetration of existing technologies?
4. Which emerging technologies hold the most promise?

Supplemental Information on Freight Energy Intensity

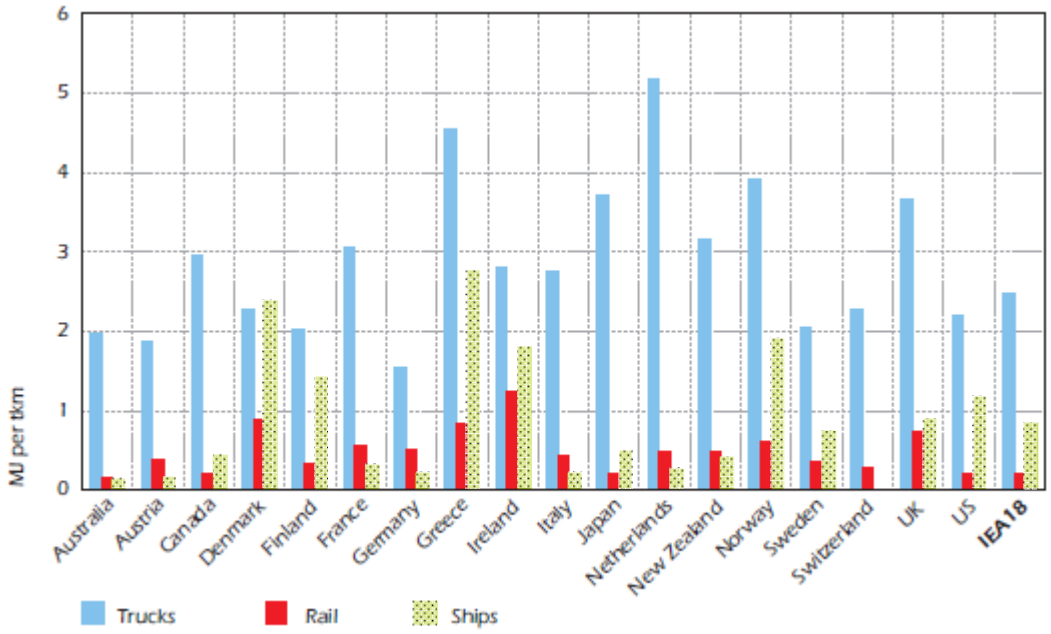
Truck Share of Freight Energy Has Grown Steadily since 1990



Source: Worldwide Trends in Energy Use and Efficiency, International Energy Agency, 2008

- Between 1990 and 2005, total energy used by trucks grew 32%.
- Rail and ship energy use remained unchanged.
- The truck share of freight energy grew from 77% in 1990 to 82% in 2005.

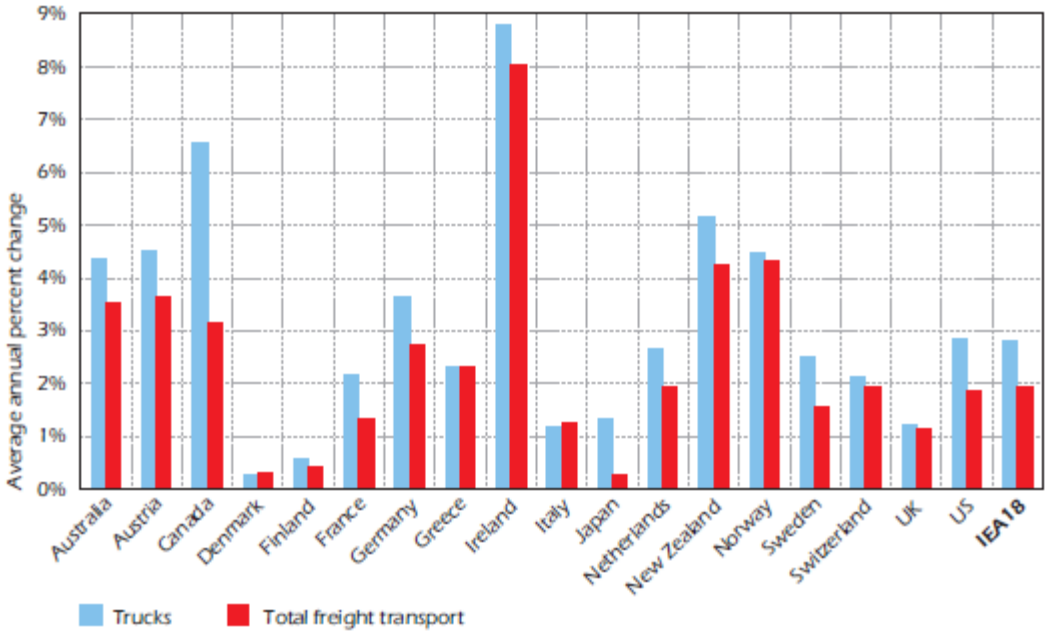
The Energy Intensity of Each Mode Varies Greatly by Country



Source: Worldwide Trends in Energy Use and Efficiency, International Energy Agency, 2008

- On average, truck energy intensity (MJ / ton-km) is triple that of ships and 15 times larger than rail.
- There is great variation across countries in the energy intensity of freight.
- In most countries, trucks require much more energy than rail or ships.

The Increase in Freight Volume Varies by Country



Source: Worldwide Trends in Energy Use and Efficiency, International Energy Agency, 2008

- Overall, truck volume increased 3% annually while total freight volume increased 2% annually.
- There is great variation across countries in the increase of freight volume
- In many countries, truck volume has increased at a much faster pace than overall freight volume.

Supplemental Information on Truck Technologies to Boost Fuel Efficiency

Reduced Aerodynamic Drag Technologies

Because aerodynamic drag dominates energy losses at highway speeds, improving a truck's aerodynamics offers great potential gains in fuel efficiency. Excessive drag usually occurs at the front of the tractor, in the gap between the tractor and trailer, under the tractor and trailer, and behind the trailer.

Options to reduce aerodynamic drag include:

- Add-on or integrated cab-roof fairings (standard on many trucks).
- Cab extenders (sometime called gap seals).
- Truck tractor side fairings.
- Front bumper air dam.
- Trailer side-skirts and front fairings.

	Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
Tractor aero package	3–5%	80-90% of van trailer trucks 50-60% of non-van trailer trucks	100% of truck tractors
Trailer aero package	3–5%	< 5% of trailers	100% of van trailers (accounts for 65% of VMT)

Reduced Rolling Resistance: Single-Wide Tires

A variety of tire options can reduce rolling resistance and improve truck fuel economy. A single wide-base tire can replace dual tires on the truck's drive and trailer axles. Similar efficiency gains can be achieved using dual tires with low rolling resistance. Fuel economy can be further increased using lightweight cast aluminum alloy wheels and aluminum axle hubs.

Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
3–5%	<5% of trucks	100% of truck tractors

Reduced Rolling Resistance: Automatic Tire Inflation

Underinflated tires cause higher rolling resistance and fuel consumption. Proper tire inflation can be maintained at all times using automatic tire inflation systems that sense pressure and supply pressurized air to tires on a continuous basis. In addition to fuel savings, maintaining proper tire pressure will decrease tire wear, the frequency of road emergencies, and the time spent on periodic tire pressure inspection.

Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
1–2%	5–10% of trucks	100% of truck tractors

Reduced Frictional Losses: Fuel Efficiency Lubricants

Friction losses in the drive train (transmission and differential) and engine can be reduced by using low viscosity lubricants. Most manufacturers of lubricants produce "fuel economy" brands that have lower viscosity than standard lubricants. Low viscosity lubricants are usually synthetics, since they are better able to meet volatility requirements, but some mineral oils can also improve fuel economy.

	Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
Transmission lubricants	1–2%	5–10% of trucks	100% of truck tractors
Engine lubricants	1–2%	10% of trucks	100% of trucks

Idle Reduction Technologies

A variety of technologies can provide truck cab heating, cooling and/or electrical supply as an alternative to engine idling.

- *Automatic engine idle systems* start and stop the truck engine automatically to maintain a specified cab temperature, or to maintain minimum battery.
- A *bunk heater* is a small, lightweight, diesel fuel-fired device mounted in the cab that provides heat for cab comfort.
- An *auxiliary power unit* (APU) is mounted externally on the truck cab. Electricity from the APU can be used to power air conditioning, heating and electrical accessories for the cab and sleeper.
- *Advanced Truck Stop Electrification* can provide heating and cooling from an external source. Under this system, truck parking bays are installed with systems that provide the cab with heating, cooling and other amenities through an external console.

	Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
Bunk heater	5%	50% adoption in Europe, uptake in U.S.	100% of sleeper cab trucks
Auxiliary power unit	8%	50,000 units sold in 2007	100% of sleeper cab trucks
Truck stop electrification	8%	136 Stations in U.S.	Over 1,600 existing stations

Supplemental Information on Rail Technologies to Boost Fuel Efficiency

Locomotive Idle Reduction Technologies

Like trucks, locomotive idling can be reduced using several technologies. EPA estimates that switch locomotives run at idle 60% of the time, which would account for over 20% of their total fuel use. Locomotive Auxiliary Power Units (APUs) automatically shut down the main locomotive engine, while maintaining all vital main engine systems at greatly reduced fuel consumption.

Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
2–13%	Up to 50% of locomotive fleet, depending on railroad.	100% of locomotives.

Hybrid Locomotives

Hybrid locomotives, such as the "Green Goat," combine a diesel locomotive engine with a diesel-alternator set and a bank of batteries. Switching locomotives are an attractive application for a hybrid locomotive, given that full power is only needed intermittently and for relatively short periods.

A true hybrid line-haul locomotive, developed by GE in 2007, adds a battery pack to the basic locomotive and redirects dynamic braking power to the battery instead of resistor banks. The control system optimizes power management on the locomotive to minimize overall fuel consumption.

Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
15-50%	60 units in service (2007)	100% of yard switchers.

Gen-Set Locomotives

A Gen-set locomotive is equipped with two or three independent diesel-alternator sets. One set is kept running on a rotating basis to provide basic locomotive functions, and the second and third sets are started as necessary when higher power is needed. The initial development was sponsored by Union Pacific in partnership with National Railway Equipment, with the first locomotive being delivered in 2005. While fuel efficiency gains are not quite as substantial as with the hybrid locomotive, Gen-sets have proved successful in service and about 250 had been ordered or delivered by early 2007, with every prospect of further growth.

Fuel Savings	Current Market Penetration	Maximum Potential Market Penetration
10–40%	250 units in service	100% of yard switchers.

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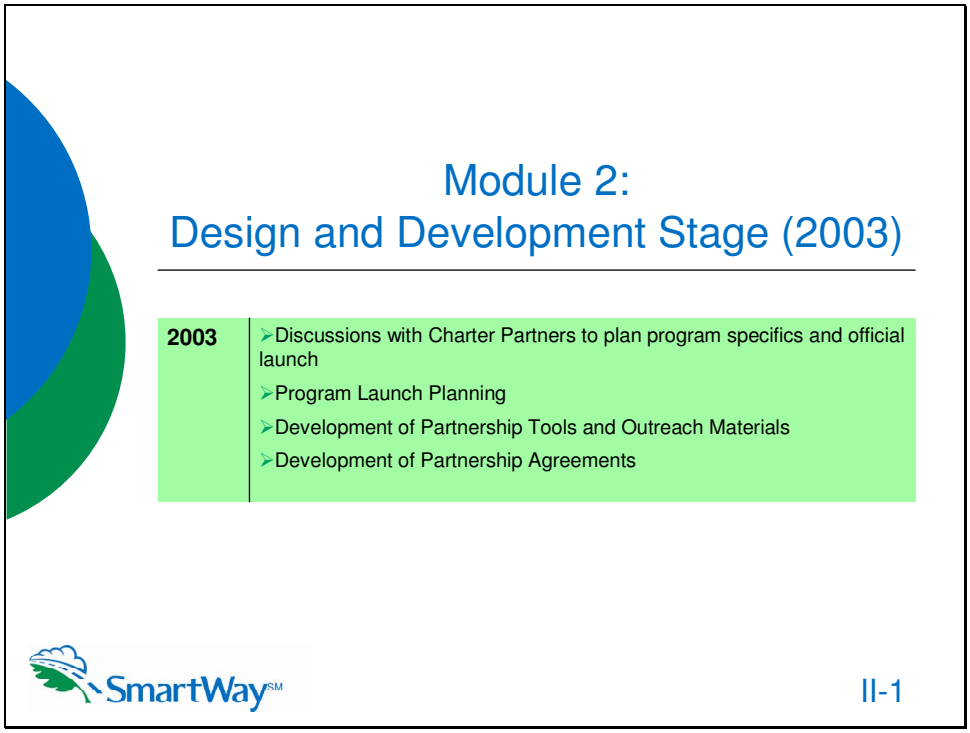
Module II. Design and Development Stage



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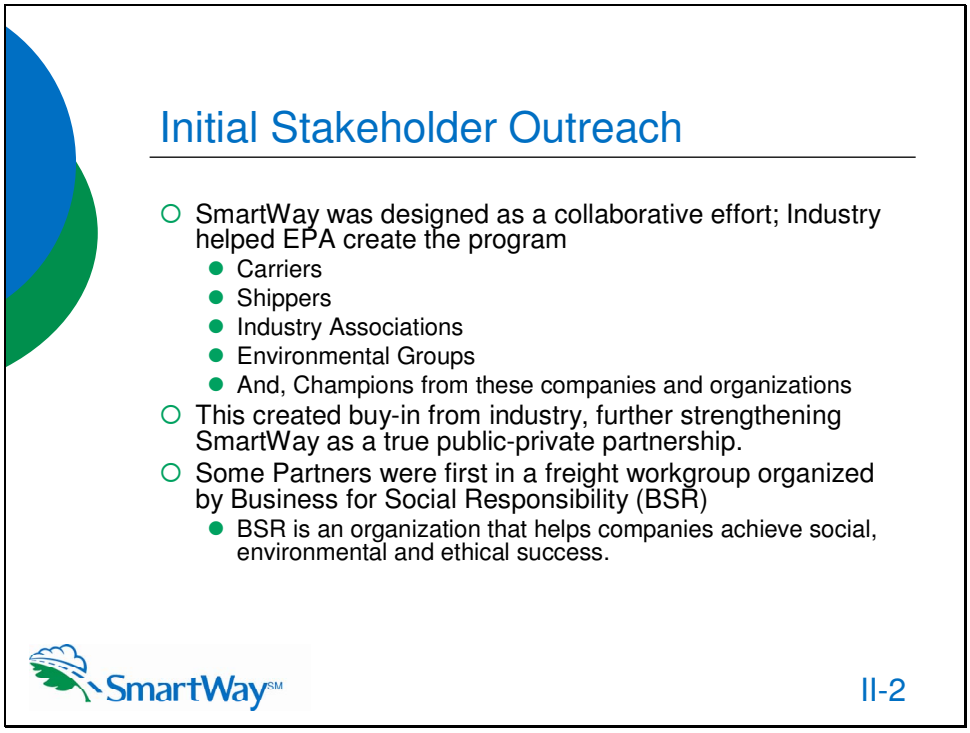

After the initial idea was developed, and some industry groups became interested, EPA sought a group of initial stakeholders, to further develop and refine the Partnership.

Including industry in the initial planning stages enfranchised them to actively participate in the design process.

Charter Partnership Group

- 15 Companies joined as Charter Partners, both shippers and carriers
  - Canon, Coca-Cola, CSX Transportation, FedEx Express, HEB, The Home Depot, IKEA, Interface, Nike, Norm Thompson Outfitters, Roadway Express, Schneider National, Swift Transportation, UPS, Yellow Transportation
- Provided EPA with institutional knowledge of the industry, ensuring SmartWay would be viable

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U.S. Environmental Protection Agency

Website Development

- Began development of Web site in preparation for program launch
- Includes information on current Partners, news, funding opportunities, official program materials, technical reports, general SmartWay information
- Continual updates based on Partner requests and news items

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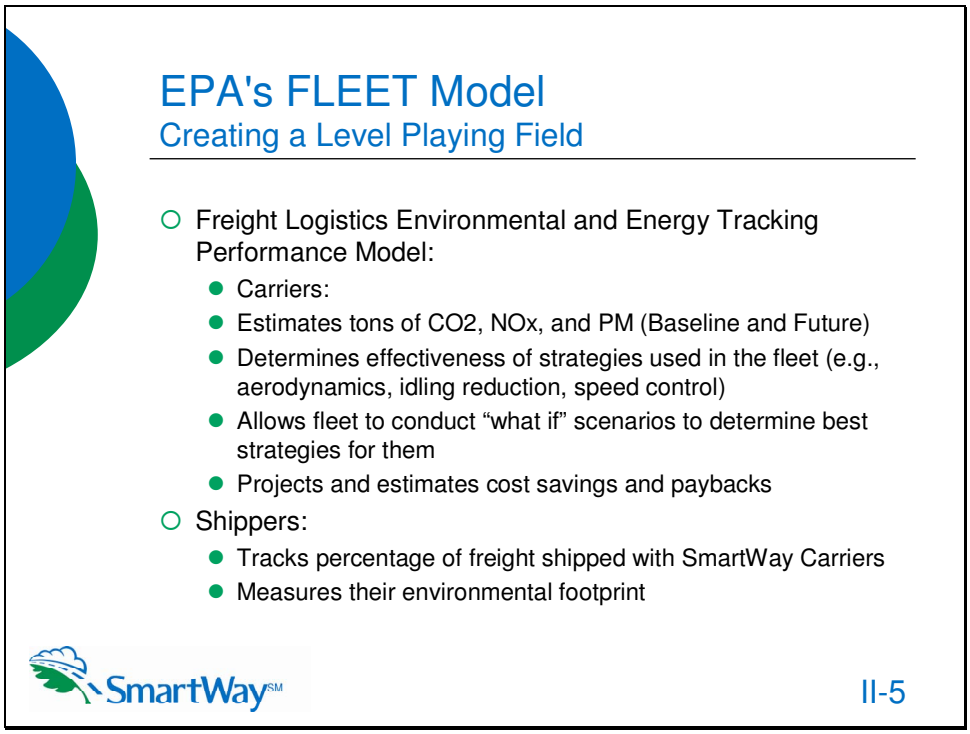
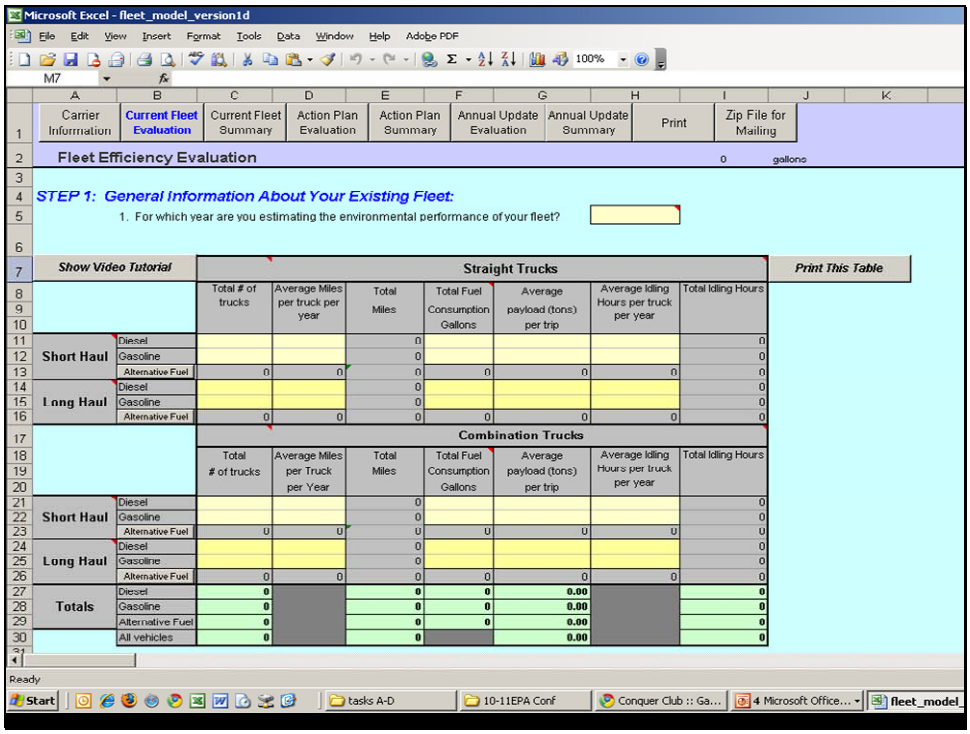
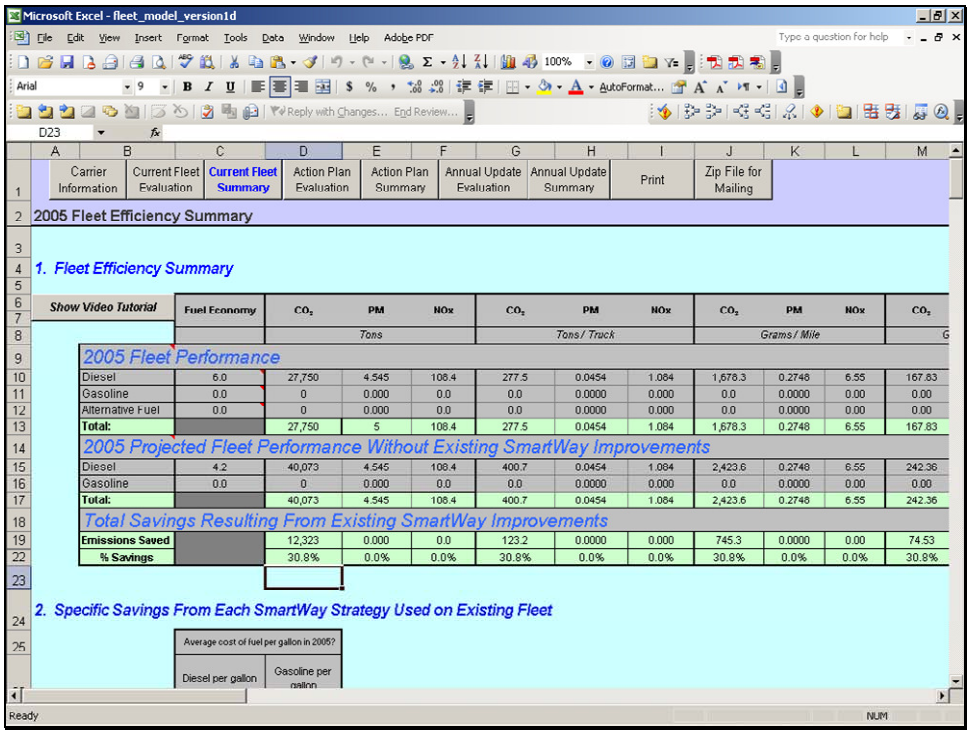


The FLEET model is integral part of Partnership process; used to collect baseline partner data, annual updates and project emissions savings

FLEET model was developed with Charter Partner input and peer reviewed

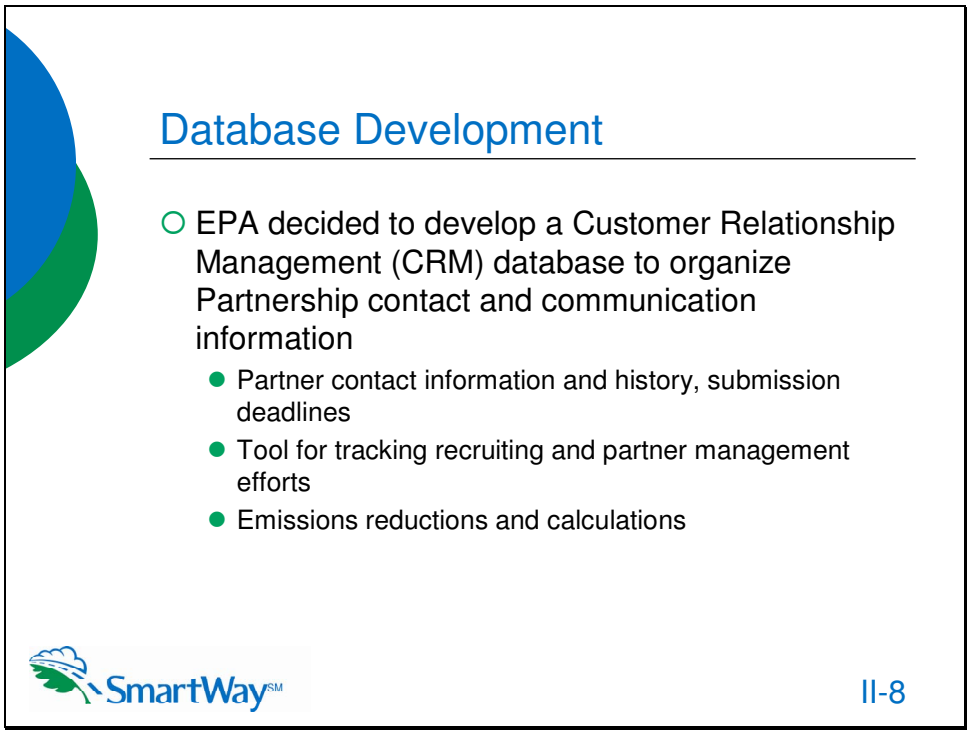
EPA tried to balance need for detailed data collection with need for user friendly tool


Microsoft Excel - fleet_model_version1d
File Edit View Insert Format Tools Data Window Help Adobe PDF
Carrier Information
Current Fleet Evaluation
Current Fleet Summary
Action Plan Evaluation
Action Plan Summary
Annual Update Evaluation
Annual Update Summary
Print
Zip File for Mailing
Fleet Efficiency Evaluation
0 gallons
STEP 1: General Information About Your Existing Fleet:
1. For which year are you estimating the environmental performance of your fleet?
Show Video Tutorial
Print This Table
Straight Trucks
Total # of trucks
Average Miles per truck per year
Total Miles
Total Fuel Consumption Gallons
Average payload (tons) per trip
Average Idling Hours per truck per year
Total Idling Hours
Short Haul
Long Haul
Diesel
Gasoline
Alternative Fuel
Combination Trucks
Average Miles per Truck per Year
Totals
All vehicles
Ready
Start
tasks A-D
10-11EPA Conf
Conquer Club :: Ga...
4 Microsoft Office...
fleet_model_



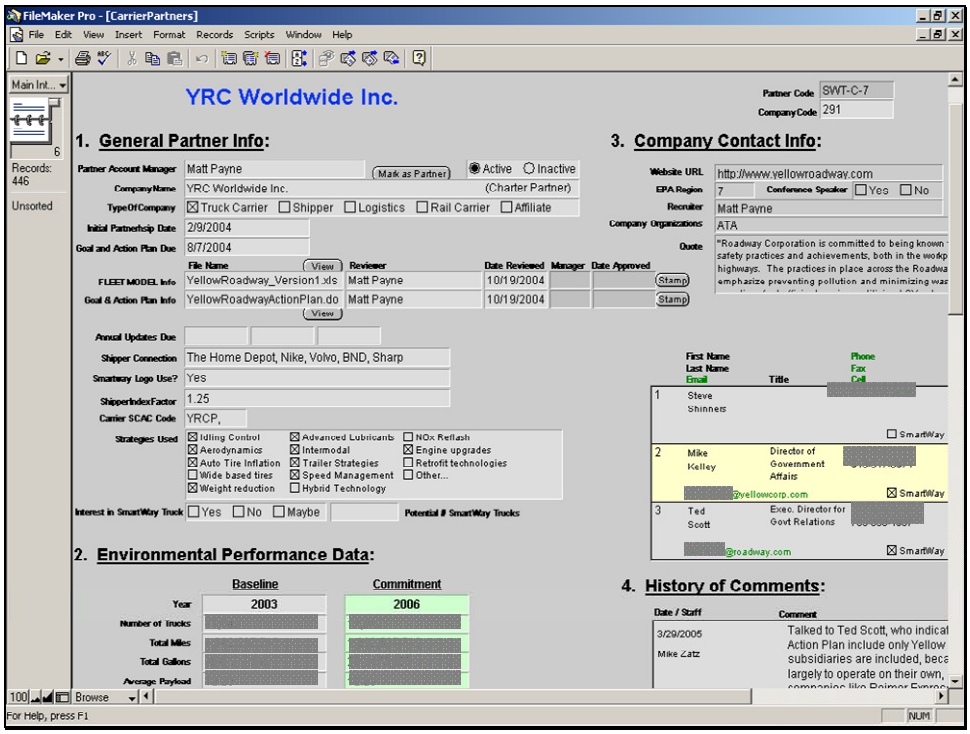
This is the summary page that is generated after a fleet enters the relevant information (trucks, current technologies, miles traveled, hours idling, etc).

The model lists fuel consumption and emissions by pollutant (in "1. Fleet Efficiency Summary"), it also allows companies to figure out savings from specific technologies ("Specific Savings from Each SmartWay Strategy…").



The Customer Relationship Management (CRM) database is essential to track recruits, partners, and other related groups.

It is ESSENTIAL to have a database system to maintain a voluntary partnership like SmartWay.



Typical CRM screen for a Partner. Includes contact info, communication history, strategies being used, and performance data. Standardized format is important for queries and other data analysis.

Partnership Agreements

- Partnership Agreements formalize commitments
- Common Method for Voluntary Programs (often called a Memorandum of Understanding)
  - Successfully gain commitment from corporate executives, set objectives, and develop timelines
- SmartWay Carrier Partners agree to:
  - Measure the environmental performance of their fleet with EPA's FLEET Model
  - Identify a goal to achieve within 3 years
  - Submit the goals and action plan to EPA within 6 months
  - Report progress annually
- EPA agrees to:
  - Increase public awareness of the Partnership and Partners participation
  - Assist Partners in achieving goals by providing technical assistance, marketing support, and create incentives (subject to appropriation)

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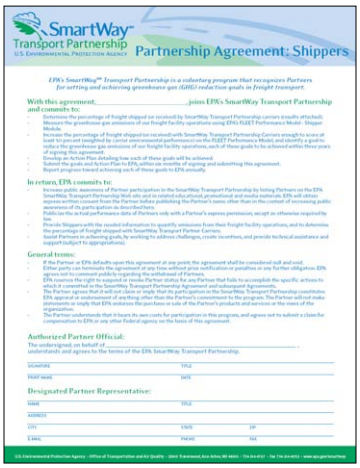
Partnership Agreements

- SmartWay Partner Shippers agree to:
  - Determine the percentage of freight shipped with Partner Carriers
  - Increase the amount of freight shipped with Partners to at least 50 percent within three years
- EPA agrees to:
  - Assist shippers quantify the emissions from their warehouse and freight operations
  - Publicize Partner efforts and increase public awareness of these efforts


SmartWay Transport Partnership
U.S. Environmental Protection Agency
Partnership Agreement: Shippers

EPA's SmartWay™ Transport Partnership is a voluntary program that recognizes Partners for setting and achieving greenhouse gas (GHG) reduction goals in freight transport.

With this agreement, _____ joins EPA's SmartWay Transport Partnership and commits to:

- Determine the percentage of freight shipped (or received) with SmartWay Transport Partnership carriers (results attached).
- Measure the greenhouse gas emissions of our freight facility operations using EPA's FLEET Performance Model - Shipper Module.
- Increase the percentage of freight shipped (or received) with SmartWay Transport Partnership Carriers enough to score at least ten percent (weighted by carrier environmental performance) on the FLEET Performance Model, and identify a goal to reduce the greenhouse gas emissions of our freight facility operations; each of these goals to be achieved within three years of signing this agreement.
- Develop a Climate Action Plan detailing how each of these goals will be achieved.
- Submit the goals and Action Plan to EPA, within six months of signing and submitting this agreement.
- Report progress toward achieving each of these goals to EPA annually.

In return, EPA commits to:

- Increase public awareness of Partner participation in the SmartWay Transport Partnership by listing Partners on the EPA SmartWay Transport Partnership Web site and in related educational, promotional and media materials. EPA will obtain express written consent from the Partner before publishing the Partner's name other than in the context of increasing public awareness of its participation as described here.
- Maintain the as-built performance data of Partners only with a Partner's express permission, except as otherwise required by law.
- Provide Shippers with the needed information to quantify emissions from their freight facility operations, and to determine the percentage of freight shipped with SmartWay Transport Partner Carriers.
- Assist Partners in achieving goals, by working to address challenges, create incentives, and provide technical assistance and support (subject to appropriations).

General terms:

- If the Partner or EPA defaults upon this agreement at any point, the agreement shall be considered null and void.
- Either party can terminate the agreement at any time without prior notification or penalties or any further obligation. EPA agrees not to comment publicly regarding the withdrawal of Partners.
- EPA reserves the right to suspend or revoke Partner status for any Partner that fails to accomplish the specific actions to which it committed in the SmartWay Transport Partnership Agreement and subsequent Agreements.
- The Partner agrees that it will not claim or imply that its participation in the SmartWay Transport Partnership constitutes an endorsement by the government of the Partner's products and services or the views of the organization.
- The Partner understands that it bears its own costs for participation in this program, and agrees not to submit a claim for compensation to EPA or any other Federal agency on the basis of this agreement.

Authorized Partner Official:

The undersigned, on behalf of _____, understands and agrees to the terms of the EPA SmartWay Transport Partnership.

SIGNATURE | TITLE

PRINT NAME | DATE

Designated Partner Representative:

NAME | TITLE

ADDRESS

CITY | STATE | ZIP

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U.S. Environmental Protection Agency · Office of Transportation and Air Quality · 2000 Traverwood, Ann Arbor, MI 48105 · 734 214 4767 · Fax 734 214 4052 · www.epa.gov/smartway

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Shippers determine the percentage of freight moved with SmartWay Carriers.

EPA allows Shippers to choose a metric to calculate this. Common metrics are VMT, number of trips, total weight shipped, percent of annual transportation spend

Any shipper that has over 50% of its freight shipped with Partner Carriers is eligible to use the logo.

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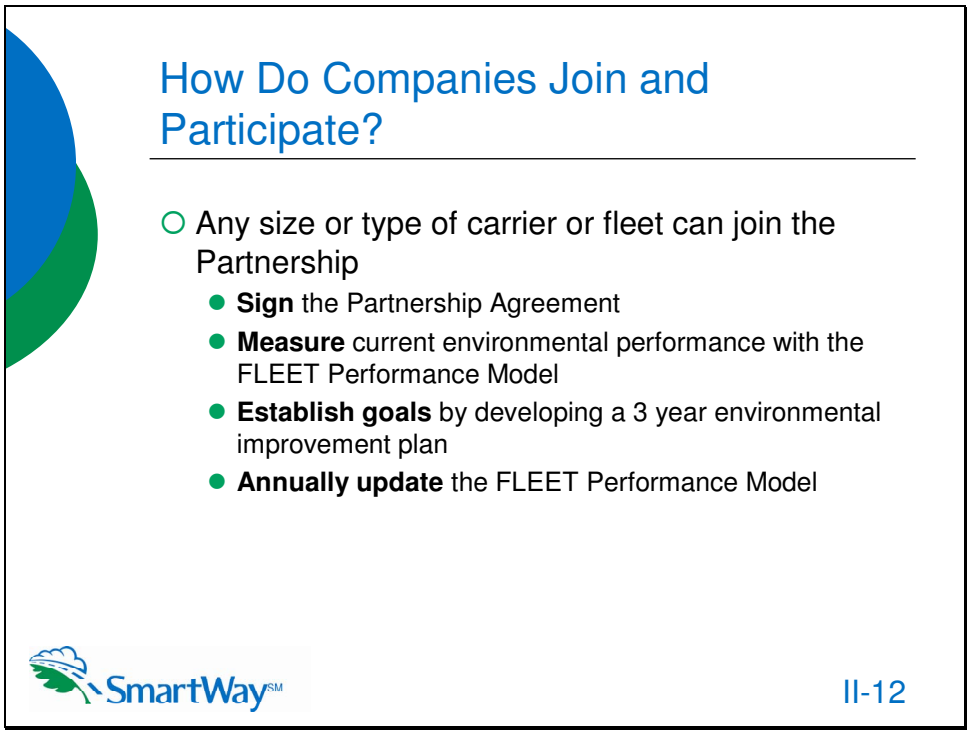

EPA is re-evaluating these requirements as part of the SmartWay 2.0 and Supply Chain modeling development. The goal is to streamline partner process.

Funding (2003)

Fiscal Year 2003 Budget: $1,000,000

- Marketing and Recruiting: $200,000
  - EPA Contractor Support
  - EPA Travel
  - Software, Display Booth, Graphic Development
  - Marketing Material for Recruiting
- Technology Grants and Testing: $500,000
  - Idling Grants and other Technologies
- Outreach and Other Initiatives: $300,000
  - BSR (Business for Social Responsibility) Grant
  - Market Research
  - General Operating Costs

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Staffing Needs (Design and Development) 2003

- 4-6 FTEs
- Staff should have:
  - Relationships with Stakeholder Groups
  - Trusted Industry Experts and Advisors
  - Staff involved in the initial planning stages
  - Staff w/ technical ability to write and interpret technical reports / convey technical knowledge
  - Public Speaking and Sales/Marketing experience

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These are the primary staffing needs for program design and development.

Technical ability to test products, write technical reports, and convey technical information (engineers) Technical knowledge of trucks and engines (engineers) Public speaking (outreach) Sales (outreach) Marketing (outreach)

Discussion: Examining Design and Development for Your Country

A panel of stakeholders from other countries discusses some of the questions that should be considered before a SmartWay-like program is launched.

Potential Discussion Points for Panel Members

1. Would a program like SmartWay succeed in your country? What elements would need to be modified?
2. What are some of the start-up challenges or obstacles that a program like SmartWay would face in your country?
3. Is there experience with other voluntary environmental or energy efficiency programs in your country/region? How can that experience support a program focused on freight transport?
4. What is the relationship between your country's environmental agency and the freight industry? What barriers exist to improving this relationship, and how can they be overcome?
5. Would the government need to play a primary role in the establishment of a program or can a trade group or NGO establish the program?

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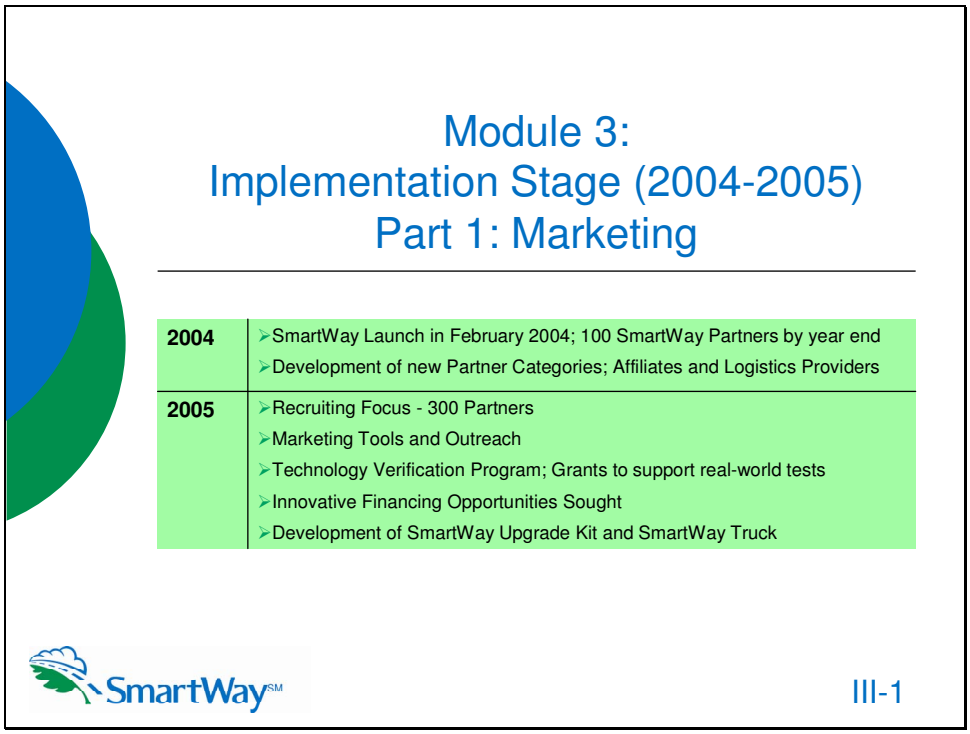
Module III. Implementation Stage
Part 1



As the Partnership grew, there became demand for new Partner categories, Affiliates and Logistics

As the Partnership grew to 300+ Partners, EPA began focusing on some long-term projects, the Upgrade Kits and SWT Truck. EPA also conducted a technology verification program to ensure that the technologies actually work.

Program Launch

- Kickoff event held on February 9, 2004 at ATA Leadership Meeting
- Charter Partners, EPA and other stakeholders were all in attendance
- Kickoff Event included:
  - Recognition of Charter Partners
  - Demonstration of the FLEET Model
  - Press Releases / Press Conference

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EPA sought to launch SmartWay at high visibility event for best impact and press

Executive level event in Washington DC with EPA Administrator

EPA recruited new Partners, in addition to 15 Charter Partners, to join in advance of launch

SmartWay Brand Marketing

- Goals:
  - To make the SmartWay brand a household name – synonymous with “smarter, cleaner and fuel efficient transportation choices”
  - Current exposure is within freight industry
  - Expand to everyday consumers with consumer campaign and through Partner’s marketing efforts

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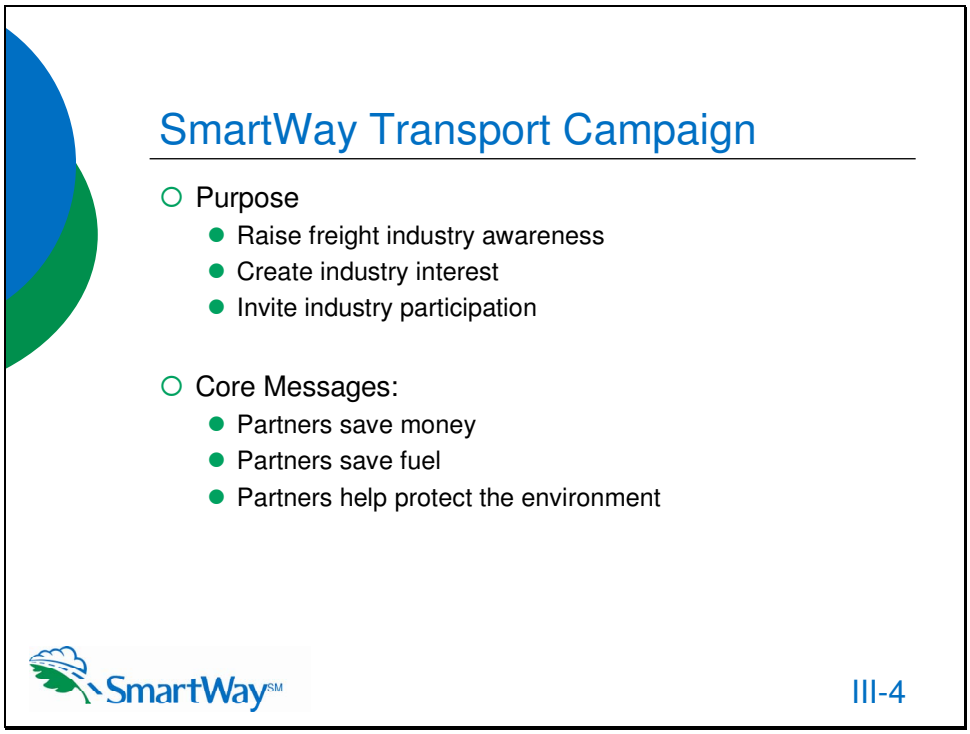

PSAs will get noticed in magazines, posters, airports, etc.

Quirkiness of the campaign softens EPA image with trucking industry

Yellow color is distinctive, upbeat and compliments SmartWay blue & green

When SmartWay was first developed, marketing was crucial because it did not yet have name recognition in the industry.

EPA used a variety of strategies and tools to market SmartWay (and continues to use many of the strategies)

PSAs were developed to increase the industry and public's awareness of SmartWay.

American magazines have a quota of PSA advertisements, so there is available space for these ads. EPA just had to develop the concept, design ads, and pitch to trade and business publications.

EPA received several million dollars worth of advertising, pro-bono, in a variety of leading business magazines.

Overview documents include Partnership Overview, Shipper and Carrier efficiency strategies and Partnership Agreements. These will be available to the audience at the meeting.

Case Studies highlight efficiency strategies currently being used by Partners. These also provide publicity for the Partners undertaking the projects. These case studies provide publicity to Partners and help other convince other fleets to try some advanced technologies (like single-wide tires)

Marketing Tools

- E-Updates
  - Quarterly Partner Newsletter, includes news, events and highlights recent Partner achievements
  - Sent to Prospective Partners for Recruiting purposes


SmartWay Transport Partnership
E-Update
SmartWay Transport Growth Spurt!
IN THIS ISSUE
Partner Spotlight
On the Road
SmartWay News Briefs
What's New
The Buzz
On the Horizon

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The E-Update is the official partner newsletter. It highlights emerging technologies, specific partner achievements, details on events and grants, highlights future developments.

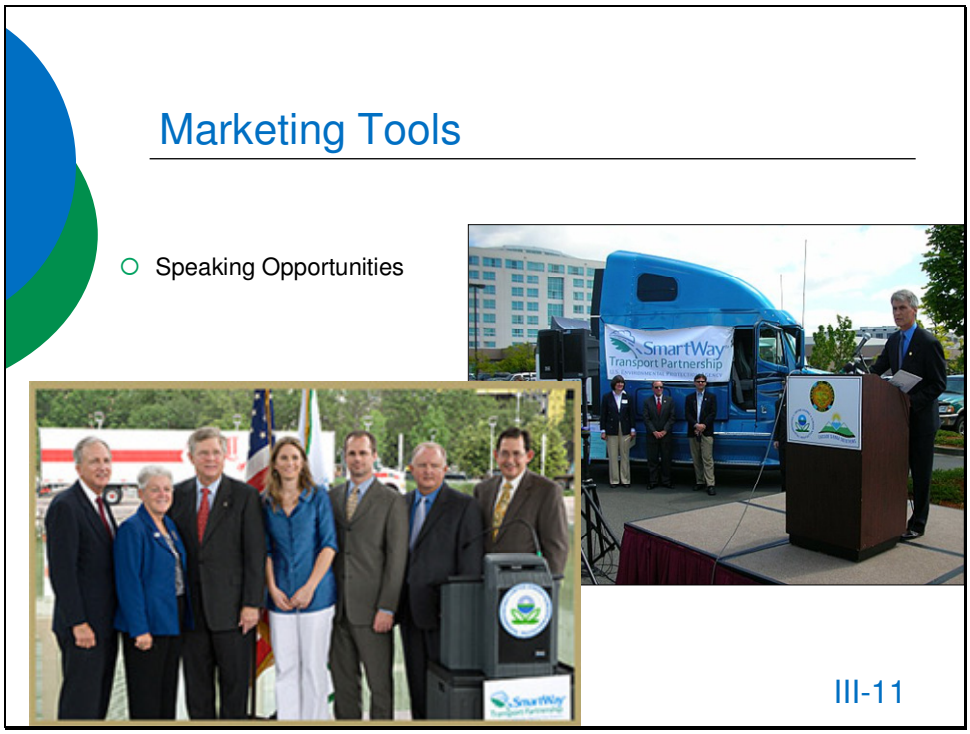
EPA holds press events to announce major Partnership news (big partners joining, new program components). A press conference was held in Arkansas when Tyson and Wal-Mart joined (in 2005).

Generally viewed as very good publicity for Partners.

Press events can be used as leverage to recruit partners (if you join, we'll hold an event). This can also be done with affiliates (if you sign 5 partners, we'll hold an event).

EPA attempts to secure speaking roles or educational sessions at industry events. These speaking roles range from 5-10 minutes, to hour-long panels with Partner testimonials.

The goal is to get current successful Partners in front of other companies, encouraging them to join. But, a quick speech can help companies understand the basic design of SmartWay.



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Leveraging the Freight Sector

- SmartWay Transport helps to reach the consumer through SmartWay Tractors/Trailers
  - We are using the tractors and trailers like billboards to showcase the SmartWay brand

- Several SmartWay Partners qualified to place the Certification Logo on the exteriors of their tractors/trailers, representing over 8500 tractors and 2300 trailers

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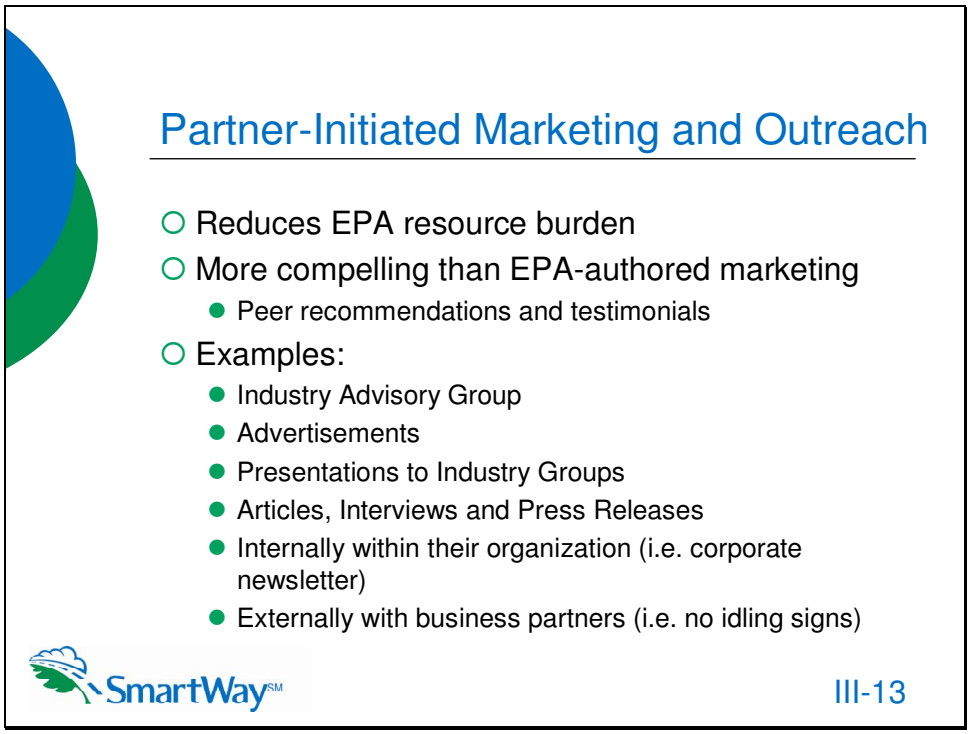

Partner-initiated marketing is important because it doesn't require much (if any) EPA effort, and can be more effective and convincing than EPA marketing.

Partner Testimonials – Credibility of Peer Group

EPA helps (and gets the ball rolling) on some of these examples, but Partners are free to pursue their own marketing, too

Marketing and Recognition

Partner Initiated No Idling Policies at Loading Facilities

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THANK YOU FOR
HELPING US WORK TOWARDS A
CLEANER ENVIRONMENT.

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Top Left – Styline – SmartWay Partner adverstises the Partnership at their facilities

Top Right – Sharp emphasizes their no idling policy at their facilities

Bottom Left – Owens Corning has a Carrier Portal (for their 400+ carrier partners). They advertise and encourage participation in SmartWay through their portal.

Bottom Right – Office Depot Press Release announcing its initial Partnership in SmartWay (On Business Wire)

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Marketing and Recognition – Partner Initiated Companies Marketing Their Corporate Activity

A smarter way

The Environmental Protection Agency's "SmartWay" initiative helps reduce energy costs and emissions by promoting efficiency among freight carriers.

Every year, 9 billion tons of goods are carried across America's highways and railways by nearly 7 million trucks and 20,000 trains. This vast ground transportation network helps keep shelves stocked and prices competitive nationwide.

It also accounts for a big part of U.S. energy costs. Together, truck and rail transport in the United States consume over 35 billion gallons of diesel fuel and other petroleum products each year.

Emissions result, too. Ground freight contributes 20 percent of transportation-related carbon dioxide emissions, 30 percent of particulate emissions, and 40 percent of nitrogen oxide emissions in the United States.

How can we deliver lower energy costs and lower emissions while still delivering the goods we need? Greater efficiency is one way. By being smart about energy use, freight carriers can reach their destination in a more cost-effective and environmentally-sound way.

That's the idea behind the U.S. Environmental Protection Agency's "SmartWay" initiative. Launched two years ago, the partnership program brings together major freight shippers, trucking companies, railroads and logistics companies to pursue efficiencies that reduce costs and emissions to the benefit of all.

EPA's SmartWay Transport Partnership aims for savings of over 6 billion gallons of fuel per year through the spread of more efficient practices such as reduced engine idling, lower highway speeds, automatic tire inflation systems, increased driver training, and greater use of low viscosity synthetic lubricants.

SmartWay Transport Partner
Getting There With Cleaner Air

Currently, SmartWay has over 400 partners. ExxonMobil is proud to be the first petroleum company to join, and is committed to continuing our plans to make our fleet of 150 company-owned tanker trucks more efficient as we deliver fuel to service stations throughout the United States.

Reducing costs and emissions through smarter, more efficient energy use. That's a goal all Americans can partner in.

ExxonMobil

Taking on the world's toughest energy challenges®

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On Left – Owens Corning published an add in Transport Topics thanking its carriers, and highlighting its participation in SmartWay.

On Right – ExxonMobil published a editorial describing its commitment under SmartWay; it was published in the New York Times, Washington Post, and a few other newspapers. PlowShare (EPA's marketing contractor) determined that the estimated value for a ¼ page ad in the NYTimes OP-ED section is **$50,385 (gross), circulation is: 1,124,622**.

Partner Recognition – Annual Partner Awards

Purpose

- Recognize SmartWay industry leaders with awards
  - Highlight accomplishments of outstanding SmartWay Transport Partners
- Publicize SmartWay program results
- Opportunity to increase visibility of SmartWay
  - EPA acknowledges award winners
  - Partners market that they are awardees
  - Affiliates recognize members that are winners

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SmartWay Excellence Awards

Great Press and Program Recognition

- First Annual Award Ceremonies at NAEM and ATA Conferences
- Low-cost (piggyback on other events)
- All Award Winners publicize – press releases / announcements

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Marketing and Recognition
EPA Partner Recognition

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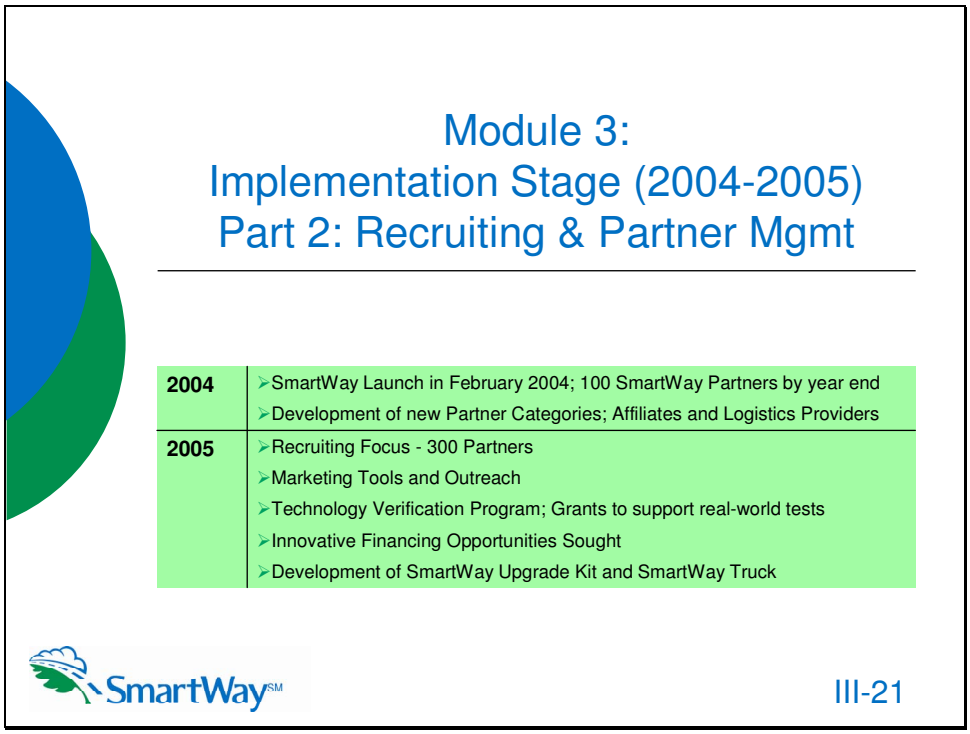
EPA also publishes Partners in industry trade publications, to identify them among the industry and in the public.

The Awards are an annual recognition event to honor the highest achievers.



As the Partnership grew, there became demand for new Partner categories, Affiliates and Logistics

As the Partnership grew to 300+ Partners, EPA began focusing on some long-term projects, the Upgrade Kits and SWT Truck. EPA also conducted a technology verification program to ensure that the technologies actually work.

Solid recruiting strategies are important; it's important to grow the Partnership, but it is also important to ensure that good, active companies are joining.

Current relationships: charter partners, industry experts involved in the planning, companies participating in other programs

Industry resources: Transport Topics Top 100, Most Sustainable Companies

New Relationships: State and National Associations, Proactive Shippers

Cold calls and direct mailings can be conducted after groups supply contact information for their members. Strategic relationships are necessary for direct mailings, and make cold calls easier.

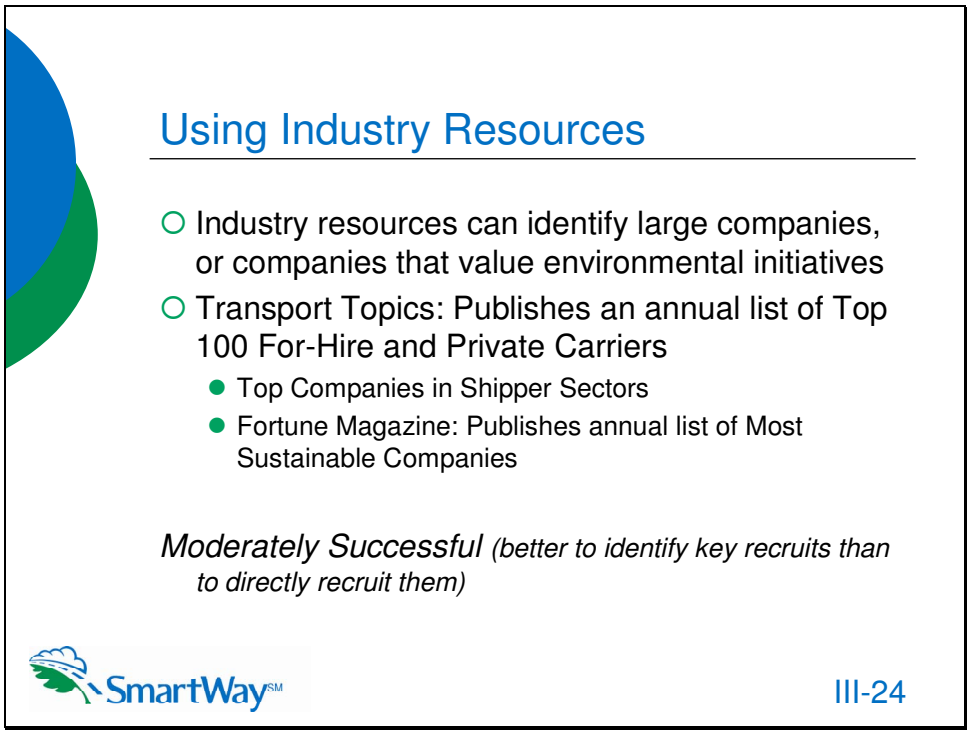
Marketing events – wide range of events to lift the visibility of the Partnership

Charter Partners were generally recognized as leaders in the industry, and could convince other companies to join.

Industry Experts, who may have helped shape the Partnership (or quickly realize its value) can spread the word within their networks (George Edwards)

ANECDOTE: ICF manages Energy Star Partners and occasionally asks them if they are also interested in a transportation efficiency voluntary partnership.

Energy Star or Performance Track Partners value voluntary partnerships to improve the environment, and see value in the publicity from EPA. Joining SmartWay is a logical step to improve that publicity and save more money.



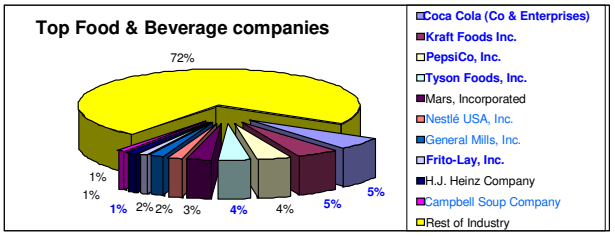
These resources are useful to identify the companies to focus recruiting efforts on (recruit the big companies and let word-of-mouth trickle down the industry). But, they don't always provide the contact information necessary for follow up calls.

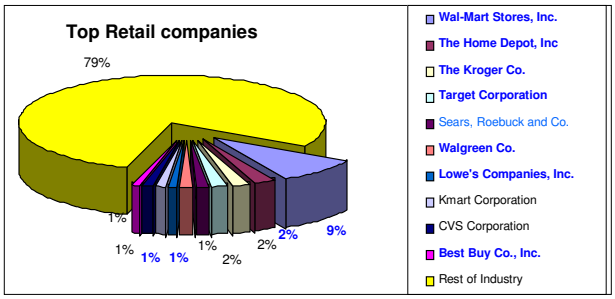
ANECDOTE: (1) Every year we check the annual Transport Topics list and identify large companies that have not yet joined. (2) The next slide includes a breakdown of the largest companies in the retail and food/beverage industries. We used this to identify the largest companies, and set recruiting priorities accordingly. (Transport Topics is a key freight industry publication.)

Industry Participation

SmartWay Partners in **blue.**

Based on total sales.





Conferences and Events

Shipper and Carrier Conferences

Industry trade shows provide good early opportunity to exhibit the program and build visibility

- Look for top transport industry, logistics, or shipper environmental events
- Be sure to understand audience and attendees
- Have good basic program overview materials and display to distinguish the program
- Good opportunities to network with other attendees and exhibitors

Moderately Successful *(hinges on getting appropriate venues, some can be unproductive, requires staff travel and expenditures)*

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National and State Trucking Associations are designed to serve their members and help them be better businesses. SmartWay achieves these goals, so it is in the interest of the STAs to highlight SmartWay. In addition, many activities to promote SmartWay won't cost the STA any money.

ANECDOTE: Maryland Motor Truck Association asked SmartWay to attend its 2005 Annual Conference because its members kept asking about strategies to save fuel (in light of the high prices), a SmartWay representative discussed the various strategies that SmartWay endorses and provided basic information about how to join.

EPA Regional Offices typically have better relationships with citizens are companies, and can easily mention SmartWay as a potential option for these leads

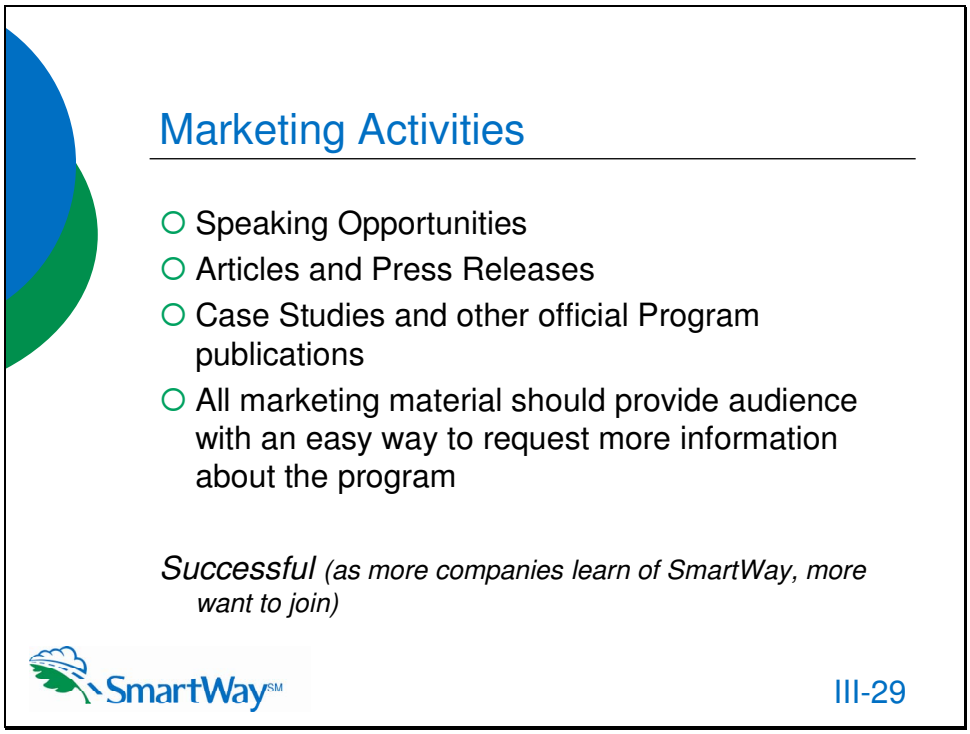
There are numerous 'GreenBiz'-type groups in America, all trying to increase efficiency and reduce GHGs. Many large companies participate, making it a great form to discuss SmartWay

This strategy entails compiling a package of information (typically a joint letter from the association head and Partnership program manager), and sending or emailing it to all members of an association.

It is vital to have an endorsement from the membership organization and the ability to make follow-up calls.

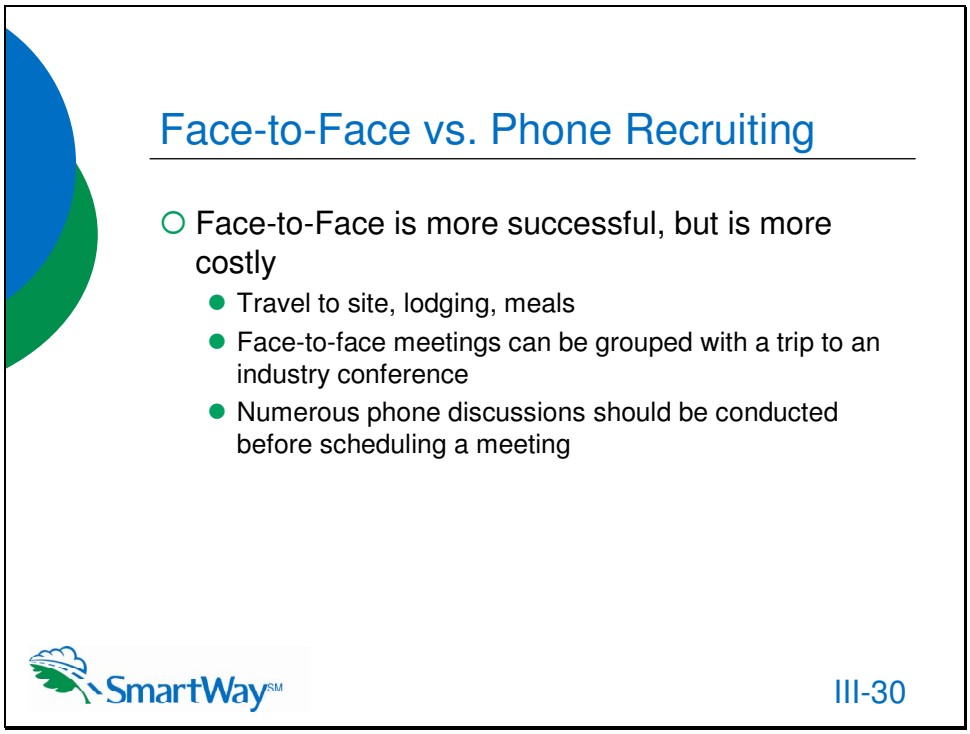
This strategy is typically only marginally successful, and takes quite a bit of effort.

ANECDOTE: One face to face meeting with a prospect that shows serious interest can be more fruitful than 50 cold phone calls to the same prospect. Casual face to face meetings at industry shows can help prospects become seriously interested, and subsequent calls can formally bring them on board.



All marketing activities should be seen as direct or indirect recruiting opportunities. Even a press release, which highlights a specific Partner's achievements, should include contact information for another company that wants to participate.

Including a simple, 'for more information about SmartWay, contact xxx at 999-9999' on all materials/publications is helpful.



To maximize face to face recruiting, only companies with serious interest should be met. Unless, it is a large company that has significant influence in the industry.

Phone recruiting is useful for general inquiries and helping companies understand the basics of the program. If successful, propose a face to face meeting.

These meetings can be piggy-backed with scheduled marketing events. If you are attending and speaking at an industry show, it is a good idea to set up other meetings with warm leads in the area.

Regional Coordination Plan

- A specific coordinator was assigned to each EPA region to coordinate all SmartWay activities between EPA regional offices, State associations, current Partners and other stakeholders.

ICF Regional Coordination Plan

An ICF Region Coordinator has been assigned to each EPA Region, as illustrated by the map below:

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Affiliates: national and state groups that support the goals of the Partnership (mainly state trucking associations and groups like ATA, NIT League). A way that these associations can receive more publicity for their efforts.

Affiliates commit to some or all of the following:

Press and promotional events

Educational workshops – learn about SmartWay and the technologies

Partner Support – help Partners with FLEET, marketing, etc

Recruiting – bring members and contacts on board

Discounts – e.g. – cheaper conference registration fees

Other – the affiliate can do and suggest more activities to spread the Partnership

Logistics: Companies that provide freight services to shippers through for-hire carriers.

Partner Management

- Importance of Partner Management
- Initial Partner Management Steps
- Adding Value to your Partners
- Managing Partnership Growth
- Tool Development
- The SmartWay Transport Partnership Brand

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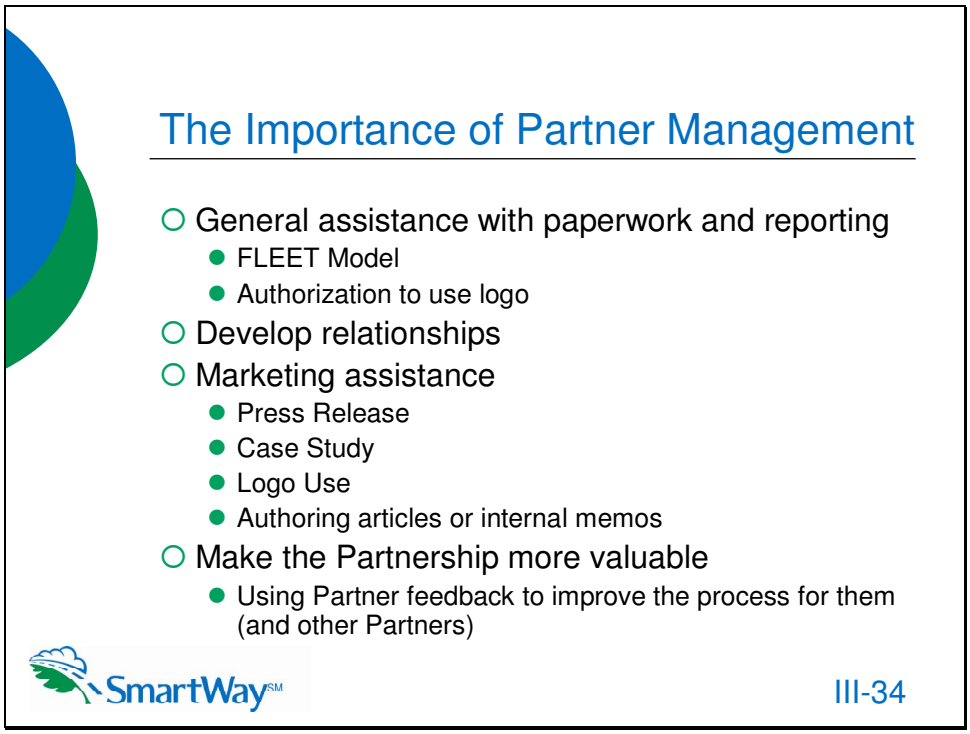


Partner Management is necessary, especially to complete the FLEET model, add a personal touch to the process and help Partners with queries and initiatives related to SmartWay. A Partner Manager can help a company navigate the Partnership and connect it with the right people to get its goals accomplished.

Logo Use Criteria:

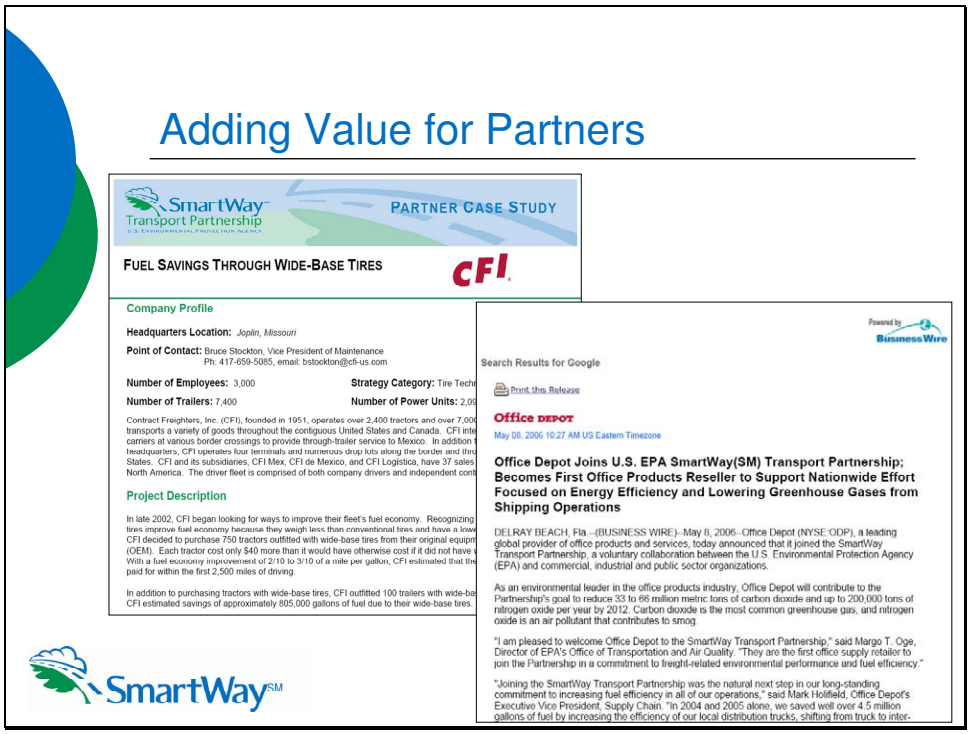
Carriers – FLEET score of 1 or better (combination of CO2, NOx and PM fleet emissions)

Shippers/Logistics – Ship 50% or more of freight with Partner Carriers (calculated by metric that company chooses – ton-miles, annual transportation spend, # of trips)

Affiliates – Upon joining the Partnership

Think of Partner Management as being a personal consultant to the Partner.

The official joining SmartWay is not always the same person doing the day-to-day work, so it is important to first explain SmartWay and make sure the company contact understands.



CFI case study on single wides (an EPA SmartWay staff member wrote this with CFI) on the left, and an Office Depot Press Release on the right. EPA/ICF helped write both of these. In fact, there is a template press release that Partners can use when they join. The template saves everyone time, and it encourages Partners to release a press release, even if they don't have much time.

Adding Value for Partners: Driver Training

- Goal: To adapt Natural Resource Canada's (NRCan) "SmartDriver for Highway Trucking" training program for a U.S. audience and to adapt the training modules for the Web.
- The SmartDriver Training program modules to be hosted online and will use log-in feature and database.
- Students' training/completion information will be housed on database.
- The training will be available in French
- EPA and NRCan discussing option of extending to Mexico (in Spanish) for N. Green American Driver Training certification

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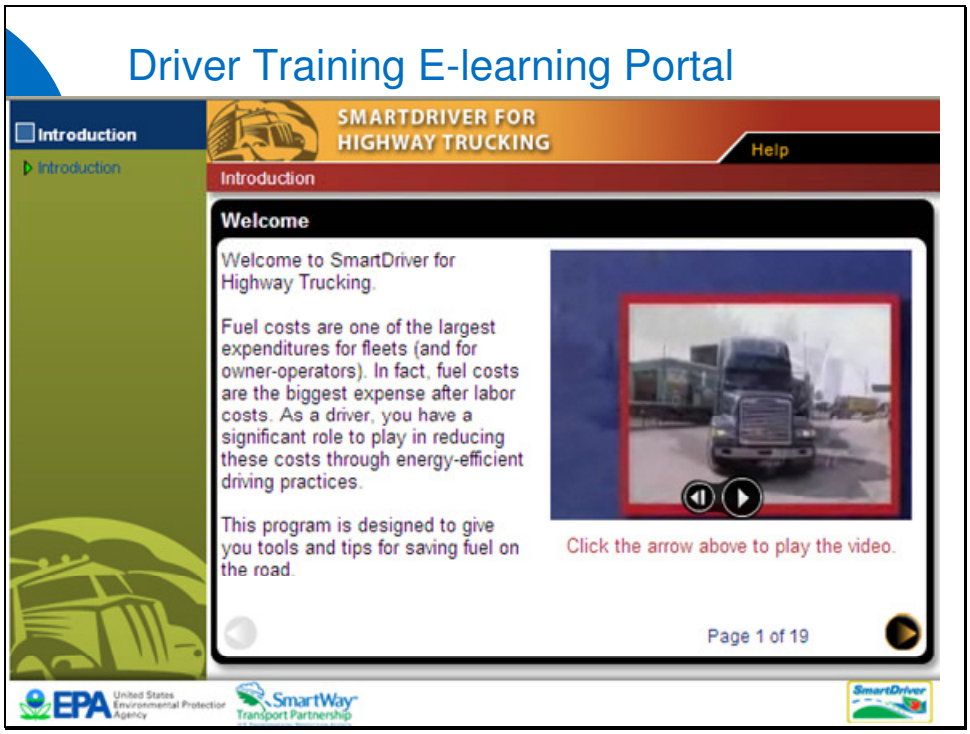
Driver Training E-learning Portal



Adding Value for Partners

- As the Partnership grows, resources to support growth were focused on tools rather than staff support
- Prioritizing Partners
  - Size of company
  - Influence on other Partners
  - Prominence in market/industry
- With a rapidly expanding program, EPA was forced to innovate to deal with the growth

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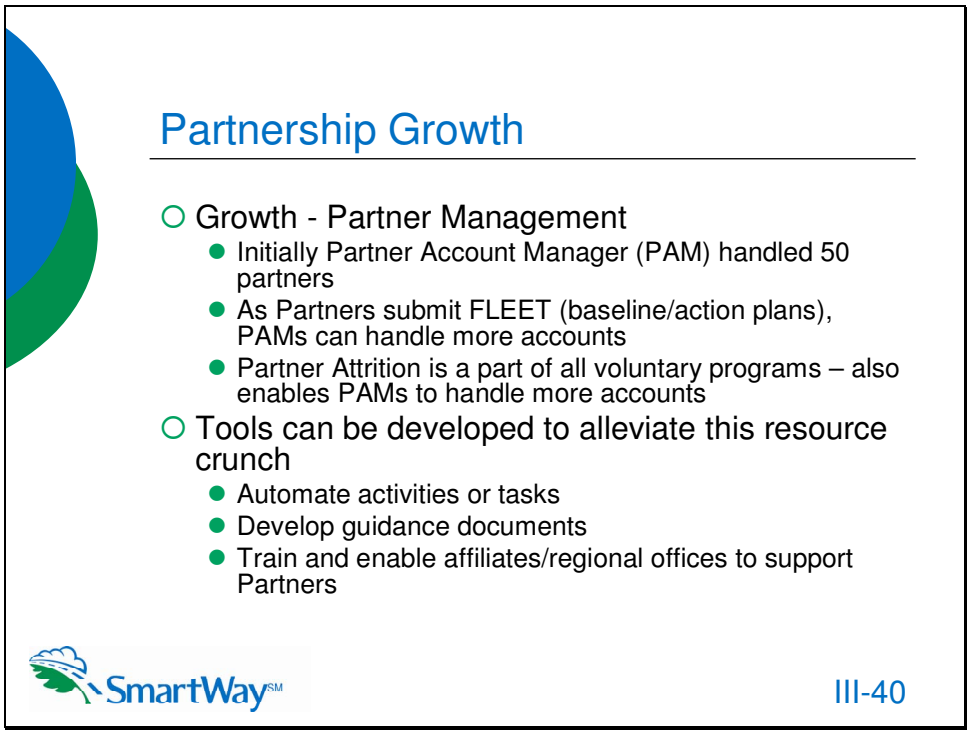
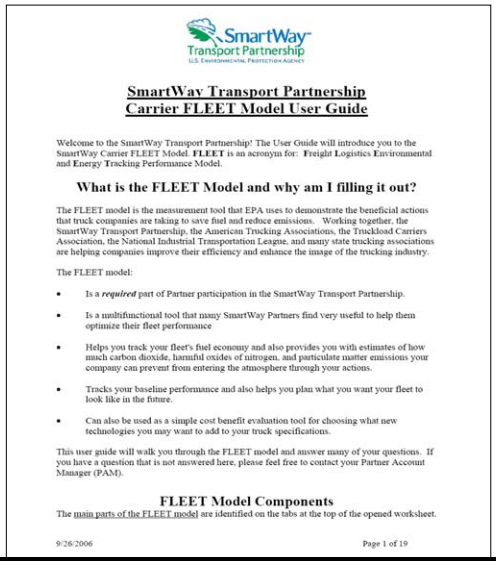


Initially, EPA allowed partners to join without completing the FLEET model, as long as they committed to finishing it soon after joining. But, this caused some partners to join, and never complete the required materials. EPA eventually removed these partners (after giving them numerous chances to submit the data), and began to require a completed FLEET model before a partner joined.

Partnership Tools

- FLEET Model User's Guide
  - Many Partners have similar questions about the FLEET
  - The User's Guide answers these basic questions, reducing EPA staff burden



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SmartWay Transport Partnership
Carrier FLEET Model User Guide

Welcome to the SmartWay Transport Partnership! The User Guide will introduce you to the SmartWay Carrier FLEET Model. **FLEET** is an acronym for: **F**reight **L**ogistics **E**nvironmental and **E**nergy **T**racking Performance Model.

What is the FLEET Model and why am I filling it out?

The FLEET model is the measurement tool that EPA uses to demonstrate the beneficial actions that truck companies are taking to save fuel and reduce emissions. Working together, the SmartWay Transport Partnership, the American Trucking Associations, the Truckload Carriers Association, the National Industrial Transportation League, and many state trucking associations are helping companies improve their efficiency and enhance the image of the trucking industry.

The FLEET model:

- Is a ***required*** part of Partner participation in the SmartWay Transport Partnership.
- Is a multifunctional tool that many SmartWay Partners find very useful to help them optimize their fleet performance
- Helps you track your fleet's fuel economy and also provides you with estimates of how much carbon dioxide, harmful oxides of nitrogen, and particulate matter emissions your company can prevent from entering the atmosphere through your actions.
- Tracks your baseline performance and also helps you plan what you want your fleet to look like in the future.
- Can also be used as a simple cost benefit evaluation tool for choosing what new technologies you may want to add to your truck specifications.

This user guide will walk you through the FLEET model and answer many of your questions. If you have a question that is not answered here, please feel free to contact your Partner Account Manager (PAM).

FLEET Model Components

The main parts of the FLEET model are identified on the tabs at the top of the opened worksheet.

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Saves the Partner Managers time by not answering the same questions numerous times. Plus, the Partners have a document in writing instead of just knowledge from conference calls with EPA.

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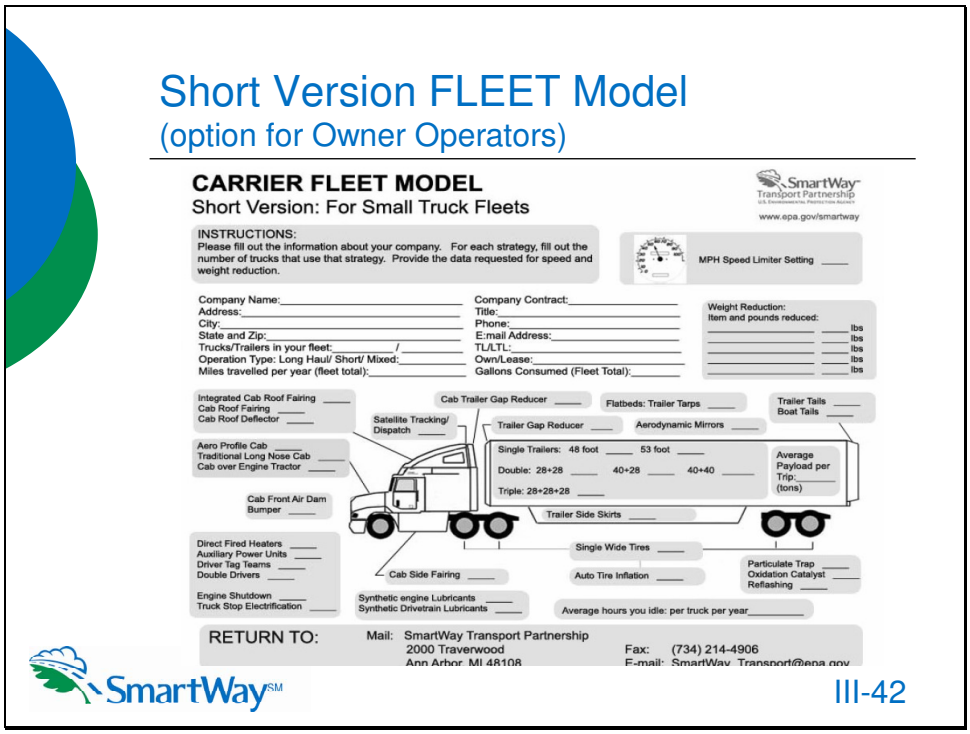

This was created as an option for small truck fleets and owner-operators. In some cases, these small partners do not have sophisticated data collection tools. EPA found that some didn't have access to a computer, which is needed to fill out the full FLEET model.

Partnership Tools

- Web-based savings calculator
  - Easier to use than the FLEET model
  - Fewer data inputs that FLEET
  - Allows companies to instantly calculate money saved by using strategies/technologies
  - Includes financing calculations, if user plans to purchase equipment with a loan

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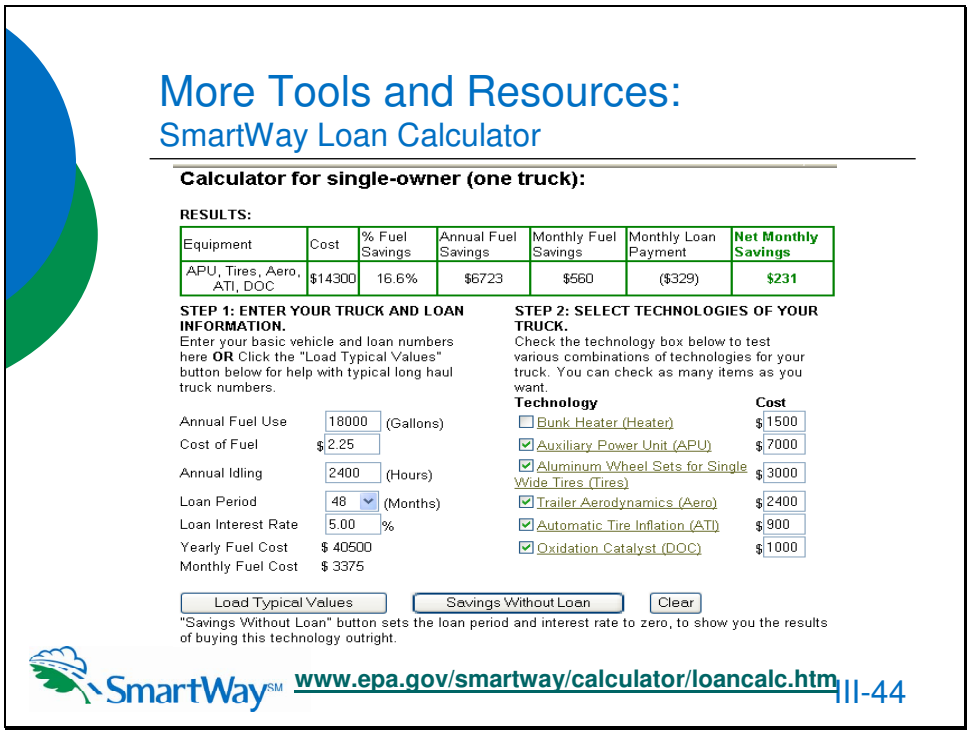
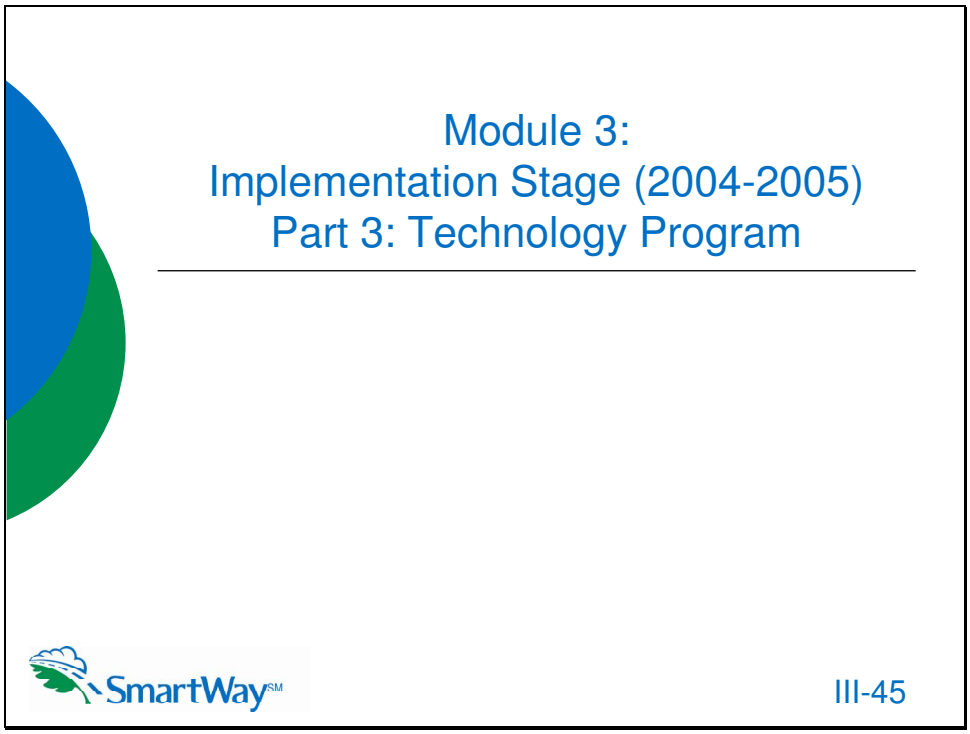


The SmartWay loan calculator is available at www.epa.gov/smartway/calculator/loancalc.htm

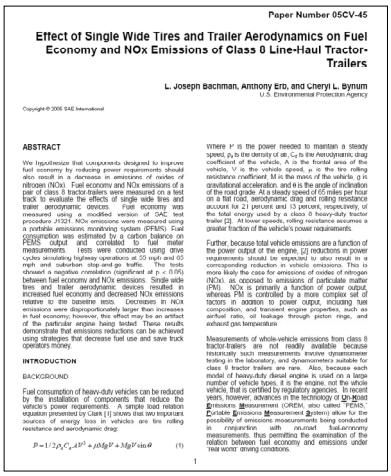


As the Partnership grew, there became demand for new Partner categories, Affiliates and Logistics

As the Partnership grew to 300+ Partners, EPA began focusing on some long-term projects, the Upgrade Kits and SWT Truck. EPA also conducted a technology verification program to ensure that the technologies actually work.

Technology Testing and Analysis

- **Technology Verification Program**
  - EPA tested benefits of Single-wide tires and trailer aerodynamics, publishing the findings
- **Grants**
  - EPA also distributes grant money for fleets to conduct real-world tests of the fuel saving technologies



Paper Number 05CV-45

Effect of Single Wide Tires and Trailer Aerodynamics on Fuel Economy and NOx Emissions of Class 8 Line-Haul Tractor-Trailers

L. Joseph Bachman, Anthony Erb, and Cheryl L. Bynum
U.S. Environmental Protection Agency

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ABSTRACT

We hypothesize that components designed to improve fuel economy by reducing power requirements should also result in a decrease in emissions of oxides of nitrogen (NOx). Fuel economy and NOx emissions of a pair of class 8 tractor-trailers were measured on a test track to evaluate the effects of single wide tires and trailer aerodynamic devices. Fuel economy was measured using a modified version of SAE test procedure J1321. NOx emissions were measured using a portable emissions monitoring system (PEMS). Fuel consumption was estimated by a carbon balance on PEMS output and correlated to fuel meter measurements. Tests were conducted using drive cycles simulating highway operations at 55 mph and 65 mph and suburban stop-and-go traffic. The tests showed a negative correlation (significant at $p < 0.05$) between fuel economy and NOx emissions. Single wide tires and trailer aerodynamic devices resulted in increased fuel economy and decreased NOx emissions relative to the baseline tests. Decreases in NOx emissions were disproportionately larger than increases in fuel economy; however, this effect may be an artifact of the particular engine being tested. These results demonstrate that emissions reductions can be achieved using strategies that decrease fuel use and save truck operators money.

INTRODUCTION

BACKGROUND

Fuel consumption of heavy-duty vehicles can be reduced by the installation of components that reduce the vehicle's power requirements. A simple load relation equation presented by Clark [1] shows that two important sources of energy loss in vehicles are tire rolling resistance and aerodynamic drag:

$$P = 1/2\rho_A C_d A V^3 + \mu M g V + M g V \sin\theta \quad (1)$$

Where P is the power needed to maintain a steady speed, ρ_A is the density of air, C_d is the Aerodynamic drag coefficient of the vehicle, A is the frontal area of the vehicle, V is the vehicle speed, μ is the tire rolling resistance coefficient, M is the mass of the vehicle, g is gravitational acceleration, and θ is the angle of inclination of the road grade. At a steady speed of 65 miles per hour on a flat road, aerodynamic drag and rolling resistance account for 21 percent and 13 percent, respectively, of the total energy used by a class 8 heavy-duty tractor trailer [2]. At lower speeds, rolling resistance assumes a greater fraction of the vehicle's power requirements.

Further, because total vehicle emissions are a function of the power output of the engine, [2] reductions in power requirements should be expected to also result in a corresponding reduction in vehicle emissions. This is more likely the case for emissions of oxides of nitrogen (NOx), as opposed to emissions of particulate matter (PM). NOx is primarily a function of power output, whereas PM is controlled by a more complex set of factors in addition to power output, including fuel composition, and transient engine properties, such as air/fuel ratio, oil leakage through piston rings, and exhaust gas temperatures.

Measurements of whole-vehicle emissions from class 8 tractor-trailers are not readily available because historically such measurements involve dynamometer testing in the laboratory, and dynamometers suitable for class 8 tractor trailers are rare. Also, because each model of heavy-duty diesel engine is used on a large number of vehicle types, it is the engine, not the whole vehicle, that is certified by regulatory agencies. In recent years, however, advances in the technology of On-Board Emissions Measurement (OBEM, also called "PEMS," Portable Emissions Measurement System) allow for the possibility of emissions measurements being conducted in conjunction with on-road fuel-economy measurements, thus permitting the examination of the relation between fuel economy and emissions under "real world" driving conditions.

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Technology Verification is EPA's effort to verify that some new technologies actually work. By publicizing the results, more companies and Partners used the new technologies.

Grants were also released to help companies test these technologies on their own.

Idle Reduction Technology Testing

Grants

- Awarded several grants to states, nonprofit groups, and universities to evaluate:
  - Truck Stop Electrification
  - Auxiliary Power Units
- Goal: build "idle-free" transportation corridors along major interstate highway roads so a truck driver always has a place to rest and not idle their engines.

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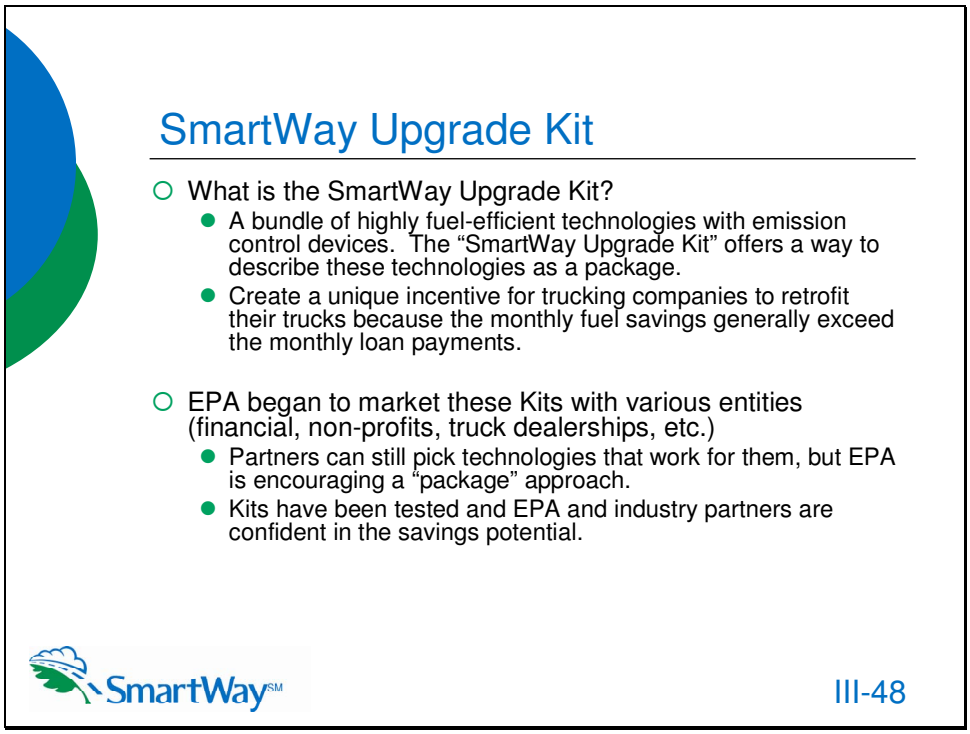
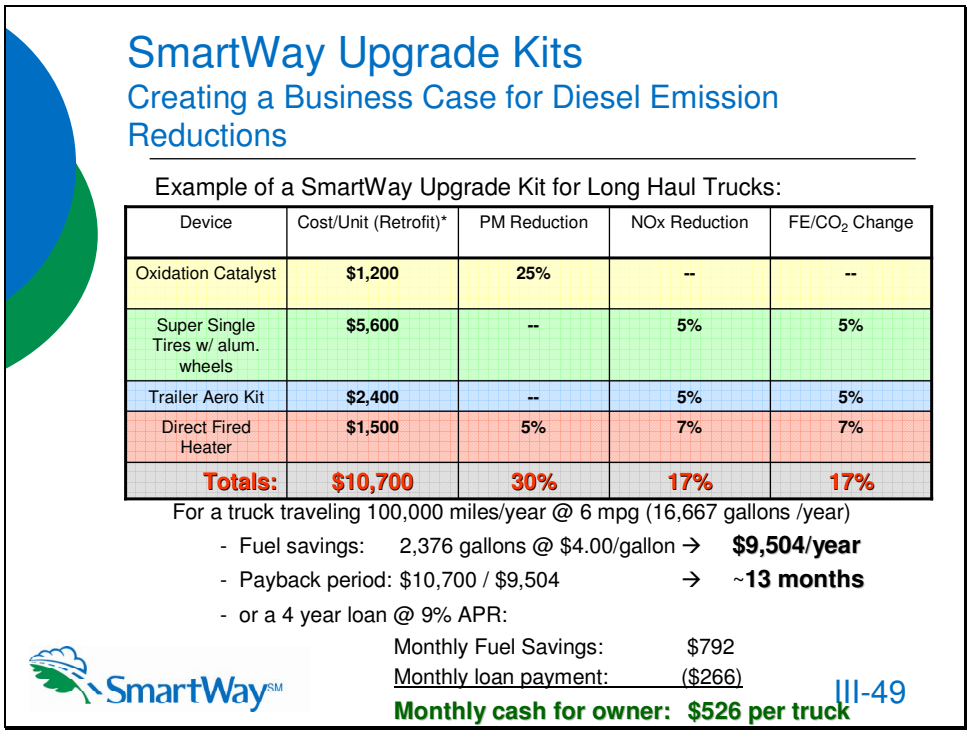


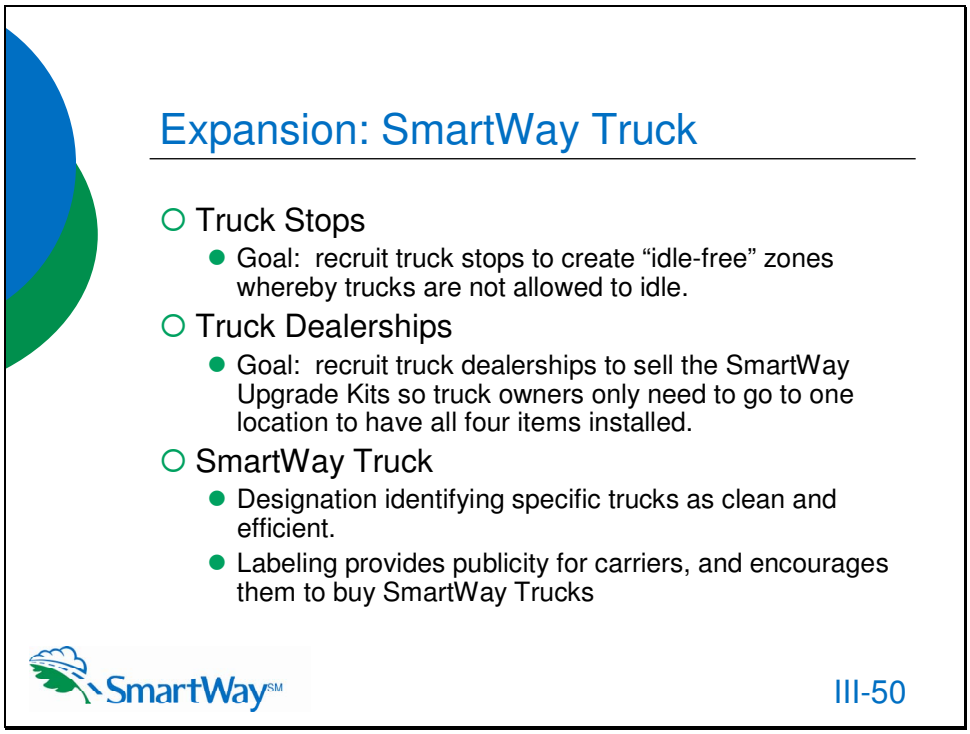
This "kit" allows one-stop shopping for fleets. Instead of picking multiple items, they can pick one and know that it will save them money and reduce emissions. EPA intends for the "kit" to be added to a new truck as simply as any other accessory.



Currently, Partners can pick different technologies and bundle them in a kit. In the future, EPA will begin to market kits that it has already tested and believes will save fleets money and reduce emissions.

The upgrade kit is simply a way to describe the numerous technologies that a truck can be equipped with, and for marketing purposes.

The Web-based calculator allows companies to calculate savings by purchasing upgrade kits



Truck Stops: Along the designated ‘idle-free’ corridors. Encourage trucks to reduce idle and provide facilities to make it happen.

Expansion: SmartWay Truck

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Expansion: SmartWay Truck

SmartWay Tractors and Trailers

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· **Beginning in 2007 and through December 21, 2009, 51 Partners have reported owning/operating 6,327 SmartWay certified tractors and 1,484 SmartWay certified trailers.**

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Funding (2004-2005)

Fiscal Year 2004 Budget: $1,300,000
Fiscal Year 2005 Budget: $1,600,000

- Recruiting and Partner Management: $400,000 - $600,000
  - EPA Contractor Support
  - EPA and Contractor Travel
  - IT Support
  - Marketing Material for Recruiting/Partner Management
- Marketing and Communication: $275,000 - $350,000
  - EPA Contractor Support
  - Communication Campaign (i.e. PSAs)
  - Outreach Material Development (documents, displays, banners, award trophies, etc.)
- National Idling Program: $250,000 (2004)
  - Truck Stop Infrastructure development
- Technology Verification and Testing: $250,000 - $500,000
  - Tire Evaluation program, Aberdeen Testing, SAE, Develop/Implement Verification
- General Operating Costs / Other: $75,000

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Staffing Needs (Program Implementation) 2004-2005

- General Implementation Staff:
  - 8-10 FTEs
- Recruiting:
  - 1 staff or contractor per 100 - 150 active recruits
  - Staff should have:
    - Experience with freight industry.
    - Experience identifying and pitching ideas to decision makers.
    - Strong interpersonal communication skills
    - Strong selling and marketing skills
    - Strong presentation and networking skills.

Note: FTEs vary based on size of recruits and travel required by recruiters

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These are the primary skills and LOE necessary for implementation during the first years after launch. Details on recruiting are on this slide, and partner management details are on the next slide.

Staffing Needs (Program Implementation) 2004-2005

Partner Management:

- 1 FTE per 60 Partners
- Staff should have:
  - Experience as an account manager preferred
  - Knowledge of various fuel saving technologies advocated by EPA
  - Strong quantitative, Excel modeling and organizational skills
  - Strong interpersonal, communication, and relationship building skills

Note: Shipper and Carrier Partners Managers require different skill sets; staff working with shippers do not need to be as familiar with the trucking industry. It is helpful for these staff to have knowledge of specific shipper sectors.

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Other useful skills for effective partner management: Managing partners, customer assistance.

Other skills for various parts of the Partnership: Entrepreneurial (outreach/marketing), Financial (loan and grant), Computer skills (Website creation)

Part 2

Supplemental Information on Recruiting for Voluntary Partnerships

Intro to Direct Marketing/Recruiting

Direct marketing is important for new and growing voluntary partnerships. Recruiting drives program growth, and educates participants, stakeholders, and other interested parties about the program.

Recruiting Strategies

Industry Relationships and other Key Stakeholders

- State and National Trucking and Shipping Associations
- Charter Partners
- Industry Leaders
- Size, Significance, Visibility
- Governments (especially state and local)
- Industry Journals
- Conference Organizers
- Consumers
- Shareholders.

Conferences and Events

- Attendance at conferences with key shippers and/or carriers. (Sponsorship at the conference could raise visibility.)
- Attendance or sponsorship of a regional event.
- Development of a new event (e.g., SmartWay Awards) all about the program. This event could be held at a larger event, instead of being free-standing.

Developing New Strategic Relationships

- Local and Regional Organizations that can influence others.
- Networking through current partners—encouraging others to participate.

Recruiting Calls

- Leads met at conferences/events that SmartWay staff attend. (Warm leads)
- Leads from industry organizations that want to publicize the partnership to their members. (Cold leads)
- Companies mentioned in news articles, displaying a commitment to the environment. (Cold leads)

Direct mailings

- Endorsed by industry associations (mentioned above)

  Note: you should have support of a particular industry association before sending materials to its members.

Supplemental Information on Partner Management

Introduction to Partner Management

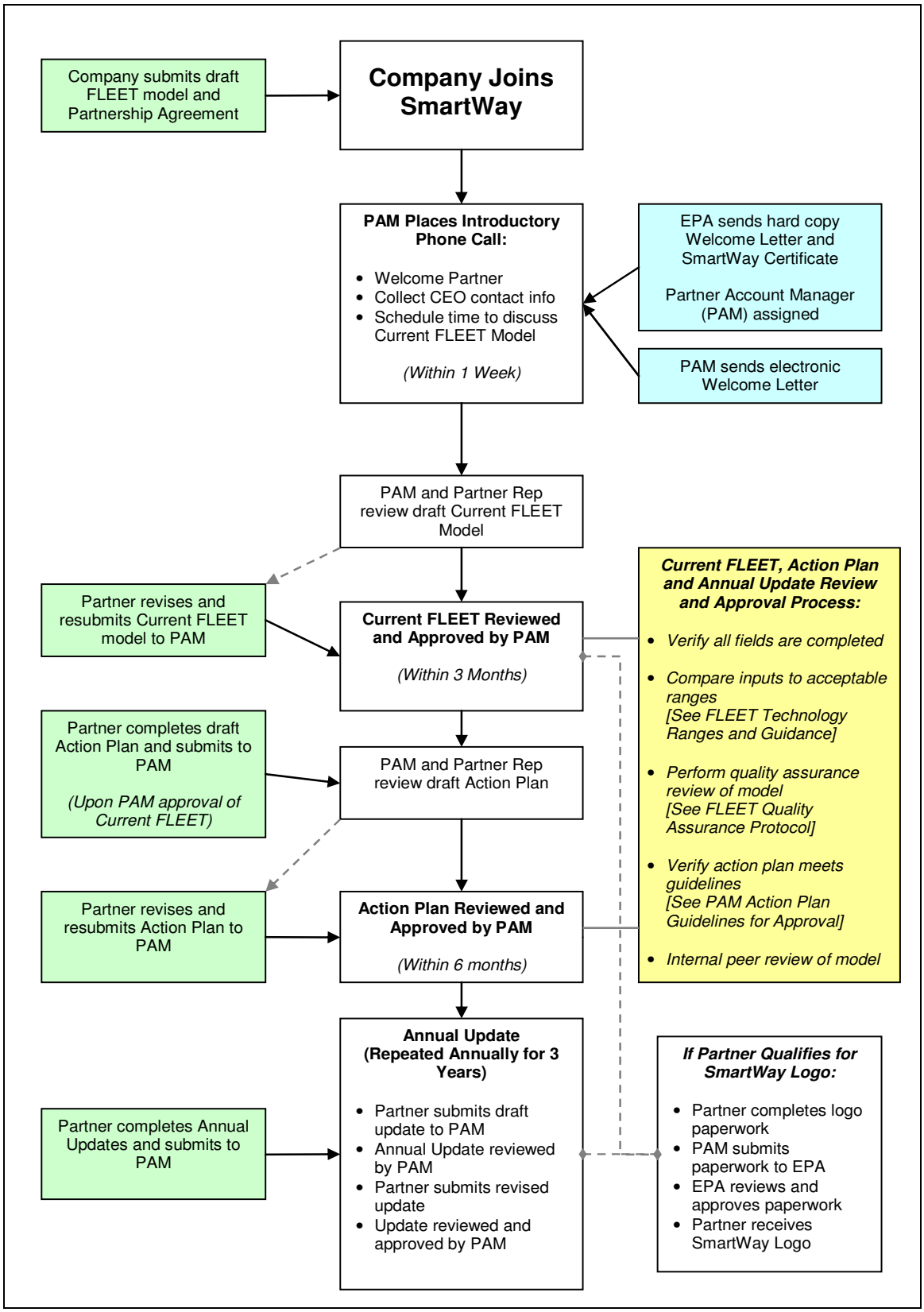
Partner management is one of the most important aspects of managing a successful voluntary partnership. The partner account manager (PAM) is the direct link from the program to the partner, and quality and responsive management of partners is a key to satisfying the partners and growing the program.

Initial Partner Management Activities

The following are initial activities that a PAM should undertake with each partner:

- Quality assurance of the FLEET model.
- Assistance with FLEET Action Plan.
- Marketing support, especially help with a press release announcing participation.
- Responding to other requests from partners.

The following table summarizes PAM activities.



Ongoing Partner Management Activities

The PAM's ongoing responsibilities include:

- Assistance with the FLEET annual updates.
- Providing technical support, as requested by partner.
- Providing marketing support, as requested by partner.
- Information dissemination.
- Responding to other requests from partners.

The attached table displays marketing oriented activities that a Partner may choose to initiate.

Internal Communications (Employees)	**Step** ***Time***	**External Communications** (Customers, Shareholders, Citizens/Neighbors)
Announcement of Joining SmartWay A notice should be sent notifying employees of: • Company becoming a Partner. • What is SmartWay. • Why company joined.	Step One *Upon Becoming a Partner*	**Announcement of Joining SmartWay** • Press Release. • Website Posting. • Submission of Corporate Profile.
Internal Education • What will the company do as a SmartWay Partner. • What does it mean to me as an employee?	Step Two *Within 3 Months*	**Outreach to:** • State and National Associations. • Large Customers. • Shareholders (if applicable).
Training As determined by Partner Action Plan, employees should be trained when necessary to ensure the Partner meets its efficiency commitments.	Step Three *Within 8 Months*	**Media Engagement** • Regular and ongoing communication to local media outlets. • Other standard company media outreach.
Continued Communication and Education Updates on progress in newsletters and employee bulletins.	Step Four *Ongoing/Continuing*	**Development of Marketing Materials** • Partner Case Study. • Co-development of marketing and communication materials, as requested by Partner. • Logo usage (if applicable).

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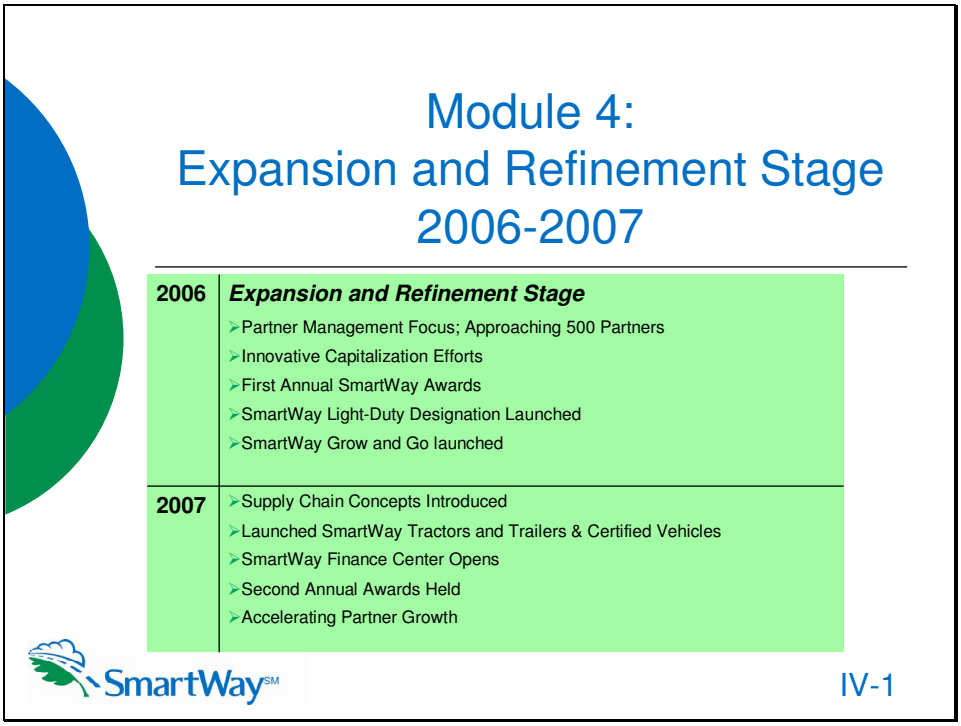
Module IV. Expansion of the SmartWay Concept



In 2006, the first SmartWay Awards were held and new programs were launched under the SmartWay Brand. Partner Management was a challenged that needed to be addressed as the Partnership reach close to 500 partners. In addition, EPA focused on developing innovative financing programs to help companies purchase fuel efficiency technologies.

Module 4:
Expansion and Refinement Stage
2008-2009

2008	➢Over 1,000 Partners ➢Supply Chain/SWT 2.0 development begins ➢Package Labeling Pilots Begin ➢Consumer Awareness Marketing Begins ➢SmartWay International Summit ➢US/Canada Partner Networking Forum ➢Launch Partner Webinar Series
2009	➢Over 2,000 Partners ➢DERA and SmartWay Grants ➢Enhanced technology verification program ➢Begin Development of Heavy-Duty Fuel Economy Test Program

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Module 4: Expansion and Refinement Stage 2010…

2010	***Moving toward second-generation program***
	➢ Almost 3,000 Partners
	➢ Supply Chain carbon accounting tools developed, beta testing and peer review
	➢ International stakeholder support
	➢ Refined marketing program

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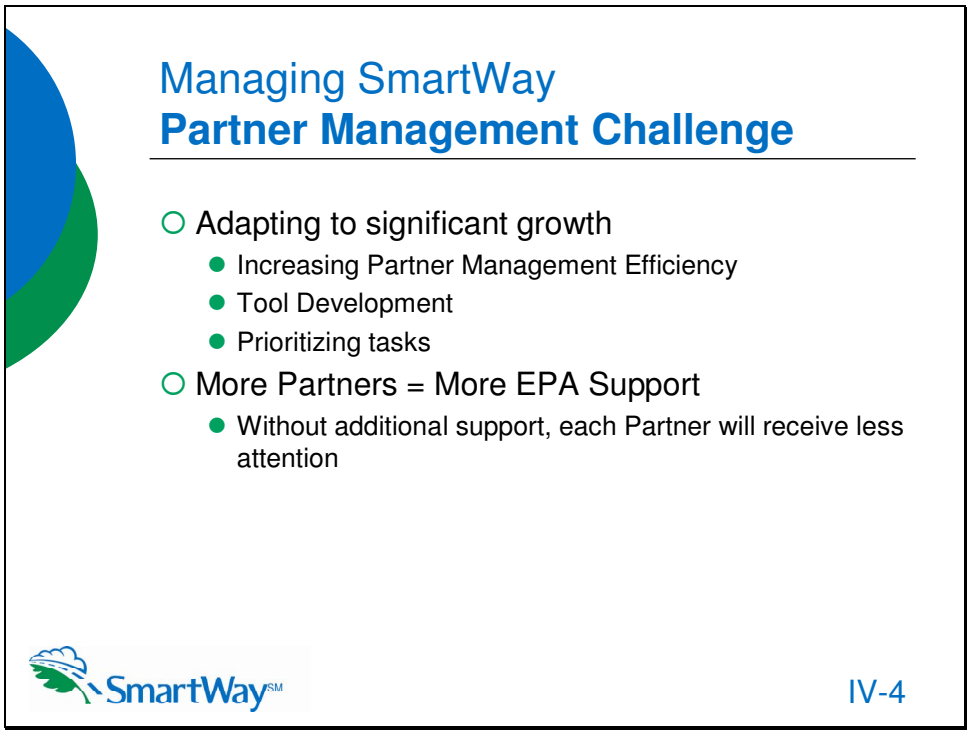
U.S. Environmental Protection Agency



SmartWay has grown very fast and as w/ other PPPs, this growth has to be managed carefully. A program's growth/success can potentially crush it if is not managed and refined.

As w/ other PPPs, it is **very important to shift and adjust resources while applying processes, guidelines, tools, etc. to help manage growth.**

ANECDOTE: For instance, as more partners required active partner management, the program needed to rely on third party recruiters to take on more of the recruiting tasks rather than EPA and contractor staff. Further, EPA needed to link rewards to successful completion of objections/projects so only those partners that completed action plans/FLEET models were eligible to submit an award application.

Managing SmartWay
Partner Management Challenge

- Adding value to Partners
  - With reduced attention, it is more difficult to give each partner attention to undertake marketing and publicity events
  - To give staff more time to pursue value-added activities, EPA developed quantitative FLEET approval guidelines.
  - Partner Account Managers approve the FLEET automatically, rather than waiting for a SmartWay Program Manager. Allows companies to "get it right the first time."
- Partner compliance to ensure program integrity
  - As program grows, so does challenge of ensuring partner commitments are kept
  - EPA implemented an enforcement process to put non-compliant Partners on notice and remove those that did not comply

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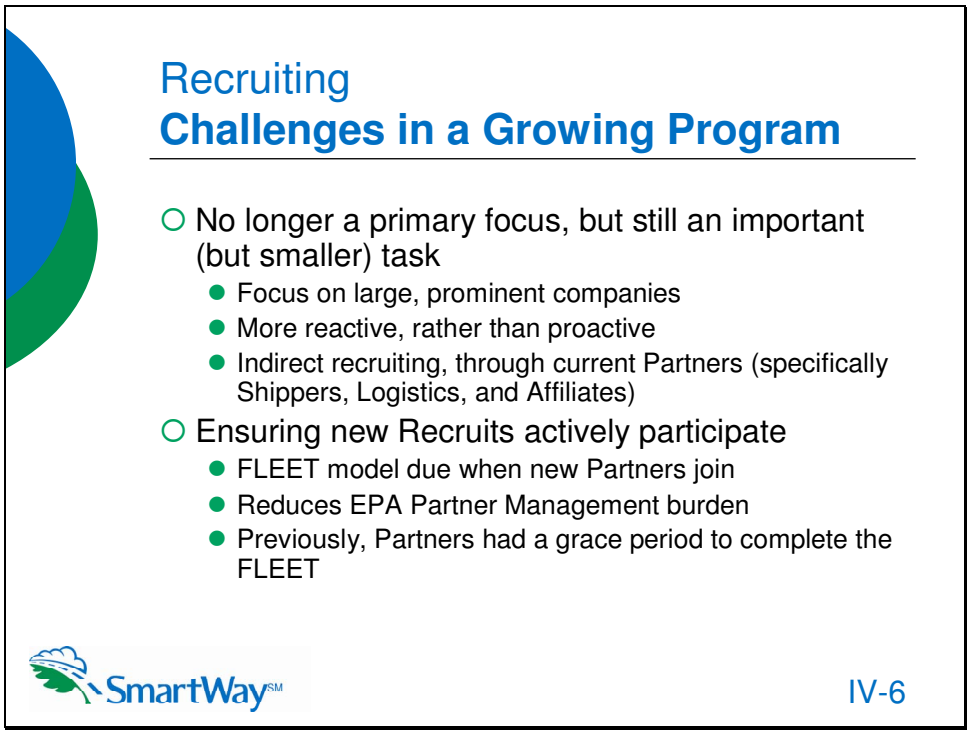
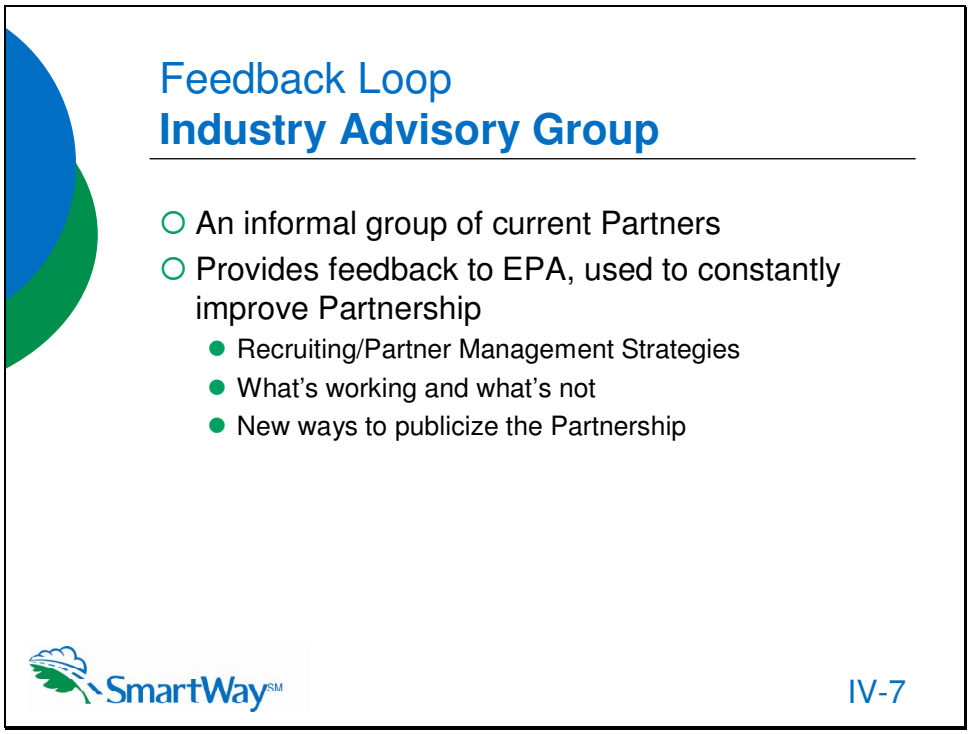


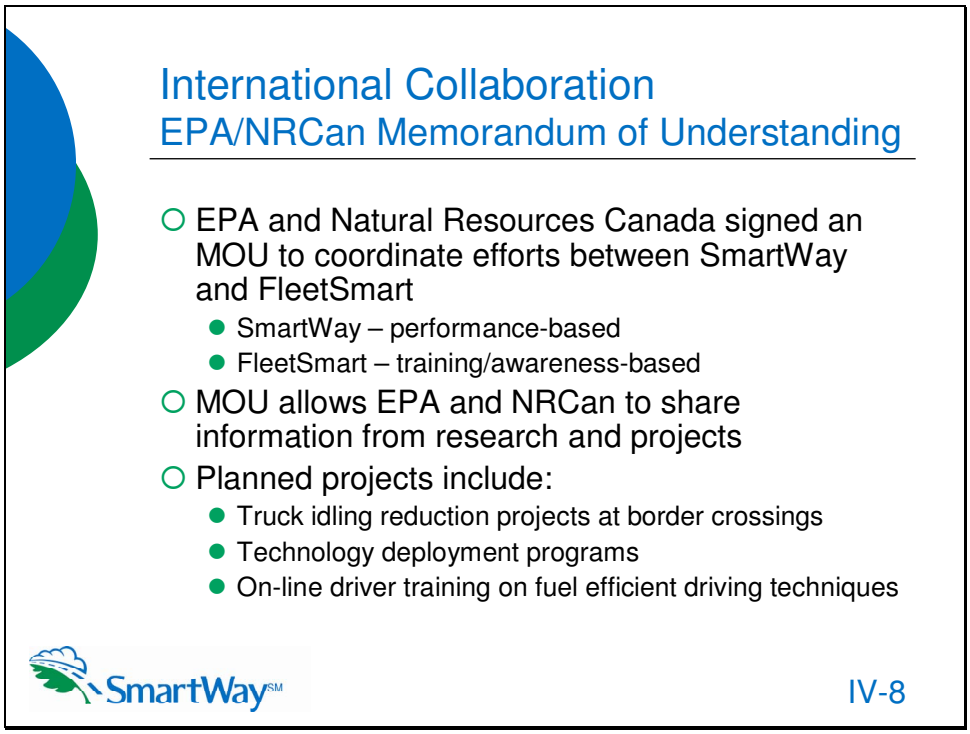
At this point, recruiting was no longer the primary focus of SmartWay. Established critical mass with ~500 partners.

It is important to consider Quality vs. Quantity now that there is this critical mass. EPA wants active participation not just large recruiting numbers.



Just like the industry groups that participated in the development of SmartWay, EPA has used an Industry Advisory Group to obtain regular feedback and advice on Partnership progress and necessary changes/improvements.

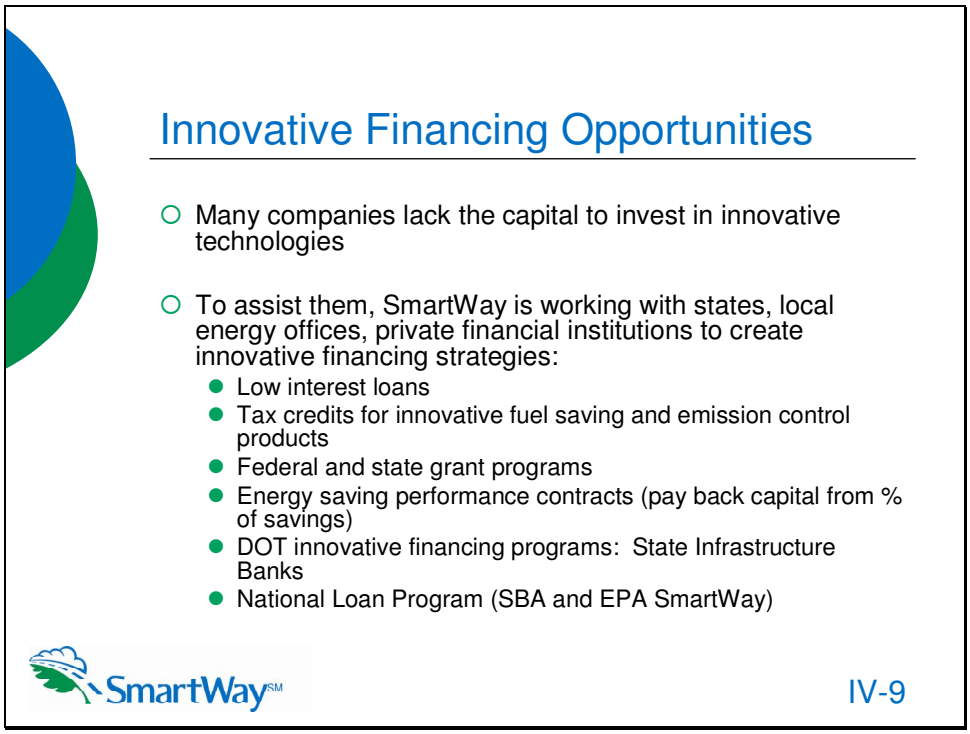
EPA facilitated monthly calls with about 10 of the most proactive and prominent Partners (also important to have all groups represented – shippers, carriers, affiliates, etc). This activity needs to happen informally and formally.



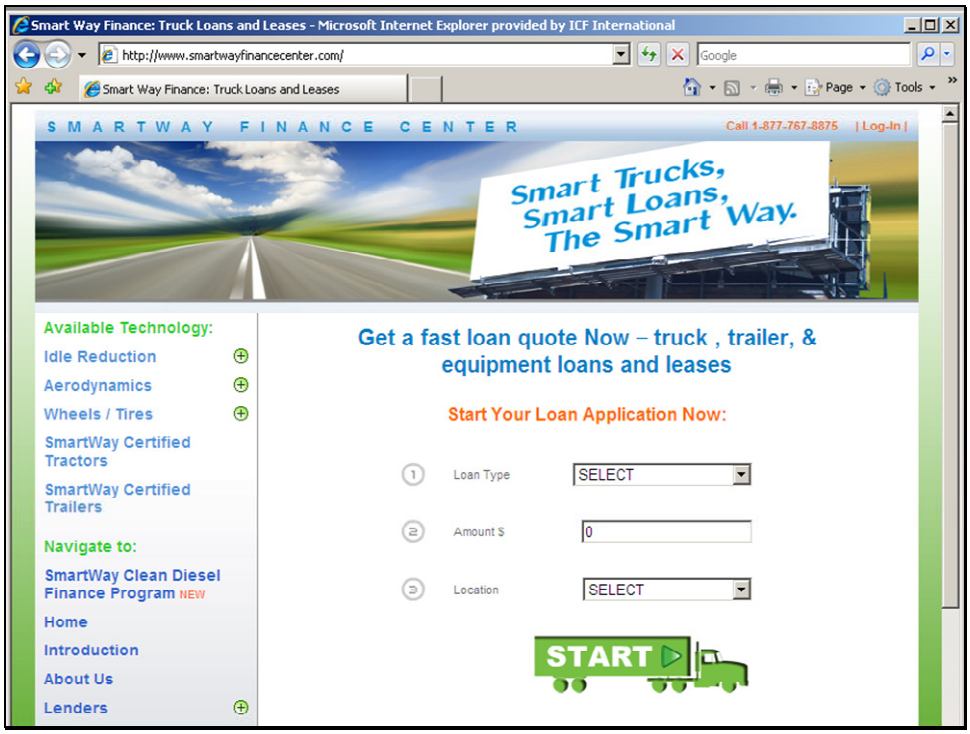
Because large amounts of freight travel across our northern border, and many companies in both counties have similar operations and interests in saving fuel, an MOU was crafted to coordinate and share resources and information.

FleetSmart is Canada's equivalent program to SmartWay, but it is focused on driver training (not evaluation and quantification).

Driver training materials are available to American companies, and Canadian companies can join SmartWay.



The SmartWay Finance Center, available at www.SmartwayFinanceCenter.com, offers information on lending institutions that offer Cleaner Truck, Trailer, and Technology Loans. Companies can enter basic information on the loan they are trying to secure, such as amount of money and location, and the website will provide loan offerings. The site also accepts loan applications.


Smart Way Finance: Truck Loans and Leases - Microsoft Internet Explorer provided by ICF International
http://www.smartwayfinancecenter.com/
Smart Way Finance: Truck Loans and Leases
SMARTWAY FINANCE CENTER
Call 1-877-767-8875 | Log-In |
Smart Trucks, Smart Loans, The Smart Way.
Available Technology:
Idle Reduction
Aerodynamics
Wheels / Tires
SmartWay Certified Tractors
SmartWay Certified Trailers
Navigate to:
SmartWay Clean Diesel Finance Program NEW
Home
Introduction
About Us
Lenders
Get a fast loan quote Now – truck , trailer, & equipment loans and leases
Start Your Loan Application Now:
1 Loan Type SELECT
2 Amount $ 0
3 Location SELECT
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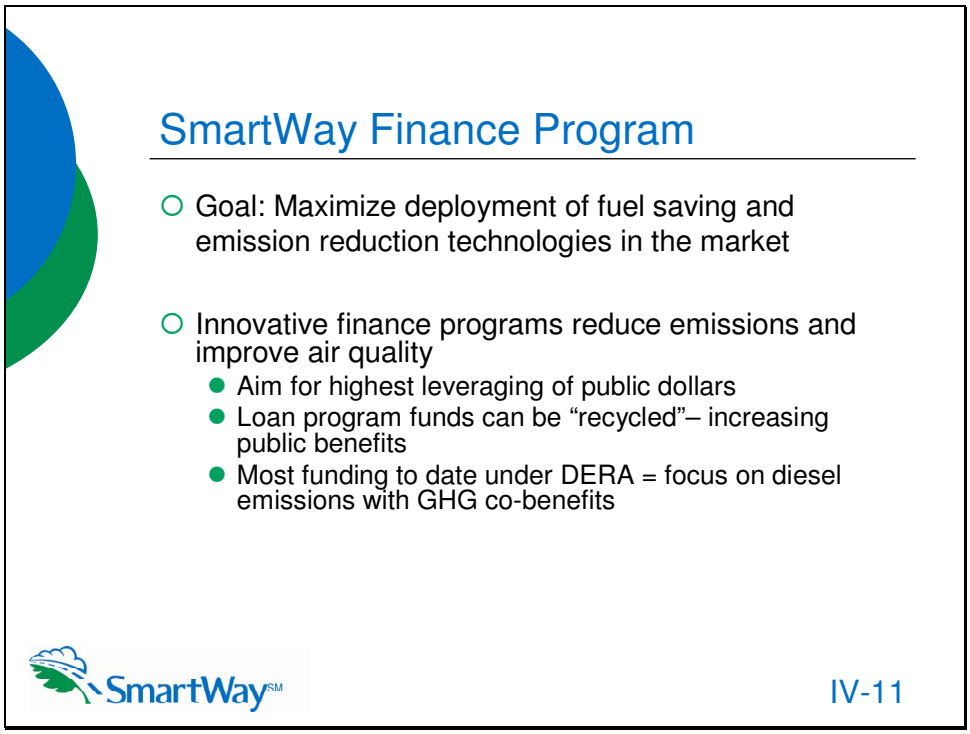

Small and medium trucking fleets can't afford upfront cost of retrofits or new cleaner trucks

Means older, dirtier trucks stay in legacy fleet

Financing for Cleaner Trucks & Equipment

- SmartWay finance program provides access to capital for smaller trucking fleets and owner operators
  - Private lenders offer financing using federal grants as seed money to provide better rates or terms
- Benefits of Cleaner Truck/Equipment Financing
  - Maximize emission reductions
  - Incentivize purchase of cleaner vehicle/equipment
  - Improve monthly cash flow

More environmental controls = Better financing rates or terms

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SmartWay Finance Helps Fleets Cut Emissions and Costs

Cleaner Used Truck	2005 MY Truck on the Used Market	
	Standard Truck	Same Truck with PM Filter Extend loan by 12 months & lower rate to 6%
Purchase Price:	$40,000	$50,000
60 Month Interest Rate:	12%	6%
Monthly Payment:	$890	$829 ($61 less)
Total Cost:	**$53,400**	**$59,688**

Combining diesel filters with fuel saving retrofits cuts emissions and costs less!

Equipment	Cost	% Fuel Savings	Annual Fuel Savings	Monthly Fuel Savings	Monthly Loan Payment	Net Monthly Savings
APU, Tires, Aero, PM Filter	$26,500	17%	$8,320	$693	($659)	**$34**

Assumes loan at 9% for 48 months; $3/gal diesel

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SmartWay Finance Program

- Since 2008, approximately $30 million awarded to support the development of loan programs to reduce fuel costs and emissions
  - Additional $12M 2009/2010 funds to be awarded
  - Complements $284M funding for EPA's National Clean Diesel Campaign
- Grants awarded to multiple entities
  - Cascade Sierra Solutions
  - Community Development Transportation Lending Services, Inc.
  - Houston Galveston Area Council
  - Owner-Operator Independent Drivers Association Foundation
- SmartWay Finance funding supports a wide range of projects across U.S.
  - Port dray truck retrofits and repowers
  - Over-the-road and regional truck fleet upgrade, leasing and loan programs
  - APU rebates for independent owner-operators
  - CNG retrofits of school buses
  - Retrofit and repower of port, construction, and agricultural equipment

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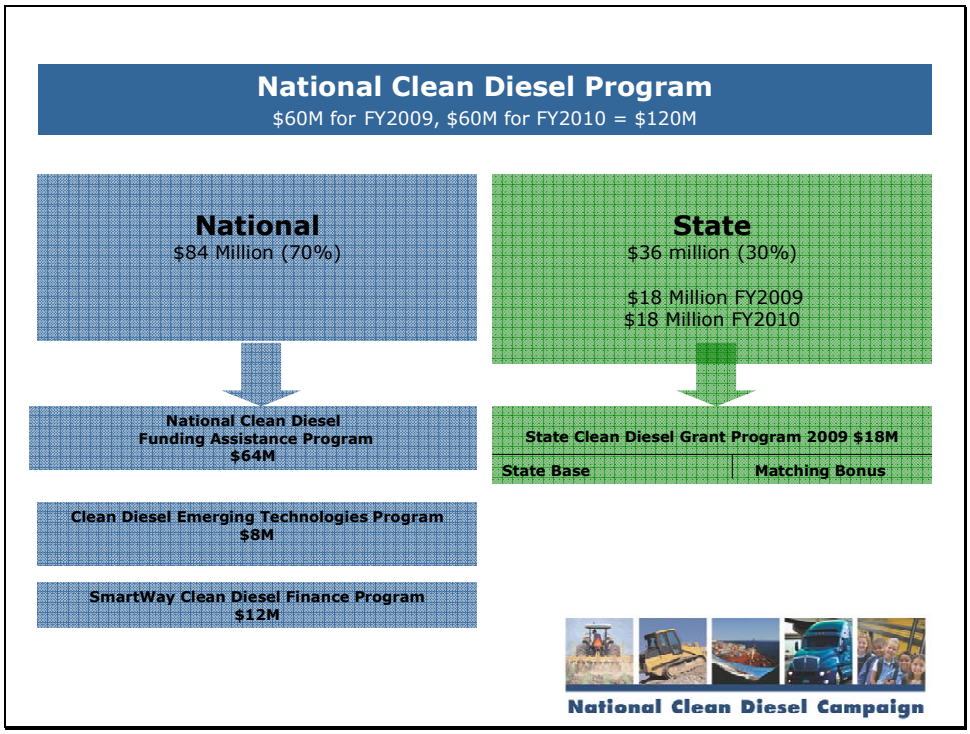

National Clean Diesel Emissions Reduction Program which was created under Title VII, Subtitle G (Sections 791 to 797) of the Energy Policy Act of 2005, Public Law 109-58, signed August 8, 2005 (EPAct). The National Clean Diesel Emissions Reduction Program is sometimes referred to as "DERA".

Eligible entities:

U.S. regional, state, local or tribal agencies/consortia or port authorities with jurisdiction over transportation or air quality

Nonprofit organizations or institutions that:

represent or provide pollution reduction or educational services to people or organizations that own or operate diesel fleets; or

have, as their principal purpose, the promotion of transportation or air quality

School districts, municipalities, metropolitan planning organizations (MPOs), cities and counties are all eligible entities under this assistance agreement program.

Lessons Learned

- Lesson: Simplify the FLEET Model
  - Model is intimidating at first glance, model file size is large and user's don't use all the features
  - Reduce Partner Account Management time on training Partners on the tool
- Solution:
  - User's guide to help companies use the tool
  - Short FLEET Model for smaller companies.
- Potential Improvements:
  - Web-based version
  - Graphical User Interface to make it more user friendly (i.e. TurboTax type front-end)

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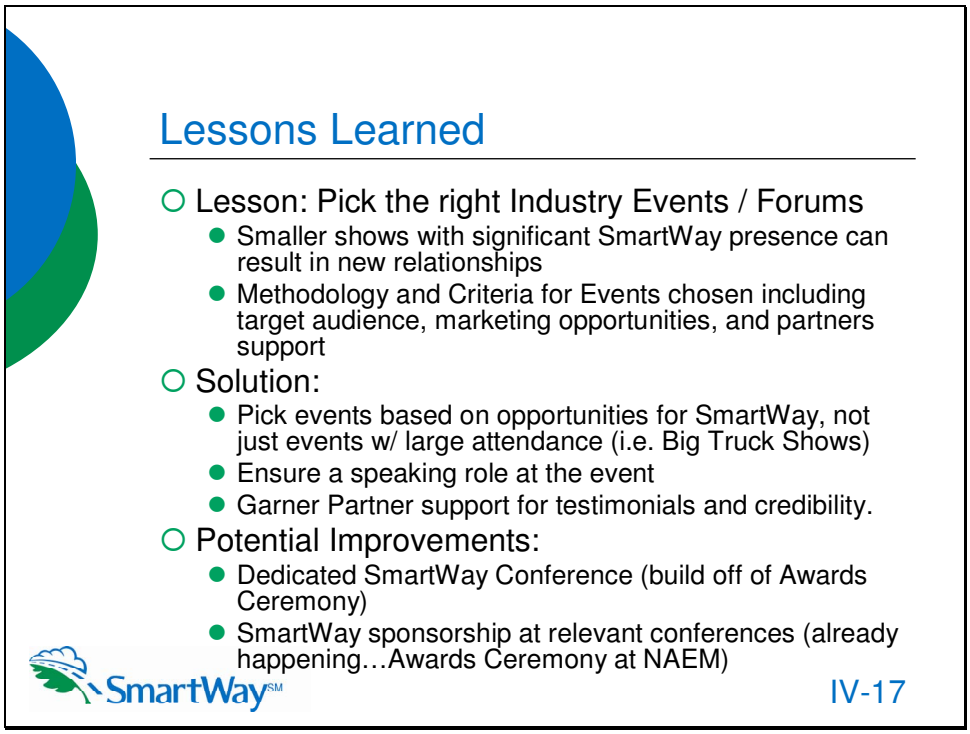

SmartWay staff and publicity can be lost among everything else happening at the largest of events. This was especially true in 2004 and 2005, before SmartWay had industry name recognition. When SmartWay was first launched, some of the smaller events offered the best opportunity to meet prospects and get them to join.

Lessons Learned

- Lesson: Link the FLEET, Web site and CRM
  - Reduce effort spent to enter (re-enter) information in each system.
- Solution:
  - Set up systems that allow EPA, contractors, and regional offices to collaborate and communicate more efficiently.
  - CRM data will automatically populate website (i.e., new Partner joins). Faster communication to public and partners.
- Potential Improvements:
  - Single information system for all Partner data, including Web site.

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Lessons Learned

- Lesson: Foster More Partner Networking
  - Partners want more offerings and information about technologies and opportunities
- Solution:
  - SmartWay Awards is a start but build it into a SmartWay specific event with workshops and information sharing across all partnership categories.
- Potential Improvements:
  - Workshops and Partner-only events
  - Webinars (Regular sessions/seminars for partners over the Internet)
  - More tools to provide valuable services to Partners

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Lessons Learned

- Lesson: Improve Industry Feedback Channels (Sustain Feedback Loop)
  - Partners want more offerings about technologies and opportunities
- Solution:
  - Re-commit to scheduled Industry Advisory Meetings
  - Feedback opportunities at speaking engagements at conferences or at SmartWay-specific workshops/events
- Potential Improvements:
  - Encourage Industry to develop its own SmartWay Partners Association
  - Sector-specific feedback groups (Benchmarking workgroups – initiated by industry)

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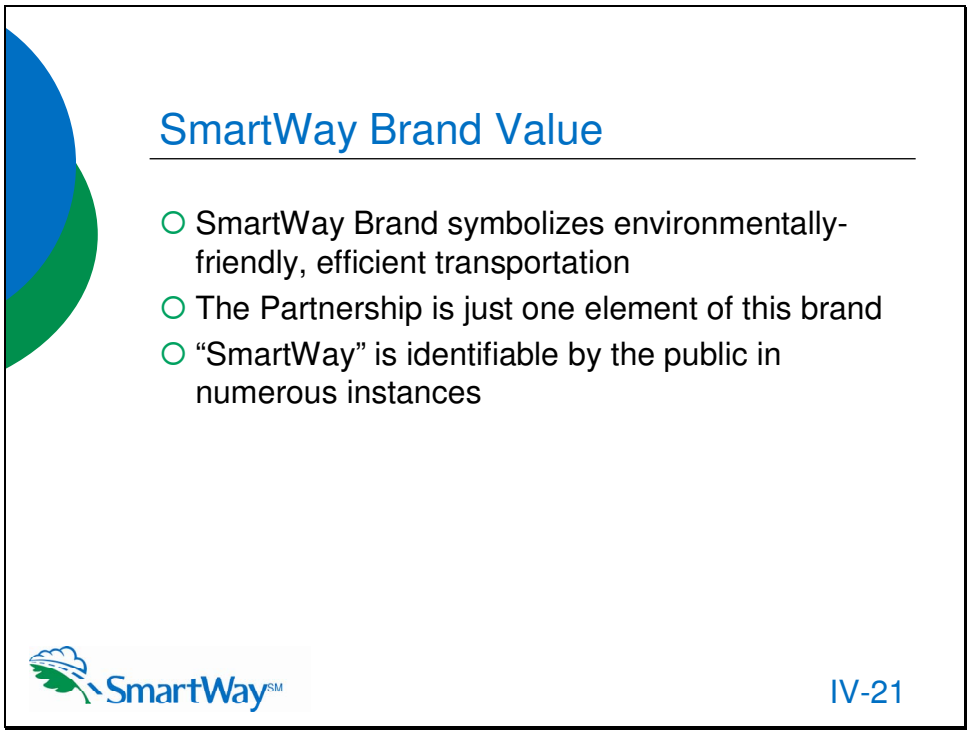
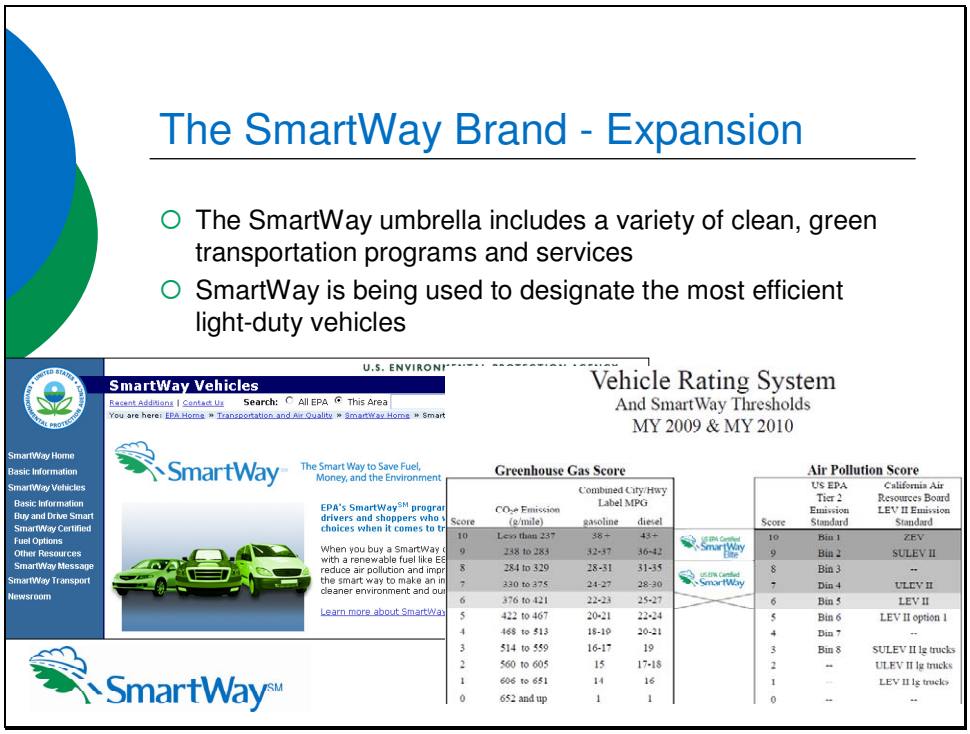


SmartWay is not just a green freight transportation program/symbol; **it is a symbol of green transportation**



Consumers are now exposed to the idea of SmartWay (green transportation) when they are shopping for cars.

The SmartWay Brand - Expansion

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Consumers are now exposed to the idea of SmartWay (green transportation) when they are shopping for cars.

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The SmartWay Brand - Expansion

- SmartWay Grow and Go
  - Temporary initiative to promote the use of biofuels
  - Partners were encouraged to adopt the use of biodiesel under the Partnership
  - Other companies were encouraged to use biofuels, or offer products that run on biofuels

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SmartWay Truck Goal

Year	2007	2010	Retrofit
Fuel Economy	~7.5 mpg 25% better than today's standard trucks		
NO_x	1.2 g/bhp-hr	0.2 g/bhp-rh	
PM	0.01 g/bhp-hr	0.01 g/bhp-hr	80% PM Filter
Fuel	ULSD Required		
Compliance	Sign Logo use guidelines Sign SWT truck agreement		

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SmartWay Truck Features

- Tractor requirements:
  - 2007+ model year
  - Integrated cab roof fairing
  - Cab side fairing
  - Tank fairing
  - Cab front air dam bumper
  - Aerodynamic mirrors
  - Idle reduction equipment
  - Single-wide or low rolling-resistance tires
- Trailer requirements:
  - Side skirts on trailer
  - Single-wide or low rolling resistant tires
  - Weight savings
  - Gap reducer on front or trailer tails

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SmartWay Truck

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Funding (2006)

Fiscal Year 2006 Budget: $1,850,000

- Recruiting and Partner Management: $750,000
  - EPA Contractor Support
  - EPA and Contractor Travel
  - IT Support
  - Marketing Material for Recruiting/Partner Management
- Marketing and Communication: $400,000
  - EPA Contractor Support
  - Communication Campaign (i.e. PSAs)
  - Outreach Material Development (documents, displays, banners, award trophies, etc.)
- Technology and Verification: $300,000
- Expansion Projects: $300,000
  - Light-Duty Vehicles, Drayage and Ports
- General Operating Costs / Other: $100,000

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Staffing Needs (Program Management/ Expansion) 2006 - 2007

15-20 Total FTEs

- Program Management:
  - Institutional Knowledge / Generalists (experience with various program aspects and design)
  - Experience in voluntary program design and implementation
- Recruiting / Partner Management Staff:
  - Experience identifying and pitching ideas to decision makers.
  - Strong interpersonal communication, sales, and marketing skills
  - Strong presentation and networking skills
  - Experience as an account manager preferred (with freight industry experience)
  - Knowledge of SmartWay fuel saving technologies
  - Strong quantitative, Excel modeling and organizational skills
  - Strong interpersonal and relationship building skills.
- Technical Support and New Initiatives Staff:
  - Ability to write and interpret technical reports / convey technical knowledge
  - Entrepreneurial; Identify trends: Understand technology adoption life cycle
  - Industry Sectors Specific Knowledge– Financial, Ports, Borders/International

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Moving toward a 2nd generation program

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SmartWay Vision for Green Supply Chain

- Industry and government work toward decarbonizing global supply chains
- Full carbon transparency exists in freight management decision-making
- SmartWay carriers are enabled with better benchmarking tools
- Universal usage of a global database of company emission factors
- Freight sustainability Programs like SmartWay exist in industrialized countries

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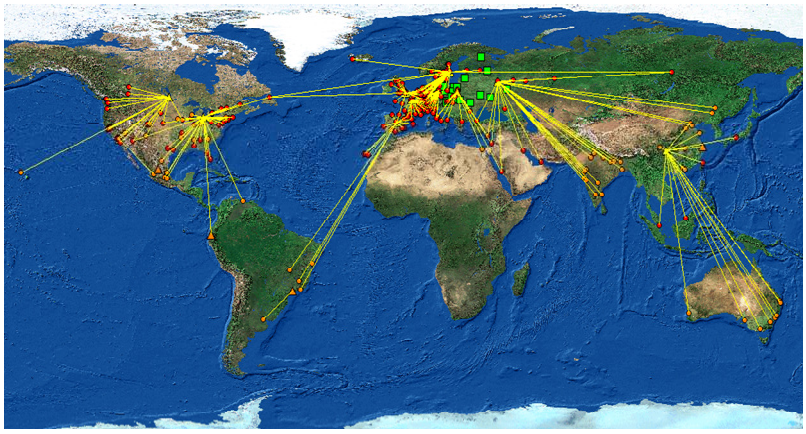
Measuring and Reducing Emissions from the Supply Chain



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The Demand

- Shippers driving demand for sustainable freight operations
  - Growing demand for carbon disclosure & efficiency gains from freight providers
  - Transportation significant to overall global emissions footprint
- Globalization introduces new challenges and opportunities
  - Multinational corporations linking manufacturing and logistics operations across the world
  - Strong business case for more sustainable supply chains
- SmartWay Partners see SmartWay as a key part of their global supply chain solution
  - SmartWay developing new carbon accounting and tracking tools that will cover more freight modes; provide enhanced carbon assessment, tracking and benchmarking capability; and improve data functionality and management

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SmartWay as a Template for Global Freight Programs

- Numerous countries, NGOs and trade groups are working to develop freight sustainability initiatives globally.
  - SmartWay often seen as a model public/private, market-based partnership for other countries to emulate.
- SmartWay International Workshop December, 2008
  - Representatives from 12 countries
    - Belgium, France, Netherlands, Sweden, Switzerland, UK, Australia, New Zealand, Canada, Mexico, India, Japan
  - Other key organizations included:
    - World Resources Institute, Environmental Defense Fund, Carbon Trust, MIT, US Maritime Administration, EPA OITA
  - Goals:
    - Training countries to set up SmartWay sister programs
    - Sharing best practices from other countries' programs
    - Harmonizing supply chain GHG accounting methods
    - Developing an international SmartWay Exchange Network

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SmartWay: Americas

- SmartWay "sister" programs:
  - Canada – FleetSmart
    - Administered by NRCan
    - Focused on driver training, education, best practices
    - EPA has MOU to collaborate on joint program activities
  - Mexico – Transporte Limpio
    - Administered by SEMARNAT
    - Pilot program underway to collect fleet data, benchmark efficiency, develop action plans
- Commission for Environmental Cooperation
  - Integrating SmartWay into North American Supply Chain Sustainability study; report to Environmental Ministers
  - Exploring cooperation for CAN-US-MEX trade corridor
- Chile and Brazil (through IDB) are pursuing SmartWay design

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SmartWay: Europe

- SmartWay "sister" programs launched:
  - France – Objectif CO_2
    - Administered by ADEME
    - Modeled after SmartWay
    - Focused on benchmarking, best practices

- EU developing SmartWay platform with goal of harmonizing multinational freight sustainability efforts, share data with US
  - Pilot demonstration underway with a dozen freight shippers/carriers
    - Multinational companies with US and EU operations
    - Beta testing new SmartWay carbon accounting tools
  - www.climatetransact.eu

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SmartWay: Asia

- SmartWay "sister" programs launched:
  - Australia – "SmartWay"
    - Administered by EPA Victoria
    - Modeled after SmartWay
    - Focused on technology, best practices
- Guangzhou China Green Truck Demonstration project
  - SmartWay technology retrofits on existing trucks
  - Demonstrated 6%-17% fuel savings

Guangdong Green Freight project

- World Bank developing multi-million funding sources from Global Environment Facility and commercial co-financing for:
  - Market based freight partnership program (like SmartWay)
  - Carbon accounting tools and methodologies
  - Financing programs

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Appendix: Relevant Websites and Contacts

- Official SmartWay Homepage: http://www.epa.gov/smartway/
- SmartWay Transport Partnership: http://www.epa.gov/smartway/transport/index.htm
- EPA Interactive Activity Map: http://epamap10.epa.gov/website/irim_us_map.asp
- EPA Green Vehicle Guide: http://www.epa.gov/greenvehicle/
- SmartWay Finance Center: http://www.smartwayfinancecenter.com/
- SmartWay Finance Program: www.epa.gov/smartway/transport/what-smartway/financing-clean-diesel-info.htm
- SmartWay verified technologies: www.epa.gov/smartway/transport/what-smartway/verified-technologies.htm
- National Clean Diesel Campaign verified emission control equipment: www.epa.gov/otaq/retrofit/verif-list.htm
- Fuel Savings Calculator: www.epa.gov/smartway/transport/calculators/
- Diesel Emissions Quantifier: http://cfpub.epa.gov/quantifier/view/index.cfm
- EPA Technology Package Savings Calculator: http://www.epa.gov/smartway/calculator/loancalc.htm
- EPA National Clean Diesel Campaign: http://www.epa.gov/cleandiesel/index.htm
- Greenhouse Gas Equivalencies Calculator: http://www.epa.gov/cleanenergy/energy-resources/calculator.html
- Department of Energy truck stop electrification (TSE) locator: http://www.eere.energy.gov/cleancities/idle/station_locator.html
- Department of Energy list of available idle reduction (IR) technology: http://www.eere.energy.gov/cleancities/idle/models.html
- ATA Trucks Deliver a Cleaner Tomorrow: http://www.trucksdeliver.org/
- Cascade Sierra Solutions: https://secure.cascadesierrasolutions.org/
- FleetSmart Canada: http://fleetsmart.nrcan.gc.ca/

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