Driving Efficiency and Savings in the Federal Supply Chain

6th Annual Government Freight Transportation Forum

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Today’s Discussion

- Transportation and Freight Sectors
  - Environmental & Economic Drivers
  - Marketplace changes and challenges

- Federal sustainability goals & reporting
  - Executive Order 13693
  - DDS3 Package Delivery Contract
  - Business case for freight sustainability

- Why SmartWay?
  - Supply Chain performance benchmarking and reporting
  - Carbon accounting system
SmartWay Drivers: Freight Sector Environmental Impacts

Transportation in U.S.:
- Over 1/4 total GHG emissions;
- About 2/3 petroleum-based fuel use.

In Transport Sector:
- Freight accounts for over 25% of all fuel consumed and GHGs emitted.
- Freight is fastest growing source of transport GHGs.

Transportation Greenhouse Gases:

- 43% Passenger Cars
- 22% Medium/Heavy Duty Trucks
- 18% Light Duty Trucks
- 8% Aircraft
- 3% Rail
- 2% Pipelines
- 1% Buses
- 1% Motorcycles
- 1% Lubricants

2011 Data - Inventory of U.S. Greenhouse Gas Emissions and Sinks (EPA 2013)
SmartWay Drivers: Economic Impacts of Freight

- **Freight transportation is cornerstone of U.S. economy**
  - Trucking & rail deliver goods and materials that drive economic growth and development
  - Domestic commodity and consumer goods shipments
  - Exports and Imports
  - Freight system moves:
    - 17.6 billion tons of freight per year
    - 48.3 million tons of freight daily
    - 57 tons of freight per person each year
    - $16.8 trillion worth of freight yearly
    - $46 billion worth of freight daily

- **Transportation logistics costs $836 billion** (5.4% of GDP)
SmartWay Drivers: Energy use by Heavy Duty Trucks

Percent of Energy Used by Mode -- Transportation Sector (million barrels per day oil equivalent)

- Light-Duty Vehicles
- MD/HD (commercial, bus, freight)
- Rail
- Marine
- Air
- Other (military, pipeline, etc)

U.S. DOT RITA, Volpe Center
SmartWay Drivers: Heavy Duty Truck Freight Tonnage

Total: 17.6 billion tons

Million Metric Tons of Freight (2011)

- Truck carries most freight tons
Expectations, Challenges, Opportunities

- **Public awareness**
  - 63% of Americans think “U.S. government should buy ‘greener’ & more environmentally-friendly products & services”
  - Private sector ramping up carbon benchmarking, reporting

- **Executive Orders**
  - Reducing impacts of federal footprint through green procurement

- **Rising and volatile energy prices**
  - Fuel is largest cost center for truck carriers: 38% of operating costs in 2013 (driver wages = 26%)

- **Globalization of supply chains**
  - Opportunities to impact global marketplace

NMI (Natural Marketing Institute)
ATRI: An Analysis of the Operational Costs of Trucking: A 2012 Update
SmartWay Drivers: Climate Awareness

Land & Ocean Temperature Percentiles Feb 2016

NOAA’s National Centers for Environmental Information

Data Source: GHCN–M version 3.3.0 & ERSST version 4.0.0

Source: National Oceanic and Atmosphere Administration
Common Sources of Federal Greenhouse Gas Emissions

SCOPE 1:
Greenhouse gas emissions from sources that are owned or controlled by a Federal agency.

SCOPE 2:
Greenhouse gas emissions resulting from the generation of electricity, heat, or steam purchased by a Federal agency.

SCOPE 3:
Greenhouse gas emissions from sources not owned or directly controlled by a Federal agency but related to agency activities.
Executive Order 13693

Revises and extends reach of EO 13514

- Goal: reduce Federal GHG emissions by 40% over next decade AND foster innovation, reduce spending, and strengthen communities where Federal facilities operate

- Strategic sustainability performance plans and OMB scorecards

- Emphasis on promoting energy conservation and efficiency through sustainable procurement and acquisition

- Specifically promotes sustainable acquisition and procurement: preferences for sustainable products and services including “SmartWay Transport partners and SmartWay products (fuel efficient products and services)”
Federal Strategic Sourcing Initiative: Domestic Delivery Services contracts (DDS3)

Contract for domestic package deliveries
- Goal: Reduce fuel use, costs and GHGs
- Multi-year, multi-agency contract valued at over $1B
  - FedEx and UPS

Carbon management provisions:
1. Requires all contractors to report GHG emissions and/or register in EPA SmartWay Transport Partnership
2. Requires annual carbon reports for each agency
3. Requirement to set company-wide targets for alternative fuel and vehicles, report annual progress
How to Address Supply Chain Carbon

1. Measure Supply Chain Footprint
2. Benchmark Performance
3. Innovate Operations
4. Report Results
5. Improve Efficiency
SmartWay Snapshot

- Since 2004, SmartWay has grown to about 3,000 partners with broad freight industry support in U.S. and Canada
  - Top 100 U.S. truck carriers and all Class 1 rail lines
  - Federal Partners: GSA and USPS
  - Fortune 500 shippers from key economic sectors
  - Major logistics firms

- Since 2004, SmartWay Partners saved:
  - 72.8 million metric tons of CO₂
  - 1,458,000 tons NOx and 59,000 tons PM
  - 170.3 million barrels of oil and 7.2 billion gallons of fuel
  - $24.9 billion dollars in fuel costs

- Equivalent to eliminating annual energy use in over 6 million homes
SmartWay Success Factors

- **SmartWay provides balanced approach**
  - *Simplicity* – standard benchmarking tools and methods
  - *Accuracy* – performance based assessment of CO₂, NOx, PM
  - *Flexibility* – multiple metrics, multimodal, multi-fleet, multi-categories
  - *Transparency* – manageable granularity, protects sensitive info

- **EPA lends credibility and neutrality**
  - Facilitates exchange of performance data to inform marketplace
  - Data QA/QC program ensures rigor

- **SmartWay triggers market mechanisms**
  - Based on business case for freight sustainability
  - Partner incentives, e.g., shipper demand for cleaner/greener carriers

- **SmartWay provides supplemental value for Partners**
  - Technology verification
  - Operational best practices
The SmartWay Benchmarking System

- **Carrier Data Collection Tools**
  - Truck, Logistics, Barge, Rail, Air, Multimodal Suite

- **SmartWay “Process”**
  - Data collection & processing, QA/QC, benchmarking
  - Quantifies emissions

- **SmartWay Database**
  - Stores and manages data
  - Allows industry benchmarking

- **Shipper Tool**
  - Calculates carrier emission footprints for Shippers

- **SmartWay Website**
  - Tools, guides, resources, webinars
Carrier Data Collected

- Short Haul vs. Long Haul
- Fuel types and gallons consumed
- Particulate Matter Reduction (pre-2006)
- “Cube Out” Percentage
- Model year and truck class
- Miles (revenue and empty)
- Average Payload (Tons) – Cargo Weight Only
- Average Capacity Volume (Cubic Feet)
- Percent Capacity Utilization (Excluding Empty Miles)
- Road Type / Speed Categories
- Average Annual Idle Hours per Truck
SmartWay Carrier Benchmarking

15 Carrier Categories
- TL, LTL, Refrigerated, Tanker, etc.

6 Emission Factors
- 2 metrics x 3 pollutants

Quintile Rankings
(ex: Truckload CO₂ g/mile)

- Top 20% TL Dry Vans
  600-1600 g/mile
  • 1550 g/mile

- Second 20% TL Dry Vans
  1600-1700 g/mile
  • 1650 g/mile

- Middle 20% TL Dry Vans
  1700-1800 g/mile
  • 1750 g/mile

- Fourth 20% TL Dry Vans
  1800-1900 g/mile
  • 1850 g/mile

- Bottom 20% TL Dry Vans
  1900-3600 g/mile
  • 1950 g/mile
Shipper (Agency) Data Collected

- North American Industry Classification System (NAICS) code(s)
- Accounting of all SmartWay carriers utilized
  - All truck, rail, multimodal and logistics providers
- Activity data for amount of freight, distance shipped
  - Total miles contracted and/or ton-miles contracted by SmartWay carrier and non-SmartWay carrier category
  - Freight characterization (avg density, avg payload)
- Mileage and ton-mileage data recommended
  - Flexibility for other data types
- **Optional** data on operational, mode shift strategies
SmartWay for Carbon Reporting

**Step 1 - Complete the Shipper Tool**

**Introduction**
Welcome to the SmartWay Shipper Tool. This version of the Shipper Tool encompasses ground truck and rail freight movements. A future version will also cover marine and air freight movements.

For additional information such as the tool user guide, technical manual or other support materials, click on the following web link:

- SmartWay Shipper Tool Website
- Call the SmartWay Helpline at: 1-800-266-2560
- Or email the Helpline at: smartway_transport@epa.gov

**Tool Help and Navigation**
Throughout the tool, you will see numerous buttons. Becoming familiar with these buttons will make completing the tool easier and faster.

- **HELP**
  - Provides instructions for completing each screen
- **ADD/VIEW COMMENTS**
  - Allows you to add notes or clarifications (button becomes yellow if a comment exists)
- **VALIDATE SCREEN**
  - Checks your data input for missing or invalid information
- **ZOOM IN**
  - Enlarges the text on the screen
- **PRINT SCREEN**
  - Sends an image of the screen to your default printer
  - Provides additional information about data entry fields

**Step 2 - Generate SmartWay Data Reports**

**EMISSIONS SUMMARY**

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<th>Mode</th>
<th>CO2 g/Mile</th>
<th>CO2 g/Ton-Mile</th>
<th>CO2 Mass Emissions (Total/Year)</th>
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**Step 3 - Use results in:**

- Benchmarking and Operations
- Environmental Reporting
- Carbon Disclosure Submittals
SmartWay for Carbon Optimization

Step 1 - Complete Shipper Strategies analysis

Step 2 - Generate SmartWay Data Reports

Step 3 - Use results in:
- Performance tracking
- Progress reporting
- Case Studies
Save Fuel, Money and the Environment with a SmartWay Truck

A SmartWay tractor and trailer annually save 2,000 to 4,000 gallons of fuel and reduce CO2 emissions by up to 20% as compared to similar trucks on the road. Learn more at www.epa.gov/smartway
Why Should Federal Agencies use SmartWay?

- Standardized approach to assess Federal supply chain efficiency and emissions
  - For any Agency that ships, carries or receives goods
  - Adopted by private sector, vendors, providers, suppliers
- Designed with and for the freight sector
  - Delivers solutions to marketplace needs and challenges
  - Voluntary and no-cost
- Proven benefits
  - Shippers identify greener carriers
  - Carriers gain competitive advantage for leading shippers
- Credible, neutral data oversight
  - EPA oversees data quality assurance and control
- Meets requirements for EOs
For more information:

www.epa.gov/smartway

smartway_transport@epa.gov

SmartWay Helpline
734-214-4767