



# Freight Sustainability, the Federal Supply Chain & SmartWay



# Today's Discussion



## Transportation and Freight Sectors

- Environmental & Economic Drivers
- Marketplace changes and challenges

## Federal sustainability goals & reporting

- Executive Order 13693
- Business case for freight sustainability

## Why SmartWay?

- Supply Chain performance benchmarking and reporting
- Carbon accounting system

# Freight Contribution to US Economy

- 
- **Our freight system moves a staggering amount of goods**
    - 17.9 billion tons of domestic freight per year
    - 55 million tons of freight daily
    - \$17.9 trillion annual value of freight
    - \$49 billion, daily
  - **Freight is a strong contributor to the US economy**
    - \$1.4 trillion in transportation logistics costs – of this transportation account for over 60% (the rest is inventory carrying and administration)
    - This represents 8.2% of total US GDP
    - Ours is one of the most efficient systems in the world – e.g., China's logistics costs are about twice as high per GDP

# Freight Sector Environmental Impacts



## Transportation in U.S.:

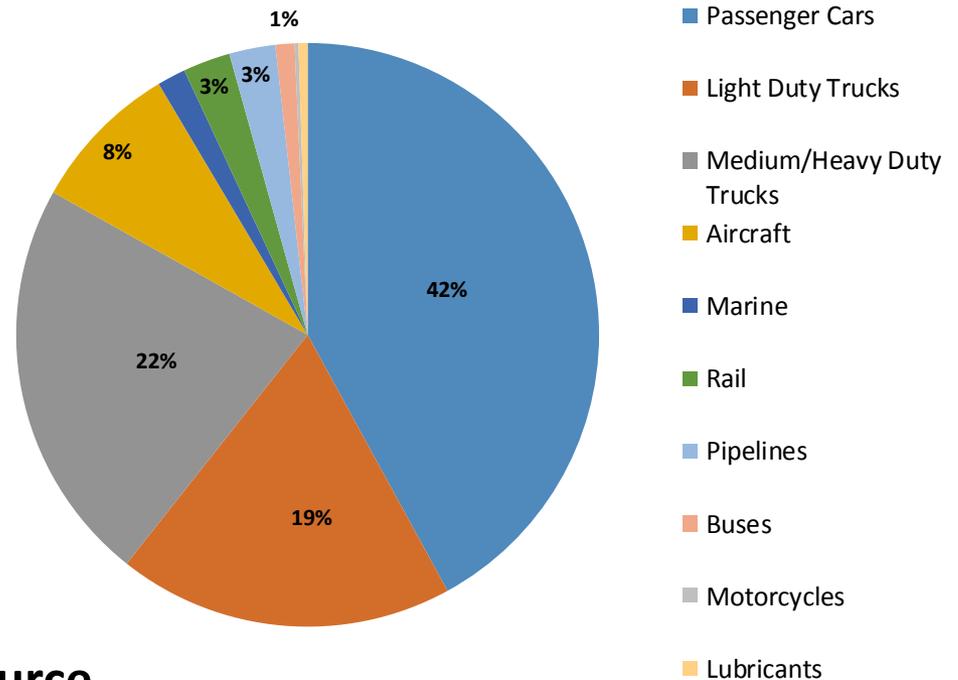
- Over 1/4 total GHG emissions;
- About 2/3 petroleum-based fuel use.

## In Transport Sector:

- Freight accounts for over 25% of all fuel consumed and GHGs emitted.

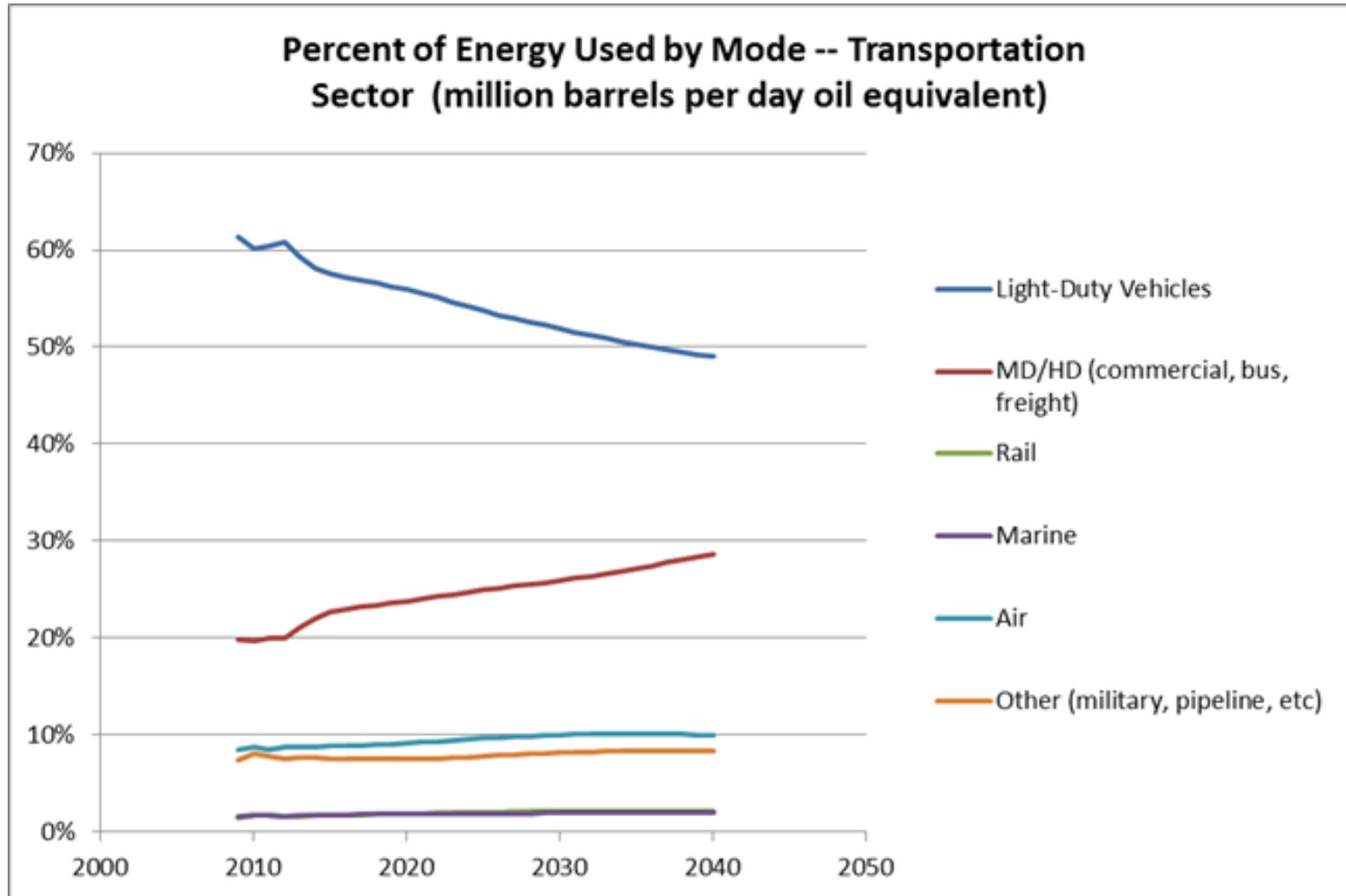
**Freight is fastest growing source of transport GHGs**

## Transportation Greenhouse Gases



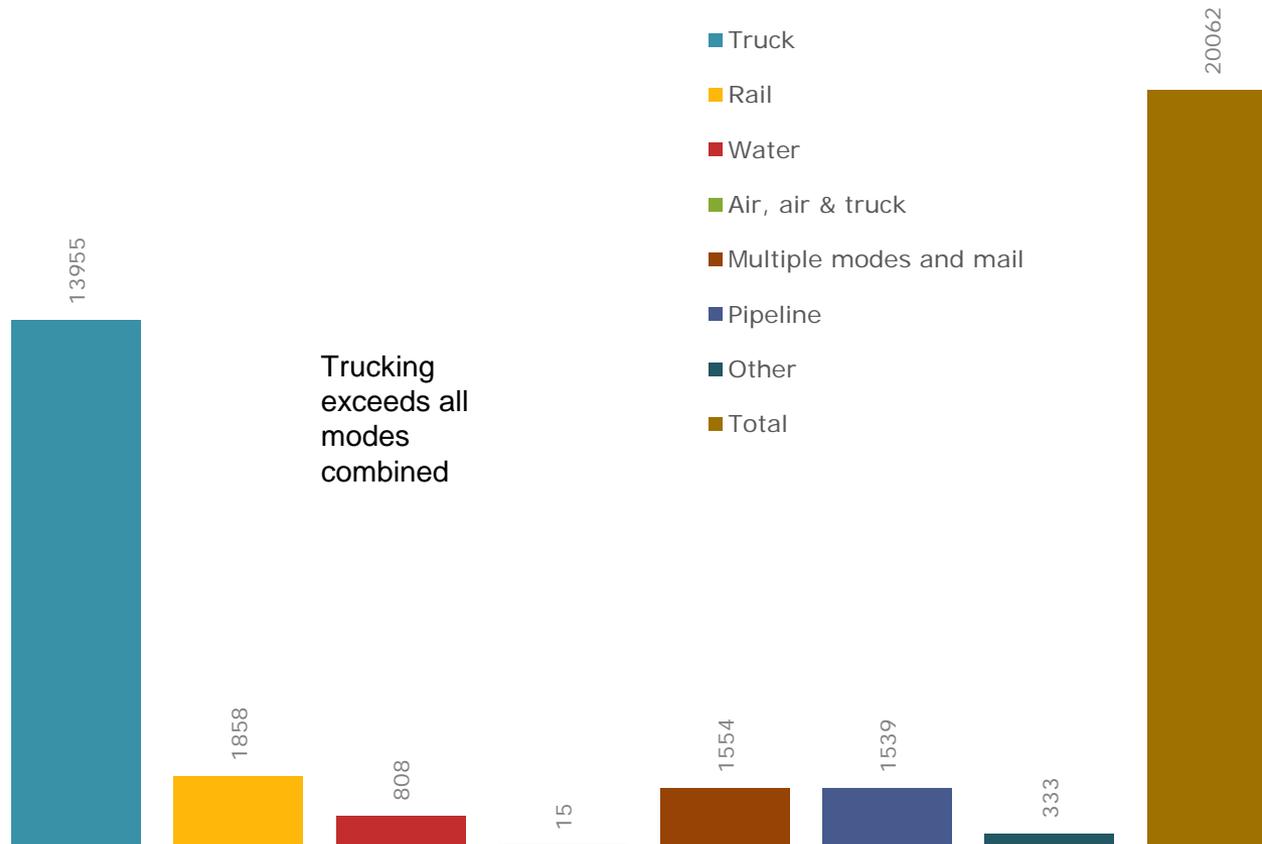
*2014 Data - Inventory of U.S. Greenhouse Gas Emissions and Sinks (EPA 2016)*

# Energy use by Heavy Duty Trucks



# Heavy Duty Truck Freight Tonnage

## WEIGHT OF FREIGHT BY MODE 2013



Total: 20 billion tons (domestic and trade)

US DOT Freight Facts and Figures 2015



*“There is such a thing as being too late when it comes to climate change.”*

- President Obama, August 3, 2015



# Freight sector, challenges, opportunities



## **Growing interest in sustainability and climate change**

- “Values buying” prevalent among millennials
- Investors expect corporate accountability on sustainability
- 63% of Americans think U.S. government should buy greener & more environmentally-friendly products and services

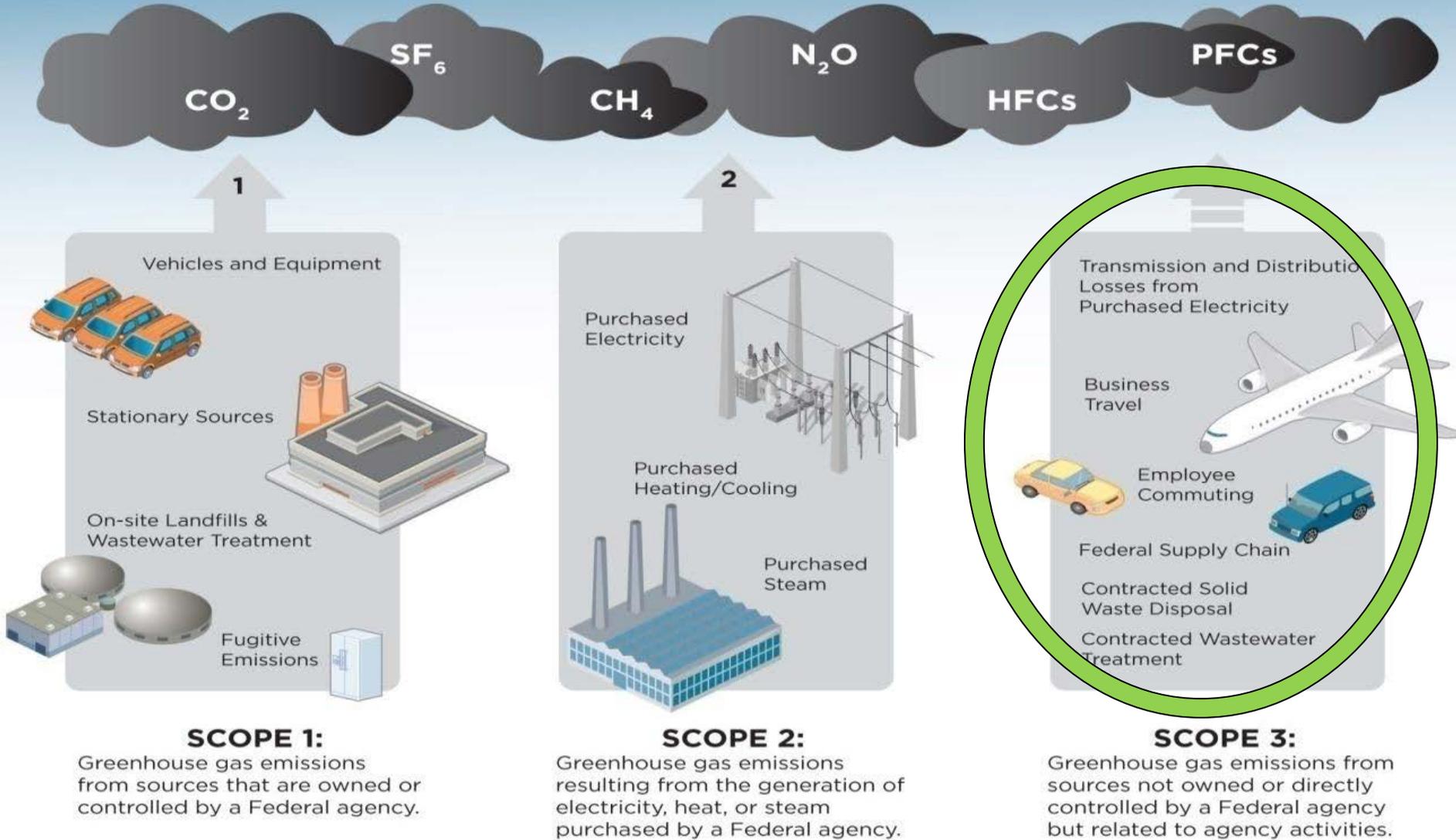
## **Energy still a key factor in the cost of goods movement**

- Despite dropping oil prices, fuel is still the 2<sup>nd</sup> highest cost of truck operation (34%); driver wages & benefits (35%)
- Reducing energy consumption goes hand-in-hand with reducing carbon and other air emissions

## **Globalization of supply chains**

- Growing awareness of supply chains environmental impacts, including freight

# Common Sources of Federal Greenhouse Gas Emissions



# Executive Order 13693



## Revises and extends reach of previous orders

- Drive down emissions across the federal supply chain and reduce federal GHG emissions by 40% over next decade
- Strategic sustainability performance plans and OMB scorecards
- Emphasis on promoting energy conservation and efficiency through sustainable procurement and acquisition
- Promotes sustainable acquisition and procurement: preferences for sustainable products and services including ***'SmartWay Transport partners and SmartWay products'***

# Federal Suppliers Subject to EO 13693



## Transport Service Providers

- For-hire trucking, rail, air, barge contracted to ship, carry or deliver freight for federal government
  - examples: FedEx, UPS, JB Hunt, ConWay, YRC, Swift, Schneider, C.R. England, UP, CSX, BNSF, AEP, Ingram Barge

## Logistics Providers (3PLs)

- Third-party freight services providers or brokers with or without assets
  - examples: CH Robinson, Armada, XPO Logistics, Penske, Ryder, NFI, Exel, Menlo, CEVA, Transplace, Lynden

## Vendors & Suppliers

- Goods and materials procured by Federal agencies
  - example: Kimberly Clark, P&G, Unilever, 3M, Alcoa, Honeywell, GE, Merck, PPG, Fluor, Bechtel, Parsons, Ford, SYSCO, DuPont,

**HELP AGENCIES MEET CARBON REPORTING & REDUCTION GOALS**

# SmartWay Carbon Assessment Tools



## Carrier Tools

- Truck, logistics, barge, rail, multimodal and air carriers

## SmartWay "Process"

- Data collection & processing, benchmarking
- Quantifies emissions

## SmartWay Database

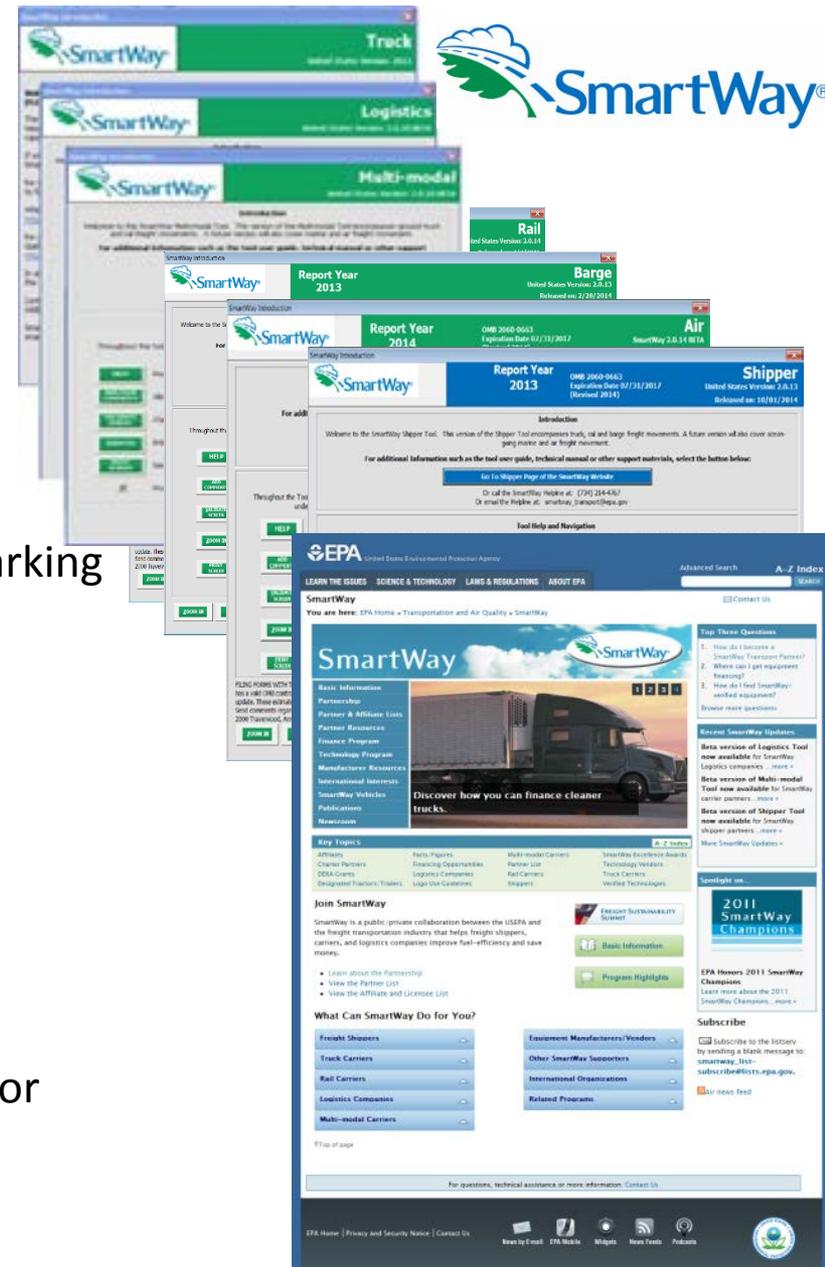
- Stores, manages data
- Allows industry benchmarking

## Shipper & Logistics Tools

- Federal agencies and their suppliers
- Calculates carrier emission footprints for Shippers

## SmartWay Website

- Tools, guides, resources, webinars



# SmartWay Snapshot



Since 2004, SmartWay has grown to about 3,000 partners 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 CO<sub>2</sub>
  - 1,458,000 tons NOx and 59,000 tons PM
  - 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 Core Principles



Reduce greenhouse and other air emissions

Provide balanced approach

- *Simplicity* – standard benchmarking tools and methods
- *Accuracy* – performance based assessment of CO<sub>2</sub>, NO<sub>x</sub>, PM
- *Flexibility* – multiple metrics, multimodal, multi-fleet, multi-categories
- *Transparency* – manageable granularity, protects sensitive info

Drive credible and neutral methods

- EPA facilitates exchange of performance data to inform marketplace
- Data QA/QC program ensures rigor

Trigger market mechanisms

- Make business case for freight sustainability
- Partner incentives, e.g., shipper demand for cleaner/greener carriers

# Carrier tool example



- Short Haul vs. Long Haul
- Fuel types and gallons consumed
- Particulate Matter Reduction
- “Cube Out” Percentage
- Model year and truck class
- Miles (revenue and empty)
- Average Payload (Tons)
- Average Capacity Volume
- Percent Capacity Utilization
- Road Type / Speed Categories
- Average Annual Idle Hours per Truck

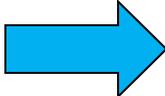
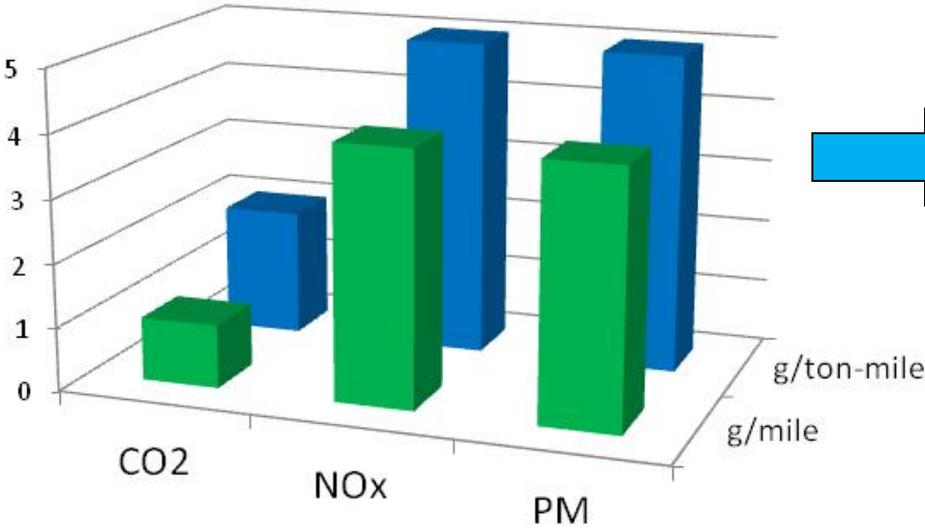
# Carrier tool outputs

## 15 Carrier Categories

- TL, LTL, Refrigerated, Tanker, etc.

## 6 Emission Factors

- 2 metrics x 3 pollutants



## Quintile Rankings

(ex: Truckload CO<sub>2</sub> 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 tool example

- 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
- Mileage and ton-mileage data recommended
- Flexibility for other data types
- Optional data on operational, mode shift strategies

The screenshot shows the EPA SmartWay website. The header includes the EPA logo and navigation links for 'LEARN THE ISSUES', 'SCIENCE & TECHNOLOGY', 'LAWS & REGULATIONS', and 'ABOUT EPA'. The main content area features a large image of a truck with the text 'Discover how you can finance cleaner trucks.' Below this, there are sections for 'Join SmartWay', 'What Can SmartWay Do for You?' (with dropdown menus for Freight Shippers, Truck Carriers, Rail Carriers, Logistics Companies, and Multi-modal Carriers), and 'Equipment Manufacturers/Vendors'. The right sidebar contains 'Top Three Questions', 'SmartWay Updates', 'Spotlight on...', and 'Subscribe' information. The footer includes 'EPA Home | Privacy and Security Notice | Contact Us' and social media icons for RSS, Email, EPA Website, Widgets, News Feeds, and Podcasts.

# SmartWay for Carbon Reporting

## Step 1- Complete the Shipper Tool



SmartWay Introduction

**Shipper**  
United States Version: 2.0.10 BETA

**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 movement.

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

[SmartWay Shipper Tool Website](#)

Or call the SmartWay Helpline at: (734) 214-4767

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

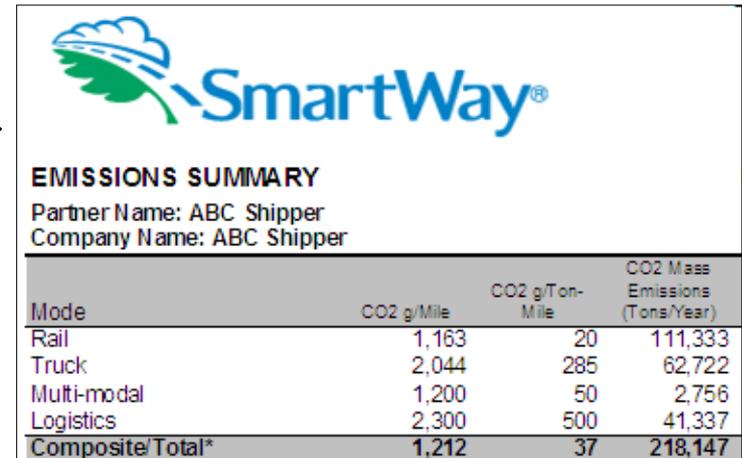
**ZOOM IN** Enlarges the text on the screen

**PRINT SCREEN** Sends an image of the screen to your default printer

**?** Provides additional information about data entry fields

**ZOOM IN** **NEXT**

## Step 2 - Generate SmartWay Data Reports



**EMISSIONS SUMMARY**  
Partner Name: ABC Shipper  
Company Name: ABC Shipper

Mode	CO2 g/Mile	CO2 g/Ton-Mile	CO2 Mass Emissions (Tons/Year)
Rail	1,163	20	111,333
Truck	2,044	285	62,722
Multi-modal	1,200	50	2,756
Logistics	2,300	500	41,337
<b>Composite/Total*</b>	<b>1,212</b>	<b>37</b>	<b>218,147</b>

## Step 3 - Use results in:

- Benchmarking and Operations
- Environmental Reporting
- Carbon Disclosure Submittals

# Benefits of SmartWay participation

Standardized approach to assess supply chain efficiency and emissions

- For any business that ships, carries or receives goods
- Adopted by industry leading corporations

Designed with and for the freight sector

- Delivers solutions to marketplace needs and challenges
- Voluntary and no-cost

Proven marketing benefits

- Shippers identify greener carriers
- Carriers gain competitive advantage for leading shippers

Credible, neutral data oversight

- EPA oversees data quality assurance and control

Strengthens brand equity to investors, customers

- Carbon assessment, corporate responsibility

For more information:

[www.epa.gov/smartway](http://www.epa.gov/smartway)

[smartway\\_transport@epa.gov](mailto:smartway_transport@epa.gov)

SmartWay Helpline

734-214-4767

