

SmartWay Transport Partnership

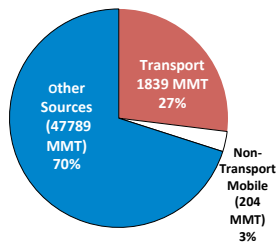
Measuring Supply Chain Carbon Footprints

US Environmental Protection Agency
October 25, 2012



SmartWay Designing a Transportation Carbon Measurement System: The WHY is now clear

2010 U.S. GHG Inventory Totals



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

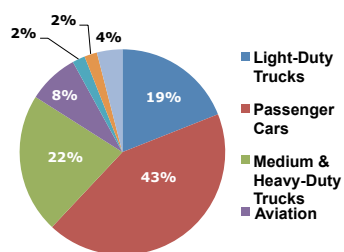
2010 Data - Inventory of U.S. Greenhouse Gas Emissions and Sinks (EPA 2012)

- Customer and Consumer awareness
- Globalization of supply chains
- Investor, Lender and Insurer requirements
- Rising and volatile energy prices



Weekly on-highway diesel prices

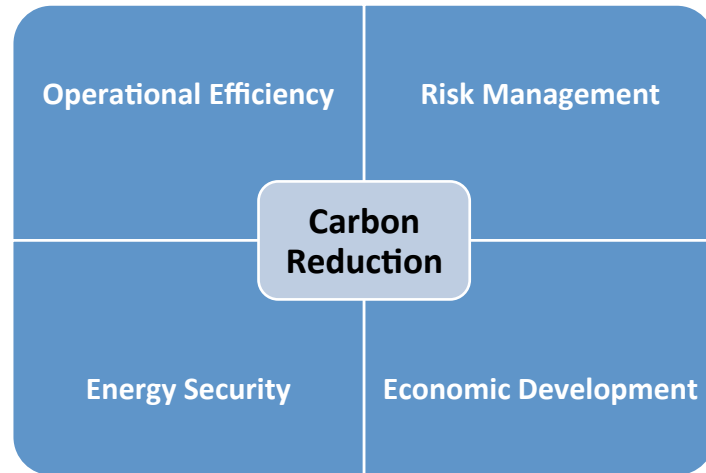
Transportation Greenhouse Gases



• Freight is the fastest growing source of GHGs.

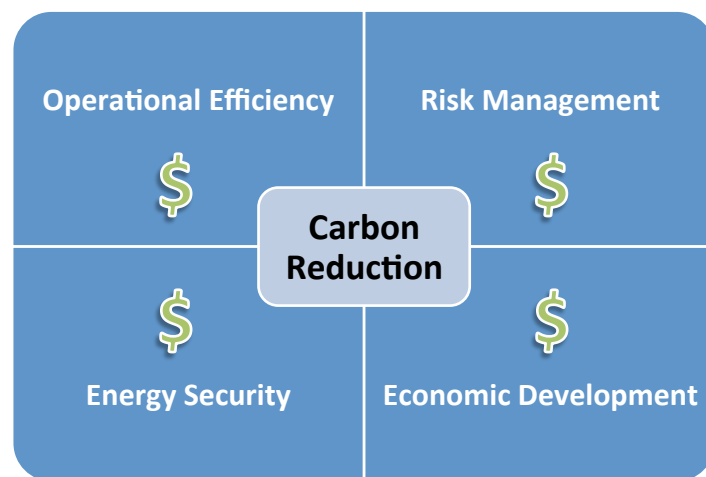
2010 Data - Inventory of U.S. Greenhouse Gas Emissions and Sinks (EPA 2012)

Shared Goals of Carbon Reduction



3

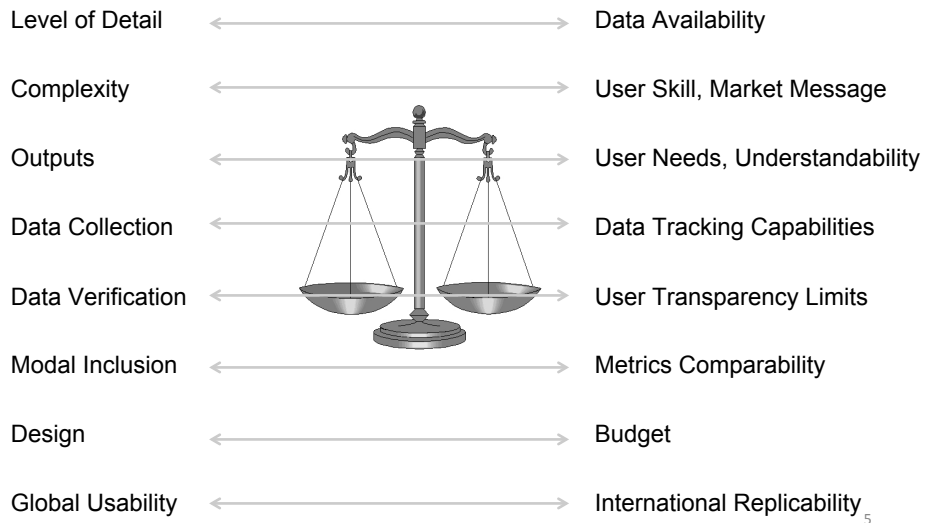
Shared Goals of Carbon Reduction



4

SmartWay

Designing a Carbon Measurement System



How to Address Carbon Reduction



SmartWay = Continuous Improvement

- Public-private partnership with freight sector
- Market based, voluntary and free
- Industry standard carbon accounting system
 - Standardized tools and metrics for collecting & reporting data
 - Developed with extensive stakeholder input and peer reviewed

Goal: Move more freight, more miles with less emissions, and less energy

How: Accelerate adoption of advanced technologies and operational practices in the freight supply chain

Measured by saving:

- gallons of fuel, barrels of oil, \$
- CO₂, NO_x and PM emissions



7

2nd Generation SmartWay

- Standardized tools and information needed to help the freight sector measure, benchmark and report supply chain environmental performance
 - Performance based assessment
- Information to help industry innovate carrier, modal, and technology choices that improve performance, save fuel and reduce costs
 - Data on carrier, modal and operational efficiencies
 - Technology verification program
- Market incentives and recognition for top performers
 - Visibility, awards and logo qualification

8

2nd Generation Program Enhancements

- SmartWay program expansion in Canada
 - Natural Resources Canada accepting new Partners
 - Multiple other countries implementing “SmartWay type” programs
- Fuel Efficient Driver Training
 - Online Driver training e-learning portal
- SmartWay Excellence Awards
 - Based on performance indicators in new tools
- SmartWay Logo
 - Enhanced logo qualification requirements
- Data Quality Program
 - QA/QC guidelines in development
- Partner education
 - Website enhancements, webinars, new bulletins

9

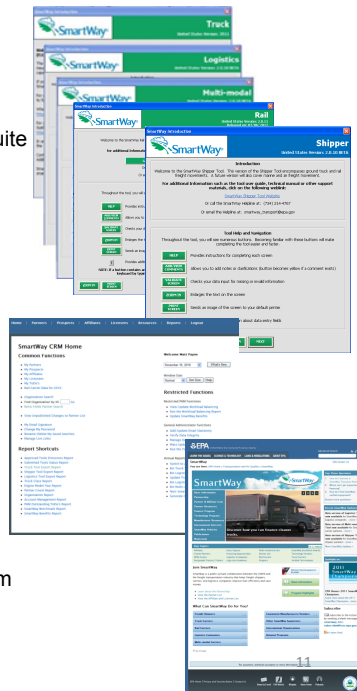
SmartWay Value Proposition

- Established program and industry standard in North America
 - Adopted by industry leaders, US and Canada
- Advancing the freight sector
 - Address marketplace needs and challenges
- Voluntary and market-based incentives
 - Simple, no-cost participation process
- Credible, neutral data oversight
 - EPA collects and processes data for industry
- Brand equity and public awareness
 - Mark of cleaner, more efficient transportation

10

SmartWay Components

- Carrier Data Collection tools
 - Truck Tool, Logistics Tool, Rail Tool, Multimodal Suite
 - All industry and academically peer reviewed
 - Data collected: gallons, miles, payload, volume, vehicle class and model year, and operational characteristics
- Shipper Tool
 - Industry and academically peer reviewed
 - Calculates emission inventories and efficiencies based on carrier mix
- SmartWay Database
 - Stores and manages all SmartWay data
- SmartWay Website
 - Contains downloadable versions of all tools, user guides, technical documentation, webinars, program descriptions



SmartWay's Current 8 Emission Metrics

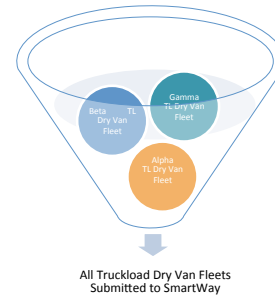


Possible Future Emission Metrics

- Grams/Volume-Mile
- Parcel Delivery?
- Other Pollutants?

SmartWay Separates All Fleets into their Carrier Categories

- 15 Truck Categories based on operational characteristics, plus rail
 - All truckload (TL) dry-van fleets are evaluated together
 - “apples to apples”
 - TL dry-van fleets are NOT evaluated with flatbed truck fleets
 - “apples to oranges”

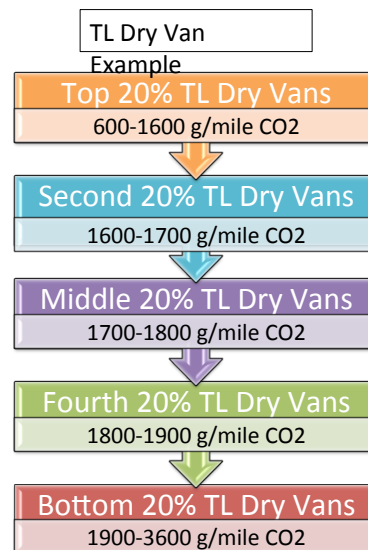


| SmartWay Truck Categories 2011 Data Year | | | | | | | | | |
|--|-----------------|--------|---------|--------|------------|--------------|--------|----------------------|-------|
| | Dry Van/Chassis | Reefer | Flatbed | Tanker | Heavy/Bulk | Auto Carrier | Moving | Specialized /Utility | Mixed |
| TL | | | | | | | | | |
| LTL | | | | | | | | | |
| PD | | | | | | | | | |
| Expedited | | | | | | | | | |
| Dray | | | | | | | | | |
| Mixed | | | | | | | | | |
| Logistics | | | | | | | | | |
| Multimodal | | | | | | | | | |

13

Partner Ranking

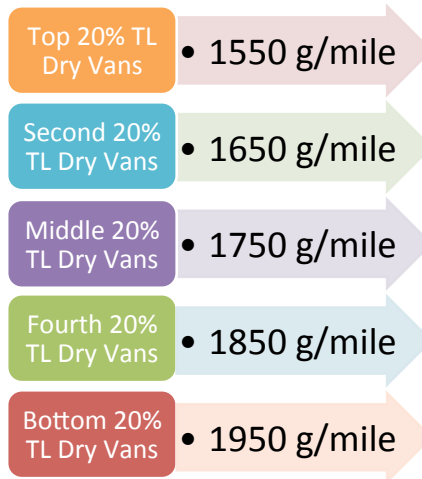
- All Fleets in a category are ranked based on emissions results and placed into one of five ranges for each of the 8 emission metrics
- Performance ranges are set from lowest emissions (best performance) to highest emissions (worst performance)



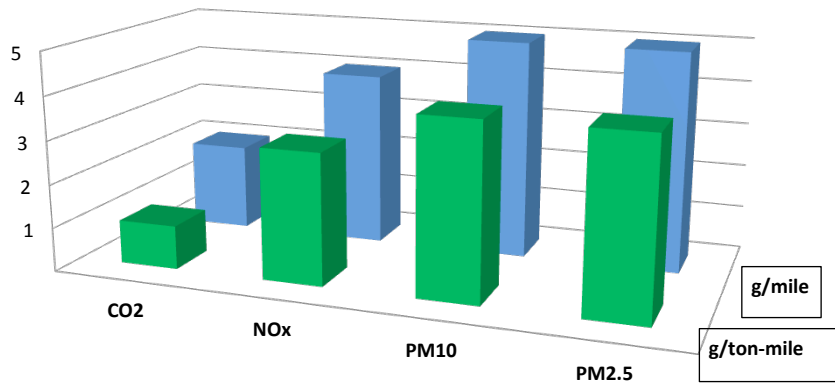
14

All Fleets in a Range are Assigned a Performance Level

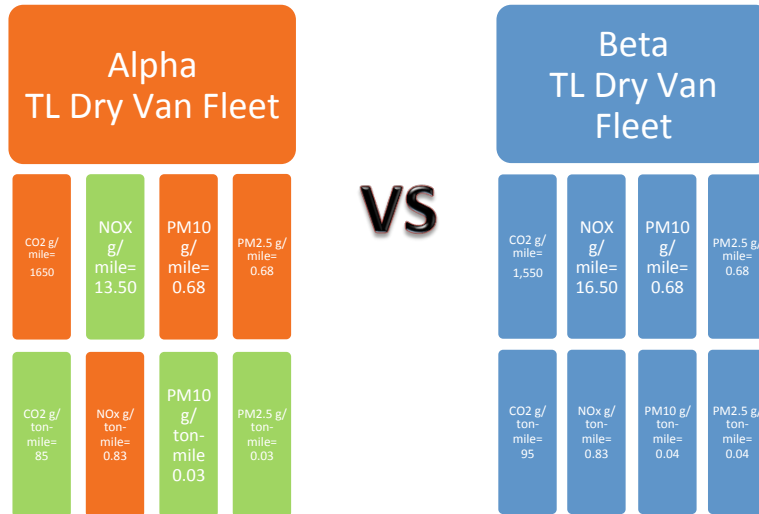
- Fleets are assigned a performance level that allows relative performance comparison to other fleets in that category
- Provides enough information to differentiate, but doesn't reveal sensitive business information
 - The performance level for ranges 2-4 are based on the MIDPOINT of the performance range
 - The performance levels for Range 1 is based on the standard deltas between the midpoints of ranges 2-4, subtracted from the midpoint of range 2. (1650 -100)
 - The performance levels for Range 5 is based on the standard deltas between the midpoints of ranges 2-4, added to the midpoint of range 4. (1850+100)



SmartWay Rating System "Carrier Performance Map"



Shippers use Performance Levels to Assess Relative Carrier Performance



Alpha performs better than Beta for NOx g/mile and CO2, PM10 and PM2.5 g/ton-mile

SmartWay Performance Report for Carriers

Performance Rankings **TRUCKLOAD/DRY VAN**

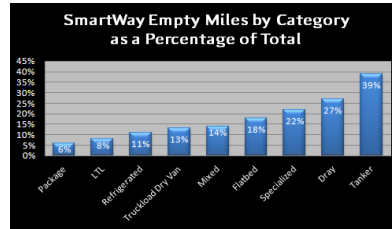
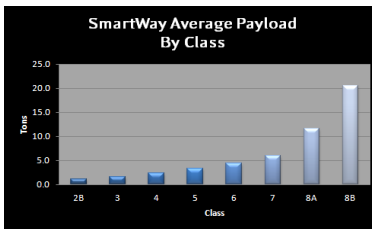
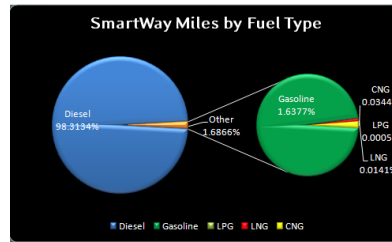
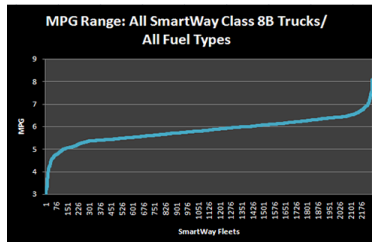
Click down arrow to filter data by column categories. Select one or more items in the dropdown checklists.
 To search by name, SCAC or MCN, click CTRL + F to bring up the search dialogue box, then type in the 4 letter SCAC, the 8 digit MCN, or all or part of the company name.
 Performance Ranking/midpoint of the performance range for the metric
 Note: gm=grams/mile and gtm=g/ton-mile

| Company/Division Name | Mode | SubMode | FleetType | SCAC | MCN | Performance Ranking | | | | | | |
|--|-------|------------|-----------|------|---------|---------------------|---------------|----------------|-----------------|----------------|----------------|-----------------|
| | | | | | | CO2 gm metric | NOx gm metric | PM10 gm metric | PM2.5 gm metric | CO2 gtm metric | NOx gtm metric | PM10 gtm metric |
| 101 Transport, Inc. | Truck | TL/Dry Van | For-Hire | OZOT | MC62589 | 1650 | 10.5 | 0.525 | 0.525 | 85 | 0.525 | 0.021 |
| 1st Express Inc. | Truck | TL/Dry Van | For-Hire | FSEP | MC18144 | 1650 | 10.5 | 0.375 | 0.375 | 85 | 0.525 | 0.021 |
| 24-7 Expedite, Inc. | Truck | TL/Dry Van | For-Hire | TWJ | MC69067 | 1650 | 16.5 | 0.675 | 0.675 | 115 | 0.825 | 0.041 |
| 3NT, LLC. | Truck | TL/Dry Van | For-Hire | THLL | MC71629 | 1650 | 4.5 | 0.075 | 0.075 | 75 | 0.225 | 0.001 |
| 9108-1950 quebec inc dba Via Trans International | Truck | TL/Dry Van | Private | VTLL | MC47147 | 1750 | 4.5 | 0.075 | 0.075 | 115 | 0.375 | 0.001 |
| A & S Services Group, LLC | Truck | TL/Dry Van | For-Hire | ANSW | MC18416 | 1950 | 4.5 | 0.225 | 0.225 | 115 | 0.525 | 0.011 |
| A&M Transport, Inc.-Dry Van Division | Truck | TL/Dry Van | For-Hire | ALKM | MC21707 | 1750 | 10.5 | 0.375 | 0.375 | 85 | 0.525 | 0.021 |
| A.C.S. Logistics Transportation Inc. | Truck | TL/Dry Van | For-Hire | OPNS | MC54806 | 1550 | 7.5 | 0.375 | 0.375 | 115 | 0.825 | 0.031 |
| A.D. Transport Express, Inc. | Truck | TL/Dry Van | For-Hire | ADXR | MC19262 | 1550 | 7.5 | 0.225 | 0.225 | 85 | 0.375 | 0.011 |
| A.N. Webber, Inc. | Truck | TL/Dry Van | For-Hire | WANQ | MCN/A | 1850 | 4.5 | 0.075 | 0.075 | 95 | 0.225 | 0.001 |
| A.R.D. Express, Inc. | Truck | TL/Dry Van | For-Hire | ARKX | MC58868 | 1650 | 10.5 | 0.525 | 0.525 | 85 | 0.525 | 0.021 |
| Ablene Motor Express, Inc. | Truck | TL/Dry Van | For-Hire | ABQC | MC33555 | 1850 | 4.5 | 0.075 | 0.075 | 115 | 0.225 | 0.001 |
| AB Express Inc. | Truck | TL/Dry Van | For-Hire | ABJE | MC40915 | 1850 | 16.5 | 0.675 | 0.675 | 95 | 0.825 | 0.041 |
| AC Leasing Company Inc.-AC Trucking | Truck | TL/Dry Van | For-Hire | ACVH | MC15669 | 1650 | 7.5 | 0.375 | 0.375 | 85 | 0.375 | 0.021 |
| Accord Transportation Ltd. | Truck | TL/Dry Van | For-Hire | ACTL | MC22317 | 1550 | 10.5 | 0.375 | 0.375 | 75 | 0.225 | 0.011 |
| Adams Motor Express, Inc. | Truck | TL/Dry Van | For-Hire | ADXI | MC21001 | 1750 | 10.5 | 0.525 | 0.525 | 115 | 0.675 | 0.041 |
| Air Capitol Delivery & Warehouse LLC | Truck | TL/Dry Van | For-Hire | AQIR | MC38987 | 1850 | 10.5 | 0.525 | 0.525 | 115 | 0.675 | 0.041 |
| Air-Land Transport Services, Inc. | Truck | TL/Dry Van | For-Hire | APVC | MC24240 | 1650 | 7.5 | 0.225 | 0.225 | 85 | 0.375 | 0.011 |
| AIS | Truck | TL/Dry Van | For-Hire | AISB | MC54320 | 1750 | 16.5 | 0.675 | 0.675 | 75 | 0.825 | 0.031 |

START HERE Dry Flatbed TL-DV Mixed Pkg Reefer Spec HeavyBuk Auto Moving Exp Tanker TL-DV Log MM

Carriers can Benchmark their Performance

- SmartWay can develop distribution curves by aggregating any data collected within SmartWay. Carriers can then see where they fall on that curve.
- This will be a powerful tool to help carriers to improve.

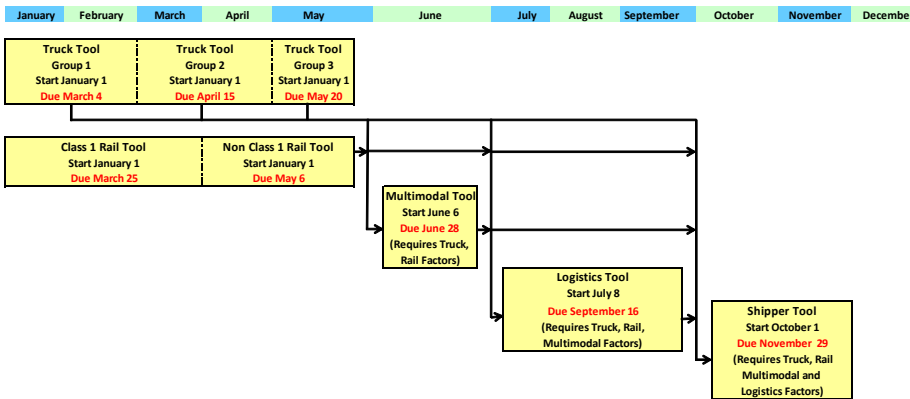


19

SmartWay

Schedule and Data Flow 2013

SmartWay Partner Schedule and Data Flow Diagram: 2013 Calendar Year Using 2012 Data



20

Overview: Shipper Tool Capabilities

- Determine a Shipper's freight transportation emissions footprint:
 - Four Pollutants: CO₂, NO_x, PM₁₀, PM_{2.5}
 - Ground based emissions (truck and rail)
 - U.S./Canada
- Provide Shippers a reasonable relative ranking of carrier emission efficiency
 - 15 carrier categories
 - Four Pollutants
 - Two efficiency metrics: g/mile and g/ton-mile
 - Presented in five performance ranges
- Enables Shippers to measure, track and reduce mass emissions, and/or improve their efficiencies
- Allows Shippers to track internal division performance
- Provides estimation tools for shipper strategies that reduce miles or weight from their system, or mode changes
- Calculates their "% freight shipped with SmartWay carriers" for SmartWay logo and award purposes


21

SmartWay for Carbon Reporting and Optimization: Carrier Management

Step 1- Complete the Shipper Tool



Step 2 - Generate SmartWay Data Reports



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

| Mode | CO ₂ g/Mile | CO ₂ g/Ton-Mile | CO ₂ Mass Emissions (Tons/Year) |
|-------------------------|------------------------|----------------------------|--|
| Rail | 1,163 | 20 | 111,333 |
| Truck | 2,044 | 265 | 92,722 |
| Multi-modal | 1,200 | 50 | 2,756 |
| Logistics | 2,300 | 500 | 41,337 |
| Composite Total* | 1,212 | 37 | 218,147 |

Step 3 - Use results in:

- Benchmarking and Operations
- Environmental Reporting
- Carbon Disclosure Submittals
- Shareholder Response

SmartWay for Carbon Reporting and Optimization: Shipper Actions

Step 1 - Complete Shipper Strategies analysis



Step 2 - Generate SmartWay Data Reports

SmartWay Shipper Tool: ABC Shipper

Select Carrier(s) | Emissions or % SmartWay | Activity Data | % SmartWay | Emissions Summary | Carrier Performance

INPUTS ON THIS SCREEN ARE OPTIONAL - NOT REQUIRED FOR EPA SUBMITTAL.
 Periodically in the tool, you calculate the emissions resulting from your movement of freight using various carriers. On this screen, you enter your company's strategies to reduce emissions BEFORE freight is placed on transport. All strategies on this screen are based on other modes. The tool calculates the emissions that would have happened had you NOT implemented our efficiency improvements implemented for the reporting year to take miles or weight out of the freight system. Emissions results are calculated assuming a results only provide a rough estimate of emissions impacts. SmartWay intends to improve the functionality of this tab in future tool versions.

Add Activity
 Select a category: Miles removed from system
 Pick an activity: Add Activity

Selected Activities

| # | Name of Activity | Carrier Mode | Improvement | Results (Tons/Year) | | | |
|----|---------------------------|--------------|-------------|---------------------|-------|---------|----------|
| | | | | # CO2 | # NOx | # PM 10 | # PM 2.5 |
| 1. | Cube optimization | Truck | 5 | 5,960 | 123.9 | 3.48 | 3.48 |
| | | | 8 | 5,494 | 38.5 | 1.75 | 1.69 |
| | | | 5 | 748 | 1.5 | 0.08 | 0.08 |
| | Miles removed from system | Logistics | 4 | 1,722 | 9.9 | 0.57 | 0.57 |

Remove Activity

| # | Name of Activity | Carrier Mode | Improvement | # CO2 | # NOx | # PM 10 | # PM 2.5 |
|----|----------------------------|--------------|-------------|--------|-------|---------|----------|
| 2. | Packaging weight savings | Truck | 15 | 1,125 | 23.8 | 0.67 | 0.67 |
| | | | 15 | 11,069 | 72.1 | 3.52 | 3.42 |
| | Package weight reduction | Multi-Modal | 7 | 207 | 2.1 | 0.11 | 0.11 |
| | Weight removed from system | Logistics | 4 | 1,722 | 9.9 | 0.57 | 0.57 |

Remove Activity

| Total Results (Tons/Year) | | | | 27,304 | 278.6 | 10.74 | 10.59 |
|---------------------------|--|--|--|--------|-------|-------|-------|
|---------------------------|--|--|--|--------|-------|-------|-------|

SHIPPER STRATEGIES
 Partner Name: ABC Shipper
 Company Name: ABC Shipper

| Activity Category | Activity Name | Mode | Improvement | CO2 |
|----------------------------------|--------------------------|-------------|-------------|---------------|
| Miles removed from system | cube optimization | Rail | 5% | 5,960 |
| | | Truck | 8% | 5,494 |
| | | Multi-modal | 5% | 145 |
| Weight removed from system | Packaging weight savings | Logistics | 4% | 1,722 |
| | | Rail | 1% | 1,125 |
| | | Truck | 15% | 11,069 |
| Total Results (Tons/Year) | | | | 27,304 |



Step 3 - Use results in:

- Performance tracking
- Progress reporting
- Case Studies

For more information:

www.epa.gov/smartway

smartway_transport@epa.gov

SmartWay Helpline
734-214-4767

