

# IBM and the U.S. EPA's SmartWay<sup>SM</sup> Transport Partnership



Steven Wysmuller, Corporate Environmental Affairs  
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## A Longstanding Commitment

- IBM has been publicly committed to environmental leadership for decades
- CEO T.J. Watson, Jr. established first corporate environmental policy 37 years ago (in 1971)
  - Current policy commits IBM to environmental leadership in all its business activities
- IBM's Global Environmental Management System covers all intersections between IBM and the environment
  - First company in the world to earn a single global registration to ISO 14001 nearly 11 years ago (December 1997)
- IBM has publicly disclosed its environmental performance each year for 18 years in a row (since 1990) through a voluntary corporate environmental report
  - Made possible by IBM's longstanding management system

## IBM's Comprehensive Energy Efficiency and Climate Protection Program

- Reducing GHG emissions associated with the company's operations:
  - Conserving energy
  - Using renewable energy
  - Supporting alternate employee commute options
  - Reducing perfluorocompound (PFC) emissions
  - Increasing the efficiency of its logistics
- Developing energy efficient products and providing diverse solutions for energy efficient data centers
- Collaborating with our clients and others on innovations that help protect the world's climate, consistent with IBM's values: dedication to every client's success, innovation that matters - for our company and the world, and trust and personal responsibility in all relationships.

## Increasing the Efficiency of its Logistics Operations *One Example*

- IBM joined the U.S. EPA's SmartWay Transport Partnership in 2006.
- Benefits of participation:
  - Improve business efficiency and environmental performance by:
    - Identifying opportunities for continual improvement both internally and through supply chain
    - Reducing logistics cost
    - Reducing logistics related GHG emissions
    - Sharing best practices with peers and suppliers
  - Gain recognized environmental and operational leadership

## Highlights of IBM's SmartWay Leadership

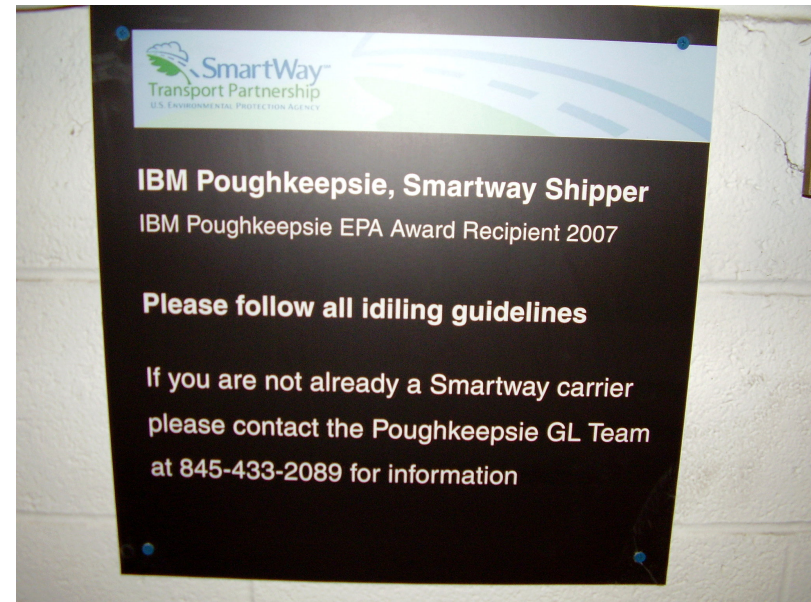
- Key SmartWay Results
- Implemented SmartWay Signage
- Incorporated SmartWay Language in to Contract Language
- Study of Outbound Logistics Transport Related Carbon Dioxide Emissions
- IBM and the Environment Report

## Key SmartWay Results

- To-date, IBM has increased its percentage of U.S. transport spending with SmartWay carriers by nearly 30% since joining SmartWay two years ago.
- Over 85% of our U.S.-based transport spend is with SmartWay transport carriers
- Engaged our transportation and logistics carriers, resulting in their joining the SmartWay Transport Partnership
- Voluntarily extended IBM's commitments under SmartWay to Global Logistics operations outside of U.S.

## Implemented SmartWay Signage

- A recent example of a SmartWay sign posted at the IBM Poughkeepsie, NY facility.
- In total, eight IBM dock locations in the United States plan to have SmartWay signs posted.
- All IBM dock locations have “No Idling” signage and policies in place.



## Incorporated SmartWay Language in Contract Language

*“IBM is committed to be an environmental leader in its business operations and values participation in the EPA SmartWay Transport Partnership (STP). This is a program in which transporters commit to reduce greenhouse gas emissions and air pollution and to improve fuel efficiency of ground freight transportation. IBM views participation in STP as a potential qualitative differentiator. Please identify if you are currently a member of STP. If you have plans to participate in the near future, please indicate the proposed target date.”*



## Incorporated SmartWay Language in Global Contract Language (Spanish)

*“IBM está comprometida a ser un líder ambientalista en sus operaciones y valores empresariales y participa en programas apoyando este esfuerzo. Por ende, anticipamos que los proveedores de logística a IBM se comprometerán y participarán en los programas que reducen la emisión de gases del efecto invernadero y la contaminación atmosférica mejorando así la eficacia en el uso de combustible en todos los aspectos de transporte de carga. IBM considera la participación en programas ambientales como un diferenciador cualitativo y continuará influenciando nuestra base de proveedores para que sea activa en este esfuerzo. Resuma por favor cualquier programa que usted tenga implementado para reducir las emisiones de gases de efecto invernadero y contaminación atmosférica o programas para mejorar la eficacia en el uso de combustible. Si usted tiene planes para crear tales programas en un futuro cercano, indique por favor la fecha propuesta para la implementación.”*

## IBM Study of Carbon Dioxide Emissions Related to Outbound Logistics Transport Using IBM's Carbon Trade-off Modeler

- Approximately 250,000 shipment records from 2006 were studied for North American Routings.
- Six product families were represented in the sample
- ALK Technology's *PC\*MILER/Streets* was used to capture the mileage over truck-specific routes.
- Air distances were computed as a geometry function of latitude and longitude coordinates and the earth's circumference.
- Carbon Dioxide Emission Factors were taken from National Renewable Energy Laboratory (NREL). <http://www.nrel.gov>

Mode Description	Average Shipment Milage
Courier	20
Expedite Truck	518
Air	869
LTL	887
LTL - Expedite	1,742
Padded Van	905
Parcel Post	948
Truckload	375
All Truck	918

Average distance traveled by a shipment for each transportation mode

Transportation Mode	Diesel
Barge	41
Diesel Truck (combination)	117
Diesel Truck (single)	250
Locomotive	28
Air	1270

Carbon Dioxide Emission Factors for various modes (source NREL)

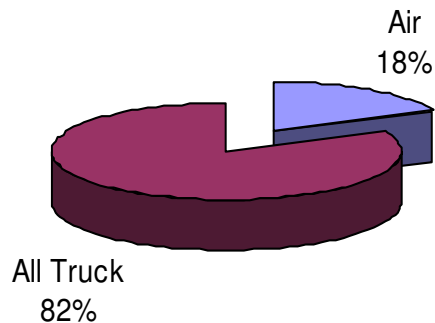
IBM Study Summary - Total carbon dioxide emissions from approximately 250,000 shipments was close to 28 thousand tons.

	Total weight traveled (kg)	Carbon dioxide emissions per mile-ton (kg)	Average mile per shipment	Total Travel (ton-miles)	Total carbon dioxide emissions (tons)	Carbon dioxide emissions price (\$/ton)	Market value of carbon dioxide emissions(\$)
<b>Courier</b>	3,594	0.117	20	72	0	36.76	0
<b>Expedited Truck</b>	486,900	0.117	518	252,214	30	36.76	1,085
<b>LTL</b>	12,231,753	0.117	887	10,849,565	1,269	36.76	46,663
<b>LTL - Expedite</b>	14,239,186	0.117	1742	24,804,662	2,902	36.76	106,683
<b>Padded Van</b>	23,319,230	0.117	905	21,103,903	2,469	36.76	90,766
<b>Parcel</b>	5,224,031	0.117	948	4,952,381	579	36.76	21,300
<b>Truckload</b>	19,852,944	0.117	375	7,444,854	871	36.76	32,020
<b>All Truck</b>	75,357,638	0.117	918	69,178,312	8,094	36.76	297,530
<b>Air</b>	17,945,340	1.270	869	15,594,500	19,805	36.76	728,032
<b>Total</b>	<b>93,302,978</b>			<b>85,002,152</b>	<b>27,926</b>	<b>36.76</b>	<b>1,026,549</b>

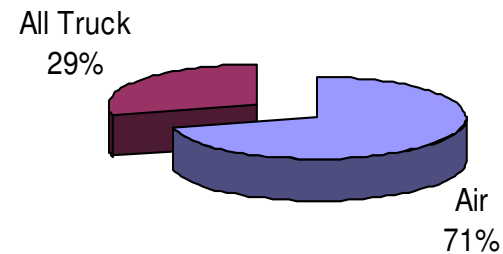
Note: Carbon dioxide emissions price based on data from European Climate Exchange on May 1, 2008.

Air shipments accounted for only 18% of total mile-tons traveled by IBM outbound finished goods and they contributed 71% to the related carbon dioxide emissions (*based on this 2006 data set*)

**Total travel (ton-miles)**



**Total carbon dioxide emissions (tons)**



## Highlighted SmartWay in IBM and the Environment Report



<http://www.ibm.com/ibm/environment/annual/>