EPA's Ports Initiative

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US EPA Region 2

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U.S. Environmental Protection Agency

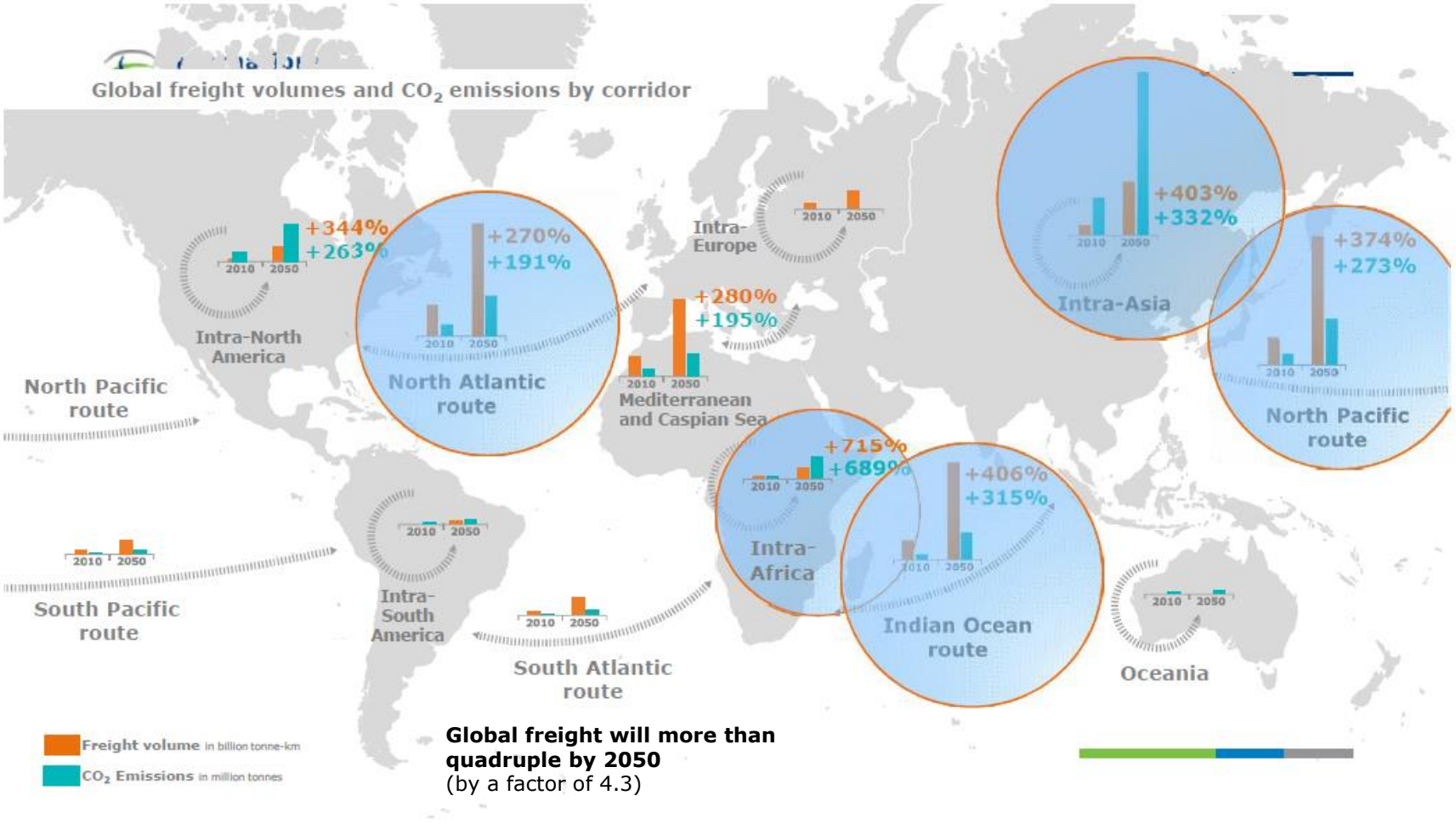




Why Focus on Ports?

- Compelling public health need
  - Concentrated emissions
  - Urban high population density settings that are often also EJ areas
  - Located in virtually every state that borders ocean, lake or major internal seaway
- Freight Movement Emissions are increasing nationally
  - A small annual percent growth translates into significant new port activity
- Increasing community pressure/interest
  - Potential for conflict, long litigation
  - Communities want to be more involved in the planning & decision process
- Need for better quantification/inventories for decision-making
- Need for dedicated sustainable funding

Source: Jari Kauppila
Senior Economist, Head of Outlook and Statistics, OECD
Smart Freight Leadership, Leipzig, 26 May 2015



Global freight will more than quadruple by 2050
(by a factor of 4.3)

EPA's Ports Initiative Background

- *National Conversation With Port Stakeholders*

  Webinar Listening Sessions

  - Sept 24, 2013 - Promoting Port Stakeholder Success
  - Jan 14, 2014 - Goods Movement and Ports: Collaborative Solutions & Community Impacts
  - Mar 4, 2014 - Advancing Sustainable Solutions
- Port Stakeholders Summit—April 8, 2014
- Formed Ports Initiative Workgroup under Mobile Source FACA (MSTRS/CAAAC) – May 2014

MSTRS Ports Initiative Workgroup Charge

- EPA asked MSTRS for recommendations on:
  - Development of EPA-led voluntary environmental port initiative
  - How to effectively measure AQ and GHG performance of ports

- The workgroup should consider:
  - Past MSTRS and other recommendations
  - Existing port environmental improvement programs
  - Ports in the context of the broader transportation supply chain
  - Information from EPA's Assessments as available

MSTRS Port Workgroup Status

- Workgroup includes ports and port associations, shipping lines, environmental organizations, manufacturers, retailers, transportation providers and state government
- Workgroup is in the process of finalizing recommendations
  - Presentation to MSTRS on June 16
  - Presentation to CAAAC at Fall meeting
- Many areas of consensus, but perspectives differ on:
  - What good looks like (inventory types, community engagement practices, appropriate emissions reductions goals, measures for different ports)
  - How voluntary program can ensure accountability, continued progress at ports

Supportive Materials

- Community-Port Capacity Building Tools
- Macro Assessment
- Port-Specific Assessment with Port Everglades
- Diesel Emission Reduction Program
- Collaboration with Regions and other EPA offices
- Federal Coordination through Committee on Marine Transportation Systems

Near-port Community Capacity Building

- Pilot tools/resource materials promoting port/community decision-making
  - Ports Primer for Communities
    - Characterizes port sector – overview of planning & operations, environmental & community health impacts
  - Community Action Roadmap
    - Companion for Ports Primer – Step by Step guide preparing community to engage with port and local/regional stakeholders
  - Environmental Justice Primer for Ports
- Post for Public Comment and Solicit Interest for Pilot Locations to Test Tools – June 2016
- Announce Pilots - Fall 2016

Macro Port Assessment

- Purpose:
  - **Update our understanding** of future national port-related emissions for criteria, air toxics, and climate pollutants
  - **Assess the effectiveness of** technological and operational emission reduction **strategies** across ports with different emissions profiles
  - **Inform national policy** discussion for port initiatives
- Status:
  - Draft final report under development
  - Target release in **summer 2016**

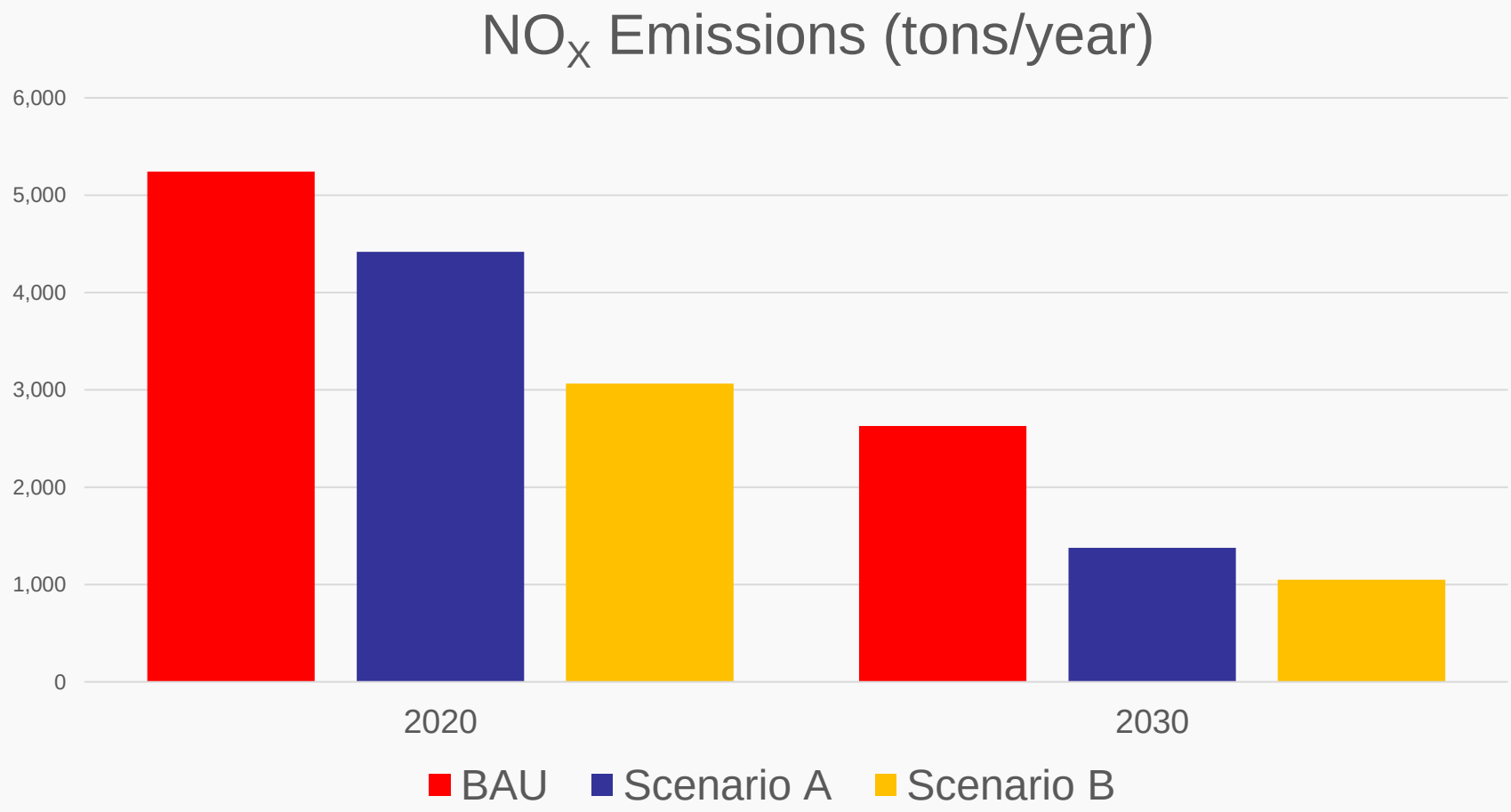
Macro Design

- Estimate 2011 baseline emissions for $PM_{2.5}$, NOx, VOC, SO_2, CO_2, BC, and air toxics
- Estimate business-as-usual (BAU) inventories for 2020, 2030, and 2050 (CO_2 only)
- Subtract emission reductions from BAU inventories under 2 scenarios:
  - Scenario A: Enhanced fleet turnover with existing technologies and operational improvements
  - Scenario B: More aggressive suite of strategies than Scenario A

Sector	Strategy	Specific Equipment
Drayage Trucks	Enhanced Fleet Turnover	On-road Trucks
	Operational Improvements	
Rail	Enhanced Fleet Turnover	Line Haulers, Switchers
	Operational Improvements	Line Haulers
Cargo Handling Equipment	Enhanced Fleet Turnover	Yard Trucks, RTG Cranes, Container Handlers
Harbor Craft	Enhanced Fleet Turnover	Tugs, Ferries

Sector	Strategy	Specifics
OGV	Fuel Changes (lower sulfur levels, LNG)	Propulsion & Auxiliary Engines
	Shore Power	Frequent Callers Only (>5 calls for passenger, >6 calls for container & reefer)
	Stack Bonnets	Non-frequent Callers Only (container & tanker)
	Reduced Hotelling	Container

Drayage Strategy Results



Background on Port-specific Assessment

- EPA's Office of Transportation and Air Quality issued a call for interest:

U.S. EPA is Seeking to Partner with a Seaport to Assess Port-Related Emissions Reduction Strategies

The objective of this opportunity is to refine and demonstrate quantitative methodologies that ports, their stakeholders, researchers and others could use to assess the potential for future criteria pollutant and greenhouse gas (GHG) emissions reductions under various technology and operational implementation scenarios.

- Port Everglades submitted a letter to EPA and was selected in 2014

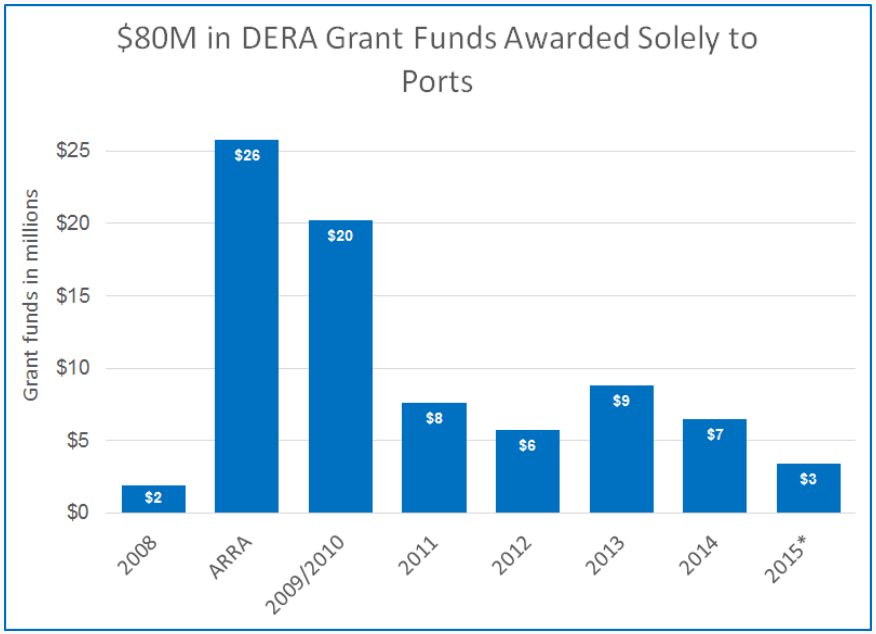
Overview of Assessment

- EPA and Port Everglades will work together to develop:
  - Future year emission inventories for 2020, 2030, and 2050
  - Emission reduction strategy scenarios for:
    - Trucks
    - Locomotives
    - Cargo handling equipment
    - Harbor craft
    - Ocean-going vessels
  - Emissions analysis of road, rail, and/or marine corridors

- This work will also inform future data and methods, lessons learned, and practical examples to share with other ports and stakeholders to support sustainable development

$80M in DERA Grant Funds Awarded to Ports

- $80 million in grants awarded to projects focused entirely on ports
  - Includes $9.2M awarded for 2013 & 2014 DERA Port RFPs
- Another $68M in grants awarded to projects that involve ports



Examples of DERA Funds at Ports

- 2013: $750k awarded to Virginia Port Authority to replace Tier 1 shuttle carriers with Tier 4 hybrids
- 2014: $550k awarded to MARAMA to assist in replacement of 19 drayage trucks in DE and VA
- 2015: $1M awarded to PANYNJ to assist in replacement of 26 drayage trucks serving the Port of New York and New Jersey

SmartWay® Transport Partnership

U.S. Environmental Protection Agency

Moving Freight Sustainability Forward

While Reducing Costs and Enhancing Energy Security

June 8, 2016

SmartWay Drivers:
Freight Sector Environmental Impacts

Transportation in U.S.:

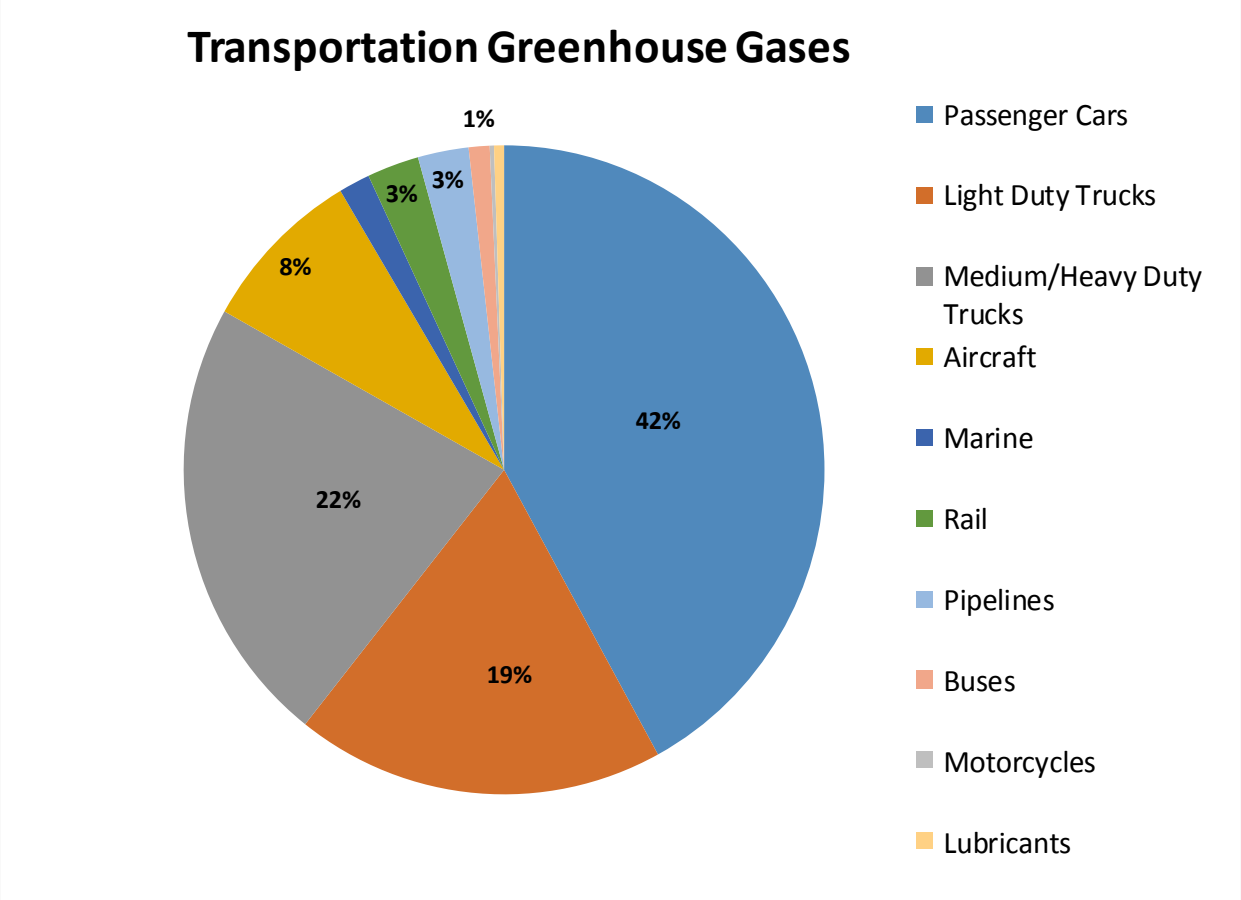
• Over 1/4 total GHG emissions;

• About 2/3 petroleum-based fuel use.

In Transport Sector:

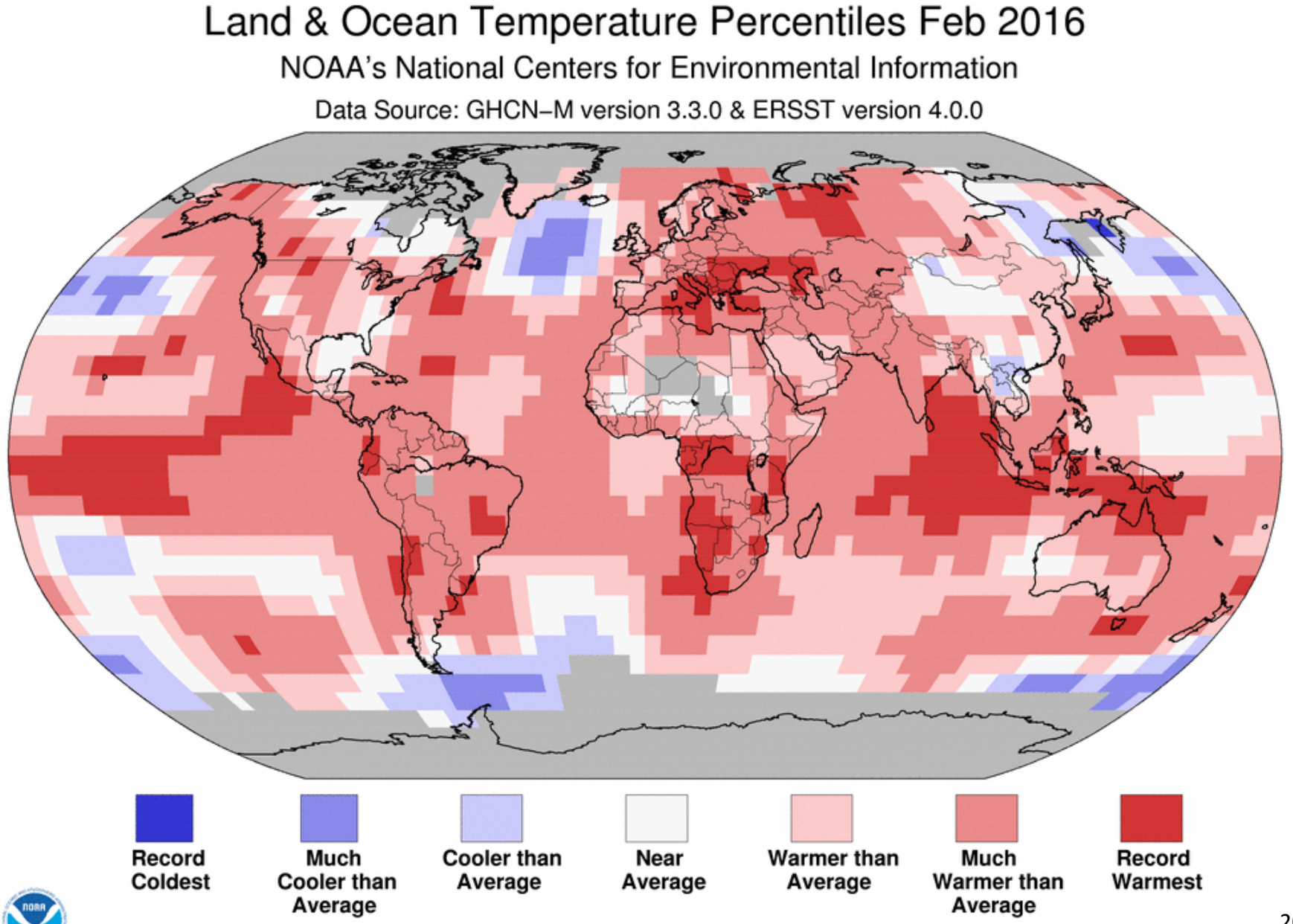
• Freight accounts for <u>over 25%</u> of all fuel consumed and GHGs emitted.

• Freight is fastest growing source of transport GHGs.



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

SmartWay Drivers: Climate Awareness



Source: National Oceanic and Atmosphere Administration

Changing Needs of Industry

- **Customer and Consumer awareness**
  - Demanding corporate citizenship and accountability
- **Investor, Lender and Insurer requirements**
  - Assessing climate risk and business opportunities
- **Rising and volatile energy prices**
  - Fuel and driver wages are largest cost centers for truck carriers: 64% of operating costs (2013)
- **Globalization of supply chains**
  - Increasing global opportunities and global competition
  - Other countries' carbon reporting requirements

ATRI: An Analysis of the Operational Costs of Trucking: A 2012 Update

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
  - All Class 1 rail lines
  - Fortune 500 shippers from key economic sectors
  - Major logistics firms
- Since 2004, SmartWay Partners saved:
  - 72.8 million metric tons of CO_2
  - 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*

Partner Spotlights

SmartWay Transport Partnership
U.S. Environmental Protection Agency

SmartWay Helps Tyson Foods Drive Out Miles Tackle Greenhouse Gas Emissions

Company Profile

Tyson

Tyson Foods, Inc., Springdale, Arkansas, is one of the world's largest processors and marketers of chicken, beef and pork, the second largest food production company in the Fortune 500 and a member of the S&P 500. Tyson produces a wide variety of protein-based and prepared food products, serving customers throughout the [illegible] and in more than 10[illegible] Tyson employs app[illegible] 115000 team meml[illegible]

Company Message

"We're serious about our responsibility to the environment, w[illegible] joined the SmartWay Transport Partnership. The framework [illegible] enabled us to evaluate, measure and reduce the environmenta[illegible] our transportation operations in a more comprehensive and s[illegible] Specifically, SmartWay has helped us reduce fuel usage and g[illegible] emissions, and improve our operational efficiency."

– Kevin J. Igli, SVP and Chief E[illegible]

Why Tyson Foods joined SmartWay

Tyson Foods has been a long-time supporter of SmartWay's g[illegible] transportation sustainability, and joined the partnership almo[illegible] ately after EPA launched it in 2004. Upon joining the compan[illegible] goal was to use SmartWay's tools to accurately measure carb[illegible] ilab[illegible]

SmartWay Transport Partnership
U.S. Environmental Protection Agency

SmartWay Helps Lead Kimberly-Clark to Greater Efficiencies and Reduced Transportation Costs

September 2012

Company Profile

Kimberly-Clark

Kimberly-Clark

Kimberly-Clark Corporation is a global health and hygiene leader serving 1.3 billion consumers in more than 80 countries featuring such global brands as Huggies, Kleenex, Scott, Kotex

Company Message

"At Kimberly-Clark, we see SmartWay as both good environmental policy and good business. The transportation strategies that SmartWay recommends are saving us fuel, lessening our carbon footprint, and making a big difference in bringing us closer to our sustainability goals." – Stelios Chrysandreas, Transportation Manager

Why Kimberly-Clark joined SmartWay

Kimberly-Clark is committed to sustainability in all areas of its business, including the delivery of its products. Joining SmartWay presented KCs Corporate Transportation team with a great opportunity to more actively engage and expand its role in the company's sustainability plans.

SmartWay Transport Partnership
U.S. Environmental Protection Agency

Partner Profile:

Penske Logistics

The SmartWay to Logistics Management

Company Profile

Penske Logistics is a wholly owned subsidiary of Penske Truck Leasing. With operations in North America, South America, Europe and Asia, Penske Logistics provides supply chain management and logistics services to major industrial and consumer companies throughout the world. Penske Logistics delivers value through design, planning and execution in transportation, warehousing, and international freight forwarding and carrier management.

Point of Contact:
Andrew Cullen
Vice President
Energy & Telecommunica[illegible]

PENSKE

Company Message

"We are constantly working to optimize our fleet as it relates to responsible sustainable practices, which includes the reduction of fuel consumption and lowering emissions. The SmartWay program has provided us with the necessary strategies to accomplish this."

- Marc Althen, President, Penske Logistics

Why Penske Logistics joined SmartWay

Penske has always partnered with companies to create supply chain management solutions, so it made perfect sense to partner with EPA SmartWay. The collaboration between industry and government offers tremendous value. In addition, SmartWay's second generation tools have allowed Penske Logistics the opportunity to assess its freight operations and to improve efficiency.

SmartWay
U.S. Environmental Protection Agency

Partner Profile

Stanley Black & Decker Uses SmartWay Tools to Reduce Freight Footprint

Company Profile

Stanley Black & Decker, an S&P 500 company, is a diversified global provider of hand tools, power tools and related accessories, mechanical access solutions and electronic security solutions, healthcare solutions, engineered fastening systems, and more. Learn more at www.stanleyblackanddecker.com.

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StanleyBlack&Decker

Why Stanley Black & Decker Joined SmartWay

"Our success in measuring, and then shaving, energy demand and resultant Scope 1 and Scope 2 emissions associated with our brick-and-mortar operations has allowed us to apply the same productivity lens to reducing Scope 3 tailpipe emissions from vehicles that transport our finished goods and our employees. Our SmartWay Transport Partnership is the most well established of our Scope 3 emissions reduction initiatives and has stimulated parallel efforts around the globe."

Deborah Patterson, Vice President of Environment, Health, and Safety, Stanley Black & Decker

Stanley Black & Decker 2010-2011 SmartWay Emissions Factor
Scope 3 CO_2 Emissions

2010

MODE	E-FACTOR (CO_2 G/M)	CO_2 (CO_2 TONS/YR)
Truck	1946	596,921
Multi-modal	1623	49,212
Logistics	1968	19,480
TOTAL		665,613

2011

MODE	E-FACTOR (CO_2 G/M)	CO_2 (CO_2 TONS/YR)
Truck	1730	493,038
Multi-modal	1706	20,677
Logistics	2007	16,074
TOTAL		529,789

For more information:

www.epa.gov/smartway

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SmartWay Helpline

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