Air Toxics Summit
June 16, 2004
Presented by: Perry R. Pandya
Air Protection Division

EPA's Mission

To protect human health and to safeguard the natural environment -- air, water, and land -- upon which life depends.

The Clean Air Act

- establishes six criteria pollutants
  - ozone
  - carbon monoxide
  - nitrogen dioxide
  - sulfur dioxide
  - particulate matter
  - lead

Mobile Sources

Planes, trains, and automobiles
…trucks and buses and boats and "nonroad" equipment

Significantly impact air quality and climate change

- Criteria pollutants: NOx, PM, CO, O_3
- Greenhouse gases: CO2

Mobile sources currently contribute about:

- 79% of all CO emissions
- 53% of all NOx emissions
- 43% of all VOC emissions
- 30 % of all CO_2 emissions
- 21% of all $PM_{2.5}$ emissions

What is the SmartWay Transport Partnership?

- **Voluntary partnership between EPA and the freight industry that will:**
  - Increase energy efficiency and energy security
  - Reduce air pollution and greenhouse gases
- **Attempts Ambitious Emission Reduction Goals:**
  - 150 million barrels of oil each year (12 million cars off the road)
  - 33 to 66 million metric tons CO_2 annually by 2012
  - 200,000 tons NOx annually, plus PM and air toxics benefits
- **Comprised of Three Major Components:**
  - Corporate Partnerships
  - National Transportation Idle-Free Corridors
  - Rail/Intermodal Operations

The Need for SmartWay Transport Partnerships

Ground freight is a cornerstone of the US economy

- Trucks carry 70% of the total weight of US cargo
- Railroads carry 14% of the total weight of US cargo

Freight activity has vast impact

- Our nation's roadways currently carry over 6 million single-unit and 2 million combination trucks

- **<u>Each year</u> those trucks:**
  - drive 200 billion miles,
  - emit 294 million tons of greenhouse gases,
  - emit over 4 million tons of nitrogen oxides, and
  - emit over 190,000 tons of particulate matter

The Need for SmartWay Transport Partnerships

- **Truck and Rail:**
  - –Consume over 35 billion gallons of fuel
  - –Account for nearly 20% of transportation related energy use
  - –Produce approximately 350 million metric tons of CO_2
- **Over the next decade this impact will increase dramatically**
  - –Increasing internet sales
  - –Faster delivery schedules

35 Billion Gallons

45 Billion Gallons

Part 1 -- Partnerships with Carriers and Shippers

Carriers: move goods across the country

- these fleets range in size from thousands of trucks to individual owners
- Varying degrees of technical and operational sophistication

Shippers: sell retail goods to the public

- Shippers hire carriers to move their freight
- Carriers compete fiercely for shipper contracts

Creating Partnerships

How to Become a Partner

- Carriers measure efficiency and emissions & commit to improve
  - Use FLEET model to establish baseline and commitment
- Shippers commit 50%+ freight with SmartWay Transport fleets

Who are Potential Partners?

- Every company that ships goods via truck or rail
- 500,000 heavy-duty fleets in United States
  - Fewer than 1,000 fleets are highly-efficient "mega-fleets"
  - Many "middle of the pack" (50-400 trucks) and smaller fleets of varying efficiency and ability to improve

SmartWay Transport offers incentives for all Partners

- EPA will recognize as a Partner any fleet or shipper that commits to improve efficiency and reduce emissions
- The most highly-efficient fleets and shippers merit access to SmartWay Transport logo (like Energy Star, but for transport)
- Partners that achieve commitment also eligible to use logo

Performance Improvements

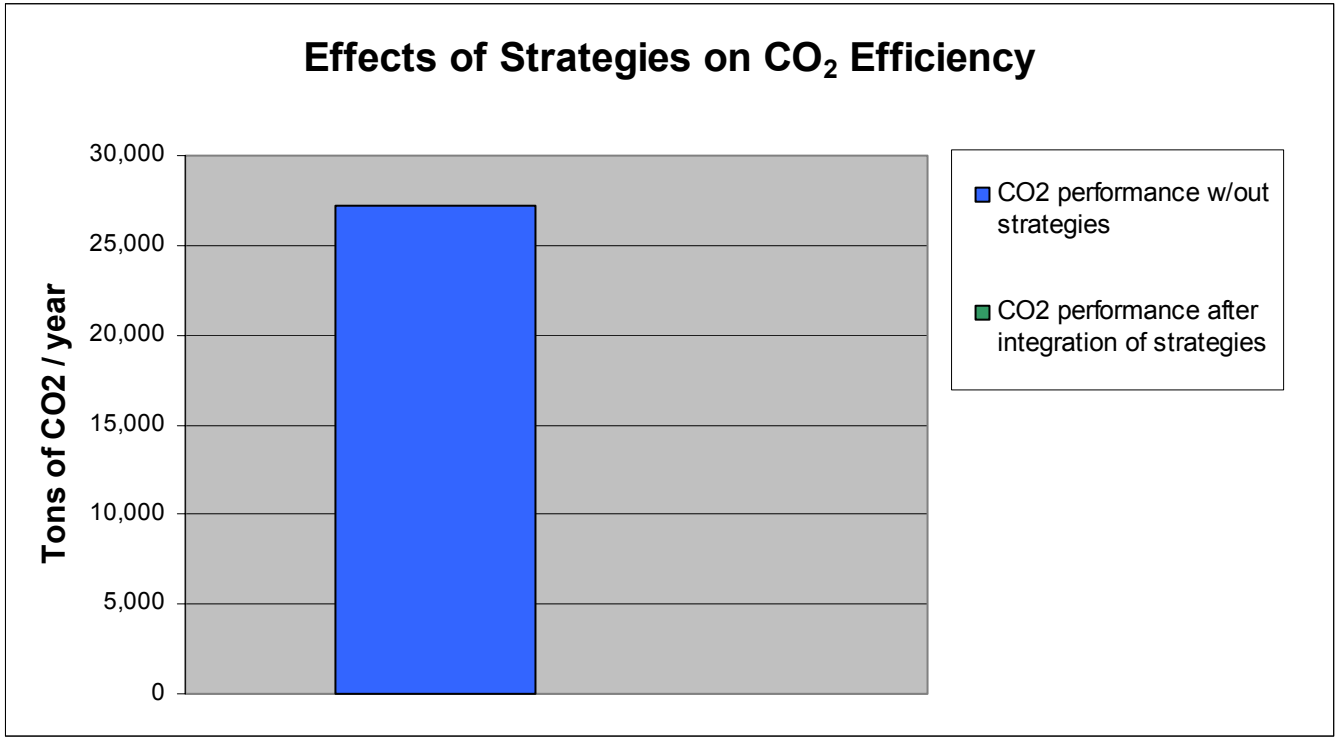
Carrier Partnerships

Any size or type of carrier or fleet can join the Partnership

- **Carriers:**
  - Measure current environmental performance with the FLEET Performance Model
  - Commit to improve environmental performance within 3 yrs
  - Sign the Partnership Agreement
- **Carrier partners can use the logo when:**
  - Demonstrate superior environmental performance:
    - Achieve a 40% CO_2 efficiency rating

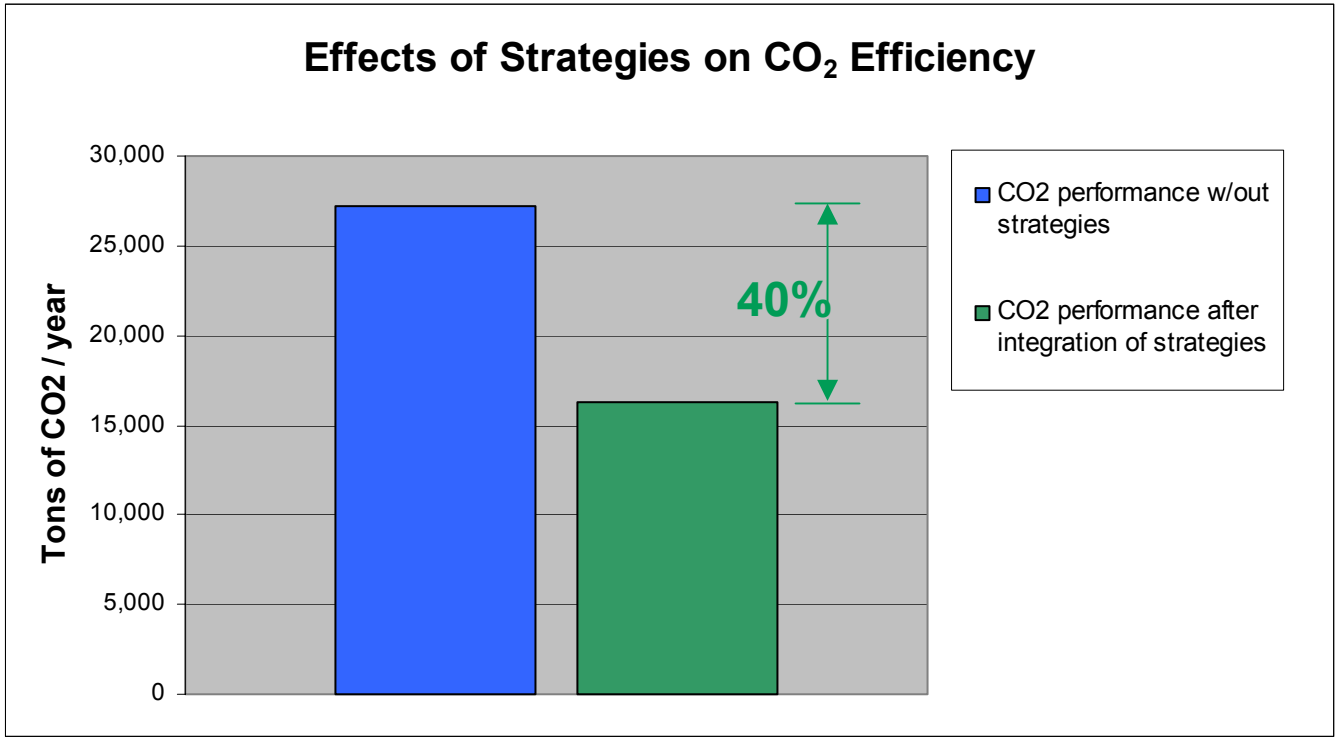
      OR
    - Demonstrate at least a 25% CO_2 efficiency rating AND set and achieve an aggressive improvement goal

What is Superior Environmental Performance?



No environmental strategies

What is Superior Environmental Performance?



SmartWay Transport Partnership
U.S. Environmental Protection Agency

Effect of adding strategies:

- Speed @ 62 mph
- Eliminate Idling
- Intermodal use
- Auto tire inflation
- Synthetic lubes
- Aerodynamics
- Double trailers
- Weight reduction
- Super single tires
- Engine upgrades

The FLEET Performance Model for Carriers

- **Freight Logistics Environmental and Energy Tracking Performance Model - Carrier Module**
  - Measures the environmental performance of any fleet:
    - tons of CO2, NOx, and PM
    - the effectiveness of strategies currently used in fleet
  - Projects the effectiveness of strategies a fleet could add in the future
  - Estimates cost savings and return on investment for strategies
  - Provides a consistent approach for fleets to evaluate and record their environmental achievements

Current SmartWay Transport Partners

SmartWay Transport Partnership
U.S. Environmental Protection Agency

Partners

The SmartWay Transport Partnership Logo

Summary of Partnership Benefits and Support

FLEET Performance Model:

- Assesses fuel efficiency and CO_2, NOx and PM emissions
- Estimates emissions reductions from fleet enhancements

Roster of SmartWay Partners:

- Published on SmartWay Transport web site
- Lists all SmartWay Transport Partner carriers and shippers
- Those listed on Roster become preferred Carriers for SmartWay Transport Shippers

SmartWay Logo:

- Mark of excellence that will recognize environmental leaders
- Similar to Energy Star; provides recognizable symbol that informs consumers, competitors and business partners about a company's environmental commitment and achievement

IdleAire
IdleAire
IdleAire
IdleAire
IdleAire
Class of
95
KENWORTH
VOLVO

Example of Truck Stop Electrification Technology

- Use of this device saves roughly .8 gallon/hour
- This translates to almost 2,000 gallons/year for each truck

Part 3 - Maximize Rail Efficiency

Rail is very efficient, but underutilized

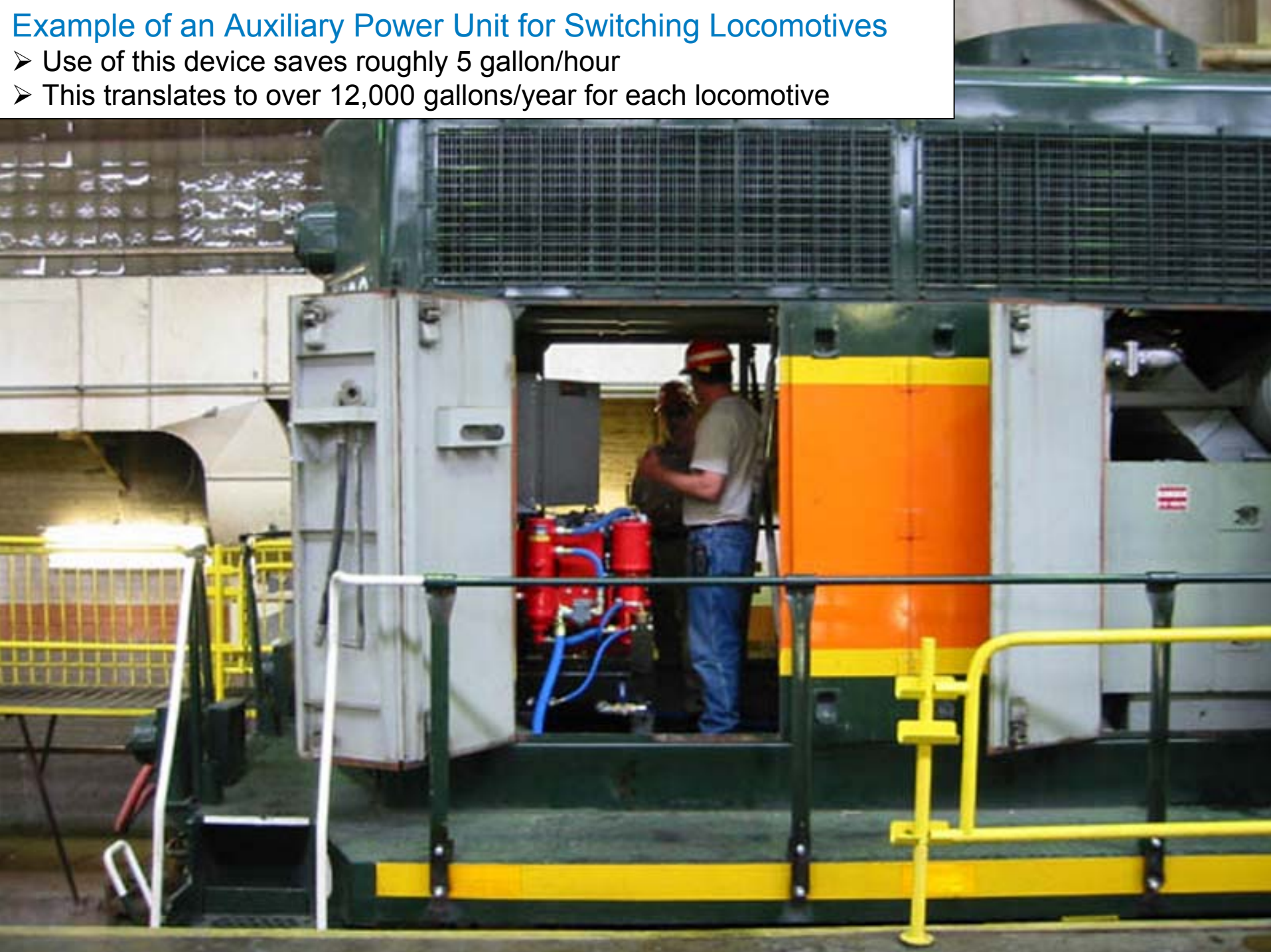
- Rail nearly 9 times more efficient than truck, on ton-mile basis
- Current trends (sprawl, service versus manufacturing economy) favor more energy-intensive modes (truck, air)

SmartWay Transport encourages expanded rail use, where and when appropriate

- Promote greater use of intermodal rail freight moves among shippers and freight providers (e.g., waste hauling)
- Encourage demonstration projects and tests of advanced rail technologies

Example of an Auxiliary Power Unit for Switching Locomotives

- Use of this device saves roughly 5 gallon/hour
- This translates to over 12,000 gallons/year for each locomotive



Communities and States are KEY to SmartWay Transport Partnership Success

State/Community Partnership opportunities

- State/Local fleets can be SmartWay Transport Partners
- States and communities can encourage “home town” shippers and carriers to join the Partnership

State/Community Idle Reduction options

- States can receive SIP credit for truck and locomotive idle reduction
- States and communities can encourage idle-free corridors with CMAQ and other public and private funds

States/Communities can promote rail as appropriate