

# Module 1

## Exploratory Stage (2001-2002)

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**2001**

*Initial discussions for design/development of Ground Freight Transportation Initiative*

- *“Industry Options for Improving Ground Freight Fuel Efficiency” – Dec, 2001 - Report on Freight Trucking/Rail Sectors, Efficiency Strategies, and Fleet/Industry Characteristics*
- *Consider common voluntary program elements and freight industry trends to design the program*

**2002**

➤ *Identifying Stakeholders and Champions*

➤ *Charter Partners join*

➤ *Design and Development of Program including FLEET Model; Partnership commitments and goals; Logo development, guidance, and usage; Begin planning outreach plan*

# State of Freight Transportation in the US

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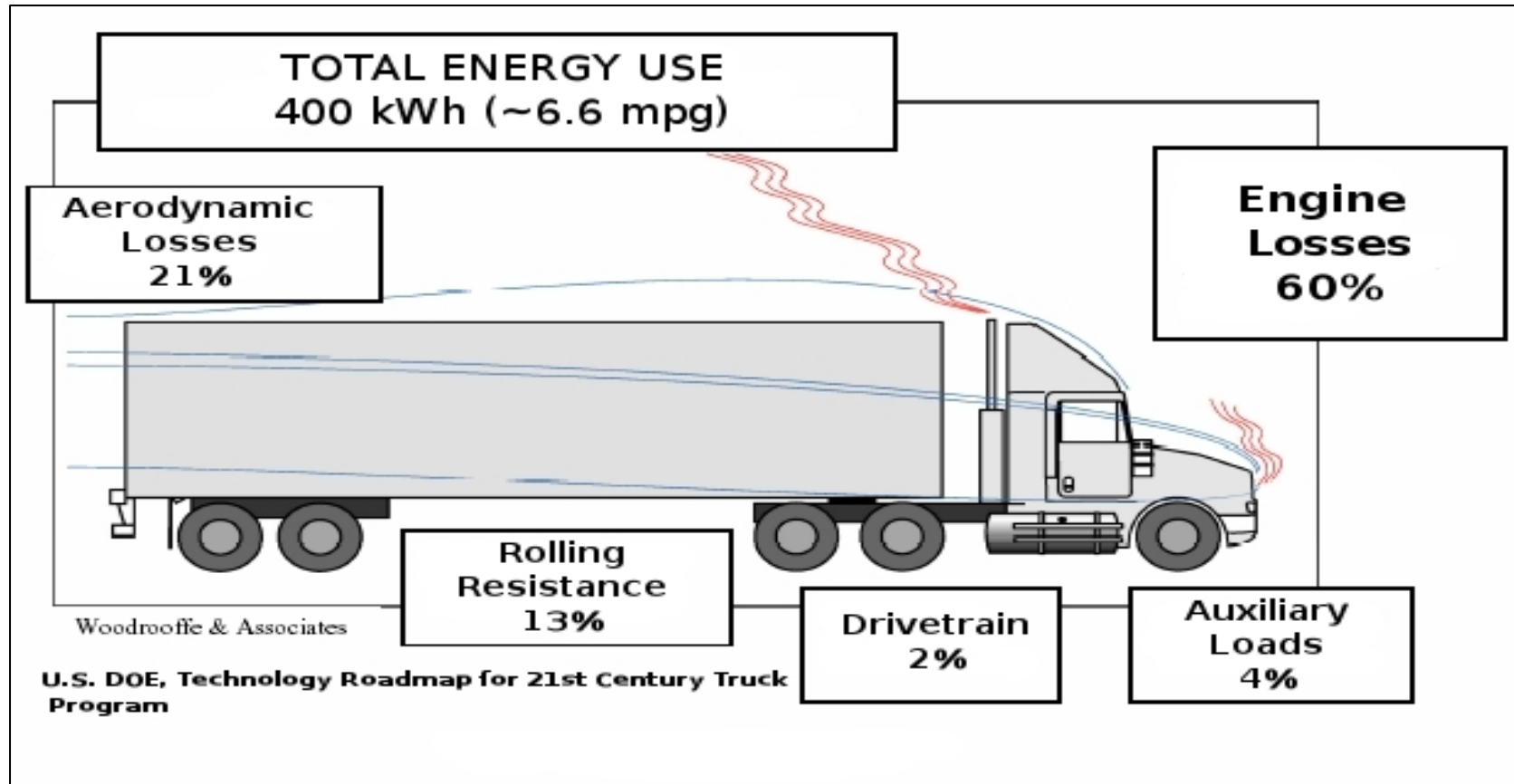
- *Before designing SmartWay, EPA conducted research on the current state of freight transportation*
  - *Freight industry energy use*
  - *Environmental impacts*
  - *Trends and forecasts*

# State of Freight Transportation in the US

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- *At the time of the report (2001), ground freight:*
  - *Accounted for 19.4% of total transportation energy use*
  - *Contributed 50% of mobile source emissions of ozone precursor NO<sub>x</sub>*
  - *Contributed 30% of mobile source particulate matter (PM) emissions.*
  - *Contributed 20% of the mobile source carbon dioxide (CO<sub>2</sub>)*
  - *Was expected to grow more rapidly than all transportation sectors except air travel*

# Truck Energy Losses



# Opportunities to Improve Efficiency

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	<u>2010 Emission Reduction (MMTCE*)</u>
<b>Fuel Savings per truck (&lt;3%)</b>	
Automatic Tire Inflation	0.70
Tare Weight Reduction (3000 lbs.)	0.80
Low-Friction Drive Train Lubricants	0.50
Low-Friction Engine Lubricants	1.50
Reduced Rolling Resist. (Wide based tires)	2.30
<b>Fuel Savings per truck (3%&lt;x&lt;6%)</b>	
Improved Trailer Aerodynamics	1.90
Driver Training and Monitoring	1.80
Improved Tractor Aerodynamics	1.20
<b>Fuel Savings per truck (&gt;6%)</b>	
Speed Reduction (70 to 65 mph)	0.90
Speed Reduction (65 to 60 mph)	3.90
Idling Reduction (APU)	2.90
Total Maximum Benefit (current technologies)	18.4

\*million metric tons of carbon equivalent

# Idle Reduction Technologies

## **Average fuel savings**   **Emissions Controlled**

Trucks: 1 gal/hr

CO<sub>2</sub>, NO<sub>x</sub> and PM

Rail: 4 - 12 gal/hr

- Automatic Shut-Down/Start Up System
- Battery Powered Systems
- Diesel Driven Heating System
- Auxiliary Power Unit/Generator Set
- Truck Stop Electrification



# Trailer Aerodynamics

## Average fuel savings

Trucks: 5%

## Emissions Controlled

CO<sub>2</sub>, NO<sub>x</sub>

- Trailer Fairings, Side-skirts
- Nose Cone and Trailer Tail



# Low Rolling Resistance Tires

## Single Wide Base and Improved Duals

### Average fuel savings

Trucks: 4 - 5%

### Emissions Controlled

CO<sub>2</sub>, NO<sub>x</sub>

- *Single-wide tires and aluminum wheels*
  - Reduced rolling resistance
  - Reduced weight
- *Low rolling resistance duals can be as effective as singles*





# Exhaust After-Treatment Devices

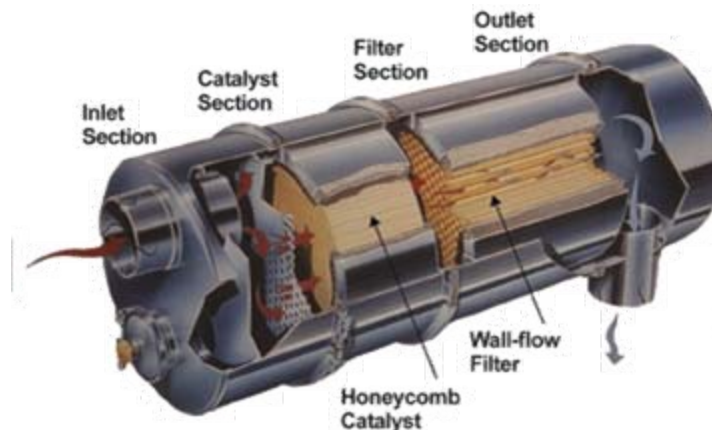
## Average fuel savings

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## Emissions Controlled

PM

- Diesel Oxidation Catalysts
  - Estimated cost: \$1,000
  - Reduce PM by 25% – 40%
- Particulate Matter Filters
  - Estimated cost \$6,000
  - Costs expected to drop sharply after 2007
  - Reduce PM by 80% – 90%



# Response to Industry Report

- In December, 2001, EPA distributed the report to industry experts during a day-long workshop
- In January, 2002, a larger roundtable event was held to unveil the idea to industry stakeholders
- Began process of stakeholder outreach and input from industry leaders

Ground Freight Transportation Initiative Roundtable  
1850 K Street NW, Suite 1000  
Washington, DC 20006 (202) 862-1200

## Agenda

- 9:30 a.m. **Continental Breakfast**
- 10:00 a.m. **Introductions**
- 10:10 a.m. **Overview of the Ground Freight Transportation Initiative -- US EPA**
- OTAQ's vision for its voluntary programs
  - The transportation brand label
  - How the Ground Freight Transportation Initiative fits into the larger picture
- 10:20 a.m. **Questions about the Industry Options Paper -- ICF Consulting**
- 10:45 a.m. **Guided Discussion -- All participants**
- Industry suggestions for program design improvement
  - What are the barriers to improved freight emissions?
  - Where can industry stakeholders coordinate to reduce inefficiencies in the freight sector?
  - Examples of active, replicable efficiency models
  - What is the value of the label to stakeholders?
- 12:30 p.m. **Working Lunch - Break out sessions**
- Discuss specific performance goals for each segment
    - Shippers
    - Carriers
    - Manufacturers
- 2:00 p.m. **Guided Discussion**

# What is a Voluntary Program?

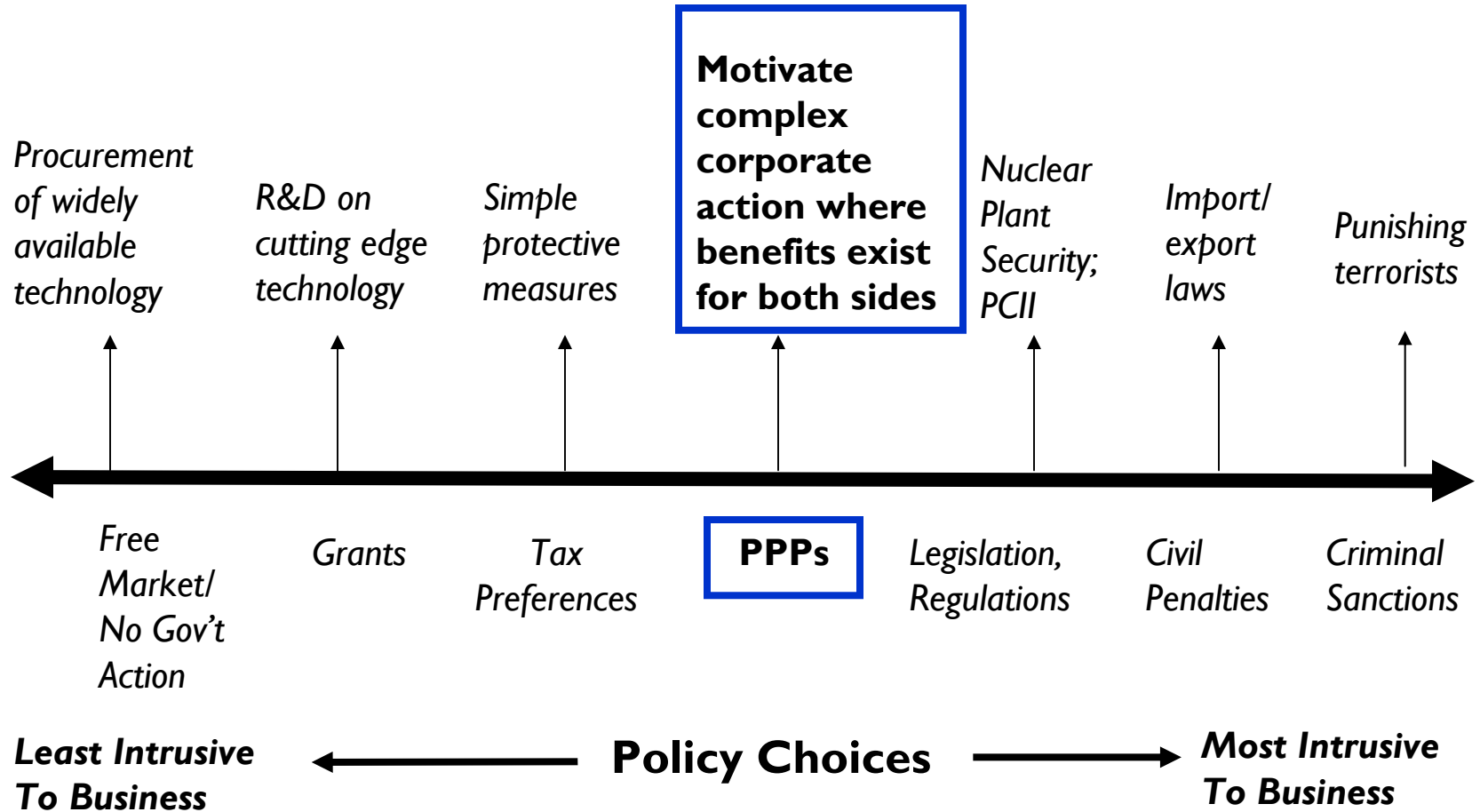
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- Sometimes called *Public-Private Partnership (PPP) or Market Transformation programs*
- *Structured relationship between a government agency and multiple private sector entities to address a public-policy problem*
- *Program participants (“Partners”) commit to*
  - *specific verifiable action beyond “business as usual”*
  - *monitoring and sharing information*
- *Government commits to*
  - *barrier removal*
  - *technical support*
  - *public recognition*
  - *other incentives*
- *Typically memorialized in a Memorandum Of Understanding or Partnership Agreement*

# PPPs are a popular policy tool in the U.S. EPA is a leader in Voluntary Programs



# PPPs Fit Within a Range of Policy Tools



Courtesy of ICF International

# PPPs Fit Within a Range of Policy Tools

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- *Establishing a program that provides value to participants*
  - *The “value proposition” is a key drivers of success... is it compelling enough?*
- *Setting goals and measuring performance*
  - *How do you balance the need for evaluation with limiting burden on partners?*
- *Recruiting partners*
  - *How do you get Partners to commit? Are your communications materials effective?*
- *Getting partners to implement program*
  - *How do you keep Partners interested?*
- *Staffing the program and maintaining over time*
  - *What are the initial staffing needs? Range of services and expertise required?*
- *Moving the Market*
  - *Does the program have the cache to continue to attract partners?*

# Voluntary Programs – Lessons Learned

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- *Challenge 1: Establishing a Program that Provides Value*
  - *Identify any barriers (e.g., regulatory, informational, etc.) and develop program support to overcome barriers*
  - *Create a “value proposition” (e.g., how will it benefit participants?)*
  - *Identify motivators and design program to capitalize on them (e.g., Recognition, Business Opportunities):*
  - *Involve potential partners in the design of the program*
  - *Use feedback loops to regularly measure and evaluate the current costs and benefits of participation; and adjust program as needed*

# Voluntary Programs – Lessons Learned

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- *Challenge 2: Setting Goals and Measuring Performance*
  - *Set measurable goals up front, evaluate and modify program*
  - *Set up ways to estimate (and possibly inhibit) “free riders”*
  - *Simplify the data collection – the more onerous the data collection, the less likely Partners will want to participate*



# Voluntary Programs – Lessons Learned

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- **Challenge 3: Recruiting Partners**
  - *Identify and understand target audience and create effective communication materials*
  - *Use experienced business marketers rather than analytical staff for recruiting and use professional sales techniques*
  - *Reach out to the appropriate person (e.g., Decision-making authority, “Champion” within organization)*
  - *Your partners are businesses - “Don’t waste their time”*
  - *Identify and recruit low-hanging fruit at first, but beware of free-riders*
  - *Use third party recruiters effectively*

# Voluntary Programs – Lessons Learned

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- *Challenge 4: Getting Partners to Implement the Program*
  - *Link rewards to successful completion of project*
  - *Take advantage of momentum when the partners first join*
  - *Set long- and short-term goals and milestones*
  - *Constantly resell the program to partners and communicate often*
  - *Provide training and other needed support*

# Voluntary Programs – Lessons Learned

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- *Challenge 5: Staffing the Program and Maintaining Over Time*
  - *Use consistent core staff throughout program, adding expertise as needed*
  - *Be ready to invest in training for core staff to shore up skills they do not have*
  - *Use IT (e.g., sales tracking systems, computer-based training, etc.) to maximize your results*

# Voluntary Programs – Lessons Learned

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## ○ Challenge 6: *Moving the Market*

- *Focus on long-run behavioral change for real, sustained market transformation*
- *Recognize the value of market leaders as early adopters of the program in moving the market*
- *Use a sector-based approach to identifying triggers and motivators*
- *Develop program messages and value statements that can endure market and economic fluctuations.*
- *Constantly use feedback loops to evaluate and adjust your approach*

# Benefits for the Environment and Economy

## Fuel Consumption, CO<sub>2</sub>, NO<sub>x</sub>, and PM

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- *Lessen health impacts from diesel emissions:*
  - *Exacerbates asthma, respiratory and cardiac illness*
  - *Possible human carcinogen*
- *Improve air quality:*
  - *474 counties are out of compliance with the 8-hour ozone standard*
  - *225 counties are out of compliance with the particulate matter standard*
- *Lessen the impacts on our most vulnerable populations:*
  - *Children, the elderly and people with existing health conditions*
- *Reduce CO<sub>2</sub> emissions that contribute to climate change:*
  - *Every gallon of diesel consumed creates 22.2 pounds of CO<sub>2</sub>*
- *Improve energy security:*
  - *Fuel prices, availability*

# Benefits for Carriers and Shippers

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- *Reduced fuel consumption and fuel costs*
- *Improved business relationships*
- *Create incentives for drivers*
- *Access to EPA technical and financial support:*
  - *Testing and verification programs for the latest technologies*
  - *Financial assistance programs around the country*
- *Create Recognition for your company and industry*
- *Marketing opportunities*
  - *EPA markets SmartWay Partners*
- *Attract socially responsible investors*
  - *Huge increase in number of corporations publishing sustainability reports*
- *Measure and improve your environmental footprint*

# Staffing Needs (Program Initiation) 2001 - 2002

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- 2 – 3 FTEs (full-time equivalents)
- Staff should have:
  - Experience in freight industry, able to develop a profile of the national trucking industry
  - Staff with experience in voluntary program design and implementation

