



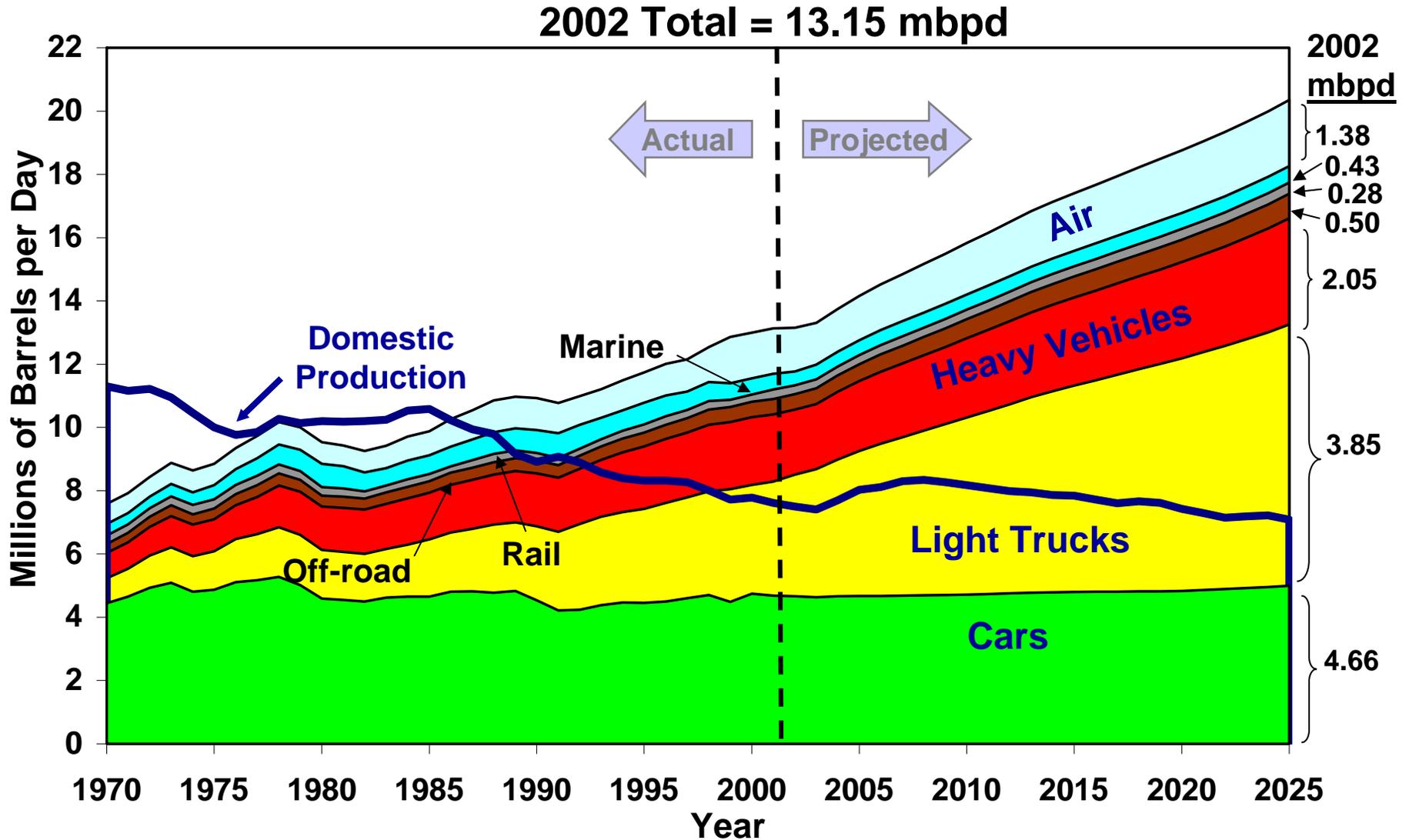
U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# freedomCAR & vehicle technologies program

DOE D E U U V I I U U



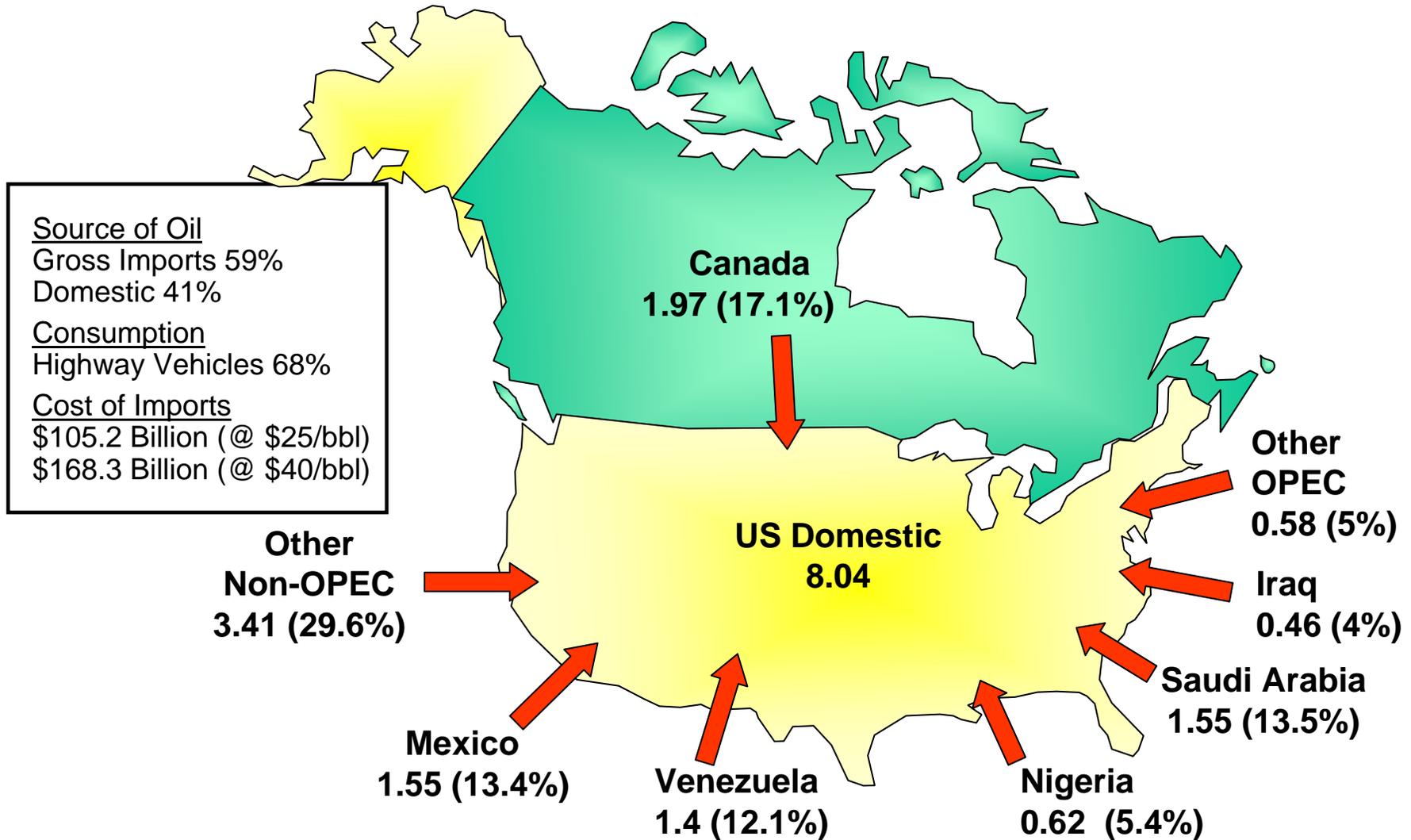
# Transportation Petroleum Use by Mode (1970-2025)



Source: Transportation Energy Data Book: Edition 23, DOE/ORNL-6970, October 2003,  
and EIA Annual Energy Outlook 2003, January 2004

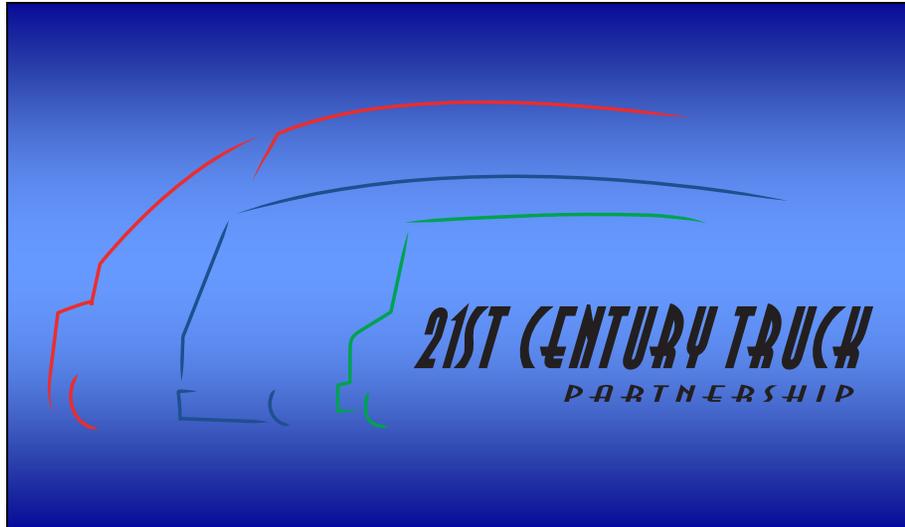


(Millions of barrels per day)





U.S. Department of Energy  
Energy Efficiency and Renewable Energy



# DOE Believes Collaborations are the Key to Answering these Challenges





U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# Government-Industry Truck R&D Partnership Answers Challenges

## ❑ Energy Security

- Increasing dependence on imported oil
- Contributes to balance-of-payments deficit

## ❑ Social Concerns and Needs

- Emissions
- Safety

## ❑ Critical DOD Strategic Need

- 70% of the logistics burden in conducting military missions is moving fuel.



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# 21<sup>st</sup> Century Truck: A Government-Industry Research Partnership



DAIMLERCHRYSLER



DOE / EE  
FreedomCAR and  
Vehicle Technologies

DOD / Army  
TACOM NAC  
Military Vehicle R&D



DOT / RSPA  
Intelligent Vehicle  
and Highway  
Safety R&D

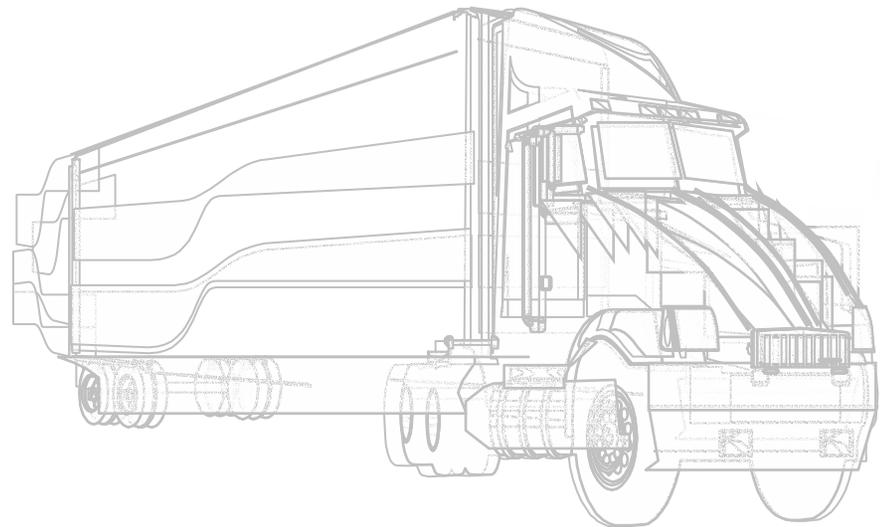
EPA  
Vehicle Emissions  
Regulations





Goals focus on five key technology areas for *heavy-duty* vehicles

- ❑ Engine Systems
- ❑ Heavy-Duty Hybrids
- ❑ Parasitic Losses
- ❑ **Idle Reduction**
- ❑ Safety



*Support Research, Development and  
Demonstration*



# Reduce Idling Fuel Use and Emissions by 85%

- ❑ By 2007, demonstrate advanced 5 kW auxiliary power units (APUs) that meet performance goals and cost under \$200/kW.
- ❑ By 2012, develop and demonstrate 5-30 kW *fuel cell* APUs that meet performance goals and cost under \$400/kW.
- ❑ Develop new codes and standards for electrification of trucks and truck stops

Co-sponsor conference with EPA and DOT in May 2004, establish an integrated and comprehensive Gov't-Industry partnership

Develop mix of incentives & regulations that encourage users to find more efficient and environmentally-sustainable ways to meet their power needs at rest

Establish educational efforts for truck and bus owners & operators to implement enabling technologies and operational practices eliminating unnecessary idling.

**Albany 2004  
Conference**



# Idle Reduction for Heavy Trucks

**GOAL:** To maximize the introduction and use of idle reduction technologies in heavy-duty trucks

## Objectives

- ❑ Data collection/demonstration - in-use information on the performance of on-board idle reduction technologies
- ❑ Identify and implement strategies to overcome critical cost barriers inhibiting broad market introduction.
- ❑ Education and outreach - increase knowledge, awareness, and acceptance of idle reduction technologies within the trucking industry and public at large





## Idle Reduction Technologies Data Collection/Demonstration

- ❑ Caterpillar, International Truck, and Cox Transfer
  - MorElectric technology
  - Electrically-driven accessories
  - Project start 4Q, FY03; Culminates 4Q, FY05
- ❑ Schneider National, Freightliner, and Webasto Thermosystems
  - Webasto Air Top cab heater (diesel-fueled air heater)
  - Webasto cab cooler (phase change cooling storage technology)
  - Project start 4Q, FY03; Culminates 2Q, FY05
- ❑ Espar, Wal-Mart, Truck manufacturer TBD
  - Espar Airtronic Bunk heater (diesel-fueled air heater)
  - DC Airco (rooftop-mounted electric A/C unit)
  - Project award Spring FY04





U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# Solicitation for Truck OEM On-line Installation

**Focus:** Integration of full function (heating, cooling, and electrical) on-board idle reduction technologies into heavy-duty trucks as factory-installed options

## Solicitation Parameters

- ❑ Teaming requirements – Truck OEM (lead), idle reduction technology manufacturer, and fleet (preferably)
- ❑ \$300-500K in total funding; 2-3 awards; 2 year-duration
- ❑ 50/50 cost share
- ❑ Summer 2004 release
- ❑ Award 4Q, FY04 – 1Q, FY05



# Next Steps

- ❑ We are recruiting working group members to help craft the plan
- ❑ Areas of particular interests are:
  - R&D
  - Financial
  - Regulatory
- ❑ Please give Lee Slezak, Diane Turchetta, Paul Bubbosh, or Heather McKee your name so that they can contact you with the schedule to develop the plan