

Energy Efficiency, Energy Independence & GHG Emission Reductions:

The Role of Diesel

Blue Skyways Collaborative
October 3, 2007

*Dawn Fenton
Director, Policy*



Diesel Technology Forum

Objective:

Increase awareness about clean diesel technology

Membership:

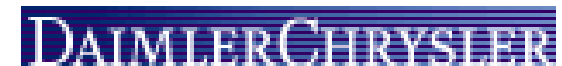
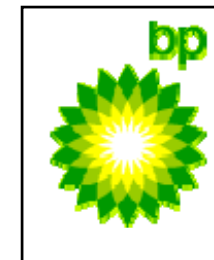
Includes energy companies, engine & vehicle manufacturers and emission treatment companies

Methods:

Educational materials & outreach events

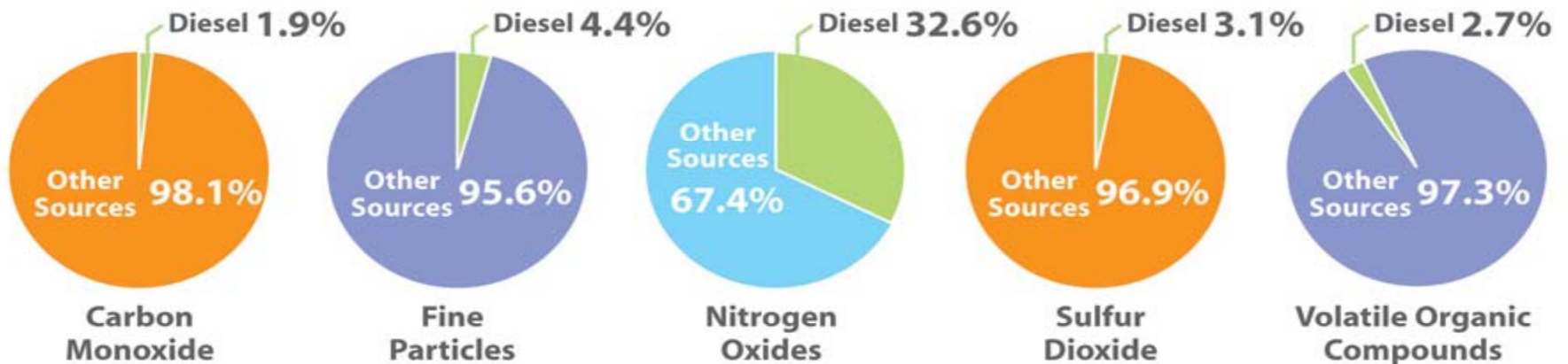


Diesel Technology Forum Leaders in Promoting Clean Diesel Technology



Emissions & Air Quality

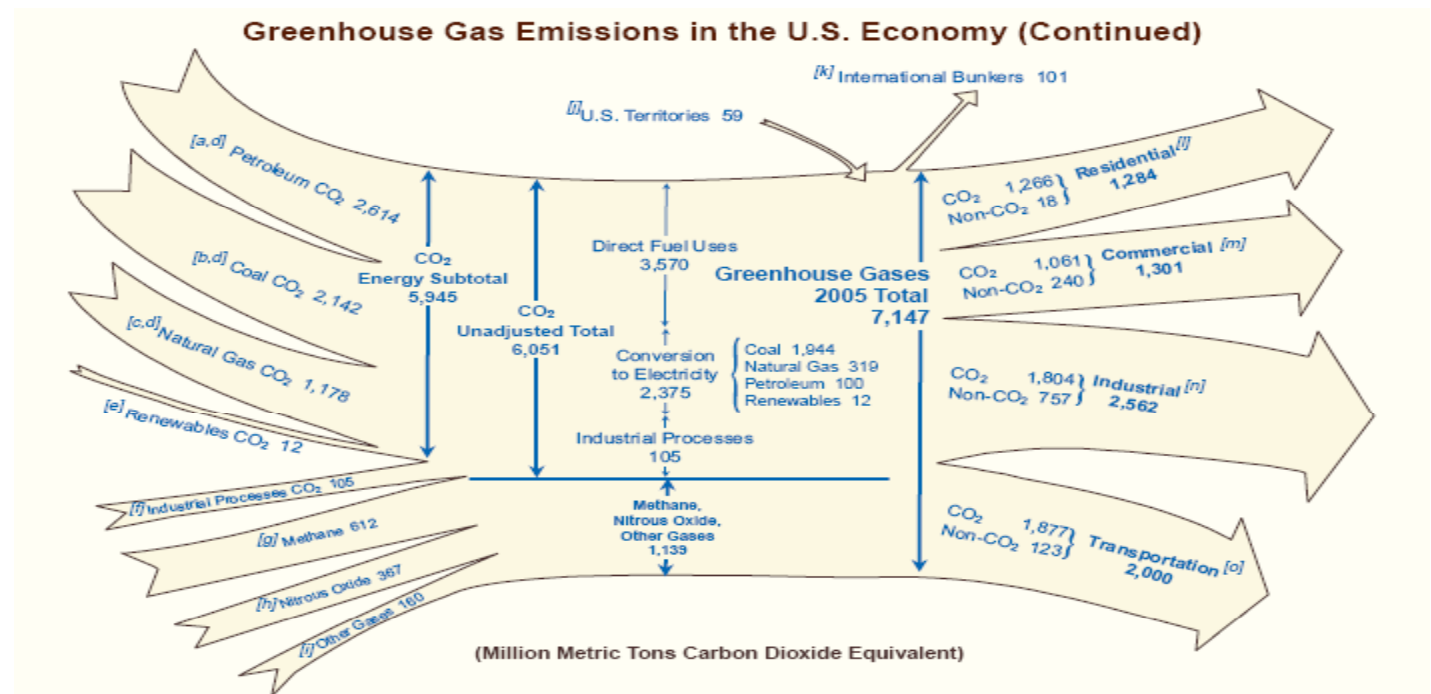
Since the Clean Air Act amendments of 1990 air quality has improved with total emissions of six principal air pollutants declining by 53% since 1970.



Source: U.S. EPA National Emissions Inventory - Average Annual Emissions, All Criteria Pollutants: <http://www.epa.gov/ttnchie1/trends/>; Based on most current data

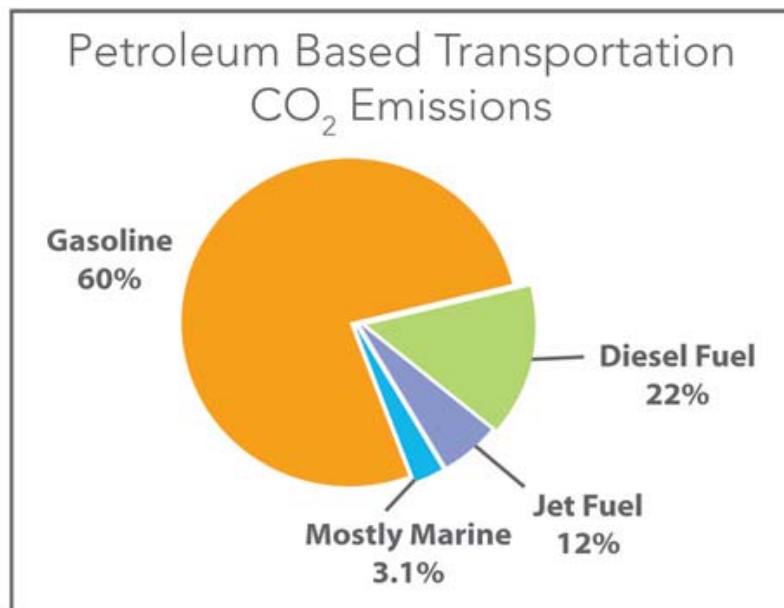
Transportation Related CO₂ Emissions

- ▶ According to the EIA, the transportation sector is responsible for approximately one-third of domestic GHG emissions.

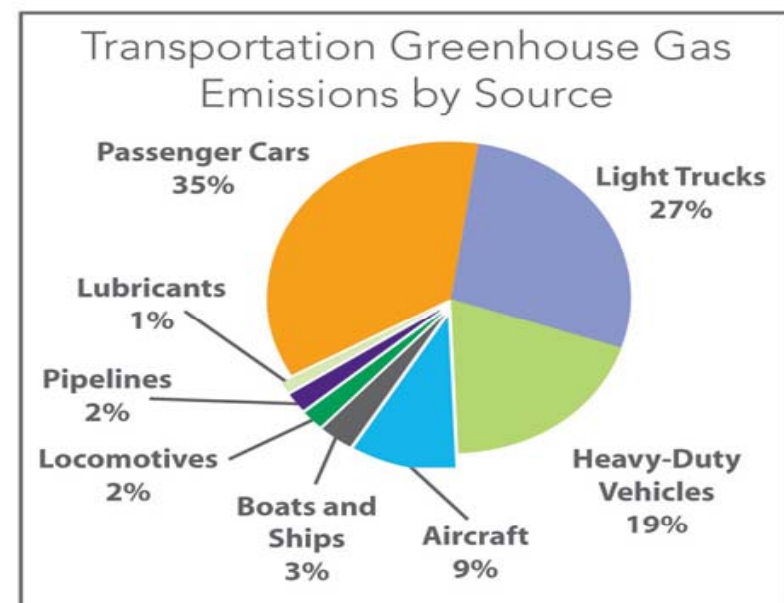


Transportation Related CO₂ Emissions by Source

Almost all transportation CO₂ emissions come from the consumption of petroleum – but vary by mode



Source: Energy Information Administration.



Source: U.S. Environmental Protection Agency, 2005.

Reducing transportation CO2 emissions

- ▶ Reduce the number of vehicle miles traveled
- ▶ Use alternative fuels
- ▶ Adopt more efficient technologies

Diesel Technology

- Most fuel-efficient of internal-combustion engines – GHG benefit
- Diesel vehicles are 20-40% more miles per gallon than gasoline counterparts



Diesel Fuel Efficiency

- ▶ Volkswagen Jetta:
Gasoline or Diesel?
- ▶ Diesel gets:
 - 36% more miles per tank of fuel
 - \$321 estimated annual fuel cost savings
 - Uses two fewer barrels of oil
 - Emits one less ton of GHG emissions



Source:
www.fueleconomy.gov

European Experience

Europe experienced a reduction in the average CO₂ emissions of new passenger cars by 12% from 1995 to 2004.

“The main reasons for the reductions since 1995 are fuel efficiency improvements, mainly in diesel-fueled vehicles, and a shift in fleet composition from petrol to diesel passenger cars.”

- European Environmental Agency

Diesels outperform mileage estimates

- ▶ According to EPA's new test methods to determine more real-world MPG ratings:
 - Gasoline vehicle ratings will drop by 1.4-1.7%
 - Hybrid vehicle ratings will drop by 8 %
 - Diesel vehicle ratings will rise by 4.3%

Reducing CO₂ emissions in Heavy-Duty Diesel Vehicles

- ▶ Vehicle design changes – reducing weight, aerodynamic drag and rolling resistance in heavy-duty vehicles
- ▶ Diesel-hybrid technologies: NREL study found diesel hybrid buses 37% more fuel efficient than conventional diesel and 88% more efficient than natural gas buses
- ▶ Biofuels: CO₂ emissions are reduced in proportion with the percentage of petroleum that is displaced in the fuel blend.

GHG Policy

- ▶ California Air Resources Board recently found renewable diesel to be one of the lowest carbon-intensity fuels available today – one of the best ways to reduce a vehicle’s impact on global warming.
- ▶ “We like substituting diesel for gasoline in any vehicles burning gas now . . . because diesels are more green,” Michael O’Hare, University of California-Berkeley researcher helping ARB craft the LCFS.
- ▶ Rep. Dingell’s Draft Carbon Tax Legislation - \$.50/gallon tax on gasoline, jet fuel, kerosene – exemption for diesel (“Fuel economy benefits of diesel surpass even its emissions benefits.”)

Conclusion

- ▶ Diesel technology is proven, efficient, available, cost-effective, and can be further improved with the use of renewable fuels.
- ▶ An economic workhorse that has experienced significant environmental improvements and can play a role in reducing GHG emissions.

For More Information

Dawn Fenton
Diesel Technology Forum
(301) 668-7230
dfenton@dieselforum.org

www.dieselforum.org

