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# Policy Discussion – Heavy-Duty Truck Fuel Economy

Presentation by Drew Kodjak,  
National Commission on Energy Policy

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Conference August 29 - September 2, 2004  
Coronado , California

# What is the NCEP?

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- Bi-partisan group of 17 experts from academia, government, industry, labor, consumer protection and environment.
- Developing long-term strategy of near-term measures. Final report December 2004.
- Philanthropic -- Hewlett, Pew, MacArthur Packard and Energy Foundations.
- Seek to combine academic credibility and political immediacy.

# Commissioners



# Commissioners

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## **Andrew Lundquist**

President, The Lundquist Group, and former Executive Director, National Energy Policy Development, The White House

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Institute Professor, Massachusetts Institute of Technology

## **Sharon L. Nelson**

Senior Assistant Attorney General, Consumer Protection Division, Washington Attorney Generals Office and Chair, Board of Directors, Consumers Union

## **Linda Stuntz**

Partner, Stuntz, Davis & Staffier, Former Deputy Secretary of Energy

## **Susan Tierney**

Senior Vice President, Lexecon, Inc., former Assistant Secretary of Energy

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## **Martin B. Zimmerman**

Group Vice President, Corporate Affairs, Ford Motor Company

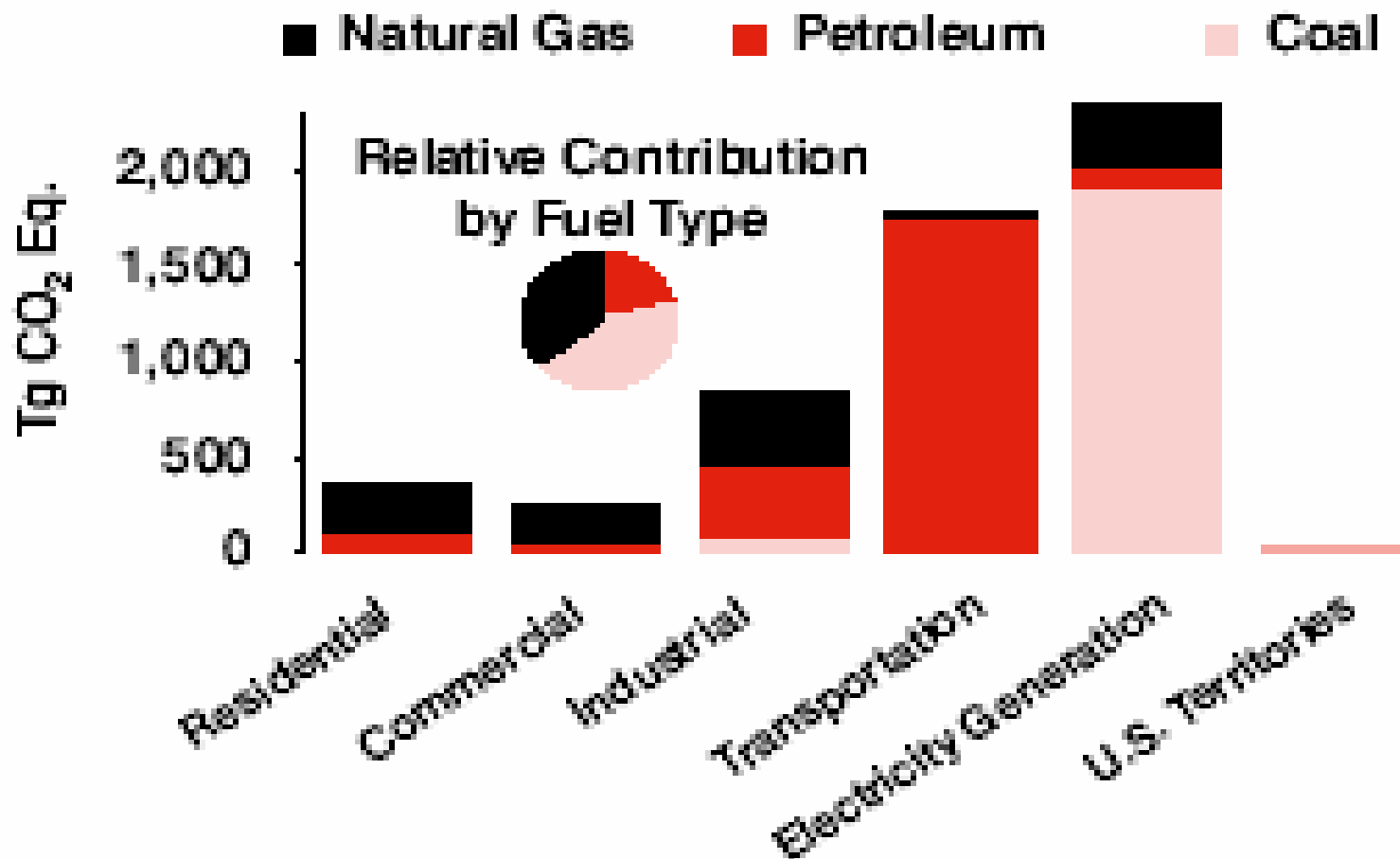


# Policy Goals

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- Adequate supply of energy
- Environment
- Oil Security

# 2000 CO<sub>2</sub> Emissions from Fossil Fuel Combustion by Sector and Fuel Type



Note: Electricity Generation also includes emissions of less than 0.01 Tg CO<sub>2</sub> Eq. from geothermal plants.



# Climate Change

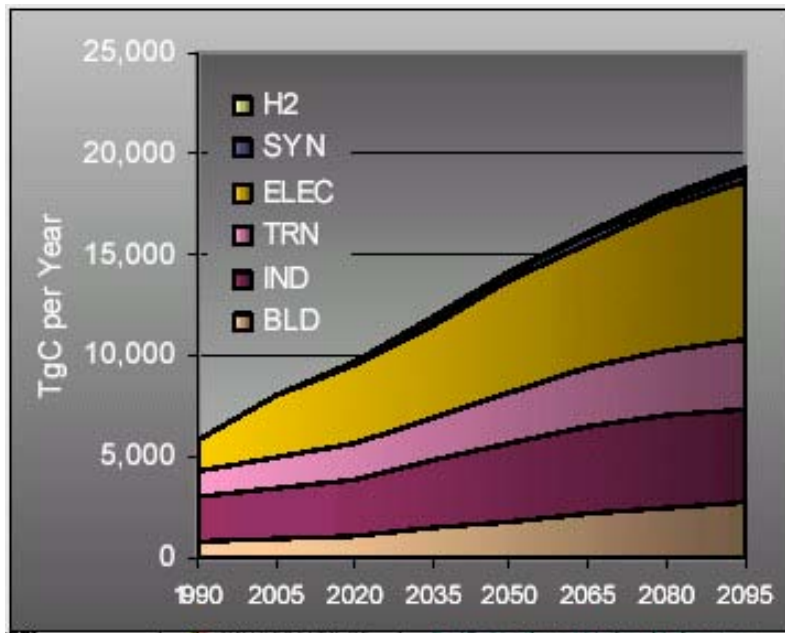
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- Century-scale, global problem characterized by uncertainty about both the costs and benefits of mitigation.
- Commission goal to establish a policy architecture that can evolve along with our understanding of the problem, the range of possible solutions, and the prospects for collaboration with other nations.

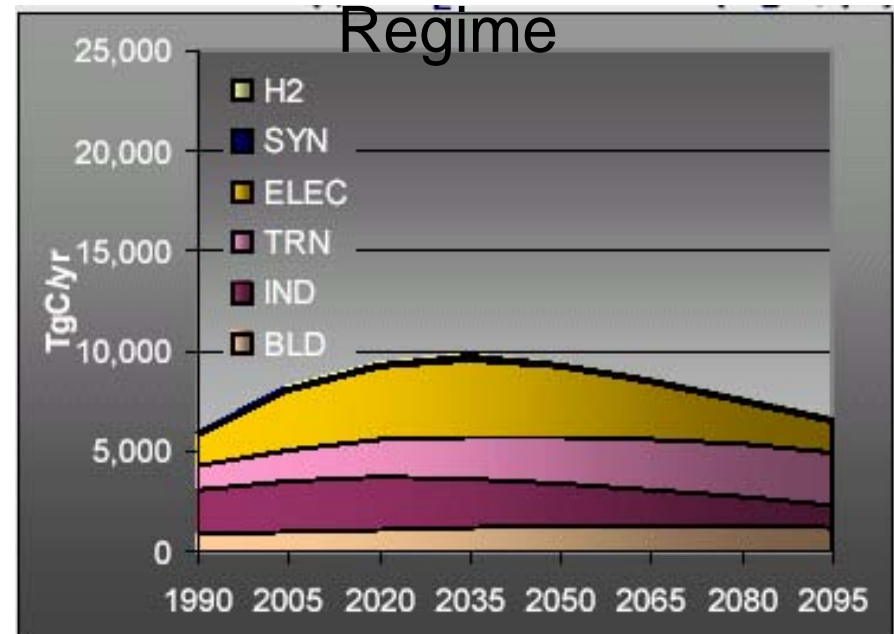
Models suggest that the transportation sector will be largely unaffected by efforts to stabilize global carbon emission.

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Base Case



Carbon Stabilization Regime





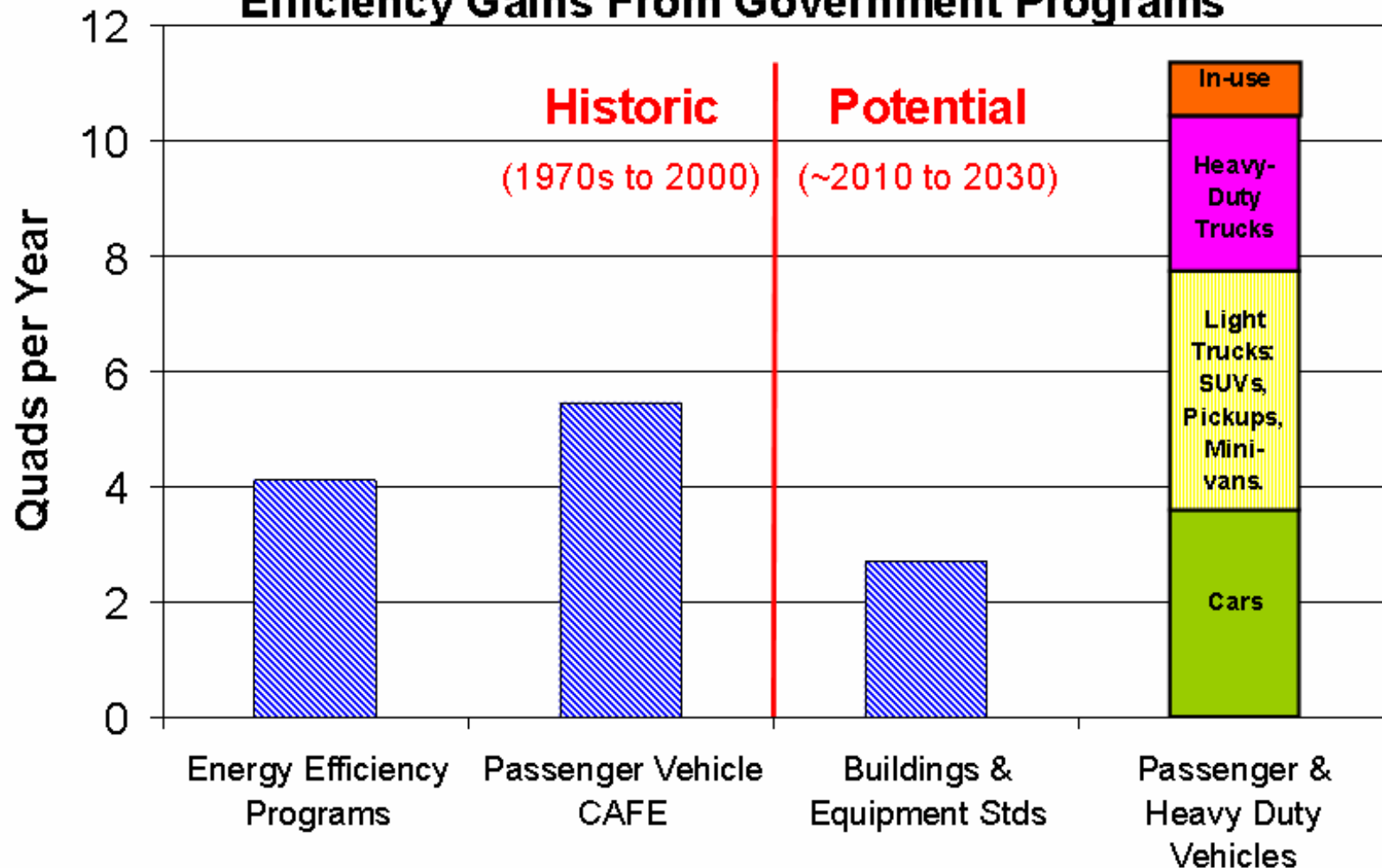
# Oil Security

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- NCEP definition includes (1) Ensuring adequacy of supply and (2) Lowering risks from oil supply disruptions.
  - Global oil consumption projected to increase from 78 MBD today to 118 MBD in 2025.
- Where to find 40 MBD?
  - Domestic supplies on the decline.
  - Non-petroleum fuels may provide 500K BD by 2025.
  - Fuel economy improvements could generate 2 to 5 MBD by 2025.

Efficiency potential is large, although these estimates do not account for tradeoffs with safety/performance.

Figure 1 -- Historic and Potential Cost Effective Efficiency Gains From Government Programs



# List of fuel economy benefits . . . .

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- Reduces pressure on future oil production
- Insulates U.S. economy from oil price shocks
- Helps lower carbon emissions.
- Lays groundwork for alternative fuel vehicles.
  - Hydrogen fuel cell vehicles are challenged by low energy density of hydrogen gas.
  - Ethanol from plants is challenged by land use constraints.

# How future debates might influence transportation policy...

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- Climate Change -- Most likely climate change policy option is an economy-wide, cap and trade program. Such a program would have a significant impact on the coal sector, and almost no impact on the transportation sector, which is the second largest source of CO<sub>2</sub> emissions. Pressure likely from the electric utility / coal industry for the vehicle industry to “do its fair share” to address climate change.
- Oil Security -- What can the U.S. – the world’s largest consumer of oil by a factor of 4 – do to help global production meet future demand in 2025? Best domestic option -- we can establish policies to increase fuel economy of passenger vehicles and heavy-duty vehicles.

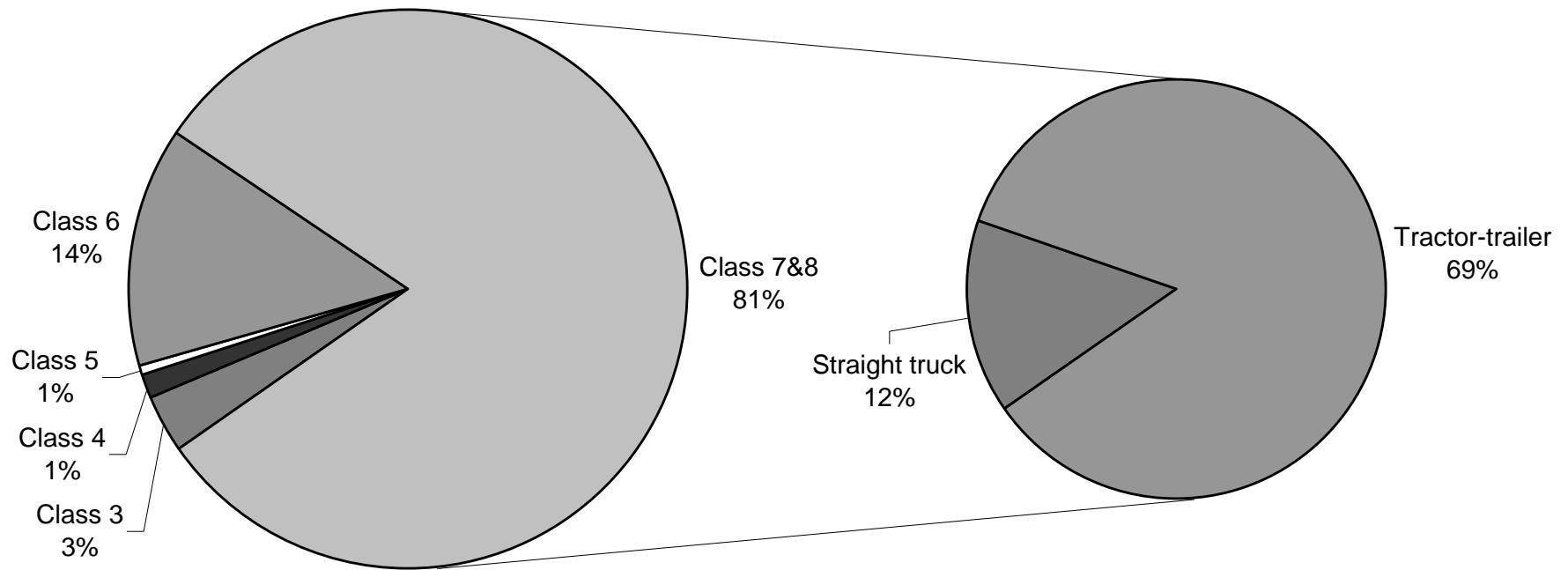
# What about heavy-duty trucks

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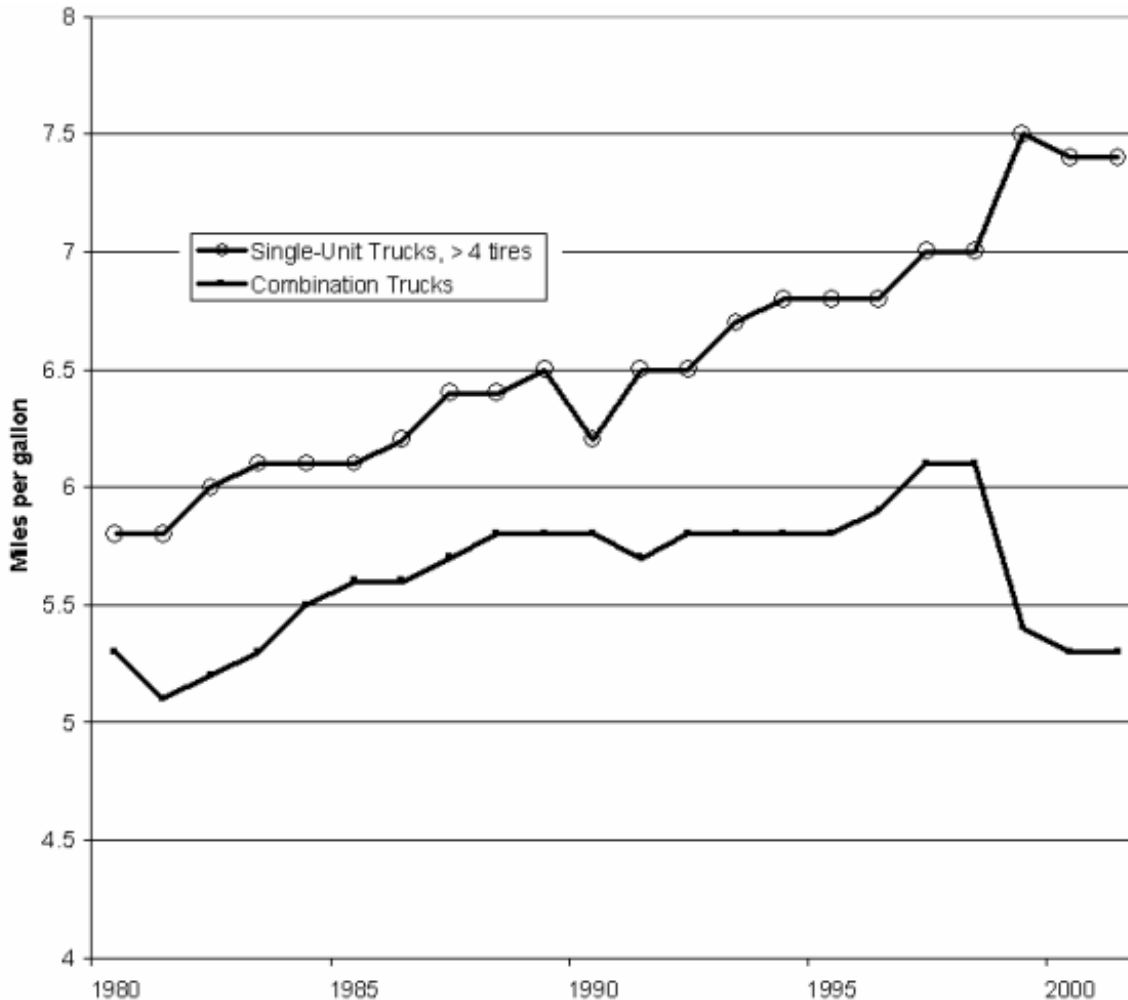
- Economic incentive for manufacturers to produce highly-efficient vehicles. . . .
- But fuel economy at 20 year low for tractor-trailers.
- And existing and emerging fuel economy technologies could be installed that would pay for themselves over the lifetime of the vehicles.
- What's the best course of action?

# Energy Use by Truck Type

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# Fuel Economy of Tractor Trailer Trucks Lowest in Two Decades



**Sharp Drop in  
1998 – 1999.**



# Tractor Trailers Trucks Dominate Potential Cost-Effective Fuel Savings

	<b>Base fuel economy (mpg)</b>	<b>New fuel economy in 2015 (mpg)</b>	<b>Fuel savings in 2025 (MBD)</b>
Large pickups and SUVs (8,500-10,000 lbs GVW)	13.9	19.2	0.15
Platform trucks, Delivery vans, Super-duty pickups, etc (10,000 – 26,000 lbs GVW)	7.8	10.1	0.16
Tractor-trailer trucks (26,000 <sup>+</sup> lbs GVW)	5.3	9.5	0.95



# Technical Summary

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- Tractor-trailers are the big fuel users among medium and heavy trucks, consuming two-thirds of all truck fuel, or 1.5 million barrels per day in 2000.
- Substantial improvements could be made to tractor-trailer fuel economy through a variety of existing and emerging technologies, including engine improvements, transmission enhancements, and weight reduction.
- NCEP-sponsored research by ACEEE found that average fuel economy for new tractor-trailers could be raised by 29% starting in 2008 and by 58% in 2015, while providing net savings for the owner based on incremental cost and lifetime fuel savings.

# Straw Proposal for Discussion

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Congress should direct the U.S. EPA to establish test procedures and gather fuel economy data on heavy-duty tractor-trailer trucks on an annual basis.

- As a starting point, EPA should review existing test procedures, such as those already developed by the private sector through the Society of Automotive Engineers (SAE).