Clean Diesel Technology Pathways to 2007

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West Coast Representative

December 9, 2004

AGENDA

- Role of Diesel Power in Moving Goods
- Key indicators of environment and economy
- Significance of 2007 Clean Diesel Milestone
- Industry Commitments

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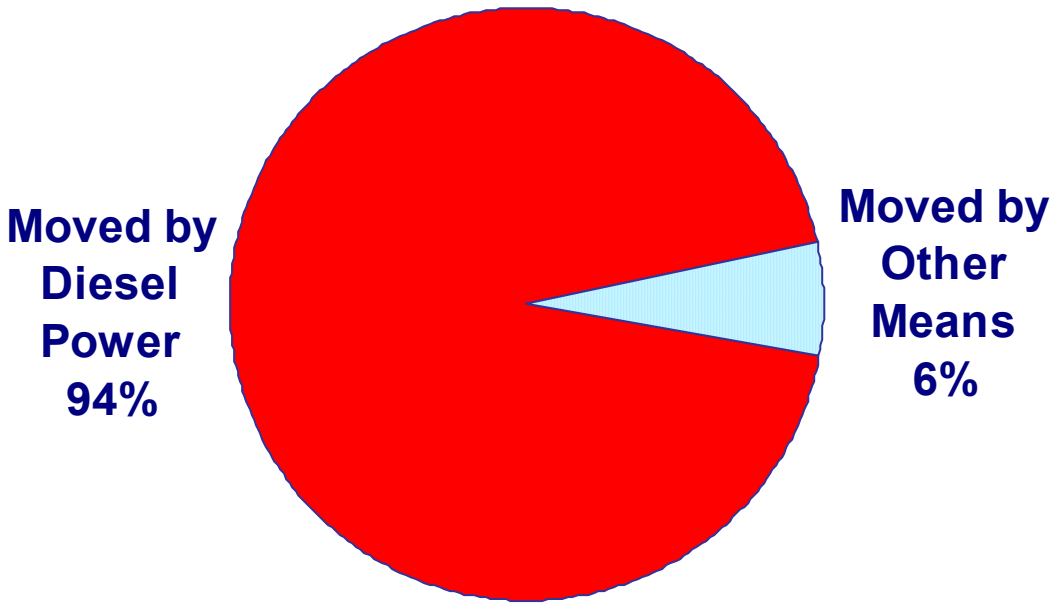
Diesel Power Moves The Goods, Drives Commerce



Total Ton-Miles

National Data; Source Charles River & Associates, 2000

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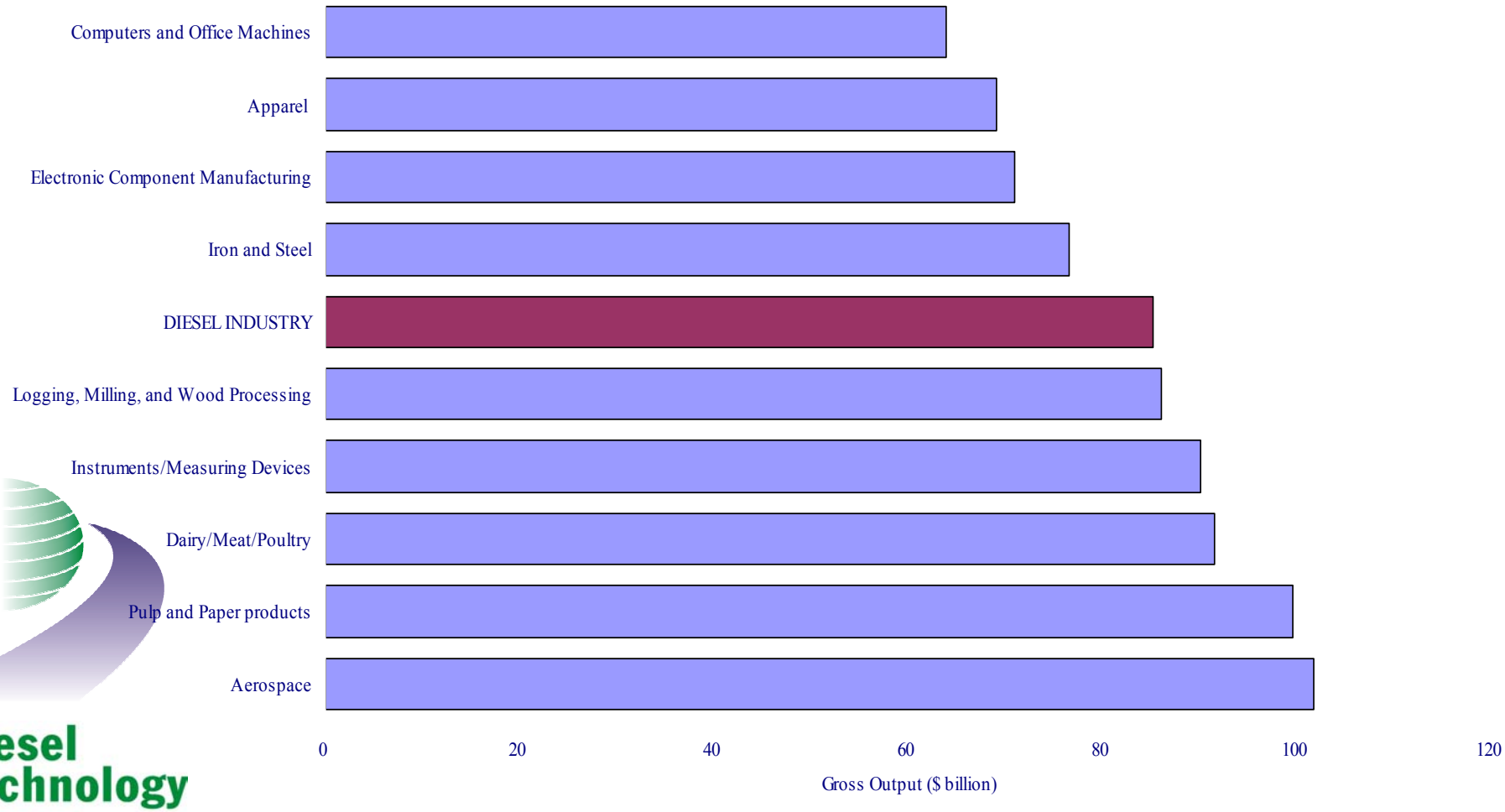
Diesel Industry Annual Economic Output --$85 Billion

National Data; Source Charles River & Associates, 2000



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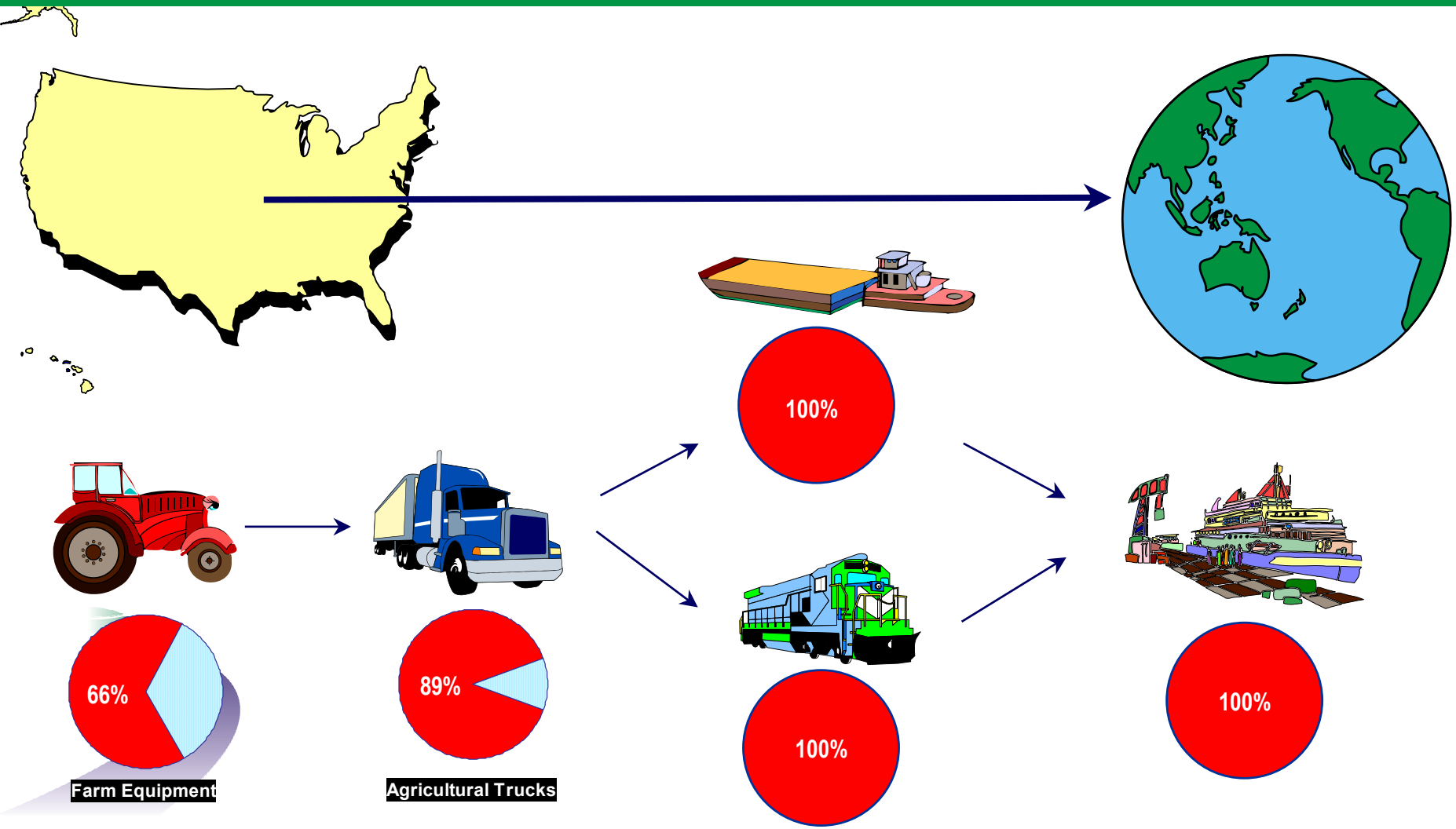
Diesel Power Essential to Agricultural Exports



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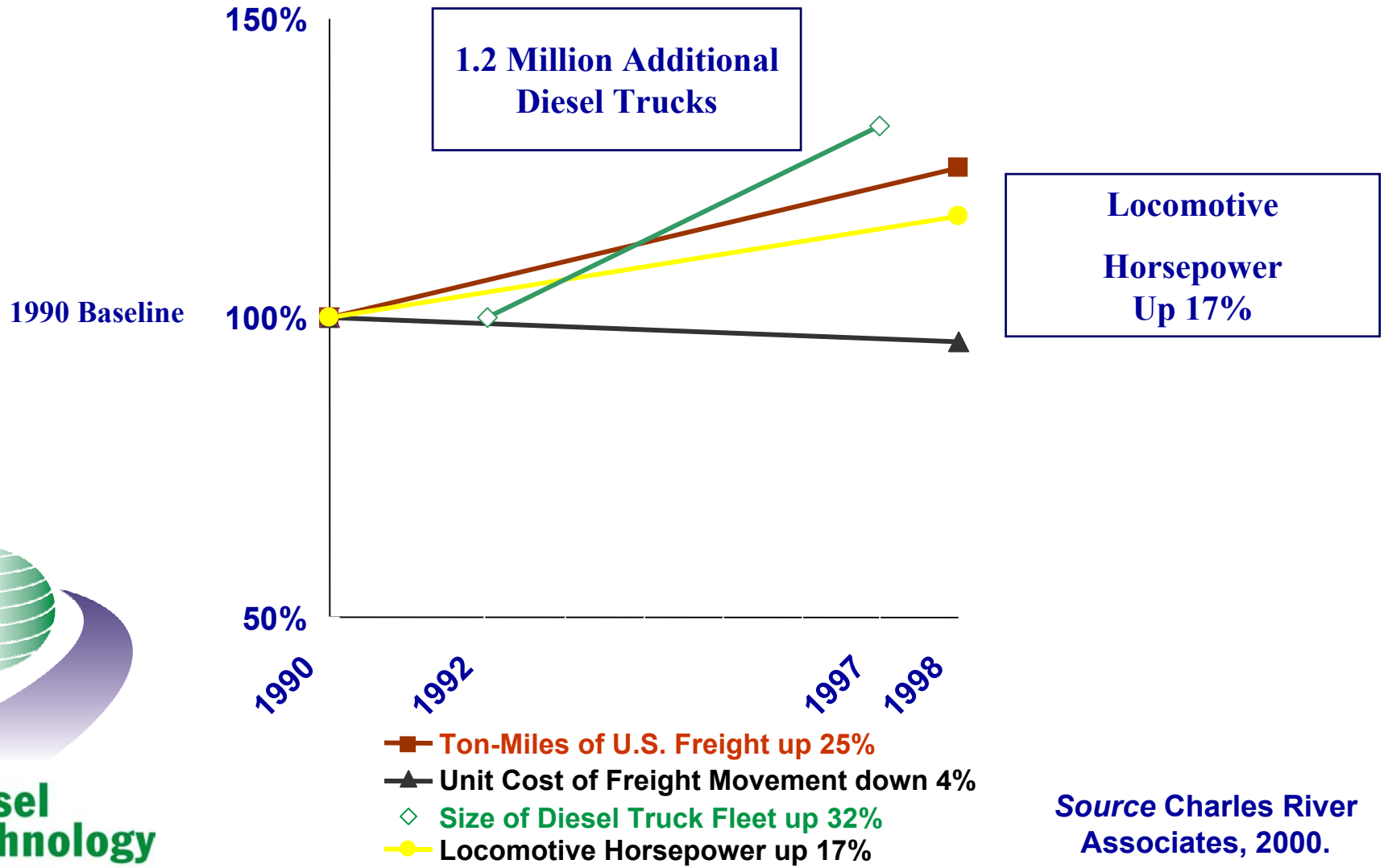
Percentage Powered by Diesel

Diesel Power Key to Efficient Goods Transportation



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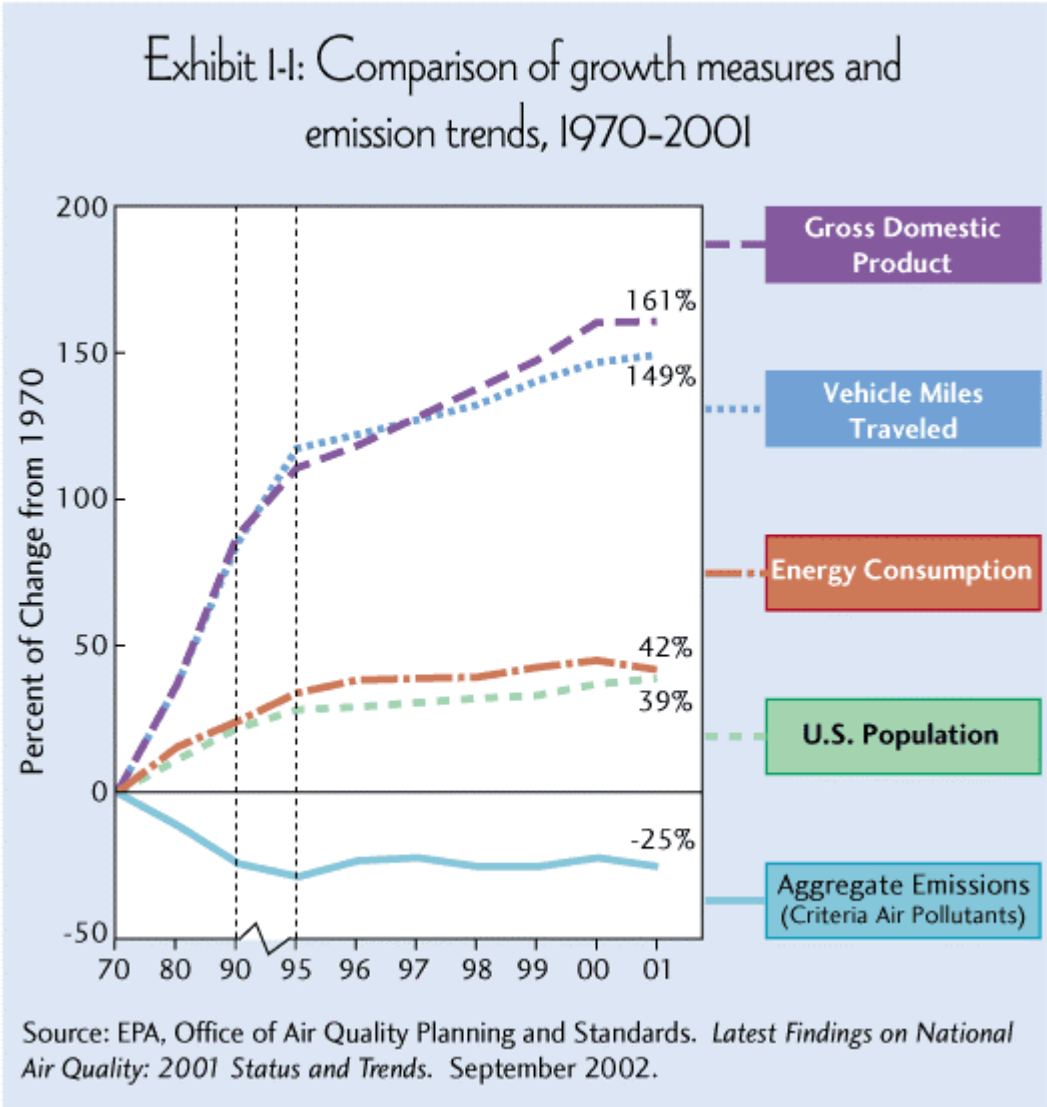
Source Charles River Associates, 2000.

We've got a Growing Economy & have Cleaner Air



Source: EPA, Office of Air Quality Planning and Standards. *Latest Findings on National Air Quality: 2001 Status and Trends.* September 2002.

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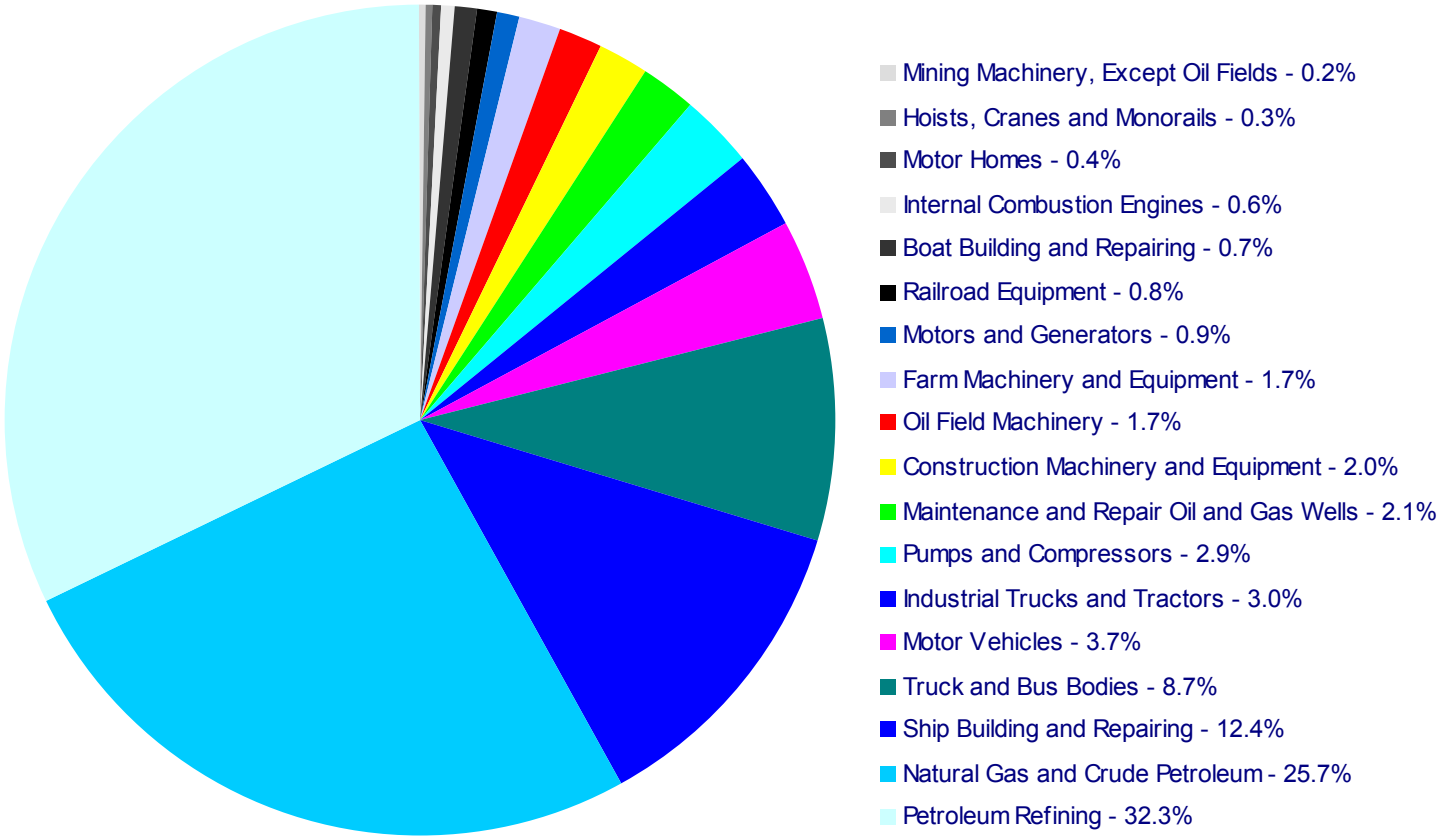
California's 2000 Gross State Product by Sector ($1.305 Trillion)



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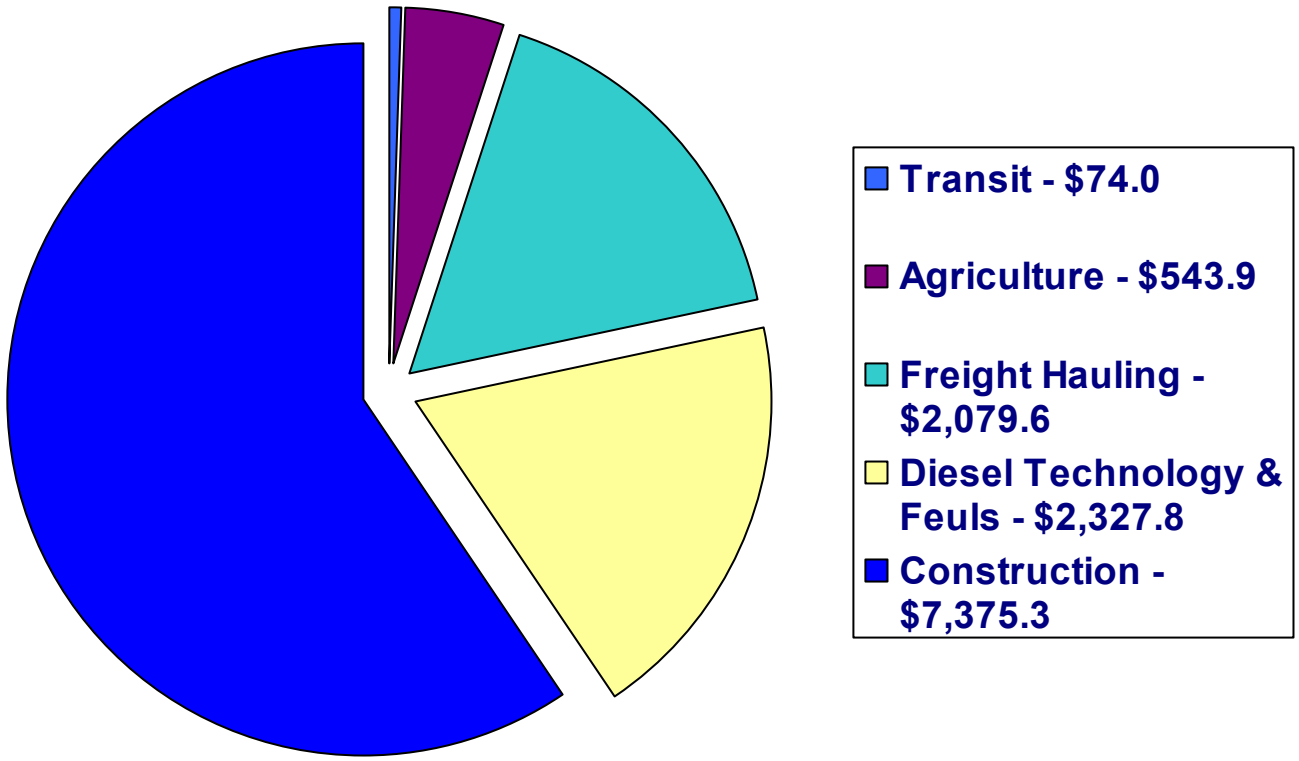
M-Cubed, Sacramento CA – 2003 Diesel Technology and the California Economy

for the Diesel Technology Forum

CA 2000 GSP Attributable to Diesel Use and Production by Diesel-Reliant and Technology Industries ($ Millions)

Diesel Power Contributes

$12.4 Billion



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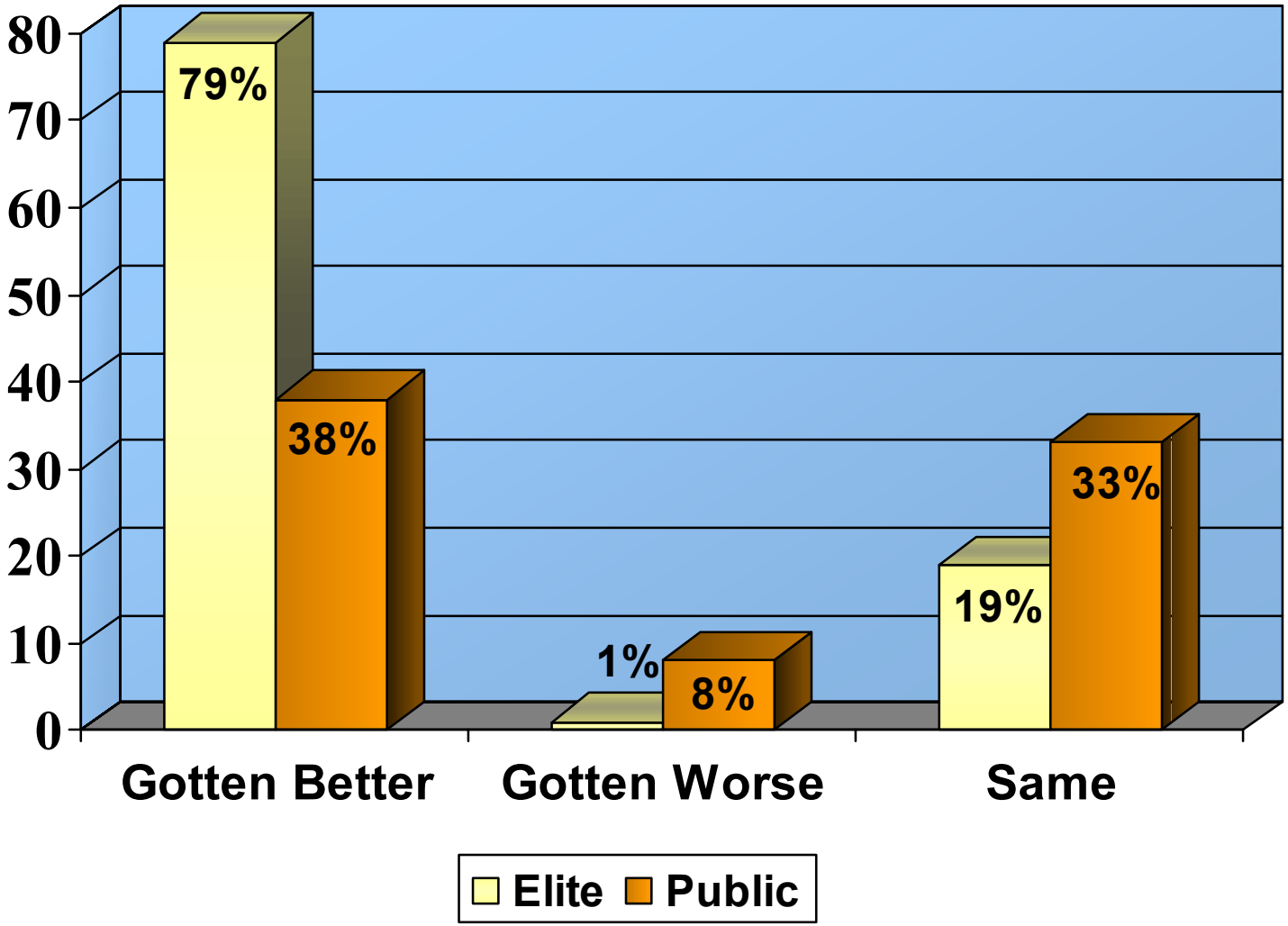
Diesel Technology and the California Economy

M-Cubed, Sacramento CA – 2003 for the Diesel Technology Forum

Opinions on Diesel:

Thinking about environmental considerations, would you say that diesel has … over the last ten years?



National Survey Data)

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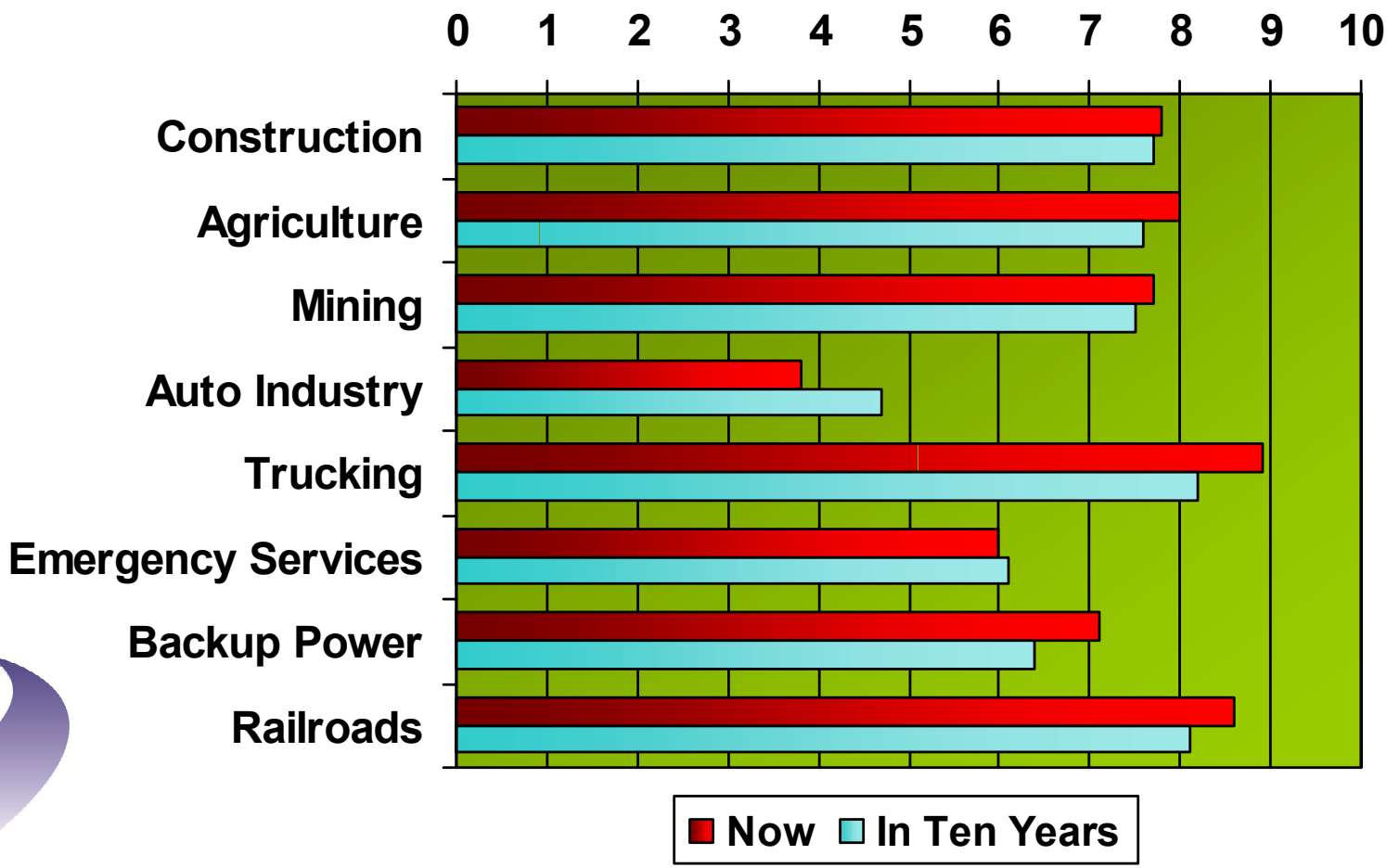
Elites: How important is diesel to the following industries?

1= not at all important; 10 = extremely important



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Profile of diesel emissions inventory in California

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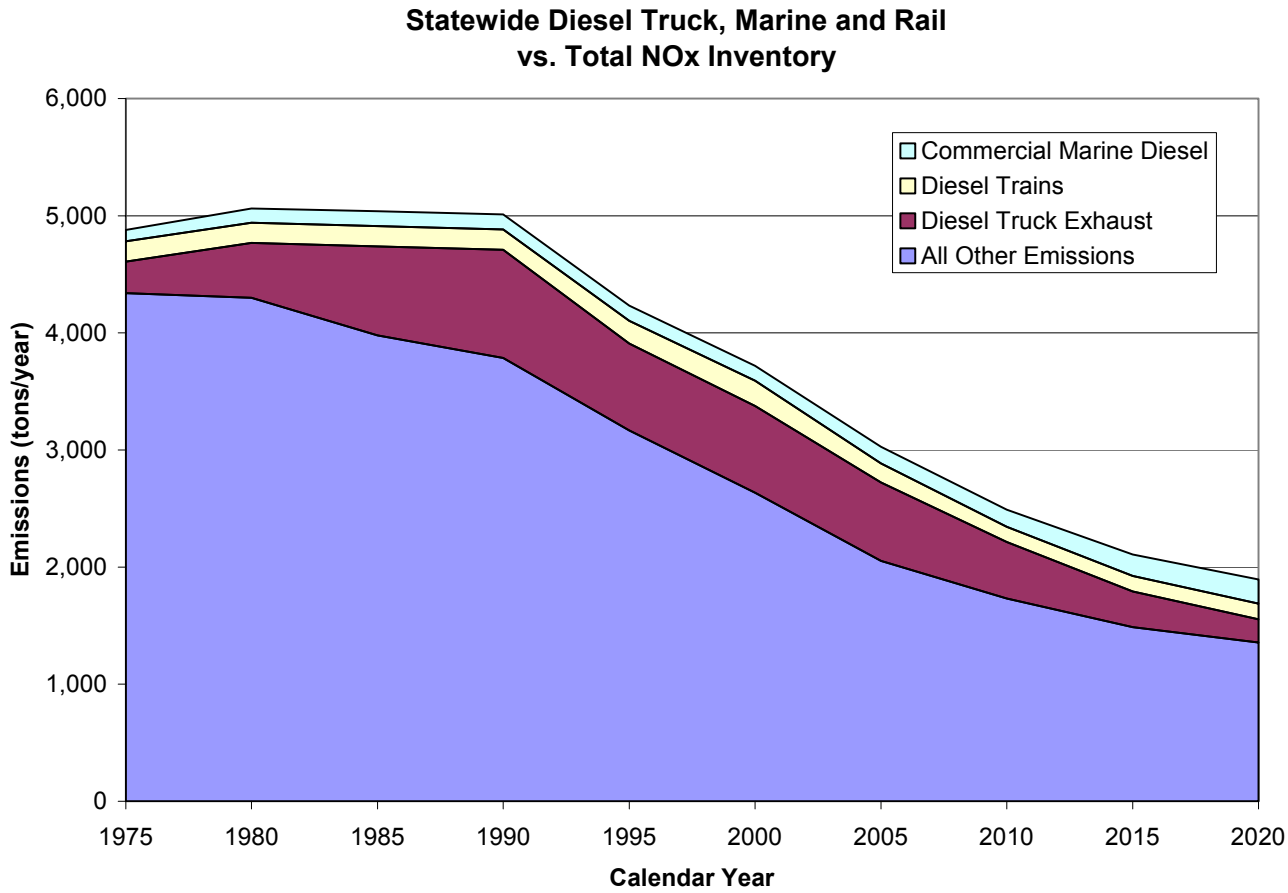
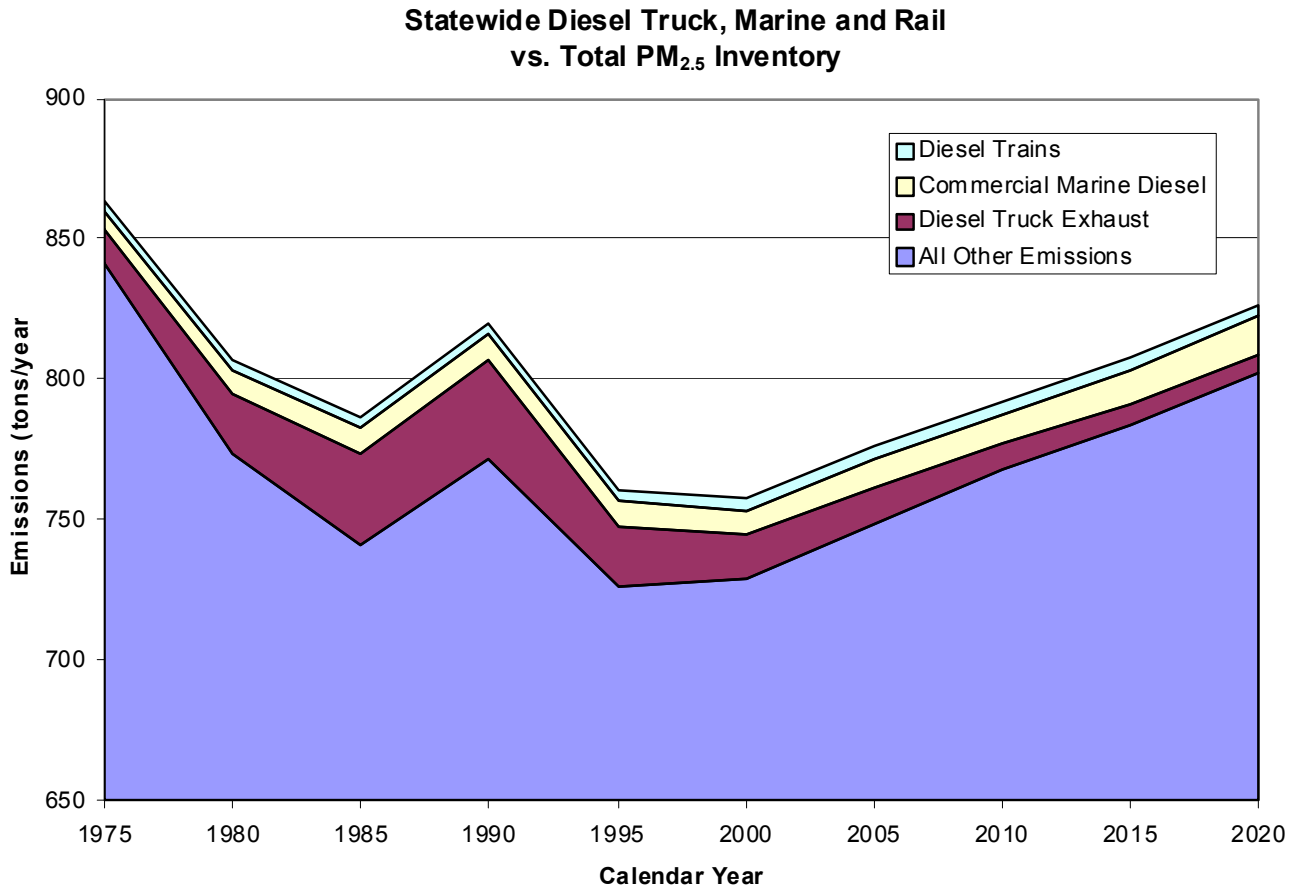
NOx emissions from Diesel-powered freight sector equipment compared to all other sources



PM2.5 emissions from Diesel-powered freight sector equipment compared to all other sources



2007 Milestone

"The best way to predict the future is to Invent it."

Alan Kay

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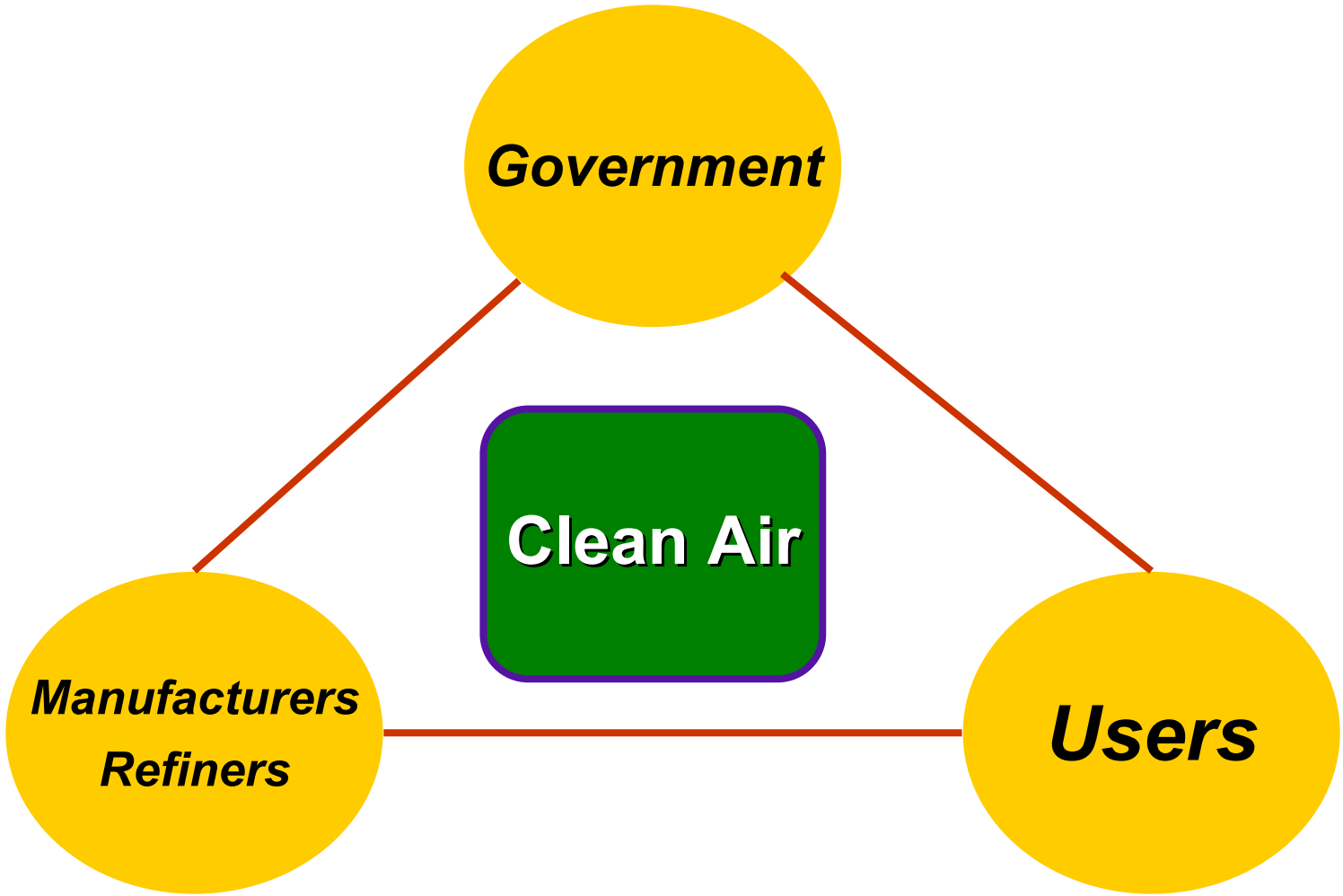
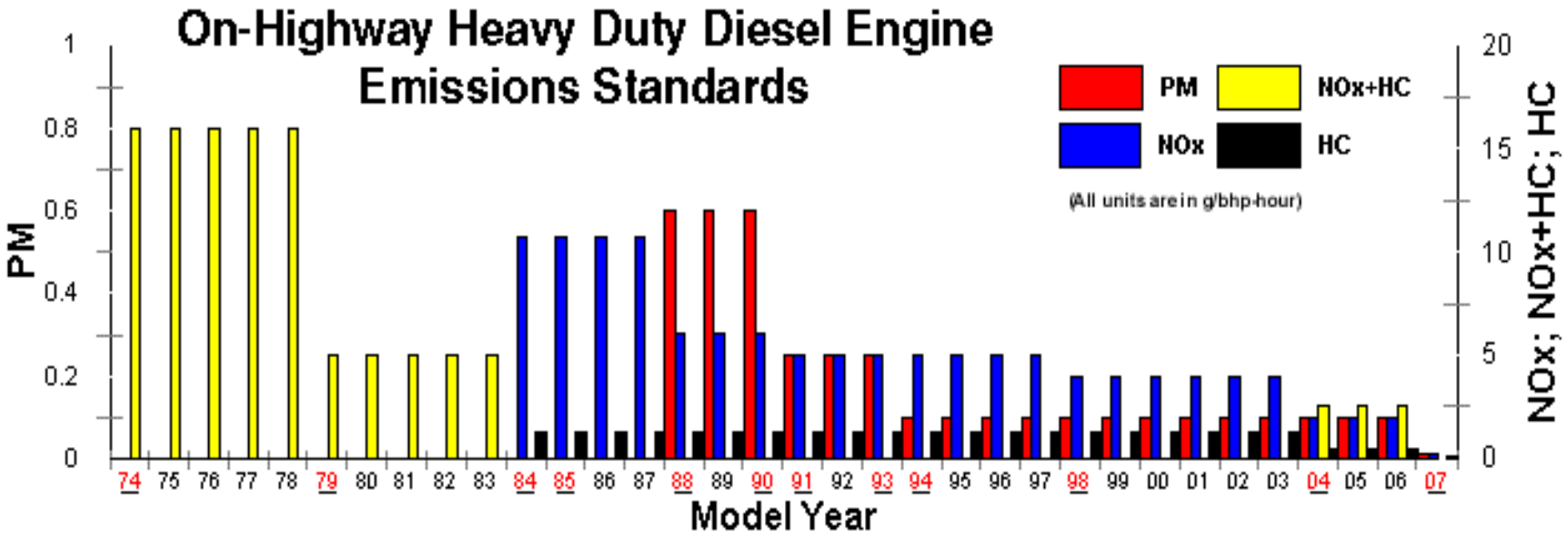
Clean Air = Shared Responsibility



Challenges in the past and the march toward the Future



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The Solutions for 2007: It's all about the system

- Fuels
  - Cleaner, low-sulfur
- Engine
  - Advances in combustion control
- After-treatment
  - NOx and or PM treatment

Managing, controlling and Optimizing the system, reduce emissions, prevent emissions from forming

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The Pathways

Hardware /Technology

- ACERT™ (Caterpillar)
- Cooled EGR
- NOx Adsorbers or Catalysts
- PM Filters
- Selective Catalytic Reduction
- Cleaner diesel fuel

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Progress toward the Milestone

2004

- May 11 Washington DC: Public display of 2007 prototypes;

2005

- 2nd-3rd qtr 2005: Fleets get 2007 prototype technologies to evaluate

2006

- June 1, 2006 ULSD coming online
- September 1, 2006: ULSD available, new trucks meet 2007 standards available

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Industry views on 2007

washingtonpost.com

Trucking Industry Won't Fight Diesel Rules

By JOHN HEILPRIN
The Associated Press
Wednesday, November 17, 2004; 12:30 PM

WASHINGTON - After years of resistance, the U.S. trucking industry says it will not try to impede or delay a new federal rule aimed at cutting diesel pollution.

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What are the concerns about 2007?

- Will the engines and trucks be ready?
  - **YES**– *prototypes roll out next year*
- Will the fuel be available?
  - **YES**– *EPA studies, oil industry comments, fuel available now in niche fleet applications*
- Will customers purchase the new 2007 technology?
  - ?
    - Meeting more stringent emissions requirements = higher costs for trucks and fuel
- What could influence 2007 technology acquisition?
  - Incentives

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Why consider Incentives?

- Air quality benefits
  - 2007 Diesel Technology key part of EPA and state clean air planning requirements.
  - Essential to meeting NAAQS for ozone, PM
- Economics
  - Stable acquisition vital to economic stability – prevent/minimize job losses
  - Stable acquisition best for both customers and industry

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Will there be Incentives to Acquire 2007 Technology?

- Coalition currently completing research on air quality and economic impacts of various 2007 technology acquisition scenarios
- Reviewing options for 109th Congress

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Conclusions

- 2007 a vitally important milestone for industry, freight sector, air quality
- 2007 engine technology is an *evolution* from today's technology– not revolutionary
- Interest in incentives from GAO, EPA, Industry
- All stakeholders should work together to make sure that 2007 Diesel Technology introduction is a success.

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