

Energy Sources and Uses

for
Briefing on Energy
American Chemical Society
Washington DC

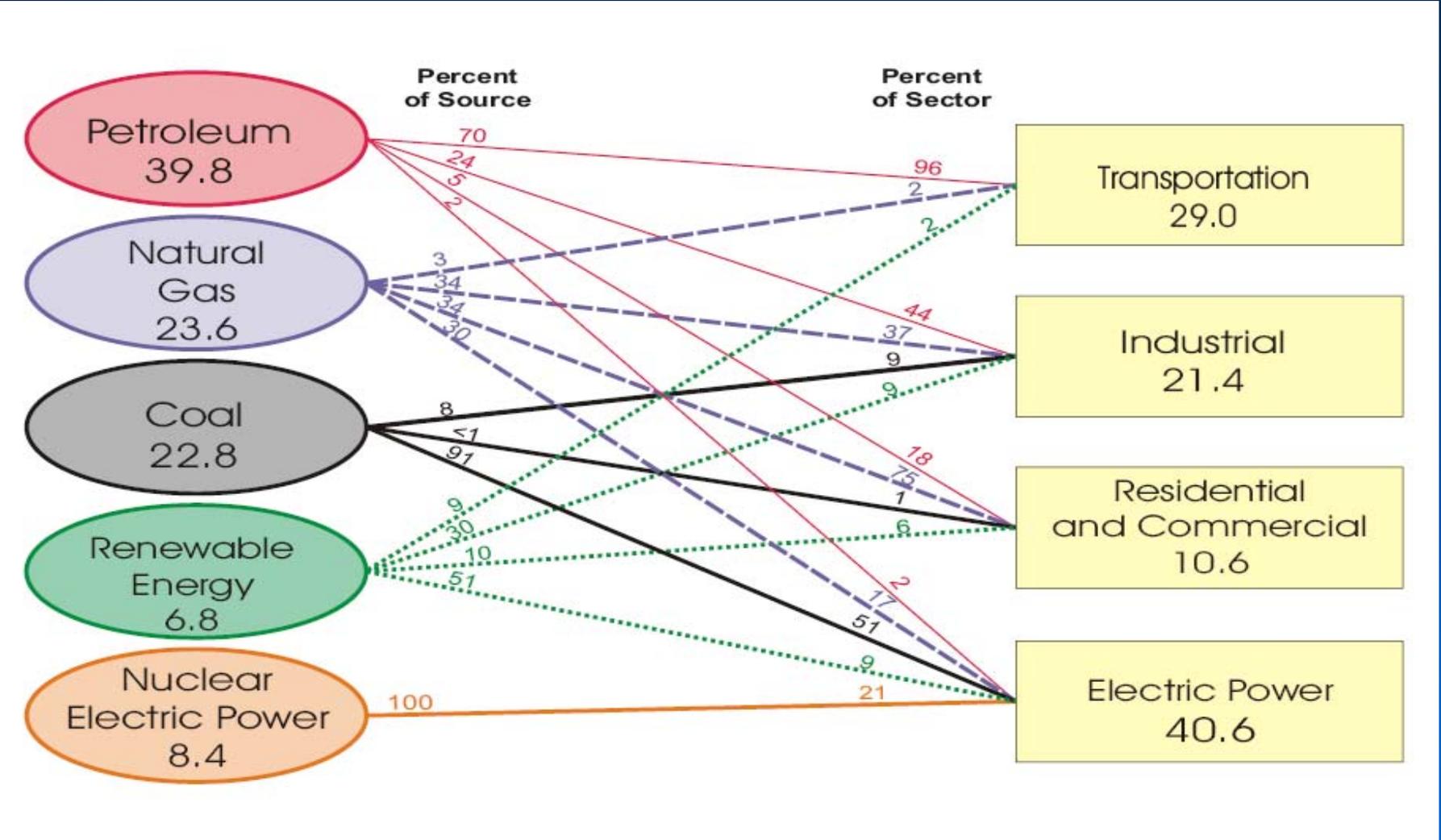
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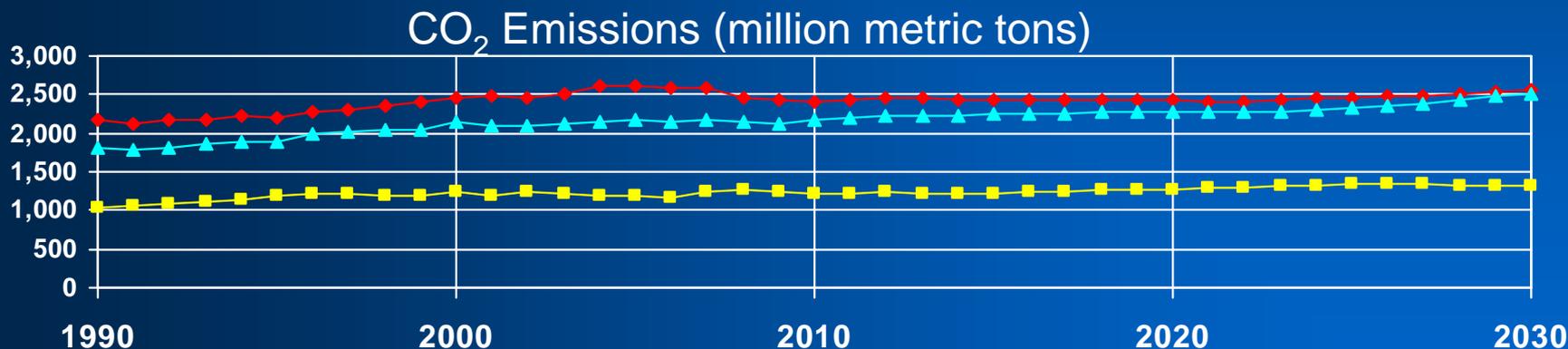
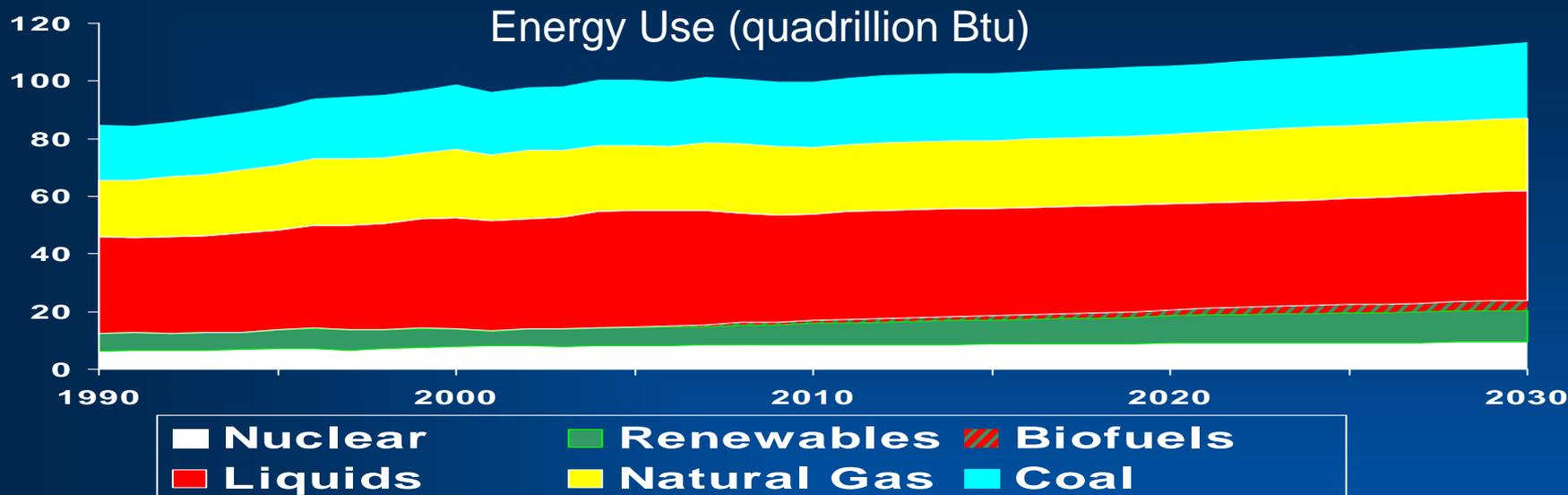


Energy Information Administration
Official Energy Statistics from the U.S. Government

U.S Primary Energy Consumption by Source and Sector, 2007 (quadrillion Btu)



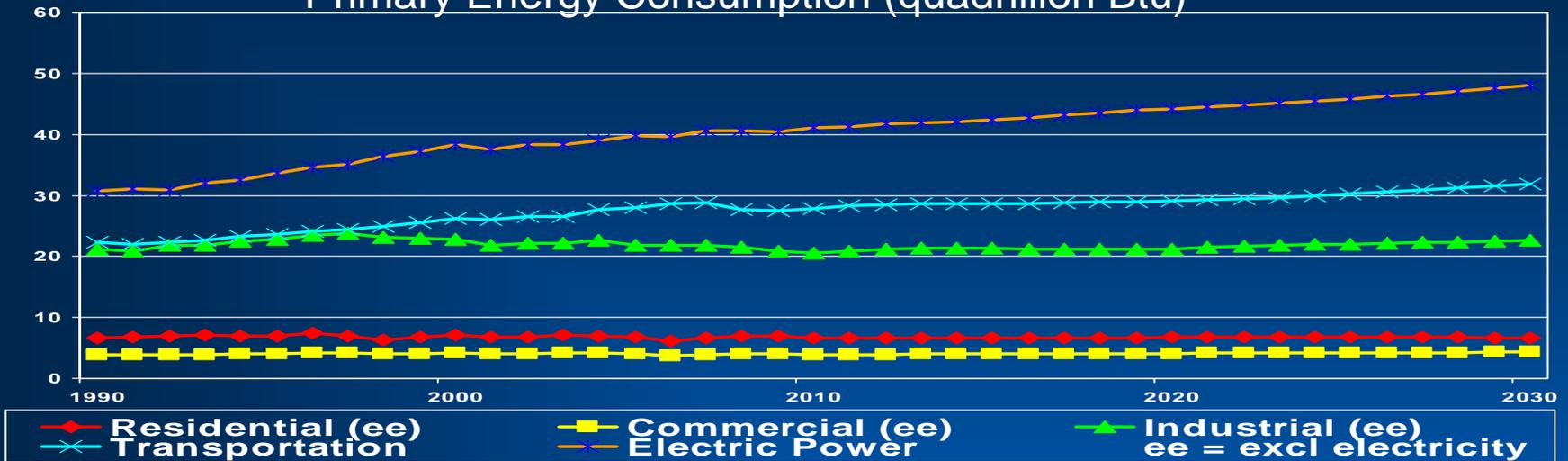
Energy use and GHG emissions by fuel History (1990-2007) and AEO2009 Reference Case



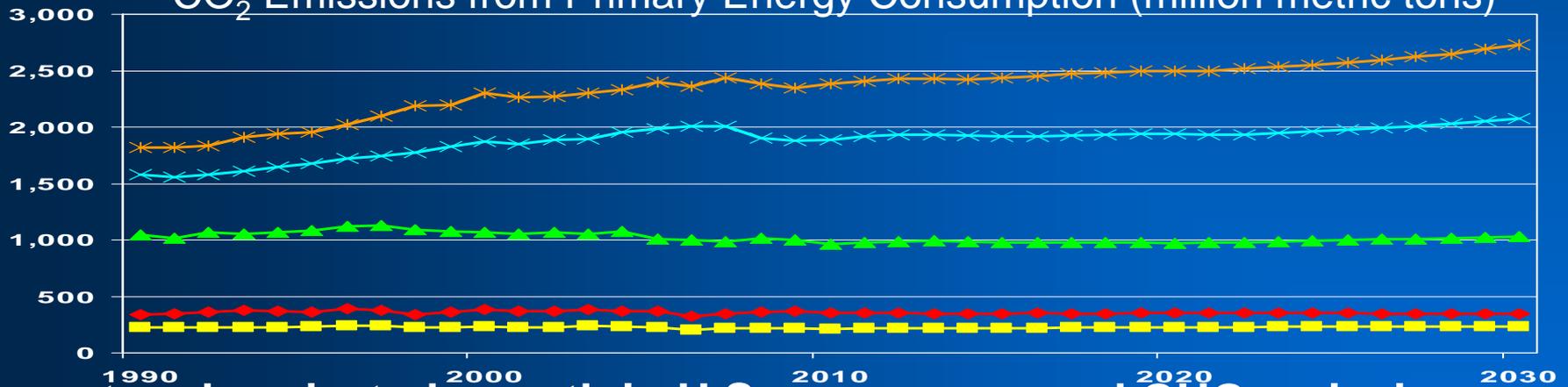
Oil accounts for the greatest share of both U.S. energy use and energy-related GHG emissions. Coal represents a growing share of emissions.

Energy Use and GHG emissions by sector History (1990-2007) and AEO2009 Reference Case

Primary Energy Consumption (quadrillion Btu)



CO₂ Emissions from Primary Energy Consumption (million metric tons)



Recent and projected growth in U.S. energy use and GHG emissions is concentrated in the transportation and electric power sectors.

Impact of a CO₂ Value on Fossil Fuel Prices

Fuel	CO ₂ content per million Btu	Delivered Price (2007, all sectors, per million Btu)	Impact of \$10 per ton CO ₂ value		Impact of \$50 per ton CO ₂ value	
			\$	percent	\$	percent
Coal	0.094	1.81	0.94	51.9	4.70	260
Oil	0.074	20.31	0.74	3.6	3.70	18.2
Nat. Gas	0.053	9.01	0.53	5.9	2.65	29.4

- As shown above, placing a value on GHGs through either a tax or a cap-and-trade program has a relatively large impact on the delivered price of coal.
- This reflects both the substantially lower price of coal relative to other fossil fuels under baseline conditions and its higher emission of CO₂ per unit of energy
- A \$25/ton value on CO₂ raises gasoline prices by about 23 cents per gallon.

Electricity Demand Growth Continues to Slow (3-year rolling average percent growth)

- Electricity demand growth has slowed over time.
- However, electricity demand is still expected to grow more than 25% above today's level by 2030.
- The situation varies by region.



Energy Security and GHG Emission Reduction: some synergies (S), some conflicts (C)

- (S) Improved vehicle efficiency: lowers GHG emissions and oil demand/imports
- (S/C) Biomass: should it back out coal used in electricity generation or oil used in transport fuels? (There are also questions about competition with food uses.)
- (S/C) Carbon capture and sequestration (CCS) requirements: helpful on GHGs. Hurts coal, an abundant domestic energy resource, but can reduce oil imports via use of captured carbon dioxide for enhanced oil recovery from aging fields.
- (C) Coal to liquids without CCS: reduces import dependence, but not helpful on GHGs.

Examples of EIA Periodic Reports

Petroleum Status and Natural Gas Storage Reports, weekly

Short-Term Energy Outlook, monthly

Annual Energy Outlook 2009, December 2008/ March 2009

International Energy Outlook 2008, August 2008

U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2007, October 2008 (Advance Summary), January 2009 (Full Report)

Examples of EIA Special Analyses

Analysis of Crude Oil Production in the Arctic National Wildlife Refuge, May 2008

Energy Market and Economic Impacts of S.2191, the Lieberman-Warner Climate Security Act of 2007, April 2008

Federal Financial Interventions and Subsidies in Energy Markets 2007, April 2008

“Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf,” Annual Energy Outlook 2007