TECHNICAL
facts

U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

Sequestration

10/2002

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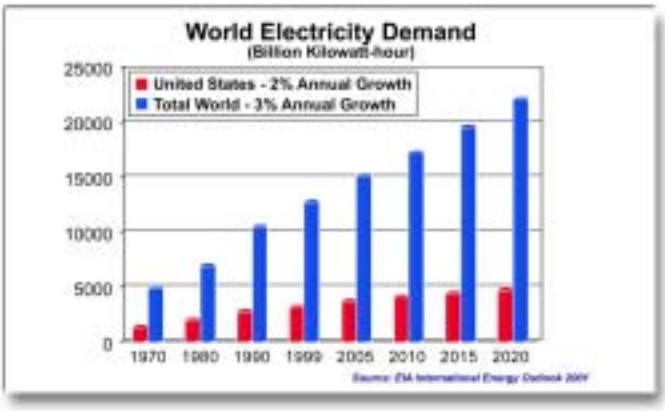
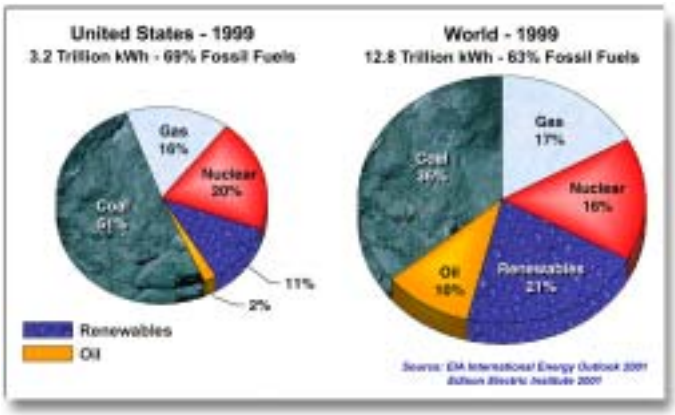
"DOE-EPRI Report 1000316, 12/2000"
is available on the web at
www.netl.doe.gov/products/power1/gasification/publications/EpriReport.PDF

COAL TECHNOLOGIES OFFER CO_2 CAPTURE BENEFITS

With potential implications surrounding global climate change and carbon dioxide (CO_2), technology and policy options are being investigated for mitigating carbon dioxide emissions. Electric power generation represents one of the largest CO_2 contributors in the United States. Electricity consumption is expected to grow and fossil fuels will continue to be the dominant fuel source. Therefore, fossil fuel based power generation can be expected to provide an even greater CO_2 contribution into the future. Coal fuels more than half of this electric power generation capacity and typically produces the cheapest electricity among all fuel sources. Compared to other fossil fuels, coal suffers inherent CO_2 disadvantages relative to its combustion characteristics and the fact that most coal power plants are old and inefficient. These CO_2 disadvantages present a major challenge to coal-based power generation. Fortunately for coal, off-the-shelf CO_2 capture technologies provide performance and cost benefits for minimizing carbon dioxide emissions relative to other fossil fuel sources.



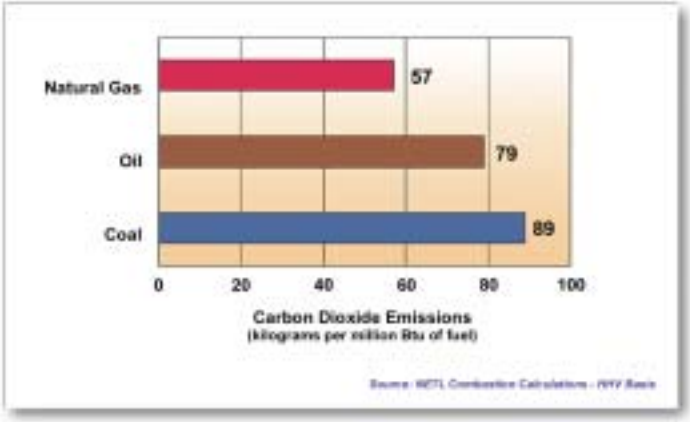
Electricity Use is Growing



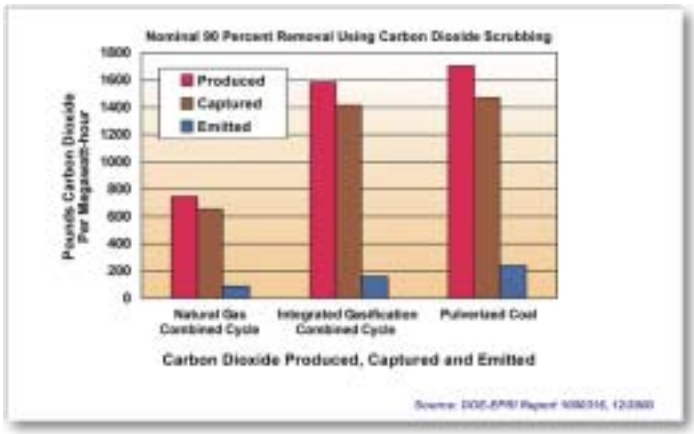
Fossil Fuels: Dominant Energy Source for Electricity

Coal Technologies Offer CO_2 Capture Benefits

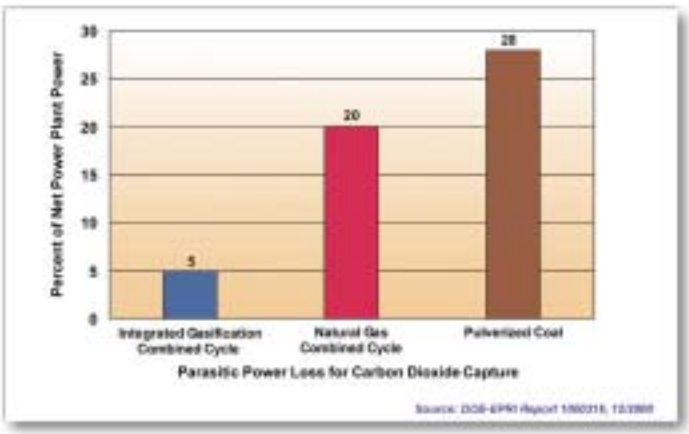
Coal & Electricity Are Major CO_2 Contributors



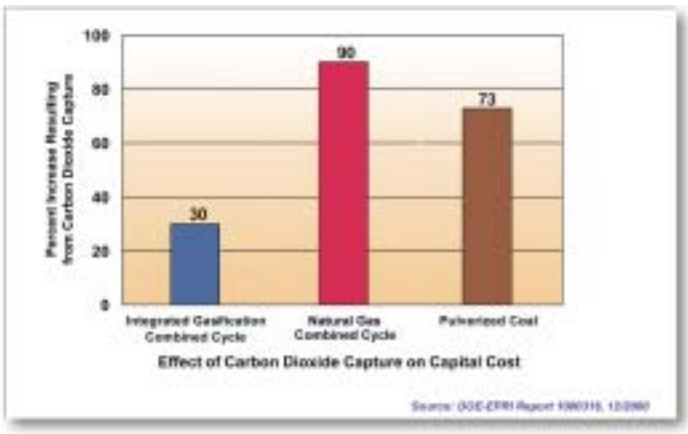
Fossil Fuel CO_2 Emissions



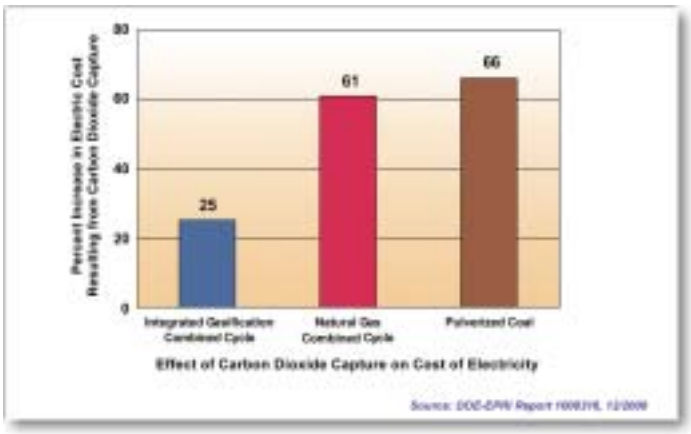
Substantial CO_2 Capture From Coal Power Plants



IGCC Minimizes Energy Penalty of CO_2 Capture



Coal Technologies Minimize Impact on Capital Cost



IGCC Minimizes Impact on Cost of Electricity