

COAL

the essential, secure, affordable, and environmentally compatible U.S. energy source

As a public advisory committee to the Secretary of Energy initially chartered in 1985, The National Coal Council has compiled 32 reports at the Secretary's request on numerous issues affecting coal and U.S. energy policy. The factual information in this paper, and the conclusions based thereon, are drawn from these studies and the documents used to compile them, all of which have been submitted to the Secretary of Energy.

Coal Fuels U.S. Economic Growth

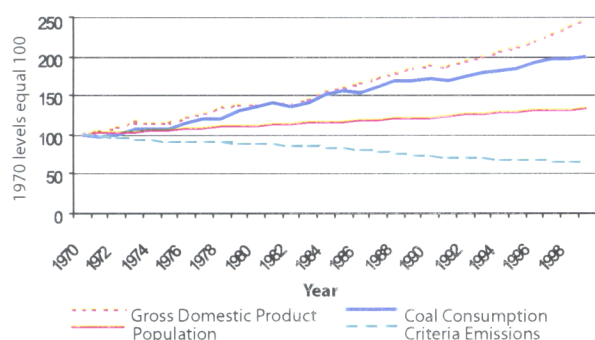
U.S. coal consumption has doubled since 1970, increasing from **520 million tons in 1970** to over **1 billion tons in 1999**, and the use of coal to generate electricity has increased nearly threefold in this period of time.

This increased coal use has helped the economy to more than double over the period, increasing 155 percent from \$3.54 trillion (1996 dollars) in 1970 to \$9.03 trillion (1996 dollars) in 1999.

Over the same period, U.S. population grew 33 percent, increasing from 205 million in 1970 to 273 million in 1999.

Nevertheless, over this period air emissions decreased more than 35 percent.

U.S. Coal, Emissions, Population, and Economy, 1970-1999



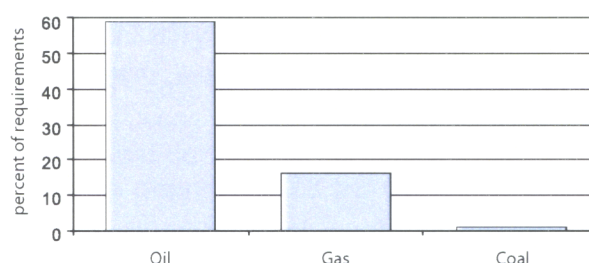
Given our economy's requirement for low cost, available electricity, increased coal

use will be necessary to support economic and population growth and is compatible with a clean environment.

Coal is a Secure U.S. Domestic Energy Source

Virtually all of the coal used in this country is produced in the U.S.

U.S. Energy Imports - 1999



The U.S. currently imports virtually no coal, but imports 59 percent of its oil and 16 percent of its natural gas. Plus, domestic extraction and production of these two fuels faces challenges far greater than coal.

The U.S. thus has control over this energy resource: It is not subject to embargo or cartel-driven price increases by international suppliers.

The U.S. is in no danger of running out of coal: U.S. coal reserves are estimated to last, at current consumption rates, for nearly 500 years.

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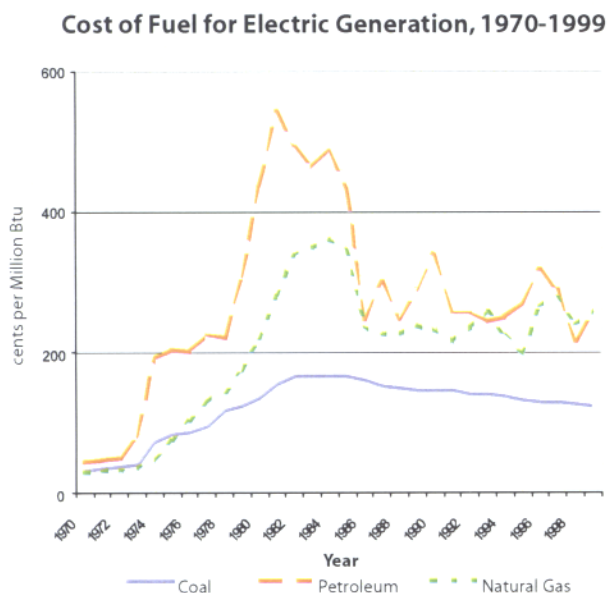
Coal reserves are found in 38 states, and electricity generated from coal is consumed in all 50 states.

As Coal Use Increases, Coal Prices are Decreasing, Unlike the Prices of Other Fossil Fuels

Over the past two decades, coal use has increased 40 percent, from **740 million tons to over 1 billion tons by 1999.**

Over this same period, coal prices have decreased **20 percent, from \$1.60 per MMBTU to \$1.22 cents per MMBTU.**

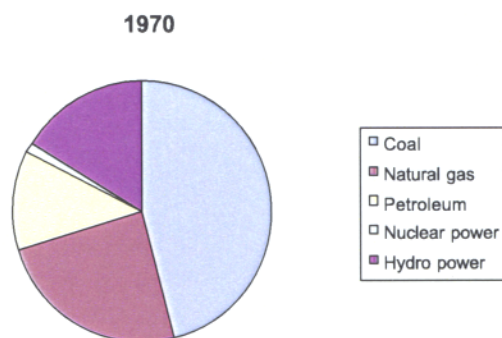
Recent events show an even more dramatic price differential between coal and other fossil fuels.



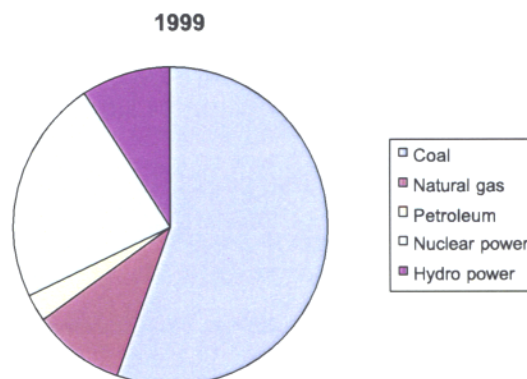
And, over the past three decades, the cost of coal for electric generation has been lower and less volatile than other fossil fuels used to generate electricity.

Coal is Essential for Electricity

In 1970 coal accounted for the net generation of 46 percent of the electricity at US electric utilities.



This contribution had increased to 55 percent by 1999.



Coal will remain the primary fuel source for electricity generation in the U.S. for the foreseeable future.

Electricity demand will increase exponentially as it is required to drive the economy of the future, including computers, the Internet, telecommunications, information, and related technologies.

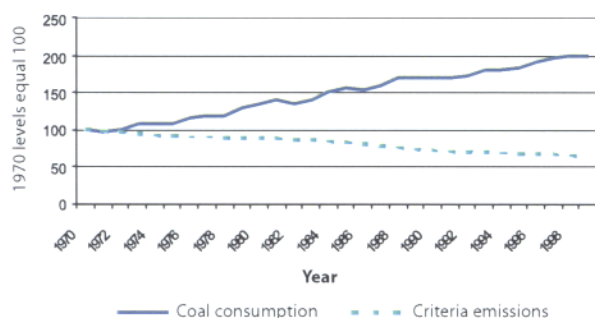
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Coal is Compatible With a Clean Environment

Even as coal use has increased rapidly, emissions in the U.S. have decreased significantly. Our air is cleaner.

Since the 1970 Clean Air Act, coal use in the U.S. has doubled.

U.S. Coal Consumption and Emissions, 1970-1999



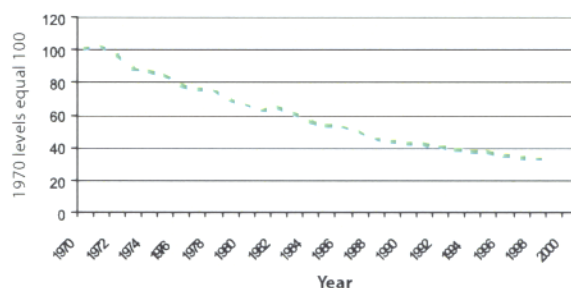
Nevertheless, over the same period of time, emissions, as measured by EPA for the six criteria pollutants (carbon monoxide, lead, nitrogen oxide, ozone, particulate matter, and sulfur dioxide) decreased more than 35 percent.

Coal Stays Committed to a Clean Environment

Over the past three decades, U.S. industry has invested over \$50 billion in cutting edge clean coal and environmental technologies.

This investment has paid off: Research and development efforts produced technology advances that continue to reduce the emissions produced per unit of coal consumed. Currently the rate of emissions is only one-third of what it was in 1970 - a 70 percent improvement in environmental efficiency.

Emissions Per Ton of Coal Use, 1970-1999

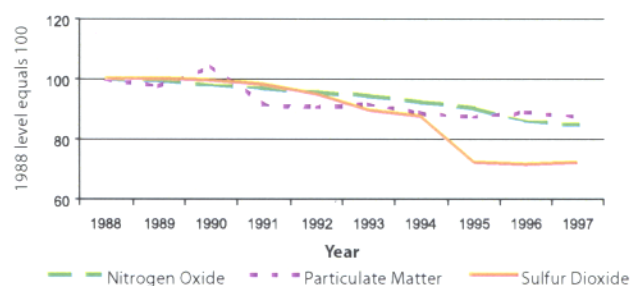


This commitment continues as coal research and development addresses future environmental challenges such as global climate change. Through a partnership with the U.S. Department of Energy, coal supports the "Vision 21" program to reduce emissions to near zero by 2020.

Specific Achievements in Reducing Emissions While Dramatically Increasing Coal Use

Over the last decade, sulfur dioxide emissions decreased **28 percent**.

U.S. Emissions Resulting from Coal, 1988-1997
(based on thousand short tons emitted per unit of consumption)



Nitrogen oxide emissions decreased **15 percent**.

Particulate matter emissions decreased **13 percent**.

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Coal is Essential to Produce the Electricity Required to Drive Future U.S. Economic Growth

The U.S. economy requires more electricity to grow. Recently, U.S. electricity requirements have increased over **four percent annually**, and are forecast to increase nearly 35 percent within 20 years.

Coal will be required to help fuel this growth.

The use of coal to generate electricity has nearly tripled since 1970.

The U.S. Energy Information Administration forecasts that coal will continue to be the major source of U.S. electricity generation at least through 2020.

Coal Supports Vision 21 Plant

The future for coal is bright, and it will play a key role in the U.S. Department of Energy's Vision 21 program.

This effort expects to lead to a nearly pollution-free energy plant by the next decade. Emerging technologies allow consideration of coal as a "carbon ore" which can be used as a raw material not only to produce energy, but also as a

source for valuable carbon-based products such as nanofibers, foams, and lightweight composites. Co-production of energy and carbon-based products can be achieved with almost zero environmental impact.



Artist's concept of Vision 21 pollution-free energy plant

Sources: U.S. Department of Commerce, Bureau of the Census and Bureau of Economic Analysis; U.S. Department of Energy, Energy Information Administration; and U.S. Environmental Protection Agency information as used in previous reports of The National Coal Council, 1985-2000.

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