

Highlights:

Annual Energy Review 1994

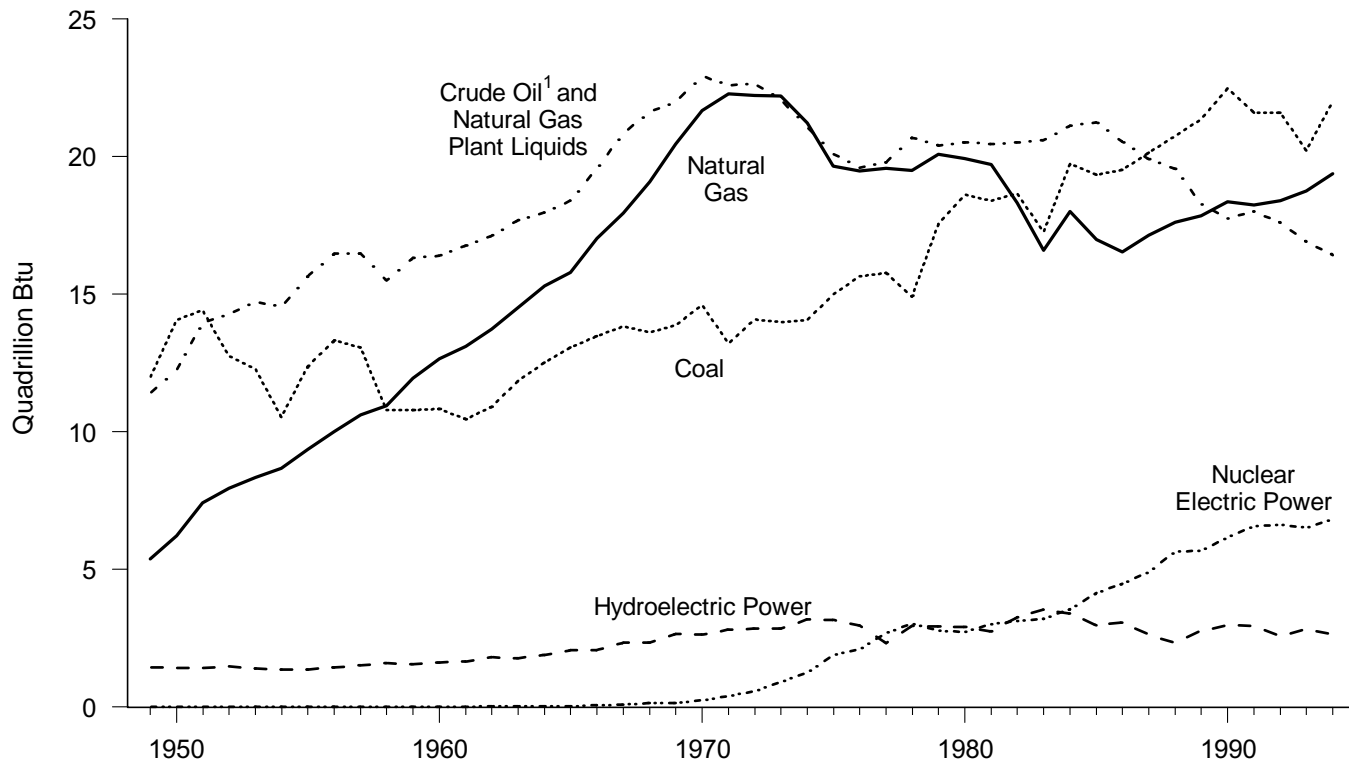
At the halfway mark of this century, coal was the leading source of energy produced in the United States. Now, as we approach the end of the 20th century, coal is still the leading source of energy produced in this country (Figure 1). Between those points of time, however, dramatic changes occurred in the composition of our Nation's energy production. For example, crude oil and natural gas plant liquids production overtook coal production in the early 1950s. That source was matched by natural gas for a few years in the mid-1970s, and then, in the early 1980s, coal regained its prominence. After 1985, crude oil production suffered a nearly steady annual decline.

While the fossil fuels moved up and down in their individual contributions to the Nation's energy production

total, hydroelectric power was a smaller but steady and dependable contributor, and a new source of energy—nuclear electric power—grew from making a minuscule contribution in the 1960s to playing a significant role in the Nation's energy capacity.

These and many other observations about the history of energy can be drawn from the data available in the Energy Information Administration's *Annual Energy Review 1994 (AER)*. The *AER*, a companion report to the *Monthly Energy Review (MER)*, is useful in analyzing trends and milestones in energy production, consumption, trade, storage, and pricing from a long-term perspective.

Figure 1. Major Sources of U.S. Energy Production, 1949-1994



¹Includes lease condensate.

Source: Energy Information Administration, *Annual Energy Review 1994*, DOE/EIA-0384(94) (Washington, DC, July 1995), Table 1.2.

Energy consumption data by end-use sector, parallel to those in *MER* Section 2, are presented in the *AER* as annual data series from 1949 through 1994. Analysis of extended time series reveals changing patterns in sector usage of energy (Figure 2). For example, the industrial sector's use of energy showed the greatest fluctuation among the major economic sectors, occasionally experiencing sharp changes in direction. The residential and commercial sector and the transportation sector, on the other hand, displayed much smoother courses, with only mild temporary downturns in their overall upward patterns.

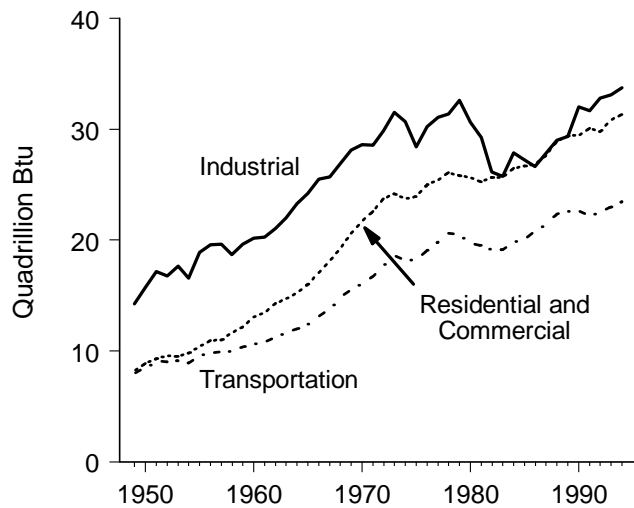
Within the sectors, the use of energy sources changed dramatically over time. For example, in the residential and commercial sector, electricity use grew in every year except two (1974

and 1992) over the 45-year period, and the energy losses associated with producing and delivering electricity soared. Natural gas consumption in the same sector surpassed petroleum consumption in 1956 and led thereafter. Meanwhile, petroleum's usage began tapering off in the late 1970s, and consumption of coal—once the leading fuel in the sector—fell to virtually nothing.

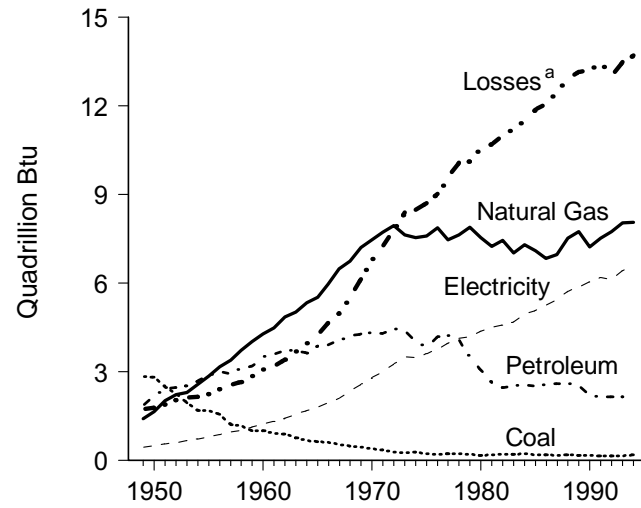
While electricity and its associated losses grew steadily in the industrial sector also, the use of coal shrank. Natural gas and petroleum use in the industrial sector rose steadily and in tandem until the oil embargo in 1973, after which the use of both fuels moderated. The transportation sector's reliance on petroleum was nearly total for the entire period reported.

Figure 2. Energy Consumption by End-Use Sector, 1949-1994

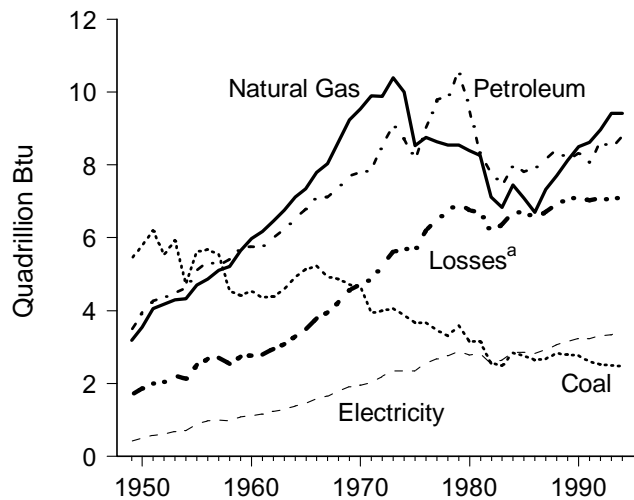
By End-Use Sector



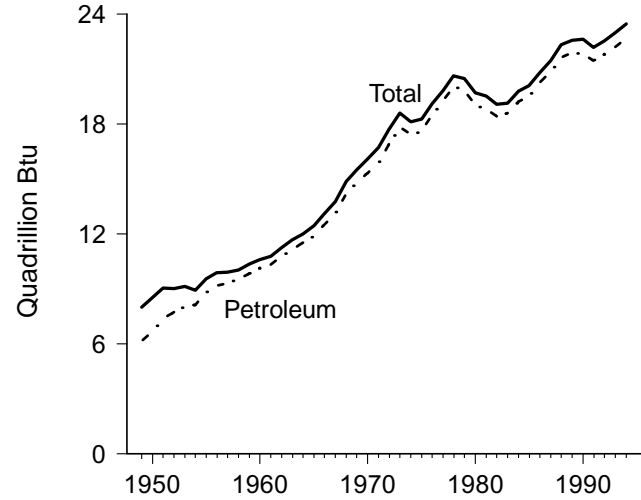
Residential and Commercial Sector



Industrial Sector



Transportation Sector



^aElectrical system energy losses associated with the generation, transmission, and distribution of energy in the form of electricity.
 Note: Because vertical scales differ, graphs should not be compared.
 Source: Energy Information Administration, *Annual Energy Review 1994*, DOE/EIA-0384(94) (Washington, DC, July 1995), Table 2.1.

AER data also reveal shifts in patterns within specific fuel types. For example, consumption of the leading petroleum products by sector is reported (Figure 3). In the residential and commercial sector, the use of distillate fuel oil generally expanded until the late 1970s, when a steep drop in its consumption occurred.

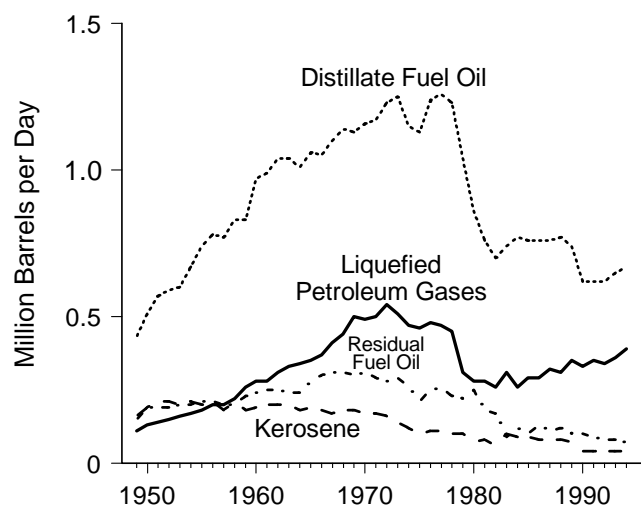
In the industrial sector, the use of liquefied petroleum gases (LPG) recorded a smooth, steady growth pattern through the mid-1970s; from that point on, the general overall upward growth continued but, within that larger pattern, notable

year-to-year ups and downs occurred. In 1968, LPG usage surpassed that of any other product in the sector and, by the early 1990s, far exceeded the others.

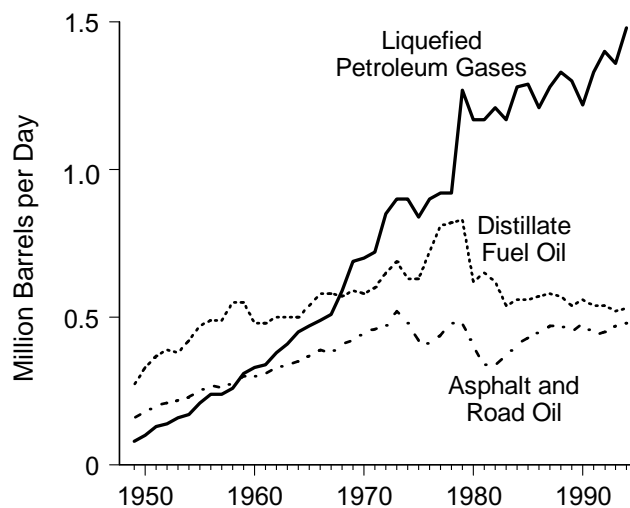
In the transportation sector, motor gasoline was overwhelmingly the fuel of choice. Its usage pattern is one of remarkably steady expansion, with only two temporary setbacks after the price shocks of the 1970s. In the electric utility sector, there was the unusual occurrence of a fuel's usage—heavy oil's—growing suddenly and then falling precipitously, all within a 20-year span.

Figure 3. Petroleum Products Supplied by Product by Sector, 1949-1994

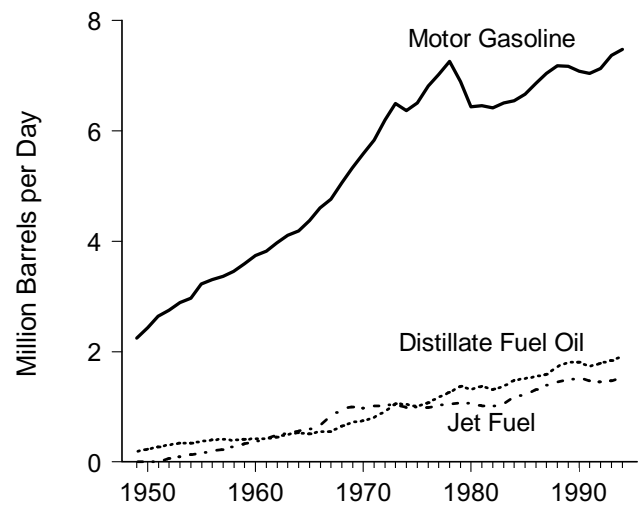
Residential and Commercial Sector, Selected Products



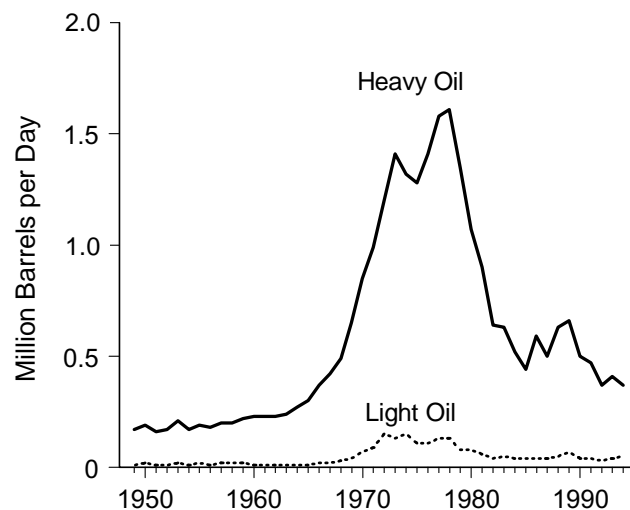
Industrial Sector, Selected Products



Transportation Sector, Selected Products



Electric Utilities, Selected Products



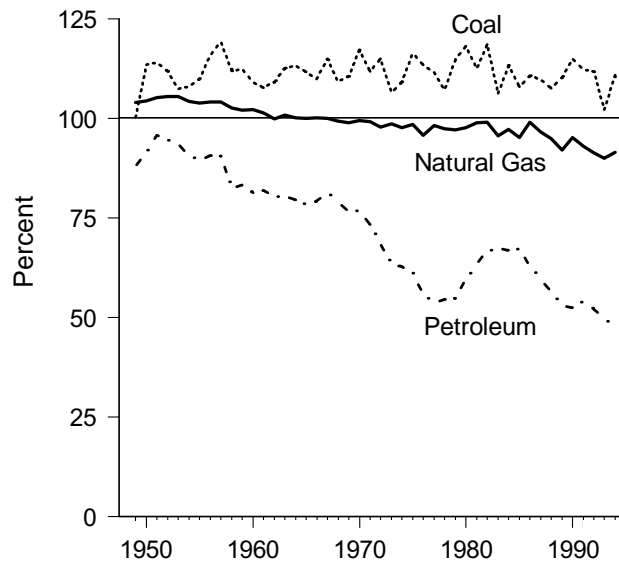
Note: Because vertical scales differ, graphs should not be compared.
 Source: Energy Information Administration, *Annual Energy Review 1994*, DOE/EIA-0384(94) (Washington, DC, July 1995), Table 5.12b.

Each of the three major fossil fuels in the United States recorded distinctly different production-to-consumption ratios over the period covered in the *AER* (Figure 4). For example, after 1949, U.S. coal production always exceeded the Nation's consumption needs, and large quantities of coal were exported to other countries. The pattern for natural gas reversed in the 1960s, changing from production levels in excess of consumption to just the opposite. Petroleum, the third and most compelling case, moved from near balance of domestic production and consumption around 1950, to levels of consumption well in excess of domestic production by the mid-1970s and thereafter.

Underlying patterns within energy production are revealed in the long historical time series published in the *AER*. For example, the transition from underground to surface-mined coal (Figure 5) and the sharp increase in western coal production (Figure 6) are examples of the changing pictures that emerge from one decade to another.

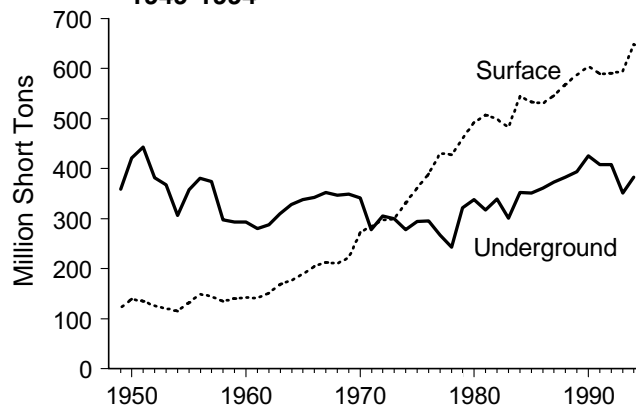
In addition to extending most of the *MER* historical time series, the *AER* provides other data that are useful to energy analysts, such as a wide range of international data series, financial and environmental indicators, renewable energy data, and selected series of non-electric utility data.

Figure 4. Production as Share of Consumption by Type of Fossil Fuel, 1949-1994



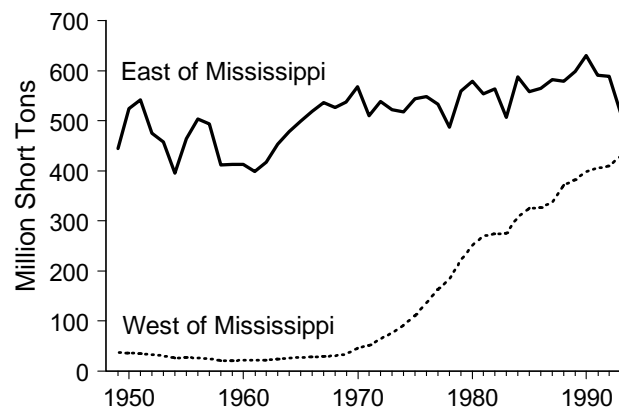
Source: Energy Information Administration, *Annual Energy Review 1994*, DOE/EIA-0384(94) (Washington, DC, July 1995), Table 7.1.

Figure 5. Coal Production by Mining Method, 1949-1994



Source: Energy Information Administration, *Annual Energy Review 1994*, DOE/EIA-0384(94) (Washington, DC, July 1995), Table 7.2.

Figure 6. Coal Production by Location, 1949-1994



Source: Energy Information Administration, *Annual Energy Review 1994*, DOE/EIA-0384(94) (Washington, DC, July 1995), Table 7.2.

EIA Contact: Samuel E. Brown
Telephone: 202-586-5103
Internet E-Mail: sbrown@eia.doe.gov
Fax: 202-586-0018

The *Annual Energy Review 1994* may be obtained by using the order form in the back of this publication. Most of the data that are published in the report are also available on personal computer diskettes. For more information about the 2-diskette set, call the Office of Scientific and Technical Information at 615-576-8401 or the National Technical Information Service at 703-487-4650.