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K. E. Seiferlein

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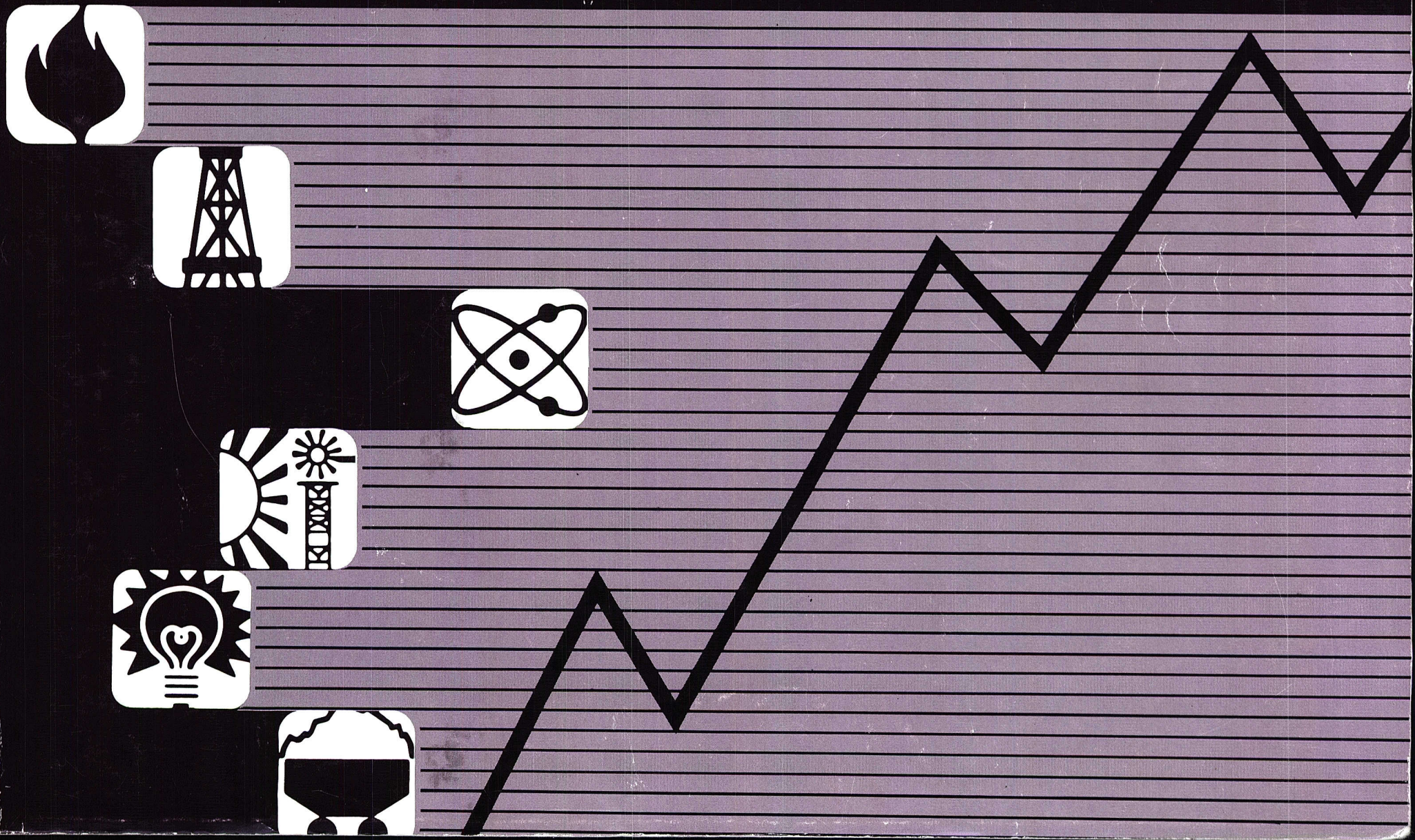
ANNUAL ENERGY REVIEW 1985



Annual Energy Review

The *Annual Energy Review* presents historical data on production, consumption, stocks, imports, exports, and prices of the principal energy commodities in the United States. Also included are data on international production of crude oil, consumption of petroleum products, petroleum stocks, and production of electricity from nuclear-powered facilities.

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Overview

Energy production in the United States in 1985 totaled 64.7 quadrillion British thermal units (Btu), 1.7 percent below the record level of 1984. Coal and natural gas accounted for all of the decline. Coal production fell 1.7 percent to 19.4 quadrillion Btu, and natural gas production was down 5.8 percent to 16.9 quadrillion Btu. In contrast, nuclear power generation rose 17 percent. Crude oil production (including natural gas plant liquids) also increased, although by only 0.1 percent, to 21.1 quadrillion Btu as higher production in Alaska more than compensated for production declines in the Lower-48 States (Tables 2 and 46).

U.S. energy consumption in 1985 remained virtually the same as it had been the previous year, declining only 0.4 percent to 73.8 quadrillion Btu (Table 3). U.S. economic growth, as measured by the increase in real gross national product (GNP), slowed to 2.3 percent in 1985, but, because total energy consumption remained essentially static, total energy consumption per dollar of GNP fell 2.5 percent from the 1984 level (Table 18).

Petroleum and coal continued to account for most of the U.S. energy trade. Petroleum net imports fell 1.0 quadrillion Btu (10.1 percent) and coal net exports rose 0.3 quadrillion Btu (12.8 percent). In combination, those changes resulted in a dramatic decline in the 1985 level of energy net imports when compared with the 1984 level (Table 5). Petroleum imports averaged 5 million barrels per day. About one-third of this total came from Canada and Mexico. Imports from Arab members of the Organization of Petroleum Exporting Countries (OPEC) declined to 0.5 million barrels per day in comparison to 0.8 in 1984 and more than 3 million barrels per day in the late 1970s. (Table 48).

Domestic Developments

Energy Production. In 1985, a large increase in nuclear power production was offset by larger decreases in the generation of hydroelectric power and in the production of natural gas and coal. Nuclear power production increased by 0.6 quadrillion Btu (17.1 percent) while hydroelectricity generation fell 0.4 quadrillion Btu (12.2 percent), natural gas production fell 1.0 quadrillion Btu (5.8 percent), and coal production fell 0.3 quadrillion Btu (1.7 percent). Petroleum production was at its highest level since 1973 (Table 2).

Energy Consumption. Consumption of petroleum and natural gas, which together meet nearly two-thirds of total U.S. energy demand, declined 0.9 quadrillion Btu (1.9 percent) in 1985. The decline was due to reduced demand in the industrial and utility sectors. Electricity continued to rise in relative importance in meeting energy demand. As a consequence, coal and nuclear-fueled generation increased 1.0 quadrillion Btu (5.0 percent). Nuclear-based generation reached a record level of 4.1 quadrillion Btu (Table 3). Per capita energy consumption, which increased in 1984 for the first time since 1978, fell again in 1985 to 309 million Btu, considerably below the 1978 peak level of 352 million Btu (Table 17).

Exploration and Development. Uncertainty in oil and gas markets was reflected in an 18.5-percent decline in the number of rotary rigs in operation in 1985 compared with the number in 1984. The 1,980 rigs in operation in 1985 were only about one-half the number in operation, on average, in 1981, a record year (Table 36). The 77,100 wells completed in 1985 were 8.1 percent fewer than the number of completions the previous year. The 71.8 percent success rate of drilling activities, however, was the highest recorded since World War II (Table 38).

Crude Oil Production. In 1985, U.S. production of crude oil (including lease condensate) increased to 8.9 million barrels per day as a result of rising output in Alaska. In the Lower-48 States, production declined in both onshore and offshore areas, but the biggest declines were onshore (Table 46).

Petroleum Refining. In 1985, U.S. refinery utilization (a measure of how much petroleum was refined compared to how much operable capacity was available) increased to 78 percent, the highest level since 1979. Total input to distillation units averaged 12.2 million barrels per day in 1985, virtually unchanged from 1984 (Table 53). The gain in refinery utilization, therefore, was primarily due to capacity shutdowns. Operable capacity fell to 15.7 million barrels per day on January 1, 1985, compared with 16.1 million barrels per day on January 1, 1984.

Petroleum Imports. The United States decreased its dependence on foreign sources of petroleum during 1985. Net petroleum imports from OPEC countries in 1985 were equal to only 12 percent of total U.S. petroleum consumption, compared with 34 percent in 1977 (Table 51).

Petroleum Consumption. The 15.7-million- barrels-per-day level of consumption remained virtually unchanged from the 1984 level. Although petroleum consumption increased in the residential and commercial sector and in the transportation sector, declines in consumption in the industrial and electric utilities sectors offset the increases (Table 56). Consumption of all major petroleum products increased except for residual fuel oil, consumption of which declined for the eighth consecutive year (Table 55). The decline in residual fuel oil use alone offset increases in the consumption of all other products.

Natural Gas. Natural gas consumption decreased in 1985, after having increased in 1984. The 17.2 trillion cubic feet of natural gas consumed in 1985 was 4 percent below the 1984 level (Table 66). Declines in demand occurred in all end use markets. Though delivered price data for 1985 are not yet available, data for 1984 indicate a marked change in natural gas price trends. The average wellhead price fell 7 percent in 1985 to $2.48 per thousand cubic feet (Table 70). The prices of natural gas delivered to residences in 1984 averaged $6.12 per thousand cubic feet, only $0.06-per-thousand-cubic-foot higher than 1983 prices (Table 71). Increases in the two prior years averaged nearly $ .90.

Coal. Coal production fell to 886 million short tons in 1985, down from the record output of 896 million short tons in 1984. All of the decline occurred in eastern producing regions. Production of coal west of the Mississippi River continued to represent a growing share of total production, accounting for 36 percent in 1985, up from 30 percent in 1980. During 1985, coal consumption increased 3.4 percent to 819 million short tons, as coal burned by electric utilities increased 4.4 percent. Consumption of coal by the industrial sector decreased by 0.5 percent (Table 74).

Electricity. Electricity generation, which increased each year except 1982 in the post-World War II period, increased in 1985 to a record of 2.47 trillion kilowatthours. Electricity generation from petroleum, natural gas, and hydroelectric power declined, whereas generation from coal, nuclear power, and geothermal energy increased, each to record levels (Table 81). Electricity sales to every major end-use sector except the industrial sector increased in 1985. In the industrial sector, sales declined 1.7 percent from the 1984 level (Table 85).

Prices. Of the energy prices listed below, only the price of residential electricity increased in 1985.

- Crude oil wellhead prices averaged $24.08 per barrel, 7 percent below the 1984 average (Table 60).
- Refiner acquisition cost for imported crude oil averaged $27.04 per barrel, 6 percent below the 1984 average (Table 62).
- Natural gas wellhead prices averaged $2.48 per thousand cubic feet, 7 percent below the 1984 average (Table 70).
- Bituminous coal and lignite prices, free on board at the mines, averaged $25 per short ton, 2 percent below the 1984 average (Table 79).
- Prices at service stations for leaded regular motor gasoline (which accounted for almost half of total motor gasoline consumption in 1985) averaged $1.12 per gallon (including taxes) in 1985, compared with an average of $1.13 in 1984 (Table 64).
- Residential heating oil prices averaged $1.05 per gallon, down 3.5 percent from the 1984 average (Table 64).
- Residential electricity prices averaged 7.79 cents per kilowatthour, 3 percent above the 1984 average (Table 89).

International Developments

Crude Oil Production. International crude oil markets continued to display weakness, and world crude oil production decreased to 53.3 million barrels per day in 1985. That level was slightly below the 54.1-million-barrels-per-day level of 1984 and 15 percent below the record of 62.5 million barrels per day established in 1979. OPEC absorbed a 1.5 million barrels per day decline in production while non-OPEC production rose. OPEC's share of world crude oil production fell to 30 percent, down from the all-time high of nearly 56 percent recorded in 1973 (Table 103). Saudi Arabian production accounted for most of the decline in recent years, falling from a peak of 9.9 million barrels per day in 1980 to 3.4 million barrels per day in 1985. In 1984, Saudi output equalled 4.7 million barrels per day.

Crude Oil Prices. The official prices of most major foreign crude oils declined in 1985, continuing a downward trend begun in 1982. The official price for Saudi Arabian Light, the "marker" crude, was $28 per barrel on January 1, 1986, $1 lower than the price 1 year earlier (Table 113). Official prices for Mexico and North Sea Crude fell more than $2.00.

Section 1. Energy Supply and Disposition—Overview

Production. Based on preliminary data, energy production in the United States equalled 64.7 quadrillion Btu, down 1.7 percent from 1984. While total production has remained relatively stable in recent years, the composition of supply has changed significantly. Natural gas has declined in relative importance while coal and nuclear output has risen. Since 1980, domestic production of natural gas has declined by 3 quadrillion Btu, or 15.2 percent. In 1985, the decline was 5.8 percent. Though coal production also declined in 1985, for most recent years production has trended upward. The strongest gains in domestic production in recent years have involved nuclear power generation. Nuclear-based generation of electricity was the only major source of energy to record a significant increase in 1985.

In aggregate, the pattern of domestic energy production has shifted considerably since the first oil embargo. In 1972, nuclear-based generation of electricity and coal production together accounted for 23.5 percent of total U.S. production. In 1985, the nuclear and coal share was 36.4 percent. Petroleum (including natural gas plant liquids) and natural gas production declined from a 71.8 percent share of total U.S. production in 1972 to a 58.8-percent share in 1985 (Table 2). Reduced natural gas output accounts for most of the shift.

Consumption. Energy consumption in the United States totaled 73.8 quadrillion Btu during 1985, 0.4 percent below the 1984 level and 6.4 percent below the peak level of 78.9 quadrillion Btu consumed in 1979 (Table 3). During 1985, the United States consumed more coal and nuclear power and less of other major energy sources than in 1984. On a Btu basis, consumption of nuclear power increased 17.1 percent and consumption of coal increased 2.5 percent. Hydroelectricity, natural gas, and petroleum decreased 10.5 percent, 4.0 percent, and 0.6 percent, respectively.

Petroleum consumption in 1985 equaled 30.9 quadrillion Btu, 18.7 percent below the peak level of 38.0 quadrillion Btu consumed in 1978. Petroleum continued to account for the largest share of total energy consumption, 41.8 percent during 1985. The share held by natural gas was 24.1 percent, with coal consumption amounting to 23.7 percent of the total (Table 3).

Energy consumption by two of the three major end-use sectors increased during 1985. Energy consumption by the residential and commercial sector rose 1.3 percent and accounted for 36.3 percent of the total. Transportation sector consumption rose 0.6 percent and accounted for 27.1 percent of the total. In contrast, energy consumption by the industrial sector fell in 1985, down 2.7 percent from the year before. Nevertheless, the industrial sector's share of total energy consumption in 1985 was 36.6 percent, higher than the other two sectors (Table 4).

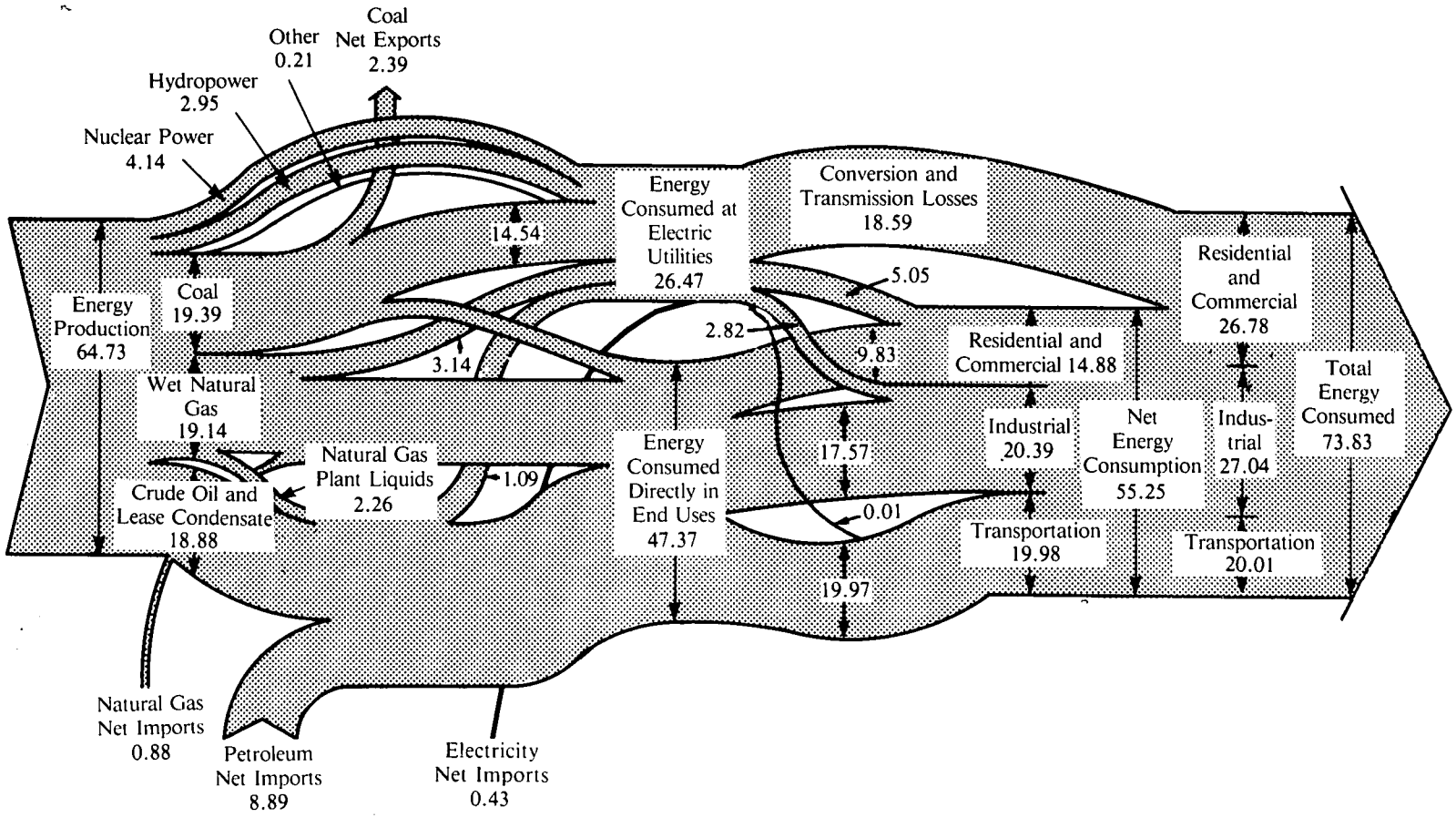
Consumption of energy by electric utilities for electricity generation increased in 1985 to 26.5 quadrillion Btu, up 1.9 percent. Of the total, only 7.9 quadrillion Btu (29.8 percent) were sold to consumers. The remaining 18.6 quadrillion Btu (70.2 percent) represented energy used to generate, transmit, and distribute the electricity (Table 83).

Trade. During 1985, the United States consumed 14 percent more energy than it produced. The difference was met primarily by energy imports. Total energy imports in 1985 were 12.0 quadrillion Btu, of which 88 percent was petroleum. The United States exported 4.2 quadrillion Btu of energy during 1985, of which 58 percent was coal. Net imports of energy decreased to 7.8 quadrillion Btu in 1985, down 1.2 quadrillion Btu from the year before and 10.2 quadrillion Btu below the level of net imports during the peak year of 1977 (Table 5).

Prices. Prices (as measured at the point nearest to production) of all major fossil fuels except anthracite declined in 1985. In current dollars per million Btu, the price of crude oil, at $4.15, remained the highest, despite falling from $4.46 in 1984. The price of natural gas fell from $2.40 in 1984 to $2.24 in 1985, and the price of bituminous coal and lignite declined from $1.16 to $1.14. The price of anthracite rose slightly, from $2.09 in 1984 to $2.10 in 1985. The composite price of the major fossil fuels was $2.50. Expressed in constant 1982 dollars, the composite price fell $0.21 to $2.24 in 1985 (Table 10).

The value of major fossil fuels produced in the United States during 1985 was $143 billion, in current dollars. The total value was comprised of petroleum at $78 billion, natural gas at $43 billion, and coal at $22 billion (Table 13).

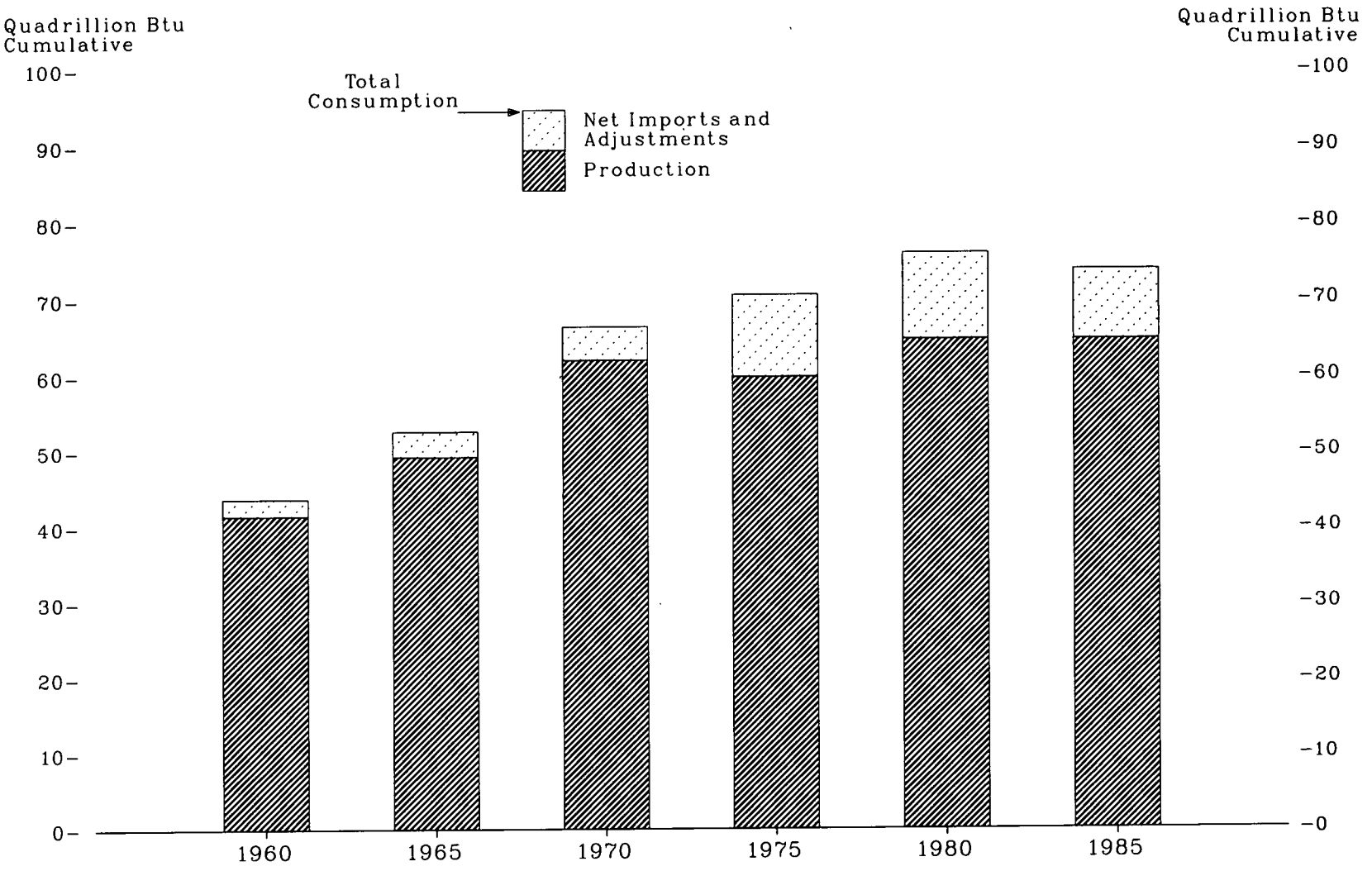
Diagram 1. Total Energy Flow, 1985
(Quadrillion Btu)



*Total Energy Consumption with conversion and transmission losses allocated to end-use sectors in proportion to the sectors' use of electricity.
Note: Sum of components does not equal total due to independent rounding; the use of preliminary conversion factors; and the exclusion of changes in stocks, miscellaneous supply and disposition, and unaccounted for quantities.

Sources: See Tables 2, 4, and 83.

Figure 1. Energy Supply and Disposition, 1960, 1965, 1970, 1975, 1980, and 1985



Source: See Table 1.

Table 1. Energy Supply and Disposition, 1960, 1965, 1970, 1973, and 1975-1985

(Quadrillion Btu)

Activity and Energy Source	1960	1965	1970	1973	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985 [1]
Production															
Crude Oil and Lease Condensate	14.93	16.52	20.40	19.49	17.73	17.26	17.45	18.43	18.10	18.25	18.15	18.31	18.39	18.85	18.88
Natural Gas Plant Liquids	1.46	1.88	2.51	2.57	2.37	2.33	2.33	2.25	2.29	2.25	2.31	2.19	2.18	2.27	2.26
Natural Gas [2]	12.66	15.78	21.67	22.19	19.64	19.48	19.57	19.49	20.08	19.91	19.70	18.25	16.53	17.93	16.89
Coal	10.82	13.06	14.61	13.99	14.99	15.65	15.76	14.91	17.54	18.60	18.38	18.64	17.25	19.72	19.39
Nuclear Electric Power	0.01	0.04	0.24	0.91	1.90	2.11	2.70	3.02	2.78	2.74	3.01	3.13	3.20	3.54	4.14
Hydroelectric Power	1.61	2.06	2.63	2.86	3.15	2.98	2.33	2.94	2.93	2.90	2.76	3.26	3.50	3.36	2.95
Other [3]	([4])	0.01	0.02	0.05	0.07	0.08	0.08	0.07	0.09	0.11	0.13	0.11	0.13	0.17	0.21
Total Production	41.49	49.34	62.07	62.06	59.86	59.89	60.22	61.10	63.80	64.76	64.42	63.89	61.19	65.85	64.73
Imports															
Crude Oil [5]	2.20	2.65	2.81	6.89	8.72	11.24	14.03	13.46	13.83	11.19	9.34	7.42	7.08	7.30	6.83
Petroleum Products [6]	1.80	2.75	4.66	6.58	4.23	4.43	4.73	4.36	4.11	3.46	3.30	3.36	3.57	4.13	3.72
Natural Gas	0.16	0.47	0.85	1.06	0.98	0.99	1.04	0.99	1.30	1.01	0.92	0.95	0.94	0.85	0.93
Other [7]	0.07	0.04	0.07	0.21	0.19	0.18	0.30	0.44	0.38	0.31	0.42	0.36	0.44	0.48	0.52
Total Imports	4.23	5.92	8.39	14.73	14.11	16.84	20.09	19.25	19.62	15.97	13.97	12.09	12.03	12.76	12.01
Exports															
Coal	1.02	1.38	1.94	1.43	1.76	1.60	1.44	1.08	1.75	2.42	2.94	2.79	2.04	2.15	2.44
Crude Oil and Petroleum Products	0.43	0.39	0.55	0.49	0.44	0.47	0.51	0.77	1.00	1.16	1.26	1.73	1.57	1.54	1.66
Other [8]	0.03	0.09	0.18	0.14	0.16	0.12	0.12	0.09	0.11	0.14	0.12	0.11	0.11	0.11	0.12
Total Exports	1.48	1.85	2.66	2.05	2.36	2.19	2.07	1.93	2.87	3.72	4.33	4.63	3.72	3.80	4.22
Adjustments [9]	-0.43	-0.72	-1.37	-0.46	-1.07	-0.18	-1.95	-0.34	-1.65	-1.05	-0.08	-0.51	1.00	-0.70	1.32
Consumption															
Petroleum Products [10]	19.92	23.25	29.52	34.84	32.73	35.17	37.12	37.97	37.12	34.20	31.93	30.23	30.05	31.05	30.85
Natural Gas	12.39	15.77	21.79	22.51	19.95	20.35	19.93	20.00	20.67	20.39	19.93	18.51	17.36	18.51	17.76
Coal	9.84	11.58	12.26	12.97	12.66	13.58	13.92	13.77	15.04	15.42	15.91	15.32	15.90	17.07	17.50
Nuclear Power	0.01	0.04	0.24	0.91	1.90	2.11	2.70	3.02	2.78	2.74	3.01	3.13	3.20	3.54	4.14
Hydroelectric Power [11]	1.66	2.06	2.65	3.01	3.22	3.07	2.51	3.14	3.14	3.12	3.11	3.56	3.87	3.77	3.38
Other [12]	([4])	-0.01	-0.04	0.04	0.09	0.08	0.10	0.19	0.15	0.08	0.11	0.09	0.12	0.16	0.20
Total Consumption	43.80	52.68	66.43	74.28	70.55	74.36	76.29	78.09	78.90	75.96	73.99	70.84	70.50	74.11	73.83

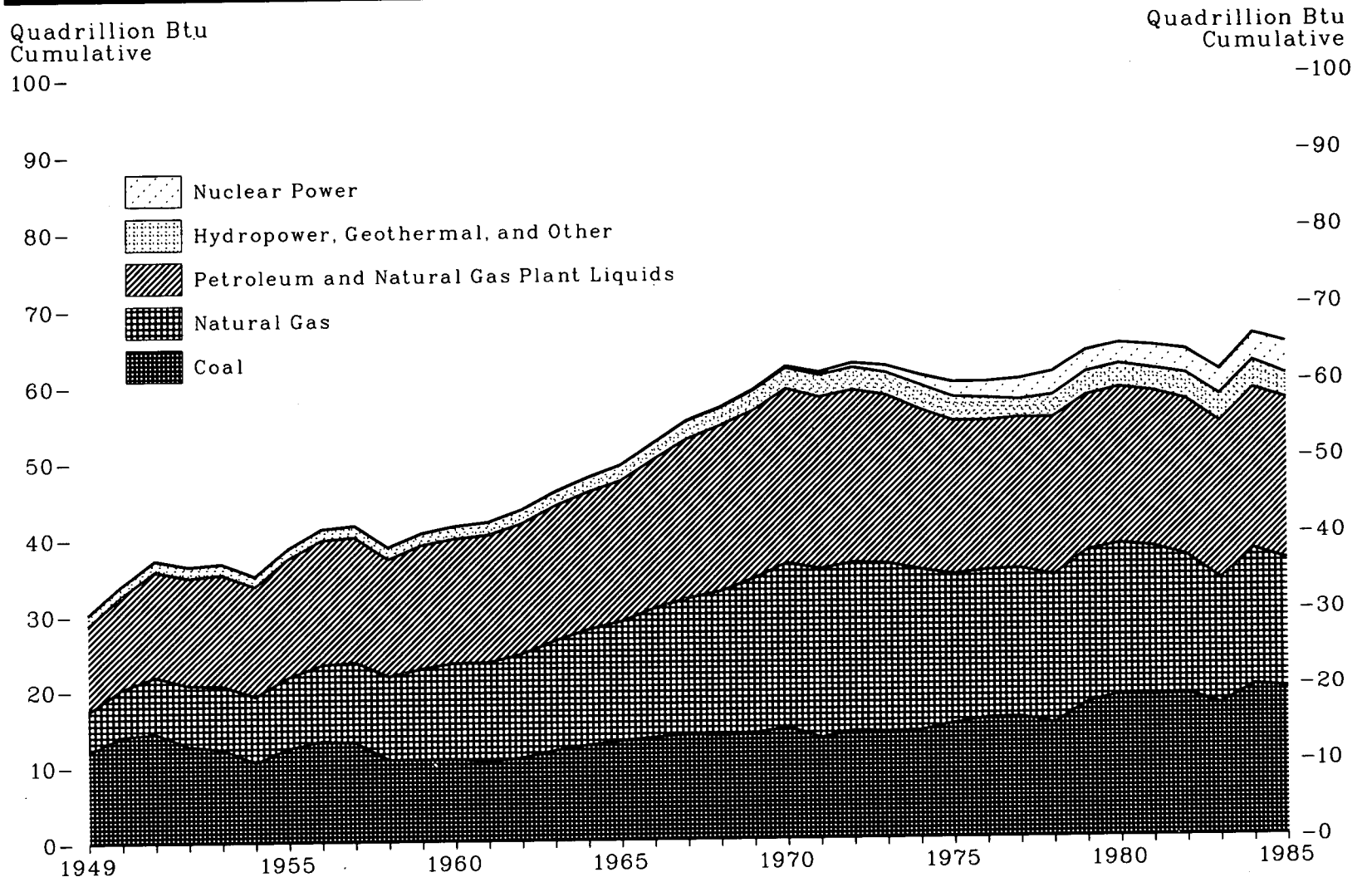
[1] Preliminary.
[2] Dry natural gas.
[3] Includes electricity produced from geothermal, wood, waste, wind, photovoltaic, and solar thermal sources connected to electric utility distribution systems (see Note).
[4] Less than 0.005 quadrillion Btu.
[5] Includes imports of crude oil for the Strategic Petroleum Reserve, which began in 1977.
[6] Includes imports of unfinished oils and natural gas plant liquids.
[7] Includes coal, coal coke, and hydroelectric power.
[8] Includes natural gas, coal coke, and hydroelectric power.
[9] A balancing item. Includes stock changes, losses, gains, miscellaneous blending components, unaccounted for supply, and anthracite shipped overseas to U.S. Armed Forces.
[10] Petroleum products supplied includes natural gas plant liquids and crude oil burned as fuel.
[11] Includes industrial generation of hydroelectric power and net electricity imports.
[12] Includes electricity produced from geothermal, wood, waste, wind, photovoltaic, and solar thermal sources connected to electric utility distribution systems (see Note) and net imports of coal coke.

Note: Data do not include the consumption of wood energy (other than that consumed by the electric utility industry) which amounted to an estimated 2.6 quadrillion Btu in 1984 (see Table 93). This table also does not include small quantities of other energy forms for which consistent historical data are not available, such as geothermal, waste, wind, photovoltaic, or solar thermal energy sources except that consumed by electric utilities.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources for Tables 45, 66, 72, 77, 80, 82, and EIA estimates for industrial hydroelectric power, and conversion factors in the Units of Measure and Conversion Factors section.

Figure 2. Production of Energy by Source, 1949-1985



Source: See Table 2.

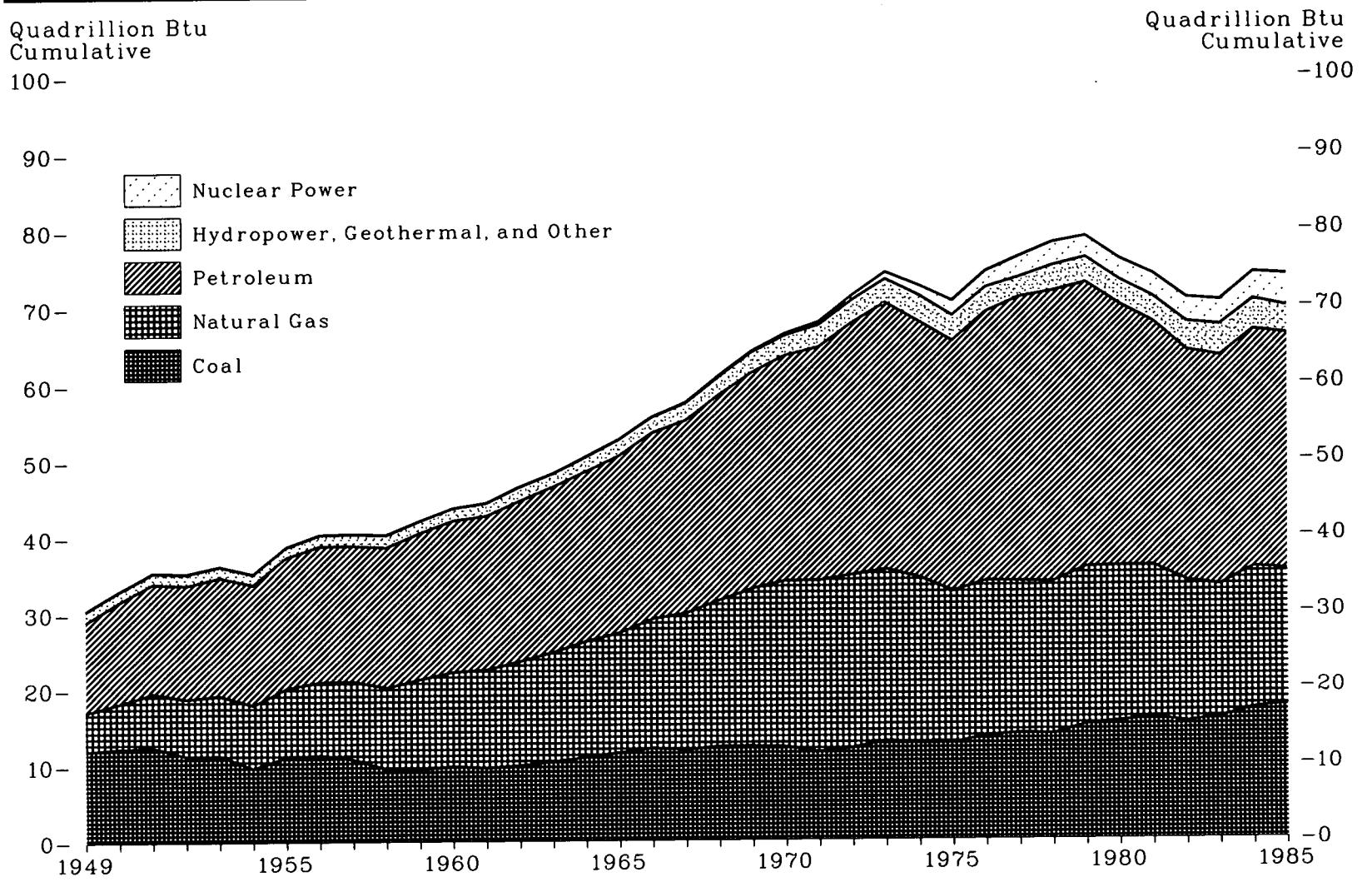
Table 2. Production of Energy by Source, 1949-1985

(Quadrillion Btu, Except as Noted)

Year	Coal	Natural Gas [1]	Crude Oil [2]	Natural Gas Plant Liquids	Hydroelectric Power [3]	Nuclear Electric Power [4]	Geothermal [4]	Other [5]	Total	Percent Change [6]
1949	11.97	5.38	10.68	0.71	1.42	0	0	(7)	30.18	—
1950	14.06	6.23	11.45	0.82	1.42	0	0	(7)	33.98	12.6
1951	14.42	7.42	13.04	0.92	1.42	0	0	(7)	37.22	9.5
1952	12.73	7.96	13.28	1.00	1.47	0	0	(7)	36.45	-2.1
1953	12.28	8.34	13.67	1.06	1.41	0	0	(7)	36.77	0.9
1954	10.54	8.68	13.43	1.11	1.36	0	0	(7)	35.13	-4.5
1955	12.37	9.34	14.41	1.24	1.36	0	0	(7)	38.73	10.2
1956	13.31	10.00	15.18	1.28	1.43	0	0	(7)	41.21	6.4
1957	13.06	10.61	15.18	1.29	1.52	0	0	(7)	41.65	1.1
1958	10.78	10.94	14.20	1.29	1.59	(7)	0	(7)	38.81	-6.8
1959	10.78	11.95	14.93	1.38	1.55	(7)	0	(7)	40.60	4.6
1960	10.82	12.66	14.93	1.46	1.61	0.01	0	(7)	41.49	2.2
1961	10.45	13.10	15.21	1.55	1.66	0.02	(7)	(7)	41.99	1.2
1962	10.90	13.72	15.52	1.59	1.82	0.03	(7)	(7)	43.58	3.8
1963	11.85	14.51	15.97	1.71	1.77	0.04	(7)	(7)	45.85	5.2
1964	12.52	15.30	16.16	1.80	1.89	0.04	(7)	(7)	47.72	4.1
1965	13.06	15.78	16.52	1.88	2.06	0.04	(7)	(7)	49.34	3.4
1966	13.47	17.01	17.56	2.00	2.06	0.06	(7)	(7)	52.17	5.7
1967	13.83	17.94	18.65	2.18	2.35	0.09	0.01	(7)	55.04	5.5
1968	13.61	19.07	19.31	2.32	2.35	0.14	0.01	(7)	56.81	3.2
1969	13.86	20.45	19.56	2.42	2.65	0.15	0.01	(7)	59.10	4.0
1970	14.61	21.67	20.40	2.51	2.63	0.24	0.01	(7)	62.07	5.0
1971	13.19	22.28	20.03	2.54	2.82	0.41	0.01	(7)	61.29	-1.3
1972	14.09	22.21	20.04	2.60	2.86	0.58	0.03	(7)	62.42	1.8
1973	13.99	22.19	19.49	2.57	2.86	0.91	0.04	(7)	62.06	-0.6
1974	14.07	21.21	18.57	2.47	3.18	1.27	0.05	(7)	60.84	-2.0
1975	14.99	19.64	17.73	2.37	3.15	1.90	0.07	(7)	59.86	-1.6
1976	15.65	19.48	17.26	2.33	2.98	2.11	0.08	(7)	59.89	0.1
1977	15.76	19.57	17.45	2.33	2.33	2.70	0.08	0.01	60.22	0.5
1978	14.91	19.49	18.43	2.25	2.94	3.02	0.06	(7)	61.10	1.5
1979	17.54	20.08	18.10	2.29	2.93	2.78	0.08	0.01	63.80	4.4
1980	18.60	19.91	18.25	2.25	2.90	2.74	0.11	(7)	64.76	1.5
1981	18.38	19.70	18.15	2.31	2.76	3.01	0.12	(7)	64.42	-0.5
1982	18.64	18.25	18.31	2.19	3.26	3.13	0.10	(7)	63.89	-0.8
1983	17.25	16.53	18.39	2.18	3.50	3.20	0.13	(7)	61.19	-4.2
1984	19.72	17.93	18.85	2.27	3.36	3.54	0.16	0.01	65.85	7.6
1985[8]	19.39	16.89	18.88	2.26	2.95	4.14	0.20	0.01	64.73	-1.7

[1] Dry natural gas.
[2] Includes lease condensate.
[3] Electric utility and industrial generation of hydroelectric power, see Explanatory Note 1.
[4] Generated by electric utilities, see Explanatory Note 1.
[5] Includes electricity produced from wood, waste, wind, photovoltaic, and solar thermal sources connected to electric utility distribution systems. Converted to Btu by applying national average heat rates for fossil fuel steam electric plants. Data do not include the consumption of wood energy (other than that consumed by the electric utility industry) which amounted to an estimated 2.6 quadrillion Btu in 1984 (see Table 93). This table also does not include small quantities of energy forms for which consistent historical data are not available, such as geothermal, waste, wind, photovoltaic, or solar thermal energy sources except that consumed by electric utilities.
[6] Percent change from previous year calculated from data prior to rounding.
[7] Less than 0.005 quadrillion Btu.
[8] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Sources: See sources for Tables 45, 66, 73, 82, and EIA estimates for industrial hydroelectric power, and conversion factors in the Units of Measure and Conversion Factors section.

Figure 3. Consumption of Energy by Source, 1949-1985



Source: See Table 3.

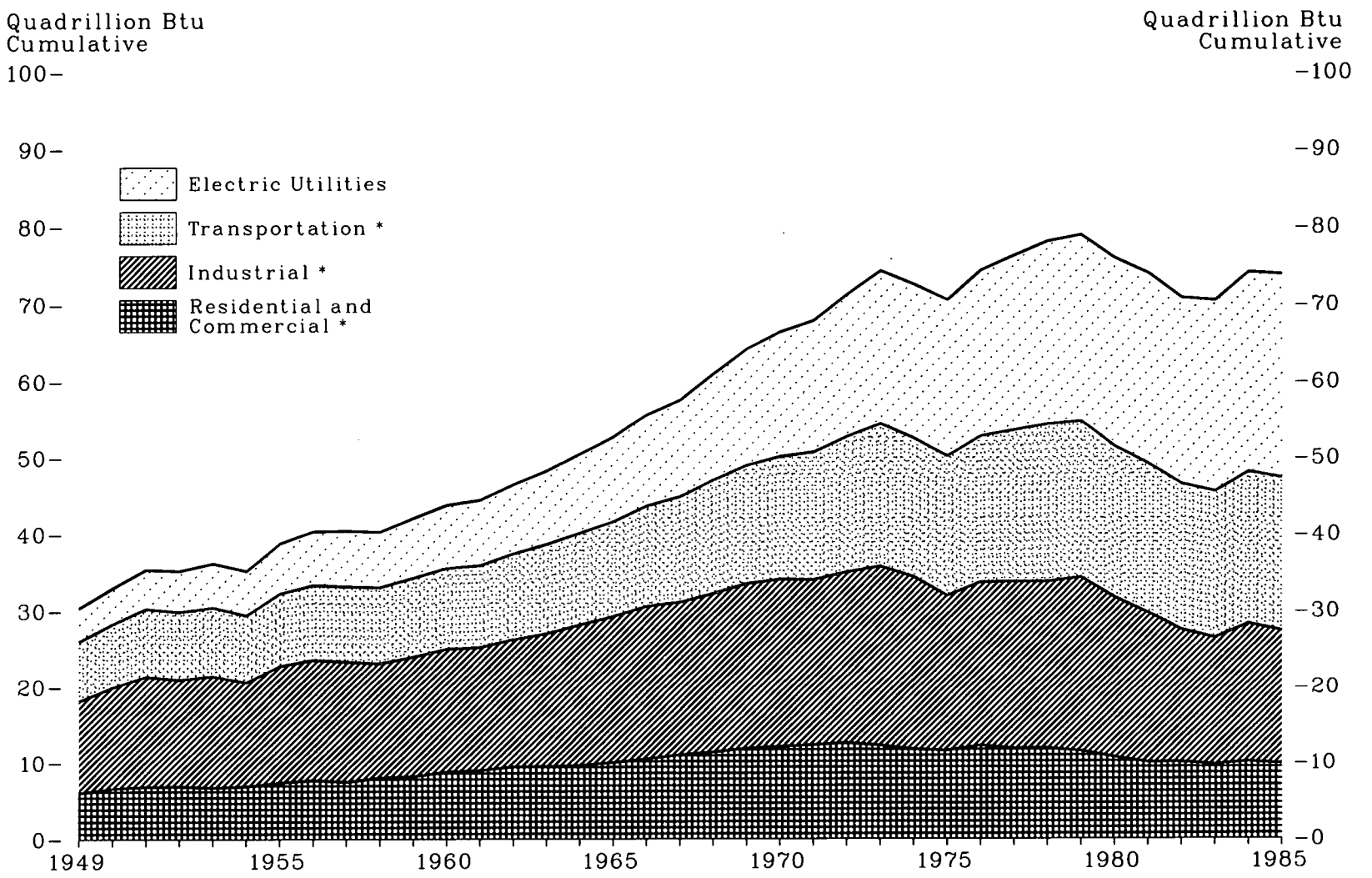
Table 3. Consumption of Energy by Source, 1949-1985

(Quadrillion Btu, Except as Noted)

Year	Coal	Natural Gas	Petroleum [1]	Hydroelectric Power [2]	Nuclear Electric Power [3]	Geothermal [3]	Other [4]	Total	Percent Change [5]
1949	11.98	5.15	11.88	1.45	0	0	([6])	30.46	—
1950	12.35	5.97	13.32	1.44	0	0	0.01	33.08	8.6
1951	12.55	7.05	14.43	1.45	0	0	- 0.02	35.47	7.2
1952	11.31	7.55	14.96	1.50	0	0	- 0.01	35.30	- 0.5
1953	11.37	7.91	15.56	1.44	0	0	([6])	36.27	2.7
1954	9.71	8.33	15.84	1.39	0	0	([6])	35.27	- 2.8
1955	11.17	9.00	17.25	1.41	0	0	- 0.01	38.82	10.1
1956	11.35	9.61	17.94	1.49	0	0	- 0.01	40.38	4.0
1957	10.82	10.19	17.93	1.56	0	0	- 0.02	40.48	0.3
1958	9.53	10.66	18.53	1.63	([6])	0	([6])	40.35	- 0.3
1959	9.52	11.72	19.32	1.59	([6])	0	- 0.01	42.14	4.4
1960	9.84	12.39	19.92	1.66	0.01	([6])	([6])	43.80	3.9
1961	9.62	12.93	20.22	1.68	0.02	([6])	- 0.01	44.46	1.5
1962	9.91	13.73	21.05	1.82	0.03	([6])	([6])	46.53	4.7
1963	10.41	14.40	21.70	1.77	0.04	([6])	- 0.01	48.32	3.9
1964	10.96	15.29	22.30	1.91	0.04	([6])	- 0.01	50.50	4.5
1965	11.58	15.77	23.25	2.06	0.04	([6])	- 0.02	52.68	4.3
1966	12.14	17.00	24.40	2.07	0.06	([6])	- 0.02	55.66	5.6
1967	11.91	17.94	25.28	2.34	0.09	0.01	- 0.01	57.57	3.4
1968	12.33	19.21	26.98	2.34	0.14	0.01	- 0.01	61.00	6.0
1969	12.38	20.68	28.34	2.66	0.15	0.01	- 0.03	64.19	5.2
1970	12.26	21.79	29.52	2.65	0.24	0.01	- 0.05	66.43	3.5
1971	11.60	22.47	30.56	2.86	0.41	0.01	- 0.03	67.89	2.2
1972	12.08	22.70	32.95	2.94	0.58	0.03	- 0.02	71.26	5.0
1973	12.97	22.51	34.84	3.01	0.91	0.04	([6])	74.28	4.2
1974	12.66	21.73	33.45	3.31	1.27	0.05	0.06	72.54	- 2.3
1975	12.66	19.95	32.73	3.22	1.90	0.07	0.02	70.55	- 2.8
1976	13.58	20.35	35.17	3.07	2.11	0.08	([6])	74.36	5.4
1977	13.92	19.93	37.12	2.51	2.70	0.08	0.02	76.29	2.6
1978	13.77	20.00	37.97	3.14	3.02	0.06	0.13	78.09	2.4
1979	15.04	20.67	37.12	3.14	2.78	0.08	0.07	78.90	1.0
1980	15.42	20.39	34.20	3.12	2.74	0.11	- 0.03	75.96	- 3.7
1981	15.91	19.93	31.93	3.11	3.01	0.12	- 0.01	73.99	- 2.6
1982	15.32	18.51	30.23	3.56	3.13	0.10	- 0.02	70.84	- 4.3
1983	15.90	17.36	30.05	3.87	3.20	0.13	- 0.01	70.50	- 0.5
1984	17.07	18.51	31.05	3.77	3.54	0.16	([6])	74.11	5.1
1985[7]	17.50	17.76	30.85	3.38	4.14	0.20	([6])	73.83	- 0.4

[1] Petroleum products supplied including natural gas plant liquids and crude oil burned as fuel.
[2] Electric utility and industrial generation of hydroelectric power and net electricity imports.
[3] Generated by electric utilities.
[4] Includes net imports of coal coke and electricity produced from wood, waste, wind, photovoltaic, and solar thermal sources connected to electric utility distribution systems. Converted to Btu by applying national average heat rates for fossil fuel steam electric plants. Data do not include the consumption of wood energy (other than that consumed by the electric utility industry) which amounted to an estimated 2.6 quadrillion Btu in 1984 (see Table 93). This table also does not include small quantities of energy forms for which consistent historical data are not available, such as geothermal, waste, wind, photovoltaic, or solar thermal energy sources except that consumed by electric utilities.
[5] Percent change from previous year calculated from data prior to rounding.
[6] Less than 0.005 quadrillion Btu.
[7] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Sources: See sources for Tables 45, 66, 72, 77, 80, 82, and EIA estimates for industrial hydroelectric power, and conversion factors in the Units of Measure and Conversion Factors section.

Figure 4. Consumption of Energy by End-Use Sector, 1949-1985



* Fossil Fuel Only
Source: See Table 4.

Table 4. Consumption of Energy by End-Use Sector,[1] 1949-1985

(Quadrillion Btu)

Year	Residential and Commercial		Industrial		Transportation		Electric Utilities	Total
	Fossil Fuels[2]	Total[3]	Fossil Fuels[2]	Total[3]	Fossil Fuels[2]	Total[3]		
1949	6.06	8.21	12.08	14.26	7.88	7.99	4.36	30.46
1950	6.65	8.87	13.28	15.71	8.38	8.49	4.70	33.08
1951	6.87	9.30	14.50	17.13	8.93	9.04	5.09	35.47
1952	6.92	9.54	14.05	16.76	8.91	9.00	5.36	35.30
1953	6.73	9.50	14.71	17.65	9.03	9.12	5.75	36.27
1954	6.92	9.78	13.67	16.58	8.82	8.90	5.80	35.27
1955	7.39	10.41	15.42	18.86	9.48	9.55	6.50	38.82
1956	7.71	10.96	15.87	19.55	9.79	9.86	6.98	40.38
1957	7.49	10.98	15.86	19.60	9.84	9.90	7.26	40.48
1958	7.99	11.64	15.14	18.70	9.95	10.00	7.22	40.35
1959	8.19	12.15	15.79	19.64	10.30	10.35	7.82	42.14
1960	8.75	13.04	16.26	20.16	10.56	10.60	8.19	43.80
1961	8.96	13.44	16.26	20.25	10.73	10.77	8.47	44.46
1962	9.45	14.27	16.83	21.05	11.18	11.22	9.03	46.53
1963	9.48	14.71	17.56	21.96	11.62	11.65	9.63	48.32
1964	9.60	15.23	18.57	23.27	11.96	11.99	10.33	50.50
1965	10.00	16.03	19.25	24.23	12.39	12.42	11.01	52.68
1966	10.47	17.06	20.11	25.51	13.05	13.09	11.99	55.66
1967	11.04	18.10	20.10	25.74	13.70	13.73	12.70	57.57
1968	11.40	19.23	20.87	26.92	14.81	14.84	13.88	61.00
1969	11.90	20.59	21.63	28.12	15.45	15.48	15.18	64.19
1970	12.14	21.71	21.94	28.65	16.04	16.07	16.27	66.43
1971	12.35	22.59	21.68	28.59	16.67	16.70	17.15	67.89
1972	12.64	23.69	22.40	29.88	17.67	17.70	18.52	71.26
1973	12.27	24.14	23.55	31.53	18.57	18.60	19.85	74.28
1974	11.77	23.72	22.63	30.70	18.08	18.11	20.02	72.54
1975	11.60	23.90	20.37	28.41	18.20	18.24	20.35	70.55
1976	12.25	25.02	21.44	30.24	19.06	19.09	21.57	74.36
1977	11.87	25.39	21.89	31.09	19.77	19.81	22.71	76.29
1978	11.91	26.09	21.86	31.41	20.56	20.59	23.72	78.09
1979	11.53	25.81	22.78	32.62	20.43	20.47	24.13	78.90
1980	10.72	25.65	21.04	30.61	19.66	19.69	24.50	75.96
1981	10.04	25.24	19.69	29.25	19.46	19.50	24.76	73.99
1982	10.06	25.62	17.45	26.14	19.03	19.07	24.26	70.84
1983	9.72	25.62	16.72	25.75	19.10	19.13	24.93	70.50
1984	10.09	26.44	18.17	27.79	19.84	19.88	25.98	74.11
1985[4]	9.83	26.79	17.53	27.04	19.97	20.01	26.47	73.83

[1] Data do not include consumption of wood energy (other than that consumed by the electric utility industry) which amounted to an estimated 2.6 quadrillion Btu in 1984 (see Table 93). This table also does not include small quantities of other energy forms for which consistent historical data are not available, such as geothermal, waste, wind, photovoltaic, or solar thermal energy sources except that consumed by electric utilities.

[2] Includes only those fossil fuels consumed directly in the sector (see Diagram 1).

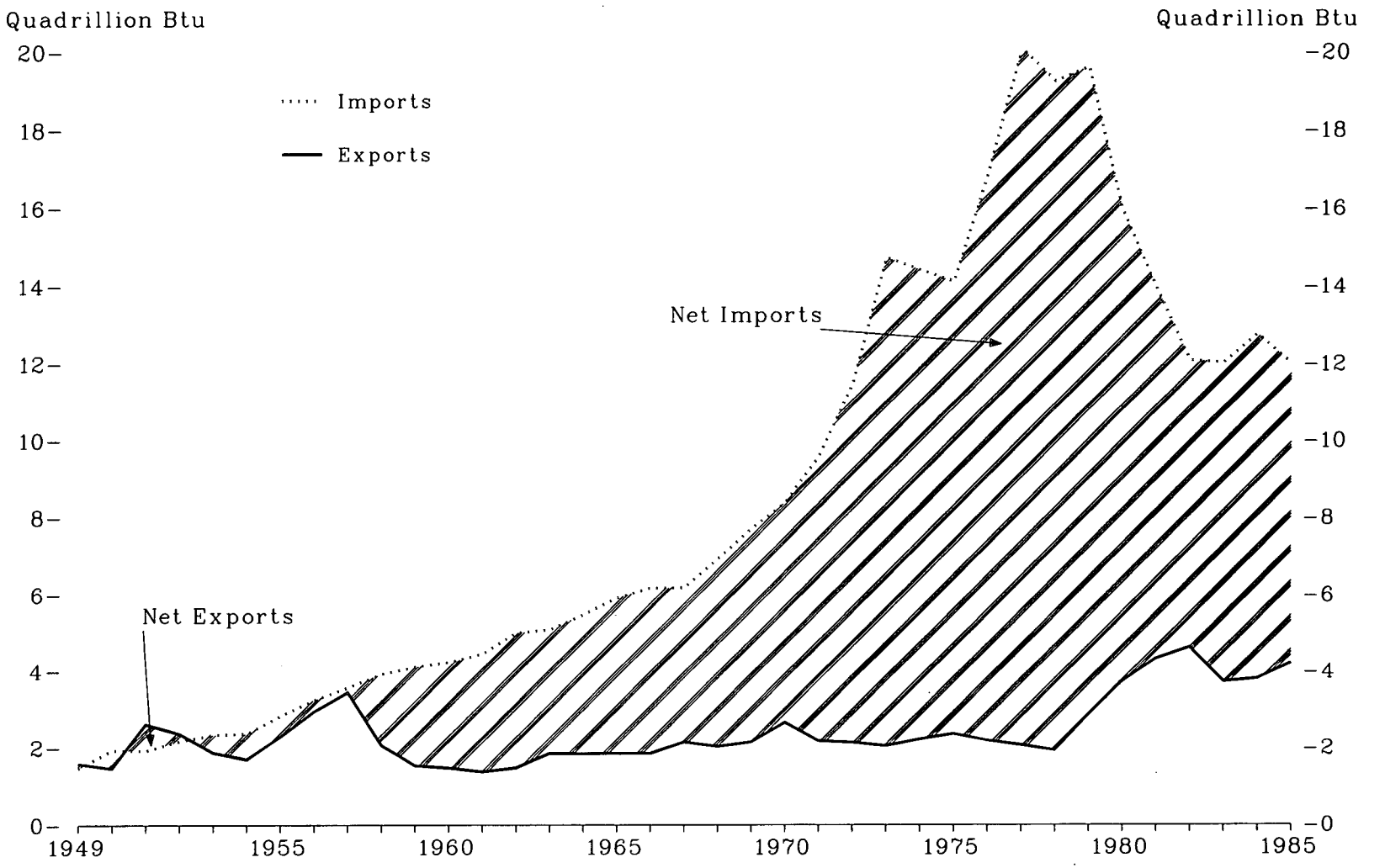
[3] Includes those fossil fuels consumed directly in the sector, utility electricity sales to the sector, and energy losses in the conversion and transmission of electricity. Conversion and transmission losses are allocated to sectors in proportion to electricity sales to sectors (see Diagram 1).

[4] Preliminary.

Note: Sum of components may not equal total due to independent rounding.

Sources: See sources for Tables 56, 68, 74, 77, 81, 85, and EIA estimates for industrial hydroelectric power, and conversion factors in the Units of Measure and Conversion Factors section.

Figure 5. Energy Imports, Exports, and Net Trade, 1949-1985



Source: See Table 5.

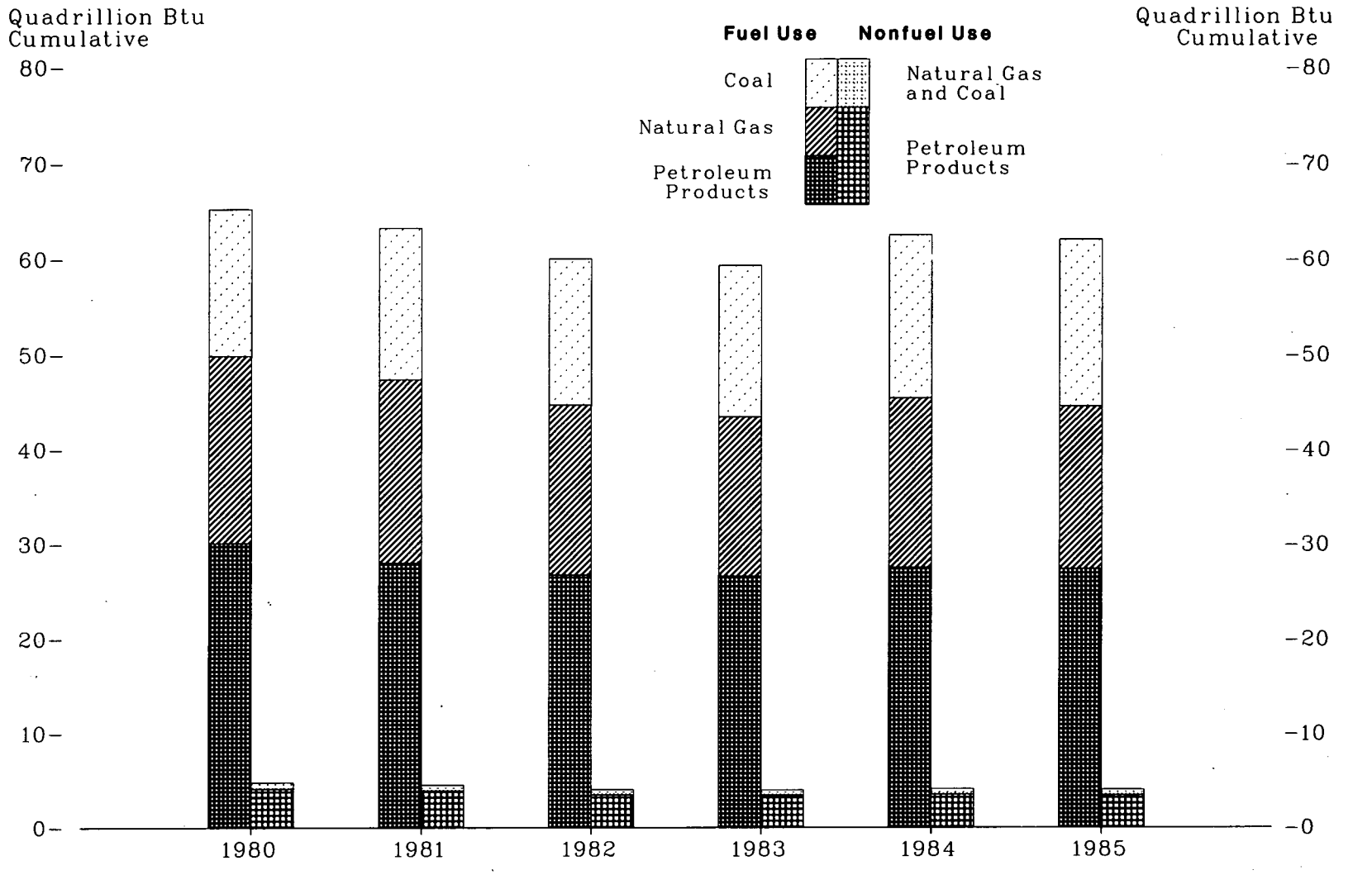
Table 5. Energy Imports, Exports, and Net Trade, 1949-1985

(Quadrillion Btu)

Year	Imports					Exports					Net Trade [1]				
	Coal	Petroleum [2]	Natural Gas (Dry)	Other [3]	Total	Coal	Petroleum	Natural Gas (Dry)	Other [3]	Total	Coal	Petroleum [2]	Natural Gas (Dry)	Other [3]	Total
1949	0.01	1.43	(4)	0.03	1.47	0.88	0.68	0.02	0.02	1.59	0.87	-0.75	0.02	-0.02	0.13
1950	0.01	1.89	(4)	0.04	1.93	0.79	0.64	0.03	0.01	1.47	0.78	-1.24	0.03	-0.03	-0.47
1951	0.01	1.87	(4)	0.04	1.92	1.68	0.89	0.03	0.03	2.62	1.67	-0.98	0.03	-0.01	0.71
1952	0.01	2.11	0.01	0.04	2.17	1.40	0.91	0.03	0.02	2.37	1.40	-1.20	0.02	-0.02	0.20
1953	0.01	2.28	0.01	0.04	2.34	0.98	0.84	0.03	0.02	1.87	0.97	-1.44	0.02	-0.02	-0.47
1954	0.01	2.32	0.01	0.04	2.37	0.91	0.75	0.03	0.01	1.70	0.91	-1.58	0.02	-0.02	-0.67
1955	0.01	2.75	0.01	0.06	2.83	1.46	0.77	0.03	0.02	2.29	1.46	-1.98	0.02	-0.04	-0.54
1956	0.01	3.17	0.01	0.06	3.25	1.98	0.91	0.04	0.02	2.95	1.98	-2.26	0.03	-0.04	-0.30
1957	0.01	3.46	0.04	0.06	3.57	2.17	1.20	0.04	0.03	3.45	2.16	-2.26	(4)	-0.02	-0.12
1958	0.01	3.72	0.14	0.05	3.92	1.42	0.58	0.04	0.02	2.06	1.41	-3.14	-0.10	-0.03	-1.86
1959	0.01	3.91	0.14	0.05	4.11	1.05	0.45	0.02	0.02	1.54	1.04	-3.46	-0.12	-0.03	-2.57
1960	0.01	4.00	0.16	0.06	4.23	1.02	0.43	0.01	0.02	1.48	1.02	-3.57	-0.15	-0.04	-2.74
1961	(4)	4.19	0.23	0.04	4.46	0.98	0.37	0.01	0.02	1.38	0.98	-3.82	-0.22	-0.02	-3.08
1962	0.01	4.56	0.42	0.03	5.01	1.08	0.36	0.02	0.03	1.48	1.08	-4.20	-0.40	- (4)	-3.53
1963	0.01	4.65	0.42	0.03	5.10	1.36	0.44	0.02	0.03	1.85	1.35	-4.21	-0.40	0.01	-3.25
1964	0.01	4.96	0.46	0.07	5.49	1.34	0.43	0.02	0.06	1.84	1.33	-4.53	-0.44	-0.01	-3.65
1965	0.00	5.40	0.47	0.04	5.92	1.38	0.39	0.03	0.06	1.85	1.37	-5.01	-0.44	0.02	-4.06
1966	(4)	5.63	0.50	0.05	6.18	1.35	0.41	0.03	0.06	1.85	1.35	-5.21	-0.47	0.01	-4.32
1967	0.01	5.56	0.58	0.04	6.19	1.35	0.65	0.08	0.06	2.15	1.35	-4.91	-0.50	0.02	-4.04
1968	0.01	6.21	0.67	0.04	6.93	1.38	0.49	0.10	0.06	2.03	1.37	-5.73	-0.58	0.02	-4.90
1969	(4)	6.90	0.75	0.06	7.71	1.53	0.49	0.05	0.08	2.15	1.53	-6.42	-0.70	0.02	-5.56
1970	(4)	7.47	0.85	0.07	8.39	1.94	0.55	0.07	0.11	2.66	1.93	-6.92	-0.77	0.04	-5.72
1971	(4)	8.54	0.96	0.08	9.58	1.55	0.47	0.08	0.07	2.18	1.54	-8.07	-0.88	- (4)	-7.41
1972	(4)	10.30	1.05	0.11	11.46	1.53	0.47	0.08	0.06	2.14	1.53	-9.83	-0.97	-0.05	-9.32
1973	(4)	13.47	1.06	0.20	14.73	1.43	0.49	0.08	0.06	2.05	1.42	-12.98	-0.98	-0.14	-12.68
1974	0.05	13.13	0.99	0.25	14.41	1.62	0.46	0.08	0.06	2.22	1.57	-12.66	-0.91	-0.19	-12.19
1975	0.02	12.95	0.98	0.16	14.11	1.76	0.44	0.07	0.08	2.36	1.74	-12.51	-0.90	-0.08	-11.75
1976	0.03	15.67	0.99	0.15	16.84	1.60	0.47	0.07	0.06	2.19	1.57	-15.20	-0.92	-0.09	-14.65
1977	0.04	18.76	1.04	0.26	20.09	1.44	0.51	0.06	0.06	2.07	1.40	-18.24	-0.98	-0.20	-18.02
1978	0.07	17.82	0.99	0.36	19.25	1.08	0.77	0.05	0.03	1.93	1.00	-17.06	-0.94	-0.33	-17.32
1979	0.05	17.93	1.30	0.33	19.62	1.75	1.00	0.06	0.06	2.87	1.70	-16.93	-1.24	-0.27	-16.75
1980	0.03	14.66	1.01	0.28	15.97	2.42	1.16	0.05	0.09	3.72	2.39	-13.50	-0.96	-0.18	-12.25
1981	0.03	12.64	0.92	0.39	13.97	2.94	1.26	0.06	0.06	4.33	2.92	-11.38	-0.86	-0.33	-9.65
1982	0.02	10.78	0.95	0.35	12.09	2.79	1.73	0.05	0.06	4.63	2.77	-9.05	-0.90	-0.28	-7.46
1983	0.03	10.65	0.94	0.40	12.03	2.04	1.57	0.06	0.05	3.72	2.01	-9.08	-0.89	-0.35	-8.31
1984	0.03	11.43	0.85	0.45	12.76	2.15	1.54	0.06	0.05	3.80	2.12	-9.89	-0.79	-0.40	-8.96
1985[5]	0.05	10.55	0.93	0.48	12.01	2.44	1.66	0.06	0.06	4.22	2.39	-8.89	-0.88	-0.41	-7.79

[1] Net trade = exports minus imports.
[2] Includes imports into the Strategic Petroleum Reserve which began in 1977.
[3] Coal coke and small amounts of electricity transmitted across U.S. borders with Canada and Mexico.
[4] Less than 0.005 quadrillion Btu.
[5] Preliminary.
Note: Sum of components may not equal totals or net trade items due to independent rounding.
Note: Includes trade between the United States (50 States and the District of Columbia) and its territories and possessions.
Source: See sources for Tables 45, 49, 66, 72, 77, and 80 and conversion factors in the Units of Measure and Conversion Factors section.

Figure 6. A Comparison of Fuel and Nonfuel Use of Fossil Fuels, 1980-1985



Source: See Table 6.

Table 6. A Comparison of Fuel and Nonfuel Use of Fossil Fuels, 1980-1985

Commodity	Physical Units						Quadrillion Btu					
	1980	1981	1982	1983	1984	1985 [1]	1980	1981	1982	1983	1984	1985 [1]
	Million Barrels											
Petroleum Products												
Fuel Use	5,455	5,109	4,889	4,871	5,057	5,045	30.08	28.02	26.73	26.60	27.52	27.39
Nonfuel Use												
Asphalt and Road Oil	145	125	125	136	149	153	0.96	0.83	0.83	0.90	0.99	1.02
Liquefied Petroleum Gases	231	230	259	267	260	255	0.82	0.81	0.90	0.93	0.89	0.86
Lubricants	58	56	51	53	57	53	0.35	0.34	0.31	0.32	0.35	0.32
Petrochemical Feedstock	253	236	169	153	144	143	1.43	1.33	0.95	0.86	0.81	0.81
Petroleum Coke	16	34	28	15	22	23	0.10	0.21	0.17	0.09	0.13	0.14
Special Naphtha	37	27	25	30	40	30	0.19	0.14	0.13	0.16	0.21	0.16
Wax	6	7	5	6	6	6	0.03	0.04	0.03	0.03	0.03	0.03
Miscellaneous	41	36	32	28	21	21	0.24	0.21	0.18	0.16	0.12	0.12
Total Nonfuel	788	752	694	688	699	684	4.13	3.91	3.50	3.45	3.53	3.46
Percent Nonfuel	12.6	12.8	12.4	12.4	12.1	11.9	12.1	12.2	11.6	11.5	11.4	11.2
	Billion Cubic Feet											
Natural Gas												
Fuel Use	19,288	18,858	17,510	16,353	17,421	16,709	19.79	19.37	18.01	16.86	17.96	17.22
Nonfuel Use												
Chemical Feedstock	589	546	491	482	530	520	0.60	0.56	0.50	0.50	0.55	0.54
Total Nonfuel	589	546	491	482	530	520	0.60	0.56	0.50	0.50	0.55	0.54
Percent Nonfuel	3.0	2.8	2.7	2.9	2.9	3.0	3.0	2.8	2.7	2.9	3.0	3.0
	Million Short Tons											
Coal												
Fuel Use	699.81	730.1	705.1	735.1	789.5	817.1	15.33	15.83	15.27	15.85	17.02	17.45
Nonfuel Use												
Crude Tar	2.3	2.1	1.4	1.2	1.5	1.5	0.08	0.08	0.05	0.04	0.04	0.04
Other	0.6	0.5	0.4	0.3	0.4	0.4	0.01	0.01	[2]	[2]	[2]	[2]
Total Nonfuel	2.9	2.5	1.8	1.5	1.8	1.8	0.10	0.08	0.05	0.05	0.05	0.05
Percent Nonfuel	0.4	0.3	0.3	0.2	0.2	0.2	0.6	0.5	0.3	0.3	0.3	0.3
Total Nonfuel Use of Fossil Fuels	—	—	—	—	—	—	4.82	4.55	4.05	4.00	4.13	4.03
Percent Nonfuel Use of Fossil Fuels	—	—	—	—	—	—	6.9	6.8	6.3	6.3	6.2	6.1

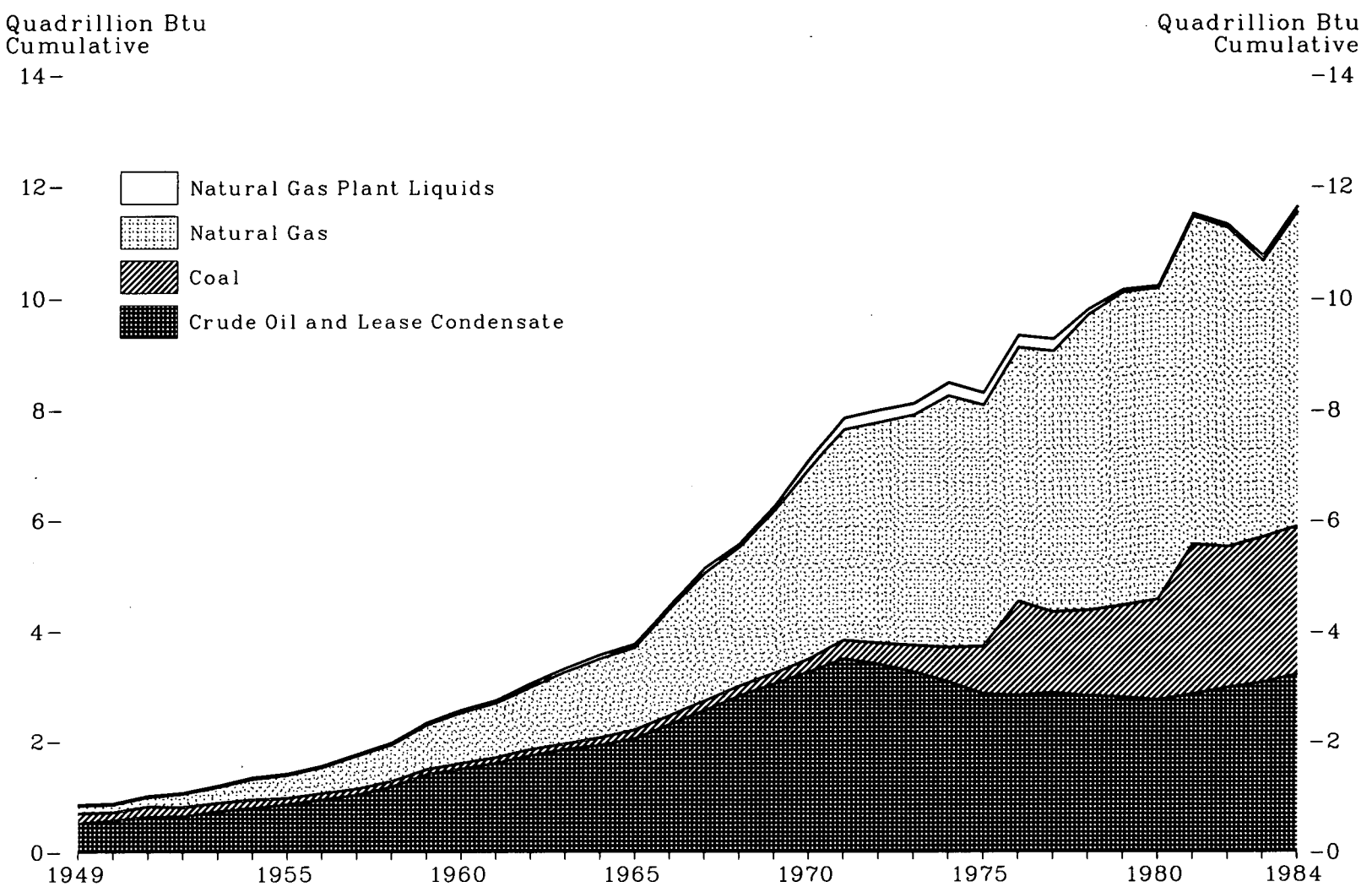
[1] Preliminary.
[2] Less than 0.01 quadrillion Btu.
— Indicates data not applicable.

Note: All nonfuel use of energy is consumed by the industrial sector except for quantities of lubricants which are consumed in the transportation sector as follows, in million barrels (and quadrillion Btu): 1980 - 32(0.19); 1981 - 28(0.16); 1982 - 25(0.15); 1983 - 26(0.16); 1984 - 28(0.17); and 1985 - 26(0.16).

Note: Sum of components may not equal total due to independent rounding.

Sources: **Petroleum Products:** • 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual* and *Sales of Liquefied Petroleum Gases and Ethane in 1980.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual* and unpublished data. • 1985—Energy Information Administration, *Petroleum Supply Monthly* and Energy Information Administration estimates. **Natural Gas:** • 1980— Bureau of the Census, 1980 Survey of Manufactures, *Hydrocarbon, Coal, and Coke Materials Consumed.* • 1981 and forward—Department of Commerce estimates. **Coal:** • 1980—Energy Information Administration, *Coke and Coal Chemicals in 1980.* • 1981—Energy Information Administration, Energy Data Report, *Coke Plant Report,* quarterly. • 1982 and forward—Energy Information Administration, *Quarterly Coal Report* and Energy Information Administration estimates.

Figure 7. Production of Fossil Fuels on Federally Administered Lands, 1949-1984



Source: See Table 7.

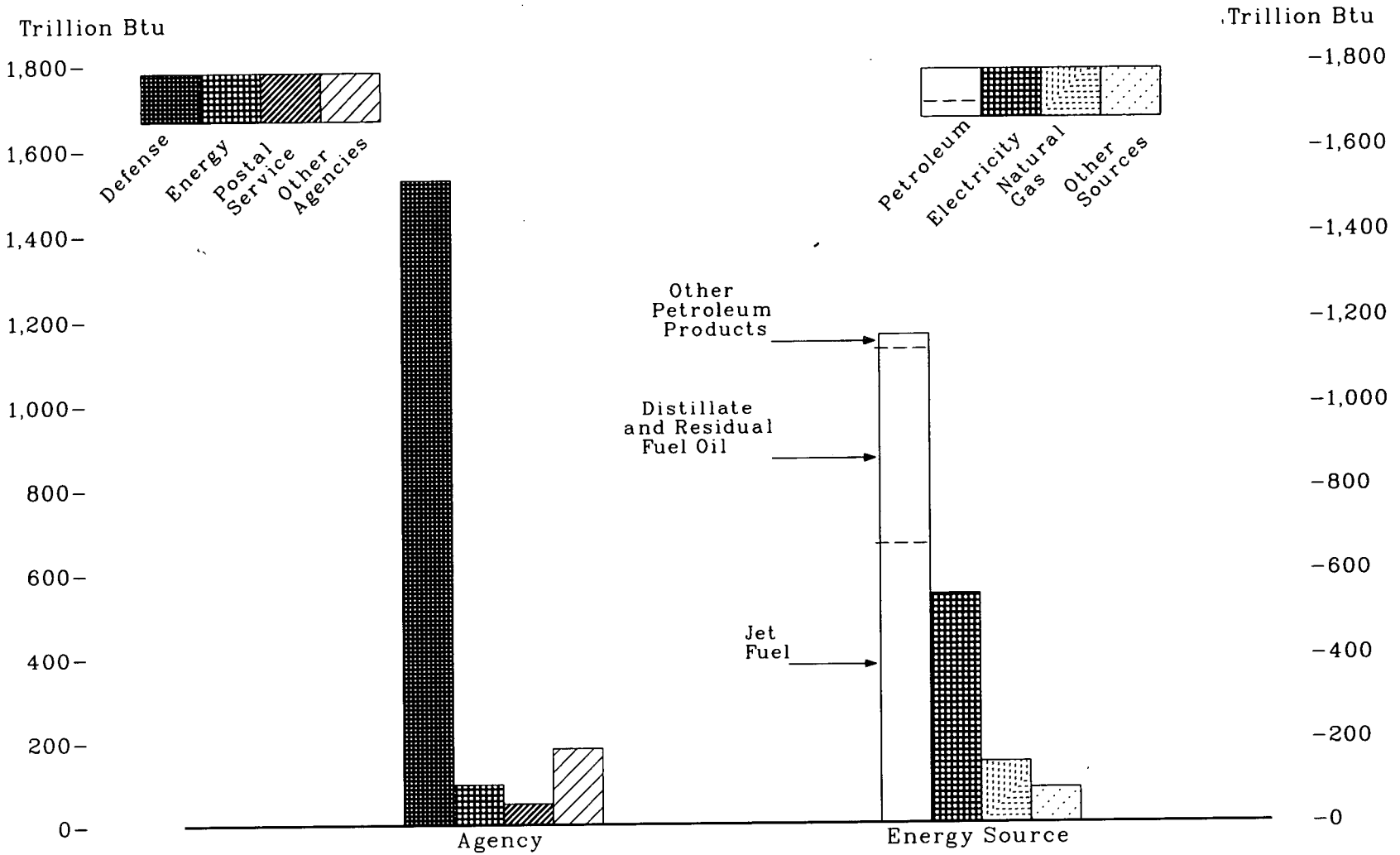
Table 7. Production of Fossil Fuels on Federally Administered Lands, 1949-1984

Year	Crude Oil and Lease Condensate [1]			Natural Gas Plant Liquids [2]			Natural Gas [3]			Coal [4]			Total	
	Million Barrels	Quadrillion Btu	Percent U.S. Total [5]	Million Barrels	Quadrillion Btu	Percent U.S. Total [5]	Trillion Cubic Feet	Quadrillion Btu	Percent U.S. Total [5]	Million Short Tons	Quadrillion Btu	Percent U.S. Total [5]	Quadrillion Btu	Percent U.S. Total
1949	95.2	0.55	5.2	4.4	0.02	2.8	0.15	0.15	2.8	9.5	0.20	2.0	0.92	3.2
1950	105.9	0.61	5.4	4.4	0.02	2.4	0.14	0.15	2.4	7.7	0.16	1.4	0.94	2.9
1951	117.3	0.68	5.2	5.3	0.02	2.6	0.17	0.18	2.4	9.3	0.20	1.6	1.08	3.0
1952	118.7	0.69	5.2	5.5	0.02	2.5	0.25	0.25	3.2	8.7	0.18	1.7	1.15	3.3
1953	136.9	0.79	5.8	5.7	0.03	2.4	0.29	0.30	3.6	7.5	0.16	1.5	1.28	3.6
1954	146.5	0.85	6.3	6.1	0.03	2.4	0.39	0.40	4.6	7.4	0.16	1.8	1.43	4.2
1955	159.5	0.92	6.4	6.0	0.03	2.1	0.43	0.45	4.8	5.9	0.12	1.2	1.53	4.1
1956	174.1	1.01	6.7	6.4	0.03	2.2	0.49	0.51	5.1	5.8	0.12	1.1	1.67	4.2
1957	189.4	1.10	7.2	6.6	0.03	2.2	0.62	0.64	6.1	5.7	0.12	1.1	1.89	4.7
1958	216.8	1.26	8.9	8.0	0.04	2.7	0.69	0.71	6.5	5.3	0.11	1.2	2.11	5.7
1959	258.2	1.50	10.0	9.5	0.04	3.0	0.83	0.86	7.2	4.9	0.10	1.1	2.50	6.4
1960	277.3	1.61	10.8	11.6	0.05	3.4	0.95	0.98	7.8	5.2	0.11	1.2	2.75	6.9
1961	297.3	1.72	11.3	13.5	0.06	3.7	1.03	1.06	8.1	5.2	0.11	1.2	2.95	7.3
1962	321.7	1.87	12.0	15.3	0.07	4.1	1.18	1.22	8.9	5.8	0.12	1.3	3.27	7.8
1963	342.8	1.99	12.5	16.0	0.07	4.0	1.37	1.41	9.7	5.4	0.11	1.1	3.58	8.1
1964	356.0	2.07	12.8	15.5	0.07	3.7	1.51	1.55	10.2	7.1	0.15	1.4	3.84	8.4
1965	378.6	2.20	13.3	14.3	0.06	3.2	1.56	1.61	10.2	8.2	0.17	1.6	4.04	8.5
1966	426.7	2.47	14.1	15.2	0.06	3.2	2.02	2.09	12.3	8.3	0.17	1.5	4.80	9.6
1967	472.6	2.74	14.7	20.1	0.09	3.9	2.41	2.48	13.8	9.5	0.20	1.7	5.51	10.5
1968	523.7	3.04	15.7	13.7	0.06	2.5	2.61	2.69	14.1	9.1	0.19	1.6	5.97	11.0
1969	563.8	3.27	16.7	19.9	0.08	3.4	3.05	3.14	15.4	10.1	0.21	1.8	6.70	11.9
1970	605.6	3.51	17.2	40.6	0.17	6.7	3.56	3.67	16.9	12.0	0.25	2.0	7.60	12.8
1971	648.9	3.76	18.8	54.0	0.22	8.7	3.95	4.08	18.3	17.3	0.36	3.1	8.42	14.5
1972	630.5	3.66	18.2	56.7	0.23	8.9	4.17	4.28	19.3	19.0	0.40	3.1	8.56	14.5
1973	604.3	3.51	18.0	54.9	0.22	8.7	4.37	4.46	20.1	24.2	0.51	4.1	8.70	14.9
1974	570.2	3.31	17.8	61.9	0.25	10.1	4.75	4.87	22.9	32.1	0.67	5.3	9.10	16.1
1975	531.5	3.08	17.4	59.7	0.24	10.0	4.57	4.67	23.8	43.6	0.92	6.7	8.90	16.3
1976	525.7	3.05	17.7	57.2	0.23	9.7	4.81	4.91	25.2	86.4	1.82	12.6	10.00	18.3
1977	535.0	3.10	17.8	57.4	0.23	9.7	4.94	5.04	25.8	74.8	1.57	10.7	9.94	18.0
1978	523.6	3.04	16.5	25.9	0.10	4.5	5.60	5.71	29.3	79.2	1.66	11.8	10.51	19.1
1979	519.8	3.01	16.7	11.9	0.05	2.1	5.93	6.05	30.1	84.9	1.78	10.9	10.89	18.8
1980	510.4	2.96	16.2	10.5	0.04	1.8	5.85	6.01	30.2	92.9	1.95	11.2	10.96	18.6
1981	529.3	3.07	16.9	12.3	0.05	2.1	6.15	6.31	32.1	138.8	2.91	16.8	12.35	21.1
1982	552.3	3.20	17.5	15.0	0.06	2.7	5.97	6.14	33.6	130.0	2.73	15.5	12.13	21.1
1983	568.8	3.30	17.9	14.0	0.05	2.5	5.17	5.33	32.3	133.9	2.81	17.1	11.50	21.2
1984	595.8	3.46	18.3	25.4	0.10	4.3	5.88	6.07	33.8	136.3	2.86	15.2	12.48	21.2

[1] Production from Naval Petroleum Reserve No. 1 (NPR#1) for 1974 and earlier years is for fiscal years (July through June).
[2] Includes only those quantities for which the royalties were paid based on the value of the natural gas plant liquids produced. Additional quantities of natural gas plant liquids were produced; however, the royalties paid were based on the value of natural gas processed. These latter quantities are included with natural gas.
[3] Includes same quantities of natural gas processed into liquids at natural gas processing plants and fractionators.
[4] Converted to British thermal units (Btu) based on an estimated heat content of coal produced on federally administered lands of 21.0 million Btu per short ton.
[5] Based on physical units.

Sources: **Coal:** •1949 through 1980—U.S. Geological Survey, *Coal, Phosphate, Potash, Sodium, and Other Mineral Production, Royalty Income, and Related Statistics,* June 1981. •1981 and forward—U.S. Minerals Management Service, *Mineral Revenues - The 1984 Report on Receipts from Federal and Indian Leases,* and predecessor annual reports. **Other:** •1949 through 1980—U.S. Geological Survey, *Oil and Gas Production, Royalty Income, and Related Statistics,* June 1981; Department of Energy, Office of Petroleum and Oil Shale Reserves, unpublished data, and U.S. Geological Survey, National Petroleum Reserve in Alaska, unpublished data. •1981 through 1983—U.S. Minerals Management Service, *Mineral Revenues - The 1983 Report on Receipts from Federal and Indian Leases,* and predecessor annual reports; Department of Energy, Office of Petroleum and Oil Shale Reserves, unpublished data; and U.S. Geological Survey, National Petroleum Reserve in Alaska, unpublished data. •1984—U.S. Minerals Management Service, *Mineral Revenues - The 1984 Report on Receipts from Federal and Indian Leases,* and Department of Energy, Office of Petroleum and Oil Shale Reserves, unpublished data.

Figure 8. U.S. Government Energy Use, Fiscal Year 1985



Source: See Table 8.

Table 8. U.S. Government Energy Use, Fiscal Years 1975-1985

(Trillion Btu)

Activity	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985 [1]
Agency											
Defense	1,558.1	1,386.8	1,398.4	1,365.7	1,384.6	1,394.8	1,455.4	1,484.3	1,475.1	1,524.1	1,525.8
Energy	85.2	87.2	87.9	87.1	86.8	84.0	85.3	88.9	91.3	95.6	96.9
Postal Service	59.2	58.3	62.9	58.6	56.0	52.3	50.9	49.4	48.4	50.5	50.9
Veterans Administration	39.2	36.5	37.9	39.4	38.5	38.2	37.4	38.0	38.7	40.0	40.6
General Services Administration	43.0	41.1	41.1	41.3	40.5	38.9	39.1	38.9	37.8	38.0	35.4
Transportation	28.5	27.4	28.8	28.9	27.6	27.6	28.0	28.5	28.7	29.2	29.2
NASA	26.4	25.1	24.0	22.4	22.4	21.4	21.2	21.8	22.4	23.0	23.3
Agriculture	11.9	11.6	10.8	11.2	11.6	11.2	10.9	10.4	10.4	10.7	10.2
Interior	12.3	13.1	13.5	12.3	13.6	11.7	10.7	10.7	10.8	11.8	9.3
Health and Human Services	9.3	9.6	9.9	9.6	9.7	9.5	10.6	10.2	10.3	10.8	10.8
Justice	7.1	7.1	7.5	7.4	8.1	7.4	7.1	7.7	7.6	8.9	8.9
Other [2]	14.8	15.6	16.5	17.6	16.7	16.6	17.1	18.5	16.9	17.7	18.6
Total	1,895.0	1,719.4	1,739.2	1,701.5	1,716.2	1,713.5	1,773.7	1,807.3	1,798.6	1,860.2	1,859.9
Energy Source											
Petroleum											
Motor Gasoline	63.4	60.5	61.5	60.2	58.6	56.1	52.9	52.8	51.8	51.0	50.3
Aviation Gasoline	21.1	11.6	8.8	6.2	4.7	4.9	4.6	3.6	2.5	1.9	1.5
Jet Fuel	707.4	610.0	619.2	601.1	618.6	638.7	653.3	672.7	673.3	693.7	705.9
Distillate and Residual Fuel Oil	364.7	329.7	348.5	332.4	327.1	307.8	351.3	349.5	329.4	342.9	323.4
Liquefied Petroleum Gases	5.4	4.6	4.1	3.0	3.7	4.0	3.7	3.8	4.0	4.1	4.0
Subtotal	1,162.0	1,016.4	1,042.1	1,002.9	1,012.7	1,011.5	1,065.8	1,082.4	1,061.0	1,093.6	1,085.1
Electricity	481.2	473.5	479.7	479.2	479.8	482.2	491.5	501.7	515.2	530.1	546.0
Natural Gas	166.2	151.8	141.1	144.7	148.9	147.3	142.2	145.9	147.7	157.4	145.8
Coal	77.9	71.3	68.4	66.0	65.1	63.6	65.1	68.6	62.4	65.3	65.0
Purchased Steam	7.6	6.3	7.7	8.6	9.7	9.1	9.1	8.5	12.3	13.8	18.6
Total	1,895.0	1,719.4	1,739.2	1,701.5	1,716.2	1,713.5	1,773.7	1,807.3	1,798.6	1,860.2	1,859.9

[1] Preliminary. Energy usage data for Department of Transportation, Health and Human Services, Department of Labor, Department of Justice, and Federal Communications Commission are estimated.

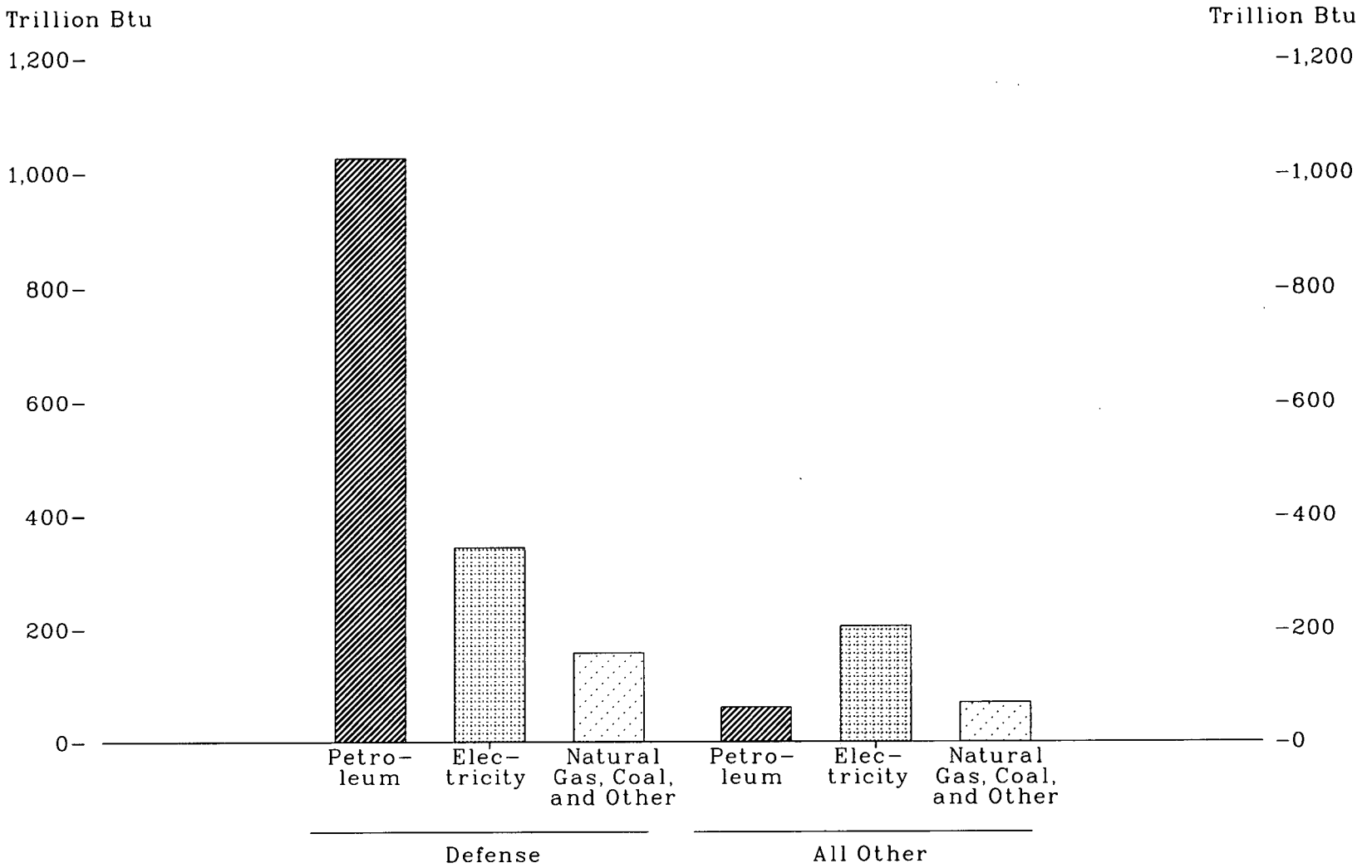
[2] Includes Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, Department of Labor, National Science Foundation, Department of Treasury, Federal Communications Commission, and Environmental Protection Agency. Environmental Protection Agency and the Department of Treasury data for 1982 are estimated. Department of Treasury data for 1983 are estimated.

Note: Sum of components may not equal total due to independent rounding.

Note: These data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. However, other energy used by U.S. agencies that produce electricity or enrich uranium is included.

Source: Department of Energy Form DOE 6200.2, "Quarterly Federal Energy Usage Report."

Figure 9. U.S. Government Energy Use by Agency, by Source, Fiscal Year 1985



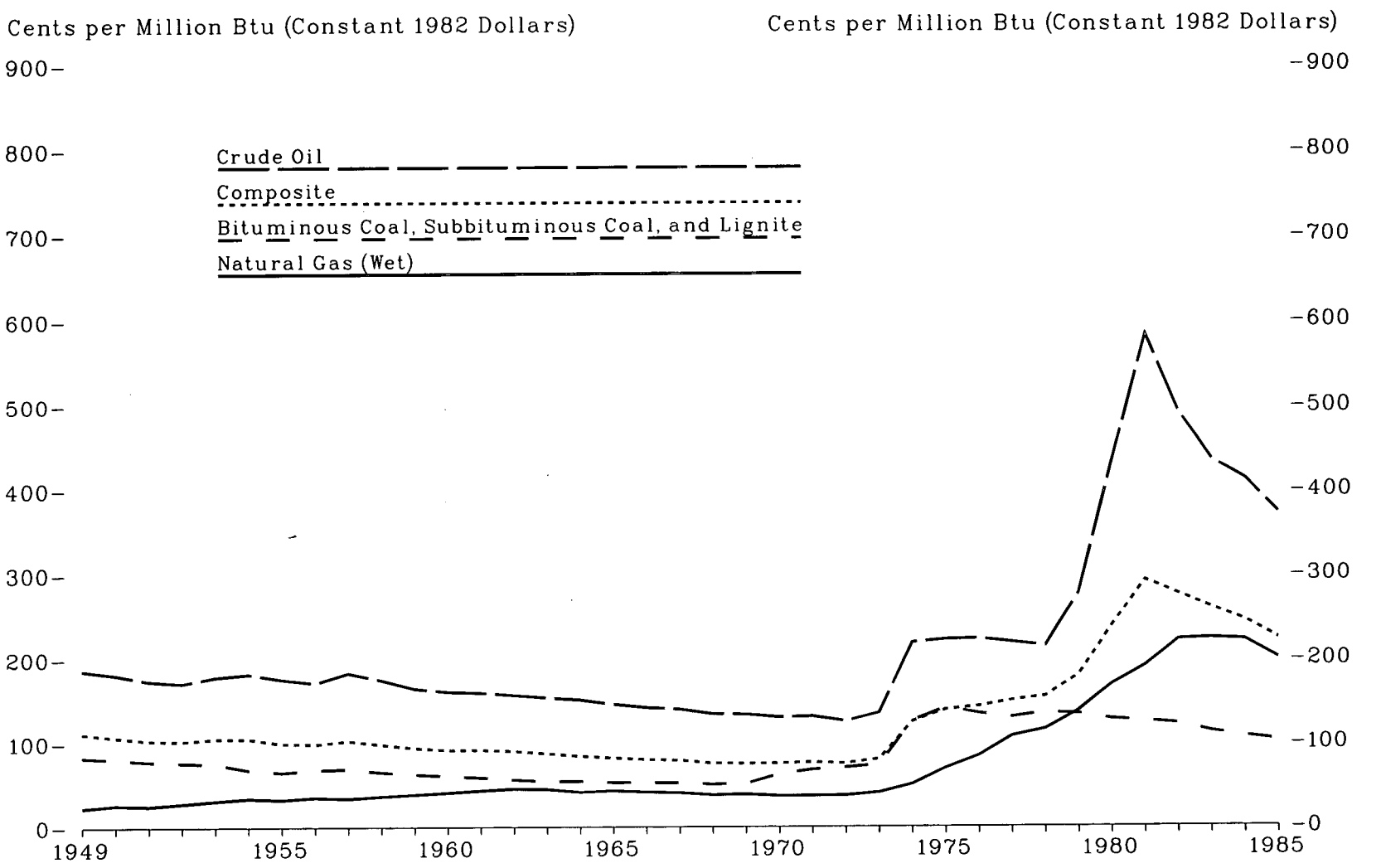
Source: See Table 9.

Table 9. U.S. Government Energy Use by Agency, by Source, Fiscal Years 1975 and 1985
(Trillion Btu)

	Petroleum							
	Motor Gasoline	Distillate and Residual Fuel Oils	Other [1]	Total	Electricity	Natural Gas	Coal and Other [2]	Total
1975								
Defense	34.9	326.5	725.5	1,086.8	296.3	119.9	55.1	1,558.1
Energy	1.3	5.2	0.3	6.8	49.2	9.8	19.4	85.2
Postal Service	10.3	4.6	0.7	15.6	40.5	2.5	0.6	59.2
Veterans Administration	0.6	5.6	[3]	6.2	16.6	14.6	1.8	39.2
General Services Administration	0.2	2.6	0	2.7	29.3	4.9	6.1	43.0
Transportation	1.5	7.8	4.7	14.0	12.9	1.3	0.3	28.5
NASA	0.4	1.8	1.2	3.4	17.9	3.9	1.2	26.4
Agriculture	4.6	1.4	0.5	6.6	3.4	2.0	[3]	11.9
Interior	2.6	2.9	0.7	6.1	4.1	2.0	0.1	12.3
Health and Human Services	0.7	2.8	0.1	3.7	3.9	1.6	0.1	9.3
Justice	2.0	0.8	[3]	2.8	1.9	2.1	0.4	7.1
Other [4]	4.3	2.8	0.2	7.3	5.3	1.6	0.4	14.8
Total	63.4	364.7	733.9	1,162.0	481.2	166.2	85.5	1,895.0
1985 [5]								
Defense	25.5	297.1	702.2	1,024.7	343.6	106.3	51.3	1,525.8
Energy	1.4	3.6	0.7	5.7	63.3	6.5	21.4	96.9
Postal Service	9.9	3.1	0.2	13.2	32.6	4.5	0.7	50.9
Veterans Administration	0.5	2.2	[3]	2.8	22.7	13.9	1.3	40.6
General Services Administration	0.1	0.6	0	0.7	28.2	3.1	3.3	35.4
Transportation	1.4	8.1	5.0	14.5	13.2	1.2	0.3	29.2
NASA	0.3	0.8	1.6	2.7	17.5	2.6	0.5	23.3
Agriculture	4.0	0.7	0.4	5.0	4.0	1.2	[3]	10.2
Interior	2.2	1.5	0.8	4.6	3.2	1.3	0.2	9.3
Health and Human Services	0.4	2.6	0.1	3.1	6.3	1.5	[3]	10.8
Justice	1.8	0.4	0.1	2.3	3.5	2.7	0.4	8.9
Other [6]	3.1	2.7	0.4	6.1	10.3	1.9	0.5	18.6
Total	50.3	323.4	711.5	1,085.2	548.8	146.7	80.0	1,859.9

[1] Includes aviation gasoline, jet fuel, and liquefied petroleum gases.
[2] Includes purchased steam.
[3] Less than 50 billion Btu.
[4] Includes Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, Department of Labor, National Science Foundation, Department of Treasury, Federal Communications Commission, and Environmental Protection Agency.
[5] Preliminary.
[6] Includes Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, National Science Foundation, Department of Treasury, and Environmental Protection Agency.
Note: Sum of components may not equal total due to independent rounding.
Note: These data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. However, other energy used by U.S. agencies that produce electricity or enrich uranium is included.
Source: Department of Energy Form DOE 6200.2, "Quarterly Federal Energy Usage Report."

Figure 10. Fossil Fuel Prices, 1949-1985



Source: See Table 10.

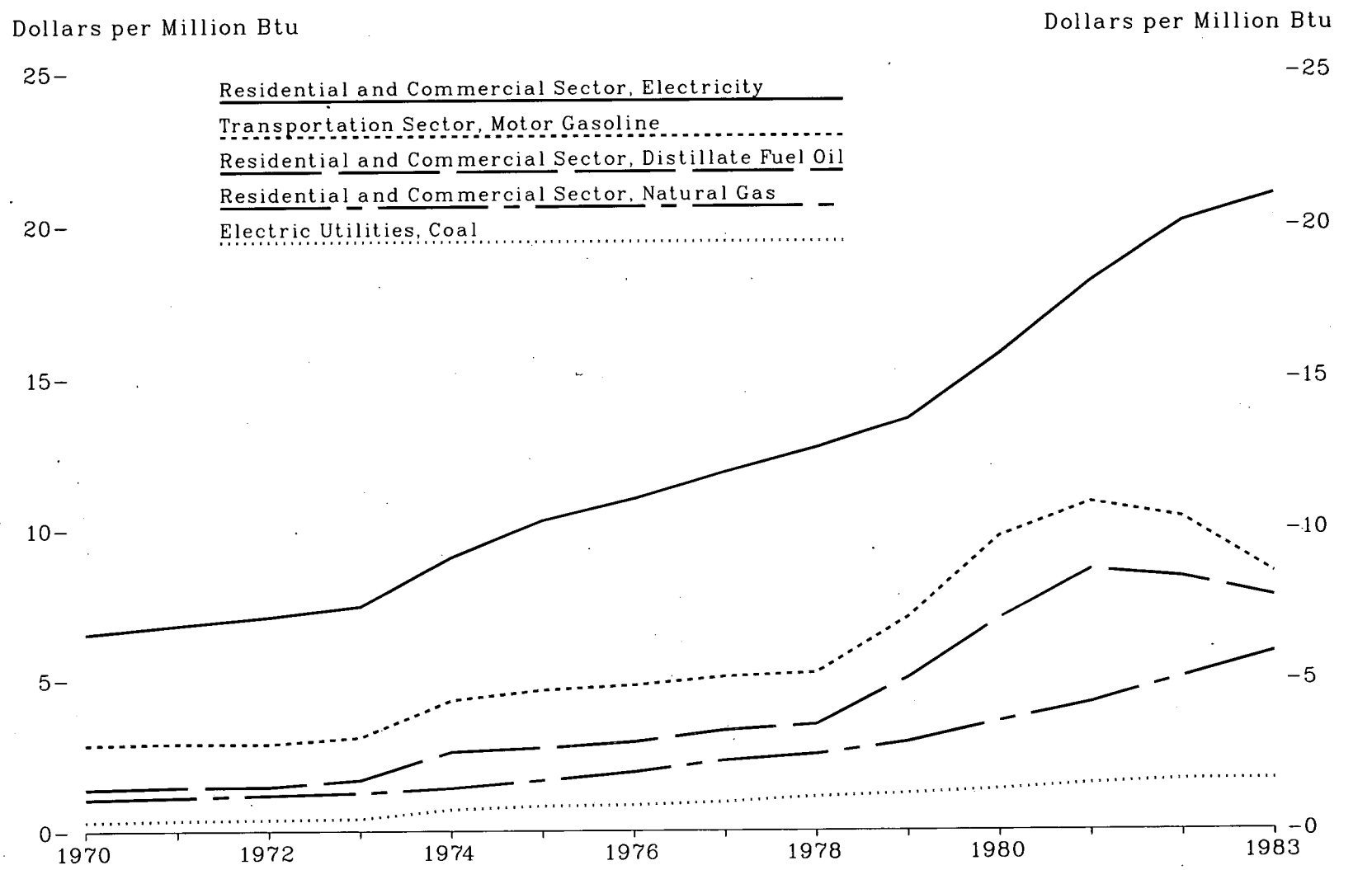
Table 10. Fossil Fuel Prices, 1949-1985

(Cents per Million Btu)

Year	Crude Oil [1]		Natural Gas [2]		Bituminous Coal, Subbituminous Coal, and Lignite		Anthracite		Composite [3]	
	Current	Constant [4]	Current	Constant [4]	Current	Constant [4]	Current	Constant [4]	Current	Constant [4]
1949	43.8	186.4	5.4	23.0	19.5	83.0	36.4	154.9	26.2	111.5
1950	43.3	181.2	6.3	26.4	19.3	80.8	37.9	158.6	25.6	107.1
1951	43.6	173.7	6.3	25.1	19.6	78.1	40.7	162.2	25.9	103.2
1952	43.6	171.0	7.2	28.2	19.5	76.5	39.3	154.1	26.1	102.4
1953	46.2	178.4	8.1	31.3	19.5	75.3	40.7	157.1	27.3	105.4
1954	47.9	182.1	9.0	34.2	18.0	68.4	36.1	137.3	27.7	105.3
1955	47.8	175.7	8.9	32.7	17.8	65.4	33.1	121.7	27.1	99.6
1956	48.1	171.2	9.9	35.2	19.1	68.0	34.9	124.2	27.8	98.9
1957	53.3	183.2	9.9	34.0	20.1	69.1	38.3	131.6	29.9	102.7
1958	51.9	174.7	10.8	36.4	19.4	65.3	38.0	127.9	29.2	98.3
1959	50.0	164.5	11.7	38.5	19.1	62.8	35.9	118.1	28.6	94.1
1960	49.7	160.8	12.6	40.8	18.8	60.8	33.8	109.4	28.3	91.6
1961	49.8	159.6	13.5	43.3	18.4	59.0	34.6	110.9	28.6	91.7
1962	50.0	156.7	14.5	45.5	18.0	56.4	33.6	105.3	28.8	90.3
1963	49.8	153.7	14.5	44.8	17.6	54.3	36.6	113.0	28.3	87.3
1964	49.7	151.1	13.6	41.3	17.9	54.4	38.0	115.5	27.7	84.2
1965	49.3	145.9	14.5	42.9	17.9	53.0	36.3	107.4	27.7	82.0
1966	49.7	142.0	14.5	41.4	18.4	52.6	34.8	99.4	28.0	80.0
1967	50.3	140.1	14.5	40.4	18.8	52.4	36.0	100.3	28.4	79.1
1968	50.7	134.5	14.3	37.9	19.1	50.7	39.2	104.0	28.5	75.6
1969	53.3	133.9	15.4	38.7	20.5	51.5	44.0	110.6	29.9	75.1
1970	54.8	130.5	15.4	36.7	26.2	62.4	48.8	116.2	31.7	75.5
1971	58.4	131.5	16.3	36.7	30.1	67.8	53.2	119.8	34.0	76.6
1972	58.4	125.6	17.3	37.2	32.7	70.3	55.3	118.9	35.0	75.3
1973	67.1	135.6	20.1	40.6	36.5	73.7	61.7	124.6	39.8	80.4
1974	118.4	219.3	27.3	50.6	68.2	126.3	102.2	189.3	67.6	125.2
1975	132.2	222.9	41.1	69.3	83.9	141.5	149.5	252.1	82.5	139.1
1976	141.2	223.8	53.1	84.2	85.0	134.7	153.9	243.9	90.2	142.9
1977	147.8	219.6	72.3	107.4	87.7	130.3	153.8	228.5	100.8	149.8
1978	155.2	215.0	83.6	115.8	97.9	135.6	152.7	211.5	111.6	154.6
1979	217.9	277.2	108.1	137.5	105.3	134.0	177.2	225.4	141.7	180.3
1980	372.2	434.3	144.8	169.0	109.4	127.7	185.9	216.9	204.2	238.3
1981	547.8	582.8	179.5	191.0	117.9	125.4	190.1	202.2	274.5	292.0
1982	491.7	491.7	222.2	222.2	122.1	122.1	214.0	214.0	275.8	275.8
1983	451.6	434.6	232.3	223.6	117.2	112.8	230.0	221.4	270.1	260.0
1984	446.2	412.8	239.9	221.9	115.9	107.2	208.7	193.1	264.6	244.8
1985[5]	415.2	371.7	223.6	200.2	114.3	102.3	210.1	188.1	249.9	223.7

[1] Includes lease condensate.
[2] Wet natural gas, prior to extraction of natural gas plant liquids.
[3] Derived by multiplying the price per Btu of each fossil fuel by the total Btu content of the production of each fossil fuel and dividing this accumulated value of total fossil fuel production by the accumulated Btu content of total fossil fuel production.
[4] Constant 1982 dollars calculated using GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.
[5] Preliminary.
Note: All fuel prices taken as close as possible to the point of production.
Sources: See sources for Tables 61, 70, and 79 and the GNP implicit price deflators in the Energy Equivalents and Price Deflators section.

Figure 11. Prices of Fuels and Electricity by End-Use Sector, 1970-1983



Source: See Table 11.

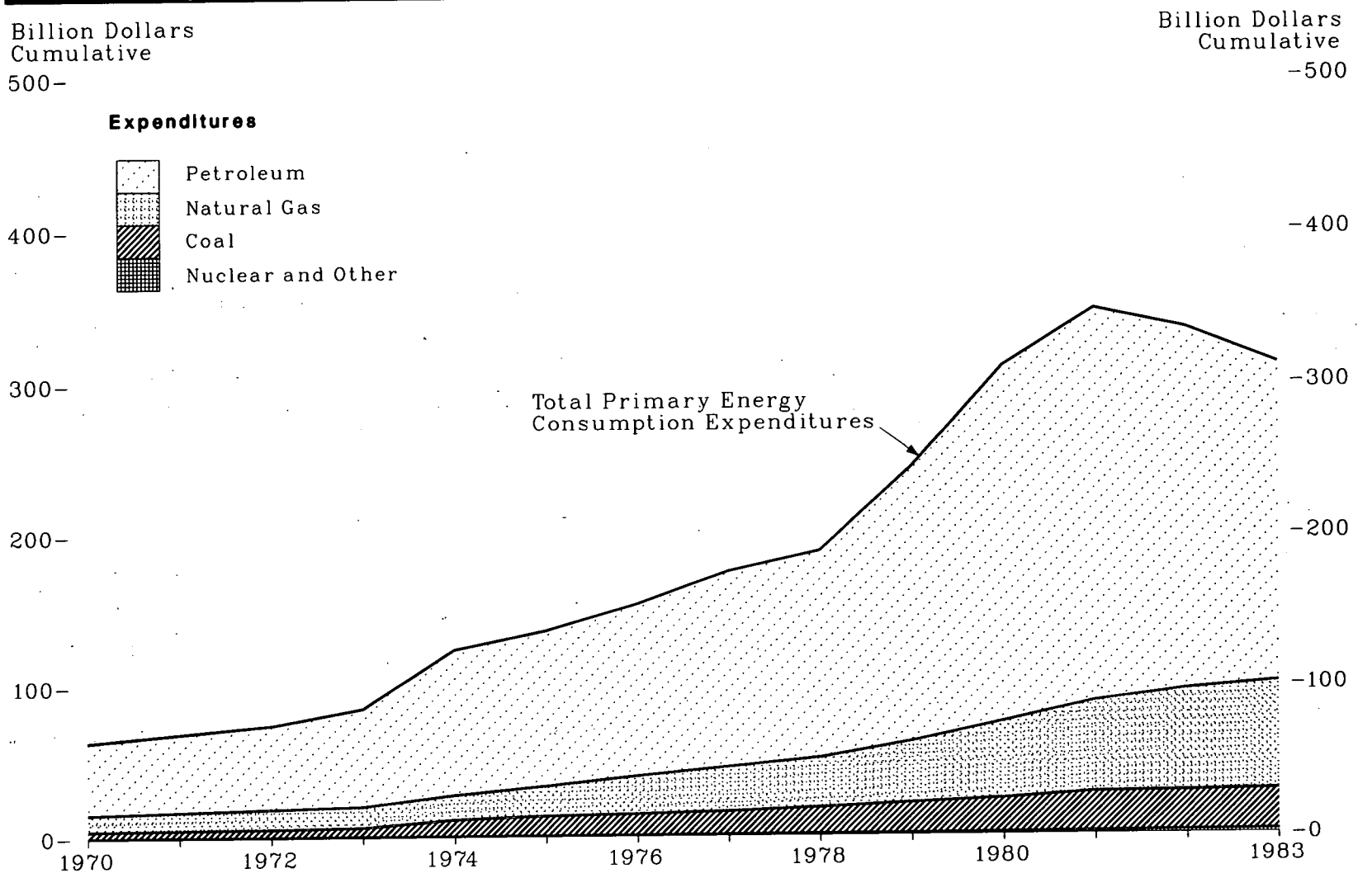
Table 11. Prices of Fuels and Electricity by End-Use Sector, 1970-1983

(Dollars per Million Btu)

End-Use Sector (Including Electric Utilities)	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Residential and Commercial Sector [1]														
Primary Energy	1.23	1.29	1.34	1.56	1.92	2.13	2.40	2.78	2.95	3.62	4.55	5.28	5.86	6.42
Coal	1.13	1.21	1.26	1.19	2.21	2.46	2.40	2.51	2.59	2.68	2.87	3.27	3.36	2.96
Natural Gas	1.06	1.12	1.19	1.26	1.42	1.67	1.94	2.31	2.52	2.92	3.60	4.19	5.05	5.89
Petroleum Products [2]	1.55	1.60	1.63	2.11	2.87	3.04	3.26	3.67	3.79	5.33	7.24	8.68	8.69	8.26
Distillate Fuel Oil	1.39	1.46	1.47	1.69	2.61	2.74	2.94	3.32	3.51	5.04	7.02	8.63	8.38	7.74
Liquefied Petroleum Gases	2.09	2.05	2.16	3.62	3.73	4.02	4.39	4.91	4.76	6.55	7.90	8.32	9.26	9.46
Motor Gasoline	2.86	2.91	2.90	3.11	4.33	4.66	4.81	5.12	5.28	7.09	9.68	10.88	10.41	8.55
Residual Fuel Oil	0.50	0.67	0.71	0.86	1.92	2.03	1.98	2.27	2.20	3.10	4.44	5.48	4.87	4.28
Electricity	6.54	6.83	7.10	7.45	9.08	10.30	11.00	11.89	12.68	13.63	15.75	18.13	20.10	20.99
Average	2.12	2.25	2.39	2.74	3.40	3.84	4.17	4.81	5.19	6.06	7.55	8.91	9.91	10.76
Industrial Sector														
Primary Energy	0.59	0.64	0.69	0.78	1.38	1.64	1.80	2.06	2.20	2.77	3.62	4.19	4.56	4.61
Coal	0.45	0.50	0.55	0.62	1.22	1.51	1.49	1.56	1.73	1.74	1.87	2.06	2.10	1.93
Coking Coal	0.45	0.52	0.59	0.68	1.36	1.65	1.65	1.72	1.94	1.89	2.10	2.34	2.43	2.16
Natural Gas	0.37	0.41	0.46	0.50	0.67	0.95	1.21	1.48	1.66	1.95	2.51	3.07	3.79	4.09
Petroleum Products [3]	0.93	1.01	1.02	1.15	2.21	2.39	2.45	2.72	2.82	3.77	5.28	6.29	6.24	6.20
Asphalt and Road Oil	0.68	0.79	0.82	0.84	1.60	1.89	1.86	1.95	2.13	2.58	3.68	5.02	4.24	4.32
Distillate Fuel Oil	0.72	0.75	0.75	0.92	2.02	2.23	2.38	2.68	2.82	3.85	5.54	6.52	6.62	6.21
Liquefied Petroleum Gases	1.12	1.18	1.20	1.33	2.46	2.55	2.75	3.20	3.12	4.07	5.25	5.76	6.17	6.66
Lubricants	5.36	5.56	5.88	5.57	7.48	7.68	7.15	6.97	7.56	10.09	14.08	17.53	16.86	16.40
Residual Fuel Oil	0.46	0.61	0.66	0.80	1.83	1.92	1.90	2.15	2.12	2.77	3.71	4.50	4.50	4.38
Electricity	3.00	3.23	3.40	3.68	4.99	6.07	6.45	7.34	8.20	8.95	10.79	12.49	14.54	14.62
Average	0.81	0.90	0.97	1.08	1.78	2.19	2.39	2.75	3.01	3.58	4.58	5.36	6.03	6.19
Transportation Sector														
Primary Energy	2.32	2.39	2.39	2.59	3.71	4.04	4.19	4.46	4.60	6.19	8.60	9.77	9.38	8.02
Coal	0.41	0.46	0.49	0.48	0.96	1.27	1.22	1.29	(4)	(4)	(4)	(4)	(4)	(4)
Petroleum Products [5]	2.33	2.39	2.39	2.59	3.71	4.04	4.19	4.46	4.60	6.19	8.60	9.77	9.38	8.02
Distillate Fuel Oil	1.31	1.38	1.38	1.66	2.63	2.80	2.96	3.31	3.42	5.04	7.19	8.54	8.14	7.29
Jet Fuel	0.78	0.82	0.82	0.97	1.67	2.18	2.39	2.75	3.05	4.16	6.78	7.58	7.23	6.51
Motor Gasoline	2.85	2.90	2.88	3.10	4.32	4.64	4.80	5.09	5.23	7.06	9.75	10.86	10.36	8.54
Residual Fuel Oil	0.36	0.49	0.53	0.64	1.41	1.45	1.52	1.68	1.51	2.38	3.18	4.11	3.85	4.76
Electricity	3.82	4.25	4.52	4.76	7.04	7.69	8.06	8.24	9.84	10.74	11.95	14.39	15.38	16.46
Average	2.33	2.39	2.39	2.59	3.71	4.04	4.19	4.46	4.60	6.19	8.60	9.77	9.38	8.03
Electric Utilities														
Coal	0.31	0.36	0.38	0.41	0.71	0.82	0.85	0.95	1.12	1.22	1.35	1.53	1.65	1.66
Natural Gas	0.28	0.31	0.33	0.35	0.49	0.75	1.03	1.29	1.43	1.74	2.19	2.79	3.36	3.46
Petroleum Products [6]	0.41	0.58	0.65	0.81	1.85	2.00	1.98	2.23	2.18	3.05	4.34	5.42	4.96	4.68
Residual Fuel Oil	0.40	0.56	0.63	0.78	1.87	1.99	1.95	2.19	2.14	2.99	4.25	5.32	4.85	4.60
Nuclear Power	0.18	0.18	0.18	0.19	0.20	0.24	0.25	0.27	0.30	0.34	0.43	0.48	0.54	0.57
Wood and Waste	0.68	0.72	0.75	0.79	0.86	0.94	0.99	1.04	1.12	1.56	1.80	1.24	1.43	1.65
Average	0.32	0.38	0.41	0.47	0.86	0.96	1.02	1.16	1.25	1.48	1.75	2.00	2.01	1.97

[1] All entries in this sector, including average, are for the residential sector, except motor gasoline and residual fuel oil, which are for the commercial sector.
[2] In addition to listed products, includes kerosene.
[3] In addition to listed products, includes jet fuel, kerosene, motor gasoline, road oil, still gas, special naphthas, petrochemical feedstocks, petroleum coke, miscellaneous products, wax, natural gasoline, and plant condensate.
[4] Not applicable.
[5] In addition to listed products, includes aviation gasoline, liquefied petroleum gases, and lubricants.
[6] In addition to listed products, includes distillate fuel oil, jet fuel, and petroleum coke.
Source: Energy Information Administration, "State Energy Price and Expenditure Data System 1983."

Figure 12. Expenditures for Fuels and Electricity, 1970-1983



Source: See Table 12.

Table 12. Expenditures for Fuels and Electricity, 1970-1983

(Billion Dollars)

Energy Source	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Coal														
Coking Coal	1.2	1.2	1.4	1.7	3.3	3.7	3.7	3.6	3.7	3.9	3.7	3.8	2.7	2.1
Steam Coal	3.4	3.7	4.0	4.5	7.9	9.4	10.3	11.9	13.9	16.5	18.9	22.4	23.8	25.0
Total	4.6	4.9	5.4	6.2	11.1	13.1	14.1	15.4	17.6	20.4	22.7	26.3	26.4	27.1
Natural Gas	10.9	12.1	13.2	13.9	16.4	20.0	25.1	29.5	33.1	40.7	51.1	60.6	68.1	72.0
Petroleum Products														
Asphalt and Road Oil	0.7	0.9	0.9	1.1	1.9	1.9	1.9	2.1	2.5	3.0	3.5	4.2	3.5	3.9
Aviation Gasoline	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.7	0.9	0.9	0.8	0.8
Distillate Fuel Oil	6.3	6.9	7.6	9.5	15.2	15.7	18.4	22.0	23.6	32.8	40.8	48.2	44.2	40.4
Jet Fuel	1.5	1.7	1.8	2.1	3.4	4.5	4.9	5.9	6.6	9.2	14.8	15.6	15.0	13.9
Kerosene	0.7	0.6	0.6	0.6	0.9	0.9	1.0	1.2	1.3	2.0	2.3	2.3	2.3	2.0
Liquefied Petroleum Gases	2.5	2.5	2.9	4.0	5.3	5.3	6.1	6.9	6.6	9.4	11.0	11.9	12.9	14.1
Lubricants	1.6	1.7	1.9	2.0	2.6	2.3	2.4	2.5	2.9	4.0	5.0	5.9	5.2	5.3
Motor Gasoline	31.6	33.5	35.3	39.7	54.1	59.4	64.5	70.0	74.4	95.2	123.3	137.1	129.9	108.4
Residual Fuel Oil	2.0	2.9	3.5	4.8	10.5	10.3	11.6	14.3	13.5	17.6	21.6	22.4	17.1	14.3
Other Petroleum Products [1]	0.7	0.8	0.9	1.1	2.5	2.7	3.3	4.6	5.0	7.9	11.8	10.3	7.4	7.3
Total	47.9	51.8	55.7	65.2	96.8	103.3	114.4	129.8	136.9	181.6	235.1	258.9	238.2	210.4
Nuclear Power, Wood, and Waste Electricity Generation	[2]	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	0.9	1.2	1.4	1.7	1.9
Imports of Coal Coke	[2]	[2]	[2]	[2]	0.2	0.2	0.1	0.1	0.4	0.3	0.1	[2]	[2]	[2]
Exports of Coal Coke [3]	0.1	[2]	[2]	[2]	[2]	0.1	0.1	0.1	[2]	0.1	0.1	0.1	0.1	[2]
Total Primary Energy	63.4	68.8	74.4	85.5	124.7	137.0	154.1	175.6	188.9	244.0	309.9	347.1	334.4	311.3
Electric Utility Fuel [3]	4.3	5.4	6.5	7.8	14.3	16.4	18.9	23.4	25.8	31.0	37.4	43.2	41.3	41.3
Electricity Purchased by End Users [4]	23.5	26.4	29.8	33.9	42.8	50.9	57.3	66.7	74.6	82.4	98.5	116.4	127.5	134.8
Total Energy [5]	82.6	89.8	97.7	111.6	153.3	171.5	192.5	218.9	237.7	295.3	371.0	420.2	420.5	404.9

[1] Includes isopentane, natural gasoline, unfractionated stream (including plant condensate), petrochemical feedstocks, special naphthas, petroleum coke, still gas, wax, and miscellaneous products.

[2] Less than $0.05 billion.

[3] In determining total energy expenditures, this is a negative quantity.

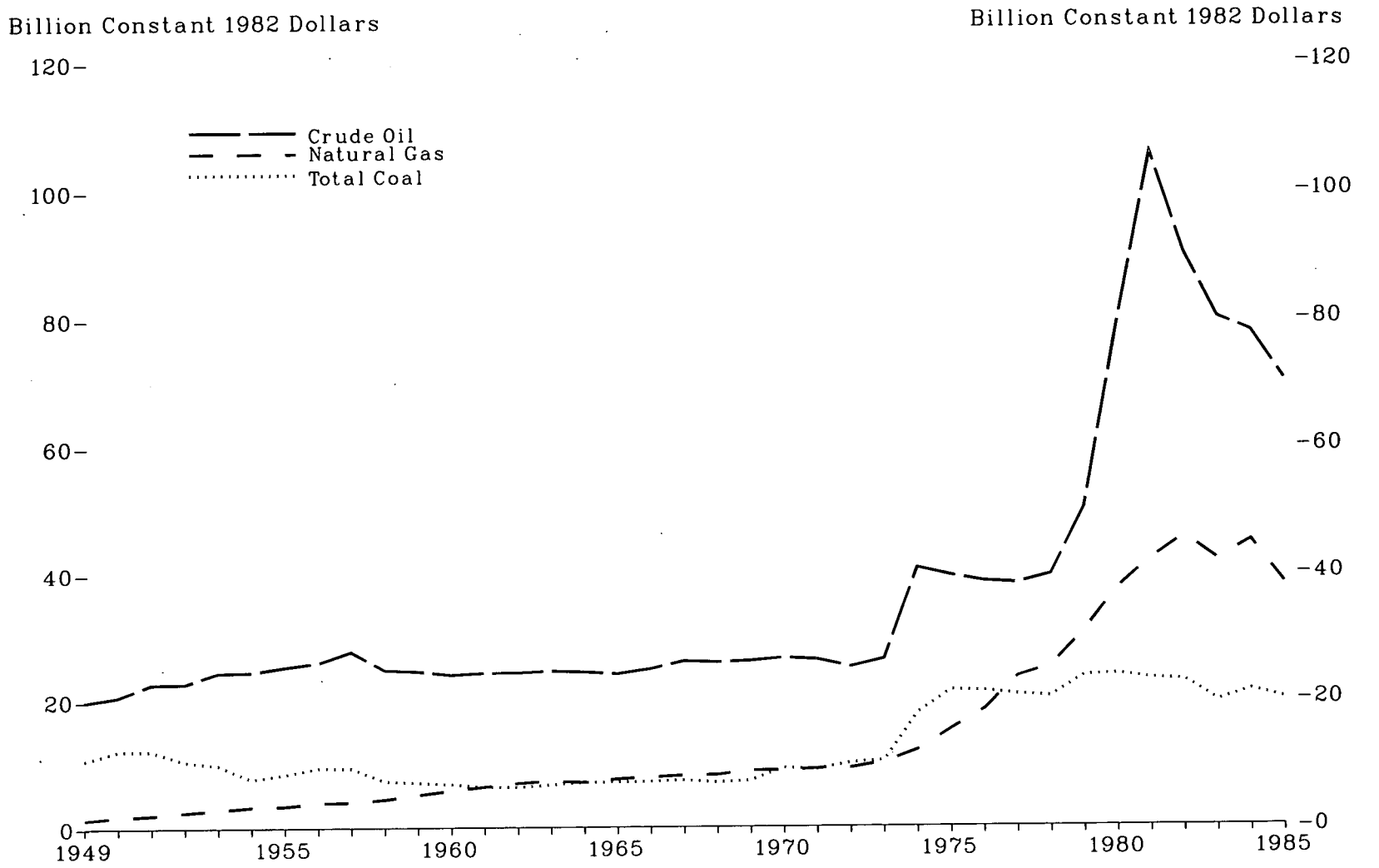
[4] These are sales. In determining total energy expenditures, this is a positive quantity.

[5] There are no purchased fuels for energy sources such as hydroelectric, solar, wind, and geothermal energy. Wood and waste fuels are not included except those consumed by the electric utility sector.

Note: Sum of components may not equal total due to independent rounding.

Source: Energy Information Administration, "State Energy Price and Expenditure Data System 1983."

Figure 13. Value of Fossil Fuel Production, 1949-1985



Source: See Table 13.

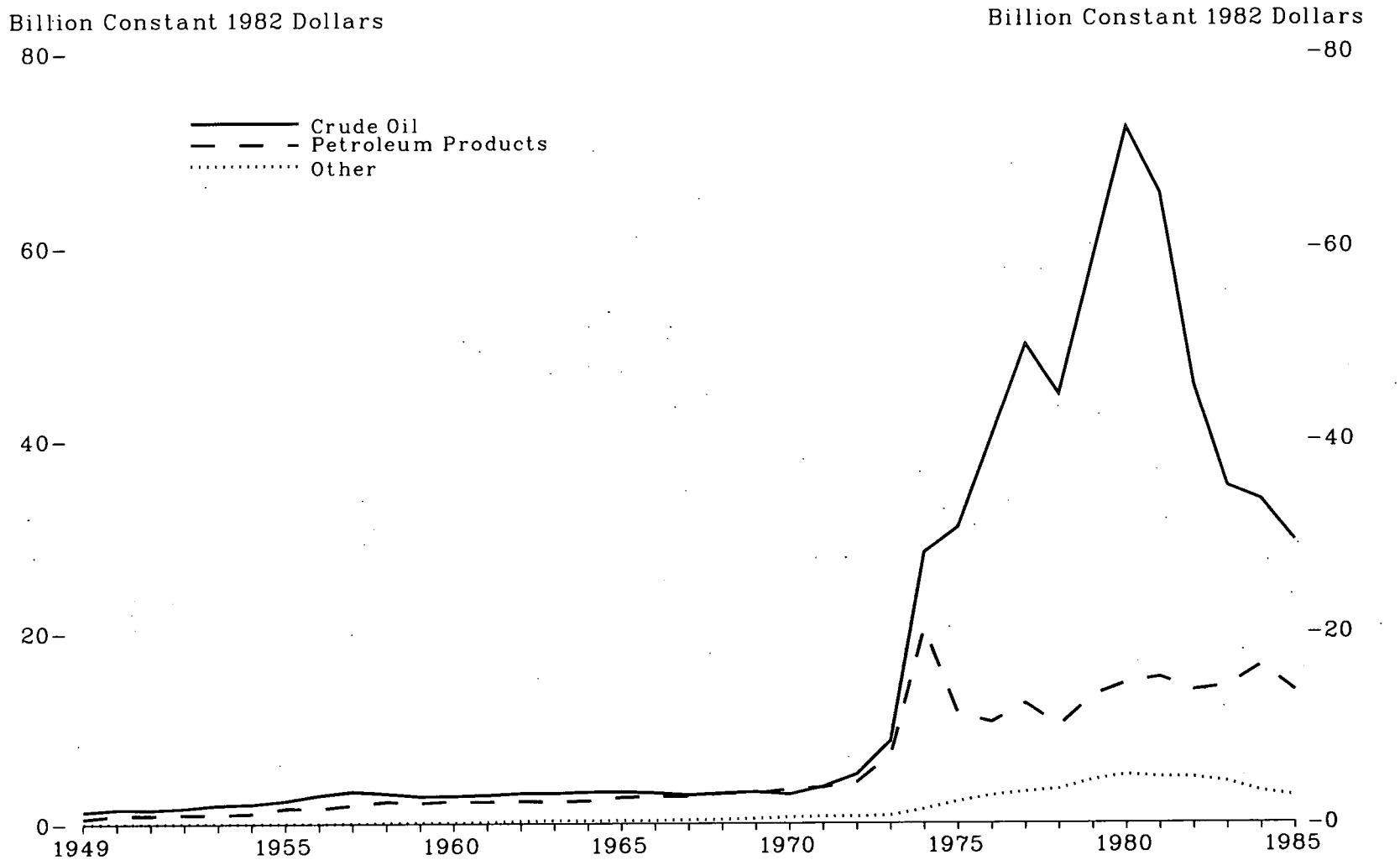
Table 13. Value of Fossil Fuel Production, 1949-1985

(Billion Dollars)

Year	Crude Oil [1]		Natural Gas (Marketed Production)		Bituminous Coal, Subbituminous Coal, and Lignite		Anthracite		Total	
	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]
1949	4.68	19.91	0.33	1.40	2.14	9.11	0.38	1.62	7.53	32.04
1950	4.95	20.71	0.44	1.84	2.50	10.46	0.41	1.72	8.30	34.73
1951	5.69	22.67	0.52	2.07	2.63	10.48	0.42	1.67	9.26	36.89
1952	5.79	22.71	0.64	2.51	2.29	8.98	0.39	1.53	9.11	35.73
1953	6.32	24.40	0.76	2.93	2.25	8.69	0.31	1.20	9.64	37.22
1954	6.44	24.49	0.87	3.31	1.77	6.73	0.25	0.95	9.33	35.48
1955	6.88	25.29	0.94	3.46	2.09	7.68	0.21	0.77	10.12	37.20
1956	7.30	25.98	1.11	3.95	2.41	8.58	0.24	0.85	11.06	39.36
1957	8.09	27.80	1.17	4.02	2.50	8.59	0.23	0.79	11.99	41.20
1958	7.37	24.81	1.32	4.44	1.99	6.70	0.19	0.64	10.87	36.59
1959	7.47	24.57	1.57	5.16	1.97	6.48	0.18	0.59	11.19	36.80
1960	7.42	24.01	1.79	5.79	1.95	6.31	0.15	0.49	11.31	36.60
1961	7.58	24.29	1.99	6.38	1.85	5.93	0.14	0.45	11.56	37.05
1962	7.76	24.33	2.22	6.96	1.89	5.92	0.13	0.41	12.00	37.62
1963	7.96	24.57	2.36	7.28	2.01	6.20	0.16	0.49	12.49	38.54
1964	8.03	24.41	2.33	7.08	2.17	6.60	0.15	0.46	12.68	38.55
1965	8.15	24.11	2.57	7.60	2.27	6.72	0.13	0.38	13.12	38.81
1966	8.72	24.91	2.75	7.86	2.42	6.91	0.10	0.29	13.99	39.97
1967	9.39	26.16	2.91	8.11	2.55	7.10	0.10	0.28	14.95	41.65
1968	9.79	25.97	3.09	8.20	2.55	6.76	0.10	0.27	15.53	41.20
1969	10.42	26.18	3.52	8.84	2.80	7.04	0.10	0.25	16.84	42.31
1970	11.19	26.64	3.73	8.88	3.77	8.98	0.11	0.26	18.80	44.76
1971	11.71	26.37	4.05	9.12	3.90	8.78	0.11	0.25	19.77	44.52
1972	11.71	25.18	4.28	9.20	4.56	9.81	0.09	0.19	20.64	44.38
1973	13.07	26.40	4.98	10.06	5.05	10.20	0.09	0.18	23.19	46.84
1974	22.00	40.74	6.48	12.00	9.50	17.59	0.15	0.28	38.13	70.61
1975	23.45	39.54	9.05	15.26	12.47	21.03	0.20	0.34	45.17	76.17
1976	24.37	38.62	11.57	18.34	13.19	20.90	0.21	0.33	49.34	78.19
1977	25.79	38.32	15.82	23.51	13.70	20.36	0.20	0.30	55.51	82.49
1978	28.60	39.61	18.18	25.18	14.49	20.07	0.18	0.25	61.45	85.11
1979	39.45	50.19	24.16	30.74	18.36	23.36	0.20	0.25	82.17	104.54
1980	67.93	79.26	32.09	37.44	20.20	23.57	0.26	0.30	120.48	140.57
1981	99.40	105.74	39.51	42.03	21.51	22.88	0.24	0.26	160.66	170.91
1982	90.03	90.03	45.56	45.56	22.62	22.62	0.23	0.23	158.44	158.44
1983	83.05	79.93	43.57	41.93	20.11	19.36	0.21	0.20	146.94	141.42
1984	84.10	77.80	48.49	44.86	22.75	21.05	0.20	0.19	155.54	143.90
1985[3]	78.40	70.19	42.58	38.12	22.05	19.74	0.19	0.17	143.22	128.22

[1] Includes lease condensate.
[2] Constant 1982 dollars calculated using GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.
[3] Preliminary.
Note: Value is based on fuel prices taken as close as possible to the point of production.
Sources: See Tables 46, 60, 66, 70, 73, and 79.

Figure 14. Value of Fossil Fuel Imports, 1949-1985



Source: See Table 14.

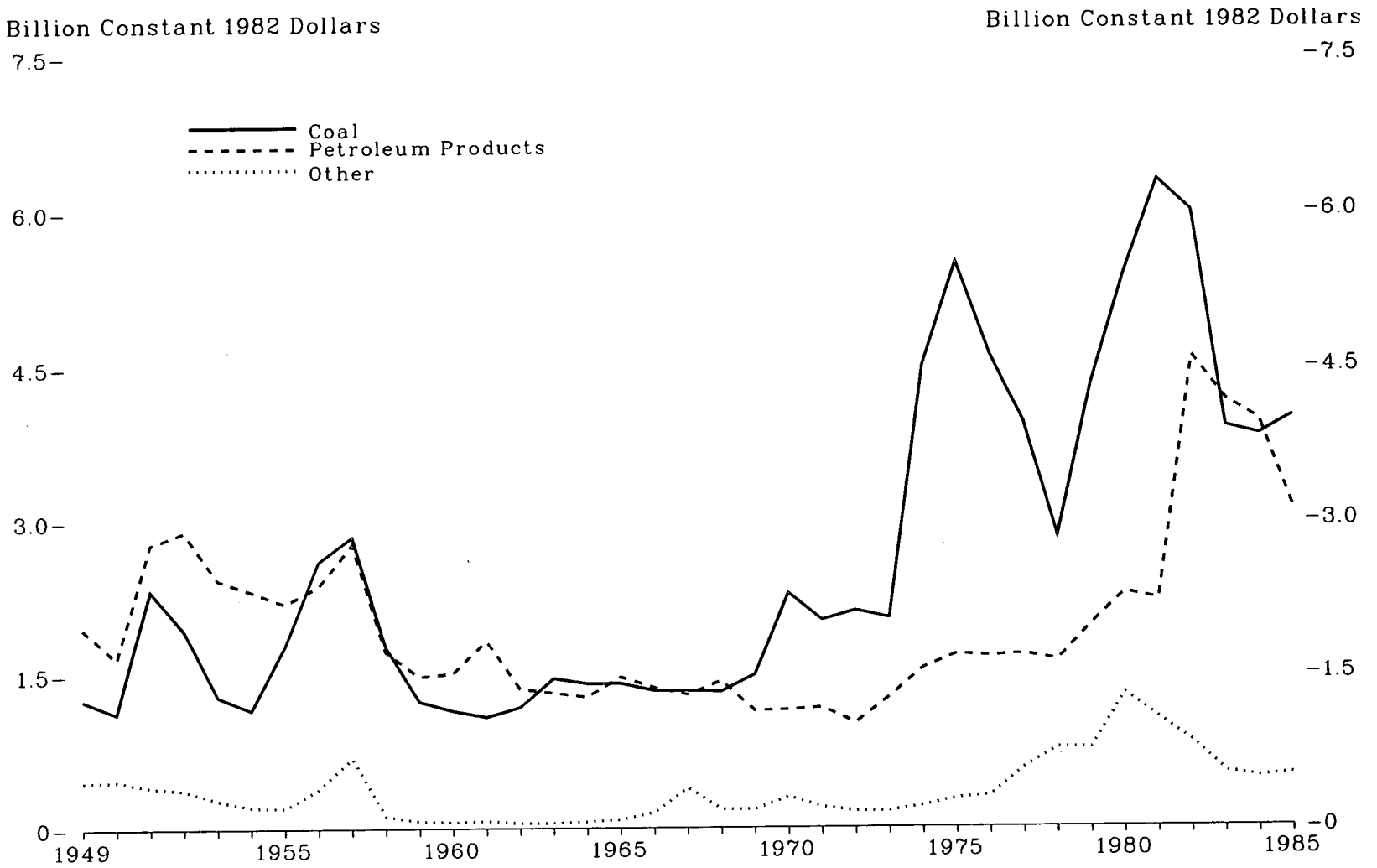
Table 14. Value of Fossil Fuel Imports, 1949-1985

(Billion Dollars)

Year	Coal		Coal Coke		Natural Gas		Crude Oil [1]		Petroleum Products		Total	
	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]
1949	[3]	0.01	[3]	0.02	[3]	[3]	0.30	1.30	0.14	0.58	0.45	1.91
1950	[3]	0.01	0.01	0.02	[3]	[3]	0.37	1.54	0.21	0.90	0.59	2.48
1951	[3]	0.01	[3]	0.01	[3]	[3]	0.37	1.49	0.23	0.90	0.61	2.41
1952	[3]	0.01	[3]	0.02	[3]	[3]	0.42	1.66	0.25	0.99	0.68	2.68
1953	[3]	0.01	[3]	0.01	[3]	[3]	0.51	1.97	0.25	0.97	0.77	2.96
1954	[3]	0.01	[3]	[3]	[3]	[3]	0.54	2.07	0.28	1.08	0.83	3.17
1955	[3]	0.01	[3]	0.01	[3]	[3]	0.65	2.41	0.44	1.62	1.10	4.05
1956	[3]	0.01	[3]	0.01	[3]	[3]	0.84	2.98	0.45	1.59	1.29	4.59
1957	[3]	0.01	[3]	0.01	[3]	0.01	0.98	3.37	0.57	1.95	1.56	5.35
1958	[3]	0.01	[3]	0.01	0.02	0.07	0.94	3.16	0.68	2.31	1.65	5.56
1959	[3]	0.01	[3]	[3]	0.03	0.09	0.87	2.87	0.66	2.18	1.57	5.15
1960	[3]	0.01	[3]	[3]	0.03	0.09	0.90	2.90	0.73	2.37	1.66	5.37
1961	[3]	[3]	[3]	[3]	0.04	0.14	0.93	2.99	0.71	2.28	1.69	5.42
1962	[3]	0.01	[3]	0.01	0.09	0.27	1.01	3.17	0.75	2.36	1.86	5.82
1963	[3]	0.01	[3]	0.01	0.10	0.30	1.03	3.16	0.74	2.28	1.87	5.76
1964	[3]	0.01	[3]	[3]	0.10	0.30	1.08	3.28	0.78	2.38	1.97	5.98
1965	[3]	[3]	[3]	[3]	0.11	0.31	1.12	3.31	0.92	2.73	2.15	6.37
1966	[3]	[3]	[3]	0.01	0.11	0.30	1.12	3.19	0.99	2.82	2.21	6.32
1967	[3]	0.01	[3]	[3]	0.13	0.36	1.06	2.96	1.02	2.83	2.21	6.17
1968	[3]	0.01	[3]	0.01	0.15	0.39	1.18	3.14	1.16	3.09	2.50	6.63
1969	[3]	[3]	[3]	0.01	0.20	0.49	1.30	3.26	1.24	3.11	2.74	6.88
1970	[3]	[3]	[3]	0.01	0.26	0.61	1.26	3.00	1.48	3.53	3.00	7.15
1971	[3]	[3]	0.01	0.01	0.31	0.70	1.69	3.80	1.66	3.73	3.66	8.25
1972	[3]	[3]	[3]	0.01	0.31	0.68	2.37	5.10	1.99	4.28	4.68	10.06
1973	[3]	[3]	0.04	0.08	0.36	0.73	4.24	8.57	3.50	7.07	8.14	16.45
1974	0.06	0.11	0.19	0.36	0.53	0.98	15.25	28.25	11.01	20.39	27.05	50.09
1975	0.02	0.04	0.16	0.26	1.15	1.94	18.29	30.84	6.77	11.41	26.39	44.50
1976	0.02	0.03	0.11	0.18	1.66	2.63	25.46	40.34	6.65	10.54	33.90	53.72
1977	0.04	0.06	0.13	0.19	2.00	2.97	33.59	49.91	8.42	12.51	44.18	65.64
1978	0.07	0.10	0.41	0.57	2.06	2.85	32.30	44.73	7.30	10.12	42.15	58.37
1979	0.05	0.07	0.34	0.43	3.13	3.98	46.06	58.60	10.45	13.30	60.03	76.37
1980	0.03	0.04	0.05	0.06	4.21	4.92	61.90	72.23	12.54	14.63	78.74	91.87
1981	0.03	0.03	0.04	0.05	4.41	4.69	61.46	65.38	14.30	15.21	80.24	85.36
1982	0.02	0.02	0.01	0.01	4.69	4.69	45.72	45.72	13.86	13.86	64.31	64.31
1983	0.04	0.04	[3]	[3]	4.39	4.22	36.49	35.12	14.84	14.28	55.77	53.67
1984	0.05	0.04	0.05	0.04	3.44	3.18	36.44	33.71	17.87	16.53	57.84	53.51
1985[4]	0.07	0.06	0.04	0.04	2.99	2.68	32.90	29.46	15.37	13.76	51.38	46.00

[1] Includes imports into the Strategic Petroleum Reserve, which began in 1977.
[2] Constant 1982 dollars calculated using GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.
[3] Less than $5 million.
[4] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Note: Includes value of imports into Puerto Rico from foreign countries; excludes receipts into the 50 States and the District of Columbia from the Virgin Islands and Puerto Rico.
Sources: **Natural Gas:** • 1949 through 1962—Bureau of the Census, *U.S. Imports of Merchandise for Consumption*, FT110. •1963—Bureau of the Census, *U.S. Imports of Merchandise for Consumption*, FT125. •1964 through 1971—Bureau of the Census, *U.S. Imports for Consumption and General Imports*, FT246. • 1972 and 1973—Federal Power Commission, *Pipeline Imports and Exports of Natural Gas - Imports and Exports of LNG*. • 1974 through 1977—Federal Power Commission, *United States Imports and Exports of Natural Gas*, annual. • 1978 through 1981—Energy Information Administration, *U.S. Imports and Exports of Natural Gas*, annual. • 1982 through 1984—Energy Information Administration, *Natural Gas Monthly*. • 1985—EIA estimates. **Others:** • 1949 through 1962—Bureau of the Census, *U.S. Imports of Merchandise for Consumption*, FT110. •1963—Bureau of the Census *U.S. Imports of Merchandise for Consumption*, FT125. • 1964 through 1984—Bureau of the Census, *U.S. Imports for Consumption*, FT246. • 1985—Bureau of the Census, *U.S. Imports for Consumption and General Imports*, IM145.

Figure 15. Value of Fossil Fuel Exports, 1949–1985



Source: See Table 15.

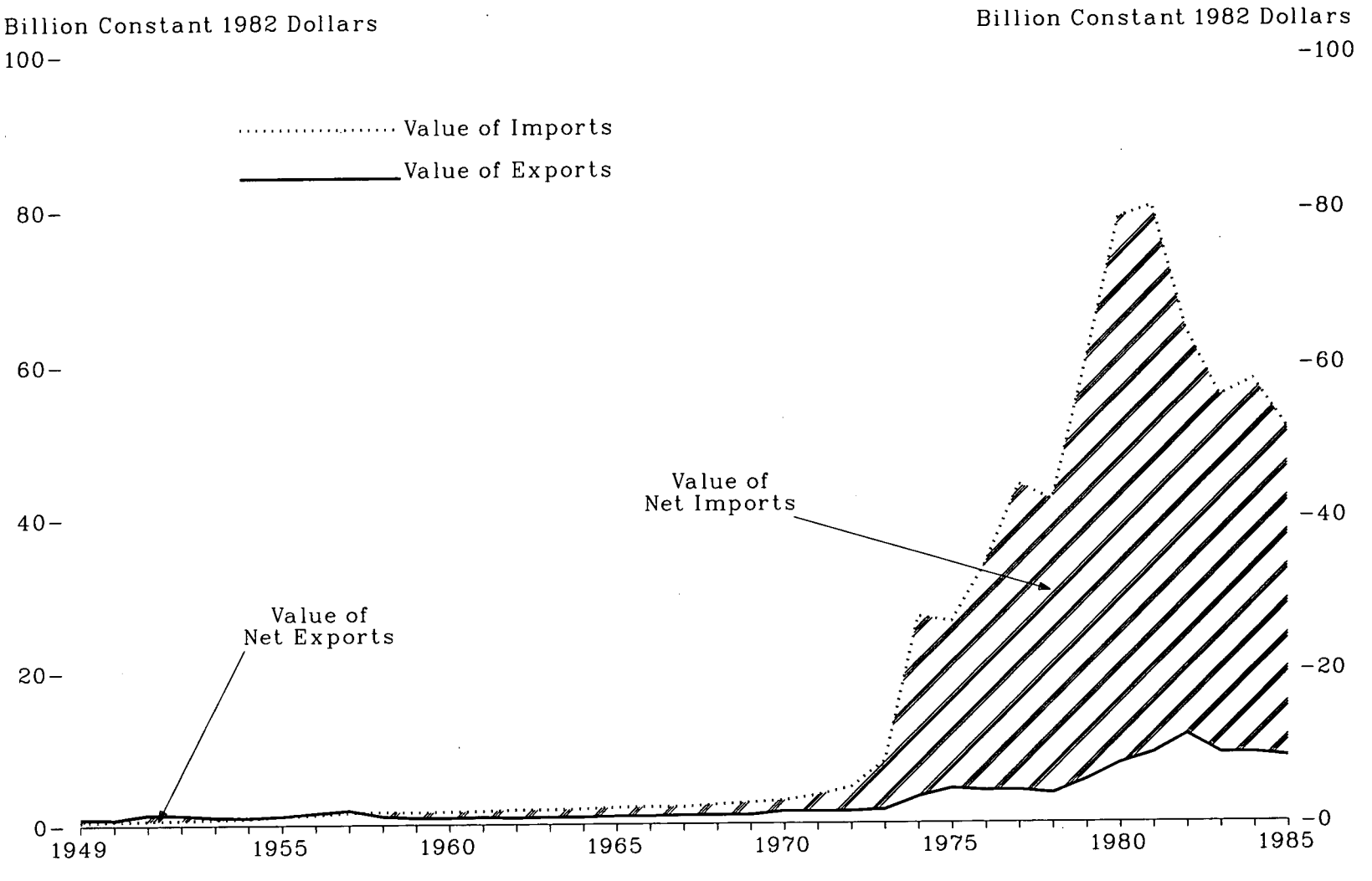
Table 15. Value of Fossil Fuel Exports, 1949-1985

(Billion Dollars)

Year	Coal		Coal Coke		Natural Gas		Crude Oil		Petroleum Products		Total	
	Current	Constant [1]	Current	Constant [1]	Current	Constant [1]	Current	Constant [1]	Current	Constant [1]	Current	Constant [1]
1949	0.30	1.26	0.01	0.04	[2]	0.01	0.10	0.42	0.46	1.96	0.87	3.69
1950	0.27	1.13	0.01	0.03	[2]	0.01	0.10	0.43	0.39	1.65	0.78	3.25
1951	0.59	2.33	0.02	0.07	[2]	0.01	0.08	0.33	0.70	2.78	1.39	5.53
1952	0.49	1.94	0.01	0.05	[2]	0.02	0.08	0.31	0.74	2.90	1.33	5.21
1953	0.34	1.29	0.01	0.04	[2]	0.02	0.06	0.23	0.63	2.43	1.04	4.01
1954	0.30	1.16	0.01	0.02	[2]	0.02	0.05	0.17	0.61	2.32	0.97	3.68
1955	0.48	1.78	0.01	0.03	0.01	0.02	0.04	0.14	0.60	2.20	1.14	4.18
1956	0.73	2.61	0.01	0.04	0.01	0.03	0.09	0.32	0.67	2.37	1.51	5.37
1957	0.83	2.85	0.01	0.05	0.01	0.04	0.17	0.60	0.81	2.78	1.84	6.31
1958	0.53	1.77	0.01	0.02	0.01	0.05	0.01	0.05	0.51	1.72	1.07	3.61
1959	0.38	1.24	0.01	0.03	0.01	0.02	0.01	0.02	0.45	1.48	0.85	2.80
1960	0.35	1.15	0.01	0.02	[2]	0.01	0.01	0.03	0.47	1.51	0.84	2.72
1961	0.34	1.09	0.01	0.03	[2]	0.01	0.01	0.03	0.57	1.83	0.93	2.99
1962	0.38	1.18	0.01	0.02	[2]	0.01	0.01	0.02	0.43	1.36	0.83	2.59
1963	0.47	1.46	0.01	0.03	[2]	0.01	[2]	0.01	0.43	1.32	0.92	2.84
1964	0.46	1.41	0.01	0.03	[2]	0.01	[2]	0.01	0.42	1.28	0.90	2.75
1965	0.48	1.41	0.02	0.05	0.01	0.02	[2]	0.01	0.50	1.47	1.00	2.96
1966	0.47	1.34	0.02	0.07	0.02	0.05	0.01	0.03	0.48	1.37	1.00	2.85
1967	0.48	1.34	0.02	0.05	0.03	0.09	0.09	0.25	0.47	1.30	1.09	3.03
1968	0.50	1.33	0.02	0.05	0.04	0.10	0.01	0.03	0.54	1.43	1.11	2.94
1969	0.59	1.49	0.04	0.10	0.03	0.07	0.01	0.02	0.45	1.14	1.12	2.81
1970	0.96	2.29	0.08	0.19	0.03	0.07	0.02	0.04	0.48	1.15	1.57	3.74
1971	0.90	2.03	0.04	0.10	0.04	0.09	0.01	0.01	0.52	1.17	1.51	3.41
1972	0.98	2.12	0.03	0.07	0.04	0.09	[2]	[2]	0.47	1.02	1.53	3.29
1973	1.01	2.05	0.03	0.07	0.04	0.08	[2]	0.01	0.63	1.27	1.72	3.47
1974	2.44	4.51	0.04	0.08	0.05	0.10	0.01	0.03	0.84	1.55	3.39	6.28
1975	3.26	5.50	0.07	0.13	0.09	0.15	[2]	[2]	1.00	1.69	4.43	7.46
1976	2.91	4.61	0.07	0.11	0.10	0.16	0.03	0.04	1.06	1.67	4.16	6.60
1977	2.66	3.95	0.07	0.11	0.11	0.16	0.21	0.31	1.14	1.69	4.18	6.21
1978	2.05	2.84	0.05	0.07	0.11	0.15	0.39	0.54	1.18	1.63	3.78	5.23
1979	3.40	4.32	0.08	0.10	0.13	0.16	0.39	0.50	1.55	1.98	5.55	7.07
1980	4.63	5.40	0.13	0.15	0.23	0.27	0.75	0.88	1.96	2.29	7.70	8.98
1981	5.92	6.29	0.07	0.08	0.35	0.37	0.58	0.61	2.09	2.22	9.00	9.58
1982	5.99	5.99	0.06	0.06	0.30	0.30	0.47	0.47	4.59	4.59	11.41	11.41
1983	4.06	3.90	0.05	0.04	0.28	0.27	0.22	0.22	4.33	4.17	8.94	8.60
1984	4.13	3.82	0.07	0.06	0.27	0.25	0.19	0.17	4.28	3.96	8.94	8.27
1985[3]	4.47	4.00	0.08	0.07	0.26	0.24	0.23	0.20	3.48	3.11	8.51	7.62

[1] Constant 1982 dollars calculated using GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.
[2] Less than $5 million.
[3] Preliminary.
Note: Includes value of exports from Puerto Rico to foreign countries; excludes shipments from the 50 States and the District of Columbia to the Virgin Islands and Puerto Rico.
Note: Sum of components may not equal total due to independent rounding.
Sources: **Natural Gas:** •1949 through 1971—Bureau of the Census, *U.S. Exports*, FT410. •1972 and 1973—Federal Power Commission, *Pipeline Imports and Exports of Natural Gas - Imports and Exports of LNG*. • 1974 through 1977—Federal Power Commission, *United States Imports and Exports of Natural Gas*, annual. • 1978 through 1981—Energy Information Administration, *U.S. Imports and Exports of Natural Gas*, annual. • 1982 through 1984—Energy Information Administration, *Natural Gas Monthly*. • 1985—EIA estimates. **Others:** • 1949 through 1984—Bureau of the Census, *U.S. Exports*, FT410. •1985—Bureau of the Census, *U.S. Exports by Schedule B Commodities*, EM522.

Figure 16. Value of Net Trade in Fossil Fuels, 1949-1985



Source: See Tables 14, 15, and 16.

Table 16. Value of Net Trade [1] in Fossil Fuels, 1949-1985

(Billion Dollars)

Year	Coal		Coal Coke		Natural Gas		Crude Oil		Petroleum Products		Total	
	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]	Current	Constant [2]
1949	0.29	1.25	[3]	0.02	[3]	0.01	- 0.21	- 0.88	0.32	1.38	0.42	1.78
1950	0.27	1.12	[3]	[3]	[3]	0.01	- 0.27	- 1.12	0.18	0.75	0.18	0.77
1951	0.58	2.33	0.02	0.06	[3]	0.01	- 0.29	- 1.17	0.47	1.88	0.78	3.12
1952	0.49	1.93	0.01	0.04	[3]	0.01	- 0.34	- 1.35	0.49	1.91	0.65	2.53
1953	0.33	1.29	0.01	0.03	[3]	0.01	- 0.45	- 1.74	0.38	1.46	0.27	1.05
1954	0.30	1.15	[3]	0.02	[3]	0.01	- 0.50	- 1.90	0.32	1.24	0.14	0.52
1955	0.48	1.77	0.01	0.03	0.01	0.02	- 0.62	- 2.27	0.16	0.58	0.04	0.13
1956	0.73	2.60	0.01	0.04	0.01	0.03	- 0.75	- 2.66	0.22	0.78	0.22	0.78
1957	0.83	2.84	0.01	0.04	0.01	0.03	- 0.81	- 2.77	0.24	0.83	0.28	0.97
1958	0.52	1.76	0.01	0.02	- 0.01	- 0.02	- 0.92	- 3.11	- 0.17	- 0.59	- 0.58	- 1.94
1959	0.38	1.24	0.01	0.02	- 0.02	- 0.07	- 0.87	- 2.85	- 0.21	- 0.70	- 0.71	- 2.35
1960	0.35	1.14	0.01	0.02	- 0.02	- 0.08	- 0.89	- 2.87	- 0.26	- 0.86	- 0.82	- 2.65
1961	0.34	1.09	0.01	0.02	- 0.04	- 0.13	- 0.92	- 2.96	- 0.14	- 0.44	- 0.76	- 2.43
1962	0.38	1.18	0.01	0.02	- 0.08	- 0.26	- 1.01	- 3.16	- 0.32	- 1.00	- 1.03	- 3.22
1963	0.47	1.45	0.01	0.02	- 0.09	- 0.29	- 1.02	- 3.15	- 0.31	- 0.95	- 0.95	- 2.92
1964	0.46	1.40	0.01	0.03	- 0.10	- 0.29	- 1.08	- 3.27	- 0.36	- 1.10	- 1.06	- 3.23
1965	0.48	1.41	0.01	0.04	- 0.10	- 0.29	- 1.11	- 3.30	- 0.43	- 1.26	- 1.15	- 3.40
1966	0.47	1.33	0.02	0.06	- 0.09	- 0.25	- 1.11	- 3.16	- 0.51	- 1.45	- 1.21	- 3.47
1967	0.48	1.34	0.01	0.04	- 0.10	- 0.27	- 0.97	- 2.71	- 0.55	- 1.53	- 1.12	- 3.13
1968	0.50	1.33	0.02	0.04	- 0.11	- 0.29	- 1.17	- 3.11	- 0.63	- 1.66	- 1.39	- 3.68
1969	0.59	1.49	0.04	0.09	- 0.17	- 0.42	- 1.29	- 3.25	- 0.78	- 1.97	- 1.62	- 4.06
1970	0.96	2.29	0.08	0.18	- 0.23	- 0.54	- 1.24	- 2.96	- 1.00	- 2.38	- 1.43	- 3.41
1971	0.90	2.03	0.04	0.09	- 0.27	- 0.62	- 1.68	- 3.79	- 1.13	- 2.56	- 2.15	- 4.84
1972	0.98	2.11	0.03	0.06	- 0.28	- 0.59	- 2.37	- 5.09	- 1.51	- 3.26	- 3.15	- 6.77
1973	1.01	2.04	- 0.01	- 0.01	- 0.32	- 0.65	- 4.24	- 8.56	- 2.87	- 5.80	- 6.42	- 12.97
1974	2.38	4.41	- 0.15	- 0.28	- 0.48	- 0.88	- 15.24	- 28.22	- 10.17	- 18.84	- 23.66	- 43.81
1975	3.24	5.46	- 0.08	- 0.14	- 1.06	- 1.79	- 18.29	- 30.84	- 5.77	- 9.73	- 21.96	- 37.04
1976	2.89	4.58	- 0.04	- 0.07	- 1.56	- 2.47	- 25.43	- 40.30	- 5.59	- 8.87	- 29.73	- 47.12
1977	2.62	3.89	- 0.06	- 0.09	- 1.89	- 2.81	- 33.38	- 49.60	- 7.28	- 10.82	- 40.00	- 59.43
1978	1.98	2.74	- 0.36	- 0.50	- 1.95	- 2.70	- 31.91	- 44.19	- 6.13	- 8.49	- 38.37	- 53.14
1979	3.35	4.26	- 0.26	- 0.33	- 3.00	- 3.81	- 45.66	- 58.10	- 8.90	- 11.32	- 54.47	- 69.30
1980	4.60	5.36	0.08	0.09	- 3.98	- 4.65	- 61.15	- 71.35	- 10.58	- 12.35	- 71.04	- 82.89
1981	5.89	6.26	0.03	0.03	- 4.06	- 4.32	- 60.88	- 64.77	- 12.21	- 12.99	- 71.24	- 75.78
1982	5.97	5.97	0.05	0.05	- 4.39	- 4.39	- 45.25	- 45.25	- 9.27	- 9.27	- 52.90	- 52.90
1983	4.01	3.86	0.04	0.04	- 4.11	- 3.96	- 36.27	- 34.91	- 10.51	- 10.11	- 46.83	- 45.07
1984	4.09	3.78	0.02	0.02	- 3.17	- 2.93	- 36.26	- 33.54	- 13.58	- 12.56	- 48.90	- 45.24
1985[4]	4.39	3.93	0.03	0.03	- 2.73	- 2.44	- 32.68	- 29.25	- 11.89	- 10.64	- 42.87	- 38.38

[1] Net trade = exports minus imports.
[2] Constant 1982 dollars calculated using GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.
[3] Less than $5 million.
[4] Preliminary.
Note: Sum of components may not equal total due to independent rounding. Data on this table may not equal data on Table 15 minus data on Table 14 due to independent rounding.
Sources: Compiled from Tables 14 and 15.

Section 2. Energy Supply and Disposition—Indicators

Consumption Trends. Energy consumption trends in the United States can be illustrated by relating energy consumption to changes in real gross national product (GNP) and population. Real GNP is a global measure of economic activity deflated to negate the effect of inflation. Consumption per dollar of real GNP fell in recent years, moving from a 1970 high of 27.5 thousand Btu per dollar of real GNP to 20.7 thousand Btu per dollar of real GNP in 1985 (Table 18). Energy consumption per capita fell to 309 million Btu in 1985, down from the all-time high of 352 million Btu recorded in 1978 (Table 17).

Residential Energy Consumption Survey Data. Based on EIA's *Residential Energy Consumption Survey* (RECS), 8.91 quadrillion Btu of energy were consumed by households in 1984, up from 8.62 quadrillion Btu during 1982. Approximately 55 percent of the residential energy consumed was natural gas, 28 percent was electricity, 13 percent was distillate fuel oil and kerosene, and 4 percent was liquefied petroleum gas (Table 21).

Consumers relied primarily on natural gas for household heating, according to the survey. In 1984, 47.7 million households used natural gas as the main heating source, up from 41.8 million in 1978. Electricity provided the main source for heating in 14.6 million households, up from the 12.1 million in 1978. In contrast, the number of households relying on fuel oil as their main heating source declined from 16.9 million in 1978 to 12.3 million in 1984 (Table 23).

Annual U.S. Government energy use in recent years fluctuated between 1.7 and 1.9 quadrillion Btu. During fiscal year 1985, petroleum was the source of 58 percent of that energy, followed by electricity, 29 percent, and natural gas, 8 percent. The U.S. Department of Defense consumed 82 percent of the total energy used by the U.S. Government during fiscal year 1985 (Table 8).

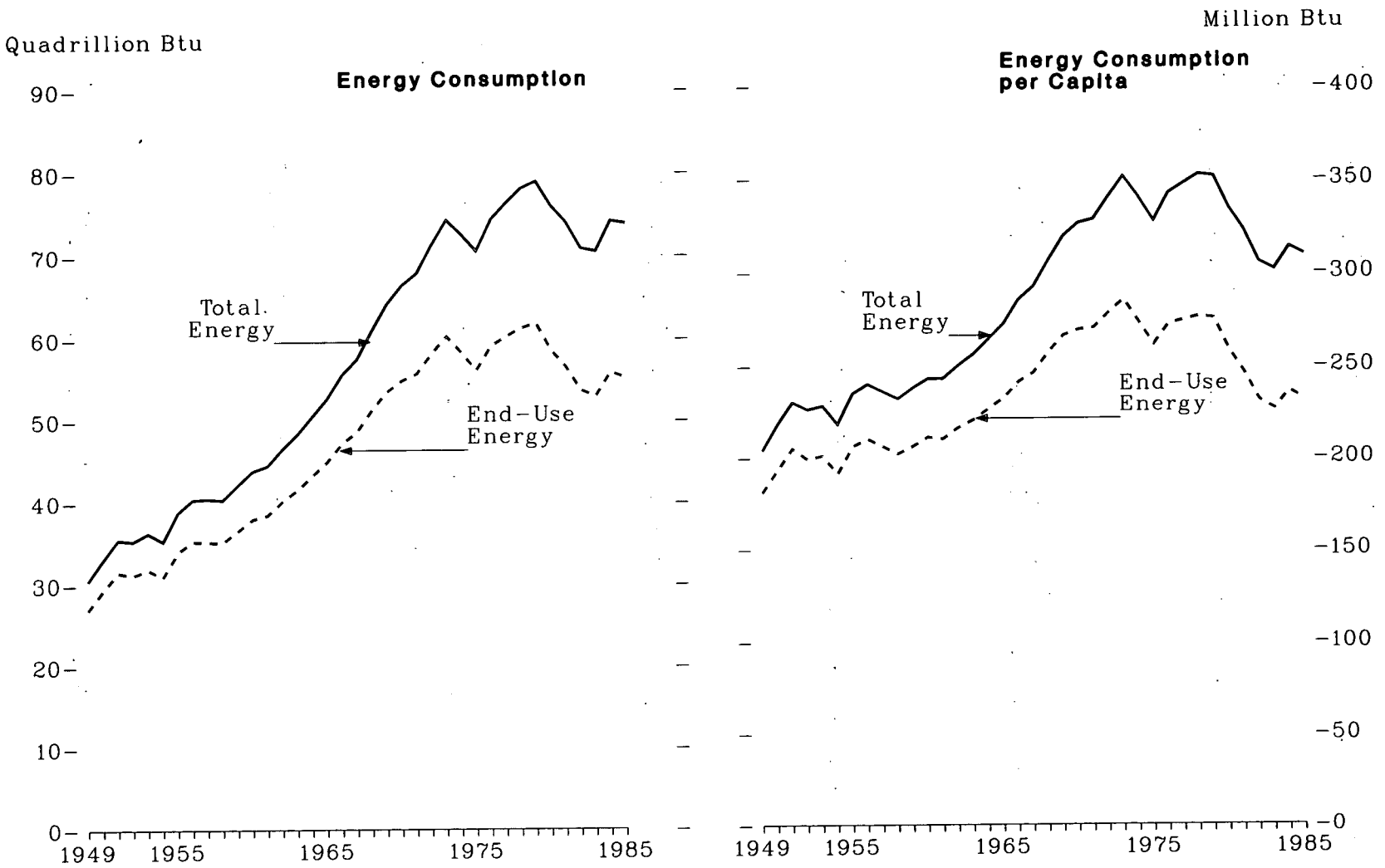
Energy Profitability and Investment. Net income of the 25 major energy companies reporting to the Financial Reporting System (FRS) declined in 1984 even as economic expansion in the United States proceeded at rates unmatched for more than two decades. While other large industrial companies realized profit gains averaging more than 20 percent, the FRS companies reported a 3-percent decline. As a consequence, the FRS companies' return on equity was exceeded by that of large industrial corporations overall for the first time since 1978. (See the Energy Information Administration's report *Performance Profiles of Major Energy Producers 1984,* DOE/EIA-0206(84) Washington,D.C., January 1986).

Petroleum product market developments accounted for the energy companies' relatively poor performance. Although U.S. petroleum product demand rose in 1984, the increase was small and overall demand was still nearly 15 percent below levels attained in 1979. In addition, product prices drove the FRS companies' profit realizations from worldwide refining and marketing operations to their lowest levels in more than a decade (Table 34).

Despite the decline in real crude oil prices, FRS companies continued to emphasize investment in petroleum and natural gas operations. Over 86 percent of their additions to property were directed toward petroleum and natural gas operations in 1984, compared with 80 percent in 1983. FRS companies made substantial investments for upgrading their domestic refineries to accept a wider variety of crude oils and to produce a larger relative yield of higher octane products. Capital outlays for FRS companies' domestic refining and marketing operations averaged 17 percent of total domestic petroleum and natural gas additions to property during 1981 through 1984 (Table 33).

In 1984, FRS companies accounted for 54 percent of U.S. crude oil and natural gas liquids production, 46 percent of natural gas production, and 78 percent of refinery output. The FRS companies' share of U.S. bituminous coal and lignite production increased from 14 percent in 1975 to 25 percent in 1984. During this period, FRS companies' share of U.S. uranium production rose from 33 percent in 1975 to 54 percent in 1977 and then fell to 30 percent by 1984 (Table 31).

Figure 17. Energy Consumption and Energy Consumption per Capita, 1949–1985



Source: See Table 17.

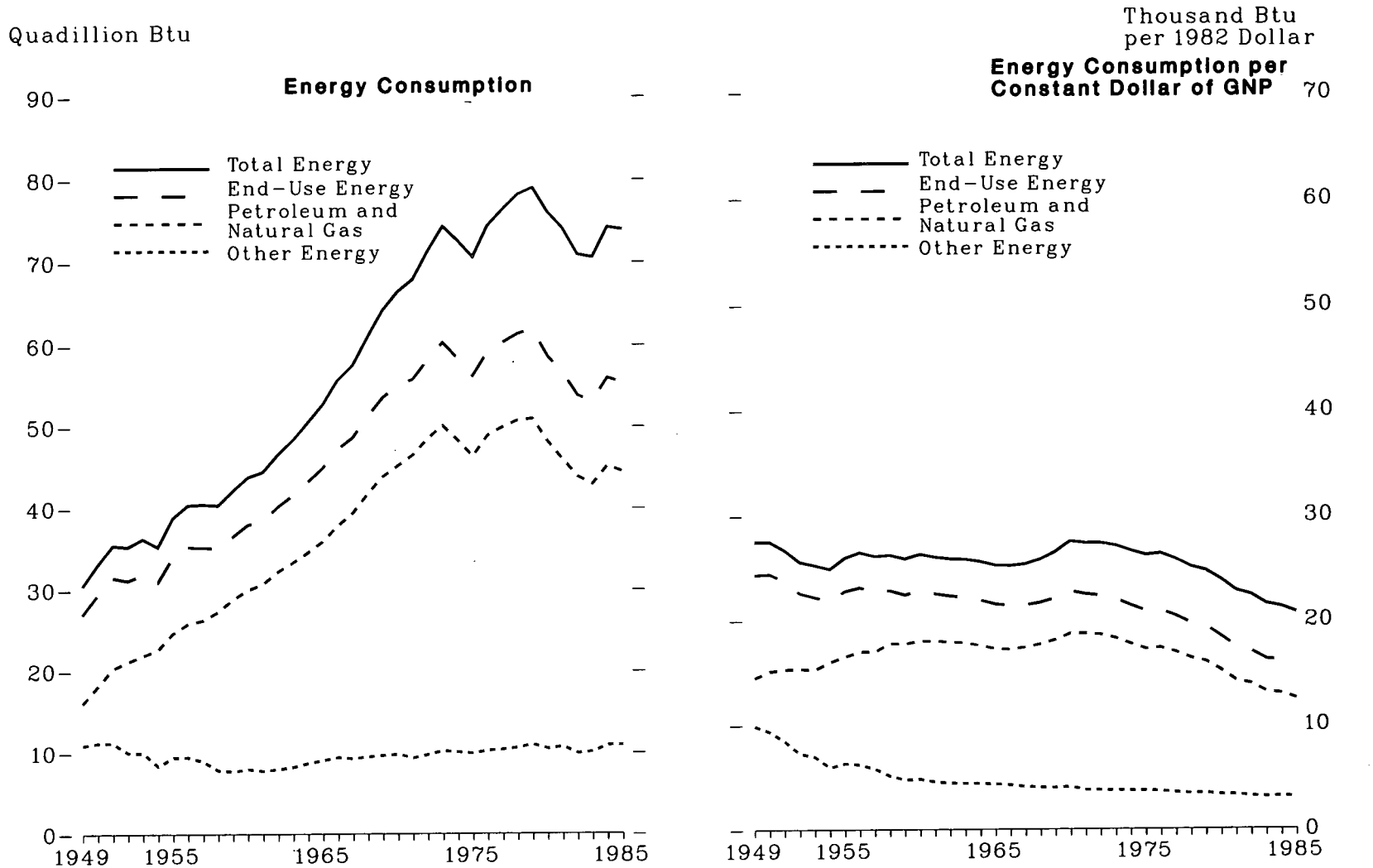
Table 17. Energy Consumption and Energy Consumption per Capita, 1949-1985

Year	Total Energy Consumption (quadrillion Btu)	End-Use Energy Consumption (quadrillion Btu)	Population (million) [1]	Consumption per Capita			
				Total Energy		End-Use Energy	
				Quantity (million Btu)	Change from Previous Year (percent) [2]	Quantity (million Btu)	Change from Previous Year (percent) [2]
1949	30.46	26.97	149.3	204	—	181	—
1950	33.08	29.37	151.9	218	6.9	193	6.6
1951	35.47	31.50	154.0	230	5.5	205	6.2
1952	35.30	31.16	156.4	226	-1.7	199	-2.9
1953	36.27	31.87	159.0	228	0.9	201	1.0
1954	35.27	30.92	161.9	218	-4.4	191	-5.0
1955	38.82	34.02	165.1	235	7.8	206	7.9
1956	40.38	35.26	168.1	240	2.1	210	1.9
1957	40.48	35.19	171.2	236	-1.7	206	-1.9
1958	40.35	35.13	174.1	232	-1.7	202	-1.9
1959	42.14	36.53	177.1	238	2.6	206	2.0
1960	43.80	37.96	180.0	243	2.1	211	2.4
1961	44.46	38.46	183.0	243	0.0	210	-0.5
1962	46.53	40.15	185.8	250	2.9	216	2.9
1963	48.32	41.54	188.5	256	2.4	220	1.9
1964	50.50	43.22	191.1	264	3.1	226	2.7
1965	52.68	44.93	193.5	272	3.0	232	2.7
1966	55.66	47.20	195.6	285	4.8	241	3.9
1967	57.57	48.62	197.5	292	2.5	246	2.1
1968	61.00	51.22	199.4	306	4.8	257	4.5
1969	64.19	53.49	201.4	319	4.2	266	3.5
1970	66.43	54.91	204.0	326	2.2	269	1.1
1971	67.89	55.75	206.8	328	0.6	270	0.4
1972	71.26	58.18	209.3	340	3.7	278	3.0
1973	74.28	60.27	211.4	351	3.2	285	2.5
1974	72.54	58.34	213.3	340	-3.1	273	-4.2
1975	70.55	56.16	215.5	327	-3.8	261	-4.4
1976	74.36	59.12	217.6	342	4.6	272	4.2
1977	76.29	60.22	219.8	347	1.5	274	0.7
1978	78.09	61.25	222.1	352	1.4	276	0.7
1979	78.90	61.84	224.6	351	-0.3	275	-0.4
1980	75.96	58.60	227.3	334	-4.8	258	-6.2
1981	73.99	56.56	229.6	322	-3.6	246	-4.7
1982	70.84	53.70	232.0	305	-5.3	231	-6.1
1983	70.50	52.91	234.3	301	-1.3	226	-2.2
1984	74.11	55.90	236.5	313	4.0	236	4.4
1985[3]	73.83	55.24	238.7	309	-1.3	231	-2.1

[1] Resident population of the 50 States and the District of Columbia estimated for July 1 of each year.
[2] Percent change calculated from data prior to rounding.
[3] Preliminary.

Sources: **Total Energy Consumption:** See sources for Table 3. **End-Use Energy Consumption:** See sources for Tables 3 and 83. **Population:** Bureau of the Census, *Current Population Reports*, "Population Estimates and Projections," Series P-25, No. 981, February 1986. **Consumption per Capita:** Calculated by Energy Information Administration.

Figure 18. Energy Consumption and Energy Consumption per Constant Dollar of Gross National Product, 1949-1985



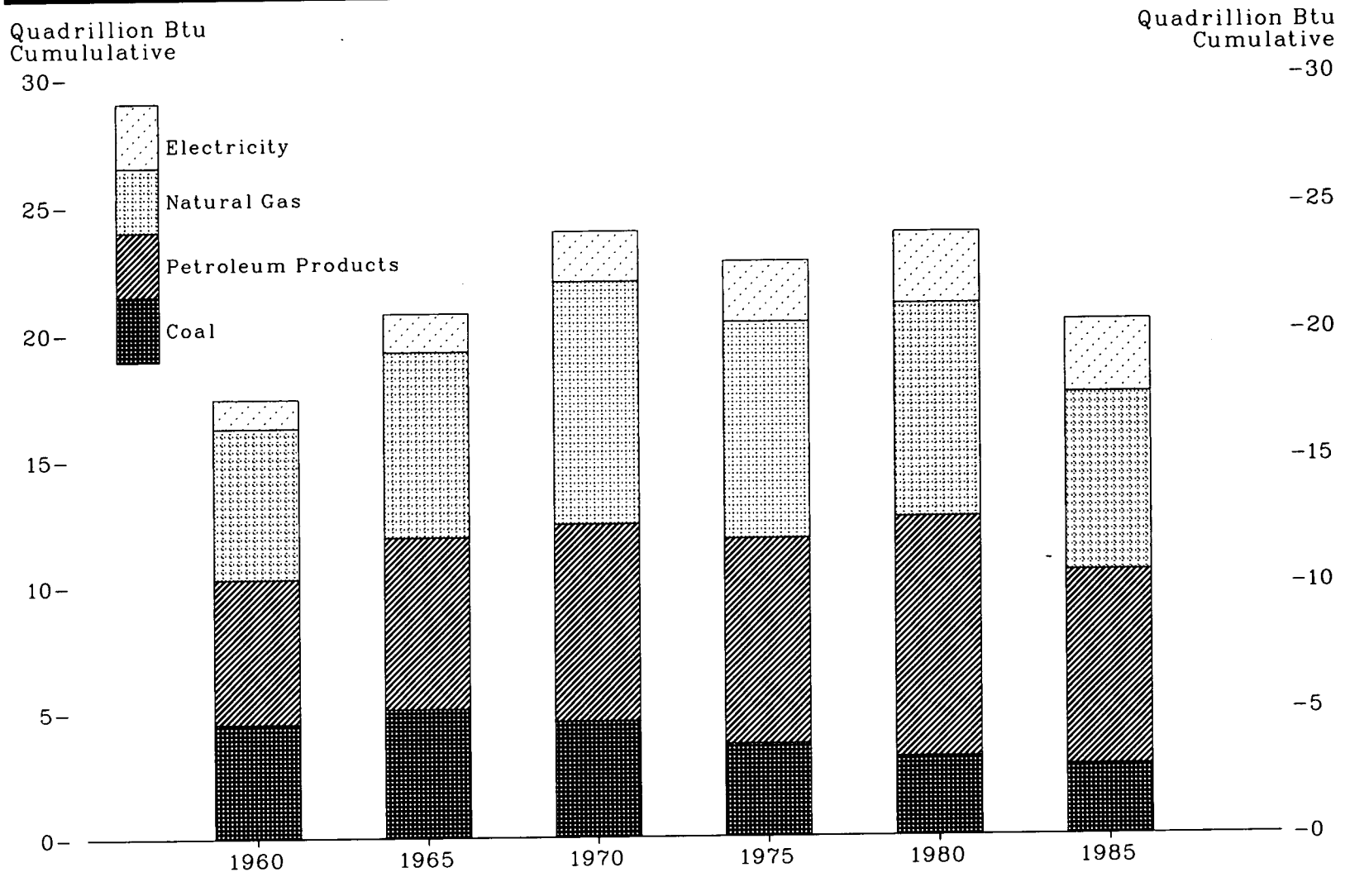
Source: See Table 18.

Table 18. Energy Consumption and Energy Consumption per Constant Dollar of Gross National Product, 1949-1985

Year	Total Energy Consumption (quadrillion Btu)	End-Use Energy Consumption [1] (quadrillion Btu)			GNP [4] (billion 1982 dollars)	Total Energy Consumption per GNP (thousand Btu per 1982 dollar)	End-Use Energy Consumption [1] per GNP (thousand Btu per 1982 dollar, except as shown)			
		Petroleum and Natural Gas [2]	Other Energy [3]	Total			Petroleum and Natural Gas [2]	Other Energy [3]	Total Quantity	Total Percent Change [5]
1949	30.46	16.04	10.92	26.97	1,109.0	27.46	14.47	9.85	24.32	—
1950	33.08	18.16	11.21	29.37	1,203.7	27.48	15.09	9.32	24.40	0.3
1951	35.47	20.29	11.21	31.50	1,328.2	26.70	15.27	8.44	23.72	-2.8
1952	35.30	21.14	10.01	31.16	1,380.0	25.58	15.32	7.26	22.58	-4.8
1953	36.27	21.88	9.99	31.87	1,435.3	25.27	15.24	6.96	22.21	-1.6
1954	35.27	22.55	8.37	30.92	1,416.2	24.90	15.92	5.91	21.83	-1.7
1955	38.82	24.59	9.43	34.02	1,494.9	25.97	16.45	6.31	22.76	4.3
1956	40.38	25.81	9.45	35.26	1,525.6	26.47	16.92	6.19	23.11	1.5
1957	40.48	26.24	8.95	35.19	1,551.1	26.10	16.92	5.77	22.69	-1.8
1958	40.35	27.28	7.85	35.13	1,539.2	26.21	17.73	5.10	22.82	0.6
1959	42.14	28.80	7.72	36.53	1,629.1	25.87	17.68	4.74	22.42	-1.8
1960	43.80	29.97	7.99	37.96	1,665.3	26.30	17.99	4.80	22.79	1.7
1961	44.46	30.70	7.76	38.46	1,708.7	26.02	17.96	4.54	22.51	-1.2
1962	46.53	32.19	7.97	40.15	1,799.4	25.86	17.89	4.43	22.31	-0.9
1963	48.32	33.31	8.23	41.54	1,873.3	25.80	17.78	4.39	22.17	-0.6
1964	50.50	34.56	8.67	43.22	1,973.3	25.59	17.51	4.39	21.90	-1.2
1965	52.68	35.90	9.03	44.93	2,087.6	25.24	17.20	4.32	21.52	-1.7
1966	55.66	37.82	9.38	47.20	2,208.3	25.20	17.12	4.25	21.37	-0.7
1967	57.57	39.38	9.24	48.62	2,271.4	25.35	17.34	4.07	21.41	0.2
1968	61.00	41.76	9.46	51.22	2,365.6	25.79	17.65	4.00	21.65	1.1
1969	64.19	43.85	9.64	53.49	2,423.3	26.49	18.09	3.98	22.07	1.9
1970	66.43	45.14	9.76	54.91	2,416.2	27.49	18.68	4.04	22.72	2.9
1971	67.89	46.44	9.31	55.75	2,484.8	27.32	18.69	3.75	22.44	-1.2
1972	71.26	48.46	9.72	58.18	2,608.5	27.32	18.58	3.73	22.30	-0.6
1973	74.28	50.09	10.18	60.27	2,744.1	27.07	18.25	3.71	21.97	-1.5
1974	72.54	48.30	10.04	58.34	2,729.3	26.58	17.70	3.68	21.38	-2.7
1975	70.55	46.27	9.88	56.16	2,695.0	26.18	17.17	3.67	20.84	-2.5
1976	74.36	48.89	10.23	59.12	2,826.7	26.31	17.30	3.62	20.91	0.3
1977	76.29	49.87	10.35	60.22	2,958.6	25.79	16.86	3.50	20.36	-2.6
1978	78.09	50.68	10.57	61.25	3,115.2	25.07	16.27	3.39	19.66	-3.4
1979	78.90	50.89	10.94	61.84	3,192.4	24.71	15.94	3.43	19.37	-1.5
1980	75.96	48.15	10.44	58.60	3,187.1	23.83	15.11	3.28	18.39	-5.1
1981	73.99	45.89	10.67	56.56	3,248.8	22.77	14.13	3.28	17.41	-5.3
1982	70.84	43.83	9.87	53.70	3,166.0	22.37	13.84	3.12	16.96	-2.6
1983	70.50	42.87	10.04	52.91	3,277.7	21.51	13.08	3.06	16.14	-4.8
1984	74.11	45.05	10.85	55.90	3,492.0	21.22	12.90	3.11	16.01	-0.8
1985	73.83	44.39	10.86	55.24	3,571.0	20.68	12.43	3.04	15.47	-3.4

[1] End-use energy consumption is total energy consumption less losses incurred in the generation, transmission, and distribution of electricity, less power plant electricity use and unaccounted for electrical system energy losses. (See Glossary).
[2] Total petroleum and natural gas consumption less consumption of these fuels by electric utilities.
[3] Total coal consumption less coal consumed by electric utilities, plus electric utility sales, hydroelectric power generated by non-electric utilities, and net imports of coal coke.
[4] GNP = Gross National Product in constant 1982 dollars calculated using GNP price deflators, 1982 = 100.0. See Energy Equivalents and Price Deflators section.
[5] Percent change calculated from data prior to rounding.
Sources: **Total Energy Consumption:** See sources for Table 3. **End-Use Energy Consumption:** See sources for Tables 3 and 83. **GNP:** Department of Commerce. **Total Energy Consumption per GNP** and **End-Use Energy Consumption per GNP:** Calculated by Energy Information Administration.

Figure 19. Industrial Energy Consumption by Source 1960, 1965, 1970, 1975, 1980, and 1985



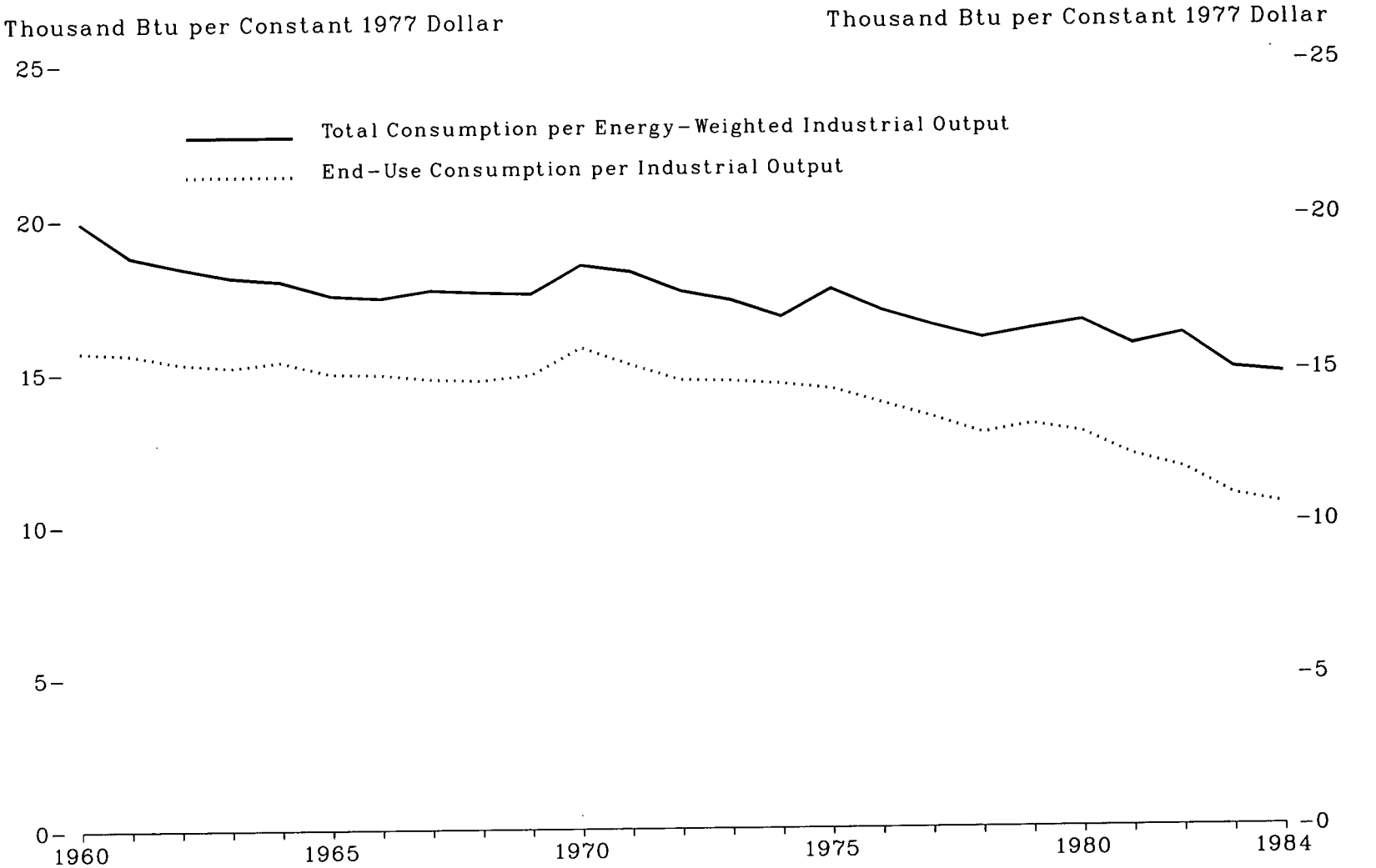
Source: See Table 19.

Table 19. Industrial Energy Consumption by Source, 1960-1985

Year	Petroleum Products		Natural Gas		Coal [1]		Electricity [2]		Total [2]
	Quadrillion Btu	Percent	Quadrillion Btu	Percent	Quadrillion Btu	Percent	Quadrillion Btu	Percent	Quadrillion Btu
1960	5.75	33	5.97	34	4.54	26	1.15	7	17.41
1961	5.76	33	6.17	35	4.34	25	1.19	7	17.45
1962	6.00	33	6.45	36	4.39	24	1.26	7	18.10
1963	6.23	33	6.75	36	4.59	24	1.32	7	18.89
1964	6.55	33	7.11	36	4.91	25	1.42	7	19.99
1965	6.80	33	7.34	35	5.12	25	1.50	7	20.75
1966	7.12	33	7.80	36	5.20	24	1.61	7	21.73
1967	7.14	33	8.04	37	4.93	23	1.69	8	21.80
1968	7.41	33	8.63	38	4.85	21	1.81	8	22.70
1969	7.72	33	9.23	39	4.68	20	1.94	8	23.58
1970	7.81	33	9.54	40	4.61	19	1.98	8	23.93
1971	7.88	33	9.89	42	3.92	17	2.04	9	23.73
1972	8.55	35	9.88	40	3.97	16	2.22	9	24.62
1973	9.11	35	10.39	40	4.04	16	2.38	9	25.91
1974	8.70	35	10.00	40	3.91	16	2.37	9	24.98
1975	8.15	36	8.53	38	3.67	16	2.38	10	22.73
1976	9.02	38	8.76	36	3.64	15	2.61	11	24.03
1977	9.79	40	8.64	35	3.46	14	2.72	11	24.60
1978	9.89	40	8.54	35	3.43	14	2.79	11	24.65
1979	10.57	41	8.55	33	3.65	14	2.91	11	25.68
1980	9.53	40	8.39	35	3.12	13	2.81	12	23.85
1981	8.30	37	8.26	37	3.13	14	2.85	13	22.53
1982	7.80	39	7.12	36	2.52	13	2.57	13	20.01
1983	7.42	38	6.83	35	2.47	13	2.68	14	19.40
1984	7.89	37	7.45	35	2.83	13	2.90	14	21.07
1985[3]	7.72	38	7.05	35	2.76	14	2.85	14	20.39

[1] Includes net imports of coal coke.
[2] Exludes energy losses from electricity generation, transmission, and distribution. Includes hydroelectric power generated by the industrial sector.
[3] Estimated.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1960 through 1972—Energy Information Administration, "State Energy Data System, 1960-1984." •1973 forward—Energy Information Administration, *Monthly Energy Review.*

Figure 20. Industrial Energy Consumption per Constant Dollar of Industrial Output, 1960-1984



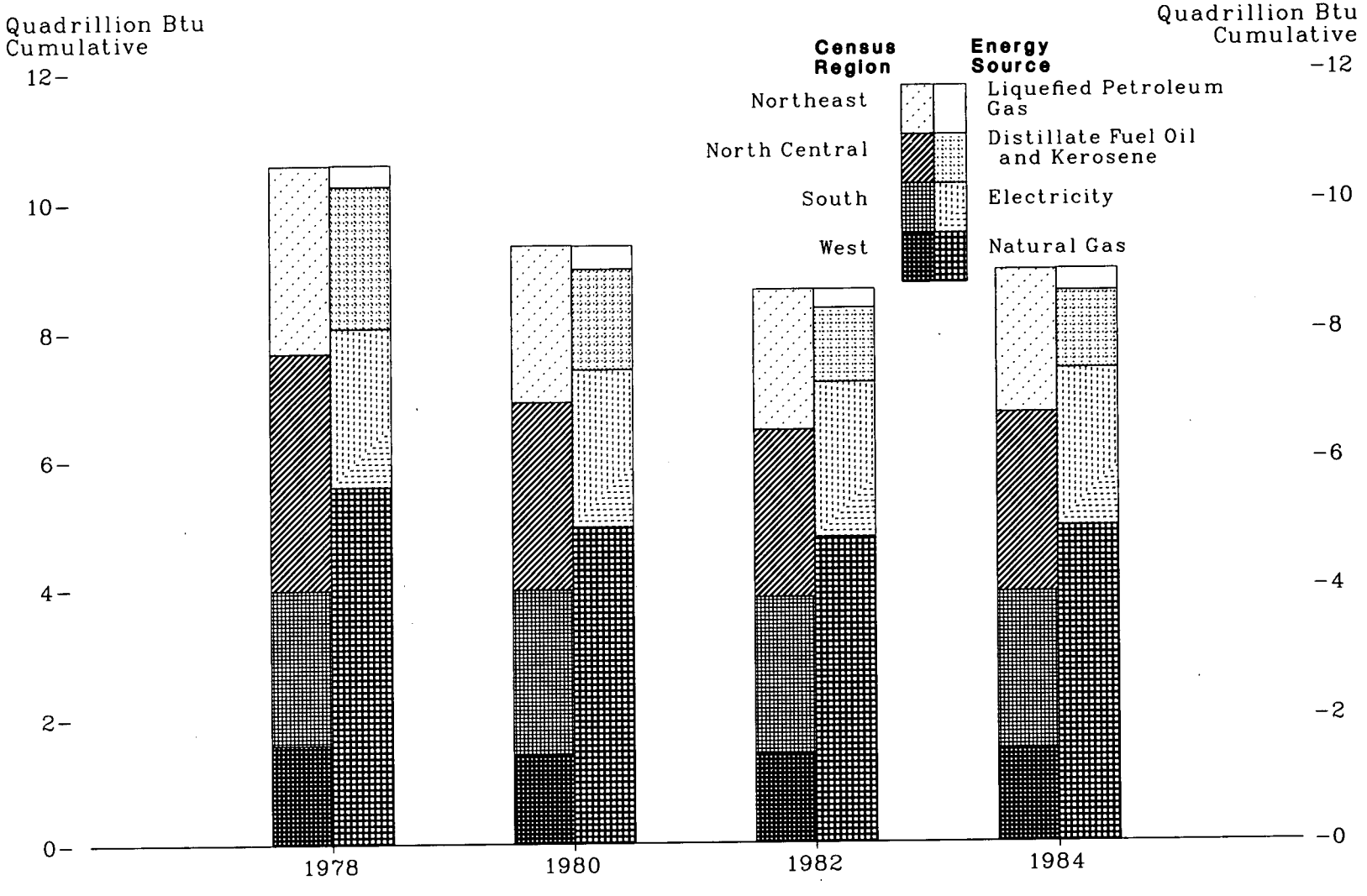
Source: See Table 20.

Table 20. Industrial Energy Consumption per Constant Dollar of Industrial Output, 1960-1984

Year	Energy-Weighted Industrial Output [1] (billion 1977 dollars)	Total Consumption (quadrillion Btu)	End-Use Consumption (quadrillion Btu)	Industrial Real Output (billion 1977 dollars)	End-Use Consumption per Industrial Output (thousand Btu per 1977 dollar)	Total Consumption per Energy-Weighted Industrial Output (thousand Btu per 1977 dollar)
1960	1,013	20.17	17.41	1,108	15.715	19.905
1961	1,078	20.26	17.45	1,116	15.634	18.794
1962	1,143	21.06	18.10	1,181	15.320	18.426
1963	1,213	21.97	18.89	1,243	15.193	18.120
1964	1,295	23.28	19.99	1,300	15.373	17.975
1965	1,385	24.24	20.75	1,387	14.955	17.506
1966	1,466	25.52	21.73	1,457	14.918	17.415
1967	1,457	25.75	21.80	1,477	14.755	17.673
1968	1,531	26.94	22.70	1,544	14.705	17.592
1969	1,604	28.13	23.57	1,583	14.895	17.540
1970	1,553	28.65	23.93	1,516	15.787	18.451
1971	1,569	28.60	23.73	1,558	15.231	18.225
1972	1,698	29.88	24.62	1,674	14.708	17.602
1973	1,823	31.52	25.91	1,766	14.675	17.291
1974	1,832	30.68	24.98	1,714	14.574	16.752
1975	1,610	28.40	22.74	1,580	14.394	17.639
1976	1,785	30.23	24.03	1,728	13.907	16.935
1977	1,888	31.07	24.60	1,830	13.443	16.457
1978	1,958	31.40	24.65	1,909	12.913	16.036
1979	1,996	32.61	25.68	1,946	13.193	16.333
1980	1,847	30.62	23.85	1,846	12.923	16.576
1981	1,851	29.25	22.54	1,851	12.174	15.800
1982	1,618	26.11	20.01	1,705	11.740	16.143
1983	1,726	25.91	19.56	1,801	10.864	15.016
1984	1,875	27.86	21.10	2,001	10.548	14.858

[1] See Glossary.
Source: Energy Information Administration, *Energy Conservation Indicators 1984 Annual Report.*

Figure 21. Energy Consumed by Households by Census Regions, 1978, 1980, 1982, and 1984



Note: See Appendix for Census Regions.
Source: See Table 21.

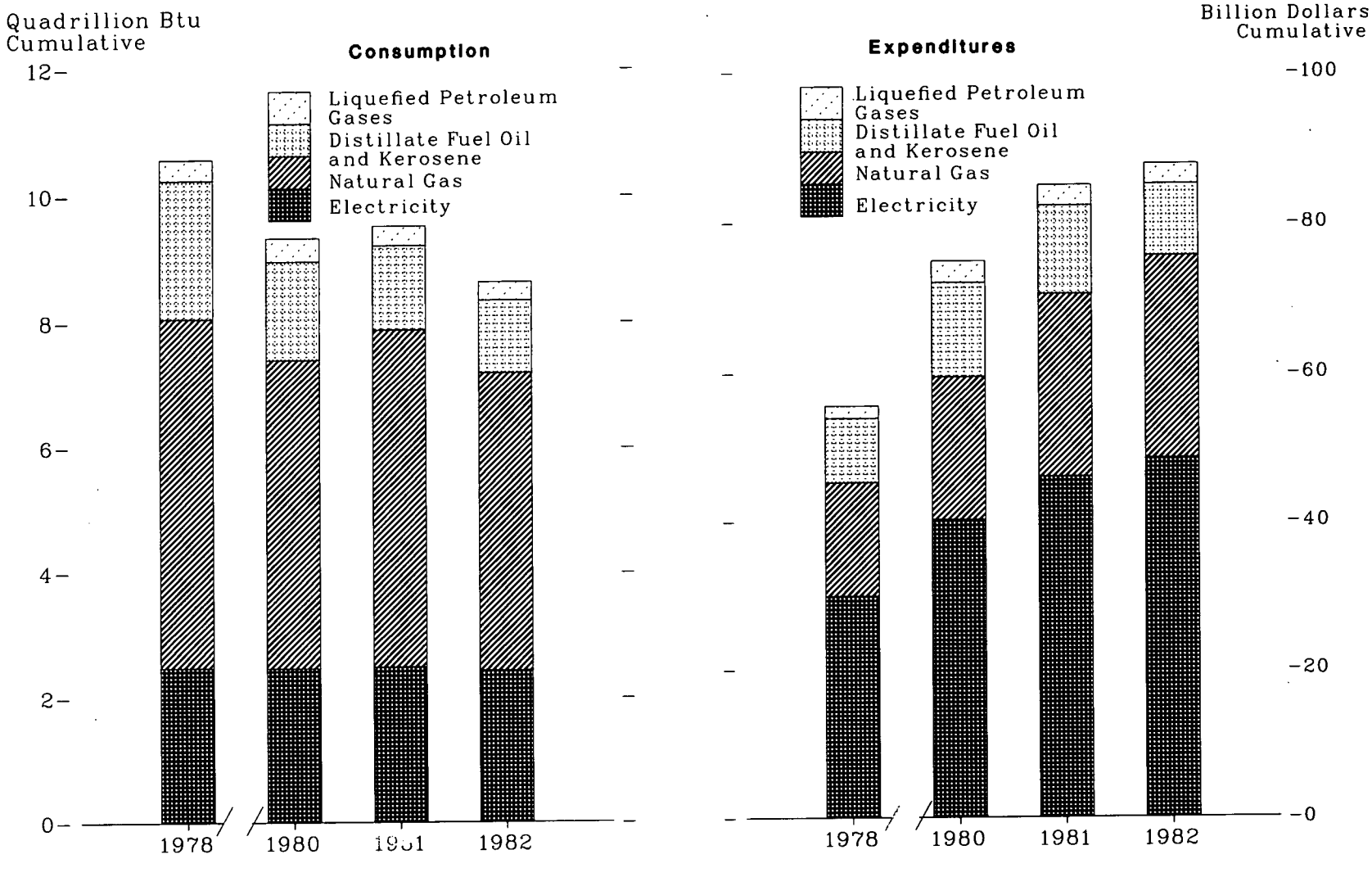
Table 21. Energy [1] Consumed by Households by Census Region, 1978-1982 and 1984 [2]

(Quadrillion Btu, Except as Noted)

Census Region [3]	1978	1979	1980	1981	1982	1984 [4]
Northeast						
Natural Gas	1.14	1.05	0.92	1.06	0.99	0.92
Electricity	0.39	0.39	0.39	0.42	0.38	0.40
Distillate Fuel Oil and Kerosene	1.32	1.03	1.09	0.96	0.79	0.86
Liquefied Petroleum Gases	0.03	0.03	0.03	0.03	0.02	0.03
Total	2.89	2.50	2.43	2.47	2.18	2.21
Consumption per Household (million Btu)	166	145	138	138	122	121
North Central						
Natural Gas	2.53	2.48	2.02	2.24	1.76	1.97
Electricity	0.60	0.59	0.60	0.57	0.57	0.54
Distillate Fuel Oil and Kerosene	0.46	0.31	0.16	0.17	0.15	0.13
Liquefied Petroleum Gases	0.12	0.10	0.15	0.13	0.11	0.14
Total	3.70	3.48	2.92	3.12	2.60	2.79
Consumption per Household (million Btu)	180	168	139	147	122	129
South						
Natural Gas	0.96	0.91	1.11	1.16	1.13	1.15
Electricity	1.00	0.97	1.06	1.03	1.05	1.05
Distillate Fuel Oil and Kerosene	0.32	0.28	0.27	0.16	0.17	0.15
Liquefied Petroleum Gases	0.15	0.14	0.15	0.12	0.12	0.13
Total	2.43	2.30	2.59	2.46	2.46	2.48
Consumption per Household (million Btu)	99	92	96	89	88	85
West						
Natural Gas	0.95	0.88	0.89	0.93	0.89	0.89
Electricity	0.48	0.47	0.41	0.46	0.42	0.46
Distillate Fuel Oil and Kerosene	0.09	0.09	0.04	0.03	0.03	0.04
Liquefied Petroleum Gases	0.03	0.04	0.04	0.04	0.04	0.04
Total	1.54	1.47	1.38	1.47	1.38	1.43
Consumption per Household (million Btu)	110	100	86	90	84	84
United States						
Natural Gas	5.58	5.31	4.94	5.39	4.77	4.93
Electricity	2.47	2.42	2.46	2.48	2.42	2.46
Distillate Fuel Oil and Kerosene	2.19	1.71	1.55	1.33	1.14	1.19
Liquefied Petroleum Gases	0.33	0.31	0.36	0.31	0.29	0.34
Total	10.56	9.74	9.32	9.51	8.62	8.91
Consumption per Household (million Btu)	138	126	114	114	103	103

[1] Major energy items only, as shown.
[2] Data are for April of year shown through March of following year.
[3] See Appendix for Census regions.
[4] Preliminary.
Note: No data are available for 1983.
Note: Sum of components may not equal total due to independent rounding.
Source: •1978 and 1979—Energy Information Administration, Form EIA-84, "Residential Energy Consumption Survey." •1980 and forward—Energy Information Administration, Form EIA-457, "Residential Energy Consumption Survey."

Figure 22. Household Energy Consumption and Expenditures by Application and Fuel Source, 1978 and 1980-1982



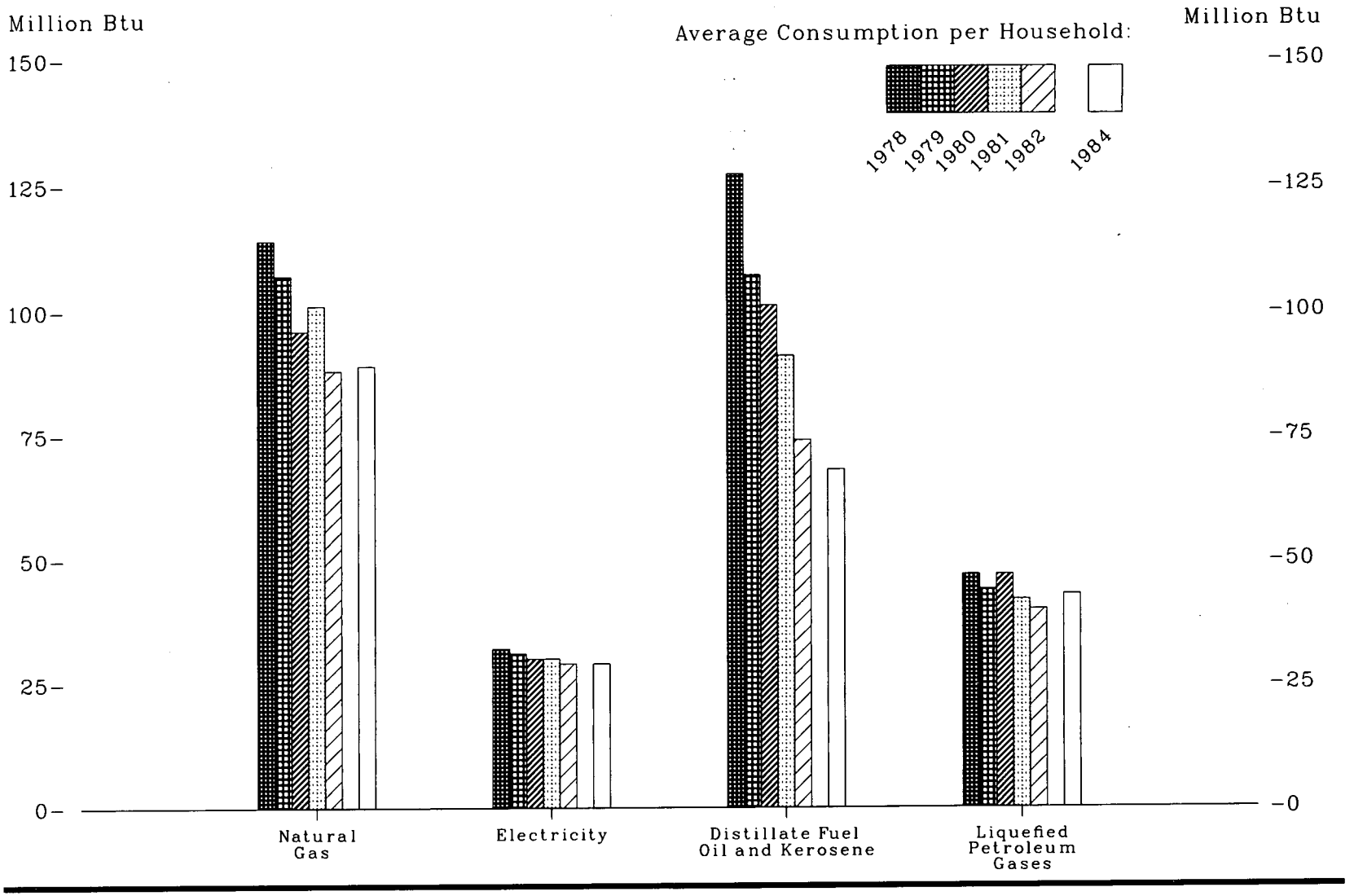
Source: See Table 22.

Table 22. Household Energy Consumption and Expenditures by Application and Fuel Source, 1978 and 1980-1982

Application and Fuel Source	Consumption (quadrillion Btu)				Expenditures (billion dollars)			
	1978	1980	1981	1982	1978	1980	1981	1982
Space Heating								
Natural Gas	4.26	3.32	3.81	3.31	11.49	12.80	17.07	18.55
Electricity	0.41	0.28	0.30	0.27	3.53	3.71	4.60	4.45
Distillate Fuel Oil and Kerosene	2.05	1.32	1.13	1.05	8.06	10.59	9.99	8.84
Liquefied Petroleum Gases	0.23	0.25	0.22	0.19	1.05	1.90	1.84	1.68
Total	6.95	5.17	5.45	4.81	24.14	29.00	33.49	33.52
Air Conditioning								
Electricity	0.31	0.32	0.33	0.30	3.97	5.07	5.96	6.05
Water Heating								
Natural Gas	1.04	1.24	1.10	1.08	2.88	4.79	4.93	6.08
Electricity	0.29	0.31	0.33	0.33	3.15	4.54	5.32	5.90
Distillate Fuel Oil and Kerosene	0.14	0.24	0.21	0.09	0.56	1.89	1.83	0.75
Liquefied Petroleum Gases	0.06	0.07	0.06	0.06	0.36	0.59	0.53	0.57
Total	1.53	1.86	1.69	1.56	6.94	11.80	12.62	13.30
Appliances								
Natural Gas	0.28	0.38	0.49	0.39	0.93	1.71	2.50	2.42
Electricity	1.46	1.55	1.53	1.52	19.24	26.82	30.02	32.02
Liquefied Petroleum Gases	0.03	0.04	0.03	0.04	0.25	0.41	0.37	0.47
Total	1.77	1.97	2.05	1.95	20.42	28.94	32.90	34.91
Total	10.57	9.32	9.51	8.62	55.47	74.81	84.96	87.78
Natural Gas	5.58	4.94	5.39	4.77	15.30	19.30	24.50	27.06
Electricity	2.47	2.46	2.48	2.42	29.89	40.14	45.90	48.42
Distillate Fuel Oil and Kerosene	2.19	1.55	1.33	1.14	8.62	12.48	11.82	9.59
Liquefied Petroleum Gases	0.33	0.37	0.31	0.29	1.66	2.89	2.74	2.72

Note: Sum of components may not equal total due to independent rounding.
Sources: •1978—Energy Information Administration, Form EIA-84, "Residential Energy Consumption Survey." •1980 and forward—Energy Information Administration, Form EIA-457, "Residential Energy Consumption Survey."

Figure 23. Household Energy Consumption Indicators, 1978–1982 and 1984



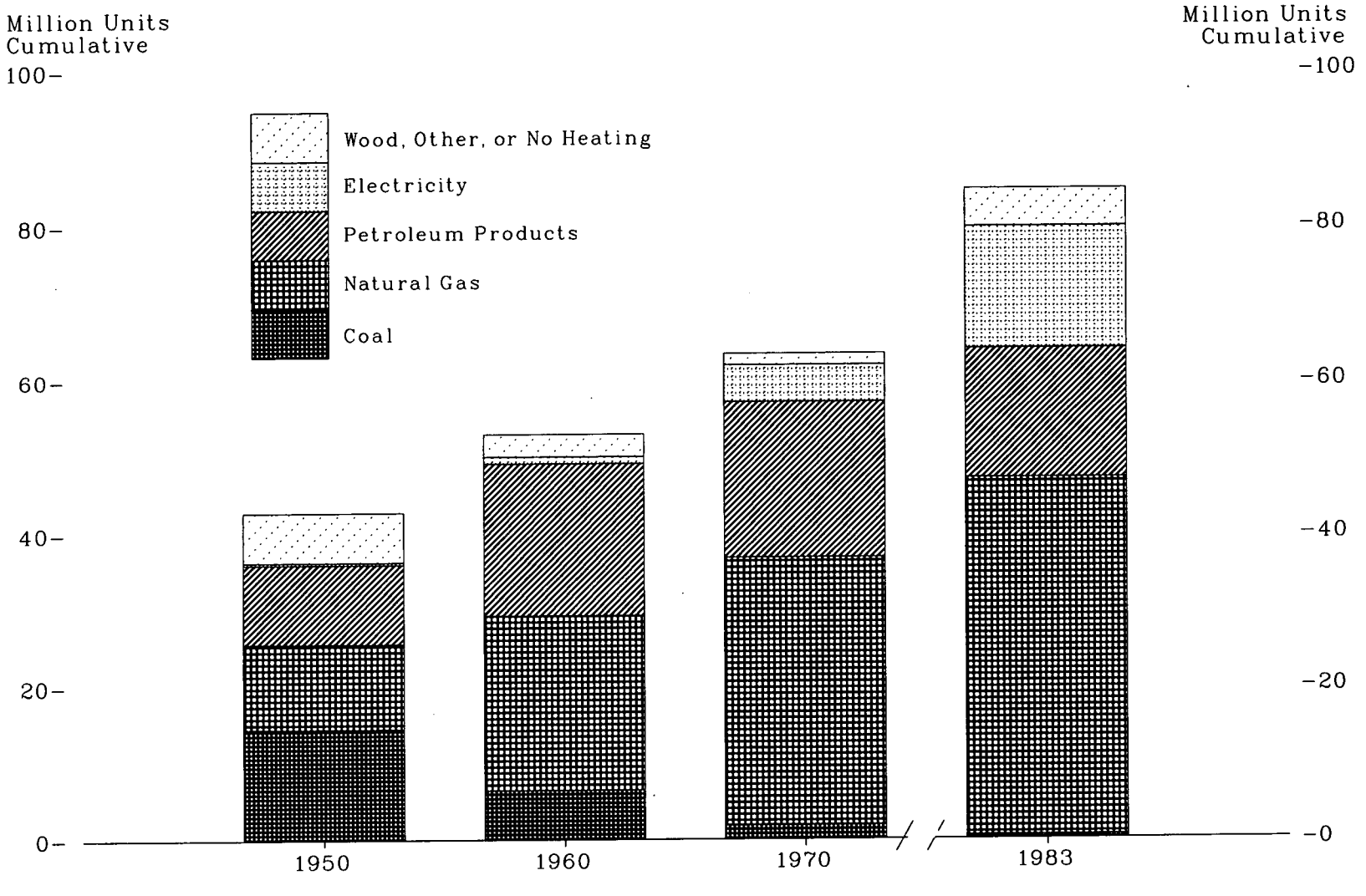
Note: No data available for 1983.
Source: See Table 23.

Table 23. Household Energy Consumption Indicators, 1978-1982 and 1984 [1]

Source	Unit of Measure	1978	1979	1980	1981	1982	1984 [2]
Natural Gas							
Households that use Natural Gas	Million	49.0	49.6	51.6	53.4	54.2	55.4
Average Consumption per Household	Million Btu	114	107	96	101	88	89
Households that use Natural Gas as Main Heating Source	Million	41.8	42.4	44.6	46.2	47.5	47.7
Average Consumption per Household	Million Btu	128	120	107	112	95	99
Heating Degree-Days	Degree-Days	5,207	5,136	4,847	4,988	4,596	4,862
Heated Floor Space	Square Feet	NA	NA	1,533	1,547	1,483	1,494
Electricity							
Households that use Electricity	Million	76.6	77.5	81.6	83.1	83.7	86.3
Average Consumption per Household	Million Btu	32	31	30	30	29	29
Households that use Electricity as Main Heating Source and for Air-Conditioning	Million	7.6	8.4	10.7	10.6	10.2	11.4
Average Consumption per Household	Million Btu	68	59	56	55	57	52
Heating Degree-Days	Degree-Days	3,271	3,196	3,543	3,431	3,293	3,051
Cooling Degree-Days	Degree-Days	1,999	1,714	1,849	1,779	1,647	1,887
Heated Floor Space	Square Feet	NA	NA	1,398	1,305	1,364	1,324
Households that use Electricity as Main Heating Source but not for Air-Conditioning	Million	4.5	4.4	3.6	3.7	3.1	3.2
Average Consumption per Household	Million Btu	72	63	55	50	48	49
Heating Degree-Days	Degree-Days	5,862	5,737	5,181	4,913	4,990	5,308
Heated Floor Space	Square Feet	NA	NA	1,270	1,135	1,068	1,088
Households that use Electricity for Air-Conditioning but not as Main Heating Source	Million	33.8	33.0	34.3	36.5	37.8	38.5
Average Consumption per Household	Million Btu	30	30	29	29	28	27
Cooling Degree-Days	Degree-Days	1,294	1,008	1,317	1,155	1,062	1,220
Distillate Fuel Oil and Kerosene (Oil)							
Households that use Oil	Million	17.2	15.9	15.4	14.6	15.5	17.5
Average Consumption per Household	Million Btu	127	107	101	91	74	68
Households that use Oil as Main Heating Source	Million	16.9	14.6	13.4	12.2	12.0	12.3
Average Consumption per Household	Million Btu	129	113	112	103	90	90
Heating Degree-Days	Degree-Days	5,548	5,362	5,827	5,973	5,379	5,358
Heated Floor Space	Square Feet	NA	NA	1,571	1,573	1,505	1,505
Liquefied Petroleum Gases (LPG) [3]							
Households that use LPG [3]	Million	6.9	7.0	7.7	7.3	7.3	7.8
Average Consumption per Household	Million Btu	47	44	47	42	40	43
Households that use LPG as Main Heating Source	Million	3.1	3.7	3.7	3.7	3.8	3.9
Average Consumption per Household	Million Btu	80	67	77	67	59	66
Heating Degree-Days	Degree-Days	3,998	3,760	4,386	4,024	3,928	4,262
Heated Floor Space	Square Feet	NA	NA	1,234	1,288	1,247	1,139

[1] Data are for April of year shown through March of following year except for household counts and floor space data which are for November of year shown.
[2] Preliminary.
[3] Excludes household use of liquefied petroleum gases for cooking grills or recreation vehicles.
NA = Not available.
Note: Average consumption per household for each energy source is total average consumption per household and is not limited to space heating and cooling only.
Note: No data are available for 1983.
Sources: •1978 and 1979—Energy Information Administration, Form EIA-84, "Residential Energy Consumption Survey." •1980 and forward—Energy Information Administration, Form EIA-457, "Residential Energy Consumption Survey."

Figure 24. Type of Heating in Occupied Housing Units, 1950, 1960, 1970, and 1983



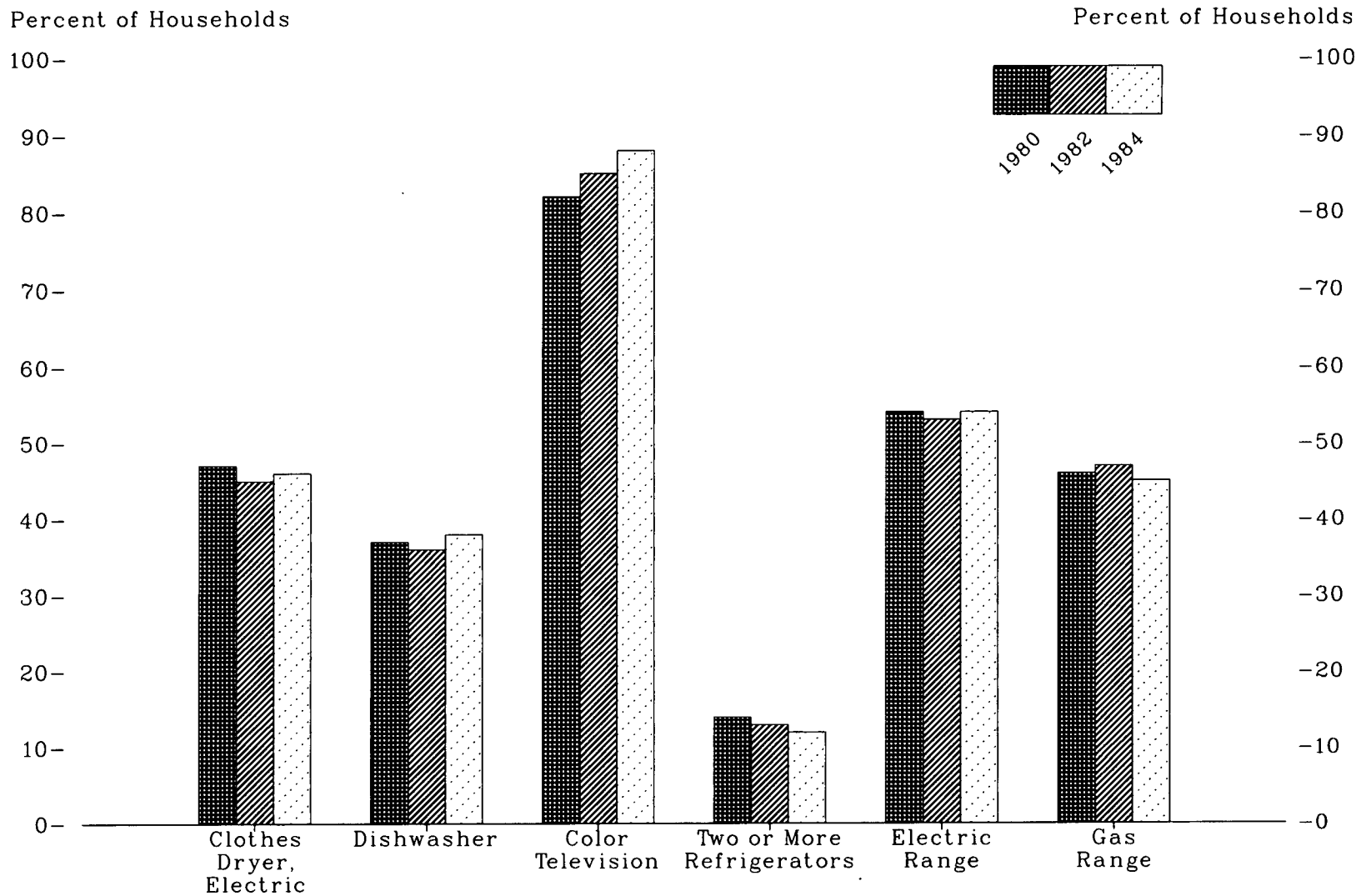
Source: See Table 24.

Table 24. Type of Heating in Occupied Housing[1] Units, 1950, 1960, 1970, 1973-1981, and 1983

Year	Coal [2]	Natural Gas	Liquefied Gas	Distillate Fuel Oil	Kerosene	Electricity	Wood	Other	None [3]	Total
	Million									
1950	14.48	11.12	0.98	9.46	([4])	0.28	4.17	0.77	1.57	42.83
1960	6.46	22.85	2.69	17.16	([4])	0.93	2.24	0.22	0.48	53.02
1970	1.82	35.01	3.81	16.47	([4])	4.88	0.79	0.27	0.40	63.45
1973	0.80	38.46	4.42	17.24	([4])	7.21	0.60	0.15	0.45	69.34
1974	0.74	39.47	4.14	16.84	([4])	8.41	0.66	0.09	0.48	70.83
1975	0.57	40.93	4.15	16.30	([4])	9.17	0.85	0.08	0.47	72.52
1976	0.48	41.22	4.24	16.45	([4])	10.15	0.91	0.09	0.46	74.01
1977	0.45	41.54	4.18	15.62	0.44	11.15	1.24	0.15	0.51	75.28
1978	0.40	42.52	4.13	15.65	0.42	12.26	1.07	0.12	0.60	77.17
1979	0.36	43.32	4.13	15.30	0.41	13.24	1.14	0.10	0.57	78.57
1980	0.33	44.40	4.17	14.50	0.37	14.21	1.38	0.11	0.61	80.07
1981	0.36	46.08	4.17	14.13	0.37	15.49	1.89	0.10	0.59	83.18
1983[5]	0.43	46.70	3.87	12.59	0.45	15.68	4.09	0.16	0.68	84.64
	Percent									
1950	33.8	26.0	2.3	22.1	([4])	0.6	9.7	1.8	3.7	100.0
1960	12.2	43.1	5.1	32.4	([4])	1.8	4.2	0.4	0.9	100.0
1970	2.9	55.2	6.0	26.0	([4])	7.7	1.3	0.4	0.6	100.0
1973	1.2	55.5	6.4	24.9	([4])	10.4	0.9	0.2	0.7	100.0
1974	1.0	55.7	5.8	23.8	([4])	11.9	0.9	0.1	0.7	100.0
1975	0.8	56.4	5.7	22.5	([4])	12.6	1.2	0.1	0.6	100.0
1976	0.7	55.7	5.7	22.2	([4])	13.7	1.2	0.1	0.6	100.0
1977	0.6	55.2	5.6	20.7	0.6	14.8	1.6	0.2	0.7	100.0
1978	0.5	55.1	5.4	20.3	0.5	15.9	1.4	0.2	0.8	100.0
1979	0.5	55.1	5.3	19.5	0.5	16.9	1.4	0.1	0.7	100.0
1980	0.4	55.4	5.2	18.1	0.5	17.7	1.7	0.1	0.8	100.0
1981	0.4	55.4	5.0	17.0	0.4	18.6	2.3	0.1	0.7	100.0
1983[5]	0.5	55.2	4.6	14.9	0.5	18.5	4.8	0.2	0.8	100.0

[1] Includes mobile homes and individual housing units in apartment buildings. Housing units with more than one type of heating system are classified according to the principal type of heating system.
[2] Includes coal coke.
[3] Includes nonreporting units in 1950 and 1960 which totaled 997 and 2,000 units, respectively.
[4] Included in distillate fuel oil.
[5] Data for 1982 are not available. Since 1981, the *Annual Housing Survey* has been a biennial survey.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1950, 1960, and 1970—Bureau of the Census, *Census of Population and Housing.* •1973 and forward—Bureau of the Census, *Annual Housing Survey.*

Figure 25. Household Appliance Data, 1980, 1982, and 1984



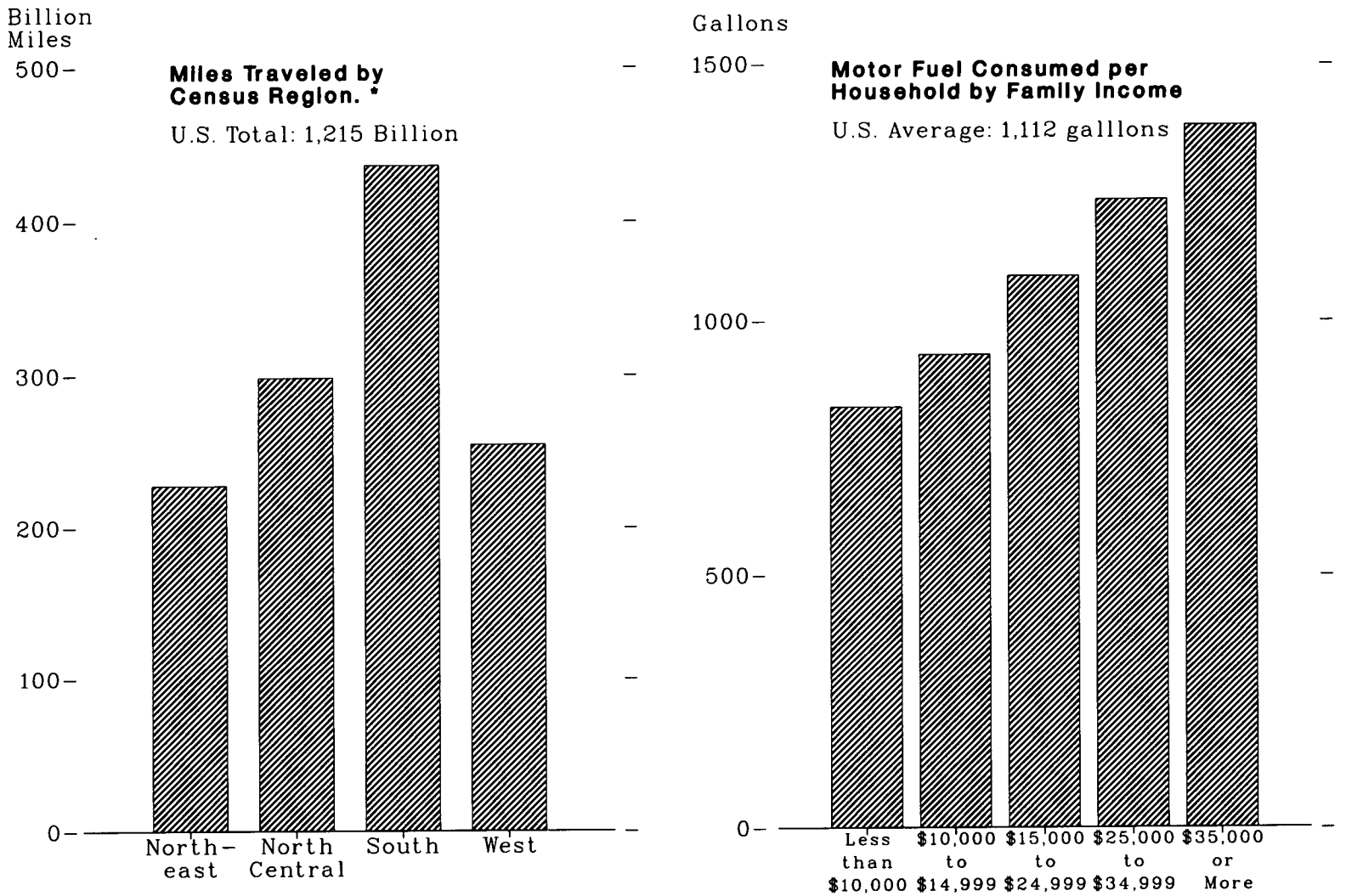
Source: See Table 25.

Table 25. Household Appliance Data, 1978-1982 and 1984

Appliance	Million Households						Percentage of Households					
	1978	1979	1980	1981	1982	1984	1978	1979	1980	1981	1982	1984
Total Households	76.6	77.5	81.6	83.1	83.8	86.3	100	100	100	100	100	100
Type Appliances												
Electric Appliances												
Television Set (Color)	NA	NA	67.0	68.4	71.0	75.9	NA	NA	82	82	85	88
Television Set (B/W)	NA	NA	41.9	39.5	38.9	37.3	NA	NA	51	48	47	43
Clothes Washer (Automatic)	54.0	NA	58.4	58.4	57.9	61.1	71	NA	72	70	69	71
Clothes Washer (Wringer)	3.4	NA	2.9	2.8	2.5	2.7	4	NA	4	3	3	3
Range (Stove-Top or Burners)	40.7	NA	43.8	45.2	44.7	46.5	53	NA	54	54	53	54
Oven, Regular or Microwave	41.5	NA	48.5	48.2	49.3	54.2	54	NA	59	58	59	63
Oven, Microwave	6.0	NA	11.6	14.0	17.3	29.6	8	NA	14	17	21	34
Clothes Dryer	34.5	NA	38.3	37.5	37.9	39.6	45	NA	47	45	45	46
Separate Freezer	27.0	NA	21.1	31.9	31.0	31.7	35	NA	38	38	37	37
Dishwasher	26.5	NA	30.4	30.5	30.3	32.5	35	NA	37	37	36	38
Humidifier	NA	NA	11.0	10.8	11.3	11.3	NA	NA	14	13	14	13
Dehumidifier	NA	NA	7.3	7.8	7.5	7.5	NA	NA	9	9	9	9
Window or Ceiling Fan	NA	NA	NA	NA	23.5	30.6	NA	NA	NA	NA	28	35
Whole House Cooling Fan	NA	NA	NA	NA	6.5	6.7	NA	NA	NA	NA	8	8
Evaporative Cooler	NA	NA	3.2	3.0	3.6	3.2	NA	NA	4	4	4	4
Gas Appliances												
Range (Stove-Top or Burners)	36.9	NA	37.5	38.2	39.0	39.0	48	NA	46	46	47	45
Oven	35.9	NA	34.2	33.0	35.0	35.9	47	NA	42	40	42	42
Clothes Dryer	11.0	NA	11.8	13.1	12.2	13.7	14	NA	14	16	15	16
Outdoor Gas Grill	NA	NA	7.1	7.4	9.4	11.5	NA	NA	9	9	11	13
Outdoor Gas Light	1.3	NA	1.6	1.4	1.4	1.2	2	NA	2	2	2	1
Swimming Pool Heater [1]	NA	NA	0.4	0.4	0.3	0.7	NA	NA	[2]	[2]	[2]	1
Refrigerators												
One	66.0	NA	70.0	72.4	72.4	75.8	86	NA	86	87	86	88
Two or More	10.4	NA	11.5	10.5	11.1	10.3	14	NA	14	13	13	12
None	0.2	NA	0.2	0.2	0.2	0.2	[2]	NA	[2]	[2]	[2]	[2]
Air Conditioning (A/C)												
Central	17.6	18.7	22.2	22.4	23.3	25.7	23	24	27	27	28	30
Individual Room Units	25.1	23.8	24.5	26.0	25.3	25.8	33	31	30	31	30	30
None	33.8	35.0	34.9	34.7	35.1	34.9	44	45	43	42	42	40

[1] In 1984, also includes heaters for jacuzzis and hot tubs.
[2] Less than 0.5 percent.
NA = Not available.
Note: No data are available for 1983.
Source: •1978 and 1979—Energy Information Administration, Form EIA-84, "Residential Energy Consumption Survey." •1980 and forward—Energy Information Administration, Form EIA-457, "Residential Energy Consumption Survey."

Figure 26. Household Motor Vehicle Data, 1983



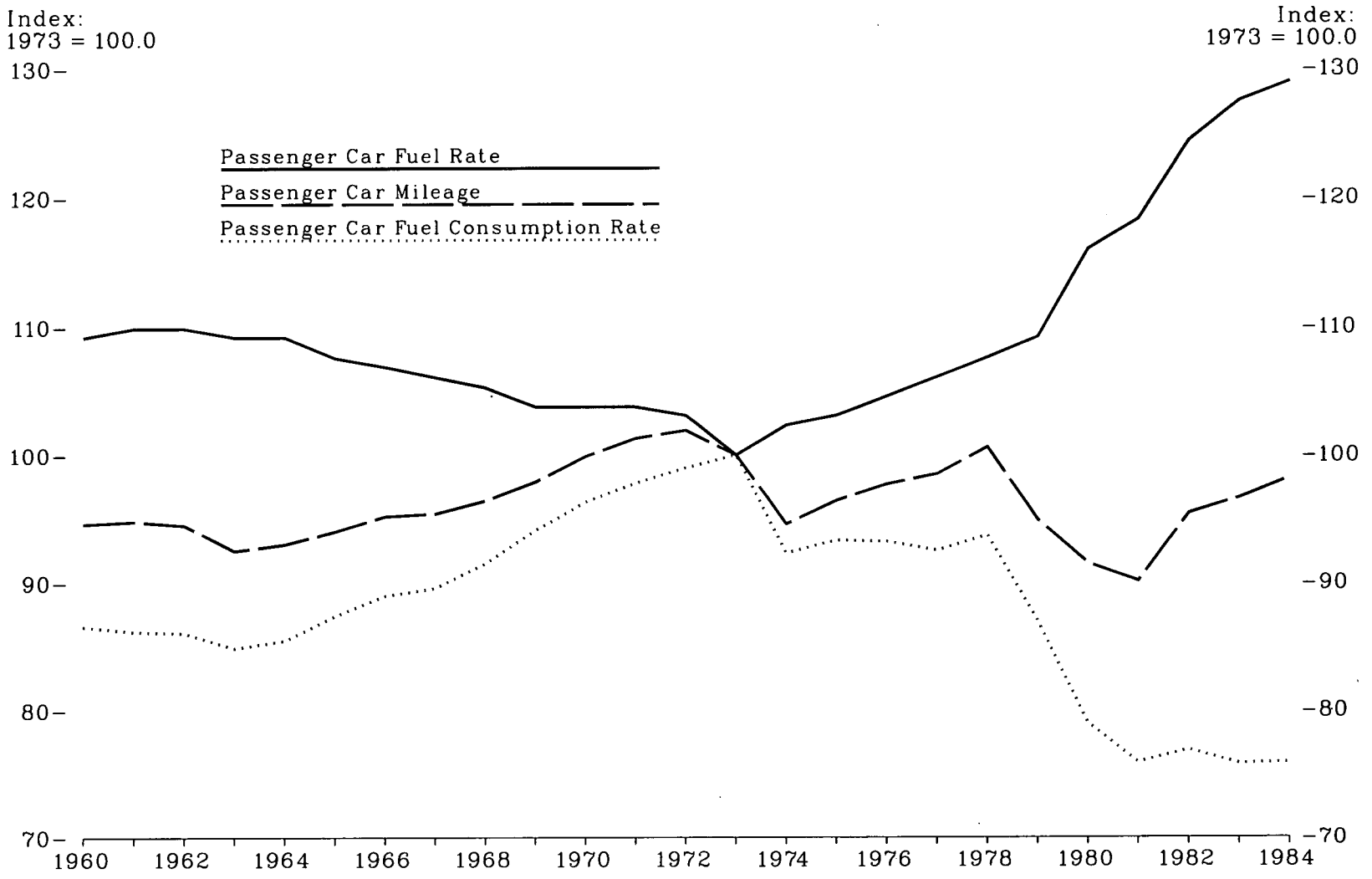
* See Appendix for Census Regions.
Source: See Table 26.

Table 26. Household Motor Vehicle Data, 1983

Activity	Census Region [1]				Family Income					
	Northeast	North Central	South	West	Less than $10,000	$10,000 to $14,999	$15,000 to $24,999	$25,000 to $34,999	$35,000 or More	Total
Households with Vehicles (millions)	13.9	18.3	24.7	15.3	13.1	10.5	18.4	14.7	15.6	72.2
Vehicles (millions)	23.9	32.5	45.1	27.7	18.5	16.1	31.8	28.3	34.6	129.3
Miles Traveled (billions)	227	298	436	254	151	144	292	282	347	1,215
Fuel Consumed (billion gallons)										
Motor Gasoline, Leaded	5.1	8.1	11.5	7.4	5.4	4.7	9.0	6.4	6.7	32.2
Motor Gasoline, Unleaded	9.1	11.4	16.8	8.7	5.2	5.0	10.6	11.3	14.0	46.1
Diesel Oil, Other	0.3	0.6	0.7	0.3	0.2	0.1	0.4	0.4	0.8	1.9
Total	14.5	20.2	29.1	16.5	10.8	9.8	20.0	18.1	21.6	80.3
Averages per Household										
Vehicles	1.7	1.8	1.8	1.8	1.4	1.5	1.7	1.9	2.2	1.8
Miles Traveled	16,324	16,299	17,689	16,541	11,559	13,682	15,897	19,252	22,167	16,830
Fuel Consumed (gallons)	1,044	1,104	1,178	1,076	830	933	1,087	1,236	1,380	1,112
Fuel Expenditures (dollars)	1,254	1,314	1,385	1,269	979	1,104	1,282	1,461	1,650	1,317
Averages per Vehicle										
Miles Traveled	9,511	9,153	9,674	9,144	8,166	8,919	9,183	9,981	10,004	9,399
Fuel Consumed (gallons)	609	620	644	595	586	608	628	641	623	621
Fuel Expenditures (dollars)	731	738	758	701	691	719	740	757	745	736
Price (dollars per gallon)										
Motor Gasoline, Leaded	1.15	1.15	1.12	1.14	1.14	1.14	1.14	1.13	1.14	1.14
Motor Gasoline, Unleaded	1.23	1.22	1.21	1.22	1.22	1.22	1.22	1.21	1.23	1.22
Diesel Oil, Other	1.18	1.16	1.13	1.17	1.14	1.15	1.15	1.18	1.14	1.15
Average	1.20	1.19	1.18	1.18	1.18	1.18	1.18	1.18	1.20	1.18
Fuel Efficiency (miles per gallon)	15.6	14.8	15.0	15.4	13.9	14.7	14.6	15.6	16.1	15.1

[1] See Appendix for Census regions.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, Form EIA-141 and Form EIA-429, "Residential Transportation Energy Consumption Survey, 1983."

Figure 27. Average Annual Motor Vehicle Mileage and Fuel Consumption, 1960-1984



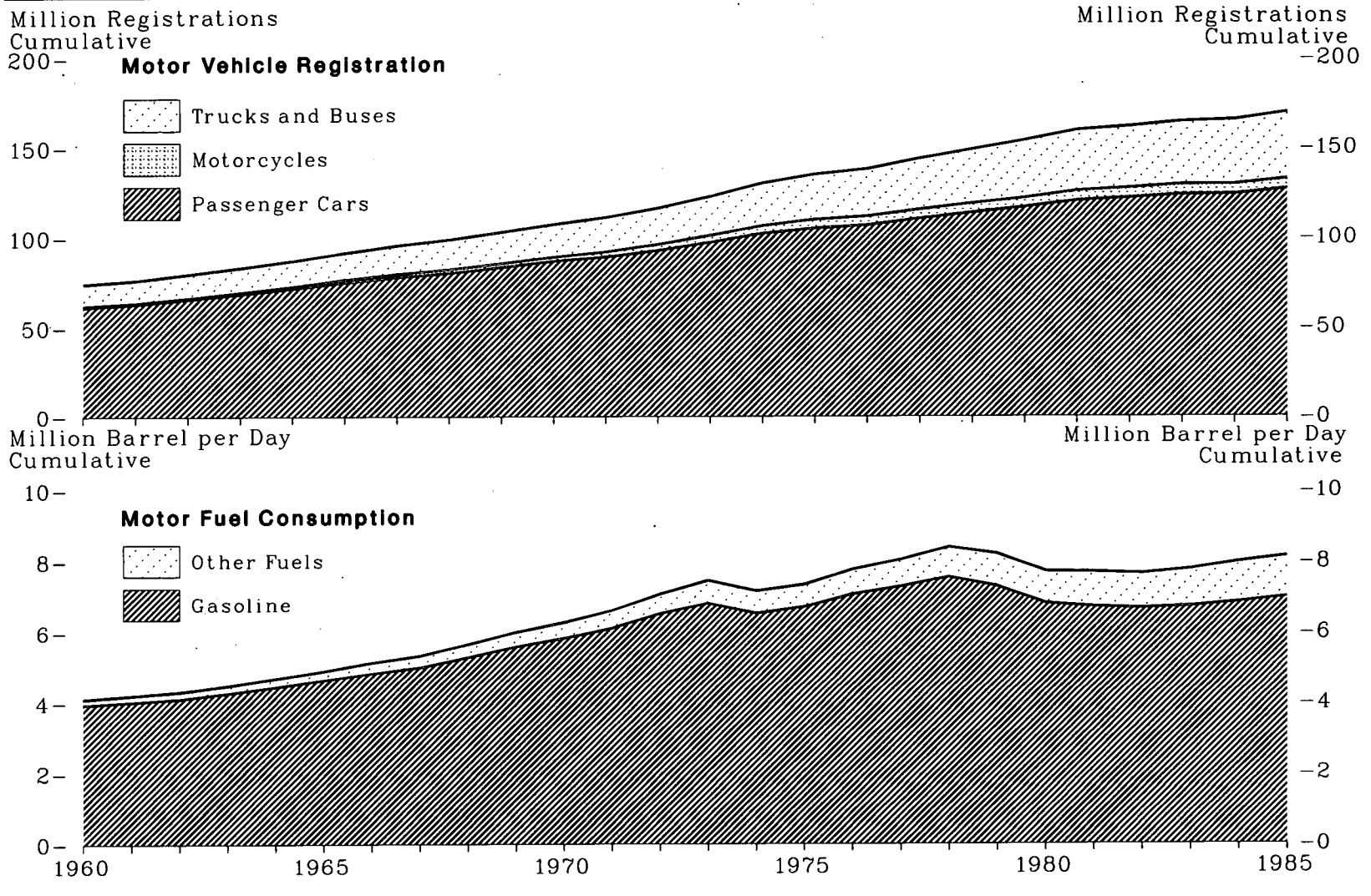
Source: See Table 27.

Table 27. Average [1] Annual Motor Vehicle Mileage and Fuel Consumption, 1960-1984

Year	Passenger Cars [2]						All Motor Vehicles [3]			
	Mileage		Fuel Consumption		Fuel Rate		Mileage		Fuel Consumption	
	Thousand Miles per Car	Index 1973 = 100.0	Gallons per Car	Index 1973 = 100.0	Miles per Gallon	Index 1973 = 100.0	Thousand Miles per Vehicle	Index 1973 = 100.0	Gallons per Vehicle	Index 1973 = 100.0
1960	9.45	94.6	661	86.6	14.3	109.2	9.65	95.7	777	91.3
1961	9.47	94.8	658	86.2	14.4	109.9	9.65	95.7	776	91.2
1962	9.44	94.5	657	86.1	14.4	109.9	9.62	95.4	774	91.0
1963	9.24	92.5	648	84.9	14.3	109.2	9.65	95.7	773	90.8
1964	9.29	93.0	652	85.5	14.3	109.2	9.70	96.2	778	91.4
1965	9.39	94.0	667	87.4	14.1	107.6	9.68	96.0	775	91.1
1966	9.51	95.2	679	89.0	14.0	106.9	9.70	96.2	778	91.4
1967	9.53	95.4	684	89.6	13.9	106.1	9.72	96.4	786	92.4
1968	9.63	96.4	698	91.5	13.8	105.3	9.85	97.7	804	94.5
1969	9.78	97.9	718	94.1	13.6	103.8	9.97	98.9	821	96.5
1970	9.98	99.9	735	96.3	13.6	103.8	10.08	100.0	830	97.5
1971	10.12	101.3	746	97.8	13.6	103.8	10.20	101.2	838	98.5
1972	10.18	101.9	755	99.0	13.5	103.1	10.37	102.9	859	100.9
1973	9.99	100.0	763	100.0	13.1	100.0	10.08	100.0	851	100.0
1974	9.45	94.6	704	92.3	13.4	102.3	9.53	94.5	788	92.6
1975	9.63	96.4	712	93.3	13.5	103.1	9.64	95.6	790	92.8
1976	9.76	97.7	711	93.2	13.7	104.6	9.84	97.6	807	94.8
1977	9.84	98.5	706	92.5	13.9	106.1	9.93	98.5	804	94.5
1978	10.05	100.6	715	93.7	14.1	107.6	10.06	99.8	813	95.5
1979	9.48	94.9	664	87.0	14.3	109.2	9.58	95.0	765	89.9
1980	9.14	91.5	603	79.0	15.2	116.0	9.41	93.4	711	83.5
1981	9.00	90.1	579	75.9	15.5	118.3	9.48	94.0	697	81.9
1982	9.53	95.4	587	76.9	16.3	124.4	9.64	95.6	686	80.6
1983	9.65	96.6	578	75.8	16.7	127.5	9.79	97.1	685	80.5
1984[4]	9.81	98.2	579	75.9	16.9	129.0	9.97	98.9	689	81.0

[1] Arithmetic mean.
[2] Includes motorcycles, 1960-1964.
[3] Includes passenger cars, motorcycles, buses, and trucks.
[4] Preliminary.
Source: Federal Highway Administration, *Highway Statistics Annual*, Table VM-1.

Figure 28. Motor Vehicle Registration and Motor Fuel Consumption, 1960-1985



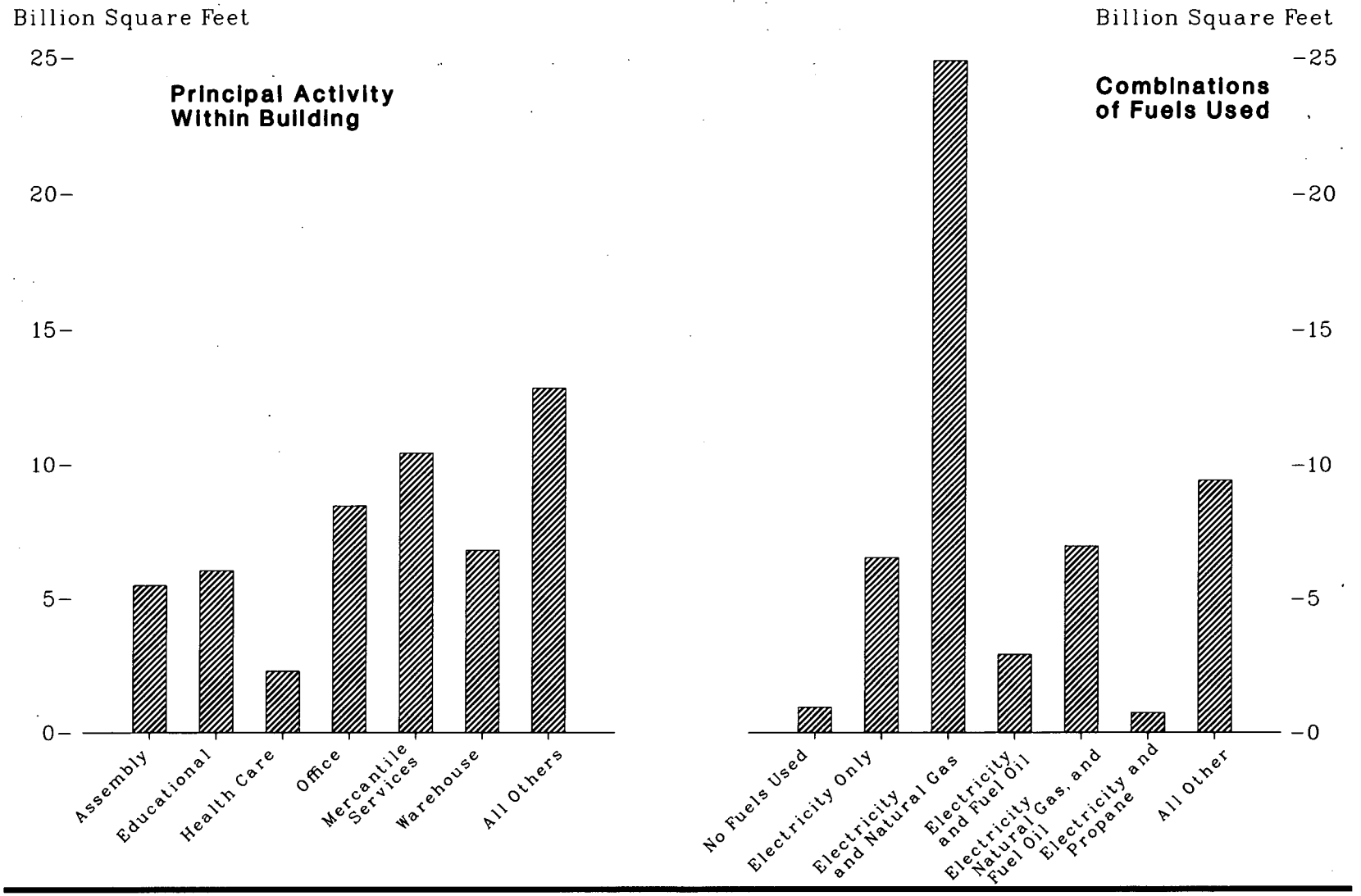
Source: See Table 28.

Table 28. Motor Vehicle Registration and Motor Fuel Consumption, 1960-1985

Year	Motor Vehicle Registration (millions)					Motor Fuel Consumption [1] (thousand barrels per day)		
	Passenger Cars	Motorcycles	Buses	Trucks	Total	Gasoline [2]	Other Fuels [3]	Total [4]
1960	61.7	0.6	0.3	11.9	74.4	3,953	159	4,112
1961	63.4	0.6	0.3	12.3	76.6	4,034	176	4,210
1962	66.1	0.7	0.3	12.8	79.8	4,120	192	4,312
1963	69.0	0.8	0.3	13.4	83.5	4,274	211	4,485
1964	72.0	1.0	0.3	14.0	87.3	4,454	236	4,690
1965	75.3	1.4	0.3	14.8	91.7	4,644	269	4,913
1966	78.1	1.8	0.3	15.5	95.7	4,846	306	5,152
1967	80.4	2.0	0.3	16.2	98.9	5,014	329	5,343
1968	83.6	2.1	0.4	16.9	103.0	5,300	370	5,670
1969	86.9	2.3	0.4	17.9	107.4	5,604	413	6,017
1970	89.2	2.8	0.4	18.8	111.2	5,845	439	6,284
1971	92.7	3.3	0.4	19.9	116.3	6,125	494	6,619
1972	97.1	3.8	0.4	21.3	122.6	6,529	554	7,083
1973	102.0	4.4	0.4	23.2	130.0	6,819	642	7,460
1974	104.9	5.0	0.4	24.6	134.9	6,531	639	7,170
1975	106.7	5.0	0.5	25.8	137.9	6,719	628	7,347
1976	110.4	5.0	0.5	27.7	143.5	7,075	697	7,772
1977	113.7	5.0	0.5	29.6	148.8	7,287	760	8,046
1978	116.6	5.1	0.5	31.7	153.9	7,555	837	8,392
1979	120.2	5.5	0.5	33.3	159.6	7,291	913	8,204
1980	121.7	5.7	0.5	33.6	161.6	6,820	896	7,716
1981	123.5	5.8	0.5	34.5	164.3	6,726	969	7,695
1982	123.7	5.7	0.6	35.3	165.3	6,679	972	7,651
1983	126.7	5.6	0.6	36.5	169.4	6,731	1,043	7,774
1984	127.9	5.5	0.6	38.0	172.0	6,850	1,127	7,977
1985[5]	130.4	5.5	([6])	[7] 39.9	175.7	6,995	1,138	8,133

[1] Includes only motor fuel taxed at the prevailing tax rates in each State. Excludes motor fuel exempt from tax payment, subject to tax refund, or taxed at rates other than the prevailing tax rate. Experience has shown that the total motor fuel consumption quantity cited here equals more than 99.0 percent of gross reported motor fuel consumption.
[2] Includes motor gasoline, aviation gasoline, and gasohol.
[3] Includes distillate fuel oil (diesel oil), liquefied gases, and kerosene when they are used to operate vehicles on highways. Excludes jet fuel beginning in 1962.
[4] Excludes losses allowed for evaporation, handling, etc.
[5] Estimated.
[6] Included in trucks.
[7] Includes buses.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1960 through 1975—Federal Highway Administration, *Highway Statistics Summary to 1975*, Tables MV-201 and MF-221. •1976 through 1984—Federal Highway Administration, *Highway Statistics Annual*, Tables MV-1, MF-21, and MF-25. •1985—Federal Highway Administration, *Selected Highway Statistics and Charts 1983.*

Figure 29. Characteristics of Commercial Buildings, 1983



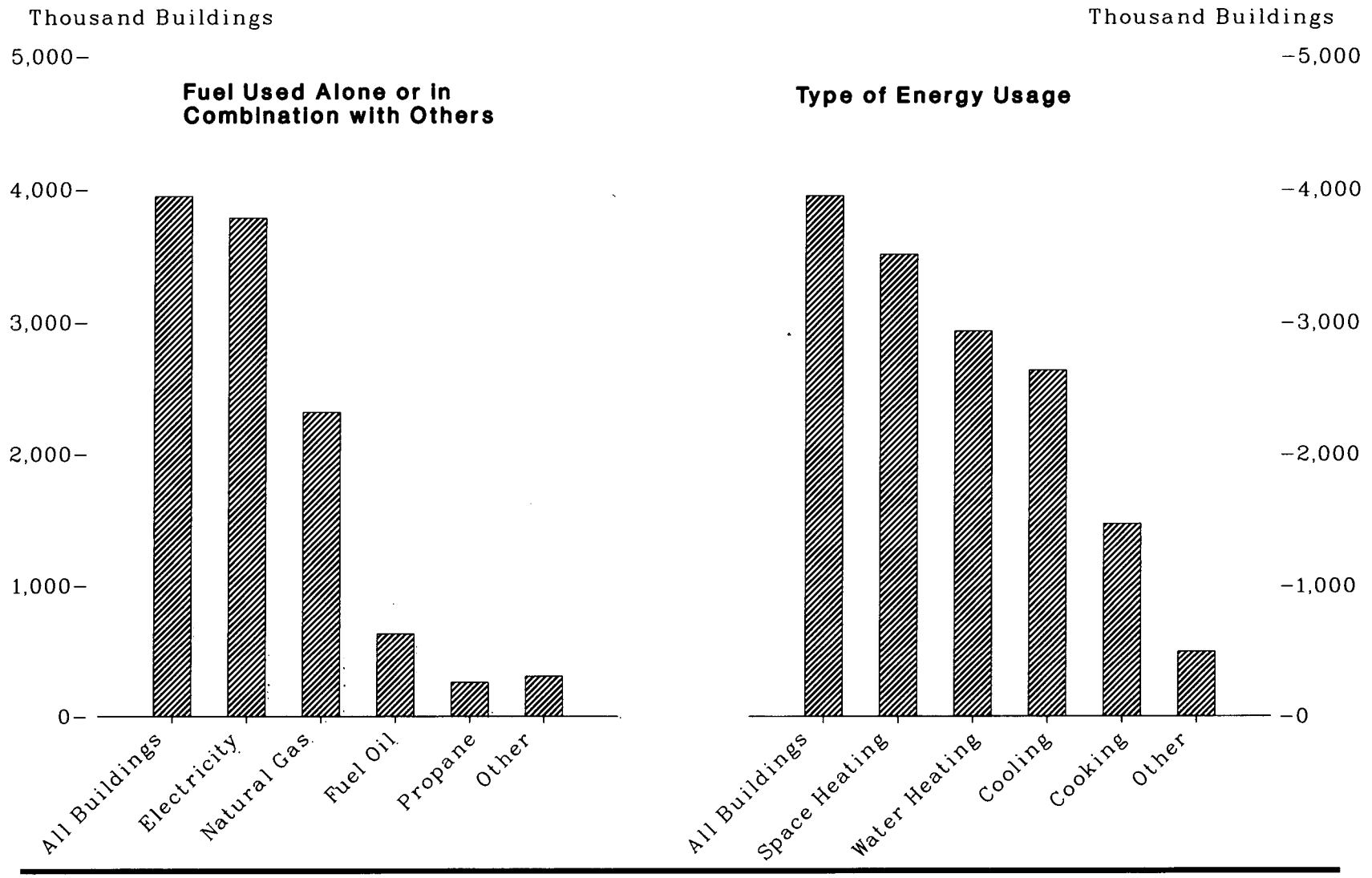
Source: See Table 29.

Table 29. Characteristics of Commercial Buildings by Census Region, 1983

	Number of Buildings in Census Region (thousands)					Total Floor Area of Buildings in Census Region (million square feet)				
	Northeast	North Central	South	West	Total	Northeast	North Central	South	West	Total
Total Buildings	670	1,211	1,493	574	3,948	11,615	16,059	17,049	7,602	52,325
Principal Activity Within Building										
Assembly	61	149	202	45	457	1,053	1,755	1,835	[1]	5,483
Educational	28	39	79	31	177	1,374	1,834	2,082	754	6,044
Food Sales/Service	58	120	145	57	380	392	724	616	320	2,051
Health Care	11	21	20	[1]	61	502	1,015	567	193	2,277
Lodging	13	12	57	24	106	422	669	803	346	2,241
Mercantile/Services	183	353	383	151	1,071	2,040	3,219	3,843	1,325	10,427
Office	97	176	191	112	575	1,774	2,178	2,903	1,599	8,454
Residential	97	78	44	16	236	1,336	717	299	103	2,454
Warehouse	57	131	170	68	425	1,224	2,130	2,288	1,149	6,791
Other	20	50	87	22	179	834	881	644	402	2,760
Vacant	46	80	114	41	281	664	937	1,169	571	3,342
Fuels Used Alone or in Combination with Other Fuels										
Electricity	651	1,161	1,420	551	3,783	11,405	15,736	16,734	7,484	51,359
Natural Gas	444	912	620	339	2,314	8,321	13,547	9,913	5,309	37,090
Fuel Oil	257	123	206	46	633	5,619	3,070	3,605	1,019	13,313
Propane	[1]	70	144	18	260	561	549	1,781	116	3,007
Purchased Steam	17	22	11	11	60	1,373	1,930	779	512	4,594
Other	42	64	91	48	245	1,101	1,138	1,284	475	3,997
Combinations of Fuels Used										
No Fuels Used	18	49	72	[1]	161	202	308	307	[1]	935
Electricity Only	55	102	504	139	800	644	803	3,660	1,411	6,518
Electricity and Natural Gas	294	810	532	303	1,939	3,701	9,205	7,603	4,354	24,863
Electricity and Fuel Oil	104	66	119	30	319	1,064	441	1,173	234	2,911
Electricity, Natural Gas and Fuel Oil	118	41	37	[1]	207	3,262	2,161	1,030	499	6,953
Electricity and Propane	[1]	37	85	[1]	138	[1]	181	481	[1]	736
Other	74	105	144	60	383	2,697	2,960	2,795	958	9,409
Percent of Building Heated										
Not Heated	43	97	214	85	440	398	641	1,311	621	2,971
50 Percent or Less	77	148	199	93	517	886	1,642	2,062	1,323	5,913
More than 50 Percent but Less than 100 Percent	115	160	195	95	564	2,111	2,163	2,817	1,176	8,266
100 Percent	435	806	886	301	2,427	8,221	11,612	10,859	4,482	35,175
Percent of Building Cooled										
Not Cooled	226	407	381	290	1,304	2,445	2,912	1,934	2,511	9,802
50 Percent or Less	234	344	308	118	1,004	4,514	5,846	4,222	1,753	16,335
More than 50 Percent but Less than 100 Percent	91	155	205	59	510	2,553	3,206	3,377	1,197	10,333
100 Percent	118	305	599	107	1,129	2,103	4,096	7,516	[1]	15,855

[1] Data withheld either because the relative standard error was greater than 50 percent, or fewer than 20 buildings were sampled.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *Characteristics of Commercial Buildings 1983.*

Figure 30. Characteristics of Commercial Buildings by Type of Energy Usage, 1983



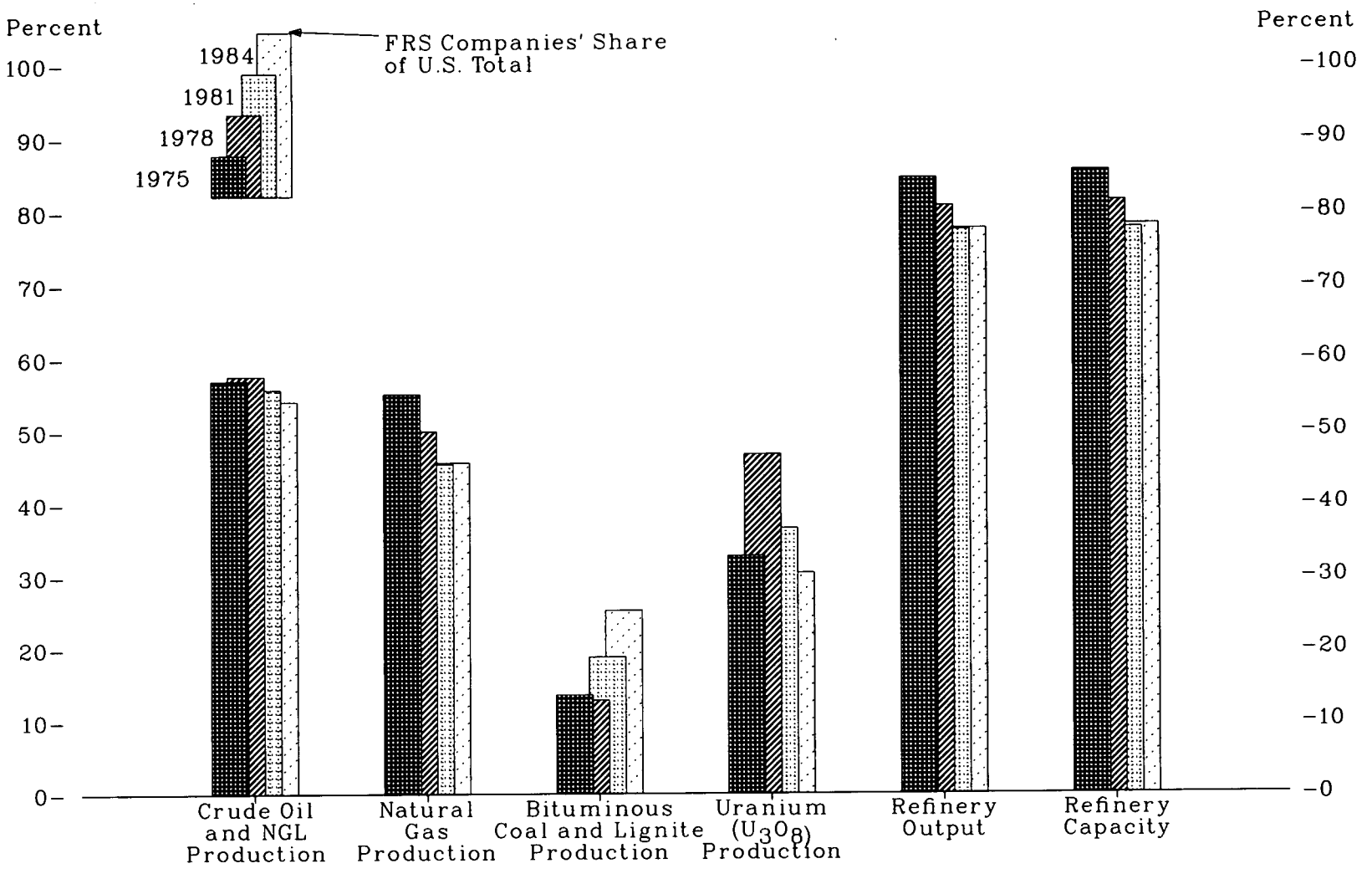
Source: See Table 30.

Table 30. Characteristics of Commercial Buildings by Type of Energy Usage, 1983

	All Buildings	Type of Energy Usage (thousand buildings)					
		Space Heating	Water Heating	Cooling	Cooking	Manufacturing	Electricity Generation
Total Buildings	3,948	3,507	2,931	2,636	1,468	388	108
Principal Activity Within Building							
Assembly	457	443	375	293	288	[1]	3
Educational	177	177	158	130	108	7	6
Food Sales/Service	380	367	343	314	285	30	[1]
Health Care	61	61	57	55	27	[1]	8
Lodging	106	102	102	79	81	[1]	3
Mercantile/Services	1,071	982	701	659	160	169	19
Office	575	566	509	524	170	35	20
Residential	236	235	229	164	195	[1]	[1]
Warehouse	425	299	238	226	56	86	[1]
Other	179	140	108	98	57	17	27
Vacant	281	136	109	94	41	10	7
Fuels Used Alone or in Combination with Other Fuels							
Electricity	3,783	3,504	2,929	2,636	1,466	387	108
Natural Gas	2,314	2,260	2,000	1,717	1,029	268	63
Fuel Oil	633	627	520	384	280	57	49
Propane	260	251	179	166	127	29	20
Purchased Steam	60	60	56	43	28	3	6
Other	245	241	175	122	106	34	42
Combinations of Fuels Used							
No Fuels Used	161	[2]	[2]	[2]	[2]	[2]	[2]
Electricity Only	800	587	459	554	187	[1]	[2]
Electricity and Natural Gas	1,939	1,891	1,661	1,456	822	227	19
Electricity and Fuel Oil	319	315	235	171	100	25	13
Electricity, Natural Gas and Fuel Oil	207	205	195	149	121	20	17
Electricity and Propane	138	132	81	91	54	[1]	[1]
Other	383	377	302	216	184	46	56
Percent of Building Heated							
Not Heated	440	[2]	68	55	26	31	[1]
50 Percent or Less	517	517	351	358	128	92	13
More than 50 Percent but Less than 100 Percent	564	564	473	435	261	48	7
100 Percent	2,427	2,426	2,039	1,788	1,052	217	88
Percent of Building Cooled							
Not Cooled	1,304	921	692	[2]	340	123	35
50 Percent or Less	1,004	973	819	1,004	387	159	26
More than 50 Percent but Less than 100 Percent	510	504	448	510	264	36	16
100 Percent	1,129	1,109	972	1,122	476	70	31

[1] Data withheld either because the relative standard error was greater than 50 percent, or fewer than 20 buildings were sampled.
[2] Not applicable.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *Characteristics of Commercial Buildings 1983.*

Figure 31. Selected Statistics for FRS* Companies' Operations, 1975, 1978, 1981, and 1984



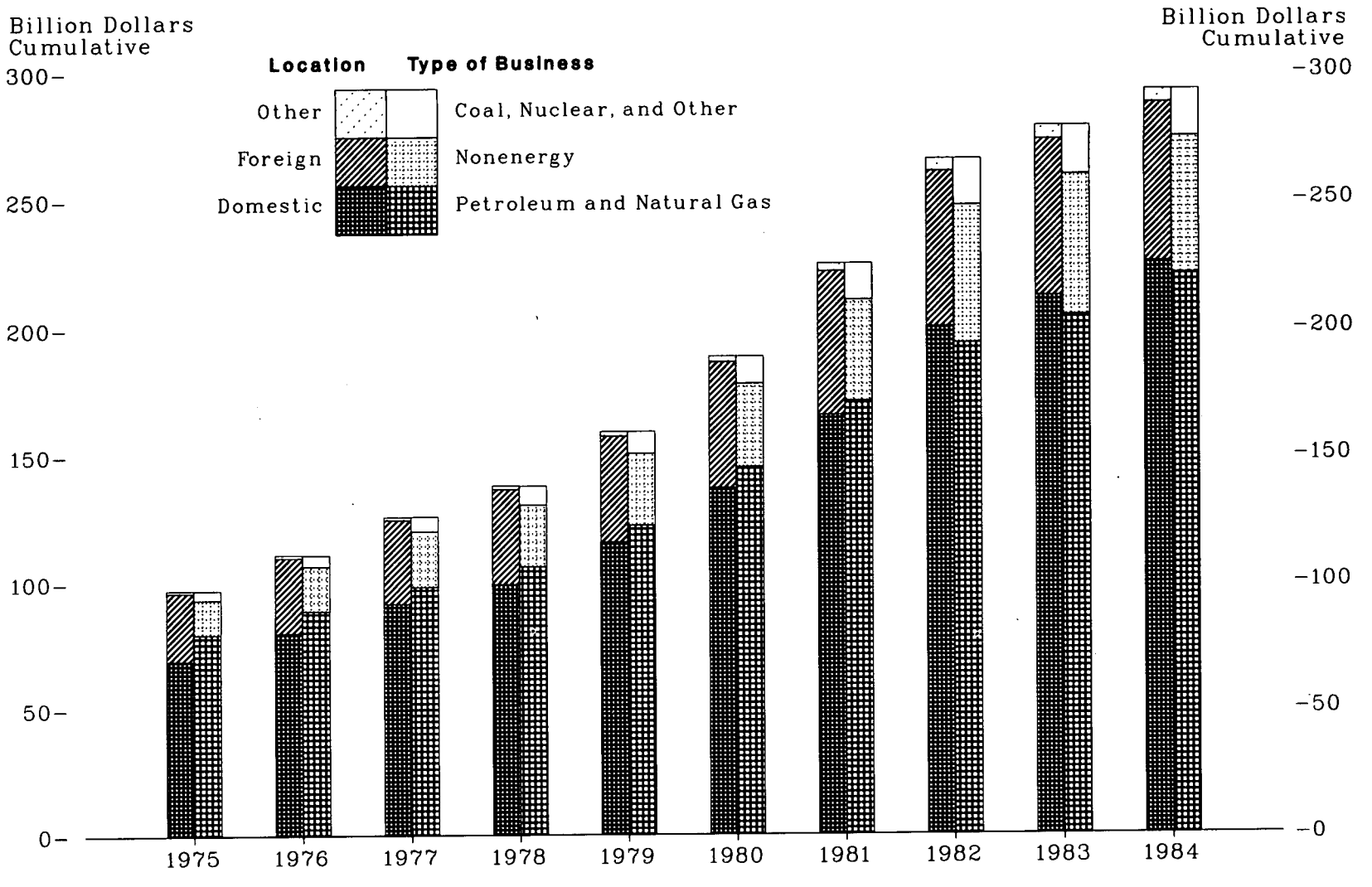
*FRS = Financial Reporting System (See Explanatory Note 13).
Source: See Table 31.

Table 31. Selected Statistics for FRS [1] Companies' Operations, 1975-1984

Activity	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Production										
Crude Oil and NGL [2] (million barrels)	2,080.9	2,002.0	2,008.4	2,160.6	2,110.9	2,068.7	2,072.4	2,079.1	2,059.3	2,088.8
(Percent of U.S. Total)	(57.0)	(56.2)	(55.8)	(57.6)	(57.0)	(55.6)	(55.8)	(55.1)	(54.8)	(54.1)
Dry Natural Gas (trillion cubic feet)	11.1	10.6	10.3	10.0	10.0	9.0	9.2	8.3	7.4	7.9
(Percent of U.S. Total)	(55.2)	(53.0)	(51.5)	(50.0)	(48.8)	(44.1)	(45.5)	(46.8)	(45.9)	(45.7)
Bituminous Coal [3] and Lignite (million short tons)	88.1	88.5	89.1	85.5	123.3	142.3	154.8	195.2	185.2	226.0
(Percent of U.S. Total)	(13.6)	(13.0)	(12.9)	(12.9)	(15.9)	(17.3)	(18.9)	(23.4)	(23.8)	(25.3)
Uranium (million pounds of U_3O_8)	7.6	6.5	16.0	17.3	16.7	19.0	14.5	9.2	6.6	4.1
(Percent of U.S. Total)	(32.8)	(25.5)	(53.5)	(46.8)	(44.6)	(43.5)	(36.6)	(34.3)	(28.1)	(30.4)
Refining										
Capacity [4] (million barrels per day)	13.4	14.2	14.6	14.8	14.8	15.1	14.6	13.6	13.0	12.8
(Percent of U.S. Total)	(85.5)	(84.0)	(81.9)	(81.4)	(79.2)	(77.8)	(77.7)	(77.4)	(77.6)	(78.2)
Output (million barrels per day)	12.2	12.8	13.7	13.6	13.3	12.2	11.3	10.6	10.4	11.0
(Percent of U.S. Total)	(84.5)	(82.6)	(81.5)	(80.7)	(80.1)	(78.7)	(77.4)	(75.9)	(76.4)	(77.6)
Financial Indicators (Percent)										
Net Income to Stockholders' Equity	12.3	13.1	12.6	12.8	18.8	21.1	18.1	11.9	11.4	12.1
Net Income Plus Interest to Total Invested Capital	11.3	11.7	11.6	12.3	16.9	18.7	16.8	11.9	11.5	12.0
Long-Term Debt to Stockholders' Equity	35.6	38.7	38.9	35.6	33.7	31.5	32.2	37.1	34.8	49.5
Addition to PP&E to Net PP&E [5]	21.5	20.7	19.0	18.2	23.4	25.3	26.1	26.9	17.0	26.5

[1] FRS = Financial Reporting System (See Explanatory Note 13).
[2] NGL = Natural Gas Liquids.
[3] Includes subbituminous coal.
[4] Operable capacity as of January 1 of the following year.
[5] PP&E = Property Plant and Equipment.
Note: FRS Crude Oil and NGL and Natural Gas (Dry Marketed) production are on a net ownership interest basis (see Glossary).
Sources: **FRS Companies:** • 1975 through 1979— Energy Information Administration, *Energy Company Development Patterns in the Postembargo Era*, Vol. 2. • 1980 and forward—Energy Information Administration, *Performance Profiles of Major Energy Producers*. **U.S. Total, Production: Crude Oil and NGL:** • 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*. • 1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual*. • 1981 and forward—Energy Information Administration, *Petroleum Supply Annual*. **U.S. Total, Production: Dry Natural Gas:** • 1975—Bureau of Mines, *Minerals Yearbook*, "Natural Gas" chapter. • 1976 through 1978— Energy Information Administration, Energy Data Reports, *Natural Gas, Annual*. • 1979—Energy Information Administration, *Natural Gas Production and Consumption*. • 1980 and forward—Energy Information Administration, *Natural Gas Annual*. **U.S. Total, Production: Bituminous Coal and Lignite:** • 1975—Bureau of Mines, *Minerals Yearbook*, "Coal — Bituminous and Lignite" chapter. • 1976—Energy Information Administration, Energy Data Report, *Coal-Bituminous and Lignite in 1976*. • 1977 and 1978— Energy Information Administration, Energy Data Report, *Bituminous Coal and Lignite Production and Mine Operations*. • 1980—Energy Information Administration, Energy Data Report, *Weekly Coal Report*. • 1981 and forward—Energy Information Administration, *Weekly Coal Production*. **U.S. Total, Production: Uranium.** • 1975 through 1981—U.S. Department of Energy, Grand Junction Office, Colorado, *Statistical Data of the Uranium Industry*, Report No. GJO-100, annual. •1982 and 1983—Energy Information Administration, *Survey of United States Uranium Marketing Activity*. •1984—Energy Information Administration, *Uranium Industry Annual* **U.S. Total, Refining:** • 1975 through 1980—Energy Information Administration, *Energy Company Development Patterns in the Postembargo Era*, Vol. 1. • 1981 and forward—Energy Information Administration, *Petroleum Supply Annual*.

Figure 32. Net Property Investment by FRS* Companies, 1975-1984



*FRS = Financial Reporting System (See Explanatory Note 13).
Source: See Table 32.

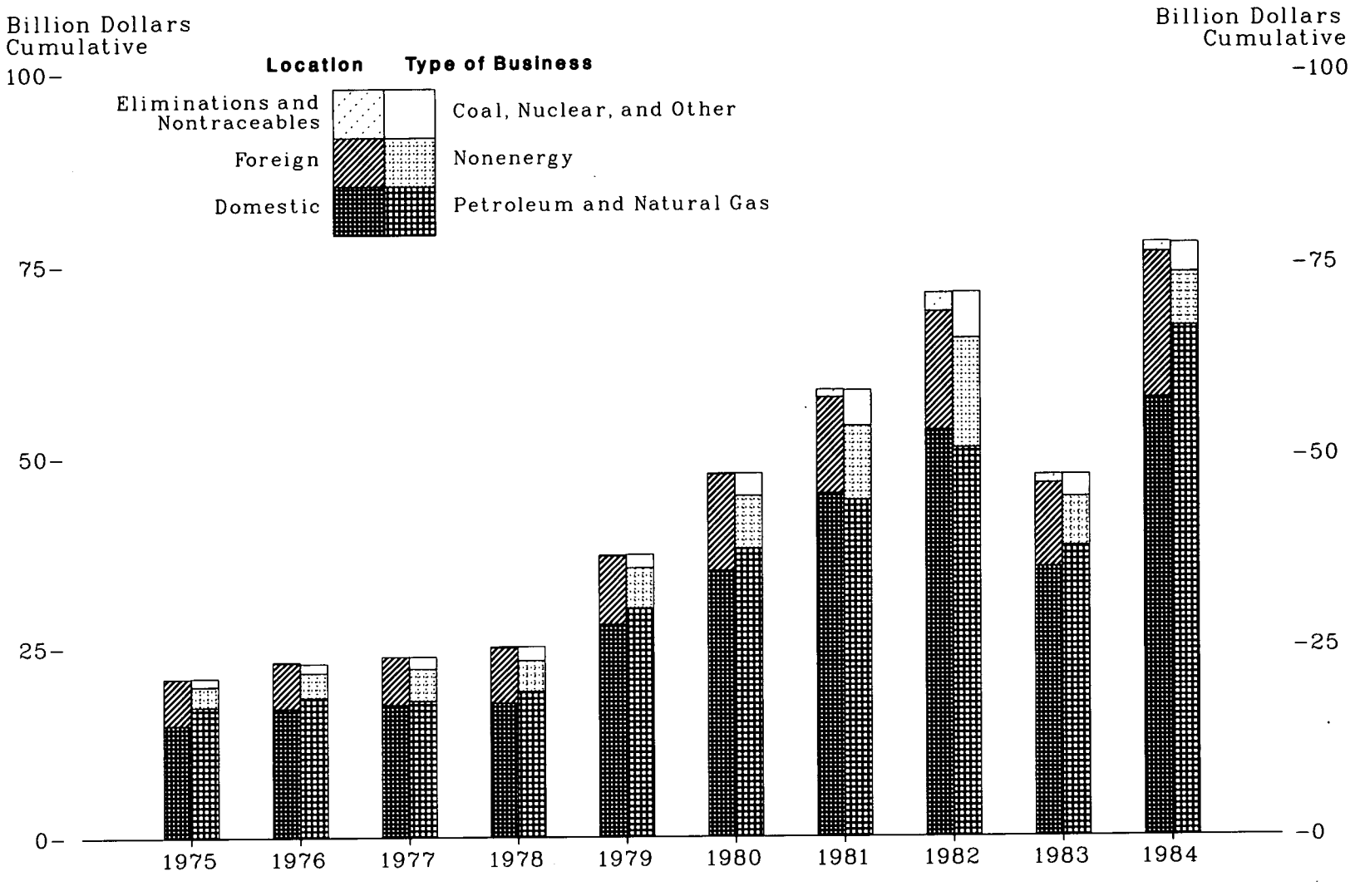
Table 32. Net Property [1] Investment by FRS [2] Companies, 1975-1984

(Billion Dollars)

Item	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Location										
Domestic	69.4	80.3	91.7	99.3	115.7	137.0	165.9	200.2	212.1	225.2
Foreign	26.8	29.6	33.0	37.3	41.8	49.7	56.0	60.5	61.0	62.1
Eliminations and Nontraceables	1.0	1.2	1.2	1.5	1.8	2.2	3.0	4.8	5.3	5.2
Total	97.3	111.1	125.9	138.1	159.3	188.9	224.9	265.5	278.4	292.4
Type of Business										
Petroleum and Natural Gas	79.8	88.9	98.4	106.2	122.4	145.3	171.3	193.9	204.6	220.6
Coal	1.6	2.0	2.7	3.1	3.7	4.6	6.8	8.4	9.0	9.0
Nuclear	0.3	0.4	0.7	0.9	1.1	1.2	1.3	1.2	1.1	0.6
Other Energy	0.8	1.0	1.2	2.2	2.1	2.7	3.0	3.7	3.6	3.7
Nonenergy	13.7	17.6	21.8	24.2	28.4	33.0	39.5	53.5	54.8	53.4
Eliminations and Nontraceables	1.0	1.1	1.2	1.4	1.6	2.1	3.0	4.8	5.3	5.2
Total	97.3	111.1	125.9	138.1	159.3	188.9	224.9	265.5	278.4	292.4
Domestic Petroleum and Natural Gas										
Production	27.8	31.4	36.4	40.4	51.7	65.7	83.1	100.4	108.1	122.8
Refining/Marketing	20.0	20.7	20.8	21.6	23.0	25.1	28.5	31.4	32.9	33.7
Transportation	7.0	9.5	11.0	11.0	10.8	10.9	10.9	10.5	11.7	11.6
Eliminations and Nontraceables	[3]	[3]	[3]	[3]	0.1	[3]	0.0	0.0	0.0	0.0
Total	54.8	61.7	68.1	73.1	85.5	101.7	122.5	142.3	152.7	168.0
Foreign Petroleum and Natural Gas										
Production	9.4	11.4	14.0	16.6	20.0	25.9	30.4	34.1	35.9	38.6
Refining/Marketing	10.3	10.3	10.5	11.1	11.3	12.4	13.6	13.3	12.4	11.2
Transportation	5.2	5.4	5.6	5.4	5.3	5.3	4.8	4.1	3.5	2.8
Eliminations and Nontraceables	[3]	[3]	[3]	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Total	24.9	27.1	30.2	33.1	36.6	43.6	48.8	51.5	51.9	52.6

[1] Property, plant, and equipment.
[2] FRS = Financial Reporting System (See Explanatory Note 13).
[3] Less than $50 million.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1975 through 1980 — Energy Information Administration, *Energy Company Development Patterns in the Postembargo Era*, Vol. 2. •1981 and forward— Energy Information Administration, *Performance Profiles of Major Energy Producers*.

Figure 33. Additions to Property by FRS* Companies, 1975-1984



*FRS = Financial Reporting System (See Explanatory Note 13).
Source: See Table 33.

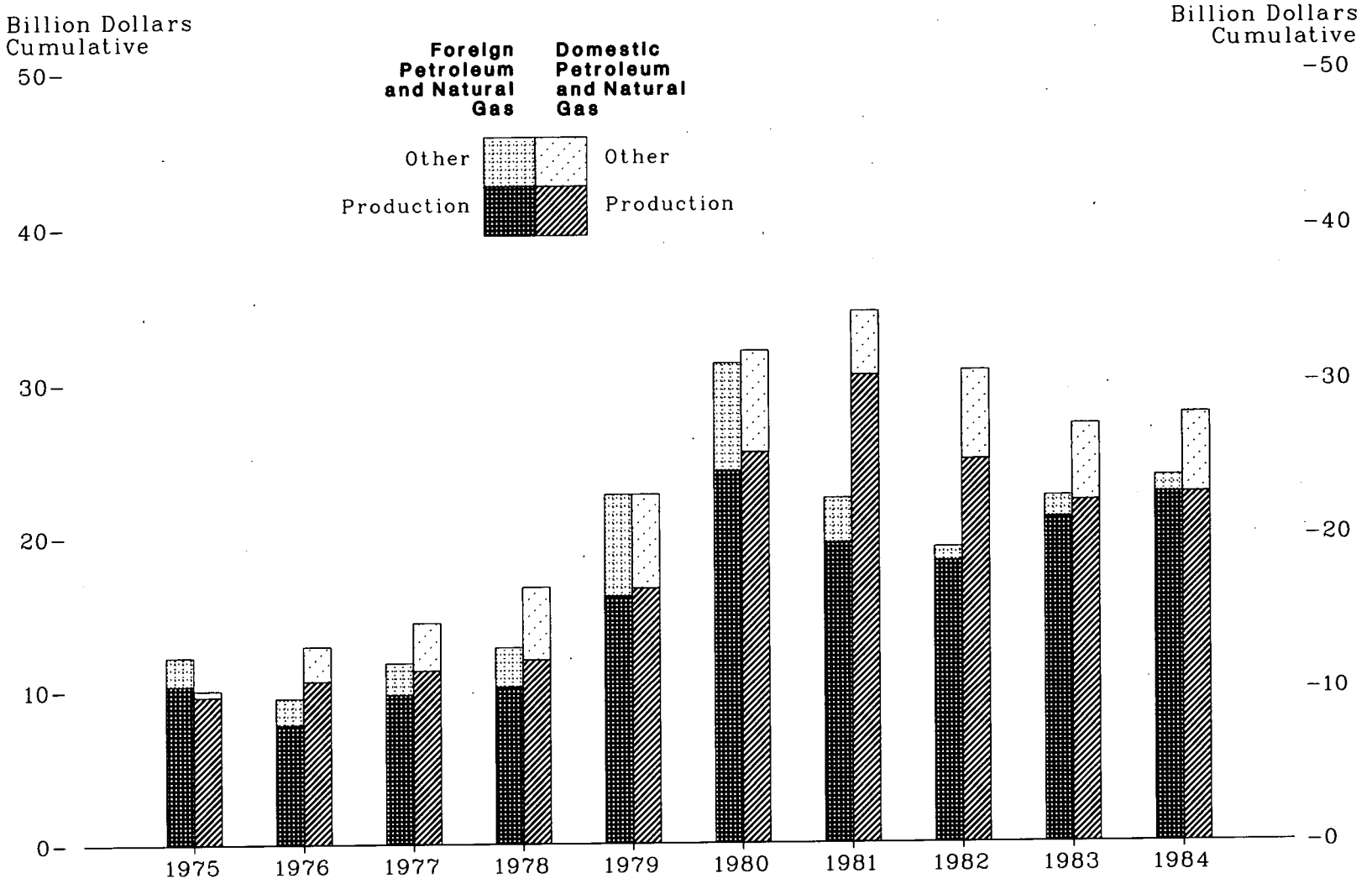
Table 33. Additions to Property [1] by FRS [2] Companies, 1975-1984

(Billion Dollars)

Item	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Location										
Domestic	14.7	16.9	17.4	17.6	28.0	35.0	45.1	53.3	35.4	57.5
Foreign	6.1	6.1	6.4	7.4	9.0	12.7	12.6	15.5	11.0	18.9
Eliminations and Nontraceables	[3]	0.1	[3]	0.1	0.1	0.1	1.0	2.4	1.1	1.3
Total	20.9	23.0	23.9	25.1	37.2	47.8	58.7	71.3	47.4	77.6
Type of Business										
Petroleum and Natural Gas	17.1	18.3	17.9	19.1	30.1	37.9	44.2	51.0	38.1	66.8
Coal	0.5	0.5	0.8	0.7	0.7	1.2	2.8	2.0	1.1	1.6
Nuclear	0.1	0.1	0.3	0.3	0.3	0.3	0.2	0.1	[3]	0.1
Other Energy	0.3	0.5	0.3	0.5	0.4	0.8	0.7	1.5	0.7	0.8
Nonenergy	2.7	3.3	4.3	4.2	5.3	6.9	9.7	14.3	6.5	7.0
Eliminations and Nontraceables	0.2	0.2	0.2	0.3	0.4	0.7	1.0	2.4	1.1	1.3
Total	20.9	23.0	23.9	25.1	37.2	47.8	58.7	71.3	47.5	77.6
Domestic Petroleum and Natural Gas										
Production	6.0	7.4	8.4	9.3	18.1	21.7	26.7	30.6	21.7	42.1
Refining/Marketing	2.8	2.8	2.2	2.8	3.5	4.3	6.0	6.9	5.2	6.8
Transportation	2.8	2.8	1.4	0.6	0.6	1.0	0.8	0.8	2.0	0.9
Eliminations and Nontraceables	0.0	[3]	[3]	[3]	[3]	[3]	0.0	0.0	0.0	0.0
Total	11.6	13.1	12.0	12.7	22.2	26.9	33.5	38.4	29.0	49.8
Foreign Petroleum and Natural Gas										
Production	3.0	3.6	4.1	4.7	5.9	8.4	8.0	10.3	7.4	14.0
Refining/Marketing	1.4	1.0	1.1	1.5	1.5	2.1	2.4	2.1	1.7	2.8
Transportation	1.1	0.7	0.7	0.2	0.5	0.5	0.3	0.3	[3]	0.2
Eliminations and Nontraceables	[3]	[3]	[3]	[3]	[3]	[3]	0.0	0.0	0.0	0.0
Total	5.5	5.3	5.9	6.4	7.8	11.0	10.7	12.6	9.2	17.0

[1] Property, plant, and equipment.
[2] FRS = Financial Reporting System (See Explanatory Note 13).
[3] Less than $50 million.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1975 through 1980 — Energy Information Administration, *Energy Company Development Patterns in the Postembargo Era*, Vol. 1 and Vol. 2, October 1982. • 1981 and forward—Energy Information Administration, *Performance Profiles of Major Energy Producers*.

Figure 34. Operating Income of FRS* Companies, 1975-1984



*FRS = Financial Reporting System (See Explanatory Note 13).
Source: See Table 34.

Table 34. Operating Income of FRS [1] Companies, 1975-1984

(Billion Dollars)

Item	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Location										
Domestic	12.2	15.2	16.4	18.0	25.2	33.3	35.0	29.7	27.8	29.2
Foreign	12.6	9.9	12.2	13.4	23.8	32.6	22.9	18.8	23.7	24.9
Eliminations and Nontraceables	-0.5	-1.1	-1.3	-1.6	-2.2	-3.2	-3.0	-3.1	-3.4	-4.0
Total	24.3	24.0	27.3	29.8	46.8	62.7	54.8	45.5	48.2	50.1
Type of Business										
Petroleum and Natural Gas	22.7	22.4	26.2	29.5	45.4	63.2	56.9	49.9	49.8	50.0
Coal	0.4	0.3	0.2	0.1	0.2	0.3	0.2	0.4	0.5	0.7
Nuclear	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	[2]	-0.2
Other Energy	-0.2	-0.1	-0.1	-0.2	-0.2	[2]	-0.5	-0.5	-0.2	-0.2
Nonenergy	2.6	2.9	2.4	2.1	3.7	2.4	1.4	1.4	1.5	3.8
Eliminations and Nontraceables	-1.2	-1.4	-1.3	-1.6	-2.1	-3.1	-3.0	-2.7	-3.4	-4.0
Total	24.3	24.0	27.3	29.8	46.8	62.7	54.8	45.5	48.2	50.1
Domestic Petroleum and Natural Gas										
Production	9.6	10.6	11.3	12.0	16.6	25.4	30.4	24.9	22.2	23.5
Refining/Marketing	-0.2	1.6	2.4	2.7	3.5	3.8	0.9	2.3	1.5	-1.0
Transportation	0.6	0.8	0.9	2.1	2.7	3.0	3.1	3.5	3.5	4.2
Eliminations and Nontraceables	[2]	-0.1	-0.1	-0.1	-0.1	-0.1	[2]	-0.1	[2]	[2]
Total	10.0	12.9	14.4	16.7	22.7	32.0	34.5	30.7	27.2	26.6
Foreign Petroleum and Natural Gas										
Production	10.3	7.8	9.7	10.2	16.1	24.2	19.5	18.3	21.1	22.7
Refining/Marketing	1.8	2.1	1.7	2.4	6.4	7.0	3.0	1.1	1.8	1.1
Transportation	-0.1	0.2	0.1	[2]	0.2	0.1	-0.1	-0.3	-0.5	-0.4
Eliminations and Nontraceables	0.2	-0.5	0.1	0.1	[2]	-0.1	[2]	[2]	0.1	[2]
Total	12.2	9.5	11.8	12.8	22.7	31.2	22.4	19.2	22.5	23.4

[1] FRS = Financial Reporting System (See Explanatory Note 13).
[2] Less than $50 million.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1975 through 1980—Energy Information Administration, *Energy Company Development Patterns in the Postembargo Era*, Vol. 2, October 1982 and Form EIA-28.
•1981 and forward—Energy Information Administration, *Performance Profiles of Major Energy Producers.*

Section 3. Energy Resources, Exploration and Development, and Reserves

Petroleum and Natural Gas Resources. The latest U.S. Geological Survey assessment of U.S. undiscovered recoverable crude oil and natural gas resources provides a mean estimate for 1980 of 82.6 billion barrels and 593.8 trillion cubic feet, respectively. About one-third of the crude oil potential resources are estimated to be offshore. Major areas containing the crude oil resources are Alaska (including offshore areas), 23 percent, and the Gulf of Mexico area (including the onshore Gulf Coast), 16 percent (Table 35). A more recent (1984) assessment by the U.S. Minerals Management Service estimates mean undiscovered recoverable resources in the Federal offshore area at 22.9 billion barrels of crude oil and 161.1 trillion cubic feet of natural gas (Table 35).

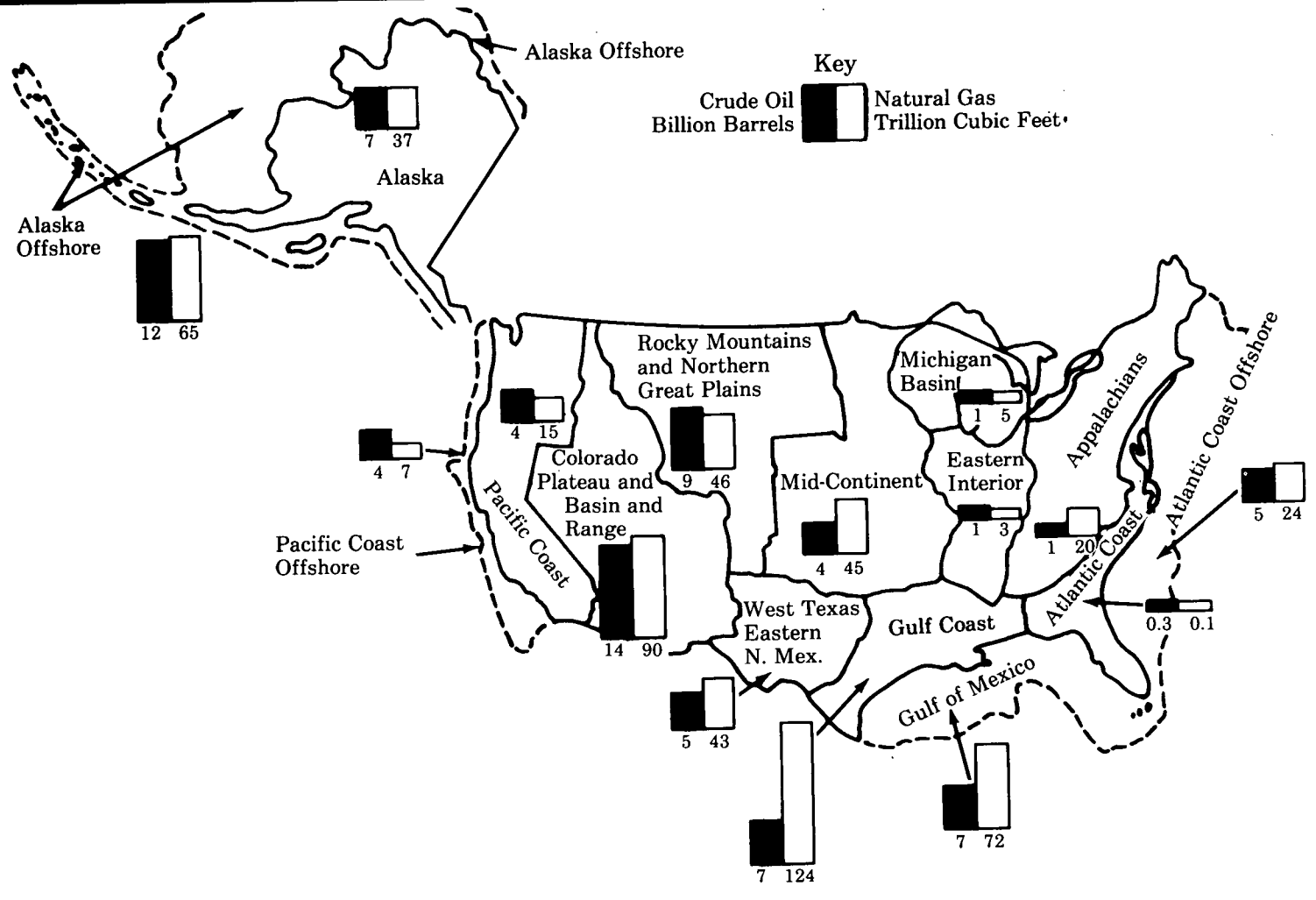
Petroleum and Natural Gas Exploration and Development. Exploration drilling is the principal means for converting potential resources to proved reserves. Preliminary data indicate that 13,510 exploratory wells were drilled in 1985, down from 14,950 in 1984, but nearly twice the annual average for most of the early 1970's (Table 37). The 1985 rotary rig count average of 1,980 was down 18 percent from the 1984 level. Seismic testing is a key activity in identifying new exploration drilling prospects. The line miles logged by seismic crews, which declined in 1983 for the first time since 1977, increased again in 1984 (the latest year for which data are available) to 724,400 line miles. In 1985, the average number of seismic crews working fell by more than 20 percent. This indication of exploration activity was at its lowest level since 1978.

Petroleum and Natural Gas Domestic Reserves. Proved reserves of crude oil declined steadily after 1970, when Alaska's North Slope proved reserves were first included in the data. However, towards the end of the 1970-to-1985 period, the level stabilized at about 28 billion barrels. Proved reserves of natural gas and natural gas liquids decreased 1.4 percent and 3.3 percent, respectively, in 1984; those decreases are equivalent to 0.7 billion barrels of crude oil. On a crude oil equivalent basis, natural gas reserves at the end of 1984 were 23 percent larger than crude oil reserves (Table 42).

Coal Resources. The most recent U.S. Geological Survey report on coal resources (Bulletin 1412) identified U.S. coal resources of more than 1,700 billion short tons at depths of less than 3,000 feet. The Survey also has estimated the existence of additional coal resources of more than 2,200 billion short tons to depths of 6,000 feet. The Energy Information Administration has estimated that 488 billion short tons of coal were in the Demonstrated Reserve Base as of January 1, 1984. Although site-specific recovery rates range from 40 percent in some underground mines to more than 90 percent at some surface mines, it has been estimated that on a national basis at least half of the coal in the Demonstrated Reserve Base can be recovered (Table 43). At current production rates, 50 percent of the Demonstrated Reserve Base is sufficient to support output for about 275 years.

Uranium Resources. Uranium resources in the form of uranium oxide (U_3O_8) from reasonably assured, estimated additional, and speculative resources were estimated at 4.3 million short tons on December 31, 1984 (Table 44).

Figure 35. Estimated Undiscovered Recoverable Crude Oil and Natural Gas Resources, 1980



Note: Quantities are scaled according to the Btu content of the resources. 1 billion barrels of crude oil equals approximately 5.3 trillion cubic feet of wet natural gas.

Source: See Table 35.

Table 35. Estimated Undiscovered Recoverable Crude Oil and Natural Gas Resources in the United States, 1980 and in the Federal Offshore, 1984

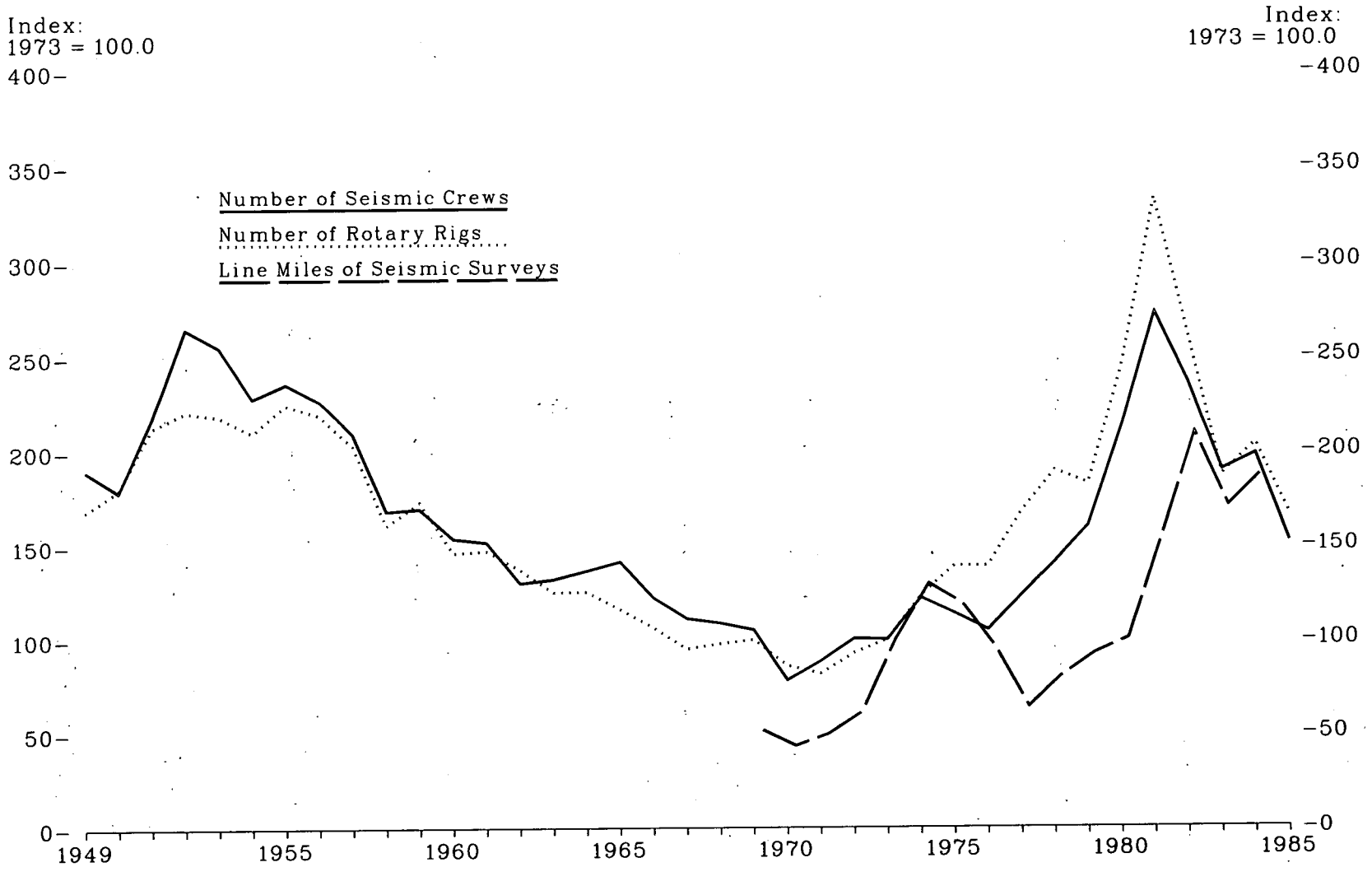
Region	Crude Oil (billion barrels)			Natural Gas (trillion cubic feet)		
		Estimated Range [1]			Estimated Range [1]	
	Mean [2]	Low	High	Mean [2]	Low	High
	United States, 1980					
Onshore						
Alaska	6.9	2.5	14.6	36.6	19.8	62.3
Pacific Coast	4.4	2.1	7.9	14.7	8.2	24.9
Colorado Plateau and Basin and Range	14.2	6.9	25.9	90.1	53.5	142.4
Rocky Mountains and Northern Great Plains	9.4	6.0	14.0	45.7	29.6	69.0
West Texas and Eastern New Mexico	5.4	2.7	9.4	42.8	22.4	75.2
Gulf Coast	7.1	3.6	12.6	124.4	56.5	249.1
Mid-Continent	4.4	2.3	7.7	44.5	22.9	80.8
Michigan Basin	1.1	0.3	2.7	5.1	1.8	10.9
Eastern Interior	0.9	0.3	1.9	2.7	1.2	5.0
Appalachians	0.6	0.1	1.5	20.1	6.4	45.8
Atlantic Coast	0.3	0.1	0.8	0.1	[3]	0.4
Total Onshore	54.6	41.7	71.0	426.8	322.5	567.9
Offshore						
Alaska [4]	12.2	4.6	24.2	64.6	33.3	109.6
Pacific Coast	3.8	1.7	7.9	6.9	3.7	13.6
Gulf of Mexico	6.5	3.1	11.1	71.8	41.7	114.2
Atlantic Coast	5.4	1.1	12.9	23.7	9.2	42.8
Total Offshore	28.0	16.9	43.5	167.0	117.4	230.6
Total United States	82.6	64.3	105.1	593.8	474.6	739.3

Federal Offshore [5]	Federal Offshore, 1984			
	Mean [2]	RMO [6]	Mean [2]	RMG [6]
Alaska	12.6	3.3	62.7	13.9
Pacific Coast	2.7	2.2	8.3	4.7
Gulf of Mexico	6.0	6.0	59.6	59.6
Atlantic Coast	1.6	0.7	30.4	12.3
Total Federal Offshore	22.9	12.2	161.1	90.5

[1] The low value of the range is the quantity associated with a 95 percent probability (19 in 20 chance) that there is at least this amount. The high value is the quantity with a 5 percent probability (1 in 20 chance) that there is at least this amount. Totals for the low and high values are not obtained by arithmetic summation; they are derived by statistical methods.
[2] The calculated mean from the probability curve using the Monte Carlo technique.
[3] Less than 0.1 trillion cubic feet.
[4] Includes quantities considered recoverable only if technology permits their exploitation beneath Arctic ice — a condition not yet met.
[5] Includes only the area encompassed by the Federally Controlled Outer Continental Shelf.
[6] RMO=risked mean oil, RMG=risked mean gas. The Minerals Management Service methodology computes the marginal probability that economically recoverable hydrocarbons exist in the area. When applied to the mean volume, the methodology adjusts the figure to reflect the probability that the area may be non-productive.

Sources: **United States, 1980:** U.S. Geological Survey, *Geological Estimates of Undiscovered Recoverable Conventional Resources of Oil and Gas in the United States, A Summary*, Circular 860, 1981. **Federal Offshore, 1984:** Department of the Interior, Minerals Management Service, *Estimates of Undiscovered, Economically Recoverable Oil and Gas Resources for the Outer Continental Shelf (OCS) as of July 1984*, OCS Report MMS 85-0012, 1985.

Figure 36. Oil and Gas Exploration and Rotary Rigs in Use, 1949-1985



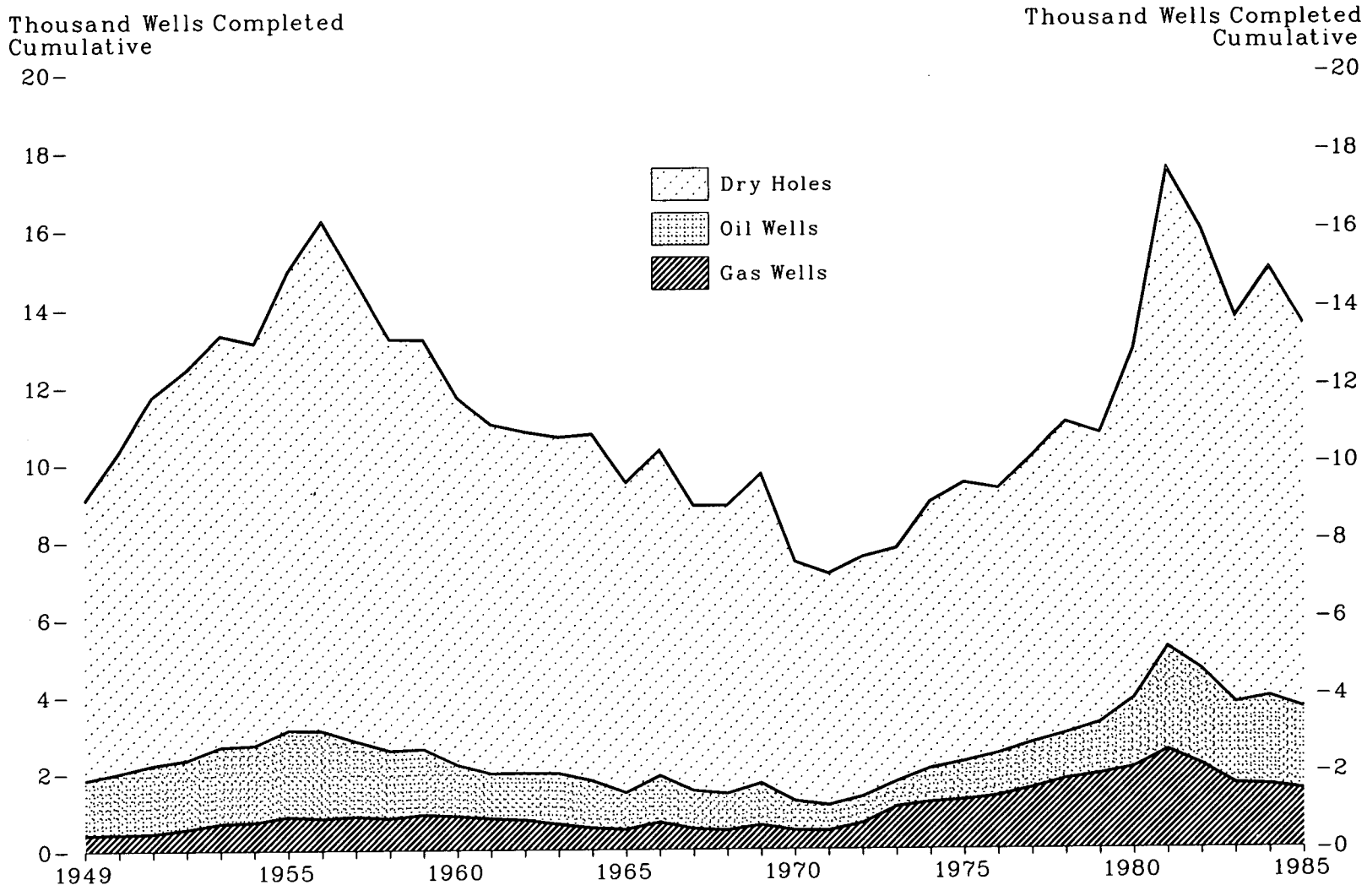
Source: See Table 36.

Table 36. Oil and Gas Exploration and Rotary Rigs in Use, 1949-1985

Year	Average Number of Seismic Crews				Line Miles of Seismic Surveys (thousand)				Average Number of Rotary Rigs in Use [1]	
	Offshore	Onshore	Total	Index [2]	Offshore	Onshore	Total	Index [2]	Total	Index [2]
1949	NA	NA	476	190.4	NA	NA	NA	NA	2,017	168.9
1950	NA	NA	448	179.2	NA	NA	NA	NA	2,154	180.4
1951	NA	NA	545	218.0	NA	NA	NA	NA	2,543	213.0
1952	NA	NA	663	265.2	NA	NA	NA	NA	2,641	221.2
1953	NA	NA	639	255.6	NA	NA	NA	NA	2,613	218.8
1954	NA	NA	572	228.8	NA	NA	NA	NA	2,508	210.1
1955	NA	NA	591	236.4	NA	NA	NA	NA	2,686	225.0
1956	NA	NA	568	227.2	NA	NA	NA	NA	2,620	219.4
1957	NA	NA	524	209.6	NA	NA	NA	NA	2,426	203.2
1958	NA	NA	422	168.8	NA	NA	NA	NA	1,922	161.0
1959	NA	NA	425	170.0	NA	NA	NA	NA	2,071	173.5
1960	NA	NA	385	154.0	NA	NA	NA	NA	1,748	146.4
1961	NA	NA	380	152.0	NA	NA	NA	NA	1,761	147.5
1962	NA	NA	326	130.4	NA	NA	NA	NA	1,641	137.4
1963	NA	NA	331	132.4	NA	NA	NA	NA	1,499	125.5
1964	NA	NA	342	136.8	NA	NA	NA	NA	1,501	125.7
1965	36	318	354	141.6	NA	NA	NA	NA	1,388	116.2
1966	38	268	306	122.4	NA	NA	NA	NA	1,272	106.5
1967	29	249	278	111.2	NA	NA	NA	NA	1,135	95.1
1968	20	252	272	108.8	NA	NA	NA	NA	1,169	97.9
1969	16	247	263	105.2	NA	NA	199.9	51.8	1,194	100.0
1970	10	185	195	78.0	NA	NA	167.3	43.3	1,028	86.1
1971	10	211	221	88.4	NA	NA	191.7	49.7	976	81.7
1972	12	239	251	100.4	NA	NA	235.7	61.0	1,107	92.7
1973	23	227	250	100.0	258.9	127.2	386.1	100.0	1,194	100.0
1974	31	274	305	122.0	341.8	158.6	500.4	129.6	1,472	123.3
1975	30	254	284	113.6	309.3	150.7	460.0	119.1	1,660	139.0
1976	25	237	262	104.8	226.3	142.9	369.2	95.6	1,658	138.9
1977	27	281	308	123.2	124.7	120.1	244.7	63.4	2,001	167.6
1978	25	327	352	140.8	174.6	135.9	310.5	80.4	2,259	189.2
1979	30	270	400	160.0	193.2	163.9	357.1	92.5	2,177	182.3
1980	37	493	530	212.0	202.7	184.1	386.8	100.2	2,909	243.6
1981	44	637	681	272.4	338.2	256.2	594.4	153.9	3,970	332.5
1982	57	531	588	235.2	558.5	248.5	806.9	209.0	3,105	260.1
1983	47	426	473	189.2	469.2	188.5	657.7	170.3	2,232	186.9
1984	49	445	494	197.6	538.5	185.9	724.4	187.6	2,428	203.4
1985	45	333	378	151.2	NA	NA	NA	NA	1,980	165.8

[1] Data are not for the exact calendar year but for the 52 or 53 consecutive whole weeks that most nearly coincide with the calendar year.
[2] Index: 1973 = 100.0.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Sources: •**Average Number of Seismic Crews** and **Line Miles of Seismic Surveys:** Society of Exploration Geophysicists, *SEG News Release, and Geophysics; The Leading Edge of Exploration,* Monthly, Tulsa, Oklahoma. •**Average Number of Rotary Rigs in Use:** *Rotary Rigs Running-By States,* Hughes Tool Company, Houston, Texas.

Figure 37. Exploratory Oil and Gas Wells Completed, by Well Type, 1949-1985



Source: See Table 37.

Table 37. Exploratory Oil and Gas Wells Completed, by Well Type, 1949-1985

Year	Wells Completed (thousands)				Footage Drilled (million feet)				Average Depth (feet)				Successful Wells (percent)
	Oil	Gas	Dry Holes	Total	Oil	Gas	Dry Holes	Total	Oil	Gas	Dry Holes	Total	
1949	1.41	0.42	7.23	9.06	6.0	2.4	26.4	34.8	4,232	5,682	3,658	3,842	20.2
1950	1.58	0.43	8.29	10.31	6.9	2.4	31.0	40.2	4,335	5,466	3,733	3,898	19.5
1951	1.76	0.45	9.54	11.76	8.1	2.5	38.7	49.3	4,609	5,497	4,059	4,197	18.9
1952	1.78	0.56	10.09	12.42	8.5	3.4	43.7	55.6	4,781	6,071	4,334	4,476	18.8
1953	1.98	0.70	10.63	13.31	9.4	4.0	47.3	60.7	4,761	5,654	4,447	4,557	20.1
1954	1.98	0.73	10.39	13.10	9.4	4.4	45.8	59.6	4,740	6,059	4,408	4,550	20.7
1955	2.24	0.87	11.83	14.94	10.8	5.2	53.2	69.2	4,819	5,964	4,498	4,632	20.8
1956	2.27	0.82	13.12	16.21	11.1	5.2	58.0	74.3	4,901	6,301	4,425	4,587	19.1
1957	1.94	0.86	11.90	14.71	9.8	6.0	53.4	69.2	5,036	6,898	4,488	4,702	19.1
1958	1.74	0.82	10.63	13.20	8.7	5.5	47.3	61.5	4,993	6,657	4,449	4,658	19.4
1959	1.70	0.91	10.58	13.19	8.5	6.0	48.7	63.3	5,021	6,613	4,602	4,795	19.8
1960	1.32	0.87	9.52	11.70	6.8	5.5	43.5	55.8	5,170	6,298	4,575	4,770	18.7
1961	1.16	0.81	9.02	10.99	5.9	5.2	43.3	54.4	5,099	6,457	4,799	4,953	17.9
1962	1.21	0.77	8.82	10.80	6.2	5.2	42.2	53.6	5,124	6,728	4,790	4,966	18.4
1963	1.31	0.66	8.69	10.66	6.4	4.2	42.8	53.5	4,878	6,370	4,933	5,016	18.5
1964	1.22	0.56	8.95	10.73	6.7	4.2	44.6	55.5	5,509	7,547	4,980	5,174	16.6
1965	0.95	0.52	8.00	9.47	5.4	3.8	40.1	49.2	5,672	7,295	5,007	5,198	15.4
1966	1.20	0.70	8.42	10.31	6.8	5.8	43.1	55.7	5,700	8,321	5,117	5,402	18.4
1967	0.99	0.53	7.36	8.88	5.7	4.0	38.2	47.8	5,758	7,478	5,188	5,388	17.1
1968	0.95	0.49	7.44	8.88	5.6	3.7	41.6	51.0	5,914	7,697	5,589	5,739	16.2
1969	1.08	0.62	8.00	9.70	6.6	5.0	45.9	57.5	6,054	8,092	5,739	5,924	17.5
1970	0.76	0.48	6.19	7.43	4.7	3.7	35.1	43.5	6,198	7,669	5,671	5,854	16.7
1971	0.66	0.47	5.99	7.13	3.8	3.6	34.6	42.0	5,702	7,654	5,765	5,885	15.8
1972	0.69	0.66	6.20	7.55	4.0	4.9	36.4	45.3	5,858	7,393	5,863	5,996	17.9
1973	0.65	1.08	6.04	7.77	4.0	7.1	34.4	46.0	6,187	6,556	5,785	5,926	22.3
1974	0.87	1.20	6.89	8.97	5.1	7.7	38.9	51.7	5,826	6,425	5,637	5,761	23.1
1975	0.99	1.26	7.21	9.46	5.8	8.5	40.8	55.1	5,875	6,714	5,655	5,819	23.8
1976	1.10	1.36	6.85	9.32	6.5	9.2	38.2	53.9	5,903	6,748	5,575	5,785	26.4
1977	1.18	1.56	7.40	10.15	6.9	10.2	41.1	58.3	5,821	6,562	5,557	5,743	27.0
1978	1.19	1.79	8.05	11.04	7.1	11.8	46.6	65.6	5,974	6,604	5,787	5,940	27.0
1979	1.33	1.92	7.48	10.73	8.0	12.6	42.7	63.4	5,985	6,579	5,715	5,903	30.3
1980	1.78	2.09	9.02	12.89	10.1	13.7	50.0	73.9	5,689	6,564	5,547	5,731	30.0
1981 [1]	2.67	2.54	12.28	17.48	15.4	17.1	68.8	101.3	5,793	6,716	5,603	5,796	29.8
1982 [1]	2.47	2.16	11.31	15.94	13.4	14.7	60.8	88.7	5,447	6,783	5,378	5,562	29.0
1983 [1]	2.10	1.65	9.95	13.70	10.4	10.2	48.1	68.8	4,970	6,141	4,841	5,021	27.4
1984 [1]	2.30	1.62	11.03	14.95	12.3	10.0	58.6	80.9	5,353	6,156	5,313	5,414	26.2
1985 [1]	2.11	1.50	9.90	13.51	11.4	9.0	51.8	72.7	5,409	5,982	5,234	5,384	26.7

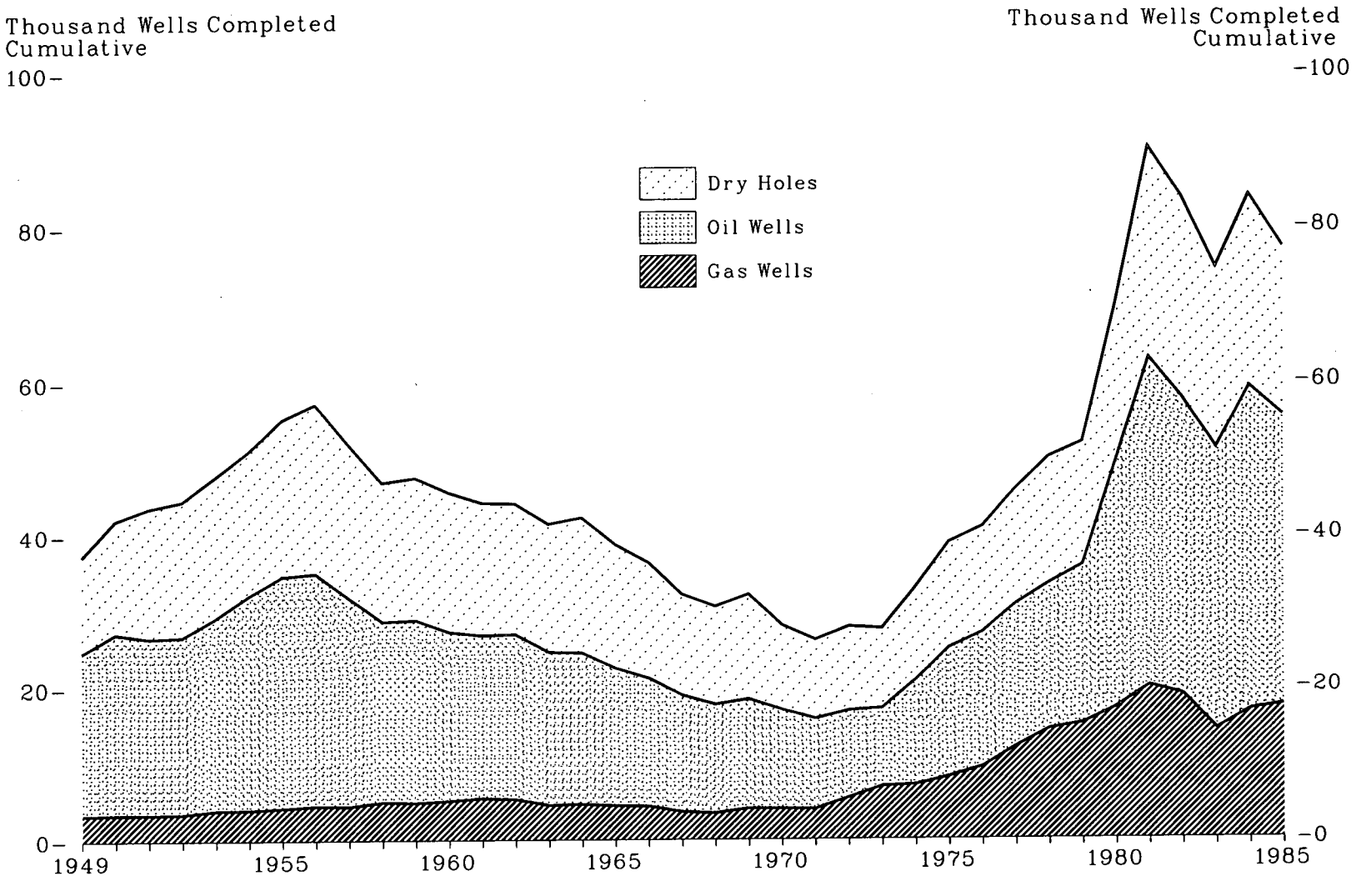
[1] Data for these years are preliminary. See Explanatory Note 18.

Note: Sum of components may not equal total due to independent rounding. Average depth may not equal average of components due to independent rounding.

Note: For 1949 through 1959, data represent wells completed in a given year. For 1960 through 1969, data are for well completion reports received by the American Petroleum Institute during the reporting year. For 1970 forward, the data represent wells completed in a given year, see Explanatory Note 18.

Sources: •1949 through 1960—American Association of Petroleum Geologists, *Statistics on Exploratory Drilling in the United States, 1940 through 1960*, Tulsa, Oklahoma, 1962, pp. 4-19. •1961 through 1965 —*Bulletin of the American Association of Petroleum Geologists*, "North American Developments" issue, Tulsa, Oklahoma. •1966 through 1969—American Petroleum Institute, *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. •1970 and forward—Energy Information Administration computations based on well reports submitted to the American Petroleum Institute.

Figure 38. Total Oil and Gas Wells Completed, by Well Type, 1949-1985



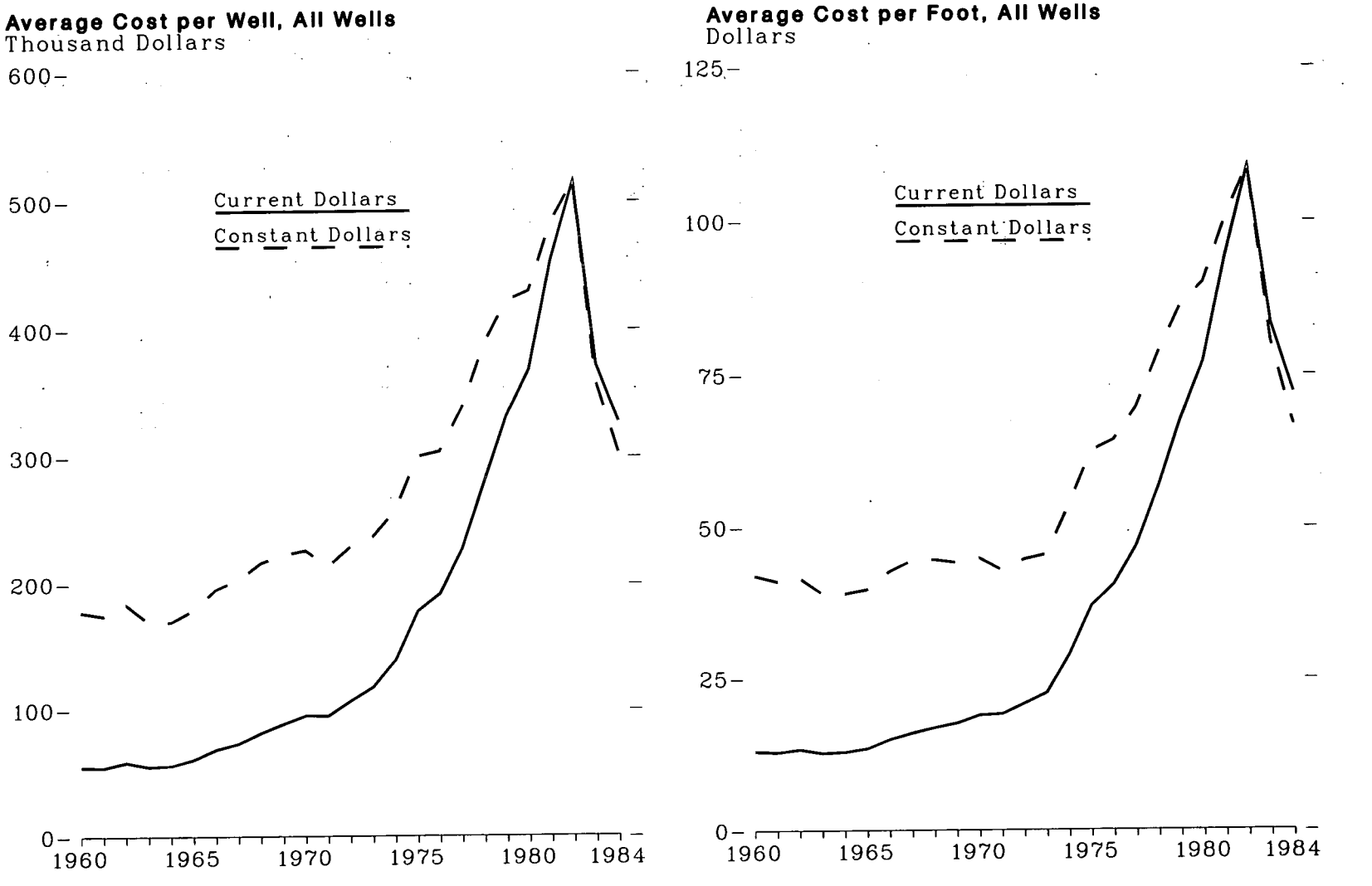
Source: See Table 38.

Table 38. Total Oil and Gas Wells [1] Completed, by Well Type, 1949-1985

Year	Wells Completed (thousands)				Footage Drilled (million feet)				Average Depth (feet)				Successful Wells (percent)
	Oil	Gas	Dry Holes	Total	Oil	Gas	Dry Holes	Total	Oil	Gas	Dry Holes	Total	
1949	21.35	3.36	12.60	37.31	79.4	12.4	43.8	135.6	3,720	3,698	3,473	3,635	66.2
1950	23.81	3.44	14.80	42.05	92.7	13.7	51.0	157.4	3,893	3,979	3,445	3,742	64.8
1951	23.18	3.44	17.03	43.64	95.1	13.9	63.1	172.1	4,103	4,056	3,706	3,944	61.0
1952	23.29	3.51	17.76	44.56	98.1	15.3	70.7	184.1	4,214	4,342	3,983	4,132	60.1
1953	25.32	3.97	18.45	47.74	102.1	18.2	73.9	194.2	4,033	4,599	4,004	4,069	61.4
1954	28.14	4.04	18.93	51.11	113.4	18.9	75.8	208.0	4,028	4,670	4,004	4,070	63.0
1955	30.43	4.27	20.45	55.15	121.1	19.9	85.1	226.2	3,981	4,672	4,161	4,101	62.9
1956	30.53	4.53	22.11	57.17	120.4	22.7	90.2	233.3	3,942	5,018	4,079	4,080	61.3
1957	27.36	4.48	20.16	52.00	110.0	23.8	83.2	217.0	4,021	5,326	4,126	4,174	61.2
1958	23.77	5.00	18.16	46.94	93.1	25.6	74.6	193.3	3,916	5,106	4,110	4,118	61.3
1959	24.04	4.93	18.59	47.56	94.6	26.6	79.5	200.7	3,935	5,396	4,275	4,220	60.9
1960	22.26	5.15	18.21	45.62	86.6	28.2	77.4	192.2	3,889	5,486	4,248	4,213	60.1
1961	21.44	5.49	17.33	44.25	85.6	29.3	74.7	189.6	3,994	5,339	4,311	4,285	60.8
1962	21.73	5.35	17.08	44.16	88.4	28.9	77.3	194.6	4,070	5,408	4,524	4,408	61.3
1963	20.14	4.57	16.76	41.47	81.8	24.5	76.3	182.6	4,063	5,368	4,552	4,405	59.6
1964	19.90	4.69	17.69	42.29	80.5	25.6	81.4	187.4	4,042	5,453	4,598	4,431	58.2
1965	18.06	4.48	16.23	38.77	73.3	24.9	76.6	174.9	4,059	5,562	4,723	4,510	58.2
1966	16.78	4.38	15.23	36.38	67.3	25.9	69.6	162.9	4,013	5,928	4,573	4,478	58.1
1967	15.33	3.66	13.25	32.23	58.6	21.6	61.1	141.4	3,825	5,898	4,616	4,385	58.9
1968	14.33	3.46	12.81	30.60	59.5	20.7	64.7	145.0	4,153	5,994	5,053	4,738	58.1
1969	14.37	4.08	13.74	32.19	61.6	24.2	71.4	157.1	4,286	5,918	5,195	4,881	57.3
1970	13.04	4.03	11.10	28.17	56.8	23.6	58.1	138.6	4,357	5,859	5,236	4,918	60.6
1971	11.90	3.98	10.38	26.27	49.1	23.4	54.8	127.3	4,121	5,880	5,276	4,845	60.4
1972	11.44	5.48	11.01	27.93	49.5	30.3	59.1	138.8	4,327	5,517	5,362	4,969	60.6
1973	10.25	6.97	10.47	27.69	44.8	38.2	56.4	139.4	4,366	5,478	5,394	5,035	62.2
1974	13.66	7.17	12.20	33.04	52.1	38.5	63.2	153.8	3,811	5,369	5,180	4,655	63.0
1975	16.98	8.17	13.74	38.88	66.9	44.5	69.6	181.0	3,942	5,445	5,069	4,656	64.7
1976	17.70	9.44	13.80	40.94	68.8	49.2	69.3	187.3	3,889	5,213	5,017	4,575	66.3
1977	18.70	12.12	15.04	45.85	75.2	63.5	77.0	215.7	4,021	5,240	5,121	4,704	67.2
1978	19.06	14.40	16.59	50.06	76.6	75.6	86.2	238.4	4,019	5,247	5,194	4,762	66.8
1979	20.70	15.17	16.04	51.91	82.1	79.9	81.7	243.7	3,967	5,266	5,092	4,694	69.1
1980	32.24	17.19	20.30	69.72	123.5	90.6	98.0	312.0	3,830	5,270	4,828	4,476	70.9
1981 [2]	42.91	19.97	27.25	90.14	169.6	106.7	132.8	409.1	3,952	5,342	4,874	4,539	69.8
1982 [2]	38.82	18.80	25.97	83.59	147.7	105.2	122.9	375.8	3,804	5,597	4,732	4,495	68.9
1983 [2]	36.70	14.34	23.42	74.46	134.7	75.8	102.9	313.4	3,670	5,287	4,395	4,209	68.5
1984 [2]	42.32	16.81	24.76	83.89	159.6	88.4	117.6	365.6	3,770	5,262	4,748	4,358	70.5
1985 [2]	37.90	17.46	21.74	77.10	142.9	89.6	103.5	336.0	3,771	5,131	4,760	4,358	71.8

[1] Includes exploratory and development wells; excludes service wells, stratigraphic tests, and core tests.
[2] Data for these years are preliminary. See Explanatory Note 18.
Note: Sum of components may not equal total due to independent rounding. Average depth may not equal average of components due to independent rounding.
Note: For 1949 through 1959, data represent wells completed in a given year. For 1960 through 1969, data are for well completion reports received by the American Petroleum Institute during the reporting year. For 1970 forward, the data represent wells completed in a given year, see Explanatory Note 18.
Sources: •1949 through 1965—*World Oil*, "Forecast-Review" issue, Houston, Texas. •1966 through 1969—American Petroleum Institute, *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. •1970 and forward—Energy Information Administration computations based on well reports submitted to the American Petroleum Institute.

Figure 39. Average Cost of Oil and Gas Wells Drilled, 1960-1984



Source: See Table 39.

Table 39. Average Cost of Oil and Gas Wells Drilled, 1960-1984

Year	Average Cost per Well (thousand dollars)					Average Cost per Foot (dollars)				
	Oil	Gas	Dry Holes	All		Oil	Gas	Dry Holes	All	
	(current)	(current)	(current)	(current)	(constant) [1]	(current)	(current)	(current)	(current)	(constant) [1]
1960	52.2	102.7	44.0	54.9	177.8	13.22	18.57	10.56	13.01	42.10
1961	51.3	94.7	45.2	54.5	174.7	13.11	17.65	10.56	12.85	41.19
1962	54.2	97.1	50.8	58.6	183.8	13.41	18.10	11.20	13.31	41.72
1963	51.8	92.4	48.2	55.0	169.8	13.20	17.19	10.58	12.69	39.17
1964	50.6	104.8	48.5	55.8	169.7	13.12	18.57	10.64	12.86	39.09
1965	56.6	101.9	53.1	60.6	179.4	13.94	18.35	11.21	13.44	39.76
1966	62.2	133.8	56.9	68.4	195.4	15.04	21.75	12.34	14.95	42.71
1967	66.6	141.0	61.5	72.9	203.1	16.61	23.05	12.87	15.97	44.48
1968	79.1	148.5	66.2	81.5	216.1	18.63	24.05	12.88	16.83	44.64
1969	86.5	154.3	70.2	88.6	222.5	19.28	25.58	13.23	17.56	44.12
1970	86.7	160.7	80.9	94.9	225.9	19.29	26.75	15.21	18.84	44.86
1971	78.4	166.6	86.8	94.7	213.3	18.41	27.70	16.02	19.03	42.86
1972	93.5	157.8	94.9	106.4	228.9	20.77	27.78	17.28	20.76	44.65
1973	103.8	155.3	105.8	117.2	236.7	22.54	27.46	19.22	22.50	45.45
1974	110.2	189.2	141.7	138.7	256.9	27.82	34.11	26.76	28.93	53.57
1975	138.6	262.0	177.2	177.8	299.8	34.17	46.23	33.86	36.99	62.38
1976	151.1	270.4	190.3	191.6	303.7	37.35	49.78	36.94	40.46	64.12
1977	170.0	313.5	230.2	227.2	337.6	41.16	57.57	43.49	46.81	69.55
1978	208.0	374.2	281.7	280.0	387.7	49.72	68.37	52.55	56.63	78.43
1979	243.1	443.1	339.6	331.4	421.6	58.29	80.66	64.60	67.70	86.13
1980	272.1	536.4	376.5	367.7	429.0	66.36	95.16	73.70	77.02	89.87
1981	336.3	698.6	464.0	453.7	482.6	80.40	122.17	90.03	94.30	100.32
1982	347.4	864.3	515.4	514.4	514.4	86.34	146.20	104.09	108.73	108.73
1983	283.8	608.1	366.5	371.7	357.8	72.65	108.37	79.10	83.34	80.21
1984	262.1	489.8	329.2	326.5	302.0	66.32	88.80	67.18	71.90	66.51

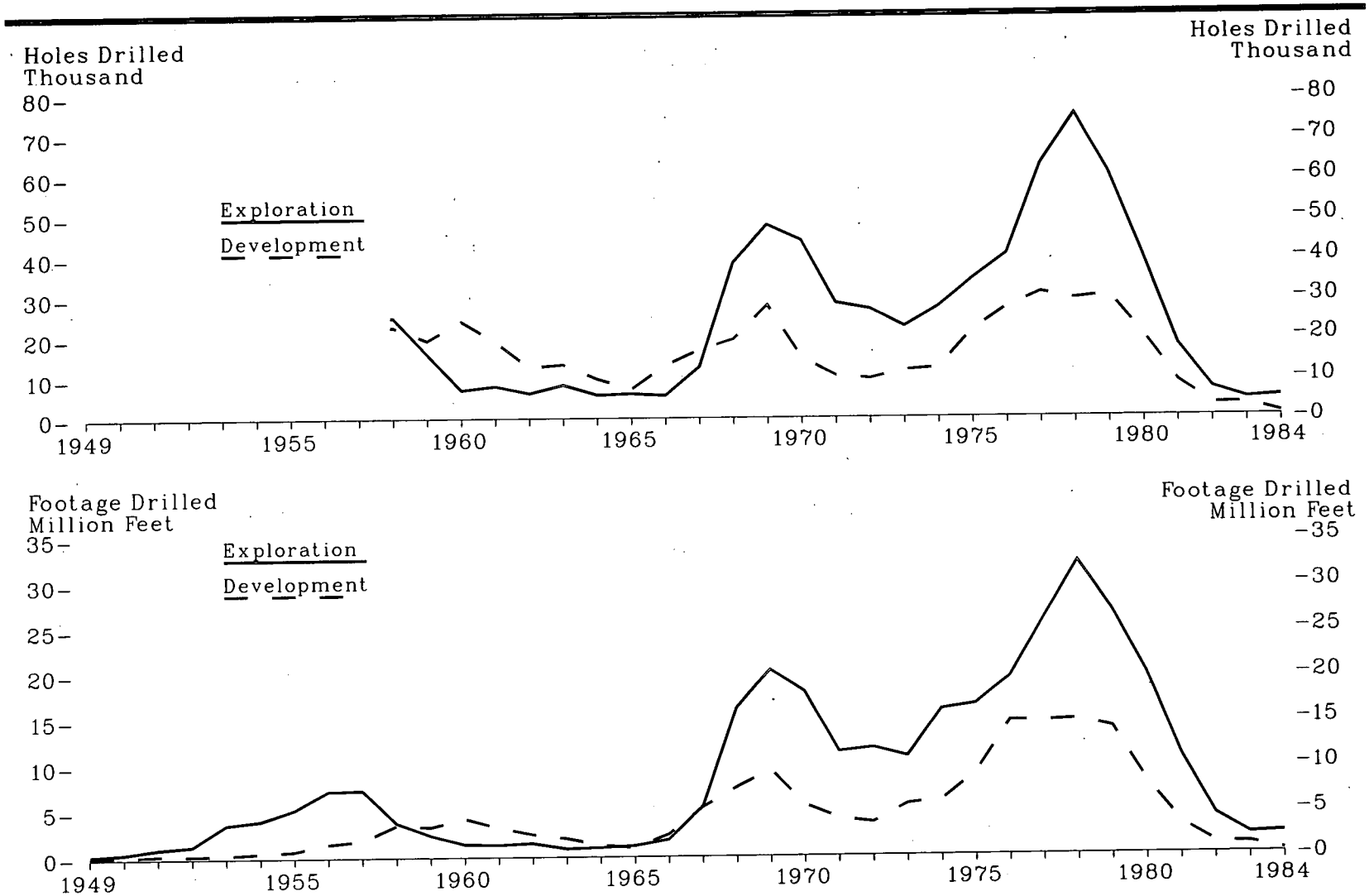
[1] Constant 1982 costs calculated using GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.

Note: Average cost is the arithmetic mean and includes all costs for drilling and equipping wells and for surface producing facilities. Wells drilled include exploratory and development wells; excludes service wells, stratigraphic tests, and core tests.

Note: The information reported for 1965 and prior years is not strictly comparable with the more recent surveys.

Source: American Petroleum Institute, Independent Petroleum Association of America, Mid-Continent Oil and Gas Association, Washington, DC, *Joint Association Survey of the U.S. Oil and Gas Producing Industry.*

Figure 40. Uranium Exploration and Development Drilling, 1949-1984



Source: See Table 40.

Table 40. Uranium Exploration and Development Drilling, 1949-1984

Year	Exploration [1]		Development [2]		Total	
	Holes Drilled (thousands)	Footage Drilled (million feet)	Holes Drilled (thousands)	Footage Drilled (million feet)	Holes Drilled (thousands)	Footage Drilled (million feet)
1949	NA	0.36	NA	0.05	NA	0.41
1950	NA	0.57	NA	0.21	NA	0.78
1951	NA	1.08	NA	0.35	NA	1.43
1952	NA	1.36	NA	0.30	NA	1.66
1953	NA	3.65	NA	0.37	NA	4.02
1954	NA	4.06	NA	0.55	NA	4.61
1955	NA	5.27	NA	0.76	NA	6.03
1956	NA	7.29	NA	1.50	NA	8.79
1957	NA	7.35	NA	1.85	NA	9.20
1958	25.32	3.76	22.93	3.49	48.25	7.25
1959	16.25	2.37	19.59	3.28	35.84	5.65
1960	7.34	1.40	24.40	4.21	31.73	5.61
1961	8.26	1.32	19.31	3.19	27.57	4.51
1962	6.44	1.48	12.87	2.43	19.31	3.91
1963	8.47	0.88	13.53	1.98	22.01	2.86
1964	5.97	0.97	9.91	1.25	15.88	2.21
1965	6.23	1.16	7.33	0.95	13.56	2.11
1966	5.75	1.80	13.18	2.40	18.93	4.20
1967	12.79	5.44	16.95	5.33	29.74	10.76
1968	38.47	16.23	19.53	7.53	58.00	23.75
1969	47.85	20.47	28.01	9.39	75.86	29.86
1970	43.98	17.98	14.87	5.55	58.85	23.53
1971	28.42	11.40	10.44	4.05	38.86	15.45
1972	26.91	11.82	9.71	3.61	36.62	15.42
1973	22.56	10.83	11.70	5.59	34.26	16.42
1974	27.40	16.00	12.30	6.00	39.70	22.00
1975	34.29	16.54	21.60	9.00	55.89	25.54
1976	40.41	19.53	27.23	14.70	67.64	34.23
1977	62.60	25.92	30.86	14.63	93.45	40.55
1978	75.07	32.20	29.29	14.80	104.35	47.00
1979	60.46	26.84	30.19	13.93	90.65	40.77
1980	39.61	19.95	20.19	7.91	59.80	27.86
1981	17.75	10.87	8.67	3.35	26.42	14.22
1982	6.97	4.23	3.00	1.13	9.97	5.36
1983	4.29	2.09	3.01	1.08	7.30	3.17
1984	4.80	2.26	0.72	0.29	5.52	2.55

[1] Includes surface drilling in search of new ore deposits or extensions of known deposits, and drilling at the location of a discovery up to the time the company decides sufficient ore reserves are present to justify commercial exploitation.

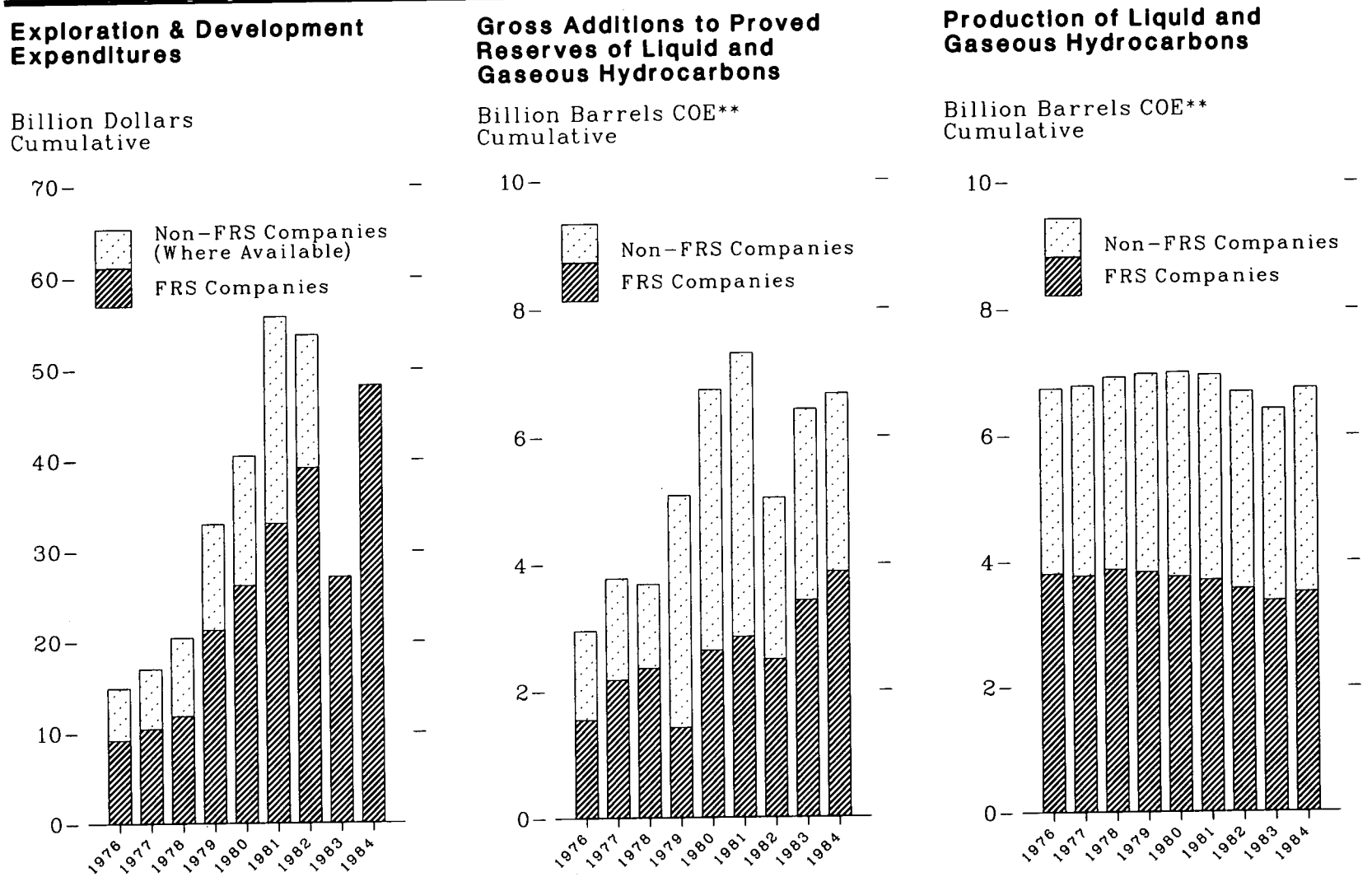
[2] Includes all surface drilling of an ore deposit to determine more precisely size, grade, and configuration subsequent to the time that commercial exploitation is deemed feasible.

NA = Not available.

Note: Sum of components may not equal total due to independent rounding.

Sources: •1949 through 1980—U.S. Department of Energy, Grand Junction Office, *Statistical Data of the Uranium Industry*, January 1, 1983, GJO-100 (annual). •1981 through 1983—Energy Information Administration, *Survey of U.S. Uranium Exploration 1983*. •1984—Energy Information Administration, *Uranium Industry Annual*.

Figure 41. Exploration and Development Expenditures, Gross Additions to Proved Reserves, and Production of Liquid and Gaseous Hydrocarbons by FRS* Companies, 1976–1984



*FRS = Financial Reporting System (See Explanatory Note 13). **COE = Crude Oil Equivalent.
Source: See Table 41.

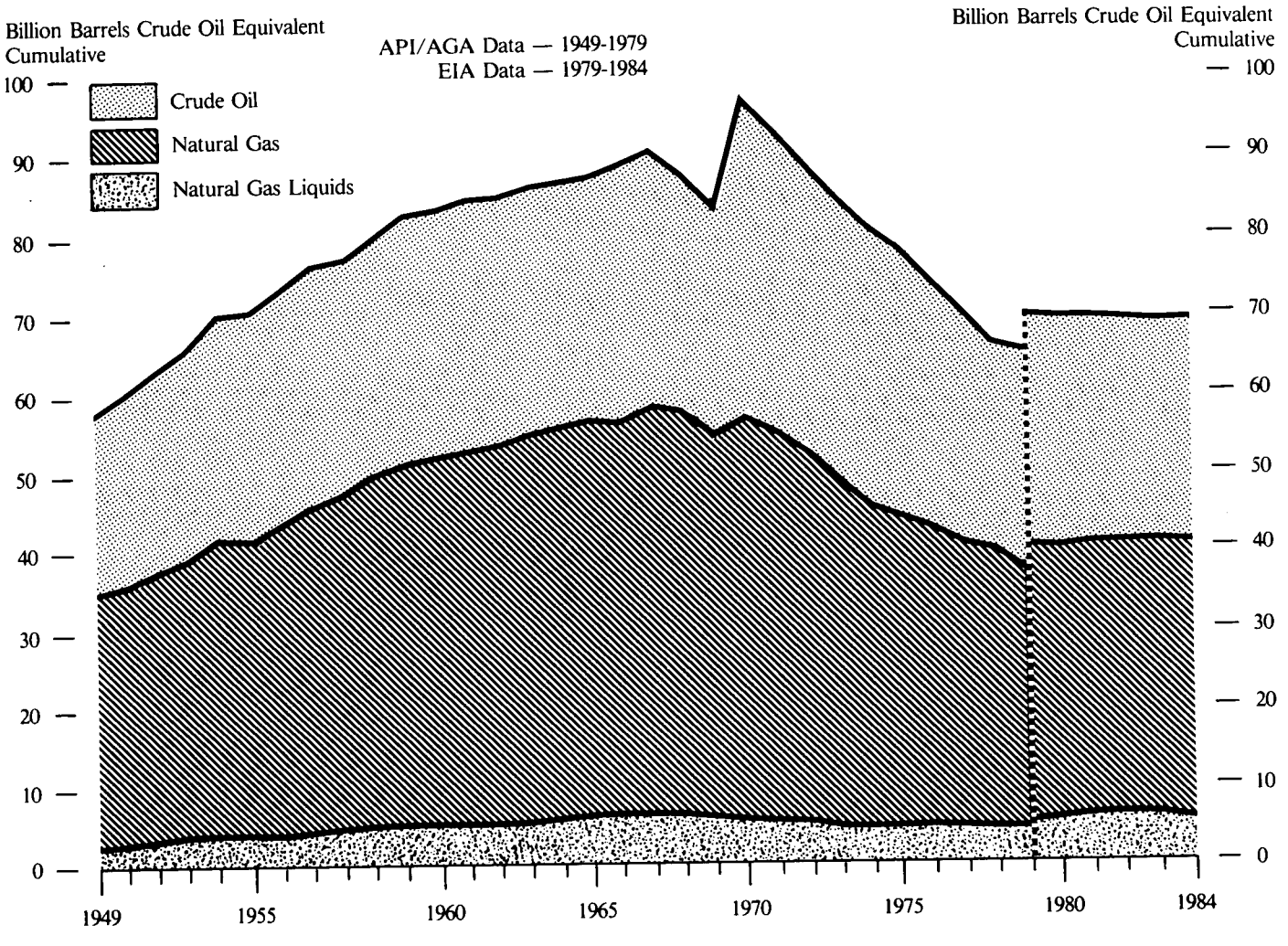
Table 41. Exploration and Development Expenditures, Gross Additions to Proved Reserves, and Production of Liquid and Gaseous Hydrocarbons by FRS [1] Companies, 1976-1984

	1976	1977	1978	1979	1980	1981	1982	1983	1984
Exploration and Development Expenditures (billion dollars)									
FRS Companies	9.2	10.4	11.8	21.3	26.2	33.0	39.1	27.1	48.1
U.S. Total	14.9	17.0	20.4	32.9	40.4	55.7	53.7	NA	NA
Gross Additions to Proved Reserves [2] of Liquid and Gaseous Hydrocarbons [3] (million barrels COE [4])									
FRS Companies [5]	1,541.7	2,171.6	2,355.4	1,416.1	2,624.5	2,847.6	2,483.2	3,418.9	3,864.3
U.S. Total	2,946.6	3,765.3	3,678.9	5,071.3	6,723.1	7,303.6	5,029.6	6,412.2	6,653.1
Production of Liquid and Gaseous Hydrocarbons [3] (million barrels COE [4])									
FRS Companies [5]	3,796.5	3,760.7	3,867.1	3,822.0	3,746.9	3,693.0	3,552.6	3,364.1	3,496.8
U.S. Total	6,729.5	6,776.6	6,918.0	6,969.9	6,995.3	6,954.4	6,681.9	6,398.6	6,736.4

[1] FRS = Financial Reporting System (See Explanatory Note 13).
[2] Gross additions to proved reserves equal annual change in proved reserves plus annual production.
[3] Liquid and gaseous hydrocarbons include crude oil, natural gas liquids, and natural gas.
[4] Crude oil equivalent: converted to Btu based on annual average conversion factors. See Units of Measure and Conversion Factors section.
[5] Based on net ownership interest (See Glossary).
NA = Not available.

Sources: **FRS Companies:** Energy Information Administration, *Form EIA-28*, "Financial Reporting System." **U.S. Total, Exploration and Development Expenditures:** •1976 through 1982—Bureau of the Census, *Annual Survey of Oil and Gas.* **U.S. Total, Gross Additions to Proved Reserves of Liquid and Gaseous Hydrocarbons:** •1976 through 1979—American Gas Association, American Petroleum Institute, and Canadian Petroleum Association (published jointly), *Reserves of Crude Oil, Natural Gas Liquids, and Natural Gas in the United States and Canada as of December 31, 1979*, Volume 34, June 1980. • 1980 and forward—Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1983 Annual Report.* **U.S. Total, Production of Liquid and Gaseous Hydrocarbons:** •1976 and forward, see Tables 45 and 66.

Figure 42. Proved Reserves of Liquid and Gaseous Hydrocarbons, End of Year 1949-1984



Source: See Table 42.

Table 42. Proved Reserves of Liquid and Gaseous Hydrocarbons, End of Year 1949-1984

Year	Crude Oil	Natural Gas		Natural Gas Liquids		Total
	Billion Barrels	Trillion Cubic Feet [1]	Billion Barrels COE [2]	Billion Barrels	Billion Barrels COE [2]	Billion Barrels COE
	American Petroleum Institute and American Gas Association Data					
1949	24.6	179.4	32.0	3.7	3.1	59.7
1950	25.3	184.6	32.9	4.3	3.5	61.7
1951	27.5	192.8	34.4	4.7	3.9	65.7
1952	28.0	198.6	35.4	5.0	4.1	67.5
1953	28.9	210.3	37.5	5.4	4.4	70.9
1954	29.6	210.6	37.6	5.2	4.2	71.3
1955	30.0	222.5	39.7	5.4	4.4	74.1
1956	30.4	236.5	42.2	5.9	4.7	77.3
1957	30.3	245.2	43.8	5.7	4.5	78.6
1958	30.5	252.8	45.1	6.2	5.0	80.6
1959	31.7	261.2	46.6	6.5	5.2	83.5
1960	31.6	262.3	46.8	6.8	5.4	83.8
1961	31.8	266.3	47.5	7.0	5.6	84.8
1962	31.4	272.3	48.6	7.3	5.8	85.7
1963	31.0	276.2	49.1	7.7	6.0	86.1
1964	31.0	281.3	50.0	7.7	6.1	87.1
1965	31.4	286.5	51.0	8.0	6.3	88.6
1966	31.5	289.3	51.5	8.3	6.5	89.5
1967	31.4	292.9	52.1	8.6	6.7	90.2
1968	30.7	287.3	51.1	8.6	6.7	88.5
1969	29.6	275.1	48.9	8.1	6.3	84.8
1970	39.0	290.7	51.7	7.7	5.9	96.6
1971	38.1	278.8	49.6	7.3	5.5	93.2
1972	36.3	266.1	47.1	6.8	5.1	88.5
1973	35.3	250.0	44.0	6.5	4.8	84.1
1974	34.2	237.1	41.9	6.4	4.7	80.8
1975	32.7	228.2	40.2	6.3	4.6	77.5
1976	30.9	216.0	38.0	6.4	4.7	73.6
1977	29.5	208.9	36.8	6.0	4.4	70.6
1978	27.8	200.3	35.2	5.9	4.3	67.3
1979	27.1	194.9	34.3	5.7	4.1	65.5
	Energy Information Administration Data					
1977	31.8	207.4	36.5	NA	NA	NA
1978	31.4	208.0	36.5	6.8	4.9	72.8
1979	29.8	201.0	35.4	6.6	4.8	70.0
1980	29.8	199.0	35.2	6.7	4.9	69.9
1981	29.4	201.7	35.7	7.1	5.2	70.3
1982	27.9	201.5	35.7	7.2	5.2	68.8
1983	27.7	200.2	35.6	7.9	5.7	69.0
1984	28.4	197.5	35.1	7.6	5.5	69.0

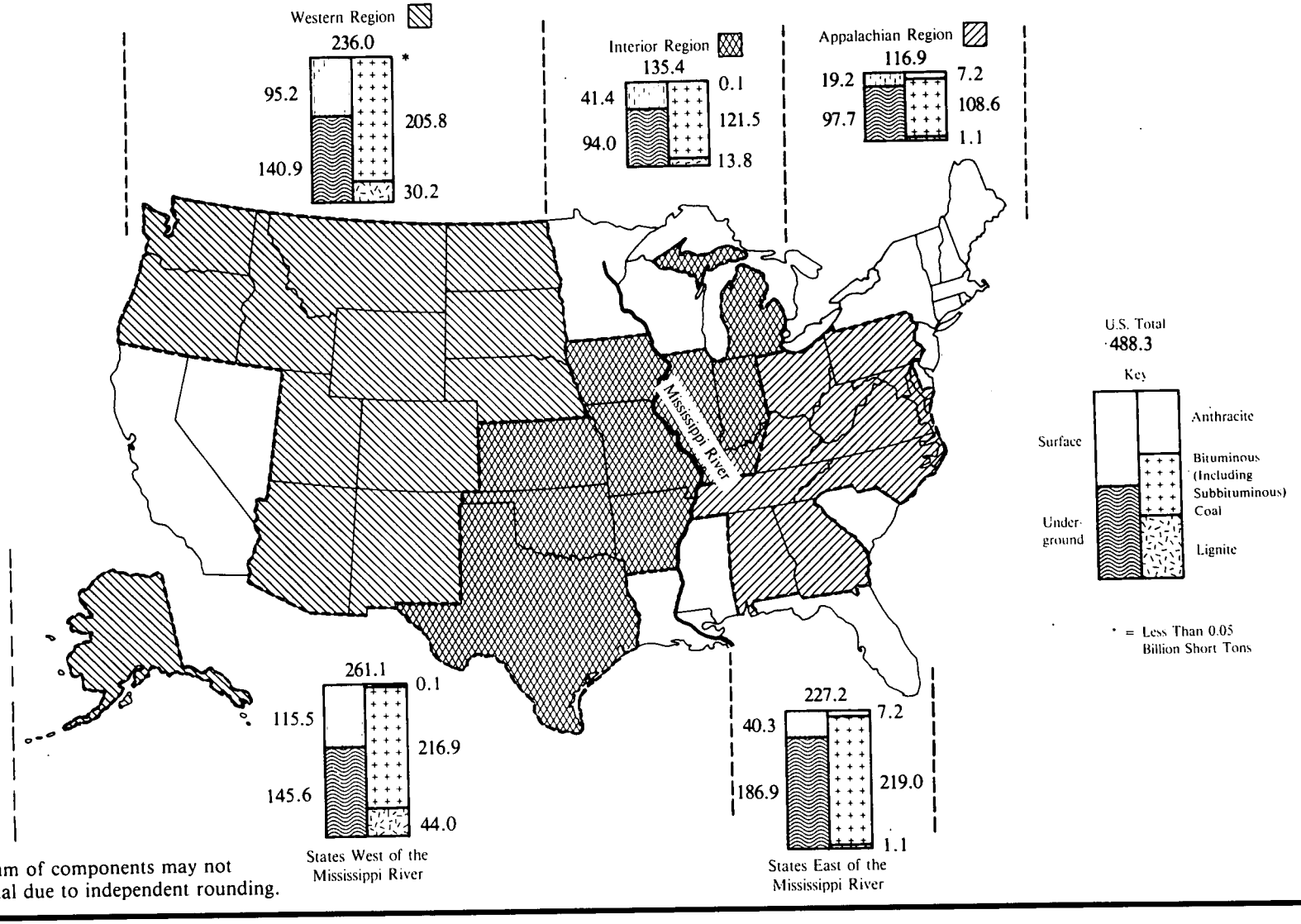
[1] The American Gas Association estimates of natural gas proved reserves include volumes of gas held in underground storage. In 1979, this volume amounted to 4.9 trillion cubic feet. Energy Information Administration data do not include gas in underground storage.

[2] Crude oil equivalent; converted to Btu based on annual average conversion factors. See Units of Measure and Conversion Factors section.

NA = Not available.

Sources: **•API/AGA Data**—American Gas Association, American Petroleum Institute, and Canadian Petroleum Association (published jointly). *Reserves of Crude Oil, Natural Gas Liquids and Natural Gas in the United States and Canada as of December 31, 1979.* Volume 34, June 1980. **•EIA Data**—Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1984 Annual Report.*

Figure 43. Demonstrated Reserve Base of Coal, January 1, 1984
(Billion Short Tons)



Note: Sum of components may not equal total due to independent rounding.

Source: See Table 43.

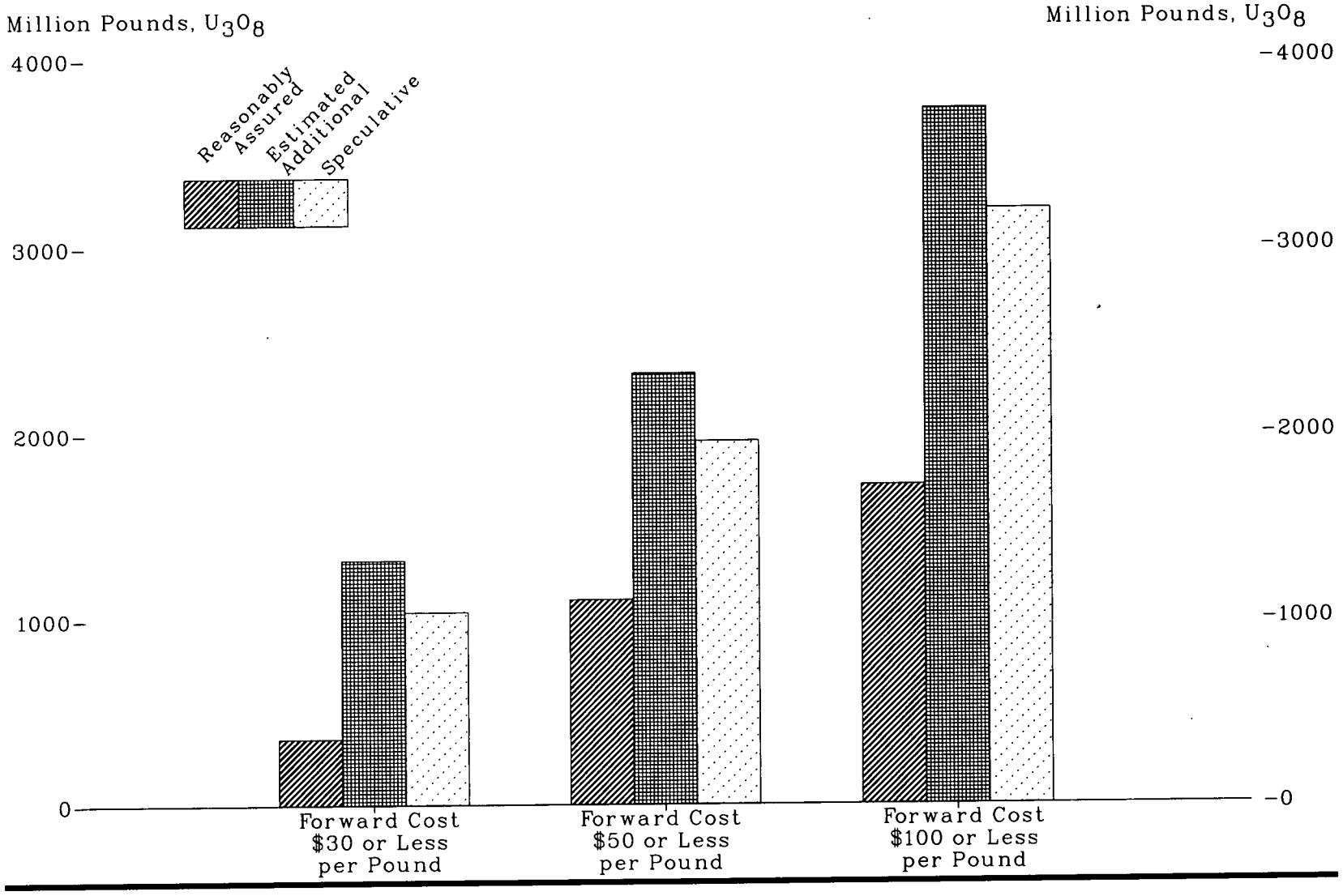
Table 43. Demonstrated Reserve Base of Coal,[1] January 1, 1984

(Billion Short Tons)

Region and State	Anthracite	Bituminous Coal [2]		Lignite	Total		
	Underground and Surface [3]	Underground	Surface	Surface [4]	Underground	Surface	Total
Appalachian							
Alabama	0	1.7	3.4	1.1	1.7	3.4	5.1
Kentucky, Eastern	0	17.1	2.1	0	17.1	2.1	19.2
Ohio	0	13.0	5.9	0	13.0	5.9	18.8
Pennsylvania	7.1	21.4	1.6	0	28.4	1.6	29.9
Virginia	0.1	2.3	0.8	0	2.4	0.8	3.2
West Virginia	0	33.8	5.1	0	33.8	5.1	38.9
Other [5]	0	1.3	0.4	0	1.3	0.4	1.7
Total	7.2	90.6	41.4	1.1	97.7	19.2	116.9
Interior							
Illinois	0	63.4	15.6	0	63.4	15.6	79.0
Indiana	0	8.9	1.6	0	8.9	1.5	10.4
Iowa	0	1.7	0.5	0	1.7	0.5	2.2
Kentucky, Western	0	16.9	4.0	0	16.9	4.0	20.8
Missouri	0	1.5	4.6	0	1.5	4.6	6.0
Oklahoma	0	1.2	0.4	0	1.2	0.4	1.6
Texas	0	0	0	13.8	0	13.8	13.8
Other [6]	0.1	0.3	1.1	[7]	0.4	1.1	1.5
Total	0.1	93.9	27.6	13.8	94.0	41.4	135.4
Western							
Alaska	0	5.4	0.7	[7]	5.4	0.7	6.2
Colorado	[7]	12.2	0.7	4.2	12.2	4.9	17.2
Montana	0	71.0	33.6	15.8	71.0	49.3	120.3
New Mexico	[7]	2.1	2.5	0	2.1	2.5	4.7
North Dakota	0	0	0	9.9	0	9.9	9.9
Utah	0	6.1	0.3	0	6.1	0.3	6.4
Washington	0	1.3	0.1	[7]	1.3	0.1	1.5
Wyoming	0	42.6	26.8	0	42.6	26.8	69.4
Other [8]	0	0.1	0.3	0.4	0.1	0.6	0.7
Total	[7]	140.8	65.0	30.2	140.9	95.2	236.0
U.S. Total	7.3	325.3	110.6	45.1	332.5	155.8	488.3
States East of the Mississippi River	7.2	179.8	39.1	1.1	186.9	40.3	227.2
States West of the Mississippi River	0.1	145.5	71.5	44.0	145.6	115.5	261.1

[1] Includes measured and indicated resource categories representing 100 percent of the coal in place. Recoverability varies from less than 40 percent to more than 90 percent for individual deposits. About one-half of the demonstrated reserve base of coal in the United States is estimated to be recoverable.
[2] Includes subbituminous coal.
[3] Includes 130.3 million short tons of surface mine reserves, of which 114.9 million tons are in Pennsylvania and 15.5 million tons are in Arkansas.
[4] There are no underground demonstrated coal reserves of lignite.
[5] Includes Georgia, Maryland, North Carolina, and Tennessee.
[6] Includes Arkansas, Kansas, and Michigan.
[7] Less than 0.05 billion short tons.
[8] Includes Arizona, Idaho, Oregon, and South Dakota.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *Coal Production 1984*.

Figure 44. Uranium Resources, December 31, 1984



Source: See Table 44.

Table 44. Uranium Resources, December 31, 1984

(Million Pounds, U_3O_8)

Resource Category	Forward Cost Category (dollars per pound) [1]		
	$30 or Less	$50 or Less	$100 or Less
Reasonable Assured Resources			
New Mexico	186	462	696
Wyoming	86	372	640
Texas	24	70	104
Arizona, Colorado, Utah	42	138	186
Others [2]	22	64	94
Total [3]	359	1,106	1,719
Estimated Additional Resources	1,318	2,324	3,728
Speculative Resources	1,040	1,958	3,193

[1] Forward costs are all operating and capital costs (in current dollars) still to be incurred in the production of uranium from estimated resources. Excluded are previous expenditures (such as exploration and land acquisitions) taxes, profit, and the cost of money. Generally, forward costs are lower than market prices.

[2] Includes California, Idaho, Montana, Nebraska, Nevada, North Dakota, Oregon, South Dakota, and Washington.

[3] Does not include an estimated 54 million pounds of U_3O_8 reserves from byproduct recovery facilities.

Source: Energy Information Administration, *Uranium Industry Annual 1984*.

Section 4. Petroleum Supply and Disposition

Production. United States production of crude oil (including lease condensate) averaged 8.9 million barrels per day during 1985, up modestly from 1984. Most U.S. production occurred in Texas, Alaska, Louisiana, and California, and their associated offshore areas. Total U.S. crude oil production from an estimated 647,000 oil wells averaged about 13.8 barrels per day per well during 1985. All of the increase in 1985 production occurred in Alaska (Table 46).

Consumption. Total consumption (products supplied) of petroleum products in 1985 averaged 15.7 million barrels per day, virtually unchanged from 1984. However, except for consumption of residual fuel oil, which declined for the eighth consecutive year, consumption of major petroleum products increased. Consumption of residual fuel oil in 1985 was 39 percent of that in the peak year of 1977. Most of the decline in demand was in the electric utility sector, where coal and uranium were substituted as fuel inputs for electricity generation. Consumption of other major petroleum products increased by 1.3 percent in 1985, representing the third consecutive year of increase (Table 55).

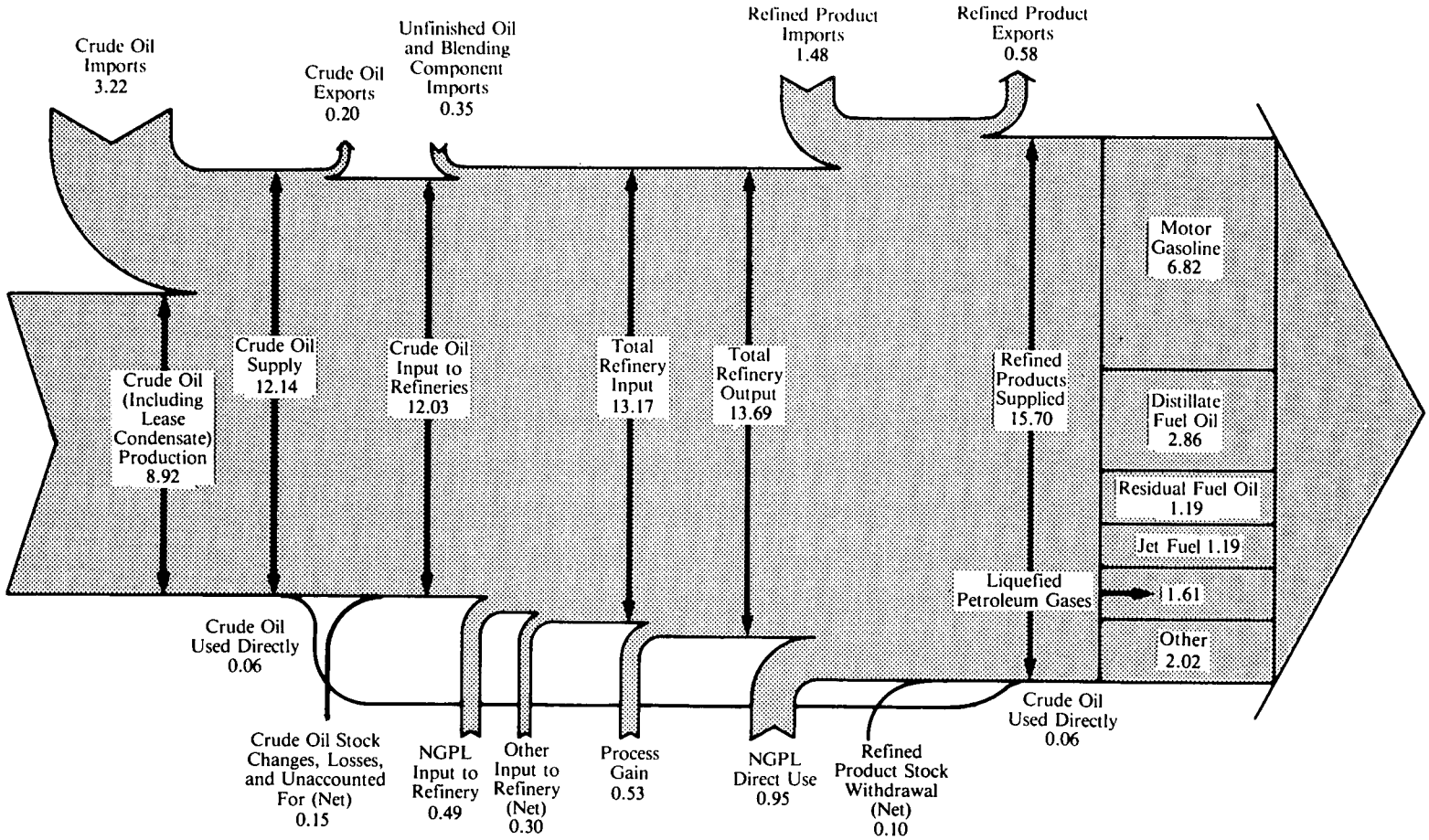
Net Imports. Net imports of crude oil and petroleum products fell to 4.3 million barrels per day, the lowest level since 1971. Furthermore, U.S. dependence on imports from members of the Organization of Petroleum Exporting Countries (OPEC) also fell as net imports from OPEC countries accounted for only 42.6 percent of all U.S. net imports and only 11.6 percent of U.S. consumption (Table 51). From 1980 through 1985, Mexico was the major source of U.S. net imports of petroleum.

Refining. Average daily refinery output, which in 1984 registered the first year-to-year increase since 1978, remained unchanged at 13.7 million barrels in 1985 (Table 52). Because of substantial decommissioning of less efficient refineries, the refinery utilization rate rose to 77.6 percent, the highest rate since 1979 (Table 53).

Stocks. At the end of 1985, crude oil stocks totaled 812 million barrels, a 2-percent increase from the 1984 end-of-year level (Table 58). All of the increase was in stocks held at the Strategic Petroleum Reserve (SPR), a U.S. Government program to hedge against petroleum supply disruptions. The 493 million barrels in SPR at the end of 1985 were equal to 159 days of non-SPR crude oil imports that year. That compares with SPR stocks equal to 88 days of crude oil imports in 1982. Private stocks of crude oil accounted for 39 percent of total crude oil stocks, the lowest level since the SPR program began (Tables 58 and 59). End-of-year private stocks of petroleum products decreased in 1985 to 704 million barrels, considerably below the record level of 964 million barrels in 1977 (Table 58).

Domestic Prices. U.S. average crude oil wellhead prices declined after reaching a record high of $31.77 per barrel in 1981. In 1985, the average price of crude oil was $24.08 per barrel, down 7 percent from 1984 and 24 percent from 1981. In constant 1982 dollars, crude oil prices were the lowest since 1979 (Table 60). The refiner acquisition cost of imported crude oil also declined. The 1985 price of $27.04 per barrel was down about $10.00 per barrel (27 percent) from the 1981 price and 6 percent from the 1984 price (Table 62). These reductions were reflected at retail (end-user) levels of most major petroleum products except motor gasoline. The average price of motor gasoline rose 0.5 cent per gallon in 1985, while the price of No. 2 fuel oil (home heating oil) fell 6.8 cents per gallon (Table 63).

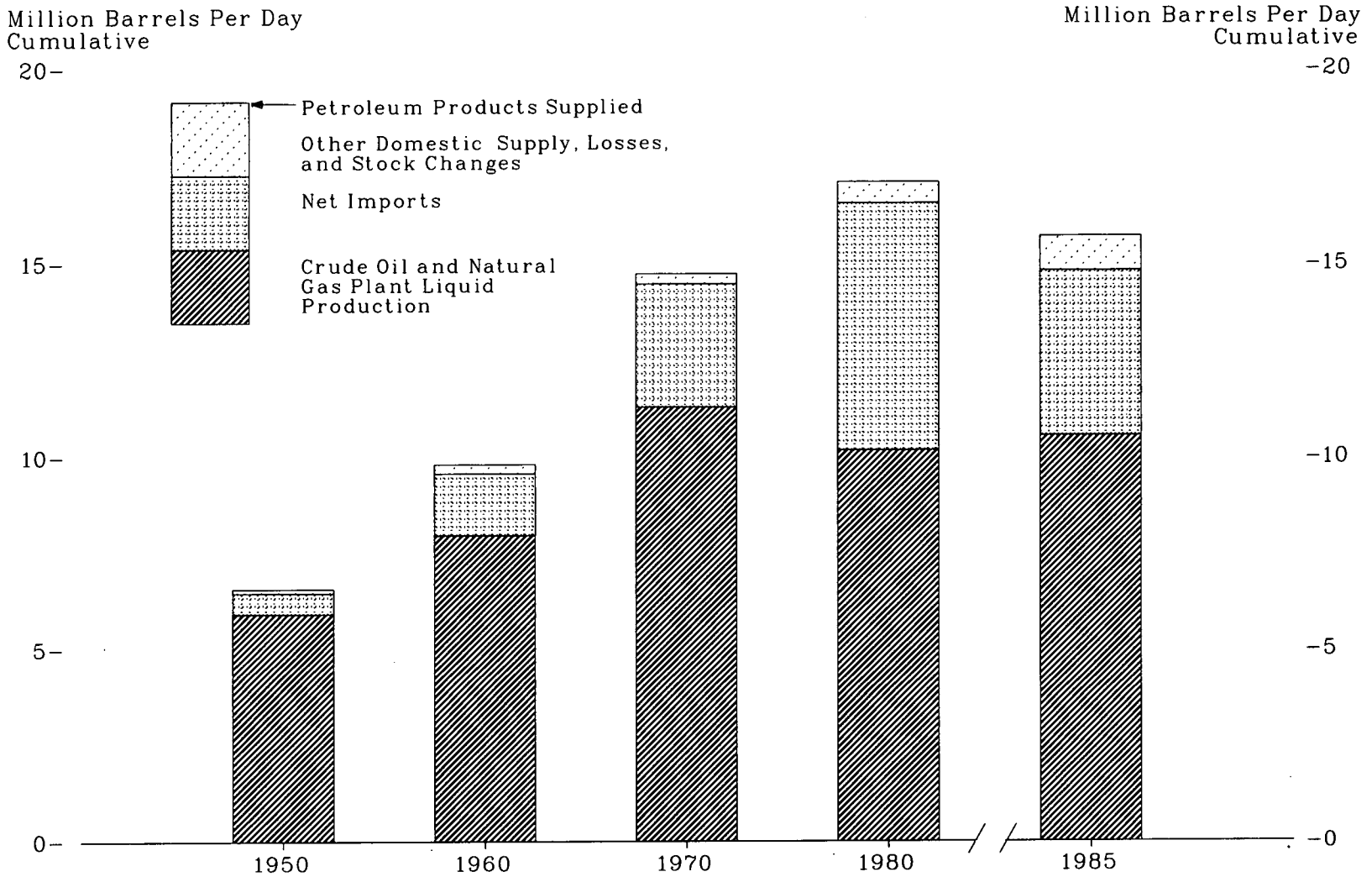
Diagram 2. Petroleum Flow, 1985
(Million Barrels per Day)



Note: Sum of components may not equal total due to independent rounding.

Sources: See Tables 45, 49, 52, and 58.

Figure 45. Petroleum Supply and Disposition, 1950, 1960, 1970, 1980, and 1985



Source: See Table 45.

Table 45. Petroleum Supply and Disposition, 1949-1985

(Million Barrels per Day)

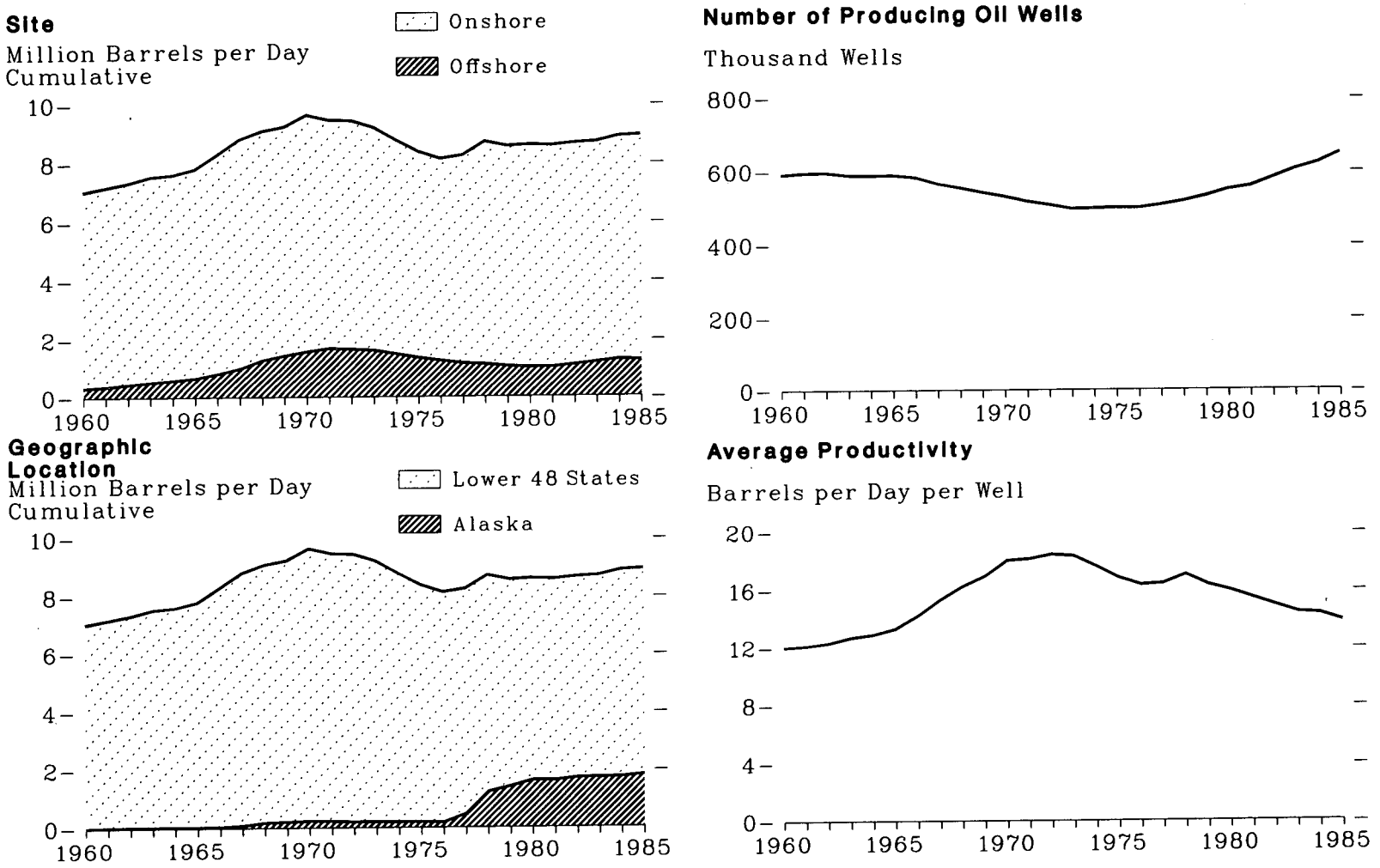
Year	Production			Other Domestic Supply [2]	Foreign Trade					Crude Oil Losses	Change in Stocks [6]	Petroleum Products Supplied
					Imports							
	Crude Oil [1]	Natural Gas Plant Liquids	Total Production		Crude Oil [3]	Petroleum Products [4]	Total Imports	Exports	Net Imports [5]			
1949	5.05	0.43	5.48	(7)	0.42	0.22	0.65	0.33	0.32	0.04	0.01	5.76
1950	5.41	0.50	5.91	(7)	0.49	0.36	0.85	0.30	0.55	0.05	0.06	6.46
1951	6.16	0.56	6.72	0.01	0.49	0.35	0.84	0.42	0.42	0.03	-0.10	7.02
1952	6.26	0.61	6.87	0.01	0.57	0.38	0.95	0.43	0.52	0.02	-0.11	7.27
1953	6.46	0.65	7.11	0.02	0.65	0.39	1.03	0.40	0.63	0.02	-0.14	7.60
1954	6.34	0.69	7.03	0.02	0.66	0.40	1.05	0.36	0.70	0.03	0.03	7.76
1955	6.81	0.77	7.58	0.04	0.78	0.47	1.25	0.37	0.88	0.04	(7)	8.46
1956	7.15	0.80	7.95	0.04	0.93	0.50	1.44	0.43	1.01	0.05	-0.18	8.78
1957	7.17	0.81	7.98	0.04	1.02	0.55	1.57	0.57	1.01	0.05	-0.17	8.81
1958	6.71	0.81	7.52	0.06	0.95	0.75	1.70	0.28	1.42	0.03	0.14	9.12
1959	7.05	0.88	7.93	0.09	0.97	0.81	1.78	0.21	1.57	0.01	-0.05	9.53
1960	7.04	0.93	7.96	0.15	1.02	0.80	1.81	0.20	1.61	0.01	0.08	9.80
1961	7.18	0.99	8.17	0.18	1.05	0.87	1.92	0.17	1.74	0.01	-0.11	9.98
1962	7.33	1.02	8.35	0.18	1.13	0.96	2.08	0.17	1.91	0.01	-0.03	10.40
1963	7.54	1.10	8.64	0.20	1.13	0.99	2.12	0.21	1.91	0.01	(7)	10.74
1964	7.61	1.15	8.77	0.22	1.20	1.06	2.26	0.20	2.06	0.01	-0.01	11.02
1965	7.80	1.21	9.01	0.22	1.24	1.23	2.47	0.19	2.28	0.01	0.01	11.51
1966	8.30	1.28	9.58	0.25	1.22	1.35	2.57	0.20	2.37	0.01	-0.10	12.08
1967	8.81	1.41	10.22	0.29	1.13	1.41	2.54	0.31	2.23	0.01	-0.17	12.56
1968	9.10	1.50	10.60	0.35	1.29	1.55	2.84	0.23	2.61	0.01	-0.15	13.39
1969	9.24	1.59	10.83	0.34	1.41	1.76	3.17	0.23	2.93	0.01	0.05	14.14
1970	9.64	1.66	11.30	0.35	1.32	2.10	3.42	0.26	3.16	0.01	-0.10	14.70
1971	9.46	1.69	11.16	0.44	1.68	2.25	3.93	0.22	3.70	0.01	-0.07	15.21
1972	9.44	1.74	11.18	0.44	2.22	2.53	4.74	0.22	4.52	0.01	0.23	16.37
1973	9.21	1.74	10.95	0.49	3.24	3.01	6.26	0.23	6.02	0.01	-0.14	17.31
1974	8.77	1.69	10.46	0.49	3.48	2.64	6.11	0.22	5.89	0.01	-0.18	16.65
1975	8.37	1.63	10.01	0.51	4.10	1.95	6.06	0.21	5.85	0.01	-0.03	16.32
1976	8.13	1.60	9.74	0.59	5.29	2.03	7.31	0.22	7.09	0.01	0.06	17.46
1977	8.24	1.62	9.86	0.57	6.61	2.19	8.81	0.24	8.56	0.02	-0.55	18.43
1978	8.71	1.57	10.27	0.49	6.36	2.01	8.36	0.36	8.00	0.02	0.09	18.85
1979	8.55	1.58	10.14	0.56	6.52	1.94	8.46	0.47	7.99	0.02	-0.15	18.51
1980	8.60	1.57	10.17	0.68	5.26	1.65	6.91	0.54	6.36	0.01	-0.14	17.06
1981	8.57	1.61	10.18	0.64	4.40	1.60	6.00	0.59	5.40	(7)	-0.16	16.06
1982	8.65	1.55	10.20	0.65	3.49	1.63	5.11	0.82	4.30	(7)	0.15	15.30
1983	8.69	1.56	10.25	0.65	3.33	1.72	5.05	0.74	4.31	(7)	0.02	15.23
1984	8.88	1.63	10.51	0.78	3.43	2.01	5.44	0.72	4.72	(7)	-0.28	15.73
1985[8]	8.92	1.62	10.54	0.79	3.22	1.83	5.05	0.78	4.26	(7)	0.11	15.70

[1] Includes lease condensate.
[2] Includes benzol, other hydrocarbons, hydrogen, alcohol, processing gains, and unaccounted for crude oil.
[3] Includes imports for the Strategic Petroleum Reserve, which began in 1977.
[4] For 1981 and forward, includes motor gasoline blending components, and aviation gasoline blending components.
[5] Net trade = imports minus exports.
[6] Negative numbers denote a net addition to stocks or a reduction in supply. Positive numbers denote a net withdrawal from stocks or an addition to supply.
[7] Less than 5,000 barrels per day.
[8] Preliminary.

Note: Sum of components may not equal total due to independent rounding.

Sources: •1949 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 46. Crude Oil and Lease Condensate Production and Oil Well Productivity, 1960–1985



Source: See Table 46.

Table 46. Crude Oil and Lease Condensate Production and Oil Well Productivity, 1954-1985

(Thousand Barrels per Day, Except as Noted)

Year	Geographic Location		Site		Type			Oil Well Productivity	
	Lower 48	Alaska	Onshore	Offshore	Crude Oil	Lease Condensate	Total Production	Thousands of Producing Wells [1]	Average Productivity [2] (barrels per day per well)
1954	6,342	0	6,209	133	6,342	[3]	6,342	511	12.6
1955	6,807	0	6,645	162	6,807	[3]	6,807	524	13.2
1956	7,151	0	6,951	201	7,151	[3]	7,151	551	13.3
1957	7,170	0	6,940	229	7,170	[3]	7,170	569	12.8
1958	6,710	0	6,473	236	6,710	[3]	6,710	575	11.7
1959	7,053	1	6,779	274	7,054	[3]	7,054	583	12.2
1960	7,034	2	6,716	319	7,035	[3]	7,035	591	12.0
1961	7,166	17	6,817	365	7,183	[3]	7,183	595	12.1
1962	7,304	28	6,888	444	7,332	[3]	7,332	596	12.3
1963	7,512	29	7,026	515	7,542	[3]	7,542	589	12.7
1964	7,584	30	7,027	587	7,614	[3]	7,614	588	12.9
1965	7,774	30	7,140	665	7,804	[3]	7,804	589	13.3
1966	8,256	39	7,473	823	8,295	[3]	8,295	583	14.2
1967	8,730	80	7,802	1,009	8,810	[3]	8,810	565	15.3
1968	8,915	181	7,808	1,287	8,660	436	9,096	554	16.2
1969	9,035	203	7,797	1,441	8,778	460	9,238	542	16.9
1970	9,408	229	8,060	1,577	9,180	457	9,637	531	18.0
1971	9,245	218	7,779	1,684	9,032	431	9,463	517	18.1
1972	9,242	199	7,780	1,660	8,998	443	9,441	508	18.4
1973	9,010	198	7,592	1,616	8,784	424	9,208	497	18.3
1974	8,581	193	7,285	1,489	8,375	399	8,774	498	17.6
1975	8,183	191	7,012	1,362	8,007	367	8,375	500	16.8
1976	7,958	173	6,868	1,264	7,776	356	8,132	499	16.3
1977	7,781	464	7,069	1,176	7,875	370	8,245	507	16.4
1978	7,478	1,229	7,571	1,136	8,353	355	8,707	517	17.0
1979	7,151	1,401	7,485	1,067	8,181	371	8,552	531	16.3
1980	6,980	1,617	7,562	1,034	8,210	386	8,597	548	15.9
1981	6,962	1,609	7,537	1,034	8,176	395	8,572	557	15.4
1982	6,953	1,696	7,538	1,110	8,261	387	8,649	580	14.9
1983	6,974	1,714	7,492	1,196	8,688	[3]	8,688	603	14.4
1984	7,157	1,722	7,596	1,283	8,879	[3]	8,879	620	14.3
1985[4]	7,121	1,799	7,659	1,261	8,920	[3]	8,920	647	13.8

[1] As of December 31.

[2] For 1954 through 1976, average productivity is based on the average number of producing wells. For 1977 forward, average productivity is based on the number of wells producing at end of year.

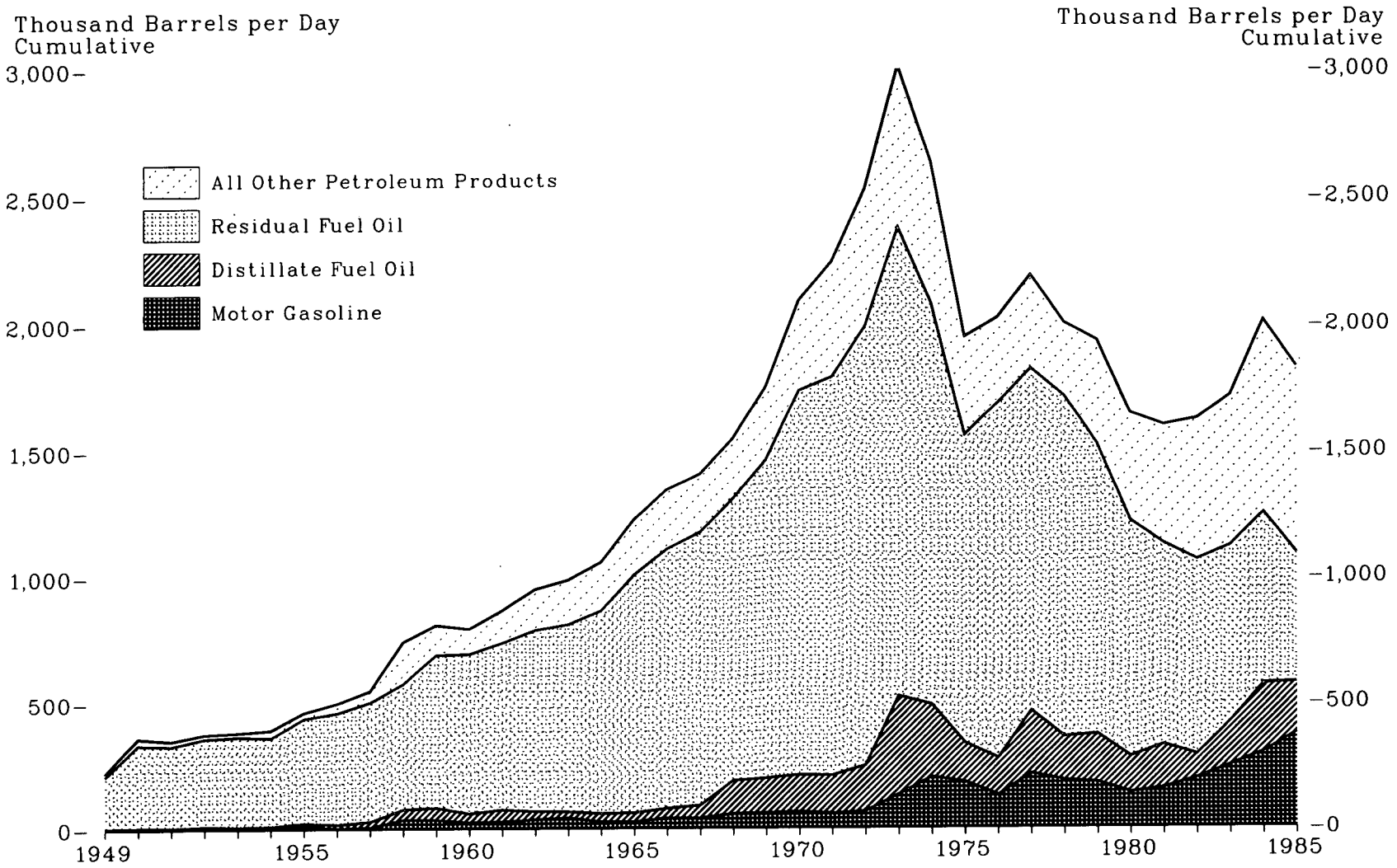
[3] Included in crude oil.

[4] Preliminary.

Note: Sum of components may not equal total due to independent rounding.

Sources: **Offshore:** •1954 through 1969—U.S. Geological Survey, *Outer Continental Shelf Statistics*, June 1979. •1970 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.* **Oil Well Productivity:** •1954 through 1975—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Independent Petroleum Association of America, *The Oil Producing Industry in Your State.* •1985—Independent Petroleum Association of America, unpublished data. **All Other Data:** •1954 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 47. Imports of Petroleum Products, 1949-1985



Source: See Table 47.

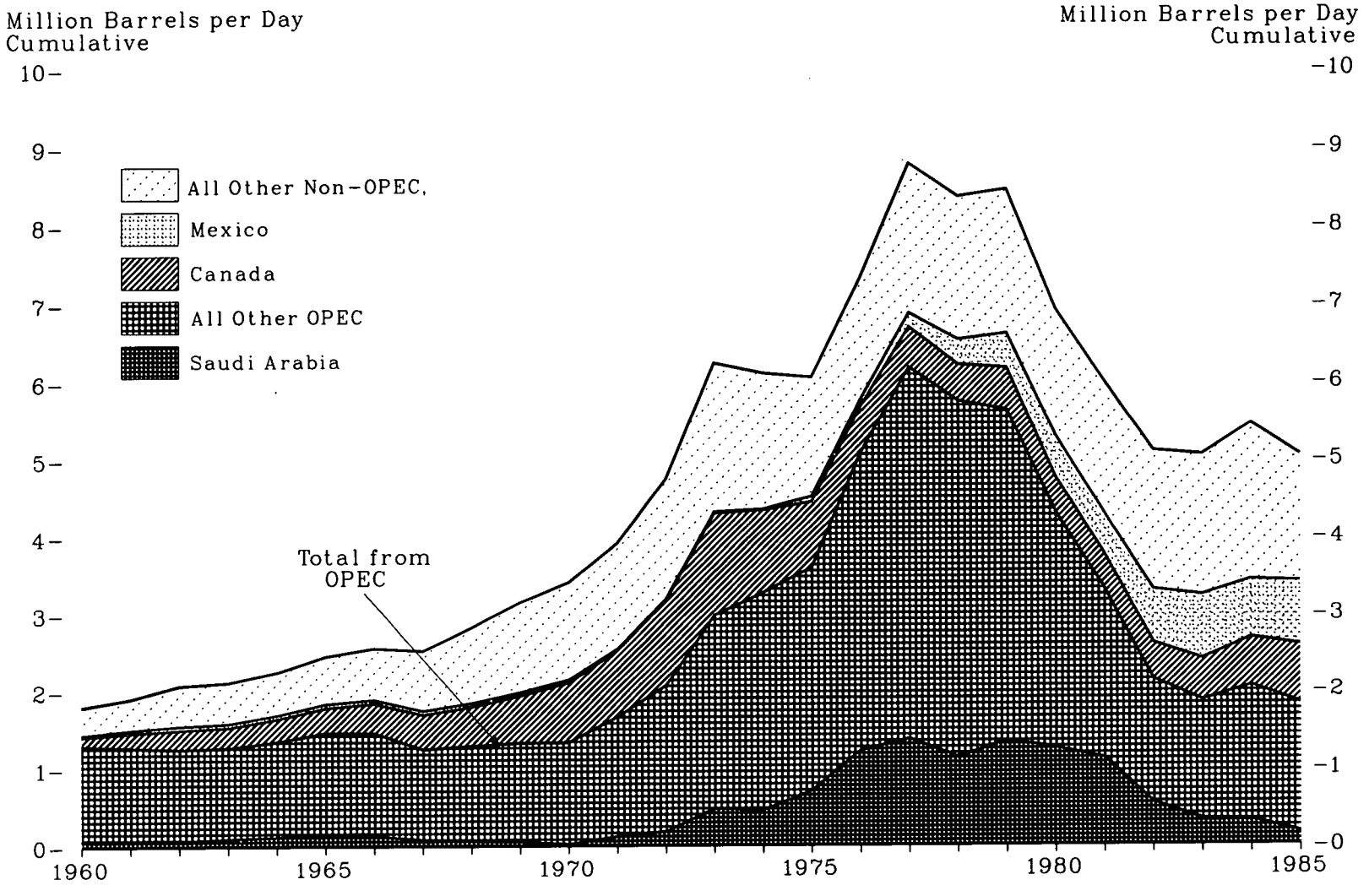
Table 47. Imports[1] of Petroleum Products, 1949-1985

(Thousand Barrels per Day)

Year	Motor Gasoline [2]	Jet Fuel [3]	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Unfinished Oils	Other Products [4]	Total
1949	0	NA	5	206	0	10	3	224
1950	(5)	NA	7	329	0	21	6	363
1951	1	NA	5	326	0	14	7	354
1952	5	NA	7	351	0	9	7	380
1953	1	NA	9	360	0	9	7	386
1954	3	NA	9	354	0	21	9	396
1955	13	NA	12	417	0	15	9	466
1956	5	21	14	445	0	7	10	502
1957	8	25	23	475	0	3	18	552
1958	38	57	41	499	0	92	21	747
1959	37	37	48	610	0	63	19	814
1960	27	34	35	637	4	45	17	799
1961	29	28	48	666	5	69	26	872
1962	38	30	32	724	6	89	36	955
1963	44	41	25	747	7	87	41	992
1964	29	33	32	808	11	89	58	1,060
1965	28	81	36	946	21	92	27	1,229
1966	43	86	38	1,032	29	97	24	1,348
1967	42	89	51	1,085	27	97	20	1,409
1968	59	105	132	1,120	32	80	22	1,549
1969	62	125	139	1,265	35	106	25	1,757
1970	67	144	147	1,528	52	108	49	2,095
1971	59	180	153	1,583	70	124	76	2,245
1972	68	194	182	1,742	89	125	126	2,525
1973	134	212	392	1,853	132	137	152	3,012
1974	204	163	289	1,587	123	121	148	2,635
1975	184	133	155	1,223	112	36	108	1,951
1976	131	76	146	1,413	130	32	97	2,026
1977	217	75	250	1,359	161	31	99	2,193
1978	190	86	173	1,355	123	27	53	2,008
1979	181	78	193	1,151	217	59	58	1,937
1980	140	80	142	939	216	55	76	1,646
1981	157	38	173	800	244	112	76	1,599
1982	197	29	93	776	226	174	131	1,625
1983	247	29	174	699	190	234	147	1,722
1984	299	62	272	681	195	231	272	2,011
1985[6]	378	37	199	512	187	289	228	1,830

[1] Includes imports from U.S. possessions and territories.
[2] Excludes motor gasoline blending components after 1980. Prior to 1964, motor gasoline data were for total gasoline, including motor gasoline, aviation gasoline, and special naphtha.
[3] Prior to 1965, imports of kerosene-type jet fuel were included with kerosene, which is listed under "Other Products."
[4] Includes aviation gasoline, kerosene, petrochemical feedstocks, special naphthas, lubricants, wax, asphalt, natural gasoline, unfractionated stream, plant condensate, and miscellaneous products. For 1981 and forward, includes motor gasoline blending components, and aviation gasoline blending components. For 1984 and forward, includes pentanes plus.
[5] Less than 500 barrels per day.
[6] Preliminary.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* • 1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 48. Imports of Crude Oil and Petroleum Products by Country of Origin, 1960-1985



Source: See Table 48.

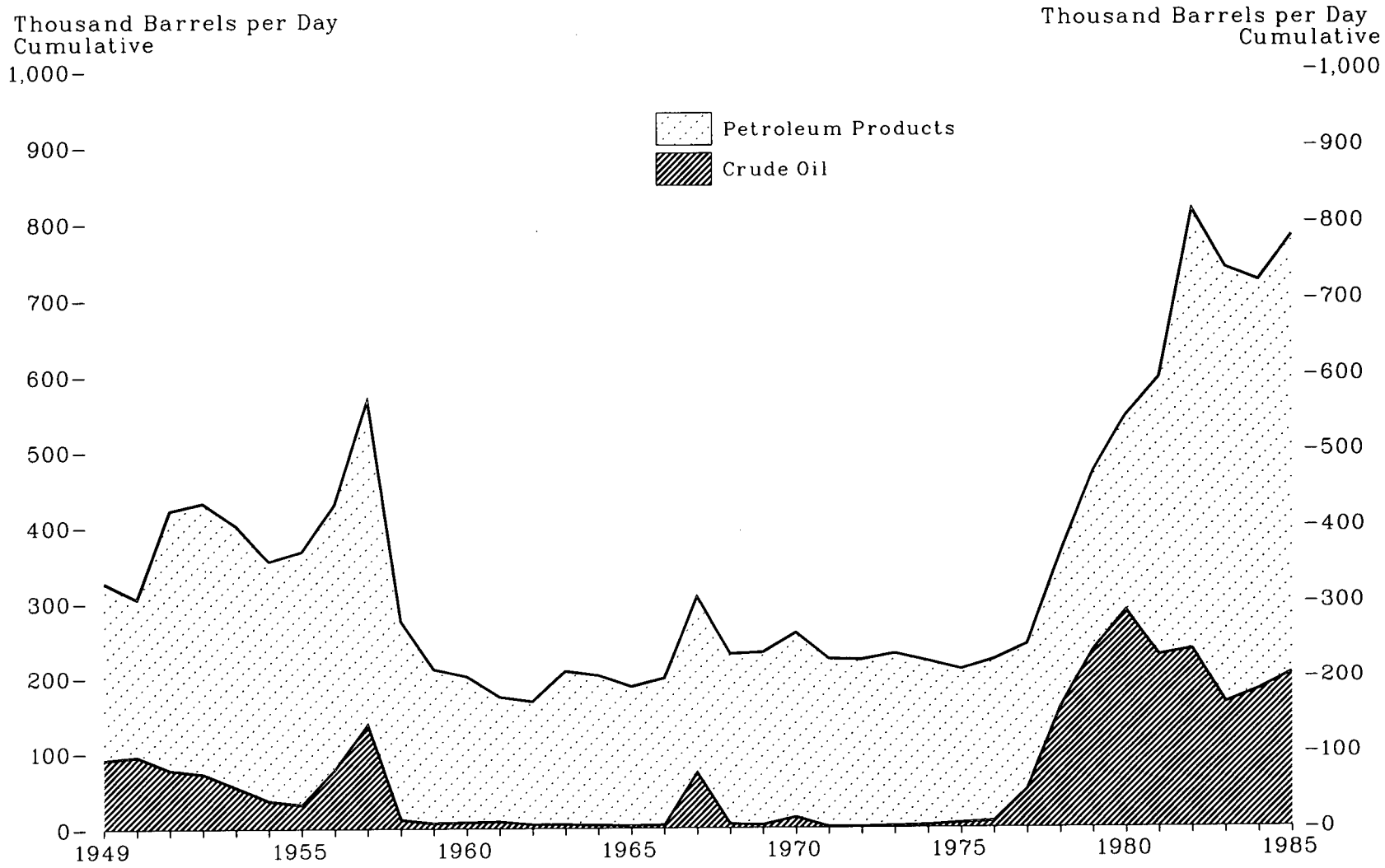
Table 48. Imports of Crude Oil and Petroleum Products by Country of Origin, 1960-1985

(Thousand Barrels per Day)

Year	Organization of Petroleum Exporting Countries (OPEC) [1]													
	Algeria	Indonesia	Nigeria	Saudi Arabia	Venezuela	Other OPEC [2]	Total OPEC [3]	Arab Members of OPEC [4]	Canada	Mexico	United Kingdom	Virgin Is. and Puerto Rico	Other Non-OPEC	Total
1960	1	77	0	84	911	241	1,314	292	120	16	• [5]	36	328	1,815
1961	0	62	0	73	879	272	1,286	284	190	40	1	44	357	1,917
1962	0	69	0	74	906	216	1,265	241	250	49	2	41	475	2,082
1963	1	63	0	108	900	211	1,283	258	265	48	3	44	480	2,123
1964	6	68	0	131	933	223	1,361	293	299	47	[5]	47	505	2,259
1965	9	63	15	158	994	237	1,476	324	323	48	[5]	47	574	2,468
1966	4	53	11	147	1,018	238	1,471	300	384	45	6	61	606	2,573
1967	5	66	5	92	938	153	1,259	177	450	49	11	96	673	2,537
1968	6	73	9	74	886	255	1,302	272	506	45	28	145	814	2,840
1969	2	88	49	65	875	256	1,336	276	608	43	20	189	971	3,166
1970	8	70	50	30	989	197	1,343	196	766	42	11	271	985	3,419
1971	15	111	102	128	1,020	296	1,673	327	857	27	10	368	991	3,926
1972	92	164	251	190	959	406	2,063	530	1,108	21	9	432	1,108	4,741
1973	136	213	459	486	1,135	564	2,993	915	1,325	16	15	429	1,479	6,256
1974	190	300	713	461	979	635	3,280	752	1,070	8	8	481	1,265	6,112
1975	282	390	762	715	702	750	3,601	1,383	846	71	14	496	1,026	6,056
1976	432	539	1,025	1,230	700	1,140	5,066	2,424	599	87	31	510	1,019	7,313
1977	559	541	1,143	1,380	690	1,880	6,193	3,185	517	179	126	571	1,221	8,807
1978	649	573	919	1,144	645	1,821	5,751	2,963	467	318	180	522	1,126	8,363
1979	636	420	1,080	1,356	690	1,456	5,637	3,056	538	439	202	523	1,116	8,456
1980	488	348	857	1,261	481	865	4,300	2,551	455	533	176	476	969	6,909
1981	311	366	620	1,129	406	491	3,323	1,848	447	522	375	389	939	5,996
1982	170	248	514	552	412	250	2,146	854	482	685	456	366	979	5,113
1983	240	338	302	337	422	223	1,862	632	547	826	382	322	1,111	5,051
1984	323	343	216	325	548	294	2,049	819	630	748	402	336	1,273	5,437
1985[6]	190	306	287	167	608	266	1,825	475	768	815	314	275	1,049	5,045

[1] See Glossary for membership.
[2] Includes Ecuador, Gabon, Iran, Iraq, Kuwait, Libya, Qatar, and United Arab Emirates.
[3] Excludes petroleum imported into the United States indirectly from OPEC countries, primarily from Caribbean and West European refining areas, as petroleum products which were refined from crude oil produced in OPEC countries.
[4] Includes Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and United Arab Emirates.
[5] Less than 500 barrels per day.
[6] Preliminary.
Note: Data include imports for the Strategic Petroleum Reserve, which began in 1977.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1960 through 1975—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" Chapter. •1976 through 1980—Energy Information Administration, Energy Data Reports, *P.A.D. Districts Supply/Demand, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 49. Exports of Crude Oil and Petroleum Products by Type, 1949–1985



Source: See Table 49.

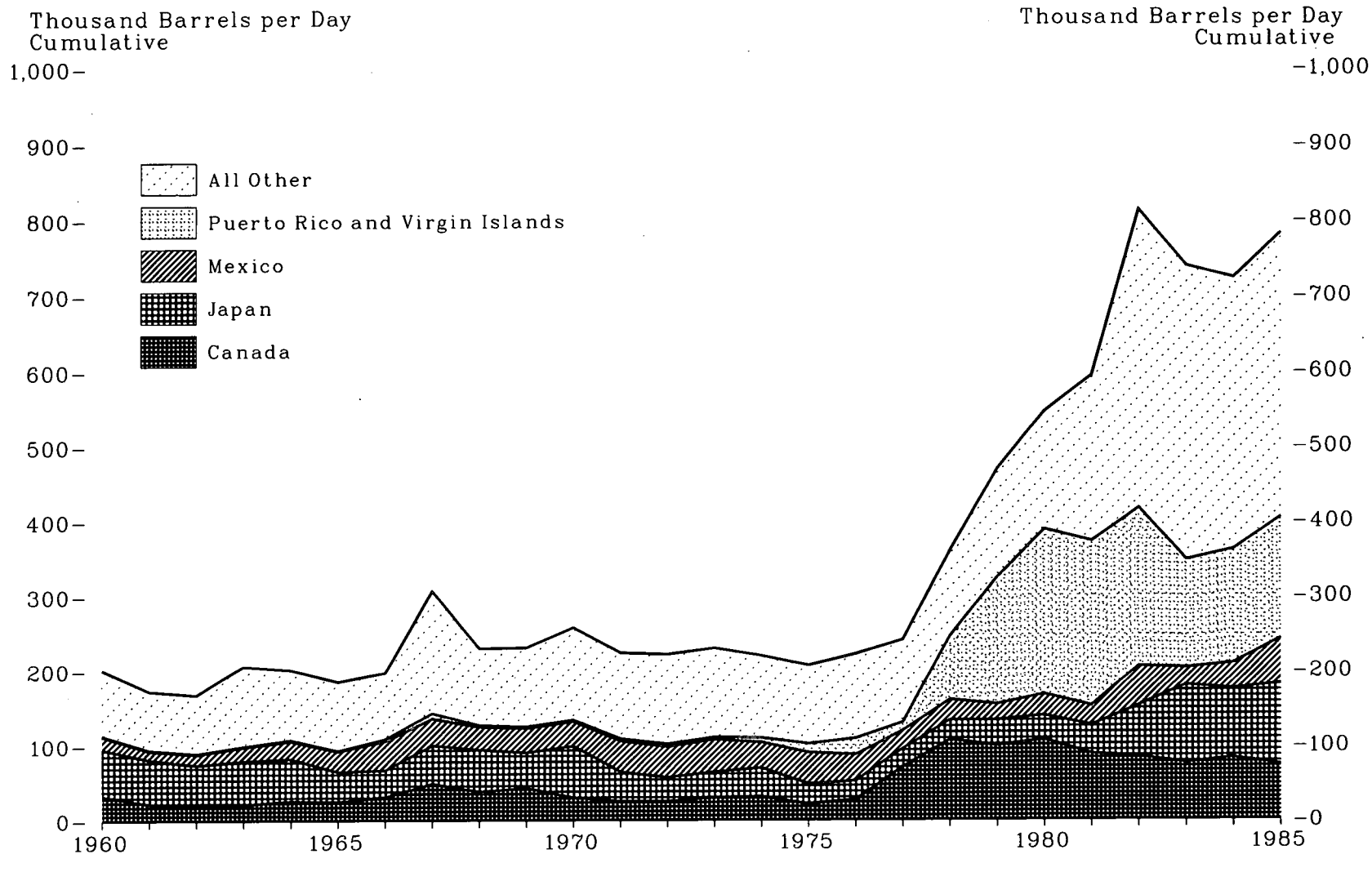
Table 49. Exports[1] of Crude Oil and Petroleum Products by Type, 1949-1985

(Thousand Barrels per Day)

Year	Crude Oil	Petroleum Products							Total Petroleum
		Liquefied Petroleum Gases	Residual Fuel Oil	Petrochemical Feedstocks	Lubricants	Petroleum Coke	Other Products[2]	Total	
1949	91	4	35	0	35	7	156	236	327
1950	95	4	44	0	39	7	115	210	305
1951	78	6	79	0	48	12	199	344	422
1952	73	7	76	0	44	11	222	359	432
1953	55	8	71	0	36	10	222	347	402
1954	37	11	73	0	41	9	184	318	355
1955	32	12	93	0	39	12	180	336	368
1956	78	12	76	0	38	18	209	352	430
1957	138	12	106	0	38	14	260	430	568
1958	12	8	71	0	36	12	138	264	276
1959	7	6	57	0	38	13	90	204	211
1960	8	8	51	0	43	19	73	193	202
1961	9	10	38	0	47	20	50	165	174
1962	5	11	35	0	48	20	49	163	168
1963	5	13	42	0	50	29	69	203	208
1964	4	15	52	0	50	37	45	198	202
1965	3	21	41	5	45	32	40	184	187
1966	4	22	35	7	47	40	43	194	198
1967	73	25	60	8	51	45	45	234	307
1968	5	29	55	8	49	53	32	226	231
1969	4	35	46	11	45	63	29	229	233
1970	14	27	54	10	44	84	25	245	259
1971	1	26	36	14	43	74	29	223	224
1972	1	31	33	13	41	85	19	222	222
1973	2	27	23	19	35	96	29	229	231
1974	3	25	14	15	33	113	18	218	221
1975	6	26	15	22	25	102	14	204	209
1976	8	25	12	30	26	103	19	215	223
1977	50	18	6	24	26	102	15	193	243
1978	158	20	13	23	27	111	10	204	362
1979	235	15	9	31	23	146	12	236	471
1980	287	21	33	29	23	136	14	258	544
1981	228	42	118	26	19	138	24	367	595
1982	236	65	209	24	16	156	109	579	815
1983	164	73	185	20	16	195	87	575	739
1984	181	48	190	21	15	193	73	541	722
1985[3]	204	62	197	19	15	187	96	577	781

[1] Includes exports to U.S. possessions and territories.
[2] Includes aviation gasoline, motor gasoline, jet fuel, distillate fuel oil, kerosene, special naphthas, wax, asphalt, pentanes plus, and miscellaneous products.
[3] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 50. Exports of Crude Oil and Petroleum Products by Country of Destination, 1960-1985



Source: See Table 50.

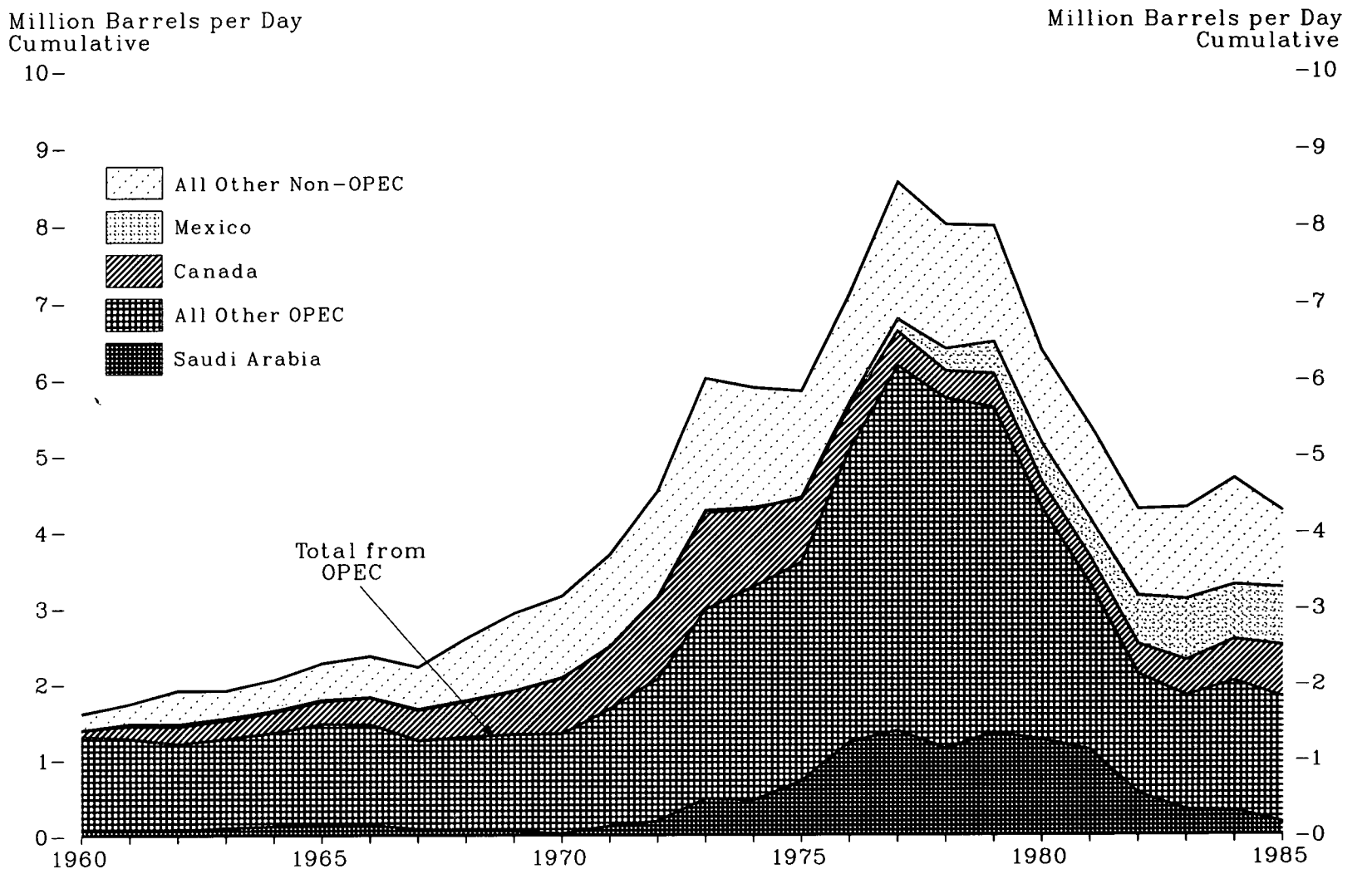
Table 50. Exports of Crude Oil and Petroleum Products by Country of Destination, 1960-1985

(Thousand Barrels per Day)

Year	Canada	Japan	Mexico	Netherlands	Belgium[1]	Italy	United Kingdom	France	Brazil	Puerto Rico	Virgin Islands	Other	Total
1960	34	62	18	6	3	6	12	4	4	1	NA	52	202
1961	23	59	12	4	4	5	10	4	4	1	[2]	48	174
1962	21	54	14	5	3	5	8	3	5	1	[2]	50	168
1963	22	58	19	13	9	8	11	4	4	1	[2]	59	208
1964	27	56	24	9	4	8	10	4	4	1	1	55	202
1965	26	40	27	10	3	7	12	3	3	1	1	54	187
1966	32	36	39	9	3	7	12	4	4	3	[2]	49	198
1967	50	51	36	13	5	9	62	3	6	7	[2]	65	307
1968	39	56	31	10	4	8	14	4	8	2	[2]	55	231
1969	44	47	33	9	4	9	13	4	7	2	1	59	233
1970	31	69	33	15	5	10	12	5	7	1	[2]	71	259
1971	26	39	42	11	7	8	9	5	9	3	[2]	67	224
1972	26	32	41	12	13	9	10	5	9	3	[2]	63	222
1973	31	34	44	13	15	9	9	5	8	3	[2]	60	231
1974	32	38	35	17	13	9	6	4	9	4	2	52	221
1975	22	27	42	23	9	10	7	6	6	5	7	44	209
1976	28	25	35	22	12	10	13	6	7	21	1	43	223
1977	71	25	24	17	16	10	9	9	6	6	5	44	243
1978	108	26	27	18	15	10	7	9	8	44	42	47	362
1979	100	34	21	28	19	15	7	13	7	64	106	57	471
1980	108	32	28	23	20	14	7	11	4	86	134	79	544
1981	89	38	26	42	12	22	5	15	1	81	140	124	595
1982	85	68	53	85	17	32	14	24	8	95	116	216	815
1983	76	104	24	49	22	35	8	23	2	33	111	251	739
1984	83	92	35	37	21	39	14	18	1	24	128	229	722
1985[3]	74	108	61	44	26	30	14	11	3	26	135	248	781

[1] Including Luxembourg.
[2] Less than 500 barrels per day.
[3] Preliminary.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1960 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 51. Net Imports of Crude Oil and Petroleum Products by Country of Origin, 1960-1985



Source: See Table 51.

Table 51. Net Imports [1] of Crude Oil and Petroleum Products by Country of Origin, 1960-1985

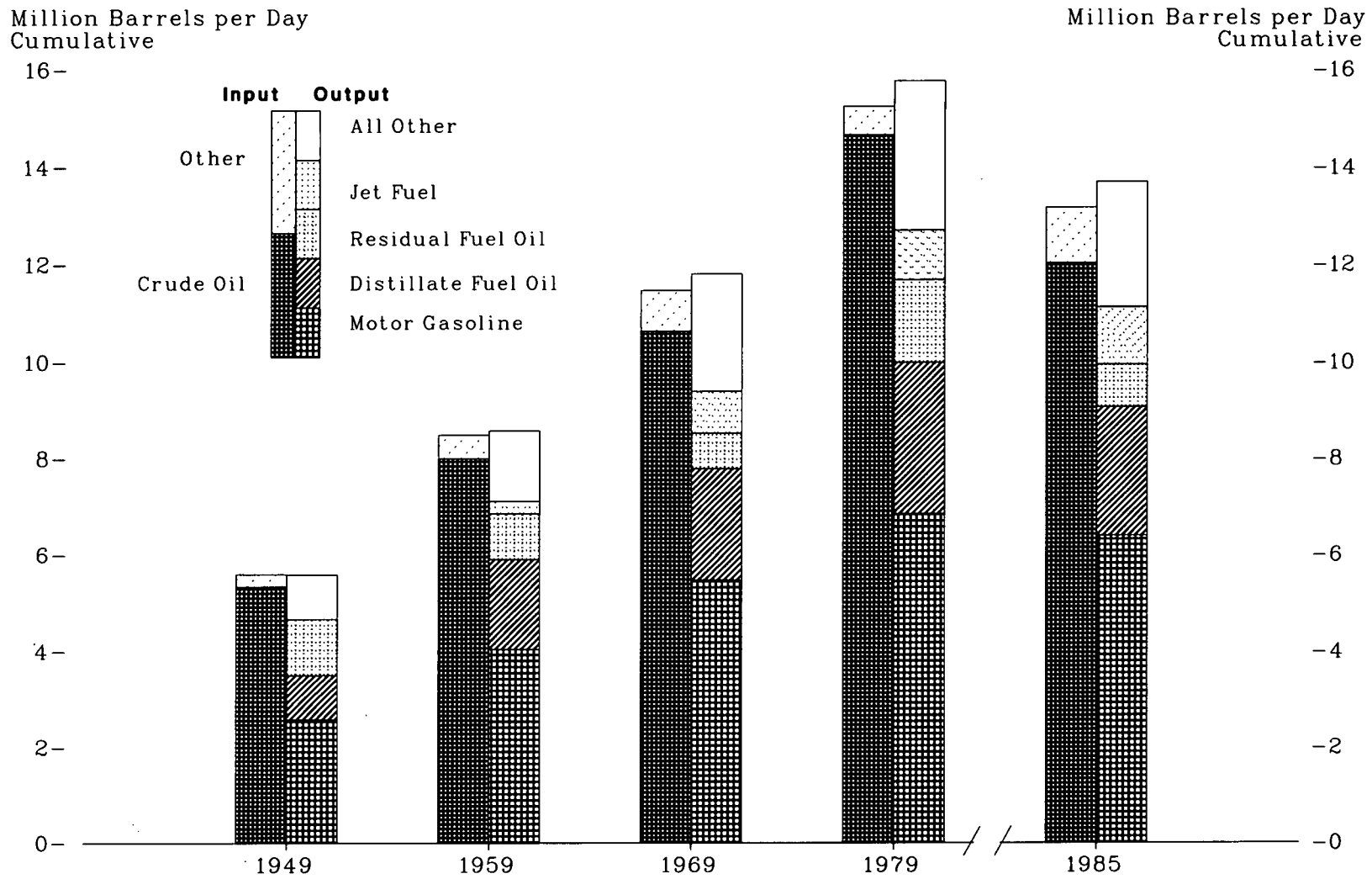
(Thousand Barrels per Day, Except as Shown)

Year	Organization of Petroleum Exporting Countries (OPEC)													U.S. Dependence on OPEC	
	Nigeria	Saudi Arabia	Venezuela	Other OPEC [2]	Total OPEC	Arab Members of OPEC [3]	Canada	Mexico	United Kingdom	Virgin Is. and Puerto Rico	Other Non-OPEC	Total Net Imports	Total Net Imports Percent of Consumption [4]	Percent of Net Imports [5]	Percent of Consumption [6]
1960	0	84	910	317	1,311	292	86	-2	-12	34	195	1,613	16.5	81.3	13.4
1961	0	73	878	333	1,283	284	167	27	-10	42	232	1,743	17.5	73.6	12.9
1962	0	74	905	232	1,210	241	229	35	-6	40	405	1,913	18.4	63.3	11.6
1963	0	108	899	274	1,282	258	243	29	-7	43	325	1,915	17.8	67.0	11.9
1964	0	131	932	296	1,359	293	272	23	-9	45	368	2,057	18.7	66.1	12.3
1965	15	158	994	308	1,475	324	297	21	-11	45	454	2,281	19.8	64.7	12.8
1966	11	147	1,018	295	1,470	291	352	6	-6	58	494	2,375	19.6	61.9	12.2
1967	5	92	937	224	1,258	177	400	13	-51	89	521	2,230	17.8	56.4	10.0
1968	9	74	886	332	1,302	272	468	15	13	143	668	2,609	19.5	49.9	9.7
1969	49	65	875	346	1,336	276	564	10	7	186	831	2,933	20.8	45.5	9.4
1970	50	30	989	274	1,343	196	736	9	-1	270	804	3,161	21.5	42.5	9.1
1971	102	128	1,019	422	1,671	327	831	-14	1	365	848	3,701	24.3	45.2	11.0
1972	251	189	959	662	2,061	529	1,082	-20	-1	428	969	4,519	27.6	45.6	12.6
1973	459	485	1,134	913	2,991	914	1,294	-28	(7)	426	1,343	6,025	34.8	49.6	17.3
1974	713	461	978	1,125	3,277	752	1,038	-27	1	475	1,127	5,892	35.4	55.6	19.7
1975	762	714	702	1,421	3,599	1,382	824	29	7	484	904	5,846	35.8	61.6	22.0
1976	1,025	1,229	699	2,110	5,063	2,423	571	53	24	488	891	7,090	40.6	71.4	29.0
1977	1,143	1,379	689	2,978	6,190	3,184	446	155	117	560	1,097	8,565	46.5	72.3	33.6
1978	919	1,142	644	3,042	5,747	2,962	359	291	173	436	996	8,002	42.5	71.8	30.5
1979	1,080	1,354	688	2,510	5,633	3,054	438	418	196	353	948	7,985	43.1	70.5	30.4
1980	857	1,259	478	1,699	4,293	2,549	347	506	169	256	794	6,365	37.3	67.4	25.2
1981	620	1,128	403	1,165	3,315	1,844	358	497	370	169	693	5,401	33.6	61.4	20.6
1982	512	551	409	663	2,136	852	397	632	442	154	538	4,298	28.1	49.7	14.0
1983	299	336	420	788	1,843	630	471	802	374	178	644	4,312	28.3	42.7	12.1
1984	215	324	544	953	2,037	817	547	714	388	184	820	4,688	29.8	43.4	13.0
1985[8]	287	167	606	756	1,815	473	694	754	299	114	588	4,264	27.2	42.6	11.6

[1] Imports minus exports; negative numbers indicate that exports exceed imports.
[2] Includes Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Qatar, and United Arab Emirates.
[3] Includes Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and United Arab Emirates.
[4] Calculated by dividing total net petroleum imports by total U.S. petroleum products supplied (consumption).
[5] Calculated by dividing net petroleum imports from OPEC countries by total net petroleum imports.
[6] Calculated by dividing net petroleum imports from OPEC countries by total U.S. petroleum product supplied (consumption).
[7] Less than 500 barrels per day.
[8] Preliminary.

Note: Data include imports for the Strategic Petroleum Reserve which began in 1977.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1960 through 1975—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. •1976 through 1980—Energy Information Administration, Energy Data Reports, *P.A.D. Districts Supply/Demand, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 52. Refinery Input and Output, 1949, 1959, 1969, 1979, and 1985



Source: See Table 52.

Table 52. Refinery Input and Output, 1949-1985

(Million Barrels per Day)

Year	Input				Output							Processing Gain or Loss
	Crude Oil	Natural Gas Plant Liquids	Other Liquids [1]	Total Input	Motor Gasoline [2]	Jet Fuel [2]	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Other Products [3]	Total Output	
1949	5.33	0.23	0.03	5.59	2.57	NA	0.93	1.16	0.06	0.85	5.59	(4)
1950	5.74	0.26	0.02	6.02	2.74	NA	1.09	1.16	0.08	0.95	6.02	(4)
1951	6.49	0.27	0.03	6.80	3.04	NA	1.30	1.29	0.09	1.09	6.80	0.01
1952	6.67	0.28	0.01	6.97	3.12	0.06	1.42	1.24	0.08	1.06	6.97	0.01
1953	7.00	0.30	(4)	7.31	3.38	0.10	1.45	1.23	0.09	1.08	7.33	0.02
1954	6.96	0.32	0.02	7.30	3.38	0.13	1.49	1.14	0.09	1.10	7.32	0.02
1955	7.48	0.34	0.03	7.86	3.65	0.16	1.65	1.15	0.12	1.17	7.89	0.03
1956	7.94	0.37	0.01	8.32	3.82	0.18	1.82	1.17	0.14	1.24	8.36	0.04
1957	7.92	0.41	(4)	8.33	3.88	0.17	1.83	1.14	0.15	1.20	8.37	0.04
1958	7.64	0.37	0.09	8.11	3.87	0.20	1.73	1.00	0.16	1.22	8.17	0.06
1959	7.99	0.42	0.07	8.48	4.04	0.25	1.86	0.95	0.19	1.28	8.57	0.09
1960	8.07	0.45	0.06	8.58	4.13	0.24	1.82	0.91	0.21	1.42	8.73	0.15
1961	8.18	0.46	0.06	8.71	4.15	0.26	1.91	0.86	0.22	1.49	8.89	0.18
1962	8.41	0.50	0.08	8.99	4.30	0.28	1.97	0.81	0.21	1.59	9.16	0.18
1963	8.69	0.52	0.09	9.30	4.39	0.27	2.09	0.76	0.26	1.72	9.50	0.20
1964	8.81	0.58	0.07	9.46	4.37	0.29	2.03	0.73	0.29	1.97	9.68	0.22
1965	9.04	0.62	0.09	9.75	4.51	0.52	2.10	0.74	0.29	1.81	9.97	0.22
1966	9.44	0.65	0.09	10.18	4.77	0.59	2.15	0.72	0.29	1.90	10.43	0.25
1967	9.82	0.67	0.09	10.58	4.94	0.75	2.20	0.76	0.31	1.92	10.87	0.29
1968	10.31	0.71	0.08	11.10	5.20	0.86	2.29	0.75	0.32	1.99	11.42	0.32
1969	10.63	0.72	0.11	11.46	5.47	0.88	2.32	0.73	0.34	2.06	11.79	0.34
1970	10.87	0.76	0.12	11.75	5.70	0.83	2.45	0.71	0.35	2.08	12.11	0.36
1971	11.20	0.78	0.14	12.12	5.97	0.83	2.50	0.75	0.36	2.09	12.50	0.38
1972	11.70	0.83	0.17	12.69	6.28	0.85	2.63	0.80	0.36	2.17	13.08	0.39
1973	12.43	0.82	0.15	13.40	6.53	0.86	2.82	0.97	0.37	2.30	13.85	0.45
1974	12.13	0.75	0.14	13.02	6.36	0.84	2.67	1.07	0.34	2.23	13.50	0.48
1975	12.44	0.71	0.07	13.23	6.52	0.87	2.65	1.24	0.31	2.10	13.68	0.46
1976	13.42	0.73	0.06	14.20	6.84	0.92	2.92	1.38	0.34	2.28	14.68	0.48
1977	14.60	0.67	0.07	15.35	7.03	0.97	3.28	1.75	0.35	2.49	15.87	0.52
1978	14.74	0.64	0.09	15.47	7.17	0.97	3.17	1.67	0.35	2.64	15.97	0.50
1979	14.65	0.51	0.08	15.24	6.84	1.01	3.15	1.69	0.34	2.74	15.76	0.53
1980	13.48	0.46	0.08	14.02	6.49	1.00	2.66	1.58	0.33	2.56	14.62	0.60
1981	12.47	0.52	0.49	13.48	6.40	0.97	2.61	1.32	0.31	2.37	13.99	0.51
1982	11.77	0.52	0.57	12.86	6.34	0.98	2.61	1.07	0.27	2.13	13.39	0.53
1983	11.69	0.46	0.50	12.65	6.34	1.02	2.46	0.85	0.33	2.14	13.14	0.49
1984	12.04	0.50	0.58	13.13	6.45	1.13	2.68	0.89	0.36	2.16	13.68	0.55
1985[5]	12.02	0.49	0.65	13.17	6.40	1.17	2.68	0.87	0.38	2.19	13.69	0.53

[1] Prior to 1981, includes unfinished oils (net), hydrogen, and hydrocarbons not included elsewhere. 1981 forward includes unfinished oils (net), motor gasoline blending components (net), aviation gasoline blending components (net), hydrogen, other hydrocarbons, and alcohol. See Explanatory Note 4.

[2] Prior to 1964, motor gasoline data were for total gasoline, including motor gasoline, aviation gasoline, and special naphtha. Prior to 1965, kerosene-type jet fuel was included in kerosene.

[3] Includes kerosene, petrochemical feedstocks, lubricants, wax, petroleum coke, asphalt, road oil, still gas, and miscellaneous products. Since 1964, aviation gasoline and special naphthas are included.

[4] Less than 5,000 barrels per day.

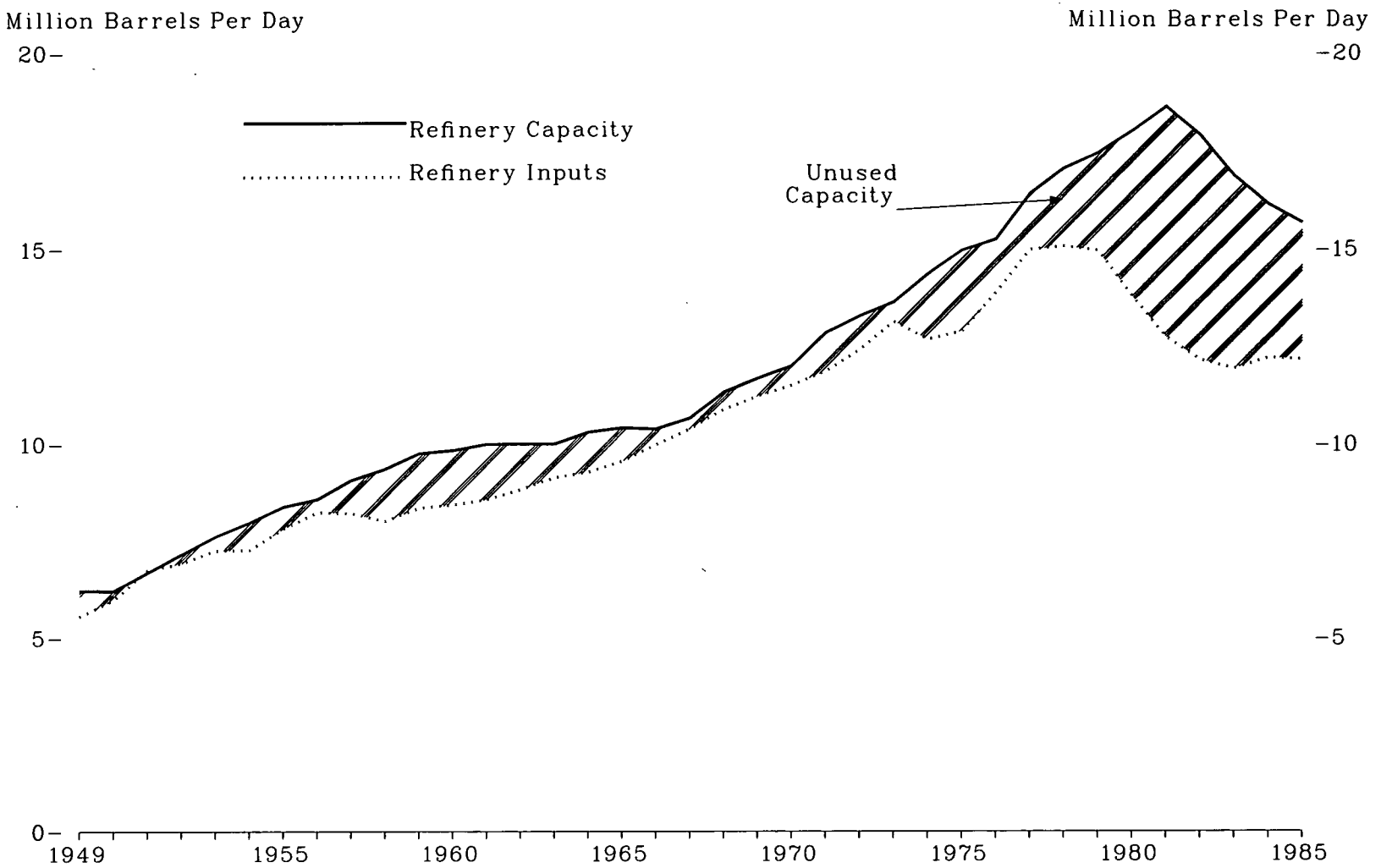
[5] Preliminary.

NA = Not available.

Note: Sum of components may not equal total due to independent rounding.

Sources: •1949 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* • 1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 53. Refinery Capacity and Utilization, 1949-1985



Source: See Table 53.

Table 53. Refinery Capacity and Utilization, 1949-1985

(Million Barrels per Day, Except as Noted)

Year	Operable Refineries		Gross Input to Distillation Units [3]	Utilization [4] (percent)
	Number [1]	Capacity [2]		
1949	336	6.23	5.56	89.2
1950	320	6.22	5.98	92.5
1951	325	6.70	6.76	97.5
1952	327	7.16	6.93	93.8
1953	315	7.62	7.26	93.1
1954	308	7.98	7.27	88.8
1955	296	8.39	7.82	92.2
1956	317	8.58	8.25	93.5
1957	317	9.07	8.22	89.2
1958	315	9.36	8.02	83.9
1959	313	9.76	8.36	85.2
1960	309	9.84	8.44	85.1
1961	309	10.00	8.57	85.7
1962	309	10.01	8.83	88.2
1963	304	10.01	9.14	90.0
1964	298	10.31	9.28	89.6
1965	293	10.42	9.56	91.8
1966	280	10.39	9.99	94.9
1967	276	10.66	10.39	94.4
1968	282	11.35	10.89	94.5
1969	279	11.70	11.25	94.8
1970	276	12.02	11.52	92.6
1971	272	12.86	11.88	90.9
1972	274	13.29	12.43	92.3
1973	268	13.64	13.15	93.9
1974	273	14.36	12.69	86.6
1975	279	14.96	12.90	85.5
1976	276	15.24	13.88	87.8
1977	282	16.40	14.98	89.6
1978	296	17.05	15.07	87.4
1979	308	17.44	14.96	84.4
1980	319	17.99	13.80	75.4
1981	324	18.62	12.75	68.6
1982	301	17.89	12.17	69.9
1983	258	16.86	11.95	71.7
1984	247	16.14	12.22	76.2
1985[5]	223	15.66	12.18	77.6

[1] Prior to 1956, the number of refineries includes only those in operation on January 1. For 1957 and forward, the number of refineries includes all operable refineries on January 1 (see Glossary).

[2] Capacity in million barrels per calendar day on January 1.

[3] See Explanatory Note 15.

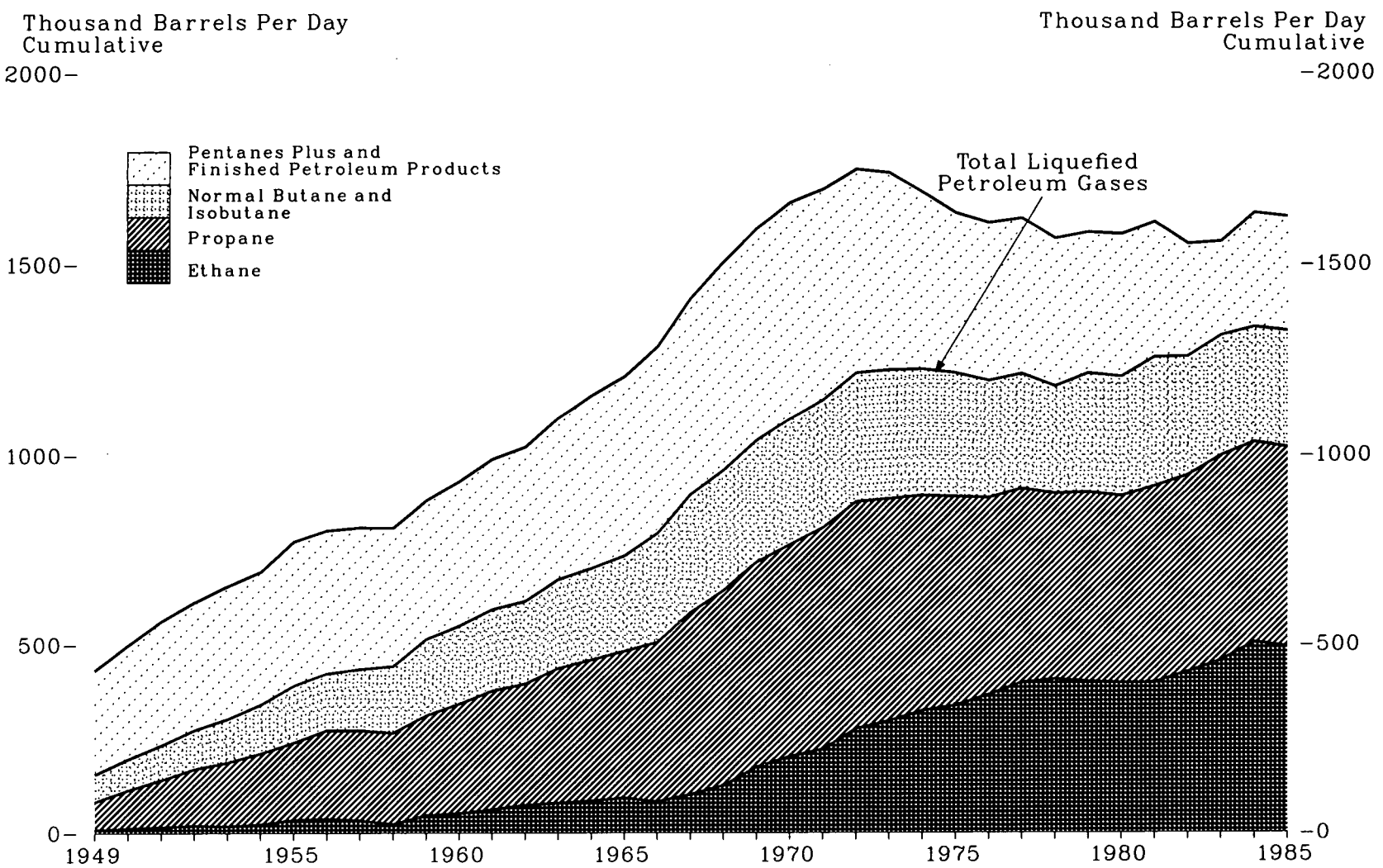
[4] For 1949 through 1980, utilization is derived by dividing gross input to distillation units by one-half of the current year January 1 capacity and the following year January 1 capacity. Percentages were derived from unrounded numbers. For 1981 and forward, utilization is derived by averaging reported monthly utilization.

[5] Preliminary.

Note: Data are for refineries in the United States, excluding the Hawaiian Foreign Trade Zone.

Sources: **Operable Refineries:** •1949 through 1977—Bureau of Mines, Mineral Industry Surveys, *Petroleum Refineries, Annual.* •1978 through 1981—Energy Information Administration, Energy Data Reports, *Petroleum Refineries in the United States and U.S. Territories.* • 1982 and forward—Energy Information Administration, *Petroleum Supply Annual.* **Gross Input to Distillation Units:** •1949 through 1966—Bureau of Mines, *Minerals Yearbook,* "Natural Gas Liquids" and "Crude Petroleum and Petroleum Products" chapters. •1967 through 1977—Bureau of Mines, Mineral Industry Surveys, *Petroleum Refineries, Annual.* •1978 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Refineries in the United States and U.S. Territories.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.* **Utilization:** •1949 through 1980—calculated. •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 54. Natural Gas Plant Liquids Production, 1949-1985



Source: See Table 54.

Table 54. Natural Gas Plant Liquids Production, 1949-1985

(Thousand Barrels per Day)

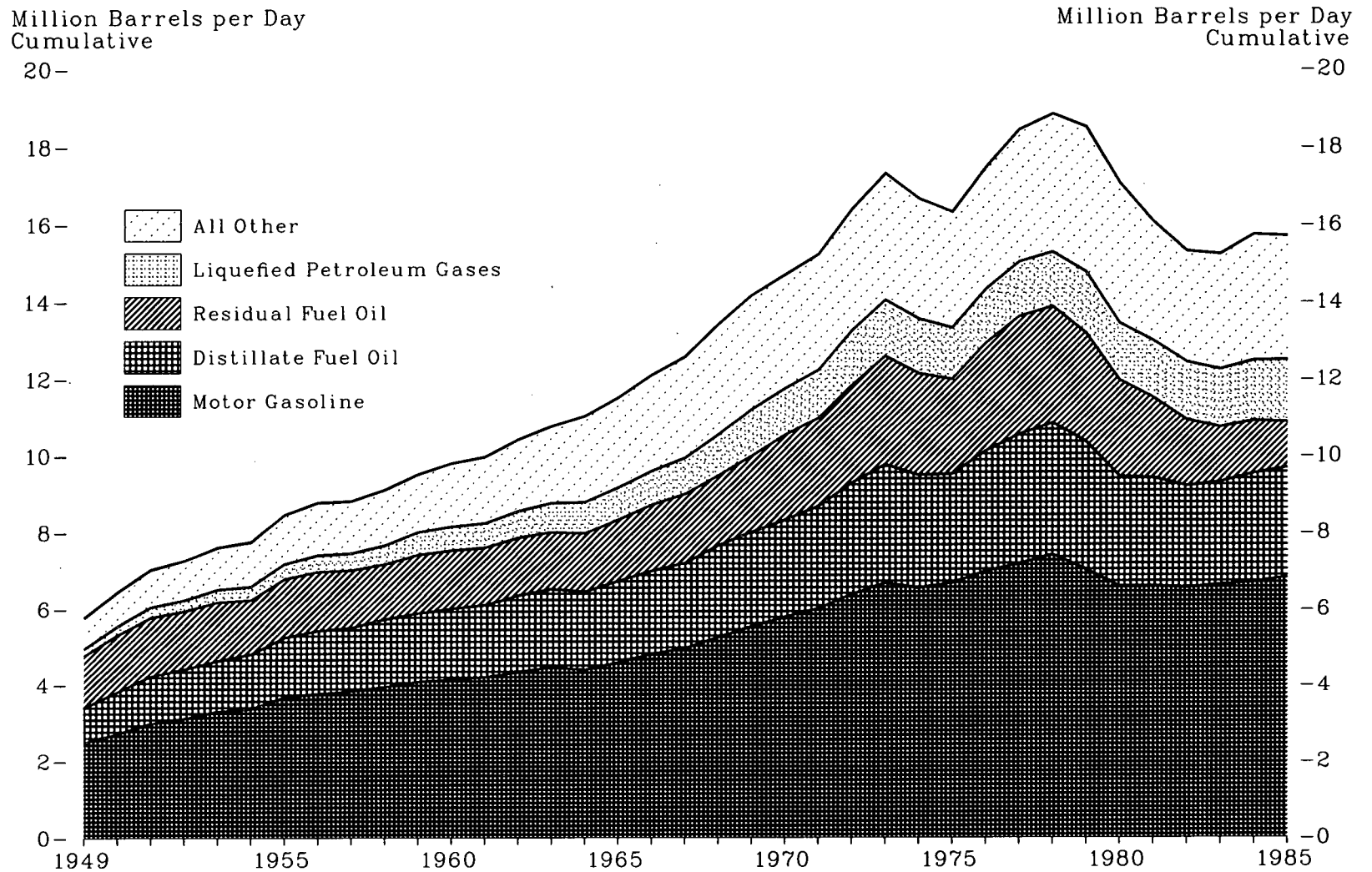
Year	Liquefied Petroleum Gases					Pentanes Plus [3]	Finished Petroleum Products [4]	Total
	Ethane [1]	Propane [1,2]	Normal Butane [2]	Isobutane	Total			
1949	8	74	61	11	155	223	53	430
1950	12	101	69	13	195	238	66	499
1951	15	125	77	15	232	256	73	561
1952	19	150	86	18	273	269	70	611
1953	17	169	97	19	301	282	71	654
1954	22	188	106	24	339	290	61	691
1955	34	205	120	30	390	313	68	771
1956	37	235	123	27	422	310	68	800
1957	33	239	132	30	434	311	63	808
1958	23	242	141	36	442	307	58	808
1959	46	265	159	43	514	312	54	879
1960	51	291	161	45	549	333	47	929
1961	61	315	164	53	593	355	43	991
1962	73	321	165	55	614	367	41	1,021
1963	78	358	175	61	672	380	47	1,098
1964	84	375	178	62	699	408	48	1,154
1965	92	390	185	67	734	434	41	1,210
1966	82	424	214	73	792	456	37	1,284
1967	101	482	232	80	895	486	29	1,409
1968	125	517	236	81	960	509	35	1,504
1969	173	543	248	74	1,037	526	27	1,590
1970	201	561	248	84	1,095	540	25	1,660
1971	221	586	249	88	1,144	523	25	1,693
1972	275	600	249	92	1,215	507	21	1,744
1973	296	587	249	92	1,225	497	16	1,738
1974	323	569	244	92	1,227	454	7	1,688
1975	337	552	237	90	1,217	409	7	1,633
1976	365	521	227	82	1,195	403	6	1,604
1977	397	513	223	81	1,214	399	5	1,618
1978	406	491	210	75	1,182	382	3	1,567
1979	400	500	212	104	1,216	342	26	1,584
1980	396	494	210	105	1,205	345	23	1,573
1981	397	519	224	117	1,256	334	18	1,609
1982	426	519	204	109	1,258	282	11	1,550
1983	456	541	217	100	1,314	233	12	1,559
1984	505	527	203	99	1,334	292	4	1,630
1985[5]	493	526	197	110	1,325	289	8	1,622

[1] Reported production of ethane-propane mixtures have been allocated 70 percent ethane and 30 percent propane.
[2] Reported production of butane-propane mixtures have been allocated 60 percent butane and 40 percent propane.
[3] Prior to 1984, this category was reported separately as natural gasoline, isopentane, and plant condensate.
[4] Includes motor gasoline, aviation gasoline, special naphthas, distillate fuel oil, and miscellaneous products.
[5] Preliminary.

Note: Sum of components may not equal total due to independent rounding.

Sources: •1949 through 1968—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. •1969 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 55. Petroleum Products Supplied by Type, 1949-1985



Source: See Table 55.

Table 55. Petroleum Products Supplied [1] by Type, 1949-1985

(Million Barrels per Day)

Year	Motor Gasoline [2]	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Other Products [3]	Total Products	Percentage Change from Previous Year [4]
1949	2.50	NA	0.90	1.36	0.19	0.81	5.76	—
1950	2.72	NA	1.08	1.52	0.23	0.90	6.46	12.1
1951	2.99	NA	1.23	1.55	0.28	0.98	7.02	8.6
1952	3.12	0.05	1.30	1.52	0.30	0.98	7.27	3.9
1953	3.30	0.09	1.34	1.54	0.33	1.00	7.60	4.3
1954	3.37	0.13	1.44	1.43	0.35	1.03	7.76	2.1
1955	3.66	0.15	1.59	1.53	0.40	1.12	8.46	9.0
1956	3.75	0.20	1.68	1.54	0.44	1.16	8.78	4.1
1957	3.82	0.20	1.69	1.50	0.45	1.15	8.81	0.1
1958	3.93	0.26	1.79	1.45	0.49	1.19	9.12	3.5
1959	4.07	0.29	1.81	1.54	0.58	1.24	9.53	4.5
1960	4.13	0.28	1.87	1.53	0.62	1.36	9.80	3.1
1961	4.20	0.29	1.90	1.50	0.64	1.44	9.98	1.5
1962	4.34	0.31	2.01	1.50	0.70	1.55	10.40	4.2
1963	4.47	0.32	2.05	1.48	0.76	1.68	10.74	3.3
1964	4.40	0.32	2.05	1.52	0.81	1.92	11.02	2.9
1965	4.59	0.60	2.13	1.61	0.84	1.74	11.51	4.2
1966	4.81	0.67	2.18	1.72	0.89	1.82	12.08	5.0
1967	4.96	0.82	2.24	1.79	0.94	1.81	12.56	3.9
1968	5.26	0.95	2.39	1.83	1.05	1.91	13.39	6.9
1969	5.53	0.99	2.47	1.98	1.22	1.95	14.14	5.3
1970	5.78	0.97	2.54	2.20	1.22	1.98	14.70	4.0
1971	6.01	1.01	2.66	2.30	1.25	1.98	15.21	3.5
1972	6.38	1.05	2.91	2.53	1.42	2.08	16.37	7.9
1973	6.67	1.06	3.09	2.82	1.45	2.21	17.31	5.5
1974	6.54	0.99	2.95	2.64	1.41	2.13	16.65	-3.8
1975	6.67	1.00	2.85	2.46	1.33	2.00	16.32	-2.0
1976	6.98	0.99	3.13	2.80	1.40	2.16	17.46	7.3
1977	7.18	1.04	3.35	3.07	1.42	2.37	18.43	5.3
1978	7.41	1.06	3.43	3.02	1.41	2.51	18.85	2.3
1979	7.03	1.08	3.31	2.83	1.59	2.67	18.51	-1.8
1980	6.58	1.07	2.87	2.51	1.47	2.57	17.06	-7.6
1981	6.59	1.01	2.83	2.09	1.47	2.08	16.06	-6.1
1982	6.54	1.01	2.67	1.72	1.50	1.86	15.30	-4.7
1983	6.62	1.05	2.69	1.42	1.51	1.94	15.23	-0.4
1984	6.69	1.18	2.84	1.37	1.57	2.07	15.73	3.5
1985[5]	6.82	1.19	2.86	1.19	1.61	2.02	15.70	-0.5

[1] See Explanatory Notes 4, 5, and 6.

[2] Prior to 1964, motor gasoline data were for total gasoline, including motor gasoline, aviation gasoline, and special naphtha.

[3] Includes kerosene, petrochemical feedstocks, lubricants, wax, petroleum coke, asphalt, road oil, still gas, natural gasoline, unfractionated stream, plant condensate, pentanes plus, and miscellaneous products. Since 1964, aviation gasoline and special naphthas are included. Prior to 1965, kerosene-type jet fuel was included in kerosene. For 1981 and forward, other products include negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, product supplied also includes crude oil burned as fuel.

[4] Percent change from previous year calculated from data prior to rounding.

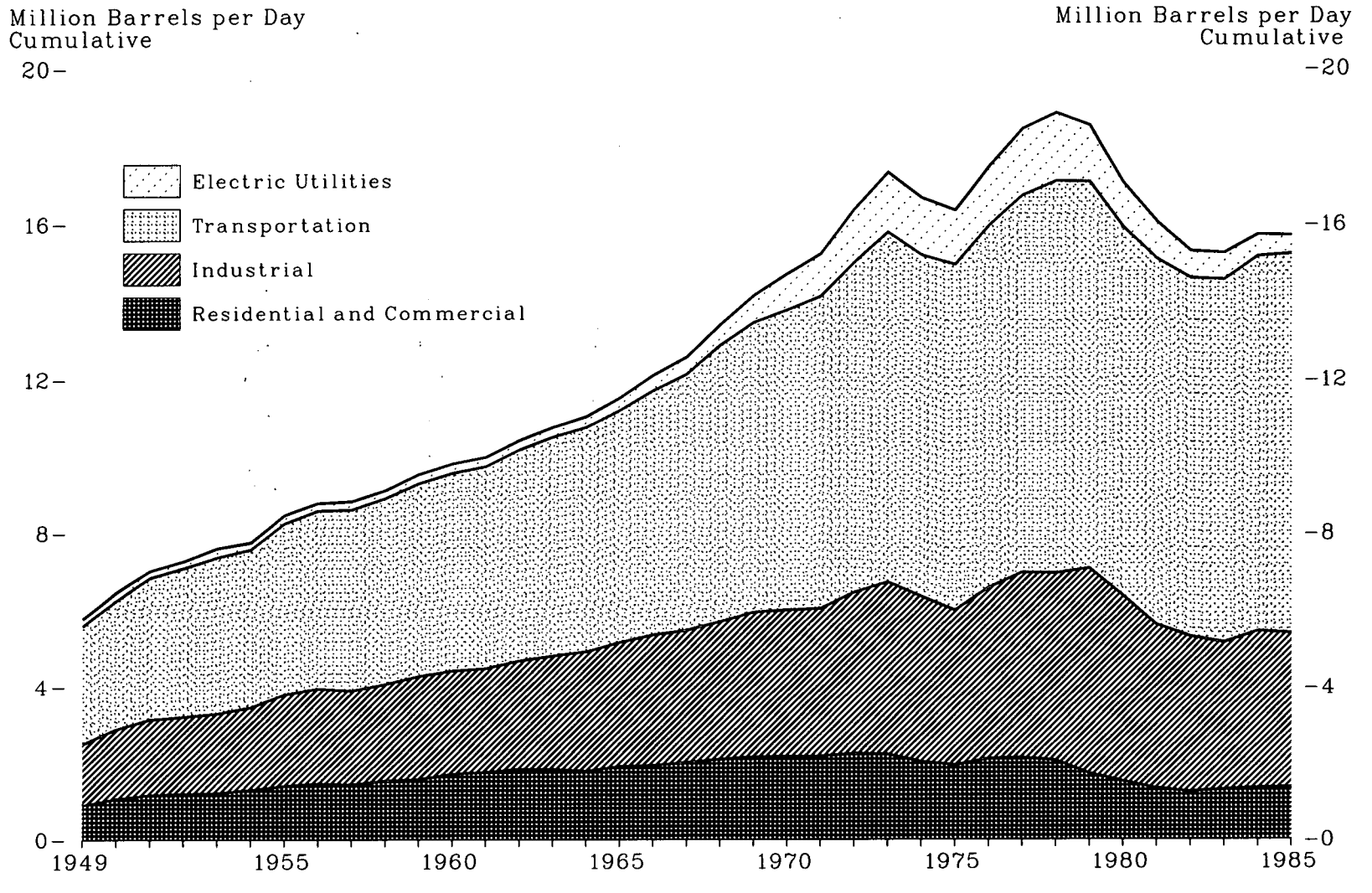
[5] Preliminary.

NA = Not available.

Note: Sum of components may not equal total due to independent rounding.

Sources: •1949 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 56. Petroleum Products Supplied to End-Use Sectors, 1949-1985



Source: See Table 56.

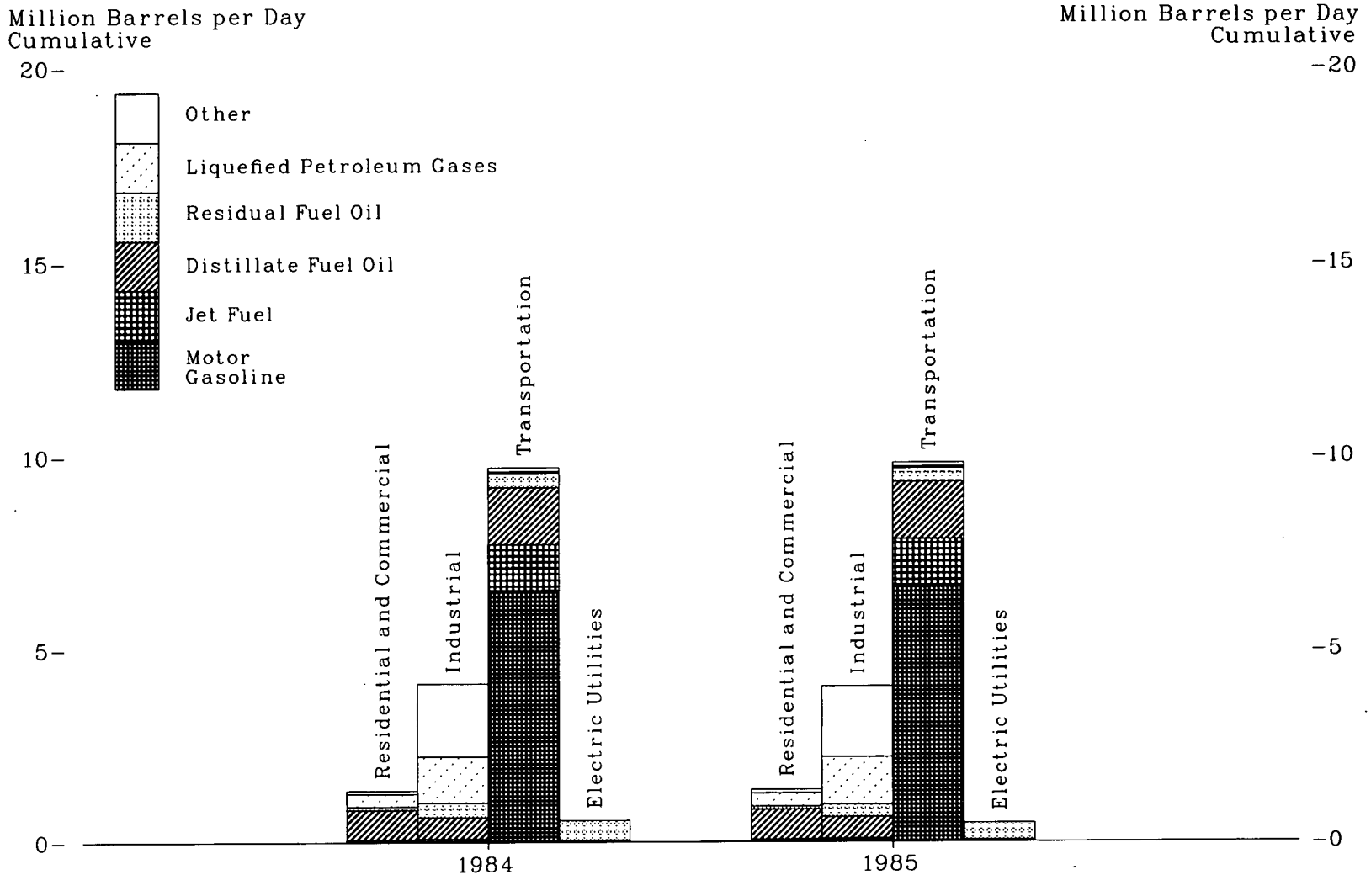
Table 56. Petroleum Products Supplied [1] to End-Use Sectors, 1949-1985

(Million Barrels per Day)

Year	Residential and Commercial	Industrial	Transportation	Electric Utilities	Total
1949	0.90	1.60	3.08	0.18	5.76
1950	1.07	1.82	3.36	0.21	6.46
1951	1.17	1.98	3.69	0.18	7.02
1952	1.20	2.02	3.87	0.18	7.27
1953	1.22	2.08	4.07	0.23	7.60
1954	1.30	2.16	4.11	0.18	7.76
1955	1.40	2.39	4.46	0.21	8.46
1956	1.46	2.49	4.62	0.20	8.78
1957	1.43	2.46	4.71	0.22	8.81
1958	1.53	2.54	4.83	0.21	9.12
1959	1.57	2.71	5.01	0.24	9.53
1960	1.71	2.71	5.14	0.24	9.80
1961	1.76	2.72	5.25	0.24	9.98
1962	1.84	2.84	5.48	0.24	10.40
1963	1.84	2.97	5.68	0.26	10.74
1964	1.79	3.13	5.83	0.28	11.02
1965	1.91	3.25	6.03	0.32	11.51
1966	1.94	3.41	6.35	0.39	12.08
1967	2.02	3.45	6.65	0.44	12.56
1968	2.10	3.59	7.18	0.52	13.39
1969	2.16	3.78	7.51	0.69	14.14
1970	2.18	3.82	7.77	0.93	14.70
1971	2.18	3.86	8.08	1.09	15.21
1972	2.25	4.20	8.55	1.36	16.37
1973	2.23	4.49	9.05	1.54	17.31
1974	2.04	4.30	8.84	1.48	16.65
1975	1.95	4.04	8.95	1.39	16.32
1976	2.12	4.45	9.37	1.52	17.46
1977	2.14	4.83	9.75	1.71	18.43
1978	2.07	4.88	10.14	1.75	18.85
1979	1.73	5.35	10.00	1.44	18.51
1980	1.52	4.84	9.55	1.15	17.06
1981	1.33	4.28	9.48	0.96	16.06
1982	1.24	4.06	9.30	0.69	15.30
1983	1.30	3.85	9.41	0.68	15.23
1984	1.34	4.10	9.72	0.56	15.73
1985[2]	1.36	4.03	9.83	0.48	15.70

[1] See Explanatory Note 5.
[2] Estimated.
Note: Sum of components may not equal total due to independent rounding.
Sources: **Total:** •1949 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly* and *Weekly Petroleum Status Report.* **Other Data:** •1949 through 1959—Energy Information Administration estimates. •1960 through 1984—Energy Information Administration, "State Energy Data System, 1960-1984." •1985—Energy Information Administration estimates.

Figure 57. Petroleum Products Supplied by Type and to End-Use Sectors, 1984 and 1985



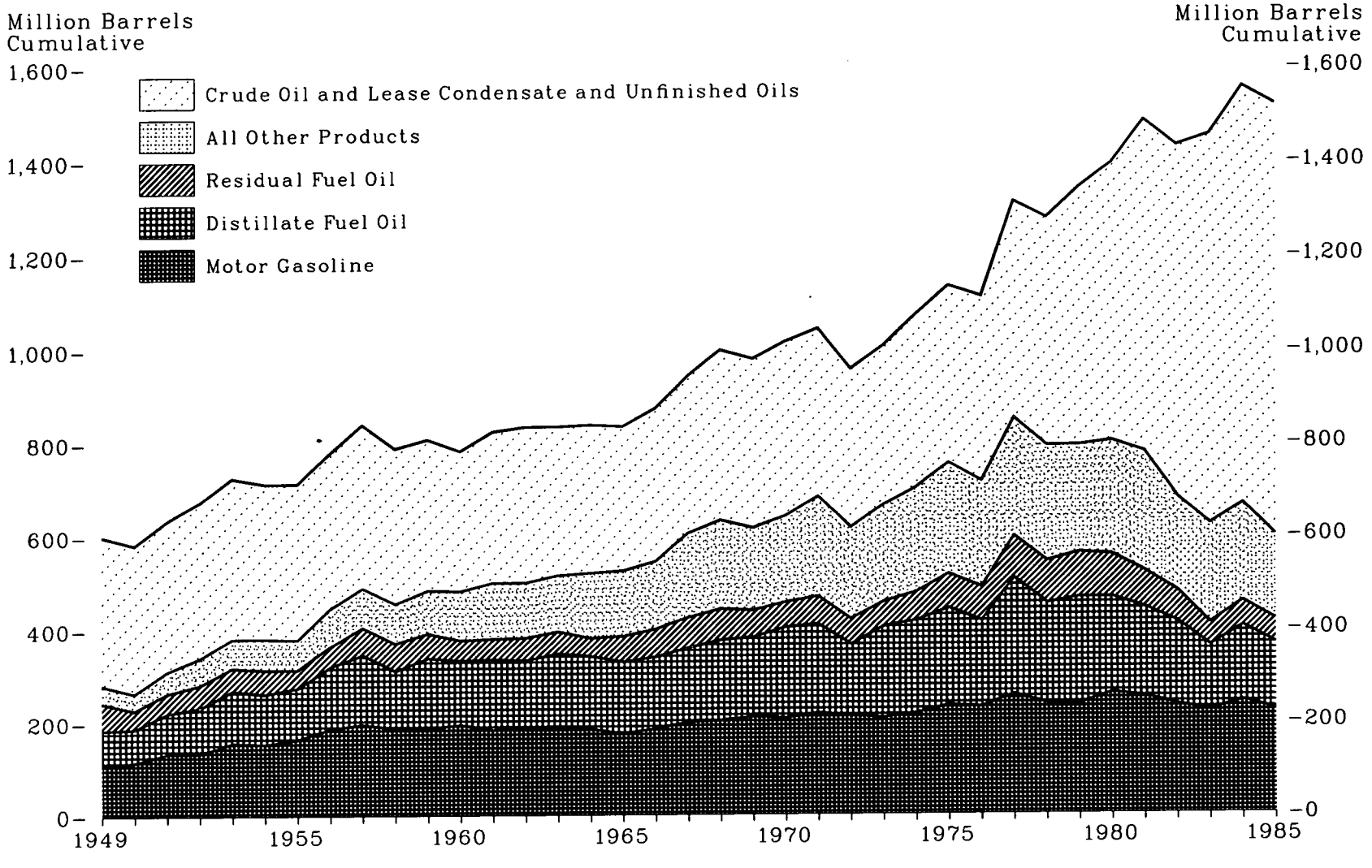
Source: See Table 57.

Table 57. Petroleum Products Supplied [1] by Type and to End-Use Sectors, 1984 and 1985

Year and Refined Product	Residential and Commercial		Industrial		Transportation		Electric Utilities		Total	
	Million Barrels per Day	Quadrillion Btu	Million Barrels per Day	Quadrillion Btu	Million Barrels per Day	Quadrillion Btu	Million Barrels per Day	Quadrillion Btu	Million Barrels per Day	Quadrillion Btu
1984										
Asphalt and Road Oil	0	0	0.41	0.99	0	0	0	0	0.41	0.99
Aviation Gasoline	0	0	0	0	0.02	0.04	0	0	0.02	0.04
Distillate Fuel Oil	0.77	1.64	0.56	1.19	1.47	3.14	0.04	0.09	2.84	6.07
Jet Fuel	0	0	0	0	1.18	2.41	0	0	1.18	2.41
Kerosene	0.09	0.18	0.03	0.06	0	0	0	0	0.12	0.24
Liquefied Petroleum Gases	0.34	0.45	1.20	1.58	0.04	0.05	0	0	1.57	2.07
Lubricants	0	0	0.08	0.18	0.08	0.17	0	0	0.16	0.35
Motor Gasoline	0.06	0.11	0.08	0.16	6.55	12.60	0	0	6.69	12.87
Residual Fuel Oil	0.09	0.21	0.38	0.87	0.38	0.88	0.52	1.19	1.37	3.15
All Other [2]	0	0	1.37	2.85	0	0	[3]	0.01	1.37	2.86
Total	1.34	2.58	4.10	7.89	9.72	19.29	0.56	1.29	15.73	31.05
1985 [4]										
Asphalt and Road Oil	0	0	0.42	1.02	0	0	0	0	0.42	1.02
Aviation Gasoline	0	0	0	0	0.03	0.05	0	0	0.03	0.05
Distillate Fuel Oil	0.78	1.65	0.56	1.19	1.48	3.16	0.04	0.08	2.86	6.08
Jet Fuel	0	0	0	0	1.19	2.45	0	0	1.19	2.45
Kerosene	0.09	0.19	0.03	0.07	0	0	0	0	0.12	0.26
Liquefied Petroleum Gases	0.35	0.46	1.23	1.62	0.04	0.05	0	0	1.61	2.13
Lubricants	0	0	0.07	0.16	0.07	0.16	0	0	0.14	0.32
Motor Gasoline	0.06	0.11	0.08	0.16	6.67	12.80	0	0	6.82	13.07
Residual Fuel Oil	0.08	0.19	0.33	0.76	0.35	0.79	0.44	1.00	1.19	2.74
All Other [2]	0	0	1.30	2.74	0	0	[3]	0.01	1.30	2.74
Total	1.36	2.60	4.03	7.72	9.83	19.45	0.48	1.09	15.70	30.85

[1] See Explanatory Notes 4, 5, and 6.
[2] Includes petrochemical feedstock, special naphthas, wax, petroleum coke, still gas, natural gasoline, pentanes plus, crude oil, and miscellaneous products.
[3] Less than 5 thousand barrels per day.
[4] Estimated.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1984—Energy Information Administration, "State Energy Data System, 1960-1984." •1985—Energy Information Administration estimates.

Figure 58. Primary Stocks of Crude Oil and Petroleum Products by Type, End of Year 1949-1985



Source: See Table 58.

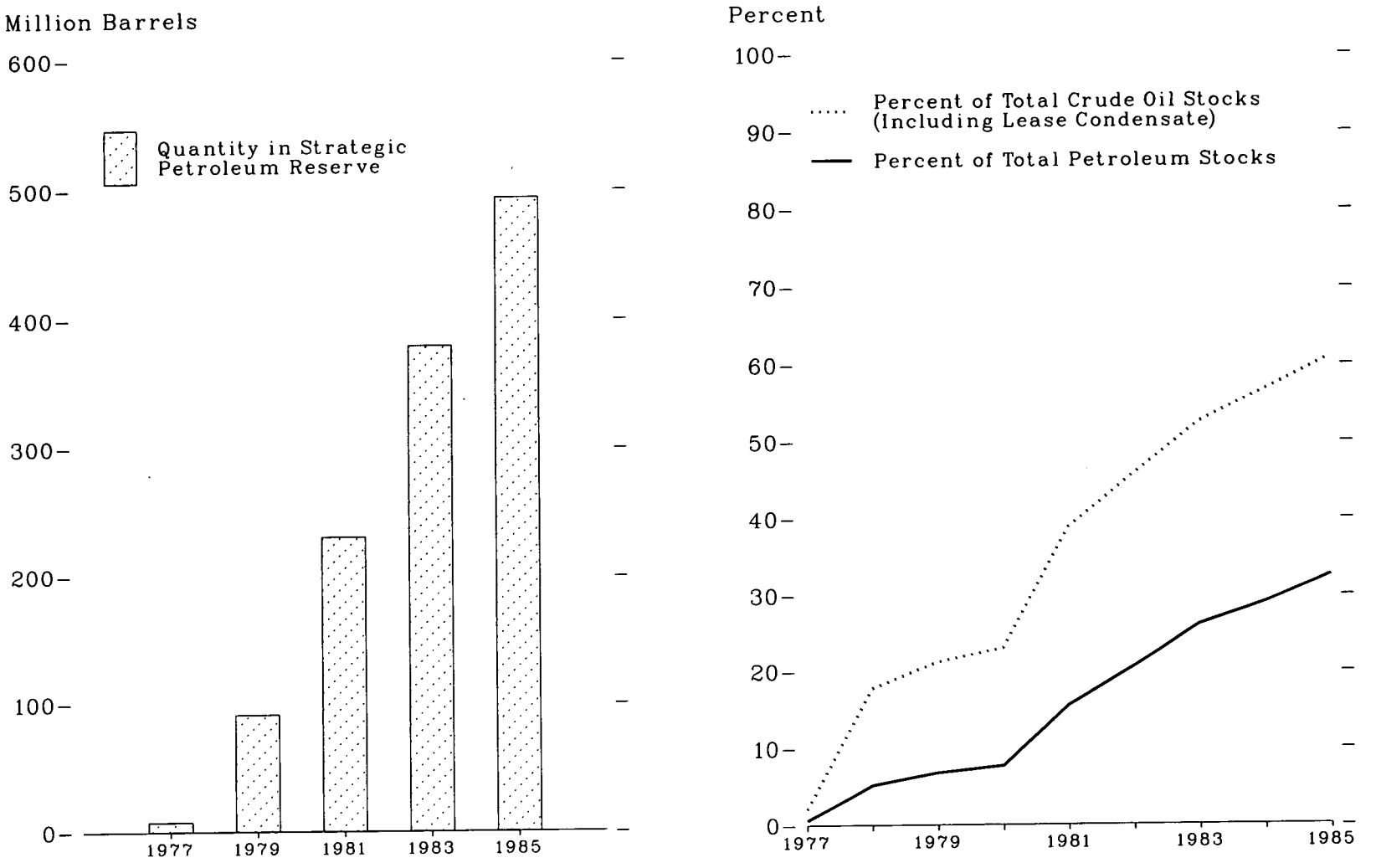
Table 58. Primary Stocks of Crude Oil and Petroleum Products by Type, End of Year 1949-1985

(Million Barrels)

Year	Crude Oil and Lease Condensate [1]	Petroleum Products								
		Motor Gasoline [2]	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Liquefied Petroleum Gases	Unfinished Oils	Other Products [3]	Total Products	Total Petroleum
1949	253	110	NA	75	60	1	66	37	350	603
1950	248	116	NA	72	41	2	70	34	334	583
1951	256	135	NA	87	43	2	67	45	378	634
1952	272	135	2	99	49	3	62	53	402	674
1953	274	158	3	112	49	4	69	56	451	726
1954	258	155	3	108	52	7	74	57	457	715
1955	266	165	3	111	39	7	68	55	449	715
1956	266	187	5	134	44	14	67	63	514	780
1957	282	197	5	149	60	14	69	66	560	841
1958	263	187	6	125	60	16	70	63	526	789
1959	257	188	8	151	54	19	67	66	552	809
1960	240	195	7	138	45	23	62	76	545	785
1961	245	184	8	152	45	31	79	81	580	825
1962	252	189	10	144	50	25	82	83	582	834
1963	237	191	9	157	48	28	82	85	598	836
1964	230	186	19	156	40	30	87	92	609	839
1965	220	175	19	155	56	30	89	92	616	836
1966	238	186	19	154	61	35	89	91	636	874
1967	249	200	22	160	66	64	90	93	695	944
1968	272	204	24	173	67	76	93	89	727	1,000
1969	265	211	28	172	58	60	98	88	715	980
1970	276	209	28	195	54	67	99	89	741	1,018
1971	260	219	28	191	60	95	101	92	784	1,044
1972	246	213	25	154	55	86	95	84	713	959
1973	242	209	29	196	53	99	99	80	766	1,008
1974	265	218	29	200	60	113	106	82	809	1,074
1975	271	235	30	209	74	125	106	82	862	1,133
1976	285	231	32	186	72	116	110	78	826	1,112
1977	348	258	35	250	90	136	113	82	964	1,312
1978	376	238	34	216	90	132	109	82	901	1,278
1979	430	237	39	229	96	111	118	82	911	1,341
1980	466	261	42	205	92	120	124	82	926	1,392
1981	594	253	41	192	78	135	111	80	890	1,484
1982	644	235	37	179	66	94	105	70	786	1,430
1983	723	222	39	140	49	101	108	72	731	1,454
1984	796	243	42	161	53	101	94	67	760	1,556
1985[4]	812	223	40	144	51	73	107	67	704	1,516

[1] Includes crude oil stored in the Strategic Petroleum Reserve, which began in 1977.
[2] Prior to 1964, motor gasoline data were for total gasoline which included motor gasoline, aviation gasoline, and special naphthas.
[3] Includes kerosene, petrochemical feedstocks, lubricants, wax, petroleum coke, asphalt, road oil, natural gasoline, unfractionated stream, plant condensate, and miscellaneous products. Since 1964, aviation gasoline and special naphthas are included. For 1981 and forward, includes aviation gasoline blending components, hydrogen, other hydrocarbons, and alcohol. For 1984 and forward, includes pentanes plus.
[4] Preliminary.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 59. Strategic Petroleum Reserve, 1977-1985



Source: See Table 59.

Table 59. Strategic Petroleum Reserve, 1977-1985

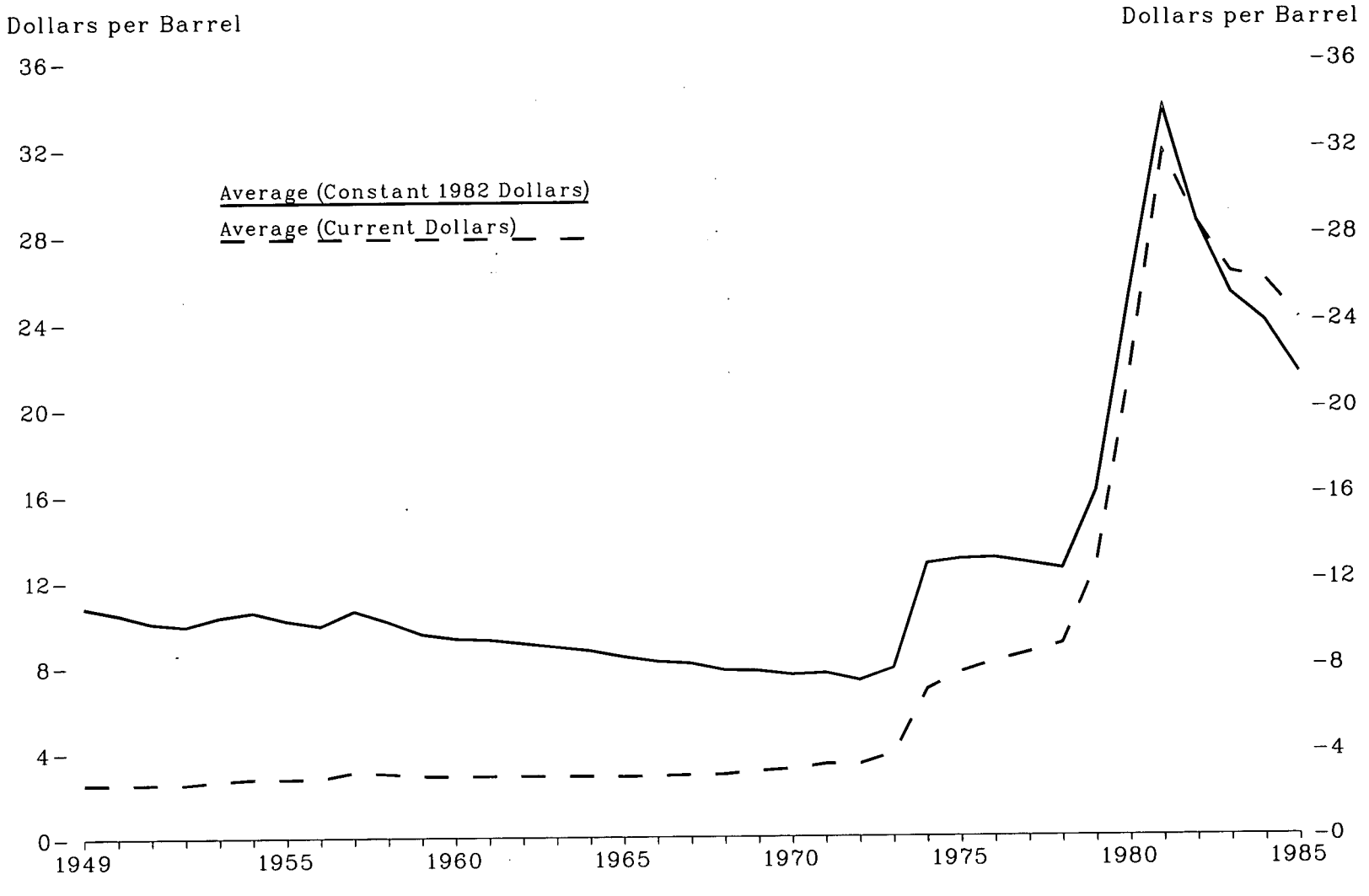
(Million Barrels, Except as Noted)

Year	Crude Oil Imports	Domestic Crude Oil Deliveries	End-of-Year Stocks			Days of Net Petroleum Imports [3]
			Quantity [1]	Percent of Crude Oil [2] Stocks	Percent of Total Petroleum Stocks	
1977	7.54	[4] 0.37	7.46	2.1	0.6	1
1978	58.80	0	66.86	17.8	5.2	8
1979	24.43	[5]	91.19	21.2	6.8	11
1980	16.07	1.30	107.80	23.1	7.7	17
1981	93.30	28.79	230.34	38.8	15.5	43
1982	60.19	3.79	293.83	45.7	20.5	68
1983	85.29	0.42	379.09	52.4	26.1	88
1984	72.04	[5]	450.51	56.6	28.9	96
1985	43.12	0.17	493.32	60.8	32.5	116

[1] Stocks do not include imported quantities in transit to Strategic Petroleum Reserve terminals, pipeline fill, and above-ground storage.
[2] Including lease condensate stocks.
[3] Derived by dividing end-of-year strategic petroleum reserve stocks by annual average daily net imports of all petroleum. Calculated prior to rounding.
[4] The quantity of domestic fuel oil which was in storage prior to injection of foreign crude oil.
[5] Less than 0.005 million barrels.

Sources: **Domestic Crude Oil Deliveries:** Department of Energy, Assistant Secretary for Fossil Energy, unpublished data. **All Other Data:** •1977 through 1980—Energy Information Administration, Energy Data Report, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* • 1985—Energy Information Administration, *Petroleum Supply Monthly.*

Figure 60. Crude Oil Wellhead Prices, 1949-1985



Source: See Table 60.

Table 60. Crude Oil Wellhead Prices,[1] 1949-1985

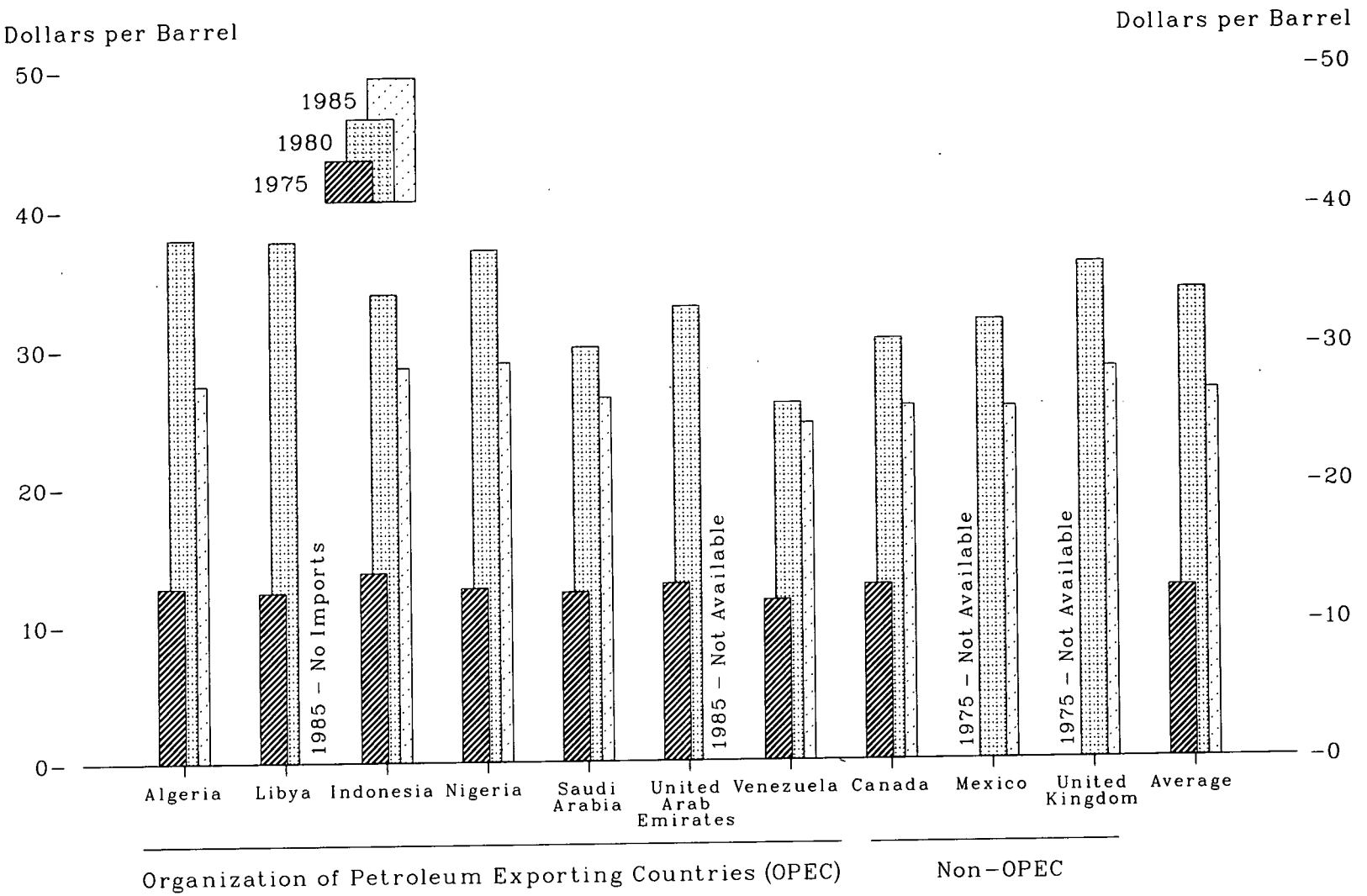
(Dollars per Barrel)

Year	Alaska North Slope (current)	Other U.S. (current)	U.S. Average (current)	U.S. Average (constant)[2]
1949	—	2.54	2.54	10.81
1950	—	2.51	2.51	10.50
1951	—	2.53	2.53	10.08
1952	—	2.53	2.53	9.92
1953	—	2.68	2.68	10.35
1954	—	2.78	2.78	10.57
1955	—	2.77	2.77	10.18
1956	—	2.79	2.79	9.93
1957	—	3.09	3.09	10.62
1958	—	3.01	3.01	10.13
1959	—	2.90	2.90	9.54
1960	—	2.88	2.88	9.32
1961	—	2.89	2.89	9.26
1962	—	2.90	2.90	9.09
1963	—	2.89	2.89	8.92
1964	—	2.88	2.88	8.75
1965	—	2.86	2.86	8.46
1966	—	2.88	2.88	8.23
1967	—	2.92	2.92	8.13
1968	—	2.94	2.94	7.80
1969	—	3.09	3.09	7.76
1970	—	3.18	3.18	7.57
1971	—	3.39	3.39	7.64
1972	—	3.39	3.39	7.29
1973	—	3.89	3.89	7.86
1974	—	6.87	6.87	12.72
1975	—	7.67	7.67	12.93
1976	—	8.19	8.19	12.98
1977	[3] 6.32	[3] 8.63	8.57	12.73
1978	5.21	9.56	9.00	12.47
1979	10.57	13.01	12.64	16.08
1980	16.87	22.65	21.59	25.19
1981	23.23	33.71	31.77	33.80
1982	19.92	30.43	28.52	28.52
1983	17.69	28.00	26.19	25.21
1984	17.91	27.59	25.88	23.94
1985[4]	17.05	25.60	24.08	21.56

[1] See Explanatory Note 16.
[2] Constant 1982 dollars calculated using GNP implicit price deflators, 1982=100. See Energy Equivalents and Price Deflators section.
[3] Average for July through December only.
[4] Preliminary.
— = Not applicable.

Sources: •1949 through 1973—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. •1974 through January 1976—Federal Energy Administration, FEA Form 90, "Crude Petroleum Production Monthly Report." • February 1976 through September 1979—Federal Energy Administration, Form FEA P-124, "Domestic Crude Oil Purchaser's Monthly Report." • October 1979 through 1982—Economic Regulatory Administration, Form 182, "Domestic Crude Oil First Purchase Report." • 1983 and forward—Energy Information Administration, Form 182, "Domestic Crude Oil First Purchase Report."

Figure 61. Landed Cost of Crude Oil Imports into the United States from Selected Countries, 1975, 1980, and 1985



Source: See Table 61.

Table 61. Landed Cost of Crude Oil Imports into the United States from Selected Countries, 1975-1985

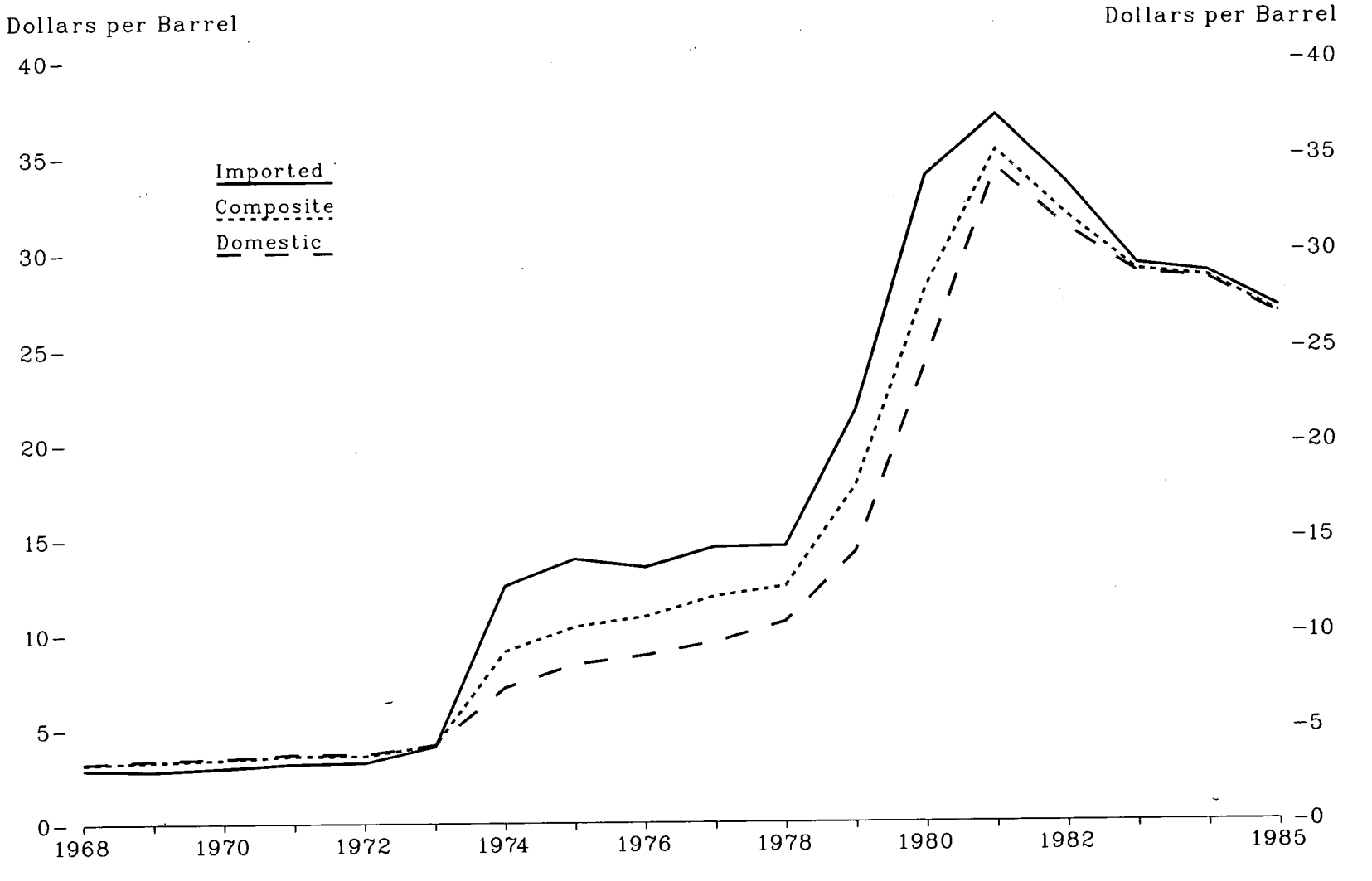
(Dollars per Barrel)

Country	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985 [1]
Algeria	12.72	13.81	15.20	14.91	21.90	37.90	40.49	35.28	31.26	29.08	27.35
Canada	12.72	13.57	14.21	14.50	20.43	30.47	32.16	26.92	25.63	26.59	25.68
Indonesia	13.79	13.82	14.63	14.64	20.69	33.92	37.57	36.75	31.57	30.64	28.62
Iran	12.21	12.82	13.80	13.88	25.02	[2]	[2]	32.40	29.81	28.67	25.73
Libya	12.35	13.58	14.87	14.72	23.68	37.72	40.92	36.05	[2]	[2]	[2]
Mexico	NA	NA	13.75	13.54	20.86	31.80	33.78	28.64	25.78	26.87	25.50
Nigeria	12.62	13.80	15.25	14.86	22.96	37.05	39.70	36.17	30.84	30.50	28.95
Saudi Arabia	12.30	13.04	13.61	13.92	19.15	30.02	34.19	35.00	29.76	29.50	26.33
United Arab Emirates	12.87	13.30	14.04	14.39	21.90	32.89	37.87	36.42	29.50	29.75	NA
United Kingdom	NA	NA	NA	NA	22.16	35.88	37.24	34.28	30.87	29.60	28.36
Venezuela	11.65	11.80	13.13	12.83	18.18	25.86	29.87	24.82	22.94	25.15	24.42
Others	12.60	13.31	14.57	14.74	23.45	36.06	37.69	33.78	29.72	29.20	27.36
Average	12.45	13.34	14.31	14.38	21.65	33.95	36.52	33.18	28.93	28.46	26.72

[1] Preliminary.
[2] Not applicable; little or no crude oil imported.
NA = Not available, included in "Others."

Sources: •1975 through September 1977—Federal Energy Administration, Form FEA F701-M-0, "Transfer Pricing Report." • October 1977 through January 1979—Energy Information Administration, Form FEA F701-M-0, "Transfer Pricing Report." • February 1980 through September 1982—Energy Information Administration, Form ERA 51, "Transfer Pricing Report." • October 1982 through June 1984—Energy Information Administration, Form EP 51, "Foreign Crude Oil Transaction Report." • July 1984 and forward—Energy Information Administration, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report."

Figure 62. Refiner Acquisition Cost of Crude Oil, 1968-1985



Source: See Table 62.

Table 62. Refiner Acquisition Cost [1] of Crude Oil, 1968-1985

(Dollars per Barrel)

Year	Domestic [2]		Imported [2]		Composite [2]	
	Current	Constant [3]	Current	Constant [3]	Current	Constant [3]
1968	3.21	8.51	2.90	7.69	3.17	8.41
1969	3.37	8.47	2.80	7.04	3.29	8.27
1970	3.46	8.24	2.96	7.05	3.40	8.10
1971	3.68	8.29	3.17	7.14	3.60	8.11
1972	3.67	7.89	3.22	6.92	3.58	7.70
1973	4.17	8.42	4.08	8.24	4.15	8.38
1974	7.18	13.30	12.52	23.19	9.07	16.80
1975	8.39	14.15	13.93	23.49	10.38	17.50
1976	8.84	14.01	13.48	21.36	10.89	17.26
1977	9.55	14.19	14.53	21.59	11.96	17.77
1978	10.61	14.70	14.57	20.18	12.46	17.26
1979	14.27	18.16	21.67	27.57	17.72	22.54
1980	24.23	28.27	33.89	39.54	28.07	32.75
1981	34.33	36.52	37.05	39.41	35.24	37.49
1982	31.22	31.22	33.55	33.55	31.87	31.87
1983	28.87	27.79	29.30	28.20	28.99	27.90
1984	28.53	26.39	28.88	26.72	28.63	26.48
1985[4]	26.65	23.86	27.04	24.21	26.76	23.96

[1] Refiner acquisition cost of crude oil for each category and for the composite is derived by dividing the sum of the total purchasing (acquisition) costs of all refiners by the total volume of all refiners' purchases.

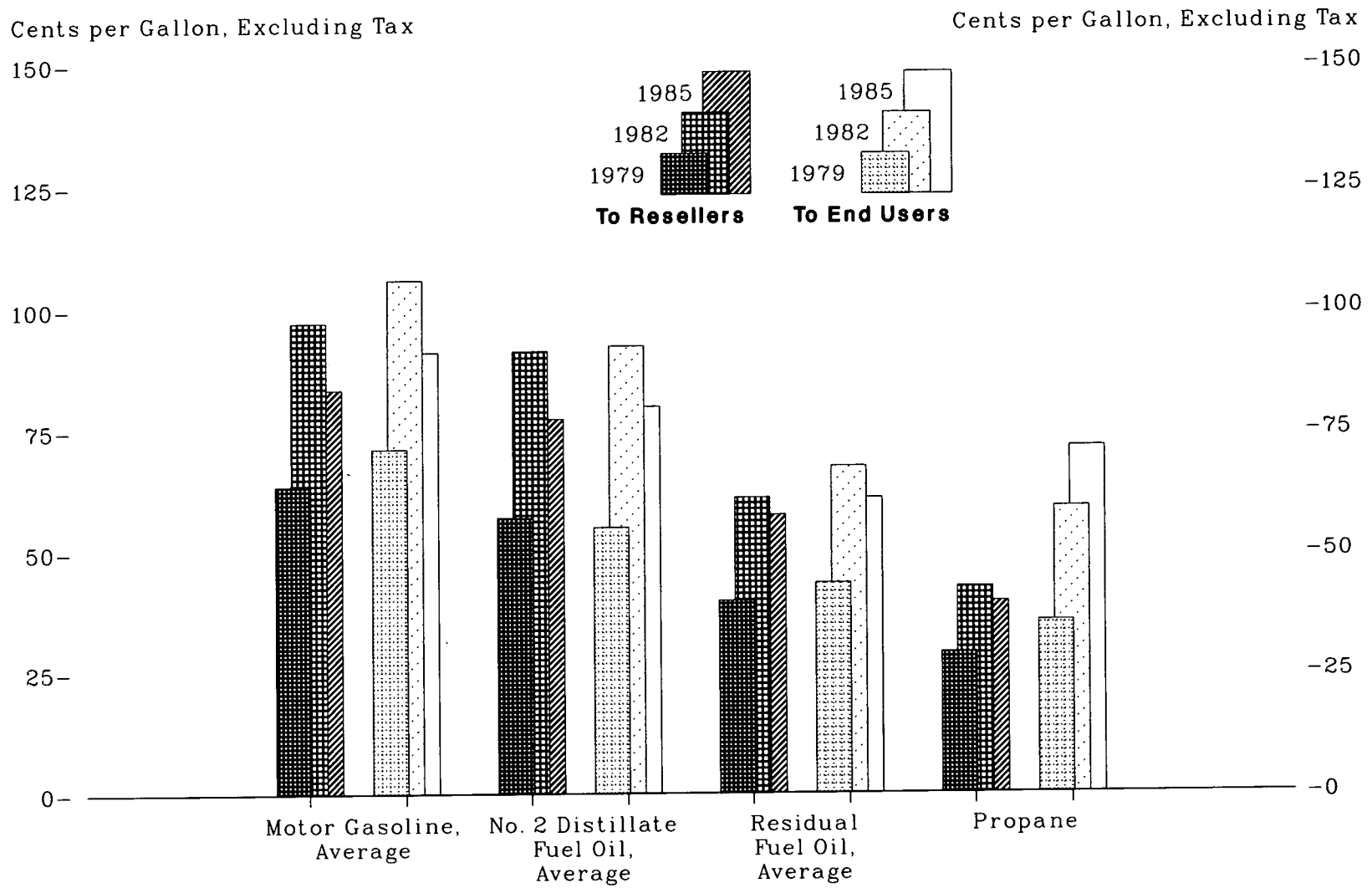
[2] Data 1968 through 1973 are estimated. See Explanatory Note 8.

[3] Constant 1982 dollars calculated using GNP price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.

[4] Preliminary.

Sources: •1974 through January 1976—Federal Energy Administration, Form FEO 96, "Monthly Cost Allocation Report." •February 1976 through September 1977—Federal Energy Administration, Form FEA P110-M-1, "Refiners' Monthly Cost Allocation Report." •October 1977 through June 1978—Energy Information Administration, Form FEA P110-M-1, "Refiners' Monthly Cost Allocation Report." •July 1978 through December 1980—Energy Information Administration, Form ERA 49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report." •1981 and forward—Energy Information Administration, Form EIA-14, "Refiners' Monthly Cost Report."

Figure 63. Petroleum Product Prices, 1979, 1982, and 1985



Source: See Table 63.

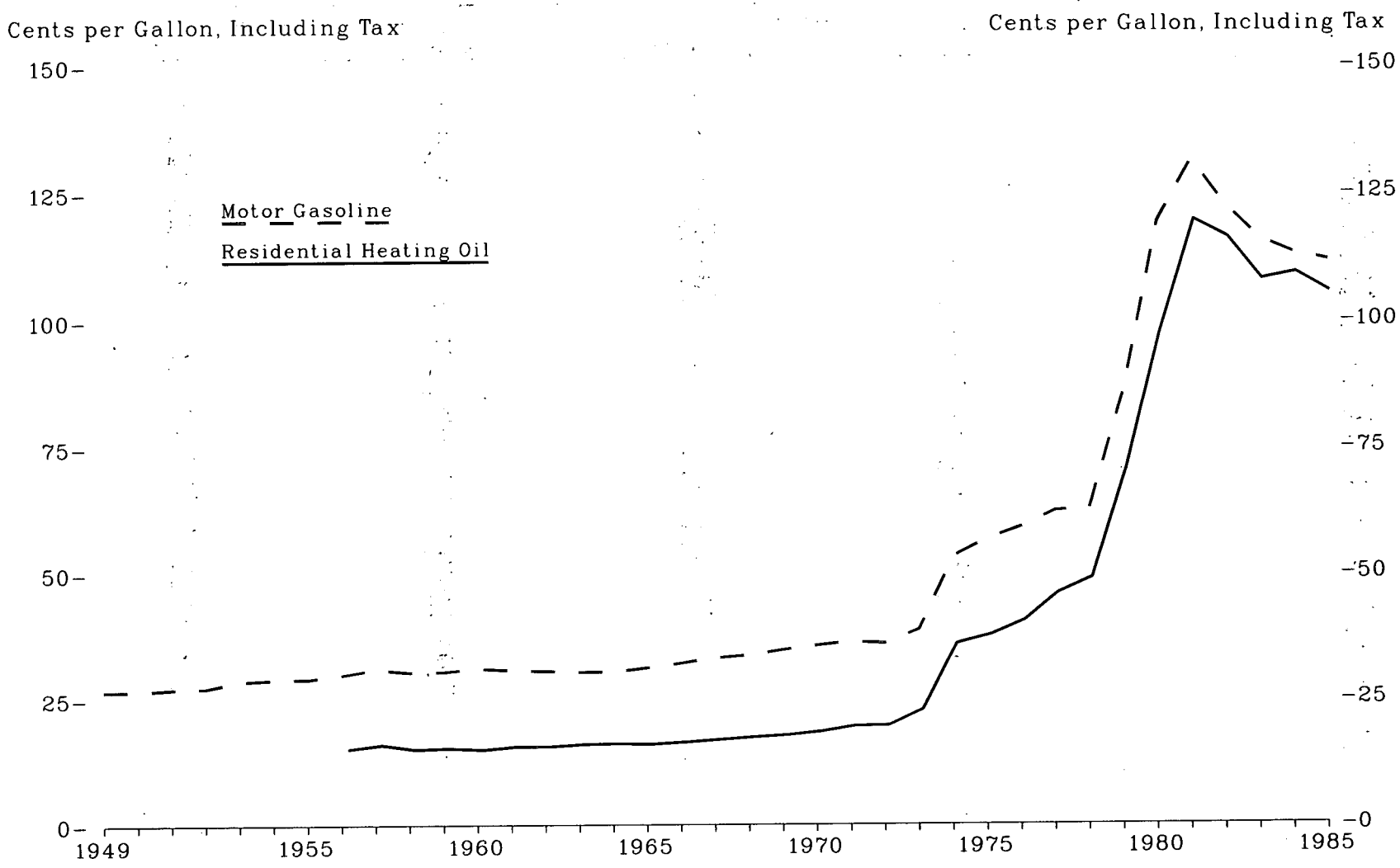
Table 63. Petroleum Product Prices, 1978-1985

(Cents per Gallon, Excluding Taxes)

Product	1978	1979	1980	1981	1982	1983	1984	1985 [1]
To Resellers:								
Aviation Gasoline	53.7	72.1	112.8	125.0	122.8	117.8	116.5	112.9
Motor Gasoline								
Leaded Regular	NA	NA	NA	NA	NA	85.0	79.5	79.3
Unleaded Regular	NA	NA	NA	NA	NA	89.5	84.2	84.3
Premium	NA	NA	NA	NA	NA	96.4	91.6	92.2
Average	43.4	63.7	94.1	106.4	97.3	88.2	83.2	83.5
Kerosene	40.4	62.4	86.4	106.6	101.8	89.2	91.6	87.4
Jet Fuel, Kerosene-Type	38.6	66.0	86.8	101.2	95.3	85.4	83.0	79.4
No. 1 Distillate Fuel Oil	40.6	58.3	88.0	107.1	103.8	89.6	89.2	86.3
No. 2 Distillate Fuel Oil								
No. 2 Fuel Oil	36.9	56.9	80.3	97.6	91.4	81.5	82.1	77.6
No. 2 Diesel Oil	36.5	57.4	80.1	97.2	91.4	80.8	80.3	77.2
Average	36.7	57.1	80.2	97.4	91.4	81.2	81.3	77.4
No. 4 Distillate Fuel Oil [2]	30.5	47.0	67.0	78.3	73.7	72.6	70.7	67.1
Residual Fuel Oil								
1% or Less Sulfur Content	29.3	45.0	60.8	74.8	69.5	64.3	68.5	60.9
Greater than 1% Sulfur Content	24.5	36.6	47.9	62.2	57.2	59.1	63.9	55.9
Average	26.3	39.9	52.8	66.3	61.2	60.9	65.4	57.6
Propane (Consumer Grade)	23.7	29.1	41.5	46.6	42.7	48.4	45.0	39.7
To End Users:								
Aviation Gasoline	51.6	68.9	108.4	130.3	131.2	125.5	123.4	120.1
Motor Gasoline								
Leaded Regular	NA	NA	NA	NA	NA	90.6	84.8	84.2
Unleaded Regular	NA	NA	NA	NA	NA	97.0	91.5	91.7
Premium	NA	NA	NA	NA	NA	105.7	101.5	102.3
Average	48.4	71.3	103.5	114.7	106.0	95.4	90.7	91.2
Kerosene	42.1	58.5	90.2	112.3	108.9	96.1	103.6	103.0
Jet Fuel, Kerosene-Type	38.7	54.7	86.8	102.4	96.3	87.8	84.2	79.5
No. 1 Distillate Fuel Oil	40.9	57.2	83.4	103.9	102.3	96.2	92.7	87.9
No. 2 Distillate Fuel Oil								
No. 2 Fuel Oil	40.0	51.6	78.8	91.4	90.5	91.6	91.6	84.8
No. 2 Diesel Oil	37.7	58.5	81.8	99.5	94.2	82.6	82.3	78.9
Average	39.6	55.1	80.4	95.8	92.5	83.9	83.7	79.9
No. 4 Distillate Fuel Oil [2]	31.1	47.9	68.2	79.7	75.0	76.6	79.6	77.3
Residual Fuel Oil								
1% or Less Sulfur Content	31.4	46.8	67.5	82.9	74.7	69.5	72.0	64.5
Greater than 1% Sulfur Content	27.5	38.9	52.3	67.3	61.1	61.1	65.9	58.4
Average	29.8	43.6	60.7	75.6	67.6	65.1	68.7	61.1
Propane (Consumer Grade)	33.5	35.7	48.2	56.5	59.2	70.9	73.7	71.6

[1] Preliminary.
[2] Includes No. 4 fuel oil and No. 4 diesel fuel.
NA = Not available.
Sources: •1978 through 1982—Energy Information Administration, Form EIA-460, "Petroleum Industry Monthly Report for Product Prices," the source for backcast estimates. •1983 and forward—Energy Information Administration, Form EIA-782A, "Monthly Petroleum Product Sales Report."

Figure 64. Motor Gasoline and Residential Heating Oil Retail Prices, 1949-1985



Source: See Table 64.

Table 64. Motor Gasoline and Residential Heating Oil Retail Prices, 1949-1985

(Cents per Gallon, Including Tax)

Year	Motor Gasoline [1]		Residential Heating Oil [2]	
	Current	Constant [3]	Current	Constant [3]
1949	26.8	114.0	NA	NA
1950	26.8	112.1	NA	NA
1951	27.2	108.4	NA	NA
1952	27.4	107.5	NA	NA
1953	28.7	110.8	NA	NA
1954	29.0	110.3	NA	NA
1955	29.1	107.0	NA	NA
1956	29.9	106.4	15.2	54.1
1957	31.0	106.5	16.0	55.0
1958	30.4	102.4	15.1	50.8
1959	30.5	100.3	15.3	50.3
1960	31.1	100.6	15.0	48.5
1961	30.8	98.7	15.6	50.0
1962	30.6	95.9	15.6	48.9
1963	30.4	93.8	16.0	49.4
1964	30.4	92.4	16.1	48.9
1965	31.2	92.3	16.0	47.3
1966	32.1	91.7	16.4	46.9
1967	33.2	92.5	16.9	47.1
1968	33.7	89.4	17.4	46.2
1969	34.8	87.4	17.8	44.7
1970	35.7	85.0	18.5	44.0
1971	36.4	82.0	19.6	44.1
1972	36.1	77.6	19.7	42.4
1973	38.8	78.4	22.8	46.1
1974	53.2	98.5	36.0	66.7
1975	56.7	95.6	37.7	63.6
1976	59.0	93.5	40.6	64.3
1977	62.2	92.4	46.0	68.4
1978	62.6	86.7	49.0	67.9
1979	85.7	109.0	70.4	89.6
1980	119.1	139.0	97.4	113.7
1981	131.1	139.5	119.4	127.0
1982	122.2	122.2	116.0	116.0
1983	115.7	111.4	107.8	103.8
1984	112.9	104.4	109.1	100.9
1985	111.5	99.8	[4] 105.3	[4] 94.3

[1] Average motor gasoline prices are for leaded regular. They are calculated from a sample of service stations providing all types of service (i.e., full-, mini-, and self-serve). Geographic coverage - 1949 through 1973, 55 representative cities; 1974 through 1977, 56 urban areas; 1978 forward, 85 urban areas.

[2] Average residential heating oil (No. 2 fuel oil) prices are derived by dividing the sum of the estimated national value of retail sales for residential heating by the estimated volume of retail sales for residential heating. Data for 1978 and forward exclude a very small amount of State and local sales taxes. There is no Federal excise tax on residential heating oil.

[3] Constant 1982 dollars calculated using GNP price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.

[4] Preliminary.

NA = Not available.

Sources: **Motor Gasoline:** •1949 through 1973— *Platt's Oil Price Handbook and Oilmanac, 1974,* 51st Edition. •1974 and forward—Bureau of Labor Statistics, *Consumer Prices: Energy,* monthly. **Residential Heating Oil:** •1956 through 1974—Bureau of Labor Statistics, *Retail Prices and Indexes of Fuels and Utilities for Residential Usage,* monthly. •January 1975 through September 1977—Federal Energy Administration, Form FEA P112-M-1, "No. 2 Heating Oil Supply/Price Monitoring Report." •October 1977 through December 1977—Energy Information Administration, Form EIA 9, "No. 2 Heating Oil Supply/Price Monitoring Report." •1978 through 1982—Energy Information Administration, Form EIA-9A, "No. 2 Distillate Price Monitoring Report," the source for backcast estimates. •1983 and forward—Energy Information Administration, Form EIA-782A, "Monthly Petroleum Product Sales Report" and Form EIA-782B, "Monthly No. 2 Distillate Sales Report."

Section 5. Natural Gas Supply and Disposition

Gross Withdrawals and Marketed Production. Preliminary data for 1985 indicate that gross withdrawals of natural gas from gas and oil wells in the United States totaled 19.1 trillion cubic feet, a decrease of 5.6 percent from the 1984 level of 20.2 trillion cubic feet. Gross withdrawals were considerably below the all-time high of 24.1 trillion cubic feet reached in 1971 (Table 65).

In 1984, there were about 234,000 producing gas wells in the United States. Although most natural gas gross withdrawals are from natural gas wells, about 20 to 25 percent comes from crude oil wells. Almost all of the gas withdrawn from oil wells is separated from the oil at or near the wellhead. Most of the natural gas withdrawn is used as a fuel or as chemical feedstock, but small quantities are either vented, flared, or used for reservoir repressuring. Also, small quantities of nonhydrocarbon gases are removed.

Data for 1985 show that of gross withdrawals from wells, 0.4 percent was vented or flared, 8.3 percent was used for repressuring, 1.2 percent represented nonhydrocarbon gases removed, and the remaining 90.1 percent was "marketed production." In 1985, marketed production totaled 17.2 trillion cubic feet, down 5.8 percent from the 1984 total (Table 65).

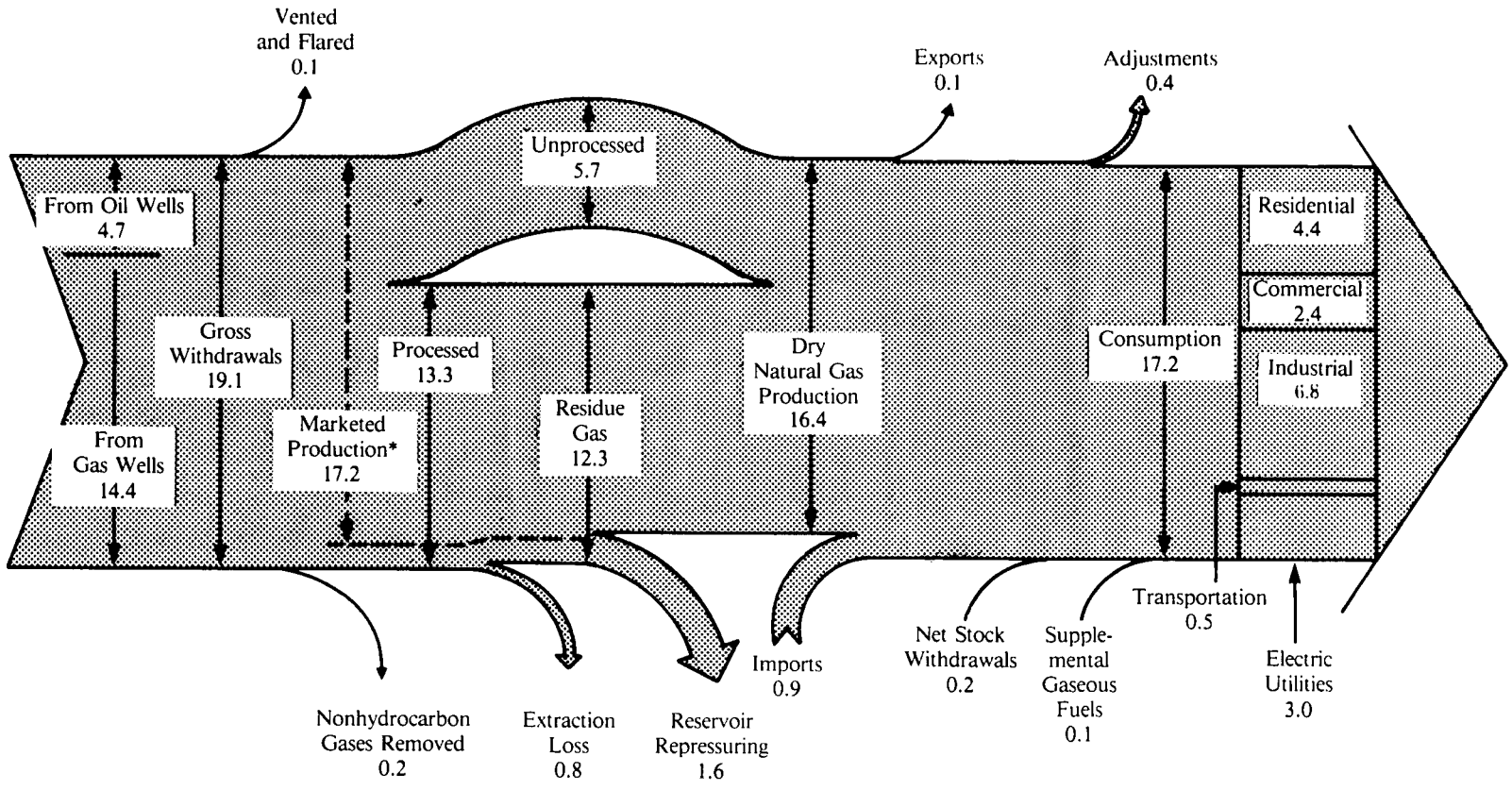
Consumption. Consumption of natural gas trended downward after 1980. In 1985, the 17.2 trillion cubic feet consumed was 4 percent below the 1984 level and 22 percent below the peak level set in 1972. Production capability exceeded demand and natural gas production was curtailed in many producing areas (Table 66). All natural gas end-use markets contracted in 1985, with the largest decrease (5.3 percent) in industrial applications (Table 68).

Storage. Because of fluctuating seasonal, daily, and even hourly marketing requirements, substantial natural gas storage facilities have been created to meet peak needs. Many of the facilities are depleted gas reservoirs located near transmission lines and marketing areas. Gas is usually injected into storage when market requirements are less than available gas flow in transmission lines. Gas is withdrawn from storage when supplies from producing fields, or the capacity of transmission systems, or both, are inadequate to meet peak requirements. Net withdrawals from underground storage supplied more than 15 percent of the gas consumed during recent winter heating seasons, and many transmission and distribution companies' peak day deliveries from underground storage exceeded 50 percent of their total maximum daily delivery. At the beginning of the 1985-1986 heating season (October 1985), the total volume of gas in underground storage was 7.1 trillion cubic feet (Energy Information Administration, *Monthly Energy Review,* December 1985). Of this total, trillion cubic feet was working gas (i.e., available for withdrawal). Year-end underground storage of natural gas is shown in Table 69.

Trade. Imports of natural gas, principally from Canada, amounted to about 926 billion cubic feet during 1985, up 9.8 percent from 1984. Exports continued at the relatively constant volume of about 55 billion cubic feet per year (Table 67).

Prices. Natural gas has many price categories as a result of different rate structures authorized by State and Federal Government ratemaking commissions. Estimated data indicate that the average wellhead price of natural gas in 1985 was $2.48 per thousand cubic feet, 6.8 percent lower than the 1984 average (Table 70). Estimated average wellhead prices by category varied from $1.44 per thousand cubic feet for "old gas" to $4.69 per thousand cubic feet for "high-cost gas." In 1984, residential consumers paid an average of $6.12 per thousand cubic feet, an increase of 1.0 percent from the 1983 average. Commercial users paid $5.55 per thousand cubic feet, down 0.7 percent, while the price to industrial users rose 1.3 percent to $3.99 in 1984 (Table 71).

Diagram 3. Natural Gas Flow, 1985
(Trillion Cubic Feet)

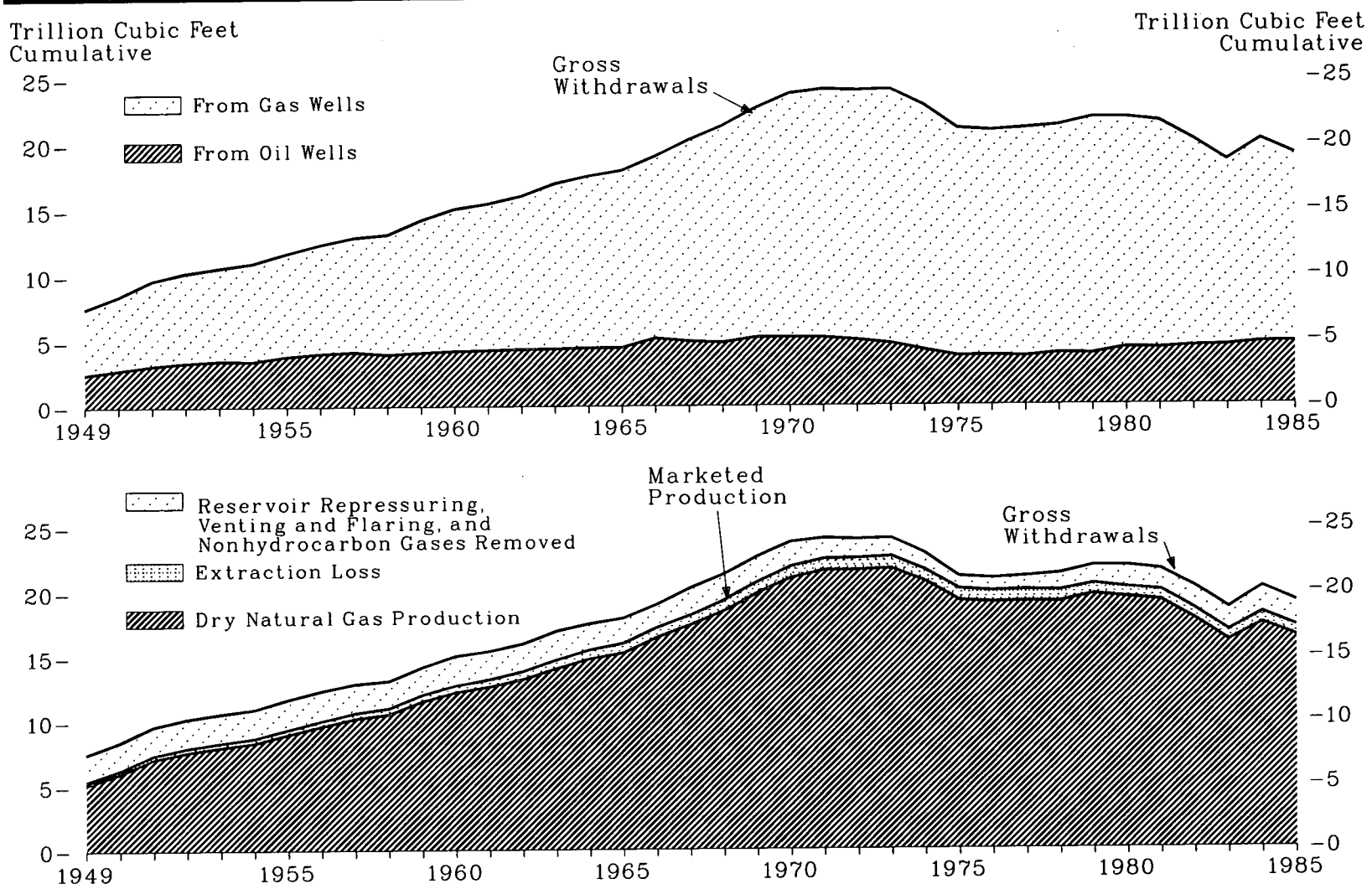


*See Glossary.

Note: Sum of components may not equal totals due to independent rounding.

Sources: See Tables 65, 66, and 68.

Figure 65. Natural Gas Production, 1949-1985



Source: See Table 65.

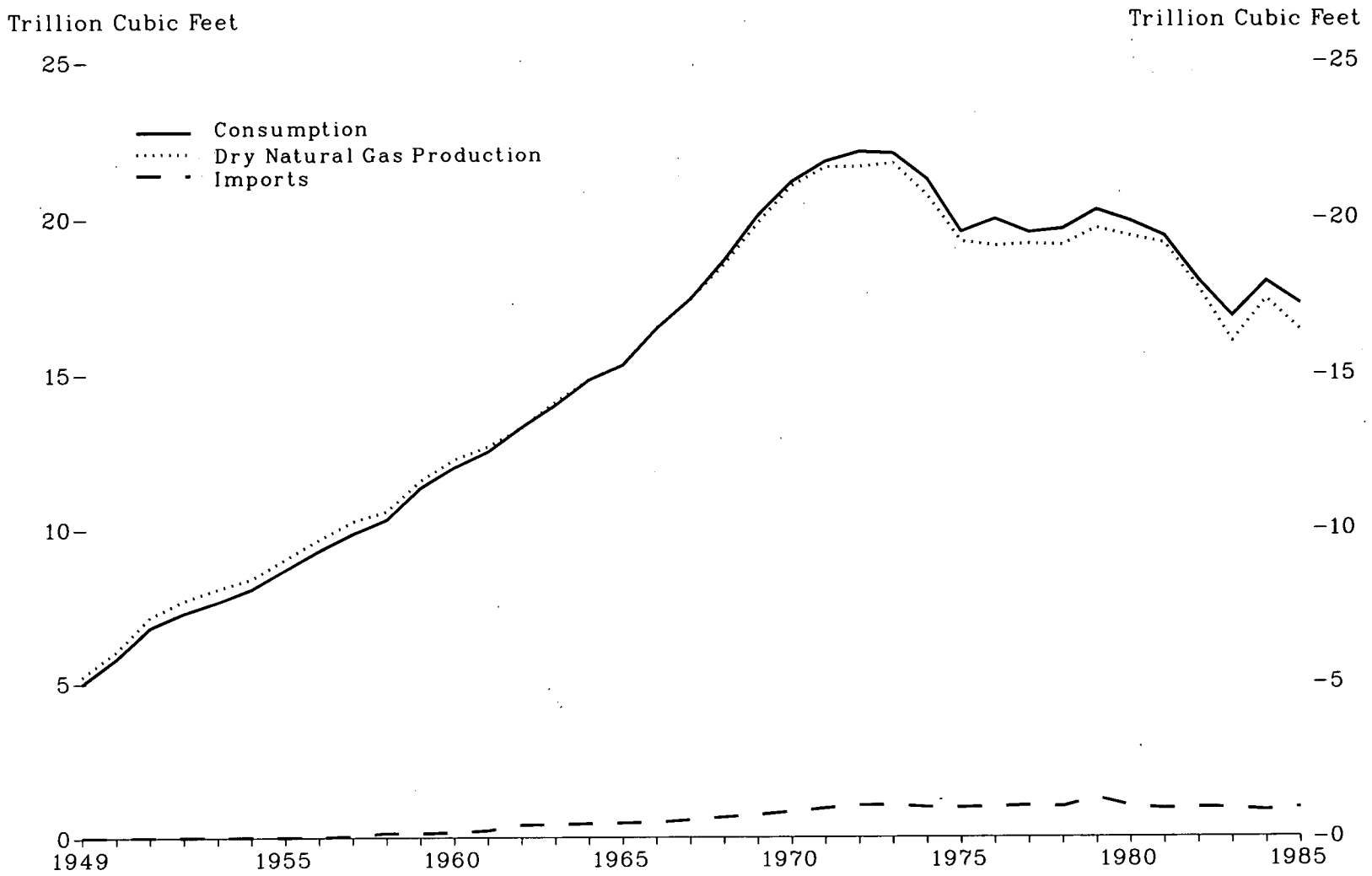
Table 65. Natural Gas Production, 1949-1985

(Trillion Cubic Feet)

Year	Gross Withdrawals: From Gas Wells	Gross Withdrawals: From Oil Wells	Gross Withdrawals: Total	Reservoir Repressuring	Non-hydrocarbon Gases Removed	Vented and Flared	Marketed Production	Extraction Loss [1]	Dry Natural Gas Production
1949	4.99	2.56	7.55	1.27	NA	0.85	5.42	0.22	5.20
1950	5.60	2.88	8.48	1.40	NA	0.80	6.28	0.26	6.02
1951	6.48	3.21	9.69	1.44	NA	0.79	7.46	0.29	7.16
1952	6.84	3.43	10.27	1.41	NA	0.85	8.01	0.32	7.69
1953	7.10	3.55	10.65	1.44	NA	0.81	8.40	0.34	8.06
1954	7.47	3.52	10.98	1.52	NA	0.72	8.74	0.35	8.39
1955	7.84	3.88	11.72	1.54	NA	0.77	9.41	0.38	9.03
1956	8.31	4.07	12.37	1.43	NA	0.86	10.08	0.42	9.66
1957	8.72	4.19	12.91	1.42	NA	0.81	10.68	0.43	10.25
1958	9.15	3.99	13.15	1.48	NA	0.63	11.03	0.46	10.57
1959	10.10	4.13	14.23	1.61	NA	0.57	12.05	0.50	11.55
1960	10.85	4.23	15.09	1.75	NA	0.56	12.77	0.54	12.23
1961	11.20	4.27	15.46	1.68	NA	0.52	13.25	0.59	12.66
1962	11.70	4.34	16.04	1.74	NA	0.43	13.88	0.62	13.25
1963	12.61	4.37	16.97	1.84	NA	0.38	14.75	0.67	14.08
1964	13.11	4.43	17.54	1.65	NA	0.34	15.55	0.72	14.82
1965	13.52	4.44	17.96	1.60	NA	0.32	16.04	0.75	15.29
1966	13.89	5.14	19.03	1.45	NA	0.38	17.21	0.74	16.47
1967	15.35	4.91	20.25	1.59	NA	0.49	18.17	0.78	17.39
1968	16.54	4.79	21.32	1.49	NA	0.52	19.32	0.83	18.49
1969	17.49	5.19	22.68	1.46	NA	0.53	20.70	0.87	19.83
1970	18.59	5.19	23.79	1.38	NA	0.49	21.92	0.91	21.01
1971	18.93	5.16	24.09	1.31	NA	0.28	22.49	0.88	21.61
1972	19.04	4.97	24.02	1.24	NA	0.25	22.53	0.91	21.62
1973	19.37	4.70	24.07	1.17	NA	0.25	22.65	0.92	21.73
1974	18.67	4.18	22.85	1.08	NA	0.17	21.60	0.89	20.71
1975	17.38	3.72	21.10	0.86	NA	0.13	20.11	0.87	19.24
1976	17.19	3.75	20.94	0.86	NA	0.13	19.95	0.85	19.10
1977	17.42	3.68	21.10	0.93	NA	0.14	20.03	0.86	19.16
1978	17.39	3.91	21.31	1.18	NA	0.15	19.97	0.85	19.12
1979	18.03	3.85	21.88	1.25	NA	0.17	20.47	0.81	19.66
1980	17.57	4.30	21.87	1.37	0.20	0.13	20.18	0.78	19.40
1981	17.34	4.25	21.59	1.31	0.22	0.10	19.96	0.77	19.18
1982	15.80	4.41	20.21	1.39	0.21	0.09	18.52	0.76	17.76
1983	14.15	4.45	18.60	1.46	0.22	0.09	16.82	0.79	16.03
1984	15.51	4.69	20.19	1.63	0.22	0.11	18.23	0.84	17.39
1985[2]	14.36	4.71	19.06	1.59	0.23	0.08	17.17	0.79	16.38

[1] Volume reduction resulting from the removal of natural gas plant liquids. Natural gas plant liquids are transferred to petroleum supply.
[2] Preliminary.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Note: Beginning with 1965 data, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60 °F. For prior years, the pressure base is 14.65 p.s.i.a. at 60 °F.
Sources: •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Natural Gas" chapter. •1976 through 1978—Energy Information Administration, Energy Data Reports, *Natural Gas Annual*. •1979—Energy Information Administration, *Natural Gas Production and Consumption 1979* •1980 through 1984—Energy Information Administration, *Natural Gas Annual*. •1985—Energy Information Administration, *Natural Gas Monthly*.

Figure 66. Natural Gas Supply and Disposition, 1949-1985



Source: See Table 66.

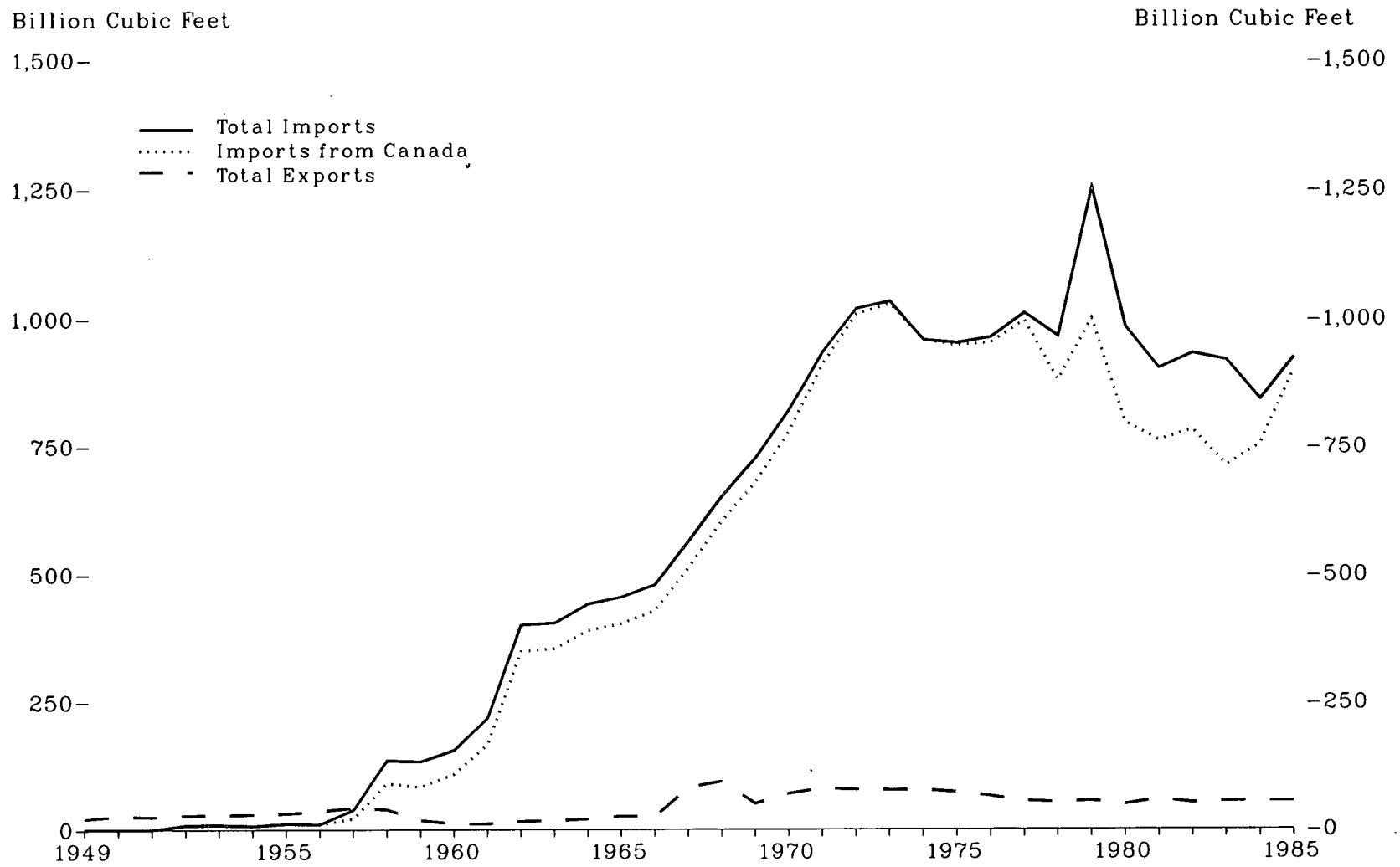
Table 66. Natural Gas Supply and Disposition, 1949-1985

(Trillion Cubic Feet)

Year	Dry Natural Gas Production	Supplemental Gaseous Fuels	Imports	Exports	Withdrawals from Storage [1]	Additions to Storage [1]	Unaccounted For [2]	Consumption
1949	5.20	NA	0	0.02	0.11	0.17	0.14	4.97
1950	6.02	NA	0	0.03	0.18	0.23	0.18	5.77
1951	7.16	NA	0	0.02	0.21	0.35	0.19	6.81
1952	7.69	NA	0.01	0.03	0.22	0.40	0.20	7.29
1953	8.06	NA	0.01	0.03	0.25	0.40	0.24	7.64
1954	8.39	NA	0.01	0.03	0.33	0.43	0.22	8.05
1955	9.03	NA	0.01	0.03	0.44	0.51	0.25	8.69
1956	9.66	NA	0.01	0.04	0.45	0.59	0.21	9.29
1957	10.25	NA	0.04	0.04	0.48	0.67	0.21	9.85
1958	10.57	NA	0.14	0.04	0.62	0.70	0.28	10.30
1959	11.55	NA	0.13	0.02	0.67	0.79	0.22	11.32
1960	12.23	NA	0.16	0.01	0.71	0.84	0.27	11.97
1961	12.66	NA	0.22	0.01	0.70	0.84	0.23	12.49
1962	13.25	NA	0.40	0.02	0.85	0.94	0.29	13.27
1963	14.08	NA	0.41	0.02	0.92	1.05	0.36	13.97
1964	14.82	NA	0.44	0.02	0.89	1.01	0.30	14.81
1965	15.29	NA	0.46	0.03	0.96	1.08	0.32	15.28
1966	16.47	NA	0.48	0.02	1.14	1.21	0.40	16.45
1967	17.39	NA	0.56	0.08	1.13	1.32	0.30	17.39
1968	18.49	NA	0.65	0.09	1.33	1.43	0.33	18.63
1969	19.83	NA	0.73	0.05	1.38	1.50	0.33	20.06
1970	21.01	NA	0.82	0.07	1.46	1.86	0.23	21.14
1971	21.61	NA	0.93	0.08	1.51	1.84	0.34	21.79
1972	21.62	NA	1.02	0.08	1.76	1.89	0.33	22.10
1973	21.73	NA	1.03	0.08	1.53	1.97	0.20	22.05
1974	20.71	NA	0.96	0.08	1.70	1.78	0.29	21.22
1975	19.24	NA	0.95	0.07	1.76	2.10	0.24	19.54
1976	19.10	NA	0.96	0.06	1.92	1.76	0.22	19.95
1977	19.16	NA	1.01	0.06	1.75	2.31	0.04	19.52
1978	19.12	NA	0.97	0.05	2.16	2.28	0.29	19.63
1979	19.66	NA	1.25	0.06	2.05	2.30	0.37	20.24
1980	19.40	0.15	0.98	0.05	1.97	1.95	0.64	19.88
1981	19.18	0.18	0.90	0.06	1.93	2.23	0.50	19.40
1982	17.76	0.14	0.93	0.05	2.16	2.47	0.47	18.00
1983	16.03	0.13	0.92	0.05	2.27	1.82	0.64	16.83
1984	17.39	0.11	0.84	0.05	2.10	2.30	0.14	17.95
1985[3]	16.38	0.13	0.93	0.06	2.37	2.14	0.39	17.23

[1] Beginning with 1980, includes liquefied natural gas (LNG) storage in above ground tanks.
[2] Unaccounted for gas, including net intransit shipments for 1980 forward, is the imbalance between available supplies for consumption and actual consumption.
[3] Preliminary.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Note: Beginning with 1965, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60 °F. For prior years, the pressure base is 14.65 p.s.i.a. at 60 °F.
Sources: •1949 through 1984—Energy Information Administration, *Natural Gas Annual, 1984,* Table 25. •1985—Energy Information Administration, *Natural Gas Monthly.*

Figure 67. Natural Gas Imports, Exports, and Net Trade, 1949-1985



Source: See Table 67.

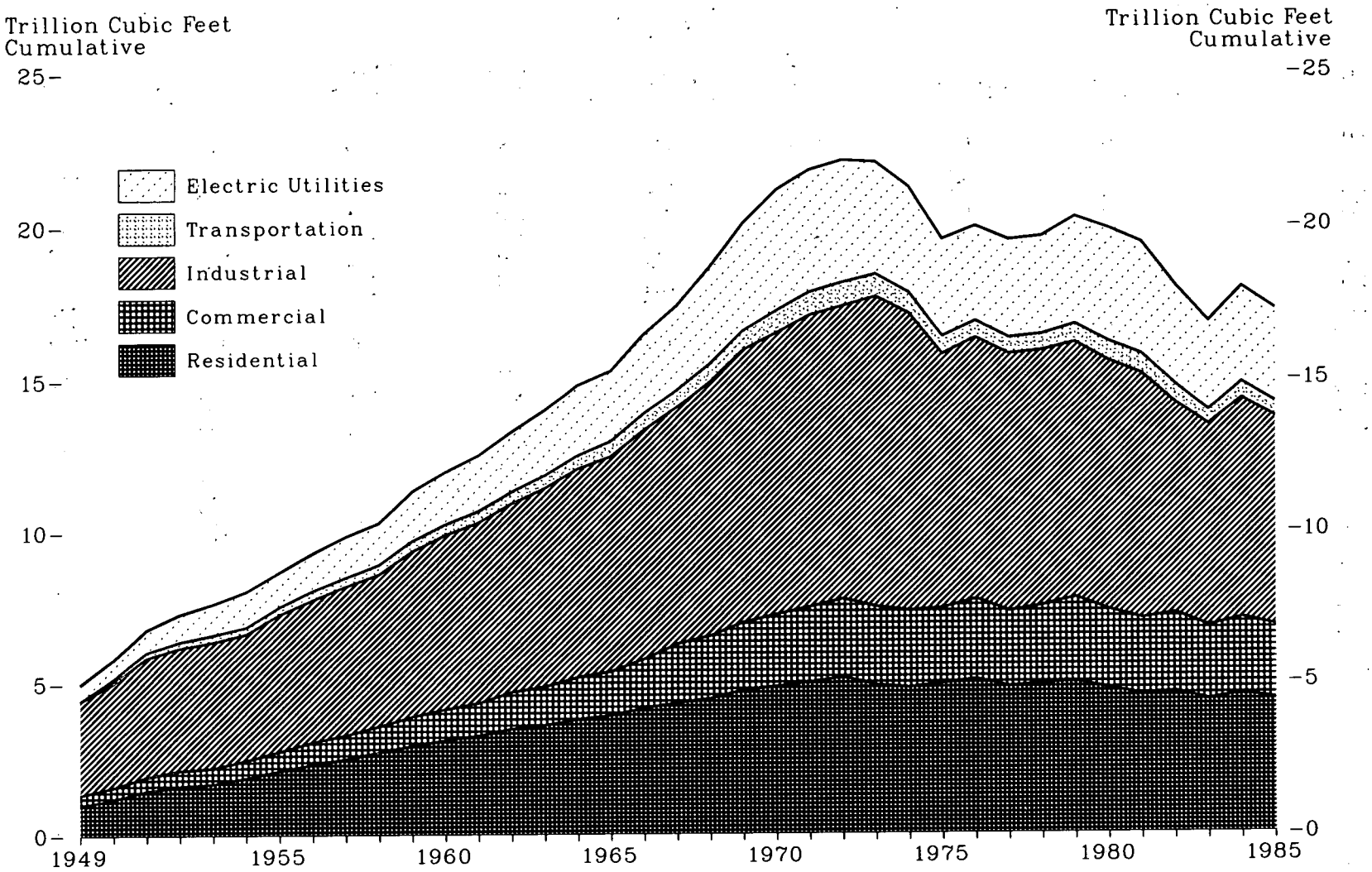
Table 67. Natural Gas Imports, Exports, and Net Trade, 1949-1985

(Billion Cubic Feet, Except as Noted)

Year	Imports				Exports				Net Trade [1]	
	Canada	Mexico	Algeria [2]	Total	Canada	Mexico	Japan [2]	Total	Total	Percent of U.S. Consumption
1949	0	0	0	0	[3]	20	0	20	20	[4]
1950	0	0	0	0	3	23	0	26	26	[4]
1951	0	0	0	0	4	21	0	24	24	[4]
1952	8	[3]	0	8	6	22	0	27	20	[4]
1953	9	0	0	9	6	22	0	28	19	[4]
1954	7	0	0	7	6	23	0	29	22	[4]
1955	11	[3]	0	11	11	20	0	31	20	[4]
1956	10	[3]	0	10	17	19	0	36	26	[4]
1957	21	17	0	38	31	11	0	42	4	[4]
1958	90	46	0	136	32	7	0	39	-97	0.9
1959	83	51	0	134	12	7	0	18	-116	1.0
1960	109	47	0	156	6	6	0	11	-144	1.2
1961	167	52	0	219	6	5	0	11	-208	1.7
1962	350	51	0	402	6	10	0	16	-386	2.9
1963	356	50	0	406	7	10	0	17	-389	2.8
1964	391	53	0	443	10	10	0	20	-424	2.9
1965	405	52	0	456	18	8	0	26	-430	2.8
1966	430	50	0	480	20	4	0	25	-455	2.8
1967	513	51	0	564	70	11	0	82	-483	2.8
1968	604	47	0	652	82	12	0	94	-558	3.0
1969	680	47	0	727	35	13	3	51	-676	3.4
1970	779	41	1	821	11	15	44	70	-751	3.6
1971	912	21	1	935	14	16	50	80	-854	3.9
1972	1,009	8	2	1,019	16	15	48	78	-941	4.3
1973	1,028	2	3	1,033	15	14	48	77	-956	4.3
1974	959	[3]	0	959	13	13	50	77	-882	4.2
1975	948	0	5	953	10	9	53	73	-880	4.5
1976	954	0	10	964	8	7	50	65	-899	4.5
1977	997	2	11	1,011	[3]	4	52	56	-955	4.9
1978	881	0	84	966	[3]	4	48	53	-913	4.6
1979	1,001	0	253	1,253	[3]	4	51	56	-1,198	5.9
1980	797	102	86	985	[3]	4	45	49	-936	4.7
1981	762	105	37	904	[3]	3	56	59	-845	4.4
1982	783	95	55	933	[3]	2	50	52	-882	4.9
1983	713	75	131	920	[3]	2	53	55	-865	5.1
1984	755	52	36	843	[3]	2	53	55	-788	4.4
1985[5]	903	0	23	926	[3]	2	53	55	-871	5.1

[1] Net trade = exports minus imports.
[2] Imports from Algeria and exports to Japan are liquefied natural gas.
[3] Less than 0.5 billion cubic feet.
[4] Not meaningful because there were net exports during this year.
[5] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration. Previously unpublished data.

Figure 68. Consumption of Natural Gas by End-Use Sector, 1949-1985



Source: See Table 68.

Table 68. Consumption of Natural Gas by End-Use Sector,[1] 1949-1985

(Trillion Cubic Feet)

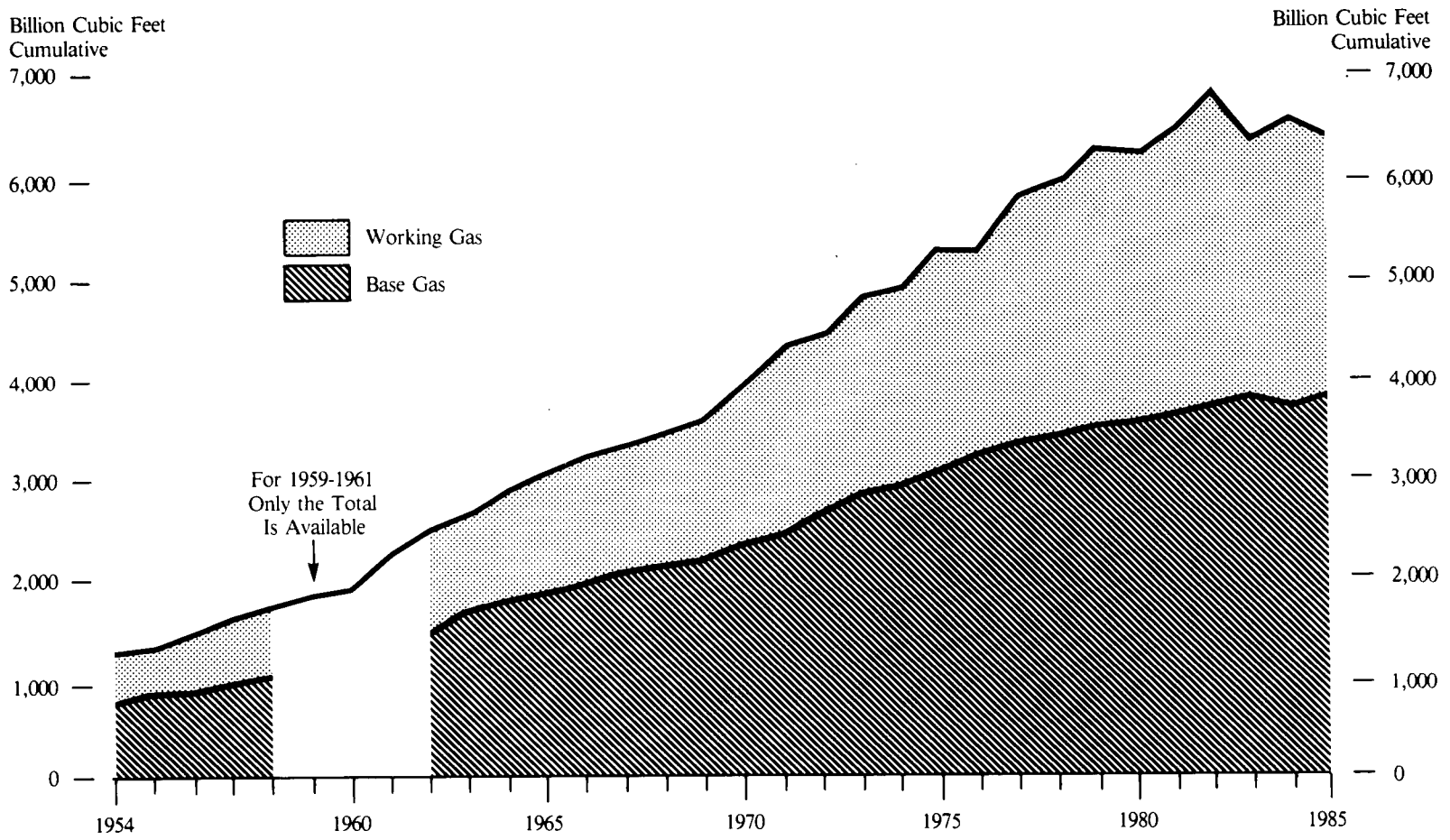
Year	Residential	Commercial[2]	Industrial			Electric Utilities	Transportation[3]	Total
			Lease and Plant Fuel	Other Industrial	Total Industrial			
1949	0.99	0.35	0.84	2.25	3.08	0.55	NA	4.97
1950	1.20	0.39	0.93	2.50	3.43	0.63	0.13	5.77
1951	1.47	0.46	1.15	2.77	3.91	0.76	0.19	6.81
1952	1.62	0.52	1.16	2.87	4.04	0.91	0.21	7.29
1953	1.69	0.53	1.13	3.03	4.16	1.03	0.23	7.64
1954	1.89	0.58	1.10	3.07	4.17	1.17	0.23	8.05
1955	2.12	0.63	1.13	3.41	4.54	1.15	0.25	8.69
1956	2.33	0.72	1.00	3.71	4.71	1.24	0.30	9.29
1957	2.50	0.78	1.05	3.89	4.93	1.34	0.30	9.85
1958	2.71	0.87	1.15	3.89	5.03	1.37	0.31	10.30
1959	2.91	0.98	1.24	4.22	5.46	1.63	0.35	11.32
1960	3.10	1.02	1.24	4.53	5.77	1.72	0.35	11.97
1961	3.25	1.08	1.29	4.67	5.96	1.83	0.38	12.49
1962	3.48	1.21	1.37	4.86	6.23	1.97	0.38	13.27
1963	3.59	1.27	1.41	5.13	6.55	2.14	0.42	13.97
1964	3.79	1.37	1.37	5.52	6.89	2.32	0.44	14.81
1965	3.90	1.44	1.16	5.96	7.11	2.32	0.50	15.28
1966	4.14	1.62	1.03	6.51	7.55	2.61	0.54	16.45
1967	4.31	1.96	1.14	6.65	7.79	2.75	0.58	17.39
1968	4.45	2.08	1.24	7.13	8.37	3.15	0.59	18.63
1969	4.73	2.25	1.35	7.61	8.96	3.49	0.63	20.06
1970	4.84	2.40	1.40	7.85	9.25	3.93	0.72	21.14
1971	4.97	2.51	1.41	8.18	9.59	3.98	0.74	21.79
1972	5.13	2.61	1.46	8.17	9.62	3.98	0.77	22.10
1973	4.88	2.60	1.50	8.69	10.18	3.66	0.73	22.05
1974	4.79	2.56	1.48	8.29	9.77	3.44	0.67	21.22
1975	4.92	2.51	1.40	6.97	8.36	3.16	0.58	19.54
1976	5.05	2.67	1.63	6.96	8.60	3.08	0.55	19.95
1977	4.82	2.50	1.66	6.82	8.47	3.19	0.53	19.52
1978	4.90	2.60	1.65	6.76	8.40	3.19	0.53	19.63
1979	4.97	2.79	1.50	6.90	8.40	3.49	0.60	20.24
1980	4.75	2.61	1.03	7.17	8.20	3.68	0.63	19.88
1981	4.55	2.52	0.93	7.13	8.06	3.64	0.64	19.40
1982	4.63	2.61	1.11	5.83	6.94	3.23	0.60	18.00
1983	4.38	2.43	0.98	5.64	6.62	2.91	0.49	16.83
1984	4.56	2.52	1.08	6.15	7.23	3.11	0.53	17.95
1985[4]	4.41	2.43	1.02	5.83	6.85	3.03	0.51	17.23

[1] See Explanatory Note 9.
[2] Includes deliveries to municipalities and public authorities for institutional heating and other purposes.
[3] Pipeline fuel.
[4] Preliminary.

Note: Sum of components may not equal total due to independent rounding. Beginning with 1965, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60 °F. For prior years, the pressure base is 14.65 p.s.i.a. at 60 °F.

Sources: **Electric Utilities**: •1949 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration—Form EIA-759, "Monthly Power Plant Report." **All Other Data:** •1949 through 1982—Energy Information Administration, *Natural Gas Annual, 1983,* Appendix B. •1983 and 1984—Energy Information Administration, *Natural Gas Annual.* •1985—Energy Information Administration, *Natural Gas Monthly.*

Figure 69. Underground Storage of Natural Gas, End of Year 1954-1985



Source: See Table 69.

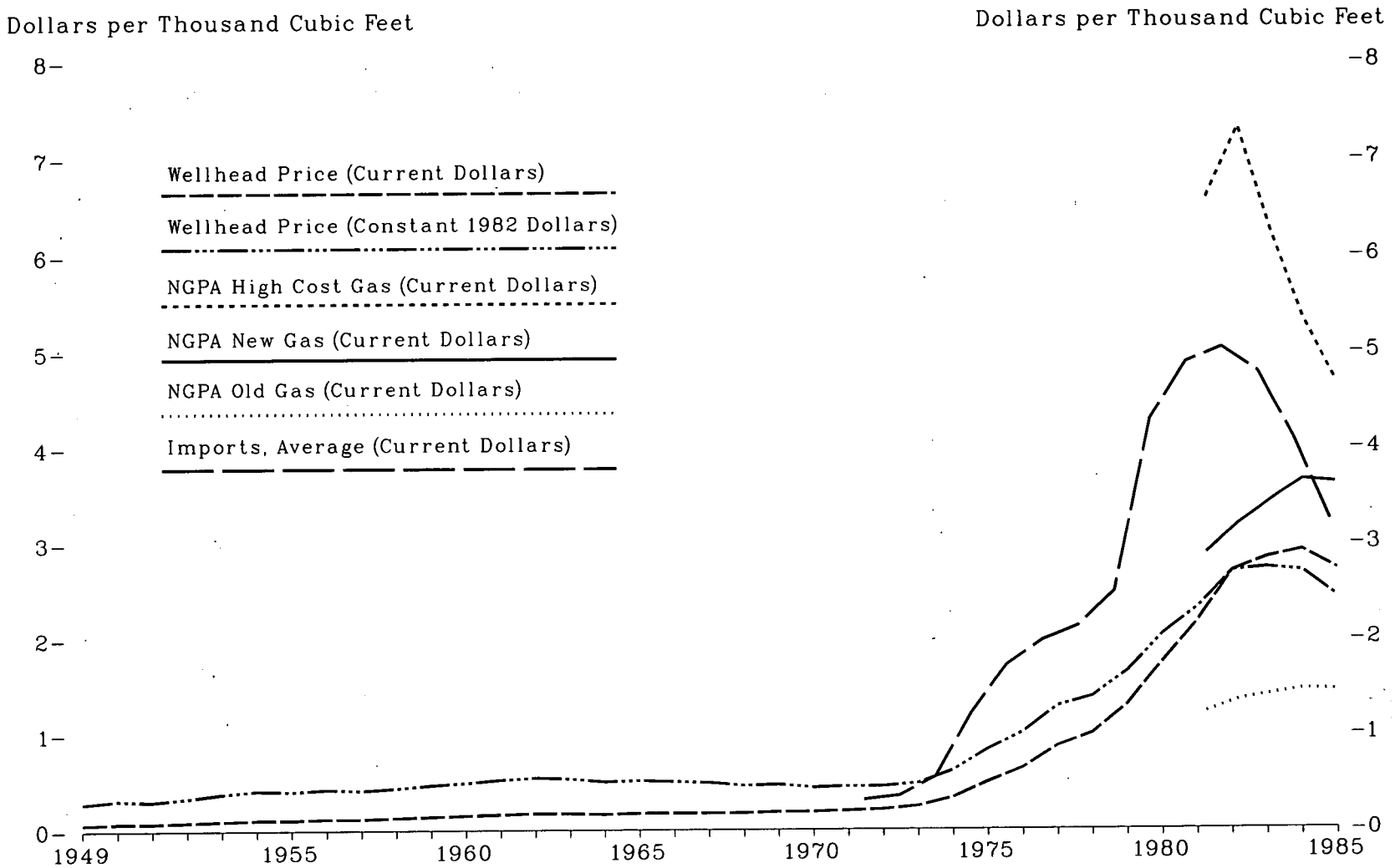
Table 69. Underground Storage of Natural Gas, End of Year 1954-1985

(Billion Cubic Feet)

Year	Base Gas [1]	Working Gas	Total Gas in Storage [1]
1954	817	465	1,281
1955	863	505	1,368
1956	919	583	1,502
1957	1,001	673	1,674
1958	1,056	708	1,764
1959	NA	NA	1,901
1960	NA	NA	2,184
1961	NA	NA	2,344
1962	1,571	933	2,504
1963	1,738	1,007	2,745
1964	1,781	1,159	2,940
1965	1,848	1,242	3,090
1966	1,958	1,267	3,225
1967	2,058	1,318	3,376
1968	2,128	1,366	3,495
1969	2,181	1,421	3,602
1970	2,326	1,678	4,004
1971	2,485	1,840	4,325
1972	2,751	1,729	4,480
1973	2,864	2,034	4,898
1974	2,912	2,050	4,962
1975	3,162	2,212	5,374
1976	3,323	1,926	5,250
1977	3,391	2,475	5,866
1978	3,473	2,547	6,020
1979	3,553	2,753	6,306
1980	3,642	2,655	6,297
1981	3,752	2,817	6,569
1982	3,808	3,071	6,879
1983	3,847	2,595	6,442
1984	3,830	2,876	6,706
1985	3,842	2,609	6,451

[1] Includes native gas.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Note: Beginning with 1965 data, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60 °F. For prior years, the pressure base is 14.65 p.s.i.a. at 60 °F.
Sources: •1954 through 1974—American Gas Association, *Gas Facts.* •1975 and 1976—Federal Energy Administration, Form G 318-M-O and Federal Power Commission, Form 8, "Underground Gas Storage Report." •1977 through 1978— Energy Information Administration, and Federal Energy Administration, Form G 318-M-O and Federal Power Commission, Form 8, "Underground Gas Storage Report." •1979 and forward—Energy Information Administration, EIA Form 191 and Federal Energy Regulatory Commission, FPC Form 8, "Underground Gas Storage Report."

Figure 70. Natural Gas Wellhead and Import Prices, 1949-1985



Source: See Table 70.

Table 70. Natural Gas Wellhead and Import Prices, 1949-1985

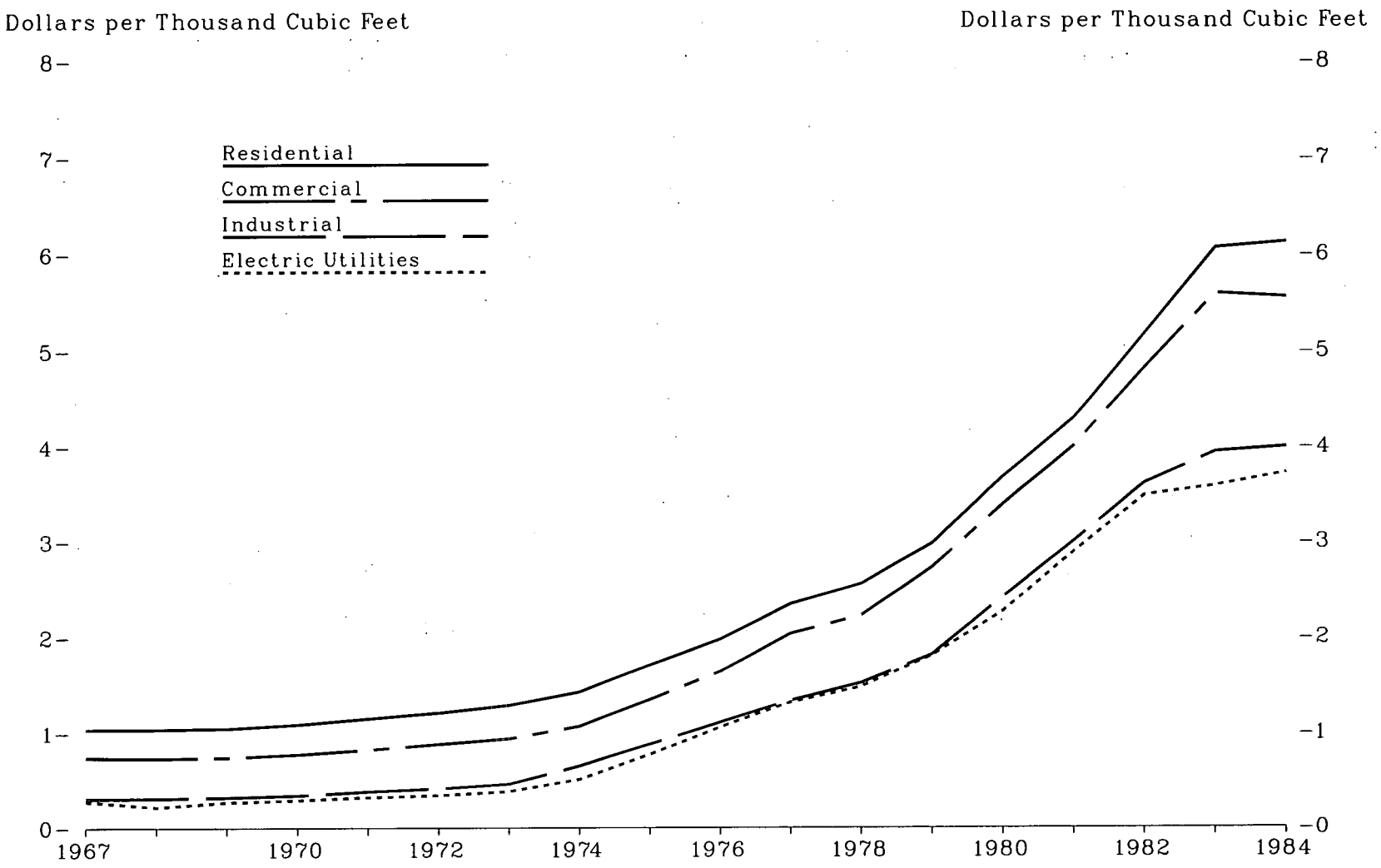
(Dollars per Thousand Cubic Feet)

Year	Wellhead [2]		Purchases by NGPA Categories [1]			Imports		
			Old Gas	New Gas	High-Cost Gas	Pipeline	Other [3]	Average
	Current	Constant [4]	Current	Current	Current	Current	Current	Current
1949	0.06	0.26	—	—	—	NA	NA	NA
1950	0.07	0.29	—	—	—	NA	NA	NA
1951	0.07	0.28	—	—	—	NA	NA	NA
1952	0.08	0.31	—	—	—	NA	NA	NA
1953	0.09	0.35	—	—	—	NA	NA	NA
1954	0.10	0.38	—	—	—	NA	NA	NA
1955	0.10	0.37	—	—	—	NA	NA	NA
1956	0.11	0.39	—	—	—	NA	NA	NA
1957	0.11	0.38	—	—	—	NA	NA	NA
1958	0.12	0.40	—	—	—	NA	NA	NA
1959	0.13	0.43	—	—	—	NA	NA	NA
1960	0.14	0.45	—	—	—	NA	NA	NA
1961	0.15	0.48	—	—	—	NA	NA	NA
1962	0.16	0.50	—	—	—	NA	NA	NA
1963	0.16	0.49	—	—	—	NA	NA	NA
1964	0.15	0.46	—	—	—	NA	NA	NA
1965	0.16	0.47	—	—	—	NA	NA	NA
1966	0.16	0.46	—	—	—	NA	NA	NA
1967	0.16	0.45	—	—	—	NA	NA	NA
1968	0.16	0.42	—	—	—	NA	NA	NA
1969	0.17	0.43	—	—	—	NA	NA	NA
1970	0.17	0.40	—	—	—	NA	NA	NA
1971	0.18	0.41	—	—	—	NA	NA	NA
1972	0.19	0.41	—	—	—	0.31	1.38	0.31
1973	0.22	0.44	—	—	—	0.35	1.05	0.35
1974	0.30	0.56	—	—	—	0.55	[5]	0.55
1975	0.45	0.76	—	—	—	1.21	0.74	1.21
1976	0.58	0.92	—	—	—	1.73	0.77	1.72
1977	0.79	1.17	—	—	—	1.99	1.07	1.98
1978	0.91	1.26	—	—	—	2.19	1.53	2.13
1979	1.18	1.50	—	—	—	2.61	2.03	2.49
1980	1.59	1.86	—	—	—	4.33	3.77	4.28
1981	1.98	2.11	1.22	2.89	6.58	4.85	5.54	4.88
1982	2.46	2.46	1.34	3.19	7.31	4.98	5.82	5.03
1983	2.59	2.49	1.40	3.43	6.25	4.51	6.41	4.78
1984	2.66	2.46	1.45	3.65	5.34	4.04	4.90	4.08
1985[6]	2.48	2.22	1.44	3.62	4.69	3.19	4.59	3.23

[1] Projected natural gas wellhead purchase prices by major interstate pipeline companies by National Gas Policy Act of 1978 categories (see Explanatory Note 14).
[2] See Glossary for definition of Natural Gas Wellhead Price.
[3] Primarily liquefied natural gas from Algeria.
[4] Constant 1982 dollars calculated using the GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section.
[5] Not applicable. All imports were by pipeline.
[6] Estimated.
— = Not applicable.
NA = Not available.

Sources: **Wellhead:** •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Natural Gas" chapter. •1976 through 1978—Energy Information Administration, Energy Data Reports, *Natural Gas, Annual.* •1979—Energy Information Administration, *Natural Gas Production and Consumption 1979.* •1980 through 1984—Energy Information Administration, *Natural Gas Annual.* •1985—Energy Information Administration, *Natural Gas Monthly.* **Purchases by NGPA Categories:** • 1981 and forward—Energy Information Administration, *Natural Gas Monthly.* **Imports:** • 1972 and 1973—Federal Power Commission, *Pipeline Imports and Exports of Natural Gas - Imports and Exports of LNG.* •1974 through 1977—Federal Power Commission, *United States Imports and Exports of Natural Gas,* annual. •1978 through 1981—Energy Information Administration, *U.S. Imports and Exports of Natural Gas,* annual. •1982 through 1984—Energy Information Administration, *Natural Gas Monthly,* May 1985 issue. •1985—Energy Information Administration estimate.

Figure 71. Average Price of Natural Gas Consumed by End-Use Sector, 1967-1984



Source: See Table 71.

Table 71. Average Price of Natural Gas [1] Consumed by End-Use Sector, 1967-1984

(Dollars per Thousand Cubic Feet)

Year	Residential	Commercial [2]	Industrial			Electric Utilities	Transportation [3]	Average
			Lease and Plant Fuel	Other Industrial	Total Industrial			
1967	1.04	0.74	0.15	0.34	0.31	0.28	0.20	0.53
1968	1.04	0.73	0.16	0.34	0.31	0.22	0.20	0.51
1969	1.05	0.74	0.18	0.35	0.32	0.27	0.21	0.53
1970	1.09	0.77	0.18	0.37	0.34	0.29	0.21	0.55
1971	1.15	0.82	0.19	0.41	0.38	0.32	0.22	0.59
1972	1.21	0.88	0.20	0.45	0.41	0.34	0.23	0.63
1973	1.29	0.94	0.21	0.50	0.46	0.38	0.25	0.68
1974	1.43	1.07	0.51	0.67	0.65	0.51	0.30	0.84
1975	1.71	1.35	0.47	0.96	0.88	0.77	0.40	1.12
1976	1.98	1.64	0.57	1.24	1.11	1.06	0.51	1.38
1977	2.35	2.04	0.71	1.50	1.34	1.32	0.77	1.66
1978	2.56	2.23	0.79	1.70	1.52	1.48	0.90	1.85
1979	2.98	2.73	1.06	1.99	1.82	1.81	1.32	2.21
1980	3.68	3.39	1.43	2.56	2.42	2.27	1.85	2.80
1981	4.29	4.00	1.93	3.14	3.00	2.89	2.39	3.39
1982	5.17	4.82	2.23	3.87	3.61	3.48	2.97	4.15
1983	6.06	5.59	2.54	4.18	3.94	3.58	3.15	4.64
1984	6.12	5.55	2.71	4.22	3.99	3.72	3.04	4.67

[1] Dry natural gas including supplemental gaseous fuels.
[2] Includes deliveries to municipalities and public authorities for institutional heating and other purposes.
[3] Pipeline fuel.

Note: The average for each end-use sector is calculated by dividing the total value of the gas consumed by each sector by the total quantity consumed. See Explanatory Note 9.

Sources: **Electric Utilities:** •1967 through 1972 —Federal Power Commission, Form 4, "Monthly Power Plant Report." •1973 through 1976—Federal Power Commission, FPC Form 4, "Monthly Power Plant Report" and FPC Form 423, " Monthly Report of Cost and Quality of Fuels for Electric Plants." •1977—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report" and FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." •1978 through 1982—Energy Information Administration, FPC Form 4, "Monthly Power Plant Report" and FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." •1983 and forward—Energy Information Administration, *Electric Power Annual.* **All Other Data:** •1967 through 1975—Bureau of Mines, *Minerals Yearbook,* "Natural Gas" chapter. •1976 through 1978—Energy Information Administration, Energy Data Reports, *Natural Gas, Annual.* •1979—Energy Information Administration, *Natural Gas Production and Consumption 1979.* •1980 and forward—Energy Information Administration, *Natural Gas Annual.*

Section 6. Coal Supply and Disposition

Production. In 1985, U.S. coal production totaled 886 million short tons, a decrease of 1.1 percent from the record high of 896 million short tons reached in 1984. Most of the 1985 production was in the form of bituminous coal, which accounted for 71 percent of the total. Subbituminous coal contributed 21 percent to the total, with lignite (8 percent) and anthracite (less than 1 percent) accounting for the remainder. Anthracite production declined again in 1985, continuing a 35-year trend in which anthracite's contribution to total coal production fell from 9 percent in 1949 to less than one-half of 1 percent in 1985 (Table 73).

Geographically, nearly two-thirds of all 1985 coal production was mined east of the Mississippi River and about one-third west of the Mississippi. The geographic composition of the coal supply has been steadily shifting westward, where open-pit mining of low-sulfur coal is concentrated. Over the decade of the 1970's, western production rose five-fold while eastern production was relatively stable (Table 73). Even though the rate of growth of western production slowed in recent years, a new record for production in this region was set in 1985.

In nearly all coal producing areas, surface mining has increased in relative importance during the past two decades. Most western output comes from surface mines. In 1985, surface mining accounted for 60 percent of all coal production, up from 36 percent in 1965 (Table 73).

Productivity. Average output per miner-hour, which declined markedly during the early 1970's, began to increase near the end of that decade. By 1984, the average had risen to 2.64 short tons per miner-hour, from 1.77 short tons per miner-hour in 1978. Much of the increase reflected the growing importance of surface coal production, for which productivity is the highest (Table 78).

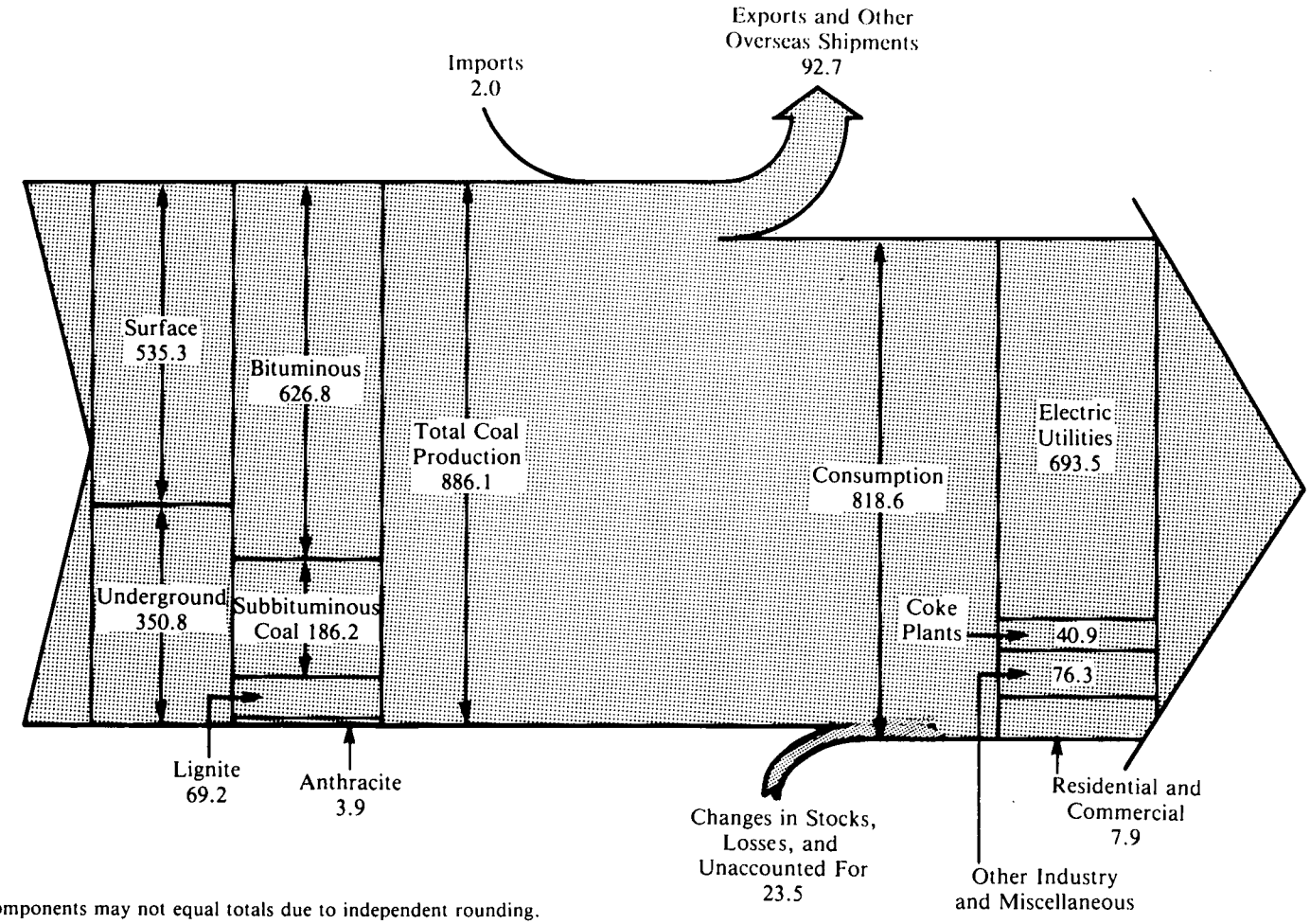
Exports. Coal exports rose to almost 93 million short tons in 1985 but remained considerably below the 1981 all-time high of 113 million short tons. Canada was the leading importer of U.S. coal in 1985, followed by Japan. Together Canada and Japan accounted for 34 percent of all U.S. coal exports, importing 16 million short tons and 15 million short tons, respectively. Italy (10 million short tons) and the Netherlands (6 million short tons) were the next leading importers of U.S. coal (Table 75).

Consumption. Domestic consumption of coal during 1985 rose to a record 819 million short tons, 3.4 percent above the 1984 level. The leading consumers of coal continued to be the electric utilities. In 1985, coal consumption by electric utilities rose to 693 million short tons, 85 percent of all coal consumed. The industrial sector consumed 117 million short tons (14 percent of total). Industrial use of coal has been in decline for nearly two decades; in 1985 it was only about two-thirds of the levels recorded in the 1960's and early 1970's (Table 74).

There is little seasonal variation in the use of coal. There are, however, considerable variations in the supply of coal. Therefore, large stockpiles are usually maintained at power plants and coke plants to compensate for production losses due to strikes, bad weather, and other emergencies. For example, during the 1981 coal miners' strike, which ended in June 1981, 50 million short tons of coal, approximately 30 percent of total stocks available, were drawn from consumer inventories. By the end of 1981, 24 million short tons of coal had been added to these depleted inventories. The especially high stocks of 232 million short tons at the end of 1982 were drawn down by nearly 30 million short tons in 1983. In 1985, 31 million short tons were drawn from inventories, bringing total year-end coal stocks to 201 million short tons (Table 76).

Prices. Domestic minemouth prices for bituminous coal and lignite in constant 1982 dollars declined 26 percent from 1978 through 1985. The current price of bituminous coal and lignite at the minemouth averaged $25 per short ton in 1985 down from $25.51 in 1984. The price per short ton for bituminous coal and lignite delivered CIF (cost, insurance, and freight paid) to electric utility power plants dropped slightly in 1985 from $35.12 to $34.63 (Table 79).

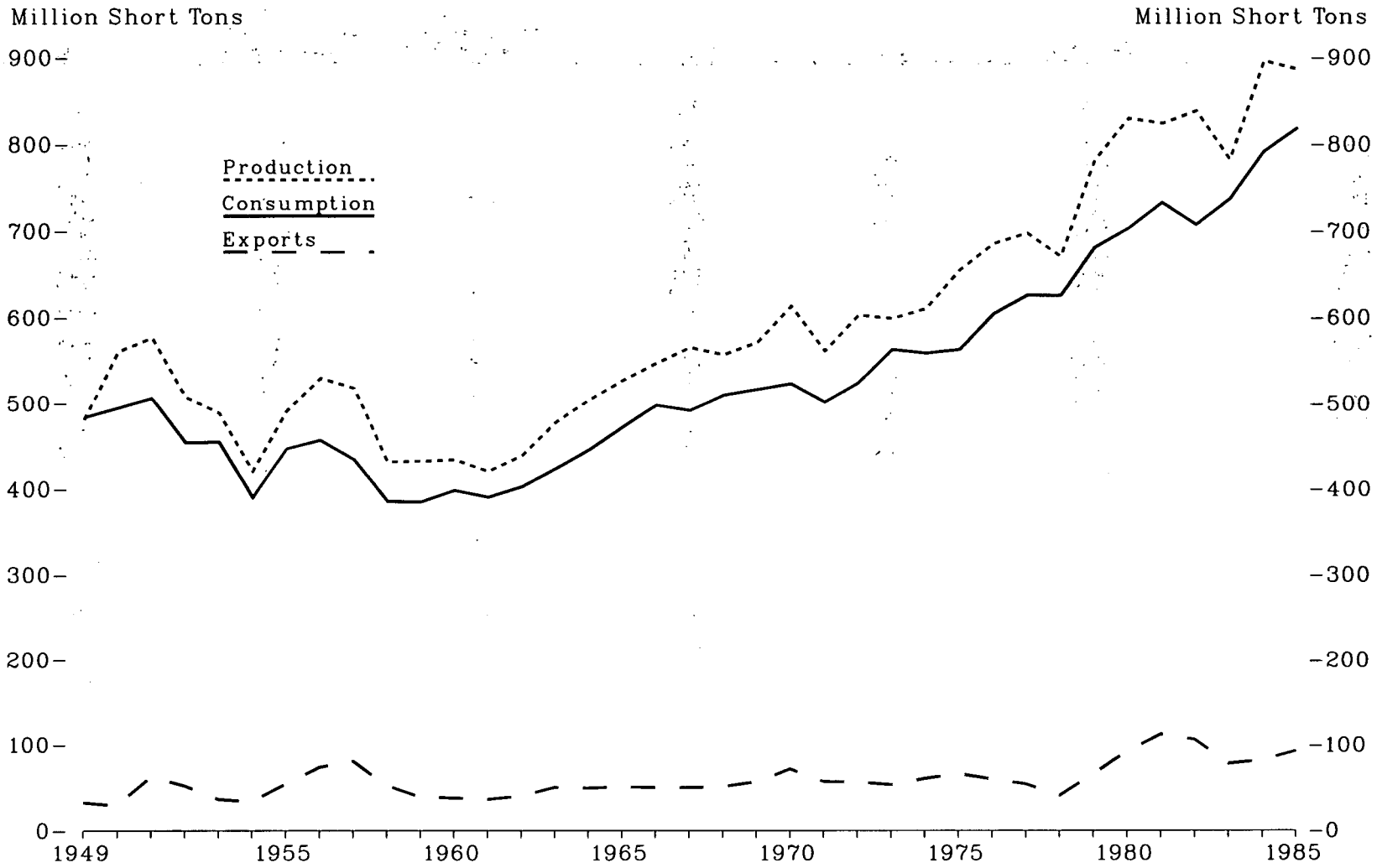
Diagram 4. Coal Flow, 1985
(Million Short Tons)



Note: Sum of components may not equal totals due to independent rounding.

Sources: See Tables 72, 73, and 74.

Figure 72. Coal Supply and Disposition, 1949-1985



Source: See Table 72.

Table 72. Coal Supply and Disposition, 1949-1985

(Million Short Tons)

Year	Production	Imports	Exports	Anthracite Shipped Overseas to U.S. Armed Forces	Change in Stocks, Losses, and Unaccounted for [1]	Consumption
1949	480.6	0.3	32.8	0	35.1	483.2
1950	560.4	0.4	29.4	0	-37.3	494.1
1951	576.3	0.3	62.7	0	-8.1	505.9
1952	507.4	0.3	52.2	0	-1.4	454.1
1953	488.2	0.3	36.5	0	2.8	454.8
1954	420.8	0.2	33.9	0	2.8	389.9
1955	490.8	0.3	54.4	0	10.3	447.0
1956	529.8	0.4	73.8	0	0.5	456.9
1957	518.0	0.4	80.8	0	-3.2	434.5
1958	431.6	0.3	52.6	0	6.4	385.7
1959	432.7	0.4	39.0	0	-9.0	385.1
1960	434.3	0.3	38.0	0	1.5	398.1
1961	420.4	0.2	36.4	0	6.2	390.4
1962	439.0	0.2	40.2	0.95	4.1	402.3
1963	477.2	0.3	50.4	0.86	-2.7	423.5
1964	504.2	0.3	49.5	1.36	-7.9	445.7
1965	527.0	0.2	51.0	1.13	-3.0	472.0
1966	546.8	0.2	50.1	0.77	1.6	497.7
1967	564.9	0.2	50.1	0.83	-22.7	491.4
1968	556.7	0.2	51.2	0.82	4.9	509.8
1969	571.0	0.1	56.9	1.04	3.2	516.4
1970	612.7	(2)	71.7	0.69	-17.0	523.2
1971	560.9	0.1	57.3	0.72	-1.4	501.6
1972	602.5	(2)	56.7	0.45	-21.1	524.3
1973	598.6	0.1	53.6	0.44	17.9	562.6
1974	610.0	2.1	60.7	0.43	7.4	558.4
1975	654.6	0.9	66.3	0.46	-26.2	562.6
1976	684.9	1.2	60.0	0.57	-21.7	603.8
1977	697.2	1.6	54.3	0.40	-18.8	625.3
1978	670.2	3.0	40.7	0.28	-6.9	625.2
1979	781.1	2.1	66.0	0.37	-36.3	680.5
1980	829.7	1.2	91.7	0.34	-36.1	702.7
1981	823.8	1.0	112.5	0.37	20.7	732.6
1982	838.1	0.7	106.3	0.22	-25.4	706.9
1983	782.1	1.3	77.8	0.34	31.4	736.7
1984	895.9	1.3	81.5	0.30	-24.1	791.3
1985[3]	886.1	2.0	92.7	0.24	23.4	818.6

[1] Includes changes in stocks at electric utilities, coke plants, other industries, retail dealers, and producers/distributors and the balancing item of losses and unaccounted for. Net additions to stocks are considered as negative numbers. Net withdrawals from stocks are considered as positive numbers.

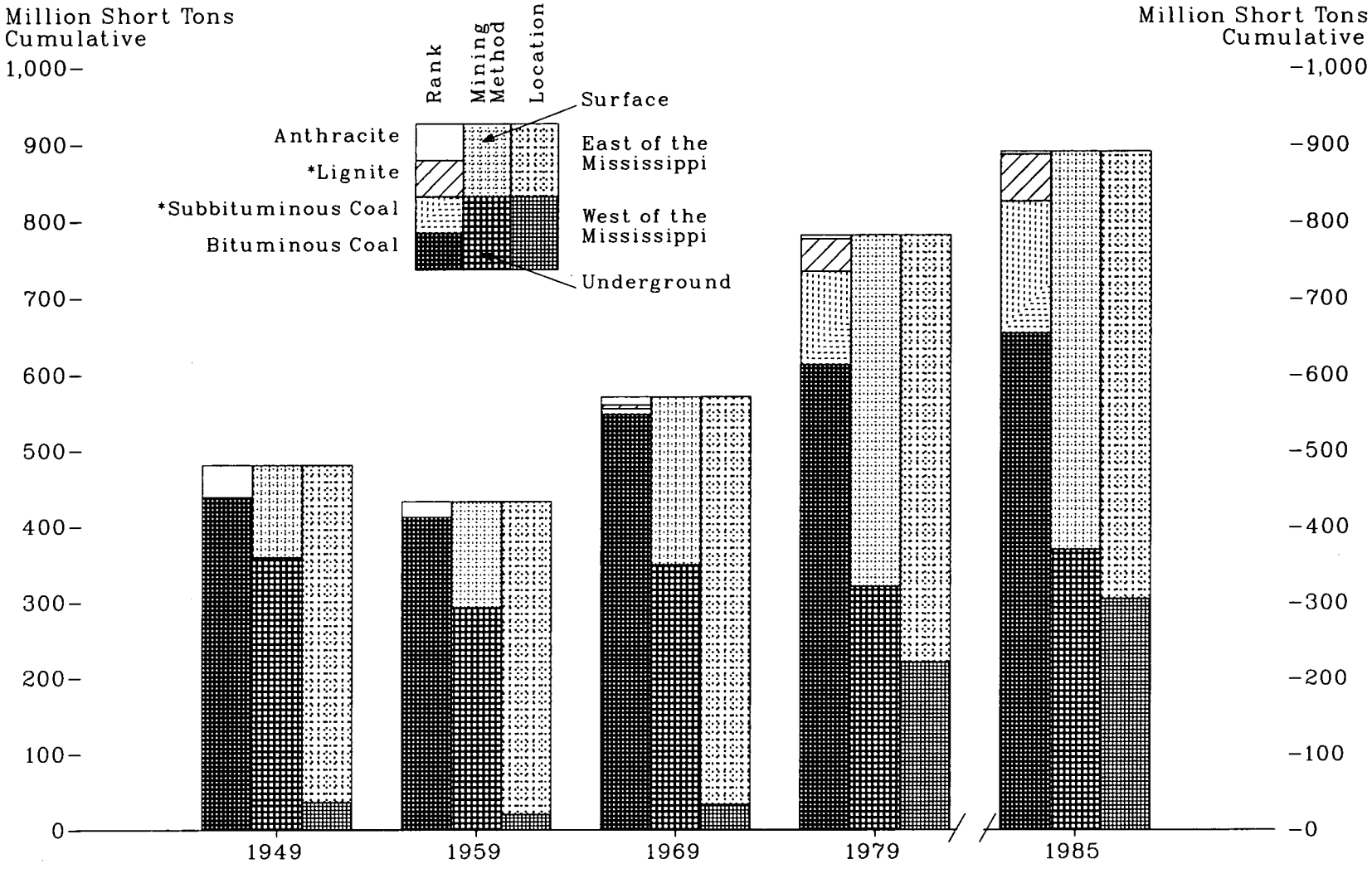
[2] Less than 0.05 million short tons.

[3] Preliminary.

Note: Sum of components may not equal total due to independent rounding.

Sources: **Anthracite Shipped Overseas to U.S. Armed Forces:** Defense Fuel Supply Center unpublished data. **All Other Data:** •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Coal-Bituminous and Lignite" and "Coal-Pennsylvania Anthracite" chapters. •1976—Energy Information Administration, Energy Data Report, *Coal-Bituminous and Lignite in 1976* and *Coal-Pennsylvania Anthracite 1976*. •1977 and 1978—Energy Information Administration, Energy Data Reports, *Bituminous Coal and Lignite Production and Mine Operations-1977;....1978* and *Coal-Pennsylvania Anthracite 1977;....1978*. • 1979 through 1980—Energy Information Administration, Energy Data Report, *Weekly Coal Report*. •1981 and forward—Energy Information Administration, *Weekly Coal Production*.

Figure 73. Coal Production, 1949, 1959, 1969, 1979, and 1985



*Included with Bituminous Coal for 1949 and 1959
Source: See Table 73.

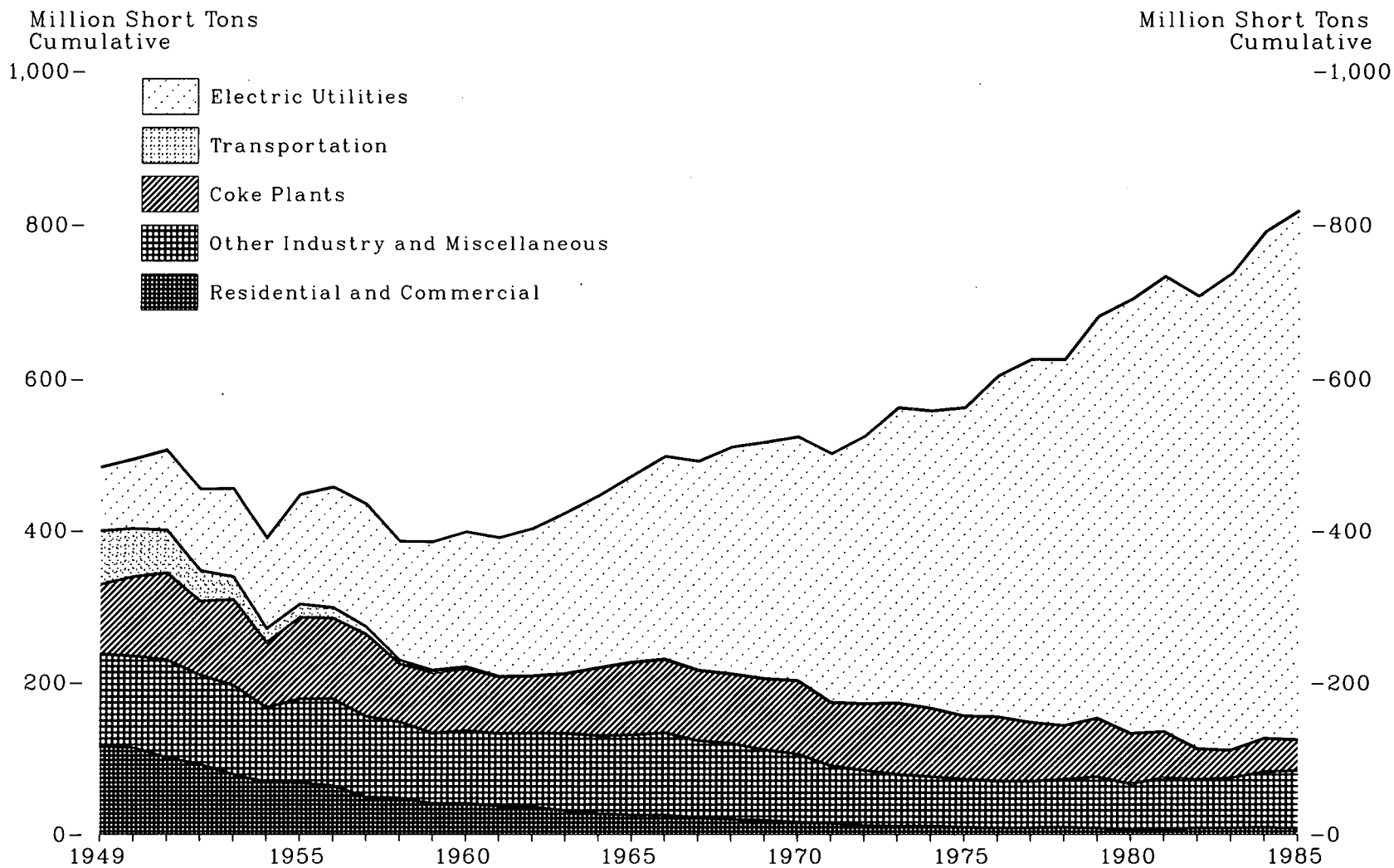
Table 73. Coal Production, 1949-1985

(Million Short Tons)

Year	Rank				Mining Method		Location		Total
	Bituminous Coal	Subbituminous Coal	Lignite	Anthracite	Underground	Surface	West of the Mississippi	East of the Mississippi	
1949	437.9	[1]	[1]	42.7	358.9	121.7	36.4	444.2	480.6
1950	516.3	[1]	[1]	44.1	421.0	139.4	36.0	524.4	560.4
1951	533.7	[1]	[1]	42.7	442.2	134.2	34.6	541.7	576.3
1952	466.8	[1]	[1]	40.6	381.2	126.3	32.7	474.8	507.4
1953	457.3	[1]	[1]	30.9	367.4	120.8	30.6	457.7	488.2
1954	391.7	[1]	[1]	29.1	306.0	114.8	25.4	395.4	420.8
1955	464.6	[1]	[1]	26.2	358.0	132.9	26.6	464.2	490.8
1956	500.9	[1]	[1]	28.9	380.8	148.9	25.8	504.0	529.8
1957	492.7	[1]	[1]	25.3	373.6	144.5	24.7	493.4	518.0
1958	410.4	[1]	[1]	21.2	297.6	134.0	20.3	411.3	431.6
1959	412.0	[1]	[1]	20.6	292.8	139.8	20.3	412.4	432.7
1960	415.5	[1]	[1]	18.8	292.6	141.7	21.3	413.0	434.3
1961	403.0	[1]	[1]	17.4	279.6	140.9	21.8	398.6	420.4
1962	422.1	[1]	[1]	16.9	287.9	151.1	21.4	417.6	439.0
1963	458.9	[1]	[1]	18.3	309.0	168.2	23.7	453.5	477.2
1964	487.0	[1]	[1]	17.2	327.7	176.5	25.7	478.5	504.2
1965	512.1	[1]	[1]	14.9	338.0	189.0	27.4	499.5	527.0
1966	533.9	[1]	[1]	12.9	342.6	204.2	28.0	518.8	546.8
1967	552.6	[1]	[1]	12.3	352.4	212.5	28.9	536.0	564.9
1968	545.2	[1]	[1]	11.5	346.6	210.1	29.7	527.0	556.7
1969	547.2	8.3	5.0	10.5	349.2	221.7	33.3	537.7	571.0
1970	578.5	16.4	8.0	9.7	340.5	272.1	44.9	567.8	612.7
1971	521.3	22.2	8.7	8.7	277.2	283.7	51.0	509.9	560.9
1972	556.8	27.5	11.0	7.1	305.0	297.4	64.3	538.2	602.5
1973	543.5	33.9	14.3	6.8	300.1	298.5	76.4	522.1	598.6
1974	545.7	42.2	15.5	6.6	278.0	332.1	91.9	518.1	610.0
1975	577.5	51.1	19.8	6.2	293.5	361.2	110.9	543.7	654.6
1976	588.4	64.8	25.5	6.2	295.5	389.4	136.1	548.8	684.9
1977	581.0	82.1	28.2	5.9	266.6	430.6	163.9	533.3	697.2
1978	534.0	96.8	34.4	5.0	242.8	427.4	183.0	487.2	670.2
1979	612.3	121.5	42.5	4.8	320.9	460.2	221.4	559.7	781.1
1980	628.8	147.7	47.2	6.1	337.5	492.2	251.0	578.7	829.7
1981	608.0	159.7	50.7	5.4	316.5	507.3	269.9	553.9	823.8
1982	620.2	160.9	52.4	4.6	339.2	499.0	273.9	564.3	838.1
1983	568.6	151.0	58.3	4.1	300.4	481.7	274.7	507.4	782.1
1984	649.5	179.2	63.1	4.2	352.1	543.9	308.3	587.6	895.9
1985[2]	626.8	186.2	69.2	3.9	350.8	535.3	316.9	569.2	886.1

[1] Included in bituminous coal.
[2] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Coal-Bituminous and Lignite" and "Coal-Pennsylvania Anthracite" chapters. •1976—Energy Information Administration, Energy Data Report, *Coal-Bituminous and Lignite in 1976* and *Coal-Pennsylvania Anthracite 1976*. •1977 and 1978—Energy Information Administration, Energy Data Report, *Bituminous Coal and Lignite Production and Mine Operations-1977; ...1978, Coal-Pennsylvania Anthracite 1977; ...1978*, and *Coal Production* (annual). •1979 through 1980—Energy Information Administration, Energy Data Report, *Weekly Coal Report* and *Coal Production* (annual). •1981 and forward—Energy Information Administration, *Weekly Coal Production* and *Coal Production* (annual).

Figure 74. Coal Consumption by End-Use Sector, 1949-1985



Source: See Table 74.

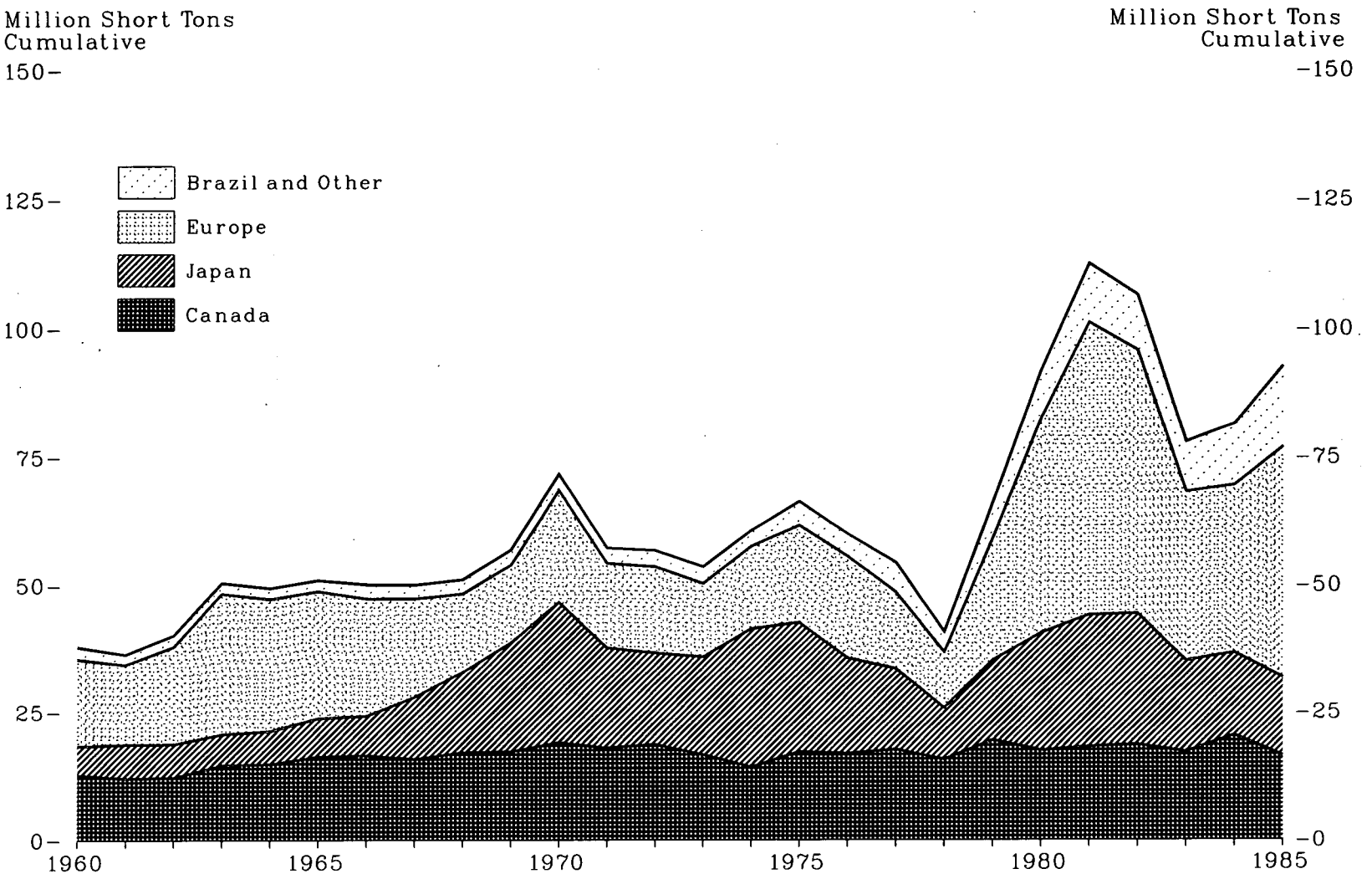
Table 74. Coal Consumption by End-Use Sector,[1] 1949-1985

(Million Short Tons)

Year	Electric Utilities	Industry and Miscellaneous			Transportation	Residential and Commercial	Total
		Coke Plants	Other Industry and Miscellaneous	Total			
1949	84.0	91.4	121.2	212.6	70.2	116.5	483.2
1950	91.9	104.0	120.6	224.6	63.0	114.6	494.1
1951	105.8	113.7	128.7	242.4	56.2	101.5	505.9
1952	107.1	97.8	117.1	214.9	39.8	92.3	454.1
1953	115.9	113.1	117.0	230.1	29.6	79.2	454.8
1954	118.4	85.6	98.2	183.9	18.6	69.1	389.9
1955	143.8	107.7	110.1	217.8	17.0	68.4	447.0
1956	158.3	106.3	114.3	220.6	13.8	64.2	456.9
1957	160.8	108.4	106.5	214.9	9.8	49.0	434.5
1958	155.7	76.8	100.5	177.4	4.7	47.9	385.7
1959	168.4	79.6	92.7	172.3	3.6	40.8	385.1
1960	176.7	81.4	96.0	177.4	3.0	40.9	398.1
1961	182.2	74.2	95.9	170.1	0.8	37.3	390.4
1962	193.3	74.7	97.1	171.7	0.7	36.5	402.3
1963	211.3	78.1	101.9	180.0	0.7	31.5	423.5
1964	225.4	89.2	103.1	192.4	0.7	27.2	445.7
1965	244.8	95.3	105.6	200.8	0.7	25.7	472.0
1966	266.5	96.4	108.7	205.1	0.6	25.6	497.7
1967	274.2	92.8	101.8	194.6	0.5	22.1	491.4
1968	297.8	91.3	100.4	191.6	0.4	20.0	509.8
1969	310.6	93.4	93.1	186.6	0.3	18.9	516.4
1970	320.2	96.5	90.2	186.6	0.3	16.1	523.2
1971	327.3	83.2	75.6	158.9	0.2	15.2	501.6
1972	351.8	87.7	72.9	160.6	0.2	11.7	524.3
1973	389.2	94.1	68.0	162.1	0.1	11.1	562.6
1974	391.8	90.2	64.9	155.1	0.1	11.4	558.4
1975	406.0	83.6	63.6	147.2	[2]	9.4	562.6
1976	448.4	84.7	61.8	146.5	[2]	8.9	603.8
1977	477.1	77.7	61.5	139.2	[2]	9.0	625.3
1978	481.2	71.4	63.1	134.5	[2]	9.5	625.2
1979	527.1	77.4	67.7	145.1	[2]	8.4	680.5
1980	569.3	66.7	60.3	127.0	[2]	6.5	702.7
1981	596.8	61.0	67.4	128.4	[2]	7.4	732.6
1982	593.7	40.9	64.1	105.0	[2]	8.2	706.9
1983	625.2	37.0	66.0	103.0	[2]	8.4	736.7
1984	664.4	44.0	73.7	117.8	[2]	9.1	791.3
1985[3]	693.5	40.9	76.3	117.2	[2]	7.9	818.6

[1] See Explanatory Note 10.
[2] Less than 0.05 million short tons. Quantities are included in the Other Industry and Miscellaneous category.
[3] Preliminary, except for electric utilities which is final.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Coal-Bituminous and Lignite" and "Coal-Pennsylvania Anthracite" chapters. •1976—Energy Information Administration, Energy Data Report, *Coal-Bituminous and Lignite in 1976* and *Coal-Pennsylvania Anthracite 1976*. •1977 and 1978—Energy Information Administration, Energy Data Report, *Coal-Pennsylvania Anthracite 1977;...1978* and *Weekly Coal Report*. • 1979 through 1980—Energy Information Administration, Energy Data Report, *Weekly Coal Report*. •1981—Energy Information Administration, *Weekly Coal Production*. •1982 and forward—Energy Information Administration, *Quarterly Coal Report*.

Figure 75. Coal Exports by Country of Destination, 1960-1985



Source: See Table 75.

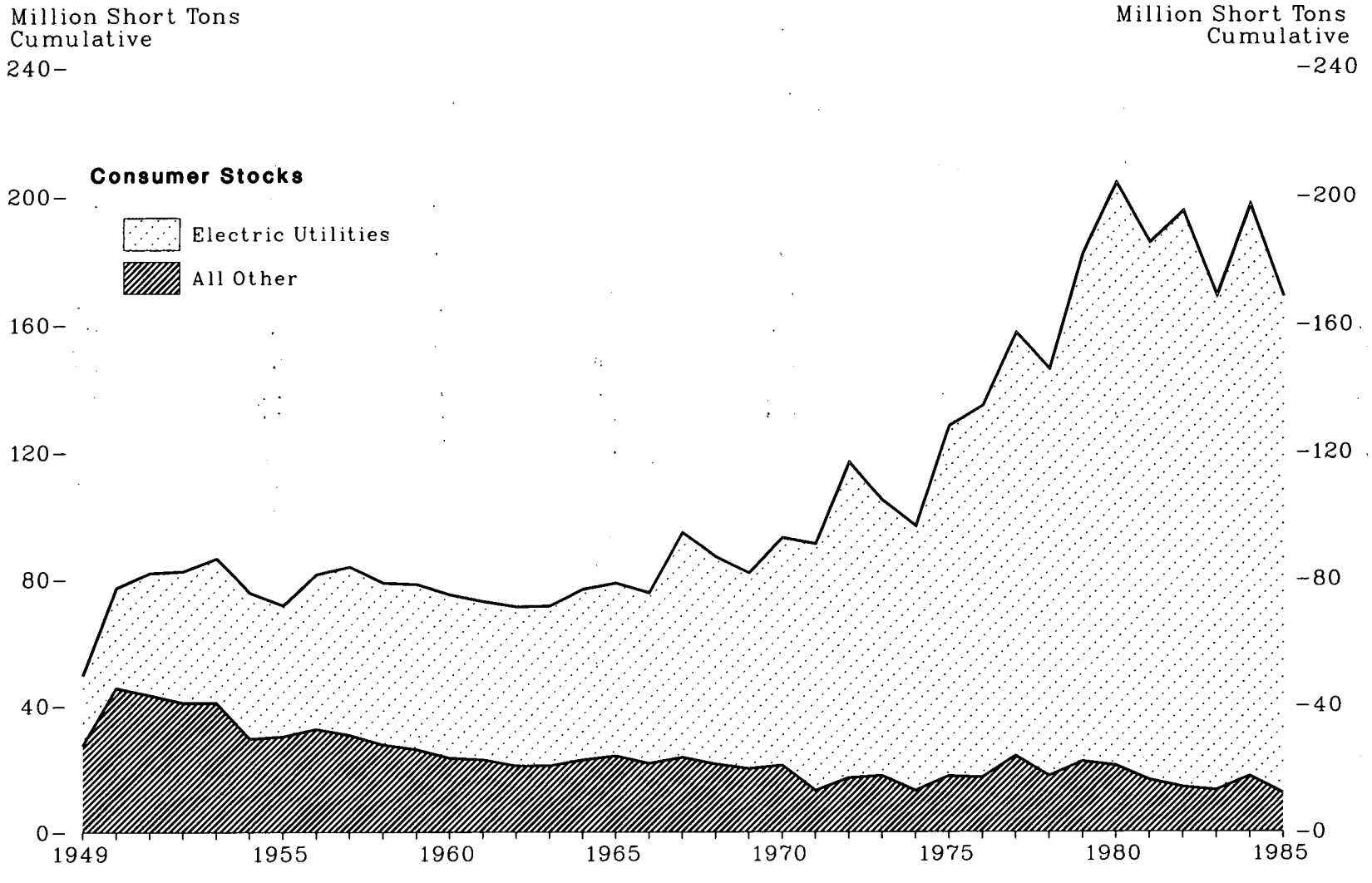
Table 75. Coal Exports[1] by Country of Destination, 1960-1985

(Million Short Tons)

Year	Canada	Brazil	Europe												
			Belgium/ Luxem-bourg	Denmark	France	West Germany	Italy	Nether-lands	Spain	United Kingdom	Other	Total	Japan	Other	Total
1960	12.8	1.1	1.1	0.1	0.8	4.6	4.9	2.8	0.3	0	2.4	17.1	5.6	1.3	38.0
1961	12.1	1.0	1.0	0.1	0.7	4.3	4.8	2.6	0.2	0	2.0	15.7	6.6	1.0	36.4
1962	12.3	1.3	1.3	(2)	0.9	5.1	6.0	3.3	0.8	(2)	1.8	19.1	6.5	1.0	40.2
1963	14.6	1.2	2.7	(2)	2.7	5.6	7.9	5.0	1.5	(2)	2.4	27.7	6.1	0.9	50.4
1964	14.8	1.1	2.3	(2)	2.2	5.2	8.1	4.2	1.4	(2)	2.6	26.0	6.5	1.1	49.5
1965	16.3	1.2	2.2	(2)	2.1	4.7	9.0	3.4	1.4	(2)	2.3	25.1	7.5	0.9	51.0
1966	16.5	1.7	1.8	(2)	1.6	4.9	7.8	3.2	1.2	(2)	2.5	23.1	7.8	1.0	50.1
1967	15.8	1.7	1.4	0	2.1	4.7	5.9	2.2	1.0	0	2.1	19.4	12.2	1.0	50.1
1968	17.1	1.8	1.1	(2)	1.5	3.8	4.3	1.5	1.5	(2)	1.9	15.5	15.8	0.9	51.2
1969	17.3	1.8	0.9	0	2.3	3.5	3.7	1.6	1.8	(2)	1.3	15.2	21.4	1.2	56.9
1970	19.1	2.0	1.9	(2)	3.6	5.0	4.3	2.1	3.2	(2)	1.8	21.8	27.6	1.2	71.7
1971	18.0	1.9	0.8	0	3.2	2.9	2.7	1.6	2.6	1.7	1.1	16.6	19.7	1.1	57.3
1972	18.7	1.9	1.1	(2)	1.7	2.4	3.7	2.3	2.1	2.4	1.1	16.9	18.0	1.2	56.7
1973	16.7	1.6	1.2	0	2.0	1.6	3.3	1.8	2.2	0.9	1.3	14.4	19.2	1.6	53.6
1974	14.2	1.3	1.1	0	2.7	1.5	3.9	2.6	2.0	1.4	0.9	16.1	27.3	1.8	60.7
1975	17.3	2.0	0.6	0	3.6	2.0	4.5	2.1	2.7	1.9	1.6	19.0	25.4	2.6	66.3
1976	16.9	2.2	2.2	(2)	3.5	1.0	4.2	3.5	2.5	0.8	2.1	19.9	18.8	2.1	60.0
1977	17.7	2.3	1.5	0.1	2.1	0.9	4.1	2.0	1.6	0.6	2.1	15.0	15.9	3.5	54.3
1978	15.7	1.5	1.1	0	1.7	0.6	3.2	1.1	0.8	0.4	2.2	11.0	10.1	2.5	40.7
1979	19.5	2.8	3.2	0.2	3.9	2.6	5.0	2.0	1.4	1.4	4.4	23.9	15.7	4.1	66.0
1980	17.5	3.3	4.6	1.6	7.8	2.5	7.1	4.7	3.4	4.1	6.0	41.9	23.1	6.0	91.7
1981	18.2	2.7	4.3	3.9	9.7	4.3	10.5	6.8	6.4	2.3	8.8	57.0	25.9	8.7	112.5
1982	18.6	3.1	4.8	2.8	9.0	2.3	11.3	5.9	5.6	2.0	7.6	51.3	25.8	7.5	106.3
1983	17.2	3.6	2.5	1.7	4.2	1.5	8.1	4.2	3.3	1.2	6.4	33.1	17.9	6.1	77.8
1984	20.4	4.7	3.9	0.6	3.8	0.9	7.6	5.5	2.3	2.9	5.3	32.8	16.3	7.2	81.5
1985	16.4	5.9	4.4	2.2	4.5	1.1	10.3	6.3	3.5	2.7	10.2	45.1	15.4	9.9	92.7

[1] Excludes overseas shipments of anthracite to U.S. Armed Forces.
[2] Less than 50,000 tons.
Note: Sum of components may not equal total due to independent rounding.
Source: Bureau of the Census, *U.S. Exports by Schedule B Commodities*, EM 522.

Figure 76. Coal Stocks, End of Year 1949-1985



Source: See Table 76.

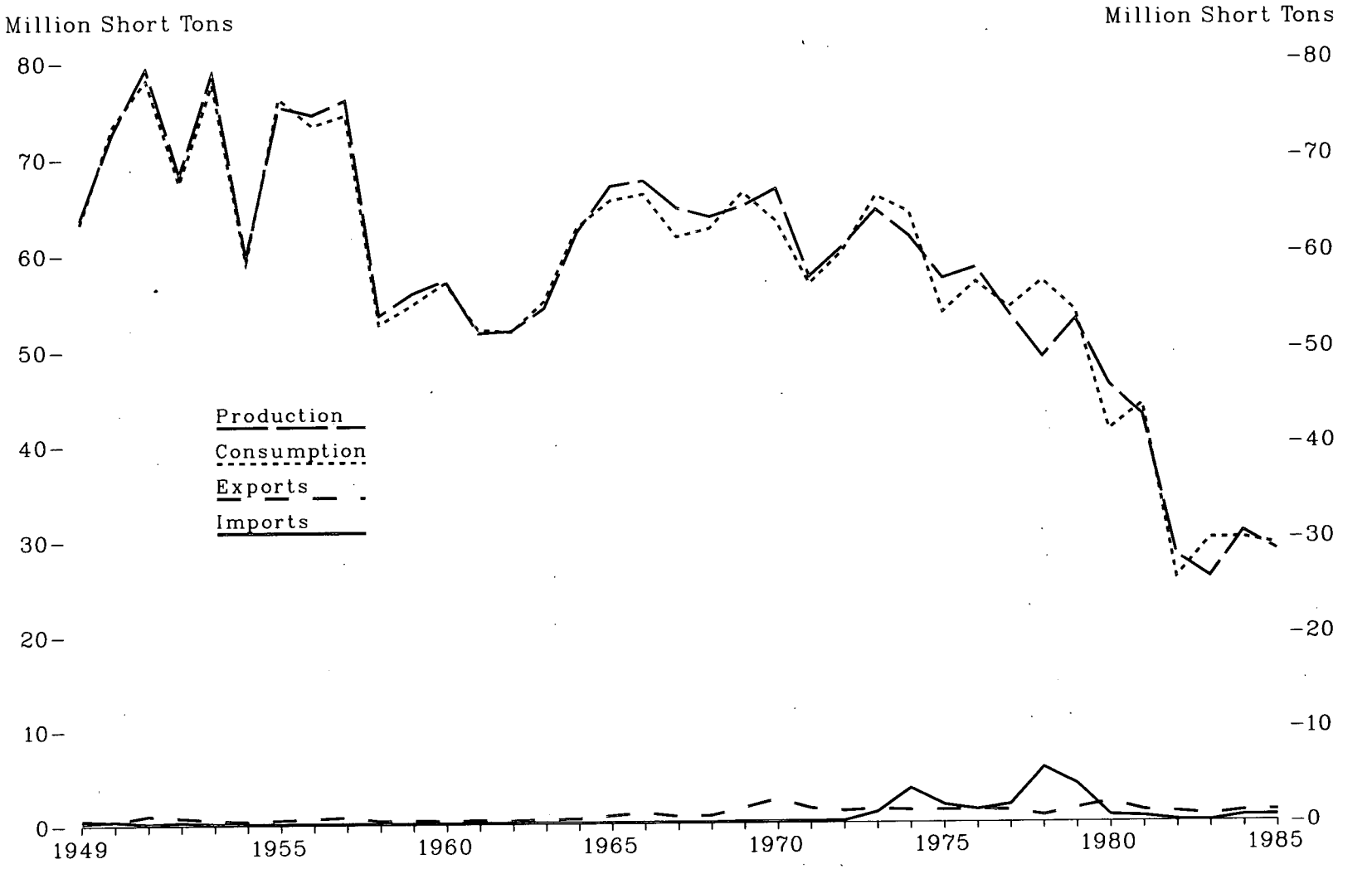
Table 76. Coal Stocks, End of Year 1949-1985

(Million Short Tons)

Year	Coal Consumers					Coal Producers and Distributors	Total
	Electric Utilities	Coke Plants	Other Industry [1]	Residential [2] and Commercial	Total		
1949	22.1	10.0	16.1	1.4	49.5	NA	NA
1950	31.8	16.8	26.2	2.5	77.3	NA	NA
1951	38.5	15.3	26.2	1.8	81.8	NA	NA
1952	41.5	14.5	24.7	1.7	82.4	NA	NA
1953	45.6	16.6	22.8	1.5	86.6	NA	NA
1954	46.1	12.4	16.4	0.8	75.7	NA	NA
1955	41.4	13.4	15.9	1.0	71.7	NA	NA
1956	48.8	14.0	17.4	1.1	81.3	NA	NA
1957	53.1	14.2	15.5	0.9	83.7	NA	NA
1958	51.0	13.1	13.7	0.9	78.7	NA	NA
1959	52.1	11.6	13.6	1.0	78.4	NA	NA
1960	51.7	11.1	11.6	0.7	75.2	NA	NA
1961	50.1	10.5	11.9	0.5	73.0	NA	NA
1962	50.4	8.4	12.0	0.5	71.3	NA	NA
1963	50.6	8.1	12.3	0.5	71.5	NA	NA
1964	53.9	10.2	12.2	0.4	76.7	NA	NA
1965	54.5	10.6	13.1	0.4	78.6	NA	NA
1966	53.9	9.3	12.2	0.2	75.6	NA	NA
1967	71.0	11.1	12.3	0.2	94.6	NA	NA
1968	65.5	9.7	11.7	0.2	87.0	NA	NA
1969	61.9	9.1	10.8	0.2	81.9	NA	NA
1970	71.9	9.0	11.8	0.3	93.0	NA	NA
1971	77.8	7.3	5.6	0.3	91.0	NA	NA
1972	99.7	9.1	7.6	0.3	116.8	NA	NA
1973	87.0	7.0	10.4	0.3	104.6	NA	NA
1974	83.5	6.2	6.6	0.3	96.6	NA	NA
1975	110.7	8.8	8.5	0.2	128.3	NA	NA
1976	117.4	9.9	7.1	0.2	134.7	NA	NA
1977	133.2	12.8	11.1	0.2	157.3	NA	NA
1978	128.2	8.3	9.0	0.4	145.9	NA	NA
1979	159.7	10.2	11.8	0.3	182.0	20.8	202.8
1980	183.0	9.1	12.0	NA	204.0	24.4	228.4
1981	168.9	6.5	9.9	NA	185.3	24.2	209.4
1982	181.1	4.6	9.5	NA	195.3	36.8	232.0
1983	155.6	4.3	8.7	NA	168.7	33.9	202.6
1984	179.7	6.2	11.3	NA	197.2	34.1	231.3
1985[3]	156.4	4.2	7.9	NA	168.5	32.2	200.7

[1] Includes transportation sector.
[2] Stocks at retail dealers, excluding anthracite.
[3] Estimated, except electric utilities which is final.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Coal-Bituminous and Lignite" and "Coal-Pennsylvania Anthracite" chapters. •1976—Energy Information Administration, Energy Data Report, *Coal-Bituminous and Lignite in 1976* and *Coal-Pennsylvania Anthracite 1976*. •1977 and 1978—Energy Information Administration, Energy Data Report, *Coal-Pennsylvania Anthracite 1977;....1978* and *Weekly Coal Report*. •1979 through 1980—Energy Information Administration, Energy Data Report, *Weekly Coal Report*. •1981—Energy Information Administration, *Weekly Coal Production*. •1982 and forward—Energy Information Administration, *Quarterly Coal Report*.

Figure 77. Coke Supply and Disposition, 1949-1985



Source: See Table 77.

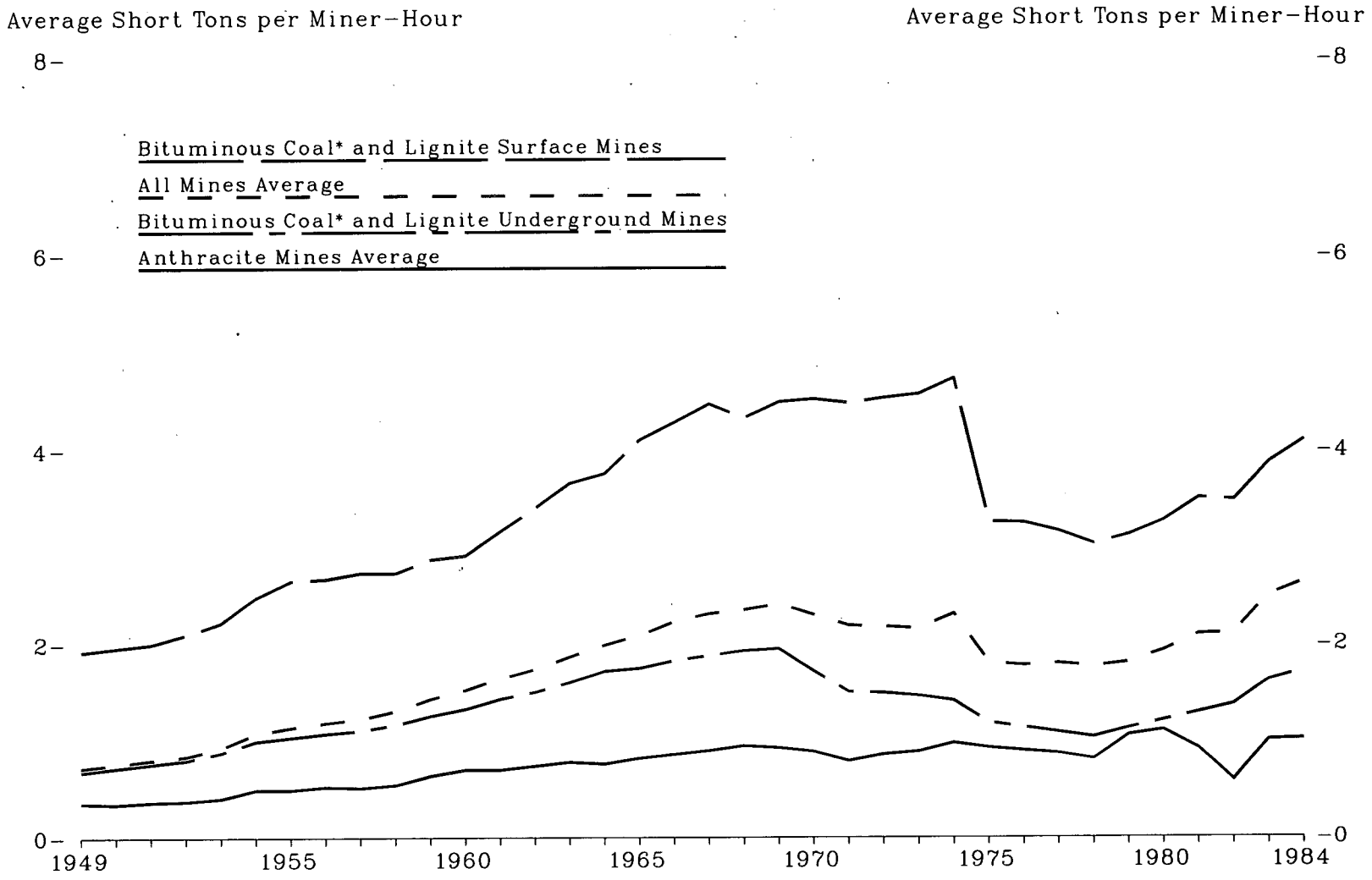
Table 77. Coke Supply and Disposition, 1949-1985

(Million Short Tons)

Year	Production	Imports	Exports	Stock Change [1]	Consumption
1949	63.64	0.28	0.55	- 0.18	63.19
1950	72.72	0.44	0.40	0.66	73.42
1951	79.33	0.16	1.03	- 0.37	78.09
1952	68.25	0.31	0.79	- 0.42	67.36
1953	78.84	0.16	0.52	- 0.78	77.70
1954	59.66	0.12	0.39	- 0.27	59.12
1955	75.30	0.13	0.53	1.25	76.14
1956	74.48	0.13	0.66	- 0.63	73.32
1957	75.95	0.12	0.82	- 0.81	74.43
1958	53.60	0.12	0.39	- 0.68	52.66
1959	55.86	0.12	0.46	- 0.86	54.67
1960	57.23	0.13	0.35	- 0.06	56.95
1961	51.71	0.13	0.44	0.70	52.09
1962	51.91	0.14	0.36	0.14	51.82
1963	54.28	0.15	0.45	1.02	55.00
1964	62.14	0.10	0.52	0.91	62.64
1965	66.85	0.09	0.83	- 0.73	65.38
1966	67.40	0.10	1.10	- 0.38	66.02
1967	64.58	0.09	0.71	- 2.39	61.57
1968	63.65	0.09	0.79	- 0.52	62.44
1969	64.76	0.17	1.63	2.86	66.17
1970	66.52	0.15	2.48	- 0.99	63.21
1971	57.44	0.17	1.51	0.59	56.69
1972	60.51	0.18	1.23	0.59	60.05
1973	64.32	1.09	1.40	1.76	65.76
1974	61.58	3.54	1.28	0.25	64.09
1975	57.21	1.82	1.27	- 4.06	53.69
1976	58.33	1.31	1.32	- 1.50	56.83
1977	53.51	1.83	1.24	0.05	54.14
1978	49.01	5.72	0.69	2.91	56.95
1979	52.94	3.97	1.44	- 1.65	53.83
1980	46.13	0.66	2.07	- 3.44	41.28
1981	42.79	0.53	1.17	1.90	44.05
1982	28.12	0.12	0.99	- 1.47	25.78
1983	25.81	0.04	0.66	4.67	29.85
1984	30.56	0.58	1.04	- 0.20	29.90
1985[2]	28.64	0.58	1.12	1.16	29.26

[1] Negative numbers denote a net addition to stocks or a reduction in supply. Positive numbers denote a net withdrawal from stocks or an addition to supply.
[2] Preliminary, except imports and exports which are final.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Coke and Coal Chemicals" chapter. •1976 through 1980—Energy Information Administration, Energy Data Report, *Coke and Coal Chemicals*, annual. •1981—Energy Information Administration, Energy Data Report, *Coke Plant Report*, quarterly. •1982 and forward—Energy Information Administration, *Quarterly Coal Report*.

Figure 78. Labor Productivity in Coal Mining, 1949-1984



*Includes Subbituminous Coal
Source: See Table 78.

Table 78. Labor Productivity in Coal Mining, 1949-1984

(Average Short Tons per Miner Hour)

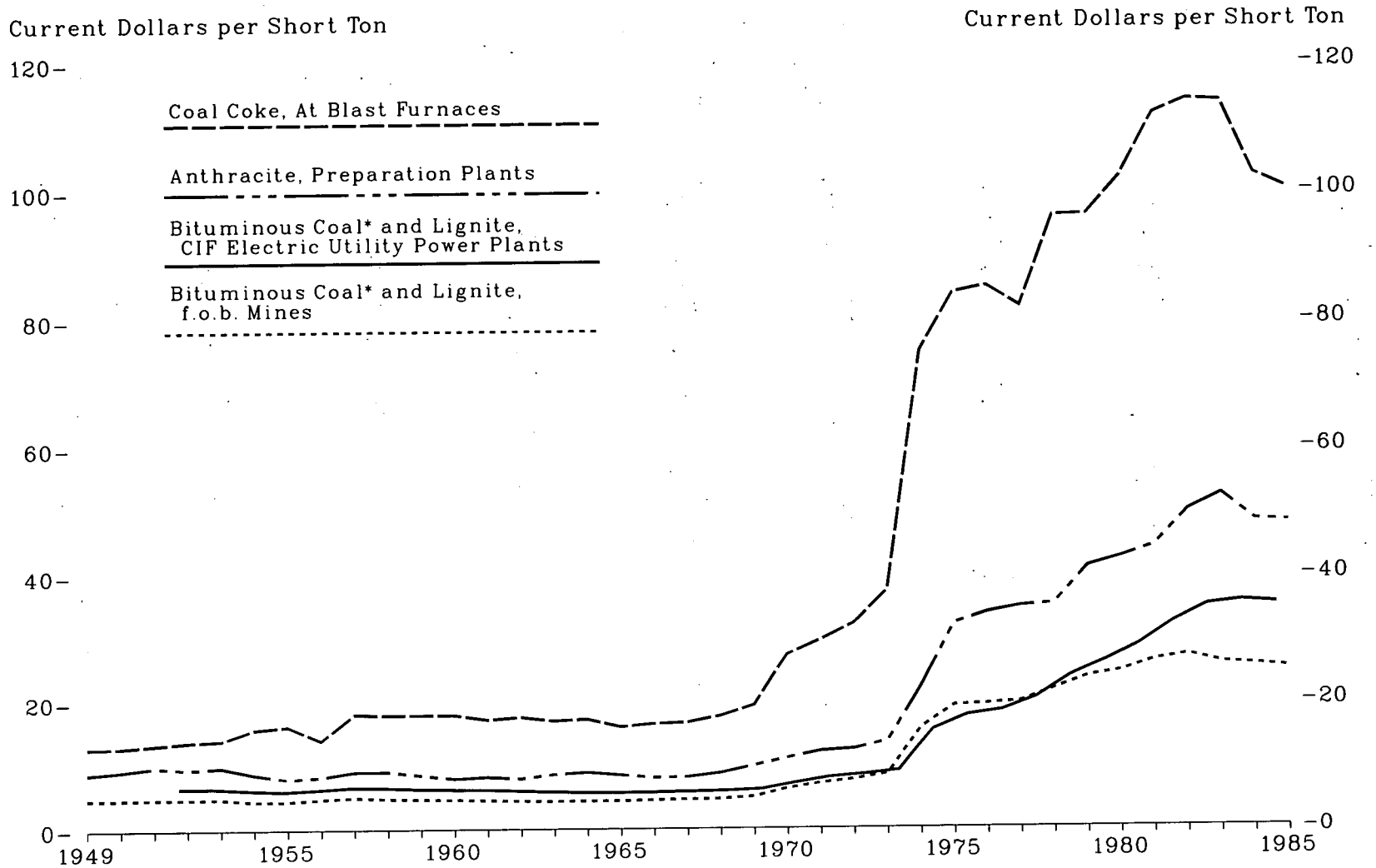
Year	Bituminous Coal [1] and Lignite Mines			Anthracite Mines Average	All Mines Average
	Underground	Surface	Average		
1949	0.68	1.92	0.80	0.36	0.72
1950	0.72	1.96	0.85	0.35	0.76
1951	0.76	2.00	0.88	0.37	0.80
1952	0.80	2.10	0.93	0.38	0.84
1953	0.88	2.22	1.02	0.41	0.93
1954	1.00	2.48	1.18	0.50	1.08
1955	1.04	2.65	1.23	0.50	1.14
1956	1.08	2.67	1.29	0.53	1.19
1957	1.11	2.73	1.32	0.52	1.23
1958	1.17	2.73	1.42	0.55	1.31
1959	1.26	2.87	1.53	0.64	1.43
1960	1.33	2.91	1.60	0.70	1.52
1961	1.43	3.16	1.73	0.70	1.64
1962	1.50	3.40	1.84	0.74	1.74
1963	1.60	3.66	1.98	0.78	1.87
1964	1.72	3.76	2.11	0.76	1.99
1965	1.75	4.10	2.19	0.82	2.09
1966	1.83	4.28	2.32	0.86	2.23
1967	1.88	4.48	2.40	0.90	2.31
1968	1.93	4.33	2.42	0.95	2.35
1969	1.95	4.50	2.49	0.93	2.41
1970	1.72	4.53	2.36	0.89	2.30
1971	1.50	4.49	2.25	0.79	2.19
1972	1.49	4.54	2.22	0.86	2.18
1973	1.46	4.58	2.20	0.89	2.16
1974	1.41	4.74	2.35	0.98	2.31
1975	1.19	3.26	1.83	0.93	1.81
1976	1.14	3.25	1.80	0.90	1.78
1977	1.09	3.16	1.82	0.87	1.80
1978	1.04	3.03	1.79	0.81	1.77
1979	1.13	3.12	1.82	1.06	1.81
1980	1.21	3.27	1.94	1.11	1.93
1981	1.29	3.50	2.11	0.92	2.10
1982	1.37	3.48	2.14	0.59	2.11
1983	1.62	3.87	2.52	1.01	2.50
1984	1.72	4.10	2.65	1.02	2.64

[1] Includes subbituminous coal.

Note: Data for bituminous coal and lignite mines 1949 through 1973 and anthracite mines 1949 through 1978 were originally reported in short tons per miner-day. These data have been converted to short-tons per miner-hour by assuming an eight-hour day. All remaining data were calculated by dividing total production by total labor hours worked by all mine employees except office workers.

Sources: •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Coal-Bituminous and Lignite" and "Coal-Pennsylvania Anthracite" chapters. •1976—Energy Information Administration, Energy Data Report, *Coal-Bituminous and Lignite in 1976* and *Coal-Pennsylvania Anthracite 1976*. •1977 and 1978—Energy Information Administration, Energy Data Report, *Bituminous Coal and Lignite Production and Mine Operations-1977; ....1978* and *Coal-Pennsylvania Anthracite 1977; ....1978*. •1979—Energy Information Administration, Energy Data Report, *Coal Production-1979*. •1980 and forward—Energy Information Administration, *Coal Production* (annual).

Figure 79. Coal and Coal Coke Prices, 1949-1985



*Includes Subbituminous Coal
Source: See Table 79.

Table 79. Coal and Coal Coke Prices, 1949-1985

(Dollars per Short Ton)

Year	Bituminous Coal [1] and Lignite		Anthracite		All Coal		Coal Coke	
	F.O.B.[2] Mines		At Preparation Plants		CIF [3] Electric Utility Power Plants		At Blast Furnaces	
	Current	Constant[4]	Current	Constant[4]	Current	Constant[4]	Current	Constant[4]
1949	4.88	20.77	8.90	37.87	NA	NA	12.90	54.89
1950	4.84	20.25	9.34	39.08	NA	NA	12.96	54.23
1951	4.92	19.60	9.94	39.60	NA	NA	13.36	53.23
1952	4.90	19.22	9.58	37.57	6.61	25.92	13.81	54.16
1953	4.92	19.00	9.87	38.11	6.61	25.52	14.03	54.17
1954	4.52	17.19	8.76	33.31	6.31	23.99	15.82	60.15
1955	4.50	16.54	8.00	29.41	6.07	22.32	16.29	59.89
1956	4.82	17.15	8.33	29.64	6.32	22.49	14.03	49.93
1957	5.08	17.46	9.11	31.31	6.64	22.82	18.15	62.37
1958	4.86	16.36	9.14	30.77	6.58	22.15	17.98	60.54
1959	4.77	15.69	8.55	28.13	6.37	20.95	18.01	59.24
1960	4.69	15.18	8.01	25.92	6.26	20.26	18.02	58.32
1961	4.58	14.68	8.26	26.47	6.20	19.87	17.27	55.35
1962	4.48	14.04	7.99	25.05	6.02	18.87	17.64	55.30
1963	4.39	13.55	8.64	26.67	5.86	18.09	17.06	52.65
1964	4.45	13.53	8.93	27.14	5.74	17.45	17.30	52.58
1965	4.44	13.14	8.51	25.18	5.71	16.89	16.11	47.66
1966	4.54	12.97	8.08	23.09	5.76	16.46	16.56	47.31
1967	4.62	12.87	8.15	22.70	5.85	16.30	16.74	46.63
1968	4.67	12.39	8.78	23.29	5.93	15.73	17.72	47.00
1969	4.99	12.54	9.91	24.90	6.13	15.40	19.42	48.79
1970	6.26	14.90	11.03	26.26	7.13	16.98	27.43	65.31
1971	7.07	15.92	12.08	27.21	8.00	18.02	29.73	66.96
1972	7.66	16.47	12.40	26.67	8.44	18.15	32.33	69.53
1973	8.53	17.23	13.65	27.58	9.01	18.20	37.42	75.60
1974	15.75	29.17	22.19	41.09	15.46	28.63	75.00	138.89
1975	19.23	32.43	32.26	54.40	17.63	29.73	84.03	141.70
1976	19.43	30.79	33.92	53.76	18.38	29.13	85.09	134.85
1977	19.82	29.45	34.86	51.80	20.37	30.27	81.91	121.71
1978	21.78	30.17	35.25	48.82	23.75	32.89	95.95	132.89
1979	23.65	30.09	41.06	52.24	26.15	33.27	96.11	122.28
1980	24.52	28.61	42.51	49.60	28.76	33.56	101.93	118.94
1981	26.29	27.97	44.28	47.11	32.31	34.37	111.79	118.93
1982	27.14	27.14	49.85	49.85	34.90	34.90	113.91	113.91
1983	25.85	24.88	52.29	50.33	35.50	34.17	113.55	109.29
1984	25.51	23.60	48.22	44.61	35.12	32.49	102.34	94.67
1985[5]	25.00	22.38	48.00	42.97	34.63	31.00	100.00	89.53

[1] Includes subbituminous coal. [2] Free on board (see Glossary). [3] Cost, Insurance, and Freight (see Glossary). [4] Constant 1982 dollars calculated using GNP implicit price deflators, 1982 = 100. See Energy Equivalents and Price Deflators section. [5] Preliminary. NA = Not available. Note: During certain years, the average F.O.B. mine price exceeded the average CIF electric utility price. This reflected long-term contract buying and occurred during a period of rapid and steep F.O.B. mine price increases. Sources: **Bituminous Coal and Lignite, F.O.B. Mines** •1949 through 1975—Bureau of Mines, *Minerals Yearbook*, "Coal-Bituminous and Lignite" chapter. •1976—Energy Information Administration, Energy Data Report, *Coal-Bituminous and Lignite in 1976*. •1977 and 1978—Energy Information Administration, Energy Data Report, *Bituminous Coal and Lignite Production and Mine Operations-1977; ....1978*. •1979 through 1981—Energy Information Administration, Energy Data Report, *Weekly Coal Reports*. •1982 and forward—Energy Information Administration, *Weekly Coal Production*. **Anthracite** •1949 through 1976—Bureau of Mines, *Minerals Yearbook*, "Coal-Pennsylvania Anthracite" chapter. •1977 and 1978—Energy Information Administration, Energy Data Report, *Coal-Pennsylvania Anthracite 1977; ....1978*. •1979—Energy Information Administration, Energy Data Report, *Coal Production-1979*. •1980—Energy Information Administration, *Coal Production-1980*. •1981 and forward—Energy Information Administration, *Weekly Coal Production*. **All Coal, CIF Electric Utility Power Plants** •1949 through 1972—National Coal Association, *Steam Electric Plant Factors*. •1973 through 1982—Federal Power Commission, FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." •1983 and forward—Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuel for Electric Utilities." **Coal Coke** •1949 through 1975— Bureau of Mines, *Minerals Yearbook*, "Coke and Coal Chemicals" chapter. •1976 through 1980—Energy Information Administration, Energy Data Report, *Coke and Coal Chemicals*, annual. •1981—Energy Information Administration, Energy Data Report, *Coke Plant Report*, quarterly. •1982 and forward—Energy Information Administration, *Quarterly Coal Report*.

Section 7. Electricity Supply and Disposition

Electricity output (generation) is measured in watthours and for convenience is recorded in kilowatthours (1,000 watthours). For example, a 1,000-kilowatt generator running at full load for an entire year would produce 8,760,000 kilowatthours of electricity (1,000 times 24 hours per day times 365 days per year). Generators must operate less than 100 percent of the time during a year, however, if only to allow for routine maintenance. In addition, the load curve for electricity is variable throughout the day and year. Utilities develop a mix of generating capacity to satisfy steady or "baseload" demand, as well as variable or "peaking" demand.

Usually, conventional steam plants, nuclear plants, and large hydroelectric power plants in Northwestern States are used for baseload electricity requirements. Gas turbine plants, internal combustion plants, and most hydroelectric power plants are generally used for peaking purposes (during short periods of high demand) and are operated less than baseload plants.

Net Summer Capability. From 1949 through 1985, operable net summer capability of electric utilities in the United States increased each year to meet the growing demand for electricity. The 1985 capability of 654 million kilowatts was 3.0 percent greater than that for 1984. Conventional steam generating plants in 1985 accounted for 67 percent of the total electric utility capability; hydroelectric power plants, 14 percent; and nuclear plants, 12 percent (Table 86).

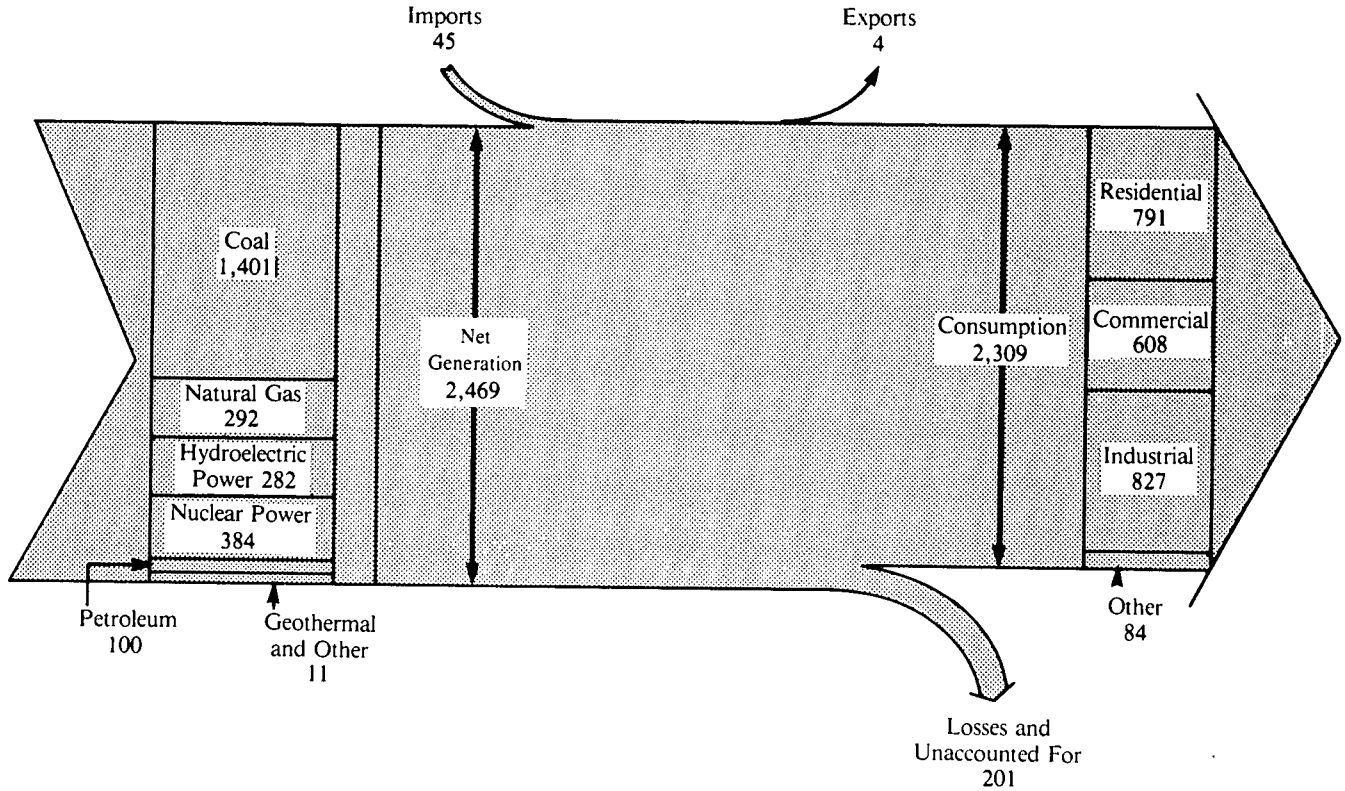
Domestic Generation. Electricity generation increased in 1985 to a record high of 2.47 trillion kilowatthours. Fossil steam generation, consistently the major source of electricity, accounted for 72.0 percent of the total output in 1985. Generation by nuclear power reached a record level in 1985 and accounted for 15.5 percent of production. Because of dry weather, generation by hydroelectric power plants declined substantially in 1985 and accounted for only 11.4 percent of total electricity generation, the lowest share since 1981 (Table 82).

Fossil Fuel Consumption. The mix of fossil fuels used to produce electricity experienced substantial shifts over the post-World War II period. During the 1950's and 1960's, petroleum and natural gas fueled increasing shares of electricity generation. However, from 1972 through 1985, the share of electricity generated from petroleum and natural gas combined fell from 37 percent to 16 percent of total generation; the share from coal and nuclear power rose from 47 percent to 72 percent (Table 81). While total energy input to generating units rose nearly 8 quadrillion Btu after 1972, input of petroleum and natural gas decreased by nearly 3 quadrillion Btu (Table 83).

Sales. Electricity sales rose in 1985 to a record 2,309 billion kilowatthours. Sales gains were greatest in the commercial sector (up 5.1 percent), reaching an all-time high of 608 billion kilowatthours. Of the three major end-use sectors, the industrial sector accounted for the largest share—35.8 percent of total sales in 1985. The residential sector and the commercial sector accounted for 34.2 percent and 26.3 percent, respectively (Table 85).

Prices. During 1985, weighted average monthly electric bills increased for each consumer group. The average monthly electric bill for residential consumers who consume 750 kilowatthours increased from $54.76 in 1984 to $57.86 in 1985 (Table 88). The weighted average price of the electricity sold by electric utilities to all consumers reached 6.72 cents per kilowatthour in 1985, 3.1 percent more than the 1984 price. The rate of increase was slightly slower than in 1984. Among major energy sources only electricity increased in price in 1985 (Table 89).

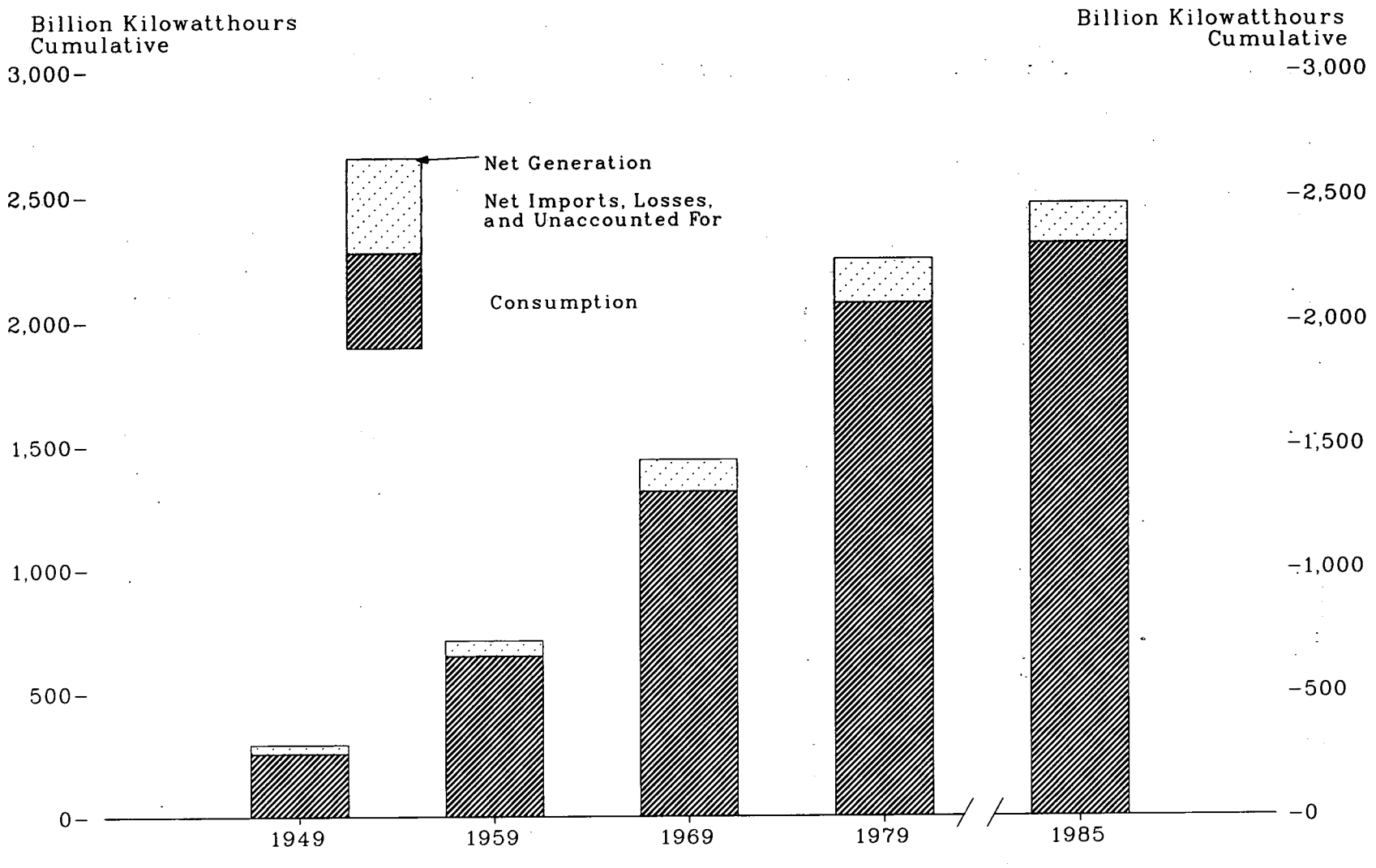
Diagram 5. Electric Utility Electricity Flow, 1985
(Billion Kilowatthours)



Note: Sum of components may not equal totals due to independent rounding.

Sources: See Tables 80, 81, and 85.

Figure 80. Electric Utility Industry, Supply and Disposition, 1949, 1959, 1969, 1979, and 1985



Source: See Table 80.

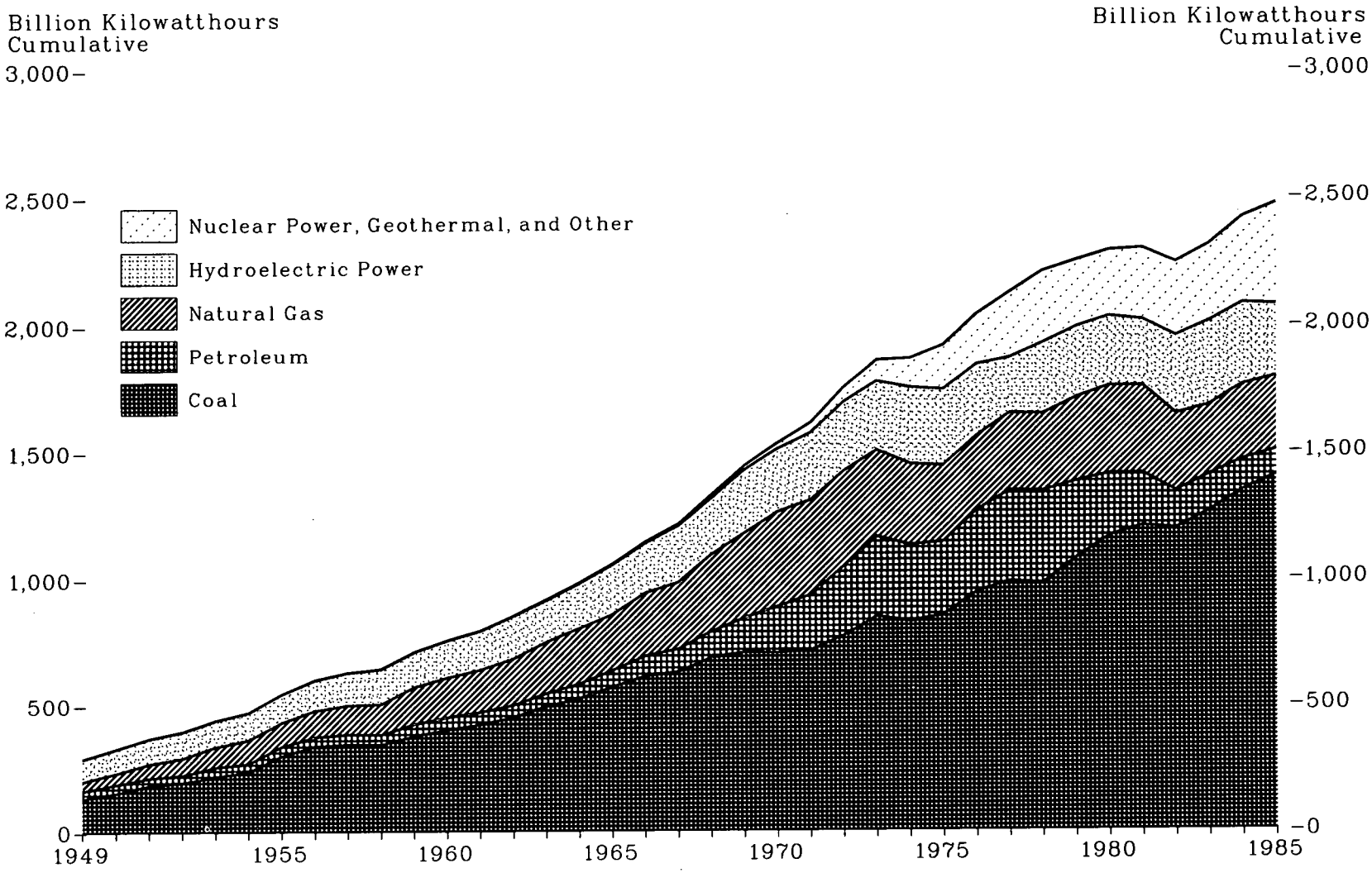
Table 80. Electric Utility Industry Supply and Disposition, 1949-1985

(Billion Kilowatthours)

Year	Net Generation [1]	Imports [2]	Exports [2]	Losses and Unaccounted For [3]	Consumption
1949	291	2	(*)	38	255
1950	329	2	(*)	39	291
1951	371	2	(*)	43	330
1952	399	3	(*)	45	356
1953	443	2	(*)	48	396
1954	472	3	(*)	50	424
1955	547	5	(*)	54	497
1956	601	5	1	59	546
1957	632	5	1	59	576
1958	645	4	1	61	588
1959	710	4	1	67	647
1960	756	5	1	72	688
1961	794	3	1	74	722
1962	855	2	2	77	778
1963	917	2	2	84	833
1964	984	6	4	90	896
1965	1,055	4	4	101	954
1966	1,144	4	3	110	1,035
1967	1,214	4	4	115	1,099
1968	1,329	4	4	126	1,203
1969	1,442	5	4	129	1,314
1970	1,532	6	4	142	1,392
1971	1,613	7	4	147	1,470
1972	1,750	10	3	162	1,595
1973	1,861	17	3	162	1,713
1974	1,867	15	3	174	1,706
1975	1,918	11	5	177	1,747
1976	2,038	11	2	191	1,855
1977	2,124	20	3	193	1,948
1978	2,206	21	1	208	2,018
1979	2,247	23	2	197	2,071
1980	2,286	25	4	213	2,094
1981	2,295	36	3	181	2,147
1982	2,241	33	4	184	2,086
1983	2,310	39	3	195	2,151
1984	2,416	42	3	178	2,278
1985[5]	2,469	44	4	201	2,309

[1] See Explanatory Note 1.
[2] Small amounts of electricity are transmitted across U.S. borders with Canada and Mexico.
[3] Balancing item, mainly transmission losses.
[4] Less than 0.5 billion kilowatthours.
[5] Preliminary. See Explanatory Note 19.
Note: Sum of components may not equal total due to independent rounding.
Sources: **Net Generation:** •1949 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report." **Consumption:** •1949 through September 1977—Federal Power Commission, Form 5, "Monthly Statement of Electric Operating Revenue and Income." •October 1977 through February 1980—Federal Energy Regulatory Commission, FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income." •March 1980 through 1982—Federal Energy Regulatory Commission, FERC Form 5, "Electric Utility Company Monthly Statement." •1983 and forward—Energy Information Administration, Form EIA-826, "Electric Utility Company Monthly Statement." **Imports and Exports:** •1949 through September 1977—unpublished Federal Power Commission data; •October 1977 and forward—unpublished Economic Regulatory Administration data.

Figure 81. Net Generation of Electricity by the Electric Utility Industry by Energy Source, 1949-1985



Source: See Table 81.

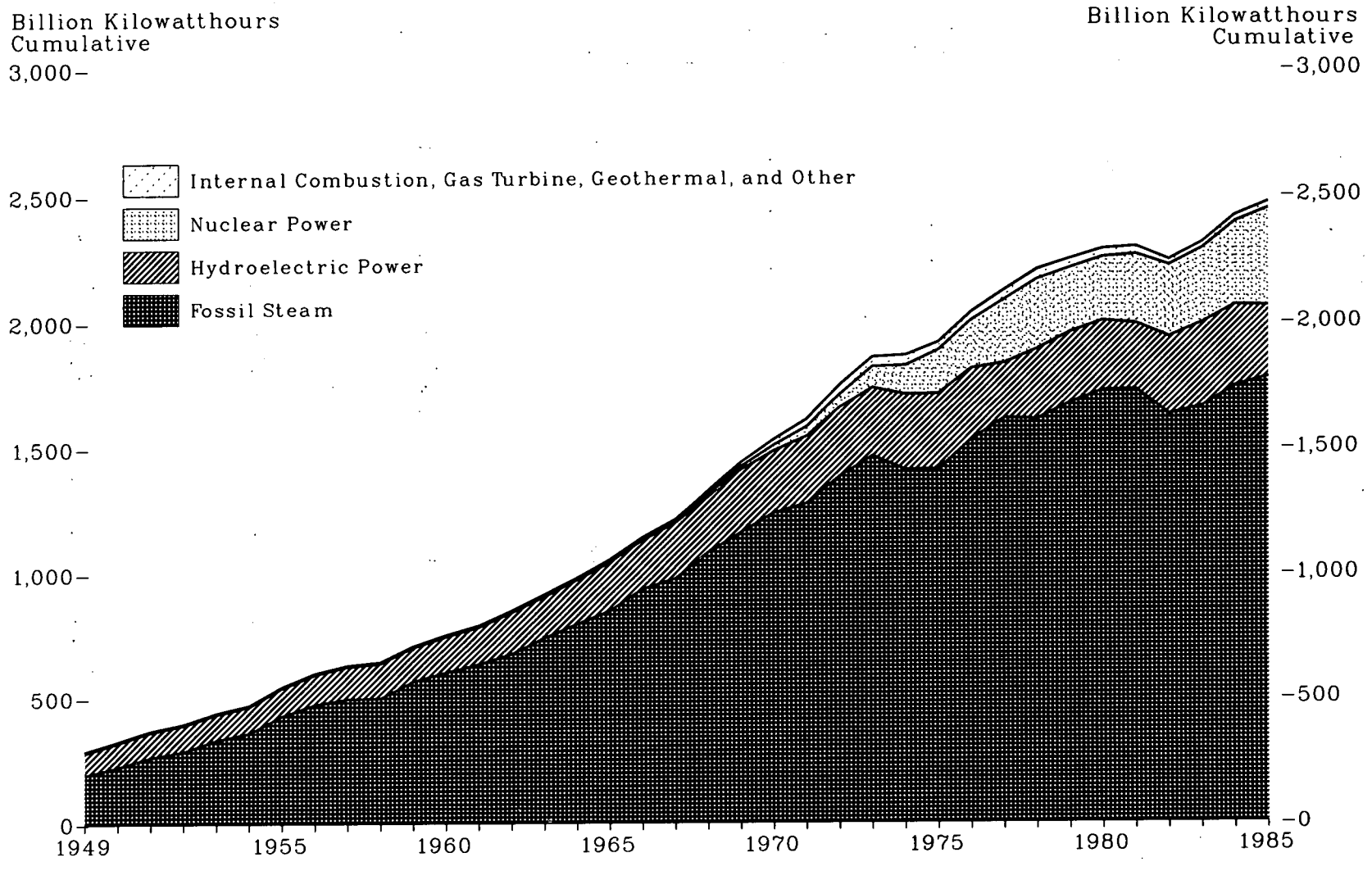
Table 81. Net Generation of Electricity[1] by the Electric Utility Industry by Energy Source, 1949-1985

(Billion Kilowatthours)

Year	Coal	Petroleum [2]	Natural Gas	Nuclear Power	Hydroelectric Power	Geothermal and Other [3]	Total
1949	135	29	37	0	90	(4)	291
1950	155	34	45	0	96	(4)	329
1951	185	29	57	0	100	(4)	371
1952	195	30	68	0	105	(4)	399
1953	219	38	80	0	105	(4)	443
1954	239	32	94	0	107	(4)	472
1955	301	37	95	0	113	(4)	547
1956	339	36	104	0	122	(4)	601
1957	346	40	114	(4)	130	(4)	632
1958	344	40	120	(4)	140	(4)	645
1959	378	47	147	(4)	138	(4)	710
1960	403	48	158	1	146	(4)	756
1961	422	49	169	2	152	(4)	794
1962	450	49	184	2	169	(4)	855
1963	494	52	202	3	166	(4)	917
1964	526	57	220	3	177	(4)	984
1965	571	65	222	4	194	(4)	1,055
1966	613	79	251	6	195	1	1,144
1967	630	89	265	8	222	1	1,214
1968	685	104	304	13	222	1	1,329
1969	706	138	333	14	250	1	1,442
1970	704	184	373	22	248	1	1,532
1971	713	220	374	38	266	1	1,613
1972	771	274	376	54	273	2	1,750
1973	848	314	341	83	272	2	1,861
1974	828	301	320	114	301	3	1,867
1975	853	289	300	173	300	3	1,918
1976	944	320	295	191	284	4	2,038
1977	985	358	306	251	220	4	2,124
1978	976	365	305	276	280	3	2,206
1979	1,075	304	329	255	280	4	2,247
1980	1,162	246	346	251	276	6	2,286
1981	1,203	206	346	273	261	6	2,295
1982	1,192	147	305	283	309	5	2,241
1983	1,259	144	274	294	332	6	2,310
1984	1,342	120	297	328	321	9	2,416
1985[5]	1,401	100	292	384	282	11	2,469

[1] See Explanatory Note 1.
[2] Includes distillate fuel oil, residual fuel oil (including crude oil burned as fuel), jet fuel, and petroleum coke.
[3] Includes generation from electric utilities which use wood, refuse, other vegetal fuels, wind, and solar energy.
[4] Less than 0.5 billion kilowatthours.
[5] Preliminary. See Explanatory Note 19.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Figure 82. Net Generation of Electricity by the Electric Utility Industry by Prime Mover, 1949-1985



Source: See Table 82.

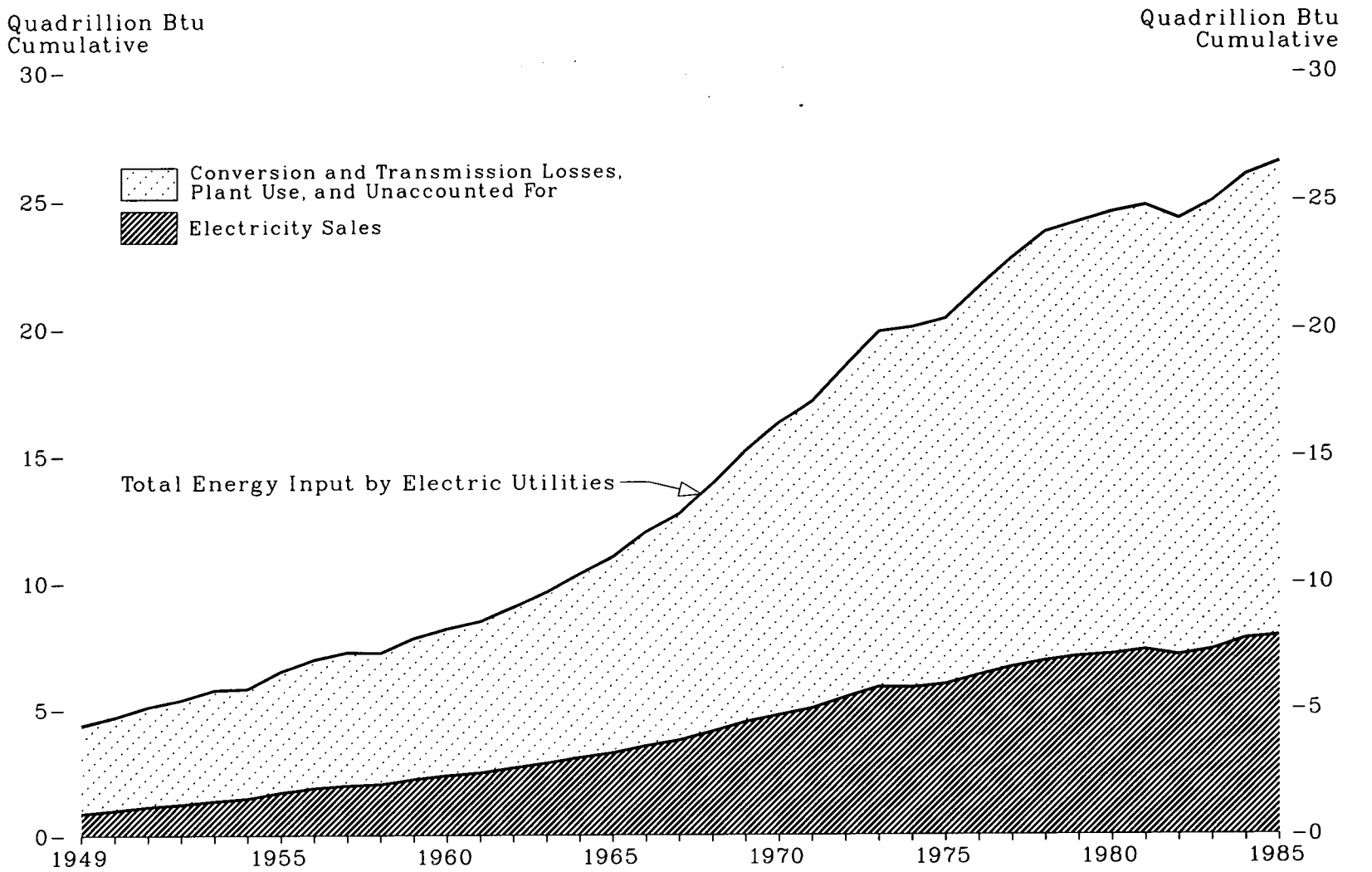
Table 82. Net Generation of Electricity[1] by the Electric Utility Industry by Prime Mover, 1949-1985

(Billion Kilowatthours)

Year	Fossil Steam [2]	Internal Combustion	Gas Turbine	Nuclear Power	Hydroelectric Power	Geothermal and Other [3]	Total
1949	197	3	0	0	90	(4)	291
1950	229	4	0	0	96	(4)	329
1951	267	4	0	0	100	(4)	371
1952	290	4	0	0	105	(4)	399
1953	333	4	0	0	105	(4)	443
1954	361	4	0	0	107	(4)	472
1955	430	4	0	0	113	(4)	547
1956	474	4	0	0	122	(4)	601
1957	497	4	0	(4)	130	(4)	632
1958	500	4	0	(4)	140	(4)	645
1959	567	4	0	(4)	138	(4)	710
1960	603	4	0	1	146	(4)	756
1961	634	5	0	2	152	(4)	794
1962	677	5	0	2	169	(4)	855
1963	742	5	(4)	3	166	(4)	917
1964	798	5	1	3	177	(4)	984
1965	851	5	1	4	194	(4)	1,055
1966	938	5	NA	6	195	1	1,144
1967	980	5	NA	8	222	1	1,214
1968	1,084	5	4	13	222	1	1,329
1969	1,163	6	8	14	250	1	1,442
1970	1,240	6	16	22	248	1	1,532
1971	1,279	6	22	38	266	1	1,613
1972	1,385	7	29	54	273	2	1,750
1973	1,467	7	30	83	272	2	1,861
1974	1,411	6	32	114	301	3	1,867
1975	1,414	6	22	173	300	3	1,918
1976	1,530	5	24	191	284	4	2,038
1977	1,615	5	29	251	220	4	2,124
1978	1,610	5	31	276	280	3	2,206
1979	1,676	4	28	255	280	4	2,247
1980	1,726	4	24	251	276	6	2,286
1981	1,730	3	22	273	261	6	2,295
1982	1,628	2	14	283	309	5	2,241
1983	1,661	2	14	294	332	6	2,310
1984	1,742	2	15	328	321	9	2,416
1985[5]	1,778	2	14	384	282	11	2,469

[1] See Explanatory Note 1.
[2] Plants whose steam is produced by burning fossil fuels only (coal, petroleum, and/or natural gas).
[3] Includes generation from electric utilities which use wood, refuse, other vegetal fuels, wind, and solar energy.
[4] Less than 0.5 billion kilowatthours.
[5] Preliminary. See Explanatory Note 19.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Figure 83. Energy Input by Electric Utilities and Electricity Sales, 1949-1985



Source: See Table 83.

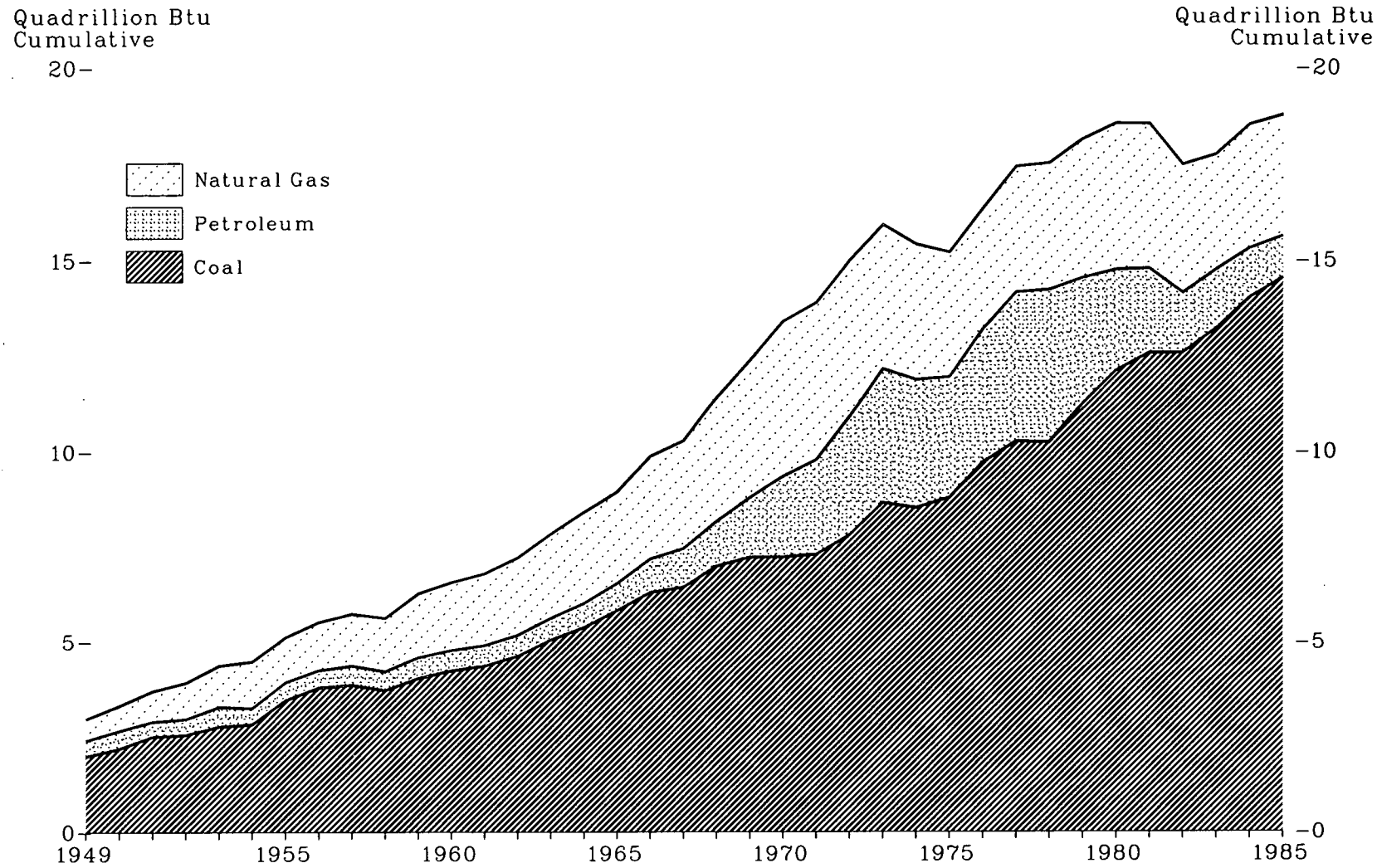
Table 83. Energy Input by Electric Utilities and Electricity Sales, 1949-1985

(Quadrillion Btu)

Year	Input/Generation									Total		Losses and Other [2]		Electricity Sales
	Coal	Natural Gas	Petroleum	Hydroelectric Power [1]		Nuclear Power		Geothermal, Wood, Waste, and Wind						
				Fossil Fuel Equivalent [3]	Electricity Equivalent [4]	Heat Equivalent [5]	Electricity Equivalent [4]	Heat Equivalent [6]	Electricity Equivalent [4]	Fossil Fuel/Heat Equivalent [7]	Electricity Equivalent [8]	Fossil Fuel/Heat Equivalent [9]	Electricity Equivalent [10]	
1949	2.00	0.57	0.41	1.37	0.31	0	0	(11)	(11)	4.36	3.29	3.49	2.42	0.87
1950	2.20	0.65	0.47	1.37	0.33	0	0	(11)	(11)	4.70	3.66	3.70	2.66	0.99
1951	2.51	0.79	0.40	1.39	0.35	0	0	(11)	(11)	5.09	4.05	3.97	2.92	1.13
1952	2.56	0.94	0.42	1.43	0.37	0	0	(11)	(11)	5.36	4.29	4.15	3.07	1.22
1953	2.78	1.07	0.51	1.38	0.37	0	0	(11)	(11)	5.75	4.73	4.40	3.38	1.35
1954	2.84	1.21	0.42	1.33	0.37	0	0	(11)	(11)	5.80	4.84	4.35	3.39	1.45
1955	3.46	1.19	0.47	1.37	0.40	0	0	(11)	(11)	6.50	5.52	4.80	3.83	1.69
1956	3.79	1.28	0.45	1.45	0.43	0	0	(11)	(11)	6.98	5.96	5.11	4.10	1.86
1957	3.86	1.38	0.50	1.52	0.46	(11)	(11)	(11)	(11)	7.26	6.19	5.29	4.23	1.96
1958	3.72	1.42	0.49	1.59	0.49	(11)	(11)	(11)	(11)	7.22	6.12	5.22	4.11	2.01
1959	4.03	1.69	0.55	1.55	0.48	(11)	(11)	(11)	(11)	7.82	6.75	5.61	4.54	2.21
1960	4.23	1.79	0.55	1.62	0.51	0.01	(11)	(11)	(11)	8.19	7.08	5.84	4.73	2.35
1961	4.35	1.89	0.56	1.64	0.53	0.02	0.01	(11)	(11)	8.47	7.33	6.01	4.87	2.46
1962	4.62	2.03	0.56	1.79	0.58	0.03	0.01	(11)	(11)	9.03	7.80	6.38	5.15	2.65
1963	5.05	2.21	0.58	1.74	0.57	0.04	0.01	0.01	(11)	9.63	8.42	6.79	5.58	2.84
1964	5.38	2.40	0.63	1.87	0.61	0.04	0.01	0.01	(11)	10.33	9.03	7.27	5.98	3.06
1965	5.82	2.40	0.72	2.02	0.66	0.04	0.01	0.01	(11)	11.01	9.61	7.76	6.36	3.25
1966	6.30	2.70	0.88	2.04	0.67	0.06	0.02	0.01	(11)	11.99	10.57	8.46	7.04	3.53
1967	6.44	2.83	1.01	2.31	0.75	0.09	0.03	0.01	(11)	12.70	11.07	8.95	7.32	3.75
1968	6.99	3.25	1.18	2.31	0.76	0.14	0.04	0.01	(11)	13.88	12.22	9.78	8.12	4.10
1969	7.22	3.60	1.57	2.62	0.86	0.15	0.05	0.02	(11)	15.18	13.29	10.70	8.81	4.48
1970	7.23	4.05	2.12	2.62	0.85	0.24	0.07	0.02	(11)	16.27	14.33	11.52	9.58	4.75
1971	7.30	4.10	2.49	2.83	0.92	0.41	0.13	0.02	(11)	17.15	14.95	12.13	9.93	5.01
1972	7.81	4.08	3.10	2.91	0.96	0.58	0.18	0.03	0.01	18.52	16.14	13.08	10.70	5.44
1973	8.66	3.75	3.51	2.98	0.98	0.91	0.28	0.05	0.01	19.85	17.19	14.01	11.35	5.84
1974	8.53	3.52	3.36	3.28	1.07	1.27	0.39	0.06	0.01	20.02	16.89	14.20	11.07	5.82
1975	8.79	3.24	3.17	3.19	1.04	1.90	0.59	0.07	0.01	20.35	16.84	14.39	10.88	5.96
1976	9.72	3.15	3.48	3.03	1.00	2.11	0.65	0.08	0.01	21.57	18.01	15.24	11.68	6.33
1977	10.26	3.28	3.90	2.48	0.81	2.70	0.86	0.08	0.01	22.71	19.13	16.07	12.48	6.65
1978	10.24	3.30	3.99	3.11	1.02	3.02	0.94	0.07	0.01	23.72	19.50	16.84	12.62	6.89
1979	11.26	3.61	3.28	3.11	1.02	2.78	0.87	0.09	0.01	24.13	20.07	17.06	13.00	7.07
1980	12.12	3.81	2.63	3.08	1.01	2.74	0.86	0.11	0.02	24.50	20.46	17.36	13.31	7.15
1981	12.58	3.77	2.20	3.07	1.00	3.01	0.93	0.13	0.02	24.76	20.51	17.43	13.18	7.33
1982	12.58	3.34	1.57	3.53	1.16	3.13	0.96	0.11	0.02	24.26	19.63	17.14	12.51	7.12
1983	13.21	3.00	1.54	3.84	1.25	3.20	1.00	0.13	0.02	24.93	20.03	17.59	12.69	7.34
1984	14.02	3.22	1.29	3.74	1.23	3.54	1.12	0.17	0.03	25.98	20.90	18.21	13.13	7.77
1985[12]	14.54	3.14	1.09	3.34	1.10	4.14	1.31	0.21	0.04	26.47	21.21	18.59	13.33	7.88

[1] Includes net imports of electricity. [2] Conversion and transmission losses, plant use, and unaccounted for. [3] The equivalent of fossil fuel energy required to generate the electricity distributed using the average fossil fuel steam electric plant thermal efficiency. See Units of Measure and Conversion Factors section for factors to convert physical unit data into Btu. [4] The equivalent amount of heat that could be produced by the electricity distributed using the conversion factor 3,412 Btu per kilowatthour. [5] The amount of heat released in reactors by fissioning uranium at electric utilities. [6] Includes for geothermal plants the heat content of the steam consumed and for wood, waste, wind and solar plants the fossil fuel equivalent using national average heat rate for fossil fuel steam electric plants. See Units of Measure and Conversion Factors section for factors to convert physical unit data into Btu. [7] Total of fossil fuels and the fossil fuel/heat equivalent of nonfossil fuel energy sources. [8] Total of fossil fuels and electricity equivalent of nonfossil fuel energy sources. [9] Balancing item, the difference between Total Fossil Fuel/Heat Equivalent and Electricity Sales, see Explanatory Note 17. [10] Balancing item, the difference between Total Electricity Equivalent and Electricity Sales. [11] Less than 0.005 quadrillion Btu. [12] Preliminary. See Explanatory Note 16. Note: Sum of components may not equal total due to independent rounding. Source: See sources for Tables 82, 84, and 85 and conversion factors in the Units of Measure and Conversion Factors section.

Figure 84. Fossil Fuels Consumed by the Electric Utility Industry to Generate Electricity, 1949-1985



Source: See Table 84.

Table 84. Fossil Fuels Consumed by the Electric Utility Industry to Generate Electricity, 1949-1985

Year	Coal		Petroleum [1]		Natural Gas		Total
	(million short tons)	(quadrillion Btu)	(million barrels)	(quadrillion Btu)	(billion cubic feet)	(quadrillion Btu)	(quadrillion Btu)
1949	84.0	2.00	66.3	0.41	550	0.57	2.98
1950	91.9	2.20	75.4	0.47	629	0.65	3.32
1951	105.8	2.51	63.9	0.40	764	0.79	3.70
1952	107.1	2.56	67.2	0.42	910	0.94	3.92
1953	115.9	2.78	82.2	0.51	1,034	1.07	4.36
1954	118.4	2.84	66.7	0.42	1,165	1.21	4.46
1955	143.8	3.46	75.3	0.47	1,153	1.19	5.12
1956	158.3	3.79	72.7	0.45	1,239	1.28	5.53
1957	160.8	3.86	79.7	0.50	1,336	1.38	5.74
1958	155.7	3.72	77.7	0.49	1,373	1.42	5.63
1959	168.4	4.03	88.3	0.55	1,629	1.69	6.27
1960	176.7	4.23	88.2	0.55	1,725	1.79	6.57
1961	182.2	4.35	88.9	0.56	1,825	1.89	6.80
1962	193.3	4.62	89.3	0.56	1,966	2.03	7.22
1963	211.3	5.05	93.3	0.58	2,144	2.21	7.85
1964	225.4	5.38	101.1	0.63	2,323	2.40	8.41
1965	244.8	5.82	115.2	0.72	2,321	2.40	8.94
1966	266.5	6.30	140.9	0.88	2,610	2.70	9.88
1967	274.2	6.44	161.3	1.01	2,746	2.83	10.29
1968	297.8	6.99	188.6	1.18	3,148	3.25	11.42
1969	310.6	7.22	251.0	1.57	3,488	3.60	12.39
1970	320.2	7.23	338.7	2.12	3,932	4.05	13.40
1971	327.3	7.30	399.5	2.49	3,976	4.10	13.89
1972	351.8	7.81	496.9	3.10	3,977	4.08	14.99
1973	389.2	8.66	562.8	3.51	3,660	3.75	15.92
1974	391.8	8.53	539.4	3.36	3,443	3.52	15.42
1975	406.0	8.79	506.5	3.17	3,158	3.24	15.19
1976	448.4	9.72	556.3	3.48	3,081	3.15	16.35
1977	477.1	10.26	624.2	3.90	3,191	3.28	17.45
1978	481.2	10.24	637.8	3.99	3,188	3.30	17.52
1979	527.1	11.26	524.6	3.28	3,491	3.61	18.16
1980	569.3	12.12	421.1	2.63	3,682	3.81	18.57
1981	596.8	12.58	351.8	2.20	3,640	3.77	18.55
1982	593.7	12.58	250.5	1.57	3,226	3.34	17.49
1983	625.2	13.21	246.8	1.54	2,911	3.00	17.75
1984	664.4	14.02	205.7	1.29	3,111	3.22	18.53
1985[2]	693.5	14.54	174.5	1.09	3,030	3.14	18.77

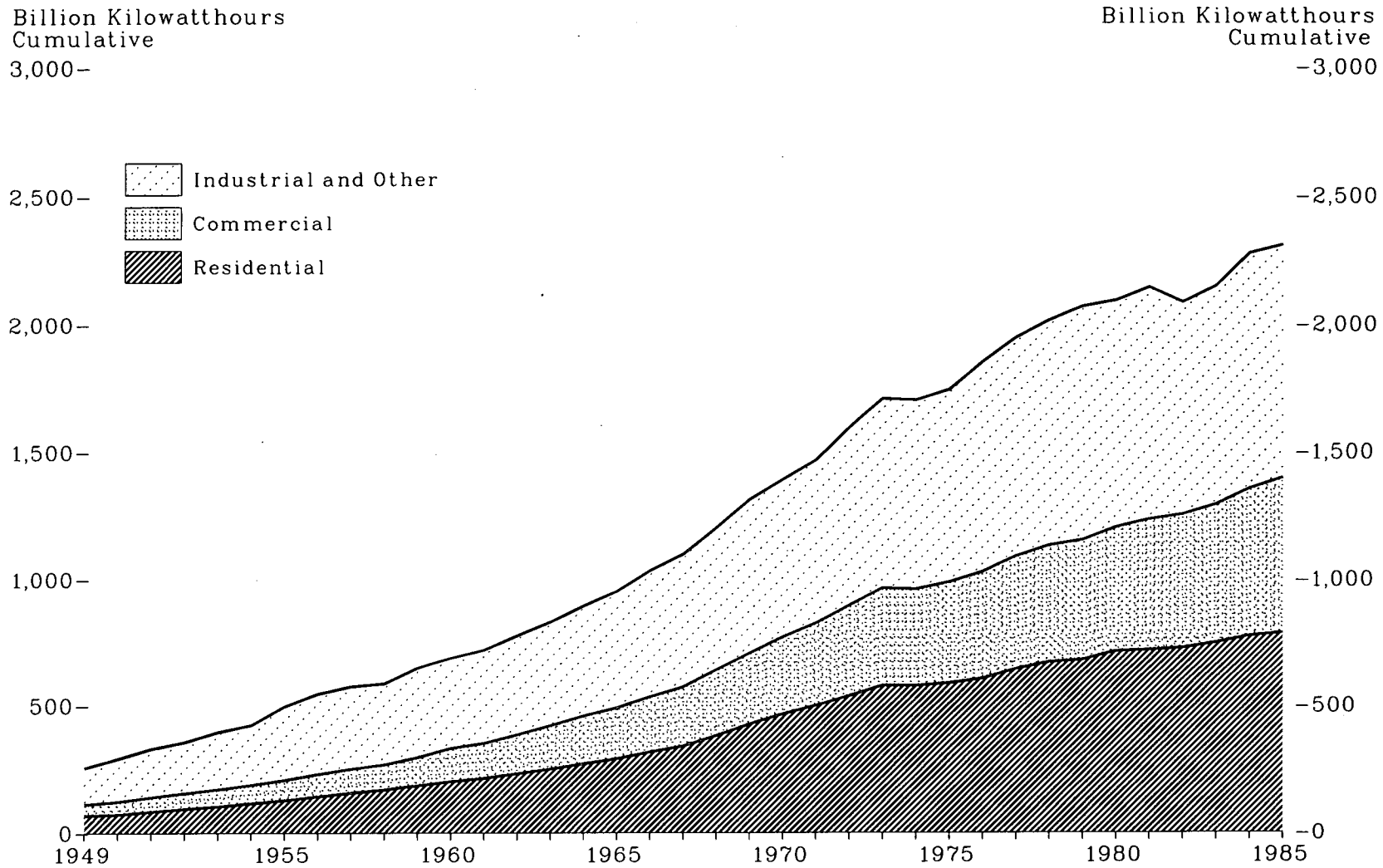
[1] These data are petroleum consumed by electric utilities and do not equate to petroleum supplied to (or delivered to) electric utilities. Included are residual fuel oil (including crude oil burned as fuel), distillate fuel oil, jet fuel, and petroleum coke, which is reported in short tons, and has been converted to barrels at a rate of 5 barrels per short ton.

[2] Preliminary. See Explanatory Note 19.

Note: Sum of components may not equal total due to independent rounding.

Sources: •1949 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Figure 85. Sales of Electric Utility Electricity to End-Use Sectors, 1949-1985



Source: See Table 85.

Table 85. Sales of Electric Utility [1] Electricity to End-Use Sectors,[2] 1949-1985

(Billion Kilowatthours)

Year	Residential	Commercial	Industrial	Other	Total
1949	67	45	123	20	255
1950	72	51	146	22	291
1951	83	57	166	24	330
1952	94	62	176	24	356
1953	104	67	199	26	396
1954	116	72	208	27	424
1955	128	79	260	29	497
1956	143	87	286	30	546
1957	157	94	294	31	576
1958	169	100	287	32	588
1959	185	112	315	36	647
1960	201	131	324	32	688
1961	214	138	337	32	722
1962	233	153	360	32	778
1963	251	171	377	34	833
1964	272	187	405	32	896
1965	291	200	429	34	954
1966	317	218	464	37	1,035
1967	340	234	485	40	1,099
1968	382	258	521	42	1,203
1969	427	282	559	46	1,314
1970	466	307	571	48	1,392
1971	500	329	589	51	1,470
1972	539	359	641	56	1,595
1973	579	388	686	59	1,713
1974	578	385	685	58	1,706
1975	588	403	688	68	1,747
1976	606	425	754	70	1,855
1977	645	447	786	71	1,948
1978	674	461	809	73	2,018
1979	683	473	842	73	2,071
1980	717	488	815	74	2,094
1981	722	514	826	85	2,147
1982	730	526	745	86	2,086
1983	751	544	776	80	2,151
1984	778	578	841	82	2,278
1985[3]	791	608	827	84	2,309

[1] Data 1979 and earlier are for Classes A and B privately-owned electric utilities only. Data 1980 forward are for selected Class A utilities whose electric operating revenues were $100 million or more during the previous year.

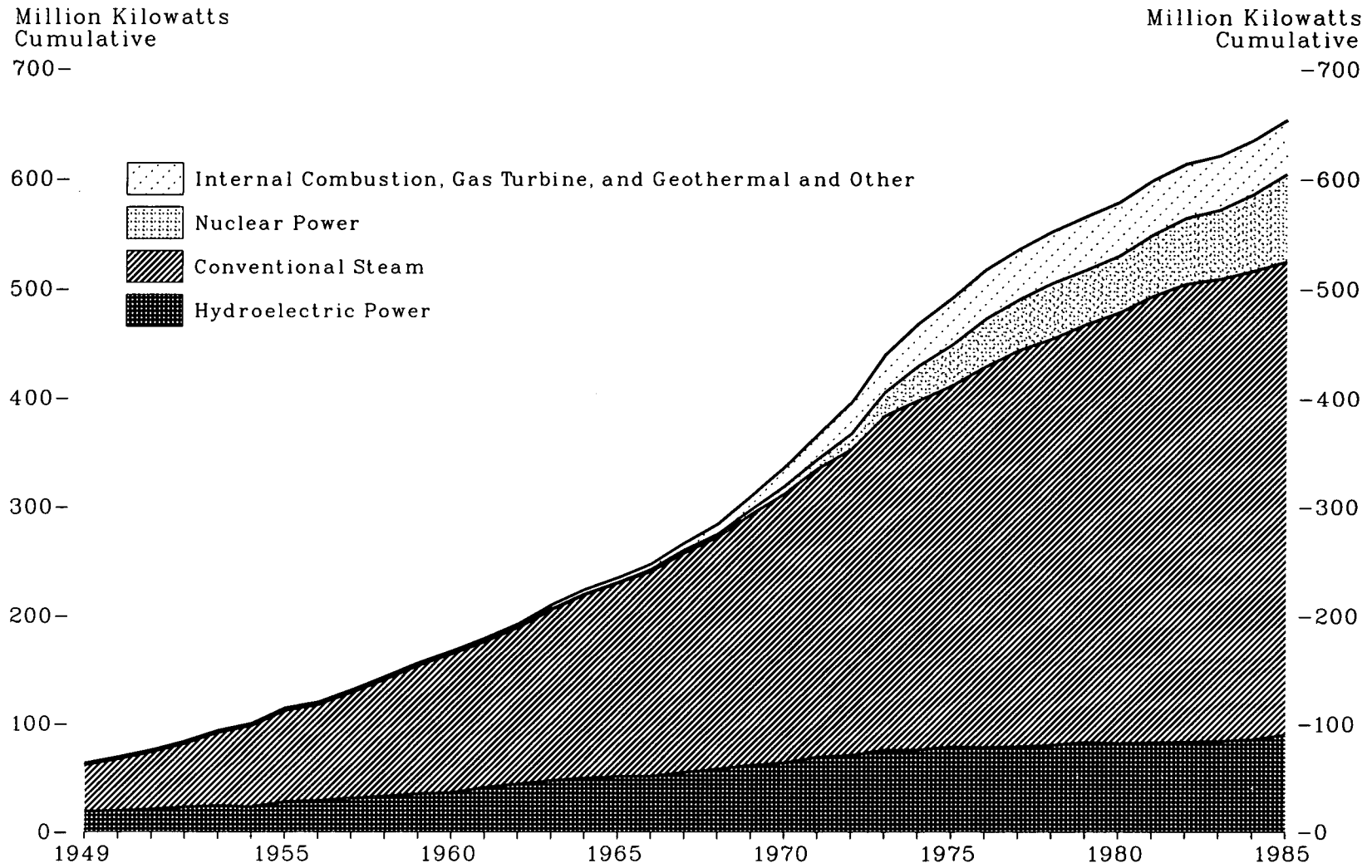
[2] See Explanatory Note 11.

[3] Preliminary. See Explanatory Note 19.

Note: Sum of components may not equal total due to independent rounding.

Sources: •1949 through September 1977—Federal Power Commission, FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income." •October 1977 through February 1980—Federal Energy Regulatory Commission, FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income." March 1980 through 1982—Federal Energy Regulatory Commission, FPC Form 5, "Electric Utility Company Monthly Statement." •1983 and forward—Energy Information Administration, Form EIA-826, "Electric Utility Company Monthly Statement."

Figure 86. Net Summer Capability of the Electric Utility Industry, End of Year 1949-1985



Source: See Table 86.

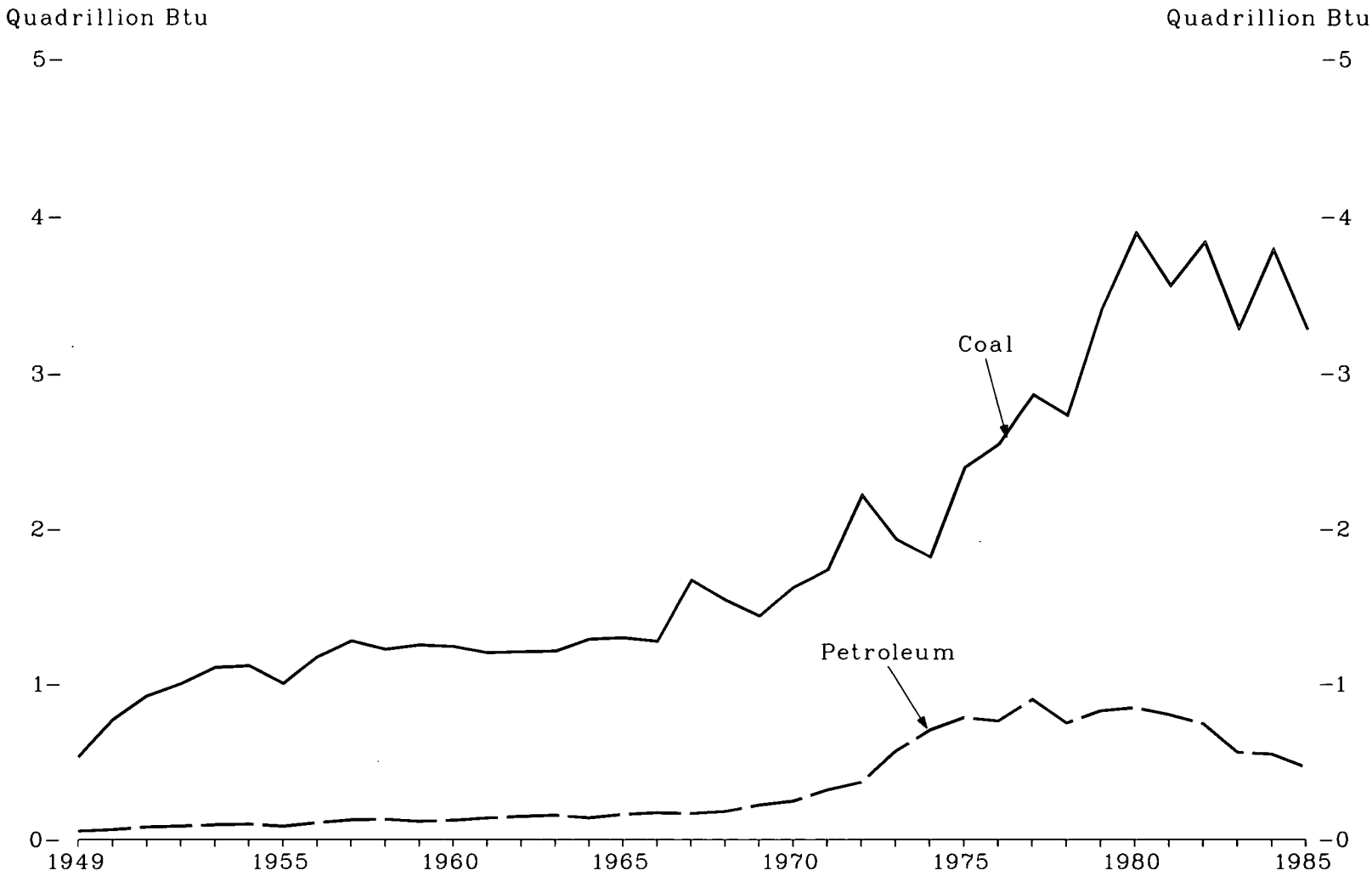
Table 86. Net Summer Capability [1] of the Electric Utility Industry, End of Year 1949-1985

(Million Kilowatts)

Year	Conventional Steam [2]	Internal Combustion	Gas Turbine	Nuclear Power	Hydroelectric Power	Geothermal and Other [3]	Total
1949	43.2	1.7	0	0	18.5	(*)	63.4
1950	48.2	1.8	0	0	19.2	(*)	69.2
1951	53.1	1.9	0	0	20.5	(*)	75.5
1952	58.8	2.0	0	0	22.4	(*)	83.2
1953	67.5	2.1	0	0	23.8	(*)	93.3
1954	75.4	2.2	0	0	22.5	(*)	100.0
1955	84.6	2.3	0	0	27.4	(*)	114.2
1956	88.8	2.4	0	0	28.5	(*)	119.7
1957	97.9	2.3	0	0.1	30.7	(*)	131.1
1958	108.2	2.4	0	0.1	32.5	(*)	143.3
1959	118.5	2.5	0	0.1	34.8	(*)	155.9
1960	128.3	2.6	0	0.4	35.8	(*)	167.1
1961	135.1	2.8	0	0.4	40.7	(*)	179.0
1962	144.6	2.8	0	0.7	44.0	(*)	192.1
1963	158.4	3.0	0.5	0.8	47.0	(*)	209.7
1964	169.6	3.1	0.8	0.8	49.4	(*)	223.7
1965	178.7	3.2	1.1	0.8	51.0	(*)	234.8
1966	189.6	3.3	1.6	1.7	51.2	(*)	247.5
1967	202.5	3.6	2.8	2.7	55.0	0.1	266.7
1968	214.3	3.8	5.3	2.7	57.9	0.1	284.0
1969	231.4	4.0	8.4	4.4	61.6	0.1	309.8
1970	248.0	4.1	13.3	7.0	63.8	0.1	336.4
1971	266.0	4.2	17.9	9.0	69.1	0.2	366.4
1972	282.3	4.5	23.9	14.5	70.5	0.3	396.0
1973	307.9	4.7	28.8	22.6	75.4	0.4	439.8
1974	322.4	4.7	33.7	31.8	75.5	0.4	468.5
1975	333.3	4.8	37.1	37.2	78.4	0.5	491.3
1976	350.9	5.0	39.1	43.7	78.0	0.5	517.2
1977	365.3	5.0	40.3	46.2	78.6	0.5	535.9
1978	374.5	5.2	41.2	50.7	79.9	0.5	552.1
1979	384.6	5.2	42.5	49.6	82.9	0.7	565.5
1980	396.6	5.2	42.5	51.7	81.7	0.9	578.6
1981	410.7	5.3	43.2	55.9	82.4	0.9	598.3
1982	421.4	4.8	43.5	59.9	83.0	1.1	613.7
1983	424.9	4.7	43.3	63.0	83.9	1.2	621.1
1984	430.8	4.5	43.5	69.7	85.3	1.3	635.1
1985[5]	435.0	4.7	43.2	79.5	89.9	1.6	654.0

[1] See Glossary and Explanatory Note 20.
[2] Includes fossil steam, wood, and waste.
[3] Includes solar and wind.
[4] Less than 0.05 million kilowatts.
[5] Preliminary. See Explanatory Note 19.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through 1984—Energy Information Administration estimates. •1985—Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Figure 87. Coal and Petroleum Stocks at Electric Utilities, End of Year 1949-1985



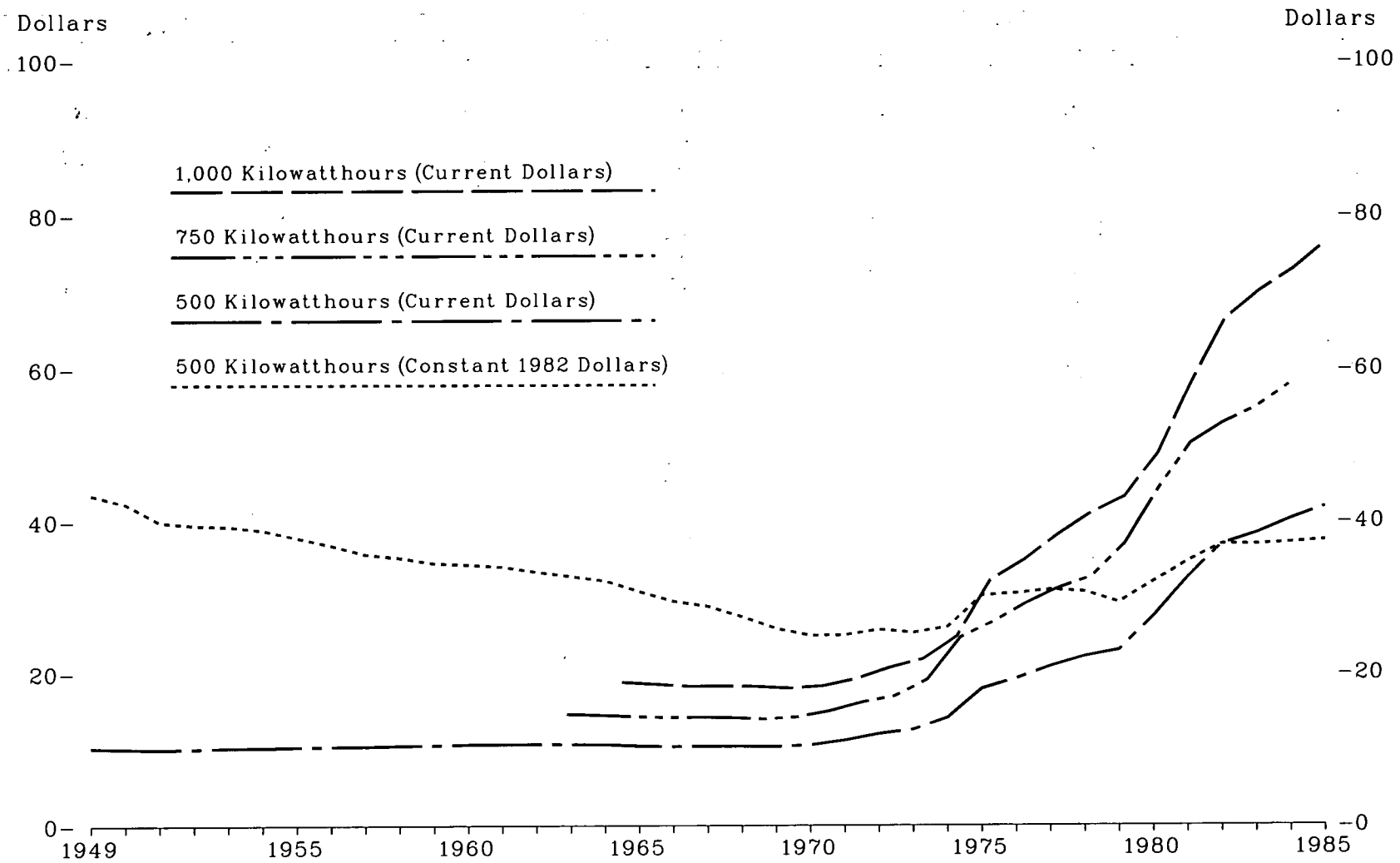
Source: See Table 87.

Table 87. Coal and Petroleum Stocks at Electric Utilities, End of Year 1949-1985

Year	Coal				Petroleum			
	Anthracite [1]	Bituminous Coal [2] and Lignite	Total		Oil [3]	Petroleum Coke [4]	Total	
	(million short tons)		(million short tons)	(trillion Btu)	(million barrels)		(million barrels)	(trillion Btu)
1949	4.3	17.8	22.1	530	8.6	NA	8.6	54
1950	4.7	27.1	31.8	771	10.2	NA	10.2	64
1951	5.1	33.4	38.5	923	12.8	NA	12.8	80
1952	5.6	35.9	41.5	1,001	13.7	NA	13.7	86
1953	5.9	39.8	45.6	1,104	15.0	NA	15.0	94
1954	6.4	39.7	46.1	1,115	15.9	NA	15.9	99
1955	3.2	38.2	41.4	1,002	13.7	NA	13.7	85
1956	2.8	46.0	48.8	1,174	17.3	NA	17.3	108
1957	2.8	50.3	53.1	1,280	20.1	NA	20.1	126
1958	2.2	48.8	51.0	1,225	20.8	NA	20.8	130
1959	2.0	50.1	52.1	1,253	18.5	NA	18.5	116
1960	1.8	49.9	51.7	1,243	19.6	NA	19.6	123
1961	1.5	48.6	50.1	1,202	22.0	NA	22.0	138
1962	1.4	49.0	50.4	1,209	23.8	NA	23.8	149
1963	1.3	49.3	50.6	1,213	24.9	NA	24.9	156
1964	1.2	52.7	53.9	1,290	22.4	NA	22.4	140
1965	1.1	53.4	54.5	1,300	25.6	NA	25.6	161
1966	1.0	52.9	53.9	1,277	27.4	NA	27.4	172
1967	1.3	69.7	71.0	1,672	26.7	NA	26.7	167
1968	1.3	64.2	65.5	1,541	28.7	NA	28.7	180
1969	1.3	60.6	61.9	1,440	35.3	NA	35.3	221
1970	1.1	70.8	71.9	1,626	38.0	1.2	39.2	245
1971	1.1	76.7	77.8	1,737	49.6	1.5	51.1	319
1972	0.9	98.8	99.7	2,217	57.7	1.4	59.1	368
1973	1.1	85.9	87.0	1,935	89.2	1.6	90.8	567
1974	0.9	82.6	83.5	1,819	112.9	0.2	113.1	705
1975	1.0	109.7	110.7	2,396	125.3	0.2	125.4	784
1976	1.0	116.4	117.4	2,546	121.7	0.2	121.9	762
1977	2.3	130.9	133.2	2,865	144.0	0.2	144.3	901
1978	2.2	126.0	128.2	2,728	118.8	1.0	119.8	749
1979	3.3	156.4	159.7	3,412	131.4	0.9	132.3	828
1980	4.7	178.3	183.0	3,897	135.4	0.3	135.6	848
1981	5.5	163.4	168.9	3,561	128.1	0.2	128.3	803
1982	6.1	175.1	181.1	3,839	118.9	0.2	119.1	745
1983	6.5	149.1	155.6	3,288	89.4	0.3	89.7	561
1984	6.7	173.0	179.7	3,792	87.6	0.3	87.9	549
1985[5]	7.2	149.2	156.4	3,279	73.6	0.2	73.9	462

[1] Includes anthracite silt stored off-site.
[2] Includes subbituminous coal.
[3] Includes residual fuel oil (including crude oil burned as fuel), distillate fuel oil, and jet fuel.
[4] Petroleum coke, which is reported in short tons, has been converted to barrels at a rate of 5 barrels per short ton.
[5] Preliminary. See Explanatory Note 19.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Sources: •1949 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Figure 88. Residential Weighted Average Monthly Electric Bill, January 1, 1949-1985



Source: See Table 88.

Table 88. Residential Weighted Average Monthly Electric Bill, January 1, 1949-1985

(Dollars)

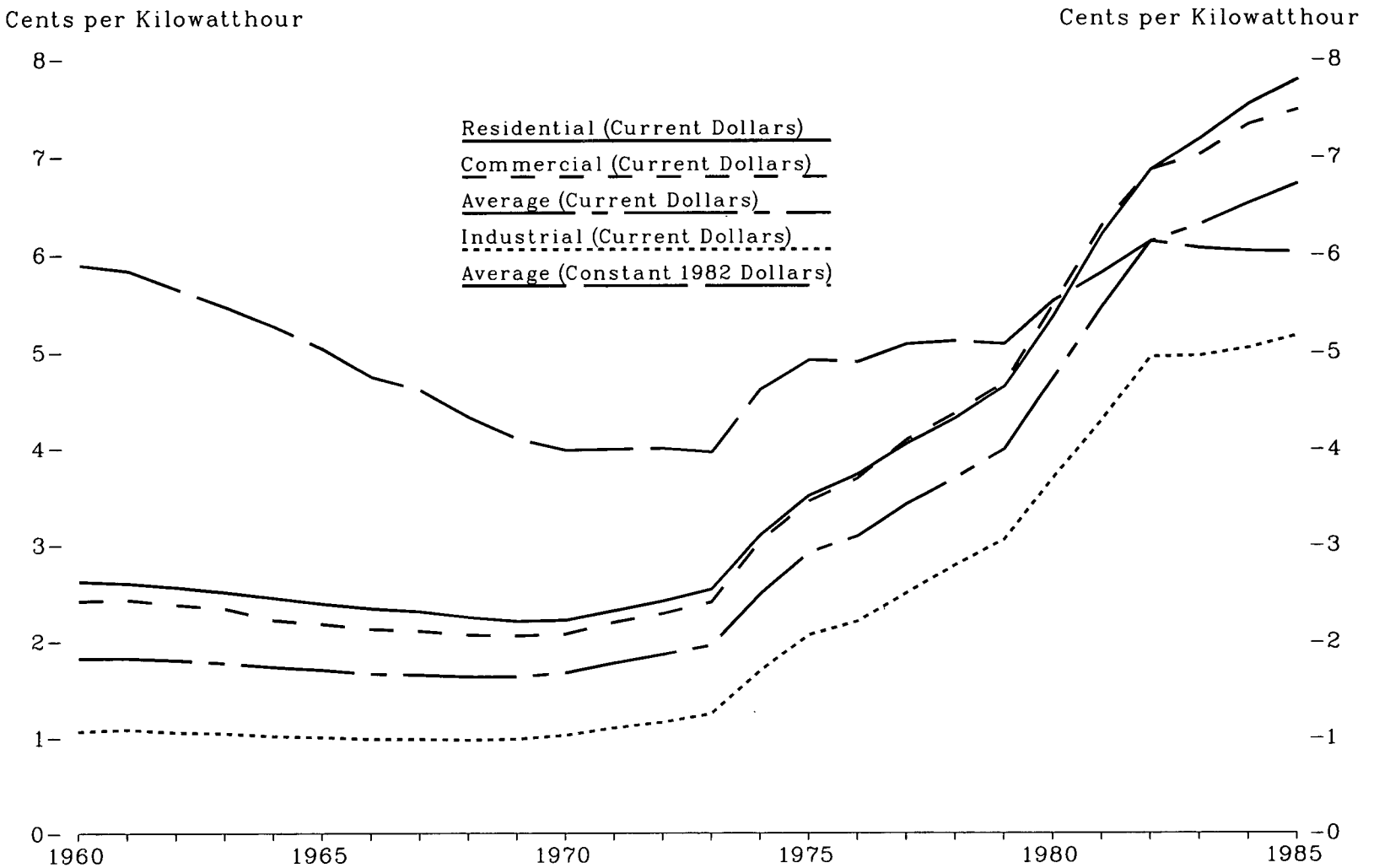
Year	500 kWh [1]		750 kWh [2]		1,000 kWh [3]	
	Current	Constant [4]	Current	Constant [4]	Current	Constant [4]
1949	10.22	43.49	NA	NA	NA	NA
1950	10.11	42.30	NA	NA	NA	NA
1951	10.02	39.92	NA	NA	NA	NA
1952	10.08	39.53	NA	NA	NA	NA
1953	10.20	39.38	NA	NA	NA	NA
1954	10.23	38.90	NA	NA	NA	NA
1955	10.30	37.87	NA	NA	NA	NA
1956	10.36	36.87	NA	NA	NA	NA
1957	10.39	35.70	NA	NA	NA	NA
1958	10.47	35.25	NA	NA	NA	NA
1959	10.51	34.57	NA	NA	NA	NA
1960	10.62	34.37	NA	NA	NA	NA
1961	10.64	34.10	NA	NA	NA	NA
1962	10.66	33.42	NA	NA	NA	NA
1963	10.64	32.84	14.65	45.22	NA	NA
1964	10.61	32.25	14.51	44.10	18.86	57.33
1965	10.41	30.80	14.34	42.43	18.59	55.00
1966	10.34	29.54	14.19	40.54	18.32	52.34
1967	10.37	28.89	14.21	39.58	18.32	51.03
1968	10.37	27.51	14.16	37.56	18.27	48.46
1969	10.32	25.93	13.97	35.10	18.03	45.30
1970	10.51	25.02	14.22	33.86	18.31	43.60
1971	11.13	25.07	14.99	33.76	19.24	43.33
1972	11.99	25.78	16.14	34.71	20.70	44.52
1973	12.56	25.37	16.96	34.26	21.85	44.14
1974	14.10	26.11	19.14	35.44	24.85	46.02
1975	17.93	30.24	24.72	41.69	32.29	54.45
1976	19.26	30.52	26.78	42.44	34.85	55.23
1977	20.86	31.00	29.22	43.42	38.15	56.69
1978	22.19	30.73	31.23	43.25	40.98	56.76
1979	23.05	29.33	32.72	41.63	43.12	54.86
1980	27.50	32.09	36.93	43.09	48.79	56.93
1981	32.61	34.69	43.99	46.80	58.16	61.87
1982	36.96	36.96	50.07	50.07	66.39	66.39
1983	38.35	36.91	52.74	50.76	69.96	67.33
1984	40.18	37.17	54.76	50.66	72.77	67.32
1985	41.86	37.48	57.86	51.80	76.37	68.37

[1] Weighted average monthly bill of residential consumers of 500 kilowatthours.
[2] Weighted average monthly bill of residential consumers of 750 kilowatthours.
[3] Weighted average monthly bill of residential consumers of 1,000 kilowatthours.
[4] Constant 1982 dollars calculated using GNP implicit price deflator, 1982 = 100. See Energy Equivalents and Price Deflators section.
NA = Not available.

Note: The U.S. average is calculated by multiplying the bill for each city included in the typical bill report by the city's population and dividing the sum of the products for all cities by the sum of their populations. Bills are based on rates, fuel adjustments, and taxes in effect January 1 of each year.

Sources: •1949 through September 1977—Federal Power Commission, Form 3, "Typical Net Monthly Bills." •October 1977 through June 1979—Federal Energy Regulatory Commission, FPC Form 3, "Typical Net Monthly Bills." •July 1979 and forward—Energy Information Administration, Form 213, "Typical Net Monthly Bills."

Figure 89. Average Price of Electricity Sold by the Electric Utility Industry to End-Use Sectors, 1960-1985



Source: See Table 89.

Table 89. Average Price of Electricity Sold by the Electric Utility Industry[1] to End-Use Sectors,[2] 1960-1985

(Cents per Kilowatthour)

Year	Residential		Commercial		Industrial		Other		Weighted Average	
	Current	Constant[3]	Current	Constant[3]	Current	Constant[3]	Current	Constant[3]	Current	Constant[3]
1960	2.62	8.48	2.42	7.83	1.06	3.43	1.91	6.18	1.82	5.89
1961	2.60	8.33	2.43	7.79	1.08	3.46	1.83	5.87	1.82	5.83
1962	2.56	8.03	2.38	7.46	1.05	3.29	1.86	5.83	1.80	5.64
1963	2.51	7.75	2.34	7.22	1.04	3.21	1.83	5.65	1.77	5.46
1964	2.45	7.45	2.22	6.75	1.01	3.07	1.83	5.56	1.73	5.26
1965	2.39	7.07	2.18	6.45	1.00	2.96	1.82	5.38	1.70	5.03
1966	2.34	6.69	2.13	6.09	0.98	2.80	1.80	5.14	1.66	4.74
1967	2.31	6.43	2.11	5.88	0.98	2.73	1.76	4.90	1.65	4.60
1968	2.25	5.97	2.07	5.49	0.97	2.57	1.76	4.67	1.63	4.32
1969	2.21	5.55	2.06	5.18	0.98	2.46	1.74	4.37	1.63	4.10
1970	2.22	5.29	2.08	4.95	1.02	2.43	1.80	4.29	1.67	3.98
1971	2.32	5.23	2.20	4.95	1.10	2.48	1.91	4.30	1.77	3.99
1972	2.42	5.20	2.29	4.92	1.16	2.49	1.98	4.26	1.86	4.00
1973	2.54	5.13	2.41	4.87	1.25	2.53	2.10	4.24	1.96	3.96
1974	3.10	5.74	3.04	5.63	1.69	3.13	2.75	5.09	2.49	4.61
1975	3.51	5.92	3.45	5.82	2.07	3.49	3.08	5.19	2.92	4.92
1976	3.73	5.91	3.69	5.85	2.21	3.50	3.27	5.18	3.09	4.90
1977	4.05	6.02	4.09	6.08	2.50	3.71	3.51	5.22	3.42	5.08
1978	4.31	5.97	4.36	6.04	2.79	3.86	3.62	5.01	3.69	5.11
1979	4.64	5.90	4.68	5.95	3.05	3.88	3.96	5.04	3.99	5.08
1980	5.36	6.25	5.48	6.39	3.69	4.31	4.76	5.55	4.73	5.52
1981	6.20	6.60	6.29	6.69	4.29	4.56	5.28	5.62	5.46	5.81
1982	6.86	6.86	6.86	6.86	4.95	4.95	5.92	5.92	6.13	6.13
1983	7.18	6.91	7.02	6.76	4.96	4.77	6.38	6.14	6.30	6.06
1984	7.54	6.98	7.33	6.78	5.04	4.66	6.78	6.27	6.52	6.03
1985[4]	7.79	6.97	7.48	6.70	5.17	4.63	6.96	6.23	6.72	6.02

[1] Data 1979 and earlier are for Classes A and B privately owned electric utilities only. Data 1980 forward are for selected Class A utilities whose electric operating revenues were $100 million or more during the previous year.

[2] See Explanatory Note 11.

[3] Constant 1982 dollars calculated using GNP implicit price deflator, 1982=100. See Energy Equivalents and Price Deflators section.

[4] Preliminary.

Sources: •1960 through September 1977—Federal Power Commission, Form 5, "Monthly Statement of Electric Operating Revenues and Income." •October 1977 through February 1980—Federal Energy Regulatory Commission, FPC Form 5, "Monthly Statement of Electric Operating Revenues and Income." •March 1980 through 1982—Federal Energy Regulatory Commission, Form 5, "Electric Utility Company Monthly Statement." •1983 and forward—Energy Information Administration, Form EIA-826, "Electric Utility Company Monthly Statement."

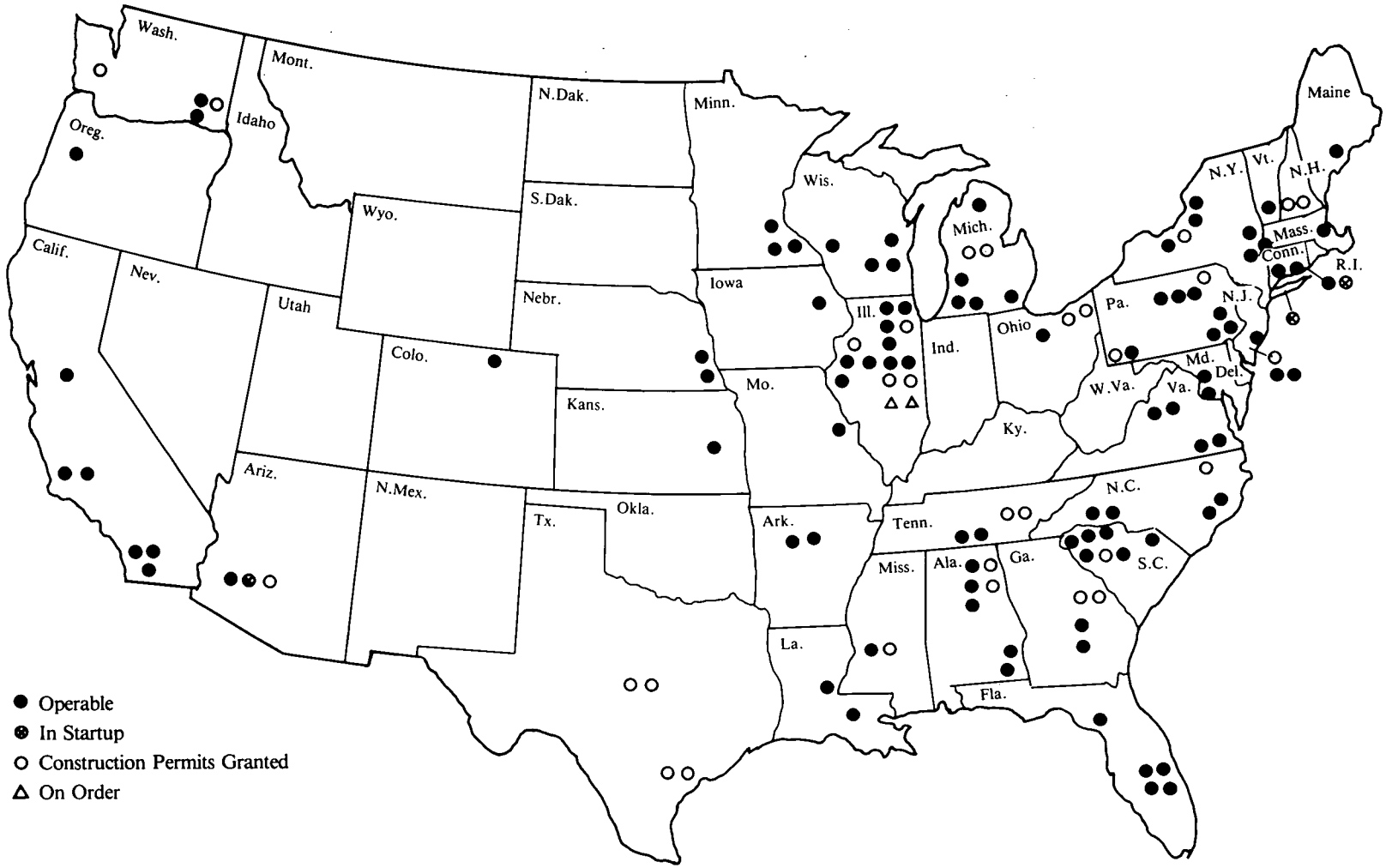
Section 8. Nuclear Energy Supply and Disposition

Nuclear Reactors. At the end of 1985 there were 95 operable nuclear reactors in the United States. In addition to operable units, there were 3 units in "startup" status and another 30 with construction permits. Overall, in 1985, the total number of domestic reactors in all stages of planning, construction, and operation fell to 130 from nearly 200 prior to the accident at Three Mile Island in 1979 (Table 90). However, both the number of operable reactors and the amount of electricity generated reached new highs in 1985. At the end of 1985, operable reactors had a net summer capability of 79.6 million kilowatts, up 14 percent from 1984 (Table 91).

Nuclear Power Generation. During 1985, operable reactors generated a record 384 billion net kilowatthours of electricity, up 17 percent from the 1984 total. After falling during 1979 and 1980, nuclear power's share of total electricity generation resumed an upward trend that recently accelerated. The share rose from 13.6 percent in 1984 to 15.5 percent in 1985, a new record (Table 91).

Uranium Supply. Uranium concentrate production in 1985 fell by more than 24 percent to 11.2 million pounds of uranium oxide (U_3O_8), the lowest level since 1955 (Table 92). This decrease reflected a softening of prices associated with an abundance of inventories at electric utilities and an increase in import competition.

Figure 90. Status of Nuclear Reactor Units, December 31, 1985



Due to space limitations, symbols do not represent actual locations.

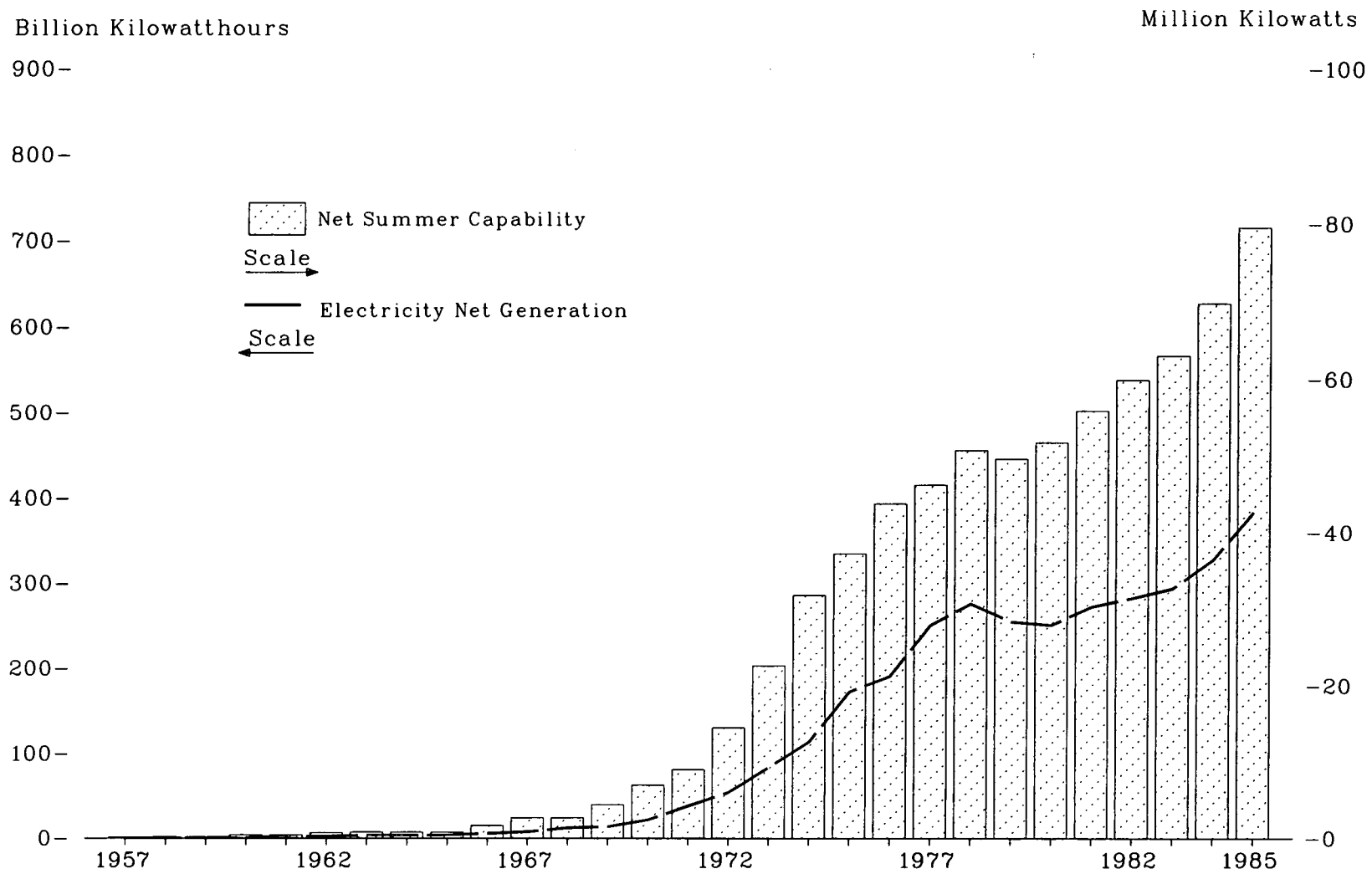
Source: See Table 90.

Table 90. Status of Nuclear Reactor Units, December 31, 1985

Status	Number of Reactors			
	Boiling Water Reactors	Pressurized Water Reactors	Other [1]	Total
Operable [2]	33	60	2	95
In Startup [3]	1	2	0	3
Construction Permits Granted	7	23	0	30
Construction Permits Pending	0	0	0	0
On Order	0	2	0	2
Total	41	87	2	130

[1] Includes one graphite-moderated and one gas-cooled reactor in full operation.
[2] Units that have received a full power amendment to their operating licenses from the Nuclear Regulatory Commission, plus the Hanford-N reactor. Excludes Peach Bottom-1; Humboldt Bay; Dresden-1; Three Mile Island-2; and Shippingport, which have been inoperative for at least 5 years.
[3] Units that have received operating licenses from the Nuclear Regulatory Commission authorizing fuel loading and low-power testing.
Sources: Compiled by the Energy Information Administration from Nuclear Regulatory Commission sources.

Figure 91. Nuclear Power Plant Net Summer Capability and Net Generation of Electricity, 1957-1985



Source: See Table 91.

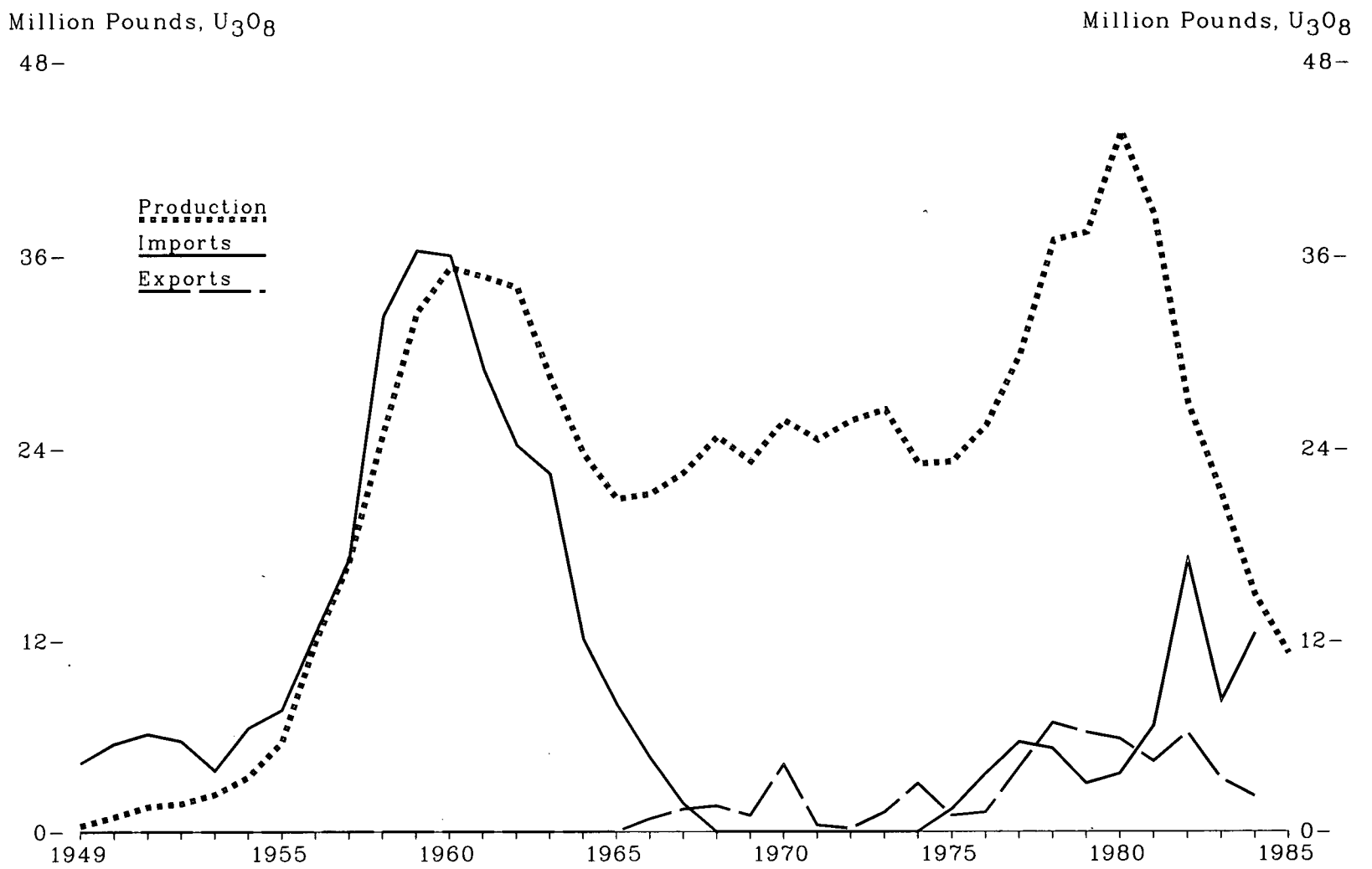
Table 91. Nuclear Power Plant Net Summer Capability [1] and Net Generation of Electricity, 1957-1985

Year	Operable Reactors [2] at End of Year	Net Summer Capability (million kilowatts)	Electricity Generation (billion net kilowatthours)	Electricity Generation (percent of total U.S. generation)	Capacity Factor
1957	1	0.1	[3]	[4]	NA
1958	1	0.1	0.2	[4]	NA
1959	1	0.1	0.2	[4]	NA
1960	3	0.4	0.5	0.1	NA
1961	3	0.4	1.7	0.2	NA
1962	5	0.7	2.3	0.3	NA
1963	6	0.8	3.2	0.4	NA
1964	6	0.8	3.3	0.3	NA
1965	6	0.8	3.7	0.4	NA
1966	8	1.7	5.5	0.5	NA
1967	10	2.7	7.7	0.6	NA
1968	11	2.7	12.5	0.9	NA
1969	14	4.4	13.9	1.0	NA
1970	18	7.0	21.8	1.4	NA
1971	21	9.0	38.1	2.4	NA
1972	[2] 29	[2] 14.5	54.1	3.1	NA
1973	[2] 39	[2] 22.6	83.5	4.5	53.7
1974	48	31.8	114.0	6.1	47.9
1975	54	37.2	172.5	9.0	56.0
1976	61	43.7	191.1	9.4	54.9
1977	65	46.2	250.9	11.8	63.4
1978	70	50.7	276.4	12.5	64.7
1979	68	49.6	255.2	11.4	58.5
1980	70	51.7	251.1	11.0	56.4
1981	74	55.9	272.7	11.9	58.4
1982	77	59.9	282.8	12.6	56.7
1983	80	63.0	293.7	12.7	54.4
1984	86	69.7	327.6	13.6	56.3
1985[5]	95	79.5	383.7	15.5	57.9

[1] See Glossary.
[2] See Explanatory Note 12.
[3] Less than 0.05 billion kilowatthours.
[4] Less than 0.05 percent.
[5] Preliminary.
NA = Not available.

Sources: **Operable Reactors at End of Year:** •1957 through 1972—Federal Power Commission, Form 4, "Monthly Power Plant Report." •1973 through 1984—Nuclear Regulatory Commission, Report NUREG-0020, *Licensed Operating Reactors*, monthly. •1957 through 1972—Federal Power Commission, Form 4, "Monthly Power Plant Report." •1973 through 1984 Nuclear Regulatory Commission, Report NUREG-0020, *Licensed Operating Reactors*. **Net Summer Capability:** •1957 through 1983—See Explanatory Note 20. •1984 and forward—Energy Information Administration, Form EIA-860, "Annual Electric Generator Report." **Electricity Generation.** •1957 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Figure 92. Uranium Production, Exports, and Imports, 1949-1985



Source: See Table 92.

Table 92. Uranium Production, Exports, and Imports, 1949-1985

(Million Pounds of U_3O_8)

Year	Domestic Production	Exports	Imports [1]
1949	0.36	0	4.26
1950	0.92	0	5.48
1951	1.54	0	6.10
1952	1.74	0	5.66
1953	2.32	0	3.80
1954	3.40	0	6.48
1955	5.56	0	7.60
1956	11.92	0	12.48
1957	16.96	0	17.14
1958	24.88	0	32.26
1959	32.48	0	36.32
1960	35.28	0	36.02
1961	34.70	0	29.00
1962	34.02	0	24.22
1963	28.44	0	22.44
1964	23.70	0	12.14
1965	20.88	0	8.00
1966	21.18	0.80	4.64
1967	22.51	1.40	1.76
1968	24.74	1.60	0
1969	23.22	1.00	0
1970	25.81	4.20	0
1971	24.55	0.40	0
1972	25.80	0.20	0
1973	26.47	1.20	0
1974	23.06	3.00	0
1975	23.20	1.00	1.40
1976	25.49	1.20	3.60
1977	29.88	4.00	5.60
1978	36.97	6.80	5.20
1979	37.47	6.20	3.00
1980	43.70	5.80	3.60
1981	38.47	4.40	6.60
1982	26.87	6.20	17.10
1983	21.16	3.30	8.20
1984	14.88	2.20	12.50
1985[2]	11.20	NA	NA

[1] Import quantities through 1970 are reported for fiscal years. Prior to 1968 the Atomic Energy Commission was the sole purchaser of all imported U_3O_8.

[2] Preliminary.

NA = Not available.

Note: Import and export data prior to 1982 are for transactions conducted by uranium suppliers only. For 1982 forward, transactions by uranium buyers (consumers) are included. In 1983, buyer imports totalled 3,800 million pounds of U_3O_8 and buyer exports totalled 1,000 million pounds of U_3O_8. Buyer imports and exports prior to 1982 are believed to be small.

Sources: •1949 through 1967—U.S. Department of Energy, Grand Junction Area Office, Colorado, *Statistical Data of the Uranium Industry*, Report No. GJO-100, annual. •1968 through 1984—Energy Information Administration, *Uranium Industry Annual 1984*. •1985—Energy Information Administration, Form EIA-851, "Survey of Domestic Uranium Production."

Section 9. Wood, Solar, and Geothermal Energy

The use of wood, waste, and other biomass energy, solar energy, and geothermal energy in the United States all increased during the 1980-to-1984 period. Among those energy sources, geothermal production of electric power showed the greatest growth. In 1984 (the most recent year for which data are available), wood, waste, and other biomass energy were used primarily in the industrial and residential sectors and accounted for 2.9 quadrillion Btu of annual consumption. Solar and geothermal energy were used for space heating and to produce electricity.

Wood, Waste, and Other Biomass Energy. According to EIA's *Estimates of U.S. Wood Energy Consumption, 1980–1983*, recent increases in fossil fuel prices led to a resurgence in the use of wood as a fuel, mostly in the residential and industrial sectors. In 1984, 9.3 percent of the end-use energy consumed by the residential sector was supplied by wood; in the industrial sector, the share was 7.2 percent. In specific industries, such as the paper and allied products and the lumber and wood products industries, wood accounted for up to 50 to 75 percent of the total energy used. Total wood consumption in 1984 was estimated at 2.6 quadrillion Btu, 3.4 percent of total energy consumption (Table 93).

Solar Energy. Solar radiation is an inexhaustible source of energy. The Earth's share of solar radiation measures 2.4 million quadrillion (2.4×10^{21}) Btu per year (*The Coming Age of Solar Energy*, D.S. Halacy, 1973). If all of this extraordinarily large amount of energy could be harnessed, the energy obtained during 1 day could satisfy the world's energy needs, at current rates of consumption, for approximately 25 years. Although solar radiation is universally available, it is a diffuse form of energy requiring a large collection area. The result is that only a small portion of the potential energy can be converted to useful energy.

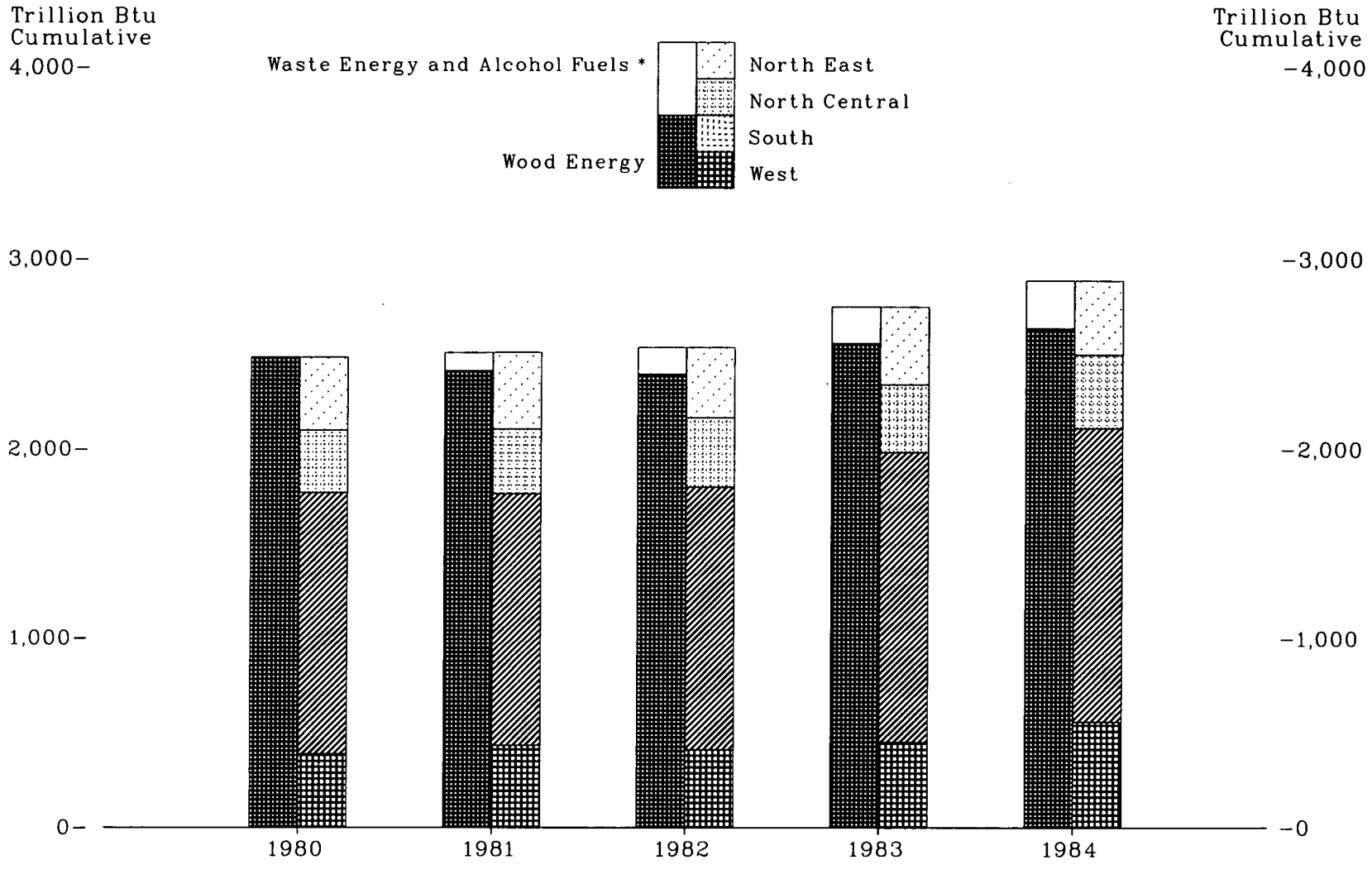
During 1984, 16.42 million square feet of solar collectors were shipped. On a square-footage basis, the low-temperature collectors' share of total shipments fell to 27 percent of the 1984 total, down from 63 percent in 1980. Shipments of medium-temperature, special, and other collectors accounted for the remaining 73 percent in 1984 (Table 96). Collectors to be used for heating pools and domestic hot water accounted for 81 percent of all collectors shipped during 1984. The residential sector was the dominant user of solar collectors, accounting for 85 percent of the manufacturers' shipments in 1984 (Table 96).

Geothermal Energy. Geothermal energy, or heat from the Earth, is conducted and radiated from the hot mass of molten rock that forms the Earth's core. Most of the heat is too deep within the Earth to be extracted for practical use. However, in hot springs, geysers, and fumaroles, the Earth's heat is more readily available. Geothermal energy is most useful when geologic conditions concentrate heat energy into hot spots or thermal reservoirs. There are three types of thermal reservoirs: hydrothermal, geopressurized, and dry rock.

Hydrothermal reservoirs are the most desirable for producing geothermal energy. These reservoirs consist of a heat source covered by a permeable formation in which the water circulates. There are two types of hydrothermal systems: vapor-dominated and hot-water-dominated. The Geysers in California, a vapor-dominated system, is the major geothermal facility producing electricity in the United States.

In 1985, net generation of electricity from geothermal sources amounted to 9.3 billion kilowatthours, up 20 percent from the 7.7 billion kilowatthours generated in 1984 (Table 98).

Figure 93. Consumption of Wood, Waste, and Other Biomass Energy by Census Region, 1980-1984



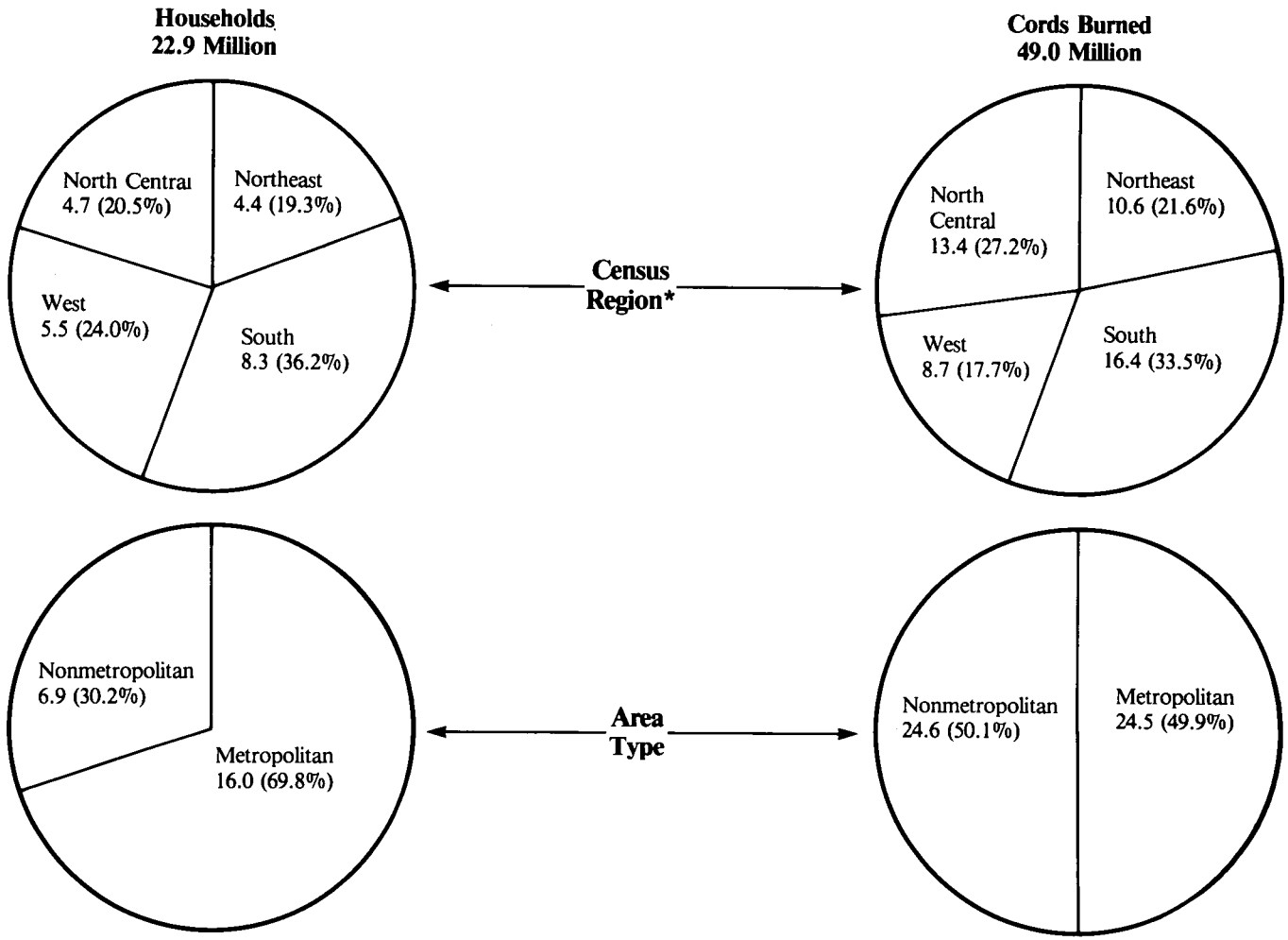
Note: See Appendix for Census Regions. * Data not available for 1980
Source: See Table 93.

Table 93. Consumption of Wood, Waste, and Other Biomass Energy by End-Use Sector and Census Region, 1980-1984

	1980		1981		1982		1983		1984	
	Million Short Tons [1]	Trillion Btu	Million Short Tons [1]	Trillion Btu	Million Short Tons [1]	Trillion Btu	Million Short Tons [1]	Trillion Btu	Million Short Tons [1]	Trillion Btu
Wood Energy										
End-Use Sector										
Industrial	93	1,600	88	1,519	83	1,434	93	1,606	98	1,679
Residential	50	859	51	869	55	937	54	925	54	923
Commercial	1	21	1	21	1	22	1	22	1	22
Electric Utility	[2]	4	[2]	3	[2]	2	[2]	3	1	9
Census Region [3]										
Northeast	22	386	22	389	20	351	21	369	20	349
North Central	19	329	20	331	20	339	18	318	20	341
South	80	1,380	75	1,291	78	1,334	86	1,471	86	1,482
West	23	388	23	402	22	372	23	396	27	461
Total	144	2,483	140	2,412	139	2,395	148	2,556	153	2,633
Waste Energy [4]										
Census Region [3]										
Northeast	NA	NA	NA	16	NA	20	NA	36	NA	39
North Central	NA	NA	NA	5	NA	13	NA	17	NA	21
South	NA	NA	NA	37	NA	50	NA	56	NA	57
West	NA	NA	NA	30	NA	36	NA	48	NA	91
Total	NA	NA	NA	88	NA	120	NA	157	NA	208
Alcohol Fuels										
Census Region [3]										
Northeast	NA	NA	NA	[5]	NA	[5]	NA	[5]	NA	[5]
North Central	NA	NA	NA	4	NA	11	NA	22	NA	25
South	NA	NA	NA	1	NA	4	NA	8	NA	13
West	NA	NA	NA	2	NA	4	NA	5	NA	5
Total	NA	NA	NA	7	NA	19	NA	35	NA	43
Total Biomass	NA	NA	NA	2,507	NA	2,534	NA	2,748	NA	2,884

[1] Oven-dried equivalent which averages approximately 17.2 million Btu per short ton.
[2] Less than 500,000 short tons.
[3] See Appendix.
[4] Includes landfill methane, mass burning, refuse derived fuels, and agricultural waste.
[5] Less than 0.5 trillion Btu.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Source: •1980—Energy Information Administration, *Estimates of U.S. Wood Energy Consumption, 1980-1983.* •1981 and forward—Energy Information Administration, previously unpublished data.

Figure 94. Households that Burn Wood, Year Ending November, 1984



* See Appendix for Census Regions.

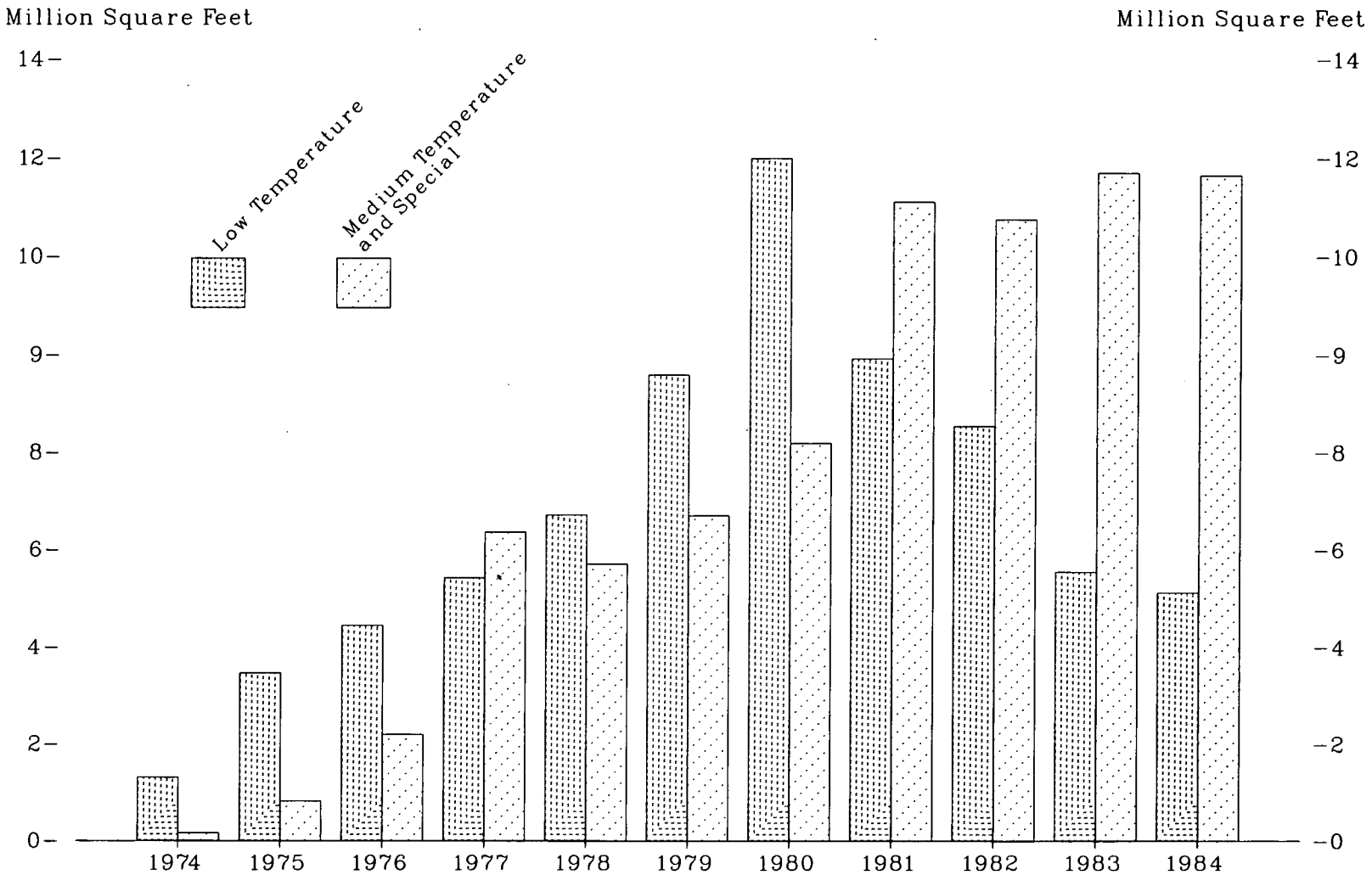
Source: See Table 94.

Table 94. Households that Burn Wood, Year Ending November 1984

Household Characteristics	Households That Burn Wood		Cords Burned		Average Amount Burned per Household (cords)
	(million)	(percent)	(million)	(percent)	
Total Households	22.9	100.0	49.0	100.0	2.1
Census Regions					
Northeast	4.4	19.3	10.6	21.6	2.4
North Central	4.7	20.5	13.4	27.2	2.8
South	8.3	36.2	16.4	33.5	2.0
West	5.5	24.0	8.7	17.7	1.6
Area Type					
Metropolitan	16.0	69.8	24.5	49.9	1.5
Nonmetropolitan	6.9	30.2	24.6	50.1	3.6
Year House was Built					
Before 1940	5.4	23.4	14.3	29.2	2.7
1940 to 1949	1.5	6.7	3.9	7.9	2.5
1950 to 1959	3.1	13.7	6.2	12.6	2.0
1960 to 1964	1.9	8.5	4.1	8.4	2.1
1965 to 1969	2.5	10.7	4.6	9.4	1.9
1970 to 1974	3.2	14.1	6.1	12.5	1.9
1975 to 1979	3.6	15.8	7.2	14.6	2.0
After 1979	1.6	7.2	2.7	5.5	1.6
Main Heating Fuel					
Natural Gas	9.1	39.5	9.0	18.3	1.0
Wood	6.4	28.0	29.4	60.0	4.6
Fireplace	0.3	1.5	0.9	1.7	2.5
Airtight Stove	4.8	21.1	20.5	41.8	4.2
Nonairtight Stove	0.8	3.4	4.5	9.2	5.8
Furnace/Other	0.4	1.9	3.6	7.3	8.0
Electricity	3.6	15.7	3.9	8.0	1.1
Fuel Oil or Kerosene	2.6	11.5	4.1	8.3	1.6
LPG/Other	1.2	5.4	2.7	5.4	2.1
Amount of Wood Burned					
Less than 0.5 Cords	7.2	31.5	1.4	2.9	0.2
0.5 to 1.4 Cords	5.8	25.2	4.2	8.6	0.7
1.5 to 2.4 Cords	2.9	12.7	5.3	10.9	1.8
2.5 to 3.4 Cords	2.1	9.2	6.1	12.4	2.9
3.5 to 4.4 Cords	1.3	5.5	4.9	10.1	3.9
4.5 or More Cords	3.6	15.9	27.0	55.1	7.4

Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, Form EIA-457, "Residential Energy Consumption Survey."

Figure 95. Producer Shipments of Solar Thermal Collectors, 1974-1984



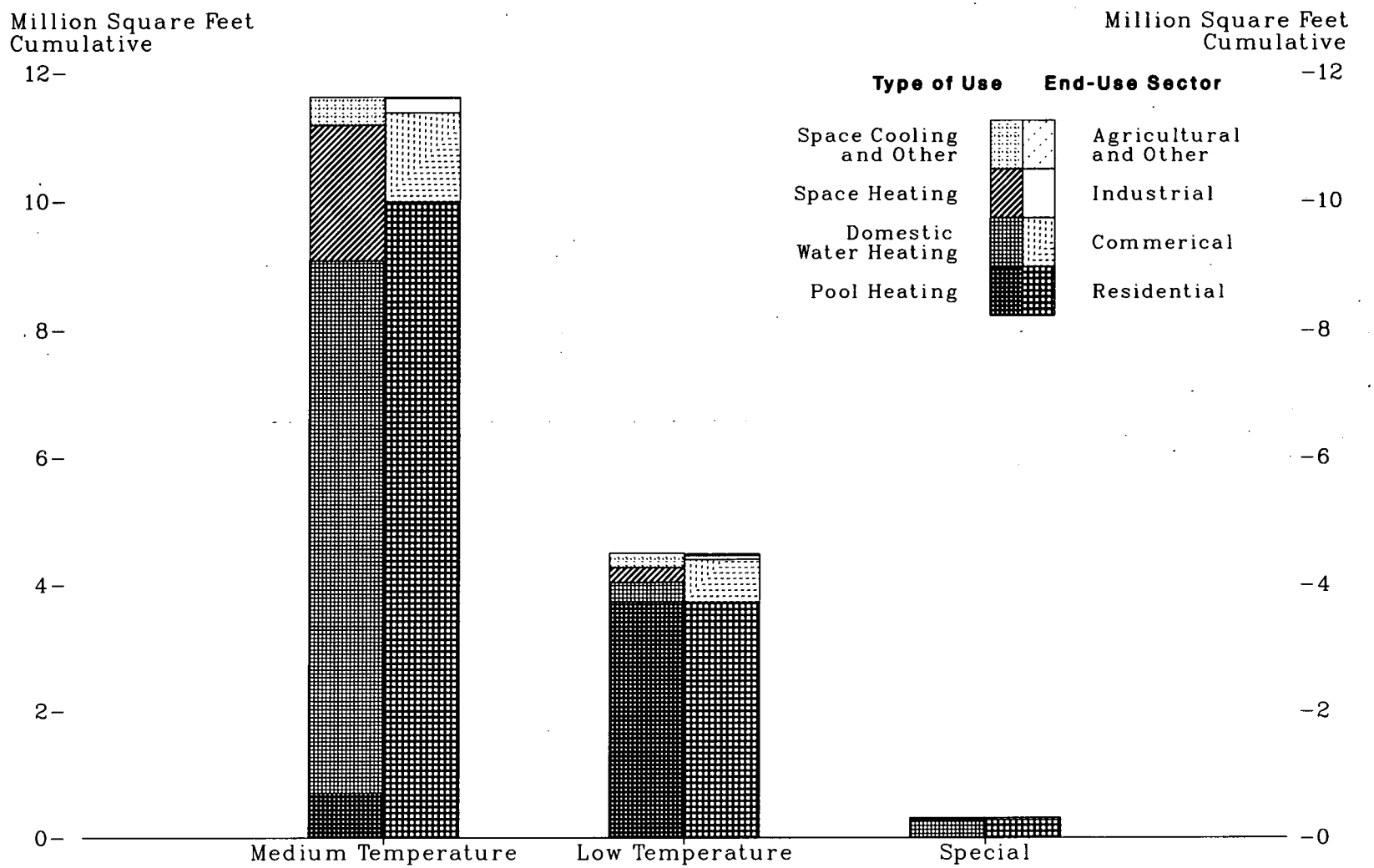
Source: See Table 95.

Table 95. Producer Shipments of Solar Thermal Collectors, 1974-1984

Year	Low-Temperature Collectors		Medium-Temperature, Special, and Other Collectors	
	Number of Manufacturers	Quantity Shipped (million square feet)	Number of Manufacturers	Quantity Shipped (million square feet)
1974	6	1.14	39	0.14
1975	13	3.03	118	0.72
1976	19	3.88	203	1.92
1977	52	4.74	297	5.57
1978	69	5.87	204	4.99
1979	84	8.39	257	5.86
1980	79	12.23	250	7.16
1981	75	8.68	263	11.46
1982	61	7.48	248	11.15
1983	55	4.85	179	11.98
1984	48	4.48	206	11.94

Note: Manufacturers producing more than one type of collector are accounted for in both groups.
Sources: •1974 through 1976—Federal Energy Administration, *Solar Collector Manufacturing Activity*, semi-annual •1977—Energy Information Administration, *Solar Collector Manufacturing Activity, July through December, 1981*. March 1982 (semi-annual), •1978 and forward—Energy Information Administration, *Solar Collector Manufacturing Activity*, annual.

Figure 96. Producer Shipments of Solar Thermal Collectors by Type of Collector and Application, 1984



Source: See Table 96.

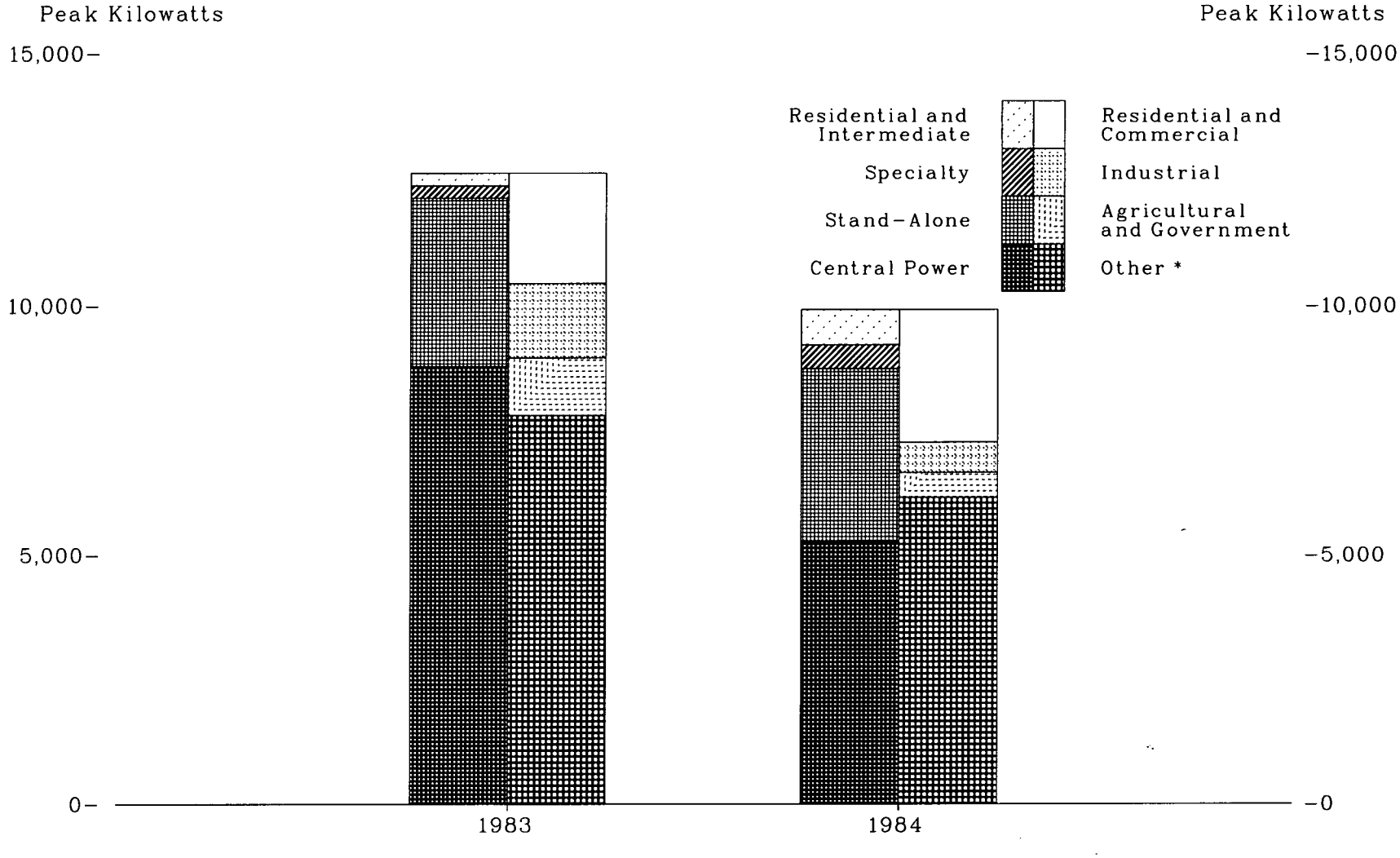
Table 96. Producer Shipments of Solar Thermal Collectors by Type of Collector and Application, 1984

(Million Square Feet)

Application	Type of Collector				
		Medium-Temperature			
	Low Temperature	Liquid	Air	Special and Other	Total
Type of Use					
Pool Heating	3.73	0.70	[1]	[1]	4.43
Domestic Hot Water	0.30	8.05	0.32	0.26	8.93
Space Heating	0.23	0.74	1.37	0.03	2.37
Space Cooling	0	0.01	[1]	[1]	0.01
Other	0.23	0.24	0.19	0.02	0.68
Total	4.48	9.74	1.89	0.31	16.42
End-Use Sector					
Residential	3.72	8.24	1.74	0.28	13.98
Commerical	0.67	1.27	0.12	0.03	2.09
Industrial	0.06	0.21	0.02	[1]	0.29
Agricultural	0.03	0.02	[1]	0	0.05
Other	[1]	[1]	[1]	[1]	0.01
Total	4.48	9.74	1.89	0.31	16.42

[1] Less than 0.005 million square feet.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *Solar Collector Manufacturing Activity*, annual.

Figure 97. Producer Shipments of Photovoltaic Modules, 1983 and 1984



Source: See Table 97.

* Mostly Electrical Utility

Table 97. Producer Shipments of Photovoltaic Modules, 1983 and 1984

(Peak Kilowatts)

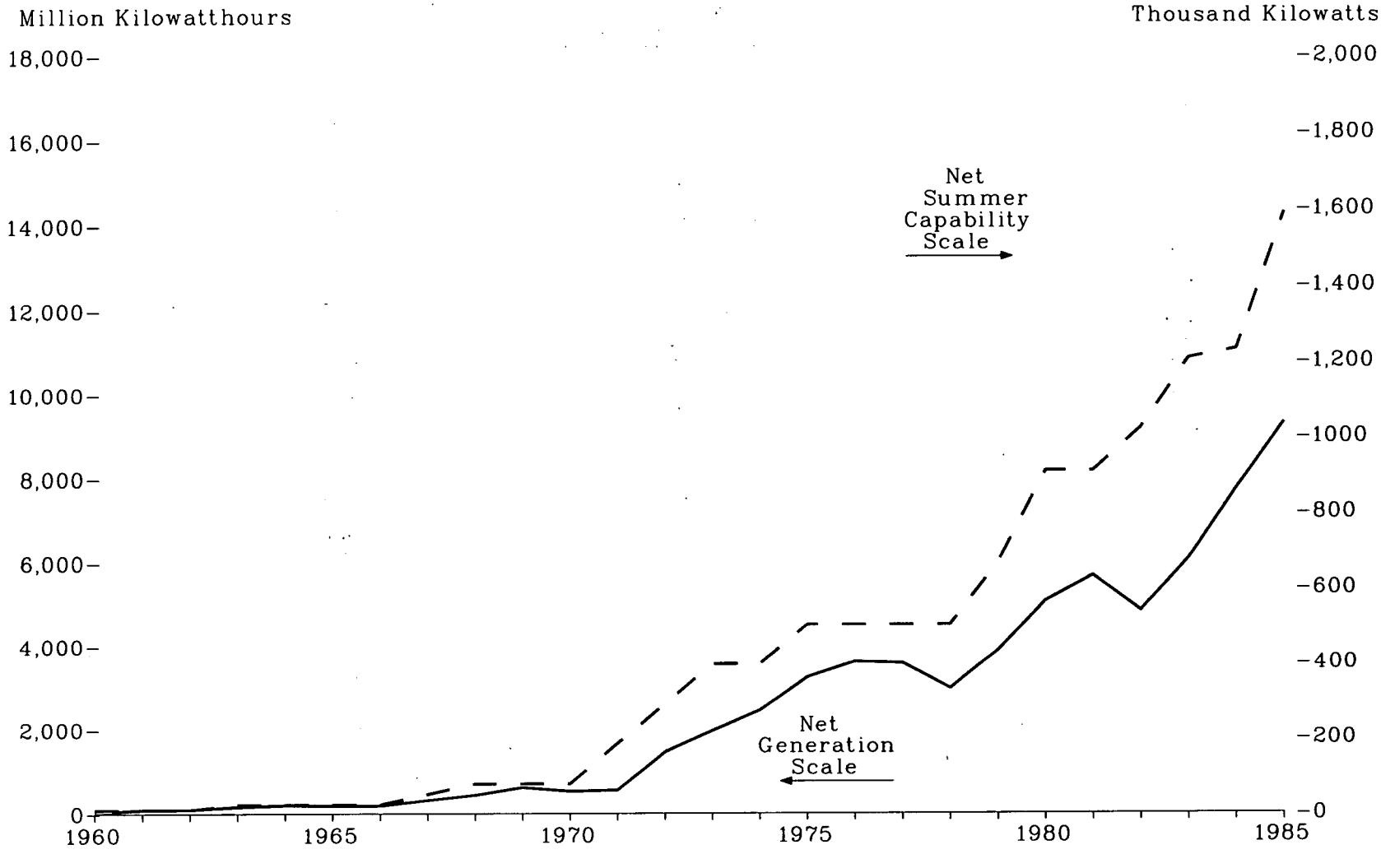
Application	1983	1984
Type of Module		
Specialty	242	470
Stand-Alone	3,334	3,475
Residential	160	492
Intermediate	93	204
Central Power	8,791	5,271
Total	12,620	9,912
End-Use Sector		
Residential	1,479	1,344
Commercial	710	1,301
Industrial	1,467	608
Agricultural	384	329
Government	787	171
Other [1]	7,793	6,160
Total	12,620	9,912
Exports	1,903	2,153

[1] Mostly electric utility.

Note: Sum of components may not equal total due to independent rounding.

Source: Energy Information Administration, *Solar Collector Manufacturing Activity*, annual.

Figure 98. Net Generation of Electricity from Geothermal Sources, 1960-1985



Source: See Table 98.

Table 98. Net Generation of Electricity from Geothermal Sources, 1960-1985

Year	Net Summer Capability [1] at End of Year (thousand kilowatts)	Net Generation [2] (million kilowatthours)
1960	11	33
1961	11	94
1962	11	100
1963	24	168
1964	24	204
1965	24	189
1966	24	188
1967	51	316
1968	78	436
1969	78	615
1970	78	525
1971	184	548
1972	290	1,453
1973	396	1,966
1974	396	2,453
1975	502	3,246
1976	502	3,616
1977	502	3,582
1978	502	2,978
1979	667	3,889
1980	909	5,073
1981	909	5,686
1982	1,022	4,843
1983	1,207	6,075
1984	1,231	7,741
1985[3]	1,590	9,325

[1] See Glossary and Explanatory Note 20.
[2] See Explanatory Note 1.
[3] Preliminary.
Sources: **Net Summer Capability at End of Year:** •1960 through 1983—Energy Information Administration estimates. •1984 and forward—Energy Information Administration, Form EIA-860, "Annual Electric Generator Report." **Net Generation:** • 1960 through 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report." •October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." •1982 and forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Section 10. International Energy Data

Energy Production. Total world energy production rose in 1984 (the most recent year for which data are available) to 292.9 quadrillion Btu, up from 280.7 quadrillion Btu in 1983. However, production levels in major oil-producing Middle East countries continued to decline, while increases were registered in most other producing areas (Table 101). In the United States, energy production rose more than 4 quadrillion Btu, due primarily to increased coal and natural gas output (Table 2).

Petroleum Production. International crude oil production decreased in 1985 to 53.3 million barrels per day, reversing the small gain reported in 1983. Production decreases were concentrated in the Organization of Petroleum Exporting Countries (OPEC) and the U.S.S.R. OPEC production fell to 30 percent of world production, from a high of 56 percent in 1973 (Table 103). Output increased in the United Kingdom, China, and the United States.

Petroleum Consumption. World consumption of petroleum products decreased for the fourth straight year in 1983 (most recent data available) as world economic recession and energy conservation continued to inhibit demand. Consumption of 59.0 million barrels per day was down 9.5 percent from the all-time high of 65.1 million barrels per day in 1979. Major consumers were the United States, the U.S.S.R., and Japan, which together accounted for approximately 49 percent of total world consumption in 1983 (Table 105).

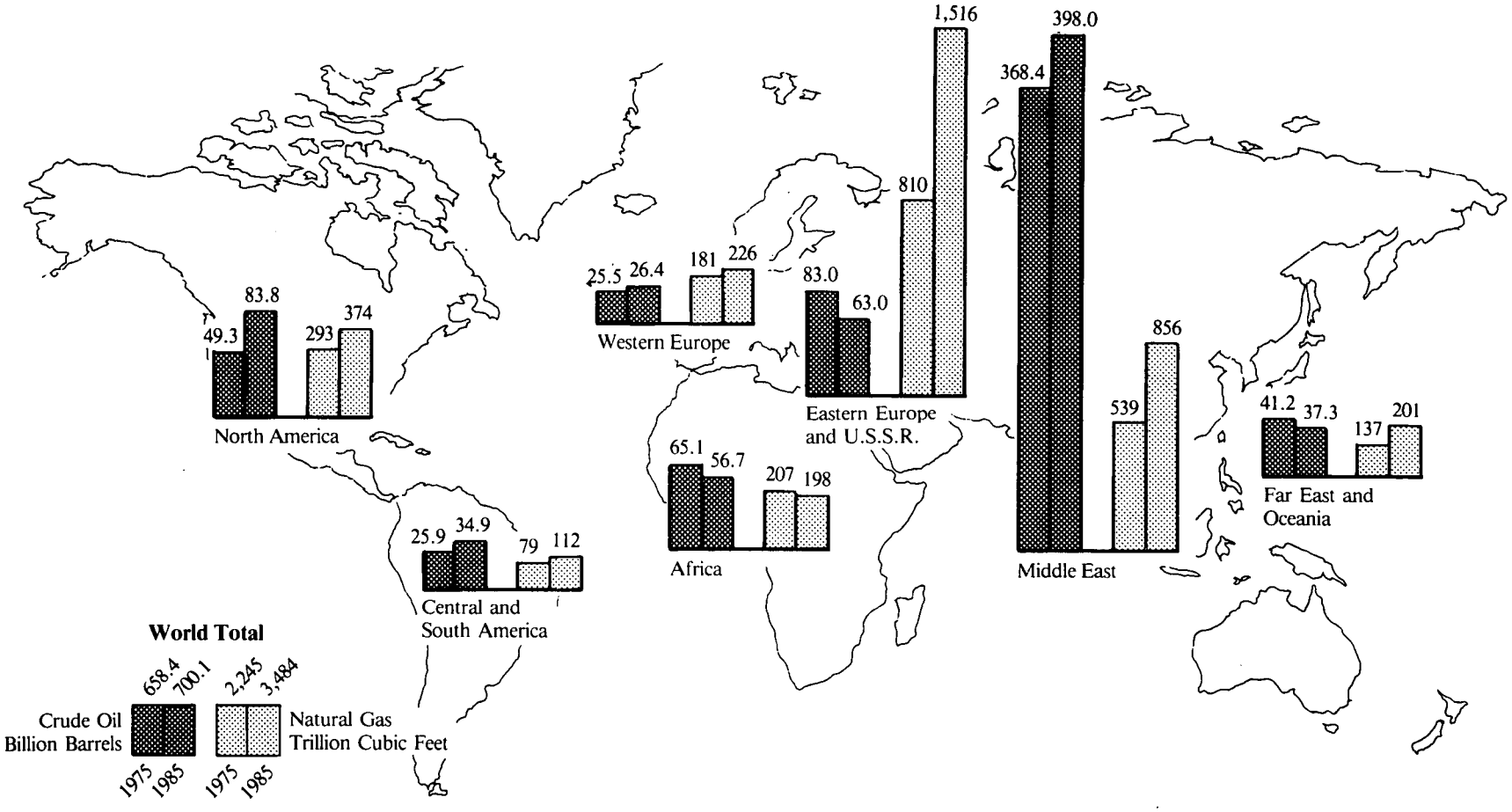
Petroleum Prices. Official prices of foreign crude oil, most of which fell steadily from January 1, 1981 through January 1, 1984, stabilized during 1984. However, most official prices resumed a downward trend in 1985. The greatest price decline from January 1, 1985, to January 1, 1986, was for Mexico Maya, which decreased $3.57 per barrel. The greatest decrease since the beginning of 1981 was United Kingdom's Brent Blend, which fell 34 percent from $39.25 per barrel to $26 per barrel (Table 113).

Natural Gas Production and Trade. World natural gas production rose in 1984 (most recent data available). The 58.3 trillion cubic feet produced in 1984 was 3.9 trillion cubic feet (7.1 percent) more than 1983 production. The United States and the U.S.S.R. were the major producers, accounting for nearly two-thirds of total production (Table 107). Major natural gas exporters were the U.S.S.R., the Netherlands, Norway, and Canada. Major importers were West Germany, Japan, and the United States (Table 108).

Coal Production. World coal production increased from 3.7 billion short tons in 1975 to 4.6 billion short tons in 1984, an average annual growth rate of 2.4 percent. The level of production in 1984 was 3.4 percent greater than in 1983. Production levels in 1984 reflected major increases in the United States and China and decreases in West European countries. About 56 percent of 1984 world coal production came from the U.S.S.R., the United States, and China (Table 110).

Nuclear Power. In 1985, annual nuclear-based electricity generation by non-Communist countries exceeded 1 trillion gross kilowatthours for the second time. Although the United States remained the major producer among those nations, its share of total nuclear- based generation continued to decline as the West European share increased. The United States' share was 32 percent in 1985, down from the all-time high of 56 percent in 1977. Other major nuclear-generating countries in 1985 were France, 18 percent of the non-Communist total; Japan, 12 percent; and West Germany, 10 percent (Table 112).

Figure 99. Estimated International Crude Oil and Natural Gas Proved Reserves, End of Year 1975 and 1985



Note: Bars are scaled in proportion to the btu content of the reserves. One billion barrels of crude oil equals approximately 5.3 trillion cubic feet of wet natural gas.

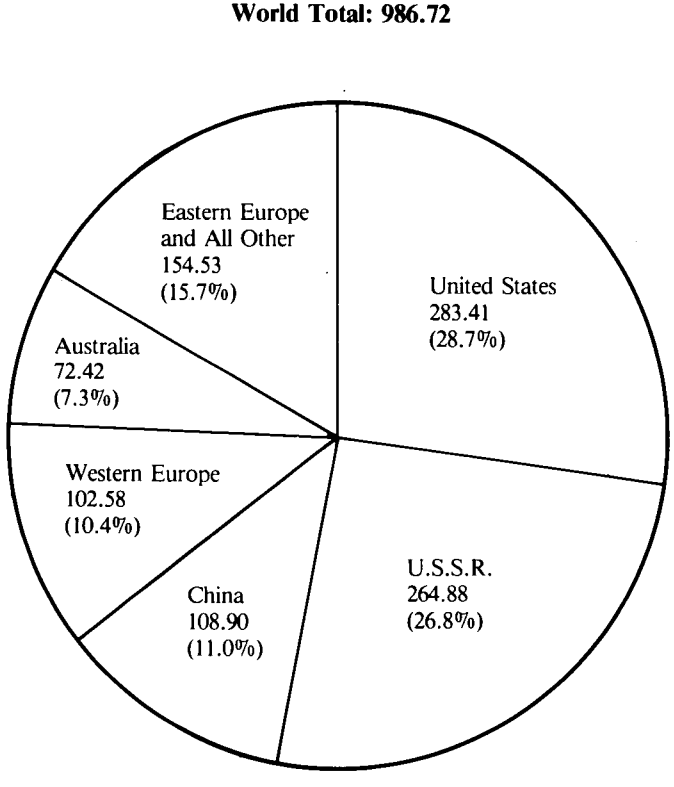
Source: See Table 99.

Table 99. Estimated International Crude Oil and Natural Gas Proved Reserves, End of Year 1975 and 1985

Area and Country	Crude Oil (billion barrels)		Natural Gas (trillion cubic feet)	
	1975	1985	1975	1985
North America				
Canada	7.1	6.5	53	100
Mexico	9.5	49.3	12	77
United States	32.7	28.0	228	197
Total	49.3	83.8	293	374
Central and South America				
Argentina	2.5	2.3	7	24
Bolivia	0.2	0.2	11	5
Brazil	0.8	2.1	1	3
Chile	0.2	0.1	2	2
Colombia	0.6	1.2	4	4
Ecuador	2.5	1.7	5	4
Peru	0.8	0.1	2	1
Trinidad and Tobago	0.7	0.1	4	11
Venezuela	17.7	25.6	42	59
Other	(2)	1.5	0	(3)
Total	25.9	34.9	79	112
Western Europe				
Denmark	0.2	0.5	1	4
Germany, West	0.4	0.3	8	6
Italy	0.7	0.7	10	5
Netherlands	0.3	0.3	70	67
Norway	7.0	10.9	25	104
United Kingdom	16.0	13.0	50	33
Other	0.9	0.7	17	7
Total	25.5	26.4	181	226
Eastern Europe and U.S.S.R.				
U.S.S.R.	80.4	61.0	800	1,500
Other	2.6	2.0	10	16
Total	83.0	63.0	810	1,516
Middle East				
Bahrain	0.3	0.2	5	7
Iran	64.5	47.9	330	470
Iraq	34.3	44.1	27	29
Kuwait [1]	71.2	92.4	36	37
Oman	5.9	4.0	2	6
Qatar	5.9	3.3	8	148
Saudi Arabia [1]	151.8	171.5	107	125
Syria	2.2	1.4	1	1
United Arab Emirates	32.2	33.0	23	33
Other	0.1	0.2	1	(3)
Total	368.4	398.0	539	856
Africa				
Algeria	7.4	8.8	126	107
Angola	1.3	2.0	2	2
Cameroon	0.0	0.6	0	4
Congo	2.5	0.7	1	2
Egypt	3.9	3.9	4	7
Gabon	2.2	0.5	3	(3)
Libya	26.1	21.3	26	21
Nigeria	20.2	16.6	44	47
Tunisia	1.1	1.8	1	4
Other	0.5	0.5	(3)	3
Total	65.1	56.7	207	198
Far East and Oceania				
Australia	1.7	1.4	33	18
Bangladesh	0	0	10	12
Brunei	2.0	1.5	9	7
China	20.0	18.4	25	30
India	0.9	3.7	2	17
Indonesia	14.0	8.5	15	36
Malaysia	2.5	3.1	15	52
New Zealand	0.1	0.2	5	6
Pakistan	(2)	0.1	16	15
Thailand	(2)	0.1	0	5
Other	0.2	0.2	7	3
Total	41.2	37.3	137	201
World Total	658.4	700.1	2,245	3,484

[1] Includes one-half of the Partitioned Zone (formerly called Neutral Zone).
[2] Less than 0.05 billion barrels.
[3] Less than 0.05 trillion cubic feet.
Note: Sum of components may not equal total due to independent rounding.
Note: All reserve figures except those for the U.S.S.R. and natural gas reserves in Canada are proved reserves recoverable with present technology and prices. U.S.S.R. figures are "explored reserves," which include proved, probable, and some possible. The Canadian natural gas figure includes proved and some probable. The latest Energy Information Administration data for the United States are for December 31, 1984, see Table 42.
Source: **United States:** •1975—See Table 42. **All Other:** •1975—*Oil and Gas Journal,* December 29, 1975. Petroleum Publishing Co., Tulsa, Oklahoma. •1985—*Oil and Gas Journal,* December 30, 1985. Petroleum Publishing Co., Tulsa, Oklahoma. The Energy Information Administration does not necessarily subscribe to the *Oil and Gas Journal* data but reproduces it as a matter of convenience.

Figure 100. Estimated International Recoverable Reserves of Coal, 1981
(Billion Short Tons)



Source: See Table 100.

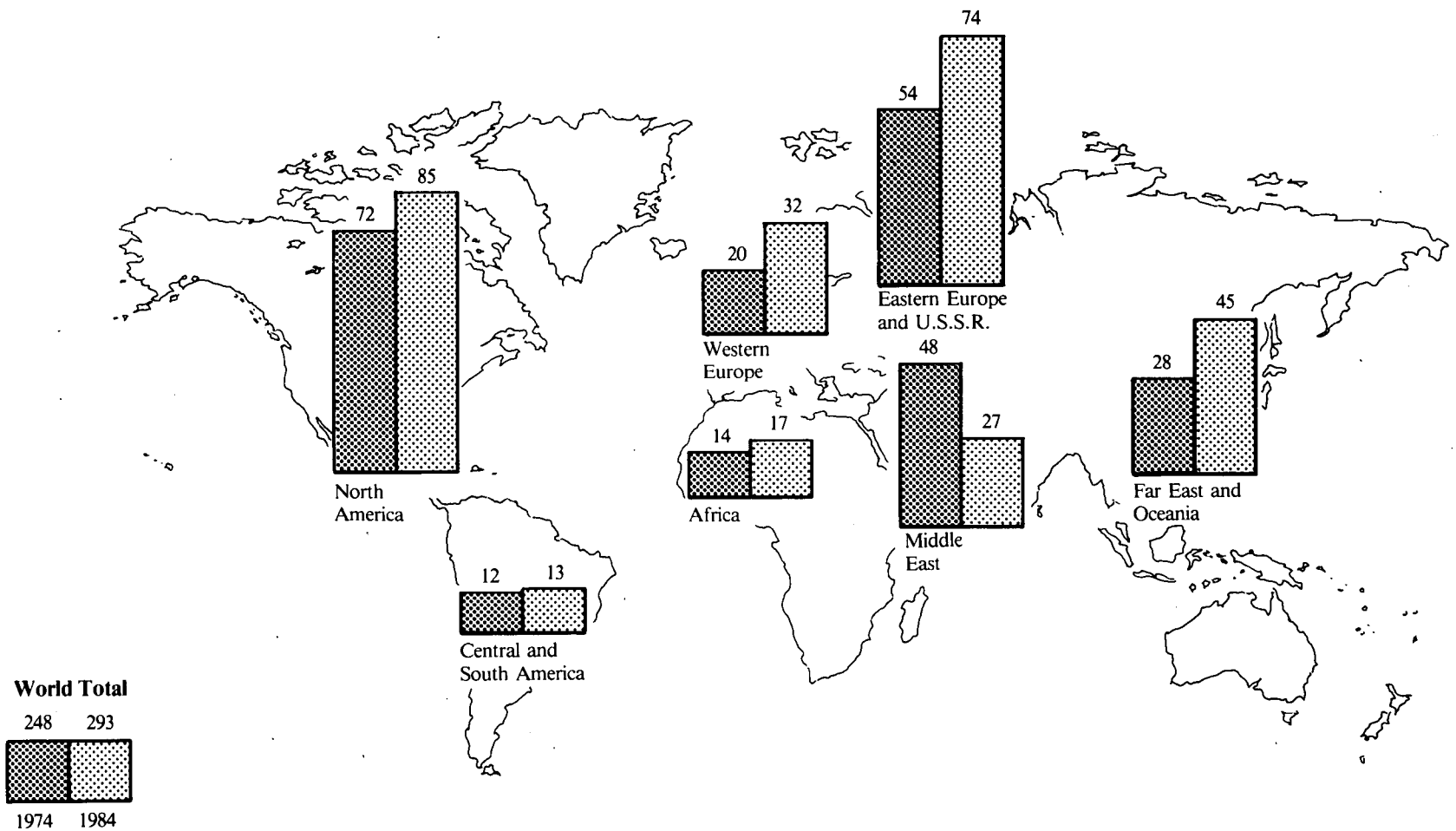
Table 100. Estimated International Recoverable Reserves of Coal, 1981 [1]

(Billion Short Tons)

Area and Country	Anthracite and Bituminous Coal [2]			Lignite		Total Recoverable
	Recoverable	Portion Surface Minable	Portion Coking Quality	Recoverable	Portion Surface Minable	
North, Central, and South America						
Canada	4.18	0	1.38	2.33	2.33	6.51
United States	248.16	89.28	NA	35.25	35.25	283.41
Other	19.25	1.78	2.74	0.02	[3]	19.28
Total	271.59	[4] 91.07	[4] 4.12	37.60	37.58	309.20
Western Europe						
Germany, West	32.98	NA	19.78	38.66	38.66	71.64
Turkey	0.20	0	0	1.90	0	2.11
United Kingdom	5.06	0	2.23	0	0	5.06
Yugoslavia	1.73	0.06	0	16.50	0	18.23
Other	3.29	[4] 0.67	[4] 1.03	2.24	0.07	5.53
Total	43.26	[4] 0.72	[4] 23.04	59.31	[4] 38.74	102.58
Eastern Europe and U.S.S.R.						
Bulgaria	0.03	NA	0.02	4.00	2.65	4.03
Czechoslovakia	3.00	NA	NA	3.15	0	6.15
Hungary	0.23	0	0	4.40	0	4.63
Poland	30.00	0	6.00	13.20	13.20	43.20
U.S.S.R.	166.67	34.88	60.00	98.21	97.23	264.88
Other	0	0	0	NA	NA	NA
Total	199.93	[4] 34.88	[4] 66.02	122.96	[4] 113.08	322.89
Africa						
Botswana	3.80	0	0	0	0	3.80
South Africa, Republic of	57.03	NA	NA	0	0	57.03
Swaziland	2.00	0	0	0	0	2.00
Other	2.43	0.55	0.15	0.11	[3]	2.54
Total	65.27	[4] 0.55	[4] 0.15	0.11	[3]	65.38
Middle East, Far East, and Oceania						
Australia	32.52	7.00	13.01	39.90	39.90	72.42
China	108.90	10.91	40.29	0	0	108.90
India	NA	NA	NA	1.74	1.65	1.74
Other	3.02	[4] 0.07	[4] 0.69	0.59	0.51	3.61
Total	144.44	[4] 17.98	[4] 53.99	42.23	[4] 42.06	186.67
World Total	724.50	[4] 145.21	[4] 147.33	262.22	[4] 231.47	986.72

[1] The reference year for most of the reserves data in the source report is 1981.
[2] Includes subbituminous coal.
[3] Less than 5 million tons.
[4] Not all countries in this group reported under this category.
NA = Not available.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *International Energy Annual.*

Figure 101. International Primary Energy Production by Area, 1974 and 1984
(Quadrillion Btu)



Source: See Table 101.

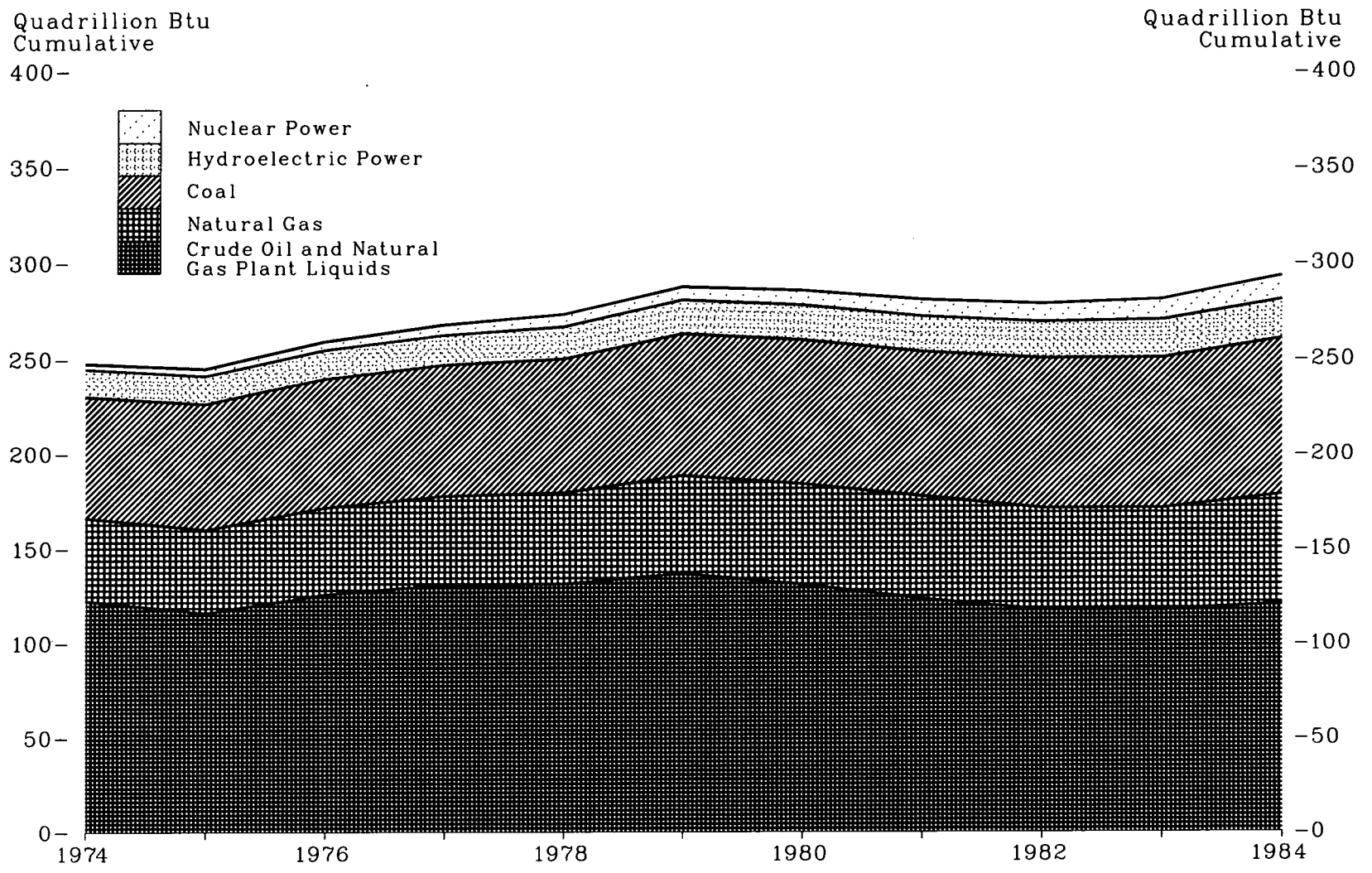
Table 101. International Primary Energy Production [1] by Area and Country, 1974-1984

(Quadrillion Btu)

Area and Country	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 [2]
North, Central, and South America											
Canada	9.34	8.84	8.67	9.09	9.18	9.94	10.13	9.85	9.75	10.28	11.11
Mexico	2.15	2.44	2.76	3.16	3.79	4.55	5.85	6.85	7.89	7.82	7.86
United States	60.79	59.80	59.81	60.14	61.04	63.72	64.65	64.30	63.78	61.06	65.63
Venezuela	7.29	5.90	5.79	5.70	5.52	6.04	5.67	5.52	5.18	4.97	5.02
Other	4.68	4.65	4.90	5.19	5.68	6.21	6.45	6.45	6.71	7.07	7.68
Total	84.25	81.63	81.93	83.28	85.21	90.46	92.75	92.97	93.31	91.20	97.30
Western Europe											
France	1.82	1.88	1.71	2.00	2.02	2.03	2.26	2.73	2.70	3.06	3.48
Germany, West	5.12	5.04	5.14	5.12	5.12	5.44	5.44	5.57	5.72	5.54	5.77
Netherlands	2.86	3.16	3.44	2.90	2.49	2.69	3.32	3.10	2.67	2.62	2.71
Norway	0.88	1.22	1.50	1.49	2.10	2.71	3.06	3.12	3.20	3.53	3.81
United Kingdom	4.38	4.87	5.39	6.58	7.19	8.25	8.41	8.75	9.54	9.98	8.98
Other	5.04	5.26	5.18	5.86	5.92	6.31	6.21	6.63	7.00	7.37	7.80
Total	20.10	21.43	22.36	23.95	24.84	27.43	28.70	29.90	30.83	32.10	32.55
Eastern Europe and U.S.S.R.											
Germany, East	2.19	2.20	2.25	2.30	2.32	2.36	2.44	2.53	2.57	2.62	2.64
Poland	4.53	4.78	5.00	5.18	5.36	5.51	5.28	4.54	5.16	5.25	5.37
Romania	2.19	2.29	2.39	2.48	2.34	2.47	2.47	2.54	2.59	2.67	2.60
U.S.S.R.	41.77	43.62	46.16	48.43	50.68	52.42	54.15	55.18	56.58	58.21	59.72
Other	2.93	3.03	3.13	3.20	3.28	3.30	3.34	3.36	3.53	3.59	3.67
Total	53.61	55.92	58.93	61.59	63.98	66.06	67.68	68.15	70.43	72.34	74.00
Middle East											
Iran	13.68	12.23	13.43	12.88	11.93	7.46	3.91	3.28	5.13	5.68	5.30
Iraq	4.24	4.88	5.24	5.07	5.43	7.36	5.36	2.13	2.15	2.13	2.57
Kuwait	5.67	4.68	4.85	4.47	4.91	5.78	3.89	2.70	1.98	2.52	2.75
Saudi Arabia	18.57	15.65	18.89	20.52	18.46	21.25	22.31	22.56	14.90	11.58	10.78
United Arab Emirates	3.56	3.57	4.20	4.45	4.09	4.11	3.89	3.45	2.99	2.90	2.97
Other	2.49	2.53	2.54	2.39	2.38	2.58	2.43	2.48	2.38	2.43	2.76
Total	48.21	43.54	49.15	49.78	47.20	48.54	41.79	36.60	29.53	27.24	27.13
Africa											
Algeria	2.35	2.34	2.63	2.71	3.25	3.18	2.74	2.82	2.78	3.15	3.28
Libya	3.32	3.27	4.26	4.53	4.37	4.60	3.97	2.54	2.58	2.49	2.49
Nigeria	4.89	3.88	4.51	4.50	4.06	4.95	4.43	3.13	2.81	2.73	3.13
South Africa, Republic of	1.57	1.65	1.84	2.03	2.15	2.46	2.74	3.09	3.24	3.45	3.49
Other	1.80	2.12	2.15	2.63	2.67	2.87	3.33	3.30	3.60	3.93	4.27
Total	13.93	13.26	15.39	16.40	16.50	18.06	17.21	14.88	15.01	15.75	16.66
Far East and Oceania											
Australia	3.04	3.20	3.48	3.56	3.65	3.81	3.67	4.08	4.11	4.40	4.83
China	14.25	15.11	15.93	16.77	18.74	19.23	19.01	18.78	19.87	21.25	22.85
India	2.36	2.68	2.84	2.90	3.09	3.15	3.16	3.81	4.06	4.48	4.75
Indonesia	2.99	2.89	3.38	3.85	3.72	3.83	4.12	4.22	3.66	3.81	4.10
Japan	1.70	1.82	1.87	1.66	1.91	2.01	2.31	2.29	2.44	2.52	2.70
Other	3.30	3.56	3.91	4.06	4.21	4.69	4.98	4.95	5.25	5.64	6.01
Total	27.64	29.26	31.41	32.80	35.32	36.72	37.25	38.13	39.39	42.10	45.24
World Total	247.74	245.04	259.17	267.80	273.04	287.26	285.38	280.63	278.49	280.73	292.86

[1] See Explanatory Note 3.
[2] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Note: Primary energy includes crude oil, lease condensate, natural gas plant liquids, dry natural gas, coal, net hydroelectric power, and net nuclear power. Excluded from these data is energy produced from geothermal, wood, waste, wind, solar, and other minor forms of energy sources.
Source: Energy Information Administration, *International Energy Annual.*

Figure 102. International Primary Energy Production by Source, 1974-1984



Source: See Table 102.

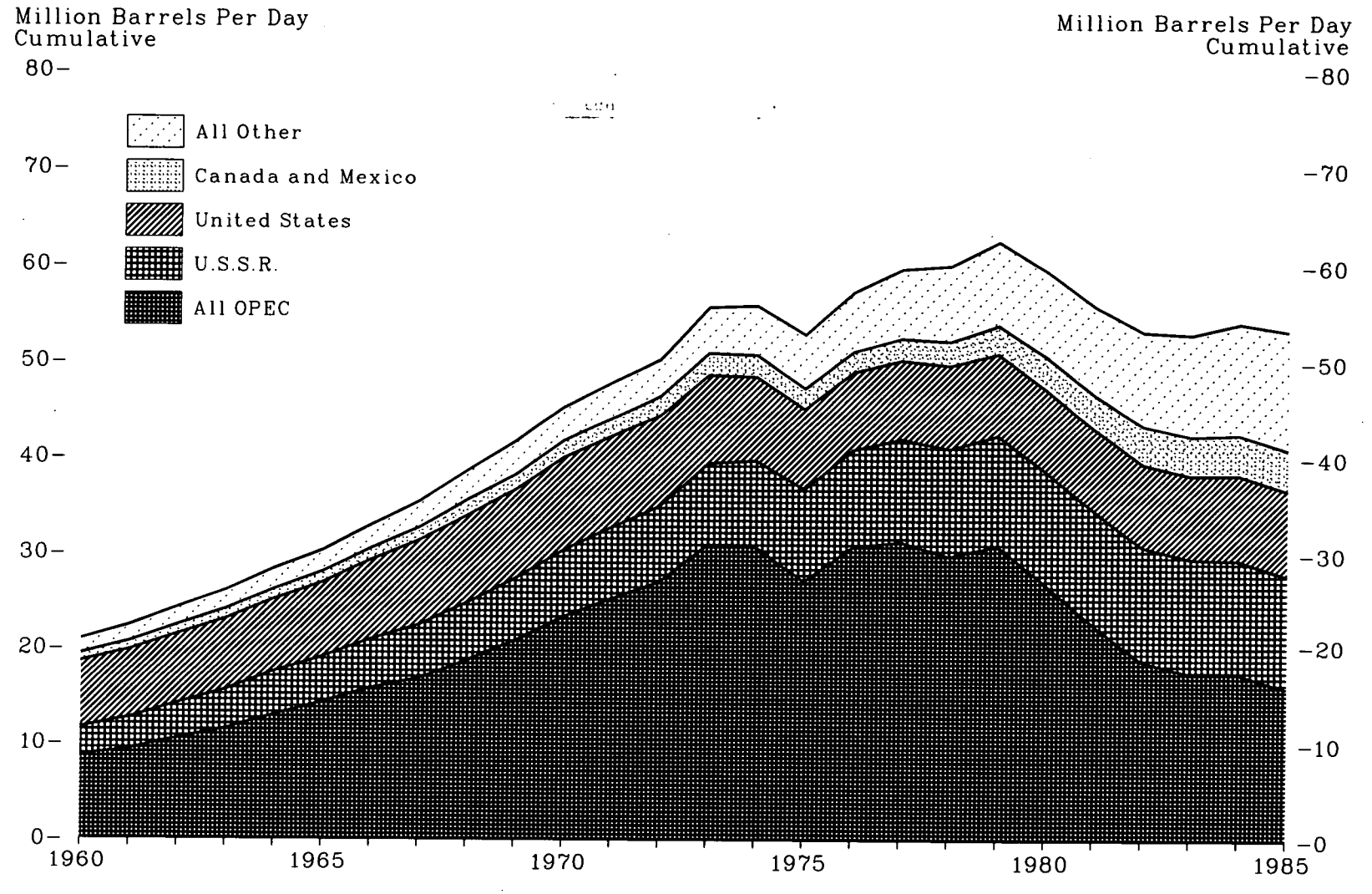
Table 102. International Primary Energy Production [1] by Source, 1974-1984

(Quadrillion Btu)

Year	Crude Oil [2]	Natural Gas Plant Liquids	Natural Gas [3]	Coal	Hydroelectric Power [4]	Nuclear Power [4]	Total
1974	118.10	4.36	43.76	63.82	14.83	2.87	247.74
1975	111.63	4.35	43.90	66.28	15.03	3.85	245.04
1976	121.25	4.52	45.68	68.12	15.07	4.52	259.17
1977	126.02	4.70	46.88	69.28	15.51	5.42	267.80
1978	126.34	4.84	48.24	70.44	16.74	6.45	273.04
1979	131.56	5.20	51.57	74.56	17.64	6.73	287.26
1980	125.51	5.49	52.93	75.80	18.16	7.51	285.38
1981	117.49	5.89	54.27	75.95	18.42	8.62	280.63
1982	111.67	5.86	53.73	78.94	18.86	9.43	278.49
1983	111.33	5.97	53.94	79.11	19.84	10.55	280.73
1984	114.07	6.45	57.72	82.12	20.20	12.31	292.86

[1] See Explanatory Note 3.
[2] Includes lease condensate.
[3] Dry production.
[4] Net generation, i.e., gross generation less plant use.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *International Energy Annual.*

Figure 103. International Production of Crude Oil, 1960-1985



Source: See Table 103.

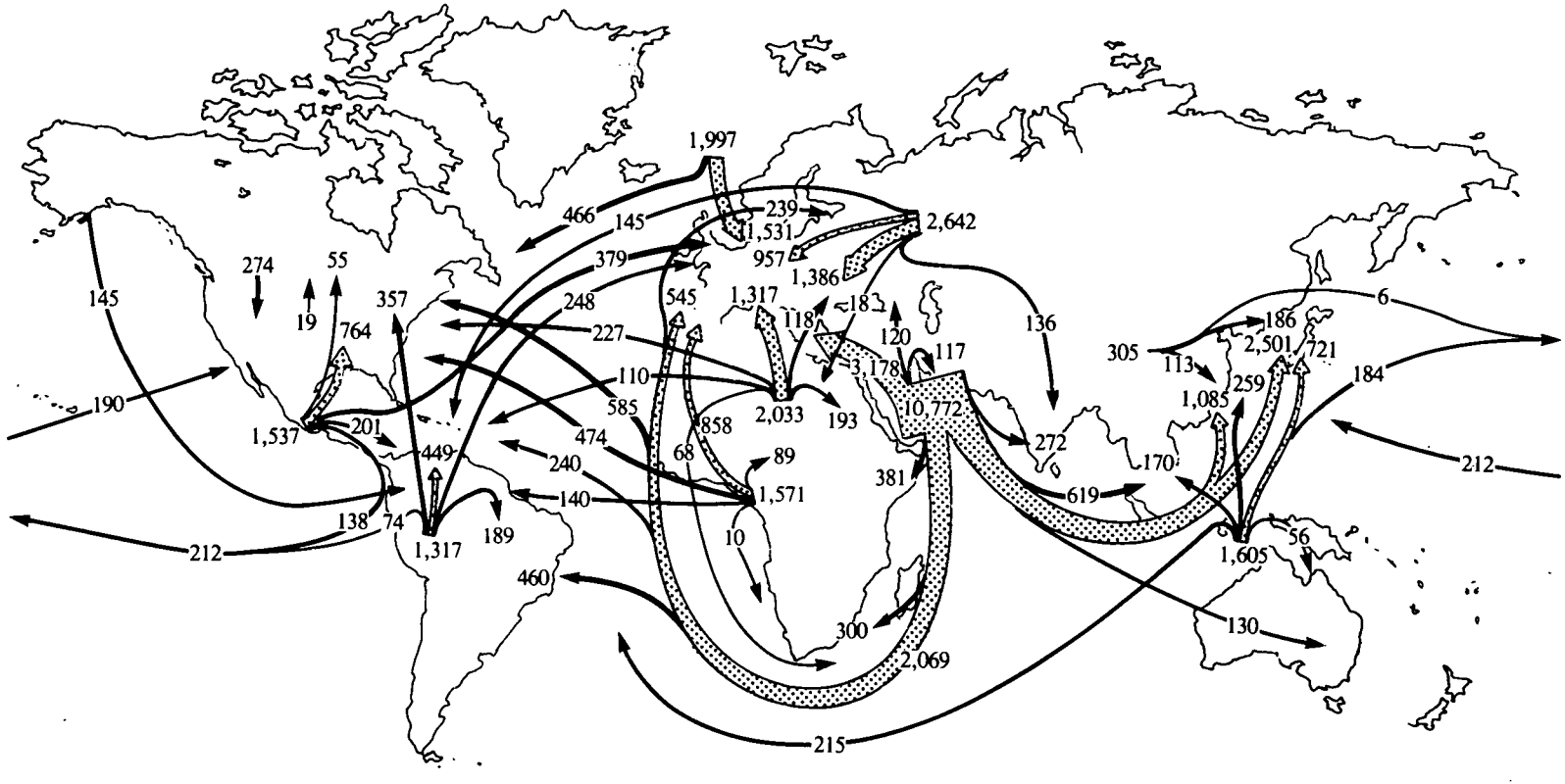
Table 103. International Production of Crude Oil,[1] 1960-1985

(Million Barrels per Day)

Year	Organization of Petroleum Exporting Countries (OPEC)[2]							Canada	China	Mexico	United Kingdom	United States	U.S.S.R.	Other Non-OPEC	Total World	Non-Communist World
	Indonesia	Iran	Nigeria	Saudi Arabia[3]	Venezuela	Other OPEC	Total OPEC									
1960	0.41	1.07	0.02	1.31	2.85	3.04	8.70	0.52	0.10	0.27	(4)	7.04	2.91	1.42	20.96	17.65
1961	0.42	1.20	0.05	1.48	2.92	3.29	9.36	0.61	0.11	0.29	(4)	7.18	3.28	1.60	22.43	18.66
1962	0.45	1.34	0.07	1.64	3.20	3.81	10.51	0.67	0.12	0.31	(4)	7.33	3.67	1.71	24.32	20.14
1963	0.44	1.49	0.08	1.79	3.25	4.46	11.51	0.71	0.13	0.32	(4)	7.54	4.07	1.85	26.13	21.52
1964	0.46	1.71	0.12	1.90	3.39	5.40	12.98	0.75	0.18	0.32	(4)	7.61	4.60	1.92	28.36	23.15
1965	0.48	1.91	0.27	2.21	3.47	6.00	14.34	0.81	0.23	0.32	(4)	7.80	4.79	2.01	30.30	24.85
1966	0.47	2.13	0.42	2.60	3.37	6.78	15.77	0.88	0.29	0.33	(4)	8.30	5.23	2.13	32.93	26.96
1967	0.51	2.60	0.32	2.81	3.54	7.07	16.85	0.96	0.28	0.37	(4)	8.81	5.68	2.42	35.37	28.95
1968	0.60	2.84	0.14	3.04	3.61	8.56	18.79	1.19	0.30	0.39	(4)	9.10	6.08	2.79	38.64	31.85
1969	0.75	3.38	0.54	3.22	3.59	9.43	20.91	1.13	0.48	0.46	(4)	9.24	6.48	2.99	41.69	34.42
1970	0.85	3.83	1.08	3.80	3.71	10.14	23.41	1.26	0.60	0.49	(4)	9.64	6.97	2.92	45.29	37.36
1971	0.89	4.54	1.53	4.77	3.55	10.05	25.33	1.35	0.78	0.49	(4)	9.46	7.44	2.99	47.84	39.29
1972	1.08	5.02	1.82	6.02	3.22	9.93	27.09	1.53	0.90	0.51	(4)	9.44	7.88	2.91	50.26	41.31
1973	1.34	5.86	2.05	7.60	3.37	10.77	30.99	1.80	1.09	0.47	(4)	9.21	8.47	3.64	55.67	45.66
1974	1.38	6.02	2.26	8.48	2.98	9.61	30.73	1.68	1.32	0.57	(4)	8.77	9.00	3.78	55.85	45.07
1975	1.31	5.35	1.78	7.08	2.35	9.29	27.16	1.44	1.49	0.71	0.01	8.38	9.63	4.08	52.88	41.29
1976	1.50	5.88	2.07	8.58	2.29	10.42	30.74	1.30	1.67	0.83	0.25	8.13	10.14	4.26	57.31	45.02
1977	1.69	5.66	2.09	9.25	2.24	10.37	31.30	1.32	1.87	0.98	0.77	8.25	10.68	4.52	59.69	46.65
1978	1.64	5.24	1.90	8.30	2.17	10.56	29.81	1.31	2.08	1.21	1.08	8.71	11.19	4.67	60.06	46.32
1979	1.59	3.17	2.30	9.53	2.36	11.98	30.93	1.50	2.12	1.46	1.57	8.55	11.46	4.95	62.54	48.51
1980	1.58	1.66	2.06	9.90	2.17	9.52	26.89	1.44	2.11	1.94	1.62	8.60	11.77	5.17	59.54	45.23
1981	1.61	1.38	1.43	9.82	2.10	6.31	22.65	1.29	2.01	2.31	1.81	8.57	11.91	5.36	55.90	41.55
1982	1.34	2.21	1.30	6.48	1.90	5.64	18.87	1.27	2.05	2.75	2.07	8.65	11.97	5.64	53.25	38.89
1983	1.34	2.44	1.24	5.09	1.80	5.67	17.58	1.36	2.12	2.69	2.29	8.69	12.03	6.24	52.99	38.39
1984	1.47	2.18	1.42	4.66	1.81	6.04	17.58	1.44	2.27	2.75	2.50	8.88	11.88	6.85	54.13	39.52
1985[5]	1.25	2.19	1.47	3.39	1.67	6.06	16.03	1.46	2.43	2.74	2.56	8.92	11.80	7.41	53.34	38.44

[1] Includes lease condensate, excludes natural gas plant liquids.
[2] See Glossary for membership.
[3] Saudi Arabia includes one-half of the production in the Partitioned Zone (formerly Neutral Zone).
[4] Less than 5,000 barrels per day.
[5] Preliminary.
Note: Sum of components may not equal total due to independent rounding.
Sources: **China** •1960 through 1972—Central Intelligence Agency, unpublished data. •1973 through 1984—Energy Information Administration, *International Energy Annual.* •1985—Energy Information Administration, *Monthly Energy Review.* **United States** •1960 through 1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1976 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1984—Energy Information Administration, *Petroleum Supply Annual.* •1985—Energy Information Administration, *Monthly Energy Review.* **U.S.S.R.:** •1960 through 1972—USSR Central Statistical Office, *Narodnoye Khozyaystvo SSSR* (National Economy USSR). •1973 through 1984—Energy Information Administration, *International Energy Annual.* •1985—Energy Information Administration, *Monthly Energy Review.* **OPEC Nations:** •1960 through 1972—Organization of Petroleum Exporting Countries, *Annual Statistical Bulletin 1979.* •1973 through 1984—Energy Information Administration, *International Energy Annual.* •1985—Energy Information Administration, *Monthly Energy Review.* **All other countries:** •1960 through 1969—Bureau of Mines, *International Petroleum Annual, 1969.* •1970 through 1972—Energy Information Administration, *International Petroleum Annual, 1978.* •1973 through 1984—Energy Information Administration, *International Energy Annual.* •1985—Energy Information Administration, *Monthly Energy Review.*

Figure 104. International Crude Oil Flow, 1983
(Thousand Barrels per Day)



Arrows Indicate Origins and Destinations but Not Necessarily Specific Routes. Several Minor Routes and Quantities Are Not Displayed.

Source: See Table 104.

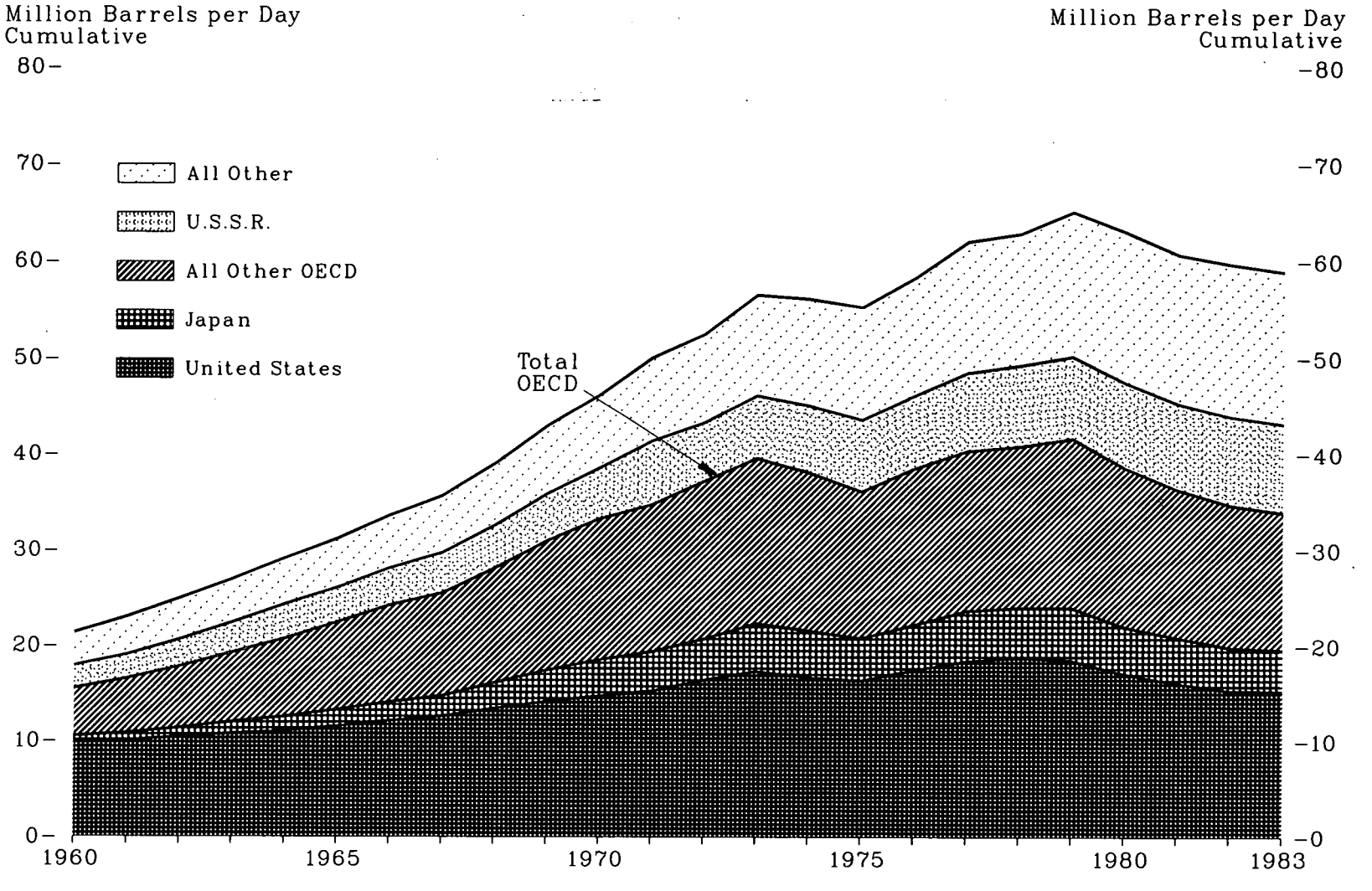
Table 104. International Crude Oil Flow, 1983

(Thousand Barrels per Day)

Exporting Area and Country	Importing Area or Country										
	North America		Central and South America		Western Europe				Far East and Oceania		
	United States	Canada	Caribbean Area	Other	Via Atlantic Ocean and North Sea	Via Mediterranean Sea	Eastern Europe	Middle East and Africa	Japan	Other	Total [1]
North America											
Canada	274	—	—	0	0	0	0	0	4	0	278
Mexico	764	55	101	100	153	226	0	0	133	5	1,537
United States	—	19	[2] 145	0	0	0	0	0	0	0	164
Central and South America											
Ecuador	55	0	17	10	2	2	0	0	0	40	126
Peru	7	0	10	5	0	0	0	0	0	0	22
Trinidad and Tobago	83	0	11	0	0	0	0	0	0	0	94
Venezuela	151	55	360	169	171	61	0	0	19	0	986
Other	6	0	51	5	10	2	0	5	0	10	89
Western Europe											
Norway	65	0	0	2	443	6	0	1	0	0	517
United Kingdom	363	14	12	2	1,004	45	0	1	0	0	1,441
Other	4	0	3	1	31	0	0	0	0	0	39
U.S.S.R. and Eastern Europe	0	0	130	15	766	191	1,386	18	2	134	2,642
Middle East											
Via Suez Canal and Sumed Pipeline	40	0	40	0	639	1,945	58	5	0	0	2,727
Via Eastern Mediterranean	10	0	74	65	110	255	62	112	0	0	688
Via Cape of Good Hope	522	63	240	460	211	334	239	0	0	0	2,069
Other [3]	0	0	0	0	0	80	0	681	2,501	2,026	5,288
Africa											
North	206	21	80	30	780	537	118	193	48	20	2,033
West	459	15	60	80	687	153	18	89	0	10	1,571
Far East and Oceania [4]	320	0	30	20	5	15	5	10	907	598	1,910
World Total	3,329	242	1,364	964	5,012	3,852	1,886	1,115	3,614	2,843	24,221

[1] The data in this column are total imports; they do not equal reported exports because of changes in stocks at sea, exchanges, transshipments, and other statistical discrepancies.
[2] Includes shipments to Puerto Rico and the Virgin Islands.
[3] Primarily tanker shipments to countries bordering the Indian or Pacific Oceans.
[4] Primarily Indonesia, China, Malaysia, and Brunei.
Note: Transshipments are assigned to the country of original lading, if known.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *International Energy Annual.*

Figure 105. International Consumption of Petroleum Products, 1960-1983



Source: See Table 105.

Table 105. International Consumption of Petroleum Products, 1960-1983

(Million Barrels per Day)

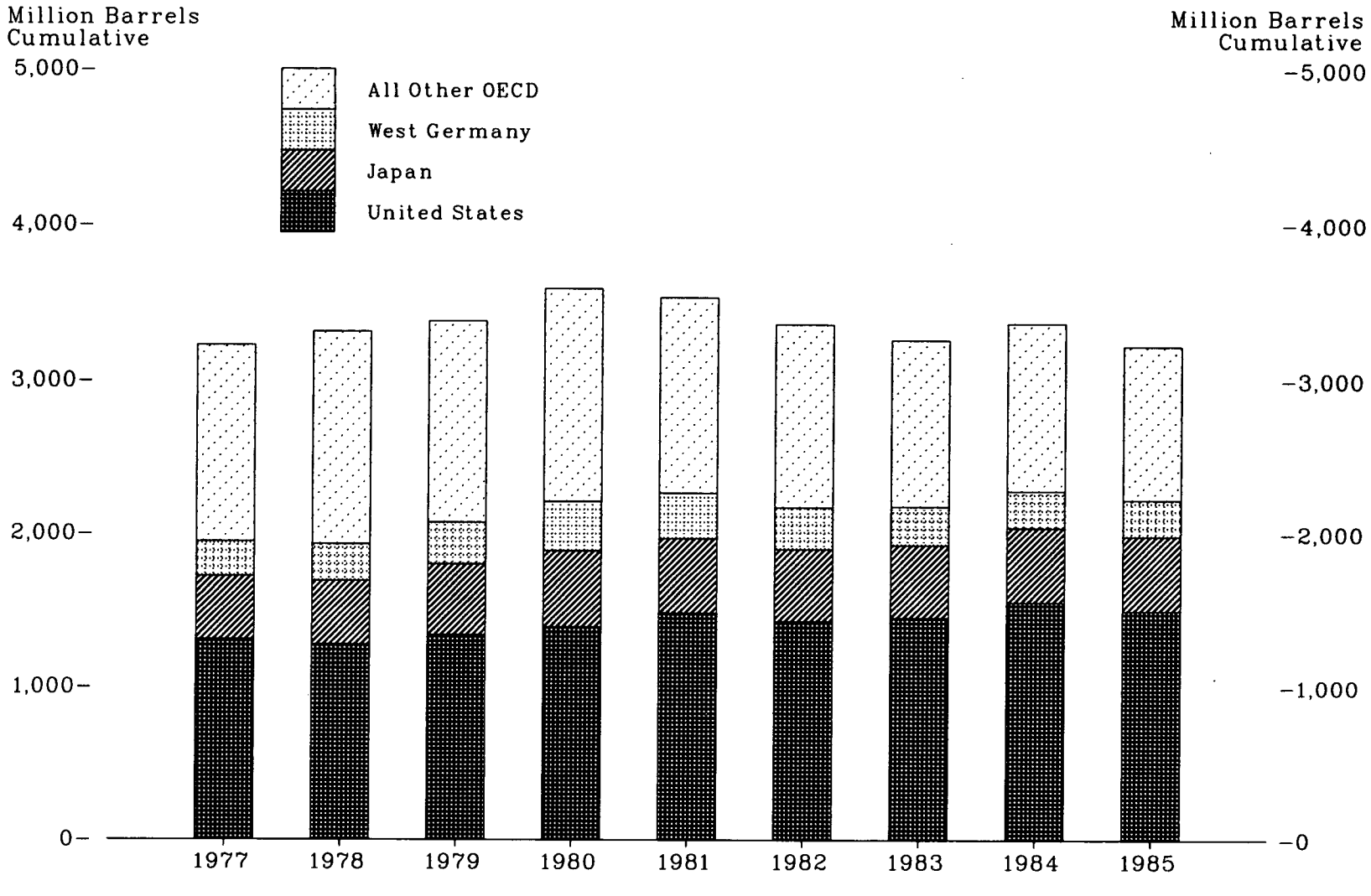
Year	Organization for Economic Cooperation and Development (OECD) [1]																
	Australia	Canada	France	West Germany	Italy	Japan	Spain	United Kingdom	United States	Other OECD	Total	Brazil	China	Mexico	U.S.S.R.	Total World	Non-Communist World
1960	0.22	0.84	0.56	0.63	0.44	0.66	0.10	0.94	9.80	1.28	15.47	0.27	0.17	0.30	2.38	21.34	18.32
1961	0.23	0.87	0.63	0.79	0.54	0.82	0.12	1.04	9.98	1.45	16.46	0.28	0.17	0.29	2.57	23.00	19.57
1962	0.25	0.92	0.73	1.00	0.67	0.93	0.12	1.12	10.40	1.62	17.74	0.31	0.14	0.30	2.87	24.89	21.20
1963	0.29	0.99	0.86	1.17	0.77	1.21	0.12	1.27	10.74	1.85	19.26	0.34	0.17	0.31	3.15	26.92	22.90
1964	0.32	1.05	0.98	1.36	0.90	1.48	0.20	1.36	11.02	2.03	20.70	0.35	0.20	0.33	3.58	29.08	24.76
1965	0.35	1.14	1.09	1.61	0.98	1.74	0.23	1.49	11.51	2.30	22.44	0.33	0.23	0.34	3.61	31.14	26.45
1966	0.37	1.21	1.19	1.80	1.08	1.98	0.31	1.58	12.08	2.61	24.20	0.38	0.30	0.36	3.87	33.56	28.53
1967	0.41	1.25	1.34	1.86	1.19	2.14	0.36	1.64	12.56	2.72	25.48	0.38	0.28	0.39	4.22	35.59	30.08
1968	0.45	1.34	1.46	1.99	1.40	2.66	0.46	1.82	13.39	3.08	28.05	0.46	0.31	0.41	4.48	38.96	32.96
1969	0.49	1.42	1.66	2.33	1.69	3.25	0.49	1.98	14.14	3.49	30.94	0.48	0.44	0.45	4.87	42.89	36.37
1970	0.51	1.49	1.89	2.43	1.84	3.85	0.56	2.09	14.70	3.88	33.23	0.51	0.62	0.50	5.30	46.17	39.39
1971	0.54	1.53	2.05	2.61	1.93	4.18	0.60	2.09	15.21	3.95	34.71	0.56	0.79	0.52	6.65	50.03	42.54
1972	0.54	1.62	2.24	2.76	2.07	4.36	0.67	2.24	16.37	4.29	37.15	0.65	0.91	0.56	6.10	52.47	45.06
1973	0.59	1.71	2.42	2.92	2.15	5.07	0.74	2.30	17.31	4.38	39.58	0.77	1.12	0.61	6.57	56.53	47.58
1974	0.62	1.74	2.26	2.61	2.09	4.96	0.78	2.14	16.65	4.23	38.08	0.83	1.38	0.67	7.01	56.12	47.54
1975	0.56	1.69	2.14	2.52	1.58	4.50	0.84	1.87	16.32	4.07	36.09	0.87	1.58	0.74	7.47	55.28	46.20
1976	0.62	1.74	2.28	2.71	1.80	4.77	0.98	1.86	17.46	4.29	38.51	0.97	1.68	0.80	7.65	58.31	47.37
1977	0.66	1.75	2.23	2.84	1.97	5.23	0.93	1.88	18.43	4.41	40.34	1.01	1.83	0.84	8.18	62.02	50.15
1978	0.61	1.74	2.17	3.05	2.18	5.14	0.95	1.85	18.85	4.29	40.81	1.05	1.81	0.92	8.47	62.84	50.55
1979	0.61	1.86	2.39	3.07	2.00	5.48	0.98	1.93	18.51	4.78	41.62	1.18	1.85	0.90	8.58	65.11	51.95
1980	0.59	1.95	2.26	2.71	1.88	4.96	0.99	1.73	17.06	4.49	38.60	1.16	1.83	1.22	8.91	63.03	49.57
1981	0.58	1.84	2.02	2.45	1.91	4.85	0.94	1.59	16.06	4.07	36.30	1.02	1.68	1.27	9.03	60.71	47.44
1982	0.66	1.62	1.94	2.32	1.78	4.55	1.01	1.59	15.30	3.92	34.69	1.08	1.66	1.36	9.25	59.74	46.28
1983	0.64	1.50	1.91	2.29	1.73	4.37	1.02	1.52	15.23	3.71	33.92	0.98	1.72	1.30	9.22	58.95	45.53

[1] See Glossary for membership. "Other OECD" includes the United States territories of Puerto Rico, Virgin Islands, and Guam.

Note: Sum of components may not equal total due to independent rounding.

Sources: **United States:** •1960 through 1976—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual.* •1977 through 1980—Energy Information Administration, Energy Data Reports, *Petroleum Statement, Annual.* •1981 through 1983—Energy Information Administration, *Petroleum Supply Annual.* **U.S.S.R.:** •1960 through 1976—U.S.S.R. Central Statistical Office, *Narodnoye Khozyaystvo SSSR* (National Economy U.S.S.R.), and *Vneshnyaya Torgvliya SSSR* (Foreign Trade of the U.S.S.R.), annual issues. •1977 through 1979—U.S.S.R. Central Statistical Office, *Narodnoye Khozyaystvo SSSR* (National Economy U.S.S.R.), annual issues; U.S.S.R. trade as imports reported by their trading partners in official trade statistics of the respective countries. •1980 through 1983—Energy Information Administration, *International Energy Annual.* **China:** •1960 through 1979—Central Intelligence Agency, unpublished data. •1980 through 1983—Energy Information Administration, *International Energy Annual.* **All other countries:** •1960 through 1969—Bureau of Mines, *International Petroleum Annual, 1969.* •1970 through 1978—Energy Information Administration, *International Petroleum Annual, 1978.* •1979 through 1983—Energy Information Administration, *International Energy Annual.*

Figure 106. Primary Stocks of Petroleum in OECD Countries, End of Year 1977-1985



Source: See Table 106.

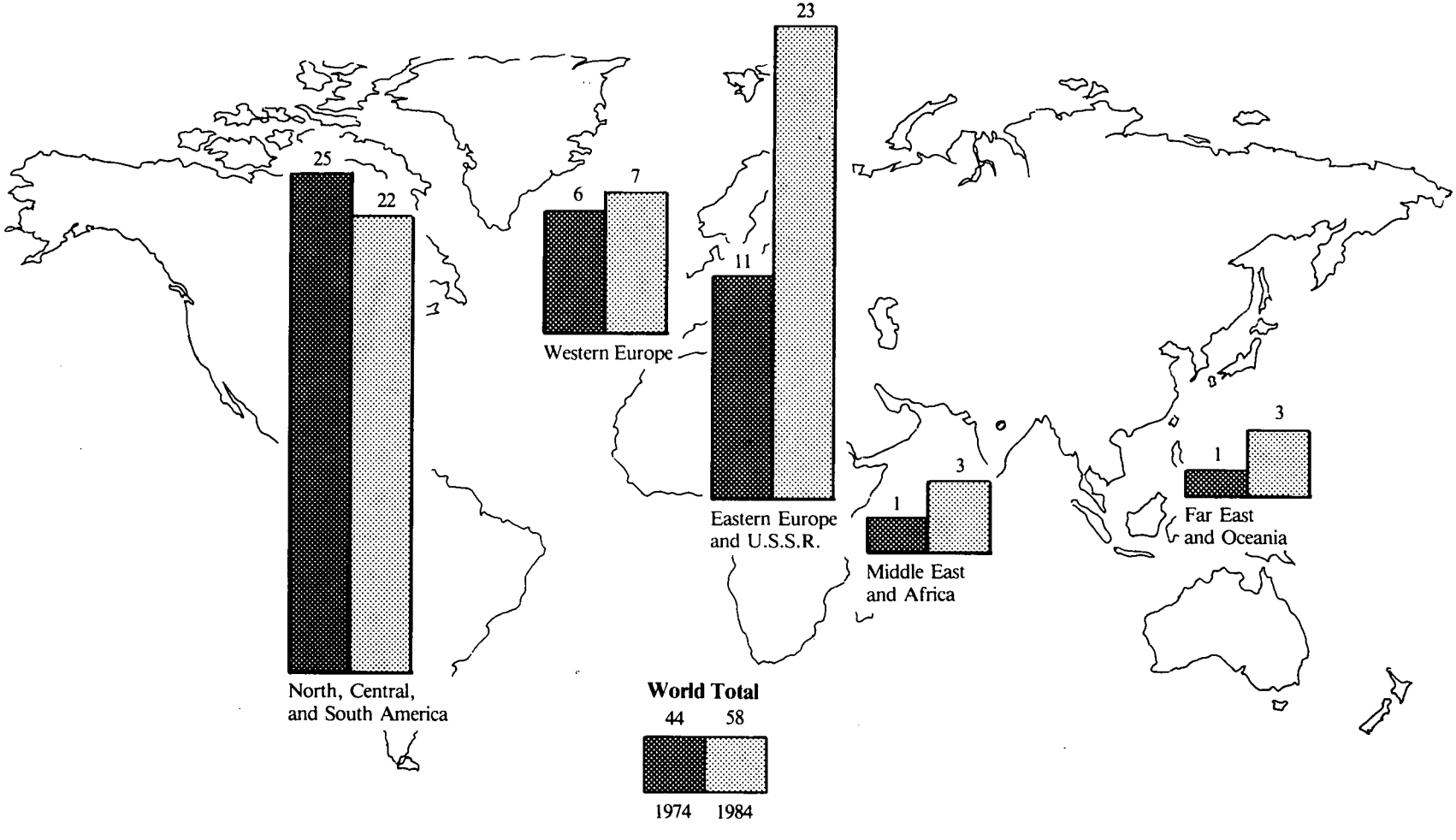
Table 106. Primary Stocks of Petroleum [1] in OECD Countries, [2] End of Year 1977-1985

(Million Barrels)

Year	France	West Germany	Italy	United Kingdom	Other OECD Europe	Total OECD Europe	Canada	Japan	United States	Other Non-Europe OECD [3]	Total OECD
1977	239	225	161	148	495	1,268	167	409	1,312	68	3,224
1978	201	238	154	157	469	1,219	144	413	1,278	68	3,122
1979	226	272	163	169	523	1,353	150	460	1,341	75	3,379
1980	243	319	170	168	564	1,464	164	495	1,392	72	3,587
1981	214	297	167	143	516	1,337	161	482	1,484	67	3,531
1982	193	272	179	125	491	1,260	136	468	1,430	68	3,360
1983	153	250	149	119	474	1,145	120	471	1,454	68	3,258
1984	153	240	159	113	468	1,132	127	480	1,556	69	3,364
1985[4]	128	238	149	115	426	1,056	119	483	1,500	63	3,220

[1] Includes crude oil, lease condensate, natural gas plant liquids, unfinished oils, and finished petroleum products. See Explanatory Note 7.
[2] Organization for Economic Cooperation and Development. See Glossary for membership.
[3] Includes Australia, New Zealand, and United States Territories.
[4] As of September 30.
Note: Sum of components may not equal total due to independent rounding.
Sources: **United States:** Energy Information Administration, *Petroleum Supply Monthly.* **Other Data:** Organization for Economic and Development/International Energy Agency, *Quarterly Oil Statistics.*

Figure 107. International Production of Natural Gas Dry, 1974 and 1984
(Trillion Cubic Feet)



Source: See Table 107.

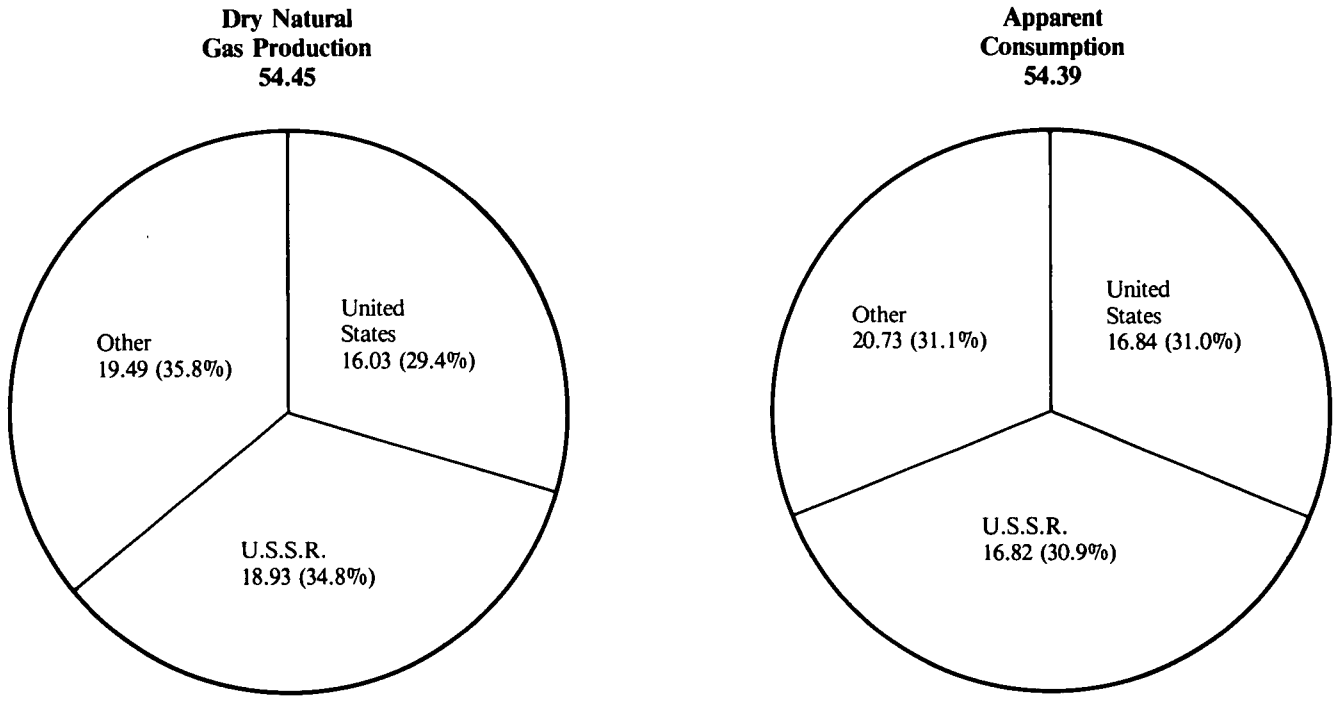
Table 107. International Production of Natural Gas (Dry), 1974-1984

(Trillion Cubic Feet)

Area and Country	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 [1]
North, Central, and South America											
Argentina	0.26	0.27	0.27	0.28	0.28	0.26	0.28	0.31	0.34	0.37	0.39
Canada	2.42	2.45	2.46	2.59	2.47	2.66	2.65	2.47	2.45	2.52	2.61
Mexico	0.52	0.52	0.51	0.54	0.67	0.81	1.01	1.03	1.11	1.15	1.04
United States	20.71	19.24	19.10	19.16	19.12	19.66	19.40	19.18	17.76	16.03	17.23
Venezuela	0.42	0.42	0.40	0.39	0.40	0.46	0.49	0.51	0.60	0.57	0.61
Other	0.35	0.30	0.33	0.40	0.53	0.61	0.55	0.39	0.41	0.43	0.51
Total	24.68	23.19	23.07	23.36	23.48	24.46	24.38	23.89	22.67	21.07	22.39
Western Europe											
Germany, West	0.73	0.67	0.68	0.68	0.72	0.73	0.67	0.68	0.59	0.62	0.65
Italy	0.54	0.52	0.55	0.48	0.48	0.46	0.42	0.49	0.51	0.46	0.50
Netherlands	2.87	3.21	3.50	2.93	2.50	2.72	3.38	3.15	2.67	2.58	2.65
Norway	[2]	0.01	0.01	0.09	0.39	0.76	0.88	0.89	0.90	0.86	0.94
United Kingdom	1.21	1.26	1.32	1.38	1.30	1.31	1.23	1.22	1.36	1.40	1.42
Other	0.41	0.40	0.40	0.45	0.38	0.41	0.44	0.40	0.41	0.42	0.42
Total	5.76	6.07	6.46	6.01	5.77	6.39	7.02	6.83	6.44	6.34	6.58
Eastern Europe and U.S.S.R.											
Romania	0.96	1.04	1.14	1.20	1.07	1.20	1.20	1.24	1.35	1.40	1.34
U.S.S.R.	9.20	10.22	11.33	12.22	13.14	14.36	15.37	16.43	17.68	18.93	20.73
Other	0.70	0.69	0.80	0.83	0.89	0.76	0.77	0.82	0.76	0.72	0.79
Total	10.86	11.95	13.27	14.25	15.10	16.32	17.34	18.49	19.79	21.05	22.86
Middle East and Africa											
Algeria	0.20	0.21	0.28	0.21	0.66	0.55	0.41	0.77	0.94	1.31	1.36
Iran	0.57	0.57	0.58	0.55	0.50	0.54	0.25	0.21	0.25	0.31	0.48
Other	0.58	0.82	0.84	1.01	1.14	1.45	1.50	1.96	1.45	1.43	1.61
Total	1.35	1.60	1.70	1.77	2.30	2.54	2.16	2.94	2.64	3.05	3.45
Far East and Oceania											
Australia	0.17	0.18	0.21	0.24	0.26	0.28	0.32	0.38	0.38	0.39	0.40
China	0.29	0.33	0.36	0.41	0.50	0.51	0.50	0.45	0.38	0.43	0.43
Brunei	0.15	0.19	0.25	0.29	0.30	0.29	0.32	0.34	0.31	0.31	0.30
Indonesia	0.04	0.08	0.13	0.20	0.20	0.39	0.63	0.66	0.67	0.78	0.82
Pakistan	0.15	0.16	0.16	0.18	0.19	0.23	0.29	0.32	0.35	0.35	0.35
Other	0.29	0.33	0.37	0.41	0.39	0.31	0.32	0.42	0.56	0.67	0.71
Total	1.09	1.27	1.48	1.73	1.84	2.01	2.38	2.57	2.65	2.93	3.01
World Total	43.74	44.10	45.98	47.14	48.50	51.73	53.28	54.71	54.18	54.45	58.30

[1] Preliminary.
[2] Less than 0.005 trillion cubic feet.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *International Energy Annual.*

Figure 108. International Supply and Disposition of Natural Gas, 1983
(Trillion Cubic Feet)



Source: See Table 108.

Table 108. International Supply and Disposition of Natural Gas, 1983

(Billion Cubic Feet)

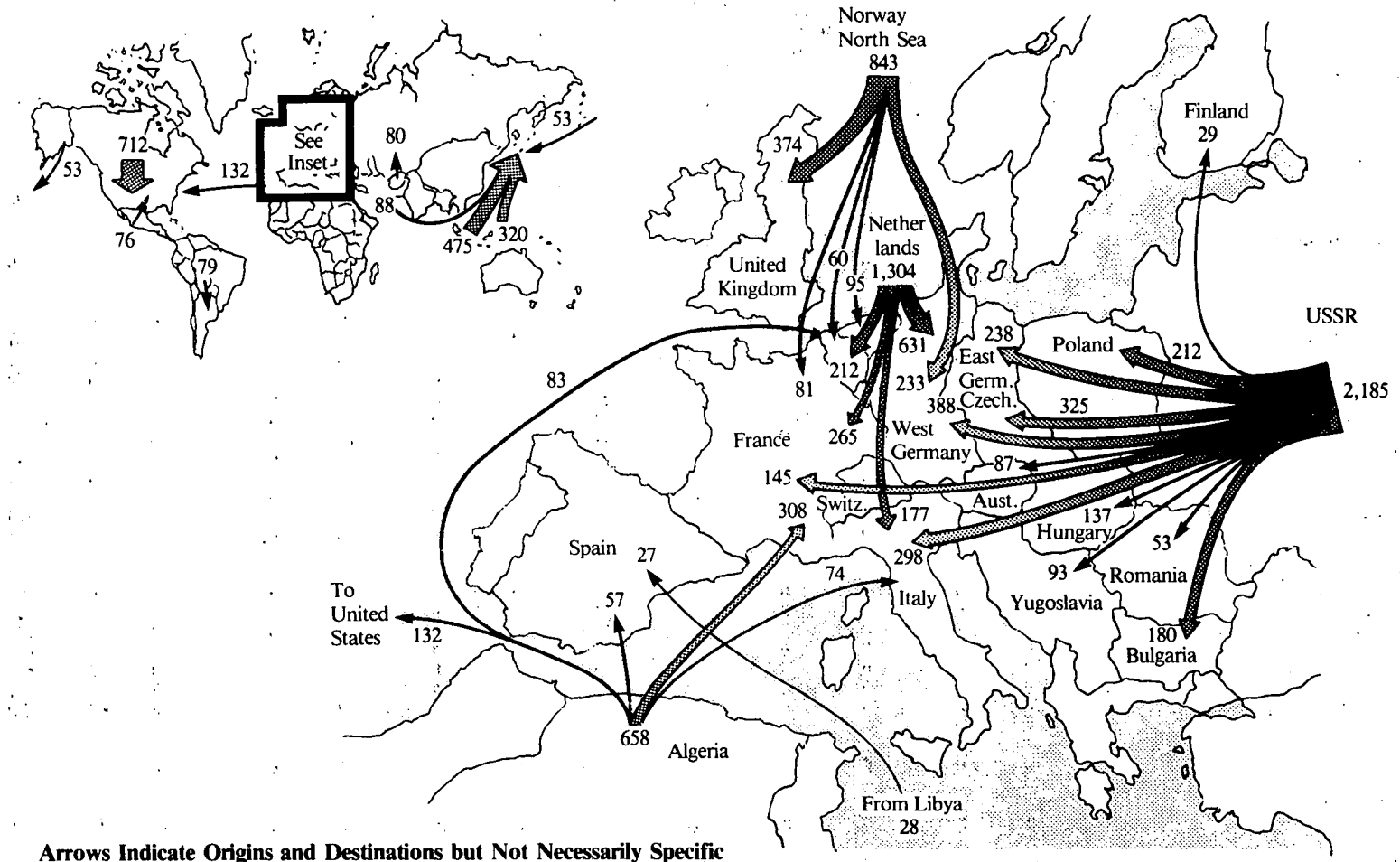
Area and Country	Supply		Disposition	
	Dry Natural Gas Production	Imports	Apparent Consumption	Exports
North, Central, and South America				
Argentina	370	79	449	0
Canada	2,519	0	1,807	712
Mexico	1,152	2	1,078	76
United States	16,033	920	[1] 16,835	55
Venezuela	573	0	573	0
Other	431	0	352	79
Total	21,078	1,001	21,094	922
Western Europe				
France	235	816	1,049	2
Germany, West	620	1,252	1,818	54
Italy	459	550	1,009	0
Netherlands	2,580	95	1,372	1,304
Norway	862	0	19	844
United Kingdom	1,400	374	1,774	0
Other	182	706	886	0
Total	6,338	3,793	7,927	2,204
Eastern Europe and U.S.S.R.				
Czechoslovakia	21	325	346	0
Germany, East	268	238	506	0
Hungary	230	144	374	0
Poland	192	212	404	0
Romania	1,400	53	1,447	7
U.S.S.R.	18,927	80	16,823	2,185
Other	14	180	194	0
Total	21,052	1,232	20,094	2,191
Middle East and Africa				
Algeria	1,314	0	656	658
Iran	310	0	310	0
Kuwait	127	0	127	0
Saudi Arabia	200	0	200	0
Other	1,098	4	986	116
Total	3,049	4	2,279	774
Far East and Oceania				
Australia	388	0	388	0
Brunei	312	0	52	260
China	431	0	431	0
Indonesia	777	0	302	475
Japan	72	936	1,008	0
Pakistan	347	0	347	0
Other	604	0	464	140
Total	2,931	936	2,992	875
World Total	54,449	6,965	54,388	6,965

[1] Actual consumption.

Note: Sum of components may not equal total due to independent rounding.

Source: Energy Information Administration, *International Energy Annual.*

Figure 109. International Natural Gas Flow, 1983
(Billion Cubic Feet)



Arrows Indicate Origins and Destinations but Not Necessarily Specific Routes. Several Minor Routes and Quantities Are Not Shown.

Source: See Table 109.

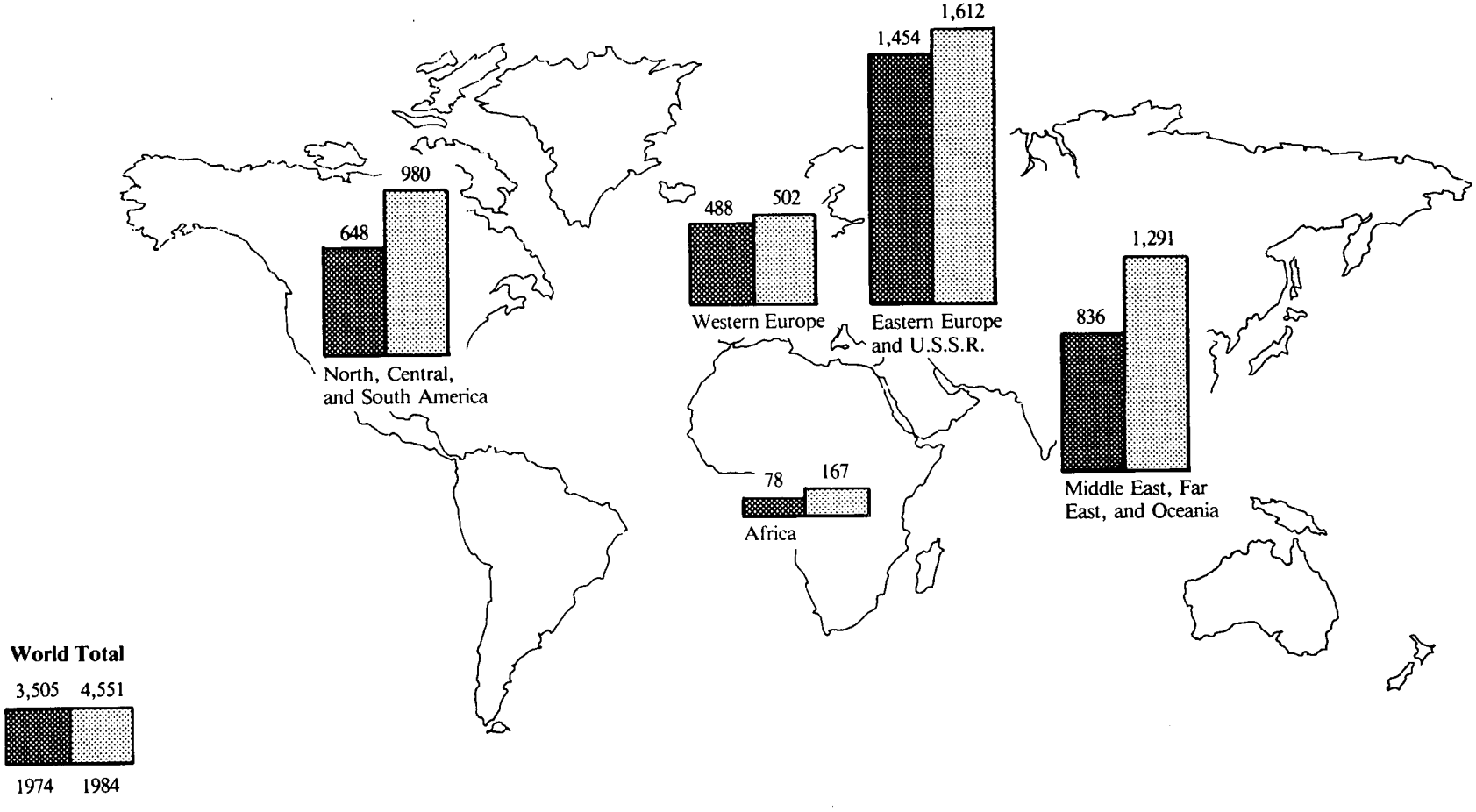
Table 109. International Natural Gas Flow, 1983

(Billion Cubic Feet)

Importing Area and Country	Exporting Area or Country													
	North and South America			Western Europe			Eastern Europe			Africa		Far East and Oceania		
	Canada	United States	Other	Nether-lands	Norway	Other	U.S.S.R.	Other	Middle East	Algeria	Libya	Indonesia	Other	Total
North America														
Mexico	0	2	0	0	0	0	0	0	0	0	0	0	0	2
United States	712	—	76	0	0	0	0	0	0	[1] 132	0	0	0	920
Central and South America														
Argentina	0	0	79	0	0	0	0	0	0	0	0	0	0	79
Western Europe														
Austria	0	0	0	0	0	1	87	0	0	0	0	0	0	87
Belgium and Luxembourg	0	0	0	212	60	2	0	0	0	[1] 83	0	0	0	357
Denmark	0	0	0	0	0	4	0	0	0	0	0	0	0	4
Finland	0	0	0	0	0	0	29	0	0	0	0	0	0	29
France	0	0	0	265	81	17	145	0	0	[1] 308	0	0	0	816
Germany, West	0	0	0	631	233	0	388	0	0	0	0	0	0	1,252
Italy	0	0	0	177	0	0	298	0	0	74	[1] 1	0	0	550
Netherlands	0	0	0	—	95	0	0	0	0	0	0	0	0	95
Spain	0	0	0	0	0	0	0	0	0	[1] 57	[1] 27	0	0	84
Switzerland	0	0	0	18	0	34	0	0	0	0	0	0	0	52
United Kingdom	0	0	0	0	374	0	0	0	0	0	0	0	0	374
Yugoslavia	0	0	0	0	0	0	93	0	0	0	0	0	0	93
Eastern Europe and U.S.S.R.														
Bulgaria	0	0	0	0	0	0	180	0	0	0	0	0	0	180
Czechoslovakia	0	0	0	0	0	0	325	0	0	0	0	0	0	325
Germany, East	0	0	0	0	0	0	238	0	0	0	0	0	0	238
Hungary	0	0	0	0	0	0	137	7	0	0	0	0	0	144
Poland	0	0	0	0	0	0	212	0	0	0	0	0	0	212
Romania	0	0	0	0	0	0	53	0	0	0	0	0	0	53
U.S.S.R.	0	0	0	0	0	0	—	0	0	0	0	0	[2] 80	[2] 80
Africa														
Tunisia	0	0	0	0	0	0	0	0	0	4	0	0	0	4
Far East and Oceania														
Japan	0	[1] 53	0	0	0	0	0	0	[1] 88	0	0	[1] 475	[1] 320	[1] 936
World Total	712	55	155	1,304	843	57	2,185	7	[1] 88	[1] 658	[1] 28	[1] 475	400	6,965

[1] Liquefied natural gas.
[2] Estimated.
— = Not applicable.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *International Energy Annual.*

Figure 110. International Coal Production, 1974 and 1984
(Million Short Tons)



Source: See Table 110.

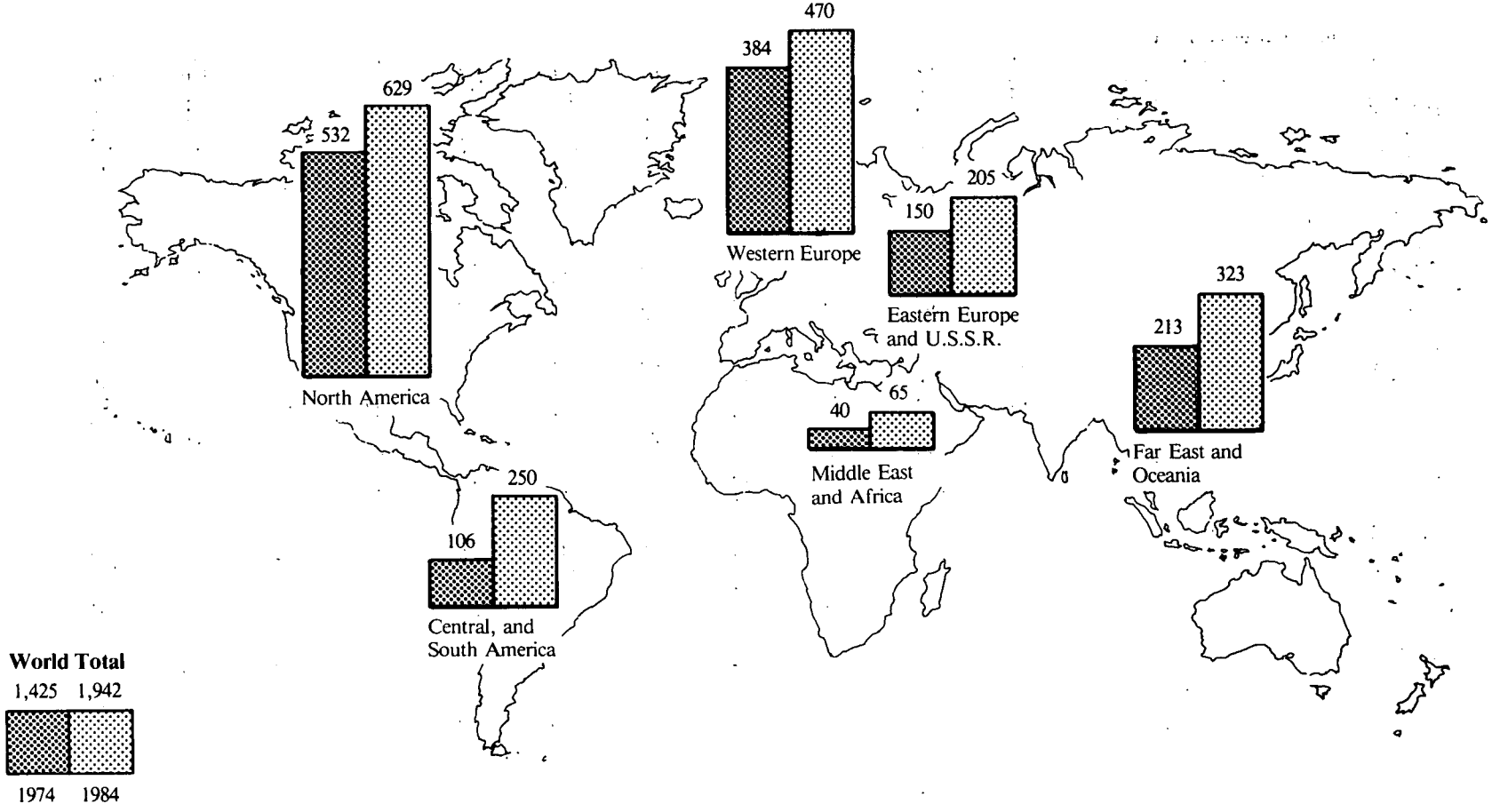
Table 110. International Coal Production, 1974-1984

(Million Short Tons)

Area and Country	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 [1]
North, Central, and South America											
Canada	23	28	28	32	34	33	40	44	47	50	63
United States	610	655	685	697	670	781	830	824	838	782	[2] 890
Other	15	15	16	17	17	24	24	22	25	25	27
Total	648	697	729	746	721	838	894	890	910	857	980
Western Europe											
Germany, West	244	238	247	229	228	239	239	241	247	236	233
Spain	15	15	16	19	22	24	32	38	43	44	44
Turkey	11	12	11	13	15	22	18	19	24	32	35
United Kingdom	121	142	137	135	136	135	141	138	137	127	56
Yugoslavia	37	39	41	43	44	46	52	58	60	65	66
Other	60	63	66	67	64	63	61	67	66	67	68
Total	488	509	518	506	509	529	543	561	577	571	502
Eastern Europe and U.S.S.R.											
Bulgaria	27	31	28	28	28	31	33	32	35	36	35
Czechoslovakia	122	127	130	134	136	137	136	137	139	140	145
Germany, East	269	272	273	280	279	282	285	294	304	309	310
Poland	222	233	241	250	258	264	254	219	250	258	267
U.S.S.R.	755	773	784	796	798	792	790	776	792	789	787
Other	59	61	57	58	61	65	68	72	73	69	68
Total	1,454	1,494	1,513	1,546	1,560	1,571	1,566	1,529	1,593	1,601	1,612
Africa											
South Africa, Republic of	73	77	85	94	100	114	127	144	151	161	161
Other	5	6	6	6	6	7	6	5	6	6	6
Total	78	82	91	100	106	121	133	149	157	167	167
Middle East, Far East, and Oceania											
Australia	94	98	109	111	114	119	116	130	140	146	158
China	548	570	586	606	681	698	684	683	734	788	850
India	96	109	116	115	116	118	125	142	148	158	167
Other	98	105	101	103	104	108	112	114	116	113	116
Total	836	882	912	935	1,015	1,043	1,037	1,069	1,138	1,205	1,291
World Total	3,505	3,665	3,763	3,833	3,911	4,101	4,173	4,198	4,375	4,402	4,551

[1] Preliminary.
[2] The quantity is preliminary. The final quantity is 896 million short tons, see Table 73.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *International Energy Annual.*

Figure 111. International Hydroelectric Power Generation, 1974 and 1984
(Billion Kilowatthours)



Source: See Table 111.

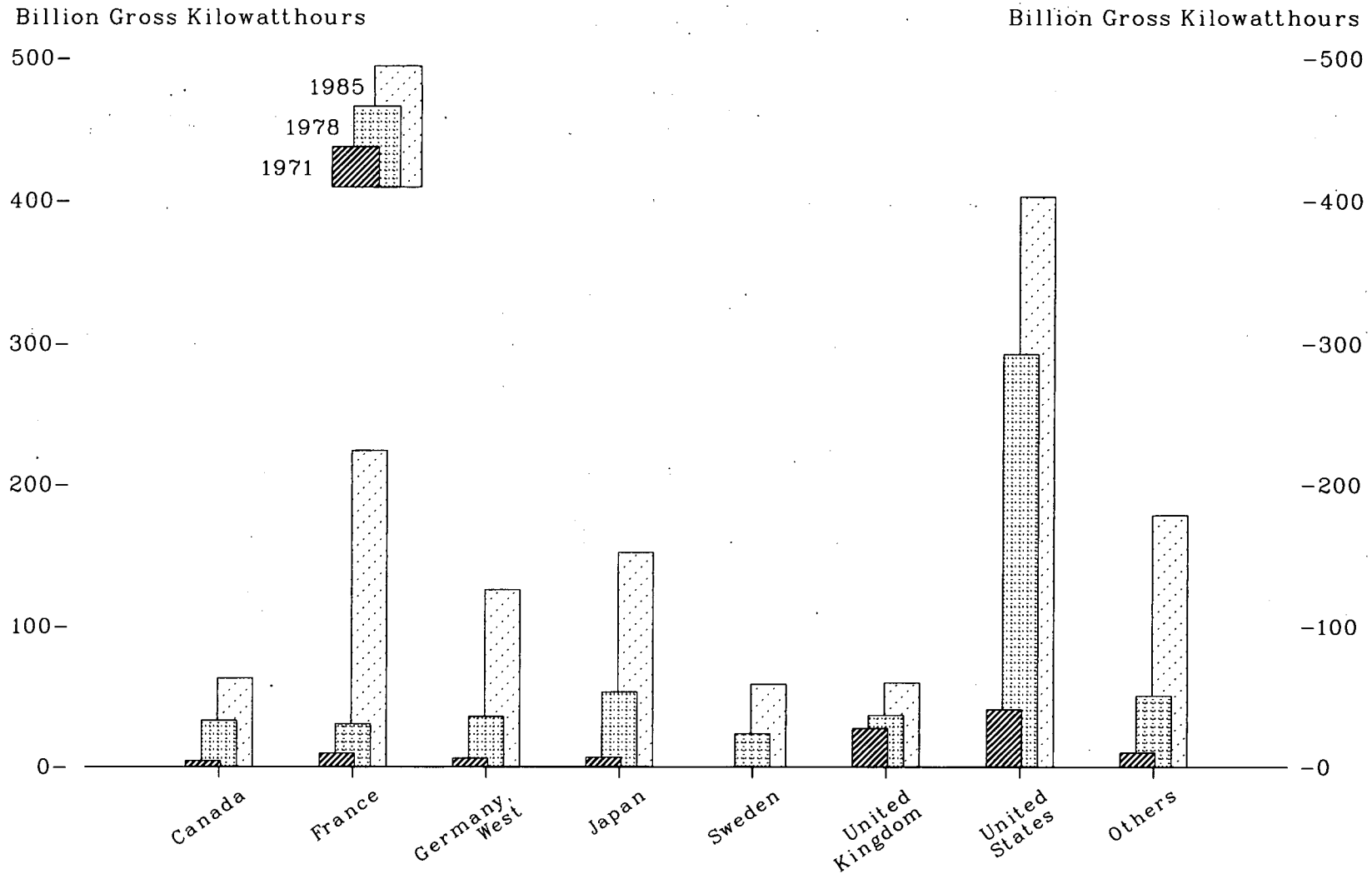
Table 111. International Hydroelectric Power Generation,[1] 1974-1984

(Billion Kilowatthours)

Area and Country	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 [2]
North, Central, and South America											
Argentina	5	5	5	6	8	11	15	15	17	18	19
Brazil	66	74	82	94	103	115	127	130	140	150	160
Canada	211	202	213	220	234	243	251	263	255	263	283
Colombia	9	10	10	11	12	13	15	18	18	19	20
Mexico	17	15	17	19	16	18	17	25	23	21	21
United States	304	303	287	224	284	283	279	264	312	335	324
Venezuela	7	9	11	12	12	13	15	15	15	17	17
Other	19	20	21	21	23	25	28	29	32	36	35
Total	638	638	646	606	692	721	747	757	813	859	879
Western Europe											
Austria	22	24	20	25	25	28	29	31	31	30	31
Finland	13	12	9	12	10	11	10	13	13	13	13
France	57	60	49	76	69	67	69	73	71	71	67
Germany, West	18	17	14	17	18	18	21	20	19	19	18
Italy	39	42	41	53	47	48	49	45	44	44	45
Norway	76	77	81	72	80	88	83	92	92	106	106
Portugal	8	6	5	10	11	12	8	5	7	8	10
Spain	31	26	22	40	41	47	31	23	28	29	29
Sweden	57	57	54	53	57	60	59	60	55	64	65
Switzerland	29	34	27	36	33	32	34	36	37	36	37
Yugoslavia	21	19	20	24	25	26	28	25	23	23	23
Other	15	17	19	20	22	24	25	26	29	25	26
Total	384	391	362	437	436	461	444	450	449	468	470
Eastern Europe and U.S.S.R.											
Romania	8	9	8	9	11	11	13	13	12	10	10
U.S.S.R.	131	125	134	146	168	170	182	185	173	179	180
Other	11	11	11	13	13	13	15	14	13	14	15
Total	150	145	154	168	191	195	210	212	198	203	205
Middle East and Africa											
Egypt	6	7	8	9	9	9	10	10	10	12	13
Zambia	6	6	7	9	8	9	9	10	10	10	10
Other	29	30	34	37	39	46	50	43	42	42	42
Total	40	43	49	54	56	64	68	63	62	64	65
Far East and Oceania											
Australia	14	15	15	14	15	16	17	15	14	13	13
China	43	45	51	47	44	50	58	65	74	86	90
India	28	33	35	38	47	45	46	49	48	51	52
Japan	84	85	88	76	74	84	91	90	83	87	90
Korea, North	14	16	17	17	19	20	22	23	25	26	26
New Zealand	14	17	15	14	16	15	16	19	18	19	21
Other	17	19	21	20	21	27	28	28	29	31	31
Total	213	230	241	226	236	257	278	289	291	313	323
World Total	1,425	1,445	1,450	1,491	1,611	1,698	1,747	1,771	1,813	1,907	1,942

[1] See Explanatory Note 1.
[2] Preliminary.
Note: Data include industrial and utility generation of hydroelectric power.
Note: Sum of components may not equal total due to independent rounding.
Source: Energy Information Administration, *International Energy Annual.*

Figure 112. Nuclear Electricity Generation by Non-Communist Countries, 1971, 1978, and 1985



Source: See Table 112.

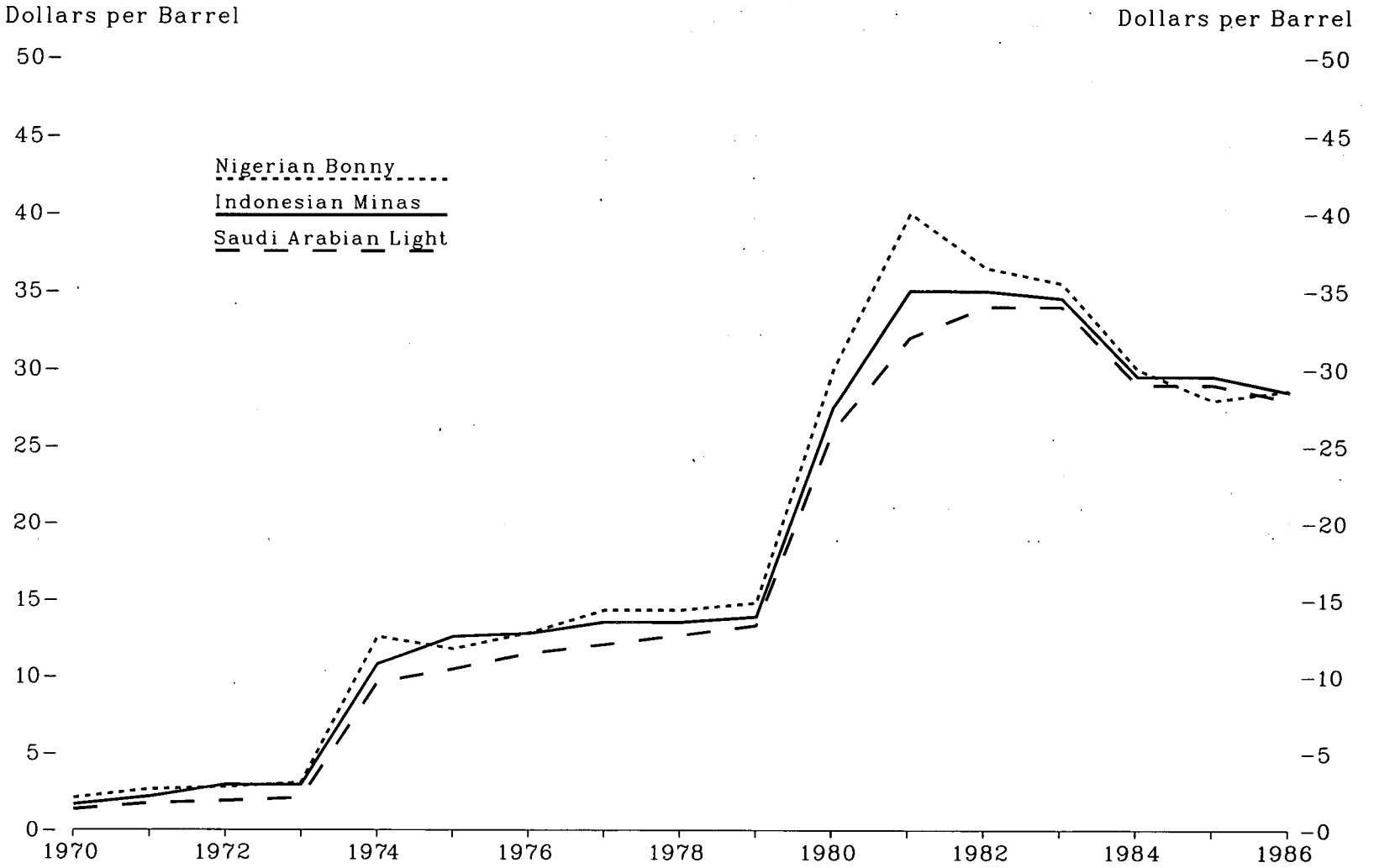
Table 112. Nuclear Electricity Generation[1] by Non-Communist Countries, 1971-1985

(Billion Gross Kilowatthours)

Country	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
North America															
Canada	4.2	3.5	15.3	15.4	13.2	18.0	26.6	33.0	38.4	40.4	43.3	42.6	53.0	53.8	62.9
United States	40.8	57.6	87.8	124.3	182.3	201.8	264.2	292.4	270.6	265.4	288.5	298.6	313.6	343.8	402.6
Total	44.9	61.1	103.1	139.7	195.5	219.8	290.8	325.4	309.0	305.8	331.8	341.2	366.6	397.6	465.5
Central and South America															
Argentina	0	0	0	1.0	2.5	2.6	1.6	2.9	2.7	2.3	2.8	1.9	3.4	4.5	4.9
Brazil	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	2.1	3.4
Total	0	0	0	1.0	2.5	2.6	1.6	2.9	2.7	2.3	2.8	1.9	3.6	6.6	8.2
Western Europe															
Belgium	0	0	0	0.1	6.8	10.0	11.9	12.5	11.4	12.5	12.8	15.6	24.1	27.7	34.5
Finland	0	0	0	0	0	0	2.7	3.3	6.7	7.0	14.5	16.5	17.4	18.5	18.8
France	9.4	14.6	14.7	14.7	18.3	15.8	17.9	30.6	39.9	61.2	105.2	108.9	144.2	191.2	224.0
Germany, West	6.0	9.3	11.9	12.0	21.7	24.5	36.0	35.7	42.2	43.7	53.4	63.4	65.8	92.6	125.7
Italy	3.4	3.6	3.1	3.4	3.8	3.8	3.4	4.5	2.6	2.2	2.7	6.8	5.8	6.9	7.0
Netherlands	0.4	0.3	1.1	3.3	3.3	3.9	3.7	4.1	3.5	4.2	3.7	3.9	3.6	3.8	3.9
Spain	2.5	4.8	6.5	7.2	7.5	7.6	6.5	7.6	6.7	5.2	9.4	8.8	10.7	23.1	28.0
Sweden	0.1	1.5	2.1	2.3	12.0	16.0	19.9	23.8	21.0	26.7	37.7	38.8	40.4	51.3	58.6
Switzerland	1.9	4.9	6.2	7.0	7.7	7.9	8.1	8.3	11.8	14.3	15.2	15.0	15.5	16.3	22.4
United Kingdom	27.6	29.6	28.2	33.8	30.5	36.8	38.1	36.6	38.5	37.2	38.9	44.1	49.6	54.1	59.6
Total	51.3	68.6	73.9	83.9	111.7	126.2	148.1	166.9	184.3	214.2	293.4	321.8	377.2	485.4	582.5
Far East and Africa															
India	1.8	0.9	2.5	1.9	2.5	3.2	2.8	2.3	3.2	2.9	3.1	2.2	2.9	4.1	4.5
Japan	6.5	9.0	9.4	18.9	21.3	36.6	28.2	53.1	62.0	82.8	86.0	104.5	109.1	127.2	152.0
Pakistan	[2]	0.2	0.5	0.6	0.5	0.5	0.3	0.2	[2]	0.1	0.2	0.1	0.2	0.3	0.3
South Africa	0	0	0	0	0	0	0	0	0	0	0	0	0	4.2	5.7
South Korea	0	0	0	0	0	0	0.1	2.3	3.2	3.5	2.9	3.8	9.0	11.8	16.4
Taiwan	0	0	0	0	0	0	0.1	2.7	6.3	8.2	10.7	13.1	18.9	24.3	28.7
Total	8.3	10.1	12.3	21.4	24.4	40.3	31.5	60.6	74.7	97.4	102.9	123.6	140.1	171.9	207.7
Total	104.5	139.8	189.3	246.0	334.1	388.9	472.0	555.9	570.7	619.8	730.9	788.5	887.5	1,061.5	1,263.9

[1] See Explanatory Note 1.
[2] Less than 0.05 billion gross kilowatthours.
Note: Sum of components may not equal total due to independent rounding.
Source: *Nucleonics Week*, McGraw-Hill Publishing Co., Inc.

Figure 113. Official Prices of Selected Foreign Crude Oils, January 1, 1970-1986



Source: See Table 113.

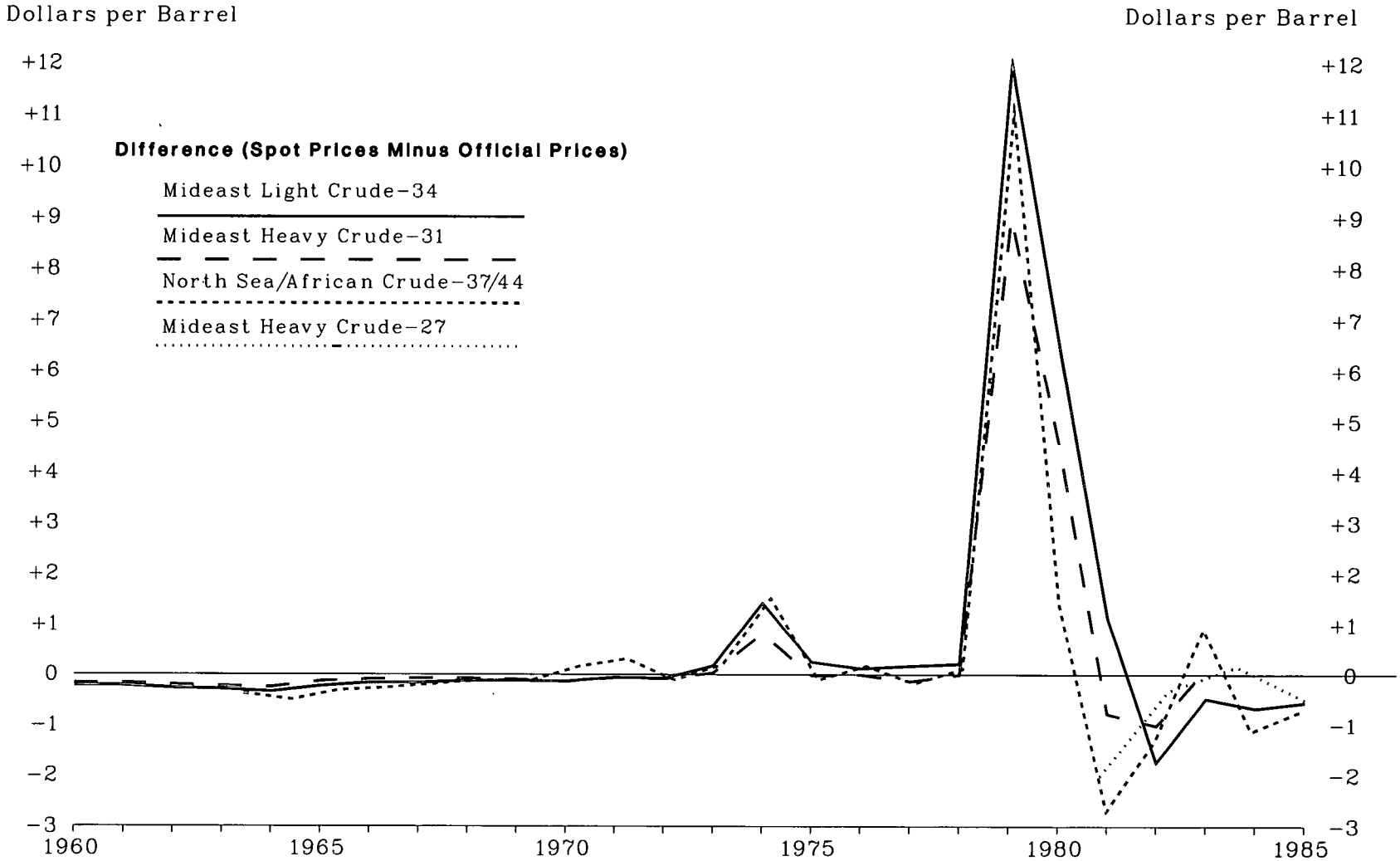
Table 113. Official Prices[1] of Selected Foreign Crude Oils, January 1, 1970-1986

(Dollars per Barrel)

Year	Saudi Arabian Light-34° API	Iranian Light-34° API	Libyan [2] Es Sider-37° API	Nigerian [3] Bonny-37° API	Indonesian Minas-34° API	Venezuelan Tia Juana-26° API	Mexico Maya-22° API	United Kingdom Brent Blend-38° API [4]
1970	1.35	1.36	2.09	2.10	1.67	2.05	NA	NA
1971	1.75	1.76	2.80	2.65	2.18	2.45	NA	NA
1972	1.90	1.91	2.80	2.80	2.96	2.45	NA	NA
1973	2.10	2.11	3.10	3.10	2.96	2.60	NA	NA
1974	9.60	10.63	14.30	12.60	10.80	9.30	NA	NA
1975	10.46	10.67	11.98	11.80	12.60	11.00	NA	NA
1976	11.51	11.62	12.21	12.84	12.80	11.12	NA	NA
1977	12.09	12.81	13.74	14.33	13.55	12.72	NA	NA
1978	12.70	12.81	13.80	14.33	13.55	12.82	NA	NA
1979	13.34	13.45	14.52	14.80	13.90	13.36	15.45	15.70
1980	26.00	[5] 30.00	34.50	29.97	27.50	25.20	28.00	26.02
1981	32.00	37.00	40.78	40.00	35.00	32.88	34.50	39.25
1982	34.00	34.20	36.50	36.50	35.00	32.88	26.50	36.60
1983	34.00	31.20	35.10	35.50	34.53	32.88	25.50	33.50
1984	29.00	28.00	30.15	30.00	29.53	27.88	25.00	30.00
1985	29.00	28.00	30.15	28.00	29.53	27.88	25.50	28.65
1986	28.00	28.05	30.15	28.65	28.53	27.10	21.93	26.00

[1] Prices free on board (f.o.b.) at the foreign port of lading. Except as noted (see United Kingdom Brent Blend - 38 degrees API) prices prior to mid-1974 are average contract selling prices and prices for the period mid-1974 forward are official selling prices including premiums or discounts in cases where they were clearly defined and applicable to all clients.
[2] Prices for 1974 and 1975 are for 40 degrees API gravity. Prices for 1980 include $4.72 in retroactive charges and market premiums.
[3] Prices from 1977 forward include 2 cents per barrel harbor dues.
[4] Estimated long term contract prices.
[5] Price for 1980 includes $1.87 market premiums and credit charges.
NA = Not available.
Sources: •1970 through 1978—Petroleum and Energy Intelligence Weekly, Inc., *Petroleum Intelligence Weekly.* •1979 and forward—Energy Information Administration, *Weekly Petroleum Status Report.*

Figure 114. Differences Between Spot Prices and Official Prices for Selected Foreign Crude Oil Mixes, 1960–1985



Source: See Table 114.

Table 114. Differences Between Average Annual Spot Prices and Official Prices for Selected Foreign Crude Oil Mixes, 1960-1985

(Dollars per Barrel)

Year	Mideast Light Crude -34 [1]			Mideast Heavy Crude -31 [2]			Mideast Heavy Crude -27 [3]			North Sea/African Crude -37/44 [4]		
	Official Price	Spot Price	Difference [5]	Official Price	Spot Price	Difference [5]	Official Price	Spot Price	Difference [5]	Official Price	Spot Price	Difference [5]
1960	1.86	1.63	-0.23	1.64	1.46	-0.18	NA	NA	NA	NA	NA	NA
1961	1.80	1.57	-0.23	1.59	1.41	-0.18	NA	NA	NA	NA	NA	NA
1962	1.80	1.52	-0.28	1.59	1.38	-0.21	NA	NA	NA	2.23	NA	NA
1963	1.80	1.50	-0.30	1.59	1.35	-0.24	NA	NA	NA	2.23	1.85	-0.38
1964	1.80	1.45	-0.35	1.59	1.33	-0.26	NA	NA	NA	2.23	1.73	-0.50
1965	1.66	1.42	-0.24	1.45	1.31	-0.14	NA	NA	NA	2.00	1.68	-0.32
1966	1.53	1.36	-0.17	1.38	1.28	-0.10	NA	NA	NA	1.90	1.63	-0.27
1967	1.50	1.33	-0.17	1.35	1.27	-0.08	NA	NA	NA	1.95	1.76	-0.19
1968	1.45	1.32	-0.13	1.32	1.24	-0.08	NA	NA	NA	2.00	1.88	-0.12
1969	1.40	1.27	-0.13	1.30	1.20	-0.10	NA	NA	NA	1.95	1.83	-0.12
1970	1.35	1.21	-0.14	1.30	1.15	-0.15	NA	NA	NA	2.10	2.26	0.16
1971	1.75	1.69	-0.06	1.68	1.61	-0.07	NA	NA	NA	2.35	2.66	0.31
1972	1.90	1.82	-0.08	1.80	1.71	-0.09	NA	NA	NA	2.80	2.69	-0.11
1973	[6] 2.64	2.81	0.17	2.04	2.07	0.03	NA	NA	NA	3.20	3.40	0.20
1974	[6] 9.56	10.98	1.42	9.44	10.25	0.81	NA	NA	NA	11.40	12.92	1.52
1975	10.46	10.71	0.25	10.37	10.35	-0.02	NA	NA	NA	11.61	11.50	-0.11
1976	11.51	11.63	0.12	11.26	11.25	-0.01	NA	NA	NA	12.97	13.14	0.17
1977	12.40	12.57	0.17	12.37	12.23	-0.14	NA	NA	NA	14.48	14.30	-0.18
1978	12.70	12.91	0.21	12.27	12.26	-0.01	NA	NA	NA	14.10	14.21	0.11
1979	17.84	29.82	11.98	18.04	27.04	9.00	NA	NA	NA	21.04	32.11	11.07
1980	29.38	35.85	6.47	29.81	34.34	4.53	NA	NA	NA	36.50	37.89	1.39
1981	33.16	34.29	1.13	33.74	32.96	-0.78	NA	NA	NA	39.39	36.68	-2.71
1982	33.51	31.76	-1.75	31.38	30.36	-1.02	31.00	28.98	-2.02	34.75	33.42	-1.33
1983	29.20	28.72	-0.48	27.50	27.61	0.11	26.83	26.50	-0.33	30.72	29.82	-0.90
1984	28.75	28.08	-0.67	NA	NA	NA	27.10	27.26	0.16	29.95	28.81	-1.14
1985	28.08	27.52	-0.56	NA	NA	NA	26.29	25.78	-0.51	28.62	27.88	-0.74

[1] Primarily Arabian Light Crude Oil, 34 degrees API. 1985 data are for Arabian Light Crude Oil, 34 degrees API only.
[2] Primarily Kuwait Heavy Crude Oil, 31 degrees API.
[3] In 1984, Mideast Heavy was redefined and is now primarily Arabian Heavy Crude Oil, 27 degrees API and prices were computed for 1982 and forward. 1985 data are for Arabian Heavy, 27 degrees API only.
[4] Primarily Libyan Brega Crude Oil, 40 degrees API during the 1960's. Broadened to include Algeria Saharan Crude Oil, 44 degrees API and Nigerian Bonny, 37 degrees API from 1970 through 1980. Further broadened in 1981 to include United Kingdom-Brent, 38 degrees API and Norway-Ekofisk, 43 degrees API. 1985 data are for Nigerian Bonny, 37 degrees API only.
[5] Spot price minus official price.
[6] Actual contract prices for Arabian Light Crude -34 degrees API. Although an official Arabian Light Crude -34 degrees API price existed, it applied to only a few direct sales contracts.
NA = Not available.
Sources: Petroleum and Energy Intelligence Weekly, Inc., *Petroleum Intelligence Weekly.*

Units of Measure and Conversion Factors

Weight

1 short ton	contains	2,000 pounds
1 metric ton	contains	1.102 short tons
1 long ton	contains	1.120 short tons

Volume

1 cubic foot	contains	0.028 cubic meters
1 cubic meter	contains	35.315 cubic feet
1 U.S. barrel	contains	42 U.S. gallons
1 Cord	contains	128 cubic feet

Conversion Factors for Crude Oil (Average Gravity)

1 U.S. barrel	weighs	0.136 metric tons
1 U.S. barrel	weighs	0.150 short tons
1 metric ton	contains	7.33 U.S. barrels
1 short ton	contains	6.65 U.S. barrels

Electricity Consumption	3,412 Btu/kilowatthour
Hardwood, dry (average)	1.25 short tons/cord 17.2 million Btu/short ton 21.5 million Btu/cord

Using Thermal Equivalent Conversion Factors

Btu conversion factors for hydrocarbon mixes are the weighted average of the Btu content of all hydrocarbons included in the mix. All final Btu factors are computed from *final* annual data. If the current year's final data are not available, preliminary Btu conversion factors are computed from the best available data.

Approximate Heat Content of Refined Petroleum Products (Million Btu per Barrel)

Asphalt	6.636
Aviation gasoline	5.048
Butane	4.326
Butane-propane mixture*	4.130
Distillate fuel oil	5.825
Ethane	3.082
Ethane-propane mixture**	3.308
Isobutane	3.974
Jet fuel—kerosene type	5.670
Jet fuel—naphtha type	5.355
Kerosene	5.670
Lubricants	6.065
Motor gasoline	5.253
Natural gasoline and Isopentane	4.620
Pentane Plus	4.620
Petrochemical feedstocks	
Naphtha 400° F or less	5.248
Other Oils over 400° F	5.825
Still gas	6.000
Petroleum coke	6.024
Plant condensate	5.418
Propane	3.836
Residual fuel oil	6.287
Road oil	6.636
Special naphtha	5.248
Still gas	6.000
Unfinished oils	5.825
Unfractionated stream	5.418
Wax	5.537
Miscellaneous	5.796

* 60 percent butane and 40 percent propane.
** 70 percent ethane and 30 percent propane.

Table 115. Approximate Heat Content of Crude Oil and Petroleum Product Production, Imports, and Exports, 1949-1985

(Million Btu per Barrel)

Year	Petroleum Production, Imports, and Exports						
	Production of Crude Oil and Lease Condensate	Imports of Crude Oil and Petroleum Products	Imports of Crude Oil	Imports of Petroleum Products	Exports of Crude Oil and Petroleum Products	Exports of Crude Oil	Exports of Petroleum Products
1949	5.8	6.059	5.952	6.261	5.692	5.8	5.651
1950	5.8	6.080	5.943	6.263	5.766	5.8	5.751
1951	5.8	6.075	5.938	6.265	5.762	5.8	5.753
1952	5.8	6.067	5.938	6.261	5.774	5.8	5.768
1953	5.8	6.052	5.924	6.268	5.742	5.8	5.732
1954	5.8	6.052	5.931	6.252	5.745	5.8	5.738
1955	5.8	6.040	5.924	6.234	5.768	5.8	5.765
1956	5.8	6.024	5.916	6.225	5.754	5.8	5.744
1957	5.8	6.023	5.918	6.219	5.780	5.8	5.774
1958	5.8	5.993	5.916	6.091	5.779	5.8	5.778
1959	5.8	6.020	5.916	6.142	5.829	5.8	5.830
1960	5.8	6.021	5.911	6.161	5.834	5.8	5.835
1961	5.8	5.991	5.900	6.102	5.832	5.8	5.833
1962	5.8	6.004	5.890	6.138	5.841	5.8	5.842
1963	5.8	6.002	5.894	6.126	5.840	5.8	5.841
1964	5.8	5.998	5.882	6.129	5.844	5.8	5.845
1965	5.8	5.997	5.872	6.123	5.743	5.8	5.742
1966	5.8	5.993	5.863	6.112	5.729	5.8	5.728
1967	5.8	5.999	5.838	6.128	5.777	5.8	5.758
1968	5.8	5.977	5.836	6.095	5.763	5.8	5.762
1969	5.8	5.974	5.825	6.093	5.714	5.8	5.713
1970	5.8	5.985	5.822	6.088	5.810	5.8	5.811
1971	5.8	5.961	5.824	6.062	5.775	5.8	5.775
1972	5.8	5.935	5.809	6.045	5.741	5.8	5.741
1973	5.8	5.897	5.817	5.983	5.752	5.8	5.752
1974	5.8	5.884	5.827	5.959	5.774	5.8	5.773
1975	5.8	5.858	5.821	5.935	5.748	5.8	5.747
1976	5.8	5.856	5.808	5.980	5.745	5.8	5.743
1977	5.8	5.834	5.810	5.908	5.797	5.8	5.796
1978	5.8	5.839	5.802	5.955	5.808	5.8	5.814
1979	5.8	5.810	5.810	5.811	5.832	5.8	5.864
1980	5.8	5.796	5.812	5.748	5.820	5.8	5.841
1981	5.8	5.775	5.818	5.659	5.821	5.8	5.837
1982	5.8	5.775	5.826	5.664	5.820	5.8	5.829
1983	5.8	5.774	5.825	5.677	5.800	5.8	5.800
1984	5.8	5.745	5.823	5.613	5.850	5.8	5.867
1985[1]	5.8	5.729	5.823	5.565	5.814	5.8	5.819

[1] Preliminary.
Note: See Thermal Conversion Factor Source Documentation.

Table 116. Approximate Heat Content of Petroleum Consumption and Natural Gas Plant Liquids Production, 1949-1985

(Million Btu per Barrel)

Year	Petroleum Consumption					Natural Gas Plant Liquids
	All Users	Residential and Commercial	Industrial	Transportation	Electric Utilities	Production
1949	5.649	5.631	5.947	5.465	6.254	4.544
1950	5.649	5.626	5.940	5.461	6.254	4.522
1951	5.634	5.626	5.913	5.458	6.254	4.495
1952	5.621	5.621	5.905	5.442	6.254	4.464
1953	5.608	5.606	5.897	5.426	6.254	4.450
1954	5.595	5.603	5.883	5.412	6.254	4.415
1955	5.591	5.607	5.866	5.408	6.254	4.406
1956	5.585	5.601	5.856	5.406	6.254	4.382
1957	5.577	5.587	5.842	5.405	6.254	4.369
1958	5.567	5.582	5.832	5.393	6.254	4.366
1959	5.557	5.549	5.811	5.389	6.254	4.311
1960	5.555	5.570	5.799	5.388	6.267	4.295
1961	5.552	5.570	5.794	5.387	6.268	4.283
1962	5.545	5.555	5.783	5.386	6.267	4.273
1963	5.534	5.532	5.757	5.385	6.266	4.264
1964	5.528	5.517	5.727	5.389	6.267	4.268
1965	5.532	5.535	5.725	5.388	6.267	4.264
1966	5.532	5.523	5.717	5.390	6.266	4.259
1967	5.515	5.473	5.675	5.394	6.266	4.232
1968	5.504	5.450	5.638	5.398	6.263	4.218
1969	5.492	5.399	5.596	5.397	6.259	4.170
1970	5.503	5.404	5.598	5.395	6.252	4.146
1971	5.504	5.392	5.593	5.392	6.245	4.117
1972	5.500	5.368	5.559	5.390	6.233	4.070
1973	5.515	5.387	5.565	5.397	6.245	4.049
1974	5.504	5.377	5.537	5.394	6.238	4.011
1975	5.494	5.358	5.527	5.392	6.250	3.984
1976	5.504	5.383	5.535	5.396	6.251	3.964
1977	5.518	5.389	5.552	5.402	6.249	3.941
1978	5.519	5.382	5.546	5.407	6.251	3.925
1979	5.494	5.471	5.416	5.430	6.258	3.955
1980	5.479	5.468	5.376	5.440	6.254	3.914
1981	5.448	5.409	5.310	5.434	6.258	3.930
1982	5.415	5.392	5.262	5.423	6.258	3.872
1983	5.406	5.286	5.273	5.416	6.255	3.839
1984	5.395	5.261	5.256	5.423	6.251	3.812
1985[1]	5.385	5.252	5.246	5.418	6.247	3.815

[1] Preliminary.
Note: See Thermal Conversion Factor Source Documentation.

Table 117. Approximate Heat Content of Natural Gas, 1949-1985

(Btu per Cubic Foot)

Year	Dry Natural Gas						Wet Natural Gas Production
		Consumption					
	Production	All Users	Electric Utilities	Non-Electric Utility	Imports	Exports	
1949	1,035	1,035	1,035	1,035	(1)	1,035	1,120
1950	1,035	1,035	1,035	1,035	(1)	1,035	1,119
1951	1,035	1,035	1,035	1,035	(1)	1,035	1,114
1952	1,035	1,035	1,035	1,035	1,035	1,035	1,115
1953	1,035	1,035	1,035	1,035	1,035	1,035	1,116
1954	1,035	1,035	1,035	1,035	1,035	1,035	1,115
1955	1,035	1,035	1,035	1,035	1,035	1,035	1,120
1956	1,035	1,035	1,035	1,035	1,035	1,035	1,116
1957	1,035	1,035	1,035	1,035	1,035	1,035	1,113
1958	1,035	1,035	1,035	1,035	1,035	1,035	1,110
1959	1,035	1,035	1,035	1,035	1,035	1,035	1,109
1960	1,035	1,035	1,035	1,035	1,035	1,035	1,107
1961	1,035	1,035	1,035	1,035	1,035	1,035	1,108
1962	1,035	1,035	1,035	1,035	1,035	1,035	1,107
1963	1,031	1,031	1,031	1,031	1,031	1,031	1,103
1964	1,032	1,032	1,032	1,032	1,032	1,032	1,102
1965	1,032	1,032	1,032	1,032	1,032	1,032	1,101
1966	1,033	1,033	1,033	1,033	1,033	1,033	1,103
1967	1,032	1,032	1,032	1,032	1,032	1,032	1,105
1968	1,031	1,031	1,031	1,031	1,031	1,031	1,115
1969	1,031	1,031	1,031	1,031	1,031	1,031	1,103
1970	1,031	1,031	1,031	1,031	1,031	1,031	1,102
1971	1,031	1,031	1,031	1,031	1,031	1,031	1,103
1972	1,027	1,027	1,027	1,027	1,027	1,027	1,100
1973	1,021	1,021	1,024	1,020	1,026	1,023	1,093
1974	1,024	1,024	1,022	1,024	1,027	1,016	1,097
1975	1,021	1,021	1,026	1,020	1,026	1,014	1,095
1976	1,020	1,020	1,023	1,019	1,025	1,013	1,093
1977	1,021	1,021	1,029	1,019	1,026	1,013	1,093
1978	1,019	1,019	1,034	1,016	1,030	1,013	1,088
1979	1,021	1,021	1,035	1,018	1,037	1,013	1,092
1980	1,026	1,026	1,035	1,024	1,022	1,013	1,098
1981	1,027	1,027	1,035	1,025	1,014	1,011	1,103
1982	1,028	1,028	1,036	1,026	1,018	1,011	1,107
1983	1,031	1,031	1,030	1,031	1,024	1,010	1,115
1984	1,031	1,031	1,035	1,030	1,005	1,010	1,109
1985[2]	1,031	1,031	1,035	1,030	1,005	1,010	1,109

[1] Not applicable.
[2] Preliminary.
Note: See Thermal Conversion Factor Source Documentation.

Table 118. Approximate Heat Content of Bituminous Coal and Lignite, and Anthracite, 1949-1985

(Million Btu per Short Ton)

Year	Bituminous Coal [1] and Lignite								Anthracite				
		Consumption								Consumption			
	Production	All Users	Residential and Commercial	Coke Plants	Other Industry [2]	Electric Utilities	Imports	Exports	Production	All Users	Electric Utilities	Non-electric Utility	Imports and Exports
1949	24.965	24.836	24.044	26.800	24.601	24.022	25.000	27.000	24.421	24.291	17.500	24.954	25.400
1950	25.126	25.024	24.162	26.800	24.804	24.200	25.000	27.000	24.667	24.592	17.500	25.297	25.400
1951	25.065	24.854	23.988	26.800	24.503	23.936	25.000	27.000	24.439	24.289	17.500	25.082	25.400
1952	25.157	24.955	24.108	26.800	24.711	24.118	25.000	27.000	24.400	24.257	17.500	25.063	25.400
1953	25.207	25.062	24.143	26.800	24.773	24.172	25.000	27.000	24.264	24.147	17.500	25.132	25.400
1954	25.115	24.971	24.144	26.800	24.775	24.174	25.000	27.000	24.234	24.130	17.500	25.015	25.400
1955	25.258	25.034	24.166	26.800	24.811	24.206	25.000	27.000	24.194	24.053	17.500	25.084	25.400
1956	25.187	24.913	24.082	26.800	24.668	24.080	25.000	27.000	23.899	23.580	17.500	24.548	25.400
1957	25.286	24.979	24.108	26.800	24.711	24.118	25.000	27.000	23.785	23.441	17.500	24.587	25.400
1958	25.031	24.758	24.039	26.800	24.592	24.014	25.000	27.000	24.059	23.903	17.500	25.003	25.400
1959	24.965	24.773	24.047	26.800	24.606	24.026	25.000	27.000	23.817	23.664	17.500	24.666	25.400
1960	24.960	24.765	24.054	26.800	24.604	24.029	25.000	27.000	23.717	23.592	17.500	24.721	25.400
1961	24.892	24.693	24.034	26.800	24.569	23.993	25.000	27.000	23.854	23.707	17.500	24.870	25.400
1962	24.869	24.668	24.027	26.800	24.558	23.988	25.000	27.000	23.811	23.515	17.500	24.666	25.400
1963	24.879	24.639	24.007	26.800	24.524	23.962	25.000	27.000	23.633	23.107	17.500	24.110	25.400
1964	24.887	24.652	23.988	26.800	24.490	23.928	25.000	27.000	23.507	23.128	17.500	24.164	25.400
1965	24.813	24.575	23.928	26.800	24.387	23.836	25.000	27.000	23.471	23.175	17.500	24.316	25.400
1966	24.664	24.431	23.836	26.800	24.227	23.699	25.000	27.000	23.202	22.906	17.500	24.193	25.400
1967	24.516	24.287	23.737	26.800	24.056	23.554	25.000	27.000	22.655	22.291	17.500	23.506	25.400
1968	24.487	24.229	23.724	26.800	24.034	23.531	25.000	27.000	22.426	22.037	17.500	23.293	25.400
1969	24.313	24.011	23.553	26.800	23.737	23.274	25.000	27.000	22.543	22.003	17.500	23.200	25.400
1970	23.862	23.461	23.111	26.800	22.973	22.603	25.000	27.000	22.603	22.102	17.500	23.476	25.400
1971	23.519	23.138	22.927	26.800	22.653	22.325	25.000	27.000	22.718	22.210	17.500	23.572	25.400
1972	23.400	23.050	22.861	26.800	22.539	22.225	25.000	27.000	22.422	21.822	17.500	23.403	25.400
1973	23.391	23.073	22.887	26.800	22.585	22.262	25.000	26.612	22.132	21.464	17.920	22.674	25.400
1974	23.087	22.694	22.523	26.800	22.420	21.799	25.000	26.716	21.711	20.919	17.200	22.330	25.400
1975	22.910	22.522	22.258	26.800	22.439	21.659	25.000	26.573	21.582	20.762	17.064	22.272	25.400
1976	22.863	22.509	22.819	26.800	22.528	21.692	25.000	26.613	22.045	21.254	17.526	22.618	25.400
1977	22.597	22.266	22.594	26.800	22.290	21.521	25.000	26.561	22.661	22.066	17.244	24.101	25.400
1978	22.242	22.014	22.078	26.800	22.175	21.284	25.000	26.501	23.079	22.398	17.104	24.388	25.400
1979	22.449	22.100	21.884	26.800	22.436	21.372	25.000	26.570	23.170	22.069	17.454	24.272	25.400
1980	22.411	21.950	22.488	26.800	22.690	21.301	25.000	26.404	22.869	21.405	17.652	22.719	25.400
1981	22.302	21.712	22.191	26.800	22.572	21.091	25.000	26.176	23.291	22.080	18.168	23.749	25.400
1982	22.234	21.671	22.373	26.800	22.694	21.200	25.000	26.231	23.289	22.485	18.160	24.530	25.400
1983	22.053	21.581	22.934	26.800	22.679	21.141	25.000	26.300	22.734	21.583	16.516	24.536	25.400
1984	22.009	21.574	22.880	26.800	22.524	21.108	25.000	26.410	23.107	22.322	17.018	25.128	25.400
1985[3]	21.876	21.376	23.056	26.800	21.978	20.974	25.000	26.320	22.846	21.781	17.018	24.421	25.400

[1] Including subbituminous coal.
[2] Includes transportation.
[3] Preliminary.
Note: See Thermal Conversion Factor Source Documentation.

Table 119. Approximate Heat Content of All Coal and Coal Coke, 1949-1985

(Million Btu per Short Ton)

Year	All Coal						Coal Coke
		Consumption					
	Production	All Users	Electric Utilities	Non-Electric Utility	Imports	Exports	Imports and Exports
1949	24.916	24.793	23.761	25.011	25.000	26.759	24.800
1950	25.090	24.989	23.937	25.229	25.020	26.788	24.800
1951	25.019	24.813	23.701	25.106	25.034	26.848	24.800
1952	25.096	24.901	23.885	25.214	25.040	26.859	24.800
1953	25.147	25.006	23.964	25.362	25.048	26.881	24.800
1954	25.054	24.913	23.996	25.312	25.012	26.865	24.800
1955	25.201	24.982	24.056	25.421	25.000	26.907	24.800
1956	25.117	24.843	23.943	25.320	25.000	26.886	24.800
1957	25.213	24.905	23.980	25.449	25.001	26.914	24.800
1958	24.983	24.716	23.897	25.271	25.005	26.931	24.800
1959	24.910	24.719	23.924	25.337	25.003	26.927	24.800
1960	24.906	24.713	23.927	25.340	25.003	26.939	24.800
1961	24.849	24.653	23.904	25.309	25.002	26.937	24.800
1962	24.828	24.627	23.911	25.289	25.013	26.928	24.800
1963	24.831	24.588	23.897	25.276	25.007	26.894	24.800
1964	24.840	24.602	23.864	25.358	25.000	26.949	24.800
1965	24.775	24.537	23.780	25.352	25.000	26.973	24.800
1966	24.629	24.396	23.648	25.259	25.000	26.976	24.800
1967	24.475	24.243	23.506	25.175	25.000	26.981	24.800
1968	24.445	24.186	23.486	25.168	25.000	26.984	24.800
1969	24.280	23.976	23.240	25.089	25.000	26.982	24.800
1970	23.842	23.440	22.573	24.806	25.000	26.982	24.800
1971	23.507	23.124	22.301	24.671	25.000	26.981	24.800
1972	23.389	23.036	22.204	24.733	25.000	26.979	24.800
1973	23.376	23.057	22.246	24.878	25.000	26.596	24.800
1974	23.072	22.677	21.781	24.783	25.000	26.700	24.800
1975	22.897	22.506	21.642	24.745	25.000	26.562	24.800
1976	22.855	22.498	21.679	24.861	25.000	26.601	24.800
1977	22.597	22.265	21.508	24.701	25.000	26.548	24.800
1978	22.248	22.017	21.275	24.496	25.000	26.478	24.800
1979	22.454	22.100	21.364	24.626	25.000	26.548	24.800
1980	22.415	21.947	21.295	24.731	25.000	26.384	24.800
1981	22.309	21.714	21.085	24.477	25.000	26.160	24.800
1982	22.240	21.675	21.194	24.194	25.000	26.223	24.800
1983	22.056	21.581	21.133	24.093	25.000	26.291	24.800
1984	22.014	21.577	21.101	24.069	25.000	26.402	24.800
1985[1]	21.880	21.378	20.968	23.647	25.000	26.307	24.800

[1] Preliminary.

Note: See Thermal Conversion Factor Source Documentation.

Table 120. Approximate Heat Rates for Electricity, 1949-1985

(Btu per Kilowatthour)

Year	Fossil Fuel Steam Electric Power Plant Generation [1]	Nuclear Power Plant Generation	Geothermal Energy Power Plant Generation
1949	15,033	[2]	[2]
1950	14,030	[2]	[2]
1951	13,641	[2]	[2]
1952	13,361	[2]	[2]
1953	12,889	[2]	[2]
1954	12,180	[2]	[2]
1955	11,699	[2]	[2]
1956	11,456	[2]	[2]
1957	11,365	11,629	[2]
1958	11,085	11,629	[2]
1959	10,970	11,629	[2]
1960	10,760	11,629	23,200
1961	10,650	11,629	23,200
1962	10,558	11,629	23,200
1963	10,482	11,877	22,182
1964	10,462	11,912	22,182
1965	10,453	11,804	22,182
1966	10,415	11,623	22,182
1967	10,432	11,555	21,770
1968	10,398	11,297	21,606
1969	10,447	11,037	21,606
1970	10,494	10,977	21,606
1971	10,478	10,837	21,655
1972	10,379	10,792	21,668
1973	10,389	10,903	21,674
1974	10,442	11,161	21,674
1975	10,406	11,013	21,611
1976	10,373	11,047	21,611
1977	10,435	10,769	21,611
1978	10,361	10,941	21,611
1979	10,353	10,879	21,545
1980	10,388	10,908	21,639
1981	10,453	11,030	21,639
1982	10,423	11,073	21,629
1983	10,445	10,905	21,290
1984	10,369	10,800	21,303
1985[3]	10,369	10,800	21,303

[1] This is used as the thermal conversion factor for hydroelectric power generation and for wood and waste, wind, photovoltaic, and solar thermal energy consumed at electric utilities.
[2] Not Applicable.
[3] Preliminary.
Note: See Thermal Conversion Factor Source Documentation.

Energy Equivalents

One Btu equals approximately:

1	match tip
250	calories (International Steam Table)
0.25	kilocalories (food calories)

One thousand Btu equals approximately:

2	glasses of table wine (5 fluid ounces each)
250	kilocalories (food calories)
0.80	peanut butter and jelly sandwich

One million Btu equals approximately:

90	pounds of coal production
120	pounds of oven-dried hardwood
8	gallons of motor gasoline or enough to move the average passenger car in the United States about 135 miles (1984)
10	therms of natural gas (dry)
11	gallons of propane
1.2	days of energy consumption per person (U.S.-1984)
2	months of dietary intake of a laborer

One million Btu of fossil fuels burned at electric utilities can generate about 100 kilowatthours of electricity, while about 300 kilowatthours of electricity generated at electric utilities can produce about one million Btu of heat.

One quadrillion Btu equals approximately:

45	million short tons of coal production
60	million short tons of oven-dried hardwood
1	trillion cubic feet of natural gas (dry)
170	million barrels of crude oil
470	thousand barrels per day of crude oil for one year
35	days of petroleum imports into the United States (1985)
28	days of United States motor gasoline usage (1985)
30	hours of world energy consumption (1984)

One barrel of crude oil equals approximately:

15	days of petroleum consumption per person (U.S.-1985)
5.6	thousand cubic feet of natural gas (dry)
0.26	short tons (or 520 pounds) of coal production
1,700	kilowatthours of electricity consumed

One short ton of coal equals approximately:

106	days of coal consumption per person (U.S.-1985)
3.8	barrels of crude oil
21	thousand cubic feet of natural gas (dry)
6,500	kilowatthours of electricity consumed

One thousand cubic feet of natural gas equals approximately:

5.1	days of natural gas consumption per person (U.S.-1985)
0.18	barrels (or 7.4 gallons) of crude oil
0.047	short tons (or 93 pounds) of coal production
300	kilowatthours of electricity consumed

One thousand kilowatthours (kWh) of electricity equal approximately:

38	days of electricity consumption per person (U.S.-1985)
0.59	barrels of crude oil (although it takes about 1.8 barrels of oil to produce 1,000 kWh)
0.15	short tons (or 310 pounds) of coal production (although it takes about 0.47 short tons to produce 1,000 kWh)
3,300	cubic feet of natural gas—dry (although it takes about 10,000 cubic feet to produce 1,000 kWh)

Gross National Product (GNP) Implicit Price Deflators 1982=100

1949	23.5	1968	37.7
1950	23.9	1969	39.8
1951	25.1	1970	42.0
1952	25.5	1971	44.4
1953	25.9	1972	46.5
1954	26.3	1973	49.5
1955	27.2	1974	54.0
1956	28.1	1975	59.3
1957	29.1	1976	63.1
1958	29.7	1977	67.3
1959	30.4	1978	72.2
1960	30.9	1979	78.6
1961	31.2	1980	85.7
1962	31.9	1981	94.0
1963	32.4	1982	100.0
1964	32.9	1983	103.8
1965	33.8	1984	108.1
1966	35.0	1985	111.7
1967	35.9		

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Thermal Conversion Factor Source Documentation

PETROLEUM AND NATURAL GAS PLANT LIQUIDS

Asphalt. • 1949 forward: Energy Information Administration (EIA) adopted the thermal conversion factor of 6.636 million British thermal units (Btu) per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Aviation Gasoline. • 1965 forward: EIA adopted the thermal conversion factor of 5.048 million Btu per barrel as adopted by the Bureau of Mines from the Texas Eastern Transmission Corporation publication *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Butane. • 1949 forward: EIA adopted the Bureau of Mines thermal conversion factor of 4.326 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Butane–Propane Mixture. • 1949 forward: EIA adopted the Bureau of Mines calculation of 4.130 million Btu per barrel based on an assumed mixture of 60 percent butane and 40 percent propane. See "Butane" and "Propane."

Crude Oil, Exports. • 1949 forward: Assumed by EIA to be 5.800 million Btu per barrel or equal to the thermal conversion factor for crude oil produced in the United States. See "Crude Oil and Lease Condensate, Production."

Crude Oil, Imports. • 1949 forward: Calculated annually by EIA by weighting the thermal conversion factor of each type of crude oil imported by the quantity imported. Thermal conversion factors for each type were calculated on a foreign country basis, by determining the average American Petroleum Institute (API) gravity of crude imported from each foreign country from Form ERA-60 in 1977 and converting average API gravity to average Btu content using National Bureau of Standards, Miscellaneous Publication No. 97, *Thermal Properties of Petroleum Products,* 1933.

Crude Oil and Lease Condensate, Production. • 1949 forward: EIA adopted the thermal conversion factor of 5.800 million Btu per barrel as reported in a Bureau of Mines internal memorandum *Bureau of Mines Standard Average Heating Values of Various Fuels adopted January 3, 1950.*

Crude Oil and Petroleum Products, Exports. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product exported and crude oil exported weighted by the quantity of each petroleum product and crude oil exported. See "Petroleum Products, Exports" and "Crude Oil, Exports."

Crude Oil and Petroleum Products, Imports. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product and each crude oil imported weighted by the quantity of each petroleum product and each type of crude oil imported. See "Crude Oil, Imports" and "Petroleum Products, Imports."

Distillate Fuel Oil. • 1949 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.825 million Btu per barrel as reported in a Bureau of Mines internal memorandum, *Bureau of Mines Standard Average Heating Value of Various Fuels, adopted January 3, 1950.*

Ethane. • 1959 forward: EIA adopted the Bureau of Mines thermal conversion factor of 3.082 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Ethane–Propane Mixture. • 1979 forward: EIA calculation of 3.308 million Btu per barrel based on an assumed mixture of 70 percent ethane and 30 percent propane. See "Ethane" and "Propane."

Isobutane. • 1949 forward: EIA adopted the Bureau of Mines thermal conversion factor of 3.974 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Jet Fuel, Kerosene Type. • 1952 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel as published for "Jet Fuel, Commercial" by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Jet Fuel, Naphtha Type. • 1952 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.355 million Btu per barrel as published for "Jet Fuel, Military" by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Kerosene. • 1949 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel as reported in a Bureau of Mines internal memorandum, *Bureau of Mines Standard Average Heating Values of Various Fuels, adopted January 3, 1950.*

Lubricants. • 1949 forward: EIA adopted the thermal conversion factor of 6.065 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Miscellaneous Products. • 1949 forward: EIA adopted the thermal conversion factor of 5.796 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Motor Gasoline. • 1949 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel as published for "Gasoline, Motor Fuel" by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Natural Gasoline. • 1949 forward: EIA adopted the thermal conversion factor of 4.620 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Natural Gas Plant Liquids, Production. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors of each natural gas plant liquid produced weighted by the quantity of each natural gas plant liquid produced.

Pentanes Plus. • 1984 forward: EIA assumed the thermal conversion factor to be 4.620 million Btu or equal to that for natural gasoline. See "Natural Gasoline."

Petrochemical Feedstocks, Naphtha 400 degrees F or Less. • 1962 forward: Assumed by EIA to be 5.248 million Btu per barrel, equal to the thermal conversion factor for special naphtha. See "Special Naphtha."

Petrochemical Feedstock, Over 400 degrees F. • 1962 forward: Assumed by EIA to be 5.825 million Btu per barrel, equal to the thermal conversion factor for distillate fuel oil. See "Distillate Fuel Oil."

Petrochemical Feedstock, Still Gas. • 1962 forward: Assumed by EIA to be 6.000 million Btu per barrel, equal to the thermal conversion factor for still gas. See "Still Gas."

Petroleum Coke. • 1949 forward: EIA adopted the thermal conversion factor of 6.024 million Btu per barrel as reported in Btu per short ton in the Bureau of Mines internal memorandum *Bureau of Mines Standard Average Heating Value of Various Fuels, adopted January 3, 1950.* Bureau of Mines calculated this factor by dividing the 30,120,000 Btu per short ton as given in the referenced Bureau of Mines internal memorandum by 5.0 barrels per short ton as given in the Bureau of Mines Form 6-1300-M and successor EIA forms.

Petroleum Products, Consumption by All Users. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed, weighted by the quantity of each petroleum product consumed.

Petroleum Products, Consumption by Electric Utilities. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed at electric utilities, weighted by the quantity of each petroleum product consumed at electric utilities. For 1960 and forward, the quantity of petroleum consumed is estimated in the State Energy Data System as documented in the *State Energy Data Report.*

Petroleum Products, Consumption by Industrial Users. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed in the industrial sector, weighted by the estimated quantity of each petroleum product consumed in the industrial sector. For 1960 and forward, the quantity of petroleum products consumed is estimated in the State Energy Data System as documented in the *State Energy Data Report.*

Petroleum Products, Consumption by Residential and Commercial Users . • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the residential and commercial sector, weighted by the estimated quantity of each petroleum product consumed in the residential and commercial

sector. For 1960 and forward, the quantity of petroleum products consumed is estimated in the State Energy Data System as documented in the *State Energy Data Report.*

Petroleum Products, Consumption by Transportation Users. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factor for all petroleum products consumed in the transportation sector, weighted by the estimated quantity of each petroleum product consumed in the transportation sector. For 1960 and forward, the quantity of petroleum products consumed is estimated in the State Energy Data System as documented in the *State Energy Data Report.*

Petroleum Products, Exports. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product weighted by the quantity of each petroleum product exported.

Petroleum Products, Imports. • 1949 forward: Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product imported weighted by the quantity of each petroleum product imported.

Plant Condensate. • 1949 forward: Estimated to be 5.418 million Btu per barrel by EIA from data provided by McClanahan Consultants, Inc., Houston, Texas.

Propane. • 1949 forward: EIA adopted the Bureau of Mines thermal conversion factor of 3.836 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Residual Fuel Oil. • 1949 forward: EIA adopted the thermal conversion factor of 6.287 million Btu per barrel as reported in the Bureau of Mines internal memorandum *Bureau of Mines Standard Average Heating Values of Various Fuels, adopted January 3, 1950.*

Road Oil. • 1949 forward: EIA adopted the Bureau of Mines thermal conversion factor of 6.636 million Btu per barrel which was assumed to be equal to that of asphalt (see "Asphalt") and was first published by the Bureau of Mines in the *Petroleum Statement, Annual, 1970.*

Special Naphtha. • 1965 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.248 million Btu per barrel which was assumed to be equal to that of total gasoline (aviation and motor) factor and was first published in the *Petroleum Statement, Annual, 1970.*

Still Gas. • 1949 forward: EIA adopted the Bureau of Mines estimated thermal conversion factor of 6.000 million Btu per barrel and was first published in the *Petroleum Statement, Annual, 1970.*

Unfinished Oil. • 1949 forward: EIA assumed the thermal conversion factor to be 5.825 million Btu per barrel or equal to that for distillate fuel oil (see "Distillate Fuel Oil") and first published in the *Annual Report to Congress, Volume 3, 1977.*

Unfractionated Stream. • 1979 forward: EIA assumed the thermal conversion factor to be 5.418 million Btu per barrel or equal to that for plant condensate (see "Plant Condensate") and first published in the *Annual Report to Congress, Volume 2, 1981.*

Wax. • 1949 forward: EIA adopted the thermal conversion factor of 5.537 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

NATURAL GAS

Natural Gas, Consumption by All Users. • 1949-1962: EIA adopted the thermal conversion factor of 1,035 Btu per cubic foot as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.* • 1963-1979: EIA adopted the thermal conversion factor calculated annually by the American Gas Association (AGA) and published in *Gas Facts,* an AGA annual. • 1980-1984: Calculated annually by EIA by dividing the total heat content of natural gas consumed by the total quantity of natural gas consumed. Heat content and quantity consumed are from Form EIA-176. • 1985: Estimated to be the same as 1984.

Natural Gas, Consumption by Electric Utilities. • 1949-1972: Assumed by EIA to be equal to the thermal conversion factor for the consumption of dry natural gas. See "Natural Gas, Consumption by All Users." • 1973-1984: Calculated annually by EIA by dividing the total heat content of natural gas received at electric utilities by the total quantity received at electric utilities. The heat contents and receipts are from FERC Form 423 and predecessor forms. • 1985: Estimated to be the same as 1984.

Natural Gas, Consumption by Non-Electric Utility Users. • 1949-1972: Assumed by EIA to be equal to the thermal conversion factor for the consumption of dry natural gas. See "Natural Gas, Consumption by All Users." • 1973-1984: Calculated annually by EIA by dividing the heat content of natural gas consumed by non-electric utility consumers by the quantity of non-electric utility natural gas consumed. Data are from Forms EIA-176, FERC Form 423, EIA-759, and predecessor forms. • 1985: Estimated to be the same as 1984.

Natural Gas, Exports. • 1949-1972: Assumed by EIA to be equal to the thermal conversion factor for the consumption of dry natural gas. See "Natural Gas, Consumption by All Users." • 1973-1984: Calculated annually by EIA by dividing the heat content of exported natural gas by the quantity of natural gas exported, both reported on FPC Form-14. • 1985: Estimated to be the same as 1984.

Natural Gas, Imports. • 1949-1972: Assumed by EIA to be equal to the thermal conversion factor for the consumption of dry natural gas. See "Natural Gas, Consumption by All Users." • 1973-1984: Calculated annually by EIA by dividing the heat content of imported natural gas by the quantity of natural gas imported, both reported on FPC Form-14. • 1985: Estimated to be the same as 1984.

Natural Gas, Production (Dry). • 1949 forward: Assumed by EIA to be equal to the thermal conversion factor for the consumption of dry natural gas. See "Natural Gas, Consumption by All Users."

Natural Gas, Production (Wet). • 1949-1984: Calculated annually by EIA by adding the heat content of natural gas, dry production and the total heat content of natural gas plant liquids production and dividing this sum by the total quantity of marketed (wet) natural gas production. • 1985: Estimated to be the same as 1984.

COAL AND COAL COKE

All Coal, Consumption by All Users. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite consumption by the sum of their respective tonnages.

All Coal, Consumption by Electric Utilities Only. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite received at electric utilities by the sum of their respective tonnages received.

All Coal, Consumption by Non-Electric Utility Users. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite consumed by nonelectric utility users by the sum of their respective tonnages.

All Coal, Exports. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite exported by the sum of their respective tonnages.

All Coal, Imports. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite imported by the sum of their respective tonnages.

All Coal, Production. • 1949 forward: Calculated annually by EIA by dividing the sum of the total heat content of bituminous coal and lignite and anthracite production by the sum of their respective tonnages.

Anthracite, Consumption by All Users. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of anthracite consumed by electric utilities and non-electric utilities by the total quantity of anthracite consumed.

Anthracite, Consumption by Electric Utilities. 1949–1972: Assumed by EIA that all anthracite consumed at electric utilities was recovered from culm banks and river dredging and estimated to have an average heat content of 17.500 million Btu per short ton. 1973 forward: Calculated annually by EIA by dividing the heat content of anthracite receipts at electric utilities by the quantity of anthracite received at electric utilities, as reported on FERC Form 423 and predecessor forms.

Anthracite, Consumption by Non-Electric Utility Users. • 1949 forward: Calculated annually by EIA by dividing the heat content of anthracite production less the heat content of the anthracite consumed at electric utilities, net exports, and shipments to U.S. Armed Forces overseas by the quantity of non-electric utility anthracite consumption less the quantity of anthracite stock changes, losses, and unaccounted for.

Anthracite, Imports and Exports. • 1949 forward: EIA assumed the anthracite imports and exports to be freshly mined anthracite having an estimated heat content of 25.400 million Btu per short ton.

Anthracite, Production. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of freshly mined anthracite (estimated to have an average heat content of 25.400 million Btu per short ton) and the heat content of anthracite recovered from culm banks and river dredging (estimated to have an average heat content of 17.500 million Btu per short ton) by the total quantity of anthracite production.

Bituminous Coal and Lignite, Consumption by All Users. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite consumed by electric utilities, coal coke plants, other industrial plants, and by the residential and commercial sector and the transportation sector by the sum of their respective tonnages.

Bituminous Coal and Lignite, Consumption by Coke Plants: • 1949 forward: Estimated by EIA to be 26.800 million Btu per short ton based on input-output analysis of coal carbonization.

Bituminous Coal and Lignite, Consumption by Electric Utilities. • 1949-1972: EIA adopted the average thermal conversion factor of the Bureau of Mines which used the National Coal Association average thermal conversion factor for electric utilities calculated from FPC Form-1 and published in *Steam Electric Plant Factors,* a National Coal Association annual report. • 1973 forward: Calculated annually by EIA by dividing the total heat content of bituminous coal and lignite received at electric utilities by the total quantity received at electric utilities. Heat contents and receipts are from FERC Form 423 and predecessor forms.

Bituminous Coal and Lignite, Consumption by Other Industrial Users. • 1949-1973: Calculated annually by EIA through regression analysis measuring the difference between the average Btu value of coal consumed by other industrial users and that of coal consumed at electric utilities in the 1974-1983 period. • 1974 forward: Calculated annually by EIA by assuming that the bituminous coal and lignite delivered to other industrial users from each coal-producing district (reported on EIA Form 6 and predecessor Bureau of Mines Form 6-1419-Q) contained a heat value equal to bituminous coal and lignite received at electric utilities from each of the same coal-producing districts (reported on FERC Form 423). The average Btu value of coal by coal-producing district was applied to the volume of deliveries to other industrial users from each coal-producing district, and the sum total of the heat content was divided by the total volume of deliveries.

Bituminous Coal and Lignite, Consumption by Residential and Commercial Users. • 1949-1973: Calculated annually by EIA through regression analysis measuring the difference between the average Btu value of coal consumed by residential and commercial users and that of coal consumed by electric utilities in the 1974-1983 period. • 1974 forward: Calculated annually by EIA by assuming that the bituminous coal and lignite delivered to residential and commercial users from each coal-producing district (reported on EIA Form 6 and predecessor Bureau of Mines Form 6-1419-Q) contained a heat value equal to bituminous coal and lignite received at electric utilities from each of the same coal-producing districts (reported on FERC Form 423). The average Btu value of coal by coal-producing district was applied to the volume of deliveries to residential and commercial users from each coal-producing district, and the sum total of the heat value was divided by the total volume of deliveries.

Bituminous Coal and Lignite, Consumption by Transportation Users: • 1949 forward: Assumed by EIA to be equal to the Btu conversion factor for "Bituminous Coal and Lignite, Consumption by Other Industrial Users."

Bituminous Coal and Lignite, Exports. • 1949-1972: Assumed by EIA to be all metallurgical coal and to have an average thermal content of 27.000 million Btu per short ton. • 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of exported metallurgical coal (estimated to average 27.000 million Btu per short ton) and the heat content of exported steam coal (estimated to have an average thermal content of 25.000 million Btu per short ton) by the total quantity of bituminous coal and lignite exported.

Bituminous Coal and Lignite, Imports. • 1949 forward: EIA estimated the average thermal conversion factor to be 25.000 million Btu per short ton.

Bituminous Coal and Lignite, Production. • 1949 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite consumption, net exports, stock changes, and unaccoun-

ted for by the sum of their respective tonnages. Consumers' stock changes by sectors were assumed to have the same conversion factor as the consumption sector. Producers' stock changes and unaccounted for were assumed to have the same conversion factor as consumption by all users.

Coal Coke, Imports and Exports. • 1949 forward: EIA adopted the Bureau of Mines estimate of 24.800 million Btu per short ton.

ELECTRICITY

Fossil Fuel Steam-Electric Power Plant Generation. There is no generally accepted practice for measuring the thermal conversion rates for power plants that generate electricity from hydroelectric, wood and waste, wind, photovoltaic, or solar thermal sources. EIA has selected a rate that is equal to the prevailing average annual heat rate factor for fossil fueled steam-electric power plants in the United States. By using this factor it is possible to evaluate fossil fuel requirements for replacing these sources during periods of interruption such as a drought. The heat content of a kilowatthour of electricity produced, regardless of the generation process, is 3,412 Btu per kilowatthour. • 1949–1955: This is the weighted average annual heat rate for fossil fueled steam-electric plants in the United States as published by EIA in "Thermal-Electric Plant Construction Cost and Annual Production Expenses–1981" and "Steam-Electric Plant Construction Cost and Annual Production Expenses–1978." • 1956 through 1984: This is the weighted average annual heat rate for fossil-fueled steam-electric plants in the United States as published by EIA in "Historical Plant Cost and Annual Production Expenses for Selected Electric Plants." • 1985: Estimated to be the same as 1984.

Geothermal Energy Power Plant Generation. • 1960–1981: Calculated annually by EIA by weighting the average annual heat rates of operating geothermal units by the installed nameplate capacities as reported on FPC Form-12. • 1982 forward: Estimated annually by EIA based on an informal survey of relevant plants.

Nuclear Power Plant Generation. • 1957-1984: Calculated annually by EIA by dividing the total heat content consumed in reactors at nuclear plants by the total (net) electricity generated by nuclear plants as reported on FERC Form-1, EIA-412 and predecessor forms. • 1985: Estimated to be the same as 1984.

Glossary

Additions to Property. The current year's expenditures on property, plant, and equipment. The amount is predicated upon each reporting company's accounting practices. That is, accounting practices with regard to capitalization of certain items may differ across companies, and therefore this figure is a function of each reporting company's policy.

Alcohol. The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The molecules in the series vary in chain length and are composed of a hydrocarbon plus a hydroxyl group (CH–(CH)n–OH). Alcohol includes methanol and ethanol.

Anthracite. A hard, black, lustrous coal containing a high percentage of fixed carbon and a low percentage of volatile matter. It is often referred to as hard coal. It includes meta-anthracite and semianthracite and conforms to ASTM Specification D388 for anthracite.

API. The trade association American Petroleum Institute.

API Gravity. An arbitrary scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API. A low API gravity means a heavy, more dense product.

Apparent Consumption, Natural Gas (International). The total of an individual nation's marketed natural gas production plus imports less exports.

Asphalt. A dark-brown-to-black cement-like material containing bitumens as the predominant constituents, obtained by petroleum processing. The definition includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts.

ASTM. The acronym for the American Society for Testing and Materials.

Aviation Gasoline Blending Components. Finished components in the gasoline range that will be used for blending or compounding into finished aviation gasoline.

Aviation Gasoline, Finished. All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D910. Excludes blending components that will be used in blending or compounding into finished aviation gasoline.

Base Gas. The total volume of natural gas in underground storage reservoirs that will maintain the required rate of delivery during an output cycle.

Bituminous Coal. A coal that is high in carbonaceous matter having a volatility greater than anthracite and a calorific value greater than lignite. In the United States, it is often referred to as soft coal. It conforms to ASTM Specification D388 for bituminous coal and is used primarily for electricity generation, coke production, and space heating.

British Thermal Unit (Btu). The amount of energy required to raise the temperature of 1 pound of water 1 °F at or near 39.2 °F. One Btu is equivalent to about 252 International Steam Table calories. An average Btu content of fuel is a heat value per unit quantity of fuel as determined from tests of fuel samples.

Butane. A normally gaseous, paraffinic hydrocarbon (C_4H_{10}) extracted from natural gas or refinery gas streams. It includes isobutane (branch-chain) and normal butane (straight-chain) and is covered by ASTM Specification 1835 and Natural Gas Processors Specifications for Commercial butane. It is used primarily for blending into motor gasoline, for residential and commercial heating, and for industrial purposes, especially the manufacture of chemicals and synthetic rubber.

Butylene. A normally gaseous, olefinic hydrocarbon (C_4H_8) recovered from refinery processes. Quantities are included with "normal butane" data.

Capacity Factors at Electric Utilities. Annual capacity factors are averages of the monthly values for that year. The monthly capacity factors are computed as the actual monthly generation divided by the maximum possible generation for that month. The maximum possible generation is the number of hours in the month multiplied by the net monthly

maximum dependable capacity. This fraction is then multiplied by 100 to obtain a percentage.

Class A Electric Utility. A utility having annual electric operating revenues of $2.5 million or more.

Class B Electric Utility. A utility having annual electric operating revenues of $1.0 million or more but less than $2.5 million.

Coal. Includes all ranks of coal—anthracite, bituminous coal, subbituminous coal, and lignite—conforming to ASTM Specification D388.

Coal Coke. The strong, porous residue consisting of carbon and mineral ash that is formed when the volatile constituents of bituminous coal are driven off by heat in the absence of or in a limited supply of air. It is used primarily in blast furnaces for smelting ores, especially iron ore.

Commercial Building. A structure that is totally enclosed by walls that extend from the foundation to the roof and that is used solely or, if residential, used partially for commercial purposes. Also included are buildings used for both commercial and industrial purposes or both commercial and agricultural purposes if the major activity is commercial. Excluded are buildings used solely for residential purposes, buildings used primarily for industrial or agricultural activity, and U.S. government buildings on military bases or reservations. In addition to retail stores and office buildings, commercial buildings include, but are not limited to, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses, restaurants, lodgings, and jails.

Commercial Sector. See **Residential and Commercial Sector**.

Cost, Insurance, and Freight (CIF). A term used in sales price contracts for both domestic and export sales. In general, the sales price includes the cost of the goods, the freight charges to a named destination, and the insurance charges on the goods shipped. The seller may waive insurance and choose to assume responsibility for any loss or damage. Regarding domestic coal sales, the sales price includes all charges for delivering the coal to the electric power utility excluding demurrage at the plant and unloading charges. Federal Power Commission Form 423, on which these data are collected, refers to this price as "FOB plant" price.

Crude Oil (Including Lease Condensate). A mixture of hydrocarbons that existed in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil (residual oil) and other unfinished oils are excluded. Liquids produced at natural gas processing plants and mixed with crude oil are excluded where identifiable.

Crude Oil Refinery Input. Total crude oil (including lease condensate) input to crude oil distillation units and other processing units.

Crude Oil Stocks. Stocks of crude oil and lease condensate held at refineries, in pipelines, at pipeline terminals, and on leases.

Crude Oil Wellhead Price. The average price at which all domestic crude oil is purchased. Prior to February 1976, the domestic crude oil wellhead price represented an estimate of the average of posted prices; after February 1976, the wellhead price represents an average of first sale prices.

Demonstrated Reserve Base of Coal. Known in-place coals of all rank that are technically and economically minable at the time of evaluation. It includes measured and indicated coal resources. It is estimated that at least one-half of the in-place coals can be recovered. (See "Indicated Resources, Coal" and "Measured Resources, Coal.")

Development Well. A well drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

Distillate Fuel Oil. Light fuel oils distilled during the refining process. Included are products known as No. 1, No. 2, and No. 4 fuel oils; and No. 1, No. 2, and No. 4 diesel fuels that conform to either ASTM Specification D396 or D975. These products are used primarily for space heating, on- and off-highway diesel engine fuel (including railroad engine fuel and fuel for agricultural machinery), and electric power generation.

Dry Hole. An exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

Electric Utility. A corporation, person, agency, authority, or other entity that owns or operates facilities for the generation, transmission, distribution, or sale of electricity, primarily for use by the public.

Electric Utility Sector. Privately and publicly owned establishments that generate electricity primarily for use by the public.

Eliminations. Revenues and expenses resulting from transactions between segments. Consolidated company accounts do not include intersegment revenues and expenses. Therefore, such intersegment transactions must be eliminated.

End-Use Energy Consumption. Total energy consumption less losses incurred in the generation, transmission, and distribution of electricity, less power plant electricity use and unaccounted for electrical system energy losses. It is also the sum of fossil fuel consumption in the residential, commercial, industrial, and transportation end-use sectors plus electric utility sales to these sectors and generation of hydroelectric power by non-electric utilities.

Energy-Weighted Industrial Output. The weighted sum of real output for all two-digit Standard Industrial Classification (S.I.C.) manufacturing industries plus agriculture, construction, and mining. The weight for each industry is the ratio between the quantity of end-use energy consumption and the value of real output. The base year for these weights is either 1981 or 1982, depending on data availability.

Ethane. A normally gaseous, paraffinic hydrocarbon (C_2H_6) extracted from natural gas or refinery gas streams. It is used primarily as petrochemical feedstock for eventual production of chemicals and plastic materials.

Ethylene. A normally gaseous, olefinic hydrocarbon (C_2H_4) recovered from refinery processes. Quantities are included with "ethane" data.

Exploratory Well. A well drilled to find and produce oil or gas in an unproved area; to find a new reservoir in a field previously found to be productive of oil or gas in another reservoir; or to extend the limit of a known oil or gas reservoir.

Exports. Shipments of goods from the 50 States and the District of Columbia to foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Extraction Loss. The reduction in volume of natural gas due to the removal of natural gas constituents, such as ethane, propane, and butane, at natural gas processing plants.

Federally Administered Lands. Includes all public lands (Federal), Indian lands, Naval Petroleum Reserve, National Petroleum Reserve (Alaska), Outer Continental Shelf, and acquired lands (lands formerly held by the Department of Agriculture and now under the jurisdiction of the Department of the Interior). Beginning on October 1, 1984, the National Petroleum Reserve was transferred to Alaskan Natives.

Forward Costs. All operating and capital costs (in current dollars) still to be incurred in the production of uranium from estimated resources. Excluded are previous expenditures (such as property and mill acquisition), taxes, profit, and the cost of money. Experience has shown that forward costs are generally lower than market prices.

Fossil Fuel Steam-Electric Power Plant. An electricity generation plant in which the prime mover is a turbine rotated by high-pressure steam produced in a boiler by heat from burning fossil fuels.

Free Alongside Ship (F.A.S.). This represents the transaction value of imports at the foreign port of exportation. It is based on the purchase price, i.e., the actual transaction value, and generally includes all charges incurred in placing the merchandise alongside the carrier at the foreign port of exportation.

Free on Board (F.O.B.). A term used in sales price quotations meaning, in general, that the seller assumes all responsibility and costs up to the specific point of delivery and that the buyer takes over responsibility and costs at that same point.

Gasohol. A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol) in which 10 percent or more of the product is alcohol.

Gas Well. A well completed for the production of natural gas from one or more gas zones or reservoirs. Such wells have no completions for the production of crude oil.

Geothermal Energy (As Used at Electric Utilities). Hot water or steam, extracted from geothermal reservoirs in the earth's crust, which is supplied to steam turbines at electric utilities that drive generators to produce electricity.

Gross Input to Distillation Units. The volume of crude oil, lease condensate, natural gas plant liquids, unfinished oils, liquefied refinery gases,

slop oils, and other liquid hydrocarbons that are processed through crude oil distillation units.

Gross National Product (GNP). The total value of goods and services produced by the Nation's economy, before deduction of depreciation charges and other allowances for capital consumption. It includes the total purchases of goods and services by private consumers and government, gross private domestic capital investment, and net foreign trade.

Gross National Product (GNP) Implicit Price Deflator. The implicit price deflator is the price index for GNP. The index is the ratio of GNP in current prices to GNP in constant prices. It is a weighted average of the price indexes used to deflate the components of GNP, the implicit weights used being expenditures in the current period. All expenditures are valued in prices of the base year to obtain the constant-dollar GNP.

Household. A group of 12 persons or less that occupy the same housing unit (see "Housing Unit") as their usual or permanent place of residence. Persons include babies, lodgers, boarders, and persons who live in the housing unit but are traveling or in a hospital. Excluded are persons who are away from home as college students or members of the Armed Services.

Housing Unit. A structure or part of a structure in which a household (see "Household") lives or could live, with access to the outside of the building either directly or through a common hall. Housing units do not include group quarters, such as prisons, hospitals, dormitories, nursing homes, fraternity/sorority houses, or convents, in which 10 or more unrelated persons live. Hotel and motel rooms, mobile homes, and trailers are considered housing units if permanently occupied by a household.

Hydroelectric Power. Electricity generated by an electric power plant whose turbines are driven by falling water.

Imports. Receipts of goods into the 50 States and the District of Columbia from foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories (see "Petroleum Imports").

Indicated Resources, Coal. Coal resources for which estimates for the rank, quality, and quantity have been computed partly from sample analyses and measurements and partly from reasonable geologic projections (see "Demonstrated Reserve Base of Coal").

Industrial Sector. Manufacturing, construction, mining, agriculture, fishing, and forestry establishments. (For allocation of individual fuels to end-use sectors, see the Explanatory Notes.)

International Bunkers. Fuel loaded on vessels and aircraft engaged in international commerce for use as fuel by the vessel or aircraft.

Isobutane. See "Butane."

Jet Fuel. Includes both naphtha-type and kerosene-type jet fuel meeting standards for use in aircraft turbine engines or meeting ASTM Specification D1655. Although most jet fuel is used in aircraft, some is used for other purposes, such as fuel for turbines to produce electricity.

Kerosene. A petroleum middle distillate having burning properties suitable for use as an illuminant when burned in wick lamps. Included are No. 1-K and No. 2-K recognized in ASTM Specification D3699 and grades of kerosene called range oil having properties similar to No. 1 fuel oil. Kerosene is used primarily in space heaters, cooking stoves, and water heaters.

Landed Cost of Crude Oil Imports. The price of imported crude oil at the port of discharge. It includes the purchase price at the foreign port plus charges for transporting and insuring the crude oil from the purchase point to the port of discharge. It does not include import tariffs or fees, wharfage charges, or demurrage costs. Coverage includes the United States and its territories.

Lease and Plant Fuel. Natural gas used in lease operations, as gas processing plant fuel, and as net used for gas lift.

Lease Condensate. A natural gas liquid recovered from gas-well gas (associated and nonassociated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons. Generally, it is blended with crude oil for refining.

Lignite. A brownish-black coal of low rank with high inherent moisture and volatile matter. It is also referred to as brown coal. It conforms to ASTM Specification D388 for lignite and is used almost exclusively for electric power generation.

Line-Miles of Seismic Exploration. The distance along the earth's surface that is covered by seismic surveying.

Liquefied Petroleum Gases. Ethane, ethylene, propane, propylene, normal butane, butylene, ethane-propane mixtures, propane-butane mixtures, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids.

Low-Temperature Solar Collector. A collector that generally operates in the temperature range below 110 °F. Typically, it has no glazing or insulation and is made of plastic or rubber, although some are made of metal (see "Solar Thermal Collector").

Lubricants. Substances used to reduce friction between bearing surfaces. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Lubricants include all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. The three categories include bright stock lubricants, neutral lubricants, and other lubricants (lubricating oil base stock used in finished lubricating oils and greases, including black, coastal, and red oils).

Maximum Dependable Capacity, Net. Represents the dependable main-unit net capacity of domestic nuclear power plant reactors and generally varies throughout the year because the unit efficiency varies with seasonal cooling water temperature variations. Usually maximum dependable capacity is the highest net dependable output of the turbine generator during the most restrictive seasonal conditions (usually summer).

Measured Resources, Coal. Coal resources for which estimates of the quality and quantity have been computed within a margin of error of less than 20 percent, by analyzing measurements taken from closely spaced, geologically well-known sample sites (see "Demonstrated Reserve Base of Coal").

Medium-Temperature Solar Collector. A collector that generally operates in the temperature range of 140 °F to 180 °F but may operate at temperatures as low as 110 °F. Typically, it has one or two glazings, a metal frame, a metal absorption panel with integral flow channels or attached tubing (liquid collector) or with integral ducting (air collector), and insulation on the sides and back of the panel (see "Solar Thermal Collector").

Metallurgical Coal. A high-quality bituminous coal suitable for making coal coke.

Metropolitan Area. A group of households located within a Metropolitan Statistical Area (MSA) as defined in the 1980 Census. Except in New England, an MSA is a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. The contiguous counties are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, MSA's consist of towns and cities, rather than counties.

Miscellaneous Petroleum Products. Includes all finished products not classified elsewhere, e.g., petrolatum, absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, specialty oils, and medicinal oils.

Motor Gasoline Blending Components. Finished components in the gasoline range that will be used for blending or compounding into finished motor gasoline. Pool gasoline (gasoline needing no processing other than blending) is included in this category.

Motor Gasoline, Finished. A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark-ignition engines and conforming to ASTM Specification D439. Included are the following:

Leaded Regular. A gasoline having an antiknock index of 89 with the use of lead additives or which contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon.

Unleaded Regular. A gasoline having an antiknock index of 87 containing not more than 0.05 grams of lead per gallon and not more than 0.005 grams of phosphorus per gallon.

Leaded Premium. A gasoline having an antiknock index of 93 with the use of lead additives or which contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. Includes gasohol.

Unleaded Premium. A gasoline having an antiknock index of 90 containing not more than 0.05 grams of lead per gallon and not more than 0.005 grams of phosphorus per gallon. Includes gasohol.

Finished motor gasoline excludes blend stock that has not been blended into finished motor gasoline and alcohol that has not been blended into gasohol.

Native Gas. The total volume of natural gas indigenous to the storage reservoir at the time the gas storage started.

Natural Gas. A mixture of hydrocarbons and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in underground reservoirs.

Natural Gas, Dry Production. Derived by subtracting extraction loss from "marketed production." It represents the amount of domestic gas production that is available to be marketed and consumed as a gas.

Natural Gas, End-Use Average Price. Average price per specified unit, including all taxes, at the point of consumption.

Natural Gas Gross Withdrawals. Full well stream volume of produced natural gas excluding condensate separated at the lease.

Natural Gas Liquids. Those hydrocarbons in natural gas that are separated as a liquid from the gas at lease separators, field facilities, and natural gas processing plants. Natural gas liquids include natural gas plant liquids and lease condensate.

Natural Gas, Marketed Production. This quantity is derived. It is gross withdrawals of natural gas from production reservoirs, less gas used for reservoir repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating and processing operations.

Natural Gas Plant Liquids. Natural gas liquids recovered from natural gas processing plants, and in some situations, from natural gas field facilities. Natural gas liquids extracted by fractionators are also included. These liquids are defined according to the published specifications of the ASTM and the Gas Processors Association and are classified as follows: ethane, propane, normal butane, isobutane, pentanes plus, and other products from natural gas processing plants (i.e., products meeting the standards for finished petroleum products produced at natural gas processing plants, such as finished motor gasoline, finished aviation gasoline, special naphthas, kerosene, distillate fuel oil, and miscellaneous products).

Natural Gas Wellhead Price. The wellhead price of natural gas is calculated by dividing the total reported value at the wellhead by the total quantity produced as reported by the appropriate agencies of individual producing States and the U.S. Geological Survey. The price includes all costs prior to shipment from the lease including gathering and compression costs in addition to State production, severance, and similar charges.

Natural Gas, Wet. Natural gas prior to the extraction of liquids and other miscellaneous products.

Net Electricity Generation. Gross generation less electricity consumed at the generating plant for station use. Electricity required for pumping at pumped-storage plants is regarded as plant use and is deducted from gross generation.

Net Income. Operating income plus earnings from unconsolidated affiliates; gains from disposition of property, plant, and equipment; minority interest income; and foreign currency translation effects less income taxes, extraordinary items, and the cumulative effect of accounting changes.

Net Ownership Interest. The sum of net working interest and royalty interest (see "Net Working Interest" and "Royalty Interest"). Net ownership interest applies to both production and reserves.

Net Property Investment. The original cost of property, plant, and equipment (PP&E), less accumulated depreciation.

Net Summer Capability. The steady hourly output that generating equipment is expected to supply to system load, exclusive of auxiliary power, as demonstrated by test at the time of summer peak demand.

Net Working Interest. A company's working interest, not including any basic royalty or overriding royalty interests (see "Working Interest").

Nonhydrocarbon Gases. Typical nonhydrocarbon gases which may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide, and nitrogen.

Nonmetropolitan Area. Households not located within Metropolitan Statistical Areas as defined in the 1980 Census.

Nontraceables. Those revenues, costs, assets, and liabilities that cannot be directly attributed to a type of business or that cannot be assigned to a type of business by use of a reasonable allocation method developed on the basis of operating-level realities.

Normal Butane. See "Butane."

Nuclear Power. Electricity generated by an electric power plant whose turbines are driven by steam generated in a reactor by heat from the fissioning of nuclear fuel.

Oil Well. A well completed for the production of crude oil from one or more oil zones or reservoirs.

Operable Refineries. Operable refineries include those that were in one of the following three categories at the beginning of the year: (1) in operation; (2) not in operation and not under active repair but capable of being placed into operation within 30 days; or (3) not in operation but under active repair that can be completed within 90 days.

Operating Income. Operating revenues less operating expenses. Excludes items of other revenue and expense such as equity in earnings of unconsolidated affiliates, dividends, interest income and expense, income taxes, extraordinary items, and cumulative effect of accounting changes.

Organization for Economic Cooperation and Development (OECD). Current membership includes: Australia, Austria, Belgium, Canada, Denmark, Finland, France, West Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States and its territories (Guam, Puerto Rico, and the Virgin Islands).

Organization of the Petroleum Exporting Countries (OPEC). Current membership includes: Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela. Data for Saudi Arabia and Kuwait include their share from the Partitioned Zone (formerly Neutral Zone).

Other Hydrocarbons (Petroleum Data). Other materials processed at refineries. Includes coal tar derivatives, hydrogen, gilsonite, and natural gas received by the refinery for reforming into hydrogen.

Pentanes Plus. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. This product includes isopentane, natural gasoline, and plant condensate.

Petrochemical Feedstocks. Chemical feedstocks derived from petroleum, principally for the manufacture of chemicals, synthetic rubber, and a variety of plastics. The categories reported are "naphtha—less than 400 °F end-point" and "other oils over 400 °F end-point."

Petroleum. A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oils, petroleum products, natural gas plant liquids, and nonhydrocarbon compounds blended into finished petroleum products.

Petroleum Coke. A solid residue that is the final product of the condensation process in cracking. It consists of aromatic hydrocarbons very poor in hydrogen. Calcination of petroleum coke can yield almost pure carbon or artificial graphite suitable for production of carbon or graphite electrodes, structural graphite, motor brushes, dry cells, and similar products. This product is reported as marketable or catalyst coke.

Petroleum Imports. Imports of petroleum into the 50 States and the District of Columbia from foreign countries, Puerto Rico, the Virgin Islands, other U.S. territories and possessions, and the U.S. Foreign Trade Zones. Included are imports for the Strategic Petroleum Reserve and withdrawals from bonded warehouses for onshore consumption, offshore bunker use, and military use. Excluded are receipts of foreign petroleum into bonded warehouses and into U.S. territories and U.S. Foreign Trade Zones.

Petroleum Products. Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, naphtha less than 400 °F end-point, other oils over 400 °F end-point, special naphthas, lubricants, wax, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Petroleum Products Supplied. See Explanatory Note 5.

Petroleum Stocks, Primary. Stocks of crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tankfarms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in transit from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve, is included. Excluded are stocks of foreign origin that are held in bonded warehouse storage.

Photovoltaic and Solar Thermal Energy (As Used at Electric Utilities). Energy radiated by the sun as electromagnetic waves (electromagnetic radiation) that is converted at electric utilities into electricity by means of solar (photovoltaic) cells or concentrating (focusing) collectors.

Photovoltaic Module. A group of photovoltaic cells. (Cells are solid-state devices that produce electricity when exposed to sunlight.) The electricity is used primarily in applications requiring remote power, such as radio communication, cathodic protection, and navigational aids.

Plant Condensate. One of the natural gas plant liquids, mostly pentanes and heavier hydrocarbons, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants. Plant condensate is not suitable for blending into finished motor gasoline. It is usually blended with crude oil for distilling or processed at other refinery units.

Primary Consumption Expenditures. Expenditures for energy consumed in each of the four major end-use sectors, excluding energy in the form of electricity, plus expenditures by the electric utilities sector for energy used to generate electricity. There are no fuel-associated expenditures for hydroelectric power, geothermal energy, photovoltaic and solar energy, or wind energy. Also excluded are the quantifiable consumption expenditures that are an integral part of process fuel consumption (see "Process Fuel").

Process Fuel. All energy consumed in the acquisition, processing, and transportation of energy. Quantifiable process fuel includes only four categories: natural gas lease and plant operations (acquisition and processing), natural gas pipeline operations (transportation), oil refinery operations (processing), and uranium enrichment operations (processing).

Processing Gain. Represents the amount by which the total volume of refinery output is greater than the volume of input for a given period of time. This difference is due to the processing of crude oil and other hydrocarbons into products the majority of which are less dense than the crude oil processed. Therefore, in terms of volume (barrels), the total output of products is greater than the input.

Propane. A normally gaseous, paraffinic hydrocarbon (C_3H_8). It is extracted from natural gas or refinery gas streams, and includes all products covered by Gas Processors Association Specifications for commercial propane and HD-5 propane and ASTM Specification D1835. Propane is used primarily for residential and commercial heating and cooling, and also as a fuel for transportation. Industrial uses of propane include use as a petrochemical feedstock.

Propylene. A normally gaseous, olefinic hydrocarbon (C_3H_6) recovered from refinery processes. Quantities are included with "propane" data.

Proved Reserves, Crude Oil. The estimated quantities of all liquids statistically defined as crude oil that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

Proved Reserves, Natural Gas. The estimated quantities of natural gas that analysis of geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known crude oil and natural gas reservoirs under existing economic and operating conditions.

Proved Reserves, Natural Gas Liquids. Estimates include: (1) reserves of liquids that are expected to be recovered from associated and nonassociated gas produced from gas wells and processed through lease separators, and (2) reserves of liquids expected to be recovered from associated-dissolved and nonassociated gas when processed in field facilities or gas processing plants. Estimates of proved reserves of natural gas liquids are based on (1) proved reserves of natural gas at the time of estimation, and (2) rates at which liquids can be recovered from natural gas by using processing equipment of the type currently installed or planned at the time of estimation.

Refiner Acquisition Cost of Crude Oil. The average price paid by refiners for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners concerned. Also see Explanatory Note 8.

Reservoir Repressuring. The injection of natural gas into oil and gas reservoir formations for pressure maintenance and cycling.

Residential and Commercial Sector. Private household establishments (which consume energy primarily for space heating, water heating, air conditioning, lighting, refrigeration, cooking, and clothes drying); nonmanufacturing business establishments, including hotels, motels, restau-

rants, wholesale businesses, retail stores, laundries, and other service enterprises; health, social, and educational institutions; and Federal, State, and local governments. Street lights, pumps, bridges, and public swimming pools are also included. (For allocation of individual fuels to end-use sectors, see the Explanatory Notes.)

Residual Fuel Oil. The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations. Included are No. 5 and No. 6 fuel oils that conform to ASTM Specification D396, Navy Special fuel oil, and Bunker C fuel oil. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes. Imports of residual fuel oil include imported crude oil burned as fuel.

Residue Gas. Natural gas from which natural gas processing plant liquid products and, in some cases, nonhydrocarbon components have been extracted.

Road Oil. Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades from O, the most liquid, to 5, the most viscous.

Rotary Rig. A machine, used for drilling wells, that employs a rotating tube attached to a bit for boring holes through rock.

Royalty Interest. An interest in a mineral property provided through a contractual arrangement that gives the owner of the interest the right to a fractional share of production, or proceeds therefrom, that does not contain rights and obligations of operating a mineral property, and that is normally free and clear of exploration, development, and operating costs, except production taxes.

Solar Thermal Collector. A device designed to receive solar radiation and convert it into thermal energy. Normally, a solar thermal collector includes a frame, glazing, and an absorber together with apropriate insulation. The heat collected by the solar thermal collector may be used immediately or stored for later use.

Special Naphthas. All finished products within the gasoline range, specially refined to a specified flash point and boiling range, for use as paint thinners, cleaners, and solvents, including commercial hexane conforming with ASTM Specification D1836, and cleaning solvent conforming to ASTM Specification D484. Excluded are naphthas to be blended or marketed as motor gasoline or aviation gasoline, or to be used as petrochemical and synthetic natural gas (SNG) feedstock.

Special Solar Collector. An evacuated tube collector or a concentrating (focusing) collector. Special collectors operate in the temperature range from just above ambient temperature (low concentration for pool heating) to several hundred degrees Fahrenheit (high concentration for air conditioning and specialized industrial processes) (see "Solar Thermal Collector").

Spot Price. A transaction price concluded "on the spot," that is, on a one-time, prompt basis; usually the transaction involves only one specific quantity of product. This contrasts with a term contract sale price, which obligates the seller to deliver a product at an agreed frequency and price over an extended period.

Startup Test Phase of Nuclear Power Plant. A nuclear power plant that has been licensed by the Nuclear Regulatory Commission to operate, but is in the initial testing phase during which production of electricity may not be continuous. In general, when the electric utility is satisfied with the plant's performance, it formally accepts the plant from the manufacturer, and places it in "commercial operation" status. A request is then submitted to the appropriate utility rate commission to include the power plant in the rate base calculation.

Still Gas (Refinery Gas). Any form or mixture of gas produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylene, propane, and propylene. It is used primarily as refinery fuel and petrochemical feedstock.

Strategic Petroleum Reserve (SPR). Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Stripper Well Property. A property whose average daily production of crude oil per well (excluding condensate recovered in nonassociated natural gas production) did not exceed an average of 10 barrels per day during any preceding consecutive 12-month period beginning after December 31, 1972.

Subbituminous Coal. A dull, black coal of rank intermediate between lignite and bituminous coal. It conforms to ASTM Specification D388 for subbituminous coal, and is used almost exclusively for electric power generation.

Supplemental Gaseous Fuels. Consists primarily of synthetic natural gas, propane-air, and refinery (still) gas. May also include coke oven gas, biomass gas, manufactured gas, and air injected for Btu stabilization.

Synthetic Natural Gas (SNG). A product resulting from the manufacture, conversion, or reforming of hydrocarbons that may be easily substituted for, or interchanged with, pipeline-quality natural gas.

Transportation Sector. Private and public vehicles that move people and commodities. Included are automobiles, trucks, buses, motorcycles, railroads and railways (including streetcars), aircraft, ships, barges, and natural gas pipelines.

Unaccounted for Crude Oil. Represents the arithmetic difference between the indicated demand for crude oil and the total disposition of crude oil. Indicated demand is the sum of crude oil production and imports less changes in crude oil stocks. Total disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Undiscovered Recoverable Resources (Crude Oil and Natural Gas). Those economic resources of crude oil and natural gas, yet undiscovered, that are estimated to exist in favorable geologic settings.

Unfinished Oil. Includes all oils requiring further refinery processing, except those requiring only mechanical blending.

Unfractionated Streams. Mixtures of unsegregated natural gas liquid components, excluding those in plant condensate. This product is extracted from natural gas.

United States. Unless otherwise noted, "United States" in this publication means the 50 States and the District of Columbia. U.S. exports include shipments to U.S. Territories, and imports include receipts from U.S. Territories.

Uranium Resources. Uranium resource estimates are divided into three separate categories reflecting different levels of confidence in the quantities estimated. They are reasonably assured resources, estimated additional resources, and speculative resources. Reasonably assured resources refers to uranium in known mineral deposits of such size, grade, and configuration that it could be recovered within the given cost ranges, with currently proven mining and processing technology. Estimated additional resources refers to uranium in addition to reasonably assured resources that is expected to occur, mostly on the basis of direct geological evidence, in extensions of well-explored deposits, in deposits in which geological continuity has been well established, as well as deposits believed to exist in well-defined geological trends or areas of mineralization with known deposits. Such deposits in this category can be discovered and delineated and the uranium subsequently recovered, all within a given cost range. Speculative resources refers to uranium in addition to estimated additional resources that is thought to exist, mostly on the basis of indirect evidence and geological extrapolations.

Wax. A solid or semi-solid material derived from petroleum distillates or residues. It is a light-colored, more or less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax whether crude scale or fully refined. Used primarily as industrial coatings for surface protection.

Well. A hole drilled for the purpose of finding or producing crude oil or natural gas or providing services related to the production of crude oil or natural gas. Wells are classified as oil wells, gas wells, dry holes, stratigraphic or core tests, or service wells.

Wind Energy (As Used at Electric Utilities). The kinetic energy of wind converted at electric utilities into mechanical energy by wind turbines (i.e., blade rotating from a hub) that drive generators to produce electricity.

Wood and Waste (As Used at Electric Utilities). Wood energy (see "Wood Energy"), garbage, bagasse, sewerage gas and other industrial, agricultural, and urban refuse used to generate electricity.

Wood Energy. Wood and wood products used as fuel. Included are round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal, pulp waste, and spent pulping liquor.

Working Gas. The total volume of gas in a storage reservoir that is in excess of the base gas.

Explanatory Notes

1. Electricity Generation. Data on the generation of electricity in the United States represents gross electricity output measured at the generator terminals, minus power plant use (net electricity generated). Nuclear electricity generation data identified by individual countries in this report are gross electricity output.

2. Consumption of Primary Energy by End-Use Sector. Sector data are derived from the end-use sector table of each energy commodity. The "Other" sector in the Electric Utility Sales table is allocated to the Residential and Commercial Sector, except for the railways' portion of "Other," which is allocated to the Transportation Sector.

3. Primary Energy Production—International. Includes only crude oil and lease condensate, natural gas plant liquids, dry natural gas, coal, and electricity from hydroelectric power and nuclear power. Crude oil production is measured at the wellhead and includes lease condensate. Natural gas plant liquids are products obtained from processing natural gas at natural gas processing plants, including natural gas plants, cycling plants, and fractionators. Dry natural gas production is that amount of natural gas production that is available to be marketed and consumed as a gas. Coal (anthracite, subanthracite, bituminous, subbituminous, lignite, and brown coal) production is the sum of sales, mine consumption, issues to miners, and issues to coking, briquetting, and other ancillary plants at mines. Coal production data include quantities extracted from surface and underground workings and normally exclude wastes removed at mines or associated preparation plants. The production of electricity from hydroelectric power and nuclear power includes both electric utility and industrial production reported on a net basis, thus excluding electricity that is generally used by the electric power plant for its own operating purposes or electricity losses in the transformers that are considered integral parts of the station.

4. Reclassified. Accurate calculation of the quantity of petroleum products supplied to the domestic market is complicated by the recycling of products at the refinery, the renaming of products involved in a transfer, and the receipt of products from outside of the primary supply system. Beginning in 1981, a single adjustment (always a negative quantity) is made to total product supplied to correct this accounting problem. The calculation of this adjustment, called "reclassified," involves only unfinished oils and gasoline blending components. It is the sum of their net changes in primary stocks (net withdrawals is a plus quantity, net additions is a minus quantity) plus imports minus net input to refineries.

5. Petroleum Products Supplied. Total petroleum products supplied is the sum of the product supplied for each petroleum product, crude oil, unfinished oils, and gasoline blending components. For each of these, except crude oil, product supplied is calculated by adding refinery production, natural gas plant liquids production, new supply of other liquids, imports, stock withdrawals, and subtracting stock additions, refinery inputs, and exports. Crude oil product supplied is the sum of crude oil burned on leases and at pipeline pump stations as reported on Form EIA-813. Prior to 1983, crude oil burned on leases and at pipeline pump stations was reported as either distillate or residual fuel oil and was included as product supplied for these products. Petroleum product supplied is an approximation of petroleum consumption and is synonymous with the term "Petroleum Consumption" in Section 1. End-use sector data for petroleum products used in more than one sector are derived from surveys of sales to ultimate consumers by refiners, marketers, distributors, and dealers and from receipts at electric utilities. See Explanatory Notes 4 and 6.

6. Joint Petroleum Reporting System. Beginning in January 1981, several Energy Information Administration survey forms and calculation methodologies were changed to reflect new developments in refinery and blending plant practices and to improve data integrity. These changes affect production and product supplied statistics for motor gasoline, distillate fuel oil, and residual fuel oil, and stocks of motor gasoline. On the new basis, motor gasoline production during the last half of 1980 would have averaged 289,000 barrels per day higher than that which was published on the old basis. Distillate and residual fuel oil production and product supplied for all of 1980 would have averaged, respectively, 105,000 and 54,000 barrels per day higher than the numbers that were published.

7. Primary Stocks of Petroleum—OECD. Petroleum stocks reported by the Organization for Economic Cooperation and Development (OECD) include those held at (or in) the following locations or facilities: leases, refineries, natural gas processing plants, bulk terminals, tanks associated with pipelines, barges, intercoastal tankers, ocean tankers in port, inland ship bunkers, major final consumers, and the strategic storage reserve. For an individual country, stocks include those held for the account of that country but located in another country. U.S. stocks include those held in the 50 States and the District of Columbia. "Other OECD" includes stocks held in Puerto Rico and the Virgin Islands. The OECD definition of petroleum stocks excludes petroleum in pipelines, rail tank cars, tank trucks, oceangoing ship bunkers, service stations, retail stores, and tankers at sea. An exception is U.S. stocks which include petroleum in pipelines.

8. Refiner Acquisition Cost of Crude Oil. This cost was estimated for 1968 through 1973. The cost of domestic crude oil was derived by adding estimated transportation costs to the reported average wellhead value. The cost of imported crude oils was derived by adding an estimated ocean transport cost based on the published "Average Freight Rate Assessment" to the average "Free Alongside Ship" value published by the U.S. Bureau of the Census. The composite cost was derived by weighting domestic costs and imported costs based on quantities produced and imported.

9. Natural Gas Consumption. Natural gas consumption statistics are compiled from a survey of natural gas production, transmission, and distribution companies and electric utility companies. Consumption by end-use sector from these surveys is compiled on a national and individual State basis and then balanced with national and individual State supply data. Included in end-use data are the following: Commercial Sector—consumption by nonmanufacturing establishments, by municipalities for institutional heating and lighting, and those engaged in agriculture, forestry, and fishing; Electric Utility Sector—consumption by electric utilities for the generation of electric power; Industrial Sector—consumption by establishments engaged primarily in processing unfinished materials into another form of product (includes mining, petroleum refining, manufacturing, and natural gas industry use for lease and plant fuel); Residential Sector—consumption by private households for space heating, cooking, and other household uses; Transportation Sector—natural gas transmission (pipeline) fuel.

10. Coal Consumption. Data in this report on the consumption of bituminous coal (including subbituminous coal), lignite, and anthracite are generated primarily from consumption data reported in surveys. Included are data reported by all electric utilities companies and coke plant companies. Data on coal consumption by all industrial and manufacturing establishments and by the residential and commercial sector are based on distribution data obtained quarterly from coal companies. Included in end-use sector data are the following: Electric Utility Sector—consumption by privately and publicly owned establishments engaged in the generation and/or distribution of electric power primarily for sale or resale; Industrial and Miscellaneous Sector—consumption at manufacturing plants, large commercial establishments, coking plants, and by agriculture, mining (other than coal mining) and construction industries; Transportation Sector—sales to railroads and vessel bunker fuel; Residential and Commercial Sector—retail dealer sales to households and small commercial establishments.

11. Electricity Sales. Data on the sales of electric utility electricity represent gross electricity output measured at the generator terminals, minus power plant use and transmission and distribution losses. Included in each end-use sector are the following: Commercial Sector—sales of electricity to businesses that generally require less than 1,000 kilowatts of service; Industrial Sector—sales of electricity to businesses that generally require more than 1,000 kilowatts of service; Residential Sector—sales of electricity to residences for household purposes; "Other" Sector—sales of electricity to Government, railways, street lighting authorities, and sales not elsewhere included.

12. Operable Reactors. Prior to 1973, the number of "End of Year Operable Reactors" includes reactors that were in commercial operation by December 31 of the stated year. Units decommissioned or inoperative for extended periods were generally included. Also included are two U.S. Department of Energy (DOE)-operated plants that supply electricity to the commercial grid. A third DOE plant, which does not distribute electricity to the grid, is excluded. For 1973 and forward, the number of reactors includes units issued full-power or operating licenses and generally does not include units in long-term shut-down status.

13. Financial Reporting System (FRS) Companies. The structure of the FRS data system is designed to permit review of the functional performance of energy companies in total, as well as specific functions and

geographic areas of operation. Domestic operations include Puerto Rico and the Virgin Islands. Foreign operations exclude these areas. The following are the FRS companies as of December 31, 1984:

Amerada Hess Corporation
American Petrofina, Incorporated
Ashland Oil, Incorporated
Atlantic Richfield Company
Burlington Northern, Incorporated
Chevern Corporation (formerly Standard Oil Company of California)
Cities Service Oil Company (included with Occidental Petroleum Corporation beginning in 1983)
E. I. du Pont de Nemours and Company
Exxon Corporation
Getty Oil Company
Gulf Oil Corporation
Kerr-McGee Corporation
Mobil Oil Corporation
Occidental Petroleum Corporation
Phillips Petroleum Company
Shell Oil Company
Standard Oil Company (an Indiana Corporation)
Sun Company, Incorporated
Tenneco Incorporated
Texaco, Incorporated
The Coastal Corporation
The Standard Oil Company (an Ohio Corporation)
The Superior Oil Company
Unocal Corporation (Formerly Union Oil Company of California)
Union Pacific Corporation
United States Steel Corporation

14. Natural Gas Prices by National Gas Policy Act of 1978 (NGPA) Categories. Old Gas. Includes natural gas dedicated to interstate commerce and natural gas purchased under existing interstate or rollover contracts (Section NGPA 104, 105, and 106). **New Gas.** Includes new natural gas and certain natural gas produced from the Outer Continental Shelf, stripper well gas, and other new gas categories (Section NGPA 102, 103, 108, and 109). **High-Cost Gas.** Includes natural gas from deep wells and low permeability (tight) reservoirs and unregulated gas (NGPA Section 107).

15. Gross Input to Distillation Units (GIDU). The methods for deriving GIDU in this report are as follows: 1949 through 1966 GIDU is estimated by summing annual crude oil runs to stills, net unfinished oil reruns at refineries and shipments of natural gasoline and plant condensate from natural gas processing plants to refineries. 1967 through 1973 GIDU is estimated by summing annual crude oil runs to stills, net unfinished oil reruns, and refinery input of natural gasoline and plant condensate. 1974 through 1980 GIDU is published annual data. 1981 and forward GIDU is the sum of reported monthly data.

16. Crude Oil Wellhead Prices. Derived as follows: 1949 through 1973—weighted average wellhead values as reported by State agencies and calculated by the Bureau of Mines; 1974 and 1975—weighted averages of a sample survey of major first purchasers' purchases; 1976 and forward—weighted averages of all first purchasers' purchases.

17. Electrical System Energy Losses. Electrical system energy losses are calculated as the difference between total energy input at electric utilities and the total energy content of electricity sold to end-use consumers. Most of these losses occur at steam electric power plants (conventional and nuclear) in the conversion of heat energy into mechanical energy to turn electric generators. This loss is a thermodynamically necessary feature of the steam electric cycle. Part of the energy input to output losses are a result of imputing fossil energy equivalent inputs for hydroelectric and other energy sources, since there is no generally accepted practice for measuring these thermal conversion rates. In addition to conversion losses, other losses include power plant use of electricity, transmission and distribution of electricity from power plants to end-use consumers (also called "line-losses"), and unaccounted for electricity. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity sales. Overall, approximately 67 percent of total energy input is lost in conversion; of electricity generated, approximately 5 percent is lost in plant use and 9 percent in transmission and distribution. Calculated electrical energy system losses may be less than actual losses, because primary consumption does not include the energy equivalent of utility purchases of electricity from nonutilities and from Canada and Mexico, although they are included in electricity sales.

18. Well Completions. For the years 1970 forward, annual well completions are estimated by the Energy Information Administration (EIA)

using the American Petroleum Institute's drilling data files. For more recent years, these files are not complete, due to delays in the reporting of wells drilled. Based on statistical analysis, EIA employs an adjustment process to impute missing data to show total well completions and footages for current years.

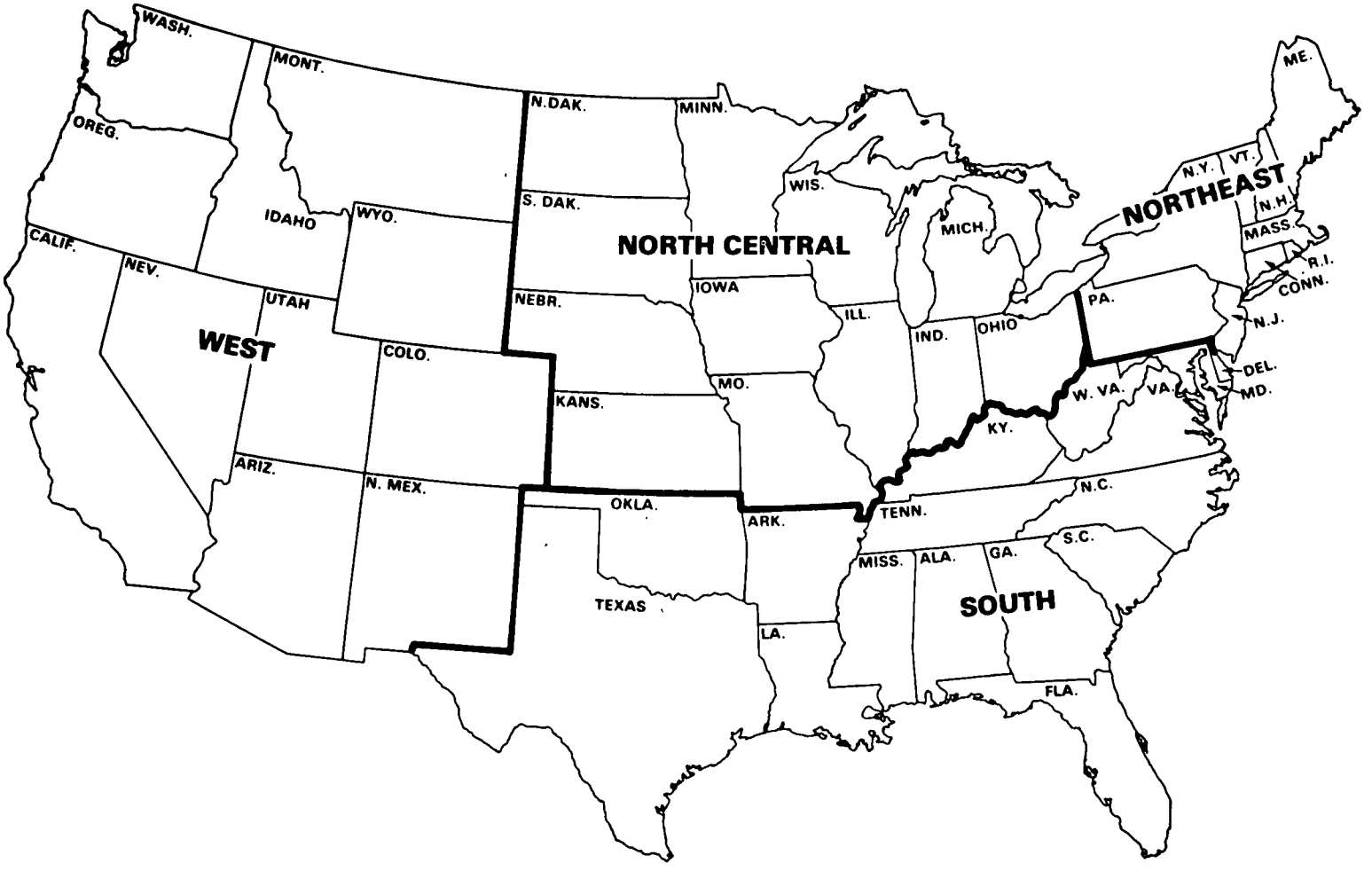
19. Electricity Statistics. Prior to 1985, electricity supply and distribution statistics included data reported by institutions (such as universities) and military facilities that generated electricity primarily for their own use. Beginning in 1985, electricity statistics exclude data for these facilities and include only data for those organizations that generate electricity primarily for public use.

20. Net Summer Capability. Net summer capabilities were first collected on Form EIA-860 for the 1984 data year. Units not assigned a net summer capability rating by the utility were given an estimated rating using a statistical relationship between installed nameplate capacity and net summer capability for each prime mover. To estimate net summer capability from 1949 through 1984, two methods were used. For each prime mover except nuclear and "other," net summer capability estimates were calculated in two steps. First, the unit capacity values reported on Form EIA-860 and the unit start dates contained in the 1984 Generating Unit Reference File (GURF) were used to compute preliminary aggregate estimates of annual net summer capability and installed nameplate capacity. These preliminary estimates were obtained by aggregating unit capacity values for all units in service during a given year. Next, the ratio of the preliminary capability to nameplate estimate was computed for each year and multiplied by the previously published installed nameplate capacity values to produce the final estimates of net summer capability.

The net summer capability data for nuclear and "other" units were used directly from the 1984 GURF for all years. Historical aggregates were then developed using the unit start dates on the GURF.

Historical capacity has also been modified to estimate capability based upon the operable definition. This was accomplished by assuming that nonnuclear generating units became operable between 1 and 4 months prior to their commercial operation dates, depending upon the prime mover and time period. The actual operable dates for nuclear units were used.

Appendix. Census Region Map



Note: West includes Alaska and Hawaii.

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