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U.S. Energy Flow—2000

Gina V. Kaiper

February 2002

U.S. Department of Energy
Lawrence
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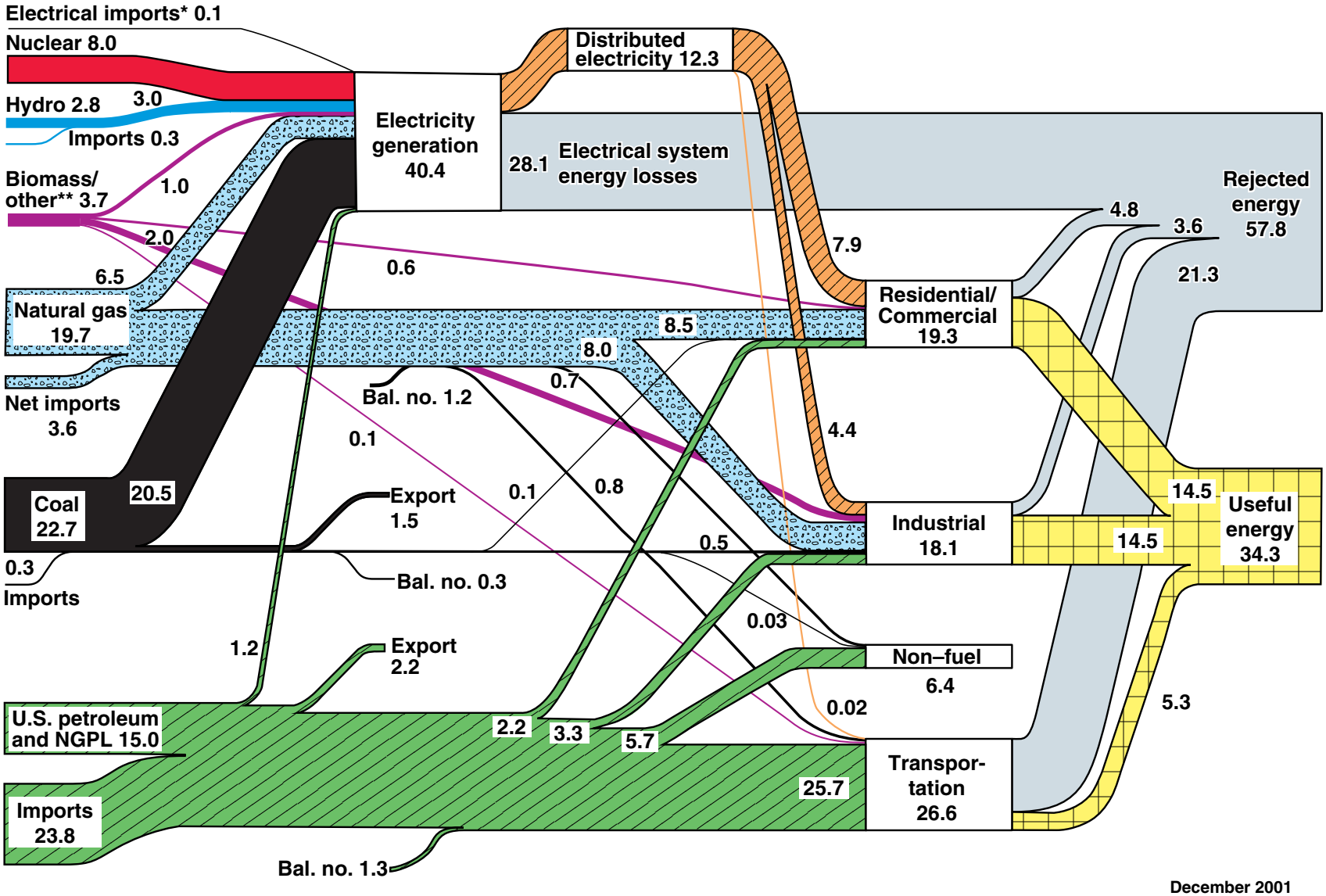
Contents

U.S. Energy Flow Trends – 2000
Net Primary Resource Consumption 98.5 Quads



Source: Production and end-use data from Energy Information Administration, *Annual Energy Review 2000*
*Net fossil-fuel electrical imports
**Biomass/other includes wood and waste, geothermal, solar, and wind.

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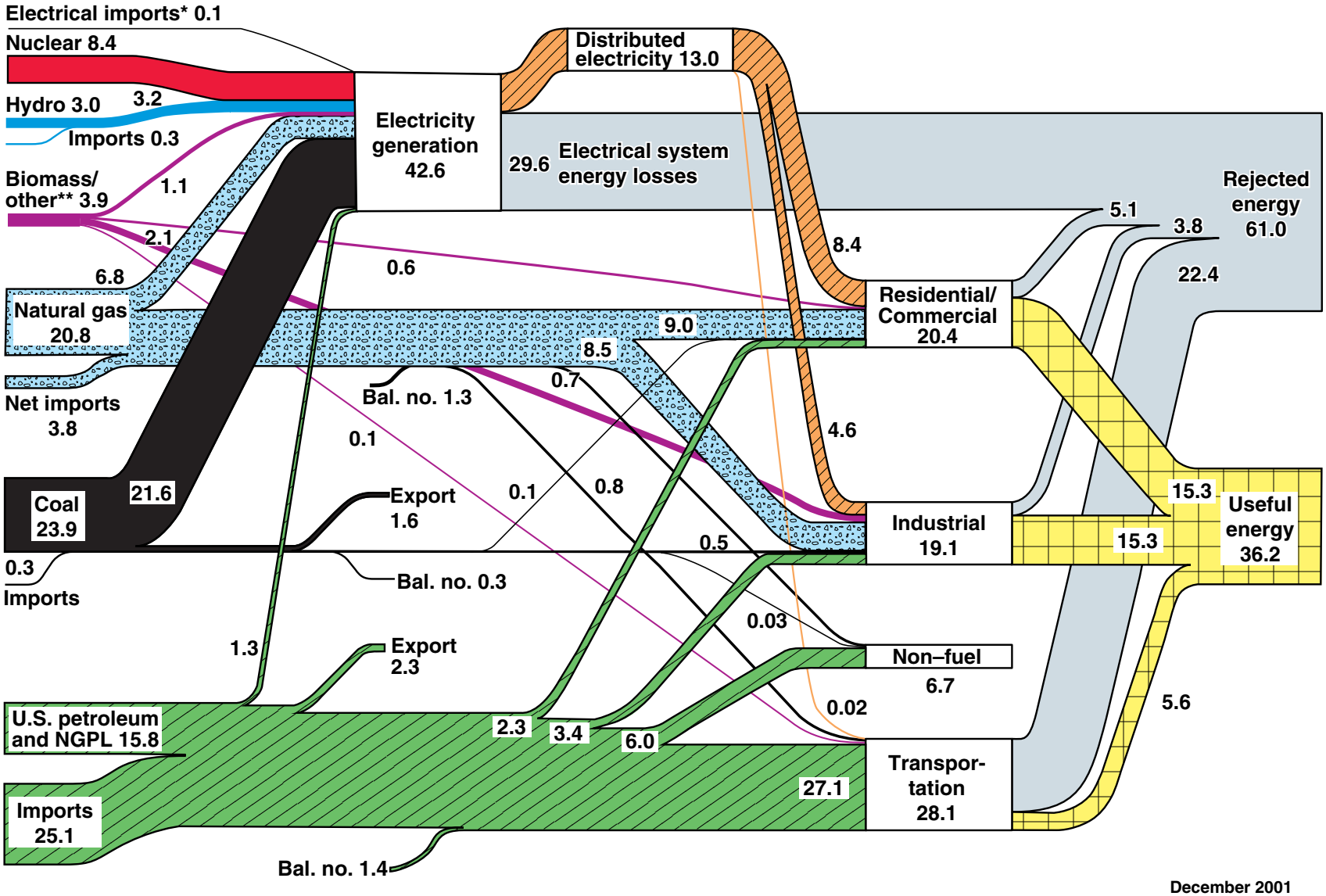
U.S. Energy Flow Trends – 2000
Net Primary Resource Consumption 104 Exajoules



Source: Production and end-use data from Energy Information Administration, *Annual Energy Review 2000*
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Notes on the U.S. Energy Flow Chart for 2000

General Notes

Background

Lawrence Livermore National Laboratory (LLNL) has prepared similar flow charts of U.S. energy consumption since 1972. The chart follows the flow of individual fuels and compares these on the basis of a common energy unit of quadrillion British thermal units (Btu). A quadrillion, or "quad," is 10^{15}. One Btu is the quantity of heat needed to raise the temperature of 1 pound of water by 1°F at or near 39.2°F.

The width of each colored line across this chart is in proportion to the number of quads conveyed. (Exception: lines showing extremely small amounts have been made wide enough to be clearly visible.)

In most cases, the numbers used in this chart have been rounded to the nearest tenth of a quad, although the original data was published in hundredths or thousandths of a quad. As a consequence of independent rounding, some of the summary numbers may not appear to be a precise total of their various components.

The first chart in this document uses quadrillion Btu's to conform with data from the U.S. Department of Energy's Energy Information Administration (EIA). However, the second chart is expressed in exajoules. A joule is the metric unit for heat. One Btu equals 1,055.06 joules; and one quadrillion Btu's equals 1.055 exajoules (an exajoule is 10^{18} joules).

Data Sources

The chart incorporates production and end-use data compiled by the Energy Information Administration, as published in the EIA's *Annual Energy Review 2000* [DOE/EIA-0384(2000), Washington, D.C., August 2001]. EIA's report is available on the Web at http://www.eia.doe.gov/aer . For ease of reference, some of the key tables and diagrams from the EIA report are included as an appendix to this document.

Most of the 2000 data in the *Annual Energy Review 2000* (AER2000) is marked as preliminary, and this is what is used in LLNL's energy flow chart for 2000. However, EIA continually revises the data and publishes updates in its *Monthly Energy Review* and in subsequent editions of the *Annual Energy Review*. Thus LLNL's U.S. Energy Flow chart for 1999 (which was prepared in March 2001 and is included at the end of this document) does not entirely correspond to the revised 1999 data given in AER2000.

In AER2000, summary data on energy production, imports, exports, and consumption is provided in Diagram 1, "Energy Flow, 2000" (p. 3) and Table 1.1., "Energy Overview, 1949–2000" (p. 5). These show that 98.50 quads of energy were consumed in the United States in 2000.

Table 1.2, "Energy Production by Source, 1949–2000" (AER2000, p. 7) gives additional details about the 71.902 quads of energy produced within the United States.

Table 1.3, "Energy Consumption by Source, 1949–2000" (AER2000, p. 9) indicates the amounts of various fossil fuels and renewable energy sources consumed, as well as nuclear energy.

Table 1.4, "Energy Imports, Exports, and Net Imports, 1949–2000" (AER2000, p. 11) shows that the United States had net energy imports of 24.42 quads in 2000. (Note that this represents almost 25% of total energy consumed and that petroleum accounts for about 89% of U.S. imported energy.)

Table 2.1.a, "Energy Consumption by Sector, 1949–2000" (AER2000, p. 38) gives the amounts and types of energy consumed by four end-use sectors—residential, commercial, industrial, and transportation—and by the electric power sector.

Tables 2.1.b–f (pp. 39–43) give the consumption of individual resources for each individual sector. LLNL's chart combines the residential and the commercial sectors into a single unit: residential/commercial.

End-Use Sectors

The ***Residential/Commercial*** sector includes private and institutional residences; business establishments not engaged in transportation or manufacturing; commercial establishments; religious and nonprofit organizations; health, social, and educational institutions; and federal, state, and local governments. Electricity used for public street and highway lighting is also included.

The ***Industrial*** sector includes manufacturing industries (the largest part of the sector), mining, construction, agriculture, fisheries, and forestry. Establishments range from large steel mills to small farms. In LLNL's energy flow chart, fossils fuels used by industry in a non-fuel capacity are treated as a separate data stream; however, most of the AER2000 tables incorporate non-fuel consumption in the data for the industrial sector.

The ***Transportation*** sector includes all types of public and private vehicles that transport people and commodities. This sector also includes the energy used to transport natural gas in pipelines.

Energy Content

The energy flow chart shows all energy streams in terms of a common energy unit: quadrillion Btu. The EIA typically uses conversion factors that represent the gross heat content of the fuel, which is the total amount of heat released when fuel is burned (i.e., the "higher heating value").

Appendix A of AER2000 (pp. 331–341) gives the thermal conversion factors used in that report. These factors are computed annually from the best available data, weighted as appropriate. The heat content depends on source, type, year of production, and use of fuel. For example, the relatively small amount of coal consumed by the residential/commercial sector has an average heat content of approximately 23.880 million Btu per short ton of coal, but the coal used to generate electricity has an average heat content of approximately 20.401 million Btu per short ton. (AER2000, Table A5, p. 335).

Some conversion factors, useful for estimation, include:

Fuel	*Energy content (Btu)*
Short ton of coal	21,400,000
Barrel (42 gallons) of crude oil	5,800,000
Cubic foot of natural gas (at standard conditions)	1,027
Kilowatt-hour of electricity	3,412

Conversion Efficiency Factors

For the sake of consistency with LLNL's previous energy flow charts, the U.S. chart for 2000 assumes the same conversion efficiencies for the residential/commercial, industrial, and transportation sectors as in previous years. The conversion efficiencies are used to determine the proportion of "useful" to "rejected" energy.

For electricity generation, the electrical system energy losses are assumed by the EIA to be about two-thirds of the energy consumed. LLNL's energy flow chart for 2000 shows electrical system energy losses of 28.1 quads, which is the sum of the amounts shown for the individual sectors in AER2000's Tables 2.1.b–e, pages 39–42 (i.e., 9.272 quads for residential, 8.818 quads for commercial, 9.931 quads for industrial, and 0.041 quads for transportation).

According to AER2000 (p. 248, Note 1), "Electrical system energy losses are estimated as the difference between total energy consumed to generate electricity and the total energy content of electricity consumed by end users. 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." Transmission and distribution losses, which are not spelled out separately on this chart, are estimated to be about 9% of the gross generation of electricity.

The conversion efficiency factors for the residential/commercial and the industrial sectors are based on engineer's estimates for the conversion efficiency of devices such as process heaters and boilers.

For the residential/commercial sector, we have again assumed an efficiency of 75%. This is a weighted average between space heating at approximately 60% efficiency and motors and other electrical uses at about 90% efficiency.

For the industrial sector, we have continued to assume a conversion efficiency of 80%.

For transportation, we continue to assume a generous 20% efficiency, which corresponds to the approximate average efficiency of internal combustion engines as measured on Federal Driving Schedules (i.e., the amount of energy that actually reaches the drive train of a vehicle, compared to the amount of energy consumed. Note that the peak efficiencies of 33–35% for spark-ignited engines and 41–45% for diesel engines are not representative of conversion efficiencies over the Federal Driving Schedules.)

Balancing Numbers

For visual clarity, the 2000 energy flow chart eliminates some of the smaller lines that appeared in the pre-1999 versions of the LLNL charts (e.g., storage, stocks, and strategic reserve amounts, as well as field use of natural gas.) Instead, three "balancing numbers" are indicated, which together add about 2.25 quads of energy between the left-hand (or "production") side of the chart and the right-hand (or "consumption") side. This corresponds approximately to the 2.18-quad "adjustments" amount given in AER2000 on Diagram 1 (p. 3) and Table 1.1 (p. 5).

Electricity Generation

LLNL's pre-1999 energy flow charts had separate lines for "utility consumption of electricity" and "cogeneration." This

2000 version does not distinguish between utility and nonutility generation.

With continuing deregulation of the electric power industry, an increasing proportion of the electricity generated in the United States is now provided by what the EIA designates as "nonutility" power producers. Because of deregulation, some utilities have sold their power plants to nonutility owners.

EIA considers the nonutility power producers to include (1) cogenerators that provide both electricity and steam or heat for industrial or other purposes; (2) small power producers that use renewables for at least 75% of their output; and (3) independent power producers that are unaffiliated with franchised utilities, do not possess transmission facilities, and do not sell power in the retail service area where they have a franchise.

Diagram 5, "Electricity Flow, 2000," in AER2000 (p. 217) shows the very complicated electricity flow for both electric utilities and nonutility power producers. This diagram shows net generation of 10.27 quads by the utilities and 2.67 quads by the nonutility power producers—thus 20.6% of the net electricity generated in the United States in 2000 came from nonutility power producers. The nonutilities made direct use or sold directly to end-users 0.71 quads of this electricity but sold 1.99 quads to the utilities, where it became part of the 11.59 quads of electricity sold by the utilities to the end-user sectors.

Nonfuel Use

The data on fossil fuel consumption for nonfuel use is from AER2000, Table 1.15 (p. 33). Petroleum products account for 5.7 quads of nonfuel use and include asphalt and road oil, liquefied petroleum gases, pentanes plus, lubricants, petrochemical feedstocks, special naphthas, and other products.

Nonfuel consumption in 2000 accounted for 6.5% of the primary energy resources consumed in the United States; however, because these resources were not used for energy purposes, LLNL's energy flow chart does not assign "rejected" and "useful" designations.

Double-counting

The EIA has different systems for tracking the resources consumed to generate electricity. For example, EIA tallies the energy resources consumed by industrial end-users, some of whom may also be power generators. In Table 2.1a, the "adjustments" column and corresponding footnote say that for 2000 there were 4.291 quads of fossil-fuel resources "double-counted" in both the electric power sector (via nonutility generators) and the industrial end-use sector.

Diagram 5 of AER2000 shows that fossil-fuel resources for nonutility generation included 2.79 quads of coal, 3.38 quads of natural gas, and 0.43 quads of petroleum, totaling 6.6 quads. Thus the 4.291 quads that were double-counted represented 65% of the total fossil-fuel resources consumed by the nonutility generators.

For the LLNL chart, we applied the same proportion (65%) to each separate resource, and this estimating method yielded 1.81 quads of coal, 2.20 quads of natural gas, and 0.28 quads of petroleum. On the chart, these amounts have been *subtracted* from the fossil-fuel resource streams going to the industrial end-use sector; they are included in the resource streams for electricity generation.

Notes on Primary Resources

Biomass/Other

By far the largest portion in this category comes from "wood and waste," which accounted for 3.275 quads of energy produced in 2000. Geothermal energy accounted for 0.319 quads; solar for 0.070 quads; and wind for 0.051 quads. (AER2000, Table 1.2, p. 7).

Coal

In 2000, coal represented 31.5% of the energy produced within the United States. About 90% of U.S. coal consumption went for the generation of electricity and fueled about 51% of the United States' generation of electricity.

More details about the production and consumption of coal are given in AER2000 in Diagram 4 (p. 197) and Table 7.1 (p. 199). The approximate heat content of coal is given in Table A5 (p. 335).

Hydroelectric Power

This involves the production of power from falling water. Almost all of this energy goes for the generation of electricity.

Natural Gas

In AER2000, details about natural gas production and consumption are included in Diagram 3 (p. 175) and Table 6.1 (p. 177). The approximate heat content of natural gas is given in Table A4 (p. 334).

Net imports of natural gas in 2000 amounted to 3.57 quads and accounted for about 15.4% of the natural gas consumed in the United States (AER2000, Table 6.3, p. 181). About 94% of the gross natural gas imports came from Canada.

Of the natural gas withdrawn from U.S. wells in 2000, about 21% came from offshore locations (AER2000, Table 6.4, p 183).

Nuclear Energy

This is generated by the 104 operable nuclear generating units in the United States. Nuclear energy accounted for 19.9% of electricity net generation in the United States in 2000 (AER2000, Table 9.2, p. 255).

Petroleum and NGPL

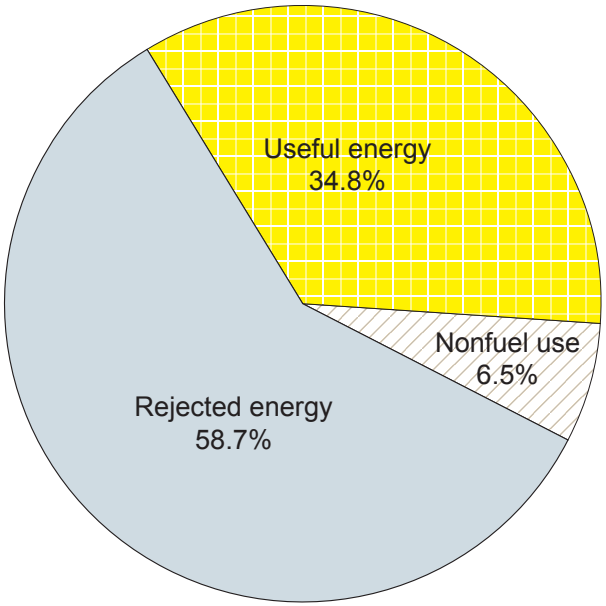
This category includes both crude oil and natural gas plant liquids (i.e., hydrocarbons in natural gas that have been separated as liquids). In AER2000, details about petroleum are found in Diagram 2 (p. 121) and Table 5.1 (p. 123). The approximate heat content of various petroleum products and of crude oil and NGPL can be found in AER2000, Tables A1, A2, and A3 (pp. 331–333).

Petroleum, at 37.964 quads, accounted for 38.5% of the United States' 2000 energy consumption. Motor gasoline was 43% of the total petroleum products supplied in 2000 (AER2000, Fig. 5.11, p. 142).

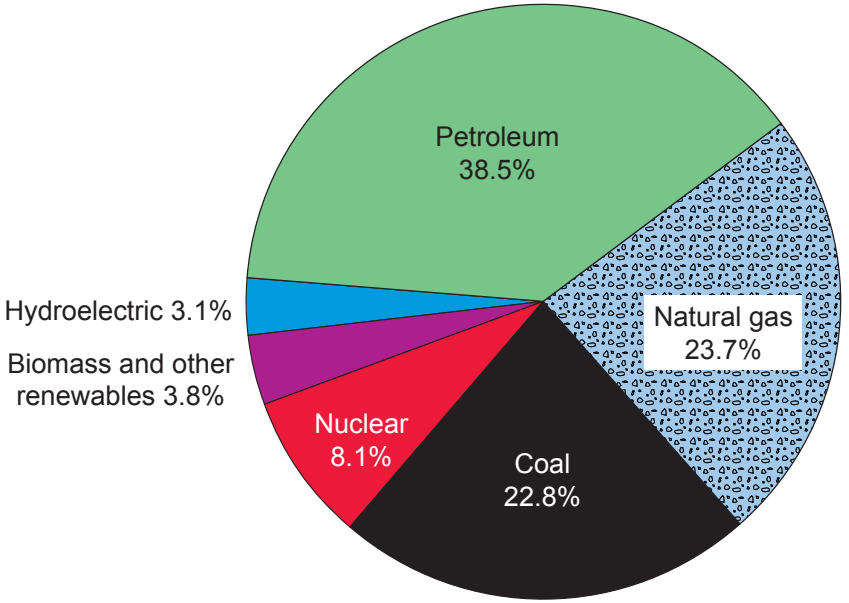
The net petroleum imports of 21.63 quads accounted for about 57% of the 37.964 quads of U.S. petroleum consumption in 2000. By comparison, in 1990 only about 46% of petroleum consumed came from imports. During that same interval (1990 to 2000), total U.S. energy consumption increased 16.8% (84.3 quads to 98.5 quads), but petroleum consumption increased only about 13.1% (33.553 quads to 37.964 quads). (AER2000, Tables 1.3 and 1.4)

Other Ways to View This Data

The U.S. Consumed 98.5 Quads of Energy in 2000

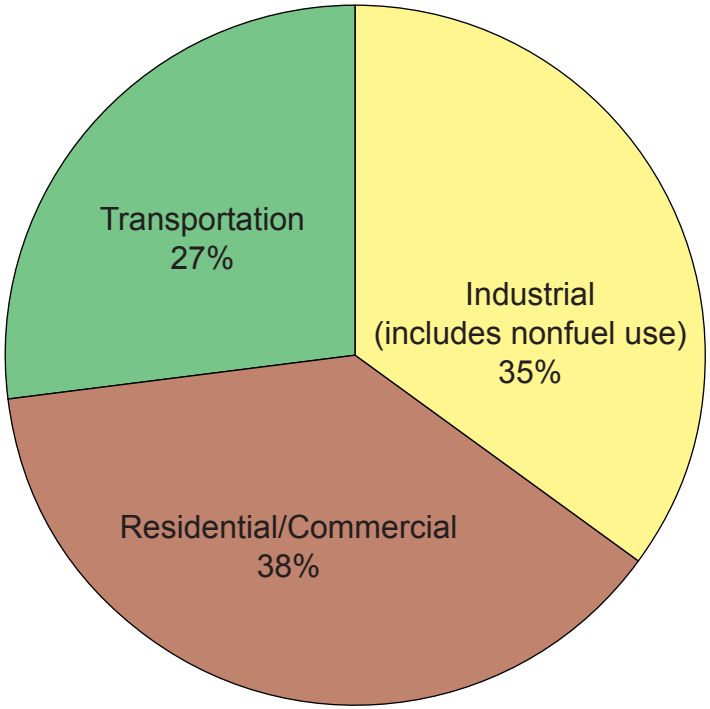


2000 Energy Consumption by Source



Source: AER2000, Table 1.3

2000 Energy Consumption by End-Use Sector



Source: AER2000

Comparison of 1990, 1999, and 2000 Energy Use

For comparison, the U.S. energy flow chart for 1999 is included at the end of this document. Note that the numbers in the tables below are from AER2000 and have been revised since LLNL prepared the 1999 chart. To show trends in U.S. energy use, the tables include data for 1990, 1999, and 2000. The tables also show the percentage change from 1999 to 2000 and from 1990 to 2000, plus the average annual rate of change over the 10 years.

Changes in End-Sector Consumption
As Table 1 shows, over the past 10 years U.S. energy consumption has increased at an average rate of 1.7% per year. However, during that same period electricity consumption increased at the much faster rate of 3.3% per year. Among the end-use sectors, the residential/commercial sector has seen the fastest growth rate.

Energy Production and Imports
During the past decade, as Table 2 indicates, the amount of energy produced in the United States has remained almost constant, while the net imports of energy have increased at an average rate of 7.3% per year. In 2000, net imports provided 24.8% of the energy that the United States consumed; in 1990 imports were only 16.7% of the total consumption.

Petroleum accounts for the majority of U.S. energy imports and is of special concern because much of that petroleum comes from volatile regions of the world. However, natural gas imports are actually increasing more than three times as fast as petroleum imports. Most of that natural gas comes from Canada.

Resource Consumption
Variations in resource consumption can be caused by differences in supply, cost, and weather. For example, the amount of rainfall in certain regions of the United States affects the amount of hydroelectricity that can be produced. Colder winters increase the demand on fuels for space heating, while hotter summers lead to greater consumption of electricity for air conditioning and thus of the resources used in electricity generation.

As Table 3 indicates, over the past decade the consumption of nuclear energy has grown at a faster rate than any other resource, followed by natural gas and biomass/other.

Factors Affecting Consumption
Both the U.S. population and per-capita energy use have been increasing, leading to growth in overall U.S. energy consumption.

Although the U.S. Gross Domestic Product (GDP) increased 38.9% from 1990 to 2000 (in chained 1996 dollars), the amount of energy consumed per dollar of GDP dropped 15.9%. Economic fluctuations particularly impact energy use in the industrial sector and also in the transportation sector.

Table 1. Energy consumption by end-use sector, 1990, 1999, and 2000

	1990 (quads)	1999 (quads)	2000 (quads)	% change 1999–2000	% change 1990–2000	Av. % change/yr 1990–2000
Residential/ Commercial	29.224	35.833	37.385	4.3	27.9	2.8
Industrial (incl. non-fuel, less adjustment)	32.26	34.721	34.472	(0.7)	6.9	0.7
Transportation	22.540	26.312	26.639	1.2	18.2	1.8
Electricity	30.350	39.009	40.368	3.5	33.0	3.3
Total consumption	84.344	96.866	98.498	1.7	16.8	1.7

Source: AER2000, T. 2.1.a

Table 2. U.S. energy production and imports, 1990, 1999, and 2000

	1990 (quads)	1999 (quads)	2000 (quads)	% change 1999–2000	% change 1990–2000	Av. % change/yr 1990–2000
U.S. production	70.83	71.98	71.90	(0.1)	1.5	0.2
Net energy imports	14.09	23.74	24.42	2.9	73.3	7.3
Net petroleum imports	15.29	21.18	21.63	2.1	41.5	4.1
Net natural gas imports	1.46	3.50	3.57	2.0	144.5	14.5

Source: AER2000, T. 1.1 and 1.4

Table 3. U.S. energy consumption by resource, 1990, 1999, and 2000

	1990 (quads)	1999 (quads)	2000 (quads)	% change 1999–2000	% change 1990–2000	Av. % change/yr 1990–2000
Biomass/other	3.108	3.714	3.716	0.1	19.6	2
Hydro	3.146	3.512	3.107	(11.5)	(1.2)	(0.1)
Nuclear	6.162	7.736	8.009	3.5	30	3
Natural gas	19.296	22.289	23.325	4.6	20.9	2.1
Coal*	19.258	21.751	22.472	3.3	16.7	1.7
Petroleum & NGPL	33.553	37.960	37.964	0	13.1	1.3

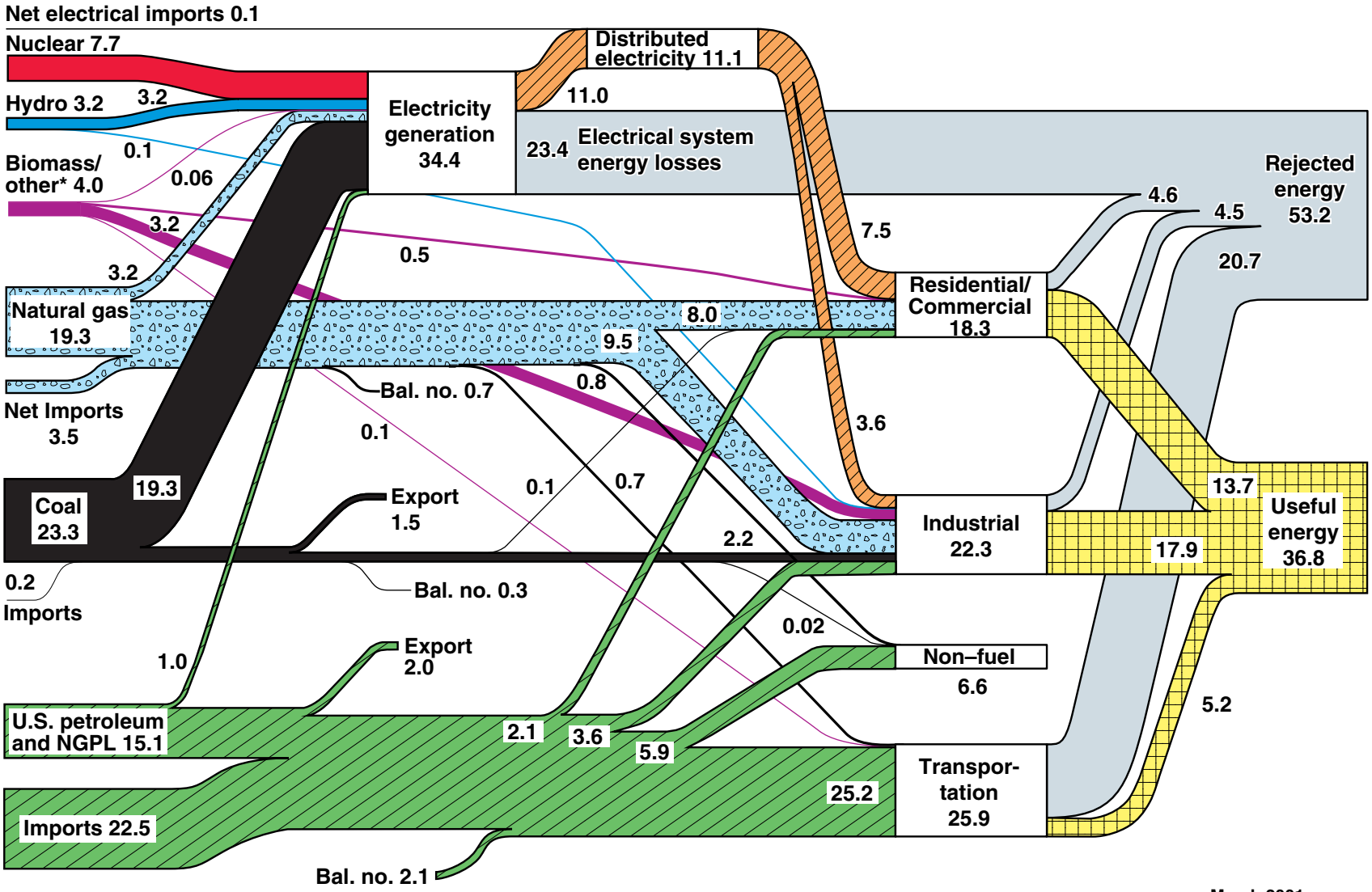
Source: AER2000, T. 1.3 *Includes coal coke net imports

Table 4. Factors affecting U.S. energy consumption, 1990, 1999, and 2000

	1990	1999	2000	% change 1999–2000	% change 1990–2000	Av. % change/yr 1990–2000
Energy consumption per person (million Btu)	339	355	350	(1.4)	3.2	0.3
GDP (billion chained 1996 dollars)	6,707.9	8,875.8	9,318.5	5	38.9	3.9
Energy consumpt. per $ of GDP (1000 Btu per chained 1996 dollar)	12.57	10.91	10.57	(3.1)	(15.9)	(1.6)

Source: AER2000, T. 1.5

U.S. Energy Flow – 1999
Net Primary Resource Consumption 97 Quads



Source: Production and end-use data from Energy Information Administration, *Annual Energy Review 1999*
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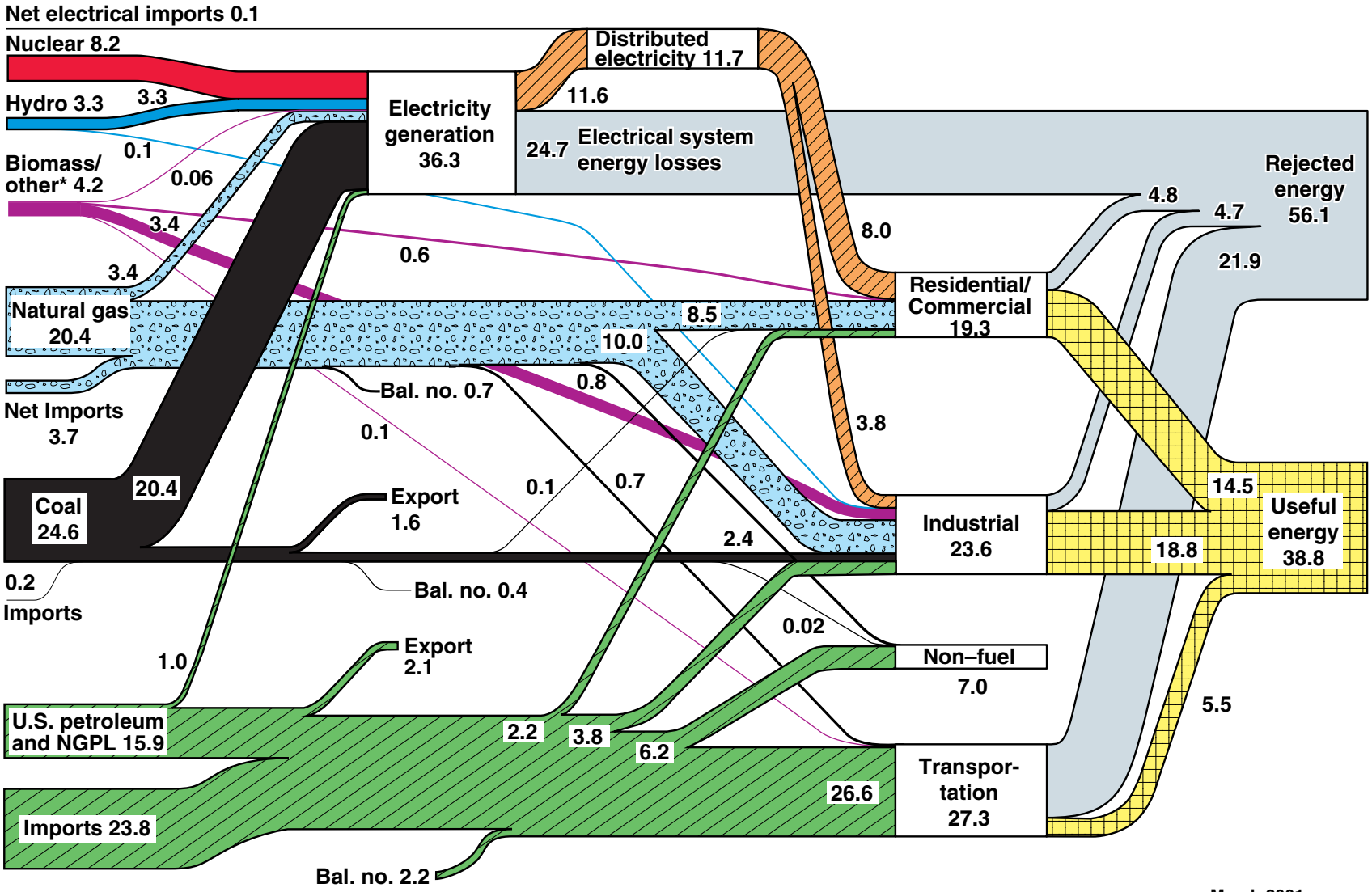
U.S. Energy Flow – 1999
Net Primary Resource Consumption 102 Exajoules



Source: Production and end-use data from Energy Information Administration, *Annual Energy Review 1999*
*Biomass/other includes wood and waste, geothermal, solar, and wind.

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Appendix
Selected Diagrams and Tables from Energy Information Administration's *Annual Energy Review 2000*

- Diagram 1. Energy Flow, 2000
- Table 1.1. Energy Overview, 1949–2000
- Table 1.2. Energy Production by Source, 1949–2000
- Table 1.3. Energy Consumption by Source, 1949–2000
- Table 1.4. Energy Imports, Exports, and Net Imports, 1949–2000
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- Table 2.1b. Residential Sector Energy Consumption, 1949–2000
- Table 2.1c. Commercial Sector Energy Consumption, 1949–2000
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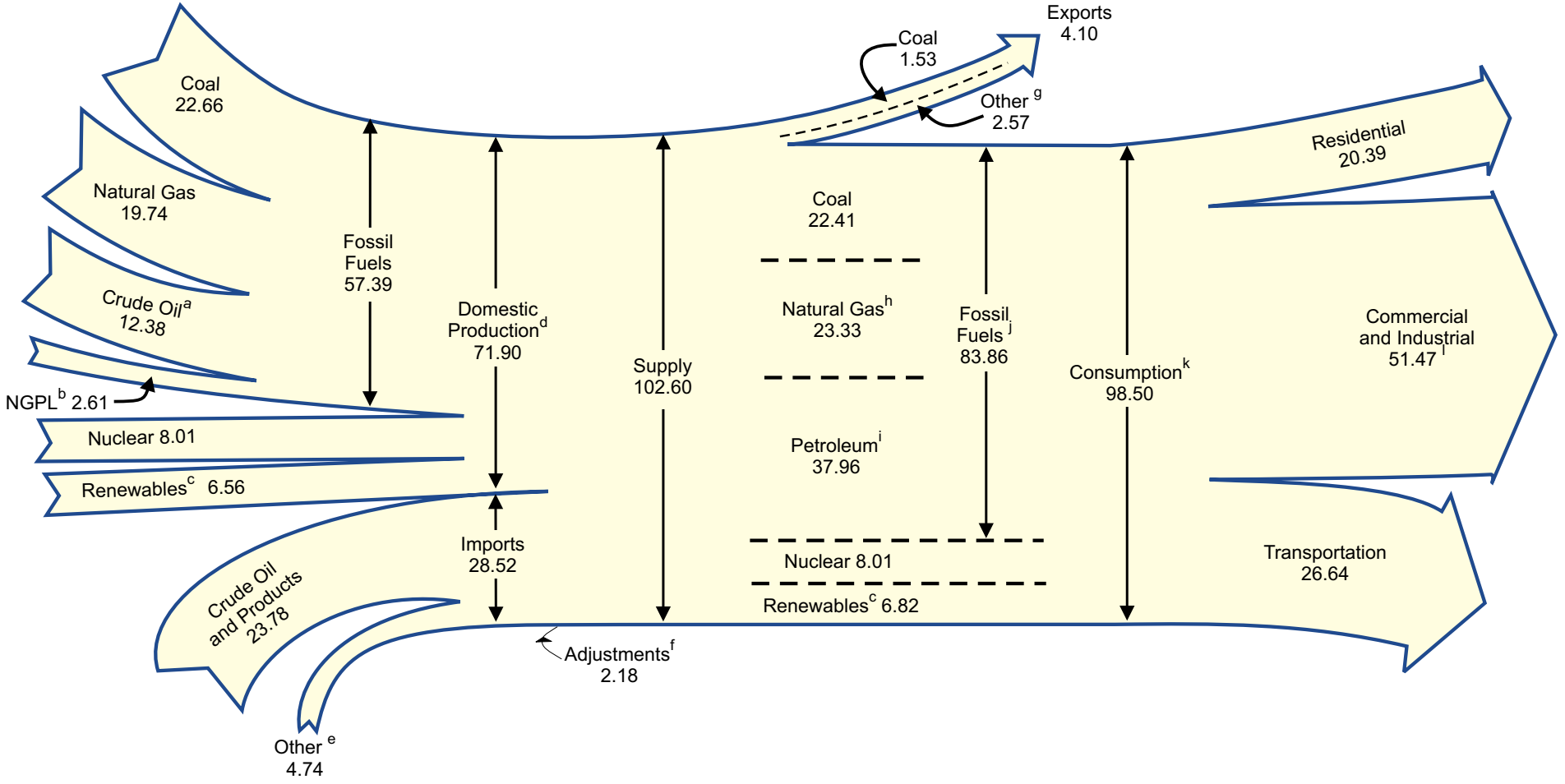
- Table 2.1e. Transportation Sector Energy Consumption, 1949–2000
- Table 2.1f. Electric Power Sector Energy Consumption, 1949–2000
- Diagram 5. Electricity Flow, 2000

Diagram 1. Energy Flow, 2000
(Quadrillion Btu)



[a] Includes lease condensate.
[b] Natural gas plant liquids.
[c] Conventional hydroelectric power, wood, waste, ethanol blended into motor gasoline, geothermal, solar, and wind.
[d] Includes -0.06 quadrillion Btu hydroelectric pumped storage.
[e] Natural gas, coal, coal coke, and electricity.
[f] Stock changes, losses, gains, miscellaneous blending components, and unaccounted-for supply.
[g] Crude oil, petroleum products, natural gas, electricity, and coal coke.
[h] Includes supplemental gaseous fuels.
[i] Petroleum products, including natural gas plant liquids.
[j] Includes 0.07 quadrillion Btu coal coke net imports and 0.10 electricity net imports from fossil fuels.
[k] Includes, in quadrillion Btu, 0.10 electricity net imports from fossil fuels; -0.06 hydroelectric pumped storage; and -0.14 ethanol blended into motor gasoline, which is accounted for in both fossil fuels and renewables and removed once from this total to avoid double-counting.
[l] Commercial and industrial sector totals plus adjustments to avoid double-counting the amount of petroleum, natural gas, and coal that is included under both "End-Use Sectors" and "Electric Power Sector." See Tables 5.12d, 6.5, and 7.3.

Notes: • Data are preliminary. • Totals may not equal sum of components due to independent rounding.

Sources: Tables 1.1, 1.2, 1.3, 1.4, and 2.1a-2.1f.

Table 1.1 Energy Overview, 1949-2000

(Quadrillion Btu)

Year	Production				Imports		Exports		Adjustments [8]	Consumption			
	Fossil Fuels [1]	Nuclear Electric Power [2]	Renewable Energy [3]	Total [4]	Petroleum [5]	Total [6]	Coal	Total [7]		Fossil Fuels [9]	Nuclear Electric Power [2]	Renewable Energy [10]	Total [4,11]
1949	28.75	0	2.97	31.72	1.43	1.47	0.88	1.59	0.40	29.00	0	3.00	32.00
1950	32.56	0	2.98	35.54	1.89	1.93	0.79	1.47	-1.37	31.63	0	3.00	34.63
1951	35.79	0	2.96	38.75	1.87	1.92	1.68	2.62	-1.05	34.01	0	2.99	37.00
1952	34.98	0	2.94	37.92	2.11	2.17	1.40	2.37	-0.95	33.80	0	2.97	36.77
1953	35.35	0	2.83	38.18	2.28	2.34	0.98	1.87	-0.96	34.83	0	2.86	37.68
1954	33.76	0	2.75	36.52	2.32	2.37	0.91	1.70	-0.53	33.88	0	2.78	36.66
1955	37.36	0	2.78	40.15	2.75	2.83	1.46	2.29	-0.44	37.41	0	2.83	40.24
1956	39.77	0	2.85	42.62	3.17	3.25	1.98	2.95	-1.13	38.89	0	2.90	41.79
1957	40.13	(s)	2.85	42.98	3.46	3.57	2.17	3.45	-1.29	38.93	(s)	2.89	41.82
1958	37.22	(s)	2.92	40.13	3.72	3.92	1.42	2.06	-0.32	38.72	(s)	2.95	41.67
1959	39.05	(s)	2.90	41.95	3.91	4.11	1.05	1.54	-1.03	40.55	(s)	2.94	43.49
1960	39.87	0.01	2.93	42.80	4.00	4.23	1.02	1.48	-0.43	42.14	0.01	2.98	45.12
1961	40.31	0.02	2.95	43.28	4.19	4.46	0.98	1.38	-0.60	42.76	0.02	2.98	45.76
1962	41.73	0.03	3.12	44.88	4.56	5.01	1.08	1.48	-0.57	44.68	0.03	3.12	47.83
1963	44.04	0.04	3.10	47.17	4.65	5.10	1.36	1.85	-0.78	46.51	0.04	3.10	49.65
1964	45.79	0.04	3.23	49.06	4.96	5.49	1.34	1.84	-0.87	48.54	0.04	3.25	51.83
1965	47.23	0.04	3.40	50.68	5.40	5.92	1.38	1.85	-0.72	50.58	0.04	3.40	54.02
1966	50.04	0.06	3.43	53.53	5.63	6.18	1.35	1.85	-0.83	53.51	0.06	3.45	57.02
1967	52.60	0.09	3.69	56.38	5.56	6.19	1.35	2.15	-1.52	55.13	0.09	3.69	58.91
1968	54.31	0.14	3.78	58.23	6.21	6.93	1.38	2.03	-0.71	58.50	0.14	3.77	62.41
1969	56.29	0.15	4.10	60.54	6.90	7.71	1.53	2.15	-0.47	61.36	0.15	4.11	65.63
1970	59.19	0.24	R4.08	63.50	7.47	8.39	1.94	2.66	-1.37	63.52	0.24	R4.10	67.86
1971	58.04	0.41	4.27	62.72	8.54	9.58	1.55	2.18	-0.82	64.60	0.41	R4.31	69.31
1972	58.94	0.58	4.40	63.92	10.30	11.46	1.53	2.14	-0.48	67.70	0.58	4.48	72.76
1973	58.24	0.91	4.43	63.58	13.47	14.73	1.43	2.05	-0.46	70.32	0.91	4.58	75.81
1974	56.33	1.27	4.77	62.37	13.13	14.41	1.62	2.22	-0.48	67.91	1.27	4.90	74.08
1975	54.73	1.90	4.72	R61.36	12.95	14.11	1.76	2.36	-1.07	65.35	1.90	4.79	72.04
1976	54.72	2.11	4.77	61.60	15.67	16.84	1.60	2.19	-0.18	69.10	2.11	4.86	76.07
1977	55.10	2.70	4.25	62.05	18.76	20.09	1.44	2.07	-1.95	70.99	2.70	4.43	78.12
1978	55.07	3.02	5.04	63.14	17.82	19.25	1.08	1.93	-0.34	71.86	3.02	5.24	80.12
1979	58.01	2.78	R5.17	65.95	17.93	19.62	1.75	2.87	-1.65	72.89	2.78	R5.38	81.04
1980	59.01	2.74	5.49	67.24	14.66	15.97	2.42	3.72	-1.05	69.98	2.74	5.71	R78.44
1981	58.53	3.01	5.47	67.01	12.64	13.97	2.94	4.33	-0.08	67.75	3.01	5.82	76.57
1982	57.46	3.13	5.99	66.57	10.78	12.09	2.79	4.63	-0.59	64.04	3.13	6.29	73.44
1983	54.42	3.20	6.49	64.11	10.65	12.03	2.04	3.72	0.90	63.29	3.20	6.86	73.32
1984	58.85	3.55	6.43	68.83	11.43	12.77	2.15	3.80	-0.82	66.62	3.55	6.84	76.97
1985	57.54	4.15	6.03	67.72	10.61	12.10	2.44	4.23	1.19	66.22	4.15	6.46	76.78
1986	56.58	4.47	6.13	67.18	13.20	14.44	2.25	4.06	-0.50	66.15	4.47	6.51	R77.07
1987	57.17	4.91	5.69	67.76	14.16	15.76	2.09	3.85	-0.04	68.63	4.91	6.17	79.63
1988	57.87	5.66	5.49	R69.02	15.75	17.56	2.50	4.42	0.89	71.66	5.66	5.82	83.07
1989	57.47	5.68	6.32	R69.47	17.16	18.96	2.64	4.77	R1.06	R72.62	5.68	R6.49	R84.72
1990	58.56	6.16	R6.14	R70.83	17.12	18.95	2.77	4.87	R-0.58	R72.03	6.16	R6.25	R84.34
1991	57.83	6.58	R6.17	R70.53	16.35	18.50	2.85	5.16	R0.43	R71.52	6.58	R6.32	R84.30
1992	57.59	6.61	R5.91	R70.07	16.97	19.58	2.68	4.96	R0.82	R72.90	6.61	R6.13	85.51
1993	55.74	6.52	R6.16	R68.38	18.51	21.50	1.96	4.28	R1.71	R74.51	6.52	R6.41	R87.30
1994	57.95	6.84	R6.09	R70.85	19.24	22.73	1.88	4.08	R-0.29	R76.09	6.84	R6.43	R89.21
1995	57.46	7.18	R6.69	R71.30	R18.88	R22.57	2.32	4.54	R1.61	R76.92	7.18	R6.99	90.94
1996	58.30	7.17	R7.16	R72.60	R20.29	R24.01	2.37	4.66	R1.98	R79.41	7.17	R7.47	R93.93
1997	58.76	6.68	R7.15	R72.55	21.74	R25.51	2.19	R4.58	R0.86	R80.41	6.68	R7.39	R94.34
1998	R59.05	7.16	R6.75	R72.91	22.91	26.86	R2.09	R4.39	R-0.77	R80.64	7.16	6.98	R94.61
1999	R57.29	R7.74	R7.02	R71.98	R23.13	R27.55	1.53	R3.81	R1.15	R82.09	R7.74	R7.23	R96.87
2000P	57.39	8.01	6.56	71.90	23.78	28.52	1.53	4.10	2.18	83.86	8.01	6.82	98.50

[1] Coal, natural gas (dry), crude oil, and natural gas plant liquids.
[2] See Note 1 at end of section.
[3] End-use consumption, and electric utility and nonutility electricity net generation.
[4] Also includes hydroelectric pumped storage.
[5] Crude oil and petroleum products.
[6] Also includes natural gas, coal, coal coke, and electricity.
[7] Also includes natural gas, petroleum, coal coke, and electricity.
[8] A balancing item. Includes stock changes, losses, gains, miscellaneous blending components, and unaccounted-for supply.
[9] Coal, coal coke net imports, natural gas, petroleum, and electricity net imports derived from fossil fuels.
[10] End-use consumption, electric utility and nonutility electricity net generation, and electricity net imports derived from renewable energy.
[11] Alcohol (ethanol blended into motor gasoline) is included in consumption values for both "Fossil Fuels" and "Renewable Energy," but is counted only once in total energy consumption.

R=Revised. P=Preliminary. (s)=Less than 0.005 quadrillion Btu.
Note: Totals may not equal sum of components due to independent rounding.
Sources: Tables 1.2, 1.3, and 1.4.

Table 1.2 Energy Production by Source, 1949-2000

(Quadrillion Btu)

Year	Fossil Fuels					Nuclear Electric Power [3]	Hydroelectric Pumped Storage [4]	Renewable Energy [1]						Total
	Coal	Natural Gas (Dry)	Crude Oil [2]	Natural Gas Plant Liquids	Total			Conventional Hydroelectric Power	Wood, Waste, Alcohol [5]	Geothermal	Solar	Wind	Total	
1949	11.974	5.377	10.683	0.714	28.748	0	([6])	1.425	1.549	0	NA	NA	2.974	31.722
1950	14.060	6.233	11.447	0.823	32.563	0	([6])	1.415	1.562	0	NA	NA	2.978	35.540
1951	14.419	7.416	13.037	0.920	35.792	0	([6])	1.424	1.535	0	NA	NA	2.958	38.751
1952	12.734	7.964	13.281	0.998	34.977	0	([6])	1.466	1.474	0	NA	NA	2.940	37.917
1953	12.278	8.339	13.671	1.062	35.349	0	([6])	1.413	1.419	0	NA	NA	2.831	38.181
1954	10.542	8.682	13.427	1.113	33.764	0	([6])	1.360	1.394	0	NA	NA	2.754	36.518
1955	12.370	9.345	14.410	1.240	37.364	0	([6])	1.360	1.424	0	NA	NA	2.784	40.148
1956	13.306	10.002	15.180	1.283	39.771	0	([6])	1.435	1.416	0	NA	NA	2.851	42.622
1957	13.061	10.605	15.178	1.289	40.133	(s)	([6])	1.516	1.334	0	NA	NA	2.849	42.983
1958	10.783	10.942	14.204	1.287	37.216	0.002	([6])	1.592	1.323	0	NA	NA	2.915	40.133
1959	10.778	11.952	14.933	1.383	39.045	0.002	([6])	1.548	1.353	0	NA	NA	2.901	41.949
1960	10.817	12.656	14.935	1.461	39.869	0.006	([6])	1.608	1.320	0.001	NA	NA	2.929	42.804
1961	10.447	13.105	15.206	1.549	40.307	0.020	([6])	1.656	1.295	0.002	NA	NA	2.953	43.280
1962	10.901	13.717	15.522	1.593	41.732	0.026	([6])	1.816	1.300	0.002	NA	NA	3.119	44.877
1963	11.849	14.513	15.966	1.709	44.037	0.038	([6])	1.771	1.323	0.004	NA	NA	3.098	47.174
1964	12.524	15.298	16.164	1.803	45.789	0.040	([6])	1.886	1.337	0.005	NA	NA	3.228	49.056
1965	13.055	15.775	16.521	1.883	47.235	0.043	([6])	2.059	1.335	0.004	NA	NA	3.398	50.676
1966	13.468	17.011	17.561	1.996	50.035	0.064	([6])	2.062	1.369	0.004	NA	NA	3.435	53.534
1967	13.825	17.943	18.651	2.177	52.597	0.088	([6])	2.347	1.340	0.007	NA	NA	3.694	56.379
1968	13.609	19.068	19.308	2.321	54.306	0.142	([6])	2.349	1.419	0.009	NA	NA	3.778	58.225
1969	13.863	20.446	19.556	2.420	56.286	0.154	([6])	2.648	1.440	0.013	NA	NA	4.102	60.541
1970	14.607	21.666	20.401	2.512	59.186	0.239	([6])	2.634	R1.431	0.011	NA	NA	R4.076	R63.501
1971	13.186	22.280	20.033	2.544	58.042	0.413	([6])	2.824	R1.432	0.012	NA	NA	R4.268	R62.723
1972	14.092	22.208	20.041	2.598	58.938	0.584	([6])	2.864	R1.503	0.031	NA	NA	R4.398	R63.920
1973	13.992	22.187	19.493	2.569	58.241	0.910	([6])	2.861	R1.529	0.043	NA	NA	R4.433	R63.585
1974	14.074	21.210	18.575	2.471	56.331	1.272	([6])	3.177	R1.540	0.053	NA	NA	R4.769	R62.372
1975	14.989	19.640	17.729	2.374	54.733	1.900	([6])	3.155	R1.499	0.070	NA	NA	R4.723	R61.357
1976	15.654	19.480	17.262	2.327	54.723	2.111	([6])	2.976	R1.713	0.078	NA	NA	R4.768	R61.602
1977	15.755	19.565	17.454	2.327	55.101	2.702	([6])	2.333	R1.838	0.077	NA	NA	R4.249	R62.052
1978	14.910	19.485	18.434	2.245	55.074	3.024	([6])	2.937	R2.038	0.064	NA	NA	R5.039	R63.137
1979	17.540	20.076	18.104	2.286	58.006	2.776	([6])	2.931	R2.152	0.084	NA	NA	R5.166	R65.948
1980	18.598	19.908	18.249	2.254	59.008	2.739	([6])	2.900	R2.485	0.110	NA	NA	R5.494	R67.241
1981	18.377	19.699	18.146	2.307	58.529	3.008	([6])	2.758	2.590	0.123	NA	NA	5.471	67.007
1982	18.639	18.319	18.309	2.191	57.458	3.131	([6])	3.266	2.615	0.105	NA	NA	5.985	66.574
1983	17.247	16.593	18.392	2.184	54.416	3.203	([6])	3.527	2.831	0.129	NA	(s)	6.488	64.106
1984	19.719	18.008	18.848	2.274	58.849	3.553	([6])	3.386	2.880	0.165	(s)	(s)	6.431	68.832
1985	19.325	16.980	18.992	2.241	57.539	4.149	([6])	2.970	R2.864	0.198	(s)	(s)	R6.033	R67.720
1986	19.509	16.541	18.376	2.149	56.575	4.471	([6])	3.071	R2.841	0.219	(s)	(s)	R6.132	R67.178
1987	20.141	17.136	17.675	2.215	57.167	4.906	([6])	2.635	R2.823	0.229	(s)	(s)	R5.687	R67.760
1988	20.738	17.599	17.279	2.260	57.875	5.661	([6])	2.334	R2.937	0.217	(s)	(s)	R5.489	R69.025
1989	21.346	17.847	16.117	2.158	57.468	5.677	([6])	2.855	R3.060	R0.323	0.059	0.024	R6.322	R69.467
1990	22.456	18.362	15.571	2.175	58.564	6.162	-0.036	3.048	R2.660	R0.343	0.063	0.032	R6.145	R70.835
1991	21.594	18.229	15.701	2.306	57.829	6.580	-0.047	3.021	R2.700	R0.348	0.066	0.032	R6.167	R70.528
1992	21.629	18.375	15.223	2.363	57.590	6.608	-0.043	2.617	R2.845	R0.355	R0.067	0.030	R5.915	R70.069
1993	20.249	18.584	14.494	2.408	55.736	6.520	-0.042	2.892	R2.803	R0.369	0.071	0.031	R6.165	R68.378
1994	22.111	19.348	14.103	2.391	57.952	6.838	-0.035	2.684	R2.938	R0.364	0.072	0.036	R6.093	R70.848
1995	22.029	19.101	13.887	2.442	57.458	7.177	-0.028	3.207	R3.066	R0.314	0.073	0.033	R6.694	R71.301
1996	22.684	19.363	13.723	2.530	58.299	7.168	-0.032	3.593	R3.126	R0.332	0.075	0.035	R7.160	R72.595
1997	23.211	19.394	13.658	2.495	58.758	6.678	-0.042	3.718	R3.004	R0.322	0.074	R0.033	R7.151	R72.545
1998	R23.935	R19.456	13.235	2.420	R59.047	7.157	-0.046	3.345	R2.976	R0.327	0.074	0.031	R6.752	R72.910
1999	R23.186	R19.126	R12.451	R2.528	R57.291	R7.736	R-0.065	3.305	R3.221	R0.373	R0.073	R0.046	R7.018	R71.980
2000P	22.663	19.741	12.383	2.607	57.395	8.009	-0.058	2.841	3.275	0.319	0.070	0.051	6.556	71.902

[1] End-use consumption, and electric utility and nonutility electricity net generation.
[2] Includes lease condensate.
[3] See Note 1 at end of section.
[4] Pumped storage facility production minus energy used for pumping.
[5] Alcohol is ethanol blended into motor gasoline.
[6] Included in conventional hydroelectric power.

R=Revised. P=Preliminary. (s)=Less than 0.0005 quadrillion Btu. NA=Not available.
Note: Totals may not equal sum of components due to independent rounding.
Sources: Tables 5.1, 6.1, 7.1, 8.2, 10.2a, 10.2b, and A2-A6.

Table 1.3 Energy Consumption by Source, 1949-2000

(Quadrillion Btu)

Year	Fossil Fuels						Nuclear Electric Power	Hydro-electric Pumped Storage [5]	Renewable Energy [1]						Total [7]
	Coal	Coal Coke Net Imports	Natural Gas [2]	Petroleum [3]	Electricity Net Imports [4]	Total			Conventional Hydroelectric Power [6]	Wood, Waste, Alcohol [7]	Geothermal [8]	Solar	Wind	Total	
1949	11.981	-0.007	5.145	11.883	([9])	29.002	0	([9])	1.449	1.549	NA	NA	NA	2.998	32.000
1950	12.347	0.001	5.968	13.315	([9])	31.632	0	([9])	1.440	1.562	NA	NA	NA	3.003	34.635
1951	12.553	-0.021	7.049	14.428	([9])	34.008	0	([9])	1.454	1.535	NA	NA	NA	2.988	36.996
1952	11.306	-0.012	7.550	14.956	([9])	33.800	0	([9])	1.496	1.474	NA	NA	NA	2.970	36.770
1953	11.373	-0.009	7.907	15.556	([9])	34.826	0	([9])	1.439	1.419	NA	NA	NA	2.857	37.684
1954	9.715	-0.007	8.330	15.839	([9])	33.877	0	([9])	1.388	1.394	NA	NA	NA	2.783	36.660
1955	11.167	-0.010	8.998	17.255	([9])	37.410	0	([9])	1.407	1.424	NA	NA	NA	2.832	40.242
1956	11.350	-0.013	9.614	17.937	([9])	38.888	0	([9])	1.487	1.416	NA	NA	NA	2.903	41.791
1957	10.821	-0.017	10.191	17.932	([9])	38.926	(s)	([9])	1.557	1.334	NA	NA	NA	2.890	41.816
1958	9.533	-0.007	10.663	18.527	([9])	38.717	0.002	([9])	1.629	1.323	NA	NA	NA	2.952	41.670
1959	9.518	-0.008	11.717	19.323	([9])	40.550	0.002	([9])	1.587	1.353	NA	NA	NA	2.940	43.493
1960	9.838	-0.006	12.385	19.919	([9])	42.137	0.006	([9])	1.657	1.320	0.001	NA	NA	2.977	45.120
1961	9.623	-0.008	12.926	20.216	([9])	42.758	0.020	([9])	1.680	1.295	0.002	NA	NA	2.977	45.755
1962	9.906	-0.006	13.731	21.049	([9])	44.681	0.026	([9])	1.822	1.300	0.002	NA	NA	3.124	47.832
1963	10.413	-0.007	14.403	21.701	([9])	46.509	0.038	([9])	1.772	1.323	0.004	NA	NA	3.099	49.647
1964	10.964	-0.010	15.288	22.301	([9])	48.543	0.040	([9])	1.907	1.337	0.005	NA	NA	3.248	51.831
1965	11.581	-0.018	15.769	23.246	([9])	50.577	0.043	([9])	2.058	1.335	0.004	NA	NA	3.397	54.016
1966	12.143	-0.025	16.995	24.401	([9])	53.514	0.064	([9])	2.073	1.369	0.004	NA	NA	3.446	57.024
1967	11.914	-0.015	17.945	25.284	([9])	55.127	0.088	([9])	2.344	1.340	0.007	NA	NA	3.691	58.906
1968	12.331	-0.017	19.210	26.979	([9])	58.502	0.142	([9])	2.342	1.419	0.009	NA	NA	3.771	62.415
1969	12.382	-0.036	20.678	28.338	([9])	61.362	0.154	([9])	2.659	1.440	0.013	NA	NA	4.113	65.628
1970	12.265	-0.058	21.795	29.521	([9])	63.522	0.239	([9])	2.654	R1.431	0.011	NA	NA	R4.096	R67.858
1971	11.598	-0.033	22.469	30.561	([9])	64.596	0.413	([9])	2.861	R1.432	0.012	NA	NA	R4.305	R69.314
1972	12.077	-0.026	22.698	32.947	([9])	67.696	0.584	([9])	2.944	R1.503	0.031	NA	NA	R4.478	R72.758
1973	12.971	-0.007	22.512	34.840	([9])	70.316	0.910	([9])	3.010	R1.529	0.043	NA	NA	R4.581	R75.808
1974	12.663	0.056	21.732	33.455	([9])	67.906	1.272	([9])	3.309	R1.540	0.053	NA	NA	R4.902	R74.080
1975	12.663	0.014	19.948	32.731	([9])	65.355	1.900	([9])	3.219	R1.499	0.070	NA	NA	R4.788	R72.042
1976	13.584	(s)	20.345	35.175	([9])	69.104	2.111	([9])	3.066	R1.713	0.078	NA	NA	R4.857	R76.072
1977	13.922	0.015	19.931	37.122	([9])	70.989	2.702	([9])	2.515	R1.838	0.077	NA	NA	R4.431	R78.122
1978	13.766	0.125	20.000	37.965	([9])	71.856	3.024	([9])	3.141	R2.038	0.064	NA	NA	R5.243	R80.123
1979	15.040	0.063	20.666	37.123	([9])	72.892	2.776	([9])	3.141	R2.152	0.084	NA	NA	R5.377	R81.044
1980	15.423	-0.035	20.394	34.202	([9])	69.984	2.739	([9])	3.118	R2.485	0.110	NA	NA	R5.712	R78.435
1981	15.908	-0.016	19.928	31.931	([9])	67.750	3.008	([9])	3.105	2.590	0.123	NA	NA	5.818	76.569
1982	15.322	-0.022	18.505	30.232	([9])	64.037	3.131	([9])	3.572	2.615	0.105	NA	NA	6.292	73.441
1983	15.894	-0.016	17.357	30.054	([9])	63.290	3.203	([9])	3.899	2.831	0.129	NA	(s)	6.860	73.317
1984	17.071	-0.011	18.507	31.051	([9])	66.617	3.553	([9])	3.800	2.880	0.165	(s)	(s)	6.845	76.972
1985	17.478	-0.013	17.834	30.922	([9])	66.221	4.149	([9])	3.398	R2.864	0.198	(s)	(s)	R6.460	R76.778
1986	17.260	-0.017	16.708	32.196	([9])	66.148	4.471	([9])	3.446	R2.841	0.219	(s)	(s)	R6.507	77.065
1987	18.008	0.009	17.744	32.865	([9])	68.626	4.906	([9])	3.117	R2.823	0.229	(s)	(s)	R6.170	79.633
1988	18.846	0.040	18.552	34.222	([9])	71.660	5.661	([9])	2.662	R2.937	0.217	(s)	(s)	R5.817	R83.068
1989	R19.043	0.030	19.384	34.211	R-0.050	R72.618	5.677	([9])	R3.014	R3.060	R0.334	0.059	0.024	R6.492	R84.716
1990	R19.253	0.005	19.296	33.553	R-0.080	R72.027	6.162	-0.036	R3.146	R2.660	R0.355	0.063	0.032	R6.254	R84.344
1991	R18.998	0.010	19.606	32.845	R0.059	R71.519	6.580	-0.047	R3.159	R2.700	R0.363	0.066	0.032	R6.320	R84.298
1992	R19.152	0.035	20.131	33.527	R0.053	R72.897	6.608	-0.043	R2.818	R2.845	R0.374	R0.067	0.030	R6.134	R85.513
1993	R19.763	0.027	20.827	33.841	R0.050	R74.508	6.520	-0.042	R3.119	R2.803	R0.387	0.071	0.031	R6.410	R87.300
1994	R19.933	0.058	21.288	34.670	R0.140	R76.089	6.838	-0.035	R2.993	R2.938	R0.391	0.072	0.036	R6.429	R89.213
1995	R20.025	0.061	22.163	34.553	R0.121	R76.924	7.177	-0.028	R3.481	R3.066	R0.333	0.073	0.033	R6.986	R90.943
1996	R20.957	0.023	22.559	35.757	R0.109	R79.406	7.168	-0.032	R3.892	R3.126	R0.346	0.075	0.035	R7.473	R93.931
1997	R21.464	0.046	22.530	36.266	R0.109	R80.415	6.678	-0.042	R3.961	R3.004	R0.322	0.074	R0.033	R7.395	R94.340
1998	R21.667	0.067	21.921	36.934	R0.048	R80.637	7.157	-0.046	R3.569	R2.976	R0.328	0.074	0.031	R6.977	R94.608
1999	R21.693	0.058	R22.289	R37.960	R0.092	R82.090	R7.736	R-0.065	R3.512	R3.221	R0.373	R0.073	R0.046	R7.226	R96.866
2000P	22.407	0.065	23.325	37.964	0.102	83.863	8.009	-0.058	3.107	3.275	0.319	0.070	0.051	6.823	98.498

[1] End-use consumption, electric utility and nonutility electricity net generation, and net imports of electricity from renewable energy.
[2] Includes supplemental gaseous fuels.
[3] Petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel.
[4] Electricity net imports from fossil fuels. May include some nuclear-generated electricity.
[5] Pumped storage facility production minus energy used for pumping.
[6] Through 1988, includes all electricity net imports. From 1989, includes only electricity net imports derived from hydroelectric power.
[7] Alcohol (ethanol blended into motor gasoline) is included in both "Petroleum" and "Alcohol," but is counted only once in total energy consumption.
[8] From 1989, includes electricity imports from Mexico that are derived from geothermal energy.
[9] Included in conventional hydroelectric power.

R=Revised. P=Preliminary. (s)=Less than 0.0005 and greater than -0.0005 quadrillion Btu. NA=Not available.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Tables 5.1, 6.1, 7.1, 7.7, 8.1, 8.2, 10.2a, 10.2b, and A2-A6.

Table 1.4 Energy Imports, Exports, and Net Imports, 1949-2000

(Quadrillion Btu)

Year	Imports					Exports					Net Imports				
	Coal	Natural Gas	Petroleum [1]	Other [2]	Total	Coal	Natural Gas	Petroleum	Other [2]	Total	Coal	Natural Gas	Petroleum [1]	Other [2]	Total
1949	0.01	0.00	1.43	0.03	1.47	0.88	0.02	0.68	0.02	1.59	-0.87	-0.02	0.75	0.02	-0.13
1950	0.01	0.00	1.89	0.04	1.93	0.79	0.03	0.64	0.01	1.47	-0.78	-0.03	1.24	0.03	0.47
1951	0.01	0.00	1.87	0.04	1.92	1.68	0.03	0.89	0.03	2.62	-1.67	-0.03	0.98	0.01	-0.71
1952	0.01	0.01	2.11	0.04	2.17	1.40	0.03	0.91	0.02	2.37	-1.40	-0.02	1.20	0.02	-0.20
1953	0.01	0.01	2.28	0.04	2.34	0.98	0.03	0.84	0.02	1.87	-0.97	-0.02	1.44	0.02	0.47
1954	0.01	0.01	2.32	0.04	2.37	0.91	0.03	0.75	0.01	1.70	-0.91	-0.02	1.58	0.02	0.67
1955	0.01	0.01	2.75	0.06	2.83	1.46	0.03	0.77	0.02	2.29	-1.46	-0.02	1.98	0.04	0.54
1956	0.01	0.01	3.17	0.06	3.25	1.98	0.04	0.91	0.02	2.95	-1.98	-0.03	2.26	0.04	0.30
1957	0.01	0.04	3.46	0.06	3.57	2.17	0.04	1.20	0.03	3.45	-2.16	(s)	2.26	0.02	0.12
1958	0.01	0.14	3.72	0.05	3.92	1.42	0.04	0.58	0.02	2.06	-1.41	0.10	3.14	0.03	1.86
1959	0.01	0.14	3.91	0.05	4.11	1.05	0.02	0.45	0.02	1.54	-1.04	0.12	3.46	0.03	2.57
1960	0.01	0.16	4.00	0.06	4.23	1.02	0.01	0.43	0.02	1.48	-1.02	0.15	3.57	0.04	2.74
1961	(s)	0.23	4.19	0.04	4.46	0.98	0.01	0.37	0.02	1.38	-0.98	0.22	3.82	0.02	3.08
1962	0.01	0.42	4.56	0.03	5.01	1.08	0.02	0.36	0.03	1.48	-1.08	0.40	4.20	(s)	3.53
1963	0.01	0.42	4.65	0.03	5.10	1.36	0.02	0.44	0.03	1.85	-1.35	0.40	4.21	-0.01	3.25
1964	0.01	0.46	4.96	0.07	5.49	1.34	0.02	0.43	0.06	1.84	-1.33	0.44	4.53	0.01	3.65
1965	(s)	0.47	5.40	0.04	5.92	1.38	0.03	0.39	0.06	1.85	-1.37	0.44	5.01	-0.02	4.06
1966	(s)	0.50	5.63	0.05	6.18	1.35	0.03	0.41	0.06	1.85	-1.35	0.47	5.21	-0.01	4.32
1967	0.01	0.58	5.56	0.04	6.19	1.35	0.08	0.65	0.06	2.15	-1.35	0.50	4.91	-0.02	4.04
1968	0.01	0.67	6.21	0.04	6.93	1.38	0.10	0.49	0.06	2.03	-1.37	0.58	5.73	-0.02	4.90
1969	(s)	0.75	6.90	0.06	7.71	1.53	0.05	0.49	0.08	2.15	-1.53	0.70	6.42	-0.02	5.56
1970	(s)	0.85	7.47	0.07	8.39	1.94	0.07	0.55	0.11	2.66	-1.93	0.77	6.92	-0.04	5.72
1971	(s)	0.96	8.54	0.08	9.58	1.55	0.08	0.47	0.07	2.18	-1.54	0.88	8.07	(s)	7.41
1972	(s)	1.05	10.30	0.11	11.46	1.53	0.08	0.47	0.06	2.14	-1.53	0.97	9.83	0.05	9.32
1973	(s)	1.06	13.47	0.20	14.73	1.43	0.08	0.49	0.06	2.05	-1.42	0.98	12.98	0.14	12.68
1974	0.05	0.99	13.13	0.25	14.41	1.62	0.08	0.46	0.06	2.22	-1.57	0.91	12.66	0.19	12.19
1975	0.02	0.98	12.95	0.16	14.11	1.76	0.07	0.44	0.08	2.36	-1.74	0.90	12.51	0.08	11.75
1976	0.03	0.99	15.67	0.15	16.84	1.60	0.07	0.47	0.06	2.19	-1.57	0.92	15.20	0.09	14.65
1977	0.04	1.04	18.76	0.26	20.09	1.44	0.06	0.51	0.06	2.07	-1.40	0.98	18.24	0.20	18.02
1978	0.07	0.99	17.82	0.36	19.25	1.08	0.05	0.77	0.03	1.93	-1.00	0.94	17.06	0.33	17.32
1979	0.05	1.30	17.93	0.33	19.62	1.75	0.06	1.00	0.06	2.87	-1.70	1.24	16.93	0.27	16.75
1980	0.03	1.01	14.66	0.28	15.97	2.42	0.05	1.16	0.09	3.72	-2.39	0.96	13.50	0.18	12.25
1981	0.03	0.92	12.64	0.39	13.97	2.94	0.06	1.26	0.06	4.33	-2.92	0.86	11.38	0.33	9.65
1982	0.02	0.95	10.78	0.35	12.09	2.79	0.05	1.73	0.06	4.63	-2.77	0.90	9.05	0.28	7.46
1983	0.03	0.94	10.65	0.41	12.03	2.04	0.06	1.57	0.05	3.72	-2.01	0.89	9.08	0.36	8.31
1984	0.03	0.85	11.43	0.46	12.77	2.15	0.06	1.54	0.05	3.80	-2.12	0.79	9.89	0.40	8.96
1985	0.05	0.95	10.61	0.49	12.10	2.44	0.06	1.66	0.08	4.23	-2.39	0.90	8.95	0.41	7.87
1986	0.06	0.75	13.20	0.43	14.44	2.25	0.06	1.67	0.08	4.06	-2.19	0.69	11.53	0.36	10.38
1987	0.04	0.99	14.16	0.57	15.76	2.09	0.05	1.63	0.08	3.85	-2.05	0.94	12.53	0.49	11.91
1988	0.05	1.30	15.75	0.47	17.56	2.50	0.07	1.74	0.10	4.42	-2.45	1.22	14.01	0.37	13.15
1989	0.07	1.39	17.16	0.34	18.96	2.64	0.11	1.84	0.18	4.77	-2.57	1.28	15.33	0.15	14.19
1990	0.07	1.55	17.12	0.22	18.95	2.77	0.09	1.82	0.18	4.87	-2.70	1.46	15.29	0.03	14.09
1991	0.08	1.80	16.35	0.27	18.50	2.85	0.13	2.13	0.04	5.16	-2.77	1.67	14.22	0.22	13.34
1992	0.10	2.16	16.97	0.35	19.58	2.68	0.22	2.01	0.05	4.96	-2.59	1.94	14.96	0.31	14.62
1993	0.20	2.40	18.51	0.39	21.50	1.96	0.14	2.12	0.06	4.28	-1.76	2.25	16.40	0.32	17.22
1994	0.22	2.68	19.24	0.58	22.73	1.88	0.16	1.99	0.05	4.08	-1.66	2.52	17.26	0.53	18.65
1995	0.24	2.90	R18.88	0.55	R22.57	2.32	0.16	1.99	0.07	4.54	-2.08	2.74	R16.89	0.47	R18.03
1996	0.20	3.00	R20.29	0.52	R24.01	2.37	0.16	2.06	0.07	4.66	-2.17	2.85	R18.23	0.45	R19.35
1997	0.19	3.06	21.74	0.52	R25.51	2.19	0.16	2.10	0.12	R4.58	-2.01	2.90	19.64	0.40	20.94
1998	0.22	3.22	22.91	0.50	26.86	R2.09	0.16	1.97	0.16	R4.39	R-1.87	3.06	20.94	0.34	R22.47
1999	0.23	R3.66	R23.13	0.52	R27.55	1.53	0.16	R1.95	0.17	R3.81	R-1.30	R3.50	R21.18	0.36	R23.74
2000P	0.31	3.81	23.78	0.61	28.52	1.53	0.24	2.15	0.18	4.10	-1.21	3.57	21.63	0.43	24.42

[1] Includes imports into the Strategic Petroleum Reserve, which began in 1977.
[2] Coal coke and small amounts of electricity transmitted across U.S. borders with Canada and Mexico.
R=Revised. P=Preliminary. (s)=Less than 0.005 quadrillion Btu and greater than -0.005 quadrillion Btu.
Notes: • Includes trade between the United States (50 States and the District of Columbia) and its territories and possessions. • Totals or net import items may not equal sum of components due to independent rounding.
Sources: Tables 5.1, 6.1, 7.1, 7.7, 8.1, 10.2b, and A2-A6.

Table 2.1a Energy Consumption by Sector, 1949-2000

(Trillion Btu)

Year	End-Use Sectors								Electric Power Sector	Adjustments [2]	Total
	Residential		Commercial [1]		Industrial [1]		Transportation				
	Primary	Total	Primary	Total	Primary	Total	Primary	Total	Primary		
1949	4,475	5,639	2,661	3,683	12,552	R14,687	7,880	R7,993	4,433	-1	32,000
1950	4,848	6,029	2,824	3,903	13,811	R16,208	8,384	R8,495	4,768	(s)	34,635
1951	5,099	6,397	2,754	3,909	15,055	R17,650	8,934	R9,044	5,156	R-2	36,996
1952	5,179	6,603	2,662	3,881	14,599	R17,280	8,907	R9,005	5,422	1	36,770
1953	5,056	6,582	2,520	3,795	15,273	R18,184	9,031	R9,125	5,806	-2	37,684
1954	5,286	6,891	2,445	3,737	14,250	R17,128	8,823	8,904	5,856	(s)	36,660
1955	5,633	7,322	2,548	3,896	16,052	R19,471	9,476	9,552	6,533	(s)	40,242
1956	5,851	7,694	2,608	4,039	16,527	R20,199	9,792	9,861	7,016	-2	41,791
1957	5,772	7,757	2,434	3,959	16,479	R20,204	9,837	9,897	7,295	-1	41,816
1958	6,143	8,237	2,553	4,128	15,762	R19,301	9,952	10,005	7,261	(s)	41,670
1959	6,224	8,466	2,630	4,367	16,483	R20,311	10,299	10,350	7,858	-1	43,493
1960	6,689	9,099	2,702	4,606	16,939	R20,819	10,561	10,598	8,230	-1	45,120
1961	6,815	9,341	2,744	4,719	16,956	R20,924	10,734	10,770	8,505	2	45,755
1962	7,113	9,828	2,910	5,032	17,554	R21,750	11,187	11,221	9,069	-1	47,832
1963	7,135	10,045	2,897	5,235	18,332	R22,711	11,621	R11,655	9,661	1	49,647
1964	7,161	10,305	2,949	5,450	19,391	R24,076	11,964	11,998	10,363	R2	51,831
1965	7,334	10,705	3,144	5,821	20,091	R25,056	12,400	12,434	11,046	(s)	54,016
1966	7,549	11,231	3,384	6,309	20,996	R26,382	13,069	13,102	12,026	1	57,024
1967	7,741	11,680	3,738	6,879	20,975	R26,593	13,717	13,751	12,732	2	58,906
1968	7,968	12,383	3,861	7,300	21,835	R27,865	14,830	14,865	13,918	3	62,415
1969	8,277	13,219	4,046	7,806	22,621	R29,099	15,472	15,507	15,216	-3	65,628
1970	8,353	13,814	4,196	8,319	22,942	R29,628	16,062	16,099	16,307	-3	R67,858
1971	8,460	14,301	4,279	8,693	22,701	R29,594	16,693	16,729	17,183	-2	R69,314
1972	8,655	14,920	4,369	9,168	23,499	R30,954	17,683	17,718	18,554	R-2	R72,758
1973	8,250	14,975	4,381	9,542	24,704	R32,670	18,575	18,611	19,887	R10	R75,808
1974	7,928	14,725	4,221	9,394	23,783	R31,834	18,087	18,120	20,055	R6	R74,080
1975	8,006	14,867	4,023	9,486	21,424	R29,446	18,211	18,245	20,382	R-2	R72,042
1976	8,408	15,471	4,333	10,060	22,656	R31,438	19,065	19,099	21,607	5	R76,072
1977	8,207	15,740	4,217	10,218	23,162	R32,338	19,783	19,819	22,746	7	R78,122
1978	8,272	16,212	4,269	10,525	23,243	R32,768	20,579	20,613	23,755	R5	R80,123
1979	7,934	15,900	4,333	10,673	24,176	R33,998	20,435	20,469	24,162	R5	R81,044
1980	7,504	15,909	4,097	10,642	22,643	R32,192	19,657	19,695	24,538	-3	R78,435
1981	7,103	15,442	3,831	10,712	21,372	R30,907	19,468	19,505	24,793	3	76,569
1982	7,163	15,661	3,859	10,950	19,080	R27,757	19,031	19,068	24,303	5	73,441
1983	6,834	15,559	3,827	11,034	18,563	R27,578	19,097	19,140	24,989	6	73,317
1984	6,990	15,881	3,991	11,555	20,176	R29,725	19,762	19,810	26,053	(s)	76,972
1985	6,988	16,059	3,712	11,585	19,509	R29,069	20,024	20,071	26,552	R-7	R76,778
1986	6,807	16,052	3,652	11,719	19,101	R28,475	20,768	20,818	26,735	2	77,065
1987	6,841	16,405	3,743	12,110	20,012	R29,663	21,405	21,456	27,633	-1	79,633
1988	7,244	17,178	3,953	12,675	20,927	R30,901	22,261	22,313	28,681	2	R83,068
1989	7,492	17,358	3,922	12,757	20,724	R31,904	22,515	R22,567	29,934	R128	R84,716
1990	6,458	16,414	3,778	12,810	21,109	R32,420	22,489	R22,540	30,350	R160	R84,344
1991	6,689	16,904	3,834	12,977	20,755	R32,062	22,077	22,128	30,715	R227	R84,298
1992	6,883	16,737	3,866	12,815	21,677	R33,200	22,419	R22,468	30,376	R292	R85,513
1993	7,123	17,514	3,861	13,103	21,929	R33,461	22,842	R22,892	31,216	R330	R87,300
1994	6,956	17,404	3,900	13,359	22,640	R34,542	23,468	R23,520	31,861	R388	R89,213
1995	7,027	17,781	3,994	13,826	22,963	R34,948	23,921	R23,972	32,621	R417	R90,943
1996	7,559	18,744	4,166	14,292	23,719	R35,938	24,467	R24,518	33,581	R439	R93,931
1997	7,093	18,187	4,192	14,778	23,920	R36,161	24,768	R24,819	33,970	R396	R94,340
1998	6,465	17,953	3,909	14,867	23,554	R35,865	25,338	R25,389	34,807	R533	R94,608
1999	6,814	319,572	3,962	316,261	24,063	R,337,958	26,255	R,326,312	339,009	R-3,237	R,396,866
2000P	7,053	20,391	4,310	16,994	24,477	38,763	26,580	26,639	40,368	-4,291	98,498

[1] Includes some fossil-fuel consumption at nonutilities.

[2] A balancing item. The sum of primary consumption in the five energy-use sectors equals the sum of total consumption in the four end-use sectors. However, total energy consumption does not equal the sum of the sectoral components due to: 1) for 1949 forward, the use of sector-specific conversion factors for natural gas and coal; 2) for 1989 forward, the undercounting of coal consumption at "Other Power Producers" in the energy-use sectors (see Table 7.3); and 3) for 1999 and 2000, the double-counting of fossil-fuel consumption at nonutilities in both the electric power sector and the end-use sectors (see Tables 5.12d, 6.5, and 7.3).

[3] There is a discontinuity in this time series between 1998 and 1999; beginning in 1999, nonutility consumption of fossil fuels is included in electric power sector consumption and the calculation for electrical system energy losses. See Table 2.1f.

R=Revised. P=Preliminary. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.

Notes: • Primary consumption includes coal, natural gas, petroleum, nuclear electric power, hydroelectric power, wood, waste, alcohol fuels, geothermal, solar, wind, net imports of coal coke, and net imports of electricity. • Total consumption includes primary consumption, electricity end-use, and electrical system energy losses. • Totals may not equal sum of components due to independent rounding.

Sources: Tables 2.1b-2.1f.

Table 2.1b Residential Sector Energy Consumption, 1949-2000

(Trillion Btu)

Year	Primary Consumption								Total Primary	Electricity [5]	Electrical System Energy Losses [6]	Total
	Fossil Fuels				Renewable Energy							
	Coal	Natural Gas [1]	Petroleum	Total	Wood [2]	Geothermal [3]	Solar [4]	Total				
1949	1,272	1,027	1,121	3,420	1,055	NA	NA	1,055	4,475	228	936	5,639
1950	1,261	1,240	1,340	3,842	1,006	NA	NA	1,006	4,848	246	935	6,029
1951	1,134	1,526	1,481	4,141	958	NA	NA	958	5,099	284	1,014	6,397
1952	1,079	1,679	1,522	4,279	899	NA	NA	899	5,179	319	1,105	6,603
1953	946	1,744	1,533	4,224	832	NA	NA	832	5,056	355	1,171	6,582
1954	858	1,961	1,667	4,486	800	NA	NA	800	5,286	397	1,208	6,891
1955	867	2,198	1,792	4,858	775	NA	NA	775	5,633	438	1,251	7,322
1956	823	2,409	1,880	5,112	739	NA	NA	739	5,851	490	1,353	7,694
1957	654	2,588	1,828	5,070	702	NA	NA	702	5,772	535	1,451	7,757
1958	652	2,809	1,994	5,455	688	NA	NA	688	6,143	578	1,515	8,237
1959	573	3,015	1,989	5,577	647	NA	NA	647	6,224	630	1,612	8,466
1960	585	3,212	2,265	6,062	627	NA	NA	627	6,689	687	1,722	9,099
1961	534	3,362	2,332	6,228	587	NA	NA	587	6,815	732	1,795	9,341
1962	512	3,600	2,441	6,553	560	NA	NA	560	7,113	794	1,921	9,828
1963	438	3,700	2,459	6,598	537	NA	NA	537	7,135	856	2,054	10,045
1964	379	3,908	2,375	6,662	499	NA	NA	499	7,161	928	2,216	10,305
1965	358	4,028	2,481	6,866	468	NA	NA	468	7,334	993	2,377	10,705
1966	349	4,275	2,471	7,094	455	NA	NA	455	7,549	1,081	2,600	11,231
1967	299	4,451	2,557	7,307	434	NA	NA	434	7,741	1,160	2,779	11,680
1968	269	4,588	2,685	7,543	426	NA	NA	426	7,968	1,302	3,113	12,383
1969	248	4,875	2,739	7,862	415	NA	NA	415	8,277	1,456	3,486	13,219
1970	209	4,987	2,755	7,952	401	NA	NA	401	8,353	1,591	3,870	13,814
1971	175	5,126	2,777	8,078	382	NA	NA	382	8,460	1,704	4,136	14,301
1972	116	5,264	2,895	8,276	380	NA	NA	380	8,655	1,838	4,427	14,920
1973	94	4,977	2,825	7,896	354	NA	NA	354	8,250	1,976	4,749	14,975
1974	82	4,901	2,573	7,557	371	NA	NA	371	7,928	1,973	4,824	14,725
1975	63	5,023	2,495	7,580	425	NA	NA	425	8,006	2,007	4,855	14,867
1976	59	5,147	2,720	7,927	482	NA	NA	482	8,408	2,069	4,994	15,471
1977	57	4,913	2,695	7,666	542	NA	NA	542	8,207	2,202	5,331	15,740
1978	49	4,981	2,620	7,651	622	NA	NA	622	8,272	2,301	5,639	16,212
1979	37	5,055	2,114	7,206	728	NA	NA	728	7,934	2,330	5,636	15,900
1980	31	4,866	1,748	6,645	R859	NA	NA	859	7,504	2,448	5,958	15,909
1981	30	4,660	1,543	6,234	869	NA	NA	869	7,103	2,464	5,876	15,442
1982	32	4,753	1,441	6,226	937	NA	NA	937	7,163	2,489	6,008	15,661
1983	31	4,516	1,362	5,909	925	NA	NA	925	6,834	2,562	6,162	15,559
1984	38	4,692	1,337	6,067	923	NA	NA	923	6,990	2,662	6,229	15,881
1985	35	4,571	1,483	6,089	899	NA	NA	899	6,988	2,709	6,362	16,059
1986	35	4,439	1,457	5,931	876	NA	NA	876	6,807	2,795	6,450	16,052
1987	32	4,449	1,508	5,989	852	NA	NA	852	6,841	2,902	6,662	16,405
1988	32	4,765	1,563	6,359	885	NA	NA	885	7,244	3,046	6,887	17,178
1989	28	4,929	1,560	6,516	918	R5	53	976	7,492	3,090	6,777	17,358
1990	26	4,523	1,266	5,816	581	R6	56	642	6,458	3,153	6,803	16,414
1991	23	4,697	1,293	6,013	613	R6	58	677	6,689	3,260	6,954	16,904
1992	24	4,835	1,312	6,172	645	R6	60	711	6,883	3,193	6,660	16,737
1993	24	5,095	1,387	6,507	548	R7	62	616	7,123	3,394	6,997	17,514
1994	21	4,988	1,340	6,349	537	R6	64	607	6,956	3,441	7,007	17,404
1995	17	4,981	1,361	6,360	596	R7	65	667	7,027	3,557	7,196	17,781
1996	17	5,383	1,492	6,891	595	R7	66	668	7,559	3,694	7,492	18,744
1997	16	5,118	1,454	6,588	433	R7	65	506	7,093	3,671	7,422	18,187
1998	13	4,669	1,324	6,006	R387	R8	65	459	6,465	3,856	7,632	17,953
1999	14	4,858	1,456	6,328	R414	R8	R64	486	6,814	3,906	[7]8,851	[7]19,572
2000P	14	5,061	1,475	6,550	433	9	62	503	7,053	4,066	9,272	20,391

[1] Includes supplemental gaseous fuels.
[2] Wood only.
[3] Geothermal heat pump and direct use energy.
[4] Solar thermal direct use and photovoltaic energy. Includes small amounts of commercial sector use.
[5] Electric utility retail sales of electricity, including nonutility sales of electricity to utilities for distribution to end users; beginning in 1996, also includes sales to ultimate consumers by power marketers.
[6] Total losses are calculated as the energy consumed to generate electricity by the electric power sector minus the electricity consumed by end users (see Tables 2.1f, 8.12, A6; Diagram 5; and Glossary). Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity use. (Nonutility direct use of electricity and nonutility sales of electricity to end users are allocated totally to the industrial sector.)
[7] There is a discontinuity in this time series between 1998 and 1999; beginning in 1999, nonutility consumption of fossil fuels is included in electric power sector consumption and the calculation for electrical system energy losses. See Table 2.1f.

R=Revised. P=Preliminary. NA=Not available.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Tables 2.1f, 5.12a, 6.5, 7.3, 8.12, 10.2a, A1, and A4-A6.

Table 2.1c Commercial Sector Energy Consumption, 1949-2000

(Trillion Btu)

Year	Primary Consumption								Electricity [5]	Electrical System Energy Losses [6]	Total
	Fossil Fuels				Renewable Energy			Total Primary			
	Coal [1]	Natural Gas [1,2]	Petroleum [1]	Total	Wood [3]	Geothermal [4]	Total				
1949	1,554	360	727	2,641	20	NA	20	2,661	200	822	3,683
1950	1,542	401	862	2,805	19	NA	19	2,824	225	854	3,903
1951	1,331	481	924	2,736	18	NA	18	2,754	252	902	3,909
1952	1,169	534	942	2,645	17	NA	17	2,662	273	946	3,881
1953	985	549	970	2,504	16	NA	16	2,520	297	978	3,795
1954	825	605	1,000	2,430	15	NA	15	2,445	319	973	3,737
1955	801	651	1,081	2,533	15	NA	15	2,548	350	999	3,896
1956	730	742	1,122	2,594	14	NA	14	2,608	380	1,051	4,039
1957	535	803	1,083	2,421	13	NA	13	2,434	411	1,114	3,959
1958	512	902	1,125	2,540	13	NA	13	2,553	435	1,140	4,128
1959	415	1,009	1,194	2,618	12	NA	12	2,630	488	1,249	4,367
1960	407	1,056	1,228	2,690	12	NA	12	2,702	543	1,361	4,606
1961	371	1,115	1,247	2,733	11	NA	11	2,744	572	1,403	4,719
1962	371	1,249	1,280	2,899	11	NA	11	2,910	621	1,501	5,032
1963	317	1,307	1,262	2,887	10	NA	10	2,897	688	1,651	5,235
1964	274	1,419	1,247	2,940	9	NA	9	2,949	738	1,763	5,450
1965	259	1,490	1,386	3,135	9	NA	9	3,144	789	1,888	5,821
1966	263	1,676	1,436	3,375	9	NA	9	3,384	859	2,066	6,309
1967	225	2,022	1,483	3,730	8	NA	8	3,738	925	2,216	6,879
1968	203	2,140	1,510	3,853	8	NA	8	3,861	1,014	2,424	7,300
1969	195	2,323	1,520	4,038	8	NA	8	4,046	1,108	2,652	7,806
1970	165	2,473	1,551	4,189	8	NA	8	4,196	1,201	2,922	8,319
1971	175	2,587	1,510	4,272	7	NA	7	4,279	1,288	3,126	8,693
1972	153	2,678	1,530	4,362	7	NA	7	4,369	1,408	3,391	9,168
1973	160	2,649	1,565	4,374	7	NA	7	4,381	1,517	3,644	9,542
1974	175	2,617	1,423	4,214	7	NA	7	4,221	1,501	3,672	9,394
1975	147	2,558	1,310	4,015	8	NA	8	4,023	1,598	3,865	9,486
1976	144	2,718	1,461	4,323	9	NA	9	4,333	1,678	4,049	10,060
1977	148	2,548	1,511	4,207	10	NA	10	4,217	1,754	4,247	10,218
1978	165	2,643	1,450	4,257	12	NA	12	4,269	1,813	4,443	10,525
1979	149	2,836	1,334	4,319	14	NA	14	4,333	1,854	4,485	10,673
1980	115	2,674	1,287	4,076	21	NA	21	4,097	1,906	4,639	10,642
1981	137	2,583	1,090	3,810	21	NA	21	3,831	2,033	4,848	10,712
1982	155	2,673	1,008	3,837	22	NA	22	3,859	2,077	5,014	10,950
1983	162	2,508	1,136	3,805	22	NA	22	3,827	2,116	5,090	11,034
1984	171	2,600	1,198	3,969	22	NA	22	3,991	2,264	5,300	11,555
1985	141	2,508	1,039	3,688	24	NA	24	3,712	2,351	5,522	11,585
1986	141	2,386	1,099	3,625	27	NA	27	3,652	2,439	5,628	11,719
1987	129	2,505	1,079	3,714	29	NA	29	3,743	2,539	5,829	12,110
1988	136	2,748	1,037	3,921	32	NA	32	3,953	2,675	6,047	12,675
1989	118	2,802	966	3,886	34	3	37	3,922	2,767	6,068	12,757
1990	129	2,701	907	3,738	37	3	40	3,778	2,860	6,172	12,810
1991	118	2,813	861	3,792	39	3	42	3,834	2,918	6,225	12,977
1992	118	2,890	813	3,821	42	3	45	3,866	2,900	6,049	12,815
1993	119	2,942	753	3,813	44	3	47	3,861	3,019	6,223	13,103
1994	118	2,979	753	3,850	45	4	49	3,900	3,116	6,344	13,359
1995	117	3,113	715	3,945	45	5	50	3,994	3,252	6,579	13,826
1996	122	3,244	747	4,112	49	5	54	4,166	3,344	6,783	14,292
1997	129	3,302	709	4,140	47	6	53	4,192	3,503	7,082	14,778
1998	92	3,098	665	3,855	47	7	54	3,909	3,678	7,280	14,867
1999	103	3,130	672	3,904	[R]51	7	58	3,962	3,766	[7]8,533	[7]16,261
2000[P]	102	3,452	696	4,250	52	8	60	4,310	3,867	8,818	16,994

[1] Includes some consumption at nonutilities.
[2] Includes supplemental gaseous fuels.
[3] Wood only.
[4] Geothermal heat pump and direct use energy.
[5] Electric utility retail sales of electricity, including nonutility sales of electricity to utilities for distribution to end users; beginning in 1996, also includes sales to ultimate consumers by power marketers.
[6] Total losses are calculated as the energy consumed to generate electricity by the electric power sector minus the electricity consumed by end users (see Tables 2.1f, 8.12, A6; Diagram 5; and Glossary). Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity use. (Nonutility direct use of electricity and nonutility sales of electricity to end users are allocated totally to the industrial sector.)
[7] There is a discontinuity in this time series between 1998 and 1999; beginning in 1999, nonutility consumption of fossil fuels is included in electric power sector consumption and the calculation for electrical system energy losses. See Table 2.1f.

R=Revised. P=Preliminary. NA=Not available.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Tables 2.1f, 5.12a, 6.5, 7.3, 8.12, 10.2a, A1, and A3-A6.

Table 2.1d Industrial Sector Energy Consumption, 1949-2000

(Trillion Btu)

Year	Primary Consumption										Electricity [5]	Electrical System Energy Losses [6]	Total
	Fossil Fuels					Renewable Energy				Total Primary			
	Coal [1]	Coal Coke Net Imports	Natural Gas [1,2]	Petroleum [1]	Total	Wood [3]	Waste [3]	Geothermal [4]	Total				
1949	5,433	-7	3,188	3,469	12,084	468	NA	NA	R468	12,552	418	R1,717	R14,687
1950	5,781	1	3,546	3,951	13,279	532	NA	NA	R532	13,811	500	R1,896	R16,208
1951	6,202	-21	4,052	4,270	14,503	553	NA	NA	R553	15,055	567	R2,027	R17,650
1952	5,517	-12	4,181	4,362	14,047	552	NA	NA	R552	14,599	601	R2,080	R17,280
1953	5,931	-9	4,304	4,481	14,707	566	NA	NA	R566	15,273	678	R2,233	R18,184
1954	4,730	-7	4,319	4,632	13,674	576	NA	NA	R576	14,250	711	R2,167	R17,128
1955	5,620	-10	4,701	5,110	15,421	631	NA	NA	R631	16,052	887	R2,532	R19,471
1956	5,667	-13	4,874	5,337	15,865	661	NA	NA	R661	16,527	976	R2,697	R20,199
1957	5,536	-17	5,107	5,237	15,863	616	NA	NA	R616	16,479	1,003	R2,722	R20,204
1958	4,533	-7	5,208	5,408	15,142	620	NA	NA	R620	15,762	978	R2,561	R19,301
1959	4,413	-8	5,647	5,740	15,791	692	NA	NA	R692	16,483	1,075	R2,753	R20,311
1960	4,543	-6	5,973	5,748	16,259	680	NA	NA	R680	16,939	1,107	R2,774	R20,819
1961	4,345	-8	6,170	5,753	16,261	695	NA	NA	R695	16,956	1,149	R2,819	R20,924
1962	4,385	-6	6,451	5,996	16,826	728	NA	NA	R728	17,554	1,228	R2,969	R21,750
1963	4,590	-7	6,748	6,226	17,557	775	NA	NA	R775	18,332	1,288	R3,092	R22,711
1964	4,915	-10	7,114	6,546	18,564	827	NA	NA	R827	19,391	1,382	R3,303	R24,076
1965	5,127	-18	7,339	6,789	19,236	855	NA	NA	R855	20,091	1,463	R3,502	R25,056
1966	5,215	-25	7,795	7,109	20,094	902	NA	NA	R902	20,996	1,582	R3,804	R26,382
1967	4,934	-15	8,043	7,119	20,081	895	NA	NA	R895	20,975	1,655	R3,963	R26,593
1968	4,855	-17	8,626	7,389	20,853	982	NA	NA	R982	21,835	1,778	R4,252	R27,865
1969	4,712	-36	9,234	7,697	21,606	1,014	NA	NA	R1,014	22,621	1,909	R4,570	R29,099
1970	4,656	-58	9,536	7,789	21,923	1,019	NA	NA	R1,019	22,942	1,948	R4,738	R29,628
1971	3,944	-33	9,892	7,859	21,661	1,040	NA	NA	R1,040	22,701	2,011	R4,881	R29,594
1972	3,993	-26	9,884	8,534	22,386	1,113	NA	NA	R1,113	23,499	2,187	R5,269	R30,954
1973	4,057	-7	10,388	9,102	23,539	1,165	NA	NA	R1,165	24,704	2,341	R5,625	R32,670
1974	3,870	56	10,004	8,694	22,624	1,159	NA	NA	R1,159	23,783	2,337	R5,715	R31,834
1975	3,667	14	8,532	8,148	20,360	1,063	NA	NA	R1,063	21,424	2,346	R5,676	R29,446
1976	3,661	(s)	8,762	9,014	21,436	1,220	NA	NA	R1,220	22,656	2,573	R6,209	R31,438
1977	3,454	15	8,635	9,776	21,880	1,281	NA	NA	R1,281	23,162	2,682	R6,494	R32,338
1978	3,314	125	8,539	9,866	21,843	1,400	NA	NA	R1,400	23,243	2,761	R6,764	R32,768
1979	3,593	63	8,549	10,566	22,771	1,405	NA	NA	R1,405	24,176	2,873	R6,949	R33,998
1980	3,155	-35	8,395	9,528	21,043	1,600	NA	NA	R1,600	22,643	2,781	R6,768	R32,192
1981	3,157	-16	8,257	8,286	19,684	1,602	87	NA	R1,689	21,372	2,817	R6,717	R30,907
1982	2,552	-22	7,121	7,795	17,446	1,516	118	NA	R1,634	19,080	2,542	R6,135	R27,757
1983	2,490	-16	6,826	7,417	16,718	1,690	155	NA	R1,845	18,563	2,648	R6,368	R27,578
1984	2,842	-11	7,448	8,015	18,293	1,679	204	NA	R1,883	20,176	2,859	R6,691	R29,725
1985	2,760	-13	7,080	7,807	17,634	1,645	230	NA	R1,875	19,509	2,855	R6,705	R29,069
1986	2,641	-17	6,690	7,921	17,235	1,610	256	NA	R1,866	19,101	2,834	R6,540	R28,475
1987	2,673	9	7,323	8,150	18,154	1,576	282	NA	R1,858	20,012	2,928	R6,723	R29,663
1988	2,828	40	7,696	8,431	18,995	1,625	308	NA	R1,933	20,927	3,059	R6,915	R30,901
1989	2,787	30	8,131	8,130	19,078	R1,394	250	R2	R1,646	20,724	3,501	R7,679	R31,904
1990	2,756	5	8,502	8,319	19,582	R1,254	271	R2	R1,527	21,109	3,582	R7,729	R32,420
1991	2,601	10	8,619	R8,058	19,288	R1,190	275	R2	R1,467	20,755	3,609	R7,698	R32,062
1992	2,515	35	8,967	8,635	20,152	R1,233	289	R2	R1,525	21,677	3,734	R7,789	R33,200
1993	2,496	27	9,410	8,450	20,383	R1,255	288	R2	R1,546	21,929	3,767	R7,766	R33,461
1994	2,510	58	9,560	8,848	20,977	R1,342	318	R3	R1,663	22,640	3,920	R7,982	R34,542
1995	2,488	61	10,064	R8,622	R21,236	R1,402	322	R3	R1,727	22,963	3,964	R8,020	R34,948
1996	R2,434	23	10,393	R9,061	R21,912	R1,441	363	R3	R1,807	23,719	4,035	R8,184	R35,938
1997	R2,395	46	10,307	R9,318	R22,066	R1,513	338	R3	R1,854	23,920	4,051	R8,190	R36,161
1998	R2,335	67	10,168	R9,104	R21,675	R1,564	312	R3	R1,879	23,554	4,132	R8,179	R35,865
1999	R2,243	58	R10,360	R9,394	R22,056	R1,711	291	R4	R2,007	24,063	4,255	R,7 9,641	R,7 37,958
2000P	2,280	65	10,943	9,197	22,485	1,702	287	4	1,993	24,477	4,355	9,931	38,763

[1] Includes some consumption at nonutilities.
[2] Includes supplemental gaseous fuels.
[3] See Table 10.2a for wood and waste components.
[4] Geothermal heat pump and direct use energy.
[5] Electric utility retail sales of electricity, including nonutility sales of electricity to utilities for distribution to end users; beginning in 1989, also includes nonutility facility use of onsite net electricity generation, and electricity sold by nonutilities directly to end users; beginning in 1996, also includes sales to ultimate consumers by power marketers.
[6] Total losses are calculated as the energy consumed to generate electricity by the electric power sector minus the electricity consumed by end users (see Tables 2.1f, 8.12, A6; Diagram 5; and Glossary). Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity use. (Nonutility direct use of electricity and nonutility sales of electricity to end users are allocated totally to the industrial sector.)
[7] There is a discontinuity in this time series between 1998 and 1999; beginning in 1999, nonutility consumption of fossil fuels is included in electric power sector consumption and the calculation for electrical system energy losses. See Table 2.1f.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Tables 2.1f, 5.12b, 6.5, 7.3, 8.12, 10.2a, A1, and A3-A6.

Table 2.1e Transportation Sector Energy Consumption, 1949-2000

(Trillion Btu)

Year	Primary Consumption						Electricity [3]	Electrical System Energy Losses [4]	Total [2]
	Fossil Fuels				Renewable Energy				
	Coal	Natural Gas [1]	Petroleum	Total	Alcohol Fuels [2]	Total Primary [2]			
1949	1,727	NA	6,152	7,880	NA	7,880	22	91	R7,993
1950	1,564	130	6,690	8,384	NA	8,384	23	88	R8,495
1951	1,379	199	7,356	8,934	NA	8,934	24	86	R9,044
1952	984	214	7,709	8,907	NA	8,907	22	76	R9,005
1953	733	238	8,060	9,031	NA	9,031	22	72	R9,125
1954	461	239	8,123	8,823	NA	8,823	20	61	8,904
1955	421	254	8,801	9,476	NA	9,476	20	57	9,552
1956	340	306	9,145	9,792	NA	9,792	19	51	9,861
1957	241	310	9,286	9,837	NA	9,837	16	44	9,897
1958	115	323	9,514	9,952	NA	9,952	15	38	10,005
1959	88	362	9,849	10,299	NA	10,299	14	37	10,350
1960	75	359	10,127	10,561	NA	10,561	10	26	10,598
1961	19	391	10,324	10,734	NA	10,734	10	25	10,770
1962	17	396	10,774	11,187	NA	11,187	10	25	11,221
1963	16	437	11,167	11,621	NA	11,621	10	24	R11,655
1964	17	450	11,497	11,964	NA	11,964	10	24	11,998
1965	16	517	11,867	12,400	NA	12,400	10	24	12,434
1966	15	553	12,501	13,069	NA	13,069	10	23	13,102
1967	11	594	13,112	13,717	NA	13,717	10	24	13,751
1968	10	609	14,211	14,830	NA	14,830	10	24	14,865
1969	7	651	14,814	15,472	NA	15,472	10	25	15,507
1970	7	745	15,311	16,062	NA	16,062	11	26	16,099
1971	5	766	15,923	16,693	NA	16,693	10	25	16,729
1972	4	787	16,892	17,683	NA	17,683	10	25	17,718
1973	3	743	17,829	18,575	NA	18,575	11	25	18,611
1974	2	685	17,400	18,087	NA	18,087	10	24	18,120
1975	1	595	17,615	18,211	NA	18,211	10	25	18,245
1976	(s)	559	18,506	19,065	NA	19,065	10	24	19,099
1977	(s)	543	19,240	19,783	NA	19,783	10	25	19,819
1978	([5])	539	20,040	20,579	NA	20,579	10	25	20,613
1979	([5])	612	19,823	20,435	NA	20,435	10	24	20,469
1980	([5])	650	19,007	19,657	NA	19,657	11	27	19,695
1981	([5])	658	18,810	19,468	7	19,468	11	26	19,505
1982	([5])	612	18,419	19,031	19	19,031	11	27	19,068
1983	([5])	505	18,591	19,097	35	19,097	13	30	19,140
1984	([5])	545	19,218	19,762	43	19,762	14	33	19,810
1985	([5])	519	19,505	20,024	52	20,024	14	33	20,071
1986	([5])	499	20,269	20,768	60	20,768	15	35	20,818
1987	([5])	535	20,870	21,405	69	21,405	16	36	21,456
1988	([5])	632	21,629	22,261	70	22,261	16	36	22,313
1989	([5])	649	21,867	22,515	71	22,515	16	36	R22,567
1990	([5])	680	21,809	22,489	63	22,489	16	35	R22,540
1991	([5])	620	21,456	22,077	73	22,077	16	35	22,128
1992	([5])	606	21,812	22,419	83	22,419	16	33	R22,468
1993	([5])	643	22,199	22,842	97	22,842	16	34	R22,892
1994	([5])	707	22,761	23,468	109	23,468	17	35	R23,520
1995	([5])	722	23,199	23,921	117	23,921	17	34	R23,972
1996	([5])	734	R23,734	24,467	84	24,467	17	34	R24,518
1997	([5])	776	R23,992	R24,768	106	24,768	17	34	R24,819
1998	([5])	662	R24,677	R25,338	117	25,338	17	34	R25,389
1999	([5])	R762	R25,493	R26,255	122	26,255	17	[6]40	R,[6]26,312
2000P	([5])	774	25,807	26,580	139	26,580	18	41	26,639

[1] Natural gas consumed in the operation of pipelines (primarily in compressors) and small amounts consumed as vehicle fuel. See Table 6.5.

[2] Alcohol (ethanol blended into motor gasoline) is included in both "Petroleum" and "Alcohol Fuels," but is counted only once in both total primary consumption and total consumption.

[3] Electric utility retail sales of electricity, including nonutility sales of electricity to utilities for distribution to end users; beginning in 1996, also includes sales to ultimate consumers by power marketers.

[4] Total losses are calculated as the energy consumed to generate electricity by the electric power sector minus the electricity consumed by end users (see Tables 2.1f, 8.12, A6; Diagram 5; and Glossary). Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity use. (Nonutility direct use of electricity and nonutility sales of electricity to end users are allocated totally to the industrial sector.)

[5] Since 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.

[6] There is a discontinuity in this time series between 1998 and 1999; beginning in 1999, nonutility consumption of fossil fuels is included in electric power sector consumption and the calculation for electrical system energy losses. See Table 2.1f.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Tables 2.1f, 5.12c, 6.5, 7.3, 8.12, 10.2a, and A3-A6.

Table 2.1f Electric Power Sector Energy Consumption, 1949-2000

(Trillion Btu)

Year	Primary Consumption														
	Fossil Fuels					Nuclear Electric Power	Hydroelectric Pumped Storage [5]	Renewable Energy [1]							Total Primary
	Coal [2]	Natural Gas [2,3]	Petroleum [2]	Other [4]	Total			Conventional Hydroelectric Power [6]	Wood	Waste	Geothermal [7]	Solar	Wind	Total	
1949	1,995	569	415	([8])	2,979	0	([8])	1,449	6	NA	NA	NA	NA	1,454	4,433
1950	2,199	651	472	([8])	3,322	0	([8])	1,440	5	NA	NA	NA	NA	1,446	4,768
1951	2,507	791	400	([8])	3,697	0	([8])	1,454	5	NA	NA	NA	NA	1,459	5,156
1952	2,557	942	420	([8])	3,920	0	([8])	1,496	6	NA	NA	NA	NA	1,503	5,422
1953	2,777	1,070	514	([8])	4,362	0	([8])	1,439	5	NA	NA	NA	NA	1,444	5,806
1954	2,841	1,206	417	([8])	4,464	0	([8])	1,388	3	NA	NA	NA	NA	1,391	5,856
1955	3,458	1,194	471	([8])	5,123	0	([8])	1,407	3	NA	NA	NA	NA	1,411	6,533
1956	3,790	1,283	455	([8])	5,527	0	([8])	1,487	2	NA	NA	NA	NA	1,489	7,016
1957	3,855	1,383	498	([8])	5,737	(s)	([8])	1,557	2	NA	NA	NA	NA	1,559	7,295
1958	3,721	1,421	486	([8])	5,628	2	([8])	1,629	2	NA	NA	NA	NA	1,631	7,261
1959	4,029	1,686	552	([8])	6,267	2	([8])	1,587	2	NA	NA	NA	NA	1,589	7,858
1960	4,228	1,785	553	([8])	6,565	6	([8])	1,657	2	NA	1	NA	NA	1,659	8,230
1961	4,355	1,889	557	([8])	6,801	20	([8])	1,680	1	NA	2	NA	NA	1,684	8,505
1962	4,622	2,035	560	([8])	7,217	26	([8])	1,822	1	NA	2	NA	NA	1,825	9,069
1963	5,050	2,211	585	([8])	7,846	38	([8])	1,772	1	NA	4	NA	NA	1,777	9,661
1964	5,380	2,397	634	([8])	8,411	40	([8])	1,907	2	NA	5	NA	NA	1,913	10,363
1965	5,821	2,395	722	([8])	8,938	43	([8])	2,058	3	NA	4	NA	NA	2,065	11,046
1966	6,302	2,696	883	([8])	9,881	64	([8])	2,073	3	NA	4	NA	NA	2,081	12,026
1967	6,445	2,834	1,011	([8])	10,290	88	([8])	2,344	3	NA	7	NA	NA	2,354	12,732
1968	6,994	3,245	1,181	([8])	11,421	142	([8])	2,342	4	NA	9	NA	NA	2,355	13,918
1969	7,219	3,596	1,571	([8])	12,386	154	([8])	2,659	3	NA	13	NA	NA	2,676	15,216
1970	7,227	4,054	2,117	([8])	13,399	239	([8])	2,654	1	2	11	NA	NA	2,669	16,307
1971	7,299	4,099	2,495	([8])	13,893	413	([8])	2,861	1	2	12	NA	NA	2,876	17,183
1972	7,811	4,084	3,097	([8])	14,992	584	([8])	2,944	1	2	31	NA	NA	2,979	18,554
1973	8,658	3,748	3,515	([8])	15,921	910	([8])	3,010	1	2	43	NA	NA	3,056	19,887
1974	8,534	3,519	3,365	([8])	15,418	1,272	([8])	3,309	1	2	53	NA	NA	3,365	20,055
1975	8,786	3,240	3,166	([8])	15,191	1,900	([8])	3,219	(s)	2	70	NA	NA	3,291	20,382
1976	9,720	3,152	3,477	([8])	16,349	2,111	([8])	3,066	1	2	78	NA	NA	3,146	21,607
1977	10,262	3,284	3,901	([8])	17,446	2,702	([8])	2,515	3	2	77	NA	NA	2,597	22,746
1978	10,238	3,297	3,987	([8])	17,522	3,024	([8])	3,141	2	1	64	NA	NA	3,209	23,755
1979	11,260	3,613	3,283	([8])	18,156	2,776	([8])	3,141	3	2	84	NA	NA	3,230	24,162
1980	12,123	3,810	2,634	([8])	18,567	2,739	([8])	3,118	3	2	110	NA	NA	3,232	24,538
1981	12,583	3,768	2,202	([8])	18,553	3,008	([8])	3,105	3	1	123	NA	NA	3,232	24,793
1982	12,582	3,342	1,568	([8])	17,491	3,131	([8])	3,572	2	1	105	NA	NA	3,680	24,303
1983	13,213	2,998	1,544	([8])	17,754	3,203	([8])	3,899	2	2	129	NA	(s)	4,032	24,989
1984	14,019	3,220	1,286	([8])	18,526	3,553	([8])	3,800	5	4	165	(s)	(s)	3,974	26,053
1985	14,542	3,160	1,090	([8])	18,792	4,149	([8])	3,398	8	7	198	(s)	(s)	3,611	26,552
1986	14,444	2,691	1,452	([8])	18,586	4,471	([8])	3,446	5	7	219	(s)	(s)	3,678	26,735
1987	15,173	2,935	1,257	([8])	19,365	4,906	([8])	3,117	8	7	229	(s)	(s)	3,362	27,633
1988	15,850	2,709	1,563	([8])	20,123	5,661	([8])	2,662	10	8	217	(s)	(s)	2,897	28,681
1989	15,988	2,871	1,685	R-50	20,494	5,677	([8])	R,1 3,014	1 289	1 104	R,1 325	1 7	1 24	3,763	29,934
1990	16,190	2,882	1,250	R-80	20,242	6,162	-36	R 3,146	316	137	R 344	7	32	3,982	30,350
1991	16,028	2,856	1,178	R 59	20,121	6,580	-47	R 3,159	346	164	R 352	8	32	4,061	30,715
1992	16,211	2,826	951	R 53	20,041	6,608	-43	R 2,818	368	184	R 362	8	30	3,769	30,376
1993	16,790	2,741	1,052	R 50	20,634	6,520	-42	R 3,119	379	191	R 374	9	31	4,104	31,216
1994	16,895	3,053	968	R 140	21,056	6,838	-35	R 2,993	390	197	R 378	8	36	4,002	31,861
1995	16,990	3,276	658	R 121	21,046	7,177	-28	R 3,481	375	209	R 319	8	33	4,426	32,621
1996	17,953	2,798	725	R 109	21,585	7,168	-32	R 3,892	380	214	R 331	9	35	4,861	33,581
1997	18,501	3,025	822	R 109	22,456	6,678	-42	R 3,961	355	213	R 306	9	33	4,877	33,970
1998	18,685	3,330	1,166	R 48	23,228	7,157	-46	R 3,569	329	220	R 310	9	31	4,468	34,807
1999	2 19,533	2 5,811	2 1,349	R 92	9 26,785	R 7,736	R -65	R 3,512	389	243	R 354	9	46	4,554	9 39,009
2000 P	20,503	6,475	1,209	102	28,289	8,009	-58	3,107	409	254	298	9	51	4,128	40,368

[1] Beginning in 1989, includes expanded coverage of nonutility consumption.

[2] Data for 1949-1998 are for electric utility consumption to produce electricity only; data for 1999 and 2000 are for electric utility and nonutility consumption to produce electricity only. See Tables 5.12d, 6.5, and 7.3.

[3] Includes supplemental gaseous fuels.

[4] Electricity net imports from fossil fuels; may include some nuclear-generated electricity.

[5] Pumped storage facility production minus energy used for pumping.

[6] Through 1988, includes all electricity net imports. From 1989, includes electricity net imports derived from hydroelectric power only.

[7] From 1989, includes electricity imports from Mexico that are derived from geothermal energy.

[8] Included in conventional hydroelectric power.

[9] There is a discontinuity in this time series between 1998 and 1999; beginning in 1999, nonutility consumption of fossil fuels is included in electric power sector consumption and the calculation for electrical system energy losses. See Note 4 at end of Electricity section.

R=Revised. P=Preliminary. (s)=Less than 0.5 trillion Btu. NA=Not available.

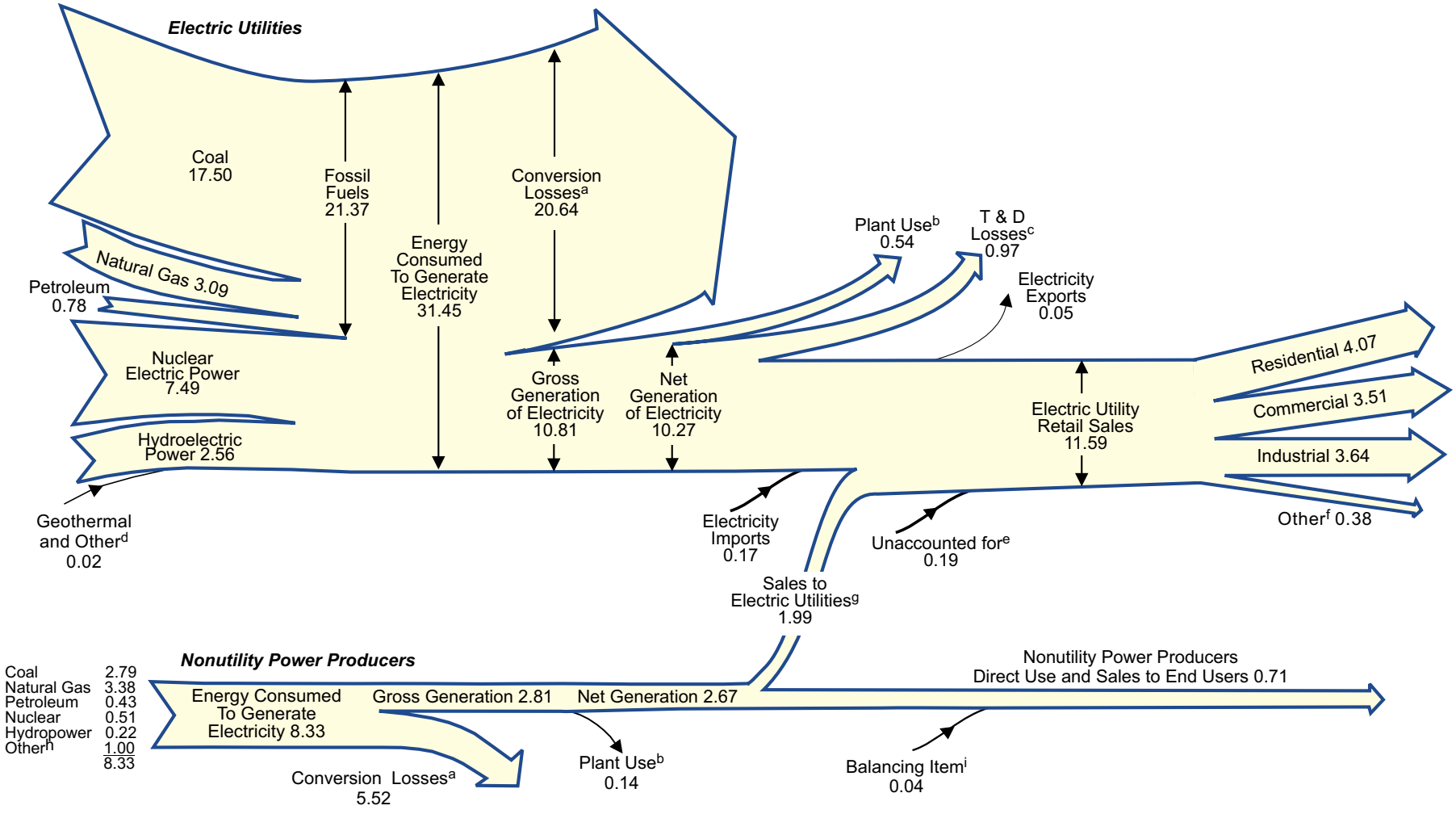
Note: Totals may not equal sum of components due to independent rounding.

Web Page: http://www.eia.doe.gov/fuelrenewable.html.

Sources: Tables 5.12d, 6.5, 7.3, 8.1, 8.2, 10.2b, A1, and A4-A6.

Diagram 5. Electricity Flow, 2000

(Quadrillion Btu)



[a] Approximately two-thirds of all energy used to generate electricity. See Note 1 at end of section.

[b] The electric energy used in the operation of power plants, estimated as 5 percent of gross generation. See Note 1 at end of section.

[c] Transmission and distribution losses are estimated as 9 percent of gross generation of electricity. See Note 1 at end of section.

[d] Wood, waste, wind, and solar energy used to generate electricity. See Table 8.3.

[e] Balancing item to adjust for data collection frame differences and nonsampling error.

[f] Public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

[g] Sales, interchanges, and exchanges of electric energy with utilities.

[h] Geothermal, wood, waste, wind, and solar energy used to generate electricity. See Table 8.4.

[i] Transmission and distribution losses and unaccounted for.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Tables 8.1, 8.3, 8.8, 8.12, A6, and (for Sales to Electric Utilities) EIA, *Short-Term Energy Outlook* (May 2001), Table A8.

Credits and Web Locations

The production and end-use data in this chart were derived from: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2000*, DOE/EIA-0384(2000), Washington, D.C., August 2001. The report is available on the Web at http://www.eia.doe.gov/aer

The energy flow charts prepared by Lawrence Livermore National Laboratory are available on the Web at http://en-env.llnl.gov/flow/

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