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Monthly Energy Review

September 1993

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Manufacturing Energy Consumption Survey

Preliminary Estimates, 1991

The following tables present preliminary consumption estimates from the 1991 Manufacturing Energy Consumption Survey (MECS). The MECS is a national survey of energy consumption and related issues for the manufacturing sector of the U.S. economy. Data were collected by mail from a national probability sample of manufacturing establishments. The manufacturing sector consists of those establishments classified as Standard Industrial Codes (SIC) 20 through 39. The MECS excludes those industrial establishments primarily engaged in agricultural production, forestry and fishing, mining, and construction.

In 1991, the Energy Information Administration (EIA) augmented the MECS to incorporate the increased data needs of the U.S. Congress, U.S. Department of Energy, EIA, and the general public.[1] Enhancements occurred in the sample design, questionnaire, and estimation procedures for the MECS. As a result, the number of publishable 4–digit SIC industries has increased and new energy measures are being provided. For example, the 1991 MECS presents, for the first time, a breakdown of consumption by end use.

The MECS continues to provide estimates of fuel-switching capabilities and three measures of total energy consumption: (1) offsite-produced energy for heat, power, and electricity generation; (2) total primary consumption of energy for all purposes; and (3) total inputs of energy for heat, power, and electricity generation. In the tables in this preview, total inputs of energy for heat, power, and electricity generation are presented by SIC and end use.

Final consumption estimates will be published by EIA in the report *Manufacturing Energy Consumption 1991*, planned for 1994. Note that in 1994 the MECS will convert to biennial data collection in accordance with the provisions of the Energy Policy Act of 1992 (Public Law 102–486).

[1]For specific details, see Energy Information Administration, *Development of the 1991 Manufacturing Energy Consumption Survey*, DOE/EIA-0555(92)/2 (Washington, DC, May 18, 1992).

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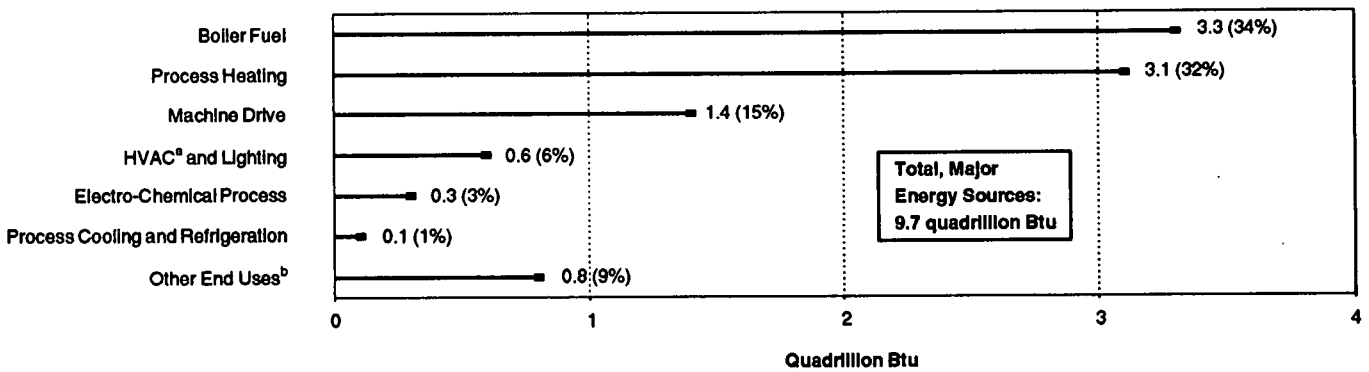
Figure 1. Estimated Consumption of Major Energy Sources by Manufacturing End Use, 1991



Note: • Estimated consumption is defined as inputs of energy for heat, power, and electricity generation. The major energy sources are net electricity, residual and distillate fuel oil, liquefied petroleum gases and natural gas liquids, natural gas, and coal (excluding coal coke and breeze). • Totals may not equal sum of components due to independent rounding.

[a]Heating, ventilation, and air conditioning.

[b]"Other End Uses" consist of facility support other than HVAC and lighting, onsite transportation, conventional electricity generation, other process and non-process end uses, and energy consumption for which end uses were not reported.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use and Integrated Statistics Division, Form EIA-846, "1991 Manufacturing Energy Consumption Survey." See Table 2 of this "Energy Preview."

This "Energy Preview" is the third in a series on EIA's consumption surveys. In accordance with a suggestion of the National Academy of Sciences report on *The National Energy Modeling System* (Washington, DC, March 1992), EIA will release preliminary estimates from four EIA consumption surveys: Residential Energy Consumption Survey, Commercial Buildings Energy Consumption Survey, Manufacturing Energy Consumption Survey, and Residential Transportation Energy Consumption Survey.

Table 1a. Total Inputs of Energy for Heat, Power, and Electricity Generation by U.S. Manufacturing Industry Group and Selected Industries, 1991: SIC 20–29

(Estimates in Btu or Physical Units)

SIC Code[a]	Industry Groups and Industry	Net Electricity[b] (million kilowatt-hours)	Residual Fuel Oil (thousand barrels)	Distillate Fuel Oil[c] (thousand barrels)	LPG and NGL[d] (thousand barrels)	Natural Gas[e] (billion cubic feet)	Coal (thousand short tons)	Coal Coke and Breeze (thousand short tons)	Other[f] (trillion Btu)	Total (trillion Btu)
20	Food and Kindred Products	49,536	4,317	2,966	1,429	497	6,913	W	W	853
2011	Meat Packing Plants	3,410	170	252	157	31	27	0	2	49
2033	Canned Fruits and Vegetables	1,375	290	131	124	35	Q	0	*	44
2037	Frozen Fruits and Vegetables	3,071	321	76	41	25	0	0	1	40
2046	Wet Corn Milling	4,054	29	30	1	51	3,051	W	W	140
2051	Bread, Cake, and Related Products	2,240	*	131	23	22	0	0	*	32
2063	Beet Sugar	386	W	30	5	18	1,901	W	*	67
2075	Soybean Oil Mills	1,616	42	31	5	24	592	0	7	50
2082	Malt Beverages	2,328	419	58	6	22	706	0	1	50
21	Tobacco Products	1,002	135	40	23	4	692	0	*	24
22	Textile Mill Products	29,532	1,966	1,064	629	105	1,362	0	13	273
23	Apparel and Other Textile Products	5,645	Q	142	158	18	88	0	1	44
24	Lumber and Wood Products	17,878	333	2,373	1,000	39	92	0	300	423
25	Furniture and Fixtures	4,915	184	162	255	18	157	0	25	67
26	Paper and Allied Products	58,896	24,883	1,566	W	532	13,252	W	1,257	2,472
2611	Pulp Mills	2,537	4,500	155	141	32	331	0	221	300
2621	Paper Mills	32,735	13,455	W	613	252	6,634	W	548	1,204
2631	Paperboard Mills	10,396	W	207	93	180	W	0	480	832
27	Printing and Publishing	15,629	50	312	179	47	0	0	4	108
28	Chemicals and Allied Products	129,093	7,573	2,084	1,226	1,621	11,345	132	646	3,076
2812	Alkalies and Chlorine	10,718	W	43	2	W	W	0	21	160
2813	Industrial Gases	17,854	0	7	Q	24	0	0	5	91
2819	Industrial Inorganic Chemicals, nec[g]	37,077	691	456	75	136	743	122	17	311
2821	Plastics Materials and Resins	14,780	668	231	54	146	1,074	0	57	288
2822	Synthetic Rubber	1,794	64	18	10	43	W	0	W	122
2823	Cellulosic Manmade Fibers	W	0	21	1	W	1,202	0	*	31
2824	Organic Fibers, Noncellulosic	6,976	W	53	38	W	1,558	0	W	98
2865	Cyclic Crudes and Intermediates	4,423	1,299	136	79	94	W	0	W	159
2869	Industrial Organic Chemicals, nec[g]	15,104	1,747	440	788	629	3,819	0	417	1,215
2873	Nitrogenous Fertilizers	2,911	0	26	43	258	0	0	5	282
2874	Phosphatic Fertilizers	1,886	250	150	1	18	W	0	W	34
29	Petroleum and Coal Products	30,782	13,862	3,598	16,498	815	W	W	1,851	2,970
2911	Petroleum Refining	29,152	10,292	1,524	15,658	770	134	0	1,847	2,876

[a] U.S. Office of Management and Budget, 1987 Standard Industrial Classification system.

[b] "Net Electricity" is obtained by summing purchases, transfers in, and generation from noncombustible renewable resources, minus quantities sold and transferred out.

[c] "Distillate Fuel Oil" includes Nos. 1, 2, and 4 fuel oil and Nos. 1, 2, and 4 diesel fuel.

[d] Liquefied petroleum gases and natural gas liquids.

[e] "Natural Gas" includes natural gas obtained from utilities; transmission pipelines; any other supplier(s), such as brokers; and producers.

[f] "Other" consists of other energy that respondents indicated was used to produce heat and power, including waste gas, petroleum coke, and pulping liquor.

[g] Not elsewhere classified.

* =Estimate less than 0.5. Data are included in higher level totals.

W=Withheld to avoid disclosing data for individual establishments. Data are included in higher level totals.

Q=Withheld because relative standard error is greater than 50 percent. Data are included in higher level totals.

Notes: • Totals may not equal sum of components due to independent rounding. • The estimates presented in this table are for the total consumption of energy for the production of heat and power, regardless of where the energy was produced. Specifically, the estimates include the quantities of energy that were originally produced offsite and purchased by or transferred to the establishment, plus those that were produced onsite from other energy or input materials not classified as energy or were extracted from captive (onsite) mines or wells.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use and Integrated Statistics Division, Form EIA-846, "1991 Manufacturing Energy Consumption Survey."

Table 1b. Total Inputs of Energy for Heat, Power, and Electricity Generation by U.S. Manufacturing Industry Group and Selected Industries, 1991: SIC 30–39 and Total

(Estimates in Btu or Physical Units)

SIC Code[a]	Industry Groups and Industry	Net Electricity[b] (million kilowatthours)	Residual Fuel Oil (thousand barrels)	Distillate Fuel Oil[c] (thousand barrels)	LPG and NGL[d] (thousand barrels)	Natural Gas[e] (billion cubic feet)	Coal (thousand short tons)	Coal Coke and Breeze (thousand short tons)	Other[f] (trillion Btu)	Total (trillion Btu)
30	Rubber and Misc. Plastics Products	33,908	1,253	508	786	93	295	0	5	237
3011	Tires and Inner Tubes	4,037	506	68	79	21	75	0	1	42
308	Miscellaneous Plastic Products	25,594	413	W	396	51	130	0	W	152
31	Leather and Leather Products	795	225	220	44	5	Q	0	1	12
32	Stone, Clay, and Glass Products	30,814	1,345	3,312	577	369	13,127	374	76	894
3211	Flat Glass	1,503	W	12	40	40	*	0	W	49
3221	Glass Containers	4,098	276	23	82	67	0	0	*	85
3229	Processed and Blown Glass, nec[g]	2,862	81	38	31	W	0	0	*	W
3241	Cement, Hydraulic	9,455	138	616	12	38	8,736	232	52	329
3274	Lime	1,324	W	240	Q	8	3,926	W	13	117
3296	Mineral Wool	2,821	W	12	41	28	*	W	*	41
33	Primary Metal Industries	146,276	5,285	1,806	888	666	2,054	22,695	451	2,292
3312	Blast Furnaces and Steel Mills	38,183	4,986	901	74	387	1,075	21,690	440	1,569
3313	Electrometalurgical Products	4,222	0	20	W	1	W	W	W	31
3321	Gray and Ductile Iron Foundries	6,412	4	144	105	28	5	859	1	74
3331	Primary Copper	1,246	W	W	3	15	W	0	1	22
3334	Primary Aluminum	67,317	*	127	42	20	0	0	1	252
3339	Primary Nonferrous Metals, nec[g]	4,312	1	53	19	16	W	W	W	42
3353	Aluminum Sheet, Plate, and Foil	4,261	0	67	62	41	W	0	W	60
34	Fabricated Metal Products	29,772	501	994	1,122	169	245	W	W	305
35	Industrial Machinery and Equipment	29,484	490	719	651	106	480	24	5	235
357	Computer and Office Equipment	4,389	11	16	4	5	0	0	*	21
36	Electronic and Other Electric Equipment	29,996	612	416	396	76	W	2	W	196
37	Transportation Equipment	34,721	1,865	1,214	526	129	1,464	40	27	333
3711	Motor Vehicles and Car Bodies	7,705	408	65	59	44	W	W	18	105
3714	Motor Vehicle Parts and Accessories	10,888	60	104	168	40	W	W	W	99
38	Instruments and Related Products	12,367	536	W	Q	25	W	0	W	98
3841	Surgical and Medical Instruments	1,161	9	30	8	2	0	0	*	6
39	Misc. Manufacturing Industries	3,661	115	W	W	14	32	0	W	31
	U.S. Total[h]	694,702	65,837	23,885	27,902	5,347	53,035	23,520	4,743	15,046

[a] U.S. Office of Management and Budget, 1987 Standard Industrial Classification system.

[b] "Net Electricity" is obtained by summing purchases, transfers in, and generation from noncombustible renewable resources, minus quantities sold and transferred out.

[c] "Distillate Fuel Oil" includes Nos. 1, 2, and 4 fuel oil and Nos. 1, 2, and 4 diesel fuel.

[d] Liquefied petroleum gases and natural gas liquids.

[e] "Natural Gas" includes natural gas obtained from utilities; transmission pipelines; any other supplier(s), such as brokers; and producers.

[f] "Other" consists of other energy that respondents indicated was used to produce heat and power, including waste gas, petroleum coke, and pulping liquor.

[g] Not elsewhere classified.

[h] Total of SIC 20–39 values shown on Tables 1a and 1b.

* =Estimate less than 0.5. Data are included in higher level totals.

W=Withheld to avoid disclosing data for individual establishments. Data are included in higher level totals.

Q=Withheld because relative standard error is greater than 50 percent. Data are included in higher level totals.

Notes: • Totals may not equal sum of components due to independent rounding. • The estimates presented in this table are for the total consumption of energy for the production of heat and power, regardless of where the energy was produced. Specifically, the estimates include the quantities of energy that were originally produced offsite and purchased by or transferred to the establishment, plus those that were produced onsite from other energy or input materials not classified as energy or were extracted from captive (onsite) mines or wells.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use and Integrated Statistics Division, Form EIA-846, "1991 Manufacturing Energy Consumption Survey."

Table 2. Total Inputs of Major Energy Sources by the U.S. Manufacturing Sector for Heat, Power, and Electricity Generation by End Use, 1991
(Estimates in Physical Units and Trillion Btu)

End-Use Category	Net Electricity[a] (million kilowatthours)	Residual Fuel Oil (thousand barrels)	Distillate Fuel Oil[b] (thousand barrels)	LPG and NGL[c] (thousand barrels)	Natural Gas[d] (billion cubic feet)	Coal, Excluding Coal Coke and Breeze, (thousand short tons)	Total[e]
Indirect End Use (Boiler Fuel)	7,830	47,009	6,850	4,877	2,037	38,473	
Direct End Use							
All Process Uses	556,973	17,342	5,800	16,893	2,504	14,075	
Process Heating[f]	60,688	16,959	3,177	12,689	2,313	14,075	
Process Cooling and Refrigeration	34,712	6	30	18	13	0	
Machine Drive	367,851	353	2,398	4,092	123	0	
Electro-Chemical Processes	89,486	—	—	—	—	—	
Other Process Uses	4,235	24	196	93	55	0	
All Non-Process Uses	106,499	1,148	9,134	5,104	682	W	
Facility Heating, Ventilation, and Air Conditioning[f]	51,069	673	1,372	730	275	15	
Facility Lighting	43,567	—	—	—	—	—	
Other Facility Support	9,758	W	81	61	22	0	
Onsite Transportation	1,099	—	6,533	4,242	*	—	
Conventional Electricity Generation	—	325	734	41	337	W	
Other Non-Process Use	1,005	W	413	30	48	0	
End Use Not Reported	23,401	339	2,101	1,028	124	W	
U.S. Total	694,702	65,837	23,885	27,902	5,347	53,035	
			Trillion Btu				
Indirect End Use (Boiler Fuel)	27	296	40	18	2,098	859	3,338
Direct End Use							
All Process Uses	1,900	109	34	64	2,579	314	5,000
Process Heating[f]	207	107	19	49	2,383	314	3,079
Process Cooling and Refrigeration	119	*	*	*	13	0	132
Machine Drive	1,255	2	14	15	127	0	1,413
Electro-Chemical Processes	306	—	—	—	—	—	306
Other Process Uses	14	*	1	*	56	0	71
All Non-Process Uses	363	7	53	19	702	W	W
Facility Heating, Ventilation, and Air Conditioning[f]	174	4	8	3	283	*	472
Facility Lighting	149	—	—	—	—	—	149
Other Facility Support	33	W	*	*	23	0	W
Onsite Transportation	3	—	38	16	*	—	57
Conventional Electricity Generation	—	2	4	*	347	W	W
Other Non-Process Use	3	W	2	*	49	0	W
End Use Not Reported	80	2	12	4	128	W	W
U.S. Total	2,370	414	139	104	5,507	1,184	9,718

[a] "Net Electricity" is obtained by summing purchases, transfers in, and generation from noncombustible renewable resources, minus quantities sold and transferred out.

[b] "Distillate Fuel Oil" includes Nos. 1, 2, and 4 fuel oil and Nos. 1, 2, and 4 diesel fuel.

[c] Liquefied petroleum gases and natural gas liquids.

[d] "Natural Gas" includes natural gas obtained from utilities, transmission pipelines, any other supplier(s) such as brokers, and producers.

[e] Total of major energy sources. The top half of the "Total" column is blank because different physical units cannot be added.

[f] "Process Heating" and "Facility Heating, Ventilation, and Air Conditioning" exclude steam and hot water.

*=Estimate less than 0.5. Data are included in higher level totals.

W=Withheld to avoid disclosing data for individual establishments. Data are included in higher level totals.

Q=Withheld because relative standard error is greater than 50 percent. Data are included in higher level totals.

—= Estimation of energy input quantity is not applicable.

Notes: • Totals may not equal sum of components due to of independent rounding. • The estimates of combustible energy presented in this table are for the total consumption of energy for the production of heat and power, regardless of where the energy was produced. Specifically, the estimates include the quantities of energy that were originally produced offsite and purchased by or transferred to the establishment, plus those that were produced onsite from other energy or input materials not classified as energy, or were extracted from captive (onsite) mines or wells. • Allocations to end uses are made on the basis of reasonable approximations by respondents.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use and Integrated Statistics Division, Form EIA-846, "1991 Manufacturing Energy Consumption Survey."

Highlights:

Natural Gas 1992: Issues and Trends

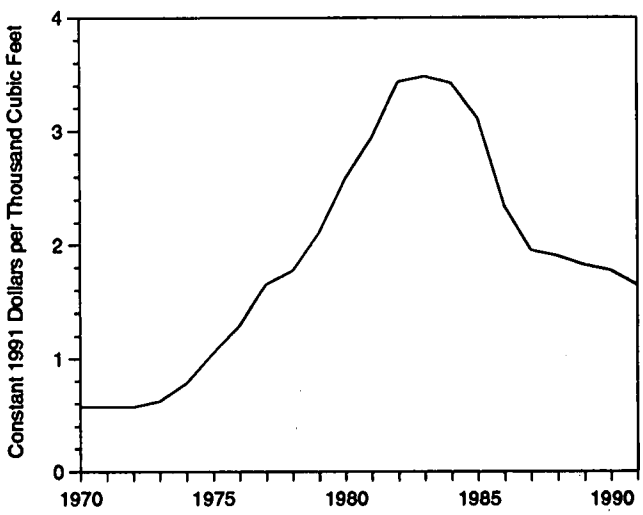
The U.S. natural gas market recorded its sixth consecutive year of expansion in 1992 and total consumption reached 19.8 trillion cubic feet, according to *Natural Gas 1992: Issues and Trends*, published by the Energy Information Administration in March 1993. Major regulatory and legislative actions, such as the Energy Policy Act of 1992, Federal Energy Regulatory Commission Order 636 (issued April 8, 1992), and the 1990 amendments to the Clean Air Act, should facilitate further industry expansion and enable it to compete more effectively for wider markets.

Natural Gas 1992 is a comprehensive review of developments in the U.S. natural gas industry during 1991 and 1992. The report discusses trends in natural gas supplies and prices and the impacts of changes in laws, regulations, and rate design practices. It also reviews developments in pipeline capacity and service and analyzes the rapidly growing market in natural gas futures.

Natural Gas Prices and Supply

Through the early 1970's, natural gas prices were relatively stable. Thereafter, the natural gas market underwent a period of price fluctuations brought on by deregulation and industry restructuring. However, annual average wellhead prices (in constant 1991 dollars) trended downward from the 1983 level of $3.48 per thousand cubic feet to $1.64 per thousand cubic feet in 1991 (Figure 1). Several factors combined to drive prices down, including plentiful supplies, improved production efficiency, increased competition triggered by deregulation, low oil prices (which gave customers with fuel-switching capability more leverage over natural gas prices), a string of mild winters, and the weakness in the economy in 1991. Prices are expected to rise only modestly to $2.56 (in constant 1991 dollars) per thousand cubic feet in 2000.

Figure 1. Average Wellhead Price, 1970-1991



Source: Energy Information Administration, *Natural Gas 1992: Issues and Trends*, DOE/EIA-0560(92) (Washington, DC, March 1993), p. 2.

The wellhead price decline of the middle and late 1980's reinforced a slump in drilling activity triggered by the falling price of oil. In 1981, the weekly average of drilling rigs in service was 3,970. By June 1992, the weekly average had dropped to a record low of 621, while the weekly average for all of 1992 was 721. However, natural gas production remained fairly steady in 1991 and 1992, at about 17.8 trillion cubic feet, in part because "open access" transportation allowed producers to sell their natural gas directly to end users. Open access increased competition at the wellhead, giving rise to an active spot market for the sale of natural gas, thus encouraging production.

The productivity of the natural gas industry improved in recent years. In 1990, over 3.8 billion cubic feet of discoveries were added per intended natural gas exploratory well in the onshore continental United States, approximately two and one-half times the natural gas finding rate in 1981. Many of the additions to reserves of natural gas since 1983 are the result of revisions to existing fields, which are based on improved knowledge of natural gas fields and exploitation of previously untapped geologic formations in known fields, rather than discovery of new fields. Proved reserves revisions in the continental United States averaged 474 billion cubic feet per year from 1978 to 1983, but soared to an average of 4,293 billion cubic feet per year from 1984 to 1991. Technological improvements, such as advanced three-dimensional seismic exploration techniques, better drill-bit designs, and wider use of horizontal drilling, also boosted productivity. Increases in reserves discovered per well drilled and reserve revisions resulted in almost as many reserves being added in the latter half of the 1980's as were added at the beginning of the 1980's, with fewer than half of the number of wells being drilled.

The decline in wellhead prices and the increasing competitiveness of the natural gas industry also drove down end-use prices over the 1984–to–1991 period (Table 1). For example, average prices (in constant 1991 dollars) declined 26 percent for residential customers and 54 percent for electric utilities from 1984 through 1991. (The difference is due to the fact that the wellhead price of natural gas—the commodity cost—to residential and commercial customers is a far smaller fraction of their total end-use price because their transmission and distribution costs are higher than those of industrial and electric utility customers.)

Changes in Laws and Regulations

Regulatory and legislative changes during the past 10 years have led to a more efficient market for natural gas. Price

signals for natural gas are now quickly transmitted from the consumer to the producer. A decade ago, natural gas users had limited options in contracting for the purchase of natural gas. Now, users can negotiate prices and contract with many different suppliers.

The changes in the laws and regulations, primarily at the Federal level, affect four key areas:

Improved market efficiency. From the early 1980's, regulatory initiatives consistently encouraged market competition. Transportation programs were initiated to alleviate oversupply problems. Forty years of wellhead price controls ended on January 1, 1993. The issuance of Federal Energy Regulatory Commission (FERC) Order 636 in April 1992 extended the trend toward a more efficient market by requiring interstate pipeline companies to unbundle (separate) their sales and transportation services. This measure prevents pipeline companies from giving preference to their own natural gas sales over those of other suppliers and thus increases competition among sellers. The order also requires pipeline companies to provide open-access transportation services that are equal in quality whether the natural gas is purchased from the pipeline company or from another supplier. Order 636 encourages the development of market centers for transactions involving natural gas; FERC believes this result will reduce costs, increase natural gas supply reliability, and improve the exchange of price information, among other benefits.

Finally, as a means of further promoting competition, Order 636 requires that pipeline companies employ the straight fixed-variable rate design. The issue addressed by this provision of Order 636 is how the costs of providing natural gas transportation service should be divided among customers of interstate pipeline companies in light of the new primary goal of the ratemaking process, i.e., to promote competition among suppliers of natural gas. To achieve that goal, Order 636 requires that all fixed costs associated with transportation service be recovered only through customers' capacity reservation fees (assessed on a monthly basis to reserve daily transportation capacity). Under the previous rate scheme (the modified fixed-variable design), some fixed costs were allocated to a commodity charge levied on each unit of natural gas used.

Table 1. Change in Average Prices, 1984 to 1991
(Constant 1991 Dollars per Thousand Cubic Feet)

Price	Price Change	Percent Change
Wellhead	-1.78	-52
City Gate	-2.19	-43
End Use		
Residential	-2.05	-26
Commercial	-2.33	-33
On-System Industrial[a]	-2.74	-50
Electric Utility	-2.58	-54

[a]Industrial end-use price data represent on-system sales only. The on-system share of total industrial sales declined from 75 percent in 1984 to 33 percent in 1991.

Source: Energy Information Administration, *Natural Gas 1992: Issues and Trends*, DOE/EIA-0560(92) (Washington, DC, March 1993), p. 72.

Critics of the modified fixed-variable design charged that it introduced price distortions, but the straight fixed-variable design is not without its own critics. Adoption of the new rate design may result in some customers incurring additional costs, although FERC attempted to minimize the effects of these cost shifts in subsequent Orders 636-A and 636-B.

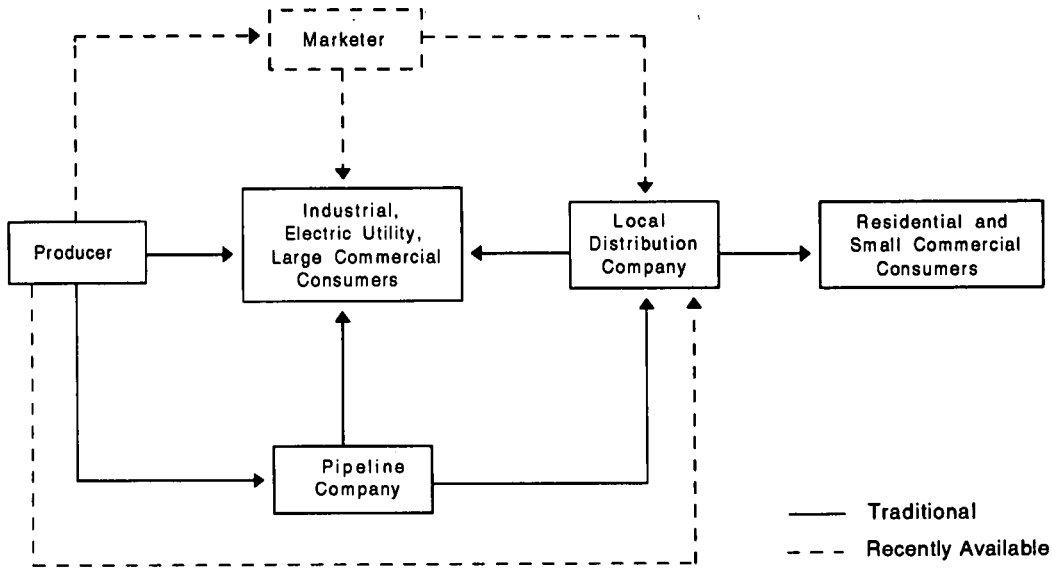
The complexities and cost implications of this rate design controversy are discussed in detail in Chapter 4 of *Natural Gas 1992*. In general, it appears that, without other changes in the ratemaking process, the potential cost shifts associated with the change in rate design will be large for those local distribution companies serving mainly residential and small commercial customers whose capacity usage is highly concentrated during one part of the year. The mechanisms outlined in Order 636 should generally be adequate to offset the cost shift fully so that the rates paid by most customers will remain largely unchanged.

In combination, the Order 636 measures—the mandates for unbundling and open-access transportation, encouragement of the development of market centers, and the adoption of the straight fixed-variable rate design—continue the restructuring of the industry and increase participation in the range of transaction possibilities between sellers and buyers of natural gas (Diagram 1).

Expanded market opportunities. The Energy Policy Act of 1992 included provisions to amend the Public Utility Holding Company Act of 1935 (PUHCA), originally passed to eliminate utility holding companies that capitalized on their size and market share to charge monopolistic rates. The amendments established a new category of generating company, "exempt wholesale generators," that is not subject to PUHCA regulations. This creation of a new category built on the earlier success of the Public Utilities Regulatory Policy Act of 1978 in creating a less closely regulated power generation market than that in which electric utilities operate. Exempt wholesale generators and other nonutility power producers are expected to proliferate and many will use natural gas.

The Clean Air Act Amendments of 1990 (CAAA) should further expand the market for natural gas. Many electric utilities will increase their use of natural gas to meet new, more stringent sulfur dioxide emissions limits specified in CAAA. In addition, CAAA, under a pilot program in California, requires auto manufacturers to sell at least 150,000 clean-fuel vehicles (CFV's) every year starting in 1996, rising to 300,000 CFV's per year starting in 1999. It also requires some commercial fleets to begin buying CFV's between 1998 and 2001. By 2001, more stringent standards for fleets nationwide and for cars in California are expected to lead to greater use of CFV's such as those fueled by natural gas.

Diagram 1. Transaction Paths for Natural Gas Purchases



Source: Energy Information Administration, *Natural Gas 1992: Issues and Trends*, DOE/EIA-0560(92) (Washington, DC, March 1993), p. 11.

Increased environmental restrictions on the industry. Natural gas industry operations are constrained by laws and regulations that seek to mitigate the environmental impact of exploration or production projects. For example, CAAA requires oil and natural gas drilling sites on the Outer Continental Shelf, with some exceptions, to meet the same emissions standards as onshore sites. Other legislation prohibits drilling along the entire U.S. East Coast, the west coast of Florida, and the U.S. West Coast (except for the area off the coast of southern California), and in the Arctic National Wildlife Refuge. Legislation also protects wetlands, which overlie a substantial fraction of U.S. natural gas reserves, from unnecessary alteration or damage. Companies wishing to dredge or fill wetland areas must secure permits.

Finally, the natural gas industry must also address the lingering contamination of pipelines and compressors by polychlorinated biphenyls (PCB's). PCB's are toxic and the Environmental Protection Agency banned them for most uses by 1980. However, their former use as lubricants, among other things, occasionally left evidence of the chemicals in pipelines and other equipment. The disposal of this contaminated hardware can be extremely costly.

Increased State regulatory activity. As Federal regulators deemphasize the regulation of the transportation of natural gas and begin to concentrate on environmental concerns, regulation of natural gas services is being left more to State public utility commissions. The commissions retain responsibility for approving rates to end users, including those encompassing transmission costs incurred as a result of FERC Order 636. In response to the danger that reserves could be depleted uneconomically during times of falling prices, some States also have begun revising their prorationing rules (by which production rights within reservoirs are specified) to conserve resources and protect the rights of owners. In addition, State regulators have begun showing more interest in integrated resource planning (IRP), in which public utilities take into account supply, demand, and social benefits when making decisions about current natural gas use and construction of new capacity. The Energy Policy Act of 1992 encourages IRP by requiring that the rates charged by State-regulated natural gas utilities "be such that prudent investments in, and expenditures for, energy conservation and load shifting programs and for other demand side management measures ... are at least as profitable ... as prudent investments in ... supplies and facilities."

Natural Gas Pipeline Capacity and Service

That the United States' 280,000-mile network of interstate natural gas pipelines is no longer adequate is suggested by the 4,000 miles of new pipeline planned for construction by the end of 1995. The historical rate of pipeline construction was often much lower; from 1983 to 1986, for example, no more than 800 miles were added each year. From January 1991 through December 1992, about 4.4 billion cubic feet per day of capacity was added to the interstate network in the continental United States. If all of the projects planned through 1995 are built, the interregional capacity of the interstate pipeline network will expand by about 9.4 billion cubic feet per day, an increase of 13 percent over the existing capacity in 1991.

This vast network of pipelines is necessary because the various regions of the United States differ widely in their patterns of production and consumption of natural gas. The Southwest, for example, both produces and consumes more natural gas than any other region. In 1991, about 61 percent of marketed production in the continental United States

came from fields in the Southwest. Of all the gas produced in the region, 59 percent was sent via pipeline to other parts of the country. In fact, all regions except the Central Region, which is also a net exporter of natural gas, depend primarily on supplies from the Southwest to satisfy local demand. Marketed gas production in the Central Region exceeded consumption by 40 percent in 1991. In the Western Region, only limited quantities of natural gas are produced and consumed locally; most of the natural gas consumed in the region is imported from the Southwest Region and Canada. A significant feature of the Midwest Region is its underground storage capacity, a consequence of the cold winters that make demand seasonal. About 30 percent of total U.S. storage capacity lies in the Midwest; during the bitter cold of December 1989, nearly half the natural gas consumed in the region was supplied from storage. Natural gas use in the Northeast Region lags behind use in the other regions, chiefly because imported oil has long been the fuel of choice among both residential and commercial customers. However, the Northeast is the only region where natural gas use has increased since the 1970's, and further gains, much of it supplied by natural gas from Canada, are expected.

Natural Gas Futures Market

In the wake of deregulation, the uncertainty about natural gas prices made the natural gas futures market, established in April 1990, an important business tool for the industry. This price volatility can be radical. For example, on November 20, 1991 (the last day of trading for December futures contracts), nominal prices for natural gas hovered near $2.00 per million Btu. By January 24, 1992, prices had slipped to about $1.00 per million Btu, even though gas is normally more expensive in January than in November. And by late July, the price was once more near $2.00 per million Btu, when relatively slack demand would ordinarily have set it much lower.

Growth in the futures market through 1992 was more rapid than for any other form of energy commodity contract since trading in crude oil futures began in 1982. The industry's enthusiasm for the natural gas futures market is reflected by the large ratio of contract positions that are held by industry participants to those held by speculators, a higher ratio than in any other energy futures market. The level of "open interest" (the number of outstanding contracts) increased dramatically in 1992, from about 20,000 contracts to about 80,000. By the end of the year, aggregate open interest on most days represented the equivalent of about 800 billion cubic feet of natural gas deliveries, 4 percent of U.S. annual consumption. The increasing competitiveness and uncertainty of the natural gas trading environment suggest that the importance of the futures market will continue to grow.

About the Report

Natural Gas 1992: Issues and Trends was prepared by EIA's Office of Oil and Gas, Reserves and Natural Gas Division, Natural Gas Analysis Branch. The 111-page report includes an appendix discussing the regression analysis methodology used to estimate the relationship between wellhead prices and end-use prices. Copies of the report may be ordered by using the form in the back of this publication.

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Section 1. Energy Overview

Energy production during June 1993 totaled 5.6 quadrillion Btu, a 1.8-percent increase from the level of production during June 1992. Coal production and natural gas production each increased 3.4 percent, and petroleum production decreased 4.7 percent. All other forms of energy production combined were up 6.7 percent from the level of production during June 1992.

Energy consumption during June 1993 totaled 6.6 quadrillion Btu, 2.2 percent above the level of consumption during June 1992. Coal consumption increased 6.0 percent, petroleum consumption rose 0.3 percent, and natural gas consumption decreased 0.5 percent. Consumption of all other forms of energy combined increased 5.4 percent from the level 1 year earlier.

Net imports of energy during June 1993 totaled 1.4 quadrillion Btu, 16.1 percent above the level of net imports 1 year earlier. Net imports of petroleum increased 12.5 percent, and net imports of natural gas were up 24.4 percent. Net exports of coal fell 4.0 percent from the level in June 1992.

Table 1.1 Energy Summary for June 1993

(Quadrillion Btu)

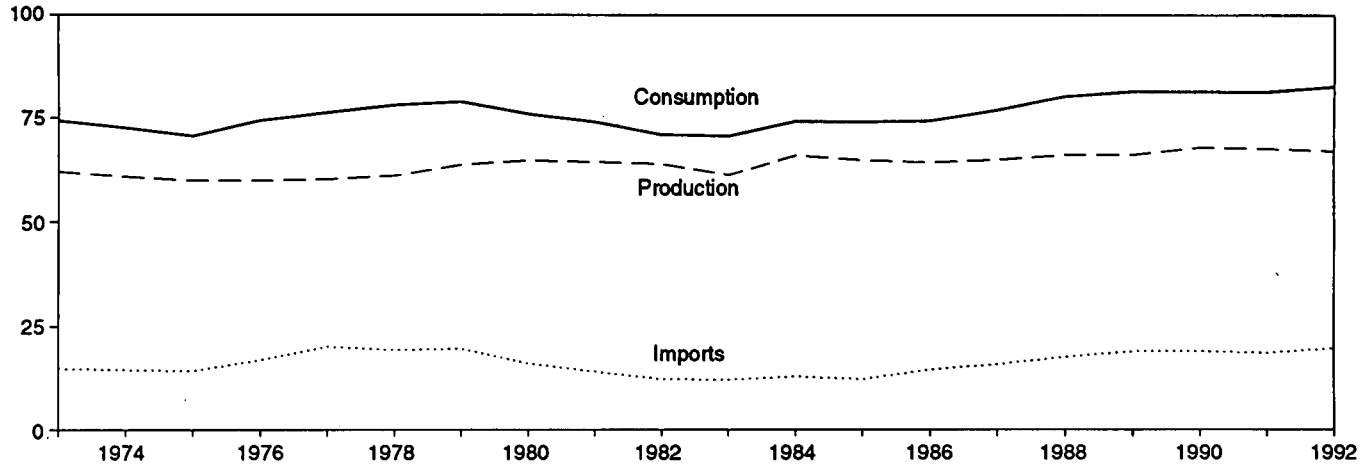
	June			Cumulative January Through June				
	1993	1992	Percent Change[a]	1993	1993 Daily Rate	1992	1992 Daily Rate	Percent Change[a]
Production[b]	**5.572**	**5.476**	**1.8**	**33.253**	**0.184**	**33.360**	**0.183**	**0.2**
Coal	1.799	1.740	3.4	10.446	.058	10.840	.060	-3.1
Natural Gas (Dry)	1.541	1.491	3.4	9.445	.052	9.068	.050	4.7
Petroleum[c]	1.374	1.441	-4.7	8.457	.047	8.865	.049	-4.1
Other[d]	.858	.804	6.7	4.905	.027	4.587	.025	7.5
Consumption[b]	**6.553**	**6.414**	**2.2**	**42.015**	**.232**	**41.278**	**.227**	**2.3**
Coal	1.630	1.537	6.0	9.421	.052	9.113	.050	4.0
Natural Gas[e]	1.305	1.312	-.5	11.127	.061	10.989	.060	1.8
Petroleum	2.747	2.738	.3	16.445	.091	16.462	.090	.5
Other[f]	.872	.827	5.4	5.021	.028	4.715	.026	7.1
Net Imports	**1.374**	**1.183**	**16.1**	**7.955**	**.044**	**6.864**	**.038**	**16.5**
Coal[g]	-.213	-.221	-4.0	-.958	-.005	-1.311	-.007	-26.5
Natural Gas	.182	.146	24.4	1.030	.006	.938	.005	10.5
Petroleum[h]	1.390	1.236	12.5	7.766	.043	7.109	.039	9.8
Other[i]	.014	.023	-39.2	.116	.001	.128	.001	-8.8

[a] Based on daily rates prior to rounding.
[b] Production and consumption totals exclude wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.
[c] Includes crude oil, lease condensate, and natural gas plant liquids.
[d] "Other" is hydroelectric and nuclear electric power, and electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
[e] Includes supplemental gaseous fuels.
[f] "Other" is hydroelectric and nuclear electric power; electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy; and net imports of electricity and coal coke.
[g] Minus sign indicates exports are greater than imports.
[h] Includes crude oil, lease condensate, petroleum products, pentanes plus, unfinished oils, gasoline blending components, and imports of crude oil for the Strategic Petroleum Reserve.
[i] "Other" is net imports of electricity and coal coke.
Note: Totals may not equal sum of components due to independent rounding.
Sources: Tables 1.3, 1.4, and 1.5.

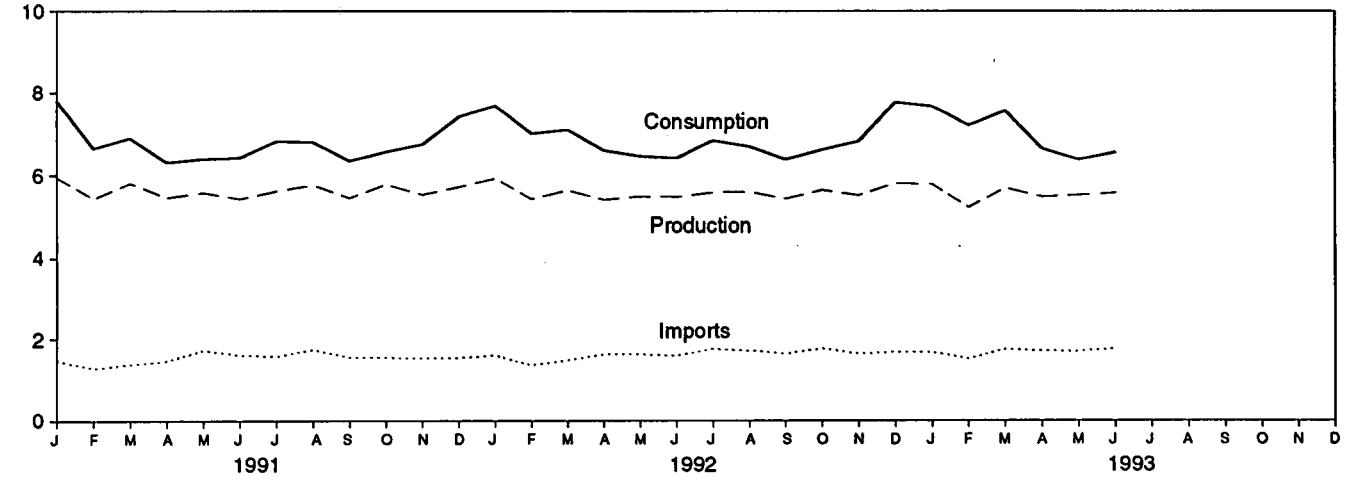
Figure 1.1 Energy Overview

(Quadrillion Btu)

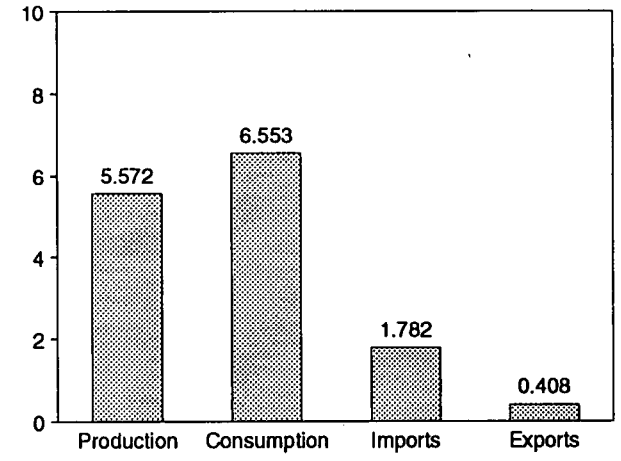
Consumption, Production, and Imports, 1973-1992



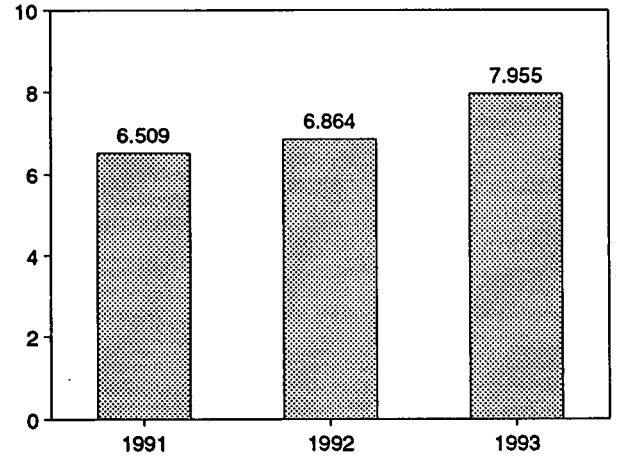
Consumption, Production, and Imports, Monthly



Overview, June 1993



Net Imports, January-June



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 1.2.

Table 1.2 Energy Overview

(Quadrillion Btu)

	Production[a]	Consumption[a,b]	Imports	Exports	Net Imports
1973 Total	62.060	74.282	14.731	2.051	12.680
1974 Total	60.835	72.543	14.413	2.223	12.190
1975 Total	59.860	70.546	14.111	2.359	11.752
1976 Total	59.892	74.362	16.837	2.188	14.648
1977 Total	60.219	76.288	20.090	2.071	18.019
1978 Total	61.103	78.089	19.254	1.931	17.323
1979 Total	63.801	78.898	19.616	2.870	16.746
1980 Total	64.761	75.955	15.971	3.723	12.247
1981 Total	64.421	73.990	13.975	4.329	9.646
1982 Total	63.962	70.848	12.092	4.633	7.460
1983 Total	61.279	70.524	12.027	3.717	8.310
1984 Total	65.962	74.144	12.767	3.804	8.963
1985 Total	64.871	73.981	12.103	4.231	7.872
1986 Total	64.350	74.297	14.438	4.055	10.382
1987 Total	64.952	76.894	15.764	3.853	11.911
1988 Total	66.105	80.218	17.564	4.415	13.149
1989 Total	66.129	81.325	18.947	4.765	14.181
1990 Total	67.853	81.265	18.987	4.910	14.077
1991 January	5.947	7.805	1.483	.397	1.085
February	5.442	6.651	1.294	.462	.832
March	5.808	6.902	1.391	.395	.996
April	5.465	6.310	1.482	.326	1.156
May	5.583	6.401	1.731	.489	1.241
June	5.433	6.428	1.622	.423	1.199
July	5.618	6.826	1.593	.457	1.136
August	5.766	6.805	1.754	.448	1.306
September	5.454	6.351	1.562	.432	1.130
October	5.776	6.569	1.562	.432	1.130
November	5.535	6.748	1.548	.464	1.084
December	5.714	7.417	1.556	.495	1.062
Total	67.539	81.213	18.577	5.220	13.357
1992 January	5.924	7.695	1.615	.458	1.157
February	5.426	7.009	1.377	.372	1.005
March	5.635	7.103	1.500	.416	1.084
April	5.408	6.596	1.639	.413	1.226
May	5.492	R6.462	1.642	.435	1.208
June	5.476	R6.414	1.610	.427	1.183
July	5.585	R6.841	1.770	.441	1.330
August	5.596	R6.692	1.728	.367	1.361
September	5.432	6.383	1.655	.417	1.238
October	5.639	6.614	1.782	.383	1.399
November	5.513	6.820	1.650	.429	1.222
December	R5.800	R7.778	1.689	.462	1.227
Total	R66.925	R82.407	19.658	5.018	14.640
1993 January	5.780	R7.682	1.695	R.399	R1.297
February	5.220	R7.210	1.531	R.365	R1.166
March	5.685	R7.559	1.764	R.349	R1.415
April	R5.476	R6.637	1.720	R.343	R1.376
May	R5.520	R6.374	1.711	R.384	R1.327
June	5.572	6.553	1.782	.408	1.374
6-Month Total	33.253	42.015	10.203	2.248	7.955
1992 6-Month Total	33.360	41.278	9.384	2.520	6.864
1991 6-Month Total	33.676	40.497	9.002	2.493	6.509

[a] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

[b] The sum of domestic energy production and net imports of energy does not equal domestic energy consumption. The difference is attributed to stock changes; losses and gains in conversion, transportation, and distribution; the addition of blending compounds; shipments of anthracite to U.S. Armed Forces in Europe; and adjustments to account for discrepancies between reporting systems.

R=Revised data.

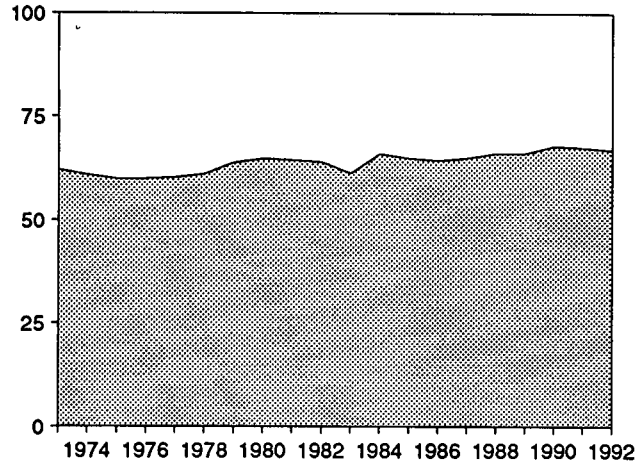
Notes: • For definitions, see Notes 1 through 4 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **Production:** Table 1.3. • **Consumption:** Table 1.4. • **Imports and Exports:** Tables 3.1b, 4.2, 6.1, A2-A8, and Section 2, "Energy Consumption Notes and Sources," Notes 8 and 9. • **Net Imports:** Table 1.5.

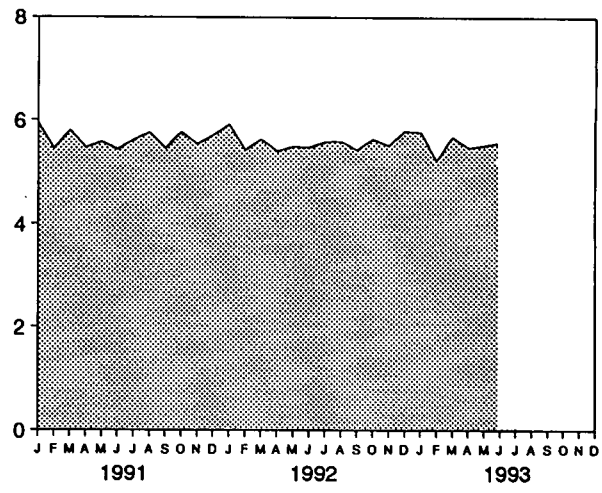
Figure 1.2 Energy Production

(Quadrillion Btu)

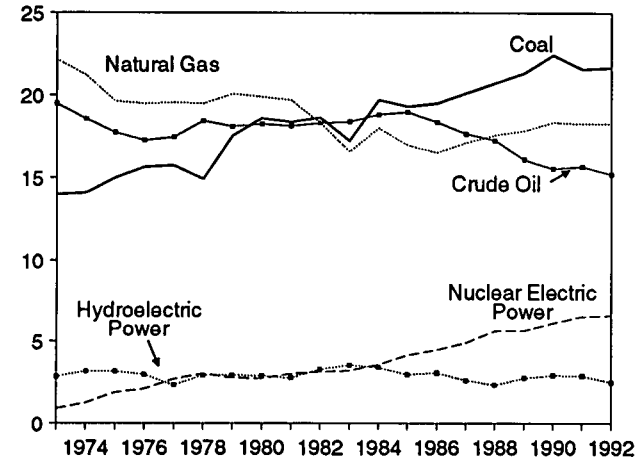
Total Production, 1973-1992



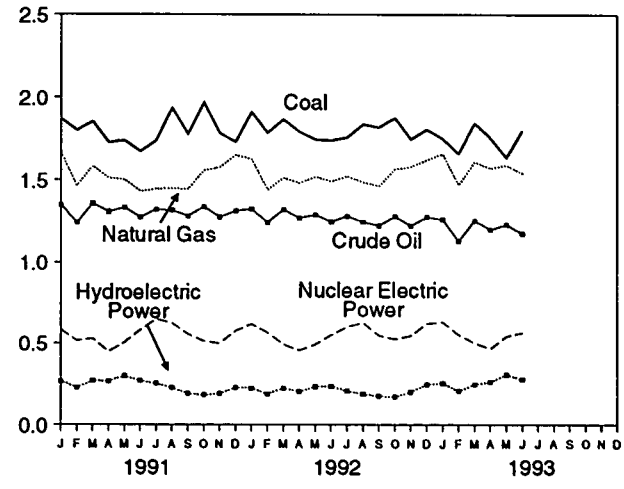
Total Production, Monthly



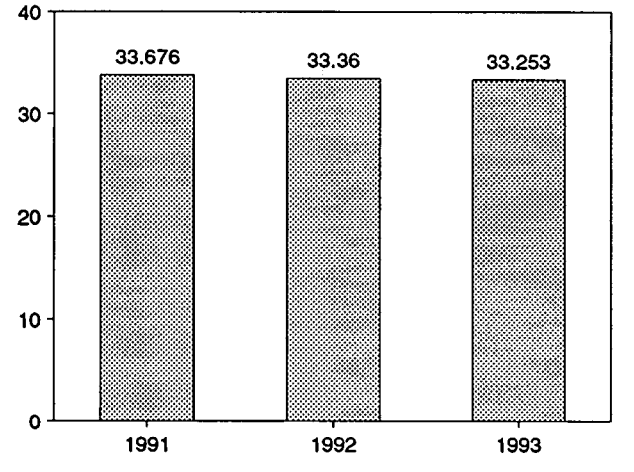
Production by Major Sources, 1973-1992



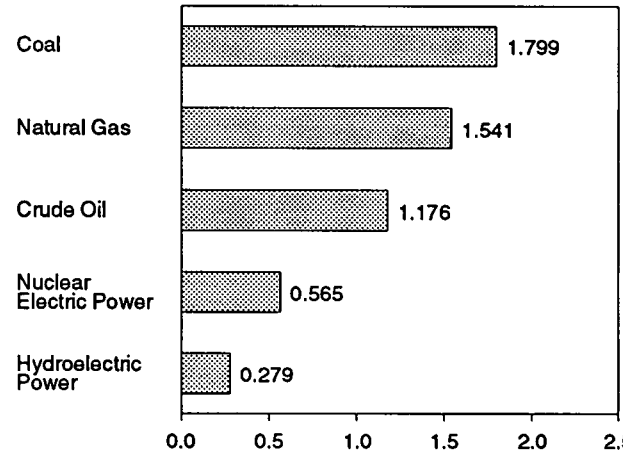
Production by Major Sources, Monthly



Total Production, January-June



Production by Major Sources, June 1993



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 1.3.

Table 1.3 Energy Production by Source

(Quadrillion Btu)

	Coal	Natural Gas (Dry)	Crude Oil[a]	Natural Gas Plant Liquids	Nuclear Electric Power	Hydro-electric Power[b]	Other[c]	Total[d]
1973 Total	13.993	22.187	19.493	2.569	0.910	2.861	0.046	62.060
1974 Total	14.074	21.210	18.575	2.471	1.272	3.177	.056	60.835
1975 Total	14.990	19.640	17.729	2.374	1.900	3.155	.072	59.860
1976 Total	15.654	19.480	17.262	2.327	2.111	2.976	.081	59.892
1977 Total	15.755	19.565	17.454	2.327	2.702	2.333	.082	60.219
1978 Total	14.910	19.485	18.434	2.245	3.024	2.937	.068	61.103
1979 Total	17.539	20.076	18.104	2.286	2.776	2.931	.089	63.801
1980 Total	18.597	19.908	18.249	2.254	2.739	2.900	.114	64.761
1981 Total	18.376	19.699	18.146	2.307	3.008	2.758	.127	64.421
1982 Total	18.639	18.319	18.309	2.191	3.131	3.266	.108	63.962
1983 Total	17.246	16.593	18.392	2.184	3.203	3.527	.133	61.279
1984 Total	19.719	18.008	18.848	2.274	3.553	3.386	.174	65.962
1985 Total	19.325	16.980	18.992	2.241	4.149	2.970	.213	64.871
1986 Total	19.510	16.541	18.376	2.149	4.471	3.071	.232	64.350
1987 Total	20.142	17.136	17.675	2.215	4.906	2.635	.245	64.952
1988 Total	20.737	17.599	17.279	2.260	5.661	2.334	.235	66.105
1989 Total	21.345	17.847	16.117	2.158	5.677	2.767	.217	66.129
1990 Total	22.456	18.362	15.571	2.175	6.161	2.926	.202	67.853
1991 January	1.870	1.664	1.348	.194	.584	.269	.017	5.947
February	1.800	1.463	1.240	.181	.514	.229	.014	5.442
March	1.853	1.585	1.357	.199	.528	.270	.016	5.808
April	1.727	1.511	1.306	.190	.447	.269	.015	5.465
May	1.739	1.501	1.332	.196	.502	.298	.015	5.583
June	1.673	1.431	1.274	.186	.582	.271	.016	5.433
July	1.738	1.445	1.321	.191	.652	.254	.016	5.618
August	1.937	1.450	1.315	.192	.628	.228	.016	5.766
September	1.777	1.444	1.282	.185	.557	.193	.015	5.454
October	1.969	1.559	1.337	.199	.512	.184	.016	5.776
November	1.782	1.579	1.275	.194	.497	.192	.017	5.535
December	1.730	1.651	1.312	.199	.576	.229	.017	5.714
Total	21.594	18.284	15.701	2.306	6.579	2.885	.191	67.539
1992 January	1.912	1.626	1.323	.199	.621	.226	.017	5.924
February	1.785	1.440	1.243	.187	.567	.189	.015	5.426
March	1.866	1.512	1.321	.200	.492	.226	.017	5.635
April	1.792	1.481	1.269	.193	.454	.204	.015	5.408
May	1.745	1.519	1.289	.200	.490	.234	.016	5.492
June	1.740	1.491	1.247	.194	.550	.238	.016	5.476
July	1.757	1.522	1.282	.198	.602	.207	.016	5.585
August	1.837	1.486	1.245	.193	.630	.189	.017	5.596
September	1.818	1.463	1.223	.189	.547	.177	.015	5.432
October	1.877	1.566	1.281	.203	.524	.172	.016	5.639
November	1.746	1.582	1.222	.200	.545	.202	.016	5.513
December	1.806	R1.622	1.277	.206	.624	.249	.016	R5.800
Total	21.681	R18.308	15.223	2.363	6.646	2.513	.192	R66.925
1993 January	1.751	1.659	1.260	.204	.634	.256	.016	5.780
February	1.660	1.469	1.130	.188	.551	.207	.015	5.220
March	1.844	1.611	1.254	.212	.501	.247	.016	5.685
April	1.756	R1.573	1.200	.204	.464	.264	.015	R5.476
May	1.636	R1.591	1.229	.203	.541	.307	.014	R5.520
June	1.799	1.541	1.176	.198	.565	.279	.014	5.572
6-Month Total	10.446	9.445	7.248	1.209	3.256	1.560	.089	33.253
1992 6-Month Total	10.840	9.068	7.692	1.173	3.174	1.317	.095	33.360
1991 6-Month Total	10.662	9.155	7.858	1.145	3.157	1.606	.094	33.676

[a] Includes lease condensate.

[b] Electric utility and industrial generation.

[c] "Other" production is electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

[d] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

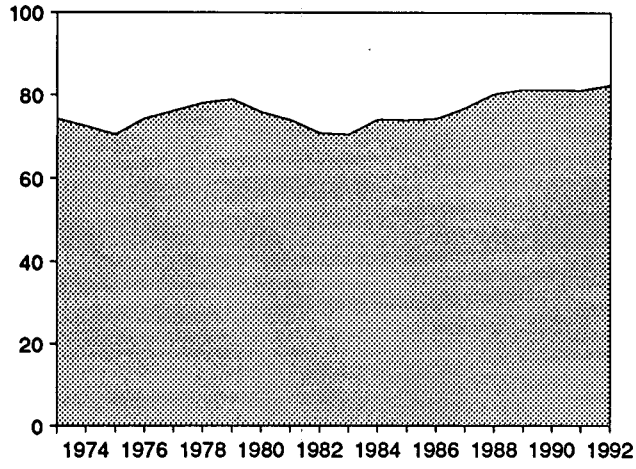
R=Revised data.

Notes: • See Note 1 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

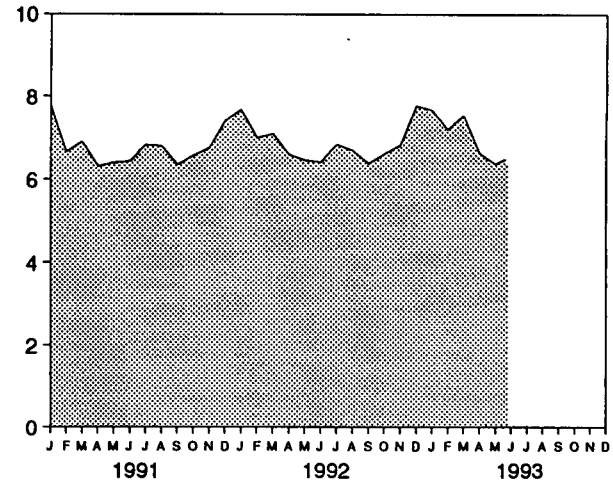
Sources: • **Coal:** Tables 6.1 and A5-A7. • **Natural Gas (Dry):** Tables 4.1 and A4. • **Crude Oil and Natural Gas Plant Liquids:** Tables 3.1a and A2. • **Nuclear Electric Power:** Tables 7.1 and A8. • **Hydroelectric Power:** Table 7.1; Section 2, "Energy Consumption Notes and Sources," Note 7; and Table A8. • **Other:** Section 2, "Energy Consumption Notes and Sources," Note 8, and Table A8.

Figure 1.3 Energy Consumption
(Quadrillion Btu)

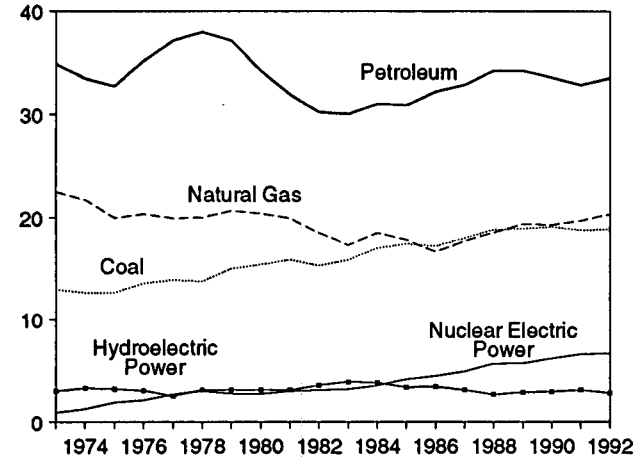
Total Consumption, 1973-1992



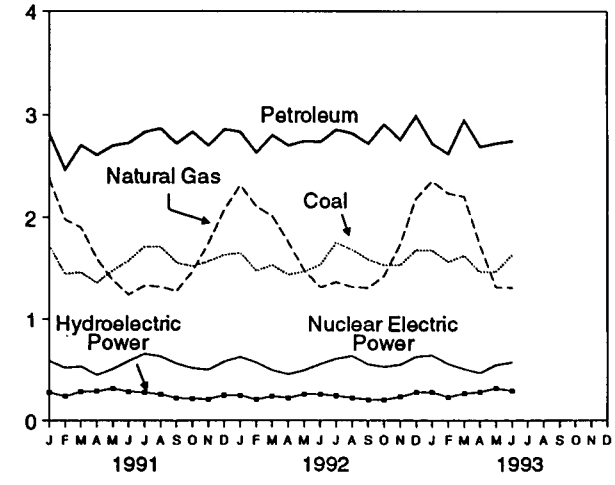
Total Consumption, Monthly



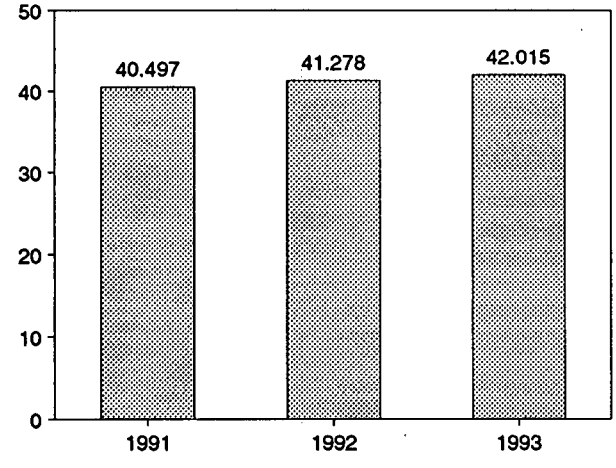
Consumption by Major Sources, 1973-1992



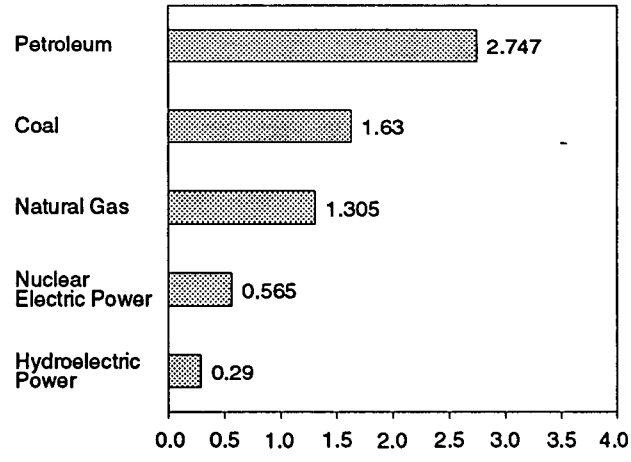
Consumption by Major Sources, Monthly



Total Consumption, January-June



Consumption by Major Sources, June 1993



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 1.4.

Table 1.4 Energy Consumption by Source

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Nuclear Electric Power	Hydro-electric Power[b]	Other[c]	Total[d]
1973 Total	12.971	22.512	34.840	0.910	3.010	0.039	74.282
1974 Total	12.663	21.732	33.455	1.272	3.309	.112	72.543
1975 Total	12.663	19.948	32.731	1.900	3.219	.086	70.546
1976 Total	13.584	20.345	35.175	2.111	3.066	.081	74.362
1977 Total	13.922	19.931	37.122	2.702	2.515	.097	76.288
1978 Total	13.765	20.000	37.965	3.024	3.141	.193	78.089
1979 Total	15.039	20.666	37.123	2.776	3.141	.152	78.898
1980 Total	15.423	20.394	34.202	2.739	3.118	.079	75.955
1981 Total	15.907	19.928	31.931	3.008	3.105	.111	73.990
1982 Total	15.322	18.505	30.231	3.131	3.572	.086	70.848
1983 Total	15.894	17.357	30.054	3.203	3.899	.118	70.524
1984 Total	17.071	18.507	31.051	3.553	3.800	.163	74.144
1985 Total	17.478	17.834	30.922	4.149	3.398	.199	73.981
1986 Total	17.261	16.708	32.196	4.471	3.446	.215	74.297
1987 Total	18.008	17.744	32.865	4.906	3.117	.253	76.894
1988 Total	18.846	18.552	34.222	5.661	2.662	.274	80.218
1989 Total	18.925	19.384	34.211	5.677	2.881	.248	81.325
1990 Total	19.101	19.296	33.553	6.161	2.946	.207	81.265
1991 January	1.728	2.377	2.819	.584	.278	.017	7.805
February	1.444	1.978	2.463	.514	.237	.015	6.651
March	1.463	1.904	2.706	.528	.283	.018	6.902
April	1.357	1.597	2.607	.447	.287	.016	6.310
May	1.480	1.384	2.702	.502	.317	.016	6.401
June	1.577	1.242	2.726	.582	.286	.015	6.428
July	1.718	1.329	2.832	.652	.275	.019	6.826
August	1.717	1.320	2.868	.628	.259	.014	6.805
September	1.558	1.275	2.721	.557	.221	.019	6.351
October	1.523	1.469	2.837	.512	.213	.015	6.569
November	1.570	1.750	2.702	.497	.211	.018	6.748
December	1.635	2.078	2.862	.576	.249	.017	7.417
Total	18.770	19.703	32.845	6.579	3.115	.200	81.213
1992 January	1.654	2.317	2.835	.621	.247	.021	7.695
February	1.478	2.106	2.634	.567	.206	.018	7.009
March	1.535	2.013	2.804	.492	.238	.020	7.103
April	1.438	1.759	2.704	.454	.223	.018	6.596
May	1.471	R1.481	2.747	.490	.256	.017	R6.462
June	1.537	R1.312	2.738	.550	.258	.019	R6.414
July	1.757	R1.365	2.857	.602	.243	.017	R6.841
August	1.687	R1.317	2.821	.630	.221	.017	R6.692
September	1.586	R1.307	2.722	.547	.205	.016	6.383
October	1.534	1.427	2.908	.524	.203	.018	6.614
November	1.533	1.738	2.756	.545	.231	.017	6.820
December	1.682	R2.188	2.988	.624	.276	.021	R7.778
Total	18.891	R20.331	33.514	6.646	2.806	.219	R82.407
1993 January	1.677	2.351	R2.720	.634	.279	.020	R7.682
February	1.562	R2.235	R2.619	.551	.229	.015	R7.210
March	1.623	R2.203	R2.948	.501	.266	.019	R7.559
April	1.462	R1.725	R2.689	.464	.279	.018	R6.637
May	1.467	R1.309	R2.723	.541	.318	.016	R6.374
June	1.630	1.305	2.747	.565	.290	.016	6.553
6-Month Total	9.421	11.127	16.445	3.256	1.662	.103	42.015
1992 6-Month Total	9.113	10.989	16.462	3.174	1.428	.112	41.278
1991 6-Month Total	9.050	10.482	16.023	3.157	1.688	.097	40.497

[a] Includes supplemental gaseous fuels.

[b] Electric utility and industrial generation and net imports of electricity.

[c] "Other" consumption is net imports of coal coke and electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

[d] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

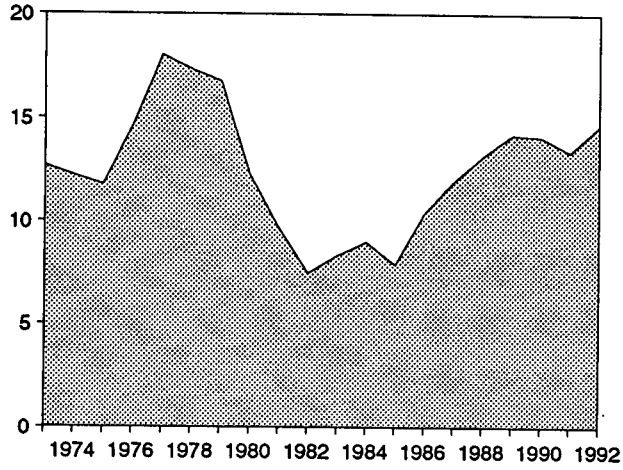
R=Revised data.

Notes: • See Note 2 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

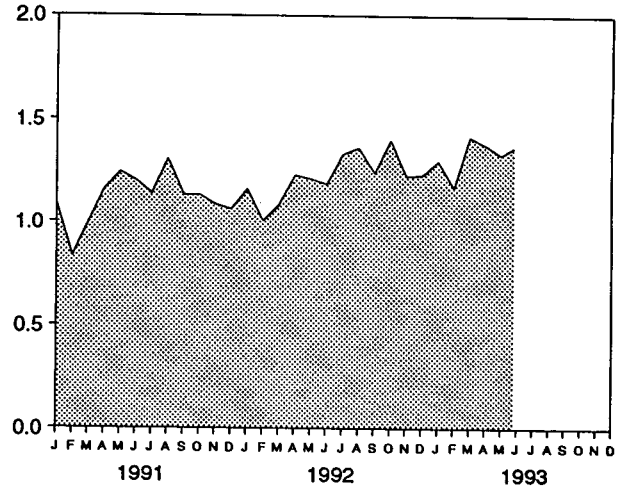
Sources: • **Coal:** Tables 6.1 and A5-A7. • **Natural Gas:** Tables 4.2 and A4. • **Petroleum:** Tables 3.1a and A3. • **Nuclear Electric Power:** Tables 7.1 and A8. • **Hydroelectric Power:** Table 7.1; Section 2, "Energy Consumption Notes and Sources," Note 8; and Table A8. • **Other:** Section 2, "Energy Consumption Notes and Sources," Note 7, and Table A8.

Figure 1.4 Energy Net Imports
(Quadrillion Btu, Except as Noted)

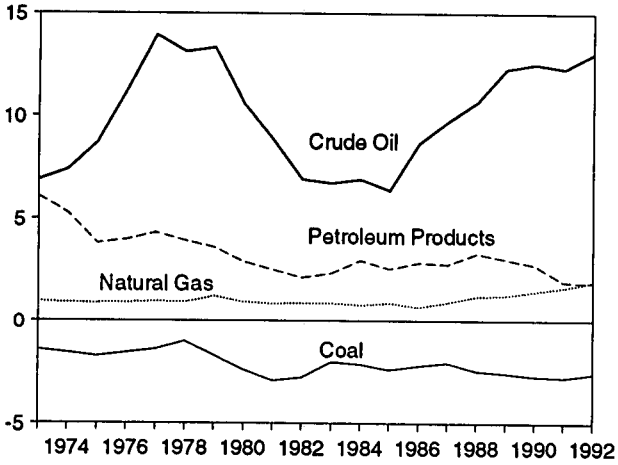
Total Net Imports, 1973-1992



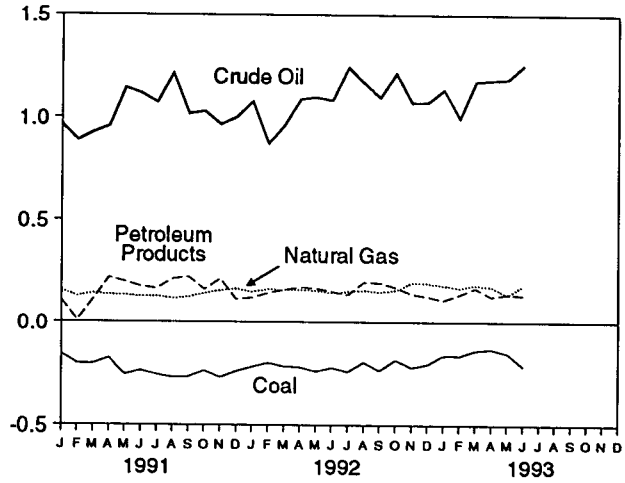
Net Imports, Monthly



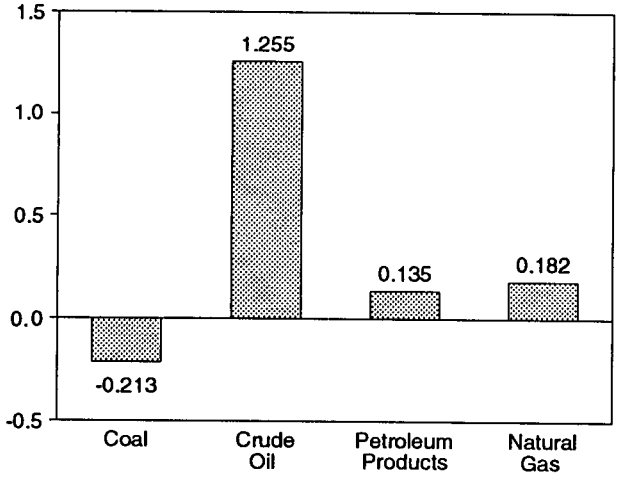
Net Imports by Major Sources, 1973-1992



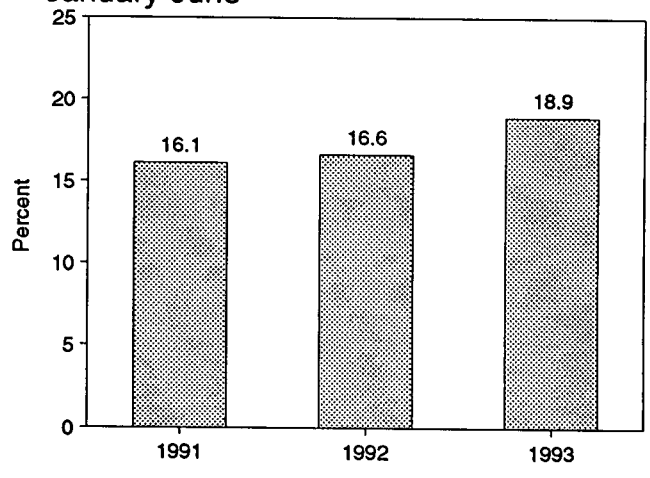
Net Imports by Major Sources, Monthly



Net Imports by Major Sources, June 1993



Net Imports as Share of Consumption, January-June



Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 1.4 and 1.5.

Table 1.5 Energy Net Imports by Source

(Quadrillion Btu)

	Coal	Natural Gas	Crude Oil[a]	Petroleum Products[b]	Electricity[c]	Coal Coke	Total
1973 Total	-1.422	0.981	6.883	6.097	0.148	-0.007	12.680
1974 Total	-1.568	.907	7.389	5.273	.133	.056	12.190
1975 Total	-1.738	.904	8.708	3.800	.064	.014	11.752
1976 Total	-1.567	.922	11.221	3.982	.089	(s)	14.648
1977 Total	-1.401	.981	13.921	4.321	.182	.015	18.019
1978 Total	-1.004	.941	13.125	3.932	.204	.125	17.323
1979 Total	-1.702	1.243	13.328	3.603	.211	.063	16.746
1980 Total	-2.391	.957	10.586	2.912	.217	-.035	12.247
1981 Total	-2.918	.857	8.854	2.522	.347	-.016	9.646
1982 Total	-2.768	.898	6.917	2.128	.306	-.022	7.460
1983 Total	-2.013	.885	6.731	2.351	.372	-.016	8.310
1984 Total	-2.119	.792	6.918	2.970	.414	-.011	8.963
1985 Total	-2.389	.896	6.381	2.570	.428	-.013	7.872
1986 Total	-2.193	.686	8.676	2.855	.375	-.017	10.382
1987 Total	-2.049	.937	9.748	2.784	.483	.009	11.911
1988 Total	-2.446	1.221	10.698	3.308	.328	.040	13.149
1989 Total	-2.566	1.278	12.296	3.029	.113	.030	14.181
1990 Total	-2.705	1.464	12.536	2.757	.020	.005	14.077
1991 January	-.156	.156	.967	.108	.009	.001	1.085
February	-.202	.129	.889	.008	.007	.001	.832
March	-.203	.143	.928	.113	.013	.002	.996
April	-.176	.137	.958	.219	.018	.001	1.156
May	-.256	.135	1.144	.199	.019	.001	1.241
June	-.236	.128	1.117	.176	.016	-.001	1.199
July	-.256	.129	1.073	.166	.021	.003	1.136
August	-.270	.119	1.215	.212	.031	-.002	1.306
September	-.267	.125	1.018	.223	.028	.004	1.130
October	-.237	.144	1.031	.162	.029	-.001	1.130
November	-.270	.156	.965	.213	.019	.001	1.084
December	-.240	.165	1.002	.114	.021	(s)	1.062
Total	-2.769	1.666	12.308	1.912	.231	.009	13.357
1992 January	-.218	.150	1.078	.122	.021	.004	1.157
February	-.198	.163	.873	.146	.018	.003	1.005
March	-.215	.160	.963	.160	.012	.003	1.084
April	-.219	.160	1.090	.173	.019	.003	1.226
May	-.240	.157	1.099	.168	.022	.001	1.208
June	-.221	.146	1.084	.152	.020	.003	1.183
July	-.241	.153	1.245	.137	.036	.001	1.330
August	-.194	.159	1.168	.197	.031	.001	1.361
September	-.235	.150	1.099	.195	.028	.001	1.238
October	-.183	.159	1.217	.173	.031	.002	1.399
November	-.219	.194	1.074	.142	.029	.001	1.222
December	-.204	.193	1.076	.129	.027	.005	1.227
Total	-2.587	1.946	13.065	1.895	.293	.027	14.640
1993 January	-.162	.182	1.138	R.111	E.023	.004	R1.297
February	-.164	.170	.999	R.139	E.022	(s)	R1.166
March	-.137	.183	1.177	R.170	E.019	.003	R1.415
April	-.131	.176	1.184	R.129	E.016	.002	R1.376
May	-.151	.137	1.188	R.140	E.011	.002	R1.327
June	-.213	.182	1.255	.135	E.011	.003	1.374
6-Month Total	-.958	1.030	6.941	.825	E.102	.014	7.955
1992 6-Month Total	-1.311	.938	6.187	.922	.111	.017	6.864
1991 6-Month Total	-1.229	.829	6.003	.822	.082	.003	6.509

[a] Crude oil, lease condensate, and imports of crude oil for the Strategic Petroleum Reserve.

[b] Petroleum products, unfinished oils, pentanes plus, and gasoline blending components.

[c] Assumed to be hydroelectricity and estimated at the average input heat rate for fossil-fuel steam-electric power plant generation, which has ranged from 10.2 thousand Btu to 10.5 thousand Btu per kilowatthour since 1973. Actual heat rates applied in converting kilowatthours to Btu are listed by year in Table A9.

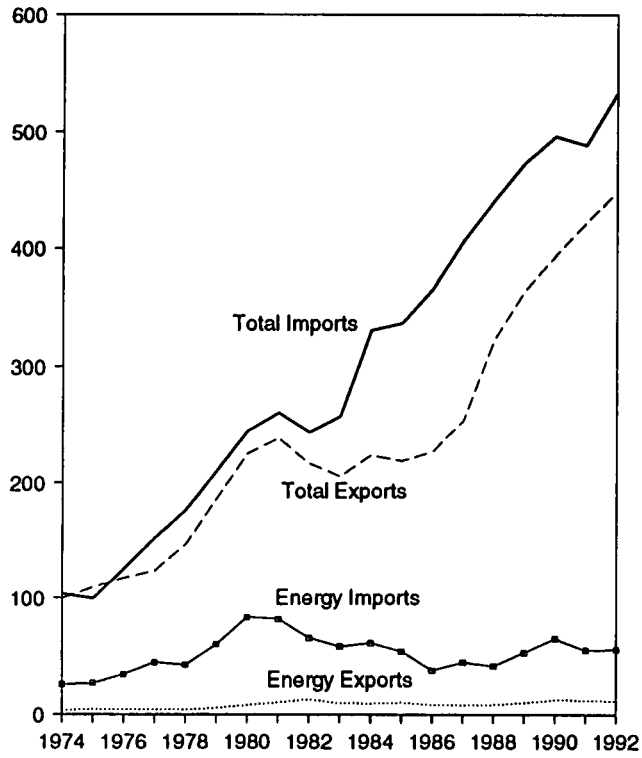
R=Revised data. E=Estimate. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.

Notes: • See Notes 3 and 4 at end of section. • Net imports equal imports minus exports. Minus sign indicates exports are greater than imports. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

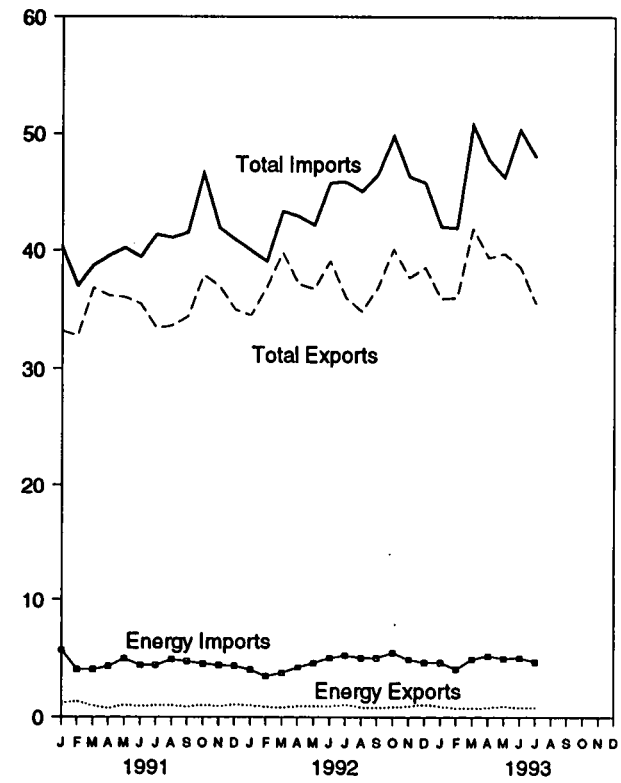
Sources: • **Coal:** Tables 6.1 and A5-A7. • **Natural Gas:** Tables 4.2 and A4. • **Crude Oil and Petroleum Products:** Tables 3.1b and A2. • **Electricity:** Section 2, "Energy Consumption Notes and Sources," Note 8, and Table A8. • **Coal Coke:** Section 2, "Energy Consumption Notes and Sources," Note 9, and Table A7.

Figure 1.5 Merchandise Trade Value
(Billion Dollars)

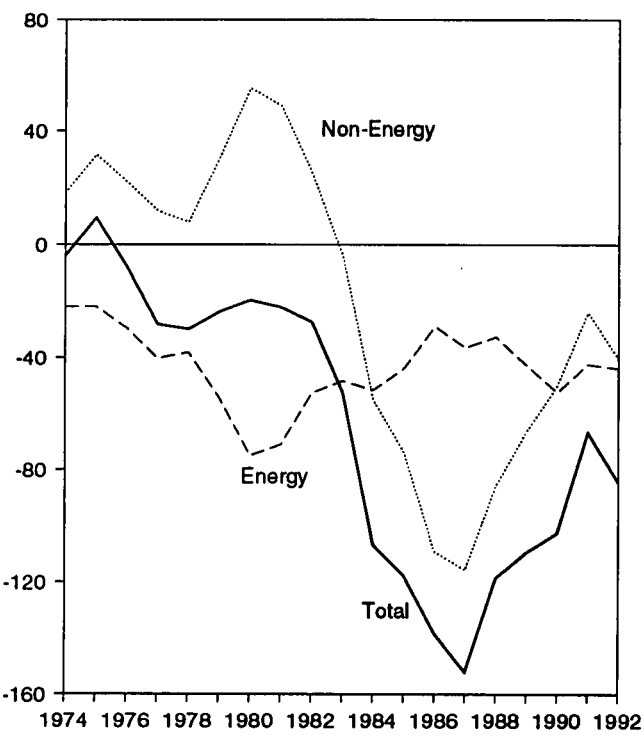
Imports and Exports, 1974-1992



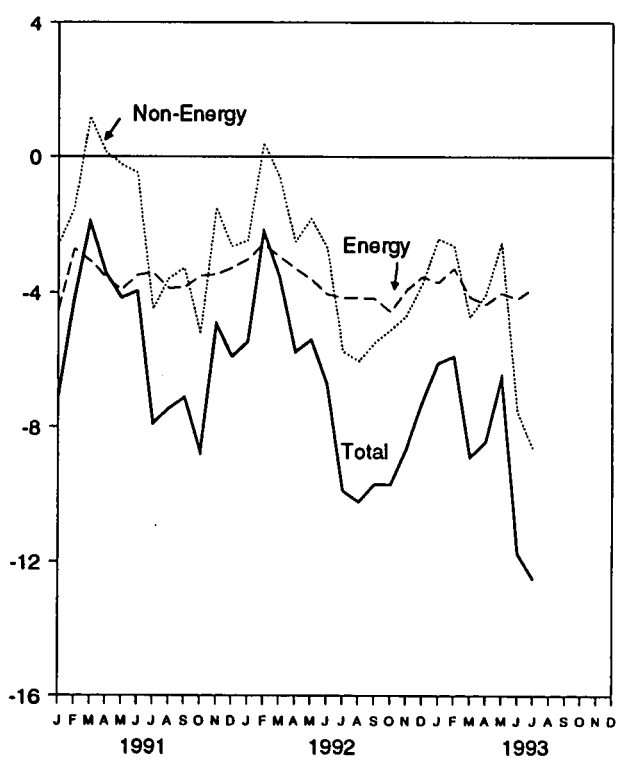
Imports and Exports, Monthly



Trade Balance, 1974-1992



Trade Balance, Monthly



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 1.6.

Table 1.6 Merchandise Trade Value

(Million Dollars)

	Petroleum			Energy			Non-Energy Balance	Total Merchandise		
	Exports	Imports	Balance	Exports	Imports	Balance		Exports	Imports	Balance
1974 Total	792	24,668	-23,876	3,444	25,454	-22,010	18,126	99,437	103,321	-3,884
1975 Total	907	25,197	-24,289	4,470	26,476	-22,006	31,557	108,856	99,305	9,551
1976 Total	998	32,226	-31,228	4,226	33,996	-29,770	21,950	116,794	124,614	-7,820
1977 Total	1,276	42,368	-41,093	4,184	44,537	-40,354	12,001	123,182	151,534	-28,353
1978 Total	1,561	39,526	-37,965	3,881	42,096	-38,215	8,010	145,847	176,052	-30,205
1979 Total	1,914	56,715	-54,801	5,621	59,998	-54,377	30,455	186,363	210,285	-23,922
1980 Total	2,833	78,637	-75,803	7,982	82,924	-74,942	55,246	225,566	245,262	-19,696
1981 Total	3,696	76,659	-72,963	10,279	81,360	-71,081	48,814	238,715	260,982	-22,267
1982 Total	5,947	60,458	-54,511	12,729	65,409	-52,680	25,170	216,442	243,952	-27,510
1983 Total	4,557	53,217	-48,659	9,500	57,952	-48,452	-3,957	205,639	258,048	-52,409
1984 Total	4,470	56,924	-52,454	9,311	60,980	-51,669	-55,033	223,976	330,678	-106,703
1985 Total	4,707	50,475	-45,768	9,971	53,917	-43,946	-73,765	218,815	336,526	-117,712
1986 Total	3,640	35,142	-31,503	8,115	37,310	-29,195	-109,084	227,159	365,438	-138,279
1987 Total	3,922	42,285	-38,363	7,713	44,220	-36,506	-115,613	254,122	406,241	-152,119
1988 Total	3,693	38,787	-35,094	8,235	41,042	-32,806	-85,720	322,426	440,952	-118,526
1989 Total	5,021	49,704	-44,683	9,869	52,779	-42,910	-66,490	363,812	473,211	-109,399
1990 Total	6,901	61,583	-54,682	12,233	64,661	-52,428	-50,068	393,592	496,088	-102,496
1991 January	881	5,361	-4,480	1,188	5,698	-4,509	-2,569	33,165	40,244	-7,079
February	928	3,741	-2,813	1,327	4,032	-2,705	-1,496	32,775	36,976	-4,201
March	565	3,729	-3,164	951	4,003	-3,051	1,163	36,820	38,708	-1,889
April	397	4,030	-3,633	748	4,286	-3,538	128	36,137	39,548	-3,411
May	562	4,699	-4,137	1,031	4,957	-3,926	-231	36,024	40,181	-4,158
June	506	4,177	-3,671	936	4,408	-3,473	-476	35,480	39,428	-3,948
July	513	4,133	-3,620	987	4,388	-3,401	-4,493	33,444	41,338	-7,894
August	495	4,641	-4,146	998	4,876	-3,879	-3,571	33,633	41,082	-7,450
September	415	4,475	-4,060	884	4,723	-3,839	-3,271	34,391	41,502	-7,111
October	584	4,226	-3,642	1,031	4,533	-3,502	-5,232	37,897	46,631	-8,735
November	488	4,112	-3,623	943	4,399	-3,456	-1,486	36,970	41,911	-4,942
December	620	4,028	-3,408	1,058	4,326	-3,268	-2,640	34,996	40,904	-5,908
Total	6,954	51,350	-44,396	12,081	54,629	-42,548	-24,175	421,730	488,453	-66,723
1992 January	602	3,683	-3,082	1,007	4,016	-3,009	-2,461	34,514	39,984	-5,470
February	454	3,165	-2,711	879	3,452	-2,573	396	36,898	39,075	-2,178
March	419	3,477	-3,058	831	3,762	-2,931	-596	39,817	43,344	-3,527
April	511	3,931	-3,420	932	4,215	-3,283	-2,489	37,154	42,925	-5,772
May	535	4,274	-3,738	968	4,573	-3,605	-1,804	36,737	42,146	-5,409
June	548	4,713	-4,165	958	5,007	-4,049	-2,669	39,094	45,812	-6,718
July	654	4,912	-4,258	1,067	5,222	-4,155	-5,738	35,979	45,872	-9,893
August	503	4,702	-4,199	867	5,034	-4,167	-6,051	34,838	45,055	-10,218
September	428	4,680	-4,252	839	5,026	-4,187	-5,506	36,811	46,503	-9,693
October	506	5,047	-4,541	874	5,456	-4,582	-5,124	40,115	49,820	-9,706
November	550	4,462	-3,912	940	4,873	-3,933	-4,711	37,670	46,314	-8,644
December	700	4,172	-3,471	1,093	4,621	-3,529	-3,747	38,537	45,813	-7,276
Total	6,412	51,217	-44,805	11,254	55,256	-44,002	-40,500	448,164	532,665	-84,501
1993 January	617	4,254	-3,637	936	4,642	-3,706	-2,407	35,922	42,035	-6,113
February	467	3,699	-3,232	789	4,070	-3,281	-2,625	36,004	41,909	-5,905
March	488	4,492	-4,004	768	4,910	-4,142	-4,745	41,895	50,781	-8,886
April	583	4,845	-4,262	835	5,191	-4,357	-4,072	39,374	47,802	-8,428
May	647	4,614	-3,967	944	4,969	-4,024	-2,518	39,751	46,293	-6,542
June	439	4,707	-4,269	826	5,023	-4,197	R-7,552	R38,616	R50,365	R-11,749
July	514	4,320	-3,806	818	4,679	-3,862	-8,656	35,508	48,026	-12,518
7-Month Total	3,753	30,931	-27,177	5,916	33,484	-27,568	-32,574	267,070	327,211	-60,142
1992 7-Month Total	3,723	28,154	-24,431	6,641	30,246	-23,605	-15,361	260,193	299,159	-38,965
1991 7-Month Total	4,352	29,869	-25,517	7,168	31,772	-24,604	-7,975	243,844	276,423	-32,579

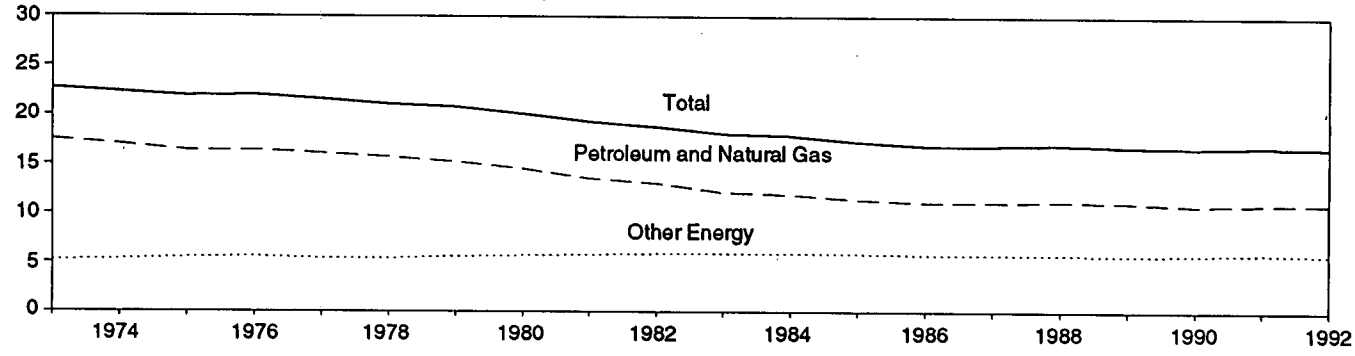
R=Revised data.

Notes: • Monthly data are not adjusted for seasonal variations. • The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory, which comprises the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands. • See Note 5 at end of section. • Totals may not equal sum of components due to independent rounding.

Sources: See end of section.

Figure 1.6 Energy Consumption per Dollar of Gross Domestic Product

(Thousand Btu per 1987 Dollar)



Source: Table 1.7.

Table 1.7 Energy Consumption per Dollar of Gross Domestic Product

(Seasonally Adjusted at Annual Rates)

	Energy Consumption			Gross Domestic Product (GDP)	Energy Consumption per Dollar of GDP		
	Petroleum and Natural Gas	Other Energy	Total[a]		Petroleum and Natural Gas	Other Energy	Total
	Quadrillion Btu			Trillion 1987 Dollars	Thousand Btu per 1987 Dollar		
1973 Year	57.352	16.930	74.282	3.269	17.5	5.2	22.7
1974 Year	55.187	17.356	72.543	3.248	17.0	5.3	22.3
1975 Year	52.678	17.868	70.546	3.222	16.4	5.5	21.9
1976 Year	55.520	18.842	74.362	3.381	16.4	5.6	22.0
1977 Year	57.053	19.235	76.288	3.533	16.1	5.4	21.6
1978 Year	57.966	20.123	78.089	3.704	15.7	5.4	21.1
1979 Year	57.789	21.109	78.898	3.797	15.2	5.6	20.8
1980 Year	54.596	21.359	75.955	3.776	14.5	5.7	20.1
1981 Year	51.859	22.131	73.990	3.843	13.5	5.8	19.3
1982 Year	48.736	22.112	70.848	3.760	13.0	5.9	18.8
1983 Year	47.411	23.113	70.524	3.907	12.1	5.9	18.1
1984 Year	49.558	24.586	74.144	4.149	11.9	5.9	17.9
1985 Year	48.756	25.225	73.981	4.280	11.4	5.9	17.3
1986 Year	48.904	25.393	74.297	4.405	11.1	5.8	16.9
1987 Year	50.609	26.285	76.894	4.540	11.1	5.8	16.9
1988 Year	52.774	27.444	80.218	4.719	11.2	5.8	17.0
1989 Year	53.595	27.730	81.325	4.838	11.1	5.7	16.8
1990 Year	52.849	28.416	81.265	R4.897	10.8	5.8	R16.6
1991 1st Quarter	52.264	28.446	80.710	R4.838	R10.8	5.9	R16.7
2nd Quarter	52.087	29.079	81.166	R4.856	R10.7	6.0	R16.7
3rd Quarter	52.798	28.724	81.522	R4.873	R10.8	5.9	R16.7
4th Quarter	53.040	28.407	81.447	R4.880	R10.9	R5.8	R16.7
Year	52.549	28.664	81.213	R4.861	R10.8	5.9	R16.7
1992 1st Quarter	R53.947	R28.202	R82.149	R4.922	11.0	R5.7	R16.7
2nd Quarter	R54.172	R28.560	R82.732	R4.957	R10.9	5.8	R16.7
3rd Quarter	R53.038	R28.389	R81.427	R4.998	R10.6	5.7	R16.3
4th Quarter	R53.154	R30.167	R83.321	R5.068	R10.5	R6.0	R16.4
Year	R53.845	R28.562	R82.407	R4.986	R10.8	R5.7	R16.5
1993 1st Quarter	R55.841	R29.593	R85.434	R5.078	R11.0	R5.8	R16.8
2nd Quarter	52.961	29.914	82.875	5.101	10.4	5.9	16.3

[a] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

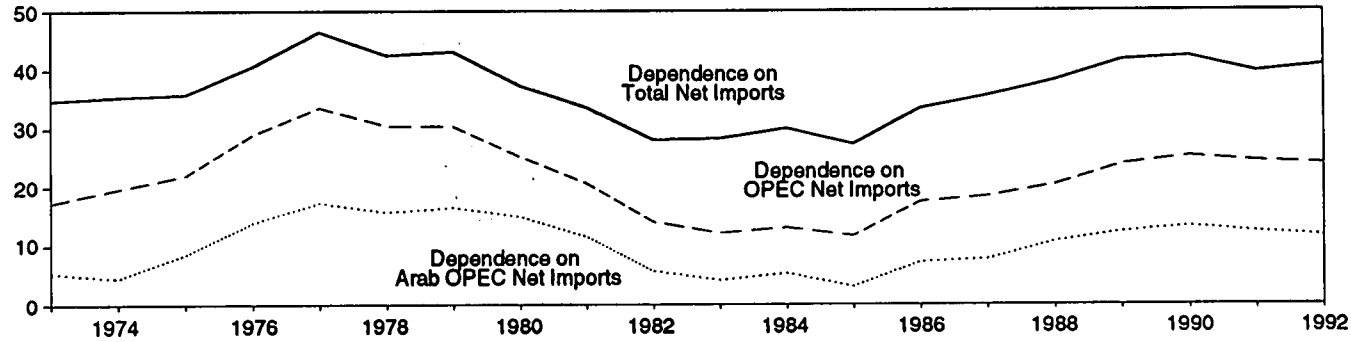
R=Revised data.

Notes: • Quarterly data are seasonally adjusted and shown at annual rates. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding. • Yearly data may not equal average of quarters due to seasonality adjustments and independent rounding.

Sources: • **Energy Consumption:** Table 1.4. • **Gross Domestic Product: 1973-1991**—U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, December 1992, Table 2. **1992 forward**—U.S. Department of Commerce, Bureau of Economic Analysis, *United States Department of Commerce News*, August 31, 1993, Table 2.

Figure 1.7 U.S. Dependence on Petroleum Net Imports

(Net Imports as Percent of Product Supplied)



Source: Table 1.8.

Table 1.8 U.S. Dependence on Petroleum Net Imports

Annual Rate	Net Imports[a]			Petroleum Products Supplied	Net Imports as Percent of U.S. Petroleum Products Supplied		
	From Arab OPEC[b]	From OPEC[c]	From All Countries		From Arab OPEC[b]	From OPEC[c]	From All Countries
	Thousand Barrels per Day				Percent		
1973 Average	914	2,991	6,025	17,308	5.3	17.3	34.8
1974 Average	752	3,277	5,892	16,653	4.5	19.7	35.4
1975 Average	1,382	3,599	5,846	16,322	8.5	22.0	35.8
1976 Average	2,423	5,063	7,090	17,461	13.9	29.0	40.6
1977 Average	3,184	6,190	8,565	18,431	17.3	33.6	46.5
1978 Average	2,962	5,747	8,002	18,847	15.7	30.5	42.5
1979 Average	3,054	5,633	7,985	18,513	16.5	30.4	43.1
1980 Average	2,549	4,293	6,365	17,056	14.9	25.2	37.3
1981 Average	1,844	3,315	5,401	16,058	11.5	20.6	33.6
1982 Average	852	2,136	4,298	15,296	5.6	14.0	28.1
1983 Average	630	1,843	4,312	15,231	4.1	12.1	28.3
1984 Average	817	2,037	4,715	15,726	5.2	13.0	30.0
1985 Average	470	1,821	4,286	15,726	3.0	11.6	27.3
1986 Average	1,160	2,828	5,439	16,281	7.1	17.4	33.4
1987 Average	1,272	3,053	5,914	16,665	7.6	18.3	35.5
1988 Average	1,837	3,513	6,587	17,283	10.6	20.3	38.1
1989 Average	2,128	4,124	7,202	17,325	12.3	23.8	41.6
1990 Average	2,243	4,285	7,161	16,988	13.2	25.2	42.2
1991 1st Quarter	1,978	3,727	5,686	16,486	12.0	22.6	34.5
2nd Quarter	2,253	4,301	7,127	16,400	13.7	26.2	43.5
3rd Quarter	2,026	4,252	7,224	17,002	11.9	25.0	42.5
4th Quarter	1,971	3,974	6,452	16,959	11.6	23.4	38.0
Average	2,057	4,064	6,626	16,714	12.3	24.3	39.6
1992 1st Quarter	2,052	3,783	6,239	16,910	12.1	22.4	36.9
2nd Quarter	1,922	4,056	7,027	16,740	11.5	24.2	42.0
3rd Quarter	1,910	4,230	7,451	16,984	11.2	24.9	43.9
4th Quarter	2,005	4,210	7,029	17,493	11.5	24.1	40.2
Average	1,972	4,071	6,938	17,033	11.6	23.9	40.7
1993 1st Quarter	R2,025	R4,311	R7,038	R17,126	R11.8	R25.2	R41.1
2nd Quarter	2,053	4,352	7,507	16,678	12.3	26.1	45.0

[a] "Net Imports" are imports minus exports. Imports from members of the Organization of Petroleum Exporting Countries (OPEC) exclude indirect imports, which are petroleum products primarily from Caribbean and West European areas and refined from crude oil produced by OPEC.

[b] The Arab members of OPEC are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates. Net imports from the Neutral Zone between Kuwait and Saudi Arabia are included in net imports from Arab OPEC.

[c] OPEC currently consists of Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members.

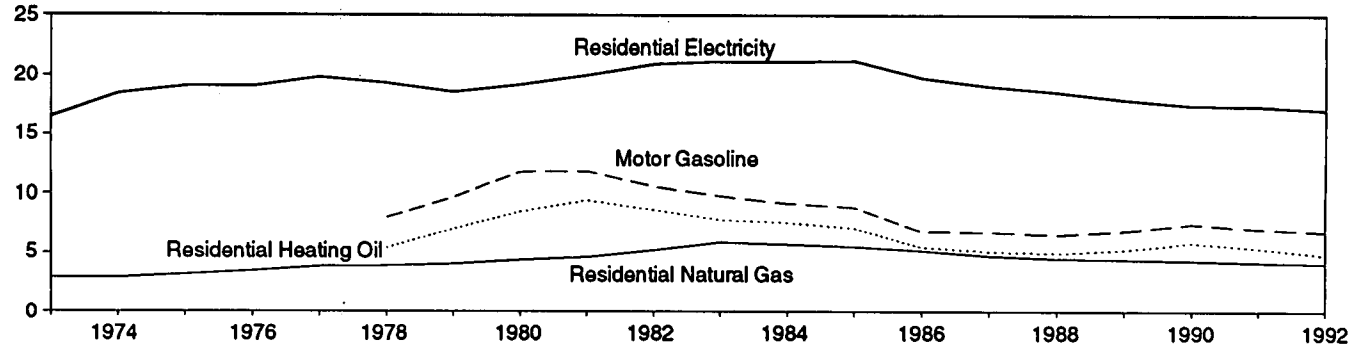
R=Revised data.

Notes: • Beginning in October 1977, Strategic Petroleum Reserves are included. • Geographic coverage is the 50 States and the District of Columbia. • Annual averages may not equal average of quarters due to independent rounding.

Sources: • **Imports:** Tables 3.3a-3.3h. • **Exports:** 1973-1976—U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys.* 1977-1980—Energy Information Administration (EIA), *Energy Data Reports,* "Petroleum Statement, Annual." 1981-1992—EIA, *Petroleum Supply Annual.* 1993 forward—EIA, *Petroleum Supply Monthly.* • **Petroleum Products Supplied:** Table 3.1a.

Figure 1.8 Cost of Fuels to End Users in Constant (1982-84) Dollars

(Dollars per Million Btu)



Source: Table 1.9.

Table 1.9 Cost of Fuels to End Users in Constant (1982-84) Dollars

	Motor Gasoline		Residential Heating Oil		Residential Natural Gas		Residential Electricity	
	Cents per Gallon	Dollars per Million Btu	Cents per Gallon	Dollars per Million Btu	Cents per Thousand Cubic Feet	Dollars per Million Btu	Cents per Kilowatthour	Dollars per Million Btu
1973 Average	NA	NA	NA	NA	290.5	2.85	5.6	16.50
1974 Average	NA	NA	NA	NA	290.1	2.83	6.3	18.43
1975 Average	NA	NA	NA	NA	317.8	3.12	6.5	19.07
1976 Average	NA	NA	NA	NA	348.0	3.41	6.5	19.06
1977 Average	NA	NA	NA	NA	387.8	3.81	6.8	19.83
1978 Average	100.0	8.00	75.2	5.42	392.6	3.86	6.6	19.33
1979 Average	121.5	9.71	97.0	6.99	410.5	4.03	6.3	18.57
1980 Average	148.2	11.85	118.2	8.52	446.6	4.36	6.6	19.21
1981 Average	148.8	11.90	131.4	9.47	471.9	4.60	6.8	19.99
1982 Average	132.7	10.61	120.2	8.67	535.8	5.22	7.2	20.96
1983 Average	123.0	9.83	108.2	7.80	608.4	5.90	7.2	21.19
1984 Average	115.3	9.22	105.0	7.57	589.0	5.72	7.2	21.16
1985 Average	111.2	8.89	97.9	7.06	568.8	5.52	7.2	21.25
1986 Average	84.9	6.79	76.3	5.50	531.9	5.17	6.8	19.79
1987 Average	84.2	6.74	70.7	5.10	487.7	4.73	6.5	19.09
1988 Average	81.4	6.51	68.7	4.96	462.4	4.49	6.3	18.58
1989 Average	85.5	6.83	72.6	5.23	454.8	4.41	6.1	17.96
1990 Average	93.1	7.44	81.3	5.86	443.8	4.31	6.0	17.49
1991 1st Quarter	90.0	7.19	81.7	5.89	413.2	4.01	5.6	16.52
2nd Quarter	88.1	7.04	68.5	4.94	471.2	4.57	6.0	17.72
3rd Quarter	87.3	6.98	64.2	4.63	524.5	5.09	6.1	18.01
4th Quarter	86.1	6.88	69.7	5.03	416.8	4.04	5.8	17.03
Average	87.8	7.02	74.8	5.39	427.3	4.14	5.9	17.43
1992 1st Quarter	81.1	6.49	R67.7	R4.88	397.3	3.85	5.6	16.48
2nd Quarter	85.3	6.82	66.0	4.76	442.8	4.29	5.9	17.40
3rd Quarter	87.1	6.96	63.7	4.59	514.5	4.99	6.1	17.89
4th Quarter	85.6	6.84	66.5	R4.79	420.7	4.08	5.8	16.94
Average	84.8	6.78	66.6	4.80	417.7	4.05	5.8	17.13
1993 1st Quarter	81.9	6.55	66.2	4.78	398.3	3.86	5.5	15.98
2nd Quarter	82.3	6.58	63.0	4.54	461.9	4.48	5.9	17.28

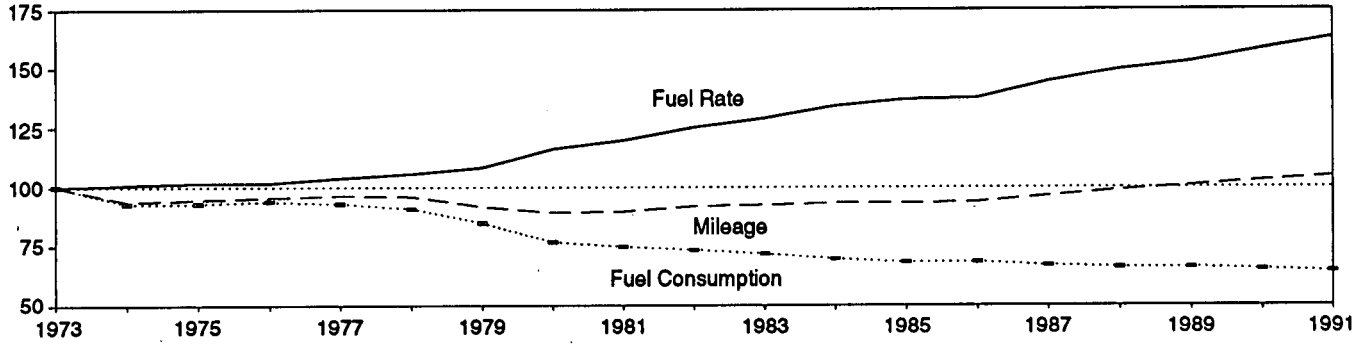
R=Revised data. NA=Not available.

Notes: • Fuel costs are calculated by using the Urban Consumer Price Index (CPI) developed by the Bureau of Labor Statistics. See Note 6 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Annual averages may not equal average of quarters due to independent rounding.

Sources: • **Annual Data:** Annual prices in Tables 9.4 (All Types), 9.8c, 9.11, and 9.9 (Monthly Series), adjusted by the CPI. • **Quarterly Data:** Simple averages of monthly prices in Tables 9.4 (All Types), 9.8c, 9.11, and 9.9 (Monthly Series), adjusted by the CPI. • **CPI:** 1973-1990—*Economic Report of the President,* February 1993, Table B-56. 1991 forward—Council of Economic Advisers, *Economic Indicators,* August 1993, "Consumer Prices - All Urban Consumers." • **Conversion Factors:** Tables A1, A4, and A8.

Figure 1.9 Passenger Car Efficiency

(Index, 1973 = 100)



Source: Table 1.10.

Table 1.10 Passenger Car Efficiency

	Mileage		Fuel Consumption		Fuel Rate	
	Miles per Car	Index 1973=100.0	Gallons per Car	Index 1973=100.0	Miles per Gallon	Index 1973=100.0
1973	10,256	100.0	771	100.0	13.30	100.0
1974	9,606	93.7	716	92.9	13.42	100.9
1975	9,690	94.5	716	92.9	13.52	101.7
1976	9,785	95.4	723	93.8	13.53	101.7
1977	9,879	96.3	716	92.9	13.80	103.8
1978	9,835	95.9	701	90.9	14.04	105.6
1979	9,403	91.7	653	84.7	14.41	108.3
1980	9,141	89.1	591	76.7	15.46	116.2
1981	9,186	89.6	576	74.7	15.94	119.8
1982	9,428	91.9	566	73.4	16.65	125.2
1983	9,475	92.4	553	71.7	17.14	128.9
1984	9,558	93.2	536	69.5	17.83	134.1
1985	9,560	93.2	525	68.1	18.20	136.8
1986	9,608	93.7	526	68.2	18.27	137.4
1987	9,878	96.3	514	66.7	19.20	144.4
1988	10,121	98.7	509	66.0	19.87	149.4
1989	10,332	100.7	509	66.0	20.31	152.7
1990	10,548	102.8	502	65.1	21.02	158.0
1991[a]	10,728	104.6	495	64.2	21.68	163.0

[a] Preliminary data.

Note: Geographic coverage is the 50 States and the District of Columbia.

Sources: Indices are prepared from statistics published by the U.S. Department of Transportation, Federal Highway Administration, Federal Highway Statistics Division. • **1973-1985:** *Highway Statistics Summary to 1985*, Table VM-201A. • **1986 forward:** *Highway Statistics*, annual, Table VM-1.

Table 1.11 Population-Weighted Heating Degree-Days

Census Divisions	August 1 through August 31					Cumulative July 1 through August 31				
				Percent Change					Percent Change	
	Normal[a]	1992	1993	Normal to 1993	1992 to 1993	Normal[a]	1992	1993	Normal to 1993	1992 to 1993
New England										
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	31	36	13	(c)	(c)	42	80	27	(c)	(c)
Middle Atlantic										
New Jersey, New York, Pennsylvania	13	12	3	(c)	(c)	13	18	3	(c)	(c)
East North Central										
Illinois, Indiana, Michigan, Ohio, Wisconsin	7	53	12	(c)	(c)	9	76	15	(c)	(c)
West North Central										
Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota	20	70	28	(c)	(c)	33	118	48	(c)	(c)
South Atlantic										
Delaware, Florida, Georgia, Maryland and the District of Columbia, North Carolina, South Carolina, Virginia, West Virginia	0	4	0	(c)	(c)	0	16	0	(c)	(c)
East South Central										
Alabama, Kentucky, Mississippi, Tennessee	0	0	0	(c)	(c)	0	0	0	(c)	(c)
West South Central										
Arkansas, Louisiana, Oklahoma, Texas	0	1	0	(c)	(c)	0	1	0	(c)	(c)
Mountain										
Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming	35	59	53	(c)	(c)	52	98	101	(c)	(c)
Pacific										
California, Oregon, Washington	24	12	18	(c)	(c)	46	25	47	(c)	(c)
U.S. Average[b]	11	24	10	(c)	(c)	17	41	20	(c)	(c)

[a] "Normal" is based on calculations of data from 1951 through 1980.
[b] Excludes Alaska and Hawaii.
[c] Percent change is not meaningful: normal is less than 100 or ratio is incalculable.

Source: See Note 7 at end of section.

Table 1.12 Population-Weighted Cooling Degree-Days

Census Divisions	August 1 through August 31					Cumulative January 1 through August 31				
				Percent Change					Percent Change	
	Normal[a]	1992	1993	Normal to 1993	1992 to 1993	Normal[a]	1992	1993	Normal to 1993	1992 to 1993
New England										
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	143	108	189	32.2	75.0	398	281	524	31.7	86.5
Middle Atlantic										
New Jersey, New York, Pennsylvania	217	161	265	22.1	64.6	625	495	786	25.8	58.8
East North Central										
Illinois, Indiana, Michigan, Ohio, Wisconsin	210	107	261	24.3	143.9	667	425	740	10.9	74.1
West North Central										
Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota	262	138	279	6.5	102.2	883	533	760	-13.9	42.6
South Atlantic										
Delaware, Florida, Georgia, Maryland and the District of Columbia, North Carolina, South Carolina, Virginia, West Virginia	391	341	430	10.0	26.1	1,431	1,338	1,596	11.5	19.3
East South Central										
Alabama, Kentucky, Mississippi, Tennessee	385	292	449	16.6	53.8	1,310	1,109	1,426	8.9	28.6
West South Central										
Arkansas, Louisiana, Oklahoma, Texas	537	432	596	11.0	38.0	1,943	1,729	1,931	-.6	11.7
Mountain										
Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming	266	277	242	-9.0	-12.6	869	894	852	-2.0	-4.7
Pacific										
California, Oregon, Washington	189	229	168	-11.1	-26.6	467	553	439	-6.0	-20.6
U.S. Average[b]	287	228	321	11.8	40.8	947	810	1,013	7.0	25.1

[a] "Normal" is based on calculations of data from 1951 through 1980.
[b] Excludes Alaska and Hawaii.

Source: See Note 7 at end of section.

Energy Summary Notes

1. Energy Production: Production of energy includes production of coal, crude oil and lease condensate, natural gas plant liquids, natural gas (dry), electric utility and industrial production of hydroelectric power, and electricity generated from nuclear power. Production also includes electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy but excludes other energy obtained from those sources because consistent historical data are not available. Approximate heat contents (Btu values) are derived by using the conversion factors provided in Appendix A.

2. Energy Consumption: Consumption of energy includes consumption of coal, natural gas (including supplemental gaseous fuels), petroleum products supplied, electric utility and industrial production of hydroelectric power, net imports of electricity (assumed to be hydroelectricity), net imports of coal coke, and electricity generated from nuclear power. Consumption also includes electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy but excludes other energy obtained from those sources because consistent historical data are not available. Approximate heat contents (Btu values) are derived by using the conversion factors provided in Appendix A.

3. Energy Imports: Energy imports include imports of coal, crude oil (including crude oil imported for the Strategic Petroleum Reserve), petroleum products, natural gas, electricity (assumed to be hydroelectricity), and coal coke. Approximate heat contents (Btu values) are derived by using the conversion factors provided in Appendix A. For further information on electricity, see "Note for imports and exports of electricity" under Note 8 of the Notes and Sources for the Energy Consumption Section.

4. Energy Exports: Energy exports include coal, crude oil, petroleum products, natural gas, electricity produced from hydroelectric power, and coal coke. Approximate heat contents (Btu values) are derived by using the conversion factors provided in Appendix A. For more information on electricity, see "Note for imports and exports of electricity" under Note 8 of the Notes and Sources for the Energy Consumption Section.

5. Merchandise Trade Value: Import data presented are based on the customs value. That value does not include insurance and freight and is consequently lower than the cost, insurance, and freight (CIF) value, which is also reported by the Bureau of the Census. All export data, and import data prior to 1981, are on a free alongside ship (f.a.s.) basis.

"Balance" is exports minus imports; a positive balance indicates a surplus trade value and a negative balance indicates a deficit trade value. "Energy" includes mineral fuels, lubricants, and related material. "Non-Energy Balance" and "Total Merchandise" include foreign exports (i.e., reexports) and nonmonetary gold and Department of Defense Grant-Aid shipments. The "Non-Energy Balance" is calculated by subtracting the "Energy" from the "Total Merchandise Balance."

"Imports" consist of government and nongovernment shipments of merchandise into the 50 States, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and the U.S. Foreign Trade Zones. They reflect the total arrival from foreign countries of merchandise that immediately entered consumption channels, warehouses, the Foreign Trade Zones, or the Strategic Petroleum Reserve. They exclude shipments between the United States, Puerto Rico, and U.S. possessions, shipments to U.S. Armed Forces and diplomatic missions abroad for their own use, U.S. goods returned to the United States by its Armed Forces, and in-transit shipments.

6. The Consumer Price Index: The values for the Consumer Price Index, All Urban Consumers, All Items, 1982-84=100, are as follows:

1973	44.4	1990:	1st Quarter	128.0
1974	49.3		2nd Quarter	129.3
1975	53.8		3rd Quarter	131.6
1976	56.9		4th Quarter	133.7
1977	60.6		Year	130.7
1978	65.2	1991:	1st Quarter	134.8
1979	72.6		2nd Quarter	135.6
1980	82.4		3rd Quarter	136.7
1981	90.9		4th Quarter	137.7
1982	96.5		Year	136.2
1983	99.6	1992:	1st Quarter	138.7
1984	103.9		2nd Quarter	139.8
1985	107.6		3rd Quarter	140.9
1986	109.6		4th Quarter	141.9
1987	113.6		Year	140.3
1988	118.3	1993:	1st Quarter	143.1
1989	124.0		2nd Quarter	144.2

7. Degree-Days: Degree-days are relative measurements of outdoor air temperature. Cooling degree-days are defined as deviations of the mean daily temperature at a sampling station above a base temperature equal to 65°F by convention. Heating degree-days are deviations of the mean daily temperature below 65° F. For example, if a weather station recorded a mean daily temperature of 78°F, cooling degree-days for that station would be 13 (and heating degree-days, 0). A weather station recording a mean daily temperature of 40° F would report 25 heating degree-days (and 0 cooling degree-days).

There are several degree-day databases maintained by the National Oceanic and Atmospheric Administration. The information published in the *Monthly Energy Review (MER)* is developed by the National Weather Service Climate Analysis Center, Camp Springs, MD. The data are available weekly with monthly summaries and are based on mean daily temperatures recorded at

about 200 major weather stations around the country. The temperature information recorded at those weather stations is used to calculate statewide degree-day averages based on population. The State figures are then aggregated into Census Divisions and into the national average. The population weights currently used represent resident State population data estimated for 1980 by the U.S. Department of Commerce, Bureau of the Census. The data shown in the *MER* are available sooner than the Historical Climatology Series 5-1 and 5-2 developed by the National Climatic Center, Asheville, NC, which compiles data from some 8,000 weather stations.

Sources for Table 1.6

U.S. Department of Commerce, Bureau of the Census, Foreign Trade Division:

• **Petroleum Exports—1974-1987:** "U.S. Exports," FT410, December issues. **1988:** "Report on U.S. Merchandise Trade, 1988 Final Revisions." **1989:** "Report on U.S. Merchandise Trade, 1989 Revisions." **1990:** "U.S. Merchandise Trade, 1990 Final Report." **1991:** "U.S. Merchandise Trade, 1991 Final Report," May 13, 1992. **1992:** "U.S. Merchandise Trade, 1992 Final Report," May 12, 1993. **1993:** "U.S. Merchandise Trade," FT900, monthly.

• **Petroleum Imports—1974-1987:** "U.S. Merchandise Trade," FT900, December issues, 1975-1988. **1988:** "Report on U.S. Merchandise Trade, 1988 Final Revisions." **1989:** "Report on U.S. Merchandise Trade, 1989 Revisions." **1990:** "U.S. Merchandise Trade, 1990 Final Report." **1991:** "U.S. Merchandise Trade, 1991 Final Report," May 13, 1992, and "U.S. Merchandise Trade, October 1992," December 17, 1992, page 3. **1992:** "U.S. Merchandise Trade, 1992 Final Report," May 12, 1993. **1993:** "U.S. Merchandise Trade," FT900, monthly.

• **Energy Exports and Imports—1974-1987:** U.S. merchandise trade press releases and database printouts for adjustments. **1988:** January-July, monthly FT900 supplement, 1989 issues. August-December, monthly FT900, 1989 issues. **1989:** Monthly FT900, 1990 issues. **1990:** "U.S. Merchandise Trade, 1990 Final Report." **1991:** "U.S. Merchandise Trade, 1991 Final Report," May 13, 1992, and "U.S. Merchandise Trade, October 1992," December 17, 1992, page 3. 1992: "U.S. Merchandise Trade, 1992 Final Report," May 12, 1993. **1993:** "U.S. Merchandise Trade," FT900, monthly.

• **Total Merchandise—1974-1987:** U.S. merchandise trade press releases and database printouts for adjustments. **1988:** "Report on U.S. Merchandise Trade, 1988 Final Revisions," August 18, 1989. **1989:** "Report on U.S. Merchandise Trade, 1989 Revisions," July 10, 1990. **1990:** "U.S. Merchandise Trade, 1990 Final Report," May 10, 1991, and "U.S. Merchandise Trade, December 1992," February 18, 1993, page 3. **1991-1992:** "U.S. Merchandise Trade, 1992 Final Report," May 12, 1993. **1993:** "U.S. Merchandise Trade," FT900, monthly.

• **Petroleum Balance, Energy Balance, and Non-Energy Balance**—Calculated by the Energy Information Administration.

Section 2. Energy Consumption

U.S. total energy consumption in June 1993 was 6.6 quadrillion Btu. Petroleum products accounted for 42 percent[1] of the energy consumed in June 1993, while coal accounted for 25 percent and natural gas accounted for 20 percent.

Residential and commercial sector consumption was 2.1 quadrillion Btu in June 1993, up 5 percent from the June 1992 level. The sector accounted for 33 percent of June 1993 total consumption, up 1 percentage point form its 32-percent share in June 1992.

Industrial sector consumption was 2.5 quadrillion Btu in June 1993, up 1 percent from the June 1992 level. The industrial sector accounted for 38 percent of June 1993 total consumption, down 1 percentage point from its 39-percent share in June 1992.

Transportation sector consumption of energy was 1.9 quadrillion Btu in June 1993, up 1 percent from the June 1992 level. The sector accounted for 29 percent of June 1993 total consumption, about the same share as in June 1992.

Electric utility consumption of energy totaled 2.6 quadrillion Btu in June 1993, up 5 percent from the June 1992 level. Coal contributed 54 percent of the energy consumed by electric utilities in June 1993, while nuclear electric power contributed 22 percent; hydroelectric power 11 percent; natural gas 10 percent; petroleum 3 percent; and wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, about 1 percent.

Table 2.1 Energy Consumption Summary for June 1993

(Quadrillion Btu)

Energy Source	End-Use Sectors				Electric Utilities	Total
	Residential and Commercial	Industrial	Transportation	Total[a]		
Coal	0.007	0.204	([b])	0.213	1.417	1.630
Natural Gas[c]	.298	.700	.046	1.044	.261	1.305
Petroleum	.147	.666	1.850	2.664	.083	2.747
Nuclear Electric Power	–	–	–	–	.565	.565
Hydroelectric Power	–	.003	–	.003	.287	.290
Net Imports of Coal Coke	–	.003	–	.003	–	.003
Other[d]	–	–	–	–	.014	.014
Primary Consumption	**.451**	**1.576**	**1.896**	**3.926**	**2.627**	**6.553**
Electricity	.520	.289	.001	.811	–	–
Net Consumption	**.972**	**1.866**	**1.897**	**4.737**	–	–
Electrical System Energy Losses	1.165	.648	.003	1.816	–	–
Total Consumption[e]	**2.137**	**2.513**	**1.900**	**6.553**	–	–

[a] Totals for coal and natural gas may not equal sum of sectors due to the use of sector-specific conversion factors.

[b] Small amounts of coal consumed for transportation are reported as industrial sector consumption.

[c] Includes supplemental gaseous fuels. Transportation sector is pipeline fuel only.

[d] "Other" is electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

[e] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

– =Not applicable.

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

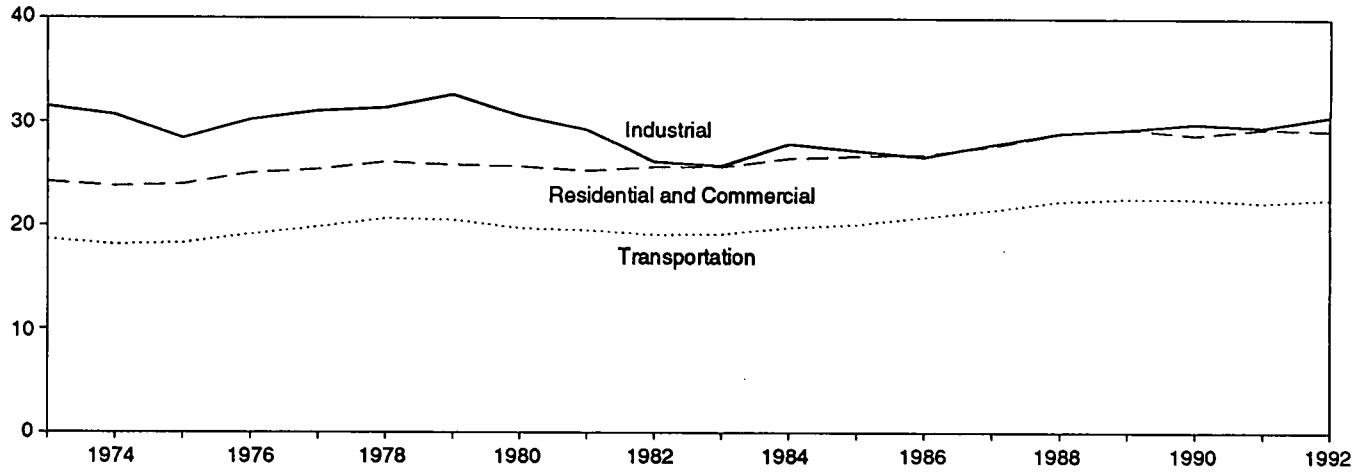
Additional Notes and Sources: See Tables 2.2-2.6 and end of section.

[1] Percentage changes are based on numbers in the following tables.

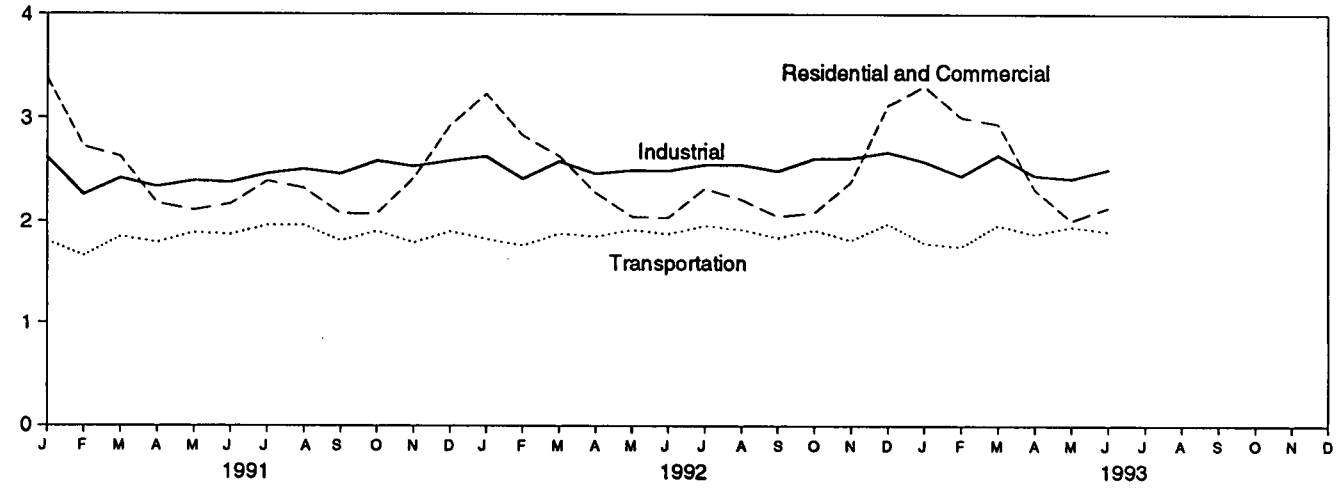
Figure 2.1 Energy Consumption by End-Use Sector

(Quadrillion Btu)

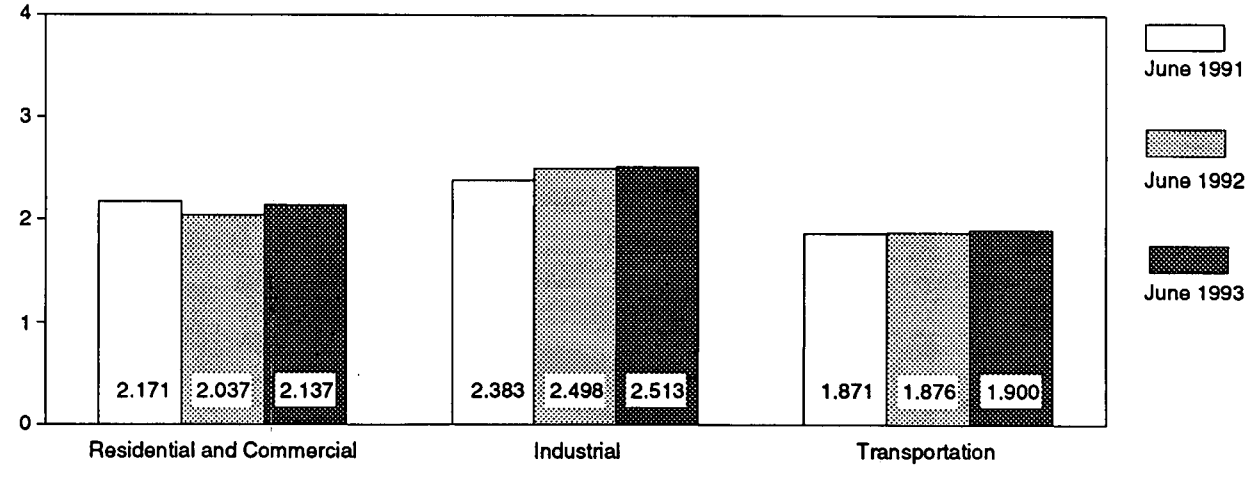
Consumption by End-Use Sector, 1973-1992



Consumption by End-Use Sector, Monthly



Consumption by End-Use Sector, June



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 2.2.

Table 2.2 Energy Consumption by End-Use Sector

(Quadrillion Btu)

	Residential and Commercial		Industrial		Transportation			
	Net	Total	Net	Total	Net	Total	Net	Total
1973 Total	15.766	24.143	25.917	31.528	18.584	18.605	60.274	74.282
1974 Total	15.246	23.724	24.994	30.696	18.095	18.117	58.341	72.543
1975 Total	15.200	23.900	22.737	28.401	18.219	18.244	56.157	70.546
1976 Total	15.997	25.020	24.038	30.234	19.076	19.101	59.119	74.362
1977 Total	15.828	25.387	24.593	31.075	19.794	19.819	60.223	76.288
1978 Total	16.023	26.088	24.637	31.388	20.589	20.611	61.251	78.089
1979 Total	15.709	25.809	25.679	32.615	20.447	20.472	61.836	78.898
1980 Total	15.075	25.653	23.854	30.609	19.669	19.695	58.597	75.955
1981 Total	14.541	25.243	22.533	29.238	19.480	19.507	56.556	73.990
1982 Total	14.629	25.630	20.020	26.144	19.043	19.069	53.697	70.848
1983 Total	14.395	25.630	19.401	25.756	19.109	19.135	52.907	70.524
1984 Total	14.964	26.478	21.184	27.862	19.773	19.801	55.923	74.144
1985 Total	14.839	26.704	20.520	27.213	20.036	20.067	55.391	73.981
1986 Total	14.791	26.852	20.101	26.629	20.781	20.812	55.676	74.297
1987 Total	15.146	27.621	21.116	27.828	21.419	21.448	57.678	76.894
1988 Total	16.004	28.922	22.085	28.988	22.274	22.305	60.366	80.218
1989 Total	16.261	29.402	22.272	29.355	22.530	22.561	61.070	81.325
1990 Total	15.568	28.790	22.841	29.932	22.504	22.535	60.921	81.265
1991 January	2.141	3.377	2.050	2.622	1.803	1.806	5.994	7.805
February	1.754	2.729	1.766	2.263	1.659	1.661	5.178	6.651
March	1.585	2.632	1.858	2.422	1.848	1.851	5.289	6.902
April	1.234	2.179	1.790	2.340	1.790	1.792	4.813	6.310
May	1.024	2.111	1.758	2.399	1.888	1.890	4.671	6.401
June	.972	2.171	1.766	2.383	1.868	1.871	4.610	6.428
July	1.029	2.396	1.824	2.465	1.958	1.961	4.815	6.826
August	1.002	2.327	1.870	2.512	1.959	1.962	4.836	6.805
September	.982	2.078	1.907	2.463	1.807	1.810	4.697	6.351
October	1.063	2.077	2.003	2.592	1.899	1.902	4.964	6.569
November	1.406	2.421	1.962	2.538	1.789	1.792	5.154	6.748
December	1.793	2.928	2.016	2.593	1.896	1.898	5.703	7.417
Total	15.987	29.425	22.570	29.592	22.165	22.196	60.723	81.213
1992 January	2.035	3.232	2.065	2.635	1.826	1.828	5.925	7.695
February	1.823	2.833	1.898	2.415	1.761	1.763	5.480	7.009
March	1.612	2.639	2.012	2.588	1.876	1.878	5.498	7.103
April	1.339	2.283	1.918	2.466	1.848	1.850	5.102	6.596
May	1.057	2.047	R1.903	R2.501	1.912	1.915	R4.872	R6.462
June	.941	2.037	R1.864	R2.498	1.874	1.876	R4.681	R6.414
July	1.017	2.324	R1.901	R2.556	1.954	1.957	R4.876	R6.841
August	.985	2.215	R1.930	R2.556	1.915	1.918	R4.834	R6.692
September	.959	2.049	R1.912	2.494	1.836	1.838	R4.709	6.383
October	1.094	2.085	2.036	2.616	1.910	1.913	5.040	6.614
November	1.371	2.388	2.024	2.620	1.811	1.814	5.205	6.820
December	1.914	3.123	R2.087	R2.679	1.974	1.976	R5.975	R7.778
Total	16.149	29.254	R23.550	R30.627	22.496	22.526	R62.195	R82.407
1993 January	R2.097	R3.308	R2.016	R2.587	R1.784	R1.787	R5.897	R7.682
February	R1.960	R3.011	R1.912	R2.446	R1.751	R1.753	R5.623	R7.210
March	R1.850	R2.947	R2.079	R2.650	R1.960	R1.962	R5.889	R7.559
April	R1.377	R2.316	R1.901	R2.450	R1.872	R1.874	R5.147	R6.637
May	R1.015	R2.009	1.803	2.419	R1.945	R1.948	R4.761	R6.374
June	.972	2.137	1.866	2.513	1.897	1.900	4.737	6.553
6-Month Total	9.271	15.729	11.576	15.065	11.209	11.224	32.054	42.015
1992 6-Month Total	8.807	15.071	11.660	15.103	11.097	11.111	31.557	41.278
1991 6-Month Total	8.711	15.199	10.989	14.429	10.857	10.872	30.554	40.497

R=Revised data.

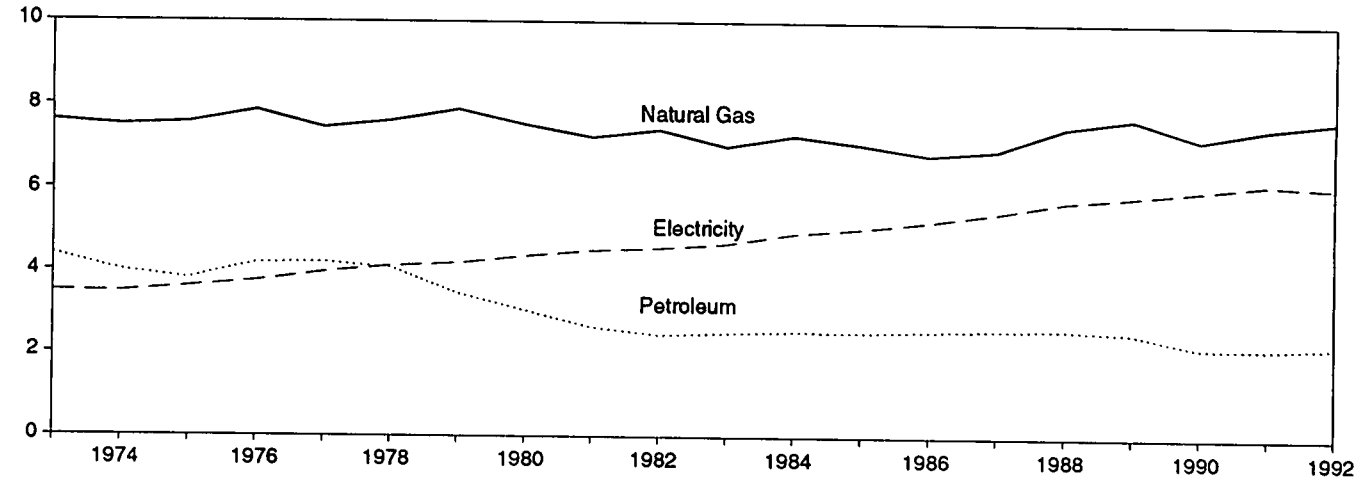
Notes: • Geographic coverage is the 50 States and the District of Columbia.
• Totals may not equal sum of components due to independent rounding and the use of sector-specific conversion factors for natural gas and coal.

Additional Notes and Sources: See end of section.

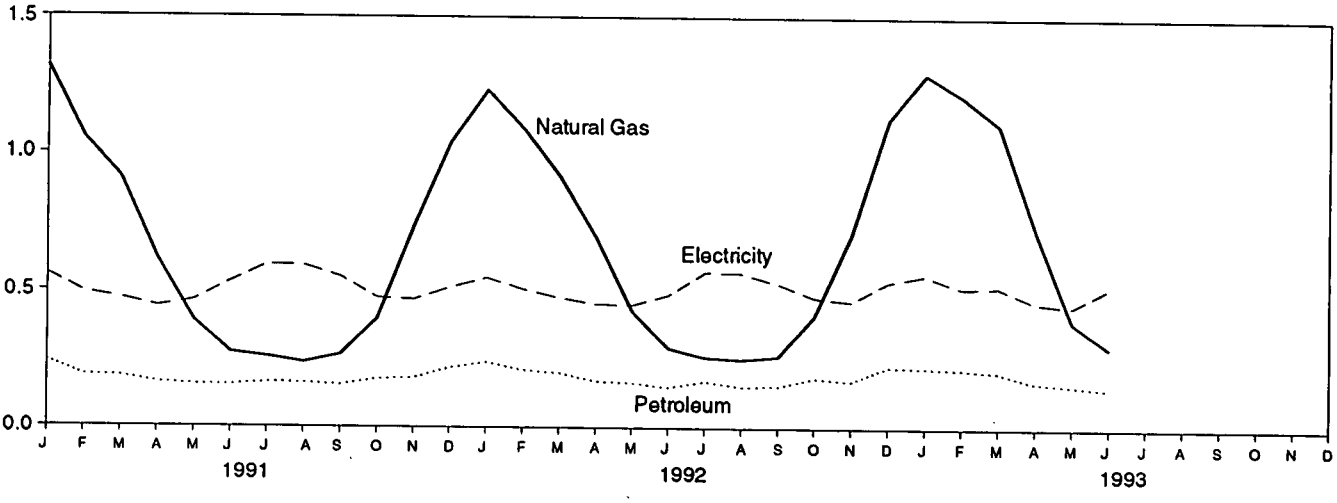
Figure 2.2 Residential and Commercial Energy Consumption

(Quadrillion Btu)

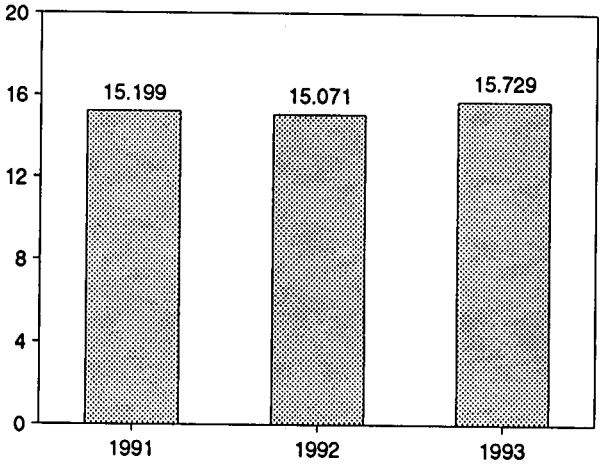
Consumption by Major Sources, 1973-1992



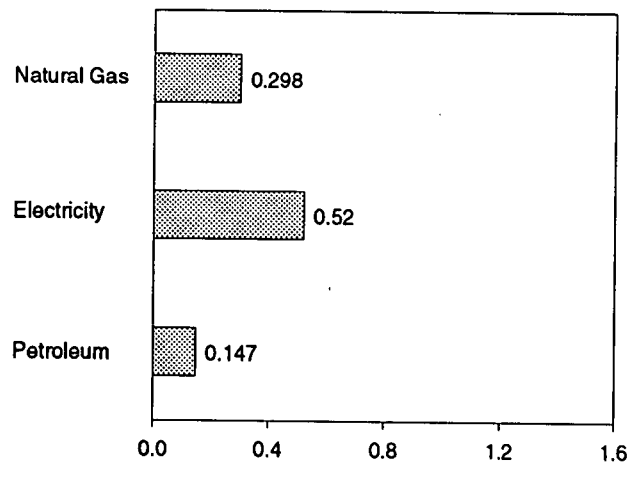
Consumption by Major Sources, Monthly



Total Consumption, January-June



Consumption by Major Sources, June 1993



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 2.3.

Table 2.3 Residential and Commercial Energy Consumption

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Primary Consumption	Electricity	Net Consumption	Electrical System Energy Losses	Total Consumption[b]
1973 Total	0.254	7.626	4.391	12.270	3.495	15.766	8.377	24.143
1974 Total	.257	7.518	3.996	11.771	3.475	15.246	8.478	23.724
1975 Total	.209	7.581	3.805	11.595	3.604	15.200	8.700	23.900
1976 Total	.203	7.866	4.181	12.250	3.747	15.997	9.023	25.020
1977 Total	.205	7.461	4.206	11.873	3.955	15.828	9.559	25.387
1978 Total	.214	7.624	4.070	11.908	4.116	16.023	10.065	26.088
1979 Total	.187	7.891	3.448	11.525	4.184	15.709	10.101	25.809
1980 Total	.145	7.540	3.035	10.721	4.355	15.075	10.578	25.653
1981 Total	.167	7.243	2.634	10.043	4.497	14.541	10.703	25.243
1982 Total	.187	7.427	2.449	10.063	4.566	14.629	11.001	25.630
1983 Total	.192	7.024	2.498	9.715	4.680	14.395	11.235	25.630
1984 Total	.209	7.292	2.535	10.036	4.928	14.964	11.514	26.478
1985 Total	.176	7.079	2.522	9.777	5.061	14.839	11.866	26.704
1986 Total	.176	6.825	2.555	9.556	5.235	14.791	12.061	26.852
1987 Total	.162	6.954	2.587	9.703	5.443	15.146	12.475	27.621
1988 Total	.168	7.513	2.600	10.280	5.724	16.004	12.918	28.922
1989 Total	.146	7.731	2.525	10.402	5.859	16.261	13.141	29.402
1990 Total	.156	7.225	2.173	9.553	6.015	15.568	13.221	28.790
1991 January	.020	1.317	.242	1.579	.562	2.141	1.236	3.377
February	.014	1.055	.190	1.259	.495	1.754	.975	2.729
March	.012	.911	.187	1.111	.474	1.585	1.047	2.632
April	.009	.617	.164	.790	.444	1.234	.945	2.179
May	.008	.394	.156	.558	.466	1.024	1.088	2.111
June	.007	.275	.155	.437	.535	.972	1.199	2.171
July	.010	.259	.164	.433	.596	1.029	1.367	2.396
August	.009	.238	.163	.410	.593	1.002	1.325	2.327
September	.007	.267	.155	.429	.553	.982	1.096	2.078
October	.008	.400	.178	.586	.477	1.063	1.013	2.077
November	.016	.737	.182	.935	.471	1.406	1.015	2.421
December	.020	1.040	.219	1.279	.514	1.793	1.134	2.928
Total	.141	7.511	2.154	9.806	6.180	15.987	13.438	29.425
1992 January	.017	1.228	.240	1.485	.550	2.035	1.197	3.232
February	.014	1.090	.211	1.314	.509	1.823	1.010	2.833
March	.012	.919	.202	1.133	.479	1.612	1.027	2.639
April	.012	.699	.172	.884	.456	1.339	.944	2.283
May	.007	.432	.165	.605	.453	1.057	.989	2.047
June	.007	.294	.150	.451	.490	.941	1.097	2.037
July	.011	.261	.172	.444	.573	1.017	1.307	2.324
August	.009	.253	.153	.415	.570	.985	1.230	2.215
September	.009	.264	.155	.428	.532	.959	1.090	2.049
October	.009	.417	.186	.612	.482	1.094	.991	2.085
November	.015	.713	.175	.903	.468	1.371	1.017	2.388
December	.021	1.127	.227	1.376	.539	1.914	1.208	3.123
Total	.143	7.697	2.210	10.050	6.099	16.149	13.105	29.254
1993 January	.017	1.292	R.223	R1.532	.564	R2.097	1.211	R3.308
February	.017	1.209	R.218	R1.443	.517	R1.960	1.051	R3.011
March	.013	1.107	R.208	R1.329	.521	R1.850	1.097	R2.947
April	.013	R.729	R.170	R.912	.465	R1.377	.939	R2.316
May	.008	.395	R.159	R.562	.452	R1.015	.995	R2.009
June	.007	.298	.147	.451	.520	.972	1.165	2.137
6-Month Total	.076	5.030	1.124	6.230	3.041	9.271	6.458	15.729
1992 6-Month Total	.069	4.661	1.141	5.872	2.935	8.807	6.264	15.071
1991 6-Month Total	.071	4.569	1.094	5.734	2.976	8.711	6.488	15.199

[a] Includes supplemental gaseous fuels.

[b] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

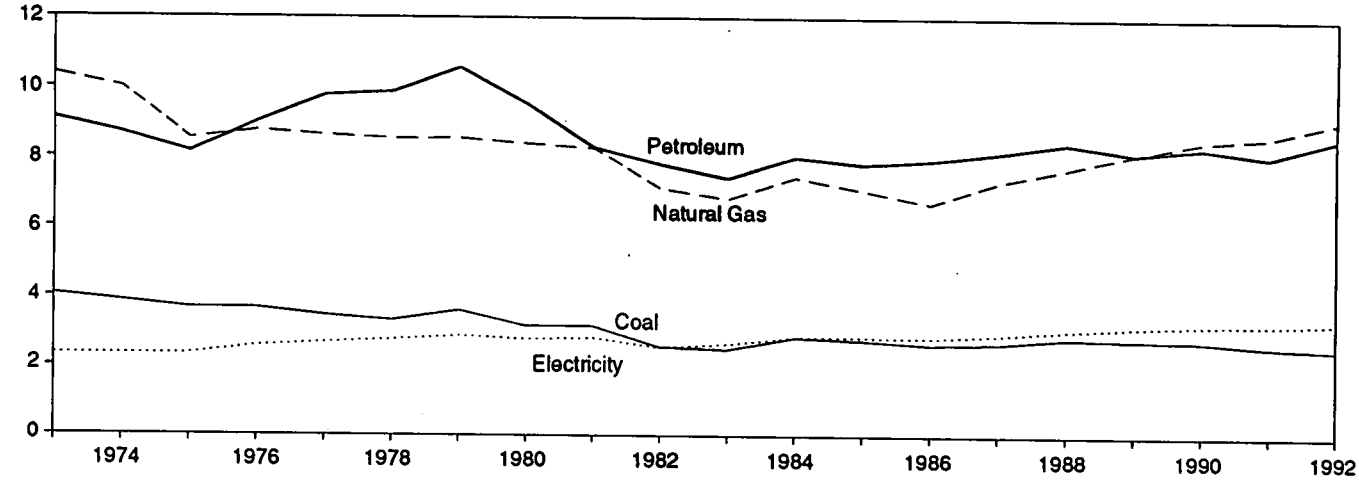
R=Revised data.

Notes: • Geographic coverage is the 50 States and the District of Columbia.
• Totals may not equal sum of components due to independent rounding.
Additional Notes and Sources: See end of section.

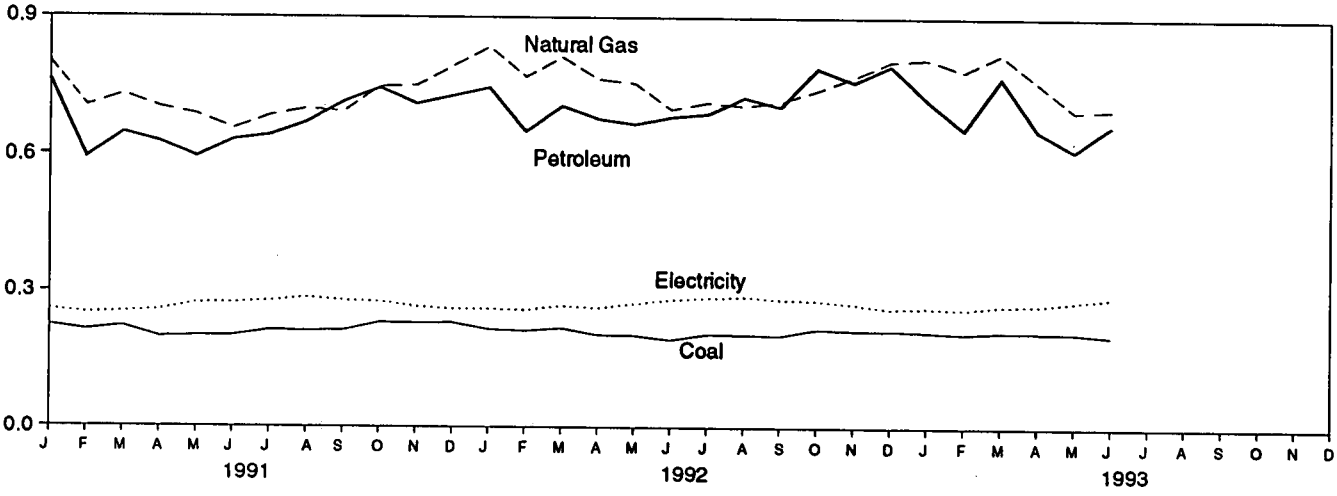
Figure 2.3 Industrial Energy Consumption

(Quadrillion Btu)

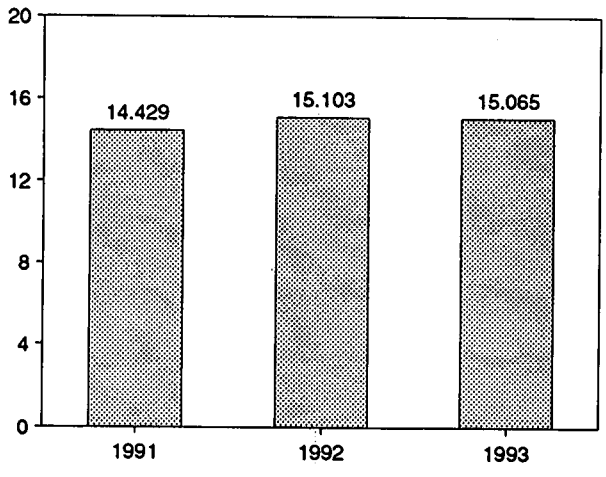
Consumption by Major Sources, 1973-1992



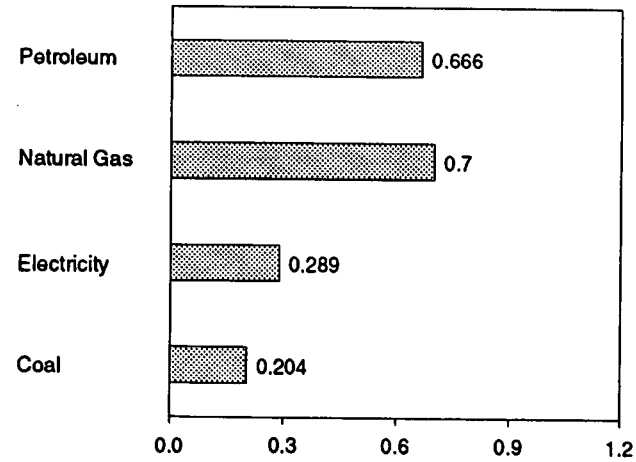
Consumption by Major Sources, Monthly



Total Consumption, January-June



Consumption by Major Sources, June 1993



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 2.4.

Table 2.4 Industrial Energy Consumption

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Hydro-electric Power	Net Imports of Coal Coke	Primary Consumption	Electricity	Net Consumption	Electrical System Energy Losses	Total Consumption[b]
1973 Total	4.057	10.388	9.104	0.035	-0.007	23.576	2.341	25.917	5.611	31.528
1974 Total	3.870	10.004	8.694	.033	.056	22.657	2.337	24.994	5.701	30.696
1975 Total	3.667	8.532	8.146	.032	.014	20.391	2.346	22.737	5.664	28.401
1976 Total	3.661	8.762	9.010	.033	(s)	21.465	2.573	24.038	6.196	30.234
1977 Total	3.454	8.635	9.774	.033	.015	21.911	2.682	24.593	6.481	31.075
1978 Total	3.314	8.539	9.867	.032	.125	21.876	2.761	24.637	6.751	31.388
1979 Total	3.593	8.549	10.568	.034	.063	22.807	2.873	25.679	6.935	32.615
1980 Total	3.155	8.395	9.525	.033	-.035	21.073	2.781	23.854	6.755	30.609
1981 Total	3.157	8.257	8.285	.033	-.016	19.715	2.817	22.533	6.705	29.238
1982 Total	2.552	7.121	7.794	.033	-.022	17.479	2.542	20.020	6.124	26.144
1983 Total	2.490	6.826	7.420	.033	-.016	16.753	2.648	19.401	6.356	25.756
1984 Total	2.842	7.448	8.014	.033	-.011	18.325	2.859	21.184	6.679	27.862
1985 Total	2.760	7.080	7.805	.033	-.013	17.665	2.855	20.520	6.693	27.213
1986 Total	2.640	6.690	7.920	.033	-.017	17.267	2.834	20.101	6.529	26.629
1987 Total	2.673	7.323	8.150	.033	.009	18.188	2.928	21.116	6.711	27.828
1988 Total	2.828	7.696	8.430	.033	.040	19.026	3.059	22.085	6.903	28.988
1989 Total	2.787	8.131	8.133	.033	.030	19.113	3.158	22.272	7.084	29.355
1990 Total	2.756	8.502	8.319	.033	.005	19.615	3.226	22.841	7.091	29.932
1991 January	.225	.800	.761	.003	.001	1.790	.260	2.050	.572	2.622
February	.214	.704	.592	.003	.001	1.514	.252	1.766	.496	2.263
March	.223	.729	.646	.003	.002	1.603	.255	1.858	.564	2.422
April	.199	.702	.626	.003	.001	1.531	.259	1.790	.550	2.340
May	.201	.686	.594	.003	.001	1.484	.274	1.758	.640	2.399
June	.202	.656	.631	.003	-.001	1.490	.275	1.766	.617	2.383
July	.214	.684	.641	.003	.003	1.545	.279	1.824	.641	2.465
August	.213	.699	.670	.002	-.002	1.583	.287	1.870	.642	2.512
September	.214	.693	.714	.002	.004	1.627	.280	1.907	.556	2.463
October	.232	.747	.744	.002	-.001	1.725	.278	2.003	.589	2.592
November	.231	.749	.710	.002	.001	1.694	.267	1.962	.576	2.538
December	.232	.792	.727	.002	(s)	1.754	.262	2.016	.577	2.593
Total	2.601	8.641	8.057	.033	.009	19.340	3.230	22.570	7.022	29.592
1992 January	.217	.834	.745	.003	.004	1.803	.262	2.065	.570	2.635
February	.214	.769	.650	.003	.003	1.638	.260	1.898	.517	2.415
March	.220	.812	.706	.003	.003	1.743	.269	2.012	.576	2.588
April	.205	.764	.678	.003	.003	1.653	.265	1.918	.548	2.466
May	.204	R.755	.667	.003	.001	R1.630	.274	R1.903	.598	R2.501
June	.194	R.699	.682	.003	.003	R1.581	.283	R1.864	.634	R2.498
July	.207	R.714	.689	.003	.001	R1.614	.287	R1.901	.655	R2.556
August	.206	R.707	.725	.002	.001	R1.640	.290	R1.930	.626	R2.556
September	.204	R.716	.705	.002	.001	R1.628	.284	R1.912	.581	2.494
October	.219	.741	.789	.002	.002	1.754	.282	2.036	.580	2.616
November	.216	.770	.759	.002	.001	1.749	.274	2.024	.596	2.620
December	.216	R.804	.795	.002	.005	R1.823	.264	R2.087	.592	R2.679
Total	2.523	R9.084	8.589	.033	.027	R20.256	3.294	R23.550	7.077	R30.627
1993 January	.213	.809	R.720	.003	.004	R1.749	.266	R2.016	.571	R2.587
February	.209	R.783	R.656	.003	(s)	R1.650	.263	R1.912	.534	R2.446
March	.213	R.820	R.768	.003	.003	R1.808	.271	R2.079	.571	R2.650
April	.212	R.758	R.654	.003	.002	R1.630	.272	R1.901	.548	R2.450
May	.211	R.696	R.610	.003	.002	R1.522	.280	1.803	.616	2.419
June	.204	.700	.666	.003	.003	1.576	.289	1.866	.648	2.513
6-Month Total	1.261	4.566	4.076	.018	.014	9.935	1.641	11.576	3.488	15.065
1992 6-Month Total	1.255	4.632	4.127	.018	.017	10.048	1.612	11.660	3.443	15.103
1991 6-Month Total	1.264	4.277	3.850	.018	.003	9.412	1.576	10.989	3.440	14.429

[a] Includes supplemental gaseous fuels.

[b] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

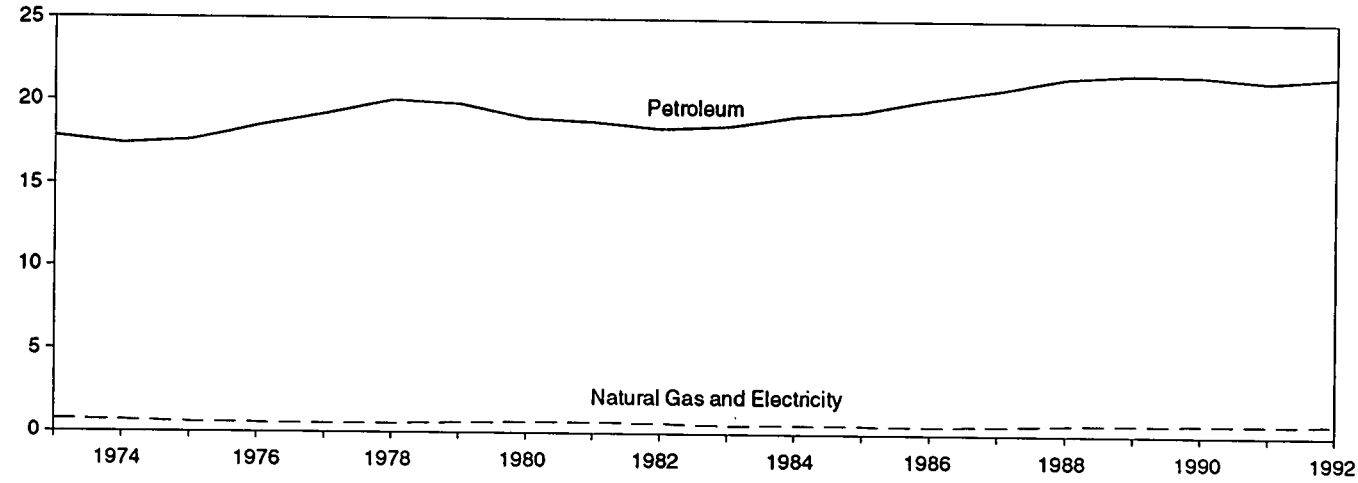
R=Revised data. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.

Notes: • Geographic coverage is the 50 States and the District of Columbia.
• Totals may not equal sum of components due to independent rounding.
Additional Notes and Sources: See end of section.

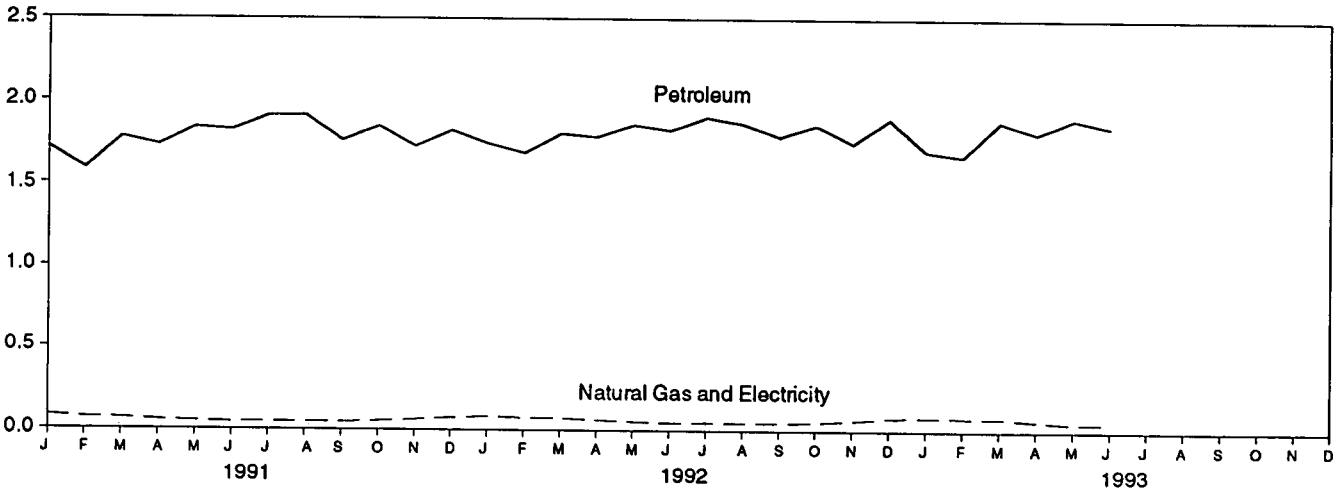
Figure 2.4 Transportation Energy Consumption

(Quadrillion Btu)

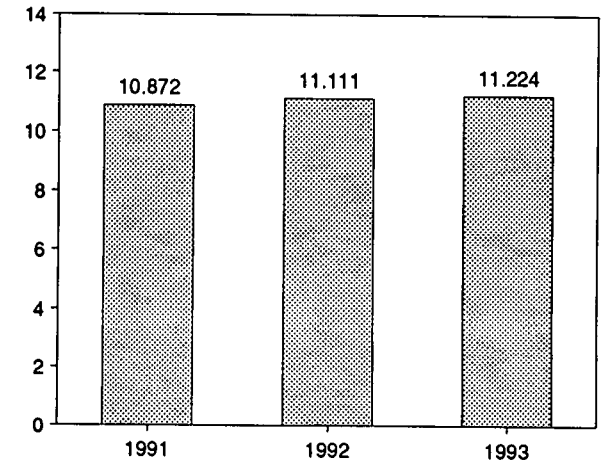
Consumption by Major Sources, 1973-1992



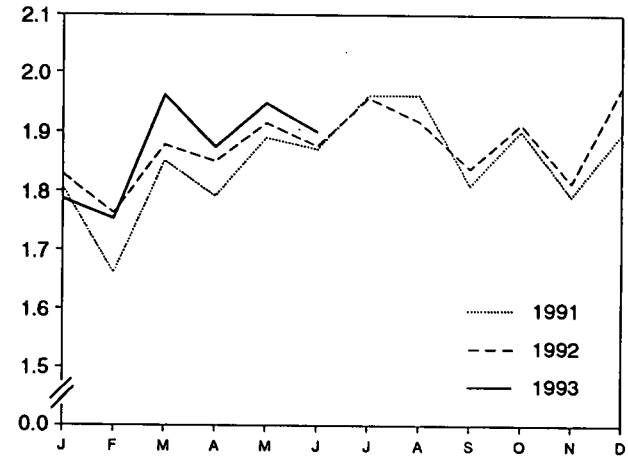
Consumption by Major Sources, Monthly



Total Consumption, January-June



Total Consumption, Monthly



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 2.5.

Table 2.5 Transportation Energy Consumption

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Primary Consumption	Electricity	Net Consumption	Electrical System Energy Losses	Total Consumption[b]
1973 Total	0.003	0.743	17.831	18.576	0.008	18.584	0.020	18.605
1974 Total	.002	.685	17.399	18.086	.009	18.095	.022	18.117
1975 Total	.001	.595	17.614	18.209	.010	18.219	.025	18.244
1976 Total	(s)	.559	18.506	19.065	.010	19.076	.025	19.101
1977 Total	(s)	.543	19.241	19.784	.010	19.794	.025	19.819
1978 Total	(c)	.539	20.041	20.580	.009	20.589	.022	20.611
1979 Total	(c)	.612	19.825	20.436	.010	20.447	.025	20.472
1980 Total	(c)	.650	19.008	19.658	.011	19.669	.026	19.695
1981 Total	(c)	.658	18.811	19.469	.011	19.480	.026	19.507
1982 Total	(c)	.612	18.420	19.032	.011	19.043	.026	19.069
1983 Total	(c)	.505	18.593	19.098	.011	19.109	.026	19.135
1984 Total	(c)	.545	19.216	19.761	.012	19.773	.028	19.801
1985 Total	(c)	.519	19.504	20.024	.013	20.036	.030	20.067
1986 Total	(c)	.499	20.269	20.768	.013	20.781	.031	20.812
1987 Total	(c)	.535	20.871	21.406	.013	21.419	.029	21.448
1988 Total	(c)	.632	21.629	22.260	.014	22.274	.031	22.305
1989 Total	(c)	.649	21.868	22.517	.014	22.530	.031	22.561
1990 Total	(c)	.680	21.810	22.490	.014	22.504	.031	22.535
1991 January	(c)	.084	1.718	1.802	.001	1.803	.003	1.806
February	(c)	.070	1.588	1.658	.001	1.659	.002	1.661
March	(c)	.067	1.780	1.847	.001	1.848	.002	1.851
April	(c)	.056	1.732	1.789	.001	1.790	.002	1.792
May	(c)	.049	1.838	1.886	.001	1.888	.003	1.890
June	(c)	.044	1.823	1.867	.001	1.868	.003	1.871
July	(c)	.047	1.910	1.957	.001	1.958	.003	1.961
August	(c)	.047	1.911	1.958	.001	1.959	.003	1.962
September	(c)	.045	1.761	1.806	.001	1.807	.002	1.810
October	(c)	.052	1.846	1.898	.001	1.899	.002	1.902
November	(c)	.062	1.726	1.788	.001	1.789	.002	1.792
December	(c)	.073	1.821	1.895	.001	1.896	.002	1.898
Total	(c)	.695	21.456	22.151	.014	22.165	.030	22.196
1992 January	(c)	.082	1.743	1.825	.001	1.826	.002	1.828
February	(c)	.074	1.685	1.760	.001	1.761	.002	1.763
March	(c)	.071	1.804	1.875	.001	1.876	.002	1.878
April	(c)	.062	1.785	1.847	.001	1.848	.002	1.850
May	(c)	.052	1.859	1.911	.001	1.912	.003	1.915
June	(c)	.046	1.826	1.873	.001	1.874	.003	1.876
July	(c)	.048	1.904	R 1.952	.001	1.954	.003	1.957
August	(c)	R .046	1.867	1.914	.001	1.915	.003	1.918
September	(c)	.046	1.788	1.834	.001	1.836	.003	1.838
October	(c)	.050	1.859	1.909	.001	1.910	.002	1.913
November	(c)	.061	1.749	1.810	.001	1.811	.002	1.814
December	(c)	.077	1.895	R 1.972	.001	1.974	.003	1.976
Total	(c)	R .717	21.765	22.482	.014	22.496	.030	22.526
1993 January	(c)	.083	R 1.700	R 1.783	.001	R 1.784	.003	R 1.787
February	(c)	R .079	R 1.671	R 1.750	.001	R 1.751	.002	R 1.753
March	(c)	R .078	R 1.881	R 1.959	.001	R 1.960	.002	R 1.962
April	(c)	.061	R 1.810	R 1.871	.001	R 1.872	.002	R 1.874
May	(c)	.046	R 1.898	R 1.944	.001	R 1.945	.002	R 1.948
June	(c)	.046	1.850	1.896	.001	1.897	.003	1.900
6-Month Total	(c)	.393	10.809	11.202	.007	11.209	.015	11.224
1992 6-Month Total	(c)	.388	10.702	11.090	.007	11.097	.014	11.111
1991 6-Month Total	(c)	.370	10.480	10.850	.007	10.857	.015	10.872

[a] Pipeline fuel only, including supplemental gaseous fuels.

[b] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

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

R=Revised data. (s)=Less than 0.5 trillion Btu.

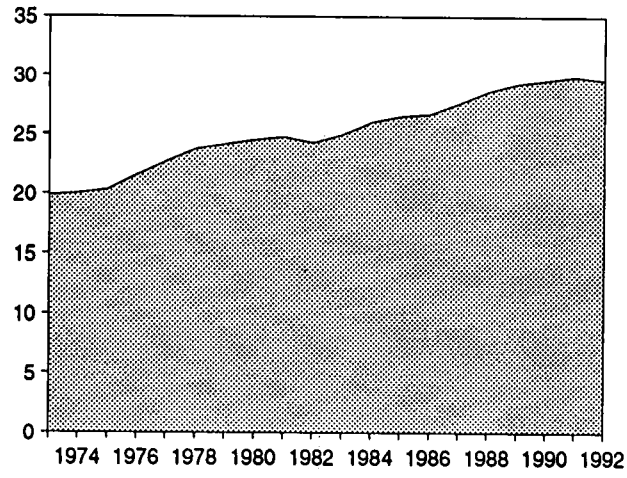
Notes: • Geographic coverage is the 50 States and the District of Columbia.

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

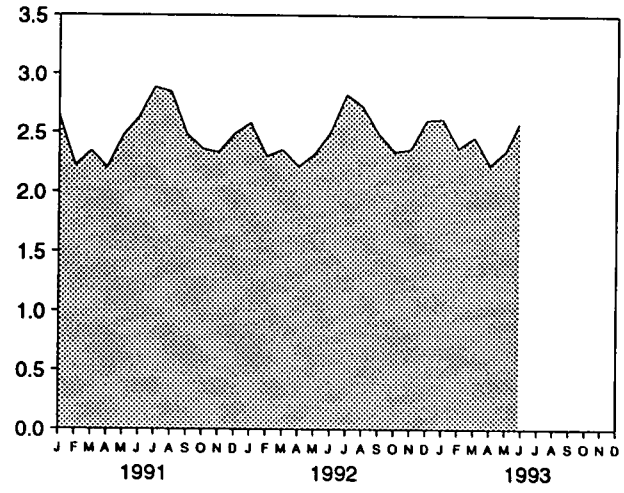
Additional Notes and Sources: See end of section.

Figure 2.5 Energy Input at Electric Utilities
(Quadrillion Btu)

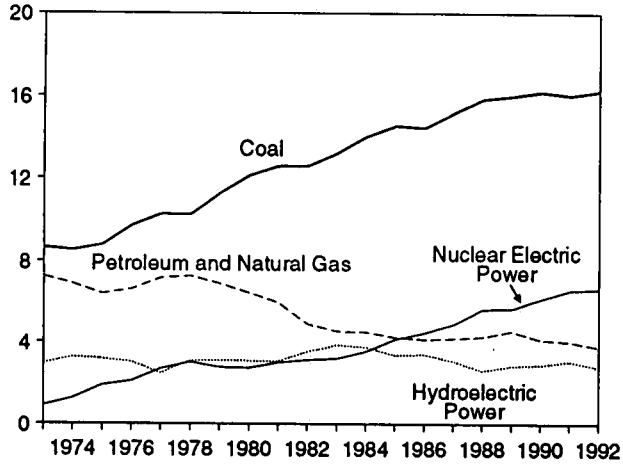
Total Input, 1973-1992



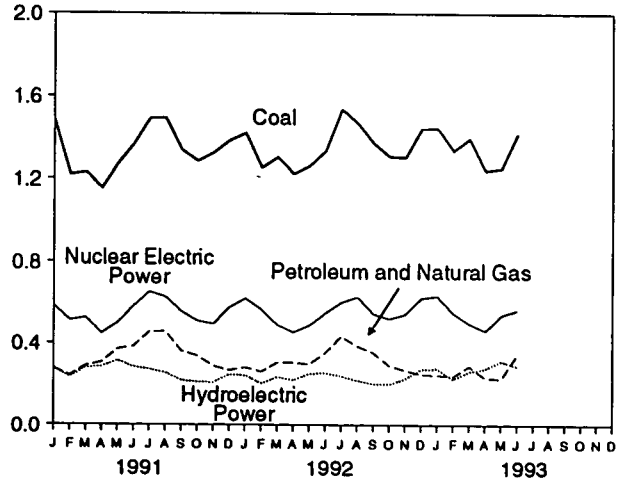
Total Input, Monthly



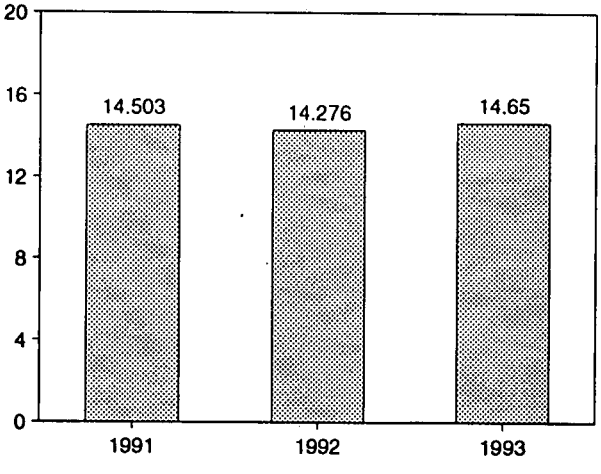
Input by Major Sources, 1973-1992



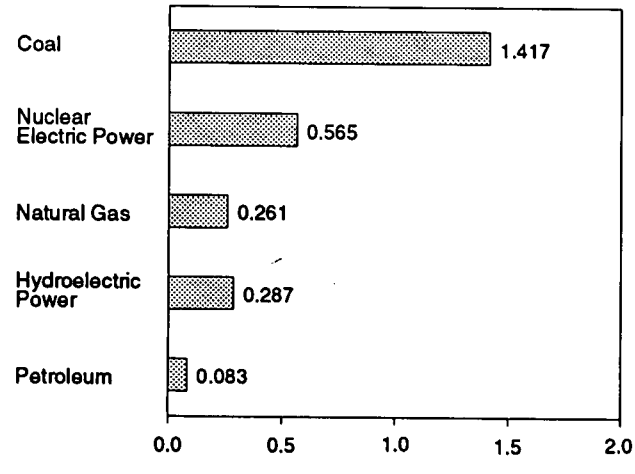
Input by Major Sources, Monthly



Total Input, January-June



Input by Major Sources, June 1993



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 2.6.

Table 2.6 Energy Input at Electric Utilities

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum[b]	Nuclear Electric Power	Hydro-electric Power[c]	Other[d]	Total
1973 Total	8.658	3.748	3.515	0.910	2.975	0.046	19.852
1974 Total	8.534	3.519	3.365	1.272	3.276	.056	20.022
1975 Total	8.786	3.240	3.166	1.900	3.187	.072	20.350
1976 Total	9.720	3.152	3.477	2.111	3.032	.081	21.574
1977 Total	10.262	3.284	3.901	2.702	2.482	.082	22.713
1978 Total	10.238	3.297	3.987	3.024	3.110	.068	23.724
1979 Total	11.260	3.613	3.283	2.776	3.107	.089	24.128
1980 Total	12.123	3.810	2.634	2.739	3.085	.114	24.505
1981 Total	12.583	3.768	2.202	3.008	3.072	.127	24.760
1982 Total	12.582	3.342	1.568	3.131	3.539	.108	24.270
1983 Total	13.213	2.998	1.544	3.203	3.866	.133	24.956
1984 Total	14.020	3.220	1.286	3.553	3.767	.174	26.020
1985 Total	14.542	3.160	1.090	4.149	3.365	.213	26.519
1986 Total	14.444	2.691	1.452	4.471	3.413	.232	26.703
1987 Total	15.173	2.935	1.257	4.906	3.084	.245	27.600
1988 Total	15.850	2.709	1.563	5.661	2.630	.235	28.648
1989 Total	15.988	2.871	1.685	5.677	2.848	.217	29.286
1990 Total	16.189	2.882	1.250	6.161	2.914	.202	29.599
1991 January	1.482	.177	.099	.584	.275	.017	2.634
February	1.217	.150	.092	.514	.234	.014	2.221
March	1.230	.198	.092	.528	.280	.016	2.344
April	1.151	.221	.084	.447	.284	.015	2.201
May	1.271	.255	.115	.502	.314	.015	2.472
June	1.366	.266	.117	.582	.283	.016	2.631
July	1.491	.338	.118	.652	.272	.016	2.887
August	1.492	.335	.123	.628	.256	.016	2.851
September	1.337	.269	.091	.557	.218	.015	2.488
October	1.284	.270	.068	.512	.211	.016	2.361
November	1.324	.203	.084	.497	.209	.017	2.333
December	1.384	.174	.094	.576	.247	.017	2.492
Total	16.028	2.856	1.178	6.579	3.083	.191	29.915
1992 January	1.420	.173	.108	.621	.243	.017	2.583
February	1.252	.174	.087	.567	.204	.015	2.299
March	1.304	.213	.092	.492	.235	.017	2.354
April	1.223	.235	.069	.454	.220	.015	2.216
May	1.261	.242	.056	.490	.252	.016	2.317
June	1.334	.272	.080	.550	.255	.016	2.507
July	1.536	.342	.092	.602	.240	.016	2.827
August	1.470	.310	.076	.630	.218	.017	2.720
September	1.372	.280	.074	.547	.202	.015	2.491
October	1.307	.218	.073	.524	.201	.016	2.339
November	1.303	.194	.074	.545	.228	.016	2.359
December	1.443	.180	.070	.624	.274	.016	2.607
Total	16.224	2.832	.951	6.646	2.773	.192	29.618
1993 January	1.446	.168	.077	.634	.276	.016	2.617
February	1.336	.166	.074	.551	.227	.015	2.369
March	1.395	.198	.090	.501	.263	.016	2.464
April	1.239	.178	.055	.464	.276	.015	2.228
May	1.250	.171	.056	.541	.314	.014	2.347
June	1.417	.261	.083	.565	.287	.014	2.627
6-Month Total	8.083	1.142	.436	3.256	1.643	.089	14.650
1992 6-Month Total	7.794	1.309	.492	3.174	1.410	.095	14.276
1991 6-Month Total	7.716	1.267	.599	3.157	1.669	.094	14.503

[a] Includes supplemental gaseous fuels.

[b] Petroleum products reported as "oil consumed in steam plants" through 1979 and "heavy oil" from 1980 forward, which are assumed to be residual fuel oil; petroleum products reported as "oil consumed in gas turbine and internal combustion engine plants" through 1979 and "light oil" from 1980 forward, which are assumed to be distillate fuel oil, kerosene, and petroleum coke.

[c] Includes net imports of electricity.

[d] "Other" is electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

Notes: • Geographic coverage is the 50 States and the District of Columbia.

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

Additional Notes and Sources: See end of section.

Energy Consumption Notes and Sources

The data in this section of the *Monthly Energy Review* (*MER*) are obtained initially from a group of energy-related surveys, typically called "supply surveys," conducted by the Energy Information Administration (EIA). Supply surveys are those surveys directed to suppliers and marketers of specific energy sources. They measure the quantities of specific energy sources produced, or the quantities supplied to the market, or both. The data obtained from the EIA's supply surveys are integrated to yield the summary consumption statistics published in this section (and in Section 1) of the *MER*. Users of the EIA's energy consumption statistics should be aware of a second group of energy-related surveys, typically called "consumption surveys." Consumption surveys gather information on the types of energy consumed by end users of energy, along with the characteristics of those end users that can be associated with energy use. For example, the Manufacturing Energy Consumption Survey belongs to the consumption survey group because it collects information directly from end users (the manufacturing establishments). There are important differences between the supply and consumption surveys that need to be taken into account in any analysis that uses both data sources. For information on those differences, see *Energy Consumption by End-Use Sector, A Comparison of Measures by Consumption and Supply Surveys*, DOE/EIA-0533, Energy Information Administration, Washington, DC, April 6, 1990. The numbered notes that follow elaborate on essential information in Section 2.

1. Total Energy Consumed: Total energy consumed includes coal, natural gas (including supplemental gaseous fuels), petroleum products supplied, electric utility and industrial generation of hydroelectric power, net imports of electricity generated from hydroelectric power, and electricity generated from nuclear power. Total energy consumed also includes electricity generated from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy but excludes other energy obtained from those sources because consistent historical data are not available.

2. Economic Sectors: Energy use is assigned to the major economic sectors according to the following guidelines as closely as possible:

- Residential—All private residences, whether occupied or vacant, owned or rented, including single-family homes, multifamily housing units, and mobile homes. Secondary homes, such as summer homes, are also included. Institutional housing, such as school dormitories, hospitals, and military barracks, generally are not included in the residential sector; they are included in the commercial sector.
- Commercial—Business establishments that are not engaged in transportation or in manufacturing or other types of industrial activity (agriculture, mining, or construction). Commercial establishments include hotels, motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; religious and nonprofit organizations; health, social, and educational institutions; and Federal, State, and local governments. Street lights, pumps, bridges, and public services are also included if the establishment operating them is considered commercial.
- Industrial—Manufacturing industries, which make up the largest part of the sector, along with mining, construction, agriculture, fisheries, and forestry. Establishments in the sector range from steel mills to small farms to companies assembling electronic components.
- Transportation—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.
- Electric Utility—Privately and publicly owned establishments that generate, transmit, distribute, and sell electricity primarily for use by the public and meet the definition of an electric utility. Nonutility power producers are not included in the electric utility sector.

Although the end-use allocations are made according to these aggregations as closely as possible, some data are collected by using different classifications. For example, data on agricultural use of natural gas are collected and reported in the commercial sector, rather than in the industrial sector. Since agricultural use of natural gas cannot be identified separately, it is included in the commercial sector in this report. Another example is master-metered condominiums and apartments, and buildings with a combination of residential and commercial units. In many cases, the metering and billing practices cause residential energy usage of electricity, natural gas, or fuel oil to be included in the commercial sector. No adjustments for these discrepancies were made.

3. Conversion Factors: See the conversion factors listed in Appendix A.

4. Coal: Coal is anthracite, bituminous coal (including subbituminous coal), and lignite. Sources:

- 1973-September 1977: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook* and *Minerals Industry Surveys*.
- Electric Utilities—October 1977 forward: Energy Information Administration (EIA), Form EIA-759 (formerly Form FPC-4), "Monthly Power Plant Report."
- Other Industrial—October 1977-December 1979: EIA, Form EIA-3, "Monthly Coal Consumption Report - Manufacturing Plants"; January 1980 for-

ward: EIA, Form EIA-3, "Quarterly Coal Consumption Report - Manufacturing Plants," and Form EIA-6, "Coal Distribution Report."

- Coke Plants—October 1977-December 1980: EIA, Form EIA-5/5A, "Coke and Coal Chemicals - Monthly/Annual"; January 1981-December 1984: EIA, Form EIA-5/5A, "Coke Plant Report - Quarterly/Annual Supplement"; January 1985 forward: EIA, Form EIA-5/5A, "Coke Plant Report," quarterly.
- Residential and Commercial—October 1977-December 1979: EIA, Form EIA-2, "Monthly Coal Report, Retail Dealers - Upper Lake Docks"; January 1980 forward: EIA, Form EIA-6, "Coal Distribution Report."

5. Natural Gas: Natural gas consumption by end use is based on data presented in Table 4.3 of this report. For Section 2 calculations, lease and plant fuel consumption are added to industrial deliveries, and pipeline fuel represents transportation use of natural gas. Values in Btu are derived by using the conversion factors provided in Appendix A. Sources:

- 1973-1975: DOI, BOM, *Minerals Yearbook*, "Natural Gas" chapter.
- 1976-1978: EIA, "Energy Data Reports," *Natural Gas, Annual.*
- 1979: EIA, *Natural Gas Production and Consumption 1979.*
- 1980-1991: EIA, *Natural Gas Annual.*
- 1992 and 1993: EIA, *Natural Gas Monthly.*
- Electric Utilities—1973-1976: Form FPC-4, "Monthly Power Plant Report"; 1977-1981: Federal Energy Regulatory Commission (FERC), Form FPC-4, "Monthly Power Plant Report"; 1982 forward: EIA, Form EIA-759, "Monthly Power Plant Report."
- American Gas Association, "Monthly Gas Utility Statistical Report," residential and commercial monthly sales data for 1973-1979, which are used to estimate monthly consumption values from EIA annual consumption values.

6. Petroleum: Petroleum consumption by end use is the sum of all individual petroleum products estimated to be consumed in each end-use sector. First, total consumption by product is determined. Petroleum consumption in this section of the *Monthly Energy Review (MER)* is the series called "petroleum products supplied" in Section 3. Sources for petroleum products supplied by individual products are:

- 1973-1975: DOI, BOM, *Mineral Industry Surveys*, "Petroleum Statement, Annual."
- 1976-1980: EIA, *Energy Data Reports*, "Petroleum Statement, Annual."
- 1981-1991: EIA, *Petroleum Supply Annual.*
- 1992 and 1993: EIA, *Petroleum Supply Monthly.*

Specific petroleum products' end-use allocation procedures follow:

- **Aviation Gasoline**—All product supplied is assigned to the transportation sector.
- **Asphalt**—All product supplied is assigned to the industrial sector.
- **Distillate Fuel**—Product supplied is assigned to electric utilities and non-electric utilities as follows:

Electric Utilities, All Periods.

Monthly and annual consumption for 1973-1979 is assumed to be the amount of oil (minus small amounts of kerosene and kerosene-type jet fuel deliveries) reported as consumed in internal combustion and gas turbine engine plants. From January 1980, electric utility consumption of distillate fuel is assumed to be the petroleum products reported as "light oil" (minus small amounts of kerosene deliveries through 1982) consumed at electric utilities.

Sources: 1973-September 1977: FPC, Form FPC-4, "Monthly Power Plant Report"; October 1977-1981: FERC, Form FPC-4, "Monthly Power Plant Report"; 1982 forward: EIA, Form EIA-759, "Monthly Power Plant Report."

Sectors Other Than Electric Utilities, Annual Estimates Through 1991.

The aggregate non-electric utility use of distillate fuel is total distillate fuel supplied minus the electric utility consumption. The non-electric utility annual consumption totals are allocated to the individual non-electric utility sectors (residential, commercial, industrial, and transportation) in proportion to the share of "adjusted sales" of each end-use sector, as reported in EIA's *Fuel Oil and Kerosene Sales* report series (DOE/EIA-0535), which is based primarily on data collected by Form EIA-821, previously Form EIA-172. "Adjusted sales" are sales that have been adjusted at the PAD district level to equal EIA volume estimates of petroleum products supplied in the U.S. market. Following are notes on the individual sector groupings:

- Since 1979, the residential sector adjusted sales total is directly from the *Sales* reports. Prior to 1979, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares.

- Since 1979, the commercial sector adjusted sales total is directly from the *Sales* reports. Prior to 1979, each year's sales subtotal of the heating plus industrial category is split into residential, commer-

cial, and industrial (including farm) in proportion to the 1979 shares.

- Since 1979, the industrial sector adjusted sales total is the sum of the adjusted sales for industrial, farm, oil company, off-highway, diesel, and all other uses. Prior to 1979, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares, and this estimated industrial portion is added to oil company, off-highway diesel, and all other uses.

- The transportation sector adjusted sales total is the sum of the adjusted sales for railroad, vessel bunkering, on-highway diesel, and military uses for all years.

Sectors Other Than Electric Utilities, Monthly Estimates Through 1991.

- Residential and commercial monthly consumption is estimated by allocating the annual estimates described above into months in proportion to each month's share of the year's sales of No. 2 heating oil as reported in the "Monthly Report of Heating Oil Sales" by the Ethyl Corporation from 1973-1980 and the American Petroleum Institute for 1981 and 1982, and the EIA, Form EIA-782A, "Refiners/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale, since 1983.

- The transportation highway use portion is allocated into the months in proportion to each month's share of the year's total sales for highway use as reported by the Federal Highway Administration's Table MF-25, "Private and Commercial Highway Use of Special Fuels by Months." The remaining transportation use of distillate fuel (i.e., for railroads, vessel bunkering, and military use) is evenly distributed over the months, adjusted for the number of days per month.

- Industrial monthly estimates are made by subtracting the residential and commercial, transportation, and electric utility sector estimates from each month's total distillate fuel supplied.

Sectors Other Than Electric Utilities, 1992 and 1993

Each month's non-electric utility consumption subtotal is disaggregated into the major end-use sectors in proportion to the shares each sector held of the non-electric utility subtotal in the same month in 1991.

- **Jet Fuel**—Through 1982, small amounts of kerosene-type jet fuel were consumed by electric utilities. Kerosene-type jet fuel deliveries to electric utilities as reported on the Form FERC-423 (formerly Form FPC-423) were used as estimates of this consumption. All remaining jet fuel (kerosene-type and naphtha-type) is consumed by the transportation sector.
- **Kerosene**—Total product supplied monthly is allocated to the major end-use sectors in proportion to annual sales grouped into end-use sectors from EIA's *Fuel Oil and Kerosene Sales (Sales)* reports (based primarily on data collected by Form EIA-821, previously Form EIA-172), as follows:

  - Residential deliveries are directly from the *Sales* reports for 1979-1991. Sales for 1991 are used as estimates for succeeding periods. Prior to 1979, each year's sales category called "heating" is split into residential, commercial, and industrial in proportion to the 1979 shares.

  - Commercial sales are directly from the *Sales* reports for 1979-1991. Sales for 1991 are used as estimates for succeeding periods. Prior to 1979, each year's sales category called "heating" is split into residential, commercial, and industrial in proportion to the 1979 shares.

  - Industrial sales are directly from the *Sales* reports for 1979-1991. Sales for 1991 are used as estimates for succeeding periods. Prior to 1979, each year's sales category called "heating" is split into residential, commercial and industrial in proportion to the 1979 shares, and this estimated industrial (including farm) portion is added to all other uses.
- **Liquefied Petroleum Gases (LPG)**—The annual shares of LPG's total consumption that are estimated to be consumed by each end-use sector are applied to each month's total LPG consumption (i.e., product supplied) to create monthly end-use consumption estimates. The annual end-use shares are calculated in the following manner:

  - Sales of LPG to the residential and commercial sector are converted from thousand gallons per year to thousand barrels per year and are assumed to be the annual consumption of LPG by the sector.

  - The quantity of LPG sold each year for consumption in internal combustion engines is allocated between the transportation and industrial sectors on the basis of data for special fuels used on highways published by the U.S. Department of Transportation, Federal Highway Administration, in *Highway Statistics*. The allocations of LPG sold for internal combustion engine use to the transportation sector range from a high of 67 percent in 1981 to a low of 37 percent in 1987.

  - LPG consumed annually by the industrial sector is estimated as the difference between LPG total supplied and the estimated consumption of LPG by the sum of the residential and commercial sector and the transportation sector. The industrial sector includes LPG used by chemical plants as raw materials or solvents and used in the production of

synthetic rubber; refinery fuel use; use as synthetic natural gas feedstock and use in secondary recovery projects; all farm use; LPG sold to gas utility companies for distribution through the mains; and a portion of the use of LPG as an internal combustion engine fuel.

The sources of the annual sales data for creating annual end-use shares are:

- 1973-1982: EIA's "Sales of Liquefied Petroleum Gases and Ethane" reports, based primarily on data collected by Form EIA-174.

- 1983: End-use consumption estimates for 1983 are based on 1982 end-use consumption because the collection of data under Form EIA-174 was discontinued after data year 1982.

- 1984-1991: American Petroleum Institute (API), "Sales of Natural Gas Liquids and Liquefied Refinery Gases," which is based on an LPG sales survey jointly sponsored by API, the Gas Processors Association, and the National Liquefied Petroleum Gas Association.

- 1992 and 1993: The 1991 source is used to estimate succeeding periods.

- **Lubricants**—Total product supplied is allocated to the industrial and transportation sectors for all months according to proportions developed from annual sales of lubricants to the two sectors from U.S. Department of Commerce, Bureau of the Census, *Current Industrial Reports*, "Sales of Lubricating and Industrial Oils and Greases." The 1973 shares are applied to 1973 and 1974; the 1975 shares are applied to 1975 and 1976; and the 1977 shares are applied to 1977 forward.
- **Motor Gasoline**—Total product supplied monthly is allocated to the major end-use sectors in proportion to aggregations of annual sales categories created on the basis of the U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, Tables MF-21, MF-24, and MF-25, as follows:

  - Commercial sales are the sum of sales for public non-highway use and miscellaneous and unclassified uses.

  - Industrial sales are the sum of sales for agriculture, construction, and industrial and commercial use as classified in the *Highway Statistics*.

  - Transportation sales are the sum of sales for highway use (minus the sales of special fuels, which are primarily diesel fuel and are accounted for in the transportation sector of distillate fuel) and sales for marine use.
- **Petroleum Coke**—The portion consumed by electric utilities is from Form EIA-759, "Monthly Power Plant Report" (formerly Form FPC-4). The remaining petroleum coke is assigned to the industrial sector.
- **Residual Fuel**—Product supplied is assigned to electric utilities and non-electric utilities as follows:

  Electric Utilities, All Periods.

  Monthly and annual consumption for 1973-1979 is assumed to be the amount of oil reported as consumed in steam-electric power plants. From January 1980 forward, electric utility consumption of residual fuel is assumed to be the petroleum products reported as heavy oil consumed at electric utilities.

  Sources: 1973-September 1977: Form FPC-4, "Monthly Power Plant Report"; October 1977-1981: FERC, Form FPC-4, "Monthly Power Plant Report"; 1982 forward: EIA, Form EIA-759, "Monthly Power Plant Report."

  Sectors Other Than Electric Utilities, Annual Estimates Through 1991.

  The aggregate non-electric utility use of residual fuel is total residual fuel supplied minus the electric utility consumption. The non-electric utility annual totals are allocated into the individual non-electric utility sectors in proportion to the amount of residual fuel sold to end users, grouped into sectors from EIA's *Fuel Oil and Kerosene Sales* (*Sales)* reports (based primarily on data collected by Form EIA-821, previously Form EIA-172), as follows:

  - Since 1979, commercial sales data are directly from the *Sales* reports. Prior to 1979, each year's sales subtotal of the heating plus industrial category is split into commercial and industrial in proportion to the 1979 shares.

  - Since 1979, industrial sales data are the sum of sales for industrial, oil company, and all other uses. Prior to 1979, each year's sales subtotal of the heating plus industrial category is split into commercial and industrial in proportion to the 1979 shares, and this estimated industrial portion is added to oil company and all other uses.

  - Transportation sales are the sum of sales for railroad, vessel bunkering, and military uses for all years.

  Sectors Other Than Electric Utilities, Monthly Estimates Through 1991.

  - Commercial sector monthly consumption is estimated by allocating the annual commercial sector estimates described above into months in proportion to each month's share of the year's sales of No. 2 fuel oil as reported in the "Monthly Report

of Heating Oil Sales" by the Ethyl Corporation for 1973-1980 and the American Petroleum Institute for 1981 and 1982, and the EIA, Form EIA-782A, "Refiners/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale, since 1983.

- Transportation monthly estimates are made by evenly distributing the annual sector estimate over the months, adjusting for the number of days per month.

- Industrial monthly estimates are made by subtracting the commercial, transportation, and electric utility sector estimates from each month's total residual fuel supplied.

Sectors Other Than Electric Utilities, 1992 and 1993

Each month's non-electric utility consumption subtotal is disaggregated into the major end-use sectors in proportion to the shares each sector held of the non-electric utility subtotal in the same month in 1991.

- **Road Oil**—All product supplied is assigned to the industrial sector.
- **All Other Petroleum Products**—The product supplied of all remaining petroleum products is assigned to the industrial sector.

7. Nuclear Electric Power and Wood, Waste, Geothermal, Wind, Photovoltaic, and Solar Thermal Energy Sources Connected to Electric Utility Distribution Systems: Sources:

- 1973-1976: FPC, Form FPC-4, "Monthly Power Plant Report."
- 1977-1981: FERC, Form FPC-4, "Monthly Power Plant Report."
- 1982 forward: EIA, Form EIA-759, "Monthly Power Plant Report."

8. Hydroelectric Power: Includes electricity generated by hydroelectric power at electric utilities, small amounts in the industrial sector, and net imports of electricity, which are assumed to be generated by hydroelectric power and are included in the electric utilities sector.

Sources for electric utilities sector:

- 1973-1976: FPC, Form FPC-4, "Monthly Power Plant Report."
- 1977-1981: FERC, Form FPC-4, "Monthly Power Plant Report."
- 1982 forward: EIA, Form EIA-759, "Monthly Power Plant Report."

Sources for industrial sector:

- 1973-1978: FPC, Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and FPC, Form FPC-12C, "Industrial Electric Generating Capacity," for all other plants.
- 1979: FPC, Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts and EIA estimates for all other plants.
- 1980 forward: Annual generation estimated by EIA as the average generation over the 6-year period of 1974-1979; monthly generation estimated to be in proportion to each month's hydroelectricity generation in the electric utility industry in 1980.

Sources for imports and exports of electricity:

- 1973-September 1977: Unpublished Federal Power Commission data.
- October 1977-1980: Unpublished Economic Regulatory Administration (ERA) data.
- 1981: DOE, Office of Energy Emergency Operations, "Report on Electric Energy Exchanges with Canada and Mexico for Calendar Year 1981," April 1982 (revised June 1982).
- 1982 and 1983: DOE, ERA, *Electricity Exchanges Across International Borders.*
- 1984-1986: DOE, ERA, *Electricity Transactions Across International Borders.*
- 1987 and 1988: DOE, ERA, Form ERA-781R, "Annual Report of International Electrical Export/Import Data."
- 1989-1991: DOE, Assistant Secretary for Fossil Energy, Form FE-781-R, "Annual Report of International Electrical Export/Import Data."
- 1992 forward: EIA estimates based on preliminary data from the National Energy Board of Canada and DOE, Assistant Secretary for Fossil Energy.

9. Net Imports of Coal Coke: Net imports means imports minus exports, and a minus sign indicates that exports are greater than imports. Sources:

- 1973-1975: DOI, BOM, *Minerals Yearbook,* "Coke and Coal Chemicals" chapter.
- 1976-1980: EIA, *Energy Data Report,* "Coke and Coal Chemicals" annual.
- 1981: EIA, *Energy Data Report,* "Coke Plant Report," quarterly.
- 1982 forward: EIA, *Quarterly Coal Report.*

10. Electricity: End-use consumption of electricity is based on Table 7.2 sales data. "Other," which is primarily for use in government buildings, is added to the commercial sector, except for approximately 4 percent used by railroads and railways and attributed to the

transportation sector. For 1973-1983 and 1992 forward, "Monthly Series" data are used directly. For 1984-1991, monthly estimates are created by dividing each month's "Monthly Series" value by the "Monthly Series" total for the year and multiplying by the "Annual Series" value for the year. Kilowatthours are converted to Btu at the rate of 3,412 Btu per kilowatthour. See Table 7.2 for sources of the electricity sales data.

11. 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 those losses occur at steam-electric power plants (conventional and nuclear) in the conversion of heat energy into mechanical energy to turn electric generators. The loss is a thermodynamically necessary feature of the steam-electric cycle. Part of the energy input-to-output losses is a result of imputing fossil energy equivalent inputs for hydroelectric and other energy sources, since there is no generally accepted practice for measuring those 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 is lost in transmission and distribution. Calculated electrical system energy losses may be less than actual losses, because primary consumption does not include the energy equivalent of utility purchases of electricity from non-electric utilities and from Canada and Mexico, although they are included in electricity sales.

Section 3. Petroleum

Total petroleum imports[2] averaged 8.4 million barrels per day in August 1993, 8 percent[3] lower than the previous month's rate but 2 percent higher than the August 1992 rate.

In August 1993, 17.7 million barrels per day of petroleum products were supplied for domestic use, 4 percent higher than the August 1992 rate. Motor gasoline accounted for 44 percent of the total; distillate fuel oil, 17 percent; and residual fuel oil, 5 percent.

Motor gasoline supplied during August 1993 averaged 7.8 million barrels per day, 5 percent higher than the August 1992 rate. Total motor gasoline stocks were 202 million barrels at the end of August 1993, 11 million barrels below the stock level in the previous month but 1 million barrels above the level 1 year earlier.

Distillate fuel oil supplied during August 1993 averaged 3.1 million barrels per day, 15 percent higher than the previous month's rate and 13 percent higher than the August 1992 rate. Distillate fuel oil ending stocks for August 1993 were 126 million barrels, 6 million barrels above the stock level in the previous month and 3 million barrels above the stock level 1 year earlier.

Residual fuel oil supplied in August 1993 averaged 0.9 million barrels per day, 16 percent lower than the previous month's rate and 4 percent lower than the August 1992 rate. Residual fuel oil stocks measured 44 million barrels at the end of August 1993, 1 million barrels above the stock level in the previous month but the same as the stock level 1 year earlier.

Distillate Fuel Oil Revisions

For the period of January through May 1993, distillate fuel oil exports were understated due to a data processing error that excluded some of the distillate fuel products. The understated exports data resulted in overstated product supplied values. The distillate fuel oil revisions appear on Table 3.5 and are reflected in petroleum products supplied on Table 3.1a and exports on Table 3.1b.

Estimates (except of crude production) for the most current month are based on Energy Information Administration (EIA) weekly data and will be revised to conform with data from the EIA Petroleum Reporting System as available. For the most recent month, crude production is an EIA estimate based on historical and provisional data through May 1993.

[2]Total import data include imports into the Strategic Petroleum Reserve.
[3]Percentage changes are based on numbers shown in the following tables.

Table 3.1a Petroleum Overview: Field Production, Stock Change, Petroleum Products Supplied, and Ending Stocks

	Field Production			Stock Change[a]		Petroleum Products Supplied	Ending Stocks[b]
	Total Domestic[c]	Crude Oil	Natural Gas Plant Production	Crude Oil[d]	Petroleum Products		Crude Oil[d] and Petroleum Products
	Thousand Barrels per Day						Million Barrels
1973 Average	10,975	9,208	1,738	-11	146	17,308	1,008
1974 Average	10,498	8,774	1,688	62	117	16,653	[e]1,074
1975 Average	10,045	8,375	1,633	[e]17	[e]15	16,322	1,133
1976 Average	9,774	8,132	[f]1,604	39	-96	17,461	1,112
1977 Average	9,913	8,245	1,618	170	378	18,431	1,312
1978 Average	10,328	8,707	1,567	78	-172	18,847	1,278
1979 Average	10,179	8,552	1,584	148	25	18,513	1,341
1980 Average	10,214	8,597	1,573	98	42	17,056	[e]1,392
1981 Average	10,230	8,572	1,609	[e]290	[e]-130	16,058	1,484
1982 Average	10,252	8,649	1,550	136	-283	15,296	[e]1,430
1983 Average	10,299	8,688	1,559	[e]214	[e]-234	15,231	1,454
1984 Average	10,554	8,879	1,630	199	81	15,726	1,556
1985 Average	10,636	8,971	1,609	50	-153	15,726	1,519
1986 Average	10,289	8,680	1,551	78	124	16,281	1,593
1987 Average	10,008	8,349	1,595	128	-87	16,665	1,607
1988 Average	9,818	8,140	1,625	1	-29	17,283	1,597
1989 Average	9,219	7,613	1,546	86	-129	17,325	1,581
1990 Average	8,994	7,355	1,559	-35	142	16,988	1,621
1991 January	9,255	7,500	1,647	-71	-1,027	16,893	1,587
February	9,424	7,637	1,695	231	-704	16,339	1,573
March	9,301	7,546	1,683	-239	-268	16,212	1,558
April	9,262	7,509	1,665	50	628	16,139	1,578
May	9,157	7,409	1,657	566	988	16,189	1,626
June	9,032	7,320	1,627	-299	546	16,878	1,634
July	9,056	7,347	1,622	-153	199	16,971	1,635
August	9,027	7,316	1,627	103	316	17,183	1,648
September	9,088	7,368	1,623	-156	653	16,848	1,663
October	9,212	7,437	1,686	51	-659	16,996	1,644
November	9,129	7,328	1,697	43	62	16,730	1,647
December	9,089	7,299	1,686	-611	-365	17,145	1,617
Average	9,168	7,417	1,659	-42	32	16,714	1,617
1992 January	9,176	7,361	1,688	540	-757	17,012	1,610
February	9,175	7,389	1,696	171	-951	16,893	1,588
March	9,123	7,348	1,694	-250	-291	16,825	1,571
April	9,072	7,293	1,693	315	92	16,764	1,583
May	8,949	7,169	1,695	-144	770	16,485	1,602
June	8,968	7,167	1,701	-581	604	16,978	1,603
July	8,961	7,131	1,683	244	290	17,143	1,620
August	8,678	6,922	1,638	-124	161	16,929	1,621
September	8,843	7,030	1,660	-160	653	16,876	1,636
October	9,025	7,126	1,722	411	-258	17,448	1,640
November	8,975	7,024	1,754	-227	77	17,091	1,636
December	9,019	7,103	1,744	-212	-1,203	17,928	[e]1,592
Average	8,996	7,171	1,697	-1	-68	17,033	[e]1,592
1993 January	[E][g]9,257	[E]7,008	1,728	264	[e]370	[R]16,320	1,611
February	[E]8,948	[E]6,957	1,761	219	-799	[R]17,397	1,595
March	[E]9,009	[E]6,976	1,799	246	-619	[R]17,688	1,584
April	[E]8,904	[E]6,897	1,790	537	388	[R]16,673	1,611
May	[E]8,775	[E]6,833	1,719	133	897	[R]16,340	1,643
June	[E]8,697	[E]6,756	1,738	-15	586	17,032	1,660
July	[E]8,599	[RE]6,654	[R]1,723	[R]41	542	17,208	1,678
August	[E]8,713	[PE]6,771	[E]1,756	[E]-355	[E]199	[E]17,668	[E]1,665
8-Month Average	[E]8,862	[PE]6,855	[E]1,752	[E]132	[E]205	[E]17,038	[E]1,665
1992 8-Month Average	9,011	7,221	1,686	21	-5	16,879	1,621
1991 8-Month Average	9,187	7,446	1,652	22	90	16,604	1,648

[a] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[b] Stocks are totals as of end of period.
[c] Includes crude oil, natural gas plant liquids, and other liquids.
[d] Includes stocks located in the Strategic Petroleum Reserve.
[e] See Note 4 at end of section.
[f] See Note 6 at end of section.
[g] Beginning in 1993, includes fuel ethanol blended into finished motor gasoline and oxygenate production from merchant MTBE (methyl tertiary butyl ether) plants.

PE=Preliminary estimate. R=Revised data. NA=Not available. E=Estimate.

Notes: • Crude oil includes lease condensate. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S1. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S1.

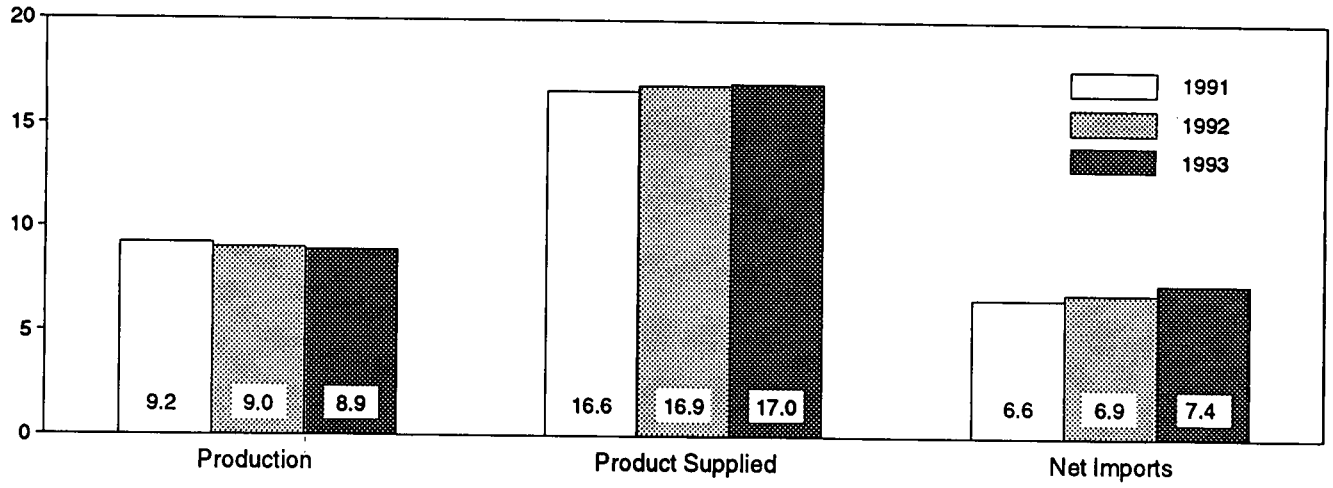
Table 3.1b Petroleum Overview: Imports, Exports, and Net Imports

	Imports			Exports			Net Imports[b]
	Total	Crude Oil[a]	Petroleum Products	Total	Crude Oil	Petroleum Products	
	Thousand Barrels per Day						
1973 Average	6,256	3,244	3,012	231	2	229	6,025
1974 Average	6,112	3,477	2,635	221	3	218	5,892
1975 Average	6,056	4,105	1,951	209	6	204	5,846
1976 Average	7,313	5,287	2,026	223	8	215	7,090
1977 Average	8,807	6,615	2,193	243	50	193	8,565
1978 Average	8,363	6,356	2,008	362	158	204	8,002
1979 Average	8,456	6,519	1,937	[c]471	235	[c]236	[c]7,985
1980 Average	6,909	5,263	1,646	544	287	258	6,365
1981 Average	5,996	4,396	1,599	595	228	367	5,401
1982 Average	5,113	3,488	1,625	815	236	579	4,298
1983 Average	5,051	3,329	1,722	739	164	575	4,312
1984 Average	5,437	3,426	2,011	722	181	541	4,715
1985 Average	5,067	3,201	1,866	781	204	577	4,286
1986 Average	6,224	4,178	2,045	785	154	631	5,439
1987 Average	6,678	4,674	2,004	764	151	613	5,914
1988 Average	7,402	5,107	2,295	815	155	661	6,587
1989 Average	8,061	5,843	2,217	859	142	717	7,202
1990 Average	8,018	5,894	2,123	857	109	748	7,161
1991 January	7,103	5,296	1,808	1,199	50	1,149	5,904
February	6,865	5,485	1,380	1,441	152	1,288	5,424
March	6,646	5,166	1,480	944	137	807	5,702
April	7,418	5,529	1,888	737	162	575	6,680
May	8,518	6,363	2,155	1,149	165	984	7,369
June	8,245	6,334	1,911	921	78	843	7,323
July	7,755	5,955	1,801	963	139	824	6,793
August	8,670	6,645	2,025	837	55	783	7,832
September	7,826	5,812	2,015	785	109	676	7,042
October	7,467	5,683	1,784	918	92	826	6,550
November	7,615	5,528	2,087	926	126	800	6,690
December	7,337	5,565	1,772	1,213	133	1,081	6,124
Average	7,627	5,782	1,844	1,001	116	885	6,626
1992 January	7,712	5,956	1,756	1,144	118	1,026	6,568
February	6,827	5,079	1,748	852	22	829	5,975
March	7,068	5,321	1,747	912	105	807	6,156
April	8,092	6,127	1,966	937	23	914	7,155
May	7,823	6,060	1,763	885	106	779	6,939
June	7,946	6,171	1,775	957	107	850	6,989
July	8,479	6,796	1,683	929	53	876	7,550
August	8,260	6,457	1,803	789	133	657	7,470
September	8,178	6,218	1,960	848	68	780	7,330
October	8,505	6,696	1,810	902	106	796	7,603
November	7,872	6,121	1,751	995	111	885	6,877
December	7,839	5,937	1,901	1,237	107	1,130	6,602
Average	7,888	6,083	1,805	950	89	861	6,938
1993 January	7,964	6,292	1,672	[R]1,135	129	[R]1,006	[R]6,830
February	7,930	6,156	1,775	[R]1,033	166	[R]867	[R]6,897
March	8,342	6,513	1,829	[R]970	139	[R]831	[R]7,373
April	8,485	6,698	1,787	[R]1,067	73	[R]994	[R]7,418
May	8,348	6,549	1,799	[R]1,082	112	[R]970	[R]7,266
June	8,745	7,175	1,569	899	150	750	7,845
July	[R]9,145	[R]7,262	[R]1,883	[R]1,013	[R]62	[R]950	[R]8,132
August	[E]8,426	[E]6,636	[E]1,790	[E]842	[E]109	[E]733	[E]7,584
8-Month Average	[E]8,428	[E]6,664	[E]1,764	[E]1,005	[E]117	[E]888	[E]7,423
1992 8-Month Average	7,782	6,002	1,780	926	84	842	6,856
1991 8-Month Average	7,661	5,850	1,810	1,020	117	904	6,640

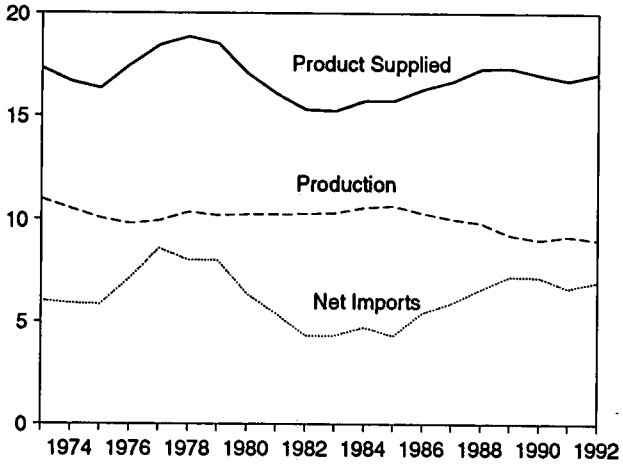
[a] Includes crude oil for storage in the Strategic Petroleum Reserve.
[b] Net imports equals imports minus exports.
[c] See Note 6 at end of section.
R=Revised data. E=Estimate.
Notes: • Geographic coverage is the 50 States and the District of Columbia.
• Totals may not equal sum of components due to independent rounding.
Sources: • 1973-1980: Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S1. • 1981 forward: EIA, *Petroleum Supply Monthly*, September 1993, Table S1.

Figure 3.1 Petroleum Overview
(Million Barrels per Day)

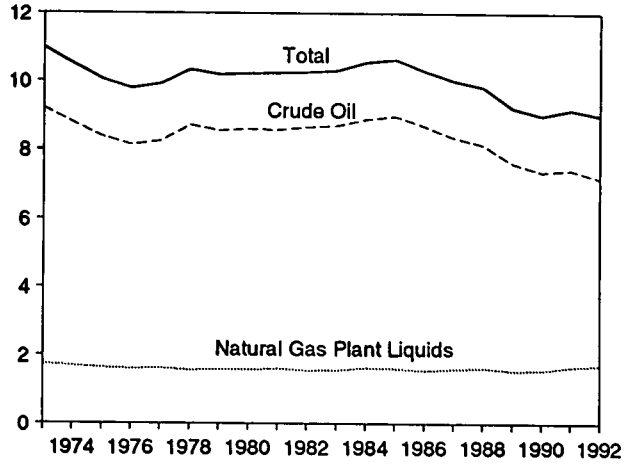
Overview, January-August



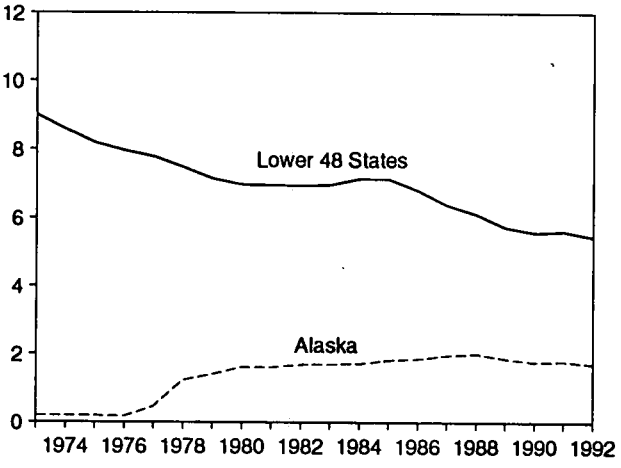
Overview, 1973-1992



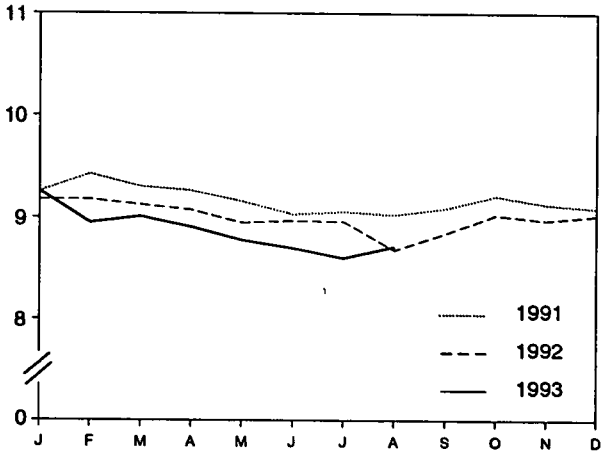
Production, 1973-1992



Crude Oil Production, 1973-1992



Total Production, Monthly

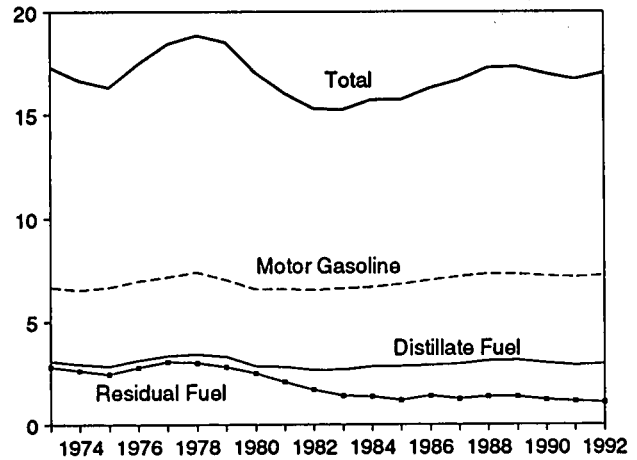


NA = Not available.
Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 3.1a, 3.1b, and 3.2a.

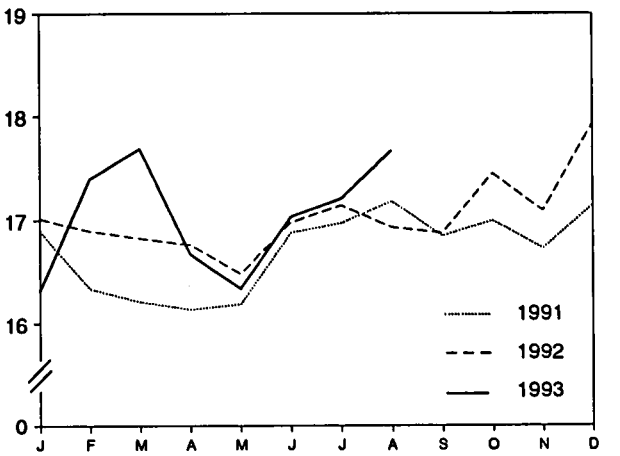
Figure 3.1 Petroleum Overview (Continued)

(Million Barrels per Day, Except as Noted)

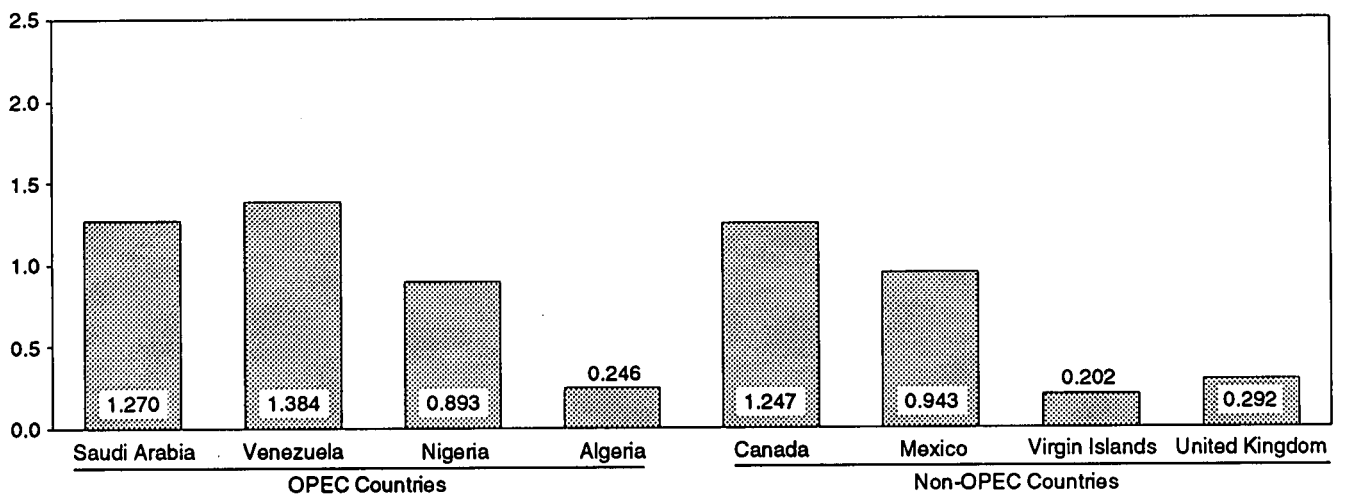
Product Supplied, 1973-1992



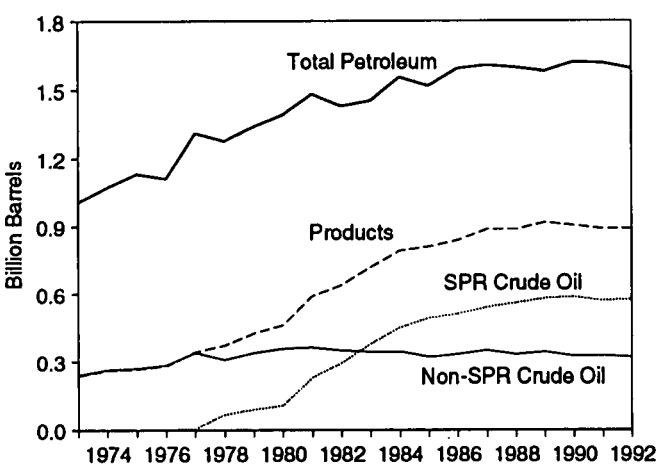
Total Product Supplied, Monthly



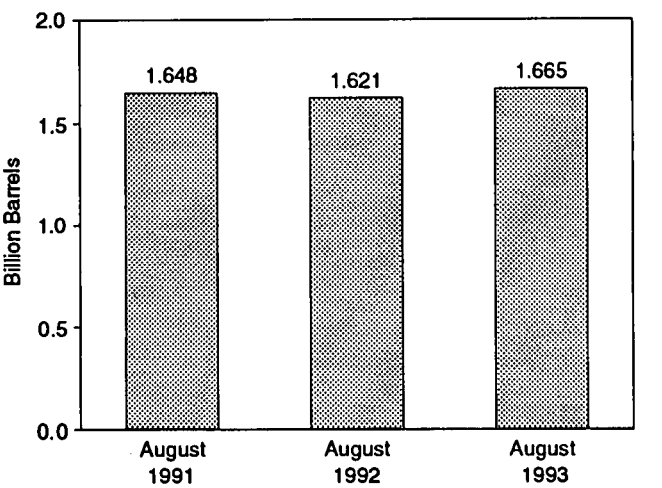
Imports from Selected Countries, July 1993



Stocks, End of Year, 1973-1992



Total Petroleum Stocks, End of Month



Note: OPEC = Organization of Petroleum Exporting Countries.
Note: SPR = Strategic Petroleum Reserve.
Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 3.1a, 3.2b, 3.3a, 3.3b, 3.3d-3.3h, 3.4, 3.5, and 3.6.

NA = Not available.

Table 3.2a Crude Oil Supply and Disposition: Supply

	Supply						
	Field Production		Imports			Unaccounted-for Crude Oil[b]	Crude Oil Used Directly[c]
	Total Domestic	Alaskan	Total	SPR[a]	Other		
	Thousand Barrels per Day						
1973 Average	9,208	198	3,244	–	3,244	3	-19
1974 Average	8,774	193	3,477	–	3,477	-25	-15
1975 Average	8,375	191	4,105	–	4,105	17	-17
1976 Average	8,132	173	5,287	–	5,287	77	[d] -19
1977 Average	8,245	464	6,615	21	6,594	-6	-14
1978 Average	8,707	1,229	6,356	[d] 161	6,195	-57	[d] -15
1979 Average	8,552	1,401	6,519	67	6,452	-11	[d] -14
1980 Average	8,597	1,617	5,263	44	5,219	34	[d] -14
1981 Average	8,572	1,609	4,396	256	4,141	83	-58
1982 Average	8,649	1,696	3,488	165	3,323	71	-59
1983 Average	8,688	1,714	3,329	234	3,096	114	–
1984 Average	8,879	1,722	3,426	197	3,229	185	–
1985 Average	8,971	1,825	3,201	118	3,083	145	–
1986 Average	8,680	1,867	4,178	48	4,130	139	–
1987 Average	8,349	1,962	4,674	73	4,601	145	–
1988 Average	8,140	2,017	5,107	51	5,055	196	–
1989 Average	7,613	1,874	5,843	56	5,787	200	–
1990 Average	7,355	1,773	5,894	27	5,867	258	–
1991 January	7,500	1,848	5,296	0	5,296	-59	–
February	7,637	1,908	5,485	0	5,485	324	–
March	7,546	1,887	5,166	0	5,166	43	–
April	7,509	1,798	5,529	0	5,529	236	–
May	7,409	1,771	6,363	0	6,363	513	–
June	7,320	1,757	6,334	0	6,334	59	–
July	7,347	1,775	5,955	0	5,955	403	–
August	7,316	1,731	6,645	0	6,645	11	–
September	7,368	1,787	5,812	0	5,812	484	–
October	7,437	1,843	5,683	0	5,683	-59	–
November	7,328	1,765	5,528	0	5,528	263	–
December	7,299	1,718	5,565	0	5,565	146	–
Average	7,417	1,798	5,782	0	5,782	195	–
1992 January	7,361	1,789	5,956	0	5,956	290	–
February	7,389	1,808	5,079	0	5,079	229	–
March	7,348	1,785	5,321	0	5,321	287	–
April	7,293	1,741	6,127	0	6,127	189	–
May	7,169	1,682	6,060	0	6,060	421	–
June	7,167	1,703	6,171	34	6,138	259	–
July	7,131	1,655	6,796	0	6,796	332	–
August	6,922	1,635	6,457	18	6,439	65	–
September	7,030	1,700	6,218	16	6,202	385	–
October	7,126	1,696	6,696	49	6,647	290	–
November	7,024	1,674	6,121	0	6,121	296	–
December	7,103	1,705	5,937	0	5,937	61	–
Average	7,171	1,714	6,083	10	6,073	258	–
1993 January	[E] 7,008	[E] 1,654	6,292	0	6,292	82	–
February	[E] 6,957	[E] 1,628	6,156	0	6,156	206	–
March	[E] 6,976	[E] 1,639	6,513	32	6,481	156	–
April	[E] 6,897	[E] 1,587	6,698	112	6,586	535	–
May	[E] 6,833	[E] 1,566	6,549	0	6,549	575	–
June	[E] 6,756	[E] 1,520	7,175	0	7,175	336	–
July	[RE] 6,654	[RE] 1,441	[R] 7,262	0	[R] 7,262	[R] 311	–
August	[PE] 6,771	[PE] 1,537	[E] 6,636	[E] 0	[E] 6,636	[E] 383	–
8-Month Average	[PE] 6,855	[PE] 1,571	[E] 6,664	[E] 18	[E] 6,646	[E] 323	–
1992 8-Month Average	7,221	1,724	6,002	6	5,996	260	–
1991 8-Month Average	7,446	1,808	5,850	0	5,850	190	–

[a] Strategic Petroleum Reserve.
[b] A balancing item.
[c] Beginning in January 1983, crude oil used directly as fuel is shown as product supplied.
[d] See Note 6 at end of section.
PE=Preliminary estimate. R=Revised data. – =Not applicable. E=Estimate.

Notes: • Crude oil includes lease condensate. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S2. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S2.

Table 3.2b Crude Oil Supply and Disposition: Disposition and Ending Stocks

	Disposition						Ending Stocks[a]		
	Crude Losses	Stock Change[b] SPR[c]	Stock Change[b] Other	Refinery Inputs	Exports	Product Supplied[d]	Total	SPR[c]	Other Primary
	Thousand Barrels per Day						Million Barrels		
1973 Average	13	–	-11	12,431	2	–	242	–	242
1974 Average	13	–	62	12,133	3	–	265	–	265
1975 Average	13	–	17	12,442	6	–	271	–	271
1976 Average	[e] 14	–	39	13,416	8	–	285	–	285
1977 Average	16	20	150	14,602	50	–	348	7	340
1978 Average	16	163	-84	14,739	158	–	376	67	309
1979 Average	16	67	81	14,648	235	–	430	91	339
1980 Average	[e] 14	45	52	13,481	287	–	[f] 466	108	[f] 358
1981 Average	5	336	[f] -46	12,470	228	–	594	230	363
1982 Average	3	174	-38	11,774	236	–	[g] 644	294	[g] 350
1983 Average	2	234	[g] -20	11,685	164	66	723	379	344
1984 Average	2	195	4	12,044	181	64	796	451	345
1985 Average	1	117	-67	12,002	204	60	814	493	321
1986 Average	(s)	50	28	12,716	154	49	843	512	331
1987 Average	(s)	80	49	12,854	151	34	890	541	349
1988 Average	(s)	52	-51	13,246	155	40	890	560	330
1989 Average	(s)	56	30	13,401	142	28	921	580	341
1990 Average	(s)	16	-51	13,409	109	24	908	586	323
1991 January	0	0	-71	12,735	50	23	906	586	320
February	0	-147	379	13,046	152	17	913	582	331
March	(s)	-422	183	12,839	137	18	905	568	337
April	(s)	0	50	13,042	162	21	907	568	338
May	(s)	0	566	13,539	165	15	924	568	356
June	(s)	(s)	-299	13,918	78	16	915	568	347
July	0	(s)	-153	13,703	139	15	911	569	342
August	0	(s)	103	13,800	55	13	914	569	345
September	0	0	-156	13,694	109	16	909	569	341
October	(s)	(s)	51	12,896	92	22	911	569	342
November	(s)	(s)	43	12,929	126	22	912	569	344
December	0	(s)	-611	13,465	133	23	893	569	325
Average	(s)	-47	5	13,301	116	18	893	569	325
1992 January	0	(s)	540	12,923	118	26	910	569	341
February	(s)	0	171	12,486	22	17	915	569	346
March	(s)	(s)	-250	13,083	105	18	907	569	339
April	0	0	315	13,260	23	11	917	569	348
May	0	(s)	-145	13,679	106	10	912	569	344
June	(s)	34	-615	14,059	107	12	895	570	325
July	0	(s)	244	13,953	53	9	902	570	333
August	(s)	20	-144	13,426	133	8	898	570	328
September	0	43	-204	13,714	68	11	893	571	322
October	(s)	69	342	13,584	106	10	906	574	333
November	(s)	15	-243	13,547	111	10	899	574	325
December	(s)	22	-234	13,194	107	12	893	575	318
Average	0	17	-18	13,411	89	13	893	575	318
1993 January	(s)	19	245	12,980	129	10	901	575	326
February	(s)	18	202	12,923	166	10	907	576	331
March	0	58	188	13,249	139	11	915	578	337
April	(s)	136	401	13,512	73	9	931	582	349
May	0	13	120	13,701	112	10	935	582	353
June	0	21	-37	14,125	150	8	935	583	352
July	0	[R] 19	[R] 22	[R] 14,114	[R] 62	9	[R] 936	583	352
August	[E] 0	[E] 31	[E] -386	[E] 14,021	[E] 109	[E] 9	[E] 924	[E] 584	[E] 340
8-Month Average	[E] (s)	[E] 39	[E] 92	[E] 13,584	[E] 117	[E] 10	[E] 924	[E] 584	[E] 340
1992 8-Month Average	(s)	7	15	13,363	84	14	898	570	328
1991 8-Month Average	(s)	-71	93	13,330	117	17	914	569	345

[a] Stocks are totals as of end of period.
[b] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[c] Strategic Petroleum Reserve.
[d] Beginning in January 1983, crude oil used directly as fuel is shown as product supplied.
[e] See Note 6 at end of section.
[f] Stocks of Alaskan crude oil in transit are included from January 1981 forward. See Note 5 at end of section.
[g] See Note 4 at end of section.

R=Revised data. – =Not applicable. E=Estimate. (s)=Less than 500 barrels per day.

Notes: • Crude oil includes lease condensate. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • 1973-1980: Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S2. • 1981 forward: EIA, *Petroleum Supply Monthly*, September 1993, Table S2.

Table 3.3a Petroleum Imports: Algeria, Iraq, Kuwait, and Libya

(Thousand Barrels per Day)

	Arab OPEC[a]							
	Algeria		Iraq		Kuwait[b]		Libya	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	136	120	4	4	47	42	164	133
1974 Average	190	180	0	0	5	5	4	4
1975 Average	282	264	2	2	16	4	232	223
1976 Average	432	408	26	26	5	1	453	444
1977 Average	559	544	74	74	48	42	723	704
1978 Average	649	634	62	62	6	5	654	638
1979 Average	636	608	88	88	8	5	658	642
1980 Average	488	456	28	28	27	27	554	548
1981 Average	311	261	(s)	0	0	0	319	317
1982 Average	170	90	3	3	5	2	26	23
1983 Average	240	176	10	10	14	7	0	0
1984 Average	323	194	12	12	36	24	1	0
1985 Average	187	84	46	46	21	4	4	0
1986 Average	271	78	81	81	68	28	0	0
1987 Average	295	115	83	82	84	70	0	0
1988 Average	300	58	345	343	92	80	0	0
1989 Average	269	60	449	441	157	155	0	0
1990 Average	280	63	518	514	86	79	0	0
1991 January	327	48	0	0	0	0	0	0
February	246	20	0	0	0	0	0	0
March	222	45	0	0	0	0	0	0
April	282	74	0	0	0	0	0	0
May	308	72	0	0	0	0	0	0
June	304	37	0	0	0	0	0	0
July	202	28	0	0	0	0	0	0
August	182	16	0	0	0	0	0	0
September	205	19	0	0	34	34	0	0
October	235	53	0	0	33	33	0	0
November	278	58	0	0	0	0	0	0
December	247	54	0	0	0	0	0	0
Average	253	44	0	0	6	6	0	0
1992 January	206	37	0	0	0	0	0	0
February	218	57	0	0	0	0	0	0
March	215	37	0	0	0	0	0	0
April	182	19	0	0	0	0	0	0
May	202	7	0	0	0	0	0	0
June	144	12	0	0	0	0	0	0
July	179	37	0	0	58	23	0	0
August	261	45	0	0	66	33	0	0
September	184	19	0	0	70	33	0	0
October	186	8	0	0	137	109	0	0
November	171	0	0	0	117	117	0	0
December	203	9	0	0	165	149	0	0
Average	196	24	0	0	51	39	0	0
1993 January	153	28	0	0	144	129	0	0
February	256	0	0	0	251	229	0	0
March	185	7	0	0	316	300	0	0
April	274	26	0	0	262	262	0	0
May	228	3	0	0	222	222	0	0
June	169	32	0	0	235	235	0	0
July	246	6	0	0	368	362	0	0
7-Month Average	215	15	0	0	257	249	0	0
1992 7-Month Average	192	29	0	0	8	3	0	0
1991 7-Month Average	270	47	0	0	0	0	0	0

[a] Excludes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

[b] Imports from the Neutral Zone between Kuwait and Saudi Arabia are included in Saudi Arabia.

(s)=Less than 500 barrels per day.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

Table 3.3b Petroleum Imports: Qatar, Saudi Arabia, U.A.E., and Total Arab OPEC

(Thousand Barrels per Day)

	Arab OPEC[a]						Total Arab OPEC[a]	
	Qatar		Saudi Arabia[b]		United Arab Emirates			
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	7	7	486	462	71	71	915	838
1974 Average	17	17	461	438	74	69	752	713
1975 Average	18	18	715	701	117	117	1,383	1,330
1976 Average	24	24	1,230	1,222	254	254	2,424	2,378
1977 Average	67	67	1,380	1,373	335	333	3,185	3,136
1978 Average	64	64	1,144	1,142	385	385	2,963	2,930
1979 Average	31	31	1,356	1,347	281	281	3,058	3,002
1980 Average	22	22	1,261	1,250	172	172	2,551	2,503
1981 Average	7	7	1,129	1,112	81	77	1,848	1,774
1982 Average	7	7	552	530	92	81	854	736
1983 Average	(s)	0	337	321	30	18	632	533
1984 Average	5	4	325	309	117	90	819	634
1985 Average	(s)	0	168	132	45	35	472	300
1986 Average	13	12	685	618	44	38	1,162	854
1987 Average	0	0	751	642	61	56	1,274	965
1988 Average	0	0	1,073	911	29	23	1,839	1,415
1989 Average	2	2	1,224	1,116	28	21	2,130	1,794
1990 Average	4	4	1,339	1,195	17	9	2,244	1,864
1991 January	0	0	1,934	1,782	0	0	2,261	1,830
February	0	0	1,566	1,538	0	0	1,812	1,559
March	0	0	1,683	1,646	0	0	1,905	1,691
April	0	0	1,764	1,702	0	0	2,046	1,776
May	0	0	2,258	2,053	0	0	2,566	2,124
June	0	0	1,841	1,795	0	0	2,145	1,832
July	0	0	1,725	1,641	0	0	1,928	1,670
August	0	0	2,019	1,964	7	0	2,208	1,980
September	0	0	1,708	1,562	0	0	1,947	1,615
October	0	0	1,671	1,545	18	18	1,956	1,649
November	0	0	1,778	1,626	16	0	2,072	1,684
December	0	0	1,645	1,566	0	0	1,892	1,620
Average	0	0	1,802	1,703	3	2	2,064	1,754
1992 January	0	0	2,017	1,900	18	0	2,241	1,937
February	0	0	1,776	1,687	0	0	1,995	1,745
March	0	0	1,707	1,568	0	0	1,922	1,605
April	0	0	1,734	1,524	0	0	1,916	1,543
May	0	0	1,764	1,584	0	0	1,966	1,591
June	0	0	1,744	1,610	0	0	1,888	1,621
July	8	0	1,713	1,599	0	0	1,958	1,659
August	0	0	1,594	1,473	7	0	1,929	1,551
September	0	0	1,593	1,477	0	0	1,847	1,529
October	0	0	1,593	1,482	4	0	1,920	1,599
November	0	0	1,608	1,540	17	0	1,913	1,657
December	0	0	1,793	1,725	28	0	2,188	1,882
Average	1	0	1,720	1,597	6	0	1,974	1,660
1993 January	0	0	1,687	1,571	0	0	1,984	1,728
February	0	0	1,626	1,480	0	0	2,133	1,709
March	6	0	1,479	1,349	0	0	1,987	1,655
April	0	0	1,606	1,478	17	17	2,161	1,783
May	0	0	1,524	1,361	59	59	2,034	1,646
June	0	0	1,523	1,396	66	66	1,993	1,729
July	0	0	1,270	1,171	19	0	1,904	1,538
7-Month Average	1	0	1,529	1,399	23	21	2,026	1,683
1992 7-Month Average	1	0	1,780	1,639	3	0	1,984	1,672
1991 7-Month Average	0	0	1,828	1,740	0	0	2,099	1,786

[a] Excludes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

[b] Imports from the Neutral Zone between Kuwait and Saudi Arabia are included in Saudi Arabia.

(s)=Less than 500 barrels per day.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

Table 3.3c Petroleum Imports: Ecuador, Gabon, Indonesia, and Iran

(Thousand Barrels per Day)

	Non-Arab OPEC[a]							
	Ecuador[b]		Gabon		Indonesia		Iran	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	48	47	0	0	213	200	223	216
1974 Average	42	42	23	23	300	284	469	463
1975 Average	57	57	27	27	390	379	280	278
1976 Average	51	51	28	26	539	537	298	298
1977 Average	57	55	42	35	541	507	535	530
1978 Average	54	38	41	38	573	533	555	554
1979 Average	42	30	42	42	420	380	304	297
1980 Average	27	17	26	25	348	314	9	8
1981 Average	48	38	35	35	366	318	0	0
1982 Average	42	32	40	40	248	226	35	35
1983 Average	61	56	59	59	338	315	48	48
1984 Average	55	47	58	57	343	304	10	10
1985 Average	67	56	52	51	314	292	27	27
1986 Average	77	64	26	25	318	297	19	19
1987 Average	29	23	35	35	285	262	98	98
1988 Average	47	33	16	15	205	186	[c] (s)	[c] (s)
1989 Average	89	80	50	49	183	158	0	0
1990 Average	49	38	64	64	114	98	0	0
1991 January	18	6	41	41	70	70	0	0
February	66	55	95	95	162	153	0	0
March	67	58	29	29	93	93	0	0
April	35	24	72	72	69	69	0	0
May	109	103	96	96	97	97	0	0
June	129	126	70	70	187	187	0	0
July	62	47	137	137	88	88	81	81
August	112	93	56	56	93	87	48	48
September	31	25	91	91	83	64	152	152
October	30	24	137	137	118	91	43	43
November	55	48	91	91	120	96	64	64
December	41	23	91	91	163	134	0	0
Average	63	53	84	84	111	102	32	32
1992 January	56	56	91	91	125	117	0	0
February	61	48	105	105	39	39	0	0
March	26	26	25	25	85	83	0	0
April	53	46	186	186	54	49	0	0
May	51	51	135	135	155	133	0	0
June	105	101	129	129	109	102	0	0
July	111	111	143	143	65	65	0	0
August	99	93	108	108	91	85	0	0
September	97	97	165	158	57	38	0	0
October	42	36	167	167	54	43	0	0
November	53	53	114	114	36	23	0	0
December	24	24	120	120	60	60	0	0
Average	65	62	124	123	78	70	0	0
1993 January	[b]	[b]	90	89	37	37	0	0
February	[b]	[b]	88	88	52	51	0	0
March	[b]	[b]	126	123	67	64	0	0
April	[b]	[b]	127	127	76	76	0	0
May	[b]	[b]	169	169	82	82	0	0
June	[b]	[b]	107	107	97	67	0	0
July	[b]	[b]	168	166	55	55	0	0
7-Month Average	[b]	[b]	126	125	67	62	0	0
1992 7-Month Average	66	63	116	116	91	85	0	0
1991 7-Month Average	69	60	77	77	109	107	12	12

[a] Excludes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

[b] Ecuador withdrew from OPEC on December 31, 1992. As of January 1993, imports from Ecuador appear on Table 3.3f under "Non-OPEC."

[c] A small amount of Iranian crude oil entered the United States in January 1988 from the Virgin Islands. The oil originated in Iran and was exported to the Virgin Islands prior to the signing of Executive Order 12613 on October 29, 1987.

(s)=Less than 500 barrels per day.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • 1973-1980: Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • 1981 forward: EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

Table 3.3d Petroleum Imports: Nigeria, Venezuela, Total Non-Arab OPEC, and Total OPEC

(Thousand Barrels per Day)

	Non-Arab OPEC[a]				Total Non-Arab OPEC[a,b]		Total OPEC[a,b]	
	Nigeria		Venezuela					
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	459	448	1,135	344	2,078	1,257	2,993	2,095
1974 Average	713	697	979	319	2,527	1,827	3,280	2,540
1975 Average	762	746	702	395	2,219	1,882	3,601	3,211
1976 Average	1,025	1,014	700	241	2,642	2,167	5,066	4,545
1977 Average	1,143	1,130	690	250	3,008	2,507	6,193	5,643
1978 Average	919	910	646	181	2,788	2,254	5,751	5,184
1979 Average	1,080	1,069	690	293	2,579	2,110	5,637	5,112
1980 Average	857	841	481	156	1,749	1,361	4,300	3,864
1981 Average	620	611	406	147	1,476	1,149	3,323	2,922
1982 Average	514	510	412	155	1,291	998	2,146	1,734
1983 Average	302	301	422	164	1,231	944	1,862	1,477
1984 Average	216	207	548	253	1,230	878	2,049	1,512
1985 Average	293	280	605	306	1,358	1,012	1,830	1,312
1986 Average	440	437	793	416	1,674	1,259	2,837	2,113
1987 Average	535	529	804	488	1,787	1,435	3,060	2,400
1988 Average	618	607	794	439	1,681	1,281	3,520	2,696
1989 Average	815	800	873	495	2,010	1,582	4,140	3,376
1990 Average	800	784	1,025	666	2,052	1,650	4,296	3,514
1991 January	504	481	1,005	673	1,637	1,271	3,898	3,101
February	721	717	959	686	2,003	1,705	3,815	3,264
March	531	531	998	631	1,718	1,342	3,623	3,033
April	677	649	845	470	1,698	1,283	3,744	3,059
May	860	838	997	581	2,158	1,715	4,724	3,839
June	832	827	1,135	705	2,354	1,915	4,498	3,747
July	833	817	1,102	683	2,304	1,855	4,232	3,525
August	1,016	983	1,070	701	2,394	1,966	4,602	3,946
September	489	467	1,163	790	2,009	1,589	3,956	3,204
October	651	623	1,087	777	2,067	1,694	4,023	3,343
November	704	674	1,065	671	2,099	1,644	4,171	3,328
December	617	593	987	655	1,899	1,496	3,791	3,116
Average	703	683	1,035	668	2,028	1,622	4,092	3,377
1992 January	593	566	1,119	787	1,984	1,617	4,224	3,554
February	322	303	1,028	655	1,555	1,150	3,549	2,895
March	441	409	1,106	793	1,684	1,336	3,606	2,941
April	798	788	1,079	722	2,169	1,791	4,085	3,334
May	773	773	1,038	745	2,152	1,837	4,118	3,428
June	740	740	1,059	738	2,141	1,809	4,029	3,430
July	900	883	1,163	912	2,382	2,114	4,339	3,772
August	815	795	1,102	841	2,215	1,922	4,144	3,473
September	774	754	1,333	953	2,426	2,001	4,274	3,531
October	827	813	1,497	1,073	2,587	2,133	4,507	3,732
November	626	608	1,343	921	2,173	1,719	4,086	3,376
December	549	532	1,164	763	1,917	1,499	4,105	3,381
Average	681	665	1,170	826	2,117	1,746	4,092	3,406
1993 January	729	729	1,385	1,038	[b]2,241	[b]1,892	[b]4,225	[b]3,620
February	927	913	1,290	925	2,358	1,976	4,491	3,685
March	928	892	1,208	817	2,330	1,897	4,317	3,552
April	892	871	1,297	1,006	2,392	2,080	4,553	3,863
May	741	723	1,226	954	2,219	1,929	4,253	3,574
June	848	827	1,277	992	2,329	1,992	4,321	3,721
July	893	888	1,384	1,068	2,500	2,177	4,404	3,715
7-Month Average	850	833	1,296	972	2,338	1,992	4,364	3,675
1992 7-Month Average	654	639	1,085	766	2,012	1,668	3,997	3,340
1991 7-Month Average	708	693	1,007	632	1,981	1,582	4,080	3,368

[a] Excludes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

[b] As of January 1993, excludes petroleum imported from Ecuador, which withdrew from OPEC on December 31, 1992.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

Table 3.3e Petroleum Imports: Angola, Australia, Bahama Islands, Brazil, Canada, and China

(Thousand Barrels per Day)

	Non-OPEC[a]											
	Angola		Australia		Bahama Islands		Brazil		Canada		China	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	49	49	2	0	174	0	9	0	1,325	1,001	(s)	0
1974 Average	49	48	1	0	164	0	2	0	1,070	791	0	0
1975 Average	75	71	5	0	152	0	5	0	846	600	0	0
1976 Average	12	7	2	0	118	0	0	0	599	371	0	0
1977 Average	24	17	3	0	171	0	0	0	517	279	0	0
1978 Average	20	6	5	0	160	0	0	0	467	248	0	0
1979 Average	43	39	6	0	147	0	1	0	538	271	13	13
1980 Average	42	37	1	0	78	0	3	1	455	199	(s)	0
1981 Average	49	45	5	0	74	0	23	14	447	164	18	0
1982 Average	44	42	5	(s)	65	0	47	19	482	214	40	8
1983 Average	78	71	4	0	125	0	41	2	547	274	34	6
1984 Average	90	85	38	25	88	0	60	(s)	630	341	46	15
1985 Average	110	104	37	21	40	0	61	0	770	468	59	36
1986 Average	112	102	41	30	37	0	50	0	807	570	90	68
1987 Average	192	180	58	49	37	0	84	0	848	608	82	63
1988 Average	212	203	64	59	32	0	98	0	999	681	88	82
1989 Average	284	279	36	31	34	0	82	0	931	630	80	76
1990 Average	237	236	53	47	37	0	49	0	934	643	80	77
1991 January	232	232	21	21	25	0	31	0	978	718	68	63
February	202	202	0	0	14	0	13	0	1,135	881	102	96
March	186	186	0	0	0	0	0	0	1,058	764	96	96
April	337	337	55	55	35	0	17	0	1,103	768	113	113
May	220	220	64	57	42	0	31	0	1,027	752	119	113
June	205	205	43	31	30	0	41	0	986	705	144	139
July	264	264	20	20	19	0	21	0	848	615	88	88
August	298	298	37	22	78	0	27	0	1,011	694	85	75
September	230	230	24	24	29	0	19	0	1,137	849	91	86
October	300	300	13	0	51	0	16	0	936	639	29	24
November	213	213	25	13	46	0	45	0	1,107	796	96	96
December	359	359	13	13	53	0	8	0	1,083	759	65	65
Average	254	254	26	21	35	0	22	0	1,033	743	91	87
1992 January	360	360	11	11	63	0	18	0	1,045	786	144	144
February	246	246	10	10	47	0	12	0	1,147	834	80	69
March	339	339	0	0	76	0	(s)	0	1,100	832	75	75
April	381	381	39	22	67	0	17	0	1,121	835	86	69
May	264	264	0	0	46	0	18	0	1,013	779	129	114
June	286	286	21	21	57	0	28	0	970	736	110	95
July	443	443	20	20	22	0	25	0	1,044	798	68	64
August	335	323	21	21	8	0	10	0	1,038	762	66	66
September	248	248	0	0	8	0	21	0	1,131	839	80	75
October	395	395	11	11	1	0	10	0	1,063	761	61	61
November	458	458	53	49	20	0	32	0	1,037	784	86	86
December	279	279	38	38	19	0	50	0	1,122	816	97	90
Average	336	336	19	17	36	0	20	0	1,069	797	90	84
1993 January	354	354	0	0	18	0	3	0	1,034	778	60	60
February	348	348	0	0	19	0	22	0	1,084	782	44	44
March	408	408	0	0	30	0	27	0	1,065	814	79	73
April	322	322	0	0	16	0	56	0	1,032	783	0	0
May	287	287	13	13	8	0	41	0	1,119	874	40	40
June	209	209	34	34	7	0	19	0	1,111	910	48	46
July	386	386	40	40	31	0	48	0	1,247	991	24	24
7-Month Average	331	331	13	13	18	0	31	0	1,099	848	42	41
1992 7-Month Average	332	332	14	12	54	0	17	0	1,062	800	99	90
1991 7-Month Average	235	235	29	27	24	0	22	0	1,017	741	104	101

[a] Includes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

(s)=Less than 500 barrels per day.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

Table 3.3f Petroleum Imports: Colombia, Ecuador, Italy, Malaysia, Mexico, and Netherlands

(Thousand Barrels per Day)

	Non-OPEC[a]											
	Colombia		Ecuador[b]		Italy		Malaysia		Mexico		Netherlands	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	9	2	–	–	125	0	12	1	16	1	53	0
1974 Average	5	0	–	–	74	0	12	1	8	2	43	0
1975 Average	9	0	–	–	27	0	8	5	71	70	19	4
1976 Average	21	6	–	–	39	0	18	16	87	87	8	0
1977 Average	17	0	–	–	51	0	66	55	179	177	31	4
1978 Average	20	0	–	–	38	0	42	37	318	316	5	2
1979 Average	18	0	–	–	30	0	66	52	439	437	23	7
1980 Average	4	0	–	–	4	0	70	61	533	507	2	(s)
1981 Average	1	0	–	–	11	0	36	33	522	469	30	(s)
1982 Average	5	0	–	–	18	(s)	20	18	685	645	35	(s)
1983 Average	10	0	–	–	18	(s)	4	3	826	766	65	3
1984 Average	8	0	–	–	45	(s)	1	0	748	659	65	3
1985 Average	23	0	–	–	60	(s)	3	1	816	715	58	0
1986 Average	87	57	–	–	76	0	12	11	699	621	54	0
1987 Average	148	115	–	–	54	1	13	12	655	602	60	0
1988 Average	134	106	–	–	65	5	19	19	747	674	61	0
1989 Average	172	136	–	–	34	3	39	39	767	716	49	0
1990 Average	182	140	–	–	58	2	41	40	755	689	55	0
1991 January	194	174	–	–	25	0	0	0	798	778	6	0
February	151	98	–	–	42	13	9	9	742	693	17	0
March	157	127	–	–	29	0	21	21	795	772	33	0
April	163	131	–	–	41	12	0	0	891	819	35	0
May	163	112	–	–	60	0	66	66	757	736	45	0
June	169	124	–	–	46	0	63	63	919	872	49	0
July	163	111	–	–	54	0	9	9	835	748	47	0
August	219	162	–	–	57	11	14	14	878	797	30	0
September	168	103	–	–	89	0	10	10	805	768	44	0
October	128	80	–	–	41	0	64	64	811	754	16	0
November	145	135	–	–	15	0	10	10	716	656	24	0
December	138	117	–	–	61	0	14	14	732	708	4	0
Average	163	123	–	–	47	3	24	24	807	759	29	0
1992 January	158	111	–	–	51	0	0	0	764	721	31	0
February	114	92	–	–	48	0	0	0	838	807	9	0
March	101	74	–	–	44	0	0	0	846	809	34	0
April	150	129	–	–	75	0	0	0	857	795	8	0
May	57	46	–	–	57	0	5	5	788	764	27	0
June	135	114	–	–	69	0	8	8	905	883	25	0
July	103	93	–	–	36	0	40	40	830	788	21	0
August	156	142	–	–	94	0	22	22	857	790	45	0
September	190	179	–	–	81	0	17	17	755	720	39	0
October	153	132	–	–	37	0	17	17	829	783	18	0
November	127	84	–	–	33	0	8	8	762	700	26	0
December	66	34	–	–	37	0	4	4	930	888	33	0
Average	126	102	–	–	55	0	10	10	830	787	26	0
1993 January	188	167	76	70	48	0	0	0	858	820	11	0
February	148	137	14	14	34	0	0	0	807	748	18	0
March	161	129	59	59	43	0	11	10	861	815	11	0
April	152	138	74	62	14	0	8	8	844	818	0	0
May	147	90	56	56	18	0	21	10	907	846	10	0
June	176	143	75	75	22	0	0	0	995	977	10	0
July	204	184	85	85	25	0	11	11	943	878	20	0
7-Month Average	168	141	63	60	29	0	7	6	889	844	12	0
1992 7-Month Average	117	94	–	–	54	0	8	8	832	795	22	0
1991 7-Month Average	166	126	–	–	42	3	24	24	820	774	33	0

[a] Includes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

[b] Through 1992, Ecuador was a member of OPEC. See Table 3.3c.

– =Not applicable. (s)=Less than 500 barrels per day.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

Table 3.3g Petroleum Imports: Netherlands Antilles, Norway, Puerto Rico, Russia, Spain, and Trinidad and Tobago

(Thousand Barrels per Day)

	Non-OPEC[a]											
	Netherlands Antilles		Norway		Puerto Rico		Russia[b]		Spain		Trinidad and Tobago	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	585	0	1	0	99	0	26	0	26	0	255	60
1974 Average	511	0	1	1	90	0	20	0	12	0	251	63
1975 Average	332	0	17	12	90	0	14	0	1	0	242	115
1976 Average	275	0	36	35	88	0	11	2	1	0	274	104
1977 Average	211	0	50	48	105	0	12	2	10	0	289	134
1978 Average	229	0	104	104	94	0	8	1	3	0	253	142
1979 Average	231	0	75	75	92	0	1	0	4	0	190	123
1980 Average	225	0	144	144	88	0	1	0	1	0	176	115
1981 Average	197	0	119	114	62	0	5	(s)	1	(s)	133	102
1982 Average	175	0	102	102	50	0	1	0	3	(s)	112	92
1983 Average	189	0	66	65	40	0	1	(s)	2	(s)	96	83
1984 Average	188	0	114	112	42	0	13	(s)	11	0	94	87
1985 Average	40	0	32	31	28	0	8	(s)	29	1	113	98
1986 Average	25	0	60	53	21	0	18	(s)	53	0	125	93
1987 Average	29	0	80	70	21	0	11	0	55	0	106	75
1988 Average	36	0	67	62	22	0	29	0	68	0	97	71
1989 Average	42	0	138	127	32	0	48	0	67	0	94	73
1990 Average	31	0	102	96	32	0	45	1	47	0	96	76
1991 January	103	0	45	34	22	0	28	0	26	0	75	64
February	23	0	37	37	20	0	17	0	18	0	76	76
March	56	0	25	16	14	0	13	0	13	0	86	73
April	61	0	51	35	23	0	39	0	66	0	84	64
May	113	0	165	156	42	0	42	0	53	0	61	61
June	84	0	99	84	19	0	0	0	41	0	118	104
July	86	0	69	63	25	0	58	0	22	0	91	72
August	100	0	142	136	42	0	80	11	48	0	91	66
September	67	0	79	72	34	0	23	0	42	0	119	75
October	90	0	98	98	12	0	13	0	24	0	88	76
November	100	0	73	65	35	0	16	0	19	0	77	69
December	88	0	94	88	36	0	16	0	26	0	87	71
Average	81	0	82	74	27	0	29	1	33	0	88	72
1992 January	40	0	25	17	32	0	17	0	35	0	108	79
February	82	0	11	0	23	0	3	0	16	0	109	76
March	49	0	11	0	18	0	0	0	37	0	105	85
April	73	0	155	147	14	0	0	0	35	0	79	75
May	59	0	210	200	22	0	0	0	30	0	69	54
June	83	0	234	225	36	0	0	0	46	0	94	74
July	49	0	186	179	11	0	72	32	18	0	103	78
August	65	0	142	134	38	0	62	31	29	0	106	54
September	60	0	103	102	37	0	53	0	56	0	84	56
October	90	0	190	177	29	0	9	0	32	0	108	71
November	56	0	111	104	26	0	0	0	36	0	85	62
December	80	0	140	133	28	0	0	0	17	0	91	71
Average	65	0	127	119	26	0	18	5	32	0	95	70
1993 January	73	0	70	70	37	0	0	0	44	0	59	48
February	80	0	62	61	21	0	0	0	25	0	72	58
March	61	0	122	115	26	0	0	0	21	0	92	71
April	86	0	109	109	18	0	16	16	61	0	78	55
May	77	0	65	65	38	0	32	32	34	0	61	51
June	55	0	160	160	29	0	59	34	20	0	77	55
July	52	0	215	215	49	0	157	134	41	0	82	53
7-Month Average	69	0	115	114	31	0	38	31	35	0	75	56
1992 7-Month Average	62	0	119	110	22	0	13	5	31	0	95	74
1991 7-Month Average	76	0	71	61	24	0	28	0	34	0	84	73

[a] Includes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

[b] Imports from other States in the former U.S.S.R. may be included in imports from Russia for the years 1973 through 1992.

(s)=Less than 500 barrels per day.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • 1973-1980: Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • 1981 forward: EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

Table 3.3h Petroleum Imports: United Kingdom, Virgin Islands, Other Non-OPEC, Total Non-OPEC, and Total Imports

(Thousand Barrels per Day)

	Non-OPEC[a]						Total Non-OPEC[a,b]		Total Imports	
	United Kingdom		Virgin Islands		Other Non-OPEC					
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	15	0	329	0	153	36	3,263	1,149	6,256	3,244
1974 Average	8	0	391	0	122	30	2,832	937	6,112	3,477
1975 Average	14	(s)	406	0	120	14	2,454	893	6,056	4,105
1976 Average	31	13	422	0	203	101	2,247	742	7,313	5,287
1977 Average	126	97	466	0	287	157	2,614	971	8,807	6,615
1978 Average	180	169	428	0	239	146	2,612	1,172	8,363	6,356
1979 Average	202	197	431	0	269	192	2,819	1,407	8,456	6,519
1980 Average	176	173	388	0	219	162	2,609	1,399	6,909	5,263
1981 Average	375	369	327	0	236	163	2,672	1,474	5,996	4,396
1982 Average	456	441	316	0	306	174	2,968	1,754	5,113	3,488
1983 Average	382	365	282	0	378	215	3,189	1,853	5,051	3,329
1984 Average	402	378	294	0	411	210	3,388	1,914	5,437	3,426
1985 Average	310	278	247	0	394	137	3,237	1,888	5,067	3,201
1986 Average	350	317	244	0	426	144	3,387	2,065	6,224	4,178
1987 Average	352	304	272	0	459	196	3,617	2,274	6,678	4,674
1988 Average	315	254	242	0	487	196	3,882	2,411	7,402	5,107
1989 Average	215	160	321	0	457	197	3,921	2,467	8,061	5,843
1990 Average	189	155	282	0	417	180	3,721	2,381	8,018	5,894
1991 January	32	19	261	0	235	91	3,205	2,195	7,103	5,296
February	34	21	222	0	180	96	3,051	2,221	6,865	5,485
March	48	19	214	0	179	60	3,023	2,133	6,646	5,166
April	61	37	245	0	256	99	3,674	2,470	7,418	5,529
May	222	188	264	0	239	63	3,794	2,524	8,518	6,363
June	105	70	234	0	349	189	3,747	2,587	8,245	6,334
July	228	164	191	0	384	275	3,524	2,430	7,755	5,955
August	254	217	208	0	369	197	4,067	2,699	8,670	6,645
September	218	194	269	0	374	197	3,871	2,608	7,826	5,812
October	201	166	262	0	252	139	3,444	2,340	7,467	5,683
November	84	18	264	0	335	130	3,444	2,200	7,615	5,528
December	154	151	286	0	229	104	3,546	2,448	7,337	5,565
Average	138	106	243	0	282	137	3,535	2,405	7,627	5,782
1992 January	129	115	250	0	208	59	3,488	2,402	7,712	5,956
February	63	0	222	0	196	50	3,278	2,184	6,827	5,079
March	79	52	202	0	345	114	3,462	2,380	7,068	5,321
April	157	128	234	0	458	212	4,007	2,793	8,092	6,127
May	198	180	246	0	467	225	3,705	2,633	7,823	6,060
June	248	206	266	0	297	95	3,917	2,741	7,946	6,171
July	354	337	280	0	415	152	4,140	3,024	8,479	6,796
August	295	282	263	0	464	357	4,116	2,984	8,260	6,457
September	341	291	217	0	382	160	3,904	2,687	8,178	6,218
October	411	411	254	0	279	144	3,998	2,964	8,505	6,696
November	336	285	274	0	219	124	3,786	2,745	7,872	6,121
December	148	110	273	0	283	92	3,734	2,556	7,839	5,937
Average	230	200	249	0	335	149	3,796	2,676	7,888	6,083
1993 January	228	201	252	0	325	104	[b]3,739	[b]2,672	7,964	6,292
February	173	127	244	0	223	151	3,439	2,471	7,930	6,156
March	315	281	244	0	390	186	[R]4,026	[R]2,961	8,342	6,513
April	348	281	245	0	455	243	3,933	2,836	8,485	6,698
May	486	458	279	0	356	152	4,095	2,974	8,348	6,549
June	458	408	290	0	570	405	4,423	3,454	8,745	7,175
July	292	247	202	0	585	299	4,741	3,546	9,145	7,262
7-Month Average	330	288	251	0	417	220	4,064	2,994	8,428	6,668
1992 7-Month Average	176	146	243	0	342	130	3,715	2,596	7,712	5,936
1991 7-Month Average	105	75	233	0	261	125	3,434	2,366	7,513	5,734

[a] Includes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

[b] As of January 1993, includes petroleum imported from Ecuador, which withdrew from OPEC on December 31, 1992.

R=Revised data. (s)=Less than 500 barrels per day.

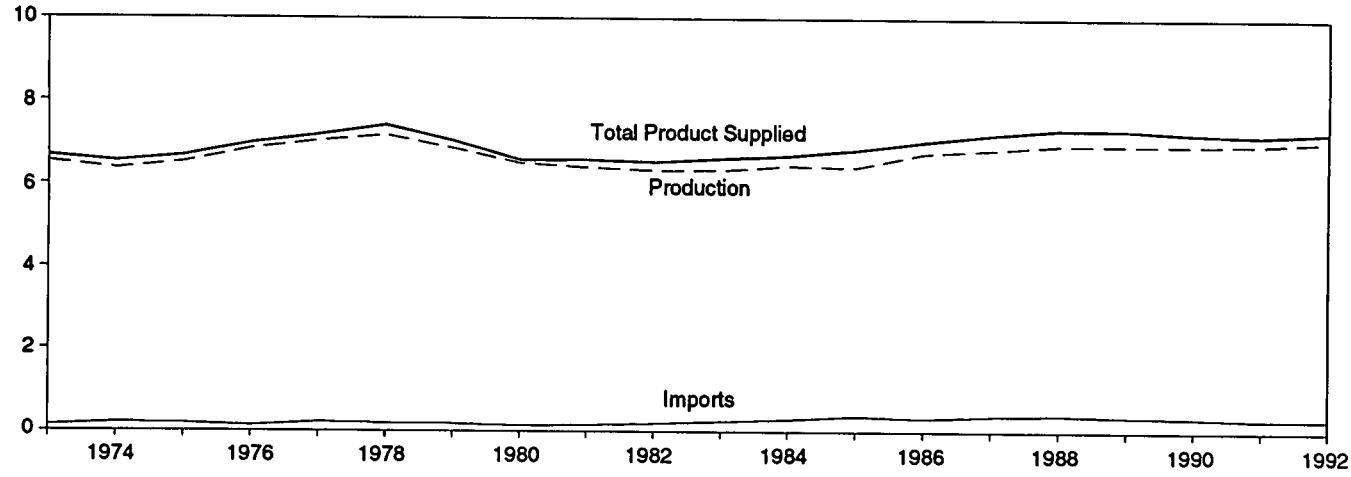
Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • 1973-1980: Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S3. • 1981 forward: EIA, *Petroleum Supply Monthly*, September 1993, Table S3.

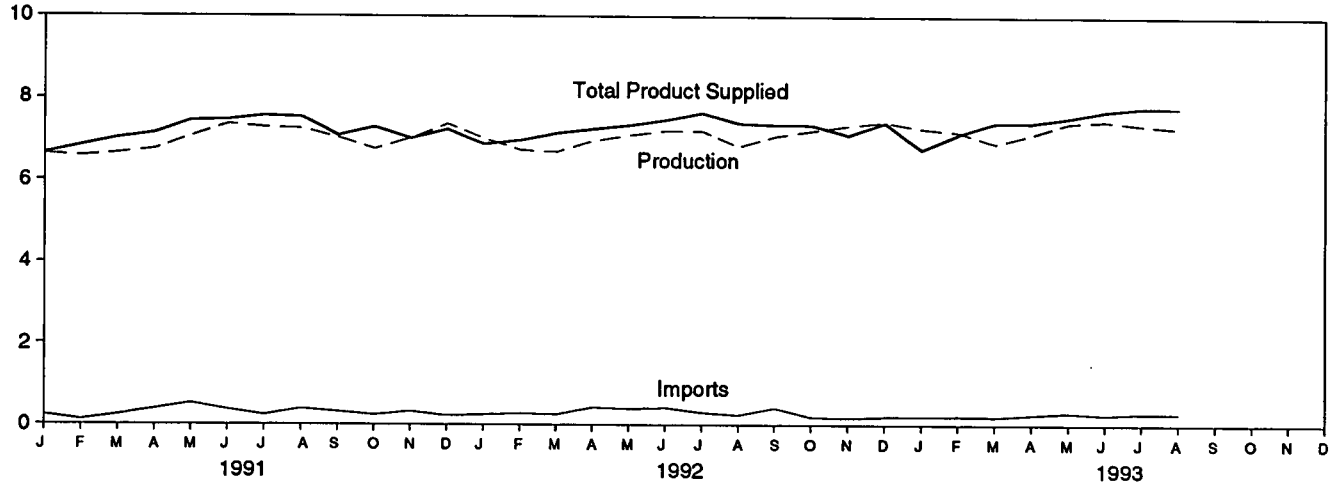
Figure 3.2 Finished Motor Gasoline

(Million Barrels per Day, Except as Noted)

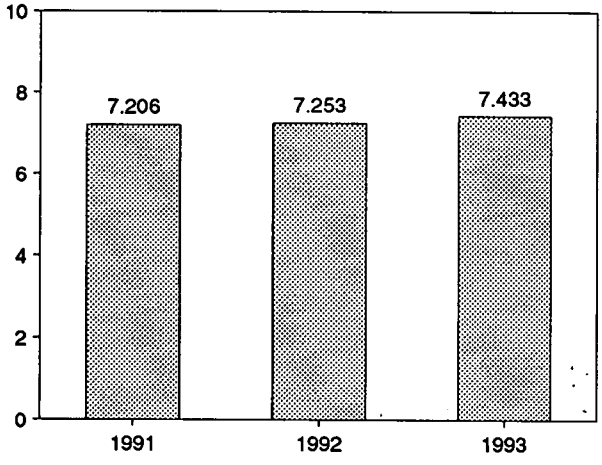
Overview, 1973-1992



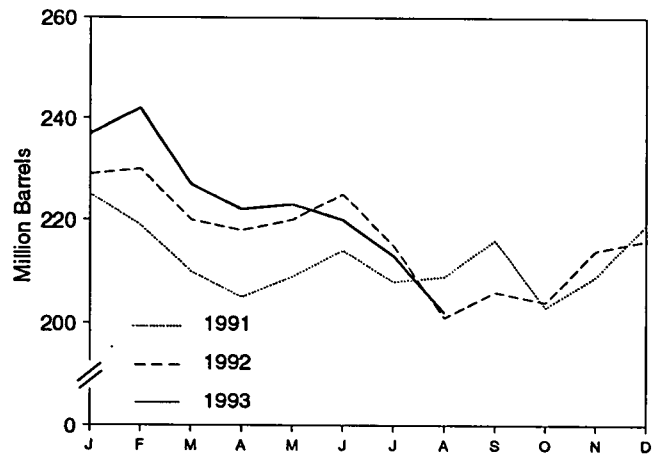
Overview, Monthly



Total Product Supplied, January-August



Total Stocks, End of Month



NA = Not available.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 3.4.

Table 3.4 Finished Motor Gasoline Supply and Disposition

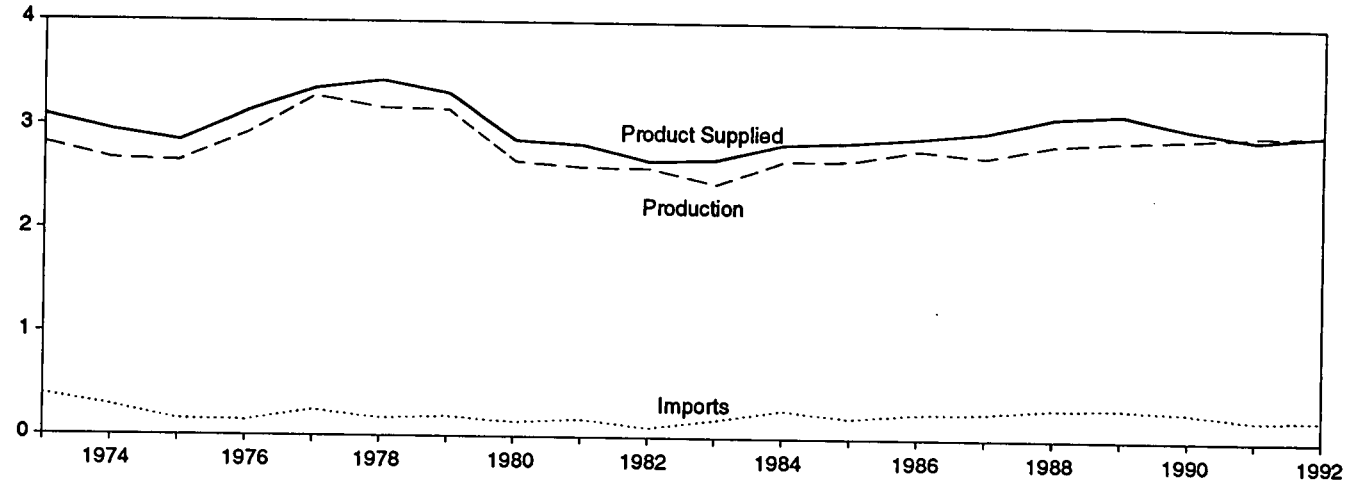
	Supply		Disposition			Motor Gasoline Ending Stocks[a]		Oxygenates Ending Stocks[a]
	Total Production	Imports[b]	Stock Change[b,c]	Exports	Product Supplied	Total[d]	Finished	
	Thousand Barrels per Day					Million Barrels		
1973 Average	6,535	134	-9	4	6,674	209	NA	NA
1974 Average	6,360	204	24	2	6,537	[e]218	NA	NA
1975 Average	6,520	184	[e]28	2	6,675	235	NA	NA
1976 Average	6,841	131	-10	3	6,978	231	NA	NA
1977 Average	7,033	217	72	2	7,177	258	NA	NA
1978 Average	7,169	190	-54	1	7,412	238	NA	NA
1979 Average	6,852	181	-2	(s)	7,034	237	NA	NA
1980 Average	6,506	140	66	1	6,579	[e]261	NA	NA
1981 Average[f]	6,405	157	[e]-28	2	6,588	253	203	NA
1982 Average	6,338	197	-25	20	6,539	[e]235	[e]194	NA
1983 Average	6,340	247	[e]-45	10	6,622	222	186	NA
1984 Average	6,453	299	54	6	6,693	243	205	NA
1985 Average	6,419	381	-41	10	6,831	223	190	NA
1986 Average	6,752	326	11	33	7,034	233	194	NA
1987 Average	6,841	384	-15	35	7,206	226	189	NA
1988 Average	6,956	405	3	22	7,336	228	190	NA
1989 Average	6,963	369	-35	39	7,328	213	177	NA
1990 Average	6,959	342	10	55	7,235	220	181	NA
1991 January	6,629	228	162	50	6,645	225	186	NA
February	6,573	115	-252	102	6,838	219	179	NA
March	6,643	235	-236	97	7,017	210	171	NA
April	6,742	381	-67	53	7,137	205	169	NA
May	7,063	528	95	59	7,437	209	172	NA
June	7,351	364	160	99	7,456	214	177	NA
July	7,274	232	-177	122	7,561	208	172	NA
August	7,247	385	7	98	7,528	209	172	NA
September	7,030	312	195	63	7,083	216	178	NA
October	6,749	236	-354	58	7,281	203	167	NA
November	7,018	322	228	104	7,008	209	173	NA
December	7,354	216	267	79	7,224	219	182	NA
Average	6,975	297	3	82	7,188	219	182	NA
1992 January	7,013	246	304	87	6,869	229	191	NA
February	6,726	275	-22	59	6,963	230	191	NA
March	6,683	247	-278	71	7,137	220	182	NA
April	6,954	428	54	90	7,238	218	183	NA
May	7,092	392	74	82	7,328	220	186	NA
June	7,198	424	76	86	7,460	225	188	NA
July	7,195	303	-249	108	7,639	215	180	NA
August	6,817	240	-446	123	7,380	201	167	NA
September	7,071	418	60	85	7,344	206	168	NA
October	7,198	193	-41	94	7,338	204	167	NA
November	7,323	170	318	74	7,102	214	177	NA
December	7,411	202	32	184	7,396	216	178	NA
Average	7,058	294	-11	96	7,268	216	178	NA
1993 January	[g]7,254	204	571	142	[g]6,746	237	195	[h]14
February	7,172	216	160	99	7,129	242	200	13
March	6,897	198	-411	109	7,397	227	187	14
April	7,123	253	-137	111	7,401	222	183	15
May	7,394	308	80	90	7,531	223	185	17
June	7,447	251	-75	81	7,692	220	183	18
July	7,344	[R]292	[R]-242	[R]100	7,777	213	[R]176	20
August	[E]7,269	[E]288	[E]-285	[E]72	[E]7,770	[E]202	[E]167	NA
8-Month Average	[E]7,238	[E]252	[E]-44	[E]101	[E]7,433	[E]202	[E]167	NA
1992 8-Month Average	6,961	319	-62	89	7,253	201	167	NA
1991 8-Month Average	6,944	310	-37	85	7,206	209	172	NA

[a] Stocks are totals as of end of period.
[b] From 1981 forward, blending components are excluded.
[c] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[d] Includes motor gasoline blending components, but excludes oxygenates, which are reported separately.
[e] See Note 4 at end of section.
[f] See Note 2 at end of section.
[g] Beginning in 1993, motor gasoline production and product supplied include blending of fuel ethanol and an adjustment to correct for the imbalance of motor gasoline blending components. See Note 2 at end of section.
[h] See Note 1 at end of section.
R=Revised data. NA=Not available. E=Estimate. (s)=Less than 500 barrels per day.
Note: Geographic coverage is the 50 States and the District of Columbia.
Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S4. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S4.

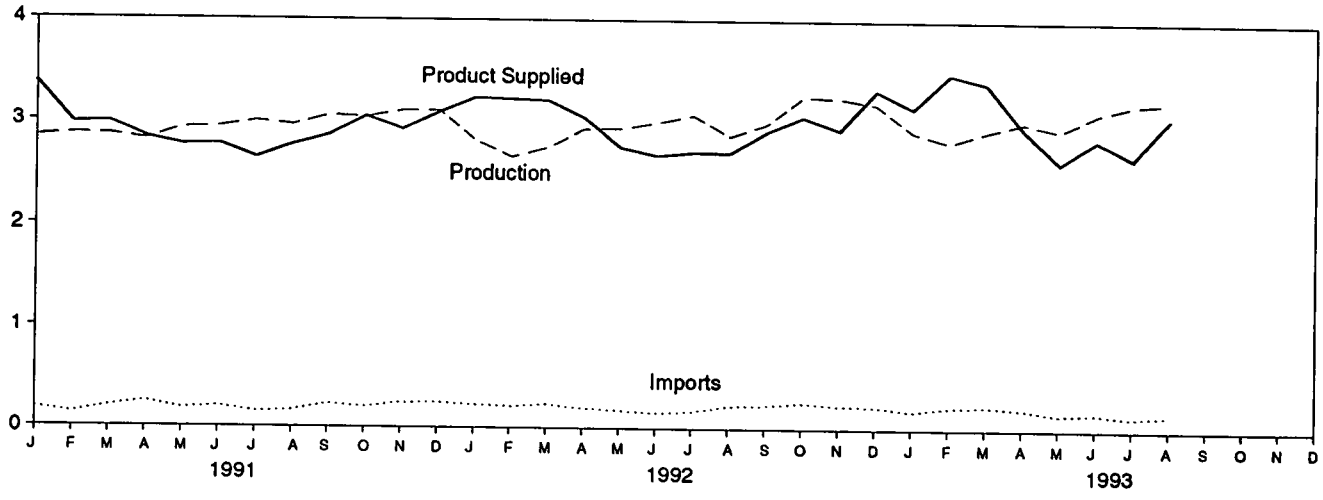
Figure 3.3 Distillate Fuel

(Million Barrels per Day, Except as Noted)

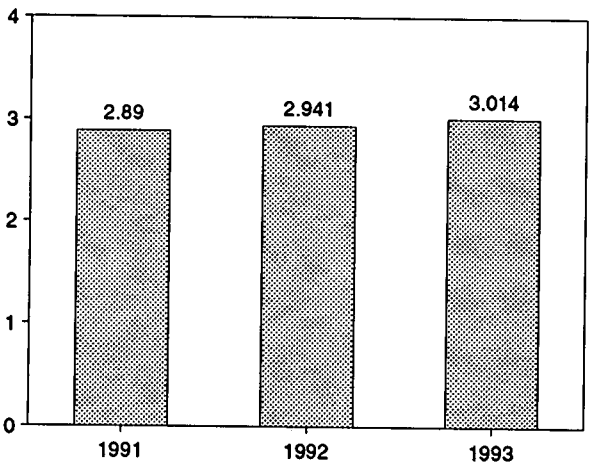
Overview, 1973-1992



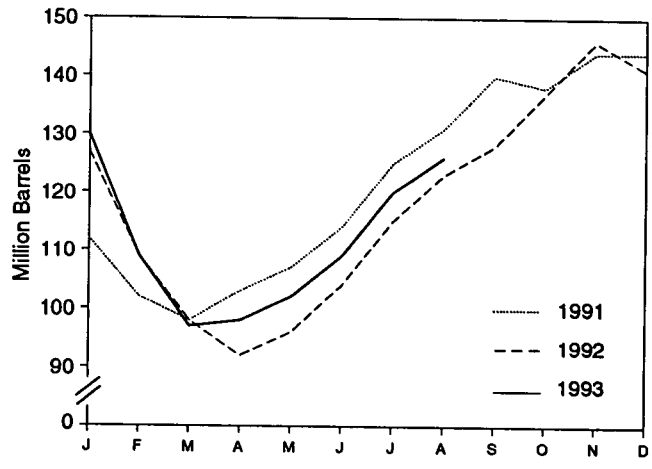
Overview, Monthly



Product Supplied, January-August



Stocks, End of Month



Source: Table 3.5.

Table 3.5 Distillate Fuel Oil Supply and Disposition

	Supply			Disposition			Ending Stocks[a]		
								Sulfur Content	
	Total Production	Imports	Crude Oil Used Directly[b]	Stock Change[c]	Exports	Product Supplied[b]	Total	0.05 Percent or Less[d]	Greater Than 0.05 Percent[d]
	Thousand Barrels per Day						Million Barrels		
1973 Average	2,822	392	2	115	9	3,092	196	NA	NA
1974 Average	2,669	289	2	[e] 10	2	2,948	[f] 200	NA	NA
1975 Average	2,654	155	2	[e,f] -41	1	2,851	209	NA	NA
1976 Average	2,924	146	1	-62	1	3,133	186	NA	NA
1977 Average	3,278	250	1	176	1	3,352	250	NA	NA
1978 Average	3,167	173	1	-93	3	3,432	216	NA	NA
1979 Average	3,153	193	1	34	3	3,311	229	NA	NA
1980 Average	2,662	142	1	-64	3	2,866	[f] 205	NA	NA
1981 Average[g]	2,613	173	10	[f] -38	5	2,829	192	NA	NA
1982 Average	2,606	93	10	-35	74	2,671	[f] 179	NA	NA
1983 Average	2,456	174	–	[f] -124	64	2,690	140	NA	NA
1984 Average	2,681	272	–	57	51	2,845	161	NA	NA
1985 Average	2,687	200	–	-48	67	2,868	144	NA	NA
1986 Average	2,798	247	–	31	100	2,914	155	NA	NA
1987 Average	2,731	255	–	-56	66	2,976	134	NA	NA
1988 Average	2,859	302	–	-30	69	3,122	124	NA	NA
1989 Average	2,899	306	–	-49	97	3,157	106	NA	NA
1990 Average	2,925	278	–	73	109	3,021	132	NA	NA
1991 January	2,845	192	–	-662	332	3,367	112	NA	NA
February	2,870	139	–	-359	393	2,976	102	NA	NA
March	2,865	206	–	-112	198	2,984	98	NA	NA
April	2,819	258	–	156	81	2,839	103	NA	NA
May	2,929	186	–	132	218	2,765	107	NA	NA
June	2,941	209	–	225	150	2,775	114	NA	NA
July	2,998	155	–	356	149	2,648	125	NA	NA
August	2,961	168	–	214	144	2,770	131	NA	NA
September	3,055	237	–	291	136	2,865	140	NA	NA
October	3,040	207	–	-59	259	3,047	138	NA	NA
November	3,103	249	–	206	224	2,921	144	NA	NA
December	3,107	252	–	-30	302	3,087	144	NA	NA
Average	2,962	205	–	31	215	2,921	144	NA	NA
1992 January	2,818	232	–	-541	360	3,231	127	NA	NA
February	2,661	217	–	-619	278	3,219	109	NA	NA
March	2,749	238	–	-358	138	3,207	98	NA	NA
April	2,930	202	–	-185	278	3,039	92	NA	NA
May	2,933	179	–	139	222	2,753	96	NA	NA
June	2,995	157	–	268	205	2,679	104	NA	NA
July	3,067	172	–	328	201	2,710	115	NA	NA
August	2,865	229	–	262	127	2,705	123	NA	NA
September	2,983	237	–	168	145	2,908	128	NA	NA
October	3,251	263	–	290	169	3,056	137	NA	NA
November	3,240	236	–	316	230	2,929	146	NA	NA
December	3,179	229	–	-183	276	3,316	141	NA	NA
Average	2,974	216	–	-8	219	2,979	141	NA	NA
1993 January	2,909	182	–	-336	[R] 287	[R] 3,141	130	[g] 22	[g] 108
February	2,813	224	–	-742	[R] 301	[R] 3,478	109	16	94
March	2,918	235	–	-386	[R] 154	[R] 3,386	97	12	85
April	3,010	209	–	30	[R] 241	[R] 2,949	98	13	86
May	2,930	153	–	104	[R] 355	[R] 2,624	102	14	87
June	3,095	168	–	263	158	2,843	109	17	92
July	[R] 3,185	[R] 130	–	[R] 348	[R] 298	[R] 2,669	[R] 120	23	97
August	[E] 3,211	[E] 157	–	[E] 161	[E] 147	[E] 3,060	[E] 126	[E] 46	[E] 80
8-Month Average	[E] 3,011	[E] 182	–	[E] -63	[E] 242	[E] 3,014	[E] 126	NA	NA
1992 8-Month Average	2,878	203	–	-85	226	2,941	123	NA	NA
1991 8-Month Average	2,904	189	–	-3	207	2,890	131	NA	NA

[a] Stocks are totals as of end of period.
[b] Beginning in January 1983, crude oil used directly as distillate fuel oil is reported as crude oil product supplied on Table 3.2b rather than as distillate fuel oil product supplied.
[c] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[d] By weight.
[e] See Note 6 at end of section.
[f] See Note 4 at end of section.
[g] See Note 3 at end of section.

R=Revised data. NA=Not available. – =Not applicable. E=Estimate. (s)=Less than 500 barrels per day.

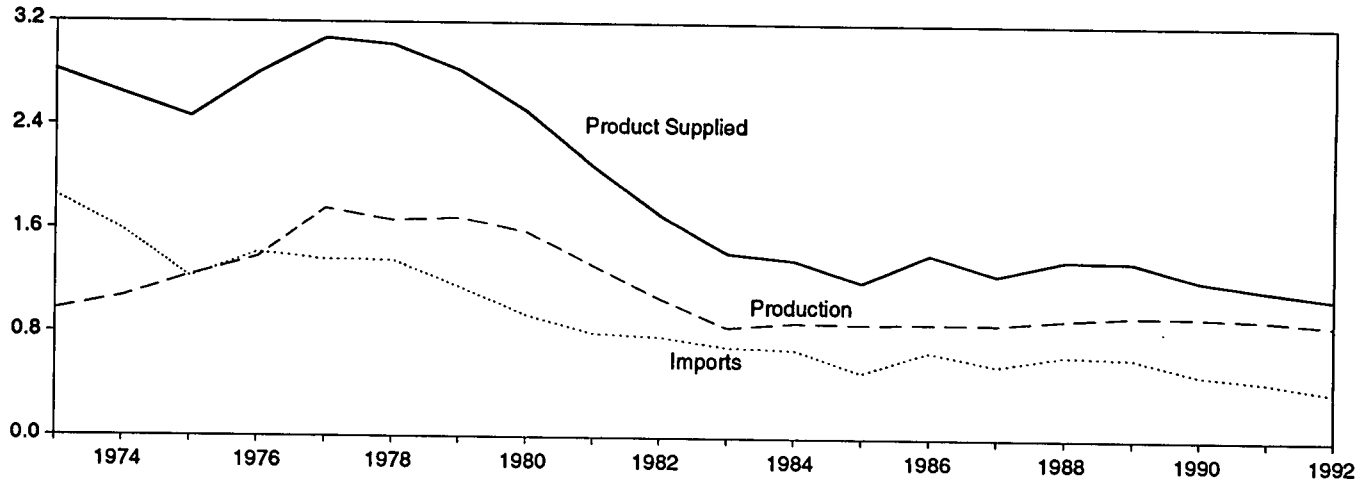
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S5. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S5.

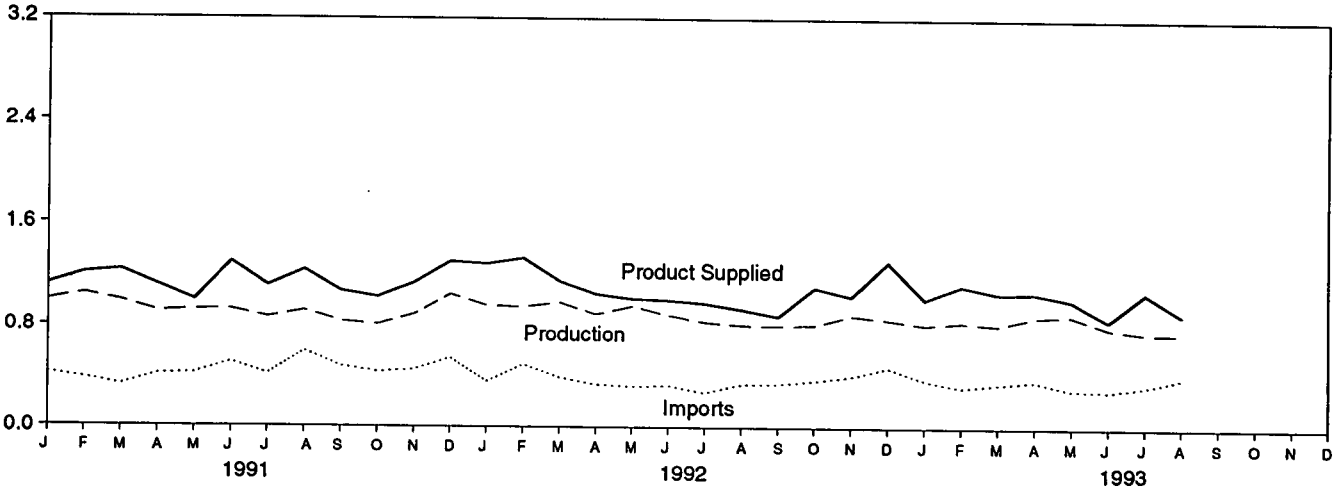
Figure 3.4 Residual Fuel

(Million Barrels per Day, Except as Noted)

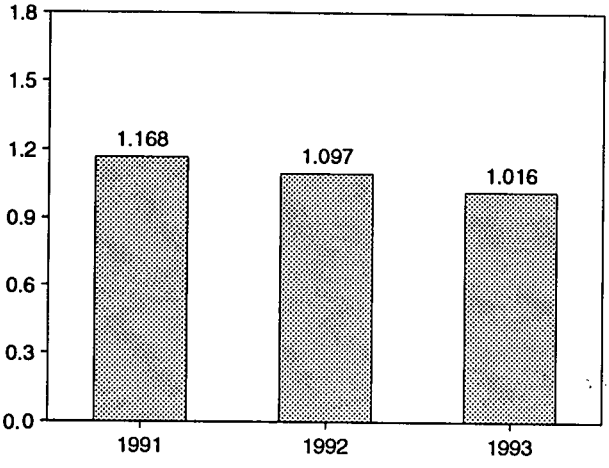
Overview, 1973-1992



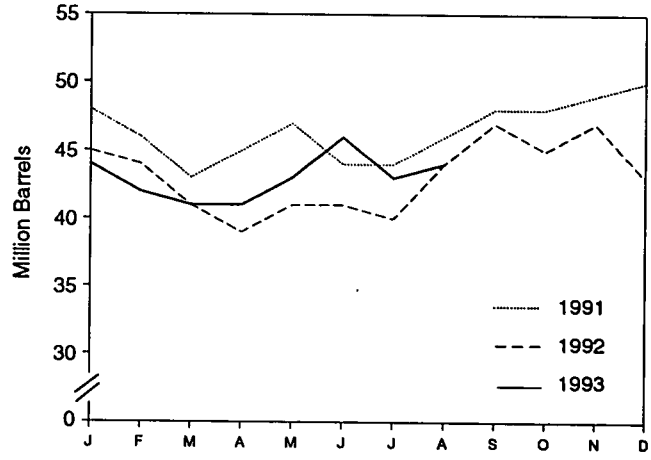
Overview, Monthly



Product Supplied, January-August



Stocks, End of Month



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 3.6.

Table 3.6 Residual Fuel Oil Supply and Disposition

	Supply			Disposition			
	Total Production	Imports	Crude Oil Used Directly[a]	Stock Change[b]	Exports	Product Supplied[a]	Ending Stocks[c]
	Thousand Barrels per Day						Million Barrels
1973 Average	971	1,853	17	-5	23	2,822	53
1974 Average	1,070	1,587	13	17	14	2,639	[d]60
1975 Average	1,235	1,223	15	[d]-2	15	2,462	74
1976 Average	1,377	1,413	17	-5	12	2,801	72
1977 Average	1,754	1,359	13	48	6	3,071	90
1978 Average	1,667	1,355	13	1	13	3,023	90
1979 Average	1,687	1,151	12	15	9	2,826	96
1980 Average	1,580	939	12	-10	33	2,508	[d]92
1981 Average[e]	1,321	800	48	[d]-37	118	2,088	78
1982 Average	1,070	776	48	-32	209	1,716	[d]66
1983 Average	852	699	–	[d]-55	185	1,421	49
1984 Average	891	681	–	12	190	1,369	53
1985 Average	882	510	–	-7	197	1,202	50
1986 Average	889	669	–	-8	147	1,418	47
1987 Average	885	565	–	(s)	186	1,264	47
1988 Average	926	644	–	-8	200	1,378	45
1989 Average	954	629	–	-2	215	1,370	44
1990 Average	950	504	–	13	211	1,229	49
1991 January	1,001	425	–	-19	320	1,124	48
February	1,050	384	–	-76	299	1,211	46
March	995	332	–	-85	178	1,234	43
April	916	416	–	68	145	1,119	45
May	929	425	–	50	300	1,003	47
June	933	512	–	-103	245	1,303	44
July	871	420	–	-1	176	1,117	44
August	925	599	–	68	216	1,240	46
September	838	481	–	78	168	1,074	48
October	814	438	–	6	217	1,029	48
November	896	455	–	24	189	1,139	49
December	1,051	547	–	28	264	1,307	50
Average	934	453	–	4	226	1,158	50
1992 January	965	364	–	-144	184	1,289	45
February	957	498	–	-55	176	1,334	44
March	990	397	–	-77	310	1,154	41
April	900	342	–	-78	265	1,055	39
May	964	328	–	67	207	1,019	41
June	894	334	–	-11	230	1,009	41
July	838	280	–	-37	169	986	40
August	815	347	–	125	96	941	44
September	810	349	–	123	149	887	47
October	818	376	–	-72	156	1,110	45
November	895	411	–	49	216	1,041	47
December	862	481	–	-127	158	1,312	43
Average	892	375	–	-20	193	1,094	43
1993 January	820	383	–	49	133	1,020	44
February	841	325	–	-75	113	1,128	42
March	819	352	–	-46	152	1,065	41
April	887	377	–	24	169	1,070	41
May	896	308	–	53	137	1,014	43
June	797	299	–	92	147	857	46
July	[R]760	[R]337	–	[R]-101	[R]122	[R]1,075	[R]43
August	[E]754	[E]402	–	[E]61	[E]191	[E]904	[E]44
8-Month Average	[E]821	[E]348	–	[E]8	[E]146	[E]1,016	[E]44
1992 8-Month Average	915	360	–	-26	204	1,097	44
1991 8-Month Average	952	439	–	-11	234	1,168	46

[a] Beginning in January 1983, crude oil used directly as residual fuel oil is reported as crude oil product supplied on Table 3.2b rather than as residual fuel oil product supplied.

[b] A negative number indicates a decrease in stocks and a positive number indicates an increase.

[c] Stocks are totals as of end of period.

[d] See Note 4 at end of section.

[e] See Note 3 at end of section.

R=Revised data. – =Not applicable. E=Estimate. (s)=Less than 500 barrels per day.

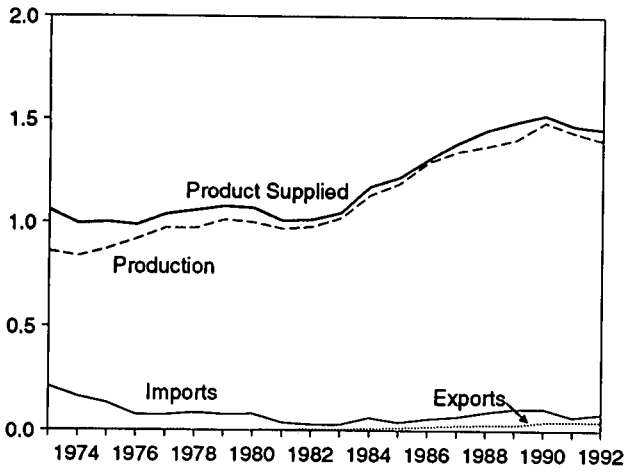
Note: Geographic coverage is the 50 States and the District of Columbia.

Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S6. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S6.

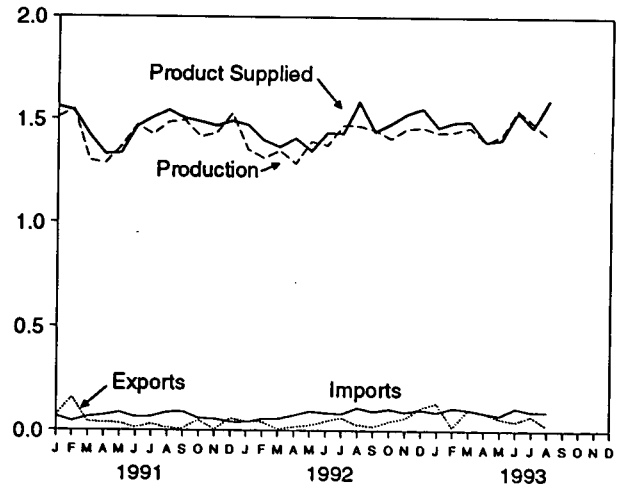
Figure 3.5 Jet Fuel

(Million Barrels per Day, Except as Noted)

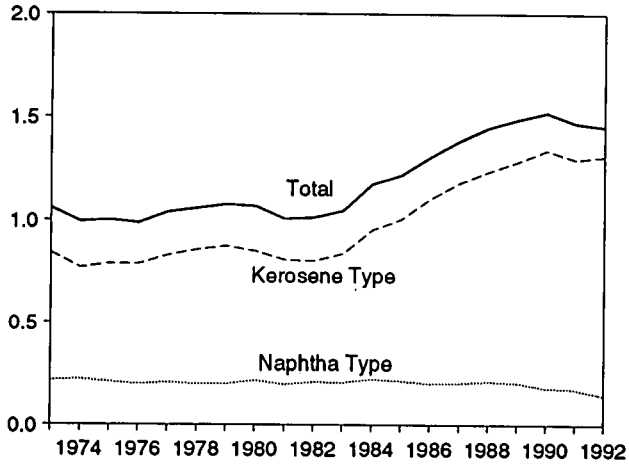
Total Jet Fuel Overview, 1973-1992



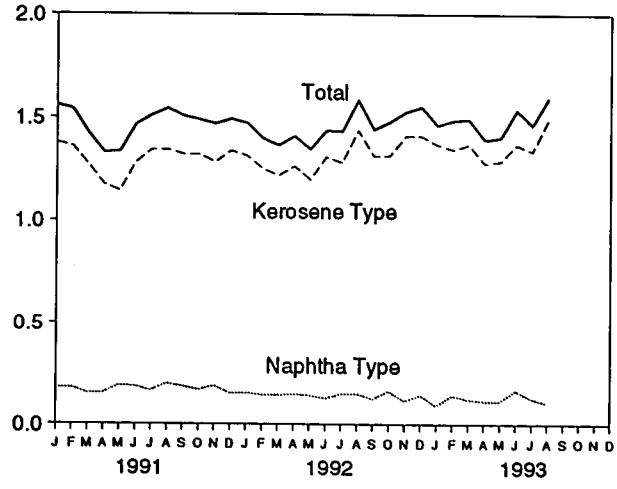
Total Jet Fuel Overview, Monthly



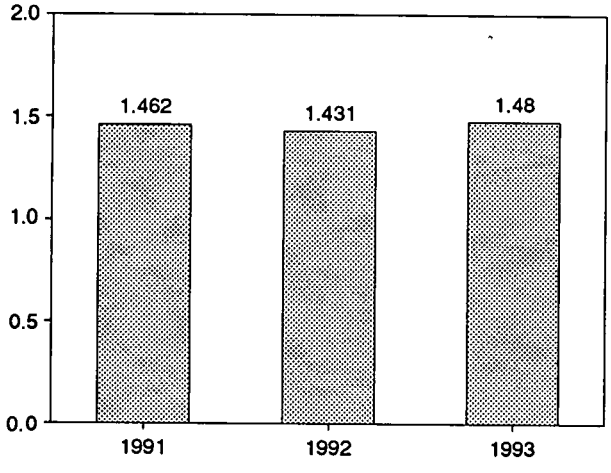
Product Supplied by Type, 1973-1992



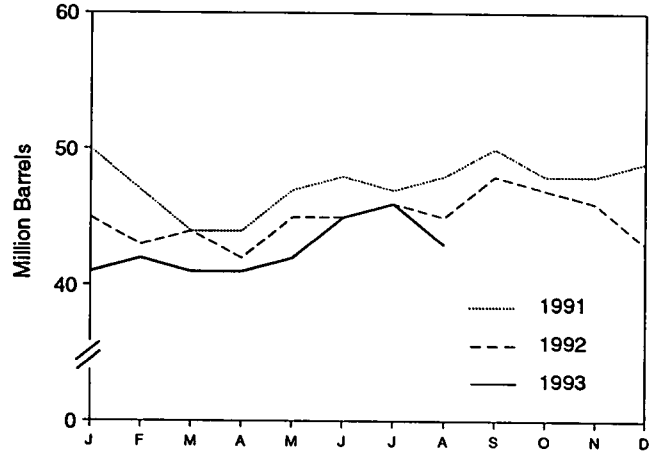
Product Supplied by Type, Monthly



Total Product Supplied, January-August



Total Stocks, End of Month



Source: Table 3.7.

Table 3.7 Jet Fuel Supply and Disposition

	Supply			Disposition				Ending Stocks[a]	
	Production		Imports	Stock Change[b]	Exports	Product Supplied			
	Total	Kerosene Type				Total	Kerosene Type	Total	Kerosene Type
	Thousand Barrels per Day							Million Barrels	
1973 Average	859	679	212	8	4	1,059	842	29	23
1974 Average	836	641	163	2	3	993	771	[c]29	[c]24
1975 Average	871	691	133	[c]2	2	1,001	791	30	25
1976 Average	918	731	76	5	2	987	789	32	26
1977 Average	973	787	75	7	2	1,039	831	35	28
1978 Average	970	791	86	-2	1	1,057	858	34	28
1979 Average	1,012	835	78	13	1	1,076	876	39	33
1980 Average	999	811	80	10	1	1,068	851	[c]42	[c]36
1981 Average	968	775	38	[c]-4	2	1,007	809	41	34
1982 Average	978	778	29	-12	6	1,013	804	[c]37	[c]31
1983 Average	1,022	817	29	[c](s)	6	1,046	839	39	32
1984 Average	1,132	919	62	9	9	1,175	953	42	35
1985 Average	1,189	983	39	-4	13	1,218	1,005	40	34
1986 Average	1,293	1,097	57	25	18	1,307	1,105	50	43
1987 Average	1,343	1,138	67	(s)	24	1,385	1,181	50	42
1988 Average	1,370	1,164	90	-17	28	1,449	1,236	44	38
1989 Average	1,403	1,197	106	-8	27	1,489	1,284	41	34
1990 Average	1,488	1,311	108	31	43	1,522	1,340	52	46
1991 January	1,509	1,354	67	-55	73	1,559	1,378	50	44
February	1,548	1,384	44	-108	159	1,541	1,360	47	41
March	1,299	1,157	65	-99	40	1,423	1,270	44	38
April	1,286	1,135	73	-8	38	1,329	1,173	44	38
May	1,367	1,191	87	85	35	1,334	1,143	47	41
June	1,473	1,300	64	58	13	1,465	1,280	48	43
July	1,426	1,255	67	-47	31	1,509	1,343	47	41
August	1,486	1,316	88	21	11	1,543	1,343	48	42
September	1,495	1,322	92	71	10	1,506	1,321	50	45
October	1,415	1,253	59	-66	50	1,489	1,319	48	43
November	1,433	1,276	56	15	5	1,469	1,282	48	44
December	1,530	1,357	42	22	59	1,492	1,338	49	44
Average	1,438	1,274	67	-9	43	1,471	1,296	49	44
1992 January	1,352	1,200	39	-127	44	1,473	1,314	45	40
February	1,311	1,164	56	-73	42	1,398	1,250	43	38
March	1,347	1,215	56	31	7	1,365	1,218	44	39
April	1,286	1,131	74	-68	18	1,409	1,262	42	37
May	1,393	1,214	93	114	26	1,346	1,198	45	40
June	1,374	1,234	86	-21	45	1,436	1,308	45	39
July	1,473	1,328	81	59	62	1,433	1,280	46	42
August	1,471	1,339	111	-32	28	1,585	1,438	45	41
September	1,448	1,296	93	78	20	1,442	1,313	48	43
October	1,408	1,265	105	-12	44	1,480	1,315	47	43
November	1,456	1,319	90	-41	59	1,528	1,411	46	41
December	1,462	1,336	102	-101	112	1,553	1,410	43	39
Average	1,399	1,254	82	-16	43	1,454	1,310	43	39
1993 January	1,437	1,306	89	-73	134	1,464	1,371	41	36
February	1,442	1,318	110	46	17	1,488	1,346	42	38
March	1,463	1,332	102	-29	101	1,493	1,371	41	37
April	1,390	1,262	88	-4	88	1,393	1,278	41	37
May	1,426	1,300	75	37	60	1,404	1,289	42	38
June	1,549	1,409	111	78	45	1,538	1,370	45	41
July	[R]1,485	[R]1,359	[R]94	[R]41	[R]73	[R]1,465	[R]1,337	[R]46	[R]42
August	[E]1,416	[E]1,321	[E]94	[E]-106	[E]22	[E]1,595	[E]1,490	[E]43	[E]40
8-Month Average	[E]1,451	[E]1,326	[E]95	[E]-2	[E]68	[E]1,480	[E]1,357	[E]43	[E]40
1992 8-Month Average	1,377	1,229	75	-14	34	1,431	1,284	45	41
1991 8-Month Average	1,423	1,260	70	-18	49	1,462	1,286	48	42

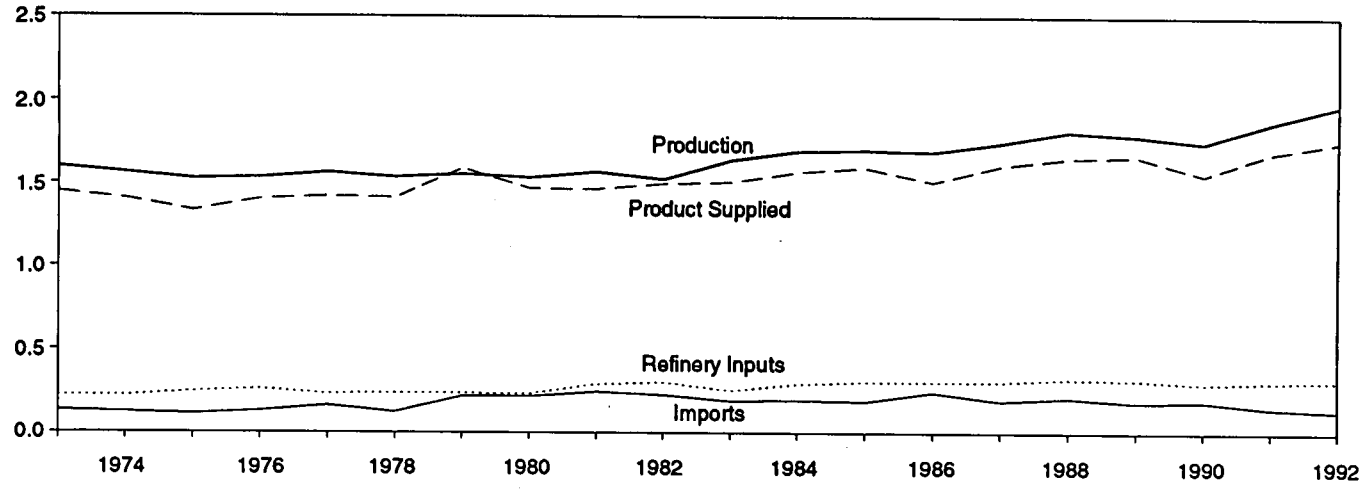
[a] Stocks are totals as of end of period.
[b] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[c] See Note 4 at end of section.
R=Revised data. E=Estimate. (s)=Less than 500 barrels per day.

Note: Geographic coverage is the 50 States and the District of Columbia.
Sources: • 1973-1980: Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S7. • 1981 forward: EIA, *Petroleum Supply Monthly*, September 1993, Table S7.

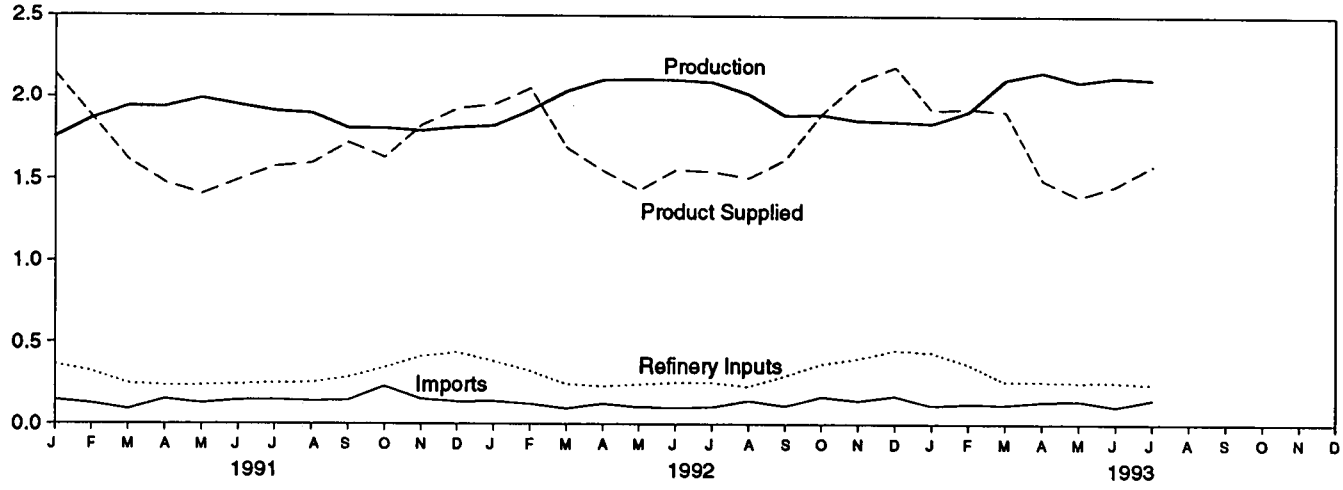
Figure 3.6 Liquefied Petroleum Gases

(Million Barrels per Day, Except as Noted)

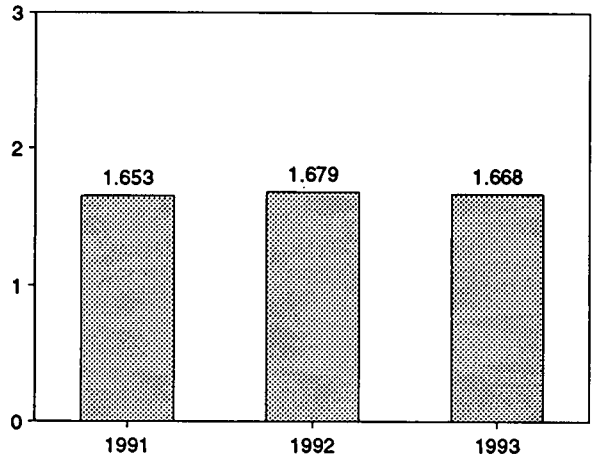
Overview, 1973-1992



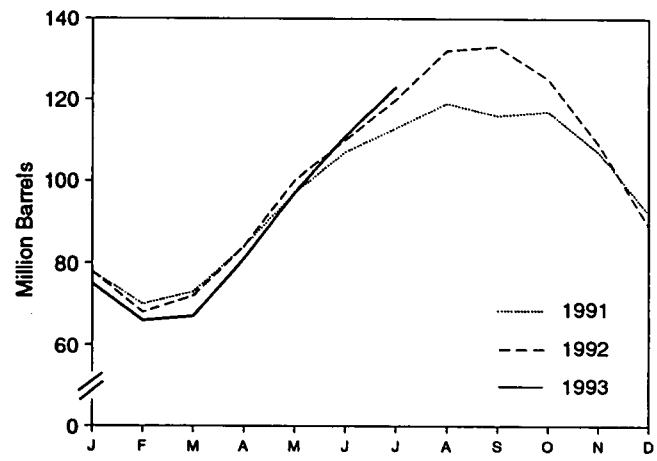
Overview, Monthly



Product Supplied, January-July



Stocks, End of Month



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 3.8.

Table 3.8 Liquefied Petroleum Gases Supply and Disposition

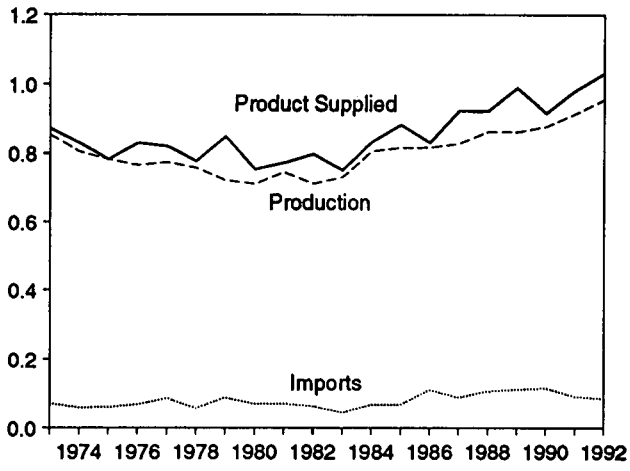
	Supply		Disposition				
	Total Production	Imports	Stock Change[a]	Refinery Inputs	Exports	Product Supplied	Ending Stocks[b]
	Thousand Barrels per Day						Million Barrels
1973 Average	1,600	132	35	220	27	1,449	99
1974 Average	1,565	123	38	220	25	1,406	[c] 113
1975 Average	1,527	112	[c] 35	246	26	1,333	125
1976 Average	1,535	130	-24	260	25	1,404	116
1977 Average	1,566	161	55	233	18	1,422	136
1978 Average	1,537	123	-12	239	20	1,413	[c] 132
1979 Average	1,556	217	[c] -70	236	15	1,592	111
1980 Average	1,535	216	27	233	21	1,469	[c] 120
1981 Average	1,571	244	[c] 18	289	42	1,466	135
1982 Average	[d] 1,527	226	-111	300	65	1,499	[c] 94
1983 Average	1,642	190	[c] -4	253	73	1,509	[c] 101
1984 Average	1,697	195	[c] -19	291	48	1,572	101
1985 Average	1,704	187	-75	304	62	1,599	74
1986 Average	1,695	242	80	302	42	1,512	103
1987 Average	1,748	190	-15	304	38	1,612	97
1988 Average	1,817	209	1	321	49	1,656	97
1989 Average	1,791	181	-47	315	35	1,668	80
1990 Average	1,749	188	48	293	40	1,556	98
1991 January	1,753	148	-658	364	56	2,139	78
February	1,865	126	-271	322	60	1,880	70
March	1,942	91	113	249	56	1,615	73
April	1,937	154	346	237	31	1,477	84
May	1,989	129	428	239	45	1,407	97
June	1,949	148	328	245	32	1,492	107
July	1,913	151	211	253	24	1,575	113
August	1,899	143	175	255	18	1,594	119
September	1,806	147	-84	288	31	1,718	116
October	1,805	233	33	345	31	1,629	117
November	1,789	156	-330	413	40	1,821	107
December	1,810	139	-488	437	73	1,927	92
Average	1,871	147	-15	304	41	1,689	92
1992 January	1,820	142	-452	384	80	1,950	78
February	1,917	126	-365	326	33	2,051	68
March	2,033	97	153	247	43	1,687	72
April	2,102	127	401	233	45	1,549	84
May	2,106	106	489	245	44	1,433	100
June	2,102	104	334	257	59	1,556	110
July	2,090	106	345	255	52	1,544	120
August	2,016	148	369	233	55	1,507	132
September	1,886	114	37	299	45	1,620	133
October	1,892	171	-242	369	39	1,898	125
November	1,854	148	-541	403	43	2,097	109
December	1,849	176	-660	453	49	2,184	89
Average	1,972	131	-10	309	49	1,755	89
1993 January	1,837	117	-441	440	39	1,917	75
February	1,912	128	-310	367	55	1,928	66
March	2,106	123	9	263	47	1,910	67
April	2,151	142	466	263	69	1,495	81
May	2,091	148	538	258	50	1,393	97
June	2,122	111	469	260	41	1,463	111
July	2,108	155	380	246	54	1,583	123
7-Month Average	2,048	132	162	299	50	1,668	123
1992 7-Month Average	2,024	115	132	278	51	1,679	120
1991 7-Month Average	1,907	135	73	272	43	1,653	113

[a] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[b] Stocks are totals as of end of period.
[c] See Note 4 at end of section.
[d] See Note 6 at end of section.
Notes: • Liquefied petroleum gases include ethane, ethylene, propane, propylene, normal butane, butylene, isobutane and isobutylene. • Geographic coverage is the 50 States and the District of Columbia.
Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S8. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S9.

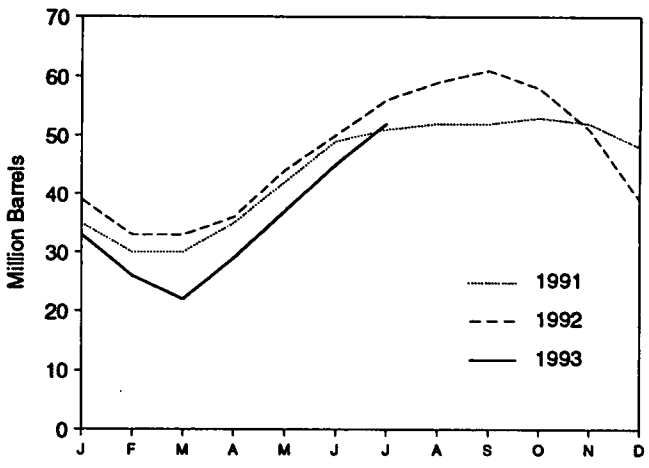
Figure 3.7 Propane and Propylene

(Million Barrels per Day, Except as Noted)

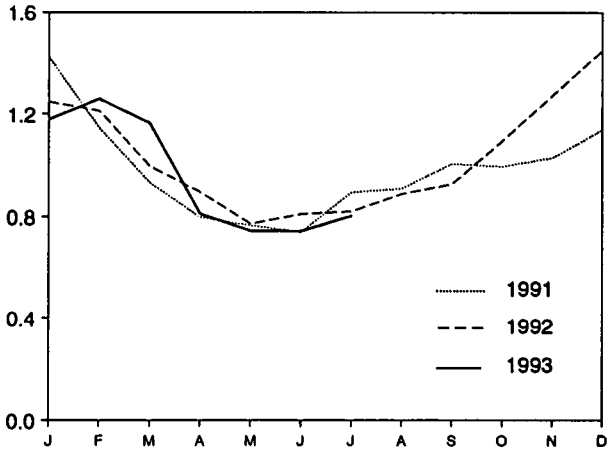
Overview, 1973-1992



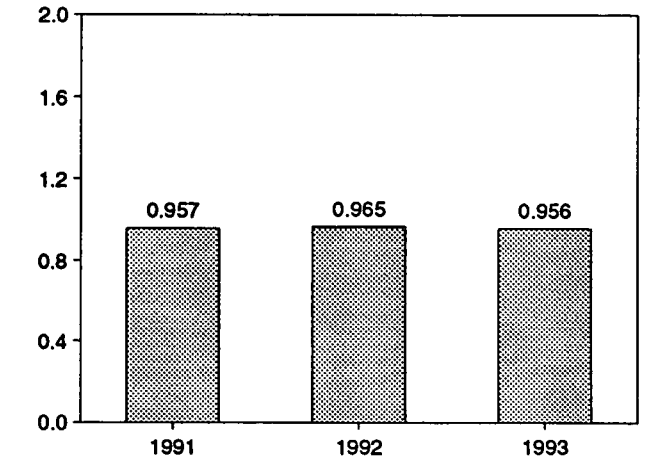
Stocks, End of Month



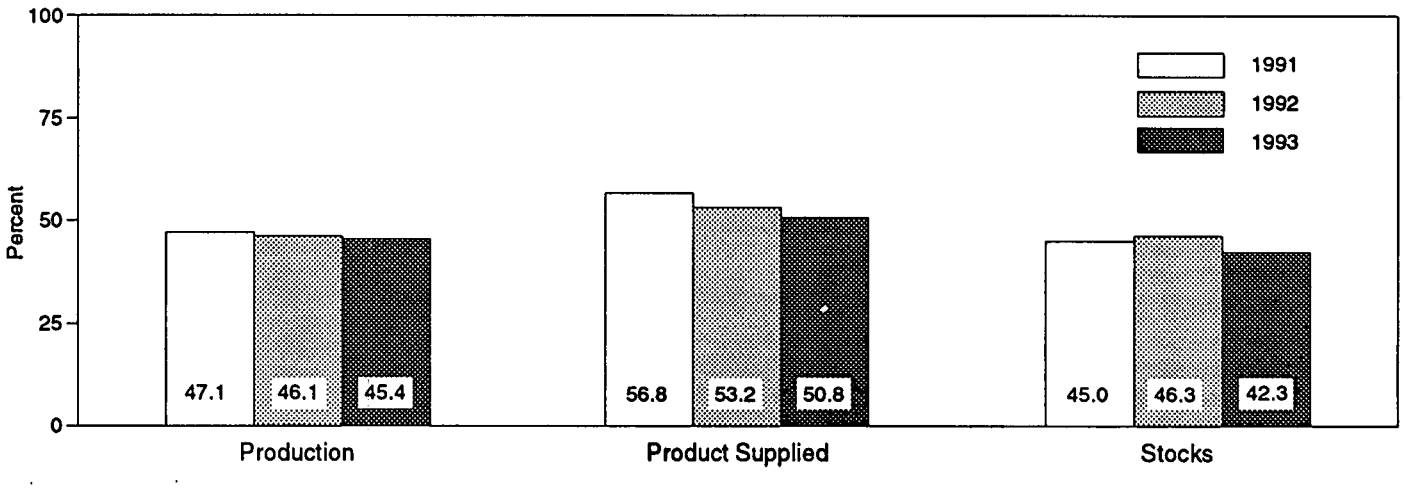
Product Supplied, Monthly



Product Supplied, January-July



Share of Liquefied Petroleum Gases, July



Note: Because vertical scales differ, graphs should not be compared.
Sources: Table 3.9 and, for calculation of shares, data prior to rounding for publication in Tables 3.8 and 3.9.

Table 3.9 Propane and Propylene Supply and Disposition (A Subset of Table 3.8)

	Supply		Disposition				
	Total Production	Imports	Stock Change[a]	Refinery Inputs	Exports	Products Supplied	Ending Stocks[b]
	Thousand Barrels per Day						Million Barrels
1973 Average	854	71	30	8	15	872	65
1974 Average	805	59	11	9	14	830	69
1975 Average	783	60	36	11	13	783	82
1976 Average	766	68	-22	12	13	830	74
1977 Average	775	86	21	10	10	821	81
1978 Average	758	57	15	13	9	778	[c]87
1979 Average	721	88	[c]-61	14	8	849	64
1980 Average	711	69	4	12	10	754	[c]65
1981 Average	745	70	[c]18	5	18	773	76
1982 Average	711	63	-59	4	31	798	[c]54
1983 Average	730	44	[c]-24	4	43	751	[c]48
1984 Average	806	67	[c]7	4	30	833	58
1985 Average	816	67	-50	3	48	883	39
1986 Average	817	110	64	4	28	831	63
1987 Average	828	88	-41	8	24	924	48
1988 Average	863	106	7	8	31	923	50
1989 Average	862	111	-52	11	24	990	32
1990 Average	878	115	48	(s)	28	917	49
1991 January	920	105	-449	0	51	1,422	35
February	923	90	-174	0	40	1,147	30
March	912	56	-10	0	45	933	30
April	900	101	179	0	25	798	35
May	922	90	214	0	31	767	42
June	906	81	223	0	22	741	49
July	901	91	81	0	15	895	51
August	891	73	40	0	13	910	52
September	905	92	-22	0	14	1,006	52
October	902	146	35	0	18	995	53
November	930	82	-37	0	20	1,030	52
December	964	86	-128	(s)	38	1,139	48
Average	915	91	-3	(s)	28	982	48
1992 January	949	90	-282	(s)	72	1,249	39
February	955	86	-200	(s)	27	1,214	33
March	940	68	-15	(s)	26	997	33
April	961	80	120	0	24	896	36
May	977	72	253	(s)	23	773	44
June	978	66	206	(s)	27	811	50
July	964	68	176	(s)	35	821	56
August	946	85	117	(s)	25	889	59
September	931	71	51	(s)	25	927	61
October	933	104	-88	(s)	30	1,095	58
November	964	99	-243	0	33	1,273	51
December	977	131	-385	0	45	1,448	39
Average	956	85	-24	(s)	33	1,032	39
1993 January	965	72	-173	1	31	1,179	33
February	959	78	-261	(s)	37	1,261	26
March	971	85	-140	(s)	32	1,165	22
April	973	112	233	(s)	40	812	29
May	942	96	262	0	30	746	37
June	958	75	266	0	23	744	45
July	956	105	232	0	26	804	52
7-Month Average	961	89	63	(s)	31	956	52
1992 7-Month Average	960	76	38	(s)	34	965	56
1991 7-Month Average	912	88	10	0	33	957	51

[a] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[b] Stocks are totals as of end of period.
[c] See Note 4 at end of section.
(s)=Less than 500 barrels per day.
Note: Geographic coverage is the 50 States and the District of Columbia.

Sources: • **1973 through 1975:** U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys*, "Petroleum Statement, Annual." • **1976 through 1980:** Energy Information Administration (EIA), *Energy Data Reports*, Petroleum Statement, Annual." • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S8.

Table 3.10 Other Petroleum Products Supply and Disposition

	Supply		Disposition				
	Total Production	Imports	Stock Change[a]	Refinery Inputs	Exports	Products Supplied	Ending Stocks[b]
	Thousand Barrels per Day						Million Barrels
1973 Average	2,833	290	1	750	162	2,211	179
1974 Average	2,722	269	25	665	172	2,129	[c]188
1975 Average	2,547	144	[c]-6	537	158	2,001	188
1976 Average	2,725	129	(s)	524	172	2,158	188
1977 Average	2,939	130	20	514	164	2,371	195
1978 Average	3,076	80	-12	492	165	2,511	191
1979 Average	3,141	116	24	352	208	2,673	200
1980 Average	2,957	130	15	310	197	2,566	[c]205
1981 Average	2,771	188	[c]-42	723	197	2,081	241
1982 Average	2,475	305	-68	787	205	[d]1,857	[c]216
1983 Average	2,437	382	[c]-6	712	236	1,877	[c]217
1984 Average	2,500	503	[c]-32	791	236	2,007	198
1985 Average	2,532	550	22	886	227	1,947	206
1986 Average	2,704	504	-15	888	291	2,045	201
1987 Average	2,737	543	-1	829	264	2,187	200
1988 Average	2,773	645	22	799	294	2,303	208
1989 Average	2,771	627	12	797	305	2,285	213
1990 Average	2,842	705	-32	887	289	2,402	201
1991 January	2,653	748	204	844	317	2,036	207
February	2,668	573	363	726	275	1,876	217
March	2,576	551	151	819	239	1,919	222
April	2,724	607	133	753	228	2,217	226
May	2,853	800	198	900	327	2,228	232
June	3,030	615	-123	1,092	304	2,372	228
July	3,029	776	-143	1,081	321	2,545	224
August	2,993	642	-169	1,013	296	2,496	219
September	3,010	746	101	802	267	2,586	222
October	2,824	611	-218	944	211	2,498	215
November	2,750	850	-81	1,093	238	2,349	213
December	2,797	577	-163	1,147	304	2,085	208
Average	2,826	675	18	936	277	2,269	208
1992 January	2,702	734	203	787	272	2,175	214
February	2,642	575	183	883	240	1,911	219
March	2,752	713	238	730	239	2,258	227
April	2,900	793	-31	1,043	217	2,464	226
May	2,929	665	-113	910	199	2,598	222
June	3,126	669	-42	787	225	2,826	221
July	3,207	740	-156	996	284	2,822	216
August	3,068	729	-116	884	227	2,802	212
September	3,114	748	188	675	336	2,663	218
October	2,923	701	-182	954	295	2,557	212
November	2,915	697	-24	989	264	2,383	212
December	2,853	711	-165	1,223	352	2,154	[c]207
Average	2,928	707	-3	906	263	2,470	[c]207
1993 January	[e]3,026	698	[c]600	829	[e]271	[e]2,023	225
February	2,815	773	122	949	282	2,235	228
March	2,866	818	243	747	269	2,425	236
April	2,862	719	9	900	315	2,357	236
May	2,899	808	85	979	278	2,364	239
June	3,022	630	-240	981	278	2,632	231
July	3,116	875	116	945	302	2,628	235
7-Month Average	2,946	761	136	903	285	2,382	235
1992 7-Month Average	2,895	699	39	876	240	2,439	216
1991 7-Month Average	2,791	669	109	890	288	2,173	224

[a] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[b] Stocks are totals as of end of period.
[c] See Note 4 at end of section.
[d] See Note 6 at end of section.
[e] Beginning in 1993, other petroleum products production, exports, and products supplied include an adjustment to oxygenates and motor gasoline blending components.
(s)=Less than 500 barrels per day.

Notes: • Other petroleum products include pentanes plus, other hydrocarbons and oxygenates, unfinished oils, gasoline blending components, and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, jet fuel, and liquefied petroleum gases. • Geographic coverage is the 50 States and the District of Columbia.
Sources: • **1973-1980:** Energy Information Administration (EIA), *Petroleum Supply Monthly*, February 1993, Table S9. • **1981 forward:** EIA, *Petroleum Supply Monthly*, September 1993, Table S10.

Petroleum Notes

1. The Energy Information Administration (EIA) uses a number of sources and methods to maintain the survey respondent lists. On a regular basis, survey managers review such industry publications as the *Oil and Gas Journal* and *Oil Daily* for information on facilities or companies starting up or closing down operations. Those sources are augmented by articles in newspapers, letters from respondents indicating changes in status, and information received from survey systems.

To supplement routine frames maintenance and to provide more thorough coverage, a comprehensive frames investigation is conducted every 3 years. This investigation results in the reassessment and recompilation of the complete frame for each survey. The effort also includes the evaluation of the impact of potential frame changes on the historical time series of data published from these respondents. The results of this frame study are usually implemented in January to provide a full year under the same frame.

In 1991, the EIA conducted a frame identifier survey of companies that produce, blend, store, or import oxygenates. A summary of the results from the identification survey was published in the *Weekly Petroleum Status Report* dated February 12, 1992, and in the February 1992 issue of the *Petroleum Supply Monthly.* In order to continue to provide relevant information about U.S. and regional gasoline supply, the EIA conducted a second frame identifier survey of those companies during 1992. As a result, numerous respondents were added to the monthly surveys effective in January 1993. See Explanatory Note 7 in the *Petroleum Supply Monthly.*

2. **Motor Gasoline:** Beginning in January 1981, the EIA expanded its universe to include non-refinery blenders and separated blending components from finished motor gasoline as a reporting category. Also, survey forms were modified to describe refinery operations more accurately.

Beginning with the reporting of January 1993 data, the EIA made adjustments to the product supplied series for finished motor gasoline. It was recognized that motor gasoline statistics published by the EIA through 1992 were underreported because the reporting system was (1) not collecting all fuel ethanol blending, and (2) there was a misreporting of motor gasoline blending components that were blended into finished gasoline. The adjustments are incorporated into EIA's data beginning in January 1993. To facilitate data analysis across the 1992-1993 period, EIA has prepared a table of 1992 data adjusted according to the 1993 basis. See *Petroleum Supply Monthly,* March 1993, Table H3.

3. **Distillate and Residual Fuel Oils:** The requirement to report crude oil in pipelines or burned on leases as either distillate or residual fuel oil has been eliminated. Prior to January 1981, the refinery input of unfinished oils typically exceeded the available supply of unfinished oils. That discrepancy was assumed to be due to the redesignation of distillate and residual fuel oils received as such but used as unfinished oil inputs by the receiving refinery. The imbalance between supply and disposition of unfinished oils would then be subtracted from the production of distillate and residual fuel oils. Two-thirds of that difference was subtracted from distillate and one-third from residual. Beginning in January 1981, the EIA modified its survey forms to account for redesignated product and discontinued the above-mentioned adjustment.

Beginning in January 1993, the end-of-month stocks of distillate fuel oil are split into two sulfur categories (0.05 percent sulfur or less and greater than 0.05 percent sulfur) to meet Environmental Protection Agency requirements effective in October 1992. For further details, see the EIA, *Petroleum Supply Monthly.*

4. **New Stock Basis:** In January 1975, 1979, 1981, and 1983, numerous respondents were added to bulk terminal and pipeline surveys, affecting subsequent stocks reported and stock change calculations. Using the expanded coverage (new basis), the end-of-year stocks, in million barrels, would have been:

- Crude Oil: 1982—645 (Total) and 351 (Other Primary).
- Crude Oil and Petroleum Products: 1974—1,121; 1980—1,425; and 1982—1,461.
- Motor Gasoline: 1974—225; 1980—263; 1982—244 (Total) and 202 (Finished).
- Distillate Fuel Oil: 1974—224; 1980—205; and 1982—186.
- Residual Fuel Oil: 1974—75; 1980—91; and 1982—69.
- Jet Fuel: 1974—30 (Total) and 24 (Kerosene Type); 1980—42 (Total) and 36 (Kerosene Type); and 1982—39 (Total) and 32 (Kerosene Type).
- Liquefied Petroleum Gases: 1974—113; 1978—136; 1980—128; and 1982—102.
- Propane and Propylene: 1978—86; 1980—69; and 1982—57.
- Other Petroleum Products: 1974—190; 1980—207; and 1982—219.

Stock change calculations beginning in 1975, 1979, 1981, and 1983 were made by using new basis stock levels.

In January 1984, changes were made in the reporting of natural gas liquids. As a result, unfractionated stream, which was formerly included in the "Other Petroleum Products Supply and Disposition" table, is now reported on a component basis (ethane, propane, normal butane, isobutane, and pentanes plus). Most of these stocks now appear in the "Liquefied Petroleum Gases Supply

and Disposition" table. This change affects stocks reported and stock change calculations in each table. Under the new basis, end-of-year 1983 stocks, in million barrels, would have been:

- Liquefied Petroleum Gases: 1983—108.
- Propane and Propylene: 1983—55.
- Other Petroleum Products: 1983—210.

In January 1993, changes were made in the monthly surveys to begin collecting bulk terminal and pipeline stocks of oxygenates. This change affected stocks reported and stock change calculations. However, a new basis stock level was not calculated for 1992 end-of-year stocks.

5. Stocks of Alaskan Crude Oil: Stocks of Alaskan Crude oil in transit were included for the first time in January 1981. The major impact of this change is on the reporting of stock change calculations. Using the expanded coverage (new basis), 1980 end-of-year stocks, in million barrels, would have been 488 (Total) and 380 (Other Primary).

6. Data Discrepancies: Due to differences internal to EIA data processing systems, some small discrepancies exist between data in the *Monthly Energy Review* (*MER*) and the *Petroleum Supply Annual* (*PSA*) and *Petroleum Supply Monthly* (*PSM*). The data that have discrepancies are footnoted in Section 3 tables and summarized here.

Table	Data Series	Year Average	*MER* Data	*PSA* and *PSM* Data
3.1a	Natural Gas Plant Production	1976	1,604	1,603
3.1b	Exports, Total	1979	471	472
3.1b	Exports, Petroleum Products	1979	236	237
3.1b	Net Imports	1979	7,985	7,984
3.2a	Crude Used Directly	1976	-19	-18
3.2a	Imports, SPR	1978	161	162
3.2a	Crude Used Directly	1978	-15	-14
3.2a	Crude Used Directly	1979	-14	-13
3.2a	Crude Used Directly	1980	-14	-13
3.2b	Crude Losses	1976	14	15
3.2b	Crude Losses	1980	14	15
3.5	Stock Change	1974	10	9
3.5	Stock Change	1975	-41	-40
3.8	Total Production	1982	1,527	1,525
3.10	Products Supplied	1982	1,857	1,856

Section 4. Natural Gas

Total dry natural gas production in the United States during July 1993 was an estimated 1.5 trillion cubic feet, 4 percent[4] higher than production during the previous July.

Consumption of natural and supplemental gas in July 1993 was 1.3 trillion cubic feet, 1 percent below the level in July 1992.

Deliveries to residential consumers in June 1993 (latest date for which data are available) were 163 billion cubic feet, 1 percent higher than the previous June's deliveries. Total deliveries to residential consumers in the first half of 1993 were up 8 percent over deliveries during the first half of 1992. Total deliveries to industrial consumers during June 1993 were 582 billion cubic feet, slightly less than the previous June's level. During the first half of 1993, deliveries to industrial consumers were down 2 percent from deliveries during the first half of 1992.

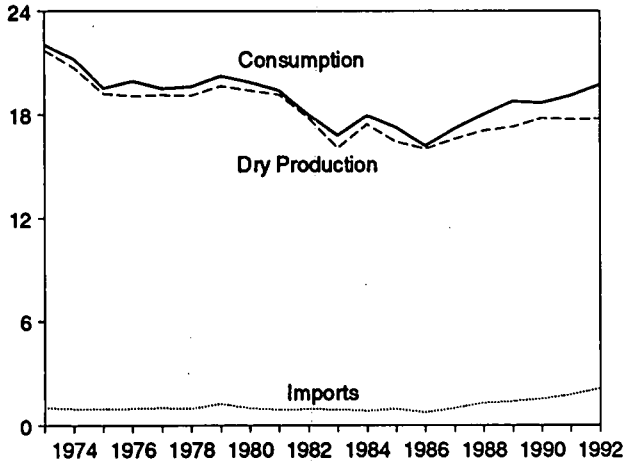
Imports of natural gas in July 1993 were 192 billion cubic feet, 15 percent higher than imports in the previous July.

Stocks of working gas[5] in underground natural gas storage reservoirs at the end of July 1993 totaled 2.5 trillion cubic feet, 1 percent above the level of stocks available 1 year earlier. Net injections into storage during July 1993 were 358 billion cubic feet, 19 percent above the amount injected during the previous July.

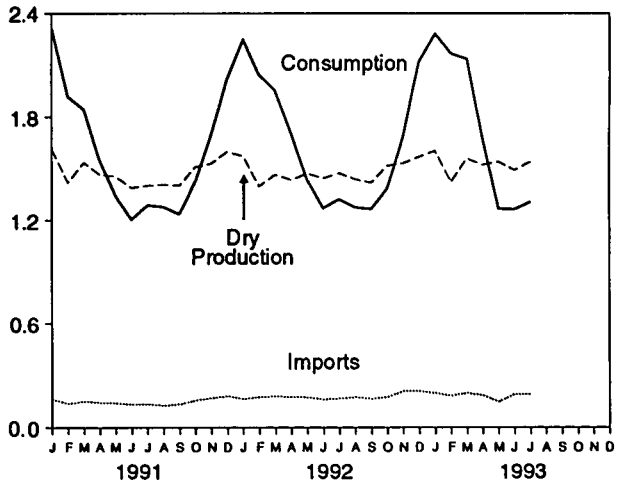
[4]Percentage changes are based on unrounded data.
[5]Gas available for withdrawal.

Figure 4.1 Natural Gas
(Trillion Cubic Feet)

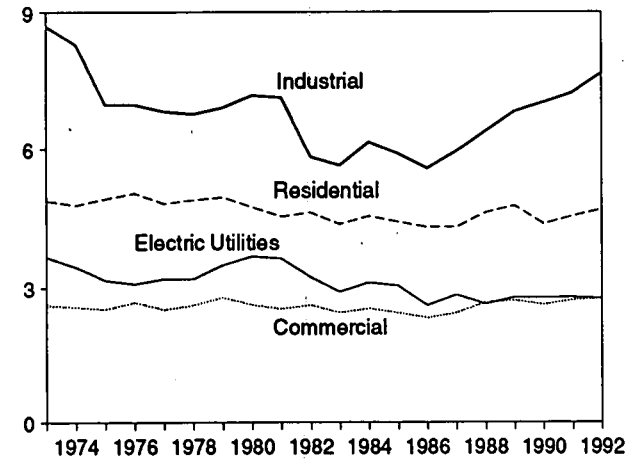
Overview, 1973-1992



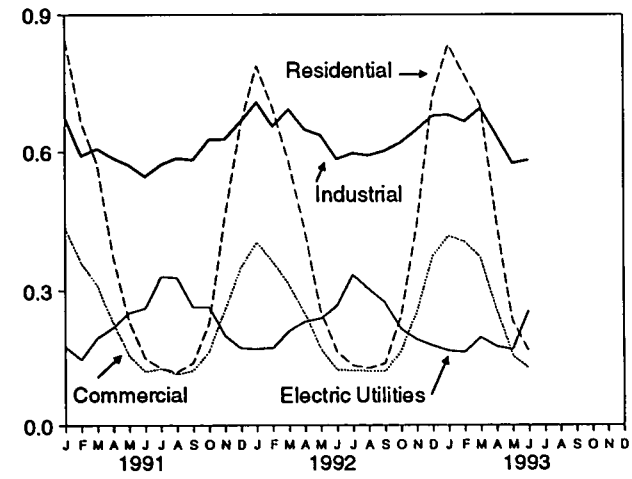
Overview, Monthly



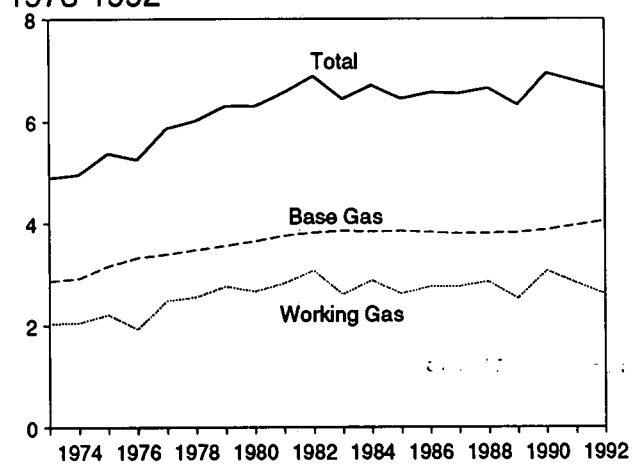
Consumption by Sector, 1973-1992



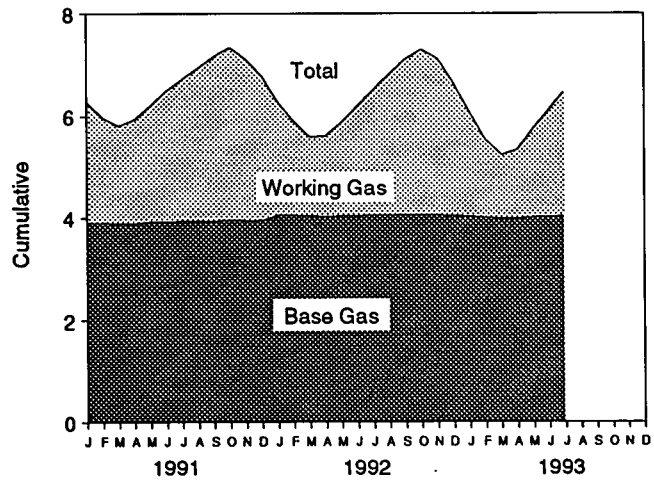
Consumption by Sector, Monthly



Underground Storage, End of Year, 1973-1992



Underground Storage, End of Month



Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 4.2, 4.3, and 4.4.

Table 4.1 Natural Gas Production

(Billion Cubic Feet)

	Gross Withdrawals[a]	Repressuring[b]	Nonhydrocarbon Gases Removed[c]	Vented and Flared[d]	Marketed Production (Wet)[e]	Extraction Loss[f]	Total Dry Gas Production[g]
1973 Total	24,067	1,171	NA	248	[h] 22,648	917	[h] 21,731
1974 Total	22,850	1,080	NA	169	[h] 21,601	887	[h] 20,713
1975 Total	21,104	861	NA	134	[h] 20,109	872	[h] 19,236
1976 Total	20,944	859	NA	132	[h] 19,952	854	[h] 19,098
1977 Total	21,097	935	NA	137	[h] 20,025	863	[h] 19,163
1978 Total	21,309	1,181	NA	153	[h] 19,974	852	[h] 19,122
1979 Total	21,883	1,245	NA	167	[h] 20,471	808	[h] 19,663
1980 Total	21,870	1,365	199	125	20,180	777	19,403
1981 Total	21,587	1,312	222	98	19,956	775	19,181
1982 Total	20,272	1,388	208	93	18,582	762	17,820
1983 Total	18,659	1,458	222	95	16,884	790	16,094
1984 Total	20,267	1,630	224	108	18,304	838	17,466
1985 Total	19,607	1,915	326	95	17,270	816	16,454
1986 Total	19,131	1,838	337	98	16,859	800	16,059
1987 Total	20,140	2,208	376	124	17,433	812	16,621
1988 Total	20,999	2,478	460	143	17,918	816	17,103
1989 Total	21,074	2,475	362	142	18,095	785	17,311
1990 Total	21,523	2,489	289	150	18,594	784	17,810
1991 January	1,963	235	24	13	1,692	76	1,616
February	1,741	221	22	12	1,487	67	1,420
March	1,894	245	24	13	1,612	72	1,539
April	1,804	234	21	14	1,536	69	1,467
May	1,791	227	23	15	1,526	69	1,458
June	1,717	226	22	14	1,455	65	1,389
July	1,744	236	23	16	1,469	66	1,403
August	1,744	231	23	15	1,474	66	1,408
September	1,720	214	24	14	1,468	66	1,402
October	1,868	245	23	15	1,585	71	1,513
November	1,869	226	23	15	1,605	72	1,533
December	1,948	231	24	15	1,678	75	1,603
Total	21,803	2,772	276	170	18,586	835	17,751
1992 January	1,941	248	24	16	1,653	75	1,578
February	1,741	242	22	13	1,464	66	1,398
March	1,835	261	22	14	1,537	69	1,468
April	1,790	248	23	14	1,505	68	1,437
May	1,829	249	22	14	1,544	70	1,475
June	1,794	242	22	14	1,515	68	1,447
July	1,827	242	23	15	1,547	70	1,477
August	1,790	242	22	14	1,510	68	1,442
September	1,774	252	20	15	1,487	67	1,420
October	1,891	261	23	14	1,593	72	1,521
November	1,905	259	23	15	1,608	73	1,536
December	[R] 1,960	273	23	15	[R] 1,649	74	[R] 1,574
Total	[R] 22,076	3,019	269	174	[R] 18,614	840	[R] 17,775
1993 January	1,992	269	22	15	1,686	76	1,610
February	1,774	245	22	14	1,493	67	1,426
March	1,938	265	21	14	1,638	74	1,564
April	[R] 1,894	[R] 256	23	16	[R] 1,600	72	[R] 1,527
May	[R] 1,915	259	[R] 23	15	[R] 1,618	[R] 73	[R] 1,545
June	[E] 1,859	[E] 256	[E] 22	[E] 14	[E] 1,567	[E] 71	[E] 1,496
July	[E] 1,905	[E] 252	[E] 22	[E] 15	[E] 1,616	[E] 73	[E] 1,543
7-Month Total	[E] 13,277	[E] 1,802	[E] 155	[E] 101	[E] 11,219	[E] 506	[E] 10,713
1992 7-Month Total	12,757	1,732	158	100	10,767	486	10,281
1991 7-Month Total	12,654	1,625	158	96	10,776	484	10,292

[a] Gas withdrawn from gas and oil wells.

[b] The injection of natural gas into oil and gas formations for pressure maintenance and cycling purposes.

[c] See Note 1 at end of section.

[d] Vented: Natural gas released into the air on the base site or at processing plants. Flared: Natural gas burned in flares on the base site or at gas processing plants.

[e] "Gross Withdrawals" minus "Repressuring," "Nonhydrocarbon Gases Removed," and "Vented and Flared." See Note 2 at end of section.

[f] See Note 3 at end of section.

[g] "Marketed Production (Wet)" minus "Extraction Loss."

[h] May include unknown quantities of nonhydrocarbon gases.

R=Revised data. NA=Not available. E=Estimate.

Notes: • Geographic coverage is the 50 States and the District of Columbia.
• Totals may not equal sum of components due to independent rounding.

Sources: • 1973-1986: Energy Information Administration (EIA), *Natural Gas Annual 1991*, Table 95. • 1987 forward: EIA, *Natural Gas Monthly*, September 1993, Table 1.

Table 4.2 Natural Gas Supply and Disposition

(Billion Cubic Feet)

	Supply						Disposition		
	Total Dry Gas Production	Withdrawals from Storage[a]	Supplemental Gaseous Fuels[b]	Imports[b]	Balancing Item[b]	Total Supply/ Disposition[c]	Additions to Storage[a]	Exports[b]	Consumption[b]
1973 Total	[d] 21,731	1,533	NA	1,033	-196	24,101	1,974	77	22,049
1974 Total	[d] 20,713	1,701	NA	959	-289	23,084	1,784	77	21,223
1975 Total	[d] 19,236	1,760	NA	953	-235	21,714	2,104	73	19,538
1976 Total	[d] 19,098	1,921	NA	964	-216	21,767	1,756	65	19,946
1977 Total	[d] 19,163	1,750	NA	1,011	-41	21,883	2,307	56	19,521
1978 Total	[d] 19,122	2,158	NA	966	-287	21,958	2,278	53	19,627
1979 Total	[d] 19,663	2,047	NA	1,253	-372	22,591	2,295	56	20,241
1980 Total	19,403	1,972	155	985	-640	21,875	1,949	49	19,877
1981 Total	19,181	1,930	176	904	-500	21,691	2,228	59	19,404
1982 Total	17,820	2,164	145	933	-537	20,525	2,472	52	18,001
1983 Total	16,094	2,270	132	918	[e] -703	18,712	1,822	55	16,835
1984 Total	17,466	2,098	110	843	[e] -217	20,300	2,295	55	17,951
1985 Total	16,454	2,397	126	950	-428	19,499	2,163	55	17,281
1986 Total	16,059	1,837	113	750	-493	18,266	1,984	61	16,221
1987 Total	16,621	1,905	101	993	-444	19,176	1,911	54	17,211
1988 Total	17,103	2,270	101	1,294	-453	20,315	2,211	74	18,030
1989 Total	17,311	2,854	107	1,382	-218	21,435	2,528	107	18,801
1990 Total	17,810	1,986	123	1,532	-149	21,302	2,499	86	18,716
1991 January	1,616	682	11	163	-39	2,433	115	10	2,308
February	1,420	409	10	138	67	2,044	112	11	1,920
March	1,539	297	11	151	-11	1,987	129	10	1,848
April	1,467	104	10	144	69	1,793	234	9	1,550
May	1,458	58	9	141	17	1,683	331	8	1,344
June	1,389	42	8	133	-34	1,538	326	7	1,206
July	1,403	75	9	135	-25	1,597	299	8	1,291
August	1,408	82	9	127	-44	1,582	290	10	1,281
September	1,402	78	8	134	-69	1,552	304	11	1,238
October	1,513	103	10	157	-85	1,698	258	14	1,426
November	1,533	360	9	169	-207	1,864	150	15	1,699
December	1,603	461	10	181	-95	2,160	125	18	2,018
Total	17,751	2,752	113	1,773	-457	21,932	2,672	129	19,129
1992 January	1,578	[R] 571	12	165	[R] -5	[R] 2,321	[R] 55	16	2,249
February	1,398	[R] 433	11	175	[R] 90	[R] 2,107	[R] 48	14	2,045
March	1,468	370	11	180	[R] 18	[R] 2,048	[R] 71	23	1,955
April	1,437	[R] 141	10	176	121	[R] 1,884	159	18	1,708
May	1,475	[R] 51	9	174	[R] 70	1,779	[R] 322	19	[R] 1,438
June	1,447	[R] 35	8	162	[R] -8	[R] 1,645	[R] 353	18	[R] 1,274
July	1,477	52	8	167	[R] -12	[R] 1,693	[R] 351	16	[R] 1,326
August	1,442	[R] 59	9	175	[R] -34	[R] 1,651	[R] 355	18	[R] 1,278
September	1,420	52	9	166	-23	1,624	336	18	[R] 1,269
October	1,521	[R] 81	10	176	-121	1,667	262	19	1,385
November	1,536	267	11	210	[R] -226	[R] 1,799	[R] 93	19	1,688
December	[R] 1,574	[R] 537	12	209	-133	[R] 2,200	57	19	[R] 2,124
Total	[R] 17,775	[R] 2,649	120	2,138	[R] -264	[R] 22,418	[R] 2,463	216	[R] 19,739
1993 January	1,610	[R] 605	13	198	-75	[R] 2,351	[R] 50	18	2,283
February	1,426	581	11	183	[R] 13	[R] 2,215	30	15	[R] 2,169
March	1,564	[R] 384	12	199	[R] 78	[R] 2,238	[R] 80	18	[R] 2,139
April	[R] 1,527	[R] 111	10	185	[R] 71	[R] 1,905	[R] 219	11	[R] 1,675
May	[R] 1,545	25	8	148	[R] 5	[R] 1,731	[R] 447	13	[R] 1,270
June	[E] 1,496	43	9	193	[R] -46	[R] 1,696	[R] 416	13	[R] 1,267
July	[E] 1,543	47	9	192	-62	1,730	405	15	1,310
7-Month Total	[E] 10,713	1,797	71	1,298	-15	13,864	1,647	105	12,113
1992 7-Month Total	10,281	1,653	69	1,200	273	13,477	1,360	123	11,994
1991 7-Month Total	10,292	1,668	67	1,006	44	13,075	1,545	61	11,467

[a] Data for 1980-1991 include underground storage and liquefied natural gas storage. All other data include underground storage only. Computation procedures are discussed in Note 8 at end of section.

[b] See Notes at end of section.

[c] Data for 1978 forward do not include in-transit receipts and deliveries.

[d] May include unknown quantities of nonhydrocarbon gases.

[e] See Note 7 at end of section.

R=Revised data. NA=Not available. E=Estimate.

Notes: • Geographic coverage is the 50 States and the District of Columbia.

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

Sources: • **1973-1986: Total Dry Gas Production**—Energy Information Administration (EIA), *Natural Gas Annual 1991*, Table 95. **Withdrawals from Storage, 1973-1975 and 1980-1986**—EIA, *Natural Gas Annual 1991*, Table 96. **Withdrawals from Storage, 1976-1979**—EIA, *Natural Gas Production and Consumption 1979*, Table 1. **Supplemental Gaseous Fuels, 1980-1986**—EIA, *Natural Gas Annual 1990*, Volume 2, Table 12. **Imports, Additions to Storage, Exports, and Consumption**—EIA, *Natural Gas Annual 1991*, Table 96. **Total Supply/Disposition**—Sum of disposition items. **Balancing Item**—Total supply/disposition minus all other supply items. • **1987 forward:** EIA, *Natural Gas Monthly*, September 1993, Table 2.

Table 4.3 Natural Gas Consumption by End-Use Sector

(Billion Cubic Feet)

	Lease and Plant Fuel	Pipeline Fuel[a]	Delivered to Consumers					Total Consumption
			Residential	Commercial	Industrial	Electric Utilities	Total	
1973 Total	1,496	728	4,879	2,597	8,689	3,660	19,825	22,049
1974 Total	1,477	669	4,786	2,556	8,292	3,443	19,077	21,223
1975 Total	1,396	583	4,924	2,508	6,968	3,158	17,558	19,538
1976 Total	1,634	548	5,051	2,668	6,964	3,081	17,764	19,946
1977 Total	1,659	533	4,821	2,501	6,815	3,191	17,329	19,521
1978 Total	1,648	530	4,903	2,601	6,757	3,188	17,449	19,627
1979 Total	1,499	601	4,965	2,786	6,899	3,491	18,141	20,241
1980 Total	1,026	635	4,752	2,611	7,172	3,682	18,216	19,877
1981 Total	928	642	4,546	2,520	7,128	3,640	17,834	19,404
1982 Total	1,109	596	4,633	2,606	5,831	3,226	16,295	18,001
1983 Total	978	490	4,381	2,433	5,643	2,911	15,367	16,835
1984 Total	1,077	529	4,555	2,524	6,154	3,111	16,345	17,951
1985 Total	966	504	4,433	2,432	5,901	3,044	15,811	17,281
1986 Total	923	485	4,314	2,318	5,579	2,602	14,814	16,221
1987 Total	1,149	519	4,315	2,430	5,953	2,844	15,542	17,211
1988 Total	1,096	614	4,630	2,670	6,383	2,636	16,320	18,030
1989 Total	1,070	629	4,781	2,718	6,816	2,787	17,102	18,801
1990 Total	1,236	660	4,391	2,623	7,018	2,787	16,820	18,716
1991 January	104	81	844	434	672	173	2,123	2,308
February	92	68	664	359	591	146	1,761	1,920
March	100	65	573	311	607	193	1,683	1,848
April	95	55	373	226	586	216	1,400	1,550
May	94	47	229	154	571	249	1,202	1,344
June	90	42	148	119	546	260	1,073	1,206
July	92	45	126	125	572	330	1,153	1,291
August	92	45	118	113	586	328	1,144	1,281
September	91	44	138	121	582	263	1,104	1,238
October	98	50	225	163	626	263	1,278	1,426
November	99	60	459	256	627	198	1,540	1,699
December	103	71	658	350	665	170	1,844	2,018
Total	1,150	674	4,556	2,730	7,231	2,789	17,305	19,129
1992 January	102	79	787	405	707	169	2,067	2,249
February	91	72	695	362	655	170	1,882	2,045
March	95	69	578	313	692	208	1,791	1,955
April	93	60	431	247	648	229	1,554	1,708
May	96	51	251	168	R636	236	R1,291	R1,438
June	94	45	162	123	R584	266	R1,135	R1,274
July	96	47	132	121	R597	334	R1,183	R1,326
August	94	45	126	120	R592	303	R1,140	R1,278
September	92	45	137	119	R602	274	R1,132	R1,269
October	99	49	241	164	620	213	1,238	1,385
November	100	59	439	252	647	189	1,528	1,688
December	102	75	719	374	R678	176	R1,947	R2,124
Total	1,154	696	4,699	2,767	R7,657	2,766	R17,889	R19,739
1993 January	105	80	834	419	680	164	2,098	2,283
February	93	76	766	406	R666	162	R2,000	R2,169
March	102	R75	702	372	R694	194	R1,962	R2,139
April	99	59	R450	R257	R636	174	R1,516	R1,675
May	R100	45	230	153	575	167	R1,125	R1,270
June	97	45	163	126	582	255	1,125	R1,267
6-Month Total	595	381	3,146	1,732	3,833	1,115	9,827	10,803
1992 6-Month Total	572	376	2,905	1,616	3,921	1,278	9,721	10,668
1991 6-Month Total	575	359	2,831	1,601	3,573	1,238	9,242	10,176

[a] Natural gas consumed in the operation of pipelines, primarily in compressors.

R=Revised data.

Notes: • Natural gas includes supplemental gaseous fuels. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • 1973-1986: Energy Information Administration (EIA), *Natural Gas Annual 1991*, Table 97. • 1987 forward: EIA, *Natural Gas Monthly*, September 1993, Table 3.

Table 4.4 Natural Gas in Underground Storage

(Volumes in Billion Cubic Feet)

	Natural Gas in Underground Storage, End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total[a]	Volume	Percent	Injections[b]	Withdrawals[b]	Net[c]
1973 Total	2,864	2,034	4,898	305	17.6	1,974	1,533	442
1974 Total	2,912	2,050	4,962	16	.8	1,784	1,701	84
1975 Total	3,162	2,212	5,374	162	7.9	2,104	1,760	344
1976 Total	3,323	1,926	5,250	-286	-12.9	1,756	1,921	-165
1977 Total	3,391	2,475	5,866	549	28.5	2,307	1,750	557
1978 Total	3,473	2,547	6,020	72	2.9	2,278	2,158	120
1979 Total	3,553	2,753	6,306	207	8.1	2,295	2,047	248
1980 Total	3,642	2,655	6,297	-99	-3.6	1,896	1,910	-14
1981 Total	3,752	2,817	6,569	162	6.1	2,180	1,887	293
1982 Total	3,808	3,071	6,879	255	9.0	2,399	2,094	306
1983 Total	3,847	2,595	6,442	-476	-15.5	1,700	2,142	-442
1984 Total	3,830	2,876	6,706	281	10.8	2,252	2,064	188
1985 Total	3,842	2,607	6,448	-270	-9.4	2,128	2,359	-231
1986 Total	3,819	2,749	6,567	142	5.5	1,952	1,812	140
1987 Total	3,792	2,756	6,548	7	.3	1,887	1,881	6
1988 Total	3,800	2,850	6,650	94	3.4	2,174	2,244	-69
1989 Total	3,812	2,513	6,325	-337	-11.8	2,491	2,804	-313
1990 Total	3,868	3,068	6,936	555	22.1	2,433	1,934	499
1991 January	3,911	2,362	6,273	92	4.1	115	659	-545
February	3,908	2,063	5,972	59	2.9	112	397	-285
March	3,895	1,912	5,806	37	2.0	129	291	-162
April	3,898	2,037	5,935	91	4.7	228	104	124
May	3,931	2,273	6,204	93	4.3	319	58	261
June	3,939	2,553	6,492	68	2.7	314	42	272
July	3,942	2,771	6,713	-20	-.7	289	75	214
August	3,949	2,978	6,927	-93	-3.0	282	82	200
September	3,950	3,201	7,151	-120	-3.6	294	78	216
October	3,961	3,369	7,330	-98	-2.8	251	103	148
November	3,952	3,148	7,100	-324	-9.3	150	352	-202
December	3,954	2,824	6,778	-244	-8.0	125	448	-323
Total	3,954	2,824	6,778	-244	-8.0	2,608	2,689	-80
1992 January	4,060	R2,216	R6,276	R-146	-6.2	R55	R571	-515
February	4,056	R1,837	R5,893	R-226	R-10.9	R48	R433	R-385
March	4,045	1,545	R5,590	-367	-19.2	R71	370	R-300
April	4,037	R1,573	R5,610	R-464	-22.8	159	R141	R18
May	4,043	R1,848	R5,891	R-425	R-18.7	R322	R51	271
June	4,049	R2,153	R6,202	R-400	-15.7	R353	R35	318
July	4,063	R2,460	R6,523	R-311	R-11.2	R351	52	R300
August	R4,061	R2,761	R6,822	R-217	-7.3	R355	R59	R295
September	R4,060	R3,044	R7,104	R-157	R-4.9	336	52	285
October	R4,064	R3,223	R7,287	R-146	R-4.3	262	R81	R181
November	R4,060	R3,054	R7,113	R-94	R-3.0	R93	267	R-174
December	R4,043	R2,597	R6,639	R-227	-8.1	57	R537	R-479
Total	R4,043	R2,597	R6,639	R-227	-8.1	R2,463	R2,649	R-186
1993 January	R4,039	R2,045	R6,084	R-170	R-7.7	R50	R605	R-556
February	R4,013	R1,519	R5,531	R-319	R-17.4	30	581	R-552
March	R3,992	R1,237	R5,228	R-308	R-19.9	R80	R384	-304
April	R3,998	R1,335	R5,333	R-238	R-15.1	R219	R111	R108
May	4,016	R1,737	R5,754	R-111	R-6.0	R447	25	423
June	R4,028	R2,100	R6,127	R-53	-2.5	R416	43	R372
July	4,029	2,473	6,502	13	.5	405	47	358

[a] Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1975--6,280 (first year for which data are available); 1976--6,544; 1977--6,678; 1978--6,890; 1979--6,929; 1980--7,434; 1981--7,805; 1982--7,915; 1983--7,985; 1984--8,043; 1985--8,087; 1986--8,145; 1987, 1988, and 1989--8,124; 1990--8,125; 1991--7,993; and 1992--7,932. Current capacity remains at 7,932.

[b] For 1980-1991, data differ from those shown on Table 4.2, which includes liquefied natural gas storage for that period.

[c] Positive numbers indicate injections are greater than withdrawals. Negative numbers indicate withdrawals are greater than injections. Net injections or withdrawals may not equal the difference between applicable ending stocks. See Note 8 at end of section.

R=Revised data.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **Storage Activity: 1973-1975**—Energy Information Administration (EIA), *Natural Gas Annual 1990, Volume 2*, Table 9. **1976-1979**—EIA, *Natural Gas Production and Consumption 1979*, Table 1. **1980-1986**—EIA, *Natural Gas Annual 1990, Volume 2*, Table 11. **1987 forward**—EIA, *Natural Gas Monthly*, September 1993, Table 13. • **Other Data: 1973 and 1974**—American Gas Association (AGA), *Gas Facts, 1972 Data*, Table 57, *Gas Facts, 1973 Data*, Table 57, and *Gas Facts, 1974 Data, Table 40*. **1975 and 1976**—Federal Energy Administration (FEA), Form FEA-G318-M-0, "Underground Gas Storage Report," and Federal Power Commission (FPC), Form FPC-8, "Underground Gas Storage Report." **1977 and 1978**—EIA, Form FEA-G318-M-0, "Underground Gas Storage Report," and Federal Energy Regulatory Commission (FERC), Form FERC-8, "Underground Gas Storage Report." **1979-1986**—EIA, Form EIA-191, "Underground Gas Storage Report," and FERC, Form FERC-8, "Underground Gas Storage Report." **1987 forward**—EIA, *Natural Gas Monthly*, September 1993, Table 13.

Natural Gas Notes

1. Nonhydrocarbon Gases Removed: Annual data on nonhydrocarbon gases removed from marketed production—carbon dioxide, helium, hydrogen sulfide, and nitrogen—are from the Energy Information Administration (EIA) *Natural Gas Annual (NGA) 1991*. Data are not available for periods prior to 1980. Monthly data are reported by three States and computed for six States. Monthly data are preliminary until after publication of the EIA *NGA*. Differences between annual data published in the EIA *NGA* and the sum of the preliminary monthly data (January-December) are allocated proportionally to the months to create final monthly data. For further information on methods of estimating preliminary monthly data, see the EIA *Natural Gas Monthly (NGM)*.

2. Production.

- Annual data: Final annual data are from the EIA *NGA*.
- Estimated monthly data: Data for the two most recent months presented are estimated. Some of the data for earlier months are also estimated or computed. For a discussion of computation and estimation procedures, see the EIA *NGM*.
- Preliminary monthly data: Monthly data are considered preliminary until after publication of the EIA *NGA*. Preliminary monthly data are gathered from reports to the Interstate Oil Compact Commission and the U.S. Minerals Management Service. Volumetric data are converted, as necessary, to a standard 14.73 psi pressure base. Unless there are major changes, data are not revised until after publication of the EIA *NGA*.
- Final monthly data: Differences between annual data in the EIA *NGA* and the sum of preliminary monthly data (January-December) are allocated proportionally to the months to create final monthly data.

3. Extraction Loss: Extraction loss is the reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants.

Annual data for extraction loss are from the EIA *NGA*, where they are estimated on the basis of the type and quantity of liquid products extracted from the gas stream and the calculated volume of such products at standard conditions. For a detailed explanation of the calculations used to derive estimated extraction losses, see the EIA *NGA*.

Preliminary monthly data are estimated on the basis of extraction loss as an annual percentage of marketed production. This percentage is applied to each month's marketed production to estimate monthly extraction loss.

Monthly data are revised and considered final after the publication of the EIA *NGA*. Final monthly data are estimated by allocating annual extraction loss data to the months on the basis of total natural gas marketed production data from the EIA *NGA*.

4. Supplemental Gaseous Fuels: Any gaseous substance that, introduced into or commingled with natural gas, increases the volume available for disposition. Such substances include, but are not limited to, propane-air, refinery gas, coke oven gas, still gas, manufactured gas, biomass gas, or air or inert gases added for Btu stabilization.

Annual data beginning with 1980 are from the EIA *NGA*. Unknown quantities of supplemental gaseous fuels are included in consumption data for 1979 and earlier years.

Monthly data are considered preliminary until after the publication of the EIA *NGA*. Monthly estimates are based on the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. The ratio is applied to the monthly sum of the three elements to compute a monthly supplemental gaseous fuels figure.

5. Imports and Exports: The United States imported natural gas via pipeline from Mexico (until 1984) and Canada and liquefied natural gas (LNG) (except in 1986) via tanker from Algeria. One shipment of LNG was received in December 1986 from Indonesia. The United States exports natural gas via pipeline to Mexico and Canada and LNG via tanker to Japan.

Annual and final monthly data are from the annual Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas," which requires data to be reported by month for the calendar year.

Preliminary monthly data are EIA estimates. For a discussion of estimation procedures, see the EIA *NGM*. Preliminary data are revised after the publication of the EIA *U.S. Imports and Exports of Natural Gas*.

6. Consumption: Consumption includes pipeline fuel use, lease and plant fuel use, and deliveries to consuming sectors.

Final data are from the EIA *NGA*. Monthly data are considered preliminary until after publication of the EIA *NGA*. For more detailed information on the methods of estimating preliminary and final monthly data, see the EIA *NGM*.

7. Balancing Item: The balancing item for natural gas represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas disposition. The differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include

differences due to the net result of conversions of flow data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period-time frames; and imbalances resulting from the merger of data reporting systems which vary in scope, format, definitions, and type of respondents.

The increase of 0.2 trillion cubic feet (Tcf) in the "Balancing Item" category in 1983, followed by a decline of 0.5 Tcf in 1984, reflected unusually large differences resulting from the use of the annual billing cycle (essentially December 15 through the following December 14) consumption data in conjunction with calendar year supply data. Record cold temperatures during the last half of December 1983 resulted in a reported 0.3 Tcf increase in net withdrawals from underground storage for peak shaving as compared with the same period in 1982, but the effect of this cold weather was reflected primarily in 1984 consumption data. For underground storage data, see Table F2 in the May 1985 *NGM*, which was published in July 1985.

8. Natural Gas Storage: Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals from the quantity in storage at the end of the previous period. The difference is due to changes in the quantity of native gas included in the base gas and/or losses in base gas due to migration from storage reservoirs.

Monthly underground storage data are collected from the Forms FERC-8 (interstate data) and EIA-191 (intrastate data). Beginning in January 1991, all data are collected on the revised Form EIA-191. Injection and withdrawal data from the FERC-8/EIA-191 survey are adjusted to correspond to data from Form EIA-176 following publication of the EIA *NGA*.

The final monthly and annual storage and withdrawal data for 1980-1989 include both underground and liquefied natural gas (LNG) storage. Annual data on LNG additions and withdrawals are from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying the ratio to the annual LNG data.

Section 5. Oil and Gas Resource Development

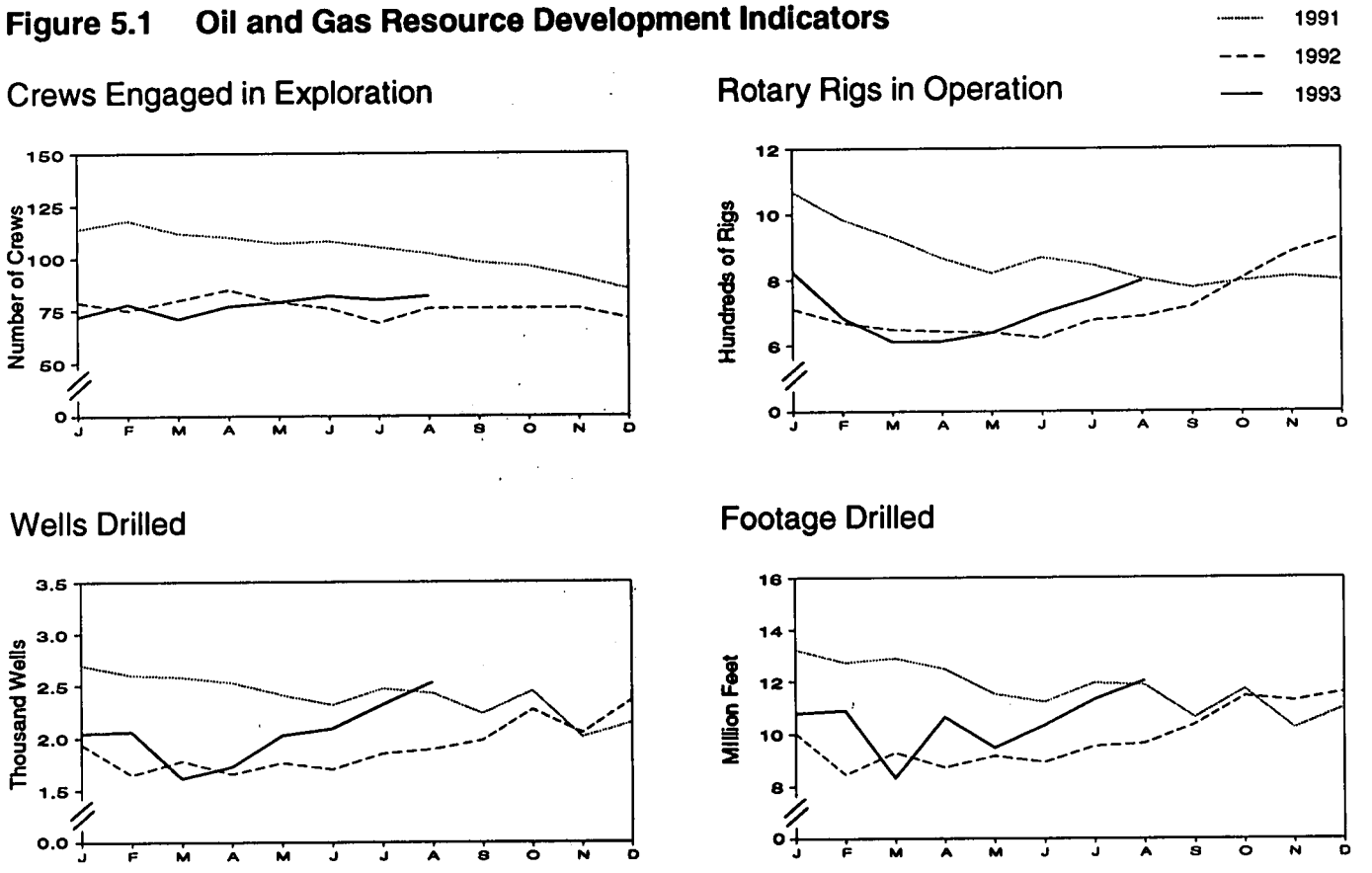
A total of 82 seismic exploration crews were active in August 1993, 6 more crews than were active during the previous year. Of the total, 66 were land crews and 16 were aboard marine vessels. The number of land crews was down by 1, and the number of operating marine vessels increased by 7 vessels from the August 1992 count.

The August 1993 rotary rig count of 797 was 8 percent higher than the count in the previous month and 16 percent higher than the count in August 1992. Of the total number of rigs in operation, 710 were onshore and 87 were offshore. The number of onshore rigs was up 12 percent from the number in August 1992, and the number of offshore rigs was up 71 percent.

Total footage drilled in August 1993 was 12.02 million feet, up 6 percent from footage drilled in July 1993 and up 25 percent from that drilled in August 1992.

The estimated number of exploratory and development gas and oil wells drilled during August 1993 was 1,801, 7 percent higher than the number drilled in July 1993 and 40 percent higher than the number drilled in August 1992. The estimated number of oil wells drilled was 828 and the estimated number of gas wells was 973, up 26 percent and 54 percent, respectively, from the August 1992 levels. The estimated number of dry holes drilled in August 1993 was 731, 16 percent higher than the number drilled in July 1993 and 22 percent higher than the number drilled in August 1992.

Figure 5.1 Oil and Gas Resource Development Indicators



Sources: Tables 5.1 and 5.2.

Table 5.1 Oil and Gas Drilling Activity Measurements

	Crews Engaged in Seismic Exploration			Rotary Rigs in Operation[a]					Total Footage Drilled[c]	Active Well Servicing Units[d]
				By Site		By Type				
	Offshore	Onshore	Total	Offshore	Onshore	Oil	Gas	Total[b]		
	Monthly Average			Weekly Average					Thousand Feet	Number
1973 Average	23	227	250	84	1,110	NA	NA	1,194	139,427	NA
1974 Average	31	274	305	94	1,378	NA	NA	1,472	153,791	NA
1975 Average	30	254	284	106	1,554	NA	NA	1,660	181,046	NA
1976 Average	25	237	262	129	1,529	NA	NA	1,658	187,291	2,601
1977 Average	27	281	308	167	1,834	NA	NA	2,001	215,696	2,828
1978 Average	25	327	352	185	2,074	NA	NA	2,259	238,388	2,988
1979 Average	30	370	400	207	1,970	NA	NA	2,177	243,686	3,399
1980 Average	37	493	530	231	2,678	NA	NA	2,909	312,303	4,089
1981 Average	44	637	681	256	3,714	NA	NA	3,970	408,842	4,850
1982 Average	57	531	588	243	2,862	NA	NA	3,105	378,437	4,248
1983 Average	47	426	473	199	2,033	NA	NA	2,232	318,585	3,732
1984 Average	49	445	494	213	2,215	NA	NA	2,428	370,730	4,663
1985 Average	45	333	378	206	1,774	NA	NA	1,980	312,569	4,716
1986 Average	24	176	200	99	865	NA	NA	964	177,486	3,036
1987 Average	24	153	177	95	841	NA	NA	936	161,226	3,060
1988 Average	29	153	182	123	813	554	354	936	153,340	3,341
1989 Average	23	109	132	105	764	453	401	869	133,383	3,391
1990 Average	23	102	125	108	902	532	464	1,010	149,378	3,658
1991 January	22	92	114	91	977	633	413	1,068	13,243	3,579
February	21	97	118	88	896	564	405	984	12,738	3,512
March	24	88	112	81	848	520	389	929	12,905	3,444
April	23	87	110	95	770	469	374	865	12,490	3,416
May	22	85	107	98	721	430	354	819	11,514	3,394
June	21	87	108	93	774	483	342	867	11,214	3,363
July	16	89	105	80	764	472	332	844	11,940	3,369
August	15	87	102	68	735	451	326	803	[R]11,861	3,257
September	14	84	98	71	704	433	314	775	10,623	3,208
October	15	81	96	68	727	433	330	795	11,694	3,138
November	18	73	91	72	736	457	328	808	10,215	3,113
December	19	66	85	65	731	469	308	796	10,980	3,183
Average	19	85	104	81	779	482	351	860	[R]141,417	3,331
1992 January	18	61	79	56	654	400	294	710	10,017	2,912
February	13	62	75	51	618	378	277	669	8,456	2,704
March	13	67	80	54	594	381	250	648	9,289	2,592
April	13	72	85	55	587	370	251	642	8,726	2,727
May	13	66	79	47	591	358	260	638	9,158	2,264
June	12	64	76	44	577	343	260	621	8,915	2,369
July	9	60	69	48	628	349	310	676	9,529	2,492
August	9	67	76	51	635	334	331	686	[R]9,635	2,630
September	10	66	76	45	672	345	356	717	10,348	2,825
October	10	66	76	53	750	392	399	803	11,425	3,076
November	15	61	76	60	822	418	451	882	11,250	2,977
December	13	58	71	59	867	397	509	926	11,570	3,218
Average	12	64	76	52	669	373	331	721	[R]118,318	2,732
1993 January	17	55	72	72	752	335	454	824	10,784	2,807
February	15	63	78	69	615	311	334	684	[R]10,891	2,899
March	16	55	71	62	549	315	268	611	8,322	2,829
April	14	63	77	69	543	320	270	612	10,642	2,703
May	15	64	79	73	564	323	294	637	9,469	2,848
June	17	65	82	83	612	350	327	695	10,321	3,087
July	15	65	80	85	656	368	360	741	11,308	[R]3,178
August	16	66	82	87	710	397	390	797	12,023	[E]3,150
8-Month Average	16	62	78	75	624	340	336	699	83,760	[E]2,938
1992 8-Month Average	12	65	77	50	612	364	280	662	73,725	2,586
1991 8-Month Average	21	89	110	87	805	498	365	892	97,905	3,417

[a] Monthly data are averages of 4- or 5-week reporting periods, not calendar months. Annual data are averages of 52- or 53-week reporting periods, not calendar years.

[b] Sum of oil, gas, and miscellaneous other rigs, which is not shown.

[c] Values shown are totals.

[d] See Glossary.

R=Revised data. NA=Not available. E=Estimate.

Notes: Geographic coverage is the 50 States and the District of Columbia.

Sources: • **Crews Engaged in Seismic Exploration:** Society of Exploration Geophysicists, Tulsa, Oklahoma, *Monthly Seismic Crew Count.* • **Rotary Rigs in Operation:** Baker Hughes, Inc., Houston, Texas, *Rotary Rigs Running--by State.* • **Total Footage Drilled:** Energy Information Administration computations, which are based on well reports submitted to the American Petroleum Institute by the Petroleum Information Corporation, Denver, Colorado. • **Active Well Servicing Units:** American Association of Oilwell Servicing Contractors, Dallas, Texas, *Well Servicing.*

Table 5.2 Oil and Gas Wells Drilled

(Number of Wells)

	Exploratory				Development				Total			
	Oil	Gas	Dry	Total	Oil	Gas	Dry	Total	Oil	Gas	Dry	Total
1973 Total	654	1,079	6,038	7,771	9,597	5,896	4,428	19,921	10,251	6,975	10,466	27,692
1974 Total	870	1,205	6,894	8,969	12,794	5,965	5,311	24,070	13,664	7,170	12,205	33,039
1975 Total	991	1,263	7,207	9,461	15,988	6,907	6,529	29,424	16,979	8,170	13,736	38,885
1976 Total	1,100	1,362	6,854	9,316	16,597	8,076	6,951	31,624	17,697	9,438	13,805	40,940
1977 Total	1,183	1,562	7,402	10,147	17,517	10,557	7,634	35,708	18,700	12,119	15,036	45,855
1978 Total	1,191	1,792	8,054	11,037	17,874	12,613	8,537	39,024	19,065	14,405	16,591	50,061
1979 Total	1,335	1,920	7,478	10,733	19,368	13,250	8,560	41,178	20,703	15,170	16,038	51,911
1980 Total	1,781	2,094	9,035	12,910	30,497	15,129	11,302	56,928	32,278	17,223	20,337	69,838
1981 Total	2,667	2,533	12,297	17,497	40,176	17,374	14,987	72,537	42,843	19,907	27,284	90,034
1982 Total	2,470	2,168	11,346	15,984	36,672	16,776	15,036	68,484	39,142	18,944	26,382	84,468
1983 Total	2,113	1,660	10,271	14,044	35,086	12,896	14,065	62,047	37,199	14,556	24,336	76,091
1984 Total	2,335	1,599	11,482	15,416	40,250	15,413	14,315	69,978	42,585	17,012	25,797	85,394
1985 Total	1,879	1,282	9,445	12,606	33,142	12,970	11,763	57,875	35,021	14,252	21,208	70,481
1986 Total	988	733	5,511	7,232	17,713	7,402	7,255	32,370	18,701	8,135	12,766	39,602
1987 Total	859	673	5,179	6,711	15,327	7,084	6,302	28,713	16,186	7,757	11,481	35,424
1988 Total	792	663	4,766	6,221	12,530	7,575	5,476	25,581	13,322	8,238	10,242	31,802
1989 Total	580	651	4,001	5,232	9,759	8,574	4,490	22,823	10,339	9,225	8,491	28,055
1990 Total	617	578	3,782	4,977	11,533	9,862	R4,758	R26,153	12,150	10,440	R8,540	R31,130
1991 January	56	46	247	349	1,166	834	352	2,352	1,222	880	599	2,701
February	47	47	271	365	1,173	681	382	2,236	1,220	728	653	2,601
March	53	32	267	352	1,098	753	379	2,230	1,151	785	646	2,582
April	55	35	279	369	1,063	705	392	2,160	1,118	740	671	2,529
May	39	34	263	336	996	692	387	2,075	1,035	726	650	2,411
June	51	42	251	344	878	727	365	1,970	929	769	616	2,314
July	56	R35	301	R392	903	R776	401	R2,080	959	811	702	2,472
August	48	R35	R309	R392	R921	R757	R357	R2,035	R969	R792	666	R2,427
September	39	29	254	322	816	715	379	1,910	855	744	633	2,232
October	32	44	286	362	911	758	417	2,086	943	802	703	2,448
November	25	35	302	362	726	571	347	1,644	751	606	649	2,006
December	43	42	271	356	718	693	375	1,786	761	735	646	2,142
Total	544	R456	R3,301	R4,301	R11,369	R8,662	R4,533	R24,564	R11,913	R9,118	7,834	R28,865
1992 January	46	31	218	295	740	587	317	1,644	786	618	535	1,939
February	34	29	167	230	590	554	273	1,417	624	583	440	1,647
March	38	30	205	273	721	R465	320	R1,506	759	R495	525	R1,779
April	32	22	233	287	656	415	297	1,368	688	437	530	1,655
May	R35	22	225	R282	R636	470	374	R1,480	671	492	599	1,762
June	41	28	209	278	626	466	330	1,422	667	494	539	1,700
July	43	28	256	327	664	545	312	1,521	707	573	568	1,848
August	39	28	241	308	620	R604	357	R1,581	659	R632	598	R1,889
September	36	19	222	277	756	603	339	1,698	792	622	561	1,975
October	28	31	202	261	740	914	354	2,008	768	945	556	2,269
November	38	30	165	233	686	795	331	1,812	724	825	496	2,045
December	43	33	225	301	751	915	391	2,057	794	948	616	2,358
Total	R453	331	2,568	R3,352	R8,186	R7,333	3,995	R19,514	8,639	R7,664	6,563	R22,866
1993 January	41	35	162	238	614	902	290	1,806	655	937	452	2,044
February	32	R42	171	R245	R551	R917	R346	R1,814	R583	R959	R517	R2,059
March	23	22	177	222	523	680	188	1,391	546	702	365	1,613
April	41	28	163	232	491	629	373	1,493	532	657	536	1,725
May	R36	R33	176	R245	R537	R785	R456	R1,778	573	818	R632	R2,023
June	35	28	193	256	617	897	318	1,832	652	925	511	2,088
July	42	33	254	329	698	913	377	1,988	740	946	631	2,317
August	48	36	254	338	780	937	477	2,194	828	973	731	2,532
8-Month Total	298	257	1,550	2,105	4,811	6,660	2,825	14,296	5,109	6,917	4,375	16,401
1992 8-Month Total	308	218	1,754	2,280	5,253	4,106	2,580	11,939	5,561	4,324	4,334	14,219
1991 8-Month Total	405	306	2,188	2,899	8,198	5,925	3,015	17,138	8,603	6,231	5,203	20,037

R=Revised data.

Notes: • Service wells, stratigraphic tests, and core tests are excluded. • Geographic coverage is the 50 States and the District of Columbia. • Due to the method of estimation, data shown on this page are frequently revised.

See end of section.

Sources: Energy Information Administration computations, which are based on well reports submitted to the American Petroleum Institute by the Petroleum Information Corporation, Denver, Colorado.

Oil and Gas Resource Development Notes

Three well types are considered in the *Monthly Energy Review (MER)* drilling statistics: "completed for oil," "completed for gas," and "dry hole." Wells that productively encounter both crude oil and natural gas are categorized as "completed for oil." Both development wells and exploratory wells (new field wildcats, new pool tests, and extension tests) are included in the statistics. All other classes of wells drilled in connection with the search for producible hydrocarbons are excluded.

Prior to the March 1985 *MER*, drilling statistics consisted of completion data for the above types and classes of wells as reported to the American Petroleum Institute (API) during a given month. Due to time lags between the date of well completion and the date of completion reporting to the API, as-reported well completions proved to be an inaccurate indicator of drilling activity. During 1982, for example, as-reported well completions rose, while the number of actual completions fell. Consequently, the drilling statistics published since the March 1985 *MER* are Energy Information Administration-generated (EIA) estimates produced by statistically imputing well counts and footage based on the partial data available from the API.

Estimates for a given month are first published in the *MER* for that month. Revisions of the "oil," "gas," and "dry" components are made in the 6th, 12th, and 24th subsequent months, as newly reported data allow refinement of the estimates. Unscheduled revisions may also occur when the latest estimate differs by more than 15 percent during the first 5 months, more than 10 percent during the next 6 months, or more than 2 percent thereafter through 5 years. After 5 years, the reported API data are published in lieu of EIA-generated estimates. Additional information about the EIA estimation methodology may be found in "Estimating Well Completions," the feature article published in the March 1985 *MER*.

Section 6. Coal

Coal production in July 1993 totaled 73 million short tons, 10 percent[6] lower than coal production in July 1992.

Electric utility coal consumption in June 1993 totaled 68 million short tons, 6 percent higher than the consumption level in June 1992. During the first 6 months of 1993, coal consumption at electric utilities was 389 million short tons, 4 percent higher than the 375 million short tons consumed during the comparable period in 1992.

Electric utility coal stocks were 145 million short tons at the end of June 1993, down from 164 million short tons at the end of June 1992.

Coal exports in June 1993 totaled 9 million short tons, 3 percent lower than exports in June 1992. Coal exports for the first 6 months of 1993 totaled 39 million short tons, 25 percent lower than the 52 million short tons of coal exported during the first 6 months of 1992.

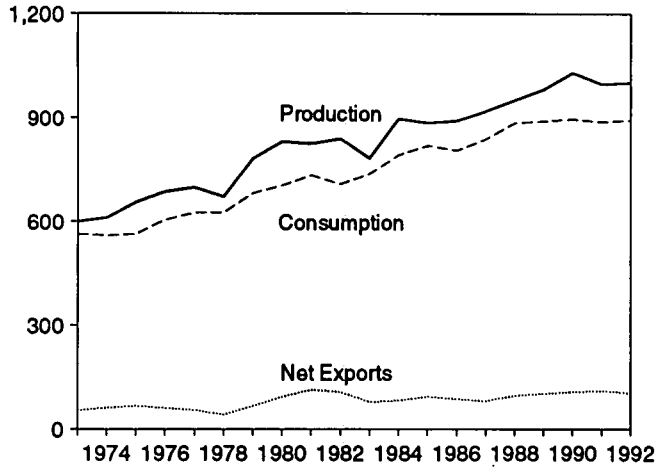
Coal imports in June 1993 totaled 514 thousand short tons, 48 thousand short tons higher than imports in June 1992. Coal imports during the first 6 months of 1993 totaled 2 million short tons, 34 percent higher than coal imports during the comparable period in 1992.

[6]Percentage changes are based on unrounded data.

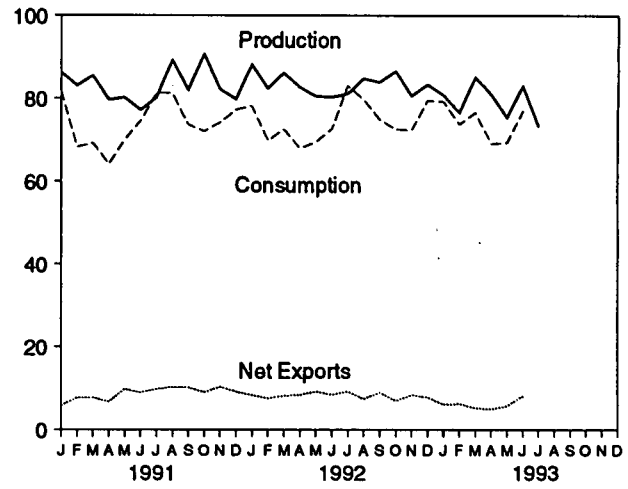
Figure 6.1 Coal

(Million Short Tons)

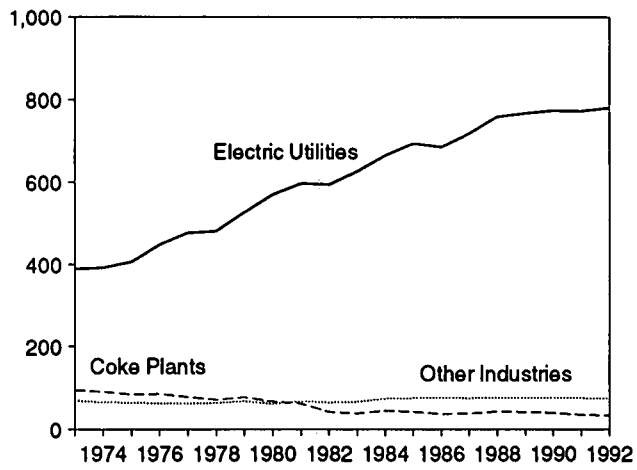
Overview, 1973-1992



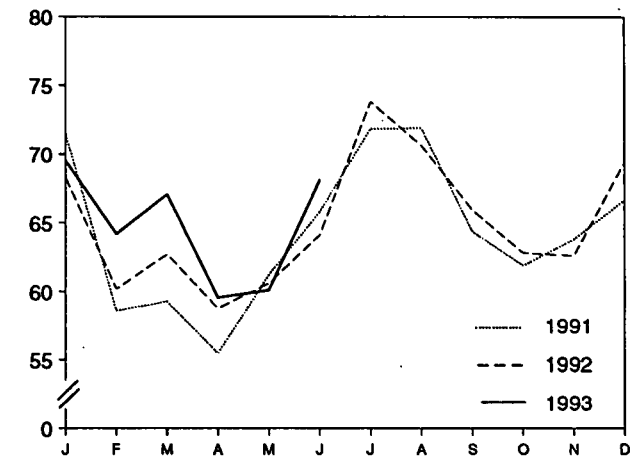
Overview, Monthly



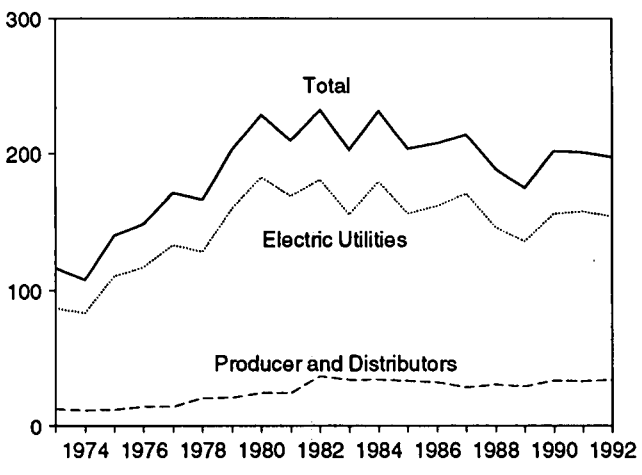
Consumption by Sector, 1973-1992



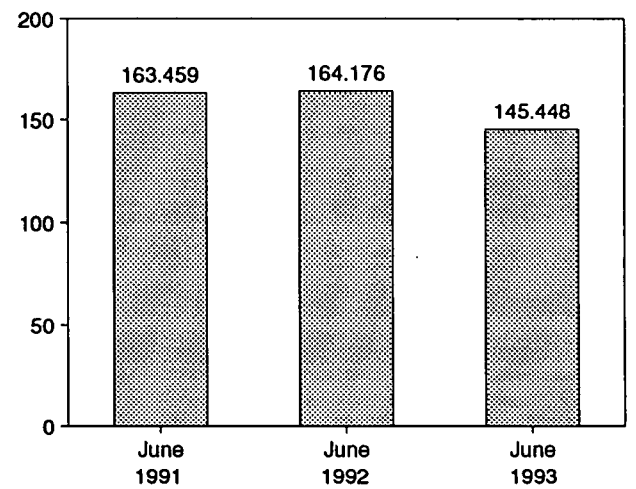
Consumption by Electric Utilities, Monthly



Stocks, End of Year, 1973-1992



Stocks at Electric Utilities, End of Month



Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 6.1, 6.2, and 6.3.

Table 6.1 Coal Overview

(Thousand Short Tons)

	Production	Consumption	Imports[a]	Exports	Stocks[b]
1973 Total	598,568	562,584	127	53,587	116,865
1974 Total	610,023	558,402	2,080	60,661	107,957
1975 Total	654,641	562,640	940	66,309	140,158
1976 Total	684,913	603,790	1,203	60,021	148,659
1977 Total	697,205	625,291	1,647	54,312	171,323
1978 Total	670,164	625,225	2,953	40,714	166,246
1979 Total	781,134	680,524	2,059	66,042	202,472
1980 Total	829,700	[c] 702,729	1,194	91,742	228,407
1981 Total	823,775	[c] 732,628	1,043	112,541	209,423
1982 Total	[c] 838,111	[c] 706,910	742	106,277	[c] 232,037
1983 Total	782,091	[c] 736,671	1,271	77,772	[c] 202,585
1984 Total	895,921	791,296	1,286	81,483	231,300
1985 Total	883,638	818,049	1,952	92,680	203,367
1986 Total	890,315	804,231	2,212	85,518	207,319
1987 Total	918,762	836,941	1,747	79,607	213,780
1988 Total	950,265	883,642	2,134	95,023	188,831
1989 Total	980,729	889,699	2,851	100,815	175,087
1990 Total	1,029,076	895,480	2,699	105,804	201,629
1991 January	86,261	81,738	263	6,214	199,927
February	83,036	68,282	429	8,127	206,312
March	85,450	69,188	246	7,977	213,647
April	79,633	64,184	198	6,917	218,443
May	80,190	69,981	248	10,018	219,221
June	77,182	74,592	284	9,278	214,716
July	80,151	81,221	348	10,099	204,378
August	89,321	81,196	248	10,541	199,237
September	81,966	73,676	387	10,557	197,488
October	90,821	72,018	214	9,244	202,136
November	82,194	74,239	298	10,602	201,670
December	79,779	77,305	225	9,393	200,682
Total	995,984	887,621	3,390	108,969	200,682
1992 January	88,216	78,170	272	8,590	200,322
February	82,351	69,825	213	7,759	204,710
March	86,106	72,524	193	8,383	208,484
April	82,673	67,942	239	8,616	211,394
May	80,484	69,482	339	9,483	214,665
June	80,268	72,628	466	8,911	213,778
July	81,073	83,018	362	9,572	202,182
August	84,738	79,694	197	7,605	198,616
September	83,866	74,946	323	9,304	197,064
October	86,587	72,465	471	7,443	200,758
November	80,561	72,430	377	8,718	201,356
December	83,327	79,460	351	8,134	197,245
Total	1,000,250	892,582	3,803	102,516	197,245
1993 January	80,780	79,230	344	6,506	195,074
February	76,608	73,783	454	6,715	191,990
March	85,072	76,682	415	5,648	190,977
April	81,014	[E] 69,087	281	5,268	[E] 194,727
May	75,458	[E] 69,334	298	6,060	[E] 196,797
June	82,999	[E] 77,007	514	8,619	[E] 191,799
July	73,258	NA	NA	NA	NA
7-Month Total	555,189	NA	NA	NA	NA
1992 7-Month Total	581,171	513,588	2,084	61,313	202,182
1991 7-Month Total	571,903	509,187	2,016	58,631	204,378

[a] Includes Puerto Rico.

[b] Stocks held by electric utilities, coke plants, general industry, and coal producers and distributors at end of period. Stocks held at retail dealers for consumption by the residential and commercial sector are excluded.

[c] See Note 6 at end of section.

NA=Not available. E=Estimate.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Data through 1991 are final. Subsequent data are preliminary. • Totals may not equal sum of components due to independent rounding. • For methodology used to calculate production, consumption, and stocks, see Notes 1, 2, and 3 at end of section.

Sources: • **Production: 1973-September 1977**—U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook* and *Minerals Industry Surveys*. **October 1977 forward**—Energy Information Administration, *Weekly Coal Production*. • **Consumption:** Table 6.2. • **Imports and Exports:** U.S. Department of Commerce, Bureau of the Census, Monthly Reports IM-145 (Imports) and EM-522 (Exports). • **Stocks:** Table 6.3.

Table 6.2 Coal Consumption by End-Use Sector

(Thousand Short Tons)

	Residential and Commercial	Industrial		Electric Utilities	Total
		Coke Plants	Other Industrial Including Transportation		
1973 Total	11,117	94,101	68,154	389,212	562,584
1974 Total	11,417	90,191	64,983	391,811	558,402
1975 Total	9,410	83,598	63,670	405,962	562,640
1976 Total	8,916	84,704	61,799	448,371	603,790
1977 Total	8,954	77,739	61,472	477,126	625,291
1978 Total	9,511	71,394	63,085	481,235	625,225
1979 Total	8,388	77,368	67,717	527,051	680,524
1980 Total	[a] 6,452	66,657	60,347	569,274	[a] 702,729
1981 Total	[a] 7,422	[a] 61,015	67,395	596,797	[a] 732,628
1982 Total	8,240	40,908	[a] 64,096	593,666	[a] 706,910
1983 Total	8,448	37,033	[a] 65,979	625,211	[a] 736,671
1984 Total	9,130	44,022	73,745	664,399	791,296
1985 Total	7,779	41,056	75,372	693,841	818,049
1986 Total	7,667	35,924	75,583	685,056	804,231
1987 Total	6,914	36,957	75,175	717,894	836,941
1988 Total	7,130	41,888	76,252	758,372	883,642
1989 Total	6,167	40,508	76,134	766,888	889,699
1990 Total	6,724	38,877	76,330	773,549	895,480
1991 January	862	2,928	6,541	71,406	81,738
February	605	2,479	6,584	58,614	68,282
March	541	2,883	6,492	59,272	69,188
April	403	2,675	5,663	55,443	64,184
May	330	2,710	5,713	61,228	69,981
June	322	2,690	5,763	65,817	74,592
July	427	2,929	6,014	71,852	81,221
August	386	2,916	6,011	71,884	81,196
September	319	2,932	6,026	64,397	73,676
October	353	2,902	6,880	61,883	72,018
November	677	2,896	6,852	63,814	74,239
December	868	2,913	6,865	66,659	77,305
Total	6,094	33,854	75,405	772,268	887,621
1992 January	735	2,816	6,354	68,264	78,170
February	582	2,669	6,391	60,183	69,825
March	526	2,855	6,439	62,705	72,524
April	532	2,857	5,758	58,794	67,942
May	321	2,803	5,767	60,591	69,482
June	296	2,436	5,774	64,122	72,628
July	474	2,759	5,969	73,815	83,018
August	393	2,745	5,919	70,637	79,694
September	368	2,697	5,914	65,967	74,946
October	367	2,586	6,705	62,806	72,465
November	642	2,562	6,614	62,612	72,430
December	916	2,581	6,598	69,365	79,460
Total	6,153	32,366	74,203	779,860	892,582
1993 January	747	2,674	6,319	69,490	79,230
February	725	2,468	6,389	64,201	73,783
March	580	2,640	6,388	67,073	76,682
April	[E] 571	[E] 2,690	[E] 6,263	59,563	[E] 69,087
May	[E] 349	[E] 2,747	[E] 6,136	60,102	[E] 69,334
June	[E] 285	[E] 2,640	[E] 5,969	68,113	[E] 77,007
6-Month Total	[E] 3,257	[E] 15,860	[E] 37,464	388,542	[E] 445,123
1992 6-Month Total	2,992	16,437	36,484	374,658	430,570
1991 6-Month Total	3,063	16,366	36,757	371,779	427,965

[a] See Note 6 at end of section.

E=Estimate.

Notes: • For sector-specific reporting and estimating information, see Note 2 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Data through 1991 are final. Subsequent data are preliminary. • Totals may not equal sum of components due to independent rounding.

Sources: • **Residential and Commercial:** 1973-1976—U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook.* January-September 1977—DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers-Upper Lake Docks." October 1977-1979—Energy Information Administration (EIA), Form EIA-2, "Monthly Coal Report, Retail Dealers-Upper Lake Docks." 1980 forward—EIA, Form EIA-6, "Coal Distribution Report." • **Coke Plants:** 1973-September 1977—DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys.* October 1977-1980—EIA, Form EIA-5/5A, "Coke and Coal Chemicals-Monthly/Annual." 1981-1984—EIA, Form EIA-5/5A, "Coke Plant Report-Quarterly/Annual Supplement." 1985 forward—EIA, Form EIA-5, "Coke Plant Report," quarterly. • **Other Industrial:** 1973-September 1977—DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys.* October 1977-1979—EIA, Form EIA-3, "Monthly Coal Consumption Report-Manufacturing Plants." 1980 forward—EIA, Form EIA-3, "Quarterly Coal Consumption Report-Manufacturing Plants," and Form EIA-6, "Coal Distribution Report." • **Electric Utilities:** 1973-September 1977—DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys.* October 1977 forward—EIA, Form EIA-759 (formerly Form FPC-4), "Monthly Power Plant Report."

Table 6.3 Coal Stocks, End of Period

(Thousand Short Tons)

	Consumer				Producers and Distributors	Total[a]
	Coke Plants	Other Industrial	Electric Utilities	Total[a]		
1973 Year	6,998	10,370	86,967	104,335	12,530	116,865
1974 Year	6,209	6,605	83,509	96,323	11,634	107,957
1975 Year	8,797	8,529	110,724	128,050	12,108	140,158
1976 Year	9,902	7,100	117,436	134,438	14,221	148,659
1977 Year	12,816	11,063	133,219	157,098	14,225	171,323
1978 Year	8,278	9,048	128,225	145,551	20,695	166,246
1979 Year	10,155	11,777	159,714	181,646	20,826	202,472
1980 Year	9,067	11,951	183,010	204,028	24,379	228,407
1981 Year	6,475	9,906	168,893	185,274	24,149	209,423
1982 Year	4,642	9,479	181,132	[b] 195,253	36,784	[b] 232,037
1983 Year	4,346	8,710	155,598	168,654	33,931	[b] 202,585
1984 Year	6,166	11,317	179,727	197,211	34,090	231,300
1985 Year	3,420	10,438	156,376	170,234	33,133	203,367
1986 Year	2,992	10,429	161,806	175,226	32,093	207,319
1987 Year	3,884	10,777	170,797	185,459	28,321	213,780
1988 Year	3,137	8,768	146,507	158,413	30,418	188,831
1989 Year	2,864	7,363	135,860	146,087	29,000	175,087
1990 Year	3,329	8,716	156,166	168,210	33,418	201,629
1991 January	3,262	8,234	152,097	163,594	36,333	199,927
February	3,196	7,753	156,116	167,065	39,248	206,312
March	3,130	7,271	161,084	171,485	42,162	213,647
April	3,181	7,154	166,315	176,650	41,793	218,443
May	3,232	7,038	167,528	177,797	41,423	219,221
June	3,283	6,921	163,459	173,663	41,054	214,716
July	3,087	7,033	155,680	165,800	38,578	204,378
August	2,891	7,145	153,097	163,133	36,103	199,237
September	2,695	7,258	153,907	163,860	33,628	197,488
October	2,721	7,192	158,813	168,726	33,409	202,136
November	2,747	7,127	158,605	168,479	33,190	201,670
December	2,773	7,061	157,876	167,711	32,971	200,682
1992 January	2,807	6,613	155,637	165,057	35,265	200,322
February	2,841	6,165	158,145	167,151	37,559	204,710
March	2,875	5,724	160,032	168,631	39,853	208,484
April	2,842	5,888	162,591	171,321	40,073	211,394
May	2,802	6,058	165,512	174,372	40,293	214,665
June	2,776	6,312	164,176	173,265	40,513	213,778
July	2,589	6,445	154,403	163,438	38,745	202,182
August	2,402	6,662	152,580	161,644	36,971	198,616
September	2,215	6,967	152,685	161,866	35,198	197,064
October	2,342	6,761	156,859	165,962	34,796	200,758
November	2,470	6,642	157,849	166,961	34,395	201,356
December	2,597	6,524	154,130	163,251	33,993	197,245
1993 January	2,668	6,600	150,371	159,639	35,435	195,074
February	2,739	6,236	146,139	155,113	36,877	191,990
March	2,809	5,872	143,978	152,659	38,319	190,977
April	[E] 2,867	[E] 8,311	148,049	[E] 159,227	[E] 35,500	[E] 194,727
May	[E] 2,939	[E] 8,288	150,070	[E] 161,297	[E] 35,500	[E] 196,797
June	[E] 2,858	[E] 7,993	145,448	[E] 156,299	[E] 35,500	[E] 191,799

[a] Excludes stocks held at retail dealers for consumption by the residential and commercial sector.

[b] See Note 6 at end of section.

E=Estimate.

Notes: • For sector-specific reporting and estimating information, see Note 3 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Data through 1991 are final. Subsequent data are preliminary. • Totals may not equal sum of components due to independent rounding.

Sources: • **Coke Plants: 1973-September 1977**—U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook* and *Minerals Industry Surveys.* **October 1977-1980**—Energy Information Administration (EIA), Form EIA-5/5A, "Coke and Coal Chemicals-Monthly/Annual." **1981-1984**—EIA, Form EIA-5/5A, "Coke Plant Report-Quarterly/Annual Supplement." **1985 forward**—EIA, Form EIA-5, "Coke Plant Report," quarterly. • **Other Industrial: 1973-September 1977**—DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys.* **October 1977-1979**—EIA, Form EIA-3, "Monthly Coal Consumption Report-Manufacturing Plants." **1980 forward**—EIA, Form EIA-3, "Quarterly Coal Consumption Report-Manufacturing Plants," and Form EIA-6, "Coal Distribution Report." • **Electric Utilities: 1973-September 1977**—DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys.* **October 1977 forward**—EIA, Form EIA-759 (formerly Form FPC-4), "Monthly Power Plant Report." • **Producers and Distributors:** EIA, Form EIA-6, "Coal Distribution Report."

Coal Notes

1. Production: Preliminary monthly estimates of national coal production are the sum of weekly estimates developed by the Energy Information Administration (EIA) and published in the *Weekly Coal Production* report. When a week extends into a new month, production is allocated on a daily basis and added to the appropriate month. Weekly estimates are based on Association of American Railroads data showing the number of railcars loaded with coal during the week by Class I and certain other railroads. This number is converted into tons of coal by EIA by using the average number of tons of coal per railcar loaded reported in the most recent "Quarterly Freight Commodity Statistics" from the Interstate Commerce Commission. If an average coal tonnage per railcar loaded is not available for a specific railroad, the national average is used. To derive the estimate of total weekly production, the total rail tonnage for the week is divided by the ratio of quarterly production shipped by rail and total quarterly production. Data for the corresponding quarter of previous years are used to derive this ratio. This method insures that the seasonal variations are preserved in the production estimates.

When preliminary quarterly data become available, the monthly and weekly estimates are adjusted to conform to the quarterly figure. The adjustment procedure uses State-level production data and is explained in EIA's *Quarterly Coal Report.* Initial estimates of annual production published in January of the following year are based on preliminary production data covering the first 9 months (three quarters) and weekly/monthly estimates for the fourth quarter. The fourth quarter estimates may or may not be revised when preliminary data become available in March of the following year, depending on the magnitude of the difference between the estimates and the preliminary data. In any event, all quarterly, monthly, and weekly production figures are adjusted to conform to the final annual production data published in the *Monthly Energy Review* in the fall of the following year.

2. Consumption: Coal consumption data are reported by major end-use sector. Estimated data for the most recent months (designated by an "E") are derived from forecasted values shown in the EIA *Short-Term Energy Outlook* (DOE/EIA-0202) table titled "Supply and Disposition of Coal: Mid World Oil Price Case." The monthly estimates are one-third of the quarterly values shown in the then current issue of the publication, regularly released in February, May, August, and November. The estimates are revised quarterly as collected data become available from the data sources. Sector-specific information follows.

- Residential and Commercial—Prior to 1980, monthly consumption estimates for the residential and commercial sector were derived by using reported data to modify baseline figures developed by the Bureau of Mines. From 1980-1987, monthly estimates were derived by proportioning reported quarterly data by using the ratios of monthly-to-quarterly consumption data in 1979, the last year in which monthly data were reported on Form EIA-2. During 1981 and 1982, the estimates were also modified to reflect air temperature degree-days. Quarterly consumption data were directly from reported data and were defined as distribution to the residential and commercial sector as reported by coal producers and distributors on Form EIA-6. Beginning in January 1988, monthly residential and commercial consumption estimates are derived from reported quarterly data by using monthly national average population weighted heating/cooling degree-days obtained from the National Oceanic and Atmospheric Administration. The monthly ratios are the monthly national sum of heating and cooling degree-days as a proportion of the quarterly national sum. Quarterly consumption data are directly from reported data.
- Coke Plants—Prior to 1980, monthly coke plant consumption data were taken directly from reported data. From 1980-1987, coke plant consumption estimates were derived by proportioning reported quarterly data by using the ratios of monthly-to-quarterly consumption data in 1979, the last year in which monthly data were reported. Beginning in January 1988, monthly coke plant consumption estimates are derived from the reported quarterly data by using monthly ratios of raw steel production data from the American Iron and Steel Institute. The ratios are the monthly raw steel production from open hearth and basic oxygen process furnaces as a proportion of the quarterly production from those kinds of furnaces.
- Other Industrial—Prior to 1978, monthly consumption data for the other industrial sector (i.e., all industrial users minus coke plants) were derived by using reported data to modify baseline consumption figures from the most recent Bureau of the Census Annual Survey of Manufactures or Census of Manufactures. For 1978 and 1979, monthly estimates were derived from data reported on Forms EIA-3 and EIA-6. From 1980-1987, monthly figures were estimated by proportioning quarterly data by using the ratios of monthly-to-quarterly consumption data in 1979, the last year in which monthly data were reported on Form EIA-3. Quarterly consumption data were derived by adding beginning stocks at manufacturing plants to current receipts and subtracting ending stocks at manufacturing plants. In this calculation, current receipts were the greater of either reported receipts from manufacturing plants (Form EIA-3) or reported shipments to the other industrial sector (Form EIA-6), thereby ensuring that agriculture, forestry, fishing, mining, and construction consumption data were included where appropriate. Starting in January 1988, monthly consumption for the other industrial sector is estimated from reported quarterly data by using

ratios derived from industrial production indices published by the Board of Governors of the Federal Reserve System. Indices for six major industry groups are used as the basis for calculating the ratios: foods (SIC 20); paper and products (SIC 26); chemicals and products (SIC 28); petroleum products (SIC 29); clay, glass, and stone products (SIC 32); and primary metals (SIC 33). The monthly ratios are computed as the monthly sum of the weighted indices as a proportion of the quarterly sum of the weighted indices by using the 1977 proportion as the weights.

- Electric Utilities—Monthly consumption data for electric utility plants are directly from reported data.

3. Stocks: Coal stocks data are reported by major end-use sector. Estimated data for the most recent months (designated by an "E") are derived from forecasted values shown in the EIA *Short-Term Energy Outlook* (DOE/EIA-0202) table titled "Supply and Disposition of Coal: Mid World Oil Price Case." The monthly estimates are one-third of the quarterly values shown in the then current issue of the publication, regularly released in February, May, August, and November. The estimates are revised quarterly as collected data become available from the data sources. Sector-specific information follows.

- Coke Plants—Prior to 1980, monthly stocks at coke plants were taken directly from reported data. From 1980 forward, coke plant stocks are estimated by using one-third of the current quarterly change to indicate the monthly change in stocks. Quarterly stocks are directly from data reported on Form EIA-5.
- Other Industrial—Prior to 1978, stocks for the other industrial sector were derived by using reported data to modify baseline figures from a one-time Bureau of Mines survey of consumers. For 1978-1982, monthly estimates were derived by judgmentally proportioning reported quarterly data based on representative seasonal patterns of supply and demand. From 1983 forward, other industrial coal stocks are estimated as indicated above for coke plants. Quarterly stocks are taken directly from data reported on Form EIA-3 and therefore include only manufacturing industries; data for agriculture, forestry, fishing, mining, and construction stocks are not available.
- Electric Utilities—Monthly stocks data at electric utility plants are taken directly from reported data.
- Producers and Distributors—Quarterly stocks at producers and distributors are taken directly from reported data. Monthly data are estimated by using one-third of the current quarterly change to indicate the monthly change in stocks.

4. Imports and Exports: All coal import and export figures are taken directly from data reported monthly by the Bureau of the Census.

5. Additional Information: EIA's *Quarterly Coal Report* provides additional information about coal data and estimation procedures.

6. Data Discrepancies: Due to differences internal to EIA data processing systems, some small discrepancies exist between data in the *Monthly Energy Review (MER)* and the *Quarterly Coal Report (QCR)*. The data that have discrepancies are footnoted in Section 6 tables and summarized here.

Table	Data Series	Year	*MER* Data	*QCR* Data
6.1	Consumption	1980	702,729	702,730
6.1	Consumption	1981	732,628	732,627
6.1	Production	1982	838,111	838,112
6.1	Consumption	1982	706,910	706,911
6.1	Stocks	1982	232,037	232,038
6.1	Consumption	1983	736,671	736,672
6.1	Stocks	1983	202,585	202,584
6.2	Residential and Commercial	1980	6,452	6,451
6.2	Total	1980	702,729	702,730
6.2	Residential and Commercial	1981	7,422	7,421
6.2	Coke Plants	1981	61,015	61,014
6.2	Total	1981	732,628	732,627
6.2	Other Industrial	1982	64,096	64,097
6.2	Total	1982	706,910	706,911
6.2	Other Industrial	1983	65,979	65,980
6.2	Total	1983	736,671	736,672
6.3	Consumer, Total	1982	195,253	195,254
6.3	Total	1982	232,037	232,038
6.3	Total	1983	202,585	202,584

Section 7. Electricity

During June 1993, electric utilities generated 250 billion kilowatthours of electricity, 5 percent[7] more than in June 1992. Coal-fired generation totaled 137 billion kilowatthours, 6 percent more than in June 1992. Nuclear generation totaled 53 billion kilowatthours, 3 percent above the level 1 year earlier. Hydroelectric generation totaled 27 billion kilowatthours, 17 percent above the June 1992 level. Natural gas-fired generation was 24 billion kilowatthours, 2 percent below the June 1992 level. Petroleum-fired generation totaled 8 billion kilowatthours, 4 percent above the level 1 year earlier.

During the first half of 1993, electric utilities generated 1,388 billion kilowatthours of electricity, 3 percent more than in the first half of 1992. Coal-fired generation totaled 783 billion kilowatthours, 3 percent more than in the first half of 1992. Nuclear generation totaled 303 billion kilowatthours, 3 percent above the level 1 year earlier. Hydroelectric generation totaled 149 billion kilowatthours, 19 percent above the first half 1992 level. Natural gas-fired generation was 107 billion kilowatthours, 12 percent below the first half 1992 level. Petroleum-fired generation totaled 41 billion kilowatthours, 12 percent below the level 1 year earlier.

Sales of electricity to all ultimate consumers in the United States in June were 238 billion kilowatthours, 5 percent more than sales during June 1992. Sales to industrial consumers totaled 85 billion kilowatthours in June 1993, 2 percent above the level a year ago. Sales to residential consumers during June 1993 were 77 billion kilowatthours, 8 percent above the level of sales during the previous year. Commercial sales were 68 billion kilowatthours, 5 percent above the level of commercial sales 1 year earlier. In June 1993, other sales totaled 8 billion kilowatthours, 3 percent above the June 1992 level.

During the first half of 1993, sales of electricity to all ultimate consumers in the United States were 1,374 billion kilowatthours, 3 percent more than sales during the first half of 1992. Sales to industrial consumers totaled 481 billion kilowatthours during the first half of 1993, 2 percent above the level of sales during the first half of 1992. Sales to residential consumers during the first half of 1993 were 470 billion kilowatthours, 4 percent above the level a year ago. Commercial sales were 376 billion kilowatthours, 3 percent above the level of commercial sales 1 year earlier. During the first half of 1993, other sales totaled 47 billion kilowatthours, 3 percent above the level of sales during the first half of 1992.

Electric utility consumption of coal during June 1993 was 68 million short tons, 6 percent above consumption in June 1992. Petroleum consumption (excluding petroleum coke) during June 1993 was 13 million barrels, 3 percent above the June 1992 level. During June 1993, electric utilities consumed 255 billion cubic feet of natural gas, 4 percent below the June 1992 consumption level.

During the first half of 1993, electric utility consumption of coal was 389 million short tons, 4 percent above consumption during the first half of 1992. Petroleum consumption (excluding petroleum coke) was 67 million barrels, 12 percent below the first half 1992 level. During the first half of 1993, electric utilities consumed 1,115 billion cubic feet of natural gas, 13 percent below the first half 1992 consumption level.

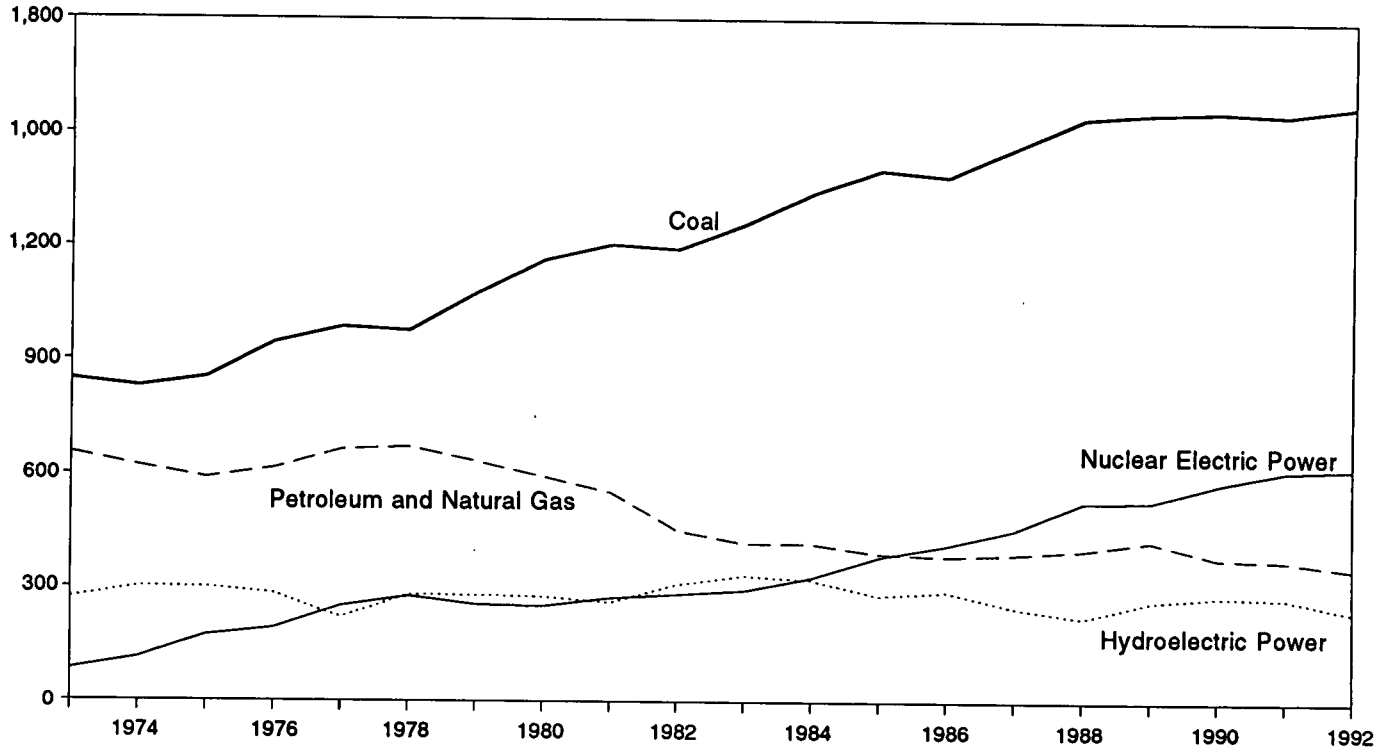
On June 30, 1993, electric utility stocks of all types of coal totaled 145 million short tons, 11 percent below the level on June 30, 1992. Stocks of petroleum (excluding petroleum coke) on June 30, 1993, totaled 64 million barrels, 7 percent below the level on June 30, 1992.

[7]Percentage changes are based on numbers shown in the following tables.

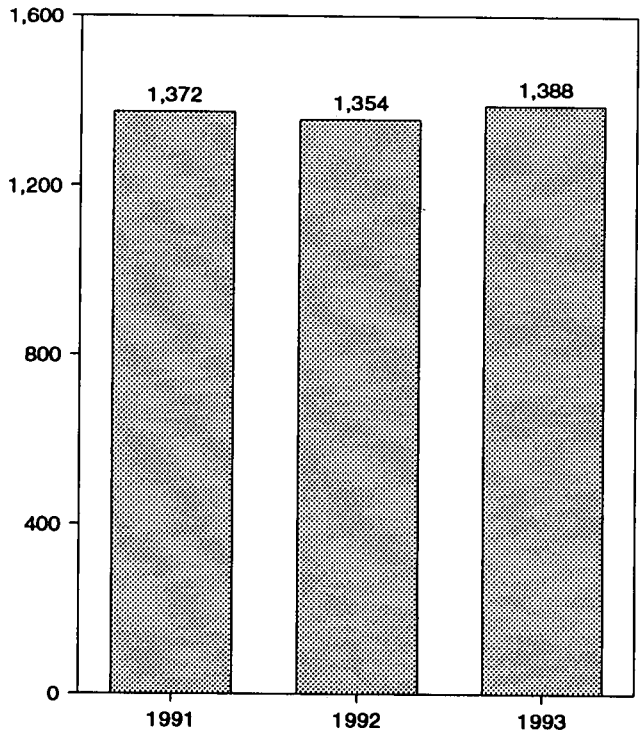
Figure 7.1 Electric Utility Net Generation of Electricity

(Billion Kilowatthours)

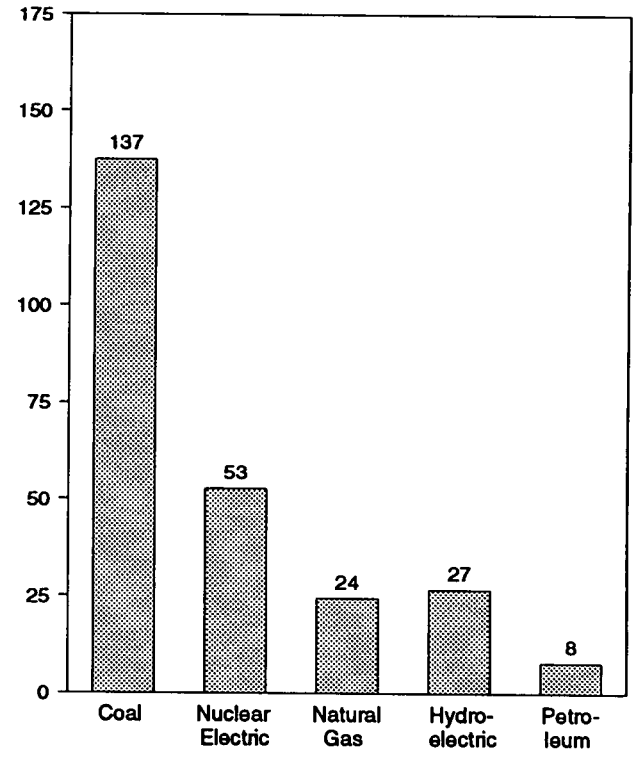
Net Generation by Source, 1973-1992



Net Generation, January-June



Net Generation by Source, June 1993



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 7.1.

Table 7.1 Electric Utility Net Generation of Electricity

(Million Kilowatthours)

	Coal	Natural Gas[a]	Petroleum[b]	Nuclear Electric Power	Hydro-Electric Power	Other[c]	Total
1973 Total	847,651	340,858	314,343	83,479	272,083	2,294	1,860,710
1974 Total	828,433	320,065	300,931	113,976	301,032	2,703	1,867,140
1975 Total	852,786	299,778	289,095	172,505	300,047	3,437	1,917,649
1976 Total	944,391	294,624	319,988	191,104	283,707	3,883	2,037,696
1977 Total	985,219	305,505	358,179	250,883	220,475	4,063	2,124,323
1978 Total	975,742	305,391	365,060	276,403	280,419	3,315	2,206,331
1979 Total	1,075,037	329,485	303,525	255,155	279,783	4,387	2,247,372
1980 Total	1,161,562	346,240	245,994	251,116	276,021	5,506	2,286,439
1981 Total	1,203,203	345,777	206,421	272,674	260,684	6,054	2,294,812
1982 Total	1,192,004	305,260	146,797	282,773	309,213	5,164	2,241,211
1983 Total	1,259,424	274,098	144,499	293,677	332,130	6,456	2,310,285
1984 Total	1,341,681	297,394	119,808	327,634	321,150	8,638	2,416,304
1985 Total	1,402,128	291,946	100,202	383,691	281,149	10,724	2,469,841
1986 Total	1,385,831	248,508	136,585	414,038	290,844	11,503	2,487,310
1987 Total	1,463,781	272,621	118,493	455,270	249,695	12,267	2,572,127
1988 Total	1,540,653	252,801	148,900	526,973	222,940	11,984	2,704,250
1989 Total	1,553,661	266,598	158,318	529,355	265,063	11,309	2,784,304
1990 Total	1,559,606	264,089	117,017	576,862	279,926	10,651	2,808,151
1991 January	141,945	16,348	9,222	54,369	25,676	897	248,455
February	117,867	13,723	8,689	47,863	21,915	764	210,821
March	118,366	18,446	8,785	49,121	25,820	863	221,400
April	112,418	20,504	7,984	41,631	25,687	780	209,004
May	123,906	23,455	10,995	46,755	28,455	808	234,373
June	131,964	24,417	11,159	54,208	25,830	848	248,427
July	143,997	31,145	11,010	60,735	24,250	839	271,976
August	144,194	30,970	11,866	58,473	21,747	865	268,115
September	129,141	24,966	8,646	51,874	18,428	830	233,885
October	125,523	25,390	6,483	47,653	17,538	843	223,430
November	129,125	18,990	7,784	46,295	18,300	883	221,377
December	132,721	15,819	8,841	53,589	21,873	916	233,760
Total	1,551,167	264,172	111,463	612,565	275,519	10,137	2,825,023
1992 January	137,327	16,178	10,202	57,849	21,502	912	243,970
February	121,732	16,165	8,296	52,804	17,966	798	217,761
March	127,678	19,906	8,809	45,835	21,566	871	224,665
April	119,909	21,913	6,505	42,268	19,454	788	210,837
May	123,768	22,689	5,156	45,627	22,285	830	220,355
June	129,607	24,997	7,508	51,185	22,698	846	236,842
July	149,028	31,950	8,540	56,049	19,711	869	266,148
August	141,900	28,778	6,923	58,656	18,062	885	255,203
September	133,239	26,099	6,841	50,919	16,838	825	234,760
October	127,940	20,420	6,908	48,784	16,375	862	221,289
November	125,535	18,031	6,838	50,726	19,294	840	221,263
December	138,234	16,744	6,390	58,075	23,808	874	244,126
Total	1,575,895	263,872	88,916	618,776	239,559	10,200	2,797,219
1993 January	138,357	15,811	7,226	59,076	24,474	853	245,797
February	130,078	15,773	6,950	51,319	19,743	800	224,663
March	136,280	18,740	8,569	46,606	23,583	852	234,630
April	120,325	16,591	5,205	43,199	25,171	802	211,292
May	120,878	15,843	5,268	50,367	29,323	716	222,396
June	137,464	24,391	7,819	52,620	26,606	725	249,625
6-Month Total	783,382	107,149	41,037	303,187	148,901	4,748	1,388,404
1992 6-Month Total	760,020	121,849	46,476	295,568	125,471	5,046	1,354,430
1991 6-Month Total	746,466	116,892	56,832	293,947	153,383	4,960	1,372,480

[a] Includes supplemental gaseous fuel.

[b] Includes fuel oil Nos. 2, 4, 5, and 6, crude oil, kerosene, and petroleum coke.

[c] "Other" is electricity produced from geothermal, wood, waste, wind, photovoltaic, and solar thermal energy sources connected to electric utility distribution systems.

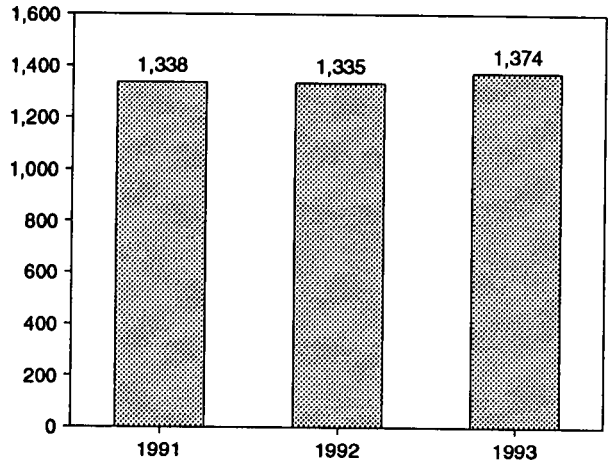
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **1973-September 1977:** Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • **October 1977-1979:** Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • **1980:** Energy Information Administration (EIA), *Electric Power Monthly*, March 1991, Table 4. • **1981:** EIA, *Electric Power Monthly*, March 1992, Table 4. • **1982 and 1991 monthly data:** EIA, *Electric Power Monthly*, March 1993, Table 4. • **1983 forward (except 1991 monthly data):** EIA, *Electric Power Monthly*, September 1993, Table 4.

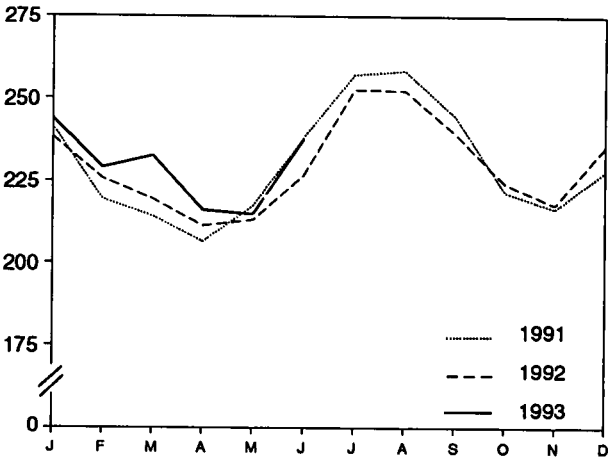
Figure 7.2 Electricity Sales

(Billion Kilowatthours)

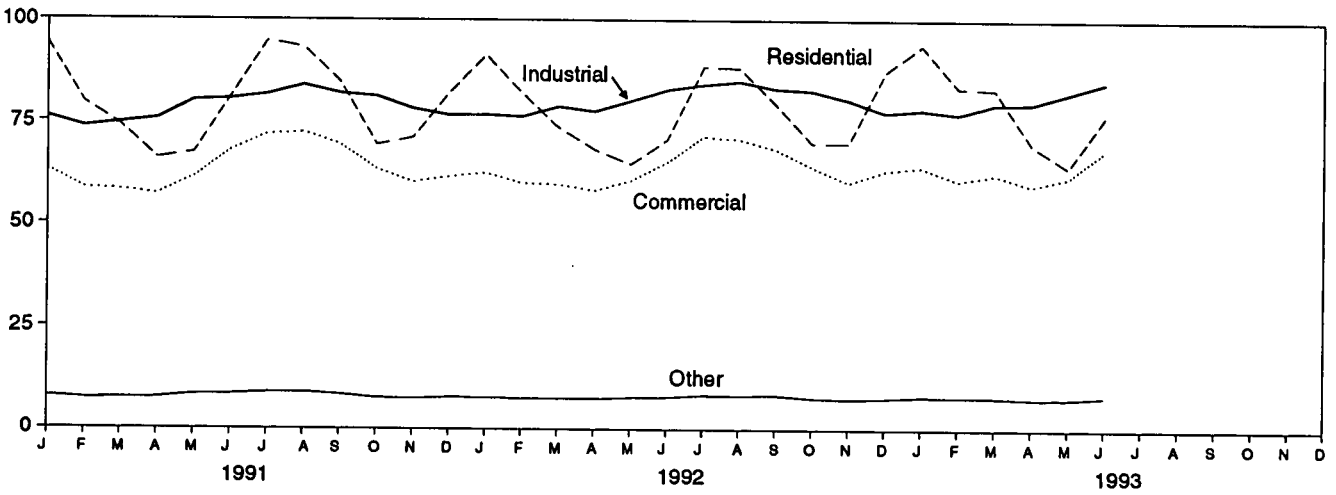
Total Sales, January-June



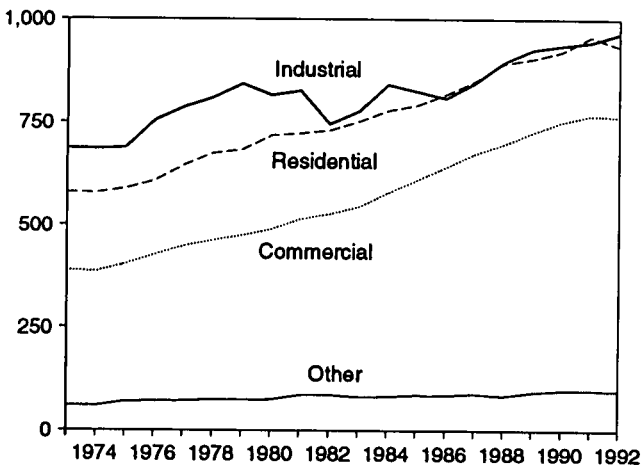
Total Sales, Monthly



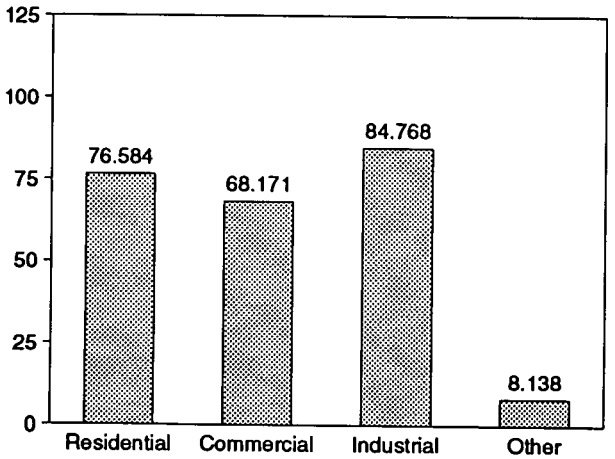
Sales by Sector, Monthly



Sales by Sector, 1973-1992



Sales by Sector, June 1993



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 7.2, Monthly Series.

Table 7.2 Electricity Sales by End-Use Sector

(Million Kilowatthours)

	Residential		Commercial		Industrial		Other[a]		Total	
	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series
1973 Total	579,231	NA	388,266	NA	686,085	NA	59,326	NA	1,712,909	NA
1974 Total	578,184	NA	384,826	NA	684,875	NA	58,039	NA	1,705,924	NA
1975 Total	588,140	NA	403,049	NA	687,680	NA	68,222	NA	1,747,091	NA
1976 Total	606,452	NA	425,094	NA	754,069	NA	69,631	NA	1,855,246	NA
1977 Total	645,239	NA	446,514	NA	786,037	NA	70,571	NA	1,948,361	NA
1978 Total	674,466	NA	461,163	NA	809,078	NA	73,215	NA	2,017,922	NA
1979 Total	682,819	NA	473,307	NA	841,903	NA	73,070	NA	2,071,099	NA
1980 Total	717,495	NA	488,155	NA	815,067	NA	73,732	NA	2,094,449	NA
1981 Total	722,265	NA	514,338	NA	825,743	NA	84,756	NA	2,147,103	NA
1982 Total	729,520	NA	526,397	NA	744,949	NA	85,575	NA	2,086,441	NA
1983 Total	750,948	NA	543,788	NA	775,999	NA	80,219	NA	2,150,955	NA
1984 Total	777,654	780,092	578,281	582,621	840,588	837,836	81,849	85,248	2,278,372	2,285,796
1985 Total	790,977	793,934	608,968	605,989	824,523	836,772	85,075	87,279	2,309,543	2,323,974
1986 Total	817,663	819,088	641,469	630,520	808,292	830,531	83,409	88,615	2,350,835	2,368,753
1987 Total	849,613	850,410	673,707	660,433	845,266	858,233	86,854	88,196	2,455,440	2,457,272
1988 Total	892,125	892,866	697,711	699,100	895,751	896,498	82,362	89,598	2,567,949	2,578,062
1989 Total	903,979	905,525	725,229	725,861	926,376	925,659	91,066	89,765	2,646,651	2,646,809
1990 Total	921,473	924,019	750,835	751,027	936,428	945,522	95,936	91,988	2,704,672	2,712,555
1991 January	94,144	–	63,336	–	76,111	–	7,905	–	241,497	–
February	79,676	–	58,582	–	73,715	–	7,424	–	219,397	–
March	74,078	–	58,157	–	74,720	–	7,459	–	214,414	–
April	66,079	–	57,155	–	75,706	–	7,600	–	206,541	–
May	67,450	–	61,434	–	80,236	–	8,378	–	217,498	–
June	81,116	–	67,991	–	80,569	–	8,502	–	238,177	–
July	94,738	–	71,872	–	81,700	–	8,877	–	257,187	–
August	93,127	–	72,360	–	83,974	–	8,986	–	258,447	–
September	84,696	–	69,501	–	81,967	–	8,476	–	244,639	–
October	69,422	–	63,439	–	81,209	–	7,654	–	221,723	–
November	71,114	–	60,133	–	78,176	–	7,463	–	216,886	–
December	82,160	–	61,516	–	76,601	–	7,790	–	228,068	–
Total	957,801	955,417	765,476	765,664	944,684	946,583	96,513	94,339	2,764,474	2,762,003
1992 January	91,310	–	62,441	–	76,760	–	7,725	–	238,235	–
February	82,022	–	59,876	–	76,312	–	7,507	–	225,717	–
March	73,635	–	59,574	–	78,741	–	7,542	–	219,491	–
April	68,322	–	58,081	–	77,607	–	7,448	–	211,458	–
May	64,662	–	60,559	–	80,191	–	7,767	–	213,179	–
June	70,745	–	65,209	–	82,900	–	7,901	–	226,755	–
July	88,510	–	71,445	–	84,195	–	8,392	–	252,541	–
August	88,251	–	70,844	–	85,013	–	8,327	–	252,435	–
September	79,400	–	68,437	–	83,182	–	8,441	–	239,460	–
October	69,838	–	63,985	–	82,678	–	7,766	–	224,267	–
November	69,970	–	60,131	–	80,421	–	7,462	–	217,984	–
December	87,378	–	63,082	–	77,358	–	7,725	–	235,543	–
Total	934,044	NA	763,664	NA	965,356	NA	94,003	NA	2,757,067	NA
1993 January	93,739	–	63,930	–	78,074	–	8,113	–	243,856	–
February	83,416	–	60,624	–	77,017	–	7,940	–	228,997	–
March	83,023	–	62,169	–	79,504	–	7,919	–	232,615	–
April	69,668	–	59,389	–	79,593	–	7,588	–	216,238	–
May	63,852	–	61,420	–	82,100	–	7,602	–	214,975	–
June	76,584	–	68,171	–	84,768	–	8,138	–	237,662	–
6-Month Total	470,282	–	375,703	–	481,058	–	47,299	–	1,374,343	–
1992 6-Month Total	450,697	–	365,740	–	472,509	–	45,890	–	1,334,836	–
1991 6-Month Total	462,544	–	366,656	–	461,056	–	47,268	–	1,337,524	–

[a] "Other" is public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

[b] Annual totals are the sums of the monthly values.

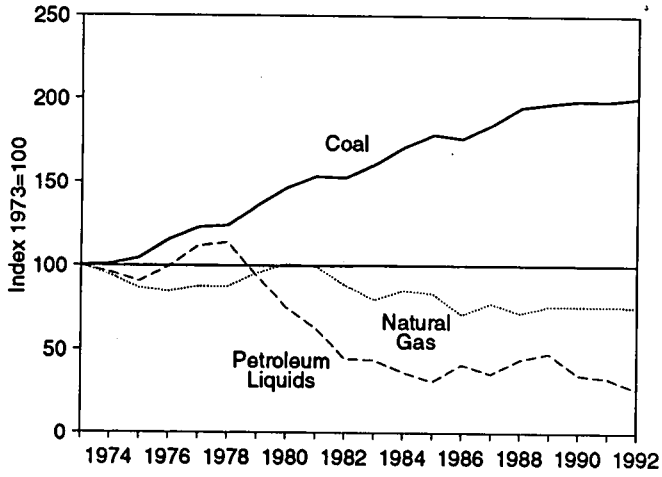
NA=Not available. – =Not applicable.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

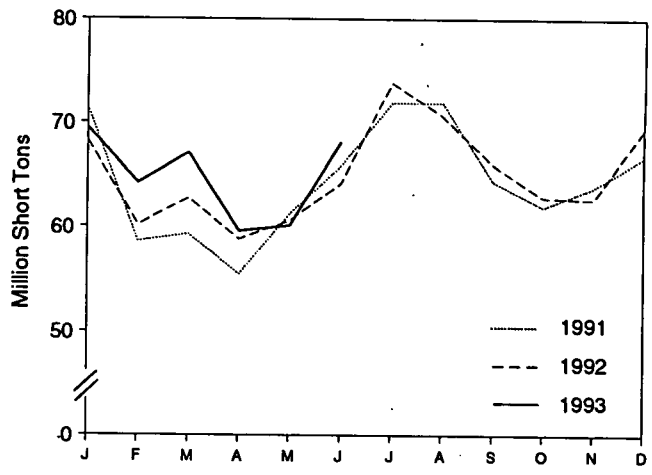
Sources: • **1973-September 1977:** Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income." **October 1977-1979:** Federal Energy Regulatory Commission, Form FERC-5, "Electric Operating Revenue and Income." • **1980:** Energy Information Administration (EIA), *Electric Power Monthly*, March 1991, Table 51. • **1981:** EIA, *Electric Power Monthly*, March 1992, Table 51. • **1982 and 1991 monthly data:** EIA, *Electric Power Monthly*, March 1993, Table 51. • **1983 forward (except 1991 monthly data):** EIA, *Electric Power Monthly*, September 1993, Table 51.

Figure 7.3 Electric Utility Consumption and Stocks of Fossil Fuels

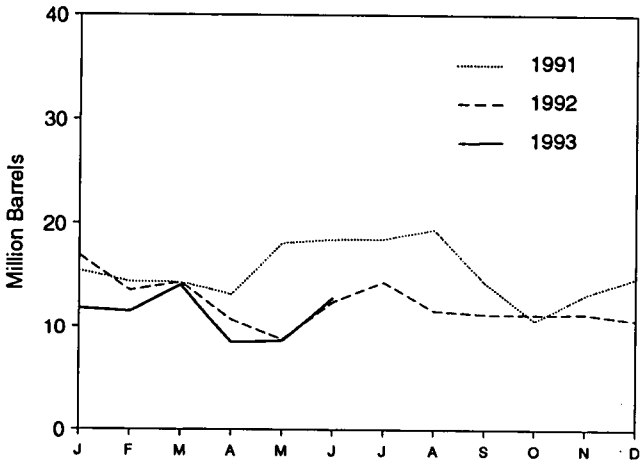
Fuels Consumed, 1973-1992



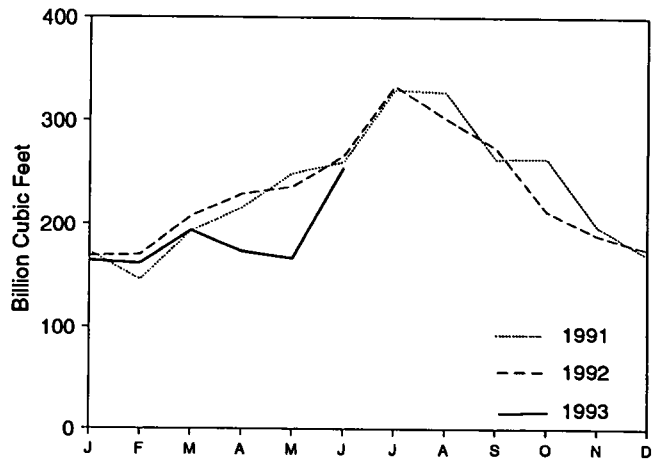
Coal Consumed, Monthly



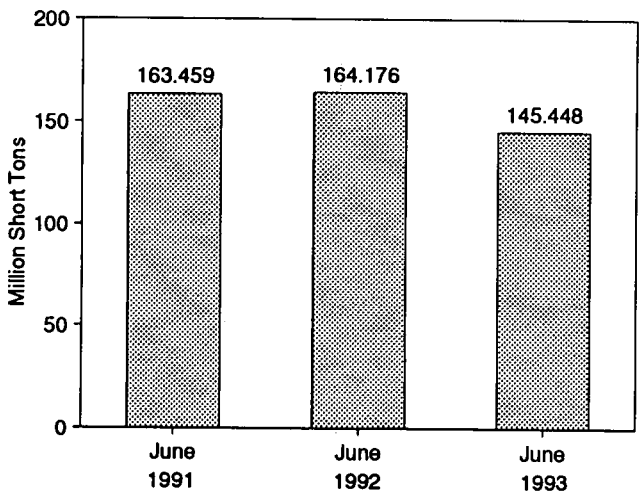
Petroleum Liquids Consumed, Monthly



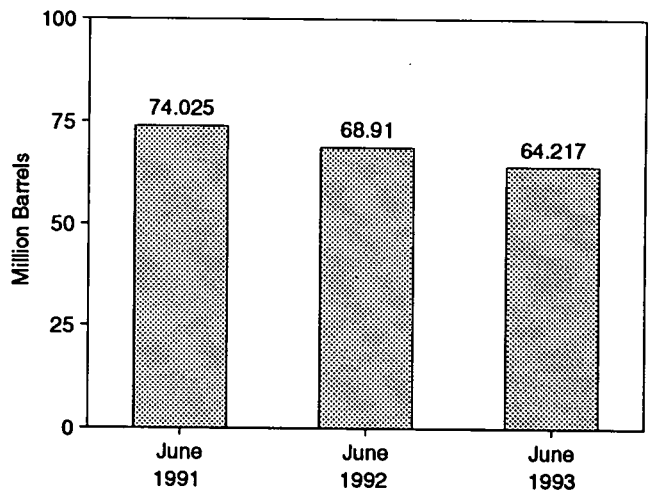
Natural Gas Consumed, Monthly



Coal Stocks, End of Month



Petroleum Liquids Stocks, End of Month



Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 7.3 and 7.4.

Table 7.3 Electric Utility Consumption of Fossil Fuels To Generate Electricity

	Coal				Petroleum						
					By Type of Petroleum		By Prime Mover Type				
	Anthracite	Bituminous Coal	Lignite	Total	Heavy Oil[a]	Light Oil[b]	Steam Plants	GT/IC[c]	Total Liquids	Petroleum Coke	Natural Gas[d]
	Thousand Short Tons				Thousand Barrels					Thousand Short Tons	Million Cubic Feet
1973 Total	1,443	376,975	10,794	389,212	NA	NA	513,190	47,058	560,248	507	3,660,172
1974 Total	1,498	378,643	11,670	391,811	NA	NA	483,146	53,128	536,274	625	3,443,428
1975 Total	1,480	388,523	15,960	405,962	NA	NA	467,221	38,907	506,128	70	3,157,669
1976 Total	1,350	425,205	21,817	448,371	NA	NA	514,077	41,843	555,920	68	3,080,868
1977 Total	1,425	451,051	24,650	477,126	NA	NA	574,869	48,837	623,705	98	3,191,200
1978 Total	1,064	448,763	31,407	481,235	NA	NA	588,319	47,520	635,839	398	3,188,363
1979 Total	1,046	488,129	37,876	527,051	NA	NA	492,606	30,691	523,297	268	3,490,523
1980 Total	951	526,680	41,642	569,274	391,163	29,051	401,863	18,351	420,214	179	3,681,595
1981 Total	1,221	550,784	44,792	596,797	329,798	21,313	339,680	11,431	351,111	139	3,640,154
1982 Total	1,075	543,346	49,245	593,666	234,434	15,337	243,537	6,234	249,771	149	3,225,518
1983 Total	1,036	570,108	54,067	625,211	228,984	16,512	237,845	7,652	245,497	261	2,910,767
1984 Total	1,070	606,339	56,990	664,399	189,289	15,190	197,050	7,429	204,479	252	3,111,342
1985 Total	1,033	631,885	60,923	693,841	158,779	14,635	166,842	6,572	173,414	231	3,044,083
1986 Total	829	616,134	68,093	685,056	216,156	14,326	222,500	7,983	230,482	313	2,602,370
1987 Total	972	647,824	69,098	717,894	184,011	15,367	190,818	8,560	199,378	348	2,844,051
1988 Total	1,063	681,048	76,260	758,372	229,327	18,769	235,817	12,279	248,096	409	2,635,613
1989 Total	1,049	688,504	77,335	766,888	241,960	25,491	250,315	17,136	267,451	517	2,787,012
1990 Total	1,031	694,317	78,201	773,549	181,231	14,823	187,531	8,523	196,054	819	2,787,332
1991 January	74	63,779	7,553	71,406	14,264	1,187	14,911	541	15,452	74	173,138
February	68	52,090	6,456	58,614	13,595	804	14,021	377	14,398	57	146,266
March	93	52,924	6,255	59,272	13,513	828	13,999	341	14,340	73	192,899
April	92	50,131	5,219	55,443	12,142	1,019	12,641	519	13,161	72	215,659
May	73	55,229	5,926	61,228	16,312	1,814	16,919	1,208	18,126	66	249,454
June	72	58,455	7,290	65,817	17,325	1,122	17,845	602	18,447	50	260,153
July	101	64,202	7,548	71,852	17,289	1,218	17,737	770	18,507	61	329,861
August	90	64,280	7,514	71,884	18,041	1,380	18,500	921	19,421	56	327,621
September	90	57,474	6,833	64,397	13,209	1,165	13,634	740	14,374	52	262,825
October	86	55,586	6,212	61,883	9,791	902	10,289	403	10,693	50	263,376
November	79	57,662	6,073	63,814	12,020	1,146	12,575	591	13,166	52	197,831
December	77	59,462	7,120	66,659	13,656	1,143	14,214	586	14,800	59	169,931
Total	994	691,275	79,999	772,268	171,157	13,729	177,286	7,600	184,886	722	2,789,014
1992 January	80	60,881	7,304	68,264	15,811	1,103	16,332	582	16,915	71	169,125
February	80	53,687	6,415	60,183	12,730	806	13,093	444	13,536	76	170,293
March	93	56,243	6,368	62,705	13,492	843	13,932	404	14,336	83	207,656
April	73	53,314	5,407	58,794	9,929	811	10,335	404	10,740	66	229,012
May	69	54,664	5,858	60,591	7,910	843	8,385	367	8,752	50	236,316
June	84	57,179	6,859	64,122	11,372	1,077	11,881	568	12,449	66	265,882
July	90	66,318	7,407	73,815	12,939	1,428	13,392	974	14,367	72	333,567
August	84	62,937	7,616	70,637	10,607	1,011	11,067	551	11,619	116	302,544
September	83	58,899	6,985	65,967	10,456	849	10,820	485	11,305	98	273,670
October	85	56,366	6,356	62,806	10,454	792	10,867	379	11,246	103	212,640
November	74	56,186	6,352	62,612	10,330	1,004	10,803	531	11,333	93	189,296
December	93	61,951	7,321	69,365	9,749	989	10,256	482	10,737	105	175,608
Total	986	698,626	80,248	779,860	135,779	11,556	141,163	6,172	147,335	999	2,765,608
1993 January	79	61,793	7,617	69,490	10,804	1,011	11,265	550	11,815	92	164,400
February	88	57,682	6,431	64,201	10,591	934	11,023	502	11,525	81	161,778
March	101	60,969	6,002	67,073	12,784	1,277	13,313	748	14,062	87	193,795
April	84	53,722	5,757	59,563	7,629	819	8,094	354	8,448	79	173,709
May	81	53,450	6,570	60,102	7,722	867	8,198	392	8,590	86	167,146
June	80	61,085	6,948	68,113	11,756	1,113	12,249	621	12,870	98	254,601
6-Month Total	513	348,702	39,326	388,542	61,287	6,022	64,141	3,167	67,308	522	1,115,428
1992 6-Month Total	478	335,969	38,211	374,658	71,244	5,483	73,958	2,770	76,728	412	1,278,283
1991 6-Month Total	472	332,609	38,698	371,779	87,151	6,774	90,337	3,588	93,925	391	1,237,569

[a] Heavy oil includes Grade Nos. 4, 5, and 6, and residual fuel oils.
[b] Light oil includes Grade No. 2 heating oil, kerosene, and jet fuel.
[c] GT/IC = Gas turbine and internal combustion plants.
[d] Includes supplemental gaseous fuels.
NA=Not available.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Sources: • **Prime Mover Type Data: 1973-September 1977**—Federal Power Commission (FPC), Form FPC-4, "Monthly Power Plant Report." **October 1977-1981**—Federal Energy Regulatory Commission (FERC), Form FPC-4, "Monthly Power Plant Report." **1982 forward**—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • **All Other Data: 1973-September 1977**—FPC, Form FPC-4, "Monthly Power Plant Report." **October 1977-1979**—FERC, Form FPC-4, "Monthly Power Plant Report." **1980**—EIA, *Electric Power Monthly*, March 1991, Table 17. • **1981:** EIA, *Electric Power Monthly*, March 1992, Table 17. • **1982 and 1991 monthly data:** EIA, *Electric Power Monthly*, March 1993, Table 17. • **1983 forward (except 1991 monthly data):** EIA, *Electric Power Monthly*, September 1993, Table 17.

Table 7.4 Electric Utility Stocks of Coal and Petroleum, End of Period

	Coal				Petroleum					
					By Type of Petroleum		By Prime Mover Type			
	Anthracite	Bituminous Coal	Lignite	Total	Heavy Oil[a]	Light Oil[b]	Steam Plants	GT/IC[c]	Total Liquids	Petroleum Coke
	Thousand Short Tons				Thousand Barrels					Thousand Short Tons
1973 Total	1,066	84,941	961	86,967	NA	NA	79,121	10,095	89,216	312
1974 Total	930	81,712	867	83,509	NA	NA	97,718	15,199	112,917	35
1975 Total	982	107,927	1,815	110,724	NA	NA	108,825	16,432	125,257	31
1976 Total	1,000	114,130	2,306	117,436	NA	NA	106,993	14,703	121,696	32
1977 Total	2,321	128,210	2,688	133,219	NA	NA	124,750	19,281	144,031	44
1978 Total	2,178	123,020	3,027	128,225	NA	NA	102,402	16,386	118,788	198
1979 Total	3,274	152,981	3,459	159,714	NA	NA	111,121	20,301	131,422	183
1980 Total	4,741	174,154	4,115	183,010	105,351	30,023	117,227	18,147	135,374	52
1981 Total	5,537	158,258	5,098	168,893	102,042	26,094	112,380	15,756	128,136	42
1982 Total	6,080	170,480	4,573	181,132	95,515	23,369	105,287	13,597	118,884	41
1983 Total	6,507	145,250	3,841	155,598	70,573	18,801	78,285	11,090	89,375	55
1984 Total	6,710	167,118	5,899	179,727	68,503	19,116	76,836	10,784	87,619	50
1985 Total	7,189	142,144	7,043	156,376	57,304	16,386	64,704	8,985	73,689	49
1986 Total	7,099	148,665	6,042	161,806	56,841	16,269	64,258	8,853	73,111	40
1987 Total	6,940	156,670	7,187	170,797	55,069	15,759	61,705	9,123	70,827	51
1988 Total	6,561	133,434	6,512	146,507	54,187	15,099	60,311	8,974	69,285	86
1989 Total	6,403	122,967	6,490	135,860	47,446	13,824	53,309	7,962	61,270	105
1990 Total	6,499	142,650	7,016	156,166	67,030	16,471	73,306	10,195	83,501	94
1991 January	6,470	138,220	7,407	152,097	64,344	16,601	70,744	10,201	80,945	103
February	6,442	142,454	7,220	156,116	60,490	16,892	67,367	10,014	77,382	111
March	6,384	147,469	7,231	161,084	58,172	16,376	64,699	9,848	74,547	101
April	6,347	152,833	7,135	166,315	58,835	16,175	65,393	9,618	75,011	90
May	6,387	154,172	6,968	167,528	57,247	15,574	63,531	9,290	72,822	81
June	6,441	150,554	6,463	163,459	58,345	15,680	64,604	9,421	74,025	89
July	6,484	142,804	6,392	155,680	57,932	15,654	64,119	9,467	73,586	86
August	6,506	140,320	6,272	153,097	56,588	15,596	62,813	9,370	72,183	79
September	6,514	141,463	5,930	153,907	59,035	15,514	65,186	9,363	74,550	73
October	6,544	146,178	6,090	158,813	60,225	15,790	66,257	9,758	76,015	64
November	6,533	145,775	6,298	158,605	58,814	15,780	64,963	9,631	74,594	75
December	6,513	145,367	5,996	157,876	58,636	16,357	65,032	9,961	74,993	70
1992 January	6,488	143,466	5,683	155,637	53,136	15,712	59,340	9,509	68,849	75
February	6,455	146,338	5,352	158,145	54,750	15,655	61,085	9,321	70,406	62
March	6,398	147,978	5,656	160,032	54,513	15,589	60,840	9,262	70,103	56
April	6,379	149,824	6,387	162,591	52,815	15,371	59,044	9,143	68,186	47
May	6,370	152,275	6,867	165,512	55,144	15,214	61,145	9,214	70,358	63
June	6,355	151,224	6,596	164,176	53,794	15,117	59,648	9,263	68,910	67
July	6,341	141,613	6,449	154,403	53,445	14,995	59,273	9,167	68,440	56
August	6,343	140,166	6,071	152,580	54,434	15,456	60,644	9,246	69,890	46
September	6,329	140,409	5,946	152,685	52,731	15,251	58,646	9,336	67,982	51
October	6,304	144,068	6,487	156,859	52,919	15,351	58,869	9,400	68,269	55
November	6,273	145,406	6,169	157,849	53,632	15,302	59,535	9,398	68,934	59
December	6,215	142,156	5,759	154,130	56,135	15,714	62,374	9,475	71,849	67
1993 January	6,166	138,685	5,521	150,371	53,781	15,956	60,209	9,527	69,736	65
February	6,107	134,674	5,357	146,139	50,008	15,205	56,306	8,907	65,213	60
March	6,036	132,183	5,758	143,978	45,313	15,001	51,528	8,785	60,314	66
April	5,802	136,159	6,088	148,049	47,958	14,835	54,069	8,724	62,793	77
May	5,773	138,165	6,132	150,070	50,422	14,682	56,512	8,591	65,103	82
June	5,766	133,673	6,009	145,448	49,294	14,923	55,595	8,621	64,217	92

[a] Heavy oil includes Grade Nos. 4, 5, and 6, and residual fuel oils.
[b] Light oil includes Grade No. 2 heating oil, kerosene, and jet fuel.
[c] GT/IC = Gas turbine and internal combustion plants.
NA=Not available.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **Prime Mover Type Data: 1973-September 1977**—Federal Power Commission (FPC), Form FPC-4, "Monthly Power Plant Report." **October 1977-1981**—Federal Energy Regulatory Commission (FERC), Form FPC-4, "Monthly Power Plant Report." **1982 forward**—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • **All Other Data: 1973-September 1977**—FPC, Form FPC-4, "Monthly Power Plant Report." **October 1977-1979**—FERC, Form FPC-4, "Monthly Power Plant Report." **1980**—EIA, *Electric Power Monthly*, March 1991, Table 28. **1981**—EIA, *Electric Power Monthly*, March 1992, Table 28. **1982 and 1991 monthly data**—EIA, *Electric Power Monthly*, March 1993, Table 28. **1983 forward (except 1991 monthly data)**—EIA, *Electric Power Monthly*, September 1993, Table 28.

Section 8. Nuclear Energy

In June 1993, U.S. nuclear generating units produced a total of 53 net terawatthours (billion kilowatthours) of electricity, 3 percent[8] more than in June 1992. Nuclear units generated at an average capacity factor of 73.8 percent, 2 percentage points higher than in June 1992. Nuclear power supplied 21.1 percent of the total electric utility-generated electricity in June 1993, down from 21.6 percent in June 1992.

Nuclear generation and the average capacity factor were higher in the first 6 months of 1993 than they were during the first 6 months of 1992, and the share of electricity did not change. Specifically, nuclear generation for the first 6 months of 1993 was 3 percent higher than generation during the first 6 months of 1992. During the same period, the average capacity factor for the U.S. nuclear units was 70.9 percent in 1993 and 68.1 percent in 1992. The average nuclear shares of electricity for the first 6 months of 1992 and 1993 were both 21.8 percent.

No low- or full power licenses for nuclear power plants were issued by Nuclear Regulatory Commission during June 1993.

On June 30, 1993, there were 109 operable nuclear generating units in the United States, with a collective net summer capability of 99.0 million kilowatts of electricity. Of the 109 operable units, 17 units generated at less than 25 percent of capacity because of maintenance, refueling, or repair outage, and 12 of the 17 units generated no electricity during the month.

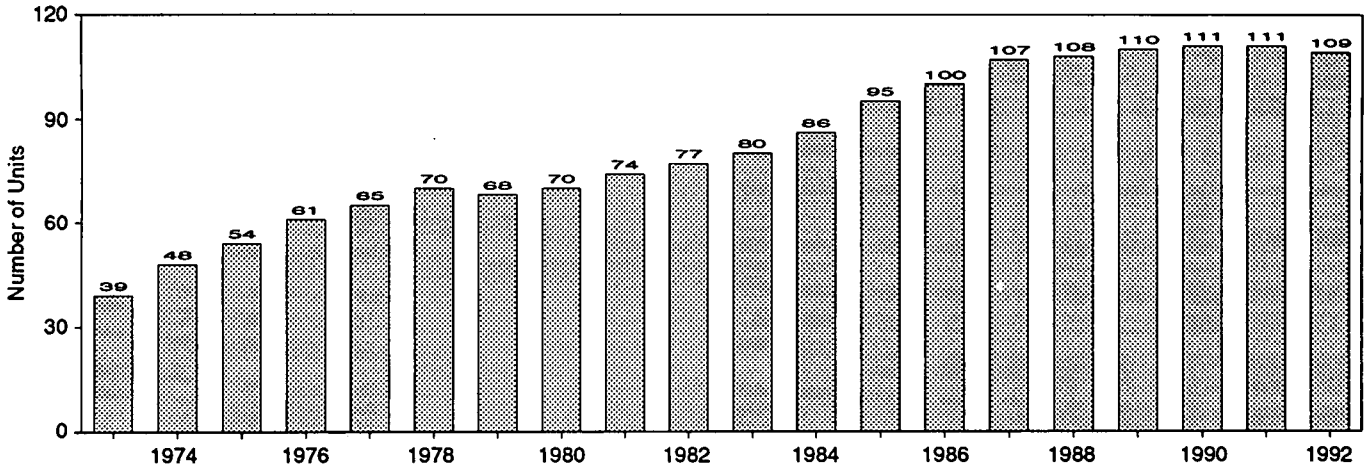
Two operable units, Browns Ferry 1 and 3, have been shut down since March 1985. Each unit had a capacity of 1,065 megawatts electric.

As of June 30, there were 116 domestic nuclear generating units in all stages of construction and operation. The aggregate net design capacity of operable units was 101.1 million kilowatts, and the design capacity of units under construction was 8.5 million kilowatts, for a total design capacity of 109.6 million kilowatts.

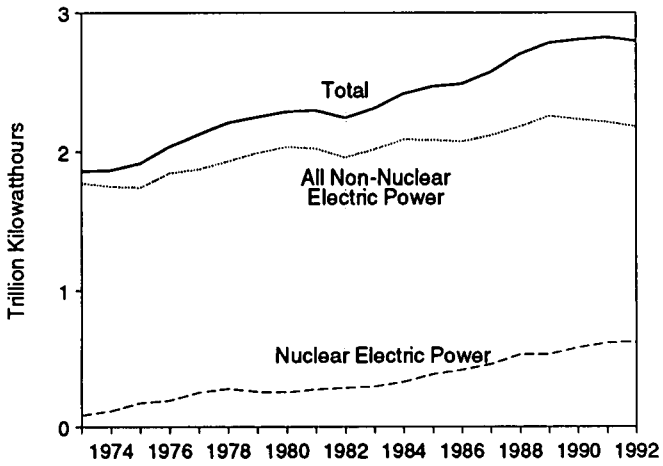
[8]Percentage changes are based on numbers shown in the following tables.

Figure 8.1 Nuclear Power Plant Operations

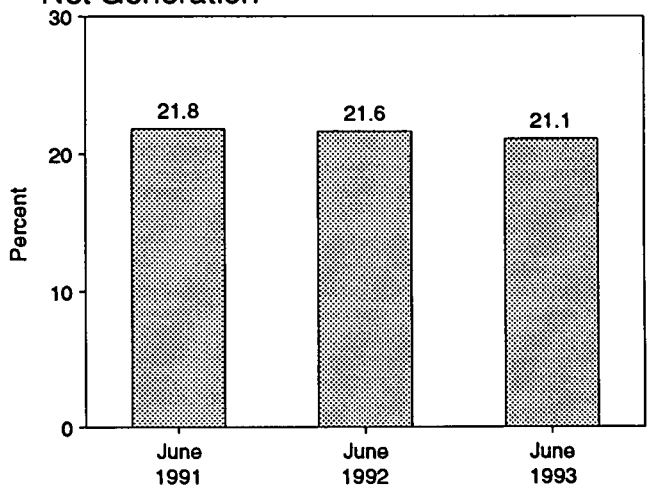
Operable Units, End of Year, 1973-1992



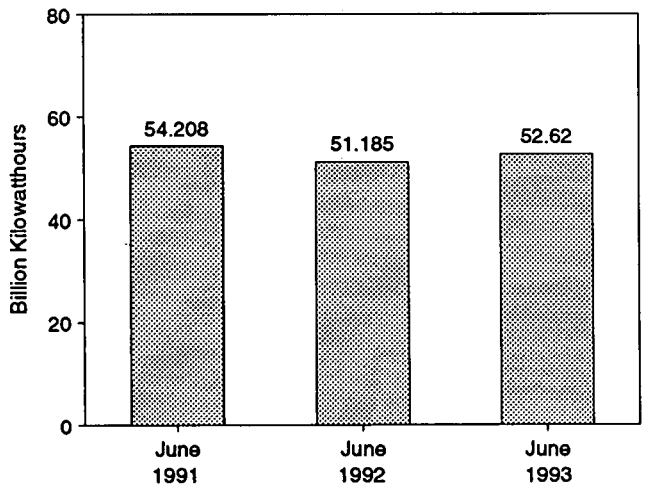
Net Generation of Electricity, 1973-1992



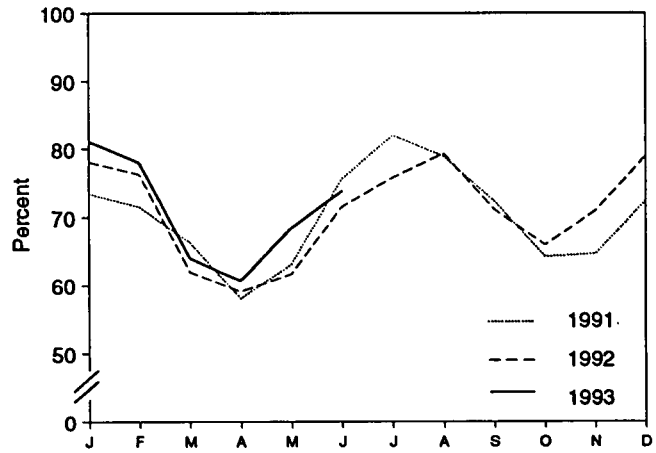
Nuclear Portion of Domestic Electricity Net Generation



Nuclear Electricity Net Generation



Capacity Factor, Monthly



Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 7.1 and 8.1.

Table 8.1 Nuclear Power Plant Operations

	Operable Units[a,b]	Nuclear Electricity Net Generation	Nuclear Portion of Domestic Electricity Net Generation	Net Summer Capability of Operable Units[a,c]	Capacity Factor[d]
	Number	Million Kilowatthours	Percent	Million Kilowatts	Percent
1973 Year	39	83,479	4.5	22.683	53.5
1974 Year	48	113,976	6.1	31.867	47.8
1975 Year	54	172,505	9.0	37.267	55.9
1976 Year	61	191,104	9.4	43.822	54.7
1977 Year	65	250,883	11.8	46.303	63.3
1978 Year	70	276,403	12.5	50.824	64.5
1979 Year	68	255,155	11.4	49.747	58.4
1980 Year	70	251,116	11.0	51.810	56.3
1981 Year	74	272,674	11.9	56.042	58.2
1982 Year	77	282,773	12.6	60.035	56.6
1983 Year	80	293,677	12.7	63.009	54.4
1984 Year	86	327,634	13.6	69.652	56.3
1985 Year	95	383,691	15.5	79.397	58.0
1986 Year	100	414,038	16.6	85.241	56.9
1987 Year	107	455,270	17.7	93.583	57.4
1988 Year	108	526,973	19.5	94.695	63.5
1989 Year	110	529,355	19.0	98.161	62.2
1990 Year	111	576,862	20.5	99.624	66.0
1991 January	111	54,369	21.9	99.624	73.4
February	111	47,863	22.7	99.624	71.5
March	111	49,121	22.2	99.624	66.3
April	111	41,631	19.9	99.624	58.1
May	111	46,755	19.9	99.624	63.1
June	111	54,208	21.8	99.624	75.6
July	111	60,735	22.3	99.589	82.0
August	111	58,473	21.8	99.589	78.9
September	111	51,874	22.2	99.589	72.3
October	111	47,653	21.3	99.589	64.2
November	111	46,295	20.9	99.589	64.6
December	111	53,589	22.9	99.589	72.3
Year	111	612,565	21.7	99.589	70.2
1992 January	111	57,849	23.7	99.589	78.1
February	110	52,804	24.2	99.422	76.3
March	110	45,835	20.4	99.422	62.0
April	110	42,268	20.0	99.422	59.1
May	110	45,627	20.7	99.422	61.7
June	110	51,185	21.6	99.422	71.5
July	110	56,049	21.1	99.422	75.8
August	110	58,656	23.0	99.422	79.3
September	110	50,919	21.7	99.422	71.1
October	110	48,784	22.0	99.422	65.9
November	110	50,726	22.9	99.422	70.9
December	109	58,075	23.8	98.986	78.9
Year	109	618,776	22.1	98.986	70.9
1993 January	108	59,076	24.0	97.882	81.1
February	108	51,319	22.8	97.882	78.0
March	108	46,606	19.9	97.882	64.0
April	109	43,199	20.4	99.032	60.7
May	109	50,367	22.6	99.032	68.4
June	109	52,620	21.1	99.032	73.8
6-Month Total	109	303,187	21.8	99.032	70.9
1992 6-Month Total	110	295,568	21.8	99.422	68.1
1991 6-Month Total	111	293,947	21.4	99.624	67.9

[a] At end of period.
[b] See Note 1 at end of section.
[c] For the definition of "Net Summer Capability," see Note 3 at end of section.
[d] For an explanation of the method of calculating the capacity factor, see Note 4 at end of section.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Nuclear electricity net generation totals may not equal sum of components due to independent rounding.

Sources: • **Operable Units: 1973-1982**—U.S. Department of Energy (DOE), Office of Nuclear Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones." **1983 forward**—Nuclear Regulatory Commission (NRC), "Licensed Operating Reactors" (NUREG-0020). • **Nuclear Electricity Net Generation:** Table 7.1. • **Nuclear Portion of Domestic Electricity Net Generation:** Calculated from data in Table 7.1. • **Net Summer Capability of Operable Units: 1973-1982**—Compiled from various sources, primarily DOE, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones." **1983 forward**—Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generation Report," and monthly updates as appropriate. • **Capacity Factor:** EIA, Office of Coal, Nuclear, Electric and Alternate Fuels.

Table 8.2 Nuclear Generating Units, End of Period

	Licensed for Operation		Construction Permits		On Order	Announced	Total	Total Design Capacity[c]
	Operable[a]	In Startup[b]	Granted	Pending				
	Number of Units							Million Kilowatts
1973 Year	39	2	57	52	49	9	208	198
1974 Year	48	5	62	75	30	6	226	223
1975 Year	54	2	69	69	14	5	213	212
1976 Year	61	1	71	63	16	2	214	211
1977 Year	65	2	78	49	13	2	209	203
1978 Year	70	0	88	32	5	0	195	191
1979 Year	68	0	90	24	3	0	185	180
1980 Year	70	1	82	12	3	0	168	162
1981 Year	74	0	76	11	2	0	163	157
1982 Year	77	2	60	3	2	0	144	134
1983 Year	80	3	53	0	2	0	138	129
1984 Year	86	6	38	0	2	0	132	123
1985 Year	95	3	30	0	2	0	130	121
1986 Year	100	7	19	0	2	0	128	119
1987 Year	107	4	14	0	2	0	127	119
1988 Year	108	3	12	0	0	0	123	115
1989 Year	110	1	10	0	0	0	121	113
1990 Year	111	0	8	0	0	0	119	111
1991 January	111	0	8	0	0	0	119	111
February	111	0	8	0	0	0	119	111
March	111	0	8	0	0	0	119	111
April	111	0	8	0	0	0	119	111
May	111	0	8	0	0	0	119	111
June	111	0	8	0	0	0	119	111
July	111	0	8	0	0	0	119	111
August	111	0	8	0	0	0	119	111
September	111	0	8	0	0	0	119	111
October	111	0	8	0	0	0	119	111
November	111	0	8	0	0	0	119	111
December	111	0	8	0	0	0	119	111
1992 January	111	0	8	0	0	0	119	111
February	110	0	8	0	0	0	118	111
March	110	0	8	0	0	0	118	111
April	110	0	8	0	0	0	118	111
May	110	0	8	0	0	0	118	111
June	110	0	8	0	0	0	118	111
July	110	0	8	0	0	0	118	111
August	110	0	8	0	0	0	118	111
September	110	0	8	0	0	0	118	111
October	110	0	8	0	0	0	118	111
November	110	0	8	0	0	0	118	111
December	109	0	8	0	0	0	117	111
1993 January	108	0	8	0	0	0	116	110
February	108	1	7	0	0	0	116	110
March	108	1	7	0	0	0	116	110
April	109	0	7	0	0	0	116	110
May	109	0	7	0	0	0	116	110
June	109	0	7	0	0	0	116	110

[a] See Note 1 at end of section.
[b] See Note 2 at end of section.
[c] Net design electrical rating (DER) is used because many of the units were canceled prior to being assigned a net summer capability. See Note 3 at end of section.

Note: Geographic coverage is the 50 States and the District of Columbia.

Sources: • **Licensed for Operation: 1973-1982**—U.S. Department of Energy (DOE), Office of Nuclear Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones." **1983 forward**—Nuclear Regulatory Commission (NRC), "Licensed Operating Reactors" (NUREG-0020). • **Construction Permits, On Order, and Announced: 1973-1982**—Compiled from various sources, primarily DOE, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones"; Energy Information Administration (EIA), Office of Coal, Nuclear, Electric and Alternate Fuels (CNEAF), "Nuclear Steam-Electric Units That Have Been in Operation as of 1957-1989"; EIA, CNEAF, "Nuclear Plant Cancellations: Causes, Costs, and Consequences"; and Utility Data Institute, Inc., "U.S. Nuclear Plant Statistics, 1987." **1983 forward**—NRC, "Summary Information Report" (NUREG-0871); NRC, "Licensed Operating Reactors" (NUREG-0020); and various journals. • **Total Design Capacity: 1973-1982**—Compiled from various sources, primarily DOE, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones"; EIA, CNEAF, "Nuclear Steam-Electric Units That Have Been in Operation as of 1957-1987"; EIA, CNEAF, "Monthly Report for Electric Utilities-Power Generation"; EIA, CNEAF, "Nuclear Plant Cancellations: Causes, Costs, and Consequences"; and Utility Data Institute, Inc., "U.S. Nuclear Plant Statistics, 1987." **1983 forward**—NRC, "Summary Information Report" (NUREG-0871); NRC, "Licensed Operating Reactors" (NUREG-0020); and EIA, Form EIA-860, "Annual Electric Generator Report."

Nuclear Energy Notes

1. Operable Units: Nuclear generating units that have been issued a full-power license by the Nuclear Regulatory Commission (NRC).

Exceptions: The Shippingport (60 MWe) and the Hanford-N (840 MWe) nuclear units were included in the operable units until 1982 and 1988, respectively. The Shippingport unit was excluded from the operable category during March 1974-August 1977 due to a major core modification outage. Hanford-N, an unlicensed unit used for defense material production, was included in the operable category because power was produced as by-product and sold commercially. Three Mile Island 2 (880 MWe) experienced a major accident in 1979 and, although that unit still retains its operating license and site cleanup continues, there is no plan to restart it. Therefore, it has not been included in the operable category since March 1979. Although Shoreham received a full-power license in April 1989, the unit is not currently scheduled to operate and, therefore, has not been included in the operable category. Rancho Seco (873 MWe) was shut down by the Sacramento Municipal Utility District (SMUD) in June 1989 following a referendum on its continued operation. Because there are currently no plans to operate it as a nuclear unit, it is no longer included as an operable unit but is identified as a unit shut down for an extended period. As soon as SMUD and the NRC formalize the plant's official retirement, it will be noted as such in this report. The Department of Energy-operated Experimental Breeder Reactor 2 unit is not a commercial reactor and is therefore not included in the operable category.

In addition, seven units have been retired and therefore removed from the operable category. Those units are: Peach Bottom 1 (40 MWe) and Indian Point 1 (265 MWe), both retired in 1974; Humboldt Bay (65 MWe), officially retired in 1976; Dresden 1 (200 MWe), retired in August 1979; LaCrosse (51 MWe), retired in May 1987; Fort Saint Vrain (217 MWe), retired in August 1989; Yankee Rowe 1 (185 MWe), retired in February 1992; San Onofre 1 (436 MWe), retired in December 1992; and Trojan (1,104 MWe), retired in January 1993.

2. In Startup: The period of time between a nuclear generating unit's initial fuel loading date and the issuance of its full-power license. During that period, the unit is undergoing low-power testing and the maximum level of operation is 5 percent of the unit's design thermal rating.

3. Capacity: Nuclear generating units may have more than one type of net capacity rating, including the following:

(a) 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. Auxiliary power of a typical nuclear power plant is about 5 percent of gross generation.

(b) Net Design Capacity or Net Design Electrical Rating (DER)—The nominal net electrical output of a unit, specified by the utility and used for plant design.

4. Monthly Capacity Factors: 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 summer capability at the end of the month. That fraction is then multiplied by 100 to obtain a percentage. Annual capacity factors are averages of the monthly values for that year.

Section 9. Energy Prices

Crude Oil. The average price of domestic crude oil purchased at the wellhead was $15.01 per barrel in June 1993, 16 percent below the level in June 1992. The refiner acquisition cost of imported crude oil in June 1993 was $16.80 per barrel, 15 percent below the June 1992 level. The average cost of domestic crude oil in June 1993 was $17.70, 12 percent less than the June 1992 average.

Motor Gasoline. The national city average retail price of unleaded regular gasoline at all types of stations was $1.11 per gallon in July 1993, 6 percent lower than the price in July 1992. The price of unleaded premium gasoline averaged $1.31 per gallon in July 1993, 4 percent lower than the price in July 1992.

Residual Fuel Oil. The average price, excluding taxes, of residual fuel oil sold to end users in June 1993 was 35 cents per gallon, 6 percent lower than the previous month's price but 1 percent above the June 1992 average. The average resale price, excluding taxes, of residual fuel oil in June 1993 was 30 cents per gallon, 3 percent lower than the May 1993 average and 8 percent below the price 1 year earlier.

Aviation Fuel. The average price, excluding taxes, of aviation gasoline sold to end users in June 1993 was $1.03 per gallon, slightly higher than the previous month's price but 4 percent lower than the June 1992 price. The average price, excluding taxes, of kerosene-type jet fuel sold to end users in June 1993 was 59 cents per gallon, 2 percent lower than the previous month's average price and 8 percent lower than the June 1992 average price.

No. 2 Distillate Fuel Oil. The June 1993 national average price, excluding taxes, of heating oil sold to residential customers was 89 cents per gallon, 2 percent lower than the May 1993 price and 3 percent lower than the June 1992 price. The average price of No. 2 fuel oil sold to all end users was 58 cents per gallon in June 1993, 3 percent lower than the May 1993 price and 8 percent lower than the June 1992 price.

Electricity. The average price of electricity sold to all ultimate consumers in the United States in June 1993 was 7.1 cents per kilowatthour, 1 percent above the June 1992 mean price. The price of electricity sold to residential consumers in June 1993 averaged 8.8 cents per kilowatthour, 2 percent above the June 1992 price. The price of electricity sold to commercial consumers averaged 8.0 cents per kilowatthour in June 1993, 1 percent above the June 1992 price. The price of electricity sold to other consumers was 7.1 cents per kilowatthour, 3 percent above the June 1992 price. The price of electricity sold to industrial users in June 1993 averaged 5.0 cents per kilowatthour, 2 percent higher than the price 1 year earlier.

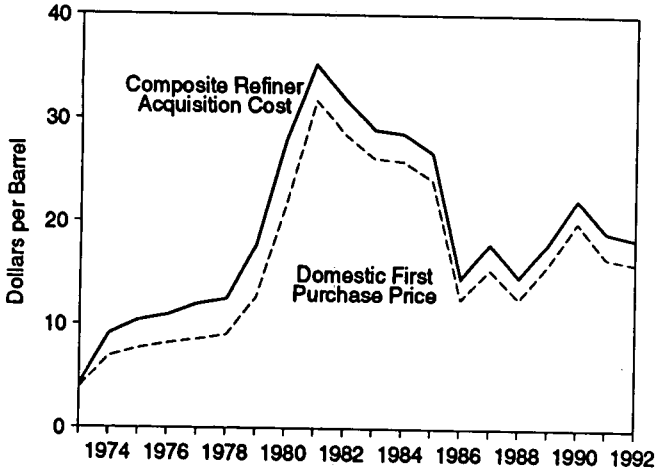
Beginning with January 1986, there were new series of national average price estimates based on a statistically derived sample of both publicly and privately owned electric utilities. Previously, average price estimates were derived from selected privately owned electric utilities and were not national averages.

Natural Gas. The estimated average wellhead price of natural gas for June 1993 was $2.12 per thousand cubic feet, 26 percent above the June 1992 price.

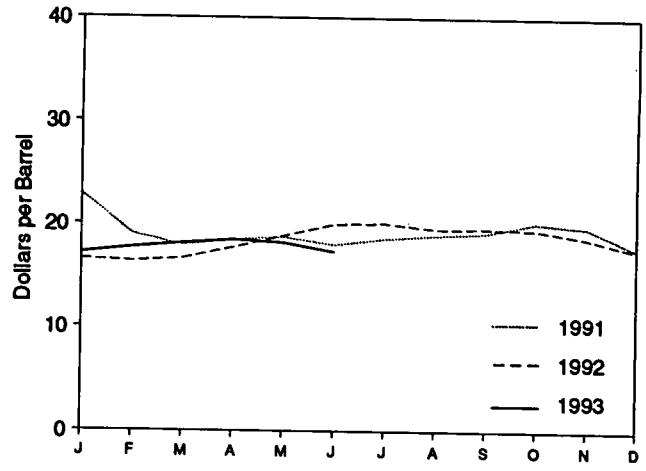
The average price of natural gas delivered to electric utility plants was $2.90 per thousand cubic feet in May 1993 (latest date for which data are available), 37 percent above the May 1992 price. The average price of natural gas used by residential consumers in June 1993 was $7.29 per thousand cubic feet, 7 percent above the June 1992 price. The average price of natural gas used by commercial consumers in June 1993 was $5.29 per thousand cubic feet, 12 percent higher than the June 1992 price. The average price of natural gas used by industrial consumers in June 1993 was $3.00 per thousand cubic feet, 19 percent above the June 1992 price.

Figure 9.1 Petroleum Prices

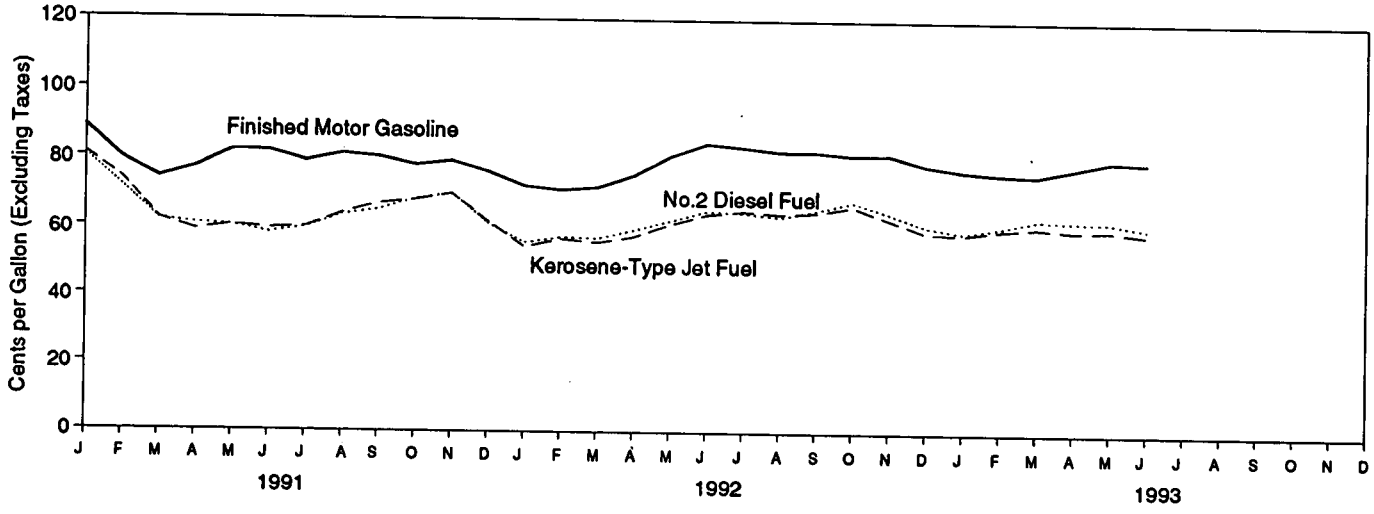
Crude Oil Prices, 1973-1992



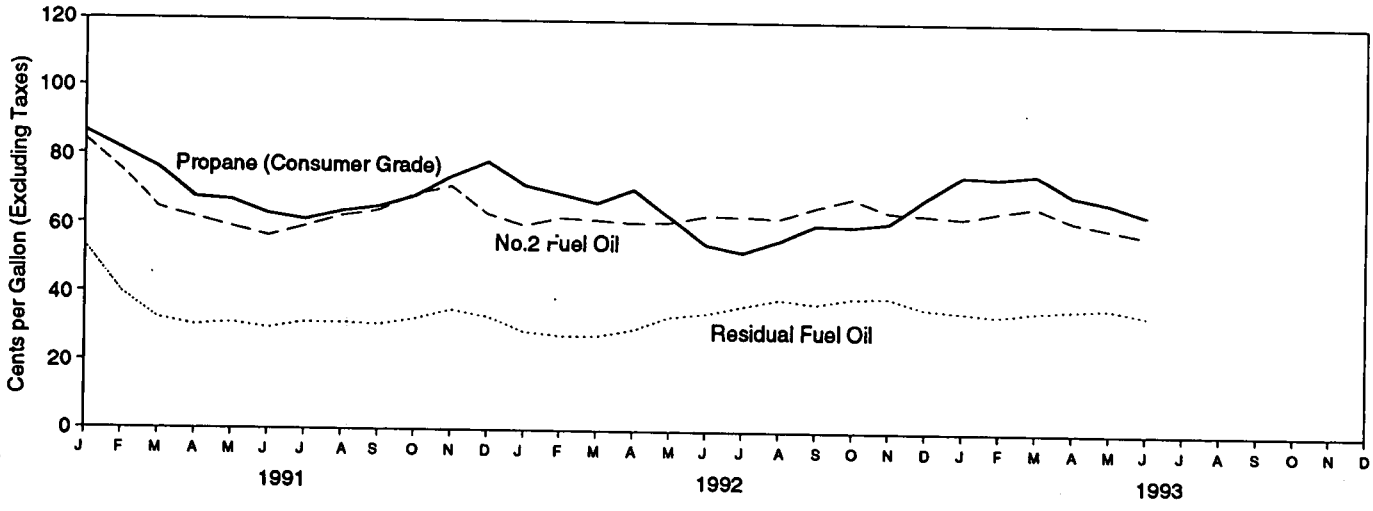
Composite Refiner Acquisition Cost, Monthly



Refiner Prices to End Users: Motor Gasoline, Diesel Fuel, and Jet Fuel, Monthly



Refiner Prices to End Users: No. 2 Fuel Oil, Propane, and Residual Fuel, Monthly



Sources: Tables 9.1, 9.5, and 9.7.

Table 9.1 Crude Oil Price Summary

(Dollars per Barrel)

	Domestic First Purchase Price[b]	F.O.B. Cost of Imports[c]	Landed Cost of Imports[d]	Refiner Acquisition Cost[a]		
				Domestic	Imported	Composite
1973 Average	3.89	[e] 5.21	[e] 6.41	[E] 4.17	[E] 4.08	[E] 4.15
1974 Average	6.87	10.91	12.32	7.18	12.52	9.07
1975 Average	7.67	11.18	12.70	8.39	13.93	10.38
1976 Average	8.19	12.15	13.32	8.84	13.48	10.89
1977 Average	8.57	13.24	14.36	9.55	14.53	11.96
1978 Average	9.00	13.29	14.35	10.61	14.57	12.46
1979 Average	12.64	20.07	21.45	14.27	21.67	17.72
1980 Average	21.59	32.37	33.67	24.23	33.89	28.07
1981 Average	31.77	35.15	36.47	34.33	37.05	35.24
1982 Average	28.52	32.02	33.18	31.22	33.55	31.87
1983 Average	26.19	27.81	28.93	28.87	29.30	28.99
1984 Average	25.88	27.60	28.54	28.53	28.88	28.63
1985 Average	24.09	25.84	26.67	26.66	26.99	26.75
1986 Average	12.51	12.52	13.49	14.82	14.00	14.55
1987 Average	15.40	16.69	17.65	17.76	18.13	17.90
1988 Average	12.58	13.25	14.08	14.74	14.56	14.67
1989 Average	15.86	16.89	17.68	17.87	18.08	17.97
1990 Average	20.03	20.37	21.13	22.59	21.76	22.22
1991 January	19.60	19.95	20.86	23.25	22.30	22.85
February	16.28	16.31	17.26	19.55	18.30	19.03
March	15.13	15.89	17.16	18.12	17.58	17.89
April	16.16	16.58	17.78	18.56	18.32	18.46
May	16.44	16.45	17.82	18.98	18.36	18.70
June	15.58	15.81	17.16	18.16	17.78	17.98
July	16.36	16.73	17.84	18.91	18.14	18.57
August	16.60	16.99	18.20	19.10	18.71	18.92
September	16.71	17.48	18.63	19.31	19.00	19.17
October	17.72	18.12	19.03	20.39	19.86	20.16
November	17.12	17.51	18.33	20.01	19.35	19.72
December	14.68	15.11	16.19	17.84	17.17	17.56
Average	16.54	16.89	18.02	19.33	18.70	19.06
1992 January	[R] 13.99	[R] 14.32	[R] 15.28	[R] 16.80	16.10	[R] 16.50
February	[R] 14.04	[R] 14.68	[R] 15.60	[R] 16.54	16.00	[R] 16.30
March	14.12	[R] 14.96	[R] 16.00	[R] 16.71	16.36	[R] 16.56
April	[R] 15.36	[R] 16.57	[R] 17.40	17.88	17.37	17.66
May	16.38	[R] 17.56	[R] 18.38	18.86	18.79	18.83
June	[R] 17.96	[R] 18.38	19.44	20.13	19.83	19.99
July	17.80	[R] 18.01	[R] 19.13	20.42	19.74	20.10
August	[R] 17.07	[R] 17.65	[R] 18.74	19.84	19.25	19.56
September	17.20	[R] 18.04	[R] 18.90	19.88	19.26	19.59
October	[R] 17.16	[R] 17.68	[R] 18.75	19.64	19.34	19.49
November	[R] 16.00	[R] 16.49	[R] 17.64	18.90	18.40	18.66
December	14.94	[R] 15.62	[R] 16.58	17.85	16.94	17.43
Average	[R] 15.99	[R] 16.77	[R] 17.75	18.63	18.20	18.43
1993 January	14.64	15.24	16.34	17.40	16.78	17.10
February	15.47	16.09	17.12	17.84	17.41	17.64
March	15.88	16.61	17.56	18.31	17.82	18.08
April	16.08	[R] 16.39	[R] 17.58	18.49	18.35	18.42
May	15.97	[R] 16.24	[R] 17.44	18.43	17.89	18.16
June	15.01	15.06	16.33	17.70	16.80	17.26

[a] See Note 4 at end of section.
[b] See Note 1 at end of section.
[c] See Note 2 at end of section.
[d] See Note 3 at end of section.
[e] Based on October, November, and December data only.
R=Revised data. E=Estimate.

Notes: • Geographic coverage is the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and all U.S. Territories and Possessions. • Values for Domestic First Purchase Price and Refiner Acquisition Cost for the current month and for F.O.B. and Landed Cost of Imports for the current 2 months are preliminary. • F.O.B. and landed costs through 1980 reflect the period of reporting; prices after 1980 reflect the period of loading • Annual averages are the averages of the monthly prices, weighted by volume.

Sources: • **Domestic First Purchase Price: 1973-1976**—U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. **1977**—Federal Energy Administration (FEA), based on Form FEA-P124, "Domestic Crude Oil Purchaser's Monthly Report." **1978 forward**—Energy Information Administration (EIA), *Petroleum Marketing Monthly*, September 1993, Table 1. • **F.O.B. and Landed Cost of Imports: October 1973-September 1977**—FEA, Form FEA-F701-M-0, "Transfer Pricing Report." **October-December 1977**—EIA, Form FEA-F701-M-0, "Transfer Pricing Report." **1978 forward**—EIA, *Petroleum Marketing Monthly*, September 1993, Table 1. • **Refiner Acquisition Cost: 1973**—EIA estimates. The domestic price was derived by adding estimated transportation costs to the reported domestic first purchase price. The imported price was derived by adding an estimated ocean transport cost to the average "Free Alongside Ship" value published by the U.S. Bureau of the Census. **1974-1976**—DOI, BOM, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. **1977—January-September**—FEA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report." **October-December**—EIA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report." **1978 forward**—EIA, *Petroleum Marketing Monthly*, September 1993, Table 1.

Table 9.2 F.O.B. Costs of Crude Oil Imports from Selected Countries

(Dollars per Barrel)

	Algeria	Indonesia	Iran	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela	Other Countries	Arab OPEC[a]	Total OPEC[b]
1973 Average[c]	7.23	5.67	4.24	NA	7.81	3.25	NA	5.39	4.84	4.06	5.43
1974 Average	13.23	11.99	10.85	W	12.44	10.17	NA	10.71	10.02	10.96	11.33
1975 Average	11.93	12.55	10.81	11.44	11.82	10.87	NA	11.04	10.86	11.18	11.34
1976 Average	13.05	12.76	11.61	12.22	13.08	11.62	W	11.39	11.92	12.06	12.23
1977 Average	14.35	13.57	12.68	13.42	14.44	12.38	14.11	12.63	13.19	13.13	13.29
1978 Average	14.12	13.61	12.65	13.24	14.05	12.70	13.82	12.38	13.35	13.28	13.31
1979 Average	20.53	19.03	22.93	20.27	21.69	17.28	21.70	16.90	21.10	19.27	19.88
1980 Average	36.67	32.17	NA	31.06	35.93	28.17	34.36	24.81	34.34	31.57	32.21
1981 Average	39.08	35.62	(d)	33.01	38.31	32.60	36.06	28.95	36.69	34.79	35.17
1982 Average	34.20	35.11	30.97	28.08	35.13	33.73	33.42	23.74	31.96	33.84	33.48
1983 Average	30.09	29.92	28.39	25.20	29.81	27.53	29.91	21.48	27.96	28.28	28.46
1984 Average	28.34	29.13	27.42	26.39	29.51	27.67	28.87	24.23	27.79	27.79	27.79
1985 Average	26.89	27.12	W	25.33	28.04	22.04	27.64	23.64	26.12	24.34	25.67
1986 Average	13.62	13.19	W	11.84	14.35	11.36	13.84	10.92	13.32	11.59	12.21
1987 Average	16.79	17.40	W	16.36	18.47	15.12	18.28	15.08	17.11	15.80	16.43
1988 Average	W	13.81	(d)	12.18	15.16	12.16	14.80	12.96	13.45	12.57	13.43
1989 Average	W	17.01	(d)	15.96	18.31	16.29	17.89	16.09	17.12	16.72	17.06
1990 Average	W	21.29	(d)	19.26	22.46	20.36	23.43	19.55	19.88	18.84	20.40
1991 January	W	W	(d)	19.39	24.68	12.69	W	17.04	21.24	16.04	19.45
February	W	20.82	(d)	13.62	20.48	14.06	W	14.50	17.12	14.56	16.73
March	W	W	(d)	13.59	19.44	W	24.50	14.90	16.18	15.24	16.48
April	W	16.85	(d)	15.34	19.12	15.14	W	15.38	16.90	15.72	16.88
May	W	W	W	15.24	19.35	15.15	W	14.68	16.95	15.71	16.71
June	W	16.77	(d)	14.68	18.38	14.54	W	13.62	16.33	15.29	16.04
July	W	W	W	15.24	19.44	W	19.45	14.85	17.41	15.86	16.86
August	W	W	W	15.34	20.20	16.35	W	14.64	17.82	16.81	17.23
September	W	W	W	15.40	21.10	15.85	20.24	15.53	18.79	16.76	17.57
October	W	18.50	W	16.91	22.55	14.61	W	16.44	19.42	15.76	18.12
November	W	W	(d)	16.30	21.63	13.33	21.67	14.77	18.97	15.02	17.03
December	W	W	(d)	13.47	18.99	12.72	W	12.62	16.57	14.32	15.03
Average	W	18.69	15.58	15.37	20.29	14.62	20.81	14.91	17.79	15.59	16.99
1992 January	W	W	(d)	12.45	18.58	W	(d)	12.32	R15.44	R14.07	R14.50
February	W	W	(d)	12.40	18.28	R14.61	W	12.53	R16.04	R15.35	R15.04
March	(d)	W	(d)	R12.68	R18.10	R14.87	W	12.45	16.01	R15.20	R15.28
April	W	16.23	(d)	R14.11	R19.59	W	W	R14.38	R17.10	R17.26	R17.25
May	W	W	(d)	R16.05	20.47	R17.61	W	15.03	18.35	R18.13	R17.83
June	W	W	(d)	17.09	21.42	W	20.14	R15.33	19.20	R17.95	R18.44
July	W	W	(d)	R16.88	20.83	R17.60	W	15.10	18.74	R18.20	R18.09
August	W	W	(d)	16.36	20.33	W	20.00	R15.38	R18.43	R17.99	R17.69
September	(d)	W	(d)	R16.88	20.84	R16.69	20.20	16.21	R18.65	R17.11	R18.01
October	(d)	W	(d)	16.90	R20.76	W	W	15.40	R18.70	R15.89	R17.42
November	(d)	W	(d)	R15.78	20.00	R14.62	19.82	R13.82	R17.57	R15.12	R15.97
December	W	W	(d)	14.79	18.42	R15.62	W	13.38	R16.13	R15.91	R15.60
Average	W	R17.06	(d)	15.26	R19.98	R15.85	19.61	14.39	R17.65	R16.50	R16.87
1993 January	(d)	W	(d)	14.14	17.95	15.55	18.29	12.99	15.17	15.60	15.62
February	(d)	W	(d)	14.64	19.06	16.17	18.13	13.68	16.51	16.39	16.49
March	W	W	(d)	15.17	19.33	16.45	18.51	14.22	16.85	16.83	16.92
April	(d)	W	(d)	15.04	19.19	R16.03	18.36	14.52	16.90	R16.24	R16.59
May	(d)	R19.14	(d)	R15.05	R18.92	R15.62	R18.37	R13.89	R16.73	R15.78	R16.30
June	(d)	W	(d)	14.08	18.01	W	W	12.67	15.77	14.29	14.99

[a] The Arab members of OPEC are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates.

[b] Current members of OPEC are Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members. Prior to 1993, Ecuador was also a member. The cost of imports from the Neutral Zone between Kuwait and Saudi Arabia is included in the cost of imports from "Total OPEC."

[c] Based on October, November, and December data only.

[d] No data reported.

R=Revised data. NA=Not available. W=Value withheld to avoid disclosure of individual company data.

Notes: • The Free on Board (F.O.B) cost at the country of origin excludes all costs related to insurance and transportation. See Note 2 at end of section. • Values for the current 2 months are preliminary. • Prices through 1980 reflect the period of reporting; prices after 1980 reflect the period of loading. • Annual averages are averages of the monthly prices, including prices not published, weighted by volume. • Cargoes that are purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude oil is acquired for importation into the United States, are not included in the published data until the actual prices have been determined and reported.

Sources: • **October 1973-September 1977:** Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." • **October 1977-December 1977:** Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report." • **1978 forward:** EIA, *Petroleum Marketing Monthly*, September 1993, Table 21.

Table 9.3 Landed Costs of Crude Oil Imports from Selected Countries

(Dollars per Barrel)

	Algeria	Canada	Indonesia	Iran	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela	Other Countries	Arab OPEC[a]	Total OPEC[b]
1973 Average[c]	8.39	5.33	7.22	6.48	NA	9.08	5.37	NA	5.99	6.99	5.92	6.85
1974 Average	13.97	11.48	13.20	12.48	W	13.16	11.63	NA	11.25	12.93	12.39	12.49
1975 Average	12.86	12.84	13.83	12.51	12.61	12.70	12.50	NA	12.36	12.66	12.71	12.70
1976 Average	13.90	13.36	13.85	12.86	12.64	13.81	13.06	W	11.89	13.36	13.31	13.32
1977 Average	15.24	14.13	14.65	13.86	13.82	15.29	13.69	14.83	13.11	14.56	14.30	14.35
1978 Average	14.93	14.41	14.65	13.89	13.56	14.88	13.94	14.53	12.84	14.58	14.36	14.34
1979 Average	21.88	20.22	20.63	24.21	20.77	22.97	18.95	22.97	17.65	22.86	20.79	21.29
1980 Average	37.92	30.11	33.92	NA	31.77	37.15	29.80	35.68	25.92	36.15	32.97	33.56
1981 Average	40.46	32.32	37.31	(d)	33.70	39.66	34.20	37.29	29.91	38.54	36.22	36.60
1982 Average	35.35	27.15	36.70	32.46	28.63	36.16	34.99	34.25	24.93	34.03	35.15	34.81
1983 Average	31.26	25.63	31.57	29.81	25.78	30.85	29.27	30.87	22.94	29.68	29.87	29.84
1984 Average	29.06	26.56	30.87	28.70	26.85	30.36	29.20	29.45	25.19	29.21	29.10	29.06
1985 Average	27.51	25.71	28.67	25.79	25.63	28.96	24.72	28.36	24.43	27.33	25.90	26.86
1986 Average	14.82	13.43	14.63	12.38	12.17	15.29	12.84	14.63	11.52	14.25	13.14	13.46
1987 Average	17.87	17.04	18.49	18.28	16.69	19.32	16.81	18.78	15.76	18.30	17.32	17.64
1988 Average	W	13.50	15.15	W	12.58	15.88	13.37	15.82	13.66	14.45	13.60	14.18
1989 Average	19.13	16.81	18.35	(d)	16.35	19.19	17.34	18.74	16.78	18.08	17.41	17.78
1990 Average	W	20.48	22.50	(d)	19.64	23.33	21.82	22.65	20.31	20.52	20.64	21.23
1991 January	W	20.81	W	(d)	19.98	26.00	18.53	W	18.35	24.08	18.94	20.16
February	W	17.05	22.61	(d)	14.23	21.66	16.18	W	15.76	19.42	16.29	17.43
March	W	15.20	20.03	(d)	14.15	20.60	17.08	25.77	16.18	18.59	17.23	17.88
April	W	16.26	18.85	(d)	15.85	20.31	17.54	20.56	16.35	18.77	17.65	18.17
May	W	16.28	W	W	15.81	20.50	17.34	20.21	15.74	19.53	17.49	17.98
June	W	16.19	18.25	(d)	15.20	19.79	16.85	19.35	14.61	18.38	17.01	17.32
July	W	17.14	17.76	17.56	15.89	20.73	17.48	20.47	15.92	18.82	17.61	17.96
August	W	17.61	W	W	15.78	21.29	18.04	20.71	15.64	19.30	18.17	18.40
September	W	17.84	W	W	15.82	22.13	18.19	21.16	16.44	20.35	18.42	18.70
October	W	18.38	19.85	W	17.34	23.68	17.62	22.07	17.26	20.91	17.97	19.03
November	W	17.53	21.05	(d)	16.53	22.71	16.46	22.71	15.66	21.04	16.90	17.95
December	W	15.87	W	(d)	13.96	19.96	15.03	20.29	13.46	18.67	15.49	15.94
Average	W	17.16	20.20	17.54	15.89	21.39	17.22	21.37	15.92	19.73	17.45	18.08
1992 January	W	14.83	W	(d)	13.02	19.34	R14.81	W	13.20	R17.46	R15.16	15.38
February	W	15.57	W	(d)	12.78	19.10	R15.61	W	13.47	R17.64	R15.85	R15.87
March	(d)	15.68	W	(d)	R13.06	R19.05	R16.05	18.83	13.41	17.44	R16.14	R16.29
April	W	R16.42	17.76	(d)	R14.40	R20.32	R18.01	18.97	15.06	R18.10	R18.11	R18.07
May	W	17.35	R17.66	(d)	R16.39	R21.25	R18.62	19.99	15.73	R19.58	R18.80	R18.65
June	W	18.40	R19.60	(d)	R17.41	R22.11	R19.49	20.85	R16.01	R20.93	R19.60	19.57
July	W	18.50	21.06	(d)	17.20	21.49	R19.00	21.45	15.78	20.49	R19.15	R19.06
August	W	18.28	R21.26	(d)	R16.74	21.05	R18.45	21.37	R16.10	R20.10	R18.79	R18.70
September	(d)	18.35	W	(d)	R17.34	21.57	R18.45	20.72	16.89	20.12	R18.51	R18.83
October	W	18.35	W	(d)	R17.26	R21.60	R17.96	21.17	16.14	R20.09	R18.08	R18.56
November	(d)	17.26	W	(d)	R16.18	20.79	R17.02	21.00	R14.51	R19.25	R17.05	R17.28
December	W	15.85	W	(d)	15.12	19.32	R16.64	19.46	14.07	R17.80	R16.69	R16.62
Average	W	17.04	R18.76	(d)	R15.60	R20.78	R17.48	20.63	15.13	R19.25	R17.63	R17.81
1993 January	(d)	15.27	W	(d)	14.50	18.96	16.36	19.12	14.07	17.21	16.39	16.64
February	(d)	15.84	W	(d)	14.98	19.92	17.29	19.28	14.60	18.17	17.29	17.43
March	W	16.48	W	(d)	15.50	20.25	17.56	19.43	15.14	18.43	17.63	17.83
April	W	16.79	19.89	(d)	15.55	20.18	R17.56	19.32	15.54	18.48	R17.55	R17.77
May	W	R16.82	R20.57	(d)	R15.55	R19.70	R17.17	R19.28	R14.91	R18.39	R17.24	R17.48
June	(d)	16.25	W	(d)	14.52	18.92	15.88	18.82	13.72	17.36	16.00	16.14

[a] The Arab members of OPEC are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates.

[b] Current members of OPEC are Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members. Prior to 1993, Ecuador was also a member. The cost of imports from the Neutral Zone between Kuwait and Saudi Arabia is included in the cost of imports from "Total OPEC."

[c] Based on October, November, and December data only.

[d] No data reported.

R=Revised data. NA=Not available. W=Value withheld to avoid disclosure of individual company data.

Notes: • See Note 3 at end of section. • Values for the current 2 months are preliminary. • Prices through 1980 reflect the period of reporting; prices since then reflect the period of loading. • Annual averages are averages of the monthly prices, including prices not published, weighted by volume. • Cargoes that are purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude oil is acquired for importation into the United States, are not included in the published data until the actual prices have been determined and reported.

Sources: • **October 1973-September 1977:** Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." • **October 1977-December 1977:** Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report." • **1978 forward:** EIA, *Petroleum Marketing Monthly*, September 1993, Table 22.

Table 9.4 Motor Gasoline Retail Prices, U.S. City Average

(Cents per Gallon, Including Taxes)

	Leaded Regular	Unleaded Regular	Unleaded Premium	All Types[a]
1973 Average	38.8	NA	NA	NA
1974 Average	53.2	NA	NA	NA
1975 Average	56.7	NA	NA	NA
1976 Average	59.0	61.4	NA	NA
1977 Average	62.2	65.6	NA	NA
1978 Average	62.6	67.0	NA	65.2
1979 Average	85.7	90.3	NA	88.2
1980 Average	119.1	124.5	NA	122.1
1981 Average[b]	131.1	137.8	[c]147.0	135.3
1982 Average	122.2	129.6	141.5	128.1
1983 Average	115.7	124.1	138.3	122.5
1984 Average	112.9	121.2	136.6	119.8
1985 Average	111.5	120.2	134.0	119.6
1986 Average	85.7	92.7	108.5	93.1
1987 Average	89.7	94.8	109.3	95.7
1988 Average	89.9	94.6	110.7	96.3
1989 Average	99.8	102.1	119.7	106.0
1990 Average	114.9	116.4	134.9	121.7
1991 January	124.6	124.7	143.1	130.4
February	113.7	114.3	132.1	119.8
March	104.7	108.2	126.4	113.8
April	106.2	110.4	128.1	115.9
May	NA	115.6	133.1	120.9
June	NA	116.0	133.8	121.4
July	NA	112.7	131.3	118.5
August	NA	114.0	131.8	119.6
September	NA	114.3	132.4	119.9
October	NA	112.2	130.7	118.0
November	NA	113.4	131.8	119.3
December	NA	112.3	130.9	118.2
Average	NA	114.0	132.1	119.6
1992 January	NA	107.3	126.7	113.5
February	NA	105.4	124.8	111.7
March	NA	105.8	125.0	112.2
April	NA	107.9	126.8	114.3
May	NA	113.6	131.7	119.7
June	NA	117.9	135.9	123.9
July	NA	117.5	136.3	123.8
August	NA	115.8	134.8	122.1
September	NA	115.8	134.6	122.2
October	NA	115.4	134.5	121.9
November	NA	115.9	135.1	122.3
December	NA	113.6	133.0	120.1
Average	NA	112.7	131.6	119.0
1993 January	NA	111.7	131.3	118.2
February	NA	110.8	130.1	117.2
March	NA	109.8	129.4	116.3
April	NA	111.2	130.4	117.5
May	NA	112.9	131.9	119.3
June	NA	113.0	132.1	119.4
July	NA	110.9	130.5	117.4

[a] Also includes types of motor gasoline not shown separately.

[b] In September 1981, the Bureau of Labor Statistics changed the weights used in the calculation of average motor gasoline prices. From September 1981 forward, gasohol is included in the average for all types, and unleaded premium is weighted more heavily.

[c] September through December data only.

NA=Not available.

Notes: • See Note 5 at end of section. • Geographic coverage for 1973-1977 is 56 urban areas. Geographic coverage for 1978 forward is 85 urban areas.

Sources: • **Monthly Data:** U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Prices: Energy*. • **Annual Data: 1973**—*Platt's Oil Price Handbook* and *Oilmanac*, 1974, 51st Edition. **1974 forward**—calculated by the Energy Information Administration as the simple averages of monthly data.

Table 9.5 Refiner Prices of Residual Fuel Oil

(Cents per Gallon, Excluding Taxes)

	Residual Fuel Oil Sulfur Content Less Than or Equal to 1 Percent		Residual Fuel Oil Sulfur Content Greater Than 1 Percent		Average	
	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users
1978 Average	29.3	31.4	24.5	27.5	26.3	29.8
1979 Average	45.0	46.8	36.6	38.9	39.9	43.6
1980 Average	60.8	67.5	47.9	52.3	52.8	60.7
1981 Average	74.8	82.9	62.2	67.3	66.3	75.6
1982 Average	69.5	74.7	57.2	61.1	61.2	67.6
1983 Average	64.3	69.5	59.1	61.1	60.9	65.1
1984 Average	68.5	72.0	63.9	65.9	65.4	68.7
1985 Average	61.0	64.4	56.0	58.2	57.7	61.0
1986 Average	32.8	37.2	28.9	31.7	30.5	34.3
1987 Average	41.2	44.7	36.2	39.6	38.5	42.3
1988 Average	33.3	37.2	27.1	30.0	30.0	33.4
1989 Average	40.7	43.6	33.1	34.4	36.0	38.5
1990 Average	47.2	50.5	37.2	40.0	41.3	44.4
1991 January	52.1	59.8	49.2	49.7	50.2	53.4
February	36.5	44.4	32.0	37.1	33.4	39.8
March	36.0	38.3	24.2	28.2	28.2	32.3
April	33.6	37.8	25.8	27.0	28.7	30.2
May	36.6	36.6	27.7	27.6	30.3	31.0
June	32.1	35.3	28.6	26.9	29.7	29.5
July	32.6	36.4	27.4	28.2	28.8	31.2
August	33.4	36.8	25.9	27.7	27.9	31.1
September	33.7	36.8	25.4	27.3	27.9	30.6
October	34.1	38.5	27.6	29.7	29.5	32.3
November	36.6	40.8	27.9	31.8	30.7	35.1
December	34.8	40.0	26.1	28.8	28.9	33.1
Average	36.4	40.2	29.2	30.6	31.4	34.0
1992 January	R30.3	35.7	R21.1	24.7	R24.4	R28.8
February	R32.7	36.2	R20.9	R23.6	R25.6	R27.7
March	R30.8	34.8	R21.1	24.4	R24.6	R27.7
April	R31.6	35.3	R25.2	R27.5	R27.4	R29.6
May	R33.1	37.2	R29.1	R32.0	R30.2	33.4
June	R35.9	38.8	R30.7	R33.1	R32.5	34.5
July	R38.0	41.4	R33.3	R34.9	R34.7	36.7
August	37.7	R42.1	33.2	37.0	R34.7	R38.8
September	37.9	42.0	32.9	35.3	34.8	37.5
October	41.4	44.7	35.5	37.3	37.4	39.2
November	R39.2	42.8	33.8	37.6	R35.9	39.4
December	R35.9	R40.2	28.1	33.4	R30.6	36.2
Average	35.4	R38.9	28.4	31.3	30.7	33.8
1993 January	36.6	40.8	27.2	32.4	31.2	35.3
February	35.5	40.8	27.1	30.8	31.1	34.4
March	39.0	42.6	27.5	31.6	32.9	35.6
April	38.4	43.6	29.2	32.2	33.6	36.3
May	34.7	41.9	R27.8	R34.1	R31.0	R36.8
June	33.7	40.6	26.3	31.5	30.0	34.7

R=Revised data.

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are those made directly to the ultimate consumer, including bulk customers, such as agriculture, industry, and electric utilities, as well as commercial customers. • Geographic coverage is the 50 States and the District of Columbia. • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration (EIA) estimates. See Note 6 at end of section.

Source: EIA, *Petroleum Marketing Monthly*, September 1993, Table 17.

Table 9.6 Refiner Prices of Petroleum Products for Resale

(Cents per Gallon, Excluding Taxes)

	Finished Motor Gasoline[a]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	43.4	53.7	38.6	40.4	36.9	36.5	23.7
1979 Average	63.7	72.1	66.0	62.4	56.9	57.4	29.1
1980 Average	94.1	112.8	86.8	86.4	80.3	80.1	41.5
1981 Average	106.4	125.0	101.2	106.6	97.6	97.2	46.6
1982 Average	97.3	122.8	95.3	101.8	91.4	91.4	42.7
1983 Average	88.2	117.8	85.4	89.2	81.5	80.8	48.4
1984 Average	83.2	116.5	83.0	91.6	82.1	80.3	45.0
1985 Average	83.5	113.0	79.4	87.4	77.6	77.2	39.8
1986 Average	53.1	91.2	49.5	60.6	48.6	45.2	29.0
1987 Average	58.9	85.9	53.8	59.2	52.7	53.4	25.2
1988 Average	57.7	85.0	49.5	54.9	47.3	47.3	24.0
1989 Average	65.4	95.0	58.3	66.9	56.5	56.7	24.7
1990 Average	78.6	106.3	77.3	83.9	69.7	69.4	38.6
1991 January	76.2	111.2	82.0	88.0	76.6	75.5	42.2
February	68.0	104.2	74.0	76.1	67.9	67.4	31.6
March	67.3	97.4	62.4	66.2	59.6	57.7	31.3
April	70.7	97.8	58.9	63.0	57.2	57.4	31.8
May	74.2	100.3	60.8	61.4	56.0	57.2	31.9
June	70.5	99.5	58.8	59.0	54.0	54.5	29.3
July	69.1	98.9	59.4	62.6	56.7	57.1	27.6
August	72.7	100.2	63.3	67.1	60.6	61.9	29.6
September	69.1	99.9	65.9	68.9	62.1	62.9	34.9
October	68.8	98.8	67.1	73.5	66.3	65.6	40.2
November	69.9	99.5	68.2	74.6	66.6	66.5	43.0
December	62.9	97.3	60.1	62.6	55.9	55.6	37.7
Average	69.9	100.1	65.0	72.2	62.2	61.5	34.9
1992 January	R60.0	94.9	53.9	R59.9	R51.9	51.4	30.9
February	61.7	93.1	55.2	R62.0	R54.0	54.1	30.2
March	R62.7	92.5	54.6	R59.1	R53.7	R54.0	R29.5
April	66.6	96.4	R56.9	R61.6	R56.5	57.0	29.0
May	R71.5	R100.5	60.8	R62.1	58.8	60.1	29.4
June	R74.2	R101.5	63.3	R63.7	R61.7	62.7	R31.6
July	R71.0	R102.0	R64.8	R65.7	R61.3	61.8	31.5
August	70.6	R102.6	63.9	R64.2	60.1	60.4	32.9
September	71.0	102.3	64.3	68.8	62.7	63.3	35.4
October	70.4	100.5	66.0	70.1	64.6	65.5	36.6
November	68.1	99.7	61.5	64.5	58.8	60.4	36.2
December	63.8	97.6	58.9	62.8	55.7	56.4	36.3
Average	67.7	99.1	60.4	63.2	57.9	59.0	32.8
1993 January	63.8	96.9	57.7	61.4	54.4	54.9	40.2
February	63.8	96.5	60.5	63.7	56.9	57.4	36.7
March	65.2	97.4	60.3	65.4	59.0	60.0	38.2
April	67.7	97.7	59.9	60.8	57.5	59.9	36.2
May	69.2	99.4	60.1	58.3	56.9	59.6	34.0
June	66.2	99.1	58.4	56.9	54.9	57.2	33.8

[a] See Note 5 at end of section.

R=Revised data.

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are those made directly to the ultimate consumer, including bulk customers, such as agriculture, industry, and electric utilities, as well as residential and commercial customers. • Geographic coverage is the 50 States and the District of Columbia. • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration (EIA) estimates. See Note 6 at end of section.

Source: EIA, *Petroleum Marketing Monthly*, September 1993, Table 4.

Table 9.7 Refiner Prices of Petroleum Products to End Users

(Cents per Gallon, Excluding Taxes)

	Finished Motor Gasoline[a]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	48.4	51.6	38.7	42.1	40.0	37.7	33.5
1979 Average	71.3	68.9	54.7	58.5	51.6	58.5	35.7
1980 Average	103.5	108.4	86.8	90.2	78.8	81.8	48.2
1981 Average	114.7	130.3	102.4	112.3	91.4	99.5	56.5
1982 Average	106.0	131.2	96.3	108.9	90.5	94.2	59.2
1983 Average	95.4	125.5	87.8	96.1	91.6	82.6	70.9
1984 Average	90.7	123.4	84.2	103.6	91.6	82.3	73.7
1985 Average	91.2	120.1	79.6	103.0	84.9	78.9	71.7
1986 Average	62.4	101.1	52.9	79.0	56.0	47.8	74.5
1987 Average	66.9	90.7	54.3	77.0	58.1	55.1	70.1
1988 Average	67.3	89.1	51.3	73.8	54.4	50.0	71.4
1989 Average	75.6	99.5	59.2	70.9	58.7	58.5	61.5
1990 Average	88.3	112.0	76.6	92.3	73.4	72.5	74.5
1991 January	88.8	112.1	81.1	105.0	84.3	80.5	86.7
February	79.5	106.4	73.7	96.9	75.2	71.4	81.4
March	74.0	101.3	62.1	88.8	64.5	61.8	76.0
April	77.0	101.2	58.7	73.8	61.6	60.6	67.4
May	82.0	105.3	60.1	69.3	58.9	60.1	66.7
June	81.9	105.2	59.2	62.3	56.3	57.9	62.8
July	78.9	103.6	59.7	64.7	59.1	59.5	61.1
August	81.1	105.8	63.8	68.7	62.3	63.3	63.6
September	80.2	105.7	66.6	73.6	63.9	64.8	65.0
October	77.9	104.6	67.8	81.6	68.5	68.0	68.0
November	79.1	104.3	69.6	94.3	70.9	69.7	73.7
December	76.0	102.0	61.5	85.8	63.0	60.9	78.2
Average	79.7	104.7	65.2	83.8	66.5	64.8	73.0
1992 January	R71.9	98.5	54.2	R83.3	R59.7	55.5	R71.3
February	R70.8	98.5	56.5	R78.3	62.0	57.1	R NA
March	R71.6	98.0	55.5	R80.2	R61.4	R56.8	R66.4
April	R75.2	99.1	57.3	R78.3	60.6	R59.2	R70.3
May	R80.8	102.4	61.0	R73.3	60.9	62.1	R62.5
June	R84.5	106.4	63.9	68.7	62.9	64.9	R54.5
July	83.5	106.8	64.9	R70.5	62.8	64.5	R52.3
August	82.3	105.7	64.2	69.0	62.3	63.4	R55.8
September	82.3	104.9	64.6	70.5	65.6	65.3	60.3
October	81.3	R104.3	66.4	R87.2	68.2	67.8	R59.9
November	R81.5	103.4	62.7	83.3	64.3	64.5	61.1
December	78.5	101.3	58.9	84.0	63.6	60.8	68.4
Average	78.4	102.7	61.0	78.6	62.7	61.8	66.2
1993 January	76.9	100.3	58.5	82.4	62.7	59.0	74.8
February	76.1	99.9	59.8	81.3	64.6	60.6	74.3
March	75.7	99.4	60.6	83.2	66.2	62.9	75.4
April	77.8	100.7	59.7	77.0	61.9	62.5	69.4
May	80.1	102.2	59.9	68.8	R59.8	62.3	R67.3
June	79.7	102.5	58.7	65.3	57.8	60.5	63.9

[a] See Note 5 at end of section.

R=Revised data. NA=Not available.

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are those made directly to the ultimate consumer, including bulk customers, such as agriculture, industry, and electric utilities, as well as residential and commercial customers. • Geographic coverage is the 50 States and the District of Columbia. • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration (EIA) estimates. See Note 6 at end of section.

Source: EIA, *Petroleum Marketing Monthly*, September 1993, Table 2.

Table 9.8a No. 2 Distillate Prices to Residences: Northeastern States

(Cents per Gallon, Excluding Taxes)

	Maine	New Hampshire	Vermont	Massachusetts	Rhode Island	Connecticut	New York	New Jersey	Pennsylvania
1978 Average	48.6	50.3	50.8	48.8	50.7	50.1	50.1	49.6	48.8
1979 Average	68.8	72.5	72.5	70.9	72.8	72.0	71.2	71.0	69.8
1980 Average	96.3	100.4	101.5	97.8	101.1	98.3	98.2	97.9	96.4
1981 Average	120.4	123.7	125.4	121.3	123.8	121.7	123.2	121.5	118.1
1982 Average	115.5	117.4	120.1	117.6	120.1	118.3	120.5	117.4	113.7
1983 Average	102.8	104.1	112.9	109.1	110.5	109.1	112.1	107.9	105.8
1984 Average	103.9	108.4	111.9	111.6	111.4	112.1	115.5	111.0	107.9
1985 Average	99.7	102.4	107.7	107.0	106.7	108.0	111.3	105.9	102.3
1986 Average	74.4	75.9	86.6	82.1	82.8	89.0	91.1	90.2	81.4
1987 Average	74.7	76.5	81.1	80.6	82.5	83.4	85.2	84.3	76.9
1988 Average	77.7	78.2	82.6	82.1	83.6	85.3	86.3	84.8	77.8
1989 Average	89.4	89.3	90.5	92.6	93.9	92.9	95.8	91.8	85.1
1990 Average	98.9	102.8	107.0	108.4	108.6	109.8	112.5	108.7	102.6
1991 January	114.4	107.2	117.7	118.1	113.3	122.5	124.6	119.6	117.7
February	105.9	100.7	111.3	111.3	109.5	116.0	120.2	113.2	110.9
March	95.4	90.5	104.4	102.6	101.8	109.0	112.8	104.3	101.8
April	87.1	83.9	98.5	96.1	94.7	101.4	106.7	98.6	95.5
May	81.9	79.4	93.5	91.7	89.7	96.5	101.2	94.4	89.9
June	79.6	77.3	91.3	88.9	87.1	92.7	98.1	90.3	85.7
July	82.3	77.6	88.1	88.5	88.8	90.0	93.9	88.5	80.8
August	83.4	80.6	88.6	88.7	88.7	89.7	93.0	89.0	81.8
September	87.3	84.2	91.9	90.9	90.3	92.0	98.7	92.2	83.4
October	91.3	87.8	93.9	94.9	94.9	96.3	103.3	96.9	88.8
November	95.1	90.1	95.7	97.5	95.8	99.8	108.1	100.7	93.6
December	89.3	88.8	94.1	95.8	93.4	98.3	105.7	96.6	93.1
Average	96.0	91.6	101.9	103.0	99.9	106.2	111.3	104.0	99.7
1992 January	R87.7	R88.1	92.4	R93.2	R90.7	96.4	R103.4	R95.6	91.4
February	R88.2	86.5	92.8	R92.5	R91.7	95.5	R103.8	R95.1	R91.5
March	86.4	R83.3	92.2	91.5	90.9	94.0	R102.1	R93.5	R90.1
April	85.5	R81.8	91.7	91.4	90.4	R93.3	101.1	R92.9	R89.4
May	85.5	81.7	91.5	91.0	R90.9	R93.1	101.1	89.2	R88.6
June	R87.1	82.9	R90.7	91.3	89.7	91.8	R101.7	90.4	R86.5
July	87.7	82.3	R89.1	90.4	89.9	R93.1	R100.7	R90.3	R83.0
August	87.8	81.8	R89.4	89.6	89.4	R90.5	R99.0	R88.1	81.7
September	86.8	83.0	R91.6	90.7	89.8	R91.8	R99.7	90.8	84.4
October	89.3	87.6	R92.0	R93.5	92.7	94.9	R102.7	94.0	87.5
November	88.3	87.6	R92.6	93.8	92.5	95.8	R104.7	R94.6	89.6
December	85.7	87.7	R92.9	R93.5	91.5	95.2	104.3	R95.4	R89.3
Average	87.1	85.6	92.2	R92.4	R91.2	94.7	102.8	93.9	88.9
1993 January	85.2	87.1	93.4	94.0	91.7	94.9	104.3	96.5	89.0
February	85.4	87.0	93.3	94.4	91.8	96.2	104.2	96.7	89.1
March	86.5	86.6	93.7	94.8	92.4	96.7	104.2	96.2	89.8
April	83.0	85.0	91.2	91.3	90.3	93.6	100.1	95.1	89.0
May	81.5	R83.8	R91.2	R90.9	R90.6	91.7	99.3	R91.6	R86.6
June	80.7	82.3	89.6	88.8	86.7	89.9	97.5	88.2	83.9

R=Revised data.

Notes: • States are grouped in Tables 9.8a, 9.8b, and 9.8c by geographic region of the country. • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration (EIA) estimates. See Note 6 at end of section.

Source: EIA, *Petroleum Marketing Monthly*, September 1993, Table 16.

Table 9.8b No. 2 Distillate Prices to Residences: Selected South Atlantic and Midwestern States

(Cents per Gallon, Excluding Taxes)

	Delaware	District of Columbia	Maryland	Virginia	West Virginia	Ohio	Michigan	Indiana	Illinois	Wisconsin	Minnesota
1978 Average	47.8	50.7	49.2	49.1	46.2	47.4	47.9	48.5	46.5	44.7	47.8
1979 Average	68.2	74.2	70.1	70.4	65.1	68.6	70.9	72.7	68.8	67.3	72.4
1980 Average	95.4	102.6	97.9	98.5	92.2	91.9	97.8	99.6	95.8	91.5	99.9
1981 Average	117.3	127.4	121.4	120.5	115.0	113.2	118.3	118.5	114.9	109.1	118.4
1982 Average	111.3	124.5	117.1	117.7	109.3	110.2	113.9	114.3	110.9	107.8	115.1
1983 Average	106.0	117.0	110.3	108.7	101.0	101.3	106.4	100.7	100.4	101.2	103.1
1984 Average	109.6	118.7	113.5	110.5	102.1	102.1	105.0	103.1	100.1	101.0	104.1
1985 Average	104.6	114.3	108.8	106.3	98.0	99.7	102.1	99.1	97.5	98.3	101.9
1986 Average	85.0	93.1	91.4	86.6	74.6	77.7	81.0	74.8	NA	75.6	79.2
1987 Average	79.3	91.8	86.6	79.5	76.4	74.7	77.5	75.4	79.8	75.1	74.6
1988 Average	80.1	91.6	87.0	80.5	74.2	74.7	77.5	75.4	77.6	73.9	73.5
1989 Average	88.2	98.6	93.8	87.0	83.0	81.6	85.3	83.2	80.9	81.1	82.4
1990 Average	105.8	107.8	111.9	110.6	99.1	98.1	100.9	99.3	96.1	94.2	101.4
1991 January	113.0	124.1	122.0	117.2	110.5	105.5	109.8	105.9	102.5	102.4	105.4
February	105.4	118.6	116.1	110.3	101.5	94.6	98.5	95.4	92.9	92.4	93.5
March	98.4	112.3	107.7	102.4	90.8	85.7	91.5	87.9	86.5	87.8	87.2
April	92.3	105.6	102.7	96.1	87.6	83.2	90.7	86.0	88.3	84.0	87.8
May	91.5	101.1	98.7	90.7	85.8	83.1	88.1	86.3	88.5	82.9	88.1
June	84.0	95.3	96.2	87.8	83.6	80.7	87.4	80.3	86.8	80.9	87.1
July	81.5	98.6	93.7	86.9	81.7	79.6	83.3	78.8	82.2	78.0	84.4
August	86.0	98.6	94.0	87.5	82.4	81.1	84.4	85.5	86.5	78.8	86.3
September	87.3	101.7	96.8	90.4	84.8	84.8	86.8	85.5	87.3	82.7	84.0
October	92.8	104.0	100.1	93.6	89.7	88.7	89.5	86.7	88.4	85.7	86.8
November	96.9	107.3	103.2	97.0	91.8	91.8	92.8	87.8	92.4	89.9	89.2
December	94.9	107.7	102.6	95.2	89.0	86.0	89.9	83.3	89.9	85.4	84.4
Average	99.7	112.2	108.4	101.1	93.4	91.0	94.2	91.8	92.7	89.5	91.1
1992 January	94.4	107.3	R101.6	R94.3	85.5	R82.0	86.6	R77.8	85.2	R80.1	R79.4
February	92.7	107.3	R100.9	93.7	86.9	83.0	86.5	78.7	85.6	R79.8	79.6
March	92.4	105.3	R100.3	93.7	86.6	82.5	86.6	R79.5	88.1	R79.2	R79.7
April	91.5	104.7	R99.0	92.6	85.6	R82.9	86.7	R80.2	R88.4	R80.4	R81.8
May	90.2	R102.3	97.2	91.7	84.2	R83.5	86.4	R81.2	89.0	81.5	R83.9
June	91.4	R102.7	R97.6	R89.6	86.5	R85.3	86.1	79.6	90.8	R81.9	R82.9
July	90.6	102.0	R95.7	R90.2	82.3	81.7	R85.0	82.4	87.9	R81.1	R84.5
August	89.5	101.9	95.2	R88.4	81.4	R82.3	R85.7	R83.1	86.4	R80.6	R84.1
September	R90.3	101.2	95.7	R89.4	85.4	84.7	R88.2	R84.8	88.9	R83.6	R85.0
October	R93.7	104.0	98.8	R91.9	88.3	R86.4	90.0	85.8	90.8	R84.1	R87.1
November	92.8	105.7	100.4	92.1	R88.0	R84.6	88.2	R82.7	90.4	83.7	86.0
December	R90.9	105.4	R100.4	R93.3	89.0	84.5	87.9	81.8	88.2	R84.3	R83.1
Average	92.4	105.7	99.9	R92.8	86.4	83.6	87.1	R81.1	87.6	81.8	82.3
1993 January	90.8	105.2	100.5	92.4	88.3	84.2	88.3	81.8	87.2	82.1	82.9
February	90.8	106.8	101.3	93.5	88.6	85.5	87.6	82.3	88.2	83.3	83.0
March	92.4	108.5	101.6	94.2	89.9	86.6	90.1	83.1	90.0	84.0	83.9
April	91.6	107.1	99.2	90.3	86.9	86.9	90.8	84.9	NA	84.7	83.3
May	89.4	R104.3	96.2	88.6	84.8	86.0	89.8	R83.6	84.8	R84.9	R84.1
June	86.8	100.8	95.5	86.0	87.3	86.3	87.8	82.1	81.1	84.2	83.3

R=Revised data. NA=Not available.

Notes: • States are grouped in Tables 9.8a, 9.8b, and 9.8c by geographic region of the country. • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration (EIA) estimates. See Note 6 at end of section.

Source: EIA, *Petroleum Marketing Monthly*, September 1993, Table 16.

Table 9.8c No. 2 Distillate Prices to Residences: Selected Western States and U.S. Average

(Cents per Gallon, Excluding Taxes)

	Idaho	Washington	Oregon	Alaska	U.S. Average
1978 Average	43.6	48.6	45.8	53.2	49.0
1979 Average	62.1	69.7	68.0	68.2	70.4
1980 Average	91.6	100.8	97.3	97.8	97.4
1981 Average	110.4	116.5	111.4	118.0	119.4
1982 Average	110.4	117.6	111.6	117.4	116.0
1983 Average	101.8	109.0	103.6	108.8	107.8
1984 Average	98.5	102.6	99.3	106.9	109.1
1985 Average	97.2	101.1	97.1	108.3	105.3
1986 Average	73.8	77.5	70.4	94.9	83.6
1987 Average	68.8	79.5	72.5	86.5	80.3
1988 Average	68.8	78.5	70.9	86.9	81.3
1989 Average	77.8	87.4	80.2	96.4	90.0
1990 Average	97.4	102.9	97.0	110.1	106.3
1991 January	110.8	118.4	108.4	129.3	117.1
February	97.3	112.0	102.9	122.8	110.5
March	84.0	95.3	88.8	109.5	102.6
April	83.4	93.5	86.4	101.9	96.9
May	84.4	94.9	86.5	101.3	92.5
June	83.4	91.7	85.6	98.2	89.3
July	80.0	85.5	83.6	98.6	86.6
August	84.6	92.6	87.3	96.8	87.0
September	87.4	93.5	90.8	92.4	89.7
October	87.6	95.2	89.1	91.3	94.0
November	93.3	99.5	90.6	96.0	98.0
December	94.7	96.2	87.0	95.2	95.9
Average	95.1	101.6	93.3	105.0	101.9
1992 January	86.1	R92.0	R85.3	R92.7	R94.2
February	79.2	R90.9	R83.5	R91.1	R94.2
March	82.2	R91.8	R82.6	R93.0	R93.2
April	84.2	R92.0	R85.5	R92.1	92.5
May	R86.1	R94.3	R88.9	R93.6	92.3
June	84.6	R90.6	R89.2	93.9	R92.0
July	R86.1	R88.0	R87.3	93.0	90.4
August	R79.4	R84.0	R84.0	R96.8	88.6
September	R86.0	R90.3	87.6	93.4	90.1
October	89.6	R94.5	91.7	R96.8	R93.7
November	R91.7	R98.7	92.8	R97.7	R94.8
December	R86.8	99.7	91.5	R95.8	R94.5
Average	85.7	94.3	87.8	94.0	93.4
1993 January	84.8	100.6	91.7	95.1	94.3
February	84.2	101.4	89.9	95.1	94.6
March	87.8	99.7	90.7	94.2	95.4
April	84.1	101.5	92.1	94.7	92.5
May	R82.9	R100.3	R91.3	R96.6	R91.0
June	83.2	95.1	90.0	97.1	89.0

R=Revised data.

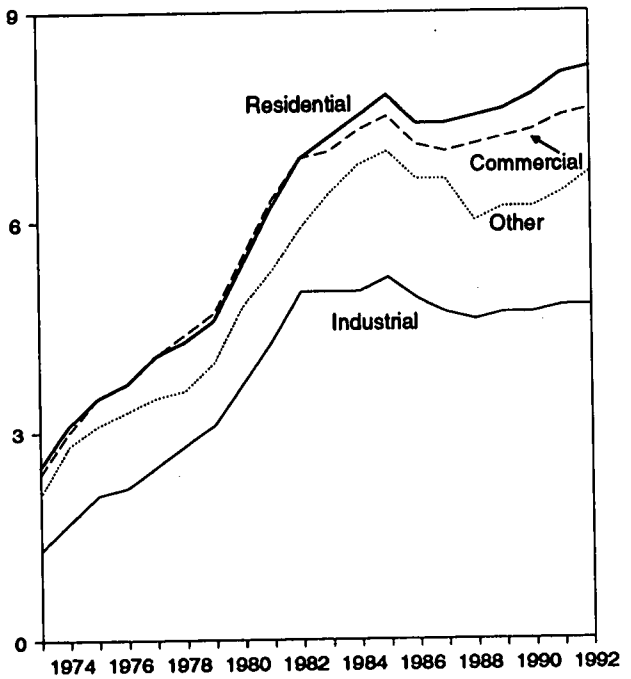
Notes: • States are grouped in Tables 9.8a, 9.8b, and 9.8c by geographic region of the country. • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration (EIA) estimates. See Note 6 at end of section.

Source: EIA, *Petroleum Marketing Monthly*, September 1993, Table 16.

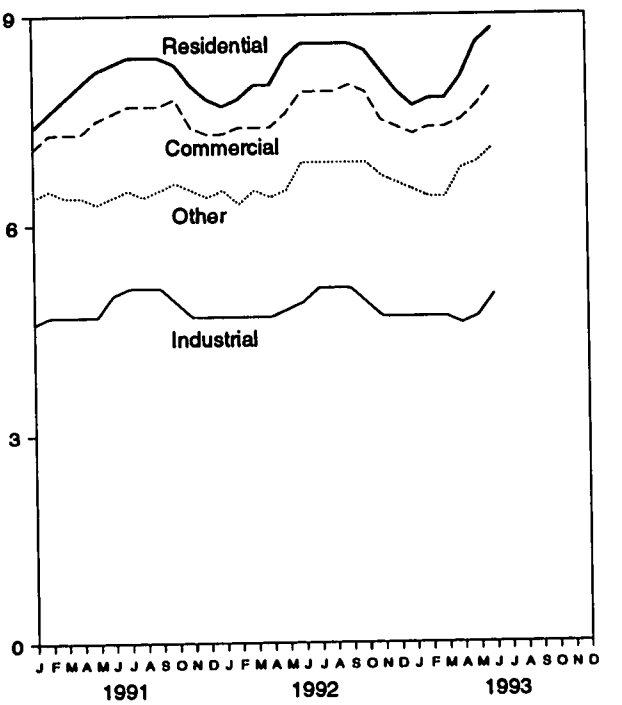
Figure 9.2 Electricity Retail Prices

(Cents per Kilowatthour)

Prices by Sector, 1973-1992



Prices by Sector, Monthly

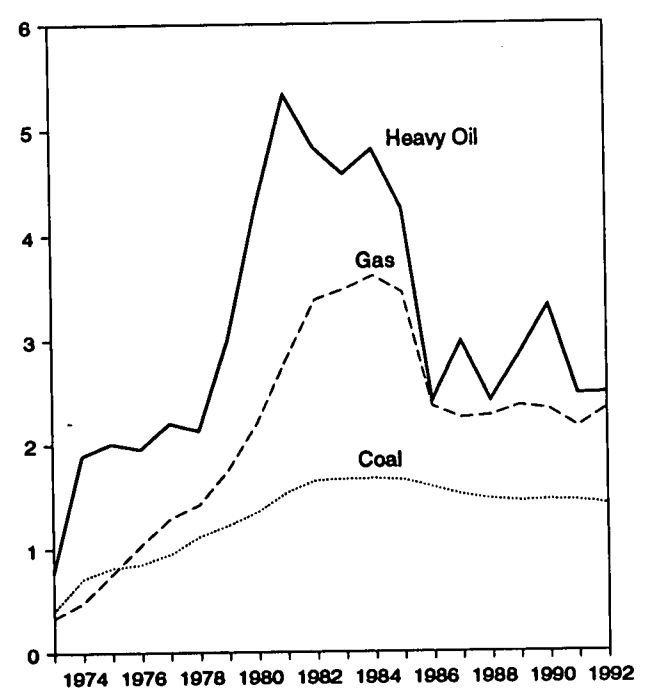


Source: Table 9.9, Monthly Series.

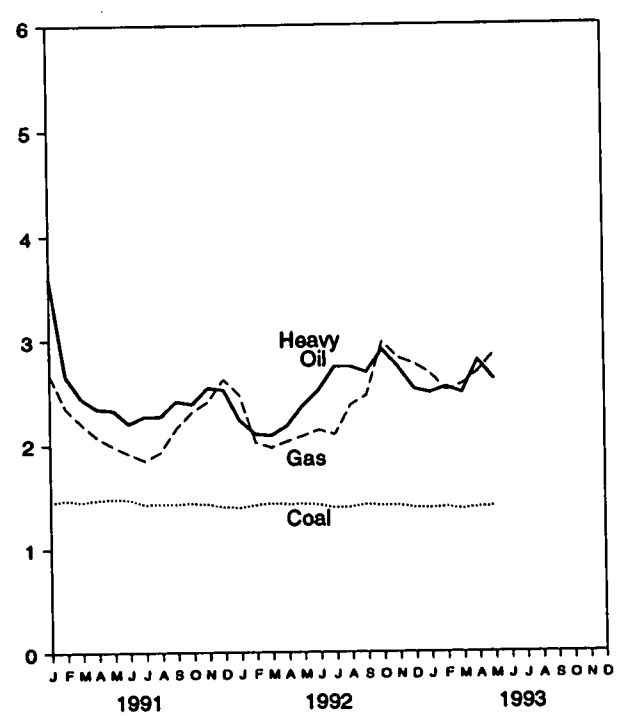
Figure 9.3 Cost of Fossil-Fuel Receipts at Steam-Electric Plants

(Dollars per Million Btu)

Fossil Fuels Costs, 1973-1992



Fossil Fuel Costs, Monthly



Source: Table 9.10.

Table 9.9 Electricity Retail Prices

(Cents per Kilowatthour)

	Residential		Commercial		Industrial		Other[a]		Total[b]	
	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series
1973 Average	2.5	NA	2.4	NA	1.3	NA	2.1	NA	2.0	NA
1974 Average	3.1	NA	3.0	NA	1.7	NA	2.8	NA	2.5	NA
1975 Average	3.5	NA	3.5	NA	2.1	NA	3.1	NA	2.9	NA
1976 Average	3.7	NA	3.7	NA	2.2	NA	3.3	NA	3.1	NA
1977 Average	4.1	NA	4.1	NA	2.5	NA	3.5	NA	3.4	NA
1978 Average	4.3	NA	4.4	NA	2.8	NA	3.6	NA	3.7	NA
1979 Average	4.6	NA	4.7	NA	3.1	NA	4.0	NA	4.0	NA
1980 Average	5.4	NA	5.5	NA	3.7	NA	4.8	NA	4.7	NA
1981 Average	6.2	NA	6.3	NA	4.3	NA	5.3	NA	5.5	NA
1982 Average	6.9	NA	6.9	NA	5.0	NA	5.9	NA	6.1	NA
1983 Average	7.2	NA	7.0	NA	5.0	NA	6.4	NA	6.3	NA
1984 Average	7.5	7.2	7.3	7.1	5.0	4.8	6.8	5.9	6.5	6.3
1985 Average	7.8	7.4	7.5	7.3	5.2	5.0	7.0	6.1	6.7	6.4
1986 Average	7.4	7.4	7.1	7.2	4.9	4.9	6.6	6.1	6.4	6.4
1987 Average	7.4	7.4	7.0	7.1	4.7	4.8	6.6	6.2	6.3	6.4
1988 Average	7.5	7.5	7.1	7.0	4.6	4.7	6.0	6.2	6.3	6.4
1989 Average	7.6	7.6	7.2	7.2	4.7	4.7	6.2	6.2	6.4	6.5
1990 Average	7.8	7.8	7.3	7.3	4.7	4.7	6.2	6.4	6.6	6.6
1991 January	7.4	–	7.1	–	4.6	–	6.4	–	6.4	–
February	7.6	–	7.3	–	4.7	–	6.5	–	6.5	–
March	7.8	–	7.3	–	4.7	–	6.4	–	6.6	–
April	8.0	–	7.3	–	4.7	–	6.4	–	6.5	–
May	8.2	–	7.5	–	4.7	–	6.3	–	6.6	–
June	8.3	–	7.6	–	5.0	–	6.4	–	6.9	–
July	8.4	–	7.7	–	5.1	–	6.5	–	7.1	–
August	8.4	–	7.7	–	5.1	–	6.4	–	7.1	–
September	8.4	–	7.7	–	5.1	–	6.5	–	7.0	–
October	8.3	–	7.8	–	4.9	–	6.6	–	6.9	–
November	8.0	–	7.4	–	4.7	–	6.5	–	6.6	–
December	7.8	–	7.3	–	4.7	–	6.4	–	6.6	–
Average	8.1	8.0	7.5	7.5	4.8	4.8	6.4	6.5	6.8	6.7
1992 January	7.7	–	7.3	–	4.7	–	6.5	–	6.6	–
February	7.8	–	7.4	–	4.7	–	6.3	–	6.6	–
March	8.0	–	7.4	–	4.7	–	6.5	–	6.6	–
April	8.0	–	7.4	–	4.7	–	6.4	–	6.6	–
May	8.4	–	7.6	–	4.8	–	6.5	–	6.7	–
June	8.6	–	7.9	–	4.9	–	6.9	–	7.0	–
July	8.6	–	7.9	–	5.1	–	6.9	–	7.2	–
August	8.6	–	7.9	–	5.1	–	6.9	–	7.2	–
September	8.6	–	8.0	–	5.1	–	6.9	–	7.2	–
October	8.5	–	7.9	–	4.9	–	6.9	–	6.9	–
November	8.2	–	7.5	–	4.7	–	6.7	–	6.6	–
December	7.9	–	7.4	–	4.7	–	6.6	–	6.7	–
Average	8.2	NA	7.6	NA	4.8	NA	6.7	NA	6.8	NA
1993 January	7.7	–	7.3	–	4.7	–	6.5	–	6.6	–
February	7.8	–	7.4	–	4.7	–	6.4	–	6.6	–
March	7.8	–	7.4	–	4.7	–	6.4	–	6.6	–
April	8.1	–	7.5	–	4.6	–	6.8	–	6.6	–
May	8.6	–	7.7	–	4.7	–	6.9	–	6.8	–
June	8.8	–	8.0	–	5.0	–	7.1	–	7.1	–
6-Month Average	8.1	–	7.6	–	4.7	–	6.7	–	6.7	–
1992 6-Month Average	8.1	–	7.5	–	4.7	–	6.5	–	6.7	–
1991 6-Month Average	7.9	–	7.4	–	4.8	–	6.4	–	6.6	–

[a] "Other" is public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

[b] Average price for total sales to ultimate consumers.

[c] Annual values are the sum of the monthly revenue divided by the sum of the monthly sales. Data through 1979 cover privately owned electric utilities in Classes A and B. Data for 1980-1985 cover selected privately owned electric utilities in Class A whose electric operating revenue was $100 million or more during the previous year. See Note 7 at end of section.

NA=Not available. – =Not applicable.

Notes: • Prices are calculated by dividing revenue by sales. Revenue may not correspond to sales for a particular month because of electric utility billing and accounting procedures. That lack of correspondence could result in uncharacteristic increases or decreases in the monthly prices. See Note 7 at end of section. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • **Monthly Series: 1973-September 1977**—Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income." **October 1977-February 1980**—Federal Energy Regulatory Commission (FERC), Form FERC-5, "Electric Operating Revenue and Income." **March 1980-December 1980**—FERC, Form FERC-5, "Electric Utility Company Monthly Statement." **1981**—Energy Information Administration (EIA), *Electric Power Monthly*, March 1992, Table 59. **1982 and 1991 monthly data**—EIA, *Electric Power Monthly*, March 1993, Table 59. **1983 forward (except 1991 monthly data)**—EIA, *Electric Power Monthly*, September 1993, Table 59. • **Annual Series:** EIA, *Electric Power Monthly*, September 1993, Table 59.

Table 9.10 Quantity and Cost of Fossil-Fuel Receipts at Steam-Electric Utility Plants

	Coal		Petroleum				Gas[a]		All Fossil Fuels[b]
			Heavy Oil[b]		Total[b,c]				
	Quantity (thousand short tons)	Cost (cents per million Btu)	Quantity (thousand barrels)	Cost (cents per million Btu)	Quantity (thousand barrels)	Cost (cents per million Btu)	Quantity (million cubic feet)	Cost (cents per million Btu)	Cost (cents per million Btu)
1973 Year	374,842	40.5	512,650	78.5	535,859	80.0	3,382,677	33.8	47.6
1974 Year	384,868	70.9	479,166	189.0	515,217	191.0	3,225,203	48.2	91.4
1975 Year	431,527	81.4	457,582	200.5	510,352	202.3	3,034,808	75.2	104.4
1976 Year	454,858	84.8	495,363	195.2	549,973	199.0	2,962,811	103.4	111.9
1977 Year	490,415	94.7	563,685	219.8	635,556	224.9	3,106,403	129.1	129.7
1978 Year	476,169	111.6	546,197	212.5	616,040	219.1	3,140,654	142.2	141.1
1979 Year	556,558	122.4	479,705	298.8	515,695	307.2	3,368,976	174.9	163.9
1980 Year	593,995	135.1	394,159	426.7	419,140	435.1	3,588,814	219.9	192.8
1981 Year	579,374	153.2	327,477	533.4	345,544	542.5	3,573,558	280.5	225.6
1982 Year	601,427	164.7	228,200	483.2	239,111	492.2	3,161,348	337.6	224.9
1983 Year	592,728	165.6	211,705	457.8	219,652	462.8	2,732,248	347.4	220.6
1984 Year	684,111	166.4	193,832	481.2	202,372	486.3	2,878,808	360.3	219.1
1985 Year	666,743	164.8	156,410	424.4	164,947	431.7	2,808,921	344.4	209.4
1986 Year	686,964	157.9	220,585	240.1	228,522	243.7	2,387,622	235.1	175.0
1987 Year	721,298	150.6	187,300	297.6	194,578	301.1	2,605,191	224.0	170.6
1988 Year	727,775	146.6	230,234	240.5	236,924	243.9	2,362,721	226.3	164.3
1989 Year	753,217	144.5	237,668	284.6	246,422	289.3	2,472,506	235.5	167.5
1990 Year	786,627	145.5	202,281	331.9	209,350	338.4	2,490,979	232.1	168.9
1991 January	63,732	145.4	11,466	359.4	12,315	373.8	165,100	267.1	169.8
February	61,407	147.0	10,429	265.8	10,899	276.0	137,568	234.8	161.3
March	63,825	145.5	11,269	244.2	11,672	251.3	182,853	220.0	159.3
April	61,093	147.3	13,119	234.2	13,479	239.7	203,893	206.7	160.3
May	63,259	148.3	14,711	233.1	15,256	240.1	233,667	198.2	160.8
June	61,674	147.4	17,122	220.2	17,675	226.1	244,386	191.2	159.5
July	65,105	142.7	17,169	227.2	17,703	233.1	310,738	184.6	156.0
August	69,794	143.1	16,831	226.7	17,323	232.6	306,418	192.7	156.6
September	65,273	143.3	15,590	241.4	16,063	247.7	248,899	215.4	160.2
October	66,445	143.6	9,658	238.6	10,287	253.1	251,458	231.0	160.9
November	62,779	142.8	11,289	253.9	11,835	264.8	186,722	240.7	160.4
December	65,538	140.0	14,453	252.2	15,120	260.3	159,115	262.0	159.5
Year	769,923	144.7	163,106	246.5	169,625	254.8	2,630,818	215.3	160.3
1992 January	64,678	139.6	12,039	223.2	12,539	230.0	159,815	247.1	155.2
February	61,603	142.1	13,634	209.8	14,107	216.1	160,328	201.7	152.7
March	63,857	143.4	12,779	208.2	13,186	214.1	198,040	196.8	153.7
April	60,661	142.7	10,144	217.8	10,555	225.7	218,468	202.6	154.8
May	63,407	142.9	10,079	237.1	10,498	245.1	227,857	207.8	156.4
June	63,704	141.9	10,888	251.4	11,352	260.0	254,025	213.6	158.3
July	64,400	139.3	12,706	274.1	13,217	281.2	315,543	208.9	159.2
August	70,241	139.6	12,152	274.1	12,664	281.2	287,373	237.3	161.6
September	66,503	142.0	8,883	268.5	9,319	277.6	259,771	246.3	163.0
October	66,907	141.3	10,772	290.5	11,221	297.7	205,039	297.9	167.5
November	64,005	141.5	11,161	273.5	11,636	280.5	182,505	282.6	164.5
December	65,998	138.6	13,302	252.1	14,097	261.9	168,913	276.5	160.0
Year	775,963	141.2	138,537	247.5	144,390	255.1	2,637,678	232.8	159.0
1993 January	65,219	138.5	8,437	248.7	9,026	259.1	159,318	267.3	156.2
February	59,229	139.3	7,002	254.1	7,421	263.8	153,681	250.8	155.6
March	63,894	137.6	8,548	248.6	9,022	258.8	186,075	256.6	156.5
April	63,807	139.3	10,074	280.0	10,539	286.6	169,844	268.9	159.9
May	62,599	139.9	10,392	261.2	10,825	268.1	163,925	286.3	161.6
5 Months	314,748	138.9	44,453	259.6	46,833	268.1	832,843	265.9	158.0
1992 5 Months	314,207	142.1	58,674	218.3	60,884	225.2	964,508	209.8	154.6
1991 5 Months	313,315	146.7	60,994	264.6	63,620	273.9	923,081	222.2	162.3

[a] Includes supplemental gaseous fuels.

[b] Heavy fuel oil includes fuel oils No. 4, No. 5, and No. 6, and topped crude oil. The weighted averages for petroleum and all fossil fuels include both heavy and light oil (No. 2 fuel oil, kerosene, and jet fuel) prices. Data do not include petroleum coke.

[c] Data for 1973-1982 do not include small quantities of rerefined motor oil, bunker oil, and liquefied petroleum gas.

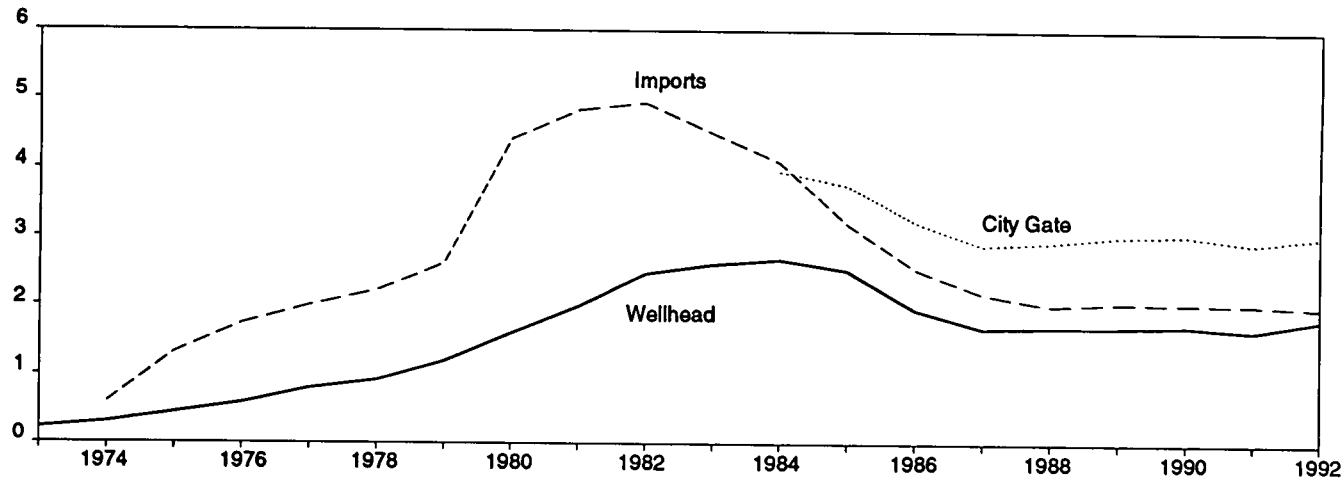
Notes: • Data for 1973-1982 cover all electric generating plants at which the generator nameplate capacity of all steam-electric units combined totaled 25 megawatts or greater. For 1974-1982, peaking units were included in the data and counted towards the 25-megawatt-or-greater total. Data for 1983-1990 cover all electric generating plants at which the generator nameplate capacity of all steam-electric units combined totaled 50 megawatts or greater. Data for 1991 forward cover all electric generating plants at which the generator nameplate capacity of all steam-electric units and combined-cycle units combined totaled 50 megawatts or greater. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • **1973-1979:** Annual data for quantity are simple sums of unrounded monthly values and for cost are averages of monthly values, weighted by quantities, from the following: 1973-May 1977—Federal Power Commission, Form FPC-423, "Monthly Report on Cost and Quality of Fuels for Electric Utility Plants." June 1977-December 1977—Federal Energy Regulatory Commission, Form FERC-423, "Monthly Report on Cost and Quality of Fuels for Electric Utility Plants." 1978 and 1979—Energy Information Administration (EIA), Form FERC-423, "Monthly Report on Cost and Quality of Fuels for Electric Utility Plants." • **1980:** EIA, *Electric Power Monthly*, April 1991, Table 33. • **1981:** EIA, *Electric Power Monthly*, April 1992, Table 33. • **1982 and 1991 monthly data:** EIA, *Electric Power Monthly*, April 1993, Table 33. • **1983 forward (except 1991 monthly data):** EIA, *Electric Power Monthly*, September 1993, Table 33.

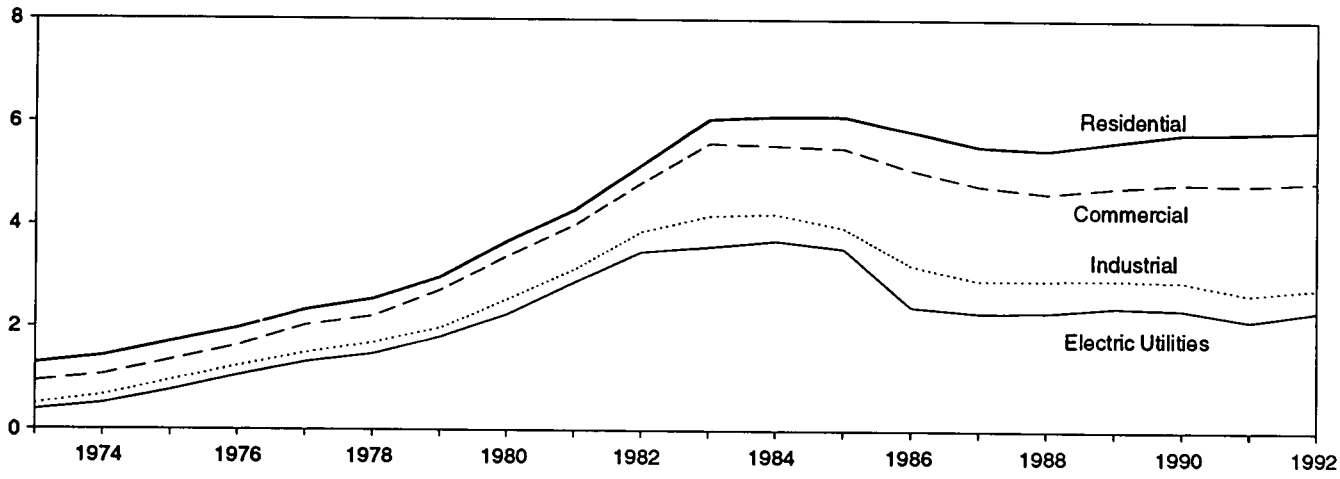
Figure 9.4 Natural Gas Prices

(Dollars per Thousand Cubic Feet)

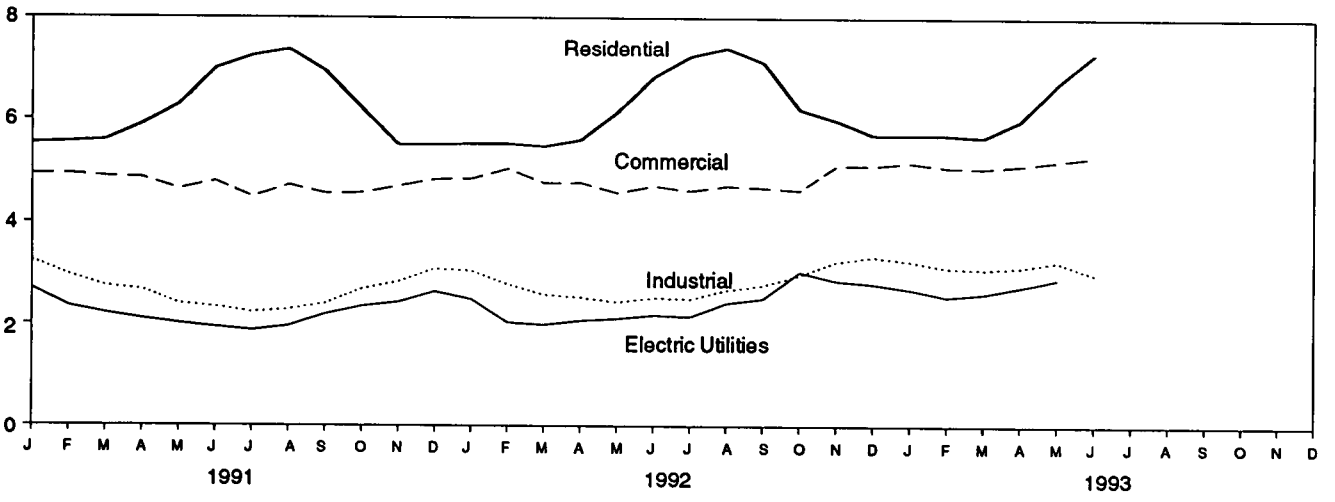
Selected Prices, 1973-1992



Delivered to Consumers, 1973-1992



Delivered to Consumers, Monthly



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 9.11.

Table 9.11 Natural Gas Prices

(Dollars per Thousand Cubic Feet)

	Wellhead	Major Interstate Pipeline Companies		City Gate	Delivered to Consumers[a,b]			
		Imports	Purchases from Producers		Residential	Commercial	Industrial	Electric Utilities[b]
1973 Average	0.22	NA	NA	NA	1.29	0.94	0.50	0.38
1974 Average	.30	.59	.27	NA	1.43	1.07	.67	.51
1975 Average	.44	1.31	.37	NA	1.71	1.35	.96	.77
1976 Average	.58	1.73	.48	NA	1.98	1.64	1.24	1.06
1977 Average	.79	1.99	.70	NA	2.35	2.04	1.50	1.32
1978 Average	.91	2.21	.83	NA	2.56	2.23	1.70	1.48
1979 Average	1.18	2.60	1.22	NA	2.98	2.73	1.99	1.81
1980 Average	1.59	4.42	1.63	NA	3.68	3.39	2.56	2.27
1981 Average	1.98	4.84	2.15	NA	4.29	4.00	3.14	2.89
1982 Average	2.46	4.94	2.72	NA	5.17	4.82	3.87	3.48
1983 Average	2.59	4.51	2.93	NA	6.06	5.59	4.18	3.58
1984 Average	2.66	4.08	2.91	3.95	6.12	5.55	4.22	3.70
1985 Average	2.51	3.19	2.85	3.75	6.12	5.50	3.95	3.55
1986 Average	1.94	2.53	2.39	3.22	5.83	5.08	3.23	2.43
1987 Average	1.67	2.17	2.10	2.87	5.54	4.77	2.94	2.32
1988 Average	1.69	2.00	2.13	2.92	5.47	4.63	2.95	2.33
1989 Average	1.69	2.04	2.18	3.01	5.64	4.74	2.96	2.43
1990 Average	1.71	2.03	2.19	3.03	5.80	4.83	2.93	2.39
1991 January	1.96	2.20	2.19	3.08	5.54	4.94	3.25	2.70
February	1.62	2.10	1.93	2.94	5.56	4.94	2.97	2.35
March	1.49	1.92	2.02	2.78	5.60	4.89	2.75	2.21
April	1.50	2.03	1.87	2.74	5.90	4.87	2.68	2.10
May	1.48	1.99	1.96	2.76	6.28	4.65	2.40	2.01
June	1.43	2.03	1.75	2.86	6.98	4.80	2.34	1.94
July	1.34	2.11	1.79	2.74	7.23	4.50	2.23	1.88
August	1.43	1.71	1.71	2.78	7.36	4.73	2.29	1.96
September	1.59	1.84	1.76	2.91	6.92	4.57	2.40	2.19
October	1.82	2.00	1.94	2.92	6.20	4.58	2.69	2.35
November	1.89	2.20	2.02	2.92	5.51	4.71	2.84	2.43
December	2.00	2.09	2.11	3.05	5.51	4.84	3.09	2.64
Average	1.64	2.02	1.92	2.90	5.82	4.81	2.69	2.18
1992 January	1.73	2.20	2.10	2.90	5.53	4.85	3.05	2.49
February	1.31	1.98	1.70	2.71	5.53	5.04	2.79	2.03
March	1.40	1.45	1.90	2.62	5.48	4.77	2.58	1.99
April	1.47	2.01	1.73	2.75	5.61	4.78	2.53	2.07
May	1.57	1.79	1.99	2.90	6.14	4.59	2.44	2.11
June	1.68	2.03	2.16	3.01	6.82	4.72	2.52	2.18
July	1.61	1.89	1.86	3.01	7.23	4.63	2.50	2.15
August	1.91	1.82	2.14	3.18	7.40	4.72	2.68	2.42
September	1.99	2.05	2.13	3.24	7.11	4.69	2.78	2.51
October	2.46	2.13	2.69	3.49	6.20	4.64	2.98	3.04
November	2.20	2.32	2.37	3.33	5.99	5.11	3.24	2.87
December	2.14	1.92	2.40	3.17	5.71	5.11	3.34	2.81
Average	1.80	1.97	2.10	3.01	5.86	4.87	2.81	2.37
1993 January	2.05	2.02	2.17	3.10	5.71	5.17	3.25	2.70
February	1.79	1.91	1.94	2.94	5.71	5.08	3.12	2.55
March	1.97	1.78	2.20	3.06	5.67	5.06	3.09	2.61
April	2.11	2.15	2.34	3.24	[R]5.99	[R]5.12	3.13	2.75
May	[R]2.40	2.13	2.81	3.57	6.70	5.20	3.24	2.90
June	[E]2.12	1.95	2.03	3.37	7.29	5.29	3.00	NA
6-Month Average	[E]2.07	1.99	2.25	3.15	5.89	5.12	3.14	NA
1992 6-Month Average	1.53	1.91	1.93	2.80	5.66	4.83	2.67	2.14
1991 6-Month Average	1.58	2.05	1.95	2.89	5.74	4.88	2.77	2.18

[a] Includes supplemental gaseous fuels.
[b] See Note 8 at end of section.
R=Revised data. NA=Not available. E=Estimate.

Notes: • Prices shown on this page are intended to include all taxes. See Note 8 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Wellhead annual and year-to-date prices are simple averages of the monthly prices; all other annual and year-to-date prices are volume-weighted averages of the monthly prices.

Sources: • **1973-1986: Wellhead**—Energy Information Administration (EIA), *Natural Gas Annual 1991*, Table 95. **Major Interstate Pipeline Companies, 1974-1977**—Calculated from revenue and sales data reported to the Federal Power Commission (FPC), Form FPC-11, "Natural Gas Pipeline Company Monthly Statement." **Major Interstate Pipeline Companies, 1978-1983**—EIA, *Natural Gas Monthly*, December 1984, Table 10. **Major Interstate Pipeline Companies, 1984-1986**—EIA, *Natural Gas Monthly*, December 1989, Table 4. **City Gate, 1984-1986**—EIA, *Natural Gas Monthly*, December 1989, Table 4. **Delivered to Consumers, 1973-1986**—EIA, *Natural Gas Annual 1991*, Table 98. • **1987 forward:** EIA, *Natural Gas Monthly*, September 1993, Table 4.

Energy Prices Notes

1. The average domestic first purchase price represents the average price at which all domestic crude oil is purchased. Prior to February 1976, the price represented an estimate of the average of posted prices; beginning with February 1976, the price represents an average of actual first purchase prices. The data series was previously called "Actual Domestic Wellhead Price."

2. F.O.B. literally means "Free on Board." It denotes a transaction whereby the seller makes the product available with an agreement on a given port at a given price; it is the responsibility of the buyer to arrange for the transportation and insurance.

3. The landed cost of imported crude oil from selected countries does not represent the total cost of all imported crude. Prior to March 1975, imported crude costs to U.S. company-owned refineries in the Caribbean were not included in the landed cost, and costs of crude oil from countries that export only small amounts to the United States were also excluded. Beginning in March 1975, however, coverage was expanded to include U.S. company-owned refineries in the Caribbean. Landed costs do not include supplemental fees.

4. Beginning with January 1981, refiner acquisition costs of crude oil are from data collected on Form EIA-14, "Refiners' Monthly Cost Report." Those costs were previously published from data collected on Form ERA-49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report." Form ERA-49 was discontinued with the decontrol of crude oil on January 28, 1981. Crude oil purchases and costs are defined for Form EIA-14 in accordance with conventions used for Form ERA-49. Also, the respondents for the two forms are essentially the same. However, due to possible different interpretations of the filing requirements and a different method for handling prior period adjustments, care must be taken when comparing the data collected on the two forms.

The refiner acquisition cost of crude oil is 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. Domestic crude oil is that oil produced in the United States or from the outer continental shelf as defined in 43 USC Section 1331. Imported crude oil is either that oil reported on Form ERA-51, "Transfer Pricing Report," or any crude oil that is not domestic oil. The composite cost is the weighted average of domestic and imported crude oil costs.

Crude oil costs and volumes reported on Form ERA-49 excluded unfinished oils but included the Strategic Petroleum Reserve (SPR). Crude oil costs and volumes reported on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report," included unfinished oils but excluded SPR. Imported averages derived from Form ERA-49 exclude oil purchased for SPR, whereas the composite averages derived from Form ERA-49 include SPR. None of the prices derived from Form EIA-14 include either unfinished oils or SPR.

5. Several different series of motor gasoline prices are published in this section. U.S. City Average Retail Prices of Motor Gasoline are calculated monthly by the Bureau of Labor Statistics during the development of the Consumer Price Index (CPI). These prices include all Federal, State, and local taxes paid at the time of sale. For the period 1974-1977, prices were collected in 56 urban areas. For the period 1978 forward, prices were collected from a new sample of service stations in 85 urban areas selected to represent all urban consumers—about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-serve).

Refiner prices of finished motor gasoline for resale and to end users are determined by the Energy Information Administration (EIA) in a monthly survey of refiners and gas plant operators (Form EIA-782A). The prices do not include any Federal, State, or local taxes paid at the time of sale. Estimates of prices prior to January 1983 are based on Form FEA-P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices," and also exclude all Federal, State, or local taxes paid at the time of sale. Sales for resale are those made to purchasers who are other-than-ultimate consumers. Sales to end users are sales made directly to the consumer of the product, including bulk consumers, such as agriculture, industry, and utilities, as well as residential and commercial consumers.

6. Starting in January 1983, Form EIA-782, "Monthly Petroleum Product Sales Report," replaced 10 previous surveys. Every attempt was made to continue the most important price series. However, prices published through December 1982 and those published since January 1983 do not necessarily form continuous data series due to changes in survey forms, definitions, instructions, populations, samples, processing systems, and statistical procedures. To provide historical data, continuous series were generated for annual data 1978-1982 and for monthly data 1981 and 1982 by estimating the prices that would have been published had Form EIA-782 survey and system been in operation at that time. This form of estimation was performed after detailed adjustment was made for product and sales type matching and for discontinuity due to other factors. An important difference between the previous and present prices is the distinction between wholesale and resale and between retail and end user. The resale category continues to include sales among resellers. However, bulk sales to utility, industrial, and commercial accounts previously included in the wholesale category are now counted as made to end users. The end-user category continues to include retail sales through company owned

and operated outlets but also includes the bulk utility, industrial, and commercial sales. Additional information may be found in Estimated Historic Time Series for the EIA-782, a feature article reprinted from the December 1983 [3] *Petroleum Marketing Monthly*, published by EIA.

7. National average electricity prices are shown in two data series. The "Annual Series" is based on data from more than 3,000 publicly and privately owned electric utilities that report on Form EIA-861, "Annual Electric Utility Report." The "Monthly Series" is based on data from over 400 utilities statistically chosen as a stratified sample of the utilities that report on Form EIA-861. The selected utilities report monthly on Form EIA-826, "Monthly Electric Utility Sales and Revenue Report with State Distributions," formerly the "Electric Utility Company Monthly Statement." Annual values shown for the monthly series are the sum of the monthly revenue divided by the sum of the monthly sales. Prior to January 1986, only privately owned utilities were included in the monthly survey and the sample was chosen by using cut-off, rather than stratification, techniques.

8. Natural gas prices are intended to include all taxes. Instructions on the data collection forms specifically direct that all Federal, State, and local taxes, surcharges, and/or adjustments billed to consumers are to be included. However, sales and other taxes itemized on consumers' bills are sometimes excluded by the reporting utilities.

Delivered-to-consumers prices for 1987 forward represent natural gas delivered and sold to residential, commercial, industrial, and electric utility consumers. They do not include the price of natural gas delivered to industrial and commercial consumers on behalf of third parties. Volumes of natural gas delivered on behalf of third parties are included in the consumption data shown in Table 4.3. Additional information is available in the EIA *Natural Gas Monthly*, Appendix C.

Electric utility data for 1973-1982 cover all electric generating plants at which the generator nameplate capacity of all steam-electric units combined totaled 25 megawatts or greater. From 1974-1982, peaking units were included in the data and counted towards the 25-megawatt-or-greater total. Data for 1983-1990 cover all electric generating plants at which the generator nameplate capacity of all steam-electric units combined totaled 50 megawatts or greater. Data for 1991 forward cover all electric generating plants at which the generator nameplate capacity of all steam-electric units and combined-cycle units together totaled 50 megawatts or greater.

Section 10. International Energy

Crude Oil Production. World crude oil production during June 1993 was 59 million barrels per day, down 0.1 million barrels per day from the level in the previous month. World crude oil production in the first half of 1993 averaged 60 million barrels per day, down slightly from the first half 1992 level.

Organization of Petroleum Exporting Countries (OPEC) production during June 1993 averaged 25 million barrels per day, up slightly from the level during the previous month. OPEC production in the first half of 1993 averaged 26 million barrels per day, a 4-percent increase from the first half of 1992 average. Production by the Arab members of OPEC in June 1993 averaged 15 million barrels per day, up slightly from the May 1993 level. Production by the Arab members of OPEC during the first half of 1993 averaged 16 million barrels per day, 4 percent above the first half of 1992 level. During June 1993, production increased in Kuwait by 75 thousand barrels per day. Production decreased in Qatar by 20 thousand barrels per day. Production remained unchanged in Algeria, Iraq, Libya, Saudi Arabia, and the United Arab Emirates. Among the non-Arab members of OPEC, production during June 1993 decreased in Nigeria by 30 thousand barrels per day. Production remained unchanged in Indonesia, Iran, and Venezuela.

Among the non-OPEC nations, production during June 1993 decreased in the United States by 77 thousand barrels per day. Production remained unchanged in Canada, Mexico, the United Kingdom, China, and in the former U.S.S.R..

Petroleum Consumption. In April 1993, consumption in all Organization for Economic Cooperation and Development (OECD) countries was 38.2 million barrels per day, slightly higher than the April 1992 rate. The consumption rate was higher than it was 1 year ago in Japan (+8 percent). Consumption levels were lower in April 1993 than in April 1992 in the United Kingdom (-7 percent), Italy (-6 percent), France (-3 percent), Canada (-2 percent), and Germany and the United States (each -1 percent).

Petroleum Stocks. For all OECD countries, petroleum stocks at the end of April 1993 totaled 3.6 billion barrels, 1 percent higher than the ending stock level in April 1992. Stock levels were higher than the levels 1 year ago in the United States (+2 percent) and in the United Kingdom, Japan, and Germany (each +1 percent). Stocks were lower in April 1993 than in April 1992 in Canada and Italy (each -5 percent) and France (-1 percent).

Nuclear Electricity Generation. Based on *Nucleonics Week* information for June 1993, reporting countries with nuclear capacity generated 151 gross terawatthours[9] of nuclear-generated electricity, 6 percent more than in June 1992.

A new nuclear unit became operable during June 1993. Canada's Darlington-4, a 935-gross megawatt pressurized heavy-water reactor, became commercially operable on June 14, 1993.

As of June 30, 1993, there were 358 operable nuclear generating units in the reporting countries. The units had a collective gross generating capacity of 303.6 gigawatts.[10] The 109 U.S. units accounted for 105.3 gross gigawatts, 34.7 percent of the total reported nuclear generating capacity.

[9]One terawatthour equals 1 billion kilowatthours.
[10]One gigawatt equals 1 million kilowatts.

Table 10.1a World Crude Oil Production: Algeria Through Venezuela

(Thousand Barrels per Day)

	Algeria	Iraq	Kuwait[a]	Libya	Qatar	Saudi Arabia[a]	United Arab Emirates	Arab OPEC[b]	Indonesia	Iran	Nigeria	Venezuela
1973 Average	1,097	2,018	3,020	2,175	570	7,596	1,533	18,009	1,339	5,861	2,054	3,366
1974 Average	1,009	1,971	2,546	1,521	518	8,480	1,679	17,724	1,375	6,022	2,255	2,976
1975 Average	983	2,262	2,084	1,480	438	7,075	1,664	15,985	1,307	5,350	1,783	2,346
1976 Average	1,075	2,415	2,145	1,933	497	8,577	1,936	18,579	1,504	5,883	2,067	2,294
1977 Average	1,152	2,348	1,969	2,063	445	9,245	1,999	19,221	1,686	5,663	2,085	2,238
1978 Average	1,231	2,563	2,131	1,983	487	8,301	1,831	18,525	1,635	5,242	1,897	2,165
1979 Average	1,224	3,477	2,500	2,092	508	9,532	1,831	21,163	1,591	3,168	2,302	2,356
1980 Average	1,106	2,514	1,656	1,787	472	9,900	1,709	19,144	1,577	1,662	2,055	2,168
1981 Average	1,002	1,000	1,125	1,140	405	9,815	1,474	15,961	1,605	1,380	1,433	2,102
1982 Average	987	1,012	823	1,150	330	6,483	1,250	12,035	1,339	2,214	1,295	1,895
1983 Average	968	1,005	1,064	1,105	295	5,086	1,149	10,672	1,343	2,440	1,241	1,801
1984 Average	1,014	1,209	1,157	1,087	394	4,663	1,146	10,670	1,412	2,174	1,388	1,798
1985 Average	1,037	1,433	1,023	1,059	301	3,388	1,193	9,434	1,325	2,250	1,495	1,677
1986 Average	945	1,690	1,419	1,034	308	4,870	1,330	11,596	1,390	2,035	1,467	1,787
1987 Average	1,048	2,079	1,585	972	293	4,265	1,541	11,783	1,343	2,298	1,341	1,752
1988 Average	1,040	2,685	1,492	1,175	346	5,086	1,565	13,389	1,342	2,240	1,450	1,903
1989 Average	1,095	2,897	1,783	1,150	380	5,064	1,860	14,229	1,409	2,810	1,716	1,907
1990 Average	1,175	2,040	1,175	1,375	406	6,410	2,117	14,698	1,462	3,088	1,810	2,137
1991 January	1,230	250	50	1,500	361	8,140	2,510	14,041	1,630	3,200	1,906	2,396
February	1,230	0	0	1,500	402	8,200	2,535	13,867	1,630	3,300	1,906	2,396
March	1,230	0	0	1,450	402	8,000	2,560	13,642	1,630	3,400	1,906	2,396
April	1,230	200	0	1,450	402	7,400	2,560	13,242	1,630	3,300	1,906	2,346
May	1,230	350	0	1,450	402	7,400	2,360	13,192	1,630	3,300	1,906	2,346
June	1,230	350	75	1,450	402	8,150	2,360	14,017	1,630	3,300	1,858	2,346
July	1,230	400	165	1,450	402	8,475	2,360	14,482	1,680	3,400	1,858	2,346
August	1,230	400	195	1,450	402	8,465	2,360	14,502	1,630	3,400	1,906	2,346
September	1,230	400	299	1,500	402	8,400	2,350	14,582	1,580	3,300	1,906	2,346
October	1,230	400	429	1,500	402	8,450	2,440	14,851	1,530	3,300	1,809	2,396
November	1,230	400	499	1,550	382	8,440	2,505	15,005	1,580	3,300	1,906	2,396
December	1,230	400	519	1,550	320	8,640	2,470	15,129	1,580	3,500	1,931	2,446
Average	1,230	298	187	1,483	390	8,181	2,447	14,216	1,613	3,334	1,892	2,375
1992 January	1,230	450	565	1,550	350	8,790	2,435	15,370	1,580	3,500	1,975	2,390
February	1,230	450	630	1,550	325	8,640	2,425	15,250	1,605	3,500	1,925	2,340
March	1,230	450	735	1,450	375	8,260	2,300	14,800	1,630	3,350	1,900	2,190
April	1,230	450	863	1,500	375	8,213	2,300	14,930	1,605	3,250	1,925	2,190
May	1,210	450	915	1,450	375	8,265	2,300	14,965	1,530	3,250	1,925	2,290
June	1,210	450	1,015	1,450	375	8,315	2,275	15,090	1,560	3,250	1,925	2,290
July	1,210	450	1,080	1,450	400	8,350	2,300	15,240	1,550	3,300	1,975	2,290
August	1,210	450	1,130	1,425	425	8,400	2,330	15,370	1,540	3,450	2,000	2,340
September	1,210	450	1,200	1,475	425	8,450	2,320	15,530	1,550	3,450	2,025	2,390
October	1,210	450	1,280	1,500	440	8,505	2,310	15,695	1,550	3,650	2,050	2,440
November	1,210	450	1,375	1,500	440	8,500	2,305	15,780	1,550	3,650	2,050	2,440
December	1,210	450	1,550	1,500	440	8,575	2,305	16,030	1,550	3,550	2,100	2,415
Average	1,217	450	1,029	1,483	396	8,438	2,325	15,338	1,566	3,429	1,982	2,334
1993 January	1,210	500	1,675	1,480	450	8,500	2,295	16,110	1,550	3,650	2,125	2,410
February	1,210	500	1,865	1,425	430	8,440	2,305	16,175	1,530	3,750	2,105	2,390
March	1,200	500	1,650	1,350	400	8,300	2,270	15,670	1,500	3,700	2,075	2,340
April	1,200	500	1,645	1,350	400	R 8,000	2,270	R 15,365	1,480	3,500	2,025	2,340
May	1,200	500	R 1,550	1,350	420	R 8,000	2,230	R 15,250	1,510	3,650	2,025	2,340
June	1,200	500	1,625	1,350	400	8,000	2,230	15,305	1,510	3,650	1,995	2,340
6-Mo. Avg.	1,203	500	1,665	1,384	417	8,205	2,266	15,640	1,513	3,649	2,058	2,360
1992 6-Mo. Avg.	1,223	450	787	1,491	363	8,413	2,339	15,066	1,585	3,349	1,929	2,281
1991 6-Mo. Avg.	1,230	194	21	1,466	395	7,878	2,480	13,664	1,630	3,300	1,898	2,371

[a] Includes about one-half of the production in the Kuwait-Saudi Arabia Neutral Zone from 1973 through July 1990 and in June 1991. Kuwaiti Neutral Zone output was discontinued following Iraq's invasion of Kuwait on August 2, 1990, but was resumed in June 1991. In June 1993, Neutral Zone production by both Kuwait and Saudi Arabia totaled about 300 thousand barrels per day.

[b] The Arab members of the Organization of Petroleum Exporting Countries (OPEC) are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates. Production in the Neutral Zone between Kuwait and Saudi Arabia is included in "Arab OPEC."

R=Revised data.

Notes: • Crude oil includes lease condensate but excludes natural gas plant liquids. • U.S. geographic coverage is the 50 States and the District of Columbia. • Monthly data are often preliminary figures and may not average to the annual totals because of rounding or because updates to the preliminary monthly data are not available.

Sources: • **United States:** Table 3.1a. • **Other Countries: Annual Data—1973-1979**—Energy Information Administration (EIA), *International Energy Annual 1981*, Table 8. **1980**—EIA, *International Energy Annual 1989*, Table 1. **1981**—EIA, *International Energy Annual 1990*, Table 1. **1982-1991**—EIA, *International Energy Annual 1991*, Table 1. **1992**—Average of monthly data. **Monthly data**—*Petroleum Intelligence Weekly*, the *Oil and Gas Journal*, and other industry sources. • **World: Annual data—1973-1979**—EIA, *International Energy Annual 1981*, Table 8. **1980**—EIA, *International Energy Annual 1989*, Table 1. **1981**—EIA, *International Energy Annual 1990*, Table 1. **1982-1991**—EIA, *International Energy Annual 1991*, Table 1. **1992**—Average of monthly data. **Monthly data**—EIA, *International Petroleum Statistics Report*, sum of all countries' monthly data.

Table 10.1b World Crude Oil Production: Total OPEC, Canada Through Former U.S.S.R., and World

(Thousand Barrels per Day)

	Total OPEC[a]	Persian Gulf Nations[b]	Canada	Mexico	United Kingdom	United States	China	Former U.S.S.R.	Other[c]	World
1973 Average	30,779	20,668	1,798	465	2	9,208	1,090	8,324	4,013	55,679
1974 Average	30,552	21,282	1,551	571	2	8,774	1,315	8,912	4,039	55,716
1975 Average	26,994	18,934	1,430	705	12	8,375	1,490	9,523	4,300	52,828
1976 Average	30,549	21,514	1,314	831	245	8,132	1,670	10,060	4,543	57,344
1977 Average	31,115	21,725	1,321	981	768	8,245	1,874	10,603	4,799	59,707
1978 Average	29,673	20,606	1,316	1,209	1,082	8,707	2,082	11,105	4,984	60,158
1979 Average	30,784	21,066	1,500	1,461	1,568	8,552	2,122	11,384	5,303	62,674
1980 Average	26,781	17,961	1,435	1,936	1,622	8,597	2,114	11,706	5,408	59,599
1981 Average	22,632	15,245	1,285	2,313	1,811	8,572	2,012	11,850	5,601	56,076
1982 Average	18,934	12,156	1,271	2,748	2,065	8,649	2,045	11,912	5,857	53,481
1983 Average	17,654	11,081	1,356	2,689	2,291	8,688	2,120	11,972	6,485	53,255
1984 Average	17,599	10,784	1,438	2,780	2,480	8,879	2,296	11,861	7,155	54,488
1985 Average	16,353	9,630	1,471	2,745	2,530	8,971	2,505	11,585	7,821	53,981
1986 Average	18,441	11,696	1,474	2,435	2,539	8,680	2,620	11,895	8,143	56,227
1987 Average	18,672	12,103	1,535	2,548	2,406	8,349	2,690	11,985	8,416	56,601
1988 Average	20,483	13,457	1,616	2,512	2,232	8,140	2,730	11,978	8,971	58,662
1989 Average	22,279	14,837	1,560	2,520	1,802	7,613	2,757	11,625	9,617	59,773
1990 Average	23,465	15,278	1,553	2,553	1,820	7,355	2,774	10,880	10,070	60,471
1991 January	23,487	14,553	1,561	2,660	1,675	7,500	2,792	10,663	10,399	60,736
February	23,414	14,477	1,621	2,674	1,904	7,637	2,802	9,943	10,439	60,433
March	23,263	14,405	1,546	2,669	2,068	7,546	2,797	10,367	10,432	60,687
April	22,712	13,903	1,445	2,655	1,526	7,509	2,802	10,310	10,320	59,279
May	22,662	13,854	1,505	2,695	1,396	7,409	2,802	10,222	10,402	59,093
June	23,439	14,674	1,525	2,720	1,525	7,320	2,812	9,808	10,138	59,288
July	24,053	15,240	1,535	2,690	1,805	7,347	2,812	9,808	10,230	60,281
August	24,072	15,260	1,581	2,660	1,827	7,316	2,812	9,420	9,897	59,584
September	24,002	15,191	1,551	2,675	1,896	7,368	2,807	9,886	10,434	60,616
October	24,185	15,459	1,505	2,680	1,990	7,437	2,807	9,492	10,484	60,580
November	24,486	15,565	1,621	2,660	1,975	7,328	2,812	9,378	10,570	60,830
December	24,884	15,889	1,586	2,675	1,979	7,299	2,807	9,347	10,663	61,239
Average	23,725	14,876	1,548	2,676	1,797	7,417	2,805	9,887	10,367	60,221
1992 January	25,100	16,130	1,585	2,675	1,920	7,361	2,830	9,115	10,821	61,407
February	24,880	16,010	1,560	2,665	1,905	7,389	2,865	8,650	10,670	60,584
March	24,170	15,510	1,620	2,680	1,755	7,348	2,835	8,760	10,744	59,912
April	24,205	15,487	1,535	2,680	1,835	7,293	2,855	9,025	10,838	60,266
May	24,265	15,592	1,510	2,660	1,700	7,169	2,835	8,455	10,566	59,160
June	24,420	15,716	1,560	2,680	1,545	7,167	2,830	8,440	10,758	59,400
July	24,660	15,916	1,630	2,660	1,780	7,131	2,825	8,365	10,818	59,869
August	25,005	16,220	1,675	2,685	1,825	6,922	2,815	8,130	10,802	59,858
September	25,245	16,330	1,620	2,685	1,830	7,030	2,860	7,980	10,873	60,123
October	25,685	16,670	1,665	2,655	1,930	7,126	2,875	7,965	11,017	60,918
November	25,770	16,755	1,640	2,640	1,945	7,024	2,845	7,910	10,847	60,621
December	25,945	16,905	1,575	2,655	1,935	7,103	2,785	7,870	11,074	60,942
Average	24,947	16,104	1,598	2,668	1,825	7,171	2,838	8,388	10,820	60,255
1993 January	26,145	17,105	1,570	2,605	1,810	E7,008	2,885	7,800	10,736	60,559
February	26,250	17,325	1,610	2,610	1,930	E6,957	2,875	7,785	10,877	60,894
March	25,585	16,855	1,635	2,635	1,710	E6,976	2,885	7,685	11,044	60,155
April	R25,010	R16,350	R1,604	R2,674	R1,697	E6,897	R2,904	7,665	R11,039	R59,490
May	R25,075	R16,385	R1,625	R2,673	R1,716	E6,833	R2,904	7,595	R10,973	R59,394
June	25,100	16,440	1,625	2,673	1,716	E6,756	2,904	7,595	10,973	59,342
6-Mo. Avg.	25,521	16,738	1,611	2,645	1,761	E6,905	2,893	7,687	10,941	59,963
1992 6-Mo. Avg.	24,505	15,739	1,562	2,673	1,776	7,287	2,841	8,742	10,733	60,119
1991 6-Mo. Avg.	23,160	14,309	1,533	2,679	1,681	7,485	2,801	10,225	10,355	59,918

[a] "Total OPEC" consists of Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela. Production from the Neutral Zone between Kuwait and Saudi Arabia is included in "Total OPEC."

[b] The Persian Gulf Nations are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates. Production from the Neutral Zone between Kuwait and Saudi Arabia is included in "Persian Gulf Nations."

[c] "Other" is a calculated total derived from the difference between "World" and the sum of production in "Total OPEC," Canada, Mexico, the United Kingdom, the United States, China, and the former U.S.S.R.

R=Revised data. E=Estimate.

Notes: • Crude oil includes lease condensate but excludes natural gas plant liquids. • U.S. geographic coverage is the 50 States and the District of Columbia. • Monthly data are often preliminary figures and may not average to the annual totals because of rounding or because updates to the preliminary monthly data are not available.

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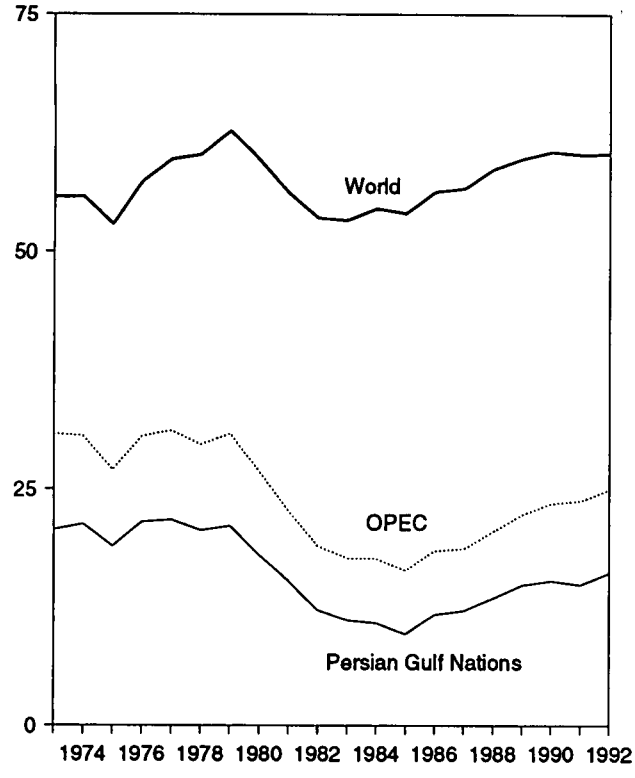
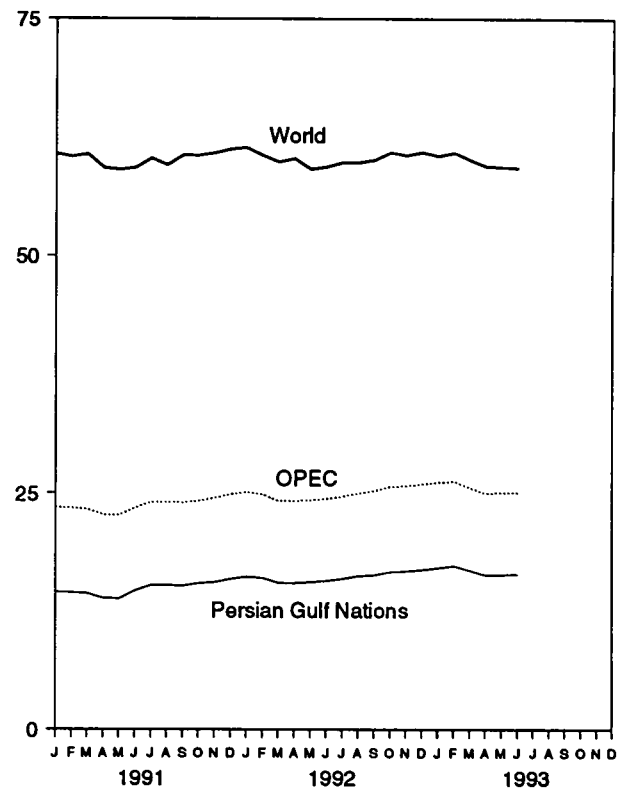
Figure 10.1 Crude Oil Production
(Million Barrels per Day)

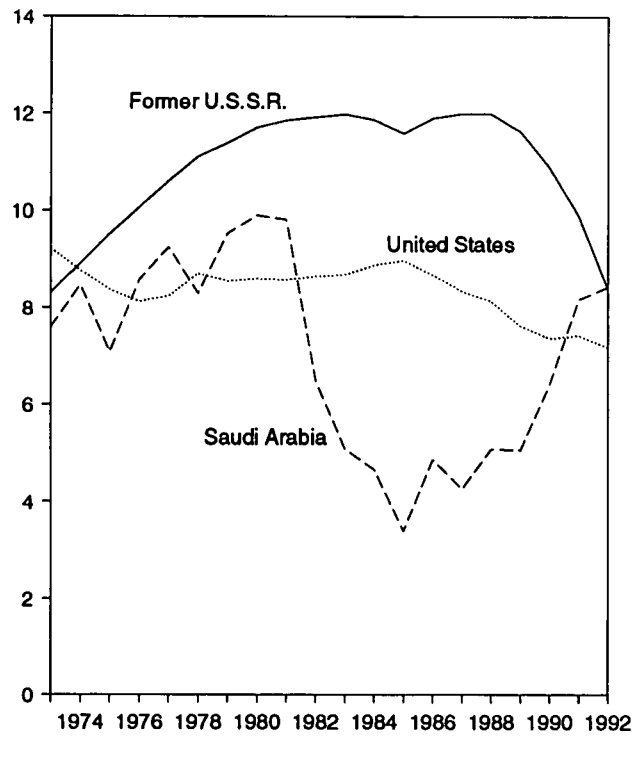
World Production, 1973-1992



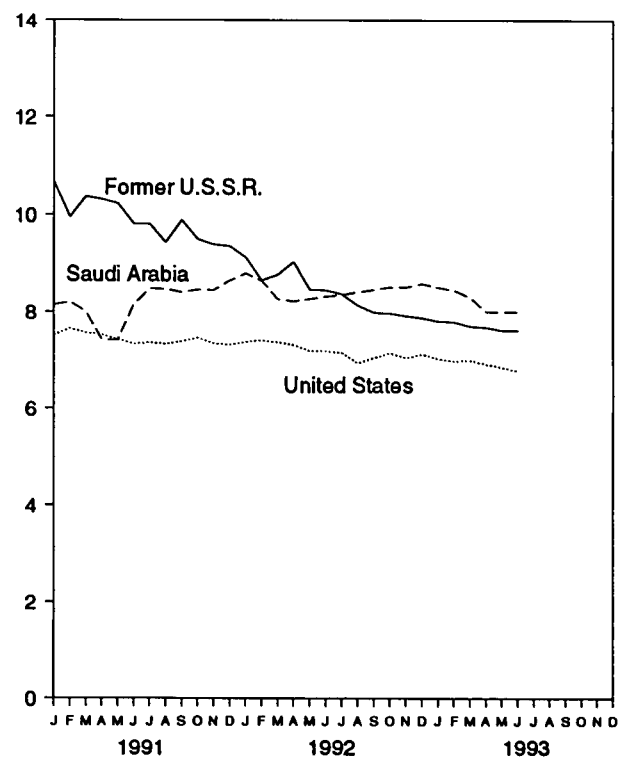
World Production, Monthly



Leading Producers, 1973-1992



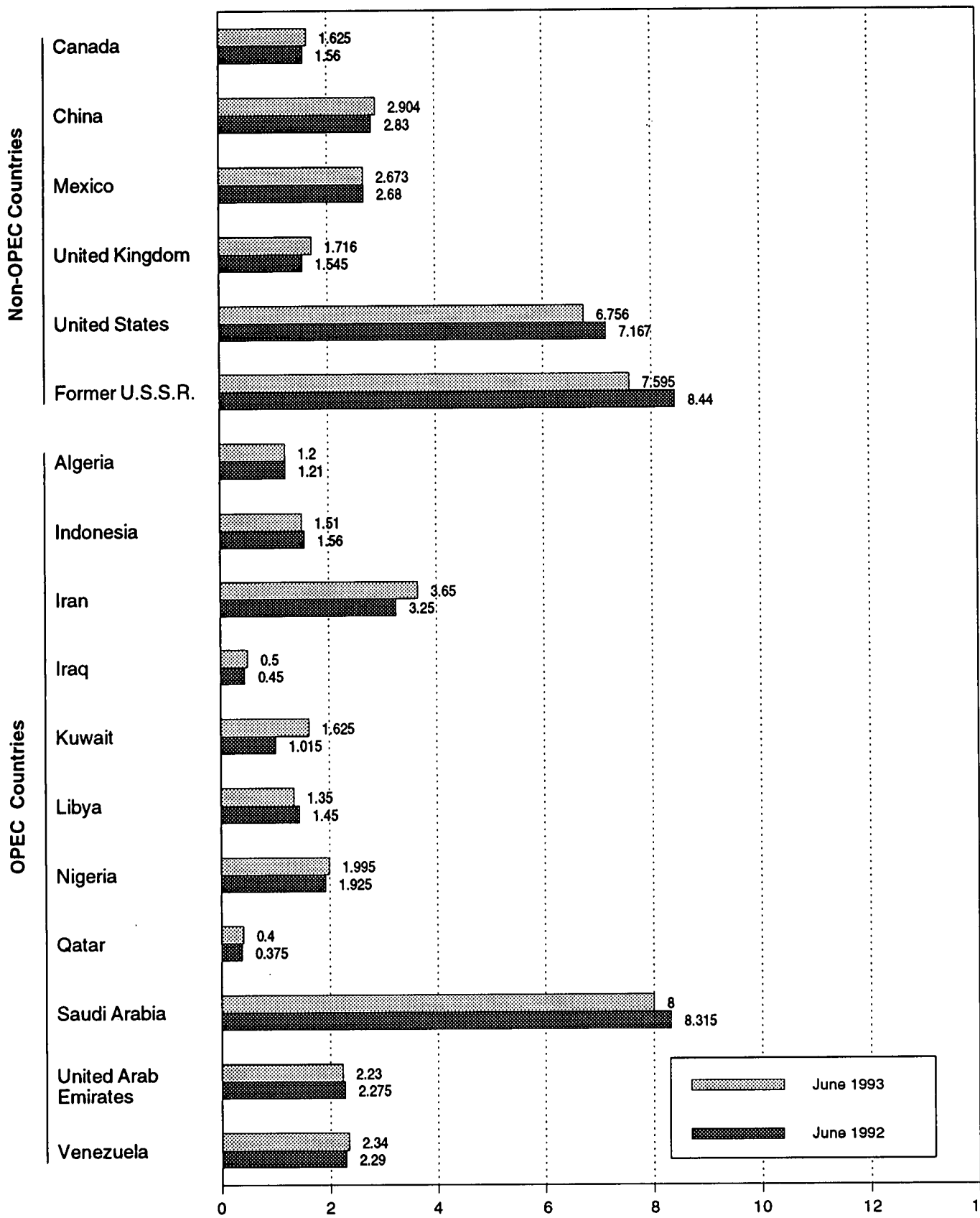
Leading Producers, Monthly



Note: OPEC is the Organization of Petroleum Exporting Countries.
Sources: Tables 10.1a and 10.1b.

Figure 10.2 Crude Oil Production by Selected Country

(Million Barrels per Day)

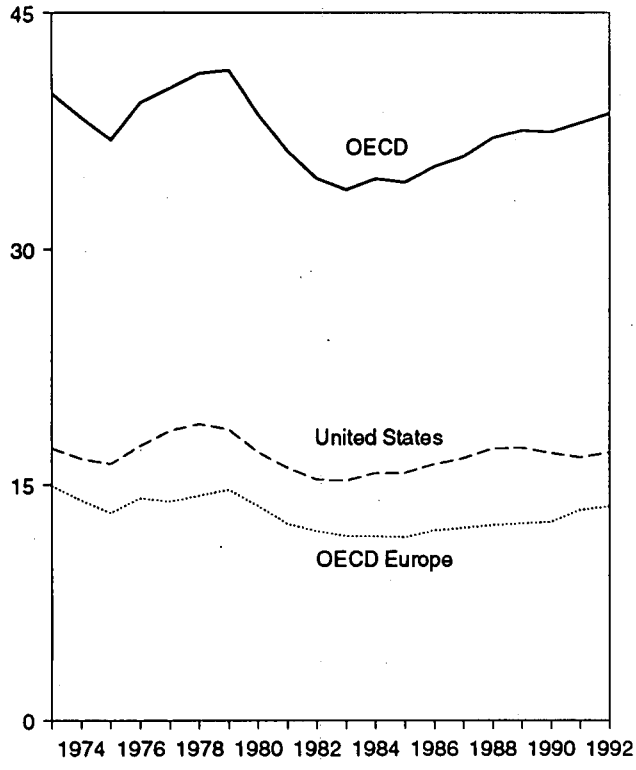


Note: OPEC is the Organization of Petroleum Exporting Countries.
Sources: Tables 10.1a and 10.1b.

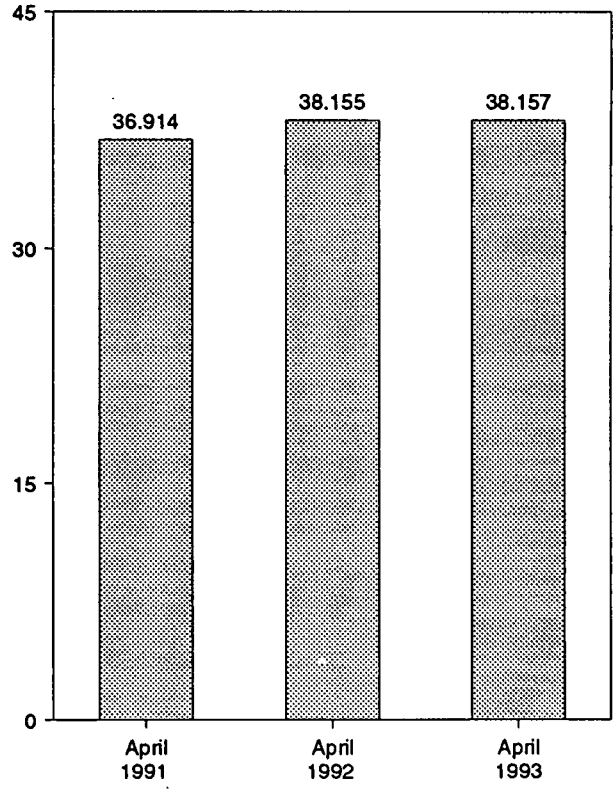
Figure 10.3 Petroleum Consumption in OECD Countries

(Million Barrels per Day)

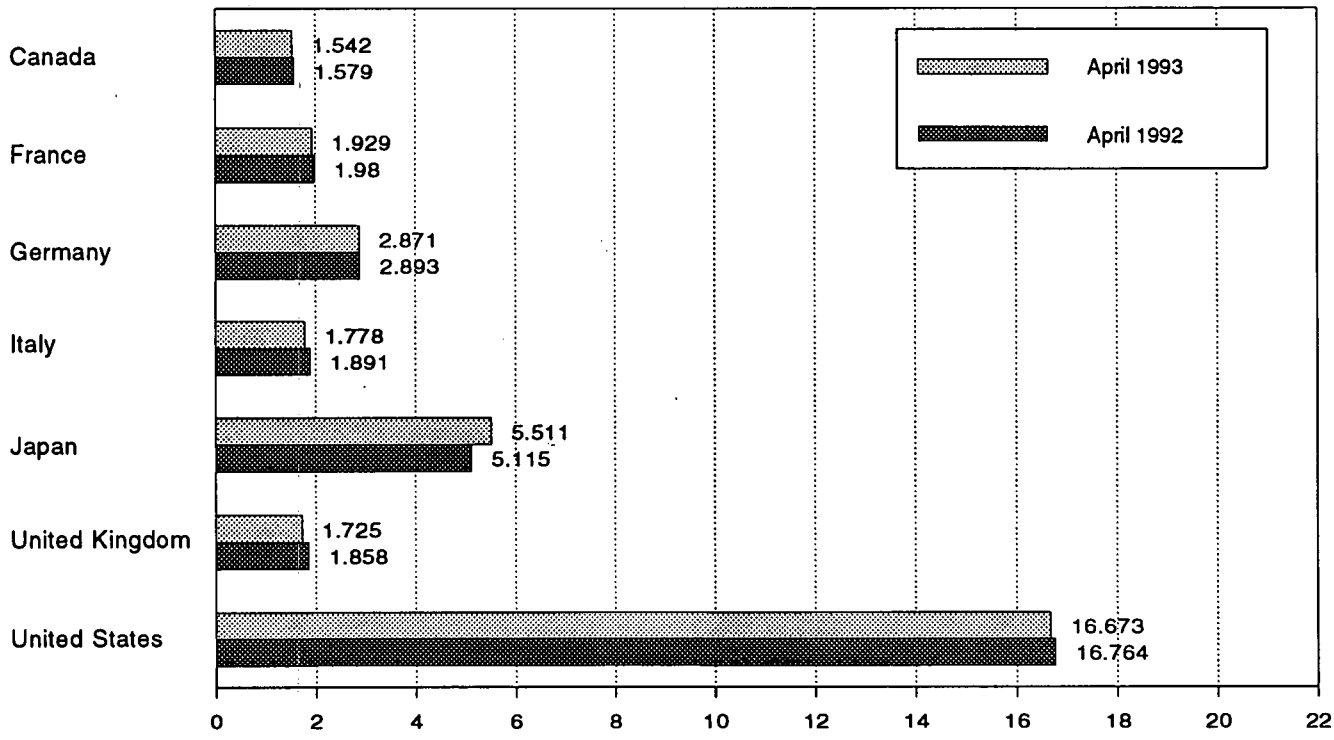
OECD Consumption, 1973-1992



OECD Consumption



Consumption by Selected OECD Country



Note: OECD is the Organization for Economic Cooperation and Development.
Source: Table 10.2.

Table 10.2 Petroleum Consumption in OECD Countries

(Thousand Barrels per Day)

	Canada	France	Germany[a]	Italy	Japan	United Kingdom	United States	OECD Europe[b]	Other OECD[c]	OECD
1973 Average	1,729	2,601	3,055	2,068	4,949	2,341	17,308	14,925	988	39,900
1974 Average	1,779	2,447	2,748	2,004	4,864	2,210	16,653	13,988	1,095	38,379
1975 Average	1,779	2,252	2,650	1,855	4,621	1,911	16,322	13,217	1,041	36,980
1976 Average	1,818	2,420	2,877	1,971	4,837	1,892	17,461	14,124	1,119	39,358
1977 Average	1,850	2,294	2,865	1,897	4,880	1,905	18,431	13,916	1,160	40,237
1978 Average	1,902	2,408	2,927	1,952	4,945	1,938	18,847	14,290	1,204	41,187
1979 Average	1,971	2,463	3,003	2,039	5,050	1,971	18,513	14,667	1,178	41,379
1980 Average	1,873	2,256	2,707	1,934	4,960	1,725	17,056	13,634	1,072	38,595
1981 Average	1,768	2,023	2,449	1,874	4,848	1,590	16,058	12,515	1,080	36,269
1982 Average	1,578	1,880	2,372	1,781	4,582	1,590	15,296	12,053	1,008	34,517
1983 Average	1,448	1,835	2,324	1,750	4,395	1,531	15,231	11,765	954	33,793
1984 Average	1,472	1,754	2,322	1,646	4,576	1,849	15,726	11,736	989	34,500
1985 Average	1,504	1,775	2,338	1,717	4,384	1,634	15,726	11,681	976	34,271
1986 Average	1,506	1,772	2,498	1,738	4,439	1,649	16,281	12,102	951	35,279
1987 Average	1,548	1,789	2,424	1,855	4,484	1,603	16,665	12,255	958	35,911
1988 Average	1,693	1,797	2,422	1,836	4,752	1,697	17,283	12,427	939	37,093
1989 Average	1,733	1,857	2,280	1,930	4,983	1,738	17,325	12,531	998	37,570
1990 Average	1,690	1,818	2,382	1,872	5,140	1,752	16,988	12,629	1,027	37,475
1991 January	1,599	2,294	2,998	2,185	5,852	1,819	16,893	14,564	1,063	39,971
February	1,613	2,009	2,783	2,025	6,155	1,837	16,339	13,804	1,039	38,950
March	1,484	1,759	2,858	1,660	5,789	1,725	16,212	12,609	1,091	37,185
April	1,595	1,808	2,953	1,813	5,025	1,793	16,139	13,073	1,082	36,914
May	1,637	1,773	2,912	1,722	4,880	1,799	16,189	12,965	1,104	36,775
June	1,589	1,807	3,269	1,535	4,765	1,769	16,878	13,184	947	37,363
July	1,707	1,989	2,272	1,665	5,000	1,853	16,971	12,648	1,001	37,327
August	1,693	1,795	2,609	1,546	4,888	1,812	17,183	12,727	989	37,480
September	1,583	1,824	2,679	1,824	4,724	1,753	16,848	12,999	1,024	37,178
October	1,693	2,075	2,919	2,126	4,848	1,864	16,996	14,178	1,113	38,827
November	1,602	1,953	2,860	2,031	5,581	1,829	16,730	13,736	1,128	38,777
December	1,662	2,132	2,829	2,231	5,952	1,765	17,145	14,228	1,043	40,029
Average	1,622	1,935	2,828	1,863	5,284	1,801	16,714	13,391	1,052	38,063
1992 January	R1,629	R2,221	2,968	2,237	R5,683	1,832	17,012	R14,467	R1,014	R39,805
February	R1,625	R2,115	2,814	R2,148	R6,248	R1,818	16,893	R14,056	1,045	R39,867
March	R1,597	R1,947	2,809	R1,885	R5,780	1,818	16,825	R13,690	R1,054	R38,946
April	R1,579	R1,980	2,893	1,891	R5,115	1,858	16,764	R13,656	1,042	R38,155
May	R1,568	R1,620	2,588	R1,670	4,750	1,694	16,485	R12,333	R1,003	R36,139
June	R1,617	R1,805	2,699	1,801	R4,851	1,725	16,978	R13,025	1,086	R37,556
July	1,642	1,923	3,029	1,900	R5,024	1,804	17,143	R13,660	1,027	R38,496
August	1,676	R1,727	2,829	1,655	R4,863	1,699	16,929	R12,902	946	R37,316
September	1,655	R1,950	3,072	2,003	R5,043	1,870	16,876	R14,222	1,046	R38,841
October	1,705	R1,917	R2,752	1,930	R5,213	1,825	17,448	R13,455	R1,014	R38,836
November	1,714	R1,864	R2,823	2,053	R5,483	1,852	17,091	R13,786	R1,049	R39,122
December	1,670	R1,976	R2,841	2,076	R6,129	1,839	17,928	R13,970	R1,103	R40,801
Average	1,640	R1,920	2,843	1,936	5,346	R1,802	17,033	R13,598	1,035	R38,653
1993 January	R1,586	1,950	R2,491	1,859	R5,790	R1,730	R16,320	R12,785	R1,006	R37,487
February	R1,726	2,138	R2,900	2,106	R6,129	R1,882	R17,397	R14,259	R1,112	R40,623
March	R1,691	2,010	R2,923	2,005	R6,094	R1,890	R17,688	R14,037	R1,132	R40,642
April	1,542	1,929	2,871	1,778	5,511	1,725	16,673	13,340	1,091	38,157
4-Mo. Average	1,635	2,004	2,793	1,934	5,878	1,806	17,013	13,591	1,085	39,202
1992 4-Mo. Average	1,607	2,066	2,872	2,040	5,702	1,832	16,874	13,968	1,039	39,191
1991 4-Mo. Average	1,571	1,968	2,900	1,919	5,700	1,792	16,399	13,509	1,069	38,249

[a] Through December 1990, the data for Germany are for the former West Germany only. Beginning with January 1991, the data for Germany are for the unified Germany, i.e., the former East Germany and West Germany.

[b] "OECD Europe" consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

[c] "Other OECD" consists of Australia, New Zealand, and the U.S. Territories.

R=Revised data.

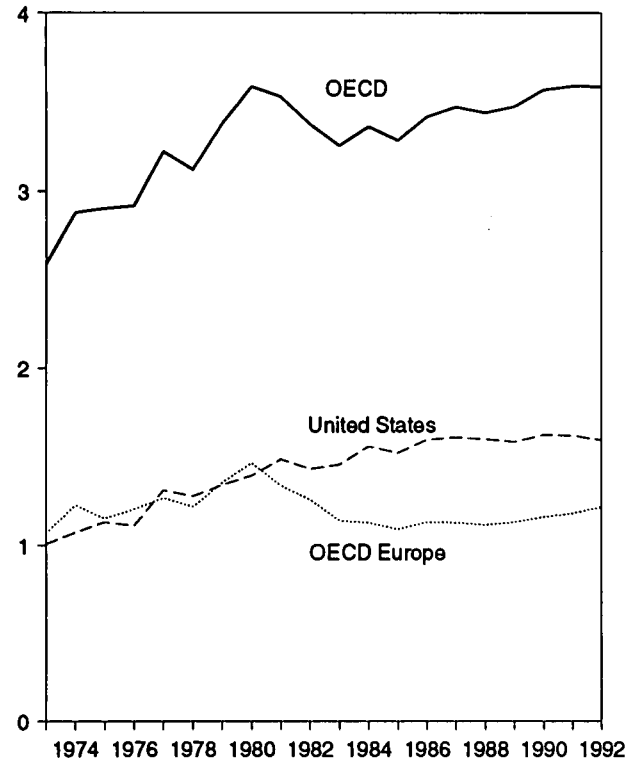
Notes: • The Organization for Economic Cooperation and Development (OECD) consists of Canada, Japan, and the United States, as well as "OECD Europe" and "Other OECD." • U.S. geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding. • Data through 1990 are final. Subsequent data are preliminary.

Sources: • **United States:** Table 3.1a. • **All Other Data: 1973-1979**—International Energy Agency (IEA), *Annual Oil and Gas Statistics of OECD Countries*. **1980 forward**—IEA, quarterly and monthly computer tapes supporting *Quarterly Oil Statistics and Energy Balances of OECD Countries*.

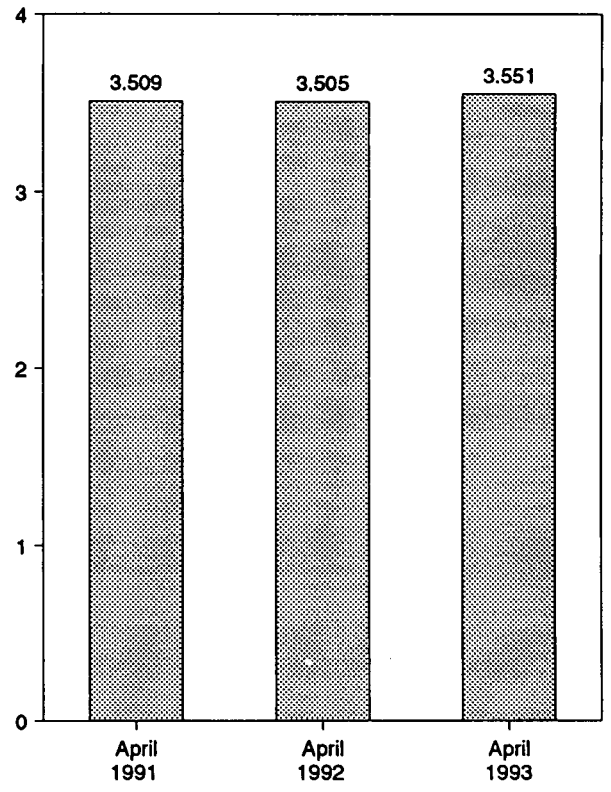
Figure 10.4 Petroleum Stocks in OECD Countries

(Billion Barrels)

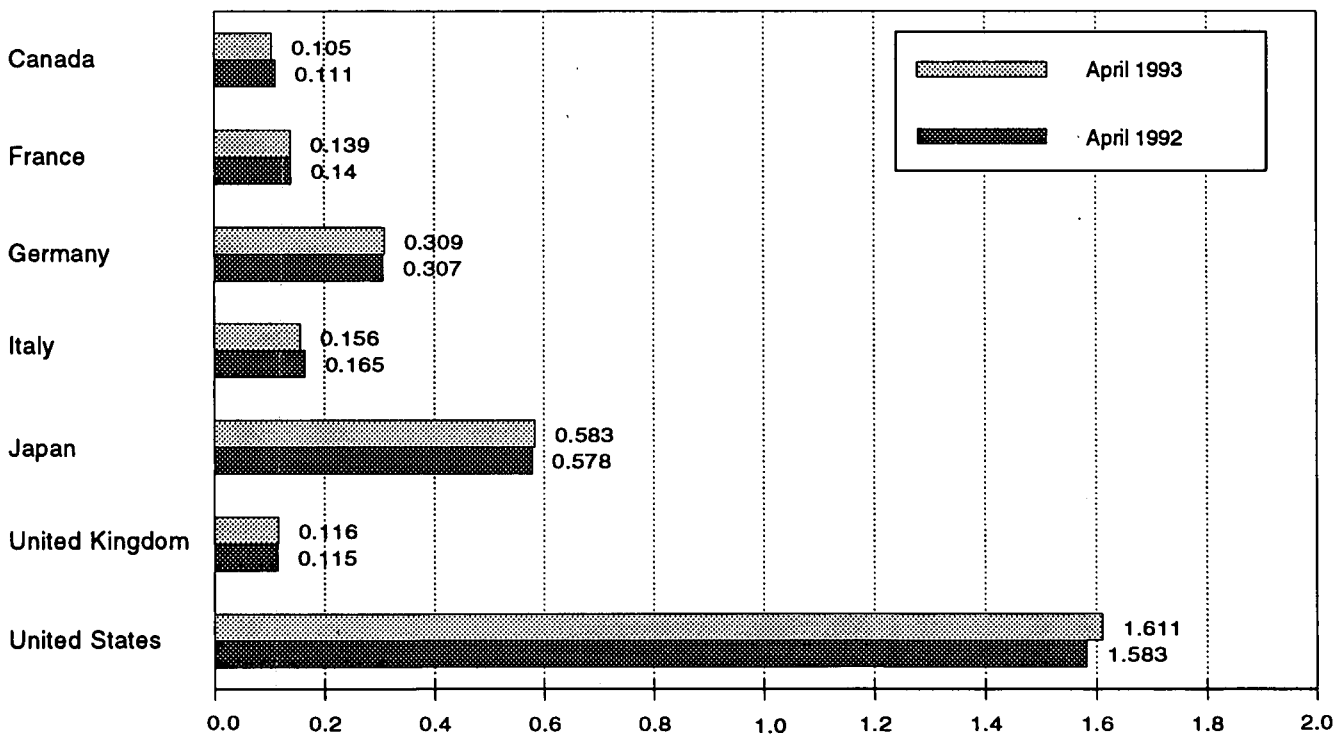
OECD Stocks, End of Year, 1973-1992



OECD Stocks, End of Month



Stocks by Selected Country, End of Month



Note: OECD is the Organization for Economic Cooperation and Development.

Source: Table 10.3.

Table 10.3 Petroleum Stocks in OECD Countries, End of Period

(Million Barrels)

	Canada	France	Germany[a]	Italy	Japan	United Kingdom	United States	OECD Europe[b]	Other OECD[c]	OECD
1973 Year	140	201	181	152	303	156	1,008	1,070	67	2,588
1974 Year	145	249	213	167	370	191	1,074	1,227	64	2,880
1975 Year	174	225	187	143	375	165	1,133	1,154	67	2,903
1976 Year	153	234	208	143	380	165	1,112	1,205	68	2,918
1977 Year	167	239	225	161	409	148	1,312	1,268	68	3,224
1978 Year	144	201	238	154	413	157	1,278	1,219	68	3,122
1979 Year	150	226	272	163	460	169	1,341	1,353	75	3,379
1980 Year	164	243	319	170	495	168	1,392	1,464	72	3,587
1981 Year	161	214	297	167	482	143	1,484	1,337	67	3,531
1982 Year	136	193	272	179	484	125	1,430	1,258	68	3,376
1983 Year	121	153	249	149	470	118	1,454	1,142	68	3,255
1984 Year	128	152	239	159	479	112	1,556	1,130	69	3,362
1985 Year	113	139	233	157	494	123	1,519	1,092	66	3,284
1986 Year	111	127	252	155	509	124	1,593	1,133	72	3,418
1987 Year	126	127	259	169	540	121	1,607	1,130	72	3,474
1988 Year	116	140	266	155	538	112	1,597	1,118	71	3,440
1989 Year	114	138	271	164	577	118	1,581	1,133	71	3,476
1990 Year	121	140	265	172	590	112	1,621	1,163	73	3,568
1991 January	116	133	278	174	591	116	1,587	1,164	73	3,531
February	114	137	278	169	572	119	1,573	1,162	72	3,493
March	117	142	280	178	593	124	1,558	1,178	75	3,521
April	110	138	277	177	585	119	1,578	1,161	75	3,509
May	107	138	279	174	586	113	1,626	1,157	75	3,551
June	107	144	274	173	590	118	1,634	1,161	72	3,564
July	118	145	285	169	594	113	1,635	1,170	73	3,590
August	116	152	284	171	610	118	1,648	1,186	76	3,636
September	117	150	287	170	622	120	1,663	1,195	74	3,671
October	118	148	286	165	625	119	1,644	1,190	71	3,649
November	122	152	289	163	607	120	1,647	1,198	70	3,643
December	119	153	288	160	607	119	1,617	1,182	65	3,589
1992 January	117	R149	293	R167	601	116	1,610	R1,168	68	R3,564
February	111	145	303	R172	596	118	1,588	R1,181	66	R3,542
March	111	142	303	159	586	115	1,571	1,152	66	3,485
April	R111	140	307	R165	578	115	1,583	R1,172	62	R3,505
May	106	147	311	R171	588	115	1,602	R1,189	63	R3,548
June	112	148	307	157	583	114	1,603	1,180	69	3,547
July	110	146	299	R166	586	120	1,620	R1,182	67	R3,565
August	113	150	303	R169	604	117	1,621	R1,211	69	R3,618
September	110	148	299	155	608	112	1,636	1,184	69	3,607
October	108	148	302	166	613	113	1,640	1,199	69	3,630
November	110	149	306	172	611	116	1,636	1,205	71	3,633
December	107	145	310	174	603	113	1,592	1,217	67	3,587
1993 January	110	148	319	171	614	120	1,611	1,230	69	3,634
February	106	142	317	163	606	120	1,595	R1,210	69	R3,586
March	109	138	303	156	592	120	1,584	R1,187	68	R3,539
April	105	139	309	156	583	116	1,611	1,182	70	3,551

[a] Through December 1990, the data for Germany are for the former West Germany only. Beginning with January 1991, the data for Germany are for the unified Germany, i.e., the former East Germany and West Germany.

[b] "OECD Europe" consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

[c] "Other OECD" consists of Australia, New Zealand, and the U.S. Territories.

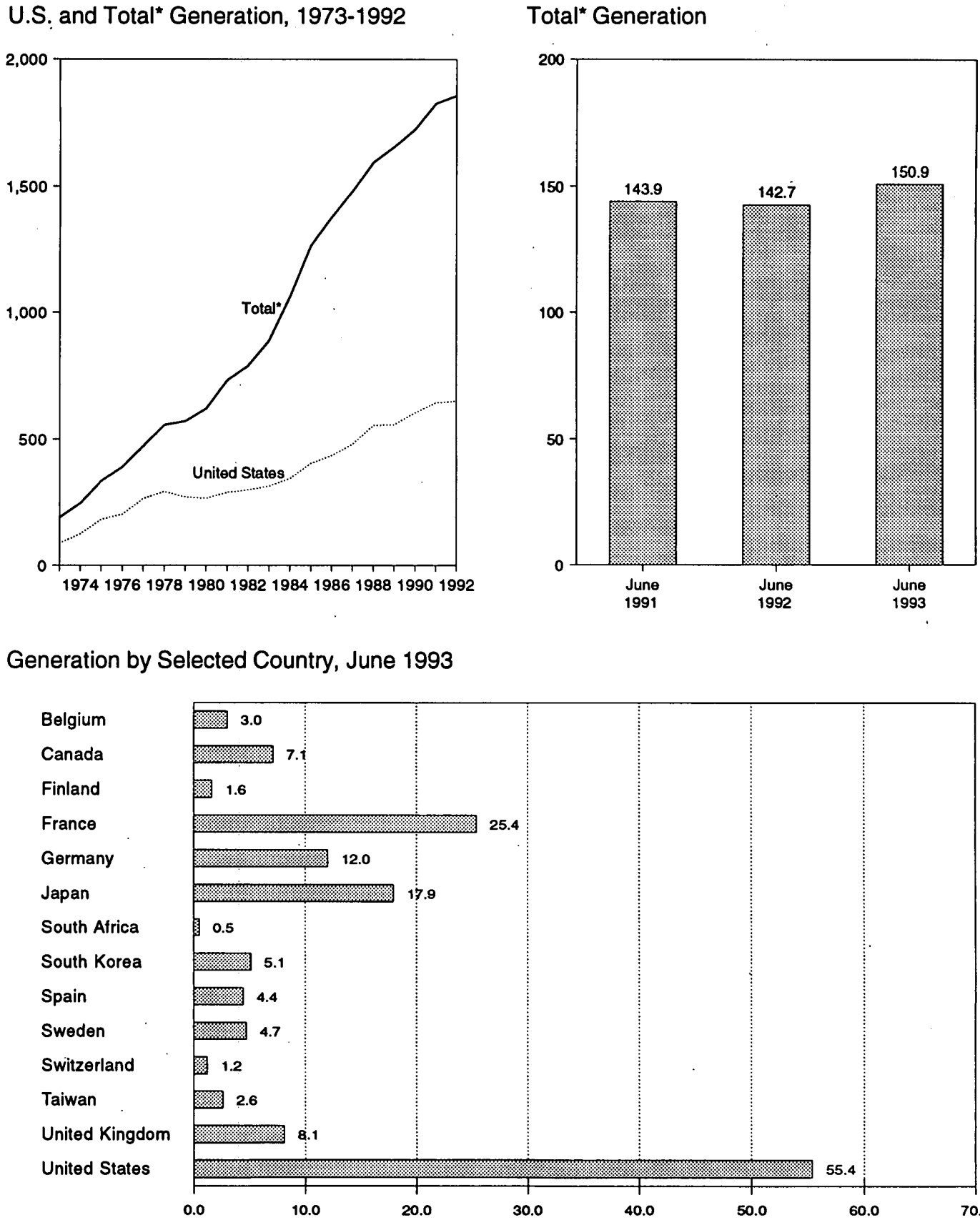
R=Revised data.

Notes: • Petroleum stocks include crude oil (including strategic reserves), unfinished oils, natural gas plant liquids, and refined products. Petroleum stocks include all nonmilitary petroleum held for storage, regardless of ownership, within each country in bulk terminals, refinery tanks, pipeline tankage, intercoastal tankers, tankers in port, and inland ship bunkers. Data exclude oil held in pipelines (except for those in the United States), rail and truck cars, sea-going ships' bunkers, service stations, retail stores, and tankers at sea. • The Organization for Economic Cooperation and Development (OECD) consists of Canada, Japan, and the United States, as well as "OECD Europe" and "Other OECD." • U.S. geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding. • In the United States in January 1975, 1981, and 1983, numerous respondents were added to bulk terminal and pipeline surveys, thereby affecting subsequent stocks reported. Using the new basis, the end-of-year U.S. stocks, in million barrels, would have been 1,121 in 1974, 1,425 in 1980, and 1,461 in 1982. • Data through 1990 are final. Subsequent data are preliminary.

Sources: • **United States:** Table 3.1a. • **All Other Data:** International Energy Agency, quarterly and monthly computer tapes supporting *Quarterly Oil Statistics and Energy Balances of OECD Countries.*

Figure 10.5 Nuclear Electricity Gross Generation

(Billion Kilowatthours)



*"Total" equals nuclear-generated electricity from all countries except Bulgaria, China, Cuba, Czechoslovakia, Hungary, North Korea, Poland, Romania, the former U.S.S.R., and Slovenia (part of the former Yugoslavia).

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 10.4a-10.4c.

Table 10.4a Nuclear Electricity Gross Generation: Argentina Through India

(Billion Kilowatthours)

	Argentina	Belgium	Brazil	Canada	Finland	France	Germany[a]	India
1973 Total	0.0	0.0	0.0	15.3	0.0	14.7	11.9	2.5
1974 Total	1.0	.1	.0	15.4	.0	14.7	12.0	1.9
1975 Total	2.5	6.8	.0	13.2	.0	18.3	21.7	2.5
1976 Total	2.6	10.0	.0	18.0	.0	15.8	24.5	3.2
1977 Total	1.6	11.9	.0	26.6	2.7	17.9	36.0	2.8
1978 Total	2.9	12.5	.0	33.0	3.3	30.6	35.7	2.3
1979 Total	2.7	11.4	.0	38.4	6.7	39.9	42.2	3.2
1980 Total	2.3	12.5	.0	40.4	7.0	61.2	43.7	2.9
1981 Total	2.8	12.8	.0	43.3	14.5	105.2	53.4	3.1
1982 Total	1.9	15.6	.1	42.6	16.5	108.9	63.4	2.2
1983 Total	3.4	24.1	.2	53.0	17.4	144.2	65.8	2.9
1984 Total	4.5	27.7	2.1	53.8	18.5	191.2	92.6	4.1
1985 Total	5.8	34.5	3.4	62.9	18.8	224.0	125.8	4.5
1986 Total	5.7	38.6	.1	74.6	18.8	254.3	118.9	5.1
1987 Total	5.2	41.9	1.0	80.6	19.4	265.5	130.2	5.5
1988 Total	5.1	43.1	.3	85.6	19.3	274.9	145.2	6.1
1989 Total	5.0	41.2	1.6	83.2	18.8	302.5	149.6	4.0
1990 Total	7.4	42.7	2.0	75.8	18.9	314.1	147.2	6.3
1991 January	.5	4.2	.2	7.6	1.8	33.5	15.2	.5
February	.6	3.9	.2	7.3	1.6	30.0	13.6	.4
March	.6	4.2	.2	7.8	1.8	28.4	14.3	.6
April	.7	3.5	.2	6.7	1.4	25.3	12.5	.4
May	.7	3.4	.2	7.2	1.5	25.3	10.6	.4
June	.7	2.9	.2	7.1	1.6	23.6	10.0	.4
July	.7	3.5	.2	7.7	1.7	23.9	11.7	.3
August	.7	3.8	.0	8.6	1.4	24.5	10.0	.4
September	.5	3.0	.0	6.7	1.3	25.8	10.8	.4
October	.7	3.2	.0	6.6	1.7	28.4	11.7	.5
November	.7	3.3	.0	6.3	1.7	29.8	12.9	.6
December	.5	4.0	.0	6.5	1.7	32.8	14.2	.5
Total	7.7	42.9	1.4	86.1	19.2	331.4	147.3	5.4
1992 January	.6	4.3	.0	6.9	1.8	33.5	15.6	.5
February	.7	4.0	.0	6.4	1.7	29.8	15.2	.5
March	.6	4.0	.0	7.4	1.8	30.7	15.8	.5
April	.6	3.4	.0	6.4	1.7	28.0	14.1	.4
May	.5	3.8	.0	4.8	1.3	25.6	11.8	.4
June	.6	3.6	.1	5.6	1.4	22.4	11.8	.3
July	.7	3.1	.3	7.2	1.6	23.7	12.0	.4
August	.7	3.4	.4	6.9	1.4	24.6	10.9	.5
September	.7	3.1	.3	6.9	1.3	25.6	11.6	.5
October	.3	3.6	.1	7.2	1.6	28.5	13.2	.6
November	.4	3.3	.3	7.4	1.7	29.5	13.0	.7
December	E.6	3.9	.1	8.0	1.8	33.1	13.8	.8
Total	E7.1	43.5	1.8	86.4	19.0	337.6	158.8	6.5
1993 January	.6	4.3	.2	8.2	1.8	36.3	15.1	.7
February	.4	3.7	.2	7.4	1.6	32.7	13.9	.6
March	.6	3.4	(s)	7.8	1.8	34.3	14.2	.6
April	.7	3.3	.0	7.3	1.7	30.5	12.4	.2
May	.7	3.1	.0	6.7	1.3	26.9	11.8	.4
June	E.7	3.0	.0	7.1	1.6	25.4	12.0	.5
6-Month Total	E3.8	20.8	.4	44.6	9.7	186.1	79.3	3.1
1992 6-Month Total	3.6	23.1	.1	37.6	9.7	170.0	84.3	2.8
1991 6-Month Total	3.9	22.0	1.3	43.7	9.6	166.1	76.1	2.7

[a] Through December 1990, the data for Germany are for the former West Germany only. Beginning with January 1991, the data for Germany are for the unified Germany, i.e., the former East Germany and West Germany.

E=Estimate.

Notes: • Net figures are generally less than gross figures by about 5 percent, the difference being the energy consumed by the generating plants themselves. • U.S. geographic coverage is the 50 States and the District of Columbia. • Monthly data may not sum to annual totals due to independent rounding and because precommercial generation is included in some annual totals but not in the monthly data.

Source: McGraw-Hill Publishing Company, *Nucleonics Week*.

Table 10.4b Nuclear Electricity Gross Generation: Italy Through Spain

(Billion Kilowatthours)

	Italy	Japan	Mexico	Netherlands	Pakistan	South Africa	South Korea	Spain
1973 Total	3.1	9.4	0.0	1.1	0.5	0.0	0.0	6.5
1974 Total	3.4	18.9	.0	3.3	.6	.0	.0	7.2
1975 Total	3.8	21.3	.0	3.3	.5	.0	.0	7.5
1976 Total	3.8	36.6	.0	3.9	.5	.0	.0	7.6
1977 Total	3.4	28.2	.0	3.7	.3	.0	.1	6.5
1978 Total	4.5	53.1	.0	4.1	.2	.0	2.3	7.6
1979 Total	2.6	62.0	.0	3.5	(s)	.0	3.2	6.7
1980 Total	2.2	82.8	.0	4.2	.1	.0	3.5	5.2
1981 Total	2.7	86.0	.0	3.7	.2	.0	2.9	9.4
1982 Total	6.8	104.5	.0	3.9	.1	.0	3.8	8.8
1983 Total	5.8	109.1	.0	3.6	.2	.0	9.0	10.7
1984 Total	6.9	127.2	.0	3.8	.3	4.2	11.8	23.1
1985 Total	7.0	152.0	.0	3.9	.3	5.9	16.5	28.0
1986 Total	8.7	164.8	.0	4.2	.5	9.3	26.1	37.5
1987 Total	.2	182.8	.0	3.6	.3	6.6	37.8	41.2
1988 Total	.0	173.6	.0	3.7	.2	11.1	38.7	50.4
1989 Total	.0	183.7	.0	4.0	.1	11.7	47.2	56.1
1990 Total	.0	191.9	2.1	3.4	.4	8.9	52.8	54.3
1991 January	.0	18.0	.5	.3	(s)	.6	4.1	5.3
February	.0	15.2	.4	.2	(s)	.5	4.5	4.6
March	.0	15.6	.5	.1	(s)	1.1	4.5	4.3
April	.0	12.8	.5	.2	(s)	.7	4.1	4.2
May	.0	12.6	.5	.4	.1	.7	4.1	4.8
June	.0	14.8	.4	.4	(s)	.6	4.8	4.4
July	.0	19.5	.4	.4	(s)	.7	5.5	4.7
August	.0	22.1	.4	.4	(s)	.7	5.2	5.2
September	.0	19.7	.0	.1	(s)	.8	4.7	4.5
October	.0	19.1	.0	(s)	.1	1.2	4.9	4.7
November	.0	17.6	.2	.4	(s)	1.1	4.8	4.4
December	.0	18.9	.5	.4	(s)	1.1	5.2	4.7
Total	.0	205.8	4.2	3.3	.4	9.7	56.3	55.6
1992 January	.0	18.5	.5	.4	(s)	.9	4.6	5.4
February	.0	17.1	.4	.3	.0	.4	4.0	4.6
March	.0	17.9	.5	.1	(s)	.4	4.2	4.2
April	.0	16.0	.5	.1	(s)	.4	4.5	3.6
May	.0	16.3	.5	.3	(s)	.7	4.5	4.3
June	.0	17.1	.3	.3	.1	1.2	4.5	4.5
July	.0	21.1	.3	.4	.1	1.3	5.3	5.0
August	.0	23.1	.2	.4	.1	1.0	5.4	5.2
September	.0	17.2	.0	.4	.1	1.1	4.6	4.2
October	.0	16.2	(s)	.4	.1	1.0	4.9	5.0
November	.0	16.3	.4	.4	.1	.6	4.7	4.4
December	.0	19.1	.4	.4	.1	.8	5.1	5.4
Total	.0	215.8	3.9	3.8	.6	9.9	56.4	55.8
1993 January	.0	19.5	.5	.4	(s)	.6	4.8	5.4
February	.0	17.4	.3	.3	.1	.6	4.5	4.3
March	.0	18.9	.1	.1	.1	.5	4.6	4.9
April	.0	17.6	.5	.1	.1	.6	4.8	4.2
May	.0	17.4	.5	.4	(s)	.8	5.3	4.1
June	.0	17.9	.5	.4	(s)	.5	5.1	4.4
6-Month Total	.0	108.8	2.3	1.6	.2	3.7	29.2	27.3
1992 6-Month Total	.0	102.8	2.6	1.5	.2	4.1	26.4	26.6
1991 6-Month Total	.0	88.9	2.7	1.6	.2	4.1	26.1	27.5

(s)=Less than 0.05 billion kilowatthours.

Notes: • Net figures are generally less than gross figures by about 5 percent, the difference being the energy consumed by the generating plants themselves. • U.S. geographic coverage is the 50 States and the District of Columbia. • Monthly data may not sum to annual totals due to independent rounding and because precommercial generation is included in some annual totals but not in the monthly data.

Source: McGraw-Hill Publishing Company, *Nucleonics Week*.

Table 10.4c Nuclear Electricity Gross Generation: Sweden Through United States and Total

(Billion Kilowatthours)

	Sweden	Switzerland	Taiwan	United Kingdom[a]	Total[b] Excluding U.S.	United States	Total[b]
1973 Total	2.1	6.2	0.0	28.2	101.4	87.8	189.3
1974 Total	2.3	7.0	.0	33.8	121.7	124.3	246.0
1975 Total	12.0	7.7	.0	30.5	151.8	182.3	334.1
1976 Total	16.0	7.9	.0	36.8	187.1	201.8	388.9
1977 Total	19.9	8.1	.1	38.1	207.8	264.2	472.0
1978 Total	23.8	8.3	2.7	36.6	263.5	292.4	555.9
1979 Total	21.0	11.8	6.3	38.5	300.1	270.6	570.7
1980 Total	26.7	14.3	8.2	37.2	354.3	265.4	619.8
1981 Total	37.7	15.2	10.7	38.9	442.4	288.5	730.9
1982 Total	38.8	15.0	13.1	44.1	489.9	298.6	788.5
1983 Total	40.4	15.5	18.9	49.6	573.9	313.6	887.5
1984 Total	51.3	16.3	24.3	54.1	717.7	343.8	1,061.5
1985 Total	58.6	22.4	28.7	59.7	862.7	402.7	1,265.4
1986 Total	69.9	22.5	26.9	58.2	944.8	434.1	1,378.9
1987 Total	67.2	23.0	33.1	56.2	1,001.2	479.5	1,480.7
1988 Total	69.4	22.7	29.9	59.4	1,038.7	554.1	1,592.8
1989 Total	65.6	22.8	28.3	71.6	1,097.1	557.0	1,654.1
1990 Total	68.2	23.6	32.9	66.1	1,119.1	603.4	1,722.5
1991 January	7.6	2.3	2.4	6.6	111.2	56.6	167.8
February	6.9	2.1	2.2	6.8	101.1	50.2	151.3
March	7.6	2.3	2.9	6.7	103.3	51.6	154.9
April	6.9	2.2	2.5	5.0	89.6	43.8	133.4
May	5.7	2.0	2.8	4.5	87.3	49.2	136.6
June	4.7	1.1	3.2	6.1	87.0	56.9	143.9
July	4.6	1.5	3.2	5.1	95.4	63.7	159.1
August	5.2	1.0	3.6	5.4	98.6	61.4	160.0
September	5.5	1.8	3.1	6.6	95.3	54.4	149.7
October	7.2	2.3	3.1	5.9	101.2	50.2	151.4
November	7.3	2.2	3.0	5.2	101.7	48.7	150.4
December	7.6	2.3	3.2	6.6	110.5	56.3	166.8
Total	76.8	22.9	35.3	70.4	1,182.2	643.0	1,825.2
1992 January	7.6	2.3	3.1	6.5	113.1	60.6	173.7
February	6.8	2.1	2.2	6.3	102.6	55.4	158.1
March	7.1	2.2	2.2	8.3	107.8	48.3	156.1
April	6.7	1.9	2.6	5.0	95.9	44.3	140.2
May	4.7	1.9	2.6	6.0	90.1	48.1	138.2
June	3.9	1.3	2.9	7.0	88.9	53.7	142.7
July	3.6	1.7	3.3	4.9	96.0	59.0	155.0
August	3.5	1.1	3.6	5.5	97.9	61.6	159.5
September	3.9	2.0	2.8	6.9	93.2	53.2	146.4
October	5.2	2.3	2.9	5.7	98.8	51.5	150.3
November	5.2	2.2	3.2	6.1	99.9	53.2	153.1
December	5.4	2.3	2.6	10.4	E 114.1	61.0	E 175.1
Total	63.5	23.4	33.8	78.5	E 1,206.0	650.0	E 1,856.0
1993 January	5.8	2.3	3.0	7.6	117.0	61.8	178.9
February	5.9	2.1	2.7	7.9	106.9	53.7	160.6
March	7.1	2.3	2.8	8.3	112.3	49.8	162.1
April	6.6	2.0	2.8	7.7	103.2	E 45.4	E 148.7
May	4.6	1.9	2.7	6.0	94.6	E 52.7	E 147.3
June	4.7	1.2	2.6	E 8.1	E 95.4	E 55.4	E 150.9
6-Month Total	34.7	11.8	16.6	E 45.6	E 629.6	E 318.9	E 948.5
1992 6-Month Total	36.8	11.8	15.5	39.1	598.4	310.5	908.9
1991 6-Month Total	39.3	11.9	16.0	35.6	579.5	308.3	887.8

[a] Monthly data for the United Kingdom are totals for 4- or 5-week reporting periods, not calendar months.

[b] "Total" equals nuclear-generated electricity from all countries except Bulgaria, China, Cuba, Czechoslovakia, Hungary, North Korea, Poland, Romania, the former U.S.S.R., and Slovenia (part of the former Yugoslavia).

E=Estimate.

Notes: • Net figures are generally less than gross figures by about 5 percent, the difference being the energy consumed by the generating plants themselves. • U.S. geographic coverage is the 50 States and the District of Columbia. • Monthly data may not sum to annual totals due to independent rounding and because precommercial generation is included in some annual totals but not in the monthly data. • Data for countries may not sum to world totals due to independent rounding.

Source: McGraw-Hill Publishing Company, *Nucleonics Week*.

Appendix A. Thermal Conversion Factors

The thermal conversion factors presented in the following eight tables can be used to estimate the heat content in British thermal units (Btu) of a given amount of energy measured in physical units, such as barrels or cubic feet. For example, 10 barrels of asphalt have a heat content of approximately 66.36 million Btu (10 barrels x 6.636 million Btu/barrel = 66.36 million Btu).

Thermal conversion factors for hydrocarbon mixes (Table A1) are weighted averages of the thermal conversion factors for each hydrocarbon included in the mix. For example, in calculating the thermal conversion factor for a 60-40 butane-propane mixture, the thermal conversion factor for butane is weighted 1.5 times more heavily than the thermal conversion factor for propane.

In general, the annual thermal conversion factors presented in Tables A1 through A8 are computed from final annual data. However, if the current year's final data are not available in time for publication, thermal conversion factors for the current year are computed from the best available data and are labeled "preliminary." The source of each factor is described in the section entitled "Thermal Conversion Factor Source Documentation," which follows Table A8 in this appendix.

Table A1. Approximate Heat Content of Petroleum Products

(Million Btu per Barrel)

Petroleum Product	Heat Content	Petroleum Product	Heat Content
Asphalt	6.636	Petrochemical Feedstocks	
Aviation Gasoline	5.048	Naphtha Less Than 401° F	5.248
Butane	4.326	Other Oils Equal to or Greater Than 401° F	5.825
Butane-Propane Mixture[a]	4.130	Still Gas	6.000
Distillate Fuel Oil	5.825	Petroleum Coke	6.024
Ethane	3.082	Plant Condensate	5.418
Ethane-Propane Mixture[b]	3.308	Propane	3.836
Isobutane	3.974	Residual Fuel Oil	6.287
Jet Fuel, Kerosene Type	5.670	Road Oil	6.636
Jet Fuel, Naphtha Type	5.355	Special Naphthas	5.248
Kerosene	5.670	Still Gas	6.000
Lubricants	6.065	Unfinished Oils	5.825
Motor Gasoline	5.253	Unfractionated Stream	5.418
Natural Gasoline and Isopentane	4.620	Waxes	5.537
Pentanes Plus	4.620	Miscellaneous	5.796

[a] 60 percent butane and 40 percent propane.
[b] 70 percent ethane and 30 percent propane.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A8.

Table A2. Approximate Heat Content of Crude Oil, Crude Oil and Products, and Natural Gas Plant Liquids

(Million Btu per Barrel)

	Crude Oil			Crude Oil and Products		Natural Gas Plant Liquids
	Production	Imports	Exports	Imports	Exports	
1973	5.800	5.817	5.800	5.897	5.752	4.049
1974	5.800	5.827	5.800	5.884	5.774	4.011
1975	5.800	5.821	5.800	5.858	5.748	3.984
1976	5.800	5.808	5.800	5.856	5.745	3.964
1977	5.800	5.810	5.800	5.834	5.797	3.941
1978	5.800	5.802	5.800	5.839	5.808	3.925
1979	5.800	5.810	5.800	5.810	5.832	3.955
1980	5.800	5.812	5.800	5.796	5.820	3.914
1981	5.800	5.818	5.800	5.775	5.821	3.930
1982	5.800	5.826	5.800	5.775	5.820	3.872
1983	5.800	5.825	5.800	5.774	5.800	3.839
1984	5.800	5.823	5.800	5.745	5.850	3.812
1985	5.800	5.832	5.800	5.736	5.814	3.815
1986	5.800	5.903	5.800	5.808	5.832	3.797
1987	5.800	5.901	5.800	5.820	5.858	3.804
1988	5.800	5.900	5.800	5.820	5.840	3.800
1989	5.800	5.906	5.800	5.833	5.857	3.826
1990	5.800	5.934	5.800	5.849	5.833	3.822
1991	5.800	5.948	5.800	5.873	5.823	3.807
1992	5.800	5.953	5.800	5.877	5.777	3.804
1993[a]	5.800	5.953	5.800	5.877	5.777	3.804

[a] Preliminary.
Note: Crude oil includes lease condensate.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A8.

Table A3. Approximate Heat Content of Petroleum Product Weighted Averages

(Million Btu per Barrel)

	Consumption							
	Residential and Commercial	Industrial	Transportation	Electric Utilities	Total	Imports	Exports	LPG Consumption
1973	5.387	5.568	5.395	6.245	5.515	5.983	5.752	3.746
1974	5.377	5.538	5.394	6.238	5.504	5.959	5.773	3.730
1975	5.358	5.528	5.392	6.250	5.494	5.935	5.747	3.715
1976	5.383	5.538	5.395	6.251	5.504	5.980	5.743	3.711
1977	5.389	5.555	5.400	6.249	5.518	5.908	5.796	3.677
1978	5.382	5.553	5.404	6.251	5.519	5.955	5.814	3.669
1979	5.471	5.418	5.428	6.258	5.494	5.811	5.864	3.680
1980	5.468	5.376	5.440	6.254	5.479	5.748	5.841	3.674
1981	5.409	5.313	5.432	6.258	5.448	5.659	5.837	3.643
1982	5.392	5.263	5.422	6.258	5.415	5.664	5.829	3.615
1983	5.286	5.273	5.415	6.255	5.406	5.677	5.800	3.614
1984	5.384	5.223	5.422	6.251	5.395	5.613	5.867	3.599
1985	5.326	5.221	5.423	6.247	5.387	5.572	5.819	3.603
1986	5.357	5.286	5.427	6.257	5.418	5.624	5.839	3.640
1987	5.318	5.253	5.430	6.249	5.403	5.599	5.860	3.659
1988	5.323	5.247	5.434	6.250	5.410	5.618	5.842	3.652
1989	5.260	5.233	5.440	6.241	5.410	5.641	5.869	3.683
1990	5.212	5.272	5.445	6.247	5.411	5.614	5.838	3.625
1991	5.163	5.192	5.442	6.248	5.384	5.636	5.827	3.614
1992[a]	5.158	5.188	5.444	6.243	5.376	5.623	5.774	3.624
1993[a]	5.158	5.188	5.444	6.243	5.376	5.623	5.774	3.624

[a] Preliminary.
Note: Weighted averages of the products included in each category are calculated by using heat content values shown in Table A1.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A8.

Table A4. Approximate Heat Content of Natural Gas

(Btu per Cubic Foot)

	Production		Consumption				
	Dry	Marketed (Wet)	Sectors Other Than Electric Utilities	Electric Utilities	Total	Imports	Exports
1973	1,021	1,093	1,020	1,024	1,021	1,026	1,023
1974	1,024	1,097	1,024	1,022	1,024	1,027	1,016
1975	1,021	1,095	1,020	1,026	1,021	1,026	1,014
1976	1,020	1,093	1,019	1,023	1,020	1,025	1,013
1977	1,021	1,093	1,019	1,029	1,021	1,026	1,013
1978	1,019	1,088	1,016	1,034	1,019	1,030	1,013
1979	1,021	1,092	1,018	1,035	1,021	1,037	1,013
1980	1,026	1,098	1,024	1,035	1,026	1,022	1,013
1981	1,027	1,103	1,025	1,035	1,027	1,014	1,011
1982	1,028	1,107	1,026	1,036	1,028	1,018	1,011
1983	1,031	1,115	1,031	1,030	1,031	1,024	1,010
1984	1,031	1,109	1,030	1,035	1,031	1,005	1,010
1985	1,032	1,112	1,031	1,038	1,032	1,002	1,011
1986	1,030	1,110	1,029	1,034	1,030	997	1,008
1987	1,031	1,112	1,031	1,032	1,031	999	1,011
1988	1,029	1,109	1,029	1,028	1,029	1,002	1,018
1989	1,031	1,107	1,031	1,030	1,031	1,004	1,019
1990	1,031	1,105	1,030	1,034	1,031	1,012	1,018
1991	1,030	1,108	1,031	1,024	1,030	1,014	1,022
1992[a]	1,030	1,108	1,031	1,024	1,030	1,014	1,022
1993[a]	1,030	1,108	1,031	1,024	1,030	1,014	1,022

[a] Preliminary.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A8.

Table A5. Approximate Heat Content of Coal

(Million Btu per Short Ton)

	Production	Consumption					Imports	Exports
		Residential and Commercial	Coke Plants	Other Industrial[a]	Electric Utilities[b]	Total		
1973	23.376	22.831	26.780	22.586	22.246	23.057	25.000	26.596
1974	23.072	22.479	26.778	22.419	21.781	22.677	25.000	26.700
1975	22.897	22.261	26.782	22.436	21.642	22.506	25.000	26.562
1976	22.855	22.774	26.781	22.530	21.679	22.498	25.000	26.601
1977	22.597	22.919	26.787	22.322	21.508	22.265	25.000	26.548
1978	22.248	22.466	26.789	22.207	21.275	22.017	25.000	26.478
1979	22.454	22.242	26.788	22.452	21.364	22.100	25.000	26.548
1980	22.415	22.543	26.790	22.690	21.295	21.947	25.000	26.384
1981	22.308	22.474	26.794	22.585	21.085	21.713	25.000	26.160
1982	22.239	22.695	26.797	22.712	21.194	21.674	25.000	26.223
1983	22.052	22.775	26.798	22.691	21.133	21.576	25.000	26.291
1984	22.010	22.844	26.799	22.543	21.101	21.573	25.000	26.402
1985	21.870	22.646	26.798	22.020	20.959	21.366	25.000	26.307
1986	21.913	22.947	26.798	22.198	21.084	21.462	25.000	26.292
1987	21.922	23.404	26.799	22.381	21.136	21.517	25.000	26.291
1988	21.823	23.571	26.799	22.360	20.900	21.328	25.000	26.299
1989	21.765	23.650	26.800	22.347	20.848	21.272	25.000	26.160
1990	21.822	23.137	26.799	22.457	20.929	21.331	25.000	26.202
1991	21.681	23.114	26.799	22.460	20.755	21.146	25.000	26.188
1992[c]	21.675	23.197	26.799	22.313	20.804	21.164	25.000	26.162
1993[c]	21.675	23.197	26.799	22.313	20.804	21.164	25.000	26.162

[a] Includes transportation.
[b] Data shown in this column are not the same as those shown in the *Electric Power Monthly* (EPM). The EPM data report coal receipts; the data shown here represent coal consumption.
[c] Preliminary.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A8.

Table A6. Approximate Heat Content of Bituminous Coal and Lignite
(Million Btu per Short Ton)

	Production	Consumption					Imports	Exports
		Residential and Commercial	Coke Plants	Other Industrial[a]	Electric Utilities	Total		
1973	23.391	22.887	26.800	22.585	22.262	23.073	25.000	26.612
1974	23.087	22.523	26.800	22.420	21.799	22.694	25.000	26.716
1975	22.910	22.258	26.800	22.439	21.659	22.522	25.000	26.573
1976	22.863	22.819	26.800	22.528	21.692	22.509	25.000	26.613
1977	22.597	22.594	26.800	22.290	21.521	22.266	25.000	26.561
1978	22.242	22.078	26.800	22.175	21.284	22.014	25.000	26.501
1979	22.449	21.884	26.800	22.436	21.372	22.100	25.000	26.570
1980	22.411	22.488	26.800	22.690	21.301	21.950	25.000	26.404
1981	22.301	22.010	26.800	22.572	21.091	21.710	25.000	26.176
1982	22.233	22.226	26.800	22.695	21.200	21.670	25.000	26.231
1983	22.048	22.438	26.800	22.680	21.141	21.576	25.000	26.300
1984	22.005	22.406	26.800	22.525	21.108	21.570	25.000	26.410
1985	21.867	22.568	26.800	22.013	20.965	21.368	25.000	26.320
1986	21.908	22.669	26.800	22.185	21.091	21.462	25.000	26.308
1987	21.918	22.800	26.800	22.360	21.143	21.514	25.000	26.304
1988	21.817	23.135	26.800	22.341	20.905	21.324	25.000	26.308
1989	21.759	22.917	26.800	22.324	20.854	21.268	25.000	26.166
1990	21.819	22.678	26.800	22.444	20.935	21.330	25.000	26.207
1991	21.678	22.635	26.800	22.448	20.761	21.146	25.000	26.192
1992[b]	21.672	22.871	26.800	22.305	20.809	21.164	25.000	26.166
1993[b]	21.672	22.871	26.800	22.305	20.809	21.164	25.000	26.166

[a] Includes transportation.
[b] Preliminary.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A8.

Table A7. Approximate Heat Content of Anthracite and Coal Coke
(Million Btu per Short Ton)

	Anthracite					Coal Coke Imports and Exports
	Production	Consumption			Imports and Exports	
		Sectors Other Than Electric Utilities	Electric Utilities	Total		
1973	22.132	22.674	17.920	21.464	25.400	24.800
1974	21.711	22.330	17.200	20.919	25.400	24.800
1975	21.582	22.272	17.064	20.762	25.400	24.800
1976	22.045	22.618	17.526	21.254	25.400	24.800
1977	22.661	24.101	17.244	22.066	25.400	24.800
1978	23.079	24.388	17.104	22.398	25.400	24.800
1979	23.170	24.272	17.454	22.069	25.400	24.800
1980	22.869	22.719	17.652	21.405	25.400	24.800
1981	23.291	23.749	18.168	22.080	25.400	24.800
1982	23.289	24.578	18.160	22.518	25.400	24.800
1983	22.734	24.536	16.516	21.583	25.400	24.800
1984	23.107	25.128	17.018	22.322	25.400	24.800
1985	22.428	23.031	16.784	20.817	25.400	24.800
1986	23.084	24.399	15.578	21.512	25.400	24.800
1987	23.108	26.293	15.962	22.435	25.400	24.800
1988	23.266	26.021	17.312	22.423	25.400	24.800
1989	23.385	27.196	16.310	22.623	25.400	24.800
1990	22.574	25.199	16.140	21.668	25.400	24.800
1991	22.573	25.268	15.858	21.410	25.400	24.800
1992[a]	22.571	24.660	16.898	21.278	25.400	24.800
1993[a]	22.571	24.660	16.898	21.278	25.400	24.800

[a] Preliminary.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A8.

Table A8. Approximate Heat Rates for Electricity

(Btu per Kilowatthour)

	Electricity Generation			
	Fossil-Fueled Steam-Electric Plants[a]	Nuclear Steam-Electric Plants	Geothermal Energy Plants	Electricity Consumption
1973	10,389	10,903	21,674	3,412
1974	10,442	11,161	21,674	3,412
1975	10,406	11,013	21,611	3,412
1976	10,373	11,047	21,611	3,412
1977	10,435	10,769	21,611	3,412
1978	10,361	10,941	21,611	3,412
1979	10,353	10,879	21,545	3,412
1980	10,388	10,908	21,639	3,412
1981	10,453	11,030	21,639	3,412
1982	10,454	11,073	21,629	3,412
1983	10,520	10,905	21,290	3,412
1984	10,440	10,843	21,303	3,412
1985	10,447	10,813	21,263	3,412
1986	10,446	10,799	21,263	3,412
1987	10,419	10,776	21,263	3,412
1988	10,324	10,743	21,096	3,412
1989	10,317	10,724	21,096	3,412
1990	10,335	10,680	21,096	3,412
1991	10,352	10,740	20,997	3,412
1992[b]	10,352	10,740	20,997	3,412
1993[b]	10,352	10,740	20,997	3,412

[a] This thermal conversion factor is used for hydroelectric power generation and for wood and waste, wind, photovoltaic, and solar thermal energy consumed at electric utilities.

[b] Preliminary.

Source: See "Thermal Conversion Factor Source Documentation," which follows this table.

Thermal Conversion Factor Source Documentation

Approximate Heat Content of Petroleum and Natural Gas Plant Liquids

Asphalt. The 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. EIA adopted the Bureau of Mines thermal conversion factor of 5.048 million Btu per barrel as published for "Gasoline, Aviation" by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Energy Markets 1947-1985,* a 1968 release of historical and projected statistics.

Butane. 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. 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. 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. 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 by using National Bureau of Standards, Miscellaneous Publication No. 97, *Thermal Properties of Petroleum Products,* 1933.

Crude Oil and Lease Condensate, Production. 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. 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 **Crude Oil, Exports** and **Petroleum Products, Exports.**

Crude Oil and Petroleum Products, Imports. Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product and each type of 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. 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. 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. EIA calculated 3.308 million Btu per barrel based on an assumed mixture of 70 percent ethane and 30 percent propane. See **Ethane** and **Propane.**

Isobutane. 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. 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 Appendix V of *Competition and Growth in American Energy Markets 1947-1985,* a 1968 release of historical and projected statistics.

Jet Fuel, Naphtha Type. 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 Appendix V of *Competition and Growth in American Energy Markets 1947-1985,* a 1968 release of historical and projected statistics.

Kerosene. 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."

Liquefied Petroleum Gases (LPG) Consumption. Calculated annually by EIA as the average of the thermal conversion factors of each liquefied petroleum gas consumed, weighted by the quantity of each liquefied petroleum gas consumed.

Lubricants. 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. 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. 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 Appendix V of *Competition and Growth in American Energy Markets 1947-1985,* a 1968 release of historical and projected statistics.

Natural Gas Plant Liquids, Production. 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.

Natural Gasoline. 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.*

Pentanes Plus. EIA assumed the thermal conversion factor to be 4.620 million Btu per barrel or equal to that for natural gasoline. See **Natural Gasoline.**

Petrochemical Feedstocks, Naphtha Less Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.248 million Btu per barrel, equal to the thermal conversion factor for special naphtha. See **Special Naphtha.**

Petrochemical Feedstocks, Oils Equal to or Greater Than 401 Degrees Fahrenheit. 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 Feedstocks, Still Gas. 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. 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." The Bureau of Mines calculated this factor by dividing 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, Total Consumption. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. Estimated to be 5.418 million Btu per barrel by EIA from data provided by McClanahan Consultants, Inc., Houston, Texas.

Propane. 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. 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. 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. 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. EIA adopted the Bureau of Mines estimated thermal conversion factor of 6.000 million Btu per barrel and first published in the *Petroleum Statement, Annual, 1970.*

Unfinished Oil. 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. 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.*

Waxes. 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.*

Approximate Heat Content of Natural Gas

Natural Gas, Total Consumption. 1973-1979: EIA adopted the thermal conversion factor calculated annually by the American Gas Association (AGA) and published in *Gas Facts,* an AGA annual publication. 1980 forward: Calculated annually by EIA by dividing the total heat content of natural gas consumed by the total quantity of natural gas consumed. The heat content and quantity consumed are from Form EIA-176. Published sources are: 1980-1990: EIA, *Natural Gas Annual 1990, Volume 2,* Table 15. 1991 forward: 1990 value used as an estimate.

Natural Gas, Consumption by Electric Utilities. 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 Form FERC-423 and predecessor forms.

Natural Gas, Consumption by Sectors Other Than Electric Utilities. Calculated annually by EIA by dividing the heat content of all natural gas consumed less the heat content of natural gas consumed at electric utilities by the quantity of all natural gas consumed less the quantity of natural gas consumed at electric utilities. Data are from Forms EIA-176, FERC-423, EIA-759, and predecessor forms.

Natural Gas, Exports. Calculated annually by EIA by dividing the heat content of exported natural gas by the quantity of natural gas exported, both reported on Form FPC-14.

Natural Gas, Imports. Calculated annually by EIA by dividing the heat content of imported natural gas by the quantity of natural gas imported, both reported on Form FPC-14.

Natural Gas Production, Dry. Assumed by EIA to be equal to the thermal conversion factor for the consumption of dry natural gas. See **Natural Gas Consumption.**

Natural Gas Production, Marketed (Wet). Calculated annually by EIA by adding the heat content of dry natural gas 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.

Approximate Heat Content of Coal and Coal Coke

Anthracite, Total Consumption. Calculated annually by EIA by dividing the sum of the heat content of anthracite consumed by electric utilities and all other sectors combined by the total quantity of anthracite consumed.

Anthracite, Consumption by Electric Utilities. Calculated annually by EIA by dividing the heat content of anthracite receipts at electric utilities by the quantity of anthracite received at electric utilities. Heat contents and receipts are from Form FERC-423 and predecessor forms.

Anthracite, Consumption by Sectors Other Than Electric Utilities. 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 anthracite consumed by sectors other than electric utilities less the quantity of anthracite stock changes, losses, and "unaccounted for."

Anthracite, Imports and Exports. EIA assumed the anthracite imports and exports to be freshly mined anthracite having an estimated heat content of 25.40 million Btu per short ton.

Anthracite, Production. 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 a heat content of 17.500 million Btu per short ton) by the total quantity of anthracite production.

Bituminous Coal and Lignite, Total Consumption. 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, the residential and commercial sector, and the transportation sector by the sum of their respective tonnages.

Bituminous Coal and Lignite, Consumption by Coke Plants. Estimated by EIA to be 26.800 million Btu per short ton on the basis of an input/output analysis of coal carbonization.

Bituminous Coal and Lignite, Consumption by Electric Utilities. 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 Form FERC-423 and predecessor forms.

Bituminous Coal and Lignite, Consumption by Other Industrial and Transportation Users. 1973: Calculated 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 1974-1982 period. 1974 forward: Calculated annually by EIA by assuming that the bituminous coal and lignite delivered to other industrial users from each coal-producing area (reported on Form EIA-6 and predecessor Bureau of Mines Form 6-1419-Q) contained a heat value equal to that of bituminous coal and lignite received at electric utilities from each of the same coal-producing areas (reported on Form FERC-423). The average Btu value of coal by coal-producing area was applied to the volume of deliveries to other industrial users from each coal-producing area, and the sum total of the heat content was divided by the total volume of deliveries. Coal-producing areas are the Bureau of Mines coal-producing districts for 1974 through 1989 and coal-producing States for 1990 forward.

Bituminous Coal and Lignite, Consumption by Residential and Commercial Users. 1973: Calculated 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 1974-1982 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 area (reported on Form EIA-6 and predecessor Bureau of Mines Form 6-1419-Q) contained a heat value equal to that of bituminous coal and lignite received at electric utilities from each of the same coal-producing areas (reported on Form FERC-423). The average Btu value of coal by coal-producing area was applied to the volume of deliveries to residential and commercial users from each coal-producing area, and the total of the heat value was divided by the total volume of deliveries. Coal-producing areas are the Bureau of Mines coal-producing districts for 1974 through 1989 and coal-producing States for 1990 forward.

Bituminous Coal and Lignite, Exports. 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. EIA estimated the average thermal conversion factor to be 25.000 million Btu per short ton.

Bituminous Coal and Lignite, Production. Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite consumption, net exports, stock changes, and unaccounted for by the sum of their respective tonnages. Consumers' stock changes by sectors were assumed to have the same conversion factor as that of the consumption sector. Producers' stock changes and unaccounted for were assumed to have the same conversion factor as that for consumption by all users.

Coal, Consumption. 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.

Coal, Consumption by Electric Utilities. 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.

Coal, Consumption by Sectors Other Than Electric Utilities. Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite consumed by sectors other than electric utilities by the sum of their respective tonnages.

Coal, Exports. 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.

Coal, Imports. 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.

Coal, Production. 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.

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

Approximate Heat Rates for Electricity

Fossil-Fueled Steam-Electric 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 energy sources. Therefore, EIA has selected a rate that is equal to the prevailing annual average heat rate factor for fossil-fueled steam-electric power plants in the United States. By using that factor, it is possible to evaluate fossil fuel requirements for replacing those sources during periods of interruption such as droughts. The heat content of a kilowatthour of electricity produced, regardless of the generation process, is 3,412 Btu per kilowatthour. 1973-1990: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published by EIA in *Electric Plant Cost and Power Production Expenses 1990*, Table 11. 1991 forward: 1990 value used as an estimate.

Geothermal Energy Plant Generation. 1973-1981: Calculated annually by EIA by weighting the average annual heat rates of operating geothermal units by the installed nameplate capacities as reported on Form FPC-12. 1982 forward: Estimated annually by EIA on the basis of an informal survey of relevant plants.

Nuclear Steam-Electric Plant Generation. Calculated annually by EIA by dividing the total heat content consumed in nuclear generating units by the total (net) electricity generated by nuclear generating units. The heat content and electricity generation are reported on Form FERC-1, Form EIA-412, and predecessor forms. The factors, beginning with 1982 data, are published in the following EIA reports—1982: *Historical Plant Cost and Annual Production Expenses for Selected Electric Plants 1982*, page 215. 1983-1990: *Electric Plant Cost and Power Production Expenses 1990*, Table 15. 1991 forward: 1990 value used as an estimate.

Appendix B. Metric and Other Physical Conversion Factors

Data presented in the *Monthly Energy Review* and in other Energy Information Administration publications are expressed in units, such as British thermal units, barrels, cubic feet, and short tons, that historically have been used in the United States. However, because U.S. activities involve foreign nations, most of which use metric units of measure, the United States is committed to making the transition to the metric system.

The metric conversion factors presented in Table B1 can be used to calculate the metric-unit equivalents of values expressed in U.S. customary units. For example, 500 short tons are the equivalent of 453.6 metric tons (500 short tons X 0.9071847 metric tons/short ton = 453.6 metric tons). Most of the metric units shown in Table B1 belong to the International System of Units.

The conversion factors presented in Table B2 can be used to calculate equivalents in various physical units commonly used in energy analyses. For example, 10 barrels are the equivalent of 420 U.S. gallons (10 barrels X 42 gallons/barrel = 420 gallons).

In the metric system of weights and measures, designations of multiples and subdivisions of any unit may be arrived at by combining the name of the unit with prefixes, such as deka, hecto, and kilo, meaning, respectively, 10, 100, and 1,000, and deci, centi, and milli, meaning, respectively, one-tenth, one-hundredth, and one-thousandth. Common metric prefixes can be found in Table B3.

Table B1. Metric Conversion Factors

Type of Unit	U.S. Unit		Conversion Factor		Metric Unit
Mass	short tons (2,000 lb)	X	0.907 184 7	=	metric tons (t)
	short tons uranium oxide (U_3O_8)	X	0.769[a]	=	metric tons uranium (tU)
	short tons uranium fluoride (UF_6)	X	0.613[a]	=	metric tons uranium (tU)
	long tons	X	1.016 047	=	metric tons (t)
	pounds (lb)	X	0.453 592 37[b]	=	kilograms (kg)
	pounds uranium oxide (lb U_3O_8)	X	0.384 645[a]	=	kilograms uranium (kgU)
	ounces, avoirdupois (avdp oz)	X	28.349 52	=	grams (g)
Volume	barrels of oil (bbl)	X	0.158 987 3	=	cubic meters (m^3)
	cubic yards (yd^3)	X	0.764 555	=	cubic meters (m^3)
	cubic feet (ft^3)	X	0.028 316 85	=	cubic meters (m^3)
	U.S. gallons (gal)	X	3.785 412	=	liters (L)
	ounces, fluid (fl oz)	X	29.573 53[a]	=	milliliters (mL)
	cubic inches (in^3)	X	16.387 064	=	milliliters (mL)
Length	miles (mi)	X	1.609 344[b]	=	kilometers (km)
	yards (yd)	X	0.914 4[b]	=	meters (m)
	feet (ft)	X	0.304 8[b]	=	meters (m)
	inches (in)	X	2.54[b]	=	centimeters (cm)
Area	acres	X	0.404 69	=	hectares (ha)
	square miles (mi^2)	X	2.589 988	=	square kilometers (km^2)
	square yards (yd^2)	X	0.836 127 4	=	square meters (m^2)
	square feet (ft^2)	X	0.092 903 04[b]	=	square meters (m^2)
	square inches (in^2)	X	6.451 6[b]	=	square centimeters (cm^2)
Temperature	degrees Fahrenheit[c] (° F)	X	5/9 (after subtracting 32)[b]	=	degrees Celsius (° C)
Energy	British thermal units (Btu)	X	1, 055.055 852 62 [b, d]	=	joules (J)
	calories (cal)	X	4.186 8[d]	=	joules (J)
	kilowatthours (kWh)	X	3.6	=	megajoules (MJ)

[a]Calculated by the Energy Information Administration.

[b]Exact conversion.

[c]To convert degrees Celsius (° C) to degrees Fahrenheit (° F) exactly, multiply by 9/5, then add 32.

[d]The International Table conversion (5th International Conference on the Properties of Steam, London, 1956).

Sources: • General Services Administration, Federal Standard 376B, preprint copy of *Preferred Metric Units for General Use by the Federal Government* (Washington, DC, January 27, 1993), pp. 9–11, 13, and 16. • National Institute of Standards and Technology, Special Publications 330, 811, and 814. • American National Standards Institute/Institute of Electrical and Electronic Engineers, *ANSI/IEEE Std. 268–1992*, pp. 28 and 29.

Table B2. Other Physical Conversion Factors

Energy Source	Original Unit		Conversion Factor		Final Unit
Crude Oil (Average Gravity)	barrels (bbl)	X	42[a]	=	U.S. gallons (gal)
Coal	short tons	X	2,000[a]	=	pounds (lb)
	long tons	X	2,240[a]	=	pounds (lb)
	metric tons (t)	X	1,000[a]	=	kilograms (kg)
Wood (Average Dry Hardwood)	cords (cd)	X	1.25[b]	=	short tons
	cords (cd)	X	128[a]	=	cubic feet (ft^3)

[a]Exact conversion.
[b]Calculated by the Energy Information Administration.
Source: National Institute of Standards and Technology, *NIST Handbook 44* (1993 Edition) (Washington, DC, October 1992), pp. C–17 and C–21.

Table B3. Metric Prefixes

Unit Multiple	Prefix	Symbol	Unit Subdivision	Prefix	Symbol
10^{24}	yotta	Y	10^{-1}	deci	d
10^{21}	zetta	Z	10^{-2}	centi	c
10^{18}	exa	E	10^{-3}	milli	m
10^{15}	peta	P	10^{-6}	micro	μ
10^{12}	tera	T	10^{-9}	nano	n
10^{9}	giga	G	10^{-12}	pico	p
10^{6}	mega	M	10^{-15}	femto	f
10^{3}	kilo	k	10^{-18}	atto	a
10^{2}	hecto	h	10^{-21}	zepto	z
10^{1}	deka	da	10^{-24}	yocto	y

Source: National Institute of Standards and Technology, *NIST Special Publicalton 330* (Washington, DC, August 1991), p. 10.

For information regarding the International System of Units, contact Dr. Barry N. Taylor at Building 221, Room B160, National Institute of Standards and Technology, Gaithersburg, MD 20899, or on telephone number 301-975-4220.

Appendix C. List of Special Features

The following is a complete list of all the special features that have appeared in the *Monthly Energy Review* since the first issue was published in October 1974. There are four categories of special features on the list. "Feature Articles" cover a wide range of energy-related subjects in depth. "Highlights" summarize the most important information presented in the subject Energy Information Administration (EIA) report. "Energy Previews" provide brief overviews of EIA preliminary energy data on a given topic. "EIA Data News" items present information on recent changes in the scope, design, methodology, and findings of the EIA's energy surveys and data bases. Questions and comments about special features may be directed to Barbara T. Fichman by telephone on 202-586-5737 or by FAX on 202-586-0018.

Special Feature	Cover Date
1993	
Energy Preview: Residential Transportation Energy Consumption Survey, Preliminary Estimates, 1991	January 1993
EIA Data News: Natural Gas Transported for the Account of Others	February 1993
Highlights: *Federal Energy Subsidies: Direct and Indirect Interventions in Energy Markets*	July 1993
Highlights: *Household Energy Consumption and Expenditures 1990*	August 1993
Feature Article: Demand, Supply, and Price Outlook for Low-Sulfur Diesel Fuel	August 1993
1992	
Energy Preview: Residential Energy Consumption and Expenditures Preliminary Estimates, 1990	April 1992
EIA Data News: Oxygenate Data Collection Begins	May 1992
Highlights: *Lighting in Commercial Buildings*	June 1992
Feature Article: Demand, Supply, and Price Outlook for Oxgenated Gasoline, Winter 1992-1993	August 1992
EIA Data News: EIA Statistics on Electric Utility Demand-Side Management	September 1992
EIA Data News: EIA Statistics on Nonutility Power Producers	October 1992
Highlights: *Derived Annual Estimates of Manufacturing Energy Consumption, 1974-1988*	November 1992
Feature Article: Energy Efficiency in the Manufacturing Sector	December 1992
1991	
Highlights: *U.S. Energy Industry Financial Developments, 1990 Fourth Quarter*	March 1991
Feature Article: U.S. Wholesale Electricity Transactions	April 1991
1990	
Feature Article: Refining Results Highlight Energy Companies' First-Half Profit Performance	June 1990
Highlights: *U.S. Oil and Gas Reserves by Year of Field Discovery*	August 1990
1989	
Feature Article: A Review of Valdez Oil Spill Market Impacts	March 1989
Feature Article: Monthly U.S. Crude Oil Production Estimates	March 1989
Feature Article: Superconductivity and Energy Production and Consumption	May 1989
Highlights: *Commercial Buildings Consumption and Expenditures 1986*	May 1989
Feature Article: Higher Prices Yield Improved Energy Industry Financial Results in the First Half of 1989	June 1989
Feature Article: The Future Structure of the U.S. Commercial Nuclear Power Equipment Manufacturing Industry	July 1989
Highlights: *Potential Costs of Restricting Chlorofluorocarbon Use*	September 1989
Highlights: *Manufacturing Energy Consumption Survey: Changes in Energy Efficiency, 1980-1985*	October 1989
Highlights: *Household Energy Consumption and Expenditures 1987, Part 1: National Data*	November 1989
Feature Article: Improved Energy Profits Offset by Refining Results in 1989	December 1989

Special Feature	Cover Date
1988	
Feature Article: Measures of Energy Consumption, Expenditures, and Prices	May 1988
Highlights: *Characteristics of Commercial Buildings 1986*	June 1988
Feature Article: The U.S. Energy Industry's Financial Recovery Continued in the First Half of 1988	June 1988
Feature Article: A U.S. Perspective on Condensate	June 1988
Feature Article: State Energy Severance Taxes, 1972-1987	July 1988
Highlights: *Manufacturing Energy Consumption Survey: Consumption of Energy, 1985*	September 1988
Highlights: *Profiles of Foreign Direct Investment in U.S. Energy 1987*	October 1988
Highlights: *Manufacturing Energy Consumption Survey: Fuel Switching, 1985*	November 1988
Feature Article: Increased Refining Income Led U.S. Energy Industry Financial Recovery in 1988	December 1988
1987	
Feature Article: Manufacturing Sector Energy Consumption, 1985 Provisional Estimates	January 1987
Highlights: *Consumption and Expenditures, April 1984 Through March 1985, Part 1: National Data*	April 1987
Highlights: *Consumption and Expenditures, April 1984 Through March 1985, Part 2: Regional Data*	May 1987
Feature Article: U.S. Energy Industry Financial Developments, 1987 Second Quarter	June 1987
Feature Article: End-Use Consumption of Residential Energy	July 1987
Highlights: *Uranium Industry Annual 1986*	September 1987
Highlights: *Potential Oil Production from ANWR*	October 1987
Highlights: *Profiles of Foreign Direct Investment in U.S. Energy 1986*	November 1987
Feature Article: The U.S. Energy Industry in 1987: A Slow Recovery	December 1987
1986	
Feature Article: State Motor Gasoline Taxes, 1960-1985	March 1986
Feature Article: The Impact of Low Oil Prices on Electric Utility Fuel Choice	June 1986
Feature Article: U.S. Energy Industry Financial Developments, 1986 Second Quarter	June 1986
Highlights: *International Energy Annual 1985*	September 1986
Feature Article: U.S. Energy Industry Financial Developments, 1986	December 1986
1985	
Highlights: *Annual Energy Review 1984*	January 1985
Highlights: *Performance Profiles of Major Energy Producers 1983*	February 1985
Feature Article: Estimating Well Completions	March 1985
Highlights: *State Energy Price and Expenditure Report 1970-1982*	March 1985
Highlights: *State Energy Data Report, Consumption Estimates, 1960-1983*	April 1985
Highlights: *Annual Outlook for U.S. Electric Power 1985*	June 1985
Highlights: *Short-Term Energy Outlook, Volume 1, October 1985*	August 1985
Highlights: *Analysis of Growth in Electricity Demand, 1980-1984*	August 1985
Highlights: *Profiles of Foreign Direct Investment in U.S. Energy 1984*	November 1985
Highlights: *Performance Profiles of Major Energy Producers 1984*	December 1985
1984	
Highlights: *Annual Energy Review 1983*	February 1984
Highlights: *Annual Energy Outlook 1983*	March 1984
Highlights: *State Energy Data Report, Consumption Estimates, 1960-1982*	March 1984
Highlights: *State Energy Price and Expenditure Report, 1970-1981*	May 1984
Highlights: *Solar Collector Manufacturing Activity 1983*	June 1984
Highlights: *International Energy Annual 1983*	September 1984
Highlights: *Estimates of U.S. Wood Energy Consumption, 1980-1983*	September 1984
Highlights: *Energy Conservation Indicators 1983 Annual Report*	November 1984
Highlights: *Annual Energy Outlook 1984*	December 1984

Special Feature	Cover Date
1983	
Highlights: *Residential Energy Consumption Survey: Consumption and Expenditures*	January 1983
Highlights: *Residential Energy Consumption Survey: Housing Characteristics*	February 1983
Feature Article: The Effect of Weather on Energy Use	April 1983
Feature Article: Trends in U.S. Energy Since 1973	May 1983
Feature Article: Data Series on Petroleum Use at Electric Utilities	July 1983
Highlights: *Energy Price and Expenditure Data Report, 1970-1980*	July 1983
Highlights: *Railroad Deregulation: Impact on Coal*	August 1983
Highlights: *Port Deepening and User Fees: Impact on U.S. Coal Exports*	August 1983
Highlights: *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1982 Annual Report*	September 1983
Feature Article: Residential Energy Consumption, 1978 Through 1981	September 1983
Feature Article: Exploring for Oil and Gas	November 1983
Feature Article: The Influence of Federal Actions on Petroleum Exploration	December 1983[2]
Feature Article: Aggregate Statistics: Accurate or Misleading?	December 1983[3]
1982	
Feature Article: The Interstate and Intrastate Natural Gas Markets	January 1982
Feature Article: Natural Gas Drilling and Production Under the Natural Gas Policy Act	February 1982
Highlights: *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1981 Annual Report*	September 1982
Feature Article: Impacts of Financial Constraints on the Electric Utility Industry	October 1982
Highlights: *Energy Company Development Patterns in the Postembargo Era*	November 1982
1981	
Feature Article: Changes in 1981 Petroleum Data Series	May 1981
Feature Article: Information Services of the Energy Information Administration	September 1981
Feature Article: An Overview of Natural Gas Markets	December 1981
1980	
Feature Article: The Solar Collector Industry and Solar Energy	February 1980
Feature Article: Trends in the Installation of Energy Using Equipment in New Residential Buildings	March 1980
Feature Article: The Energy Information Administration's Oil and Gas Reserves Program—The First Year's Report	June 1980
Feature Article: Energy From Urban Waste	August 1980
Feature Article: Natural Gas Liquids: Revisions to 1979 Data	October 1980
Feature Article: EIA Weekly Petroleum Data: Data Collection and Methods of Estimation	November 1980
Feature Article: The Department of Energy Disclosure Policy for Individually Identifiable Information Maintained by the Energy Information Administration	December 1980
1979	
Feature Article: The Energy Requirements of U.S. Agriculture	July 1979
Feature Article: Three Mile Island—Possible Regulatory Responses and Their Impacts on the Nation's Short-Term Electric Utility Fuel Outlook	October 1979
Feature Article: Reduction in Natural Gas Requirements Due to Fuel Switching	December 1979
1978	
Feature Article: Short-Term Petroleum Supply and Demand	May 1978
1977	
Feature Article: Crude Oil Entitlements Program	January 1977
Feature Article: Motor Gasoline Supply and Demand	July 1977

Special Feature	Cover Date
1976	
Feature Article: Curtailments of Natural Gas Service	January 1976
Feature Article: Home Heating Conservation Alternatives and the Solar Collector Industry	March 1976
Feature Article: Trends in United States Petroleum Imports	September 1976
1975	
Feature Article: Energy Consumption	March 1975
Feature Article: Nuclear Power	April 1975
Feature Article: The Price of Crude Oil	June 1975
Feature Article: U.S. Coal Resources and Reserves	July 1975
Feature Article: Propane—A National Energy Resource	September 1975
Feature Article: Short-Term Energy Supply and Demand Forecasting at FEA	October 1975

Glossary

Anthracite: A hard, black, lustrous coal containing a high percentage of fixed carbon and a low percentage of volatile matter. Often referred to as hard coal. It conforms to ASTM Specification D388-84 for anthracite, meta-anthracite, and semianthracite.

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 American Society for Testing and Materials.

Aviation Gasoline Blending Components: Naphthas that are used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, and reformate). Excludes oxygenates (alcohols and ethers), butane, and pentanes plus.

Aviation Gasoline, Finished: All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D910 and Military Specification MIL-G-5572. Excludes blending components that will be used in blending or compounding into finished aviation gasoline.

Barrel (petroleum): A unit of volume equal to 42 U.S. gallons.

Base (Cushion) Gas: The volume of gas needed as a permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates throughout the withdrawal season. All native gas is included in the base gas volume.

Bituminous Coal: A dense black coal, often with well-defined bands of bright and dull material, with a moisture content usually less than 20 percent. Often referred to as soft coal. It is the most common coal and is used primarily for generating electricity, making coke, and space heating. It conforms to ASTM Specification D388-84 for bituminous coal. In this report, bituminous coal includes subbituminous coal.

British Thermal Unit (Btu): The quantity of heat needed to raise the temperature of 1 pound of water by 1° F at or near 39.2° F. See **Heat Content of a Quantity of Fuel, Gross** and **Heat Content of a Quantity of Fuel, Net.**

Butane: A normally gaseous straight-chain or branched-chain hydrocarbon (C_4H_{10}). It is extracted from natural gas or refinery gas streams. It includes isobutane and normal butane and is designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial butane.

- *Isobutane:* A normally gaseous branched-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 10.9° F. It is extracted from natural gas or refinery gas streams.
- *Normal Butane:* A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 31.1° F. It is extracted from natural gas or refinery gas streams.

Butylene: An olefinic hydrocarbon (C_4H_8) recovered from refinery processes.

Capacity Factor: The ratio of the electrical energy produced by a generating unit for a given period of time to the electrical energy that could have been produced at continuous full-power operation during the same period.

CIF: See **Cost, Insurance, Freight.**

City Gate: A point or measuring station at which a distribution gas utility receives gas from a natural gas pipeline company or transmission system.

Coal: A black or brownish-black solid, combustible substance formed by the partial decomposition of vegetable matter without access to air. The rank of coal, which includes anthracite, bituminous coal, subbituminous coal, and lignite, is based on fixed carbon, volatile matter, and heating value. Coal rank indicates the progressive alteration, or coalification, from lignite to anthracite. Lignite contains approximately 9 to 17 million Btu per ton. The heat contents of subbituminous and bituminous coal range from 16 to 24 million Btu per ton, and from 19 to 30 million Btu per ton, respectively. Anthracite contains approximately 22 to 28 million Btu per ton.

Coal Coke: A hard, porous product made from baking bituminous coal in ovens at temperatures as high as 2,000° F. It is used both as a fuel and as a reducing agent in smelting iron ore in a blast furnace.

Commercial Sector: The commercial sector, as defined economically, consists of business establishments that are not engaged in transportation or in manufacturing or other types of industrial activity (agriculture, mining, or construction). Commercial establishments include hotels, motels,

restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; religious and nonprofit organizations; health, social, and educational institutions; and Federal, State, and local governments. Street lights, pumps, bridges, and public services are also included if the establishment operating them is considered commercial.

Completion: The installation of permanent equipment for the production of oil or gas. If a well is equipped to produce only oil or gas from one zone or reservoir, the definition of a well (classified as an oil well or gas well) and the definition of a completion are identical. However, if a well is equipped to produce oil and/or gas separately from more than one reservoir, a well is not synonymous with a completion.

Conversion Factor: A number that translates units of one system into corresponding values of another system. Conversion factors can be used to translate physical units of measure for various fuels into Btu equivalents.

Cost, Insurance, Freight (CIF): A type of sale in which the buyer of the product agrees to pay a unit price that includes the f.o.b. value of the product at the point of origin plus all costs of insurance and transportation. This type of transaction differs from a "delivered" purchase in that the buyer accepts the quantity as determined at the loading port (as certified by the Bill of Loading and Quality Report) rather than pay on the basis of the quantity and quality ascertained at the unloading port. It is similar to the terms of an f.o.b. sale, except that the seller, as a service for which he is compensated, arranges for transportation and insurance.

Crude Oil f.o.b. Price: The crude oil price actually charged at the oil-producing country's port of loading. Includes deductions for any rebates and discounts or additions of premiums, where applicable. It is the actual price paid with no adjustment for credit terms.

Crude Oil (Including Lease Condensate): A mixture of hydrocarbons that exists 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. Where identifiable, liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded.

Crude Oil Landed Cost: The price of crude oil at the port of discharge, including charges associated with the purchase, transporting, and insuring of a cargo from the purchase point to the port of discharge. The cost does not include charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage).

Crude Oil Refinery Input: The total crude oil put into processing units at refineries.

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

Crude Oil Used Directly: Crude oil consumed as fuel by crude oil pipelines and on crude oil leases.

Cubic Foot (natural gas): A unit of volume equal to 1 cubic foot at a pressure base of 14.73 pounds standard per square inch absolute and a temperature base of 60° F.

Degree-Day Normals: Simple arithmetic averages of monthly or annual degree-days over a long period of time (usually the 30-year period 1951-1980). The averages may be simple degree-day normals or population-weighted degree-day normals.

Degree-Days, Cooling (CDD): The number of degrees per day that the daily average temperature is above 65° F. The daily average temperature is the mean of the maximum and minimum temperatures for a 24-hour period.

Degree-Days, Heating (HDD): The number of degrees per day that the daily average temperature is below 65° F. The daily average temperature is the mean of the maximum and minimum temperatures for a 24-hour period.

Degree-Days, Population-Weighted: Heating or cooling degree-days weighted by the population of the area in which the degree-days are recorded. To compute State population-weighted degree-days, each State is divided into from one to nine climatically homogeneous divisions, which are assigned weights based on the ratio of the population of the division to the total population of the State. Degree-day readings for each division are multiplied by the corresponding population weight for each division and those products are then summed to arrive at the State population-weighted degree-day figure. To compute national population-weighted degree-days, the Nation is divided into nine Census regions comprised of from three to eight States, which are assigned weights based on the ratio of the population of the region to the total population of the Nation. Degree-day readings for each region are multiplied by the corresponding population weight for each region and those products are then summed to arrive at the national population-weighted degree-day figure.

Design Electrical Rating, Net: The nominal net electrical output of a nuclear unit as specified by the electric utility for the purpose of plant design.

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: A general classification for one of the petroleum fractions produced in conventional distillation operations. Included are products known as No. 1, No. 2, and No. 4 fuel oils and No. 1, No. 2, and No. 4 diesel fuels. It is 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.

Dry Natural Gas Production (as a decrement from gas reserves): The volume of natural gas withdrawn from reservoirs during the report year less (1) the volume returned to such reservoirs in cycling, repressuring of oil reservoirs, and conservation operations; (2) shrinkage resulting from the removal of lease condensate and plant liquids; and (3) nonhydrocarbon gases, where they occur in sufficient quantity to render the gas unmarketable. Volumes of gas withdrawn from gas storage reservoirs and native gas that has been transferred to the storage category are not considered production. This is not the same as marketed production, since the latter also excludes vented and flared gas but contains liquids.

Dry Natural Gas Production (as an increment to gas supply): Gross withdrawals from production reservoirs less gas used in reservoir repressuring, amounts vented and flared, nonhydrocarbons removed, and various natural gas constituents, such as ethane, propane, and butane, removed at natural gas processing plants. The parameters for measurement are 60° F and 14.73 pounds standard per square inch absolute.

Electrical System Energy Losses: The amount of energy lost during generation, transmission, and distribution of electricity, including plant and unaccounted-for uses.

Electricity Generation: The process of producing electric energy or transforming other forms of energy into electric energy. Also the amount of electric energy produced or expressed in watthours (Wh).

Electricity Generation, Gross: The total amount of electric energy produced by the generating station or stations, measured at the generator terminals.

Electricity Generation, Net: 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.

Electricity Production: Net electricity (gross electricity output measured at generator terminals minus power plant use) generated by publicly and privately owned electric utilities. Excludes industrial electricity generation (except autogeneration of hydroelectric power).

Electricity Sales: The amount of kilowatthours sold in a given period of time; usually grouped by classes of service, such as residential, commercial, industrial, and other. "Other" sales include sales for public street and highway lighting and other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

Electric Power Plant: A station containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or fission energy into electric energy.

Electric Utility: A corporation, person, agency, authority, or other legal entity or instrumentality that owns and/or operates facilities for the generation, transmission, distribution, or sale of electric energy, primarily for use by the public, and that files forms listed in the *Code of Federal Regulations*, Title 18, Part 141. Facilities that qualify as cogenerators or small power producers under the Public Utility Regulatory Policies Act are not considered electric utilities.

Electric Utility Sector: The electric utility sector consists of privately and publicly owned establishments that generate, transmit, distribute, or sell electricity primarily for use by the public and that meet the definition of an electric utility. Nonutility power producers are not included in the electric utility sector.

End-Use Sectors: The residential, commercial, industrial, and transportation sectors of the economy.

Energy: The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks. Electrical energy is usually measured in kilowatthours, while heat energy is usually measured in British thermal units.

Energy Consumption: The use of energy as a source of heat or power or as an input in the manufacturing process.

Energy Consumption, End-Use: *Primary end-use energy consumption* is the sum of fossil fuel consumption by the four end-use sectors (residential, commercial, industrial, and transportation) and generation of hydroelectric power by nonelectric utilities. *Net end-use energy consumption* includes

electric utility sales to those sectors but excludes electrical system energy losses. *Total end-use energy consumption* includes both electric utility sales to the four end-use sectors *and* electrical system energy losses.

Energy Consumption, Total: The sum of fossil fuel consumption by the five sectors (residential, commercial, industrial, transportation, and electric utility) plus hydroelectric power, nuclear electric power, net imports of coal coke, and electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

Energy Source: A substance, such as petroleum, natural gas, or coal, that supplies heat or power. In Energy Information Administration reports, electricity and renewable forms of energy, such as biomass, geothermal, wind, and solar, are considered to be energy sources.

Ethane: A normally gaseous straight-chain hydrocarbon (C_2H_6). It is a colorless, paraffinic gas that boils at a temperature of -127.48° F. It is extracted from natural gas and refinery gas streams.

Ethylene: An olefinic hydrocarbon (C_2H_4) recovered from refinery processes or petrochemical processes.

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 and to Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

f.a.s.: See **Free Alongside Ship.**

Federal Energy Regulatory Commission (FERC): The Federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. FERC is an independent regulatory agency within the Department of Energy and is the successor to the Federal Power Commission.

Federal Power Commission (FPC): The predecessor agency of the Federal Energy Regulatory Commission. The Federal Power Commission was created by an Act of Congress under the Federal Water Power Act on June 10, 1920. It was charged originally with regulating the electric power and natural gas industries. It was abolished on September 30, 1977, when the Department of Energy was created. Its functions were divided between the Department of Energy and the Federal Energy Regulatory Commission, an independent regulatory agency.

First Purchase Price: The marketed first sales price of domestic crude oil, consistent with the removal price defined by the provisions of the Windfall Profits Tax on Domestic Crude Oil (Public Law 96-223, Sec. 4998 (c)).

Flared Natural Gas: Natural gas burned in flares on the base site or at gas processing plants.

f.o.b.: See **Free on Board.**

Footage Drilled: Total footage for wells in various categories, as reported for any specified period, includes (1) the deepest total depth (length of well bores) of all wells drilled from the surface, (2) the total of all bypassed footage drilled in connection with reported wells, and (3) all new footage drilled for directional sidetrack wells. Footage reported for directional sidetrack wells does not include footage in the common bore, which is reported as footage for the original well. In the case of old wells drilled deeper, the reported footage is that which was drilled below the total depth of the old well.

Former U.S.S.R.: See **U.S.S.R.**

Fossil Fuel: Any naturally occurring organic fuel, such as petroleum, coal, and natural gas.

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.): The value of a commodity at the port of exportation, generally including the purchase price, plus all charges incurred in placing the commodity alongside the carrier at the port of exportation.

Free on Board (f.o.b.): A transaction whereby the seller makes the product available within an agreed-on period at a given port at a given price. It is the responsibility of the buyer to arrange for the transportation and insurance.

Fuel Ethanol: An anhydrous, denatured aliphatic alcohol (C_2H_5OH) intended for motor gasoline blending. See **Oxygenates.**

Full-Power Operation: Operation of a nuclear generating unit at 100 percent of its design capacity. Full-power operation precedes commercial operation.

Gasohol: A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol) limited to 10 percent by volume

of alcohol. Gasohol is included in finished leaded and unleaded motor gasoline.

Gas-Turbine Electric Power Plant: A plant in which the prime mover is a gas turbine. A gas turbine typically consists of an axial-flow air compressor, one or more combustion chambers where liquid or gaseous fuel is burned and the hot gases expand to drive the generator and then are used to run the compressor.

Gas Well: A well completed for the production of natural gas from one or more gas zones or reservoirs. (Wells producing both crude oil and natural gas are classified as oil wells.)

Geothermal Energy: Energy from the internal heat of the Earth, which may be residual heat, friction heat, or a result of radioactive decay. The heat is found in rocks and fluids at various depths and can be extracted by drilling and/or pumping.

Geothermal Energy (as used at electric utilities): Hot water or steam extracted from geothermal reservoirs in the Earth's crust and supplied to steam turbines at electric utilities that drive generators to produce electricity.

Gross Domestic Product (GDP): The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier (that is, the workers and, for property, the owners) may be either U.S. residents or residents of foreign countries.

Heat Content of a Quantity of Fuel, Gross: The total amount of heat released when a fuel is burned. Coal, crude oil, and natural gas all include chemical compounds of carbon and hydrogen. When those fuels are burned, the carbon and hydrogen combine with oxygen in the air to produce carbon dioxide and water. Some of the energy released in burning goes into transforming the water into steam and is usually lost. The amount of heat spent in transforming the water into steam is counted as part of gross heat content but is not counted as part of net heat content. Also referred to as the higher heating value. Btu conversion factors typically used in EIA represent gross heat content.

Heat Content of a Quantity of Fuel, Net: The amount of usable heat energy released when a fuel is burned under conditions similar to those in which it is normally used. Also referred to as the lower heating value. Btu conversion factors typically used in EIA represent gross heat content.

Heavy Oil: The fuel oils remaining after the lighter oils have been distilled off during the refining process. Except for start-up and flame stabilization, virtually all petroleum used in steam-electric power plants is heavy oil.

Hydrocarbon: An organic chemical compound of hydrogen and carbon in the gaseous, liquid, or solid phase. The molecular structure of hydrocarbon compounds varies from the simplest (methane, the primary constituent of natural gas) to the very heavy and very complex.

Hydroelectric Power: The production of electricity from the kinetic energy of falling water.

Hydroelectric Power Plant: A plant in which the turbine generators are driven by falling water.

Imports: Receipts of goods into the 50 States and the District of Columbia from foreign countries and from Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Industrial Sector: The industrial sector comprises manufacturing industries, which make up the largest part of the sector, along with mining, construction, agriculture, fisheries, and forestry. Establishments in the sector range from steel mills, to small farms, to companies assembling electronic components.

Internal Combustion Electric Power Plant: A power plant in which the prime mover is an internal combustion engine. Diesel or gas-fired engines are the principal types used in electric power plants. The plant is usually operated during periods of high demand for electricity.

Jet Fuel: The term includes kerosene-type jet fuel and naphtha-type jet fuel. Kerosene-type jet fuel is a kerosene-quality product used primarily for commercial turbojet and turboprop aircraft engines. Naphtha-type jet fuel is a fuel in the heavy naphthas range used primarily for military turbojet and turboprop aircraft engines.

Kerosene: A petroleum distillate that has a maximum distillation temperature of 401° F at the 10-percent recovery point, a final boiling point of 572° F, and a minimum flash point of 100° F. Included are the two grades designated in ASTM D3699 (No. 1-K and No. 2-K) and all grades of kerosene called range or stove oil. Kerosene is used in space heaters, cook stoves, and water heaters; it is suitable for use as an illuminant when burned in wick lamps.

Lease and Plant Fuel: Natural gas used in well, field, and lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors), and as fuel in natural gas processing plants.

Lease Condensate: A natural gas liquid recovered from gas well gas (associated and non-associated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons.

Light Oil: Lighter fuel oils distilled off during the refining process. Virtually all petroleum used in internal combustion and gas-turbine engines is light oil.

Lignite: A brownish-black coal of low rank with a high content of moisture and volatile matter. Often referred to as brown coal. It is used almost exclusively for electric power generation. It conforms to ASTM Specification D388-84 for lignite.

Liquefied Natural Gas (LNG): Natural gas (primarily methane) that has been liquefied by reducing its temperature to -260° F at atmospheric pressure.

Liquefied Petroleum Gases (LPG): Ethane, ethylene, propane, propylene, normal butane, butylene, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate new natural gas plant liquids.

Low-Power Testing: The period of time between a nuclear generating unit's initial fuel loading date and the issuance of its operating (full-power) license. The maximum level of operation during that period is 5 percent of the unit's design thermal rating.

Lubricants: Substances used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacturing of other products or as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Excluded are byproducts of lubricating oil refining, such as aromatic extracts derived from solvent extraction or tars derived from deasphalting. Included are all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. Lubricant categories are paraffinic and naphthenic.

Marketed Production: Gross withdrawals less gas used for repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating or processing operations. Includes all quantities of gas used in field and processing operations.

Methanol: A light, volatile alcohol (CH_3OH) eligible for motor gasoline blending. See **Oxygenates.**

Miscellaneous Petroleum Products: All finished petroleum products not classified elsewhere—for example, petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils.

Motor Gasoline Blending Components: Naphthas that will be used for blending or compounding into finished motor gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and zylene). Excluded are oxygenates (alcohols and ethers), butane, and pentanes plus.

Motor Gasoline, Finished: A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that has been blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as given in ASTM Specification D439 or Federal Specification VV-G-1690B, includes a range in distillation temperatures from 122 to 158° F at the 10-percent recovery point and from 365 to 374° F at the 90-percent recovery point. Motor gasoline includes reformulated motor gasoline, oxygenated motor gasoline, and other finished motor gasoline. Blendstock is excluded until blending has been completed.

- *Reformulated Motor Gasoline*: Motor gasoline, formulated for use in motor vehicles, the composition and properties of which are certified as "reformulated motor gasoline" by the Environmental Protection Agency.
- *Oxygenated Motor Gasoline*: Motor gasoline, formulated for use in motor vehicles, that has an oxygen content of 1.8 percent or higher by weight.
- *Other Finished Motor Gasoline:* Motor gasoline that is not included in the reformulated or oxygenated categories.

Motor Gasoline, Finished 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.

Motor Gasoline, Finished Leaded: Motor gasoline that contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Motor Gasoline, Finished Leaded Premium: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than 90 and containing more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon.

Motor Gasoline, Finished Leaded Regular: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than or equal to 87 and less than or equal to 90 and containing more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

Motor Gasoline, Finished Unleaded: Motor gasoline containing not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes unleaded gasohol. Blendstock is excluded until blending has

been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Motor Gasoline, Finished Unleaded Midgrade: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than or equal to 88 and less than or equal to 90 and containing not more than 0.05 gram of phosphorus per gallon.

Motor Gasoline, Finished Unleaded Premium: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than 90 and containing not more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

Motor Gasoline, Finished Unleaded Regular: Motor gasoline having an antiknock index, calculated as (R+M)/2, of 87 containing not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon.

Motor Gasoline Retail Prices: Motor gasoline prices calculated each month by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index (CPI). Those prices are collected in 85 urban areas selected to represent all urban consumers—about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-service).

Motor Gasoline, Total: Includes finished leaded motor gasoline (premium and regular), finished unleaded motor gasoline (premium, midgrade, and regular), motor gasoline blending components, and gasohol.

MTBE (Methyl Tertiary Butyl Ether): An ether, $(CH_3)_3COCH_3$, intended for motor gasoline blending. See **Oxygenates.**

Naphtha: A genetic term applied to a petroleum fraction with an approximate boiling range between 122 and 400° F.

Natural Gas: A mixture of hydrocarbons (principally methane) and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in underground reservoirs.

Natural Gas, Dry: The marketable portion of natural gas production, which is obtained by subtracting extraction losses, including natural gas liquids removed at natural gas processing plants, from total production.

Natural Gas Marketed Production: Gross withdrawals of natural gas from production reservoirs, less gas used for reservoir repressuring; nonhydrocarbon gases removed in treating and processing operations; and quantities vented and flared.

Natural Gas Plant Liquids (NGPL): Natural gas liquids recovered from natural gas in processing plants and, in some situations, from natural gas field facilities, as well as those extracted by fractionators. Natural gas plant liquids are defined according to the published specifications of the Gas Processors Association and the American Society for Testing and Materials 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. Minerals Management Service. 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 Consumption: See **Energy Consumption, End-Use.**

Nonhydrocarbon Gases: Typical nonhydrocarbon gases that may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide, and nitrogen.

Nuclear Electric 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.

Nuclear Electric Power Plant: A single-unit or multiunit facility in which heat produced in one or more reactors by the fissioning of nuclear fuel is used to drive one or more steam turbines.

Nuclear Reactor: An apparatus in which the nuclear fission chain can be initiated, maintained, and controlled so that energy is released at a specific rate. The reactor includes fissionable material (fuel), such as uranium or plutonium; fertile material; moderating material (unless it is a fast reactor); a heavy-walled pressure vessel; shielding to protect personnel; provision for heat removal; and control elements and instrumentation.

Offshore: That geographic area that lies seaward of the coastline. In general, the coastline is the line of ordinary low water along with that portion of the coast that is in direct contact with the open sea or the line marking the seaward limit of inland water.

Oil: See **Crude Oil (Including Lease Condensate).**

Oil Well: A well completed for the production of crude oil from one or more oil zones or reservoirs. Wells producing both crude oil and natural gas are classified as oil wells.

Operable (nuclear): A U.S. nuclear generating unit is considered operable after it completes low-power testing and is issued a full-power operating license by the Nuclear Regulatory Commission. A foreign nuclear generating unit is considered operable once it has generated electricity to the grid.

Organization for Economic Cooperation and Development (OECD): Current members are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States and its territories (Guam, Puerto Rico, and the Virgin Islands), and Germany.

Organization of Petroleum Exporting Countries (OPEC): Countries that have organized for the purpose of negotiating with oil companies on matters of oil production, prices, and future concession rights. Current members are Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Oxygenated Motor Gasoline: See **Motor Gasoline, Finished.**

Oxygenates: Any substance which, when added to motor gasoline, increases the amount of oxygen in that motor gasoline blend. Through a series of waivers and interpretive rules, the Environmental Protection Agency (EPA) has determined the allowable limits for oxygenates in unleaded gasoline. The "Substantially Similar" Interpretive Rules (56 FR [February 11, 1991]) allows blends of aliphatic alcohols other than methanol and aliphatic ethers, provided the oxygen content does not exceed 2.7 percent by weight. The "Substantially Similar" Interpretive Rules also provide for blends of methanol up to 0.3 percent by volume exclusive of other oxygenates, and butanol or alcohols of a higher molecular weight up to 2.75 percent by weight. Individual waivers pertaining to the use of oxygenates in unleaded motor gasoline have been issued by the EPA. They include:

- *Fuel Ethanol.* Blends of up to 10 percent by volume anhydrous ethanol (200 proof).
- *Methanol.* Blends of methanol and gasoline-grade tertiary butyl alcohol (GTBA) such that the total oxygen content does not exceed 3.5 percent by weight and the ratio of methanol to GTBA is less than or equal to 1. It is also specified that this blended fuel must meet ASTM volatility specifications.
  Blends of up to 5.0 percent by volume methanol with a minimum of 2.5 percent by volume co-solvent alcohols having carbon number of 4 or less (i.e., ethanol, propanol, butanol, and/or GTBA). The total oxygen must not exceed 3.7 percent by weight, and the blend must meet ASTM volatility specifications as well as phase separation and alcohol purity specifications.
- *MTBE (Methyl tertiary butyl ether).* Blends up to 15.0 percent by volume MTBE that must meet the ASTM D4814 specifications. Blenders must take precautions that the blends are not used as base gasolines for other oxygenated blends.

Pentanes Plus: A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. 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 naphthas less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

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 residue that is the final product of the condensation process in cracking. The product is either marketable petroleum coke or catalyst petroleum coke.

Petroleum Coke, Catalyst: The carbonaceous residue that is deposited on and deactivates the catalyst used in many catalytic operations (e.g., catalytic cracking). Carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon, which is used as a fuel in the refining process. That carbon or coke is not recoverable in a concentrated form.

Petroleum Coke, Marketable: Those grades of coke produced in delayed or fluid cokers that may be recovered as relatively pure carbon. Marketable petroleum coke may be sold as is or further purified by calcining.

Petroleum Consumption: The sum of all refined petroleum products supplied. For each refined petroleum product, the amount supplied is calculated by adding production and imports, then subtracting

changes in primary stocks (net withdrawals are a plus quantity and net additions are a minus quantity) and exports.

Petroleum Imports: Imports of petroleum into the 50 States and the District of Columbia from foreign countries and from Puerto Rico, the Virgin Islands, and other U.S. territories and possessions. 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: Products 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, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Petroleum Products Supplied: See **Petroleum Consumption.**

Petroleum Stocks, Primary: For individual products, quantities that are held at refineries, in pipelines, and at bulk terminals that have a capacity of 50,000 barrels or more, or that are in transit thereto. Stocks held by product retailers and resellers, as well as tertiary stocks held at the point of consumption, are excluded. Stocks of individual products held at gas processing plants are excluded from individual product estimates but are included in other oils estimates and total.

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.

Pipeline Fuel: Gas consumed in the operation of pipelines, primarily in compressors.

Primary Consumption: See **Energy Consumption, End-Use.**

Propane: A normally gaseous straight-chain hydrocarbon (C_3H_8). It is a colorless paraffinic gas that boils at a temperature of -43.67° F. It is extracted from natural gas or refinery gas streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HD-5 propane.

Propylene: An olefinic hydrocarbon (C_3H_6) recovered from refinery or petrochemical processes.

Refiner Acquisition Cost of Crude Oil: The cost of crude oil to the refiner, including transportation and fees. The composite cost is the weighted average of domestic and imported crude oil costs.

Refinery (petroleum): An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Renewable Energy: Energy obtained from sources that are essentially inexhaustible (unlike, for example, the fossil fuels, of which there is a finite supply). Renewable sources of energy include wood, waste, photovoltaic, and solar thermal energy.

Repressuring: The injection of a pressurized fluid (such as air, gas, or water) into oil and gas reservoir formations to effect greater ultimate recovery.

Residential Sector: The residential sector is considered to consist of all private residences, whether occupied or vacant, owned or rented, including single-family homes, multifamily housing units, and mobile homes. Secondary homes, such as summer homes, are also included. Institutional housing, such as school dormitories, hospitals, and military barracks, generally are not included in the residential sector; they are included in the commercial sector.

Residual Fuel Oil: The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations and that conform to ASTM Specifications D396 and 975. Included are No. 5, a residual fuel oil of medium viscosity; Navy Special, for use in steam-powered vessels in government service and in shore power plants; and No. 6, which includes Bunker C fuel oil and is used for commercial and industrial heating, electricity generation, and to power ships. Imports of residual fuel oil include imported crude oil burned as fuel.

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 0, 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.

Short Ton (coal): A unit of weight equal to 2,000 pounds.

SIC: See **Standard Industrial Classification.**

Solar Energy: The radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.

Standard Industrial Classification (SIC): A set of codes developed by the Office of Management and Budget which categorizes industries into groups with similar economic activities.

Startup Test Phase of Nuclear Power Plant: A nuclear power plant that has been licensed by the Nuclear Regulatory Commission to operate but is still in the initial testing phase, during which the 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.

Steam-Electric Power Plant: A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

Strategic Petroleum Reserve (SPR): Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Supplemental Gaseous Fuels: Any gaseous substance that, introduced into or commingled with natural gas, increases the volume available for disposition. Such substances include, but are not limited to, propane-air, refinery gas, coke oven gas, still gas, manufactured gas, biomass gas, or air or inert gases added for Btu stabilization.

Synthetic Natural Gas (SNG): A manufactured product chemically similar in most respects to natural gas, resulting from the conversion or reforming of petroleum hydrocarbons. It may easily be substituted for, or interchanged with, pipeline quality natural gas. Also referred to as substitute natural gas.

Total Consumption: See **Energy Consumption, End-Use.**

Transportation Sector: The transporation sector consists of 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: Arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production and imports, less changes in crude oil stocks. The calculated 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.

Underground Storage: The storage of natural gas in underground reservoirs at a different location from which it was produced.

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.

U.S.S.R.: The Union of Soviet Socialist Republics consisted of 15 constituent republics: Armenia, Azerbaijan, Belorussia, Estonia, Georgia, Kazakhstan, Kirghizia, Latvia, Lithuania, Moldavia, Russia, Tadzhikistan, Turkmenistan, Ukraine, and Uzbekistan. As a political entity, the U.S.S.R. ceased to exist as of December 31, 1991.

Vented Natural Gas: Gas released into the air on the base site or at processing plants.

Wellhead Price: The value of crude oil or natural gas at the mouth of the well.

Well Servicing Unit: Truck-mounted equipment generally used for downhole services after a well is drilled. Services include well completions and recompletions, maintenance, repairs, workovers, and well plugging and abandonments. Jobs range from minor operations, such as pulling the rods and rod pumps out of an oil well, replacing the pump and rerunning the assemblage into the well, to major workovers, such as milling out and repairing collapsed casing. Well depth and characteristics determine the type of equipment used.

Wind Energy (as used at electric utilities): The kinetic energy of wind converted at electric utilities into mechanical energy by wind turbines (i.e., blades rotating from a hub) that drive generators to produce electricity for distribution.

Wood and Waste (as used at electric utilities): Wood energy, garbage, bagasse, sewerage gas, and other industrial, agricultural, and urban refuse used to generate electricity for distribution.

Wood Energy: Wood and wood products used as fuel, including round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal, pulp waste, and spent pulping liquor.

Working Gas: The gas in a reservoir that is in addition to the base (cushion) gas. It may or may not be completely withdrawn during any particular withdrawal season. Conditions permitting, the total working capacity could be used more than once during any given season.

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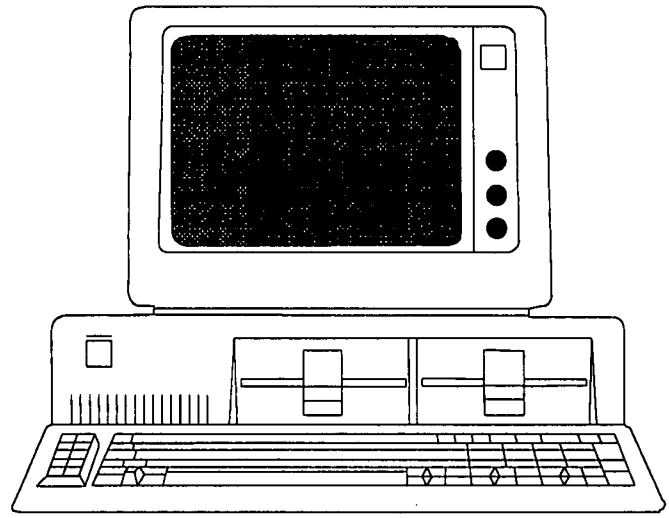

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The ***State Energy Price and Expenditure Report**** (DOE/EIA-0376) presents annual energy price and expenditure estimates at the State and national levels for selected years. The base year is 1970. The estimates are presented by energy source (e.g., petroleum, natural gas, coal, and electricity) and by major sector (i.e., residential, commercial, industrial, transportation, and electric utilities). The report includes documentation of the price estimates for each type of energy, the sources of all data, and a summary of any changes made to historical data in the report since its previous release.

The ***International Energy Annual*** (DOE/EIA-0219) presents annual data for production, consumption, imports, and exports of primary energy commodities in more than 190 countries, dependencies, and areas of special sovereignty. Also included are prices of crude oil and petroleum products in selected countries. The data presented are derived largely from national publications, international organizations, and other authoritative sources. The data are converted to units of measurement and thermal values familiar to the American public.

The ***International Petroleum Statistics Report*** (DOE/EIA-0520) presents current monthly international petroleum data on production, consumption, imports, and stocks. Included are oil consumption and stocks for specific countries in the Organization for Economic Cooperation and Development (OECD). Also provided are the oil supply/consumption balances for the world in quarterly intervals and oil imports by OECD countries.

*Data for this report are also available on computer diskettes.

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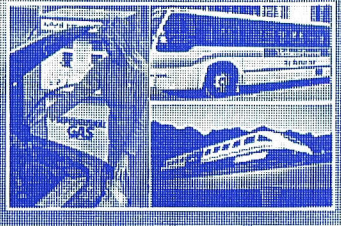

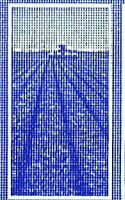

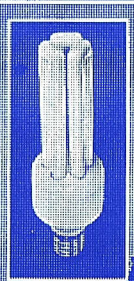

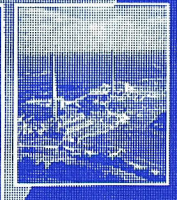

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