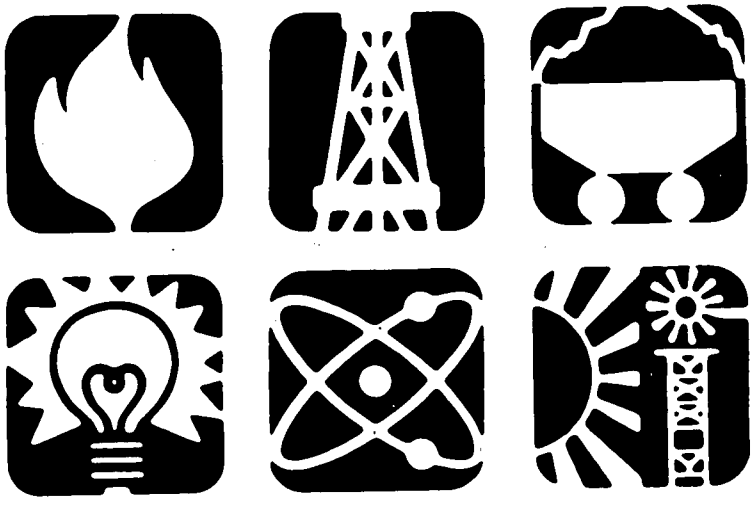
DOE/EIA-0035(88/10)

Energy Information Administration

Monthly Energy Review

October 1988



Monthly Energy Review

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

Publication of this report is in keeping with responsibilities given the Energy Information Administration in Public Law 95-91 (Section 205(a)(2)) that states:

> *The Administrator shall be responsible for carrying out a central, comprehensive, and unified energy data and information program which will collect, evaluate, assemble, analyze and disseminate data and information . .*

The *Monthly Energy Review* is intended to provide timely energy information to Members of Congress, to Federal and State agencies, and to the general public.

Subscriptions

This publication is available from the Superintendent of Documents, U.S. Government Printing Office (GPO). Information about purchasing this or other Energy Information Administration (EIA) publications may be obtained from the GPO or the EIA's National Energy Information Center (NEIC). Questions on energy statistics should be directed to the NEIC by mail, telephone or telecommunications device for the deaf (TDD). Addresses, telephone numbers and hours appear below.

National Energy Information Center, EI-231
Energy Information Administration
Forrestal Building, Room 1F-048
Washington, D.C. 20585
(202) 586-8800
TDD (202) 586-1181
Hours: 8:00-5:00, M-F, Eastern Time

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
(202) 783-3238

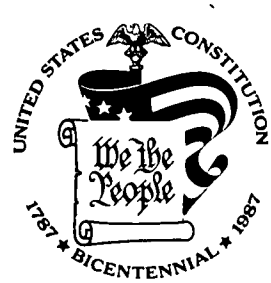
The *Monthly Energy Review* (ISSN 0095-7356) is published monthly by the Energy Information Administration, 1000 Independence Avenue, SW, Washington, DC 20585, and sells for $62.00 per year (price is subject to change without advance notice). Application to mail at second-class postage rates is pending at Washington, DC 20066-9998, and at additional mailing offices. POSTMASTER: Send address changes to *Monthly Energy Review*, Energy Information Administration, EI-231, 1000 Independence Avenue SW, Washington DC 20585.

DOE/EIA-0035(88/10)
Distribution Category UC-98

Monthly Energy Review

October 1988

Energy Information Administration
Office of Energy Markets and
End Use
U.S. Department of Energy
Washington, DC 20585



Contacts

The *Monthly Energy Review* is prepared in the Statistics Branch of the Office of Energy Markets and End Use, Energy Information Administration, under the direction of Katherine E. Seiferlein (202) 586-5692.

Questions and comments concerning the contents of the *Monthly Energy Review* may be directed to Diane D. Perritt (202) 586-2788, Carol E. Swiggins (202) 586-5743, or the following subject specialists:

	Special Features	Barbara T. Fichman	(202) 586-5737
Section 1.	**Energy Summary**	Alethea Jennings	(202) 586-9160
Section 2.	**Consumption**	Alethea Jennings	(202) 586-9160
Section 3.	**Petroleum**	Christine D. Gray	(202) 586-8995
Section 4.	**Natural Gas**	Charles Readling	(202) 586-6301
Section 5.	**Oil and Gas Resource Development**	Lawrence R. Mangen	(202) 586-4804
Section 6.	**Coal**	Wayne Watson	(202) 586-6871
Section 7.	**Electric Utilities**		
	Generation, Consumption, and Stocks	Melvin Johnson	(202) 586-6520
	Sales	James R. Knaub	(202) 586-6523
Section 8.	**Nuclear**	Sabrina Ratchford	(202) 586-9410
Section 9.	**Price**		
	Petroleum	Annie P. Whatley	(202) 586-6612
	Natural Gas	Charles Readling	(202) 586-6301
	Electricity		
	Retail Prices	James R. Knaub	(202) 586-6523
	Fossil Fuels	Karen McDaniel	(202) 586-8952
Section 10.	**International**		
	Petroleum		
	Production	Patricia A. Smith	(202) 586-6925
	Consumption and Stocks	Michael J. Maloney	(202) 586-9415
	Nuclear Electricity Generation	Sabrina Ratchford	(202) 586-9410

Additional information on all energy statistics available from the Energy Information Administration may be obtained from the National Energy Information Center (202) 586-8800.

• Released for printing: January 26, 1989

Contents

Feature Articles

Feature articles on energy-related subjects are occasionally included in this publication. The following is a complete list of all the feature articles that have been published to date.

Highlights

"Highlights"--special features that summarize the most important information presented in selected Energy Information Administration reports--are occasionally included in this publication. The following is a complete list of all the reports that have been summarized to date.

U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1981 Annual Report	September 1982
Energy Company Development Patterns in the Postembargo Era, Volume One	November 1982
Residential Energy Consumption Survey: Consumption and Expenditures	January 1983
Residential Energy Consumption Survey: Housing Characteristics	February 1983
Energy Price and Expenditure Data Report, 1970-1980	July 1983
Railroad Deregulation: Impact on Coal	August 1983
Port Deepening and User Fees: Impact on U.S. Coal Exports	August 1983
U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1982 Annual Report	September 1983
Annual Energy Review 1983	February 1984
State Energy Data Report, Consumption Estimates, 1960-1982	March 1984
Annual Energy Outlook 1983	March 1984
State Energy Price and Expenditure Report, 1970-1981	May 1984
Solar Collector Manufacturing Activity 1983	June 1984
Estimates of U.S. Wood Energy Consumption, 1980-1983	September 1984
International Energy Annual 1983	September 1984
Energy Conservation Indicators 1983 Annual Report	November 1984
Annual Energy Outlook 1984	December 1984
Annual Energy Review 1984	January 1985
Performance Profiles of Major Energy Producers 1983	February 1985
State Energy Price and Expenditure Report 1970-1982	March 1985
State Energy Data Report, Consumption Estimates, 1960-1983	April 1985
Annual Outlook for U.S. Electric Power 1985	June 1985
Short-Term Energy Outlook, Volume 1, October 1985	August 1985
Analysis of Growth in Electricity Demand, 1980-1984	August 1985
Profiles of Foreign Direct Investment in U.S. Energy 1984	November 1985
Performance Profiles of Major Energy Producers 1984	December 1985
International Energy Annual 1985	September 1986
Consumption and Expenditures, April 1984 Through March 1985, Part 1: National Data	April 1987
Consumption and Expenditures, April 1984 Through March 1985, Part 2: Regional Data	May 1987
Uranium Industry Annual 1986	September 1987
Potential Oil Production from the Coastal Plain of the Arctic National Wildlife Refuge (Revised Edition)	October 1987
Profiles of Foreign Direct Investment in U.S. Energy 1986	November 1987
Characteristics of Commercial Buildings 1986	June 1988
Manufacturing Energy Consumption Survey: Consumption of Energy, 1985	September 1988

Highlights: *Profiles of Foreign Direct Investment in U.S. Energy 1987*

Profiles of Foreign Direct Investment in U.S. Energy 1987, published by the Energy Information Administration in December 1988, summarizes the activities in the United States of foreign-affiliated companies that own or control U.S. energy sources and reports on their role in U.S. energy operations. The major foreign-affiliated U.S. energy companies are Shell Oil Company, BP America, E.I. du Pont de Nemours and Company, and American Petrofina, but foreign direct investment statistics are based on other companies as well. Although data on coal and uranium are presented, investment in petroleum is emphasized. For reporting purposes, petroleum refers to production of crude oil (including natural gas liquids) and natural gas, oil field services, and integrated refining, marketing, and transport.

Foreign direct investment (FDI) is the cumulative net flow of funds between a foreign-affiliated company and its foreign owners. Stock purchases and paid-in capital, retained earnings and other equity, and loans from and to foreign owners are included. Energy investments flow out of, as well as into, the United States. U.S. direct investment abroad exceeds foreign direct investment in the United States (Table FE1).

Table FE1. Foreign Direct Investment and U.S. Direct Investment, 1980-1987

(Billion Dollars)

Year	FDI in the U.S.[1]		U.S. DI Abroad[2]	
	Petroleum	Total	Petroleum	Total
1980 . . .	12	83	48	215
1981 . . .	15	109	53	228
1982 . . .	18	125	58	208
1983 . . .	18	137	58	207
1984 . . .	25	165	58	212
1985 . . .	28	185	58	230
1986 . . .	29	220	62	260
1987 . . .	35	262	66	309

[1]The foreign direct investment (FDI) position is the value of foreign investors' net equity in, and outstanding loans to, U.S. affiliates at the end of the year.

[2]The direct investment (DI) position abroad is the value of U.S. investors' net equity in, and loans to, foreign affiliates.

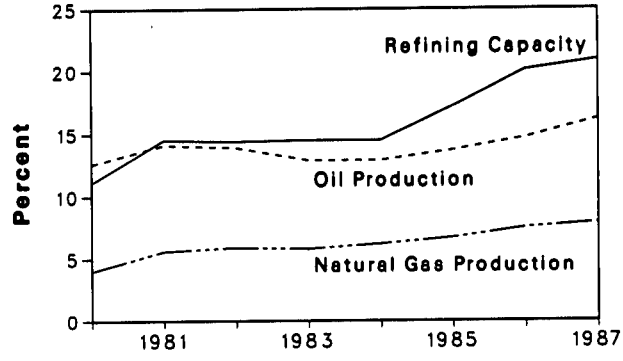
Source: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1987*, DOE/EIA-0466(87) (Washington, DC, December 1988), p. 4.

Petroleum

Several factors contributed to an upswing in total FDI in the United States in 1987: a fall in the international value of the dollar, continued U.S. economic growth, and growth in the trade surpluses of (and therefore funds available for investments by) major U.S. trading partners. Other factors--rising oil consumption and a modest recovery in oil prices--made U.S. petroleum particularly attractive to foreign investors. Additions to FDI in U.S. petroleum rose from $0.8 billion in 1986 to $6.3 billion in 1987. The growth in additions to petroleum accounted for nearly all of the growth in total FDI additions, which rose from $35.8 billion in 1986 to $41.5 billion in 1987.

Foreign affiliates' shares of U.S. petroleum activities increased for the third year in a row (Figure FE1). Their share of U.S. petroleum refining capacity reached 21 percent in 1987, while their shares of oil production and natural gas production were 16 percent and 8 percent, respectively.

Figure FE1. Foreign Affiliates' Shares of U.S. Petroleum Production and Refining Capacity, 1980-1987



Source: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1987*, DOE/EIA-0466(87) (Washington, DC, December 1988), p. xi.

October

In general, the FDI-related transactions followed trends established in recent years. Partial ownership of a major U.S. petroleum company was converted to 100 percent ownership, a variety of oil and gas properties and facilities were acquired by various foreign buyers, drilling ventures with Japanese investors were expanded, and involvement of foreign investors in petroleum refining was increased. Major transactions in U.S. petroleum production and refining in 1987 included the following:

- British Petroleum increased its ownership of Standard Oil from 55 percent to 100 percent for $7.8 billion.
- Total Minatome purchased producing properties from Texas International for $120 million.
- Shell Oil purchased oil and gas properties from Union Texas Petroleum for $83 million.
- Wintershall Corporation acquired Mid Louisiana Gas Company from Tenneco for $80 million.
- American Petrofina purchased producing properties from the Exploration Company of Louisiana for $79 million.
- Nippon Oil Company and Chevron became partners in a joint drilling venture valued at $100 million.
- Broken Hill Proprietary acquired AB Volvo's 50.5-percent share of Hamilton Oil for $394 million.
- Petroleos de Venezuela and Union Pacific became joint venture partners in Champlin Petroleum's Corpus Christi refinery in a transaction valued at $93 million.
- First Oil International acquired Chevron's Caribbean Gulf Refining Corporation and its refinery in Puerto Rico for $100 million.
- Elf Aquitaine purchased Riffe Petroleum Company for $68 million.
- Total Petroleum (North America) purchased Asamera's Colorado refinery for $25 million.

Improved Financial Performance

The financial performance of all U.S. energy companies improved with the moderate recovery in oil prices, and the foreign-affiliated energy companies' return on equity rose from negative 1.6 percent in 1986 to 10.6 percent in 1987. Although income and cash flow, as well as the prospects for energy prices, improved in 1987, cutbacks in exploration and development spending effected in 1986 carried over to the first half of 1987. The foreign affiliates' 1987 capital expenditures of $8.4 billion were down 2 percent from the 1986 level.

Foreign Sources of Petroleum FDI

In 1987, FDI in U.S. petroleum continued to be dominated by European interests. Largely due to British Petroleum's completion of its acquisition of Standard Oil, the European share of FDI rose from 90 percent in 1986 to nearly 93 percent, the highest share since at least 1976. Data from the Organization of Petroleum Exporting Countries (OPEC) are no longer disclosed, but OPEC's share of FDI in U.S. petroleum undoubtedly increased in 1987 from its 0.1 percent share in 1985.

Coal

Foreign holdings of U.S. coal assets declined by $378 million, due to the disposition of foreign affiliates' coal subsidiaries and properties, and the FDI position in U.S. coal fell from $3.5 billion in 1986 to $3.1 billion in 1987. However, the rate of return on FDI in U.S. coal was positive (though less than 1 percent) for the first time since 1981.

Foreign-affiliated companies produced 181 million short tons of U.S. coal in 1987 and, partly due to restrained growth in overall U.S. coal production, their share of U.S. bituminous coal and lignite production rose to an all-time high of 20 percent.

Uranium

In 1987, foreign investors continued to predominate in U.S. uranium exploration and development. The number of foreign-affiliated companies rose from 8 in 1986 to 11 in 1987. Foreign expenditures for exploration and development totaled $11.9 million, essentially the same as in 1986. Because total U.S. exploration and development expenditures fell by $2.5 million to $19.6 million, the foreign-affiliated companies' share of the U.S. total rose from 54 percent in 1986 to 61 percent in 1987.

To Order the Report

Profiles of Foreign Direct Investment in U.S. Energy 1987 may be obtained by using the order form in the back of this publication.

Section 1. Energy Summary

The United States produced 1.6 percent more energy during the first 10 months of 1988 than during the same period in 1987, and U.S. consumption was up 4.2 percent. Net imports of all energy were 5.2 percent higher than during the first 10 months of 1987.

Energy production during October 1988 totaled 5.4 quadrillion Btu, a 2.6-percent decrease compared with the level of production during October 1987. Coal production decreased 6.3 percent, petroleum production was down 3.7 percent, while natural gas production increased slightly. All other forms of energy production combined were up 6.0 percent from the level of production during October 1987.

Energy consumption during October 1988 totaled 6.4 quadrillion Btu, 3.0 percent above the level of consumption during October 1987. Coal consumption increased 4.2 percent, petroleum consumption rose 3.2 percent, and natural gas consumption increased 0.8 percent. Consumption of all other forms of energy combined also increased, up 4.2 percent compared with the level 1 year earlier.

Net imports of energy during October 1988 totaled 1.1 quadrillion Btu, 3.2 percent above the level of net imports 1 year earlier. Net imports of natural gas increased 14.8 percent, and net imports of petroleum were up 7.9 percent. Net exports of coal increased 34.3 percent compared with the level in October 1987.

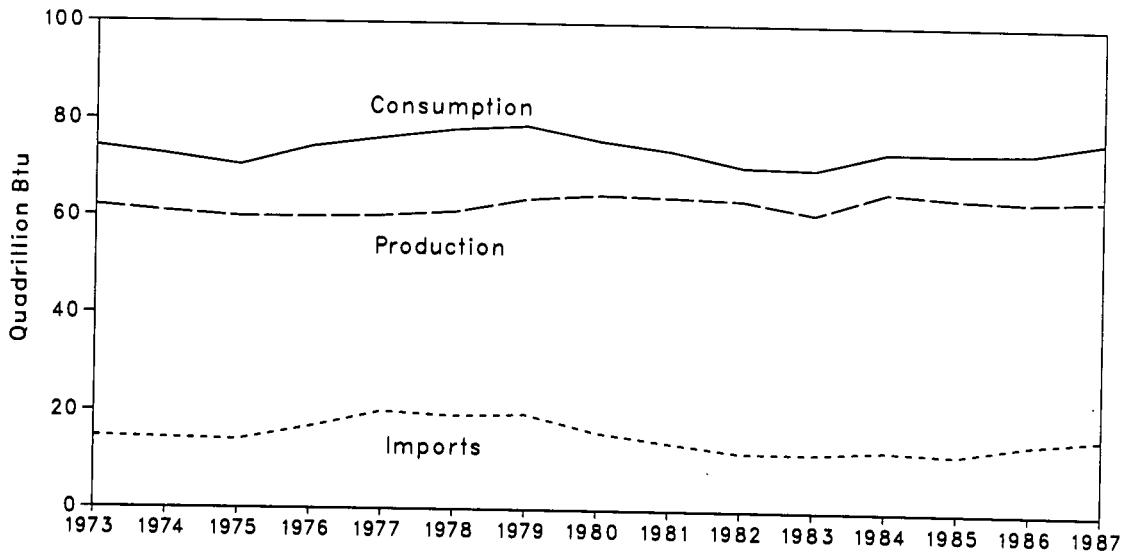
Table 1.1 Energy Summary for October 1988
(Quadrillion (10^{15}) Btu)

	October			Cumulative January Through October				
	1988	1987	Percent Change[a]	1988	1988 Daily Rate	1987	1987 Daily Rate	Percent Change[a]
Total Production[b]	**5.449**	**5.593**	**-2.6**	**54.741**	**0.179**	**53.691**	**0.177**	**1.6**
Petroleum[c]	1.630	1.693	-3.7	16.306	.053	16.555	.054	-1.8
Natural Gas (Dry)	1.416	1.415	.1	14.144	.046	14.011	.046	.6
Coal	1.767	1.885	-6.3	17.383	.057	16.661	.055	4.0
Other[d]	.637	.601	6.0	6.908	.023	6.464	.021	6.5
Total Consumption[b]	**6.387**	**6.198**	**3.0**	**66.323**	**.217**	**63.440**	**.209**	**4.2**
Petroleum[e]	2.928	2.838	3.2	28.042	.092	27.294	.090	2.4
Natural Gas[f]	1.287	1.276	.8	15.308	.050	14.288	.047	6.8
Coal	1.510	1.448	4.2	15.771	.052	14.972	.049	5.0
Other[g]	.663	.636	4.2	7.203	.024	6.886	.023	4.3
Net Imports	**1.147**	**1.111**	**3.2**	**10.437**	**.034**	**9.893**	**.033**	**5.2**
Petroleum[h]	1.251	1.160	7.9	11.135	.037	10.409	.034	6.6
Natural Gas	.101	.088	14.8	1.004	.003	.720	.002	39.1
Coal[i]	-.231	-.172	34.3	-1.997	-.007	-1.658	-.005	20.1
Other[j]	.026	.036	-26.8	.294	.001	.422	.001	-30.4

[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 petroleum products.
[f]Includes supplemental gaseous fuels.
[g]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.
[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]Minus sign indicates exports are greater than imports.
[j]Other is net imports of electricity and coal coke.
Note: Totals may not equal sum of components due to independent rounding.
Sources: Energy Information Administration (EIA), *Monthly Energy Review* Section 1 and EIA calculations.

Figure 1.1 Energy Overview

Yearly



Monthly

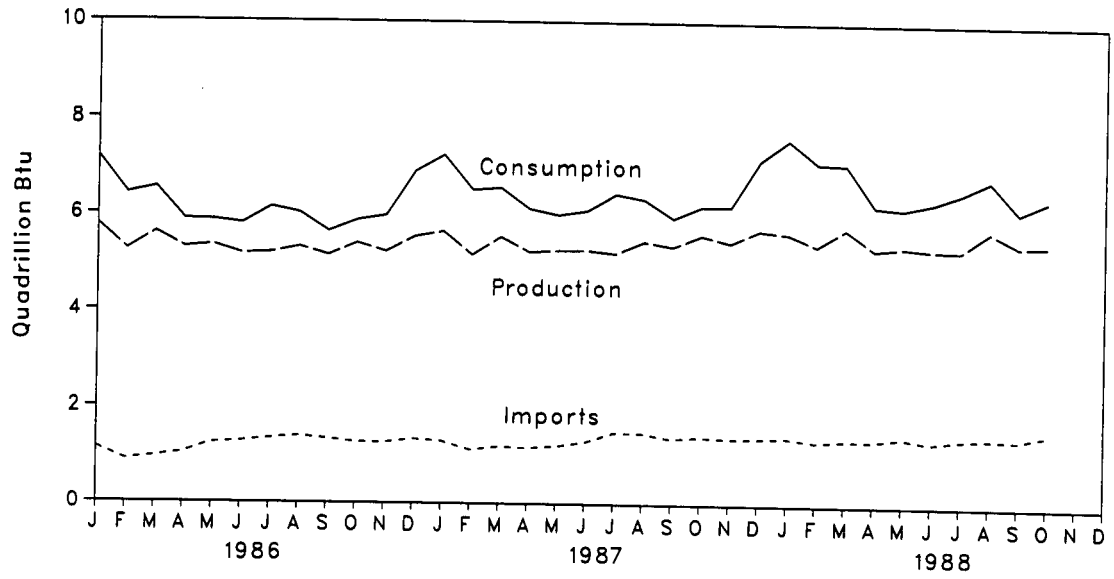


Table 1.2 Energy Overview[a]
(Quadrillion (10^{15}) Btu)

	Production[b]	Consumption[b] [c]	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	**63.898**	**70.848**	**12.092**	**4.633**	**7.460**
1983 Total	**61.215**	**70.524**	**12.028**	**3.717**	**8.311**
1984 Total	**65.847**	**74.101**	**12.763**	**3.804**	**8.959**
1985 Total	**64.765**	**73.945**	**12.098**	**4.232**	**7.866**
1986 January	5.774	7.173	1.144	.320	.825
February	5.245	6.416	.875	.291	.584
March	5.610	6.543	.943	.313	.630
April	5.294	5.886	1.028	.380	.648
May	5.348	5.875	1.241	.365	.876
June	5.165	5.801	1.275	.315	.960
July	5.191	6.145	1.336	.338	.998
August	5.311	6.023	1.388	.374	1.014
September	5.141	5.640	1.333	.347	.986
October	5.395	5.877	1.268	.352	.916
November	5.220	5.976	1.261	.331	.929
December	5.532	6.885	1.336	.329	1.007
Total	**64.225**	**74.237**	**14.430**	**4.055**	**10.375**
1987 January	5.643	7.227	1.294	.281	1.012
February	5.158	6.512	1.113	.294	.819
March	5.536	6.555	1.184	.315	.869
April	5.224	6.124	1.157	.324	.833
May	5.258	6.004	1.202	.300	.901
June	5.265	6.091	1.292	.321	.972
July	5.205	6.443	1.491	.307	1.183
August	5.455	6.333	1.480	.336	1.144
September	5.355	5.952	1.373	.325	1.048
October	5.593	6.198	1.416	.305	1.111
November	5.441	6.195	1.386	.330	1.056
December	5.704	7.147	1.394	.417	.976
Total	**64.836**	**76.781**	**15.780**	**3.855**	**11.925**
1988 January	5.639	R 7.598	1.416	.288	1.128
February	5.392	R 7.108	1.332	.275	1.057
March	5.751	R 7.084	1.368	.350	1.017
April	5.324	R 6.231	1.365	.364	1.001
May	5.382	R 6.179	1.435	.374	1.060
June	5.328	R 6.308	1.338	.389	.949
July	5.317	R 6.514	1.407	.381	1.027
August	5.732	R 6.788	1.438	.405	1.033
September	R 5.429	R 6.127	1.413	.395	1.018
October	5.449	6.387	1.528	.381	1.147
10-Month Total	**54.741**	**66.323**	**14.040**	**3.603**	**10.437**
1987 10-Month Total	**53.691**	**63.440**	**13.001**	**3.108**	**9.893**
1986 10-Month Total	**53.472**	**61.377**	**11.832**	**3.395**	**8.437**

[a]For definitions, see Notes at end of section.

[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]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.

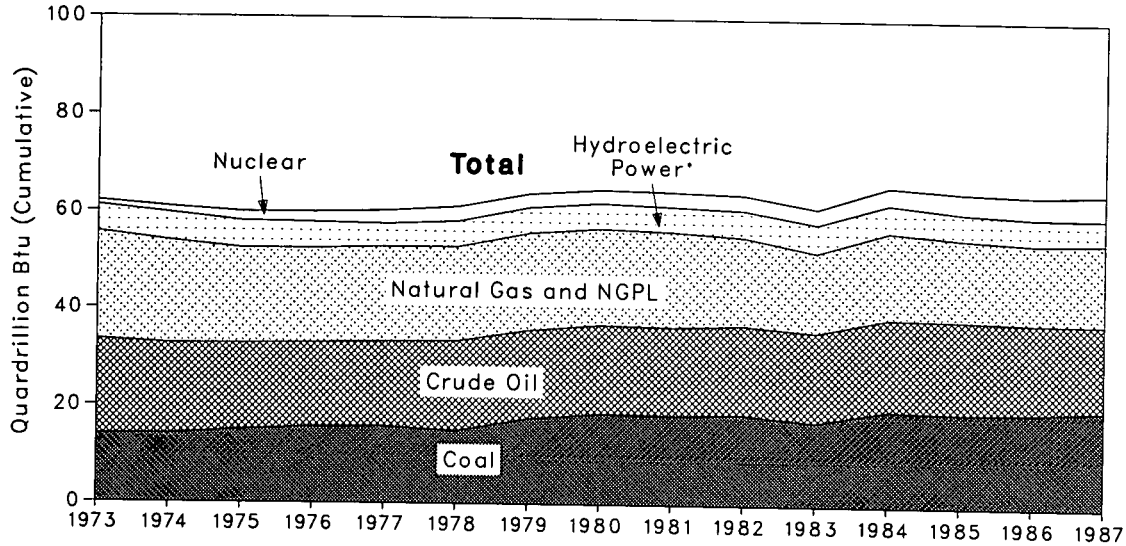
R=Revised data.

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

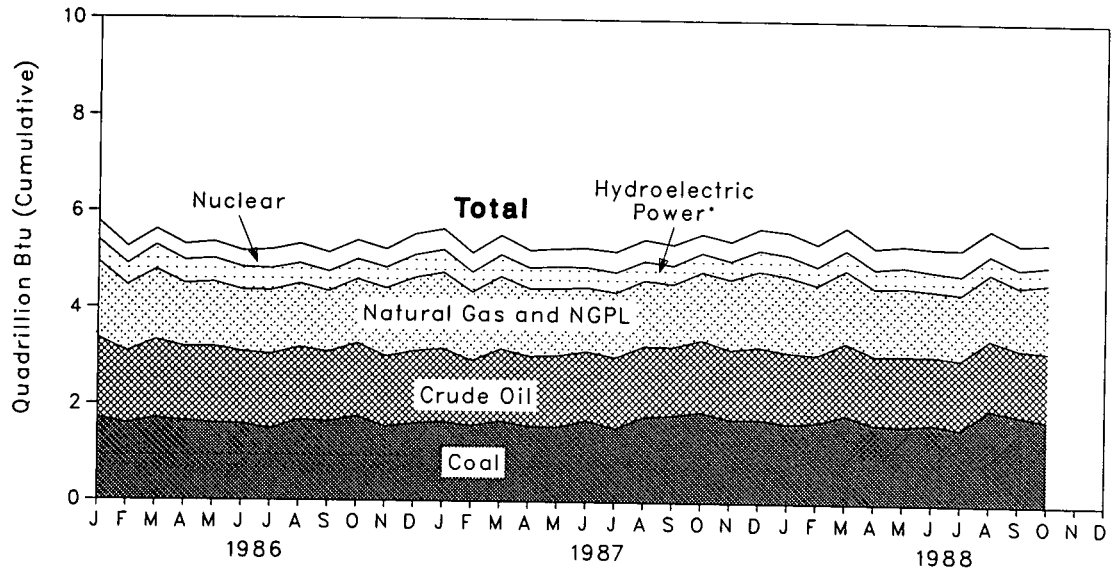
Source: Energy Information Administration calculations based on data appearing elsewhere in this publication.

Figure 1.2 Production of Energy by Source

Yearly



Monthly



*Includes other.

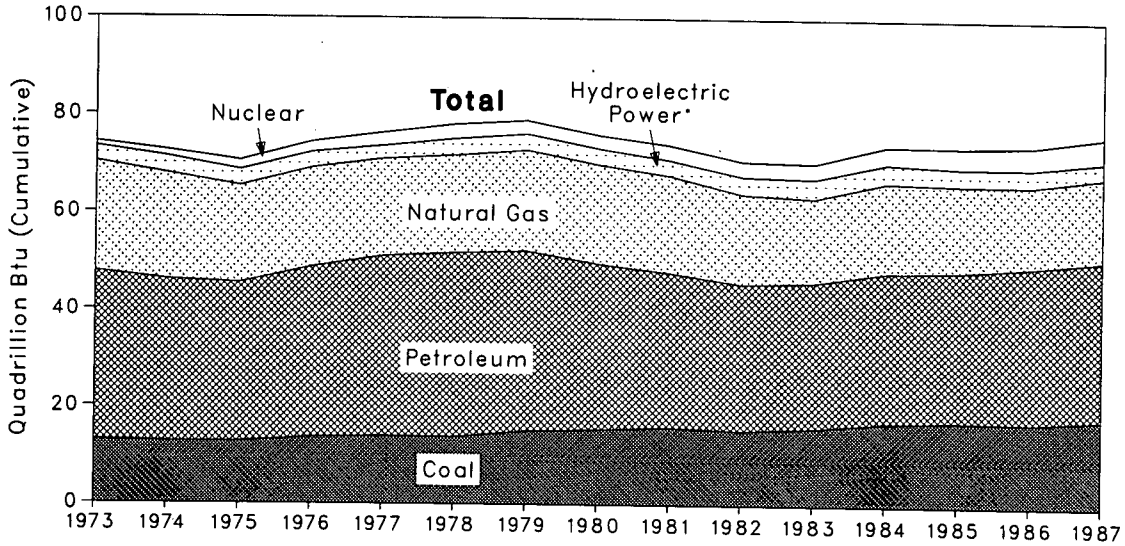
Table 1.3 Production of Energy by Source
(Quadrillion (10^{15}) Btu)

	Coal	Crude Oil[a]	NGPL[b]	Natural Gas (Dry)	Hydro-electric Power[c]	Nuclear Electric Power	Other[d]	Total[e]	Year to Date
1973 Total	**13.993**	**19.493**	**2.569**	**22.187**	**2.861**	**0.910**	**0.046**	**62.060**	
1974 Total	**14.074**	**18.575**	**2.471**	**21.210**	**3.177**	**1.272**	**.056**	**60.835**	
1975 Total	**14.990**	**17.729**	**2.374**	**19.640**	**3.155**	**1.900**	**.072**	**59.860**	
1976 Total	**15.654**	**17.262**	**2.327**	**19.480**	**2.976**	**2.111**	**.081**	**59.892**	
1977 Total	**15.755**	**17.454**	**2.327**	**19.565**	**2.333**	**2.702**	**.082**	**60.219**	
1978 Total	**14.910**	**18.434**	**2.245**	**19.485**	**2.937**	**3.024**	**.068**	**61.103**	
1979 Total	**17.539**	**18.104**	**2.286**	**20.076**	**2.931**	**2.776**	**.089**	**63.801**	
1980 Total	**18.597**	**18.249**	**2.254**	**19.908**	**2.900**	**2.739**	**.114**	**64.761**	
1981 Total	**18.376**	**18.146**	**2.307**	**19.699**	**2.758**	**3.008**	**.127**	**64.421**	
1982 Total	**18.639**	**18.309**	**2.191**	**18.255**	**3.266**	**3.131**	**.108**	**63.898**	
1983 Total	**17.246**	**18.392**	**2.184**	**16.530**	**3.527**	**3.203**	**.133**	**61.215**	
1984 Total	**19.719**	**18.848**	**2.274**	**17.931**	**3.348**	**3.553**	**.174**	**65.847**	
1985 Total	**19.325**	**18.992**	**2.241**	**16.906**	**2.939**	**4.149**	**.213**	**64.765**	
1986 January	1.711	1.643	.201	1.582	.222	.391	.023	5.774	5.774
February	1.588	1.490	.180	1.373	.241	.353	.019	5.245	11.019
March	1.696	1.621	.189	1.457	.295	.332	.020	5.610	16.629
April	1.636	1.542	.173	1.309	.265	.329	.018	5.294	21.923
May	1.598	1.589	.182	1.334	.283	.345	.018	5.348	27.270
June	1.587	1.500	.171	1.276	.272	.338	.020	5.165	32.436
July	1.481	1.557	.177	1.316	.250	.388	.021	5.191	37.626
August	1.672	1.506	.170	1.317	.220	.405	.021	5.311	42.937
September	1.639	1.449	.167	1.254	.219	.395	.018	5.141	48.078
October	1.751	1.514	.174	1.327	.221	.391	.017	5.395	53.472
November	1.538	1.464	.179	1.407	.240	.377	.015	5.220	58.693
December	1.612	1.502	.185	1.517	.269	.426	.020	5.532	64.224
Total	**19.510**	**18.376**	**2.149**	**16.471**	**3.017**	**4.471**	**.231**	**64.225**	
1987 January	1.637	1.525	.187	1.578	.264	.432	.020	5.643	5.643
February	1.571	1.362	.172	1.418	.220	.395	.019	5.158	10.800
March	1.663	1.522	.188	1.498	.241	.403	.021	5.536	16.336
April	1.557	1.479	.181	1.396	.229	.362	.019	5.224	21.560
May	1.550	1.499	.187	1.379	.252	.371	.020	5.258	26.818
June	1.690	1.440	.180	1.322	.217	.395	.021	5.265	32.083
July	1.530	1.484	.187	1.340	.210	.433	.022	5.205	37.288
August	1.769	1.476	.185	1.364	.192	.447	.022	5.455	42.743
September	1.808	1.428	.181	1.301	.189	.428	.020	5.355	48.098
October	1.885	1.504	.189	1.415	.186	.394	.020	5.593	53.691
November	1.737	1.461	.187	1.457	.175	.404	.020	5.441	59.132
December	1.744	1.495	.191	1.581	.219	.454	.020	5.704	64.836
Total	**20.142**	**17.675**	**2.215**	**17.049**	**2.595**	**4.916**	**.244**	**64.836**	
1988 January	1.656	1.482	.185	1.582	.231	.482	.021	5.639	5.639
February	1.689	1.409	.176	1.445	.199	.456	.018	5.392	11.030
March	1.846	1.501	.192	1.514	.203	.474	.021	5.751	16.781
April	1.657	1.439	.184	1.394	.199	.433	.019	5.324	22.105
May	1.628	1.475	.192	1.408	.221	.439	.018	5.382	27.486
June	1.682	1.419	.183	1.352	.196	.476	.020	5.328	32.815
July	1.582	1.449	.190	1.360	.176	.538	.021	5.317	38.132
August	1.995	1.450	.191	1.374	.171	.529	.021	5.732	43.863
September	1.880	1.375	.185	R 1.300	.169	.500	.020	R 5.429	R 49.292
October	1.767	1.434	.196	1.416	.157	.460	.020	5.449	54.741
10-Month Total	**17.383**	**14.432**	**1.874**	**14.144**	**1.924**	**4.787**	**.197**	**54.741**	
1987 10-Month Total	**16.661**	**14.718**	**1.837**	**14.011**	**2.201**	**4.059**	**.205**	**53.691**	
1986 10-Month Total	**16.359**	**15.410**	**1.785**	**13.546**	**2.508**	**3.668**	**.196**	**53.472**	

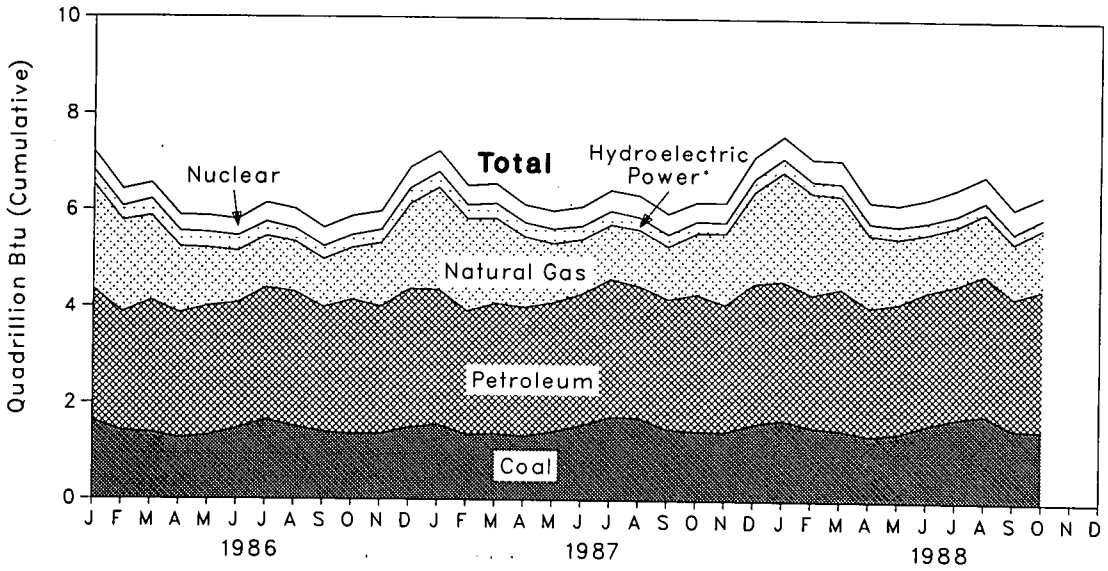
[a]Includes lease condensate.
[b]Natural gas plant liquids.
[c]Includes industrial and utility production of hydroelectric power.
[d]Other is electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
[e]Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy except for small amounts used by electric utilities to generate electricity for distribution.
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.
Source: Energy Information Administration calculations based on data appearing elsewhere in this publication.

Figure 1.3 Consumption of Energy by Source

Yearly



Monthly



*Includes other.

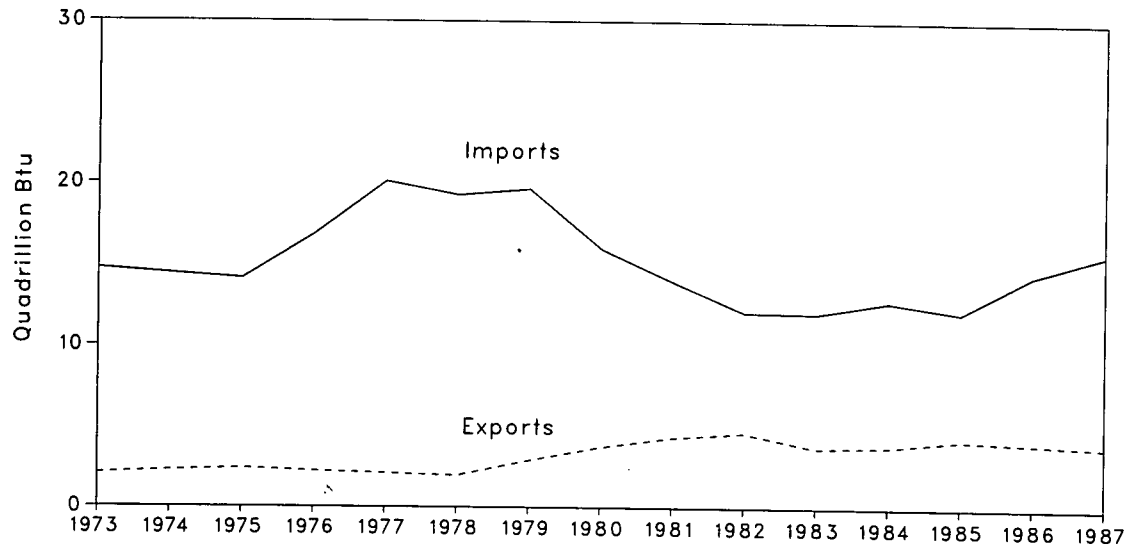
Table 1.4 Consumption of Energy by Source
(Quadrillion (10^{15}) Btu)

	Coal	Natural Gas[a]	Petro-leum	Hydro-electric Power[b]	Nuclear Electric Power	Other[c]	Total[d]	Year to Date
1973 Total	**12.971**	**22.512**	**34.840**	**3.010**	**0.910**	**0.039**	**74.282**	
1974 Total	**12.663**	**21.732**	**33.455**	**3.309**	**1.272**	**.112**	**72.543**	
1975 Total	**12.663**	**19.948**	**32.731**	**3.219**	**1.900**	**.086**	**70.546**	
1976 Total	**13.584**	**20.345**	**35.175**	**3.066**	**2.111**	**.081**	**74.362**	
1977 Total	**13.922**	**19.931**	**37.122**	**2.515**	**2.702**	**.097**	**76.288**	
1978 Total	**13.765**	**20.000**	**37.965**	**3.141**	**3.024**	**.193**	**78.089**	
1979 Total	**15.039**	**20.666**	**37.123**	**3.141**	**2.776**	**.152**	**78.898**	
1980 Total	**15.423**	**20.394**	**34.202**	**3.118**	**2.739**	**.079**	**75.955**	
1981 Total	**15.907**	**19.928**	**31.931**	**3.105**	**3.008**	**.111**	**73.990**	
1982 Total	**15.322**	**18.505**	**30.231**	**3.572**	**3.131**	**.086**	**70.848**	
1983 Total	**15.894**	**17.357**	**30.054**	**3.899**	**3.203**	**.118**	**70.524**	
1984 Total	**17.070**	**18.507**	**31.051**	**3.757**	**3.553**	**.163**	**74.101**	
1985 Total	**17.478**	**17.834**	**30.922**	**3.363**	**4.149**	**.199**	**73.945**	
1986 January	1.628	2.169	2.702	.259	.391	.023	7.173	7.173
February	1.415	1.904	2.455	.269	.353	.019	6.416	13.588
March	1.385	1.754	2.734	.319	.332	.019	6.543	20.132
April	1.265	1.373	2.592	.310	.329	.018	5.886	26.018
May	1.321	1.196	2.686	.312	.345	.016	5.875	31.893
June	1.464	1.070	2.609	.300	.338	.020	5.801	37.694
July	1.648	1.070	2.739	.280	.388	.019	6.145	43.838
August	1.515	1.037	2.791	.259	.405	.016	6.023	49.861
September	1.401	.987	2.586	.253	.395	.017	5.640	55.501
October	1.356	1.072	2.789	.252	.391	.017	5.877	61.377
November	1.367	1.314	2.637	.269	.377	.012	5.976	67.353
December	1.498	1.761	2.877	.302	.426	.020	6.885	74.238
Total	**17.262**	**16.708**	**32.196**	**3.385**	**4.471**	**.215**	**74.237**	
1987 January	1.563	2.115	2.794	.304	.432	.019	7.227	7.227
February	1.358	1.917	2.558	.265	.395	.020	6.512	13.738
March	1.372	1.767	2.707	.286	.403	.019	6.555	20.294
April	1.323	1.466	2.678	.276	.362	.020	6.124	26.418
May	1.419	1.221	2.684	.288	.371	.021	6.004	32.422
June	1.554	1.133	2.728	.259	.395	.023	6.091	38.513
July	1.732	1.133	2.866	.258	.433	.022	6.443	44.956
August	1.720	1.169	2.738	.237	.447	.022	6.333	51.290
September	1.484	1.091	2.702	.222	.428	.024	5.952	57.241
October	1.448	1.276	2.838	.220	.394	.022	6.198	63.440
November	1.434	1.481	2.649	.205	.404	.022	6.195	69.635
December	1.602	1.900	2.922	.250	.454	.019	7.147	76.781
Total	**18.008**	**17.668**	**32.865**	**3.070**	**4.916**	**.253**	**76.781**	
1988 January	1.692	R 2.256	2.885	.259	.482	.024	R 7.598	R 7.598
February	1.544	R 2.107	2.755	.226	.456	.019	R 7.108	R 14.706
March	1.490	R 1.927	2.936	.231	.474	.026	R 7.084	R 21.790
April	1.377	R 1.510	2.665	.223	.433	.023	R 6.231	R 28.021
May	1.427	R 1.355	2.700	.242	.439	.017	R 6.179	R 34.200
June	1.611	R 1.212	2.764	.219	.476	.024	R 6.308	R 40.508
July	R 1.749	R 1.223	2.773	.203	.538	.028	R 6.514	R 47.022
August	R 1.833	R 1.285	2.910	.206	.529	.024	R 6.788	R 53.810
September	R 1.539	R 1.146	2.726	.193	.500	.023	R 6.127	R 59.936
October	1.510	1.287	2.928	.179	.460	.024	6.387	66.323
10-Month Total	**15.771**	**15.308**	**28.042**	**2.183**	**4.787**	**.233**	**66.323**	
1987 10-Month Total	**14.972**	**14.288**	**27.294**	**2.615**	**4.059**	**.212**	**63.440**	
1986 10-Month Total	**14.398**	**13.633**	**26.682**	**2.814**	**3.668**	**.183**	**61.377**	

[a]Includes supplemental gaseous fuels.
[b]Includes industrial and utility production and net imports of electricity.
[c]Other 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: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration calculations based on data appearing elsewhere in this publication.

Figure 1.4 Energy Imports and Exports

Yearly



Monthly

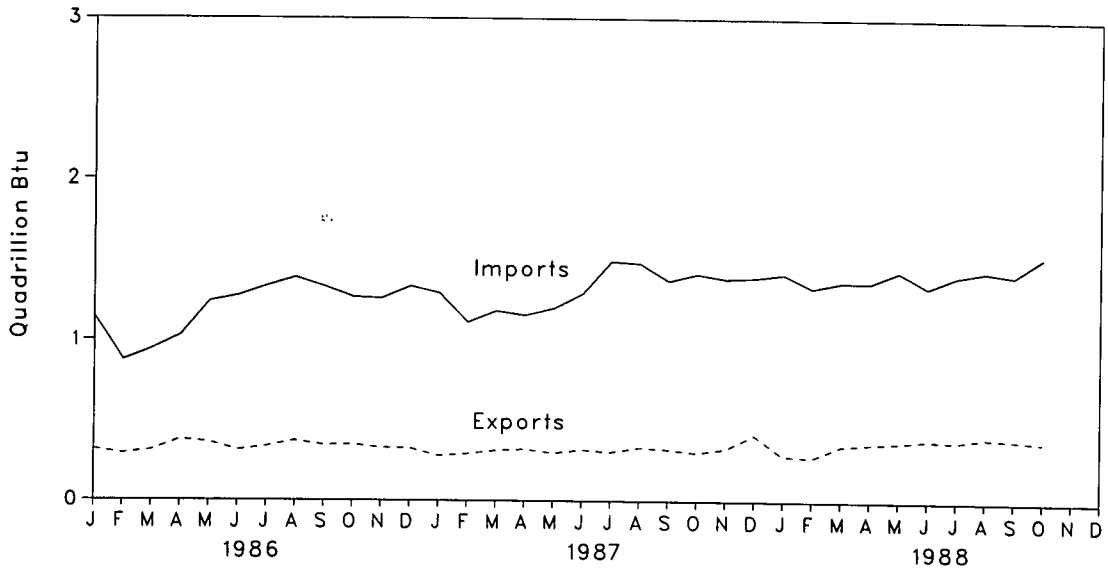


Table 1.5 Net Imports[a] of Energy by Source
(Quadrillion (10^{15}) Btu)

	Coal	Crude Oil[b]	Petroleum Products[c]	Natural Gas	Electricity[d]	Coal Coke	Total	Year to Date
1973 Total	**-1.422**	**6.883**	**6.097**	**0.981**	**0.148**	**-0.007**	**12.680**	
1974 Total	**-1.568**	**7.389**	**5.273**	**.907**	**.133**	**.056**	**12.190**	
1975 Total	**-1.738**	**8.708**	**3.800**	**.904**	**.064**	**.014**	**11.752**	
1976 Total	**-1.567**	**11.221**	**3.982**	**.922**	**.089**	**0**	**14.648**	
1977 Total	**-1.401**	**13.921**	**4.321**	**.981**	**.182**	**.015**	**18.019**	
1978 Total	**-1.004**	**13.125**	**3.932**	**.941**	**.204**	**.125**	**17.323**	
1979 Total	**-1.702**	**13.328**	**3.603**	**1.243**	**.211**	**.063**	**16.746**	
1980 Total	**-2.391**	**10.586**	**2.912**	**.957**	**.217**	**-.035**	**12.247**	
1981 Total	**-2.918**	**8.854**	**2.522**	**.857**	**.347**	**-.016**	**9.646**	
1982 Total	**-2.768**	**6.917**	**2.128**	**.898**	**.306**	**-.022**	**7.460**	
1983 Total	**-2.013**	**6.731**	**2.351**	**.887**	**.372**	**-.016**	**8.311**	
1984 Total	**-2.119**	**6.918**	**2.970**	**.792**	**.409**	**-.011**	**8.959**	
1985 Total	**-2.389**	**6.381**	**2.570**	**.894**	**.423**	**-.013**	**7.866**	
1986 January	-.152	.607	.240	.094	.037	0	.825	0.825
February	-.130	.464	.152	.071	.028	0	.584	1.409
March	-.159	.509	.206	.050	.025	-.001	.630	2.039
April	-.213	.636	.164	.037	.024	0	.648	2.686
May	-.220	.760	.262	.049	.029	-.003	.876	3.563
June	-.188	.779	.303	.038	.028	0	.960	4.523
July	-.200	.853	.274	.042	.031	-.002	.998	5.521
August	-.199	.847	.288	.045	.039	-.006	1.014	6.535
September	-.211	.863	.250	.049	.035	0	.986	7.521
October	-.187	.782	.227	.064	.031	-.001	.916	8.437
November	-.167	.797	.210	.064	.029	-.003	.929	9.366
December	-.167	.779	.279	.084	.034	-.001	1.007	10.374
Total	**-2.193**	**8.676**	**2.855**	**.686**	**.368**	**-.017**	**10.375**	
1987 January	-.141	.787	.231	.096	.040	-.001	1.012	1.012
February	-.120	.593	.220	.081	.044	.001	.819	1.831
March	-.167	.664	.248	.081	.045	-.002	.869	2.701
April	-.158	.689	.191	.065	.046	0	.833	3.534
May	-.169	.782	.194	.058	.037	0	.901	4.435
June	-.190	.831	.234	.053	.042	.002	.972	5.407
July	-.171	.942	.304	.061	.048	0	1.183	6.590
August	-.199	.982	.244	.070	.046	.001	1.144	7.734
September	-.171	.885	.230	.068	.033	.004	1.048	8.782
October	-.172	.926	.234	.088	.034	.002	1.111	9.893
November	-.183	.859	.246	.101	.030	.003	1.056	10.949
December	-.209	.809	.231	.116	.031	-.001	.976	11.925
Total	**-2.049**	**9.748**	**2.806**	**.936**	**.475**	**.009**	**11.925**	
1988 January	-.113	.807	.275	.128	E .028	.003	1.128	1.128
February	-.114	.778	.254	.111	E .026	.002	1.057	2.185
March	-.182	.837	.225	.104	E .028	.006	1.017	3.202
April	-.233	.887	.226	.092	E .024	.004	1.001	4.203
May	-.202	.932	.223	.088	E .021	-.002	1.060	5.264
June	-.205	.870	.168	.088	E .023	.005	.949	6.213
July	-.213	.882	.231	.094	E .027	.007	1.027	7.240
August	-.240	.894	.252	.088	E .035	.003	1.033	8.272
September	-.264	.896	.247	.112	E .024	.003	1.018	9.290
October	-.231	.983	.268	.101	E .022	.004	1.147	10.437
10-Month Total	**-1.997**	**8.766**	**2.369**	**1.004**	**E .259**	**.036**	**10.437**	
1987 10-Month Total	**-1.658**	**8.080**	**2.329**	**.720**	**.415**	**.007**	**9.893**	
1986 10-Month Total	**-1.858**	**7.100**	**2.366**	**.537**	**.305**	**-.013**	**8.437**	

[a]Net imports equals imports minus exports. Minus sign indicates exports are greater than imports.
[b]Includes crude oil, lease condensate, and imports of crude oil for the Strategic Petroleum Reserve.
[c]Includes petroleum products, unfinished oils, pentanes plus, and gasoline blending components.
[d]Assumed to be hydroelectricity and estimated at the average input heat rate for fossil fuel steam-electric power plant generation, which has ranged from 10.3 to 10.5 thousand Btu per kilowatthour since 1973. Actual rates applied in converting kilowatthour to Btu are listed by year in the "Conversion Factors" section of this publication.

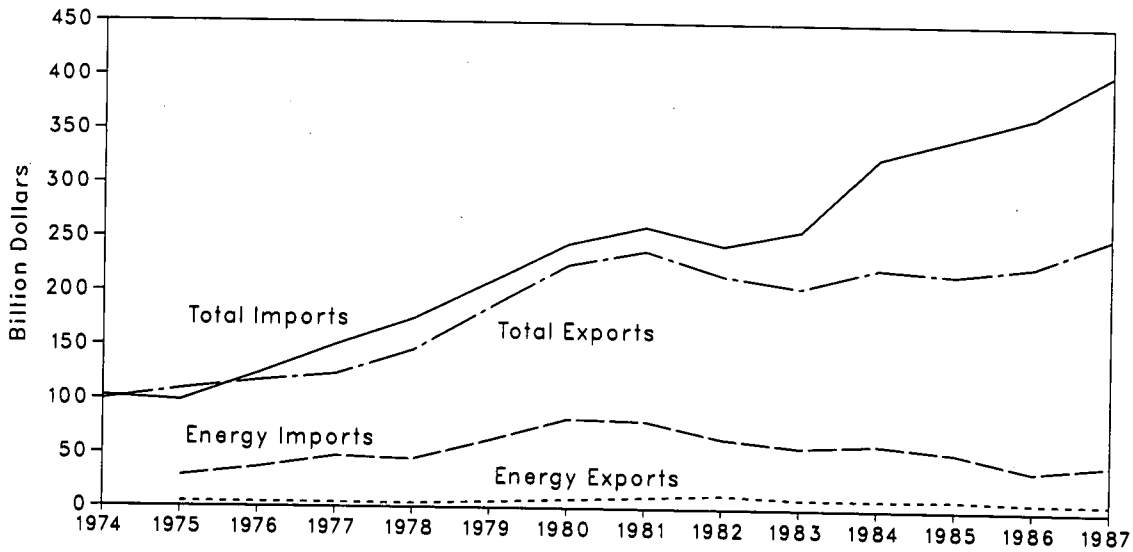
E=Estimate.

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

Source: Energy Information Administration calculations based on data appearing elsewhere in this publication.

Figure 1.5 Merchandise Trade Value

Yearly



Monthly

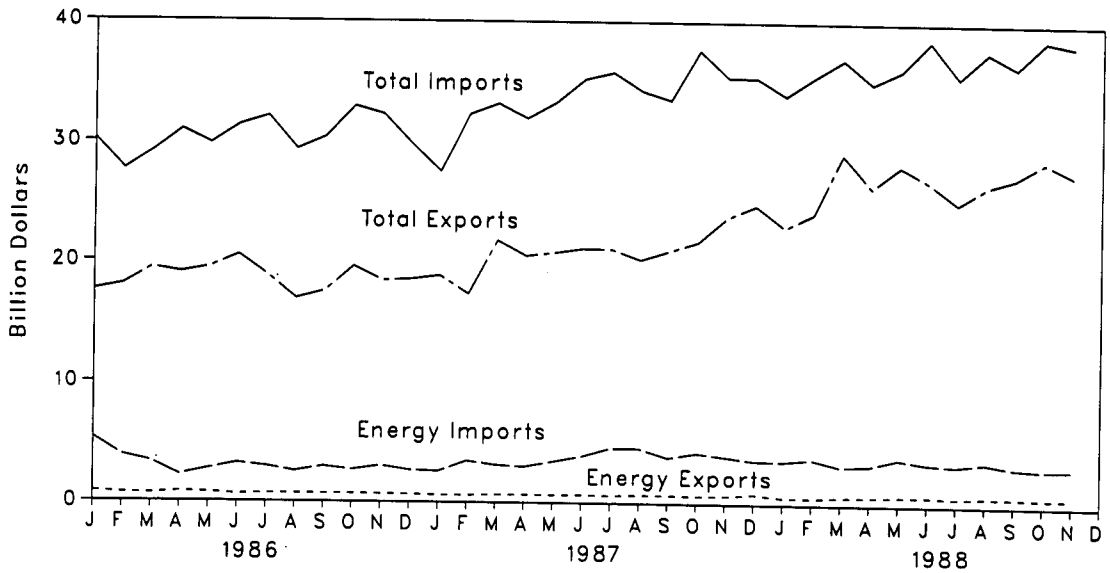


Table 1.6 Merchandise Trade Value
(Million Dollars)

	Exports			Imports			Trade Balance		
	Energy	All Other	Total	Energy	All Other	Total	Energy	All Other	Total
1974 Total	**NA**	**NA**	**99,437**	**NA**	**NA**	**102,559**	**NA**	**NA**	**-3,122**
1975 Total	**4,470**	**104,386**	**108,856**	**28,325**	**70,178**	**98,503**	**-23,855**	**34,208**	**10,353**
1976 Total	**4,226**	**112,568**	**116,794**	**36,384**	**87,093**	**123,477**	**-32,158**	**25,475**	**-6,683**
1977 Total	**4,184**	**118,998**	**123,182**	**47,153**	**103,237**	**150,390**	**-42,969**	**15,761**	**-27,208**
1978 Total	**3,882**	**141,965**	**145,847**	**44,763**	**129,994**	**174,757**	**-40,881**	**11,971**	**-28,910**
1979 Total	**5,675**	**180,688**	**186,363**	**63,077**	**146,381**	**209,458**	**-57,402**	**34,307**	**-23,095**
1980 Total	**7,982**	**217,584**	**225,566**	**82,924**	**161,947**	**244,871**	**-74,942**	**55,637**	**-19,305**
1981 Total	**10,279**	**228,436**	**238,715**	**81,360**	**179,622**	**260,982**	**-71,081**	**48,814**	**-22,267**
1982 Total	**12,729**	**203,713**	**216,442**	**65,409**	**178,543**	**243,952**	**-52,680**	**25,170**	**-27,510**
1983 Total	**9,500**	**196,139**	**205,639**	**57,952**	**200,096**	**258,048**	**-48,452**	**-3,957**	**-52,409**
1984 Total	**9,311**	**214,665**	**223,976**	**60,980**	**264,746**	**325,726**	**-51,669**	**-50,081**	**-101,750**
1985 Total	**9,971**	***208,844**	***218,815**	**53,917**	**291,359**	**345,276**	**-43,946**	***-82,515**	***-126,461**
1986 January	812	16,793	17,605	5,344	24,427	29,771	-4,532	-7,634	-12,166
February	676	17,377	18,053	3,874	23,206	27,080	-3,198	-5,829	-9,027
March	622	18,805	19,427	3,331	26,057	29,388	-2,709	-7,252	-9,961
April	791	18,248	19,039	2,176	28,481	30,657	-1,385	-10,233	-11,618
May	728	18,743	19,471	2,700	27,477	30,177	-1,972	-8,734	-10,706
June	584	19,913	20,497	3,185	27,524	30,709	-2,601	-7,611	-10,212
July	653	18,176	18,829	2,933	28,952	31,885	-2,280	-10,776	-13,056
August	661	16,662	17,323	2,511	26,969	29,480	-1,850	-10,307	-12,157
September	657	17,128	17,785	2,933	27,996	30,929	-2,276	-10,868	-13,144
October	670	19,687	20,357	2,662	30,165	32,827	-1,992	-10,478	-12,470
November	641	18,714	19,355	3,014	29,481	32,495	-2,373	-10,767	-13,140
December	620	18,797	19,417	2,647	27,393	30,040	-2,027	-8,596	-10,623
Total	**8,115**	**219,044**	**227,159**	**37,310**	**328,128**	**365,438**	**-29,195**	**-109,084**	**-138,279**
1987 January	573	16,773	17,346	2,564	28,235	30,799	-1,991	-11,462	-13,453
February	564	18,290	18,854	3,440	26,370	29,810	-2,876	-8,080	-10,956
March	620	21,216	21,836	3,120	29,344	32,464	-2,500	-8,128	-10,628
April	633	20,045	20,678	2,979	29,312	32,291	-2,346	-9,267	-11,613
May	623	20,137	20,760	3,425	29,745	33,170	-2,802	-9,608	-12,410
June	654	20,983	21,637	3,895	31,463	35,358	-3,241	-10,480	-13,721
July	605	20,774	21,379	4,593	31,217	35,810	-3,988	-10,443	-14,431
August	675	19,404	20,079	4,582	29,244	33,826	-3,907	-9,840	-13,747
September	657	20,527	21,184	3,830	29,838	33,668	-3,173	-9,311	-12,484
October	630	22,148	22,778	4,240	33,836	38,076	-3,610	-11,688	-15,298
November	660	22,619	23,279	3,940	31,271	35,211	-3,280	-8,652	-11,932
December	817	23,497	24,314	3,612	32,147	35,759	-2,795	-8,650	-11,445
Total	**7,713**	**246,409**	**254,122**	**44,220**	**362,021**	**406,241**	**-36,507**	**-115,612**	**-152,119**
1988 January	560	22,430	22,990	3,576	29,419	32,995	-3,016	-6,989	-10,005
February	548	23,591	24,139	3,795	31,774	35,569	-3,247	-8,183	-11,430
March	645	28,461	29,106	3,190	33,840	37,030	-2,545	-5,379	-7,924
April	678	25,657	26,335	3,281	31,746	35,027	-2,603	-6,089	-8,692
May	729	27,414	28,143	3,865	32,282	36,147	-3,136	-4,868	-8,004
June	753	26,086	26,839	3,491	35,099	38,590	-2,738	-9,013	-11,751
July	660	24,438	25,098	3,339	32,244	35,583	-2,679	-7,806	-10,485
August	727	25,811	26,538	3,608	34,133	37,741	-2,881	-8,322	-11,203
September	711	26,526	27,237	3,204	33,255	36,459	-2,493	-6,730	-9,223
October	656	R 27,969	R 28,625	3,057	R 35,674	R 38,731	-2,401	R -7,706	R -10,107
November	654	26,819	27,473	3,101	35,174	38,275	-2,447	-8,355	-10,802
11-Month Total	**7,322**	**285,199**	**292,521**	**37,505**	**364,642**	**402,147**	**-30,183**	**-79,442**	**-109,625**

R=Revised data. NA=Not available.

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, and Puerto Rico) and the Virgin Islands.

Additional Notes and Sources: See end of section.

Figure 1.6 Quarterly Energy Consumption per Dollar of Gross National Product (Seasonally Adjusted at Annual Rates)

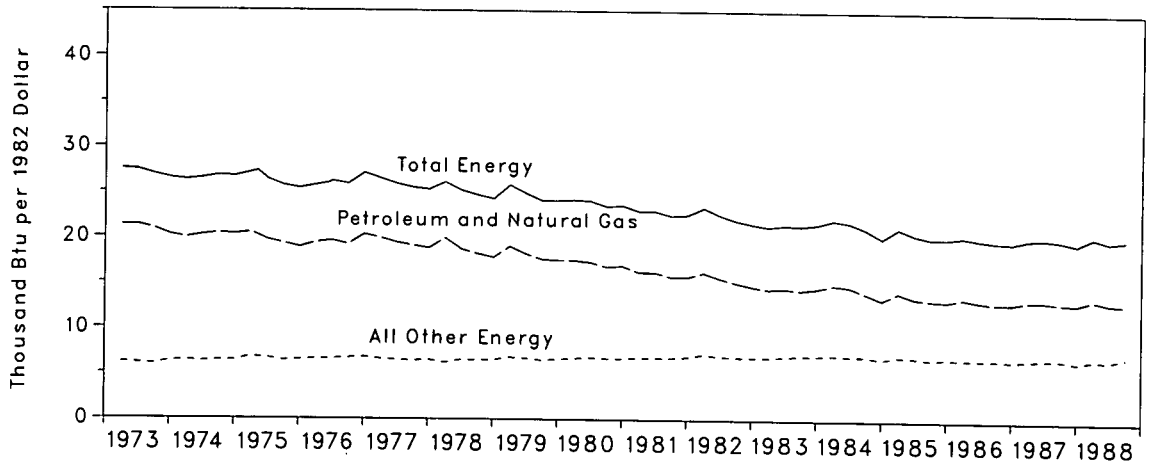


Table 1.7 Energy Consumption per Dollar of Gross National Product (Seasonally Adjusted at Annual Rates)

	Energy Consumption[a]	Gross National Product (GNP)	Energy Consumption per Dollar of GNP		
			Total Energy	Petroleum and Natural Gas	All Other Energy
	Quadrillion Btu	Trillion 1982 Dollars	Thousand Btu per 1982 Dollar		
1973 Year	**74.282**	**2.744**	**27.1**	**20.9**	**6.2**
1974 Year	**72.543**	**2.729**	**26.6**	**20.2**	**6.4**
1975 Year	**70.546**	**2.695**	**26.2**	**19.5**	**6.7**
1976 Year	**74.362**	**2.827**	**26.3**	**19.6**	**6.7**
1977 Year	**76.288**	**2.959**	**25.8**	**19.3**	**6.5**
1978 Year	**78.089**	**3.115**	**25.1**	**18.6**	**6.5**
1979 Year	**78.898**	**3.192**	**24.7**	**18.1**	**6.6**
1980 Year	**75.955**	**3.187**	**23.8**	**17.1**	**6.7**
1981 Year	**73.990**	**3.249**	**22.8**	**16.0**	**6.8**
1982 Year	**70.848**	**3.166**	**22.4**	**15.4**	**7.0**
1983 Year	**70.524**	**3.279**	**21.5**	**14.5**	**7.0**
1984 Year	**74.101**	**3.501**	**21.2**	**14.2**	**7.0**
1985 Year	**73.945**	**3.619**	**20.4**	**13.5**	**6.9**
1986 1st Quarter[b]	75.458	3.719	20.3	13.5	6.8
2nd Quarter[b]	74.380	3.712	20.0	13.2	6.8
3rd Quarter[b]	73.663	3.721	19.8	13.0	6.8
4th Quarter[b]	73.476	3.735	19.7	13.0	6.7
Year	**74.237**	**3.722**	**20.0**	**13.2**	**6.8**
1987 1st Quarter[b]	75.738	3.777	20.1	13.3	6.8
2nd Quarter[b]	77.043	3.823	20.2	13.3	6.9
3rd Quarter[b]	77.297	3.865	20.0	13.1	6.9
4th Quarter[b]	77.027	3.923	19.6	13.0	6.6
Year	**76.781**	**3.847**	**20.0**	**13.1**	**6.9**
1988 1st Quarter[b]	R 80.721	3.956	20.4	R 13.5	R 6.9
2nd Quarter[b]	R 79.398	3.985	19.9	13.1	6.8
3rd Quarter[b]	R 80.432	R 4.009	R 20.1	13.0	R 7.1

[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]Quarterly data are seasonally adjusted and shown at annual rates.

R=Revised data.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Yearly data may not equal average of quarters due to seasonality adjustments and independent rounding.

Sources: See end of section.

Figure 1.7 U.S. Dependence on Petroleum Net Imports

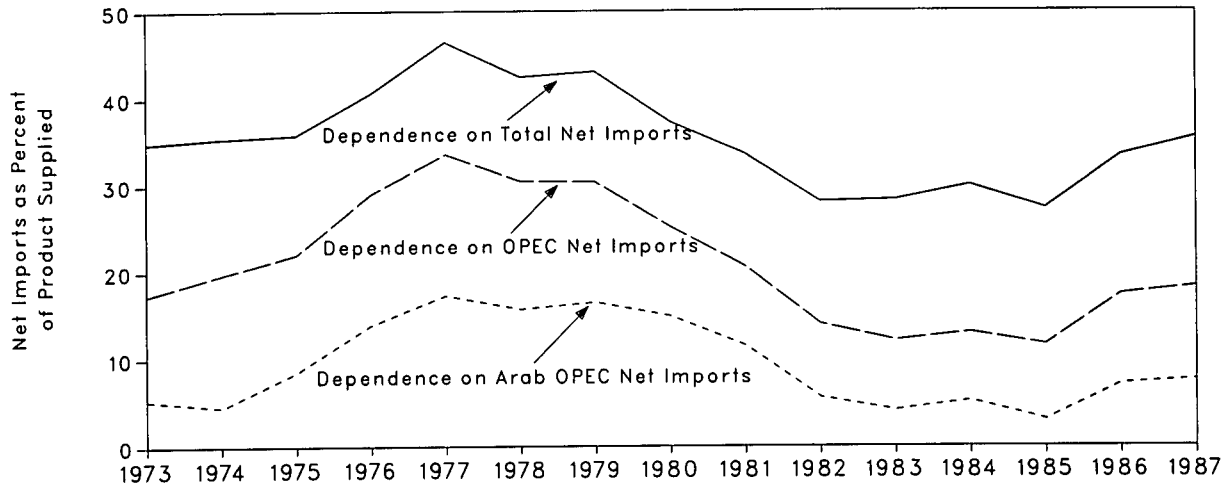


Table 1.8 U.S. Dependence on Petroleum Net Imports[a]

Annual Rate	Net Imports[b]			Petroleum Products Supplied	Net Imports as Percent of U.S. Petroleum Products Supplied		
	From Arab OPEC[c]	From OPEC[d]	From All Countries		From Arab OPEC[c]	From OPEC[d]	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 1st Quarter	845	2,086	4,177	16,183	5.2	12.9	25.8
2nd Quarter	1,131	2,766	5,493	15,996	7.1	17.3	34.3
3rd Quarter	1,359	3,337	6,310	16,282	8.3	20.5	38.8
4th Quarter	1,300	3,105	5,749	16,656	7.8	18.6	34.5
Average	**1,160**	**2,828**	**5,439**	**16,281**	**7.1**	**17.4**	**33.4**
1987 1st Quarter	1,077	2,608	5,252	16,575	6.5	15.7	31.7
2nd Quarter	968	2,734	5,514	16,455	5.9	16.6	33.5
3rd Quarter	1,501	3,607	6,697	16,710	9.0	21.6	40.1
4th Quarter	1,534	3,251	6,175	16,916	9.1	19.2	36.5
Average	**1,272**	**3,053**	**5,914**	**16,665**	**7.6**	**18.3**	**35.5**
1988 1st Quarter	1,668	3,155	6,006	17,443	9.6	18.1	34.4
2nd Quarter	1,640	3,355	6,240	16,533	9.9	20.3	37.7
3rd Quarter	1,975	3,545	6,353	16,917	11.7	21.0	37.6

37.3

[a]Beginning in October 1977, Strategic Petroleum Reserves are included.

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

[c]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."

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

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Annual averages may not equal average of quarters due to independent rounding.

Sources: See end of section.

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

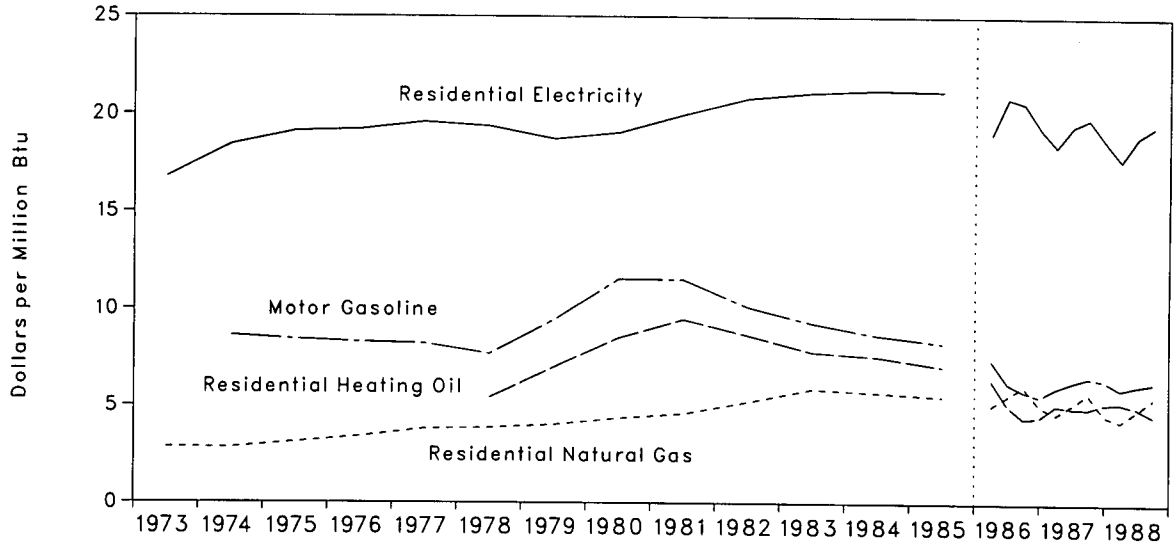


Table 1.9 Cost of Fuels to End Users in Constant (1982-84) Dollars[a]

	Leaded Regular Motor Gasoline		Residential Heating Oil		Residential Natural Gas		Residential Electricity[b]	
	Cent/Gal	$/MMBtu	Cent/Gal	$/MMBtu	Cent/Mcf	$/MMBtu	Cent/kWh	$/MMBtu
1973 Average	**NA**	**NA**	**NA**	**NA**	**290.5**	**2.85**	**5.72**	**16.77**
1974 Average	**107.9**	**8.63**	**NA**	**NA**	**290.1**	**2.83**	**6.29**	**18.43**
1975 Average	**105.4**	**8.43**	**NA**	**NA**	**317.8**	**3.12**	**6.52**	**19.12**
1976 Average	**103.7**	**8.29**	**NA**	**NA**	**348.0**	**3.41**	**6.56**	**19.21**
1977 Average	**102.6**	**8.21**	**NA**	**NA**	**387.8**	**3.81**	**6.68**	**19.59**
1978 Average	**96.0**	**7.68**	**75.2**	**5.42**	**392.6**	**3.86**	**5.08**	**19.37**
1979 Average	**118.0**	**9.44**	**97.0**	**6.99**	**410.5**	**4.03**	**6.39**	**18.73**
1980 Average	**144.5**	**11.56**	**118.2**	**8.52**	**446.6**	**4.36**	**6.50**	**19.06**
1981 Average	**144.2**	**11.53**	**131.4**	**9.47**	**471.9**	**4.60**	**6.82**	**19.99**
1982 Average	**126.6**	**10.12**	**120.2**	**8.67**	**535.8**	**5.22**	**7.11**	**20.83**
1983 Average	**116.2**	**9.29**	**108.2**	**7.80**	**608.4**	**5.90**	**7.21**	**21.13**
1984 Average	**108.7**	**8.69**	**105.0**	**7.57**	**589.0**	**5.72**	**7.26**	**21.27**
1985 Average	**103.6**	**8.29**	**97.9**	**7.06**	**568.8**	**5.52**	**7.24**	**21.22**
1986 1st Quarter	92.7	7.41	88.8	6.40	519.2	5.05	6.49	19.03
2nd Quarter	78.1	6.24	70.7	5.10	572.5	5.56	6.92	20.27
3rd Quarter	72.8	5.82	61.1	4.41	625.7	6.08	7.03	20.61
4th Quarter	69.4	5.55	62.2	4.49	522.6	5.08	6.60	19.35
Average	**78.2**	**6.25**	**76.3**	**5.50**	**531.9**	**5.17**	**6.76**	**19.82**
1987 1st Quarter	75.0	6.00	71.0	5.12	477.6	4.63	6.28	18.41
2nd Quarter	78.8	6.30	69.3	5.00	530.5	5.15	6.64	19.46
3rd Quarter	81.8	6.54	68.9	4.97	590.0	5.72	6.77	19.83
4th Quarter	80.1	6.40	71.8	5.18	474.0	4.60	6.39	18.72
Average	**79.0**	**6.31**	**70.7**	**5.10**	**487.7**	**4.73**	**6.52**	**19.12**
1988 1st Quarter	74.3	5.94	72.4	5.22	442.7	4.29	6.04	17.70
2nd Quarter	76.7	6.13	69.4	5.00	499.6	4.85	6.45	18.91
3rd Quarter	78.4	6.27	R 63.3	R 4.56	R 564.2	R 5.47	6.63	19.44

[a]Fuel costs shown on this page are calculated using the Urban Consumer Price Index developed by the Bureau of Labor Statistics. See Note 6 at end of section.

[b]Calculated from Table 9.9 "Old Series" for 1973 through 1985 and "New Series" for 1986 forward.

R=Revised data. NA=Not available.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Annual averages may not equal average of quarters due to independent rounding.

Sources: See end of section.

Figure 1.9 Passenger Car Efficiency

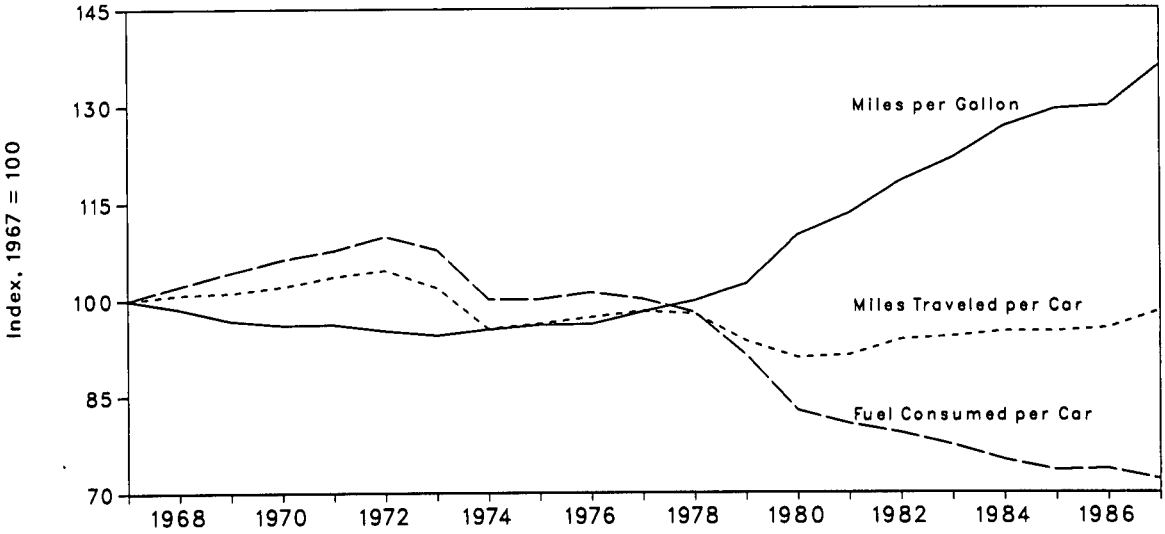


Table 1.10 Passenger Car Efficiency

	Average Fuel Consumed per Car		Average Miles Traveled per Car		Average Miles Traveled per Gallon of Fuel Consumed	
	Gallons	Index	Miles	Index	Miles	Index
1967	715	100.0	10,060	100.0	14.07	100.0
1968	731	102.2	10,144	100.8	13.87	98.6
1969	746	104.3	10,158	101.0	13.62	96.8
1970	760	106.3	10,272	102.1	13.52	96.1
1971	770	107.7	10,422	103.6	13.54	96.2
1972	785	109.8	10,521	104.6	13.40	95.2
1973	771	107.8	10,256	101.9	13.30	94.5
1974	716	100.1	9,606	95.5	13.42	95.4
1975	716	100.1	9,690	96.3	13.52	96.1
1976	723	101.1	9,785	97.3	13.53	96.2
1977	716	100.1	9,879	98.2	13.80	98.1
1978	701	98.0	9,835	97.8	14.04	99.8
1979	653	91.3	9,403	93.5	14.41	102.4
1980	591	82.7	9,141	90.9	15.46	109.9
1981	576	80.6	9,186	91.3	15.94	113.3
1982	566	79.2	9,428	93.7	16.65	118.3
1983	553	77.3	9,475	94.2	17.14	121.8
1984	536	75.0	9,558	95.0	17.83	126.7
1985	525	73.4	9,560	95.0	18.20	129.4
1986	526	73.6	9,608	95.5	18.27	129.9
1987[a]	515	72.0	9,883	98.2	19.17	136.2

[a]Preliminary data.
Note: Geographic coverage is the 50 States and the District of Columbia.
Sources: See end of section.

Table 1.11 Population-Weighted Heating Degree-Days[a]

Census Divisions	December 1 through December 31					Cumulative July 1 through December 31				
				Percent Change					Percent Change	
	Normal[b]	1987	1988	Normal to 1988	1987 to 1988	Normal[b]	1987	1988	Normal to 1988	1987 to 1988
New England CT, ME, MA, NH, RI, VT	1,098	1,012	1,118	1.8	10.5	2,419	2,435	2,530	4.6	3.9
Middle Atlantic NJ, NY, PA	1,013	907	1,014	.1	11.8	2,138	2,089	2,221	3.9	6.3
East North Central IL, IN, MI, OH, WI	1,126	993	1,110	-1.4	11.8	2,361	2,312	2,485	5.3	7.5
West North Central IA, KS, MN, MO, NE, ND, SD	1,208	1,081	1,143	-5.4	5.7	2,543	2,454	2,570	1.1	4.7
South Atlantic DE, FL, GA, MD and DC, NC, SC, VA, WV	593	518	588	-.8	13.5	1,146	1,103	1,184	3.3	7.3
East South Central AL, KY, MS, TN	700	603	681	-2.7	12.9	1,384	1,289	1,376	-.6	6.7
West South Central AR, LA, OK, TX	506	469	460	-9.1	-1.9	893	834	764	-14.4	-8.4
Mountain AZ, CO, ID, MT, NV, NM, UT, WY	944	982	963	2.0	-1.9	2,194	2,168	2,078	-5.3	-4.2
Pacific CA, OR, WA	557	601	567	1.8	-5.7	1,189	1,139	1,148	-3.4	.8
U.S. Average[c]	**846**	**774**	**834**	**-1.4**	**7.8**	**1,757**	**1,706**	**1,782**	**1.4**	**4.5**

[a]See Note 7 at end of section.
[b]Normal is based on calculations of data from 1951 through 1980.
[c]Excludes Alaska and Hawaii.
Source: See end of section.

Notes and Sources for the Energy Summary Section

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. The volumetric data are converted to approximate heat contents (Btu values) of these energy sources using the conversion factors provided in the Conversion Factors section of this publication.

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 using the conversion factors provided in the Conversion Factors section of this publication.

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 using the conversion factors provided in the Conversion Factors section of this publication. For further information on electricity, see "Note for imports and exports of electricity" under Note 7 of the Notes and Sources for the 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 using the conversion factors provided in the Conversion Factors section of this publication. For more information on electricity, see "Note for imports and exports of electricity" under Note 7 of the Notes and Sources for the 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.

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

"Imports" represent general imports (i.e., entries for immediate consumption, entries into customs bonded warehouses, and entries for the Strategic Petroleum Reserve). The statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory (which includes the 50 United States, the District of Columbia, and Puerto Rico) and the Virgin Islands. The statistics exclude imports into Guam, American Samoa, and other U.S. possessions, as well as shipments between the United States and Puerto Rico and the Virgin Islands, between the United States and other U.S. possessions, and between any two of those outlying areas.

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	1986:	1st Quarter	109.2
1974	49.3		2nd Quarter	109.0
1975	53.8		3rd Quarter	109.8
1976	56.9		4th Quarter	110.4
1977	60.6		Year	109.1
1978	65.2	1987:	1st Quarter	111.6
1979	72.6		2nd Quarter	113.1
1980	82.4		3rd Quarter	114.4
1981	90.9		4th Quarter	115.4
1982	96.5		Year	112.4
1983	99.6	1988:	1st Quarter	116.1
1984	103.9		2nd Quarter	117.5
1985	107.6		3rd Quarter	119.1

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 data bases maintained by the National Oceanic and Atmospheric Administra-

tion. 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

Merchandise Trade Value: 1974 through 1980: U.S. Department of Commerce, Bureau of the Census, "Highlights of U.S. Export and Import Trade," FT990 (January 1982), Appendix for total imports and exports. Energy imports and exports from U.S. Department of Commerce, Bureau of the Census, "Summary of U.S. Export and Import Merchandise Trade," December issues, plus Bureau of the Census reports EA691 "Exports from the Virgin Islands to Foreign Countries," and IA245V "U.S. Imports for Consumption and General Imports into the Virgin Islands." 1981 forward: U.S. Department of Commerce, Bureau of the Census, "Summary of U.S. Export and Import Merchandise Trade," most recent monthly issue.

Gross National Product: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business.*

U.S. Dependence on Petroleum Net Imports: Imports and products supplied--Section 3 of this publication. Exports--1973 through 1976: Bureau of Mines, *Mineral Industry Surveys.* 1977 through 1980: Energy Information Administration (EIA), *Energy Data Reports*, "Petroleum Statement, Annual". 1981-1986: EIA, *Petroleum Supply Annual.* 1987 forward: EIA, *Petroleum Supply Monthly.*

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

- Leaded Regular Motor Gasoline--Bureau of Labor Statistics (BLS).
- Residential Heating Oil--EIA, 1983 forward: EIA Form-782A, "Refiners/Gas Plant Operators' Monthly Petroleum Product Sales Report" and EIA Form-782B, "Resellers/Retailers' Monthly Petroleum Product Sales Report." Prices prior to 1983 are EIA estimates using data from FEA Form P112-M1/EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report" and EIA Form 9-A, "No. 2 Distillate Price Monitoring Report." See Note 6 in the Notes and Sources *Monthly Energy Review* Section 9, Price, for additional information.
- Residential Natural Gas--EIA, Annual data from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." Monthly data from Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."
- Residential Electricity--Federal Energy Regulatory Commission (FERC), 1973 through February 1980: FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income"; March 1980 forward: FERC Form 5, "Electric Utility Company Monthly Statement."
- Deflator (The Consumer Price Index, All Urban Consumers, All Items, 1982-84=100)--BLS.

Passenger Car Efficiency: Indices are prepared from statistics published by the U.S. Department of Transportation, Federal Highway Administration, Federal Highway Statistics Division. 1967-1985: "Highway Statistics Summary to 1985," Table VM-201A; 1986: "Highway Statistics 1986," Table VM-1.

Section 2. Consumption

U.S. total energy consumption in October 1988 was 6.4 quadrillion Btu. Petroleum products accounted for 46 percent[1] of the energy consumed in October 1988, while coal accounted for 24 percent and natural gas accounted for 20 percent.

Residential and commercial sector consumption was 2.1 quadrillion Btu in October 1988, up 5 percent from the October 1987 level. The sector accounted for 32 percent of October 1988 total consumption, about the same share as in October 1987.

Industrial sector consumption was 2.5 quadrillion Btu in October 1988, up 4 percent from the October 1987 level. The industrial sector accounted for 39 percent of October 1988 total consumption, up 1 percentage point from its 38-percent share in October 1987.

Transportation sector consumption of energy was 1.9 quadrillion Btu in October 1988, down slightly from the October 1987 level. The sector consumed 29 percent of October 1988 total consumption, down 1 percentage point from its 30-percent share in October 1987.

Electric utility consumption of energy totaled 2.2 quadrillion Btu in October 1988, up 4 percent from the October 1987 level. Coal contributed 56 percent of the energy consumed by electric utilities in October 1988, while nuclear electric power contributed 21 percent; natural gas and hydroelectric power 8 percent each; petroleum, 6 percent; and wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, about 1 percent.

Table 2.1 Energy Consumption Summary for October 1988
(Quadrillion (10^{15}) Btu)

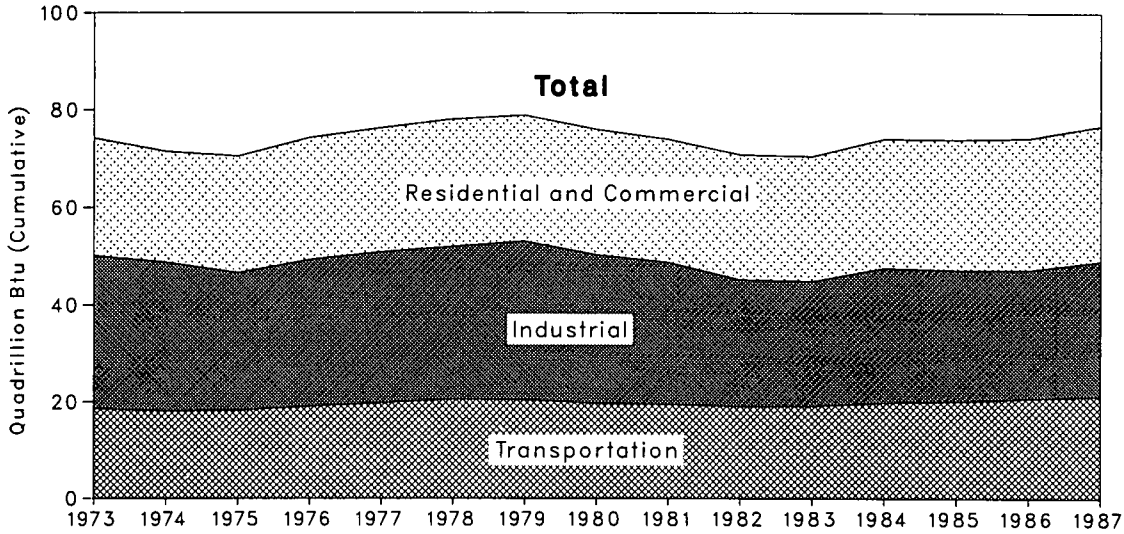
Energy Source	Sector				Total
	Residential and Commercial	Industrial	Transportation	Electric Utilities	
Coal	0.018	0.237	[a]	1.258	1.510
Natural Gas[b]	.402	.653	0.044	.187	1.287
Petroleum Products	.224	.757	1.809	.138	2.928
Hydroelectric Power	-	.002	-	.177	.179
Nuclear Electric Power	-	-	-	.460	.460
Net Imports of Coal Coke	-	.004	-	-	.004
Other[c]	-	-	-	.020	.020
Primary Consumption	**.644**	**1.653**	**1.853**	**2.240**	**6.387**
Electricity	.441	.256	.001		
Net Energy Consumption	**1.085**	**1.909**	**1.854**		**4.845**
Electrical System Energy Losses	.974	.565	.002		1.542
Total Energy Consumption[d]	**2.060**	**2.475**	**1.857**		**6.387**

[a]Small amounts of coal consumed for transportation are reported as industrial sector consumption.
[b]Includes supplemental gaseous fuels. Transportation sector is pipeline fuel only.
[c]Other is electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
[d]Excludes wood, waste, geothermal, wind, photovotaic, and solar thermal energy except for small amounts used by electric utilities to generate electricity for distribution.
Note: Totals may not equal sum of components due to independent rounding and the use of sector-specific conversion factors.
Additional Notes and Sources: See end of section.

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

Figure 2.1 Consumption of Energy by End-Use Sector

Yearly



Monthly

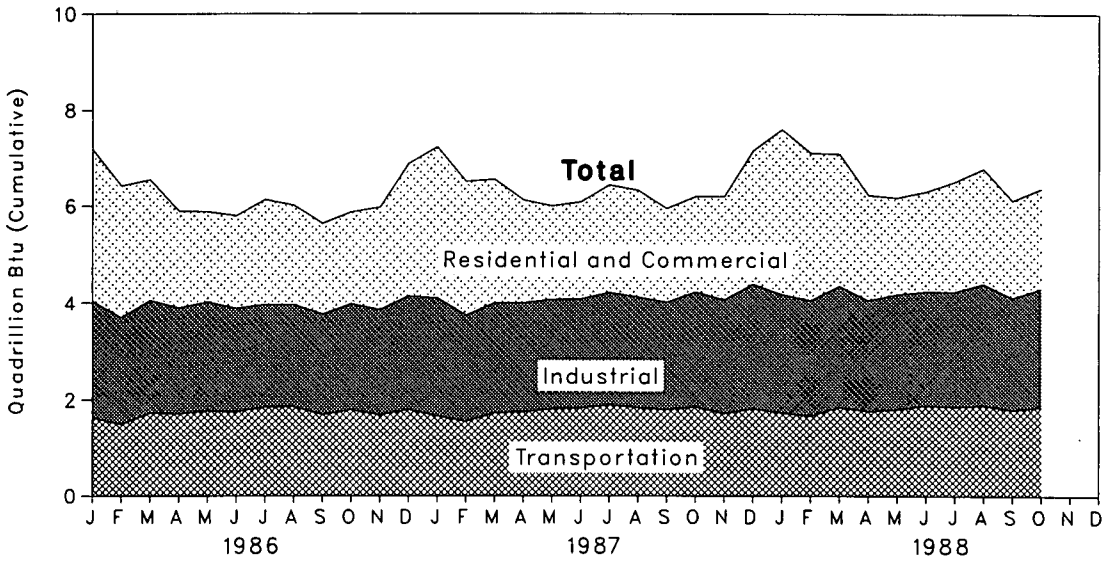


Table 2.2 Consumption of Energy by End-Use Sector
(Quadrillion (10^{15}) Btu)

	Residential and Commercial		Industrial		Transportation		Total Net	Total Gross
	Net	Gross	Net	Gross	Net	Gross		
1973 Total	**15.766**	**24.143**	**25.926**	**31.537**	**18.575**	**18.595**	**60.274**	**74.282**
1974 Total	**15.246**	**23.724**	**24.997**	**30.699**	**18.091**	**18.113**	**58.341**	**72.543**
1975 Total	**15.200**	**23.900**	**22.742**	**28.406**	**18.215**	**18.240**	**56.157**	**70.546**
1976 Total	**15.997**	**25.020**	**24.045**	**30.241**	**19.068**	**19.093**	**59.119**	**74.362**
1977 Total	**15.828**	**25.387**	**24.605**	**31.087**	**19.783**	**19.808**	**60.223**	**76.288**
1978 Total	**16.023**	**26.088**	**24.659**	**31.410**	**20.567**	**20.589**	**61.251**	**78.089**
1979 Total	**15.709**	**25.809**	**25.687**	**32.623**	**20.439**	**20.464**	**61.836**	**78.898**
1980 Total	**15.075**	**25.653**	**23.852**	**30.607**	**19.669**	**19.695**	**58.597**	**75.955**
1981 Total	**14.540**	**25.243**	**22.544**	**29.249**	**19.470**	**19.496**	**56.556**	**73.990**
1982 Total	**14.630**	**25.631**	**20.018**	**26.142**	**19.040**	**19.066**	**53.697**	**70.848**
1983 Total	**14.396**	**25.631**	**19.396**	**25.752**	**19.108**	**19.134**	**52.907**	**70.524**
1984 Total	**15.007**	**26.486**	**21.059**	**27.732**	**19.852**	**19.881**	**55.920**	**74.101**
1985 Total	**14.898**	**26.754**	**20.410**	**27.071**	**20.091**	**20.123**	**55.397**	**73.945**
1986 January	2.034	3.142	1.880	2.387	1.642	1.644	5.556	7.173
February	1.795	2.721	1.736	2.209	1.485	1.488	5.013	6.416
March	1.573	2.501	1.802	2.320	1.724	1.726	5.095	6.543
April	1.152	2.001	1.669	2.185	1.705	1.707	4.519	5.886
May	.945	1.868	1.668	2.240	1.769	1.772	4.378	5.875
June	.860	1.915	1.569	2.131	1.751	1.753	4.181	5.801
July	.905	2.176	1.525	2.113	1.846	1.849	4.283	6.145
August	.905	2.058	1.566	2.102	1.856	1.858	4.331	6.023
September	.869	1.876	1.545	2.070	1.690	1.692	4.106	5.640
October	.960	1.898	1.651	2.182	1.793	1.795	4.406	5.877
November	1.170	2.120	1.628	2.167	1.685	1.687	4.485	5.976
December	1.661	2.742	1.806	2.341	1.796	1.799	5.265	6.885
Total	**14.827**	**27.017**	**20.043**	**26.446**	**20.746**	**20.775**	**55.616**	**74.237**
1987 January	1.973	3.123	1.910	2.434	1.666	1.668	5.551	7.227
February	1.827	2.770	1.723	2.187	1.551	1.554	5.101	6.512
March	1.582	2.558	1.740	2.268	1.727	1.729	5.049	6.555
April	1.243	2.130	1.726	2.245	1.751	1.753	4.716	6.124
May	.954	1.935	1.678	2.256	1.813	1.815	4.442	6.004
June	.891	2.003	1.656	2.251	1.831	1.834	4.382	6.091
July	.943	2.221	1.717	2.322	1.894	1.897	4.558	6.443
August	.945	2.207	1.699	2.285	1.836	1.839	4.482	6.333
September	.927	1.936	1.690	2.220	1.794	1.796	4.410	5.952
October	1.038	1.969	1.823	2.374	1.855	1.858	4.713	6.198
November	1.201	2.131	1.793	2.348	1.717	1.720	4.707	6.195
December	1.661	2.754	2.009	2.578	1.815	1.818	5.482	7.147
Total	**15.182**	**27.734**	**21.164**	**27.769**	**21.252**	**21.282**	**57.595**	**76.781**
1988 January	R 2.201	R 3.415	R 1.898	R 2.447	1.733	1.735	R 5.833	R 7.598
February	R 2.008	R 3.051	R 1.869	R 2.383	1.671	1.673	R 5.548	R 7.108
March	R 1.706	R 2.728	R 1.958	R 2.507	1.850	1.852	R 5.511	R 7.084
April	R 1.266	R 2.175	R 1.759	R 2.291	1.767	1.769	R 4.789	R 6.231
May	R 1.034	R 1.998	R 1.789	R 2.381	1.802	1.804	R 4.620	R 6.179
June	R .925	R 2.062	R 1.733	R 2.356	1.886	1.889	R 4.545	R 6.308
July	R .958	R 2.270	R 1.742	R 2.382	1.858	1.860	R 4.560	R 6.514
August	R 1.011	R 2.377	R 1.867	R 2.516	1.889	1.891	R 4.770	R 6.788
September	R .960	R 2.010	R 1.780	R 2.315	1.801	1.803	R 4.540	R 6.127
October	1.085	2.060	1.909	2.475	1.854	1.857	4.845	6.387
10-Month Total	**13.155**	**24.146**	**18.304**	**24.051**	**18.110**	**18.134**	**49.561**	**66.323**
1987 10-Month Total	**12.322**	**22.852**	**17.362**	**22.842**	**17.718**	**17.743**	**47.406**	**63.440**
1986 10-Month Total	**11.998**	**22.157**	**16.610**	**21.938**	**17.260**	**17.284**	**45.867**	**61.377**

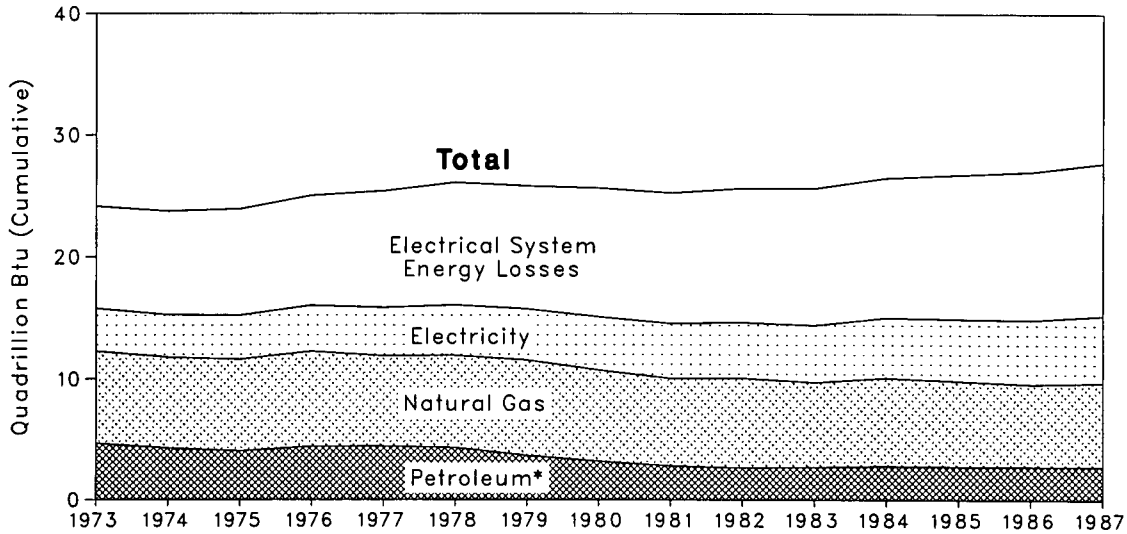
R=Revised data.

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.

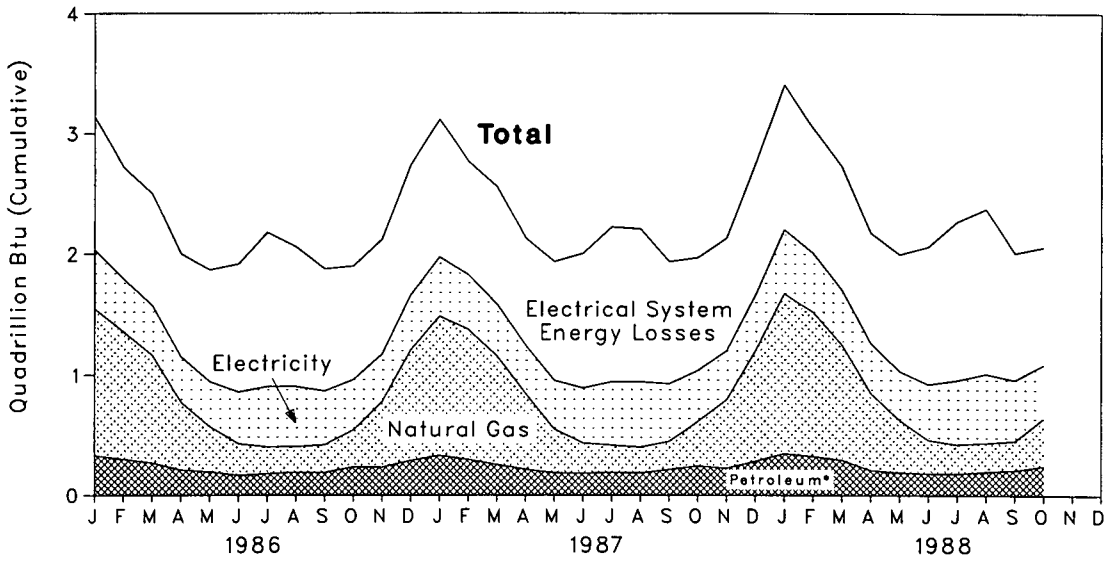
Additional Notes and Sources: See end of section.

Figure 2.2 Consumption of Energy by the Residential and Commercial Sector

Yearly



Monthly



*Includes coal.

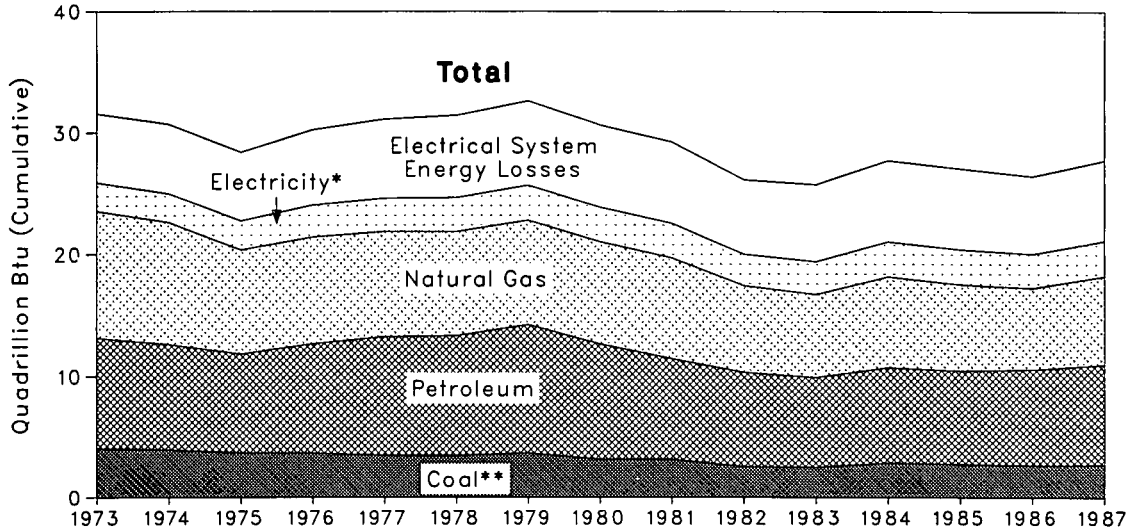
Table 2.3 Consumption of Energy by the Residential and Commercial Sector
(Quadrillion (10^{15}) Btu)

	Coal	Natural Gas[a]	Petroleum	Electricity[b]	Net Energy	Electrical System Energy Losses	Total[c]	Year to Date
1973 Total	**0.254**	**7.626**	**4.391**	**3.495**	**15.766**	**8.377**	**24.143**	
1974 Total	**.257**	**7.518**	**3.996**	**3.475**	**15.246**	**8.478**	**23.724**	
1975 Total	**.209**	**7.581**	**3.805**	**3.604**	**15.200**	**8.700**	**23.900**	
1976 Total	**.203**	**7.866**	**4.181**	**3.747**	**15.997**	**9.023**	**25.020**	
1977 Total	**.205**	**7.461**	**4.206**	**3.955**	**15.828**	**9.559**	**25.387**	
1978 Total	**.214**	**7.624**	**4.070**	**4.116**	**16.023**	**10.065**	**26.088**	
1979 Total	**.187**	**7.891**	**3.448**	**4.184**	**15.709**	**10.101**	**25.809**	
1980 Total	**.145**	**7.540**	**3.035**	**4.355**	**15.075**	**10.578**	**25.653**	
1981 Total	**.167**	**7.243**	**2.634**	**4.497**	**14.540**	**10.703**	**25.243**	
1982 Total	**.187**	**7.427**	**2.449**	**4.566**	**14.630**	**11.001**	**25.631**	
1983 Total	**.192**	**7.025**	**2.498**	**4.680**	**14.396**	**11.235**	**25.631**	
1984 Total	**.209**	**7.291**	**2.585**	**4.922**	**15.007**	**11.478**	**26.486**	
1985 Total	**.176**	**7.078**	**2.573**	**5.072**	**14.898**	**11.855**	**26.754**	
1986 January	.020	1.217	.308	.488	2.034	1.108	3.142	3.142
February	.018	1.060	.280	.437	1.795	.927	2.721	5.863
March	.013	.896	.254	.410	1.573	.928	2.501	8.365
April	.018	.568	.190	.375	1.152	.849	2.001	10.365
May	.011	.378	.182	.374	.945	.922	1.868	12.233
June	.009	.261	.154	.436	.860	1.056	1.915	14.149
July	.011	.221	.166	.507	.905	1.271	2.176	16.324
August	.010	.212	.178	.505	.905	1.153	2.058	18.383
September	.013	.228	.173	.454	.869	1.007	1.876	20.259
October	.015	.310	.216	.419	.960	.938	1.898	22.157
November	.016	.551	.212	.392	1.170	.949	2.120	24.276
December	.021	.924	.262	.454	1.661	1.081	2.742	27.018
Total	**.176**	**6.824**	**2.576**	**5.251**	**14.827**	**12.190**	**27.017**	
1987 January	.017	1.158	.308	.490	1.973	1.149	3.123	3.123
February	.015	1.083	.277	.452	1.827	.943	2.770	5.893
March	.011	.905	.239	.428	1.582	.976	2.558	8.450
April	.014	.634	.198	.397	1.243	.887	2.130	10.581
May	.009	.366	.174	.405	.954	.981	1.935	12.515
June	.007	.252	.172	.461	.891	1.112	2.003	14.518
July	.012	.226	.175	.530	.943	1.278	2.221	16.739
August	.011	.213	.172	.548	.945	1.262	2.207	18.946
September	.015	.233	.196	.483	.927	1.009	1.936	20.882
October	.015	.374	.226	.422	1.038	.932	1.969	22.852
November	.016	.572	.207	.406	1.201	.930	2.131	24.983
December	.021	.923	.258	.459	1.661	1.093	2.754	27.736
Total	**.162**	**6.938**	**2.602**	**5.481**	**15.182**	**12.552**	**27.734**	
1988 January	.019	R 1.329	.325	.528	R 2.201	1.214	R 3.415	R 3.415
February	.016	R 1.199	.304	.489	R 2.008	1.043	R 3.051	R 6.466
March	.012	R .962	.278	.454	R 1.706	1.022	R 2.728	R 9.194
April	.014	R .647	.192	.413	R 1.266	.909	R 2.175	R 11.369
May	.008	R .442	.180	.403	R 1.034	.965	R 1.998	R 13.367
June	.010	R .280	.169	.465	R .925	1.137	R 2.062	R 15.430
July	R .013	R .242	.166	.537	R .958	1.311	R 2.270	R 17.699
August	R .012	R .240	.183	.576	R 1.011	1.366	R 2.377	R 20.077
September	R .016	R .244	.191	.509	R .960	1.050	R 2.010	R 22.087
October	.018	.402	.224	.441	1.085	.974	2.060	24.146
10-Month Total	**.137**	**5.989**	**2.213**	**4.816**	**13.155**	**10.992**	**24.146**	
1987 10-Month Total	**.125**	**5.444**	**2.137**	**4.616**	**12.322**	**10.529**	**22.852**	
1986 10-Month Total	**.139**	**5.352**	**2.103**	**4.404**	**11.998**	**10.159**	**22.157**	

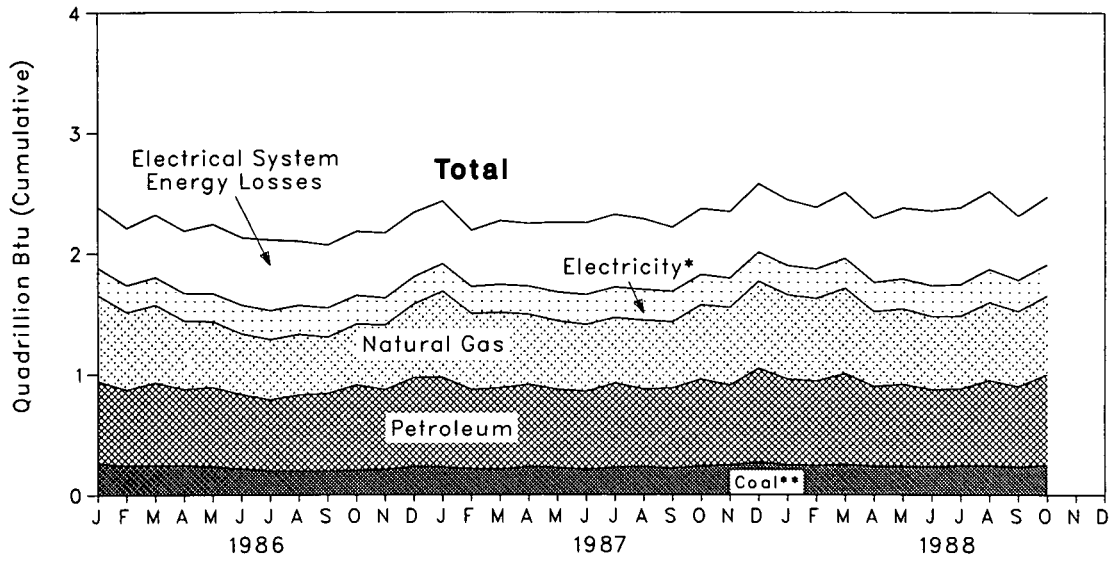
[a]Includes supplemental gaseous fuels.
[b]Includes electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
[c]Excludes wood, waste, geothermal wind, photovoltaic, and solar thermal energy except for small amounts used by electric utilities to 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 Consumption of Energy by the Industrial Sector

Yearly



Monthly



*Includes hydroelectric power.
**Includes net imports of coal coke.

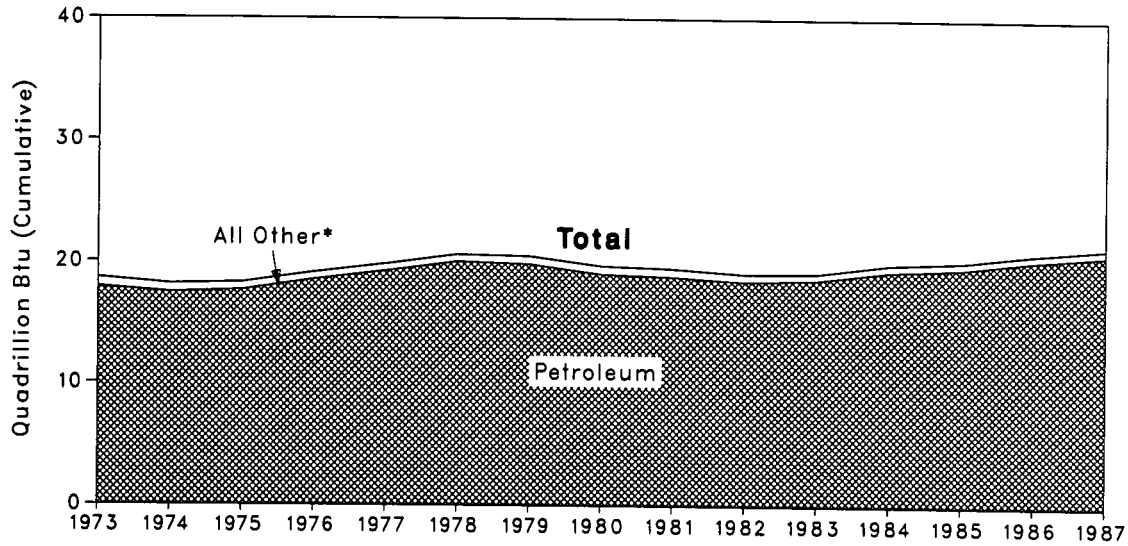
Table 2.4 Consumption of Energy by the Industrial Sector
(Quadrillion (10^{15}) Btu)

	Coal	Natural Gas[a]	Petroleum	Hydroelectric Power	Net Imports of Coal Coke	Electricity[b]	Net Energy	Electrical System Energy Losses	Total[c]	Year to Date
1973 Total	**4.057**	**10.388**	**9.113**	**0.035**	**-0.007**	**2.341**	**25.926**	**5.611**	**31.537**	
1974 Total	**3.870**	**10.003**	**8.698**	**.033**	**.056**	**2.337**	**24.997**	**5.701**	**30.699**	
1975 Total	**3.667**	**8.532**	**8.151**	**.032**	**.014**	**2.346**	**22.742**	**5.664**	**28.406**	
1976 Total	**3.661**	**8.761**	**9.018**	**.033**	**0**	**2.573**	**24.045**	**6.196**	**30.241**	
1977 Total	**3.454**	**8.636**	**9.786**	**.033**	**.015**	**2.682**	**24.605**	**6.481**	**31.087**	
1978 Total	**3.314**	**8.539**	**9.890**	**.032**	**.125**	**2.761**	**24.659**	**6.751**	**31.410**	
1979 Total	**3.593**	**8.549**	**10.576**	**.034**	**.063**	**2.873**	**25.687**	**6.935**	**32.623**	
1980 Total	**3.155**	**8.394**	**9.524**	**.033**	**-.035**	**2.781**	**23.852**	**6.755**	**30.607**	
1981 Total	**3.157**	**8.257**	**8.295**	**.033**	**-.016**	**2.817**	**22.544**	**6.705**	**29.249**	
1982 Total	**2.552**	**7.116**	**7.797**	**.033**	**-.022**	**2.542**	**20.018**	**6.124**	**26.142**	
1983 Total	**2.490**	**6.821**	**7.420**	**.033**	**-.016**	**2.648**	**19.396**	**6.356**	**25.752**	
1984 Total	**2.842**	**7.449**	**7.885**	**.033**	**-.011**	**2.862**	**21.059**	**6.674**	**27.732**	
1985 Total	**2.760**	**7.080**	**7.702**	**.033**	**-.013**	**2.850**	**20.410**	**6.661**	**27.071**	
1986 January	.259	.709	.686	.003	0	.223	1.880	.507	2.387	2.387
February	.239	.637	.634	.003	0	.223	1.736	.473	2.209	4.596
March	.240	.638	.693	.003	-.001	.229	1.802	.518	2.320	6.915
April	.239	.563	.637	.003	0	.228	1.669	.516	2.185	9.100
May	.231	.540	.664	.003	-.003	.232	1.668	.573	2.240	11.340
June	.212	.502	.620	.003	0	.232	1.569	.562	2.131	13.472
July	.196	.499	.593	.003	-.002	.235	1.525	.588	2.113	15.584
August	.199	.501	.635	.002	-.006	.235	1.566	.536	2.102	17.686
September	.193	.466	.647	.002	0	.237	1.545	.525	2.070	19.756
October	.198	.499	.715	.002	-.001	.237	1.651	.531	2.182	21.938
November	.208	.531	.668	.002	-.003	.223	1.628	.539	2.167	24.105
December	.229	.607	.742	.002	-.001	.225	1.806	.536	2.341	26.446
Total	**2.643**	**6.693**	**7.934**	**.032**	**-.017**	**2.758**	**20.043**	**6.402**	**26.446**	
1987 January	.225	.712	.748	.003	-.001	.224	1.910	.524	2.434	2.434
February	.207	.624	.665	.003	.001	.223	1.723	.465	2.187	4.621
March	.206	.620	.682	.003	-.002	.231	1.740	.528	2.268	6.889
April	.226	.576	.689	.003	0	.232	1.726	.519	2.245	9.134
May	.218	.561	.656	.003	0	.239	1.678	.578	2.256	11.390
June	.201	.548	.655	.003	.002	.247	1.656	.595	2.251	13.641
July	.221	.539	.703	.003	0	.251	1.717	.604	2.322	15.963
August	.224	.565	.652	.002	.001	.254	1.699	.586	2.285	18.247
September	.218	.542	.671	.002	.004	.254	1.690	.530	2.220	20.468
October	.228	.614	.727	.002	.002	.250	1.823	.551	2.374	22.842
November	.238	.640	.668	.002	.003	.242	1.793	.555	2.348	25.189
December	.262	.722	.785	.002	-.001	.239	2.009	.569	2.578	27.767
Total	**2.673**	**7.264**	**8.302**	**.032**	**.009**	**2.884**	**21.164**	**6.605**	**27.769**	
1988 January	.239	R .697	.717	.003	.003	.239	R 1.898	.549	R 2.447	R 2.447
February	.234	R .683	.707	.003	.002	.241	R 1.869	.514	R 2.383	R 4.830
March	.241	R .708	.757	.003	.006	.244	R 1.958	.549	R 2.507	R 7.337
April	.226	R .615	.670	.003	.004	.242	R 1.759	.532	R 2.291	R 9.628
May	.231	R .622	.687	.003	-.002	.247	R 1.789	.592	R 2.381	R 12.009
June	.222	R .600	.648	.003	.005	.255	R 1.733	.623	R 2.356	R 14.365
July	R .227	R .598	.646	.003	.007	.262	R 1.742	.640	R 2.382	R 16.746
August	R .230	R .645	.713	.002	.003	.273	R 1.867	.649	R 2.516	R 19.262
September	R .223	R .619	.674	.002	.003	.259	R 1.780	.534	R 2.315	R 21.577
October	.237	.653	.757	.002	.004	.256	1.909	.565	2.475	24.051
10-Month Total	**2.310**	**6.438**	**6.974**	**.028**	**.036**	**2.518**	**18.304**	**5.748**	**24.051**	
1987 10-Month Total	**2.173**	**5.902**	**6.849**	**.028**	**.007**	**2.403**	**17.362**	**5.480**	**22.842**	
1986 10-Month Total	**2.206**	**5.555**	**6.524**	**.028**	**-.013**	**2.310**	**16.610**	**5.328**	**21.938**	

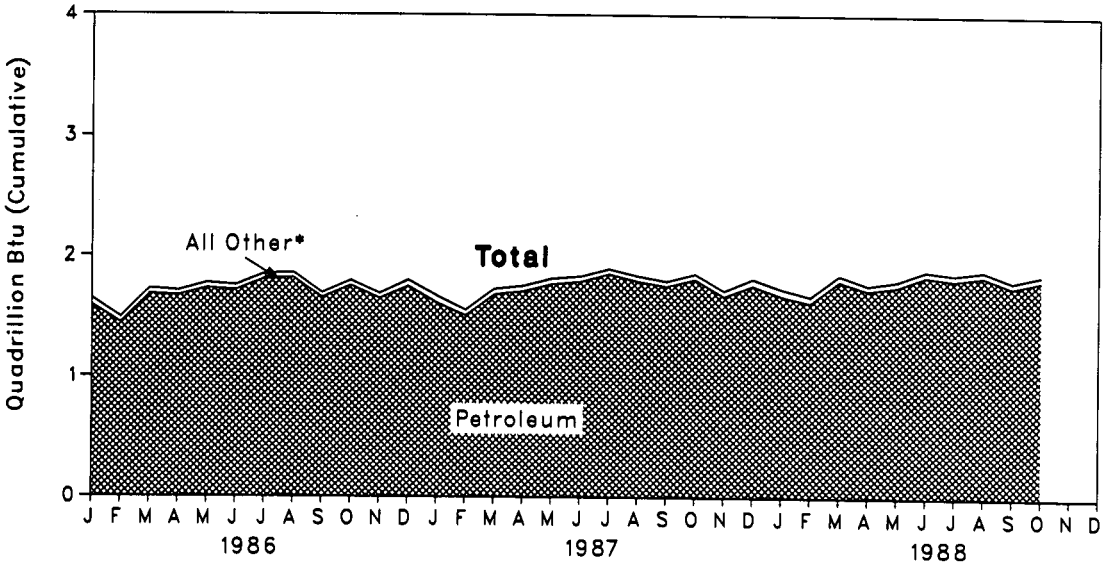
[a]Includes supplemental gaseous fuels.
[b]Includes electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
[c]Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy except for small amounts used by electric utilities 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 2.4 Consumption of Energy by the Transportation Sector

Yearly



Monthly



*Includes coal, natural gas, electricity, and electrical system energy losses.

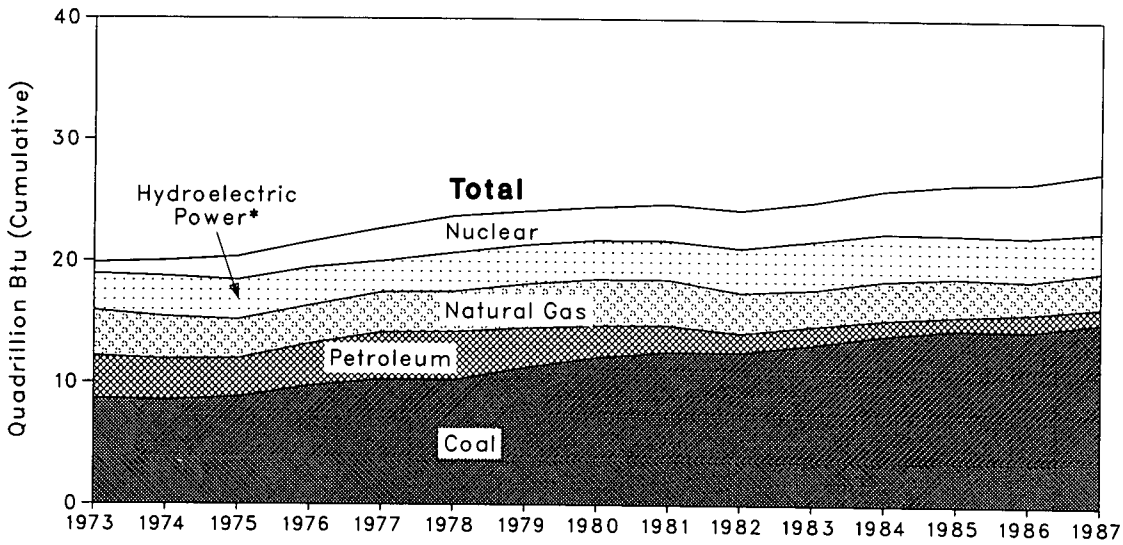
Table 2.5 Consumption of Energy by the Transportation Sector
(Quadrillion (10^{15}) Btu)

	Coal	Natural Gas[a]	Petroleum	Electricity[b]	Net Energy	Electrical System Energy Losses	Total[c]	Year to Date
1973 Total	0.003	0.743	17.821	0.008	18.575	0.020	18.595	
1974 Total	.002	.685	17.396	.009	18.091	.022	18.113	
1975 Total	.001	.595	17.610	.010	18.215	.025	18.240	
1976 Total	[d]	.559	18.499	.010	19.068	.025	19.093	
1977 Total	[d]	.543	19.230	.010	19.783	.025	19.808	
1978 Total	[e]	.539	20.019	.009	20.567	.022	20.589	
1979 Total	[e]	.612	19.817	.010	20.439	.025	20.464	
1980 Total	[e]	.650	19.009	.011	19.669	.026	19.695	
1981 Total	[e]	.658	18.800	.011	19.470	.026	19.496	
1982 Total	[e]	.612	18.417	.011	19.040	.026	19.066	
1983 Total	[e]	.505	18.592	.011	19.108	.026	19.134	
1984 Total	[e]	.545	19.295	.013	19.852	.029	19.881	
1985 Total	[e]	.519	19.558	.014	20.091	.032	20.123	
1986 January	[e]	.051	1.589	.001	1.642	.002	1.644	1.644
February	[e]	.044	1.440	.001	1.485	.002	1.488	3.132
March	[e]	.043	1.679	.001	1.724	.002	1.726	4.858
April	[e]	.037	1.667	.001	1.705	.002	1.707	6.565
May	[e]	.039	1.729	.001	1.769	.003	1.772	8.336
June	[e]	.038	1.712	.001	1.751	.002	1.753	10.090
July	[e]	.039	1.806	.001	1.846	.003	1.849	11.939
August	[e]	.039	1.816	.001	1.856	.002	1.858	13.797
September	[e]	.037	1.651	.001	1.690	.002	1.692	15.489
October	[e]	.039	1.753	.001	1.793	.002	1.795	17.284
November	[e]	.039	1.645	.001	1.685	.002	1.687	18.972
December	[e]	.048	1.747	.001	1.796	.003	1.799	20.771
Total	[e]	.499	20.235	.012	20.746	.029	20.775	
1987 January	[e]	.055	1.610	.001	1.666	.003	1.668	1.668
February	[e]	.046	1.504	.001	1.551	.002	1.554	3.222
March	[e]	.045	1.680	.001	1.727	.002	1.729	4.951
April	[e]	.043	1.707	.001	1.751	.002	1.753	6.704
May	[e]	.043	1.768	.001	1.813	.003	1.815	8.519
June	[e]	.041	1.789	.001	1.831	.003	1.834	10.353
July	[e]	.039	1.854	.001	1.894	.003	1.897	12.250
August	[e]	.041	1.794	.001	1.836	.003	1.839	14.089
September	[e]	.039	1.754	.001	1.794	.002	1.796	15.885
October	[e]	.042	1.812	.001	1.855	.002	1.858	17.743
November	[e]	.044	1.672	.001	1.717	.002	1.720	19.462
December	[e]	.053	1.761	.001	1.815	.003	1.818	21.280
Total	[e]	.535	20.704	.013	21.252	.030	21.282	
1988 January	[e]	.058	1.674	.001	1.733	.002	1.735	1.735
February	[e]	.051	1.619	.001	1.671	.002	1.673	3.408
March	[e]	.048	1.800	.001	1.850	.002	1.852	5.260
April	[e]	.042	1.724	.001	1.767	.002	1.769	7.030
May	[e]	.044	1.756	.001	1.802	.002	1.804	8.833
June	[e]	.043	1.842	.001	1.886	.003	1.889	10.722
July	[e]	.044	1.812	.001	1.858	.003	1.860	12.583
August	[e]	.044	1.843	.001	1.889	.003	1.891	14.474
September	[e]	.043	1.757	.001	1.801	.002	1.803	16.277
October	[e]	.044	1.809	.001	1.854	.002	1.857	18.134
10-Month Total	[e]	.463	17.637	.010	18.110	.023	18.134	
1987 10-Month Total	[e]	.436	17.271	.011	17.718	.025	17.743	
1986 10-Month Total	[e]	.407	16.842	.010	17.260	.024	17.284	

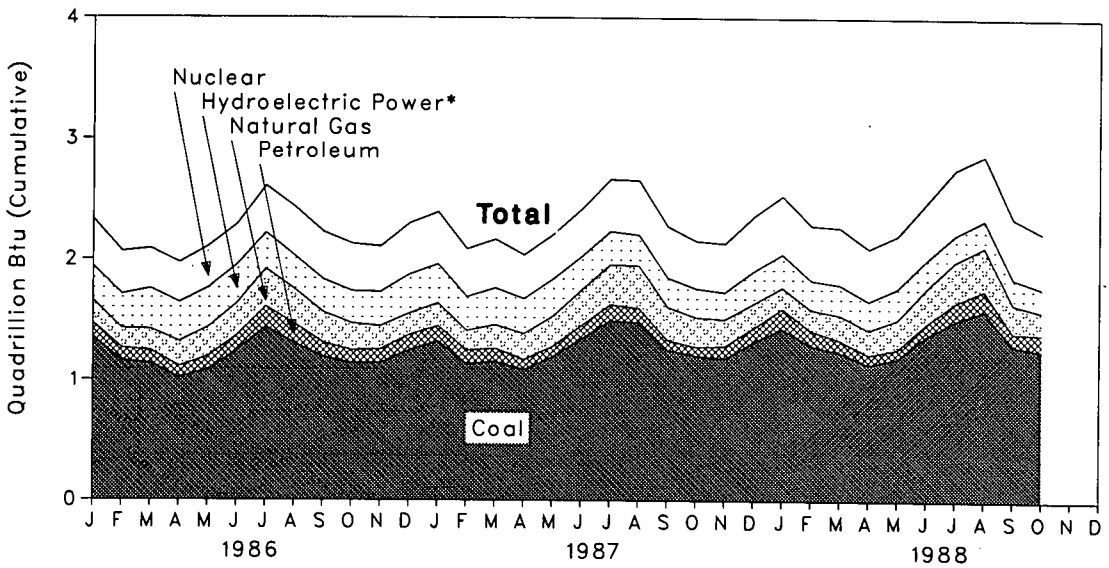
[a]Pipeline fuel only, including supplemental gaseous fuels.
[b]Includes electricity generated for distribution from wood, waste, geothermal, wind photovoltaic, and solar thermal energy.
[c]Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy for small amounts used by electric utilities to generate electricity for distribution.
[d]Less than 0.5 trillion Btu.
[e]Since 1978, the small amounts of coal consumed for transportation have been reported as industrial sector consumption.
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

Yearly



Monthly



*Includes other.

Table 2.6 Energy Input at Electric Utilities
(Quadrillion (10^{15}) Btu)

	Coal	Natural Gas[a]	Petro-leum[b]	Hydro-electric Power[c]	Nuclear Electric Power	Other[d]	Total	Year to Date
1973 Total	**8.658**	**3.748**	**3.515**	**2.975**	**0.910**	**0.046**	**19.852**	
1974 Total	**8.534**	**3.519**	**3.365**	**3.276**	**1.272**	**.056**	**20.022**	
1975 Total	**8.786**	**3.240**	**3.166**	**3.187**	**1.900**	**.072**	**20.350**	
1976 Total	**9.720**	**3.152**	**3.477**	**3.032**	**2.111**	**.081**	**21.574**	
1977 Total	**10.262**	**3.284**	**3.901**	**2.482**	**2.702**	**.082**	**22.713**	
1978 Total	**10.238**	**3.297**	**3.987**	**3.110**	**3.024**	**.068**	**23.724**	
1979 Total	**11.260**	**3.613**	**3.283**	**3.107**	**2.776**	**.089**	**24.128**	
1980 Total	**12.123**	**3.810**	**2.634**	**3.085**	**2.739**	**.114**	**24.505**	
1981 Total	**12.583**	**3.768**	**2.202**	**3.072**	**3.008**	**.127**	**24.760**	
1982 Total	**12.582**	**3.342**	**1.568**	**3.539**	**3.131**	**.108**	**24.270**	
1983 Total	**13.213**	**2.998**	**1.544**	**3.866**	**3.203**	**.133**	**24.956**	
1984 Total	**14.020**	**3.220**	**1.286**	**3.725**	**3.553**	**.174**	**25.977**	
1985 Total	**14.542**	**3.160**	**1.090**	**3.330**	**4.149**	**.213**	**26.484**	
1986 January	1.350	.190	.119	.256	.391	.023	2.329	2.329
February	1.161	.162	.101	.266	.353	.019	2.063	4.392
March	1.136	.175	.107	.317	.332	.020	2.088	6.480
April	1.014	.205	.097	.307	.329	.018	1.970	8.451
May	1.084	.239	.111	.308	.345	.018	2.105	10.556
June	1.242	.269	.123	.297	.338	.020	2.289	12.844
July	1.434	.311	.173	.278	.388	.021	2.605	15.449
August	1.301	.286	.163	.256	.405	.021	2.432	17.881
September	1.192	.255	.115	.251	.395	.018	2.226	20.107
October	1.141	.224	.105	.250	.391	.017	2.128	22.236
November	1.142	.193	.112	.267	.377	.015	2.106	24.342
December	1.246	.181	.126	.300	.426	.020	2.300	26.642
Total	**14.444**	**2.691**	**1.452**	**3.353**	**4.471**	**.231**	**26.642**	
1987 January	1.319	.191	.128	.301	.432	.020	2.391	2.391
February	1.135	.163	.111	.262	.395	.019	2.086	4.477
March	1.155	.197	.107	.283	.403	.021	2.166	6.643
April	1.087	.213	.084	.272	.362	.019	2.038	8.681
May	1.194	.250	.086	.285	.371	.020	2.206	10.887
June	1.342	.293	.112	.256	.395	.021	2.419	13.305
July	1.495	.329	.134	.255	.433	.022	2.667	15.973
August	1.481	.349	.120	.235	.447	.022	2.654	18.627
September	1.253	.277	.082	.220	.428	.020	2.280	20.907
October	1.207	.246	.073	.218	.394	.020	2.158	23.064
November	1.183	.224	.103	.203	.404	.020	2.136	25.200
December	1.322	.203	.117	.247	.454	.020	2.363	27.564
Total	**15.173**	**2.935**	**1.257**	**3.038**	**4.916**	**.244**	**27.564**	
1988 January	1.433	.172	.169	.256	.482	.021	2.532	2.532
February	1.294	.175	.125	.223	.456	.018	2.292	4.824
March	1.239	.209	.101	.228	.474	.021	2.272	7.096
April	1.142	.206	.079	.220	.433	.019	2.098	9.194
May	1.191	.247	.076	.239	.439	.018	2.210	11.404
June	1.377	.289	.105	.216	.476	.020	2.484	13.888
July	1.507	.339	.149	.201	.538	.021	2.754	16.642
August	1.588	.356	.171	.204	.529	.021	2.868	19.510
September	1.301	.240	.105	.191	.500	.020	2.356	21.867
October	1.258	.187	.138	.177	.460	.020	2.240	24.107
10-Month Total	**13.329**	**2.421**	**1.218**	**2.155**	**4.787**	**.197**	**24.107**	
1987 10-Month Total	**12.668**	**2.508**	**1.037**	**2.587**	**4.059**	**.205**	**23.064**	
1986 10-Month Total	**12.056**	**2.317**	**1.214**	**2.786**	**3.668**	**.196**	**22.236**	

[a]Includes supplemental gaseous fuels.
[b]Includes 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 and 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.

Notes and Sources for the Consumption Section

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 and Commercial Sector-- private household establishments (which consume energy primarily for space heating, water heating, air conditioning, refrigeration, cooking, and clothes drying); nonmanufacturing business establishments, including hotels, motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; health, social, and educational institutions; and Federal, State, and local governments. Street lights, pumps, bridges, and public swimming pools are also included.
- Industrial sector--manufacturing, construction, mining, agriculture, fishing, and forestry establishments.
- Transportation sector--private and public vehicles that move people and commodities. Included are automobiles, trucks, buses, motorcycles, railroads and railways (including streetcars), aircraft, ships, barges, and natural gas pipelines.
- Electric utility sector--privately- and publicly-owned establishments that generate electricity primarily for use by the public.

3. Conversion Factors: See the Conversion Factors section of this publication.

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

- 1973 through 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), EIA Form 759 (formerly FPC Form 4), "Monthly Power Plant Report."
- Other Industrial--October 1977 through December 1979: EIA, EIA Form 3, "Monthly Fuel Consumption Report - Manufacturing Plants"; January 1980 forward: EIA, EIA Form 3, "Quarterly Fuel Consumption Report - Manufacturing Plants" and EIA Form 6, "Coal Distribution Report."
- Coke Plants--October 1977 through December 1980: EIA, EIA Form 5/5A, "Coke and Coal Chemicals - Monthly/Annual"; January 1981 forward: EIA, EIA Form 5/5A, "Coke and Coal Chemicals - Quarterly/Annual."
- Residential and Commercial--October 1977 through December 1979: EIA, EIA Form 2, "Monthly Coal Report, Retail Dealers and Upper Lake Docks"; January 1980 forward: EIA, EIA Form 6, "Coal Distribution Report."

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

- 1973 through 1975: DOI, BOM, *Minerals Yearbook,* "Natural Gas" chapter.
- 1976 through 1978: EIA, *Energy Data Reports,* "Natural Gas, Annual."
- 1979: EIA, *Natural Gas Production and Consumption 1979.*
- 1980 through 1987: EIA, *Natural Gas Annual.*
- 1988 forward: EIA, EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," and EIA computations.
- Electric utilities consumption--1973 through 1976: FPC Form 4, "Monthly Power Plant Report." 1977 through 1981: Federal Energy Regulatory Commission (FERC), FPC Form 4, "Monthly Power Plant Report." 1982 forward: EIA, EIA Form 759, "Monthly Power Plant Report."
- American Gas Association, "Monthly Gas Utility Statistical Report."

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 through 1975: DOI, BOM, *Mineral Industry Surveys,* "Petroleum Statement, Annual."
- 1976 through 1980: EIA, *Energy Data Reports,* "Petroleum Statement, Annual."
- 1981 through 1986: EIA, *Petroleum Supply Annual.*
- 1987 forward: 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**

Electric Utility Sector, All Periods.

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

Non-Electric Utility Sectors, Annual Estimates Through 1986.

The aggregate non-electric utility use of distillate fuel is total distillate 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 distillate fuel delivered to end users, grouped into sectors from EIA's "Deliveries of Fuel Oil and Kerosene" ("Deliveries") reports (based primarily on data collected by Form EIA-821, previously Form EIA-172) as follows:

- Residential sector deliveries are directly from the "Deliveries" reports for 1979 through 1986. Prior to 1979, each year's deliveries subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares;

- Commercial sector deliveries are directly from the "Deliveries" reports for 1979 through 1986. Prior to 1979, each year's deliveries subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares;

- Industrial sector deliveries for 1979 through 1986 are the sum of deliveries for industrial, farm, oil company, off-highway, diesel, and all other uses. Prior to 1979, each year's deliveries 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; and

- Transportation sector deliveries are the sum of deliveries for railroad, vessel bunkering, on-highway diesel, and military uses for all years.

Non-Electric Utility Sectors, Monthly Estimates Through 1986.

- Residential and commercial sector monthly consumption is estimated by allocating the annual sector 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 through 1980 and the American Petroleum Institute for 1981 and 1982, and the Energy Information Administration, Form EIA-782-A, "Refiners/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale, for 1983 through 1986.

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

Non-Electric Utility Sectors, 1987 Forward.

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 1986.

- **Jet Fuel**--Through 1982, small amounts of kerosene-type jet fuel were consumed by the electric utility sector. Kerosene-type jet fuel deliveries to electric utilities as reported on the FERC-423 (formerly 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 deliveries grouped into end-use sectors from EIA's "Deliveries of Fuel Oil and Kerosene" ("Deliveries") reports (based primarily on data collected by Form EIA-821, previously Form EIA-172) as follows:

  - Residential sector deliveries are directly from the "Deliveries" reports for 1979 through 1986. Deliveries for 1986 are used as estimates for suc-

ceeding periods. Prior to 1979, each year's deliveries category called "heating" is split into residential, commercial, and industrial in proportion to the 1979 shares;

- Commercial sector deliveries are directly from the "Deliveries" reports for 1979 through 1986. Deliveries for 1986 are used as estimates for succeeding periods. Prior to 1979, each year's deliveries category called "heating" is split into residential, commercial, and industrial in proportion to the 1979 shares; and

- Industrial sector deliveries are directly from the "Deliveries" reports for 1979 through 1986. Deliveries for 1986 are used as estimates for succeeding periods. Prior to 1979, each year's deliveries 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 that is consumed in internal combustion engines is allocated between the transportation and industrial sectors according to a 5-year moving average of the percentage of carburetors sold to each end-use category. The proportions range from 31 percent transportation and 69 percent industrial in 1973 to 63 percent transportation and 37 percent industrial in 1985.

  - LPG consumed annually by the industrial sector is estimated as the difference between LPG's total supplied and the estimated consumption 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 for use 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 through 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 through 1986: American Petroleum Institute (API), "Sales of Natural Gas Liquids and Liquefied Refinery Gases" based on an LPG sales survey jointly sponsored by API, the Gas Processors Association, and the National Liquefied Petroleum Gas Association.

  - Succeeding periods: The 1986 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 those 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 formed from 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, miscellaneous use, and unclassified use;

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

  - 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 the electric utility sector is from EIA Form 759, "Monthly Power Plant Report" (formerly FPC Form 4). The remaining petroleum coke is assigned to the industrial sector.

- **Residual Fuel**

  Electric Utility Sector, All Periods.

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

products reported as "heavy oil" consumed at utilities.

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

Non-Electric Utility Sectors, Annual Estimates Through 1986.

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 delivered to end users, grouped into sectors from EIA's "Deliveries of Fuel Oil and Kerosene" ("Deliveries") reports (based primarily on data collected by Form EIA-821, previously Form EIA-172) as follows:

- Commercial sector deliveries are directly from the "Deliveries" reports for 1979 through 1986. Prior to 1979, each year's deliveries subtotal of the heating plus industrial category is split into commercial and industrial in proportion to the 1979 shares;

- Industrial sector deliveries for 1979 through 1986 are the sum of deliveries for industrial, oil company, and all other uses. Prior to 1979, each year's deliveries 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; and

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

Non-Electric Utility Sectors, Monthly Estimates Through 1986.

- 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 through 1980 and the American Petroleum Institute for 1981 and 1982, and the Energy Information Administration, Form EIA-782-A, "Refiners/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale, 1983 through 1986.

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

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

Non-Electric Utility Sectors, 1987 Forward.

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 1986.

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

Sources for industrial sector:

- 1973 through 1978: FPC Form 4, *Monthly Power Plant Report* for plants with generating capacity exceeding 10 megawatts and FPC Form 12-C, *Industrial Electric Generating Capacity*, for all other plants.
- 1979: FPC Form 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 through 1979; monthly generation estimated to be in proportion to each month's hydroelectricity generation in the electric utility industry in 1980.

Note for imports and exports of electricity:

- Monthly electricity imports and exports estimates for 1982 forward were revised in the May 1984 *MER*. The revisions do not cause discontinuity in the annual data series: the data continue to come from the same source. The monthly data series, however, are discontinuous because monthly data from January 1982 forward are now available from the same source as the annual data. Estimates for monthly values prior to 1982, published in previous issues, were developed by con-

verting the annual value to a daily rate and multiplying by the number of days in the month. Accordingly, month-to-month analyses are not comparable when taken across the transition date of January 1982. Monthly analyses on either side of that date will be comparable. There is no known bias in either the annual data or the monthly data since January 1982.

Sources for imports and exports of electricity:

- 1973 through 1980: DOE, Economic Regulatory Administration, "Report on Electric Energy Exchanges with Canada and Mexico."
- 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 through 1987: DOE, Economic Regulatory Administration, *Electricity Transactions Across International Borders* (DOE/RG-0069) from the ERA-781, "Annual Report of International Electric Import/Export Data."
- 1988 forward: EIA estimates.

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

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

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 through 1975: DOI, BOM, *Minerals Yearbook,* "Coke and Coal Chemicals," chapter.
- 1976 through 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: Sales of electricity represent consumption. From the sources cited below the following electricity sales categories are available: residential, commercial, industrial, and other. For the end-use estimates in this section, the "other" category (which is primarily sales for use in government buildings) is added to the commercial sector except for approximately 4 percent used by railroads and railways and accounted for in the transportation sector. Sales of electricity are converted into Btu at the rate of 3,412 Btu per kilowatthour.
Sources of sales data:

- 1973 through 1976: FPC, Form 5, "Monthly Statement of Electric Operating Revenue and Income."
- 1977 through February 1980: EIA, FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income."
- March 1980 through December 1982: EIA, FERC Form 5, "Electric Utility Company Monthly Statement."
- January 1983 forward: EIA, EIA Form 826, "Electric Utility Company Monthly Statement."

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 are 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 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

Domestic crude oil production during 1988 was estimated to be 8.1 million barrels per day, 3 percent[2] lower than during 1987.

Total petroleum imports[3] averaged 7.9 million barrels per day in December 1988, 5 percent more than the November 1988 rate and 16 percent more than the December 1987 rate. Total petroleum imports during 1988 averaged 7.2 million barrels per day, 8 percent more than the average imports during 1987.

In December 1988, 18.2 million barrels per day of petroleum products were supplied for domestic use, 5 percent more than in both the previous month and the level 1 year earlier. Motor gasoline accounted for 40 percent of the total; distillate fuel oil, 19 percent; and residual fuel oil, 10 percent.

Motor gasoline supplied during December 1988 averaged 7.3 million barrels per day, slightly lower than the rate in November 1988 but 1 percent above the rate in the previous December. During 1988 an average of 7.3 million barrels per day of motor gasoline were supplied, 1 percent more than during 1987. Stocks of motor gasoline totaled 229 million barrels at the end of December 1988, 8 million barrels above the stock level at the end of November 1988 and 3 million barrels above the stock level 1 year earlier.

In December 1988, 3.5 million barrels of distillate fuel oil were supplied per day, 12 percent higher than the November 1988 rate and 6 percent above the December 1987 rate. An average of 3.1 million barrels per day of distillate fuel oil were supplied during 1988, 4 percent higher than during 1987. Distillate fuel oil ending stocks for December 1988 were 126 million barrels, 3 million barrels lower than the previous month and 8 million barrels lower than the stock level 1 year earlier.

Residual fuel oil supplied in December 1988 averaged 1.8 million barrels per day, 25 percent higher than in November 1988 and 27 percent higher than the December 1987 rate. The 1988 annual average of residual fuel oil supplied was 1.3 million barrels per day, 6 percent higher than the average in 1987. Residual fuel oil stocks measured 45 million barrels at the end of December 1988, the same stock level as the previous month but 2 million barrels lower than the stock level 1 year earlier.

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 September 1988.

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

Table 3.1a Crude Oil[a] and Petroleum Products Overview

	Field Production			Stock Withdrawal[b]		Petroleum Products Supplied	Ending Stocks[c]
	Total Domestic[d]	Crude Oil	Natural Gas Plant Production	Crude Oil[e]	Petroleum Products		Crude Oil[e] 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**	I 1,074
1975 Average	**10,045**	**8,375**	**1,633**	I -17	I -15	**16,322**	**1,133**
1976 Average	**9,774**	**8,132**	H 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**	**-97**	**-42**	**17,056**	I 1,392
1981 Average	**10,230**	**8,572**	**1,609**	I -290	I 130	**16,058**	**1,484**
1982 Average	**10,252**	**8,649**	**1,550**	**-136**	**283**	**15,296**	I 1,430
1983 Average	**10,299**	**8,688**	**1,559**	I -214	I 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 January	10,911	9,137	1,711	-383	-151	16,088	1,535
February	10,916	9,173	1,696	-37	804	16,186	1,514
March	10,664	9,013	1,604	-345	1,160	16,276	1,489
April	10,435	8,864	1,523	41	262	15,945	1,479
May	10,440	8,838	1,543	260	-1,109	15,993	1,506
June	10,187	8,623	1,504	3	-1,238	16,049	1,543
July	10,225	8,660	1,507	-541	-422	16,307	1,573
August	9,875	8,374	1,445	242	-551	16,618	1,582
September	9,852	8,328	1,468	-217	-973	15,909	1,618
October	9,954	8,419	1,477	-233	476	16,602	1,610
November	10,061	8,412	1,569	95	-147	16,221	1,612
December	9,985	8,352	1,571	186	443	17,131	1,593
Average	**10,289**	**8,680**	**1,551**	**-78**	**-124**	**16,281**	
1987 January	10,139	8,480	1,582	-166	376	16,684	1,586
February	10,073	8,389	1,618	-22	831	16,908	1,563
March	10,131	8,464	1,598	-125	340	16,165	1,557
April	10,139	8,498	1,590	50	532	16,524	1,539
May	9,977	8,336	1,585	36	-116	16,026	1,542
June	9,906	8,279	1,578	-165	-42	16,830	1,548
July	9,895	8,251	1,582	33	-372	17,113	1,558
August	9,843	8,210	1,571	-345	-737	16,346	1,592
September	9,851	8,205	1,582	-220	-236	16,670	1,606
October	10,037	8,364	1,602	-661	523	16,941	1,610
November	10,112	8,397	1,637	-355	-478	16,343	1,635
December	10,001	8,318	1,621	405	482	17,445	1,607
Average	**10,008**	**8,349**	**1,595**	**-128**	**87**	**16,665**	
1988 January	E 9,874	E 8,245	1,569	56	285	17,224	1,597
February	E 10,016	E 8,376	1,594	-130	895	17,584	1,575
March	E 10,044	E 8,347	1,628	-212	748	17,530	1,559
April	E 9,935	E 8,268	1,609	-194	-450	16,440	1,578
May	E 9,881	E 8,203	1,624	-41	-1,049	16,117	1,612
June	E 9,815	E 8,158	1,605	-113	146	17,054	1,611
July	E 9,728	E 8,059	1,609	270	-788	16,555	1,627
August	E 9,756	E 8,063	1,624	495	-304	17,375	1,621
September	E 9,585	E 7,900	1,622	74	-296	16,816	1,627
October	E 9,703	E 7,974	1,665	-403	315	17,481	1,630
November	RE 9,711	RE 7,985	R 1,667	R -4	R -137	R 17,426	R 1,634
December	PE 9,743	PE 8,035	E 1,644	E 242	E 368	E 18,249	E 1,612
Average	PE **9,815**	PE **8,134**	E **1,622**	E **5**	E **-25**	E **17,154**	

[a]Includes lease condensate.
[b]A negative number indicates an increase in stocks and a positive number indicates a decrease.
[c]Stocks are totals as of end of period.
[d]Includes crude oil, natural gas plant liquids, other hydrocarbons, and alcohol.
[e]Includes stocks located in the Strategic Petroleum Reserve.
[f]Includes crude oil for storage in the Strategic Petroleum Reserve.
[g]Net imports equals imports minus exports.
[h]Due to a rounding difference, this value is 1,603 in the *Petroleum Supply Annual* and *Petroleum Supply Monthly*.
[I]In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stocks withdrawal calculations. See Note 4 at end of section.
Footnotes continued on following page.

Table 3.1b Crude Oil[a] and Petroleum Products Overview (continued)

	Imports			Exports			Net Imports[g]
	Total	Crude Oil[f]	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**	**471**	**235**	**236**	**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 January	5,573	3,472	2,101	859	159	700	4,714
February	4,676	2,968	1,709	876	162	715	3,800
March	4,712	2,988	1,724	732	212	520	3,980
April	5,439	3,684	1,755	850	94	756	4,589
May	6,400	4,250	2,150	724	98	625	5,676
June	6,848	4,635	2,213	642	240	401	6,206
July	6,942	4,726	2,216	685	65	620	6,256
August	7,168	4,859	2,309	868	233	635	6,300
September	7,090	5,031	2,059	714	161	553	6,375
October	6,427	4,419	2,008	831	151	680	5,597
November	6,592	4,615	1,977	821	115	706	5,771
December	6,700	4,412	2,288	820	159	661	5,881
Average	**6,224**	**4,178**	**2,045**	**785**	**154**	**631**	**5,439**
1987 January	6,353	4,385	1,968	703	84	619	5,650
February	5,984	3,866	2,118	977	284	694	5,007
March	5,794	3,779	2,015	720	150	570	5,074
April	5,911	4,132	1,779	870	247	624	5,041
May	6,073	4,340	1,732	666	69	597	5,407
June	6,769	4,807	1,962	669	116	554	6,099
July	7,588	5,295	2,293	680	149	531	6,908
August	7,454	5,510	1,944	664	141	523	6,790
September	7,178	5,110	2,068	795	116	680	6,382
October	7,068	5,142	1,926	646	84	562	6,422
November	7,068	5,013	2,055	737	164	573	6,331
December	6,833	4,640	2,194	1,057	220	838	5,776
Average	**6,678**	**4,674**	**2,004**	**764**	**151**	**613**	**5,914**
1988 January	6,900	4,619	2,281	891	212	679	6,009
February	6,995	4,692	2,303	867	149	718	6,128
March	6,727	4,788	1,938	839	218	622	5,888
April	7,050	5,126	1,924	678	117	562	6,371
May	7,218	5,234	1,983	817	141	676	6,401
June	6,885	5,055	1,830	941	141	800	5,944
July	6,994	5,006	1,988	831	191	640	6,164
August	7,174	5,039	2,135	817	155	661	6,357
September	7,220	5,183	2,037	675	122	554	6,545
October	7,666	5,542	2,124	737	171	566	6,929
November	R 7,544	R 5,017	R 2,527	R 721	R 151	R 569	R 6,823
December	E 7,933	E 5,322	E 2,610	E 707	E 147	E 560	E 7,225
Average	**E 7,193**	**E 5,054**	**E 2,140**	**E 793**	**E 160**	**E 634**	**E 6,400**

Footnotes continued.

PE=Preliminary estimate. R=Revised data. 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: See end of section.

Figure 3.1 Crude Oil and Natural Gas Liquids Production

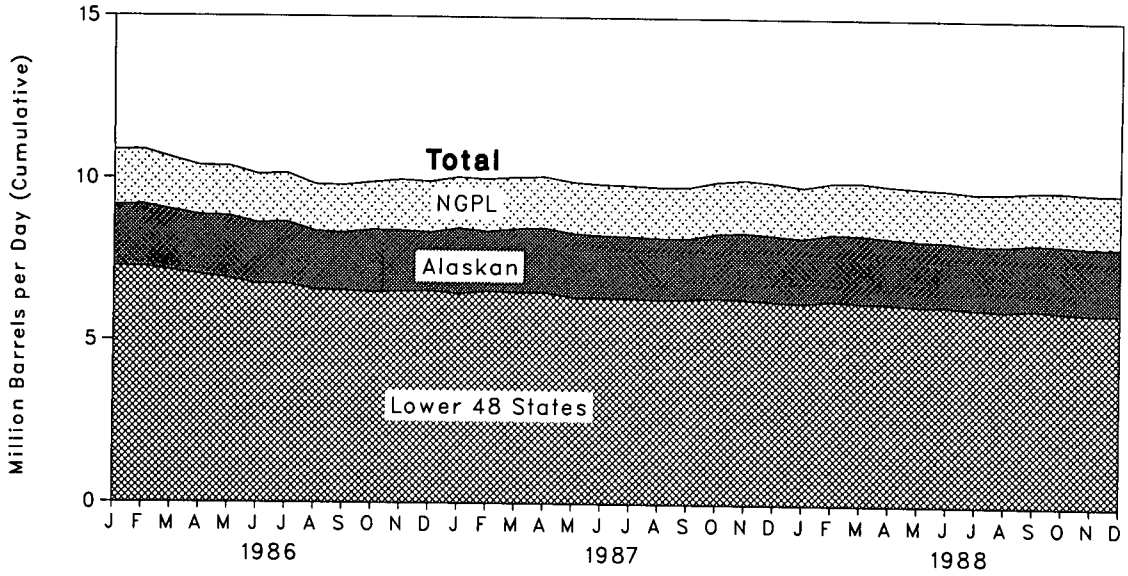


Figure 3.2 Petroleum Stocks

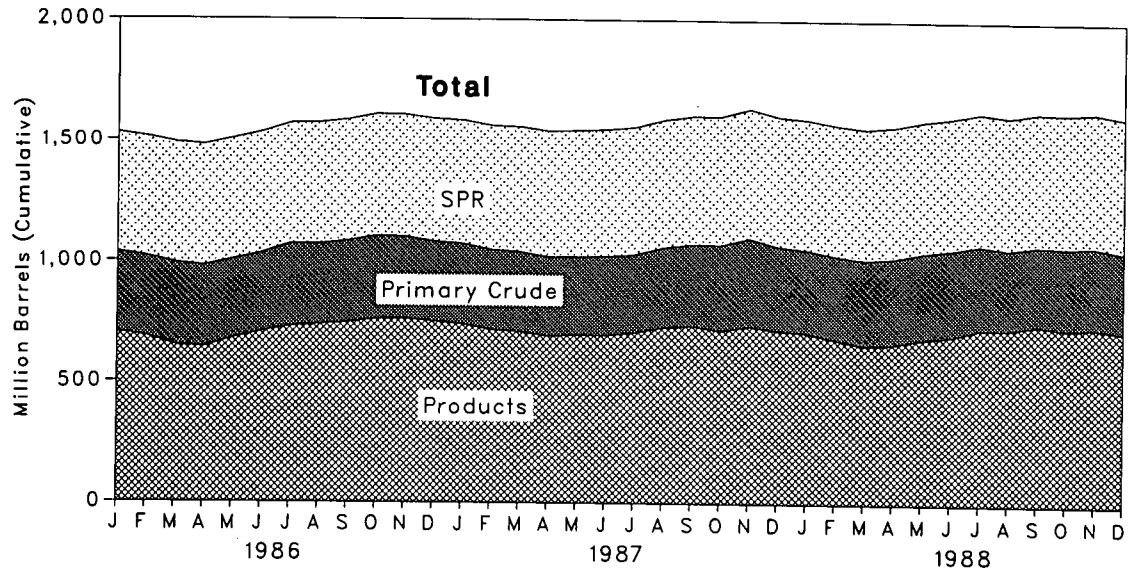


Figure 3.3 Petroleum Products Supplied and Imports

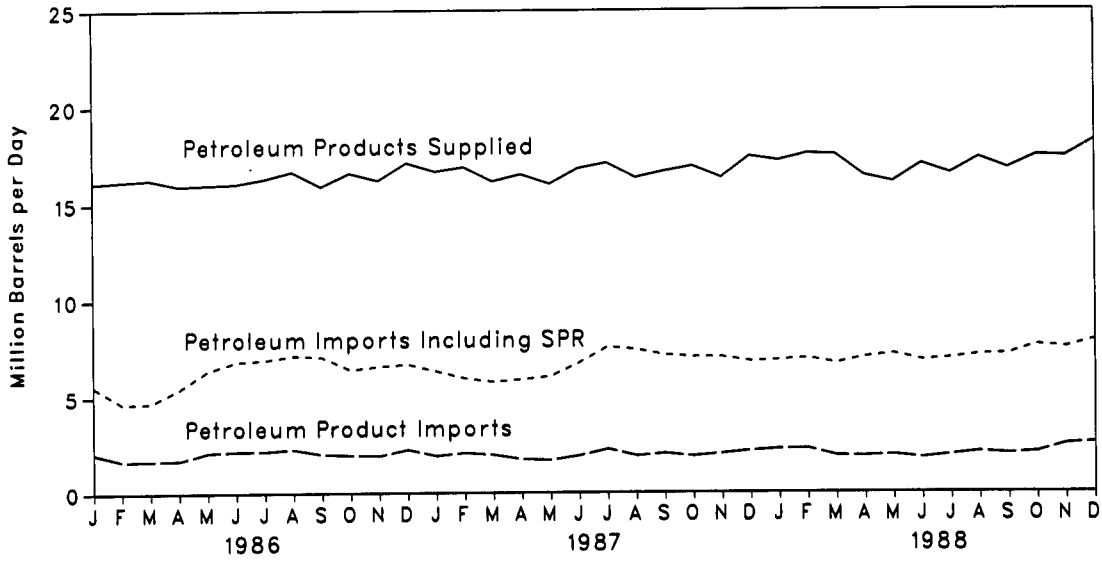


Figure 3.4 Petroleum Imports by Source

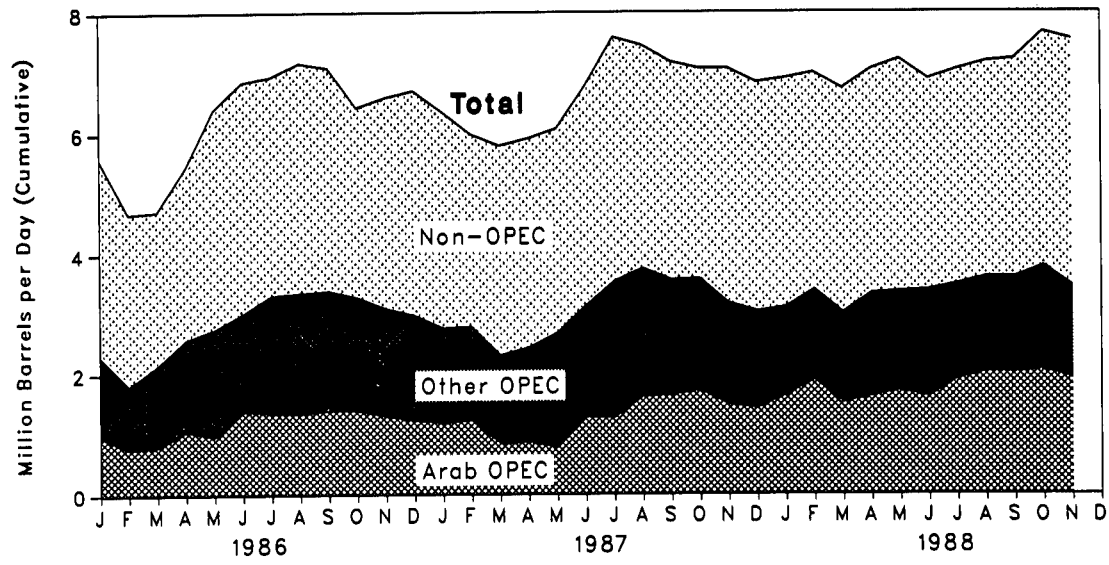


Table 3.2a Crude Oil[a] Supply and Disposition
(Thousand Barrels per Day)

	Supply							
	Field Production		Imports			Stock Withdrawal[c]		Unaccounted for Crude Oil[e]
	Total Domestic	Alaskan	Total	SPR[d]	Other	SPR[d]	Other	
1973 Average	**9,208**	**198**	**3,244**		**3,244**		**11**	**3**
1974 Average	**8,774**	**193**	**3,477**		**3,477**		**-62**	**-25**
1975 Average	**8,375**	**191**	**4,105**		**4,105**		**-17**	**17**
1976 Average	**8,132**	**173**	**5,287**		**5,287**		**-39**	**77**
1977 Average	**8,245**	**464**	**6,615**	**21**	**6,594**	**-20**	**-150**	**-6**
1978 Average	**8,707**	**1,229**	**6,356**	**162**	**6,195**	**-163**	**84**	**-57**
1979 Average	**8,552**	**1,401**	**6,519**	**67**	**6,452**	**-67**	**-81**	**-11**
1980 Average	**8,597**	**1,617**	**5,263**	**44**	**5,219**	**-45**	**-52**	**34**
1981 Average	**8,572**	**1,609**	**4,396**	**256**	**4,141**	**-336**	**[g] 46**	**83**
1982 Average	**8,649**	**1,696**	**3,488**	**165**	**3,323**	**-174**	**38**	**71**
1983 Average	**8,688**	**1,714**	**3,329**	**234**	**3,096**	**-234**	**[g] 20**	**114**
1984 Average	**8,879**	**1,722**	**3,426**	**197**	**3,229**	**-195**	**-4**	**185**
1985 Average	**8,971**	**1,825**	**3,201**	**118**	**3,083**	**-117**	**67**	**145**
1986 January	9,137	1,870	3,472	51	3,420	-35	-348	364
February	9,173	1,907	2,968	24	2,944	-35	-2	32
March	9,013	1,860	2,988	59	2,929	-49	-296	259
April	8,864	1,836	3,684	63	3,621	-63	104	70
May	8,838	1,927	4,250	36	4,215	-35	295	79
June	8,623	1,887	4,635	64	4,571	-64	66	292
July	8,660	1,903	4,726	52	4,674	-52	-489	189
August	8,374	1,811	4,859	51	4,809	-51	293	93
September	8,328	1,782	5,031	47	4,984	-47	-170	161
October	8,419	1,927	4,419	37	4,382	-36	-197	223
November	8,412	1,883	4,615	45	4,570	-65	160	-136
December	8,352	1,807	4,412	48	4,365	-68	254	28
Average	**8,680**	**1,867**	**4,178**	**48**	**4,130**	**-50**	**-28**	**139**
1987 January	8,480	2,019	4,385	92	4,293	-108	-58	-5
February	8,389	1,853	3,866	44	3,822	-64	42	382
March	8,464	1,968	3,779	95	3,684	-106	-19	151
April	8,498	1,990	4,132	57	4,076	-67	116	120
May	8,336	1,979	4,340	92	4,248	-101	137	51
June	8,279	1,930	4,807	64	4,743	-69	-97	434
July	8,251	1,910	5,295	76	5,218	-91	124	32
August	8,210	1,908	5,510	63	5,447	-63	-281	177
September	8,205	1,874	5,110	64	5,047	-64	-157	217
October	8,364	1,986	5,142	57	5,085	-57	-604	-3
November	8,397	2,068	5,013	97	4,916	-97	-258	115
December	8,318	2,043	4,640	68	4,572	-68	472	101
Average	**8,349**	**1,962**	**4,674**	**73**	**4,601**	**-80**	**-49**	**145**
1988 January	[E] 8,245	[E] 1,999	4,619	67	4,552	-67	123	303
February	[E] 8,376	[E] 2,070	4,692	49	4,643	-49	-81	-21
March	[E] 8,347	[E] 2,086	4,788	23	4,766	-26	-187	419
April	[E] 8,268	[E] 2,029	5,126	78	5,049	-77	-117	126
May	[E] 8,203	[E] 2,016	5,234	22	5,213	-22	-19	251
June	[E] 8,158	[E] 1,984	5,055	70	4,985	-70	-43	601
July	[E] 8,059	[E] 1,960	5,006	42	4,965	-42	312	548
August	[E] 8,063	[E] 2,009	5,039	26	5,013	-26	521	385
September	[E] 7,900	[E] 2,020	5,183	84	5,099	-84	157	313
October	[E] 7,974	[E] 2,010	5,542	43	5,499	-43	-360	288
November	[RE] 7,985	[RE] 2,027	[R] 5,017	[R] 89	[R] 4,928	[R] -89	[R] 85	[R] 393
December	[PE] 8,035	[PE] 2,048	[E] 5,322	[E] 33	[E] 5,289	[E] -33	[E] 275	[E] 11
Average	[PE] **8,134**	[PE] **2,021**	[E] **5,054**	[E] **52**	[E] **5,002**	[E] **-52**	[E] **57**	[E] **303**

[a]Includes lease condensate.
[b]Stocks are totals as of end of period.
[c]A negative number indicates an increase in stocks and a positive number indicates a decrease.
[d]Strategic Petroleum Reserve.
[e] A balancing item.
[f]Beginning in January 1983, crude oil used directly as fuel is shown as product supplied.
[g]Stocks of Alaskan crude oil in transit were included beginning in January 1981. Stock withdrawals are calculated using new basis stock levels. See Notes 4 and 5 at end of section.
Footnotes continued on following page.

Table 3.2b Crude Oil[a] Supply and Disposition (continued)

	Supply	Disposition				Ending Stocks[b]		
	Crude Used Directly[f]	Crude Losses	Refinery Inputs	Exports	Product Supplied[f]	Total	SPR[d]	Other Primary
	Thousand Barrels per Day					Million Barrels		
1973 Average	**-19**	**13**	**12,431**	**2**		**242**		**242**
1974 Average	**-15**	**13**	**12,133**	**3**		**265**		**265**
1975 Average	**-17**	**13**	**12,442**	**6**		**271**		**271**
1976 Average	**-18**	**15**	**13,416**	**8**		**285**		**285**
1977 Average	**-14**	**16**	**14,602**	**50**		**348**	**7**	**340**
1978 Average	**-14**	**16**	**14,739**	**158**		**376**	**67**	**309**
1979 Average	**-13**	**16**	**14,648**	**235**		**430**	**91**	**339**
1980 Average	**-13**	**15**	**13,481**	**287**		**[g] 466**	**108**	**[g] 358**
1981 Average	**-58**	**5**	**12,470**	**228**		**594**	**230**	**363**
1982 Average	**-59**	**3**	**11,774**	**236**		**[g] 644**	**294**	**350**
1983 Average	**NA**	**2**	**11,685**	**164**	**66**	**723**	**379**	**344**
1984 Average	**NA**	**2**	**12,044**	**181**	**64**	**796**	**451**	**345**
1985 Average	**NA**	**1**	**12,002**	**204**	**60**	**814**	**493**	**321**
1986 January	NA	1	12,374	159	57	826	494	332
February	NA	(s)	11,918	162	56	827	495	332
March	NA	(s)	11,652	212	52	838	497	341
April	NA	(s)	12,512	94	51	837	499	338
May	NA	(s)	13,279	98	49	829	500	329
June	NA	(s)	13,261	240	52	828	502	327
July	NA	(s)	12,917	65	51	845	503	342
August	NA	(s)	13,287	233	48	838	505	333
September	NA	(s)	13,097	161	45	844	506	338
October	NA	(s)	12,636	151	41	851	508	344
November	NA	(s)	12,831	115	41	849	509	339
December	NA	(s)	12,777	159	42	843	512	331
Average	**NA**	**(s)**	**12,716**	**154**	**49**			
1987 January	NA	1	12,570	84	41	848	515	333
February	NA	(s)	12,290	284	41	849	517	332
March	NA	1	12,081	150	39	852	520	332
April	NA	(s)	12,512	247	41	851	522	329
May	NA	(s)	12,653	69	42	850	525	325
June	NA	(s)	13,202	116	36	855	527	328
July	NA	(s)	13,430	149	32	854	530	324
August	NA	(s)	13,380	141	31	864	532	332
September	NA	(s)	13,168	116	28	871	534	337
October	NA	(s)	12,733	84	25	892	536	356
November	NA	(s)	12,981	164	25	902	539	364
December	NA	(s)	13,212	220	31	890	541	349
Average	**NA**	**(s)**	**12,854**	**151**	**34**			
1988 January	NA	(s)	12,975	212	36	888	543	345
February	NA	(s)	12,715	149	52	892	544	348
March	NA	(s)	13,072	218	52	899	545	354
April	NA	(s)	13,167	117	42	904	547	357
May	NA	(s)	13,472	141	34	906	548	358
June	NA	(s)	13,528	141	32	909	550	359
July	NA	(s)	13,663	191	29	901	551	349
August	NA	(s)	13,797	155	30	885	552	333
September	NA	(s)	13,309	122	37	883	555	328
October	NA	(s)	13,188	171	42	896	556	340
November	NA	(s)	[R] 13,196	[R] 151	[R] 44	[R] 896	559	[R] 337
December	NA	[E] (s)	[E] 13,423	[E] 147	[E] 40	[E] 892	[E] 560	[E] 333
Average	**NA**	**[E] (s)**	**[E] 13,295**	**[E] 160**	**[E] 39**			

Footnotes continued.

PE=Preliminary estimate. R=Revised data. NA=Not available. 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: See end of section.

Table 3.3a Crude Oil and Petroleum Product Imports
(Thousand Barrels per Day)

	Imports from OPEC Sources[a]										
	Algeria	Libya	Saudi Arabia[b]	United Arab Emirates	Indonesia	Iran	Nigeria	Venezuela	Other OPEC[b,c]	Total OPEC[d]	Total Arab OPEC[e]
1973 Average	136	164	486	71	213	223	459	1,135	106	2,993	915
1974 Average	190	4	461	74	300	469	713	979	88	3,280	752
1975 Average	282	232	715	117	390	280	762	702	122	3,601	1,383
1976 Average	432	453	1,230	254	539	298	1,025	700	134	5,066	2,424
1977 Average	559	723	1,380	335	541	535	1,143	690	267	6,193	3,185
1978 Average	649	654	1,144	385	573	555	919	645	226	5,751	2,963
1979 Average	636	658	1,356	281	420	304	1,080	690	212	5,637	3,056
1980 Average	488	554	1,261	172	348	9	857	481	130	4,300	2,551
1981 Average	311	319	1,129	81	366	0	620	406	90	3,323	1,848
1982 Average	170	26	552	92	248	35	514	412	97	2,146	854
1983 Average	240	0	337	30	338	48	302	422	144	1,862	632
1984 Average	323	1	325	117	343	10	216	548	166	2,049	819
1985 Average	187	4	168	45	314	27	293	605	187	1,830	472
1986 January	215	0	664	11	290	0	278	629	210	2,298	976
February	157	0	574	0	290	(s)	204	518	64	1,807	757
March	260	0	482	0	161	0	328	797	117	2,145	798
April	275	0	698	21	292	0	319	831	139	2,576	1,058
May	193	0	574	40	314	40	398	899	290	2,749	966
June	319	0	662	83	353	0	382	772	439	3,010	1,377
July	310	0	738	59	532	66	542	730	330	3,307	1,357
August	363	0	680	37	274	93	606	916	378	3,346	1,339
September	245	0	810	62	341	31	684	856	356	3,383	1,388
October	305	0	697	147	388	0	530	863	346	3,276	1,387
November	311	0	868	34	335	0	483	843	214	3,088	1,295
December	291	0	769	30	251	0	511	841	284	2,976	1,223
Average	**271**	**0**	**685**	**44**	**318**	**19**	**440**	**793**	**265**	**2,837**	**1,162**
1987 January	156	0	875	15	254	0	346	899	218	2,764	1,184
February	307	0	776	54	418	30	256	791	155	2,785	1,222
March	334	0	430	0	317	73	312	702	135	2,305	843
April	323	0	463	62	236	47	512	710	77	2,430	866
May	196	0	499	26	297	75	550	913	119	2,675	775
June	247	0	782	45	261	165	548	808	268	3,122	1,275
July	347	0	756	42	349	237	792	854	157	3,533	1,264
August	250	0	961	103	312	208	732	831	351	3,748	1,611
September	378	0	902	146	242	193	615	821	263	3,560	1,640
October	274	0	1,051	111	305	86	518	829	401	3,576	1,713
November	395	0	637	97	219	41	607	771	402	3,169	1,477
December	339	0	876	31	216	23	613	717	220	3,033	1,415
Average	**295**	**0**	**751**	**61**	**285**	**98**	**535**	**804**	**231**	**3,060**	**1,274**
1988 January	312	0	849	61	179	[f] 1	406	752	540	3,100	1,632
February	358	0	1,265	79	148	0	501	830	214	3,394	1,883
March	259	0	934	6	123	0	541	790	352	3,006	1,506
April	342	0	931	48	166	0	651	812	385	3,335	1,613
May	320	0	1,034	34	298	0	488	835	354	3,363	1,710
June	262	0	923	11	158	0	703	839	495	3,391	1,603
July	193	0	1,076	43	198	0	614	706	609	3,439	1,897
August	253	0	1,161	0	153	0	557	809	669	3,603	2,024
September	274	0	1,048	22	231	0	528	803	697	3,603	2,009
October	326	0	1,244	16	216	0	686	758	539	3,785	2,056
November	322	0	986	0	227	0	471	752	694	3,452	1,914
11-Month Average	**292**	**0**	**1,041**	**29**	**191**	**(s)**	**559**	**789**	**505**	**3,406**	**1,804**
1987 11-Month Average	**291**	**0**	**740**	**64**	**291**	**105**	**528**	**812**	**232**	**3,063**	**1,261**
1986 11-Month Average	**269**	**0**	**677**	**45**	**325**	**21**	**434**	**789**	**264**	**2,824**	**1,156**

[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]Prior to January 1988, data on crude oil and petroleum product imports from the Neutral Zone are included in the data for Saudi Arabia. From January 1988 forward, those imports are included in the data for "Other OPEC."

[c]The other members of OPEC are Ecuador, Gabon, Iraq, Kuwait, and Qatar.

[d]"Total OPEC" consists of Ecuador, Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members.

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

[f]A small amount of Iranian crude oil entered the United States (defined in this publication as the 50 States and the District of Columbia) 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.

Footnotes continued on following page.

Table 3.3b Crude Oil and Petroleum Product Imports (continued)
(Thousand Barrels per Day)

	Imports from Non-OPEC Sources[g]										Total Imports
	Bahamas	Canada	Mexico	Netherlands Antilles	Trinidad and Tobago	United Kingdom	Puerto Rico	Virgin Islands	Other Non-OPEC	Total Non-OPEC	
1973 Average	**174**	**1,325**	**16**	**585**	**255**	**15**	**99**	**329**	**465**	**3,263**	**6,256**
1974 Average	**164**	**1,070**	**8**	**511**	**251**	**8**	**90**	**391**	**340**	**2,832**	**6,112**
1975 Average	**152**	**846**	**71**	**332**	**242**	**14**	**90**	**406**	**300**	**2,454**	**6,056**
1976 Average	**118**	**599**	**87**	**275**	**274**	**31**	**88**	**422**	**353**	**2,247**	**7,313**
1977 Average	**171**	**517**	**179**	**211**	**289**	**126**	**105**	**466**	**550**	**2,614**	**8,807**
1978 Average	**160**	**467**	**318**	**229**	**253**	**180**	**94**	**429**	**484**	**2,613**	**8,363**
1979 Average	**147**	**538**	**439**	**231**	**190**	**202**	**92**	**431**	**548**	**2,819**	**8,456**
1980 Average	**78**	**455**	**533**	**225**	**176**	**176**	**88**	**388**	**491**	**2,609**	**6,909**
1981 Average	**74**	**447**	**522**	**197**	**133**	**375**	**62**	**327**	**534**	**2,672**	**5,996**
1982 Average	**65**	**482**	**685**	**175**	**112**	**456**	**50**	**316**	**627**	**2,968**	**5,113**
1983 Average	**125**	**547**	**826**	**189**	**96**	**382**	**40**	**282**	**701**	**3,189**	**5,051**
1984 Average	**88**	**630**	**748**	**188**	**94**	**402**	**42**	**294**	**902**	**3,388**	**5,437**
1985 Average	**40**	**770**	**816**	**40**	**113**	**310**	**28**	**247**	**873**	**3,237**	**5,067**
1986 January	62	823	681	58	108	333	21	326	862	3,275	5,573
February	33	690	557	11	85	218	18	309	949	2,870	4,676
March	18	750	616	27	79	178	25	186	688	2,567	4,712
April	34	798	694	13	111	188	23	209	793	2,863	5,439
May	32	881	743	37	130	365	27	237	1,199	3,651	6,400
June	29	753	884	17	167	569	30	233	1,157	3,838	6,848
July	44	763	850	25	131	353	29	237	1,202	3,634	6,942
August	39	801	738	12	133	584	7	214	1,294	3,822	7,168
September	15	801	615	17	162	437	23	291	1,345	3,706	7,090
October	38	842	680	26	112	173	21	215	1,043	3,151	6,427
November	39	960	565	53	129	448	21	179	1,111	3,504	6,592
December	57	809	746	7	148	351	12	291	1,304	3,724	6,700
Average	**37**	**807**	**699**	**25**	**125**	**350**	**21**	**244**	**1,080**	**3,387**	**6,224**
1987 January	59	799	689	29	100	384	33	327	1,170	3,589	6,353
February	56	783	692	23	127	260	24	296	938	3,199	5,984
March	43	738	721	14	124	322	17	247	1,262	3,489	5,794
April	43	818	679	12	123	485	24	259	1,037	3,481	5,911
May	31	884	541	33	117	392	21	214	1,164	3,398	6,073
June	22	912	664	13	114	377	21	281	1,242	3,646	6,769
July	46	901	680	71	98	354	17	288	1,598	4,055	7,588
August	27	841	577	51	100	289	20	274	1,526	3,706	7,454
September	48	846	705	42	105	259	25	271	1,318	3,618	7,178
October	26	938	697	16	88	321	17	250	1,138	3,492	7,068
November	31	827	627	14	111	456	15	235	1,585	3,899	7,068
December	10	883	591	24	73	324	23	327	1,543	3,800	6,833
Average	**37**	**848**	**655**	**29**	**106**	**352**	**21**	**272**	**1,296**	**3,617**	**6,678**
1988 January	49	953	767	40	104	312	29	341	1,205	3,800	6,900
February	58	995	699	21	93	313	16	200	1,206	3,601	6,995
March	45	989	745	30	89	461	22	180	1,160	3,720	6,727
April	12	975	674	31	82	581	29	193	1,137	3,714	7,050
May	17	990	718	38	102	383	20	243	1,345	3,855	7,218
June	25	1,022	765	19	112	232	13	212	1,094	3,494	6,885
July	15	962	723	35	96	208	22	215	1,280	3,556	6,994
August	12	1,003	692	20	97	104	7	172	1,465	3,571	7,174
September	25	920	842	13	95	148	29	236	1,307	3,617	7,220
October	11	939	743	17	98	447	21	234	1,370	3,881	7,666
November	27	985	811	59	73	245	28	286	1,578	4,092	[R] 7,544
11-Month Average	**27**	**976**	**744**	**29**	**95**	**312**	**21**	**228**	**1,287**	**3,719**	**7,125**
1987 11-Month Average	**39**	**845**	**661**	**29**	**110**	**355**	**21**	**267**	**1,274**	**3,600**	**6,663**
1986 11-Month Average	**35**	**806**	**694**	**27**	**123**	**350**	**22**	**239**	**1,059**	**3,356**	**6,179**

Footnotes continued.

[g]Includes petroleum imported into the United States indirectly from members of OPEC, primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

R=Revised data. (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. • Beginning in October 1977, Strategic Petroleum Reserve imports are included.

Sources: See end of section.

Figure 3.5 Finished Motor Gasoline Product Supplied, Production, and Imports

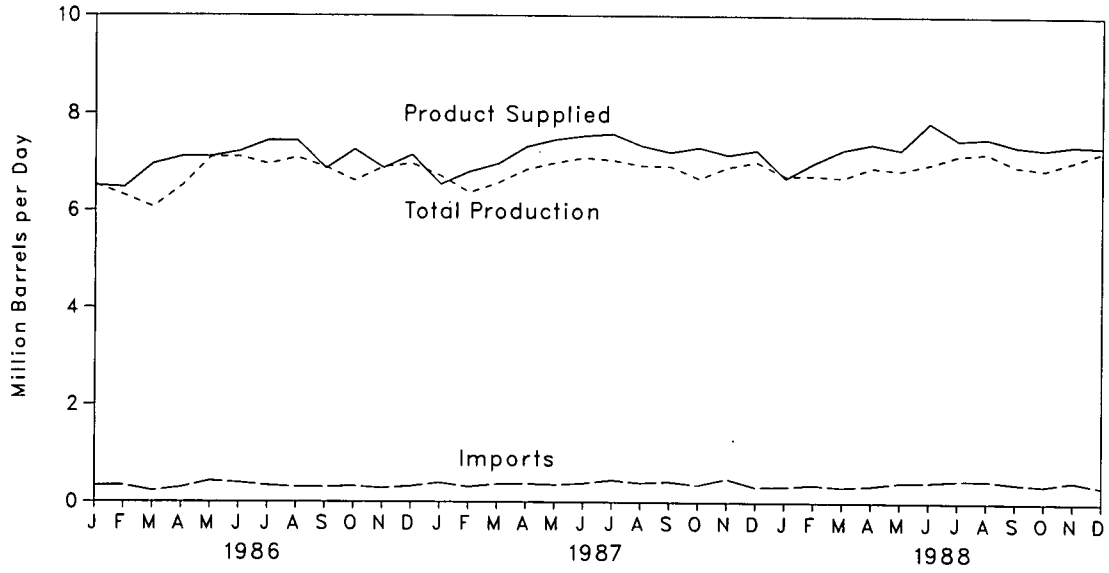


Figure 3.6 Motor Gasoline Ending Stocks

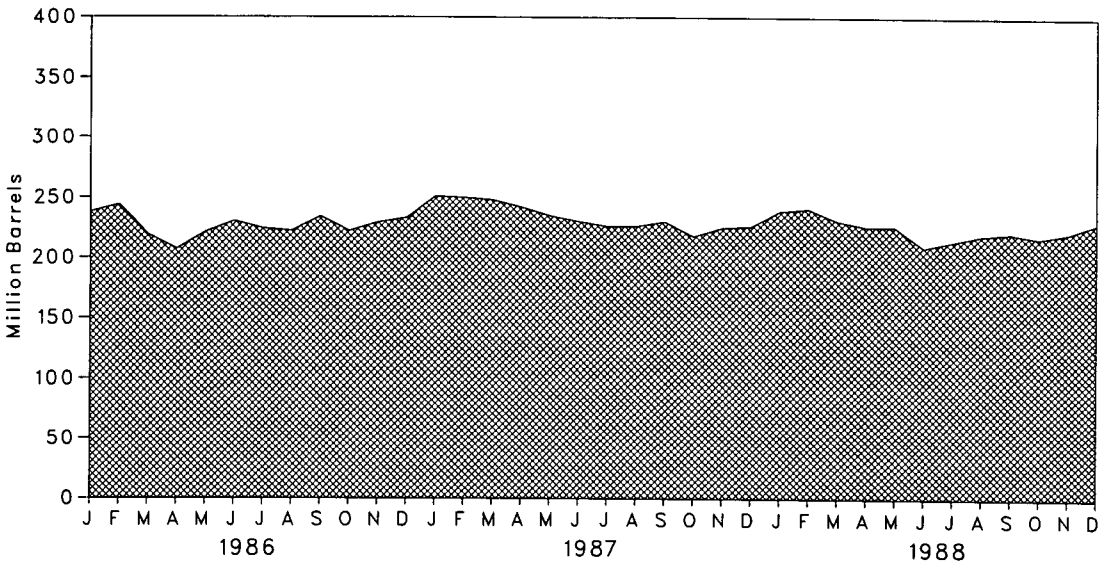


Table 3.4 Finished Motor Gasoline Supply and Disposition

	Supply			Disposition				Ending Stocks[a]	
					Product Supplied				
	Total Production	Imports[b]	Stock Withdrawal[b] [c]	Exports	Total	Unleaded[d]	Unleaded	Total Motor Gasoline[e]	Finished Motor Gasoline
	Thousand Barrels per Day						Percent of Total	Million Barrels	
1973 Average	**6,535**	**134**	**9**	**4**	**6,674**			**209**	
1974 Average	**6,360**	**204**	**-24**	**2**	**6,537**			**[f] 218**	
1975 Average	**6,520**	**184**	**[f] -28**	**2**	**6,675**			**235**	
1976 Average	**6,841**	**131**	**10**	**3**	**6,978**			**231**	
1977 Average	**7,033**	**217**	**-72**	**2**	**7,177**	**1,976**	**27.5**	**258**	
1978 Average	**7,169**	**190**	**54**	**1**	**7,412**	**2,521**	**34.0**	**238**	
1979 Average	**6,852**	**181**	**2**	**(s)**	**7,034**	**2,798**	**39.8**	**237**	
1980 Average	**6,506**	**140**	**-66**	**1**	**6,579**	**3,067**	**46.6**	**[f] 261**	
1981 Average[g]	**6,405**	**157**	**[f] 28**	**2**	**6,588**	**3,264**	**49.5**	**253**	
1982 Average	**6,338**	**197**	**25**	**20**	**6,539**	**3,409**	**52.1**	**[f] 235**	
1983 Average	**6,340**	**247**	**[f] 45**	**10**	**6,622**	**3,647**	**55.1**	**222**	**186**
1984 Average	**6,453**	**299**	**-54**	**6**	**6,693**	**3,987**	**59.6**	**243**	**205**
1985 Average	**6,419**	**381**	**41**	**10**	**6,831**	**4,406**	**64.5**	**223**	**190**
1986 January	6,522	332	-347	6	6,502	4,404	67.7	238	201
February	6,302	334	-156	11	6,469	4,365	67.5	244	205
March	6,061	224	691	21	6,955	4,678	67.3	219	184
April	6,498	291	338	23	7,105	4,783	67.3	207	174
May	7,095	471	-450	9	7,106	4,729	66.5	221	188
June	7,101	392	-265	18	7,209	4,914	68.2	230	196
July	6,956	337	189	47	7,436	5,182	69.7	224	190
August	7,092	303	83	43	7,435	5,138	69.1	222	187
September	6,891	303	-289	40	6,864	4,813	70.1	234	196
October	6,616	322	372	61	7,250	5,086	70.1	222	184
November	6,895	280	-200	96	6,879	4,918	71.5	229	190
December	6,970	320	-122	24	7,143	5,193	72.7	233	194
Average	**6,752**	**326**	**-11**	**33**	**7,034**	**4,854**	**69.0**		
1987 January	6,714	393	-528	44	6,535	4,822	73.8	251	211
February	6,365	309	144	22	6,796	5,068	74.6	250	207
March	6,569	364	51	20	6,964	5,193	74.6	248	205
April	6,850	374	133	42	7,314	5,405	73.9	242	201
May	6,991	354	164	48	7,460	5,569	74.7	235	196
June	7,089	385	111	46	7,539	5,678	75.3	230	193
July	7,043	452	119	33	7,581	5,740	75.7	226	189
August	6,933	396	29	19	7,338	5,656	77.1	226	188
September	6,921	421	-107	30	7,205	5,536	76.8	230	191
October	6,668	356	302	21	7,305	5,636	77.1	218	182
November	6,907	484	-208	32	7,151	5,589	78.2	225	188
December	7,015	320	-24	59	7,251	5,715	78.8	226	189
Average	**6,841**	**384**	**15**	**35**	**7,206**	**5,470**	**75.9**		
1988 January	6,723	324	-361	8	6,679	5,392	80.7	239	200
February	6,736	365	-78	18	7,004	5,571	79.5	241	202
March	6,695	318	271	18	7,265	5,845	80.4	231	194
April	6,906	349	148	18	7,384	5,946	80.5	226	190
May	6,847	415	34	28	7,269	5,813	80.0	226	188
June	6,983	424	490	59	7,838	6,356	81.1	209	174
July	7,159	461	-135	12	7,473	6,126	82.0	214	178
August	7,204	465	-142	15	7,511	6,191	82.4	219	182
September	6,948	403	14	16	7,349	6,066	82.5	221	182
October	6,875	363	63	13	7,287	5,992	82.2	217	180
November	[R] 7,057	[R] 451	[R] -124	[R] 15	[R] 7,369	[R] 6,149	[R] 83.4	[R] 221	[R] 184
December	[E] 7,248	[E] 343	[E] -234	[E] 14	[E] 7,342	[E] 6,306	[E] 85.9	[E] 229	[E] 190
Average	**[E] 6,949**	**[E] 390**	**[E] -6**	**[E] 19**	**[E] 7,314**	**[E] 5,980**	**[E] 81.8**		

[a]Stocks are totals as of end of period.
[b]Beginning in 1981, excludes blending components.
[c]A negative number indicates an increase in stocks and a positive number indicates a decrease.
[d]Includes gasohol.
[e]Includes motor gasoline blending components.
[f]In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 4 at end of section.
[g]Beginning in January 1981, survey forms were modified. See Note 1 at end of section.
R=Revised data. 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: See end of section.

Figure 3.7 Distillate Fuel Oil Product Supplied, Production, and Imports

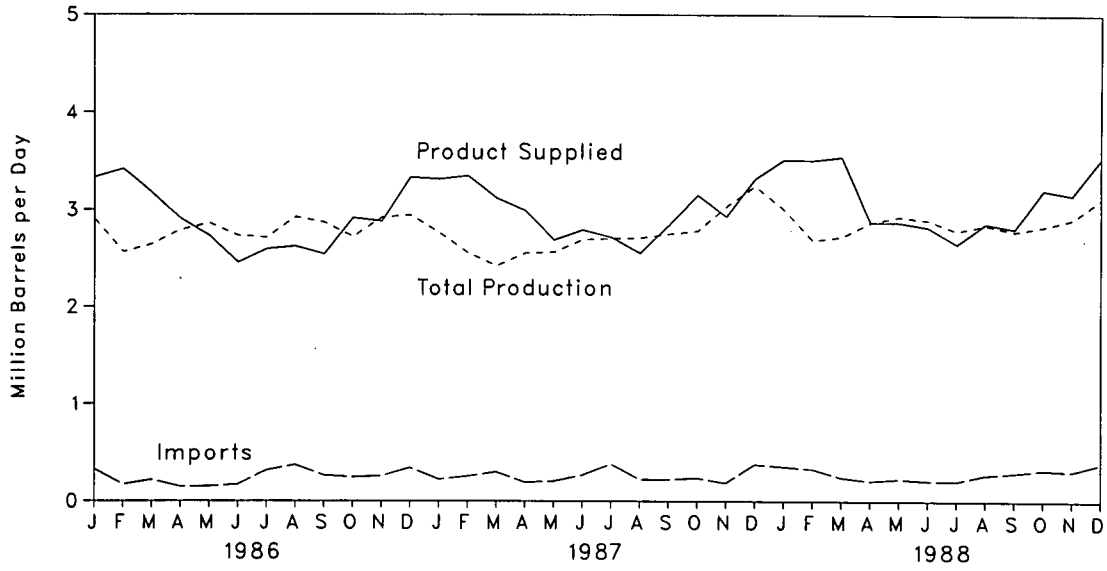


Figure 3.8 Distillate Fuel Oil Ending Stocks

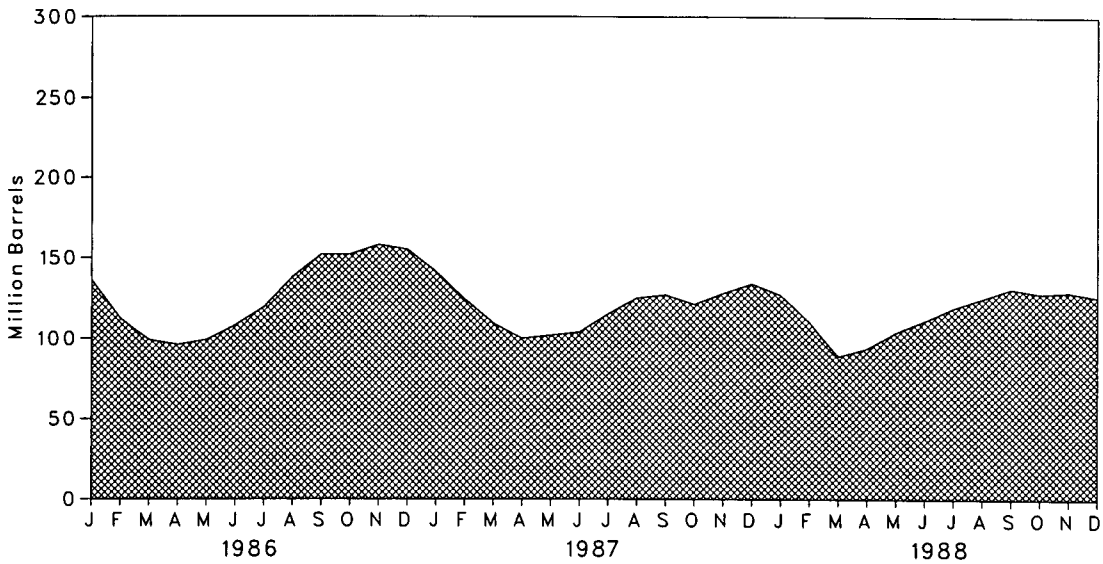


Table 3.5 Distillate Fuel Oil Supply and Disposition

	Supply				Disposition		
	Total Production	Imports	Stock Withdrawal[a]	Crude Used Directly[b]	Exports	Product Supplied[b]	Ending Stocks[c]
	Thousand Barrels per Day						Million Barrels
1973 Average	**2,822**	**392**	**-115**	**2**	**9**	**3,092**	**196**
1974 Average	**2,669**	**289**	**-9**	**2**	**2**	**2,948**	**[d] 200**
1975 Average	**2,654**	**155**	**[d] 40**	**2**	**1**	**2,851**	**209**
1976 Average	**2,924**	**146**	**62**	**1**	**1**	**3,133**	**186**
1977 Average	**3,278**	**250**	**-176**	**1**	**1**	**3,352**	**250**
1978 Average	**3,167**	**173**	**93**	**1**	**3**	**3,432**	**216**
1979 Average	**3,153**	**193**	**-34**	**1**	**3**	**3,311**	**229**
1980 Average	**2,662**	**142**	**64**	**1**	**3**	**2,868**	**[d] 205**
1981 Average[e]	**2,613**	**173**	**[d] 38**	**10**	**5**	**2,829**	**192**
1982 Average	**2,606**	**93**	**35**	**10**	**74**	**2,671**	**[d] 179**
1983 Average	**2,456**	**174**	**[d] 124**	**NA**	**64**	**2,690**	**140**
1984 Average	**2,681**	**272**	**-57**	**NA**	**51**	**2,845**	**161**
1985 Average	**2,687**	**200**	**48**	**NA**	**67**	**2,868**	**144**
1986 January	2,899	325	232	NA	126	3,330	136
February	2,563	169	860	NA	176	3,416	112
March	2,643	217	438	NA	131	3,168	99
April	2,788	147	97	NA	128	2,904	96
May	2,858	149	-95	NA	149	2,762	99
June	2,729	169	-301	NA	53	2,544	108
July	2,710	313	-355	NA	75	2,592	119
August	2,922	370	-607	NA	64	2,621	138
September	2,865	262	-489	NA	98	2,540	152
October	2,717	243	25	NA	74	2,912	152
November	2,917	254	-222	NA	72	2,877	158
December	2,943	339	102	NA	55	3,329	155
Average	**2,798**	**247**	**-31**	**NA**	**100**	**2,914**	
1987 January	2,759	222	444	NA	115	3,310	141
February	2,556	253	629	NA	93	3,345	124
March	2,421	297	464	NA	67	3,116	109
April	2,553	192	300	NA	53	2,991	100
May	2,563	203	-31	NA	51	2,684	101
June	2,689	265	-104	NA	61	2,790	104
July	2,700	381	-329	NA	38	2,713	115
August	2,706	222	-327	NA	47	2,553	125
September	2,748	222	-68	NA	64	2,838	127
October	2,780	237	187	NA	53	3,151	121
November	3,035	187	-234	NA	56	2,932	128
December	3,242	378	-209	NA	92	3,318	134
Average	**2,731**	**255**	**56**	**NA**	**66**	**2,976**	
1988 January	3,008	355	236	NA	82	3,517	127
February	2,683	330	604	NA	107	3,511	110
March	2,720	243	656	NA	74	3,544	89
April	2,869	208	-166	NA	42	2,870	94
May	2,931	228	-328	NA	74	2,757	104
June	2,893	209	-207	NA	76	2,820	111
July	2,783	205	-283	NA	58	2,647	119
August	2,844	270	-186	NA	70	2,860	125
September	2,779	292	-193	NA	72	2,806	131
October	2,830	324	98	NA	48	3,204	128
November	[R] 2,905	[R] 308	[R] -26	NA	[R] 34	[R] 3,153	129
December	[E] 3,114	[E] 388	[E] 91	NA	[E] 60	[E] 3,533	[E] 126
Average	**[E] 2,864**	**[E] 280**	**[E] 23**	**NA**	**[E] 66**	**[E] 3,102**	

[a]A negative number indicates an increase in stocks and a positive number indicates a decrease.
[b]Beginning in January 1983, product supplied for distillate fuel oil does not include crude oil used directly. See Note 3 at end of section.
[c]Stocks are totals as of end of period.
[d]In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 4 at end of section.
[e]Beginning in January 1981, survey forms were modified. See Note 1 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: See end of section.

Figure 3.9 Residual Fuel Oil Product Supplied, Production, and Imports

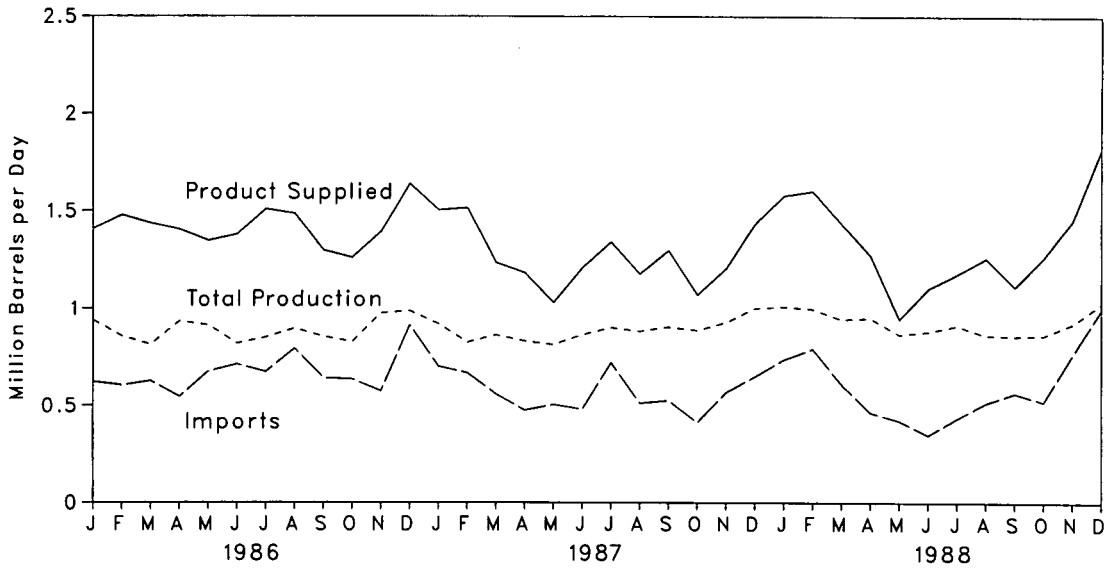


Figure 3.10 Residual Fuel Oil Ending Stocks

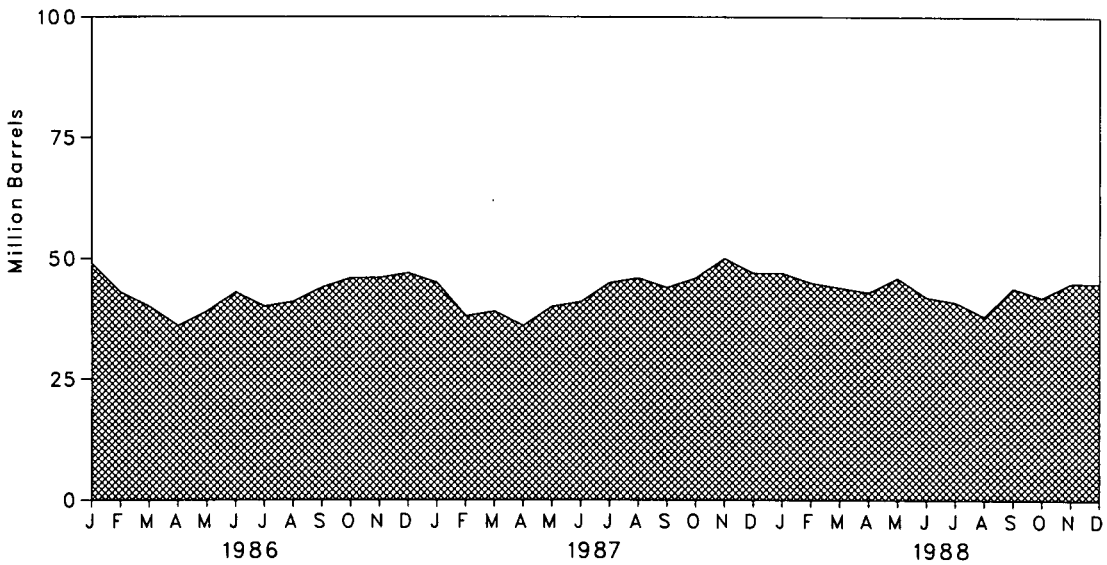


Table 3.6 Residual Fuel Oil Supply and Disposition

	Supply				Disposition		
	Total Production	Imports	Stock Withdrawal[a]	Crude Used Directly[b]	Exports	Product Supplied[b]	Ending Stocks[c]
	Thousand Barrels per Day						Million Barrels
1973 Average	**971**	**1,853**	**5**	**17**	**23**	**2,822**	**53**
1974 Average	**1,070**	**1,587**	**-17**	**13**	**14**	**2,639**	**[d] 60**
1975 Average	**1,235**	**1,223**	**[d] 2**	**15**	**15**	**2,462**	**74**
1976 Average	**1,377**	**1,413**	**5**	**17**	**12**	**2,801**	**72**
1977 Average	**1,754**	**1,359**	**-48**	**13**	**6**	**3,071**	**90**
1978 Average	**1,667**	**1,355**	**-1**	**13**	**13**	**3,023**	**90**
1979 Average	**1,687**	**1,151**	**-15**	**12**	**9**	**2,826**	**96**
1980 Average	**1,580**	**939**	**10**	**12**	**33**	**2,508**	**[d] 92**
1981 Average[e]	**1,321**	**800**	**[d] 37**	**48**	**118**	**2,088**	**78**
1982 Average	**1,070**	**776**	**32**	**48**	**209**	**1,716**	**[d] 66**
1983 Average	**852**	**699**	**[d] 55**	**NA**	**185**	**1,421**	**49**
1984 Average	**891**	**681**	**-12**	**NA**	**190**	**1,369**	**53**
1985 Average	**882**	**510**	**7**	**NA**	**197**	**1,202**	**50**
1986 January	940	622	56	NA	211	1,407	49
February	856	604	200	NA	183	1,478	43
March	813	626	108	NA	113	1,435	40
April	933	545	127	NA	202	1,402	36
May	913	675	-114	NA	129	1,345	39
June	818	712	-111	NA	43	1,377	43
July	850	673	75	NA	90	1,508	40
August	896	793	-29	NA	174	1,485	41
September	854	641	-89	NA	110	1,296	44
October	827	635	-59	NA	144	1,259	46
November	975	574	-15	NA	143	1,391	46
December	987	913	-37	NA	224	1,638	47
Average	**889**	**669**	**8**	**NA**	**147**	**1,418**	
1987 January	920	701	81	NA	198	1,504	45
February	825	668	243	NA	221	1,515	38
March	863	559	-38	NA	150	1,234	39
April	831	476	114	NA	239	1,182	36
May	813	505	-145	NA	144	1,029	40
June	864	481	-33	NA	105	1,207	41
July	901	721	-108	NA	175	1,339	45
August	882	512	-32	NA	185	1,176	46
September	904	526	42	NA	177	1,296	44
October	887	414	-39	NA	194	1,089	46
November	928	568	-145	NA	146	1,205	50
December	1,001	650	83	NA	300	1,434	47
Average	**885**	**565**	**0**	**NA**	**186**	**1,264**	
1988 January	1,009	737	23	NA	190	1,578	47
February	997	792	40	NA	229	1,601	45
March	944	610	45	NA	165	1,434	44
April	951	465	27	NA	170	1,272	43
May	866	423	-81	NA	263	945	46
June	881	349	121	NA	249	1,102	42
July	913	436	34	NA	206	1,177	41
August	863	515	104	NA	225	1,258	38
September	859	566	-213	NA	100	1,112	44
October	863	522	59	NA	181	1,263	42
November	[R] 923	[R] 765	-89	NA	[R] 146	[R] 1,453	[R] 45
December	[E] 1,027	[E] 997	[E] -63	NA	[E] 142	[E] 1,818	[E] 45
Average	**[E] 925**	**[E] 598**	**[E] 1**	**NA**	**[E] 189**	**[E] 1,334**	

[a]A negative number indicates an increase in stocks and a positive number indicates a decrease.
[b]Beginning in January 1983, product supplied for residual fuel oil does not include crude oil used directly. See Note 3 at end of section.
[c]Stocks are totals as of end of period.
[d]In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 4 at end of section.
[e]Beginning in January 1981, survey forms were modified. See Note 1 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: See end of section.

Figure 3.11 Liquefied Petroleum Gases Product Supplied, Production, and Imports

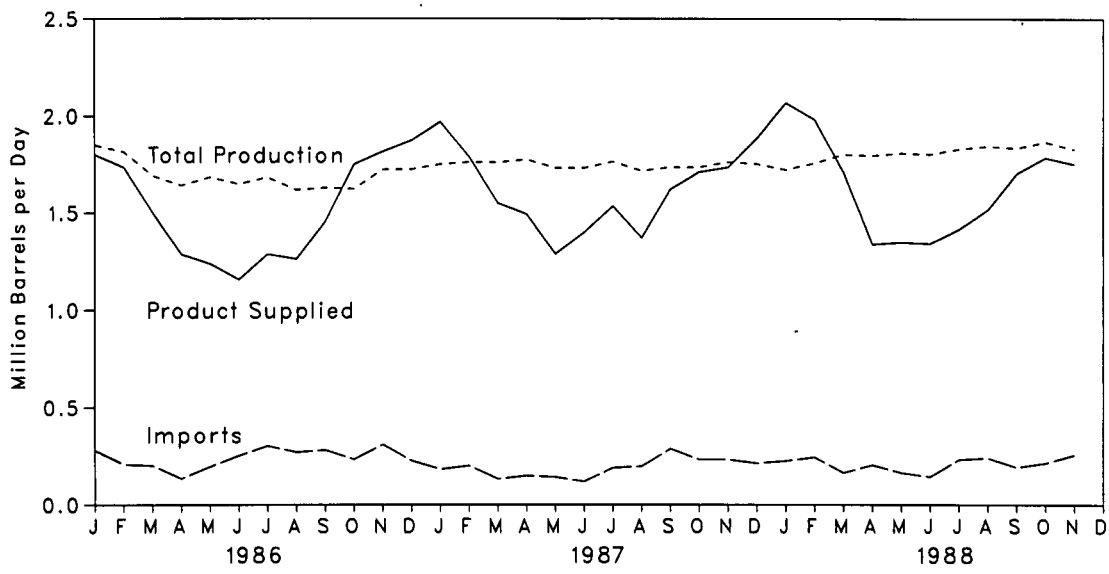


Figure 3.12 Liquefied Petroleum Gases Ending Stocks

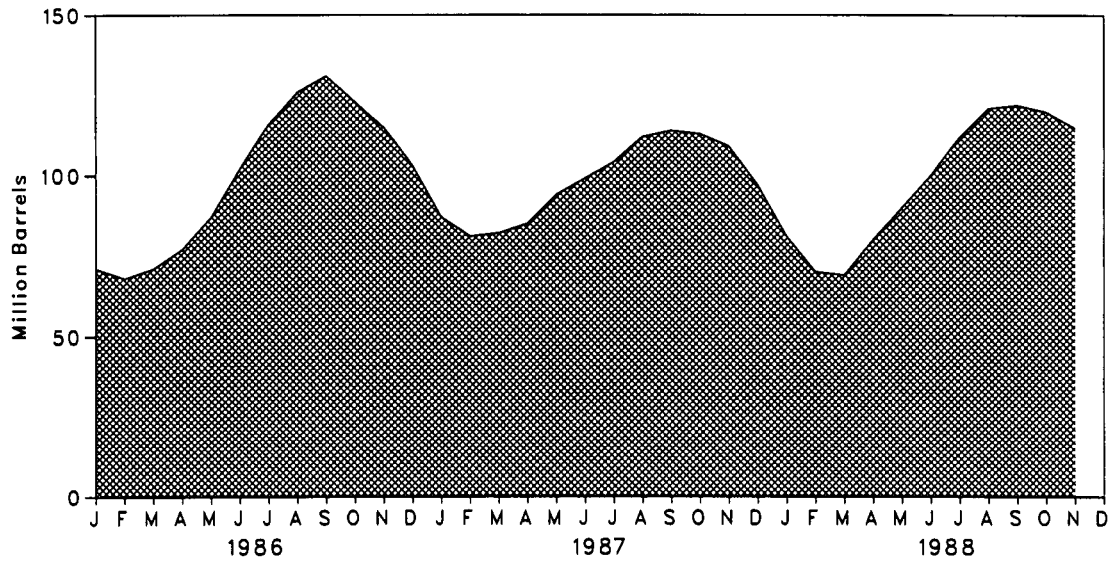


Table 3.7 Liquefied Petroleum Gases[a] Supply and Disposition

	Supply			Disposition			
	Total Production	Imports	Stock Withdrawal[b]	Refinery Inputs	Exports	Product Supplied	Ending Stocks[c]
	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**	**[d] 113**
1975 Average	**1,527**	**112**	**[d] -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**	**132**
1979 Average	**1,556**	**217**	**70**	**236**	**15**	**1,592**	**111**
1980 Average	**1,535**	**216**	**-27**	**233**	**21**	**1,469**	**[d] 120**
1981 Average	**1,571**	**244**	**[d] -18**	**289**	**42**	**1,466**	**135**
1982 Average	**[e] 1,527**	**226**	**111**	**300**	**65**	**1,499**	**[d] 94**
1983 Average	**1,642**	**190**	**4**	**253**	**73**	**1,509**	**[d] 101**
1984 Average	**1,697**	**195**	**19**	**291**	**48**	**1,572**	**101**
1985 Average	**1,704**	**187**	**75**	**304**	**62**	**1,599**	**74**
1986 January	1,850	280	80	364	47	1,800	71
February	1,815	208	108	325	74	1,733	68
March	1,693	202	-98	250	47	1,500	71
April	1,642	134	-200	256	33	1,286	77
May	1,685	196	-336	267	40	1,238	87
June	1,649	253	-490	228	25	1,158	102
July	1,684	303	-450	199	50	1,287	116
August	1,619	271	-332	243	53	1,262	126
September	1,631	282	-142	288	27	1,456	131
October	1,625	234	249	332	26	1,750	123
November	1,724	310	254	417	53	1,817	115
December	1,725	227	411	456	33	1,875	103
Average	**1,695**	**242**	**-80**	**302**	**42**	**1,512**	
1987 January	1,751	183	500	419	43	1,971	87
February	1,762	201	205	341	38	1,789	81
March	1,761	132	-10	282	52	1,550	82
April	1,775	149	-121	274	36	1,493	85
May	1,732	142	-283	269	34	1,288	94
June	1,732	119	-175	255	22	1,400	99
July	1,764	190	-145	244	30	1,534	104
August	1,717	198	-259	252	33	1,372	112
September	1,736	288	-81	266	56	1,622	114
October	1,736	233	59	294	23	1,711	113
November	1,763	233	129	356	35	1,735	109
December	1,753	214	372	395	56	1,887	97
Average	**1,748**	**190**	**15**	**304**	**38**	**1,612**	
1988 January	1,723	226	529	366	44	2,069	81
February	1,757	245	364	336	47	1,982	70
March	1,802	165	45	266	36	1,710	69
April	1,796	205	-362	256	43	1,339	80
May	1,809	165	-333	253	37	1,350	90
June	1,804	144	-333	234	38	1,343	100
July	1,831	233	-384	228	35	1,416	112
August	1,848	241	-281	241	50	1,517	121
September	1,837	194	-34	251	43	1,704	122
October	1,869	216	55	296	56	1,787	120
November	1,831	258	161	425	71	1,753	115
11-Month Average	**1,810**	**208**	**-54**	**286**	**45**	**1,633**	
1987 11-Month Average	**1,748**	**188**	**-18**	**295**	**36**	**1,586**	
1986 11-Month Average	**1,692**	**243**	**-125**	**288**	**43**	**1,479**	

[a]Includes ethane, propane, normal butane, and isobutane.
[b]A negative number indicates an increase in stocks and a positive number indicates a decrease.
[c]Stocks are totals as of end of period.
[d]In January 1975, 1981, 1983, and 1984, a new stock basis was established affecting stocks reported and stock withdrawal calculations. See Note 4 at end of section.
[e]Due to a rounding difference, this value is 1,528 in the *Petroleum Supply Annual* and the *Petroleum Supply Monthly*.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Sources: See end of section.

Table 3.8 Other Petroleum Products[a] Supply and Disposition

	Supply			Disposition			
	Total Production	Imports	Stock Withdrawal[b]	Refinery Inputs	Exports	Products Supplied	Ending Stocks[c]
	Thousand Barrels per Day						Million Barrels
1973 Average	**3,693**	**502**	**-9**	**750**	**166**	**3,270**	**208**
1974 Average	**3,558**	**432**	**-28**	**665**	**174**	**3,123**	**[d] 218**
1975 Average	**3,418**	**277**	**[d] 4**	**537**	**160**	**3,002**	**219**
1976 Average	**3,643**	**206**	**-5**	**524**	**175**	**3,145**	**220**
1977 Average	**3,912**	**205**	**-27**	**514**	**165**	**3,410**	**230**
1978 Average	**4,046**	**166**	**14**	**492**	**167**	**3,568**	**225**
1979 Average	**4,153**	**195**	**-37**	**352**	**209**	**3,749**	**238**
1980 Average	**3,956**	**210**	**-23**	**311**	**198**	**3,634**	**[d] 247**
1981 Average	**3,739**	**226**	**[d] 46**	**723**	**199**	**3,088**	**282**
1982 Average	**3,453**	**334**	**80**	**787**	**211**	**[e] 2,870**	**[d] 253**
1983 Average	**3,460**	**411**	**[d] 6**	**712**	**242**	**2,923**	**[d] 256**
1984 Average	**3,632**	**565**	**23**	**791**	**245**	**3,183**	**240**
1985 Average	**3,721**	**588**	**-17**	**886**	**240**	**3,166**	**246**
1986 January	3,902	541	-172	967	311	2,993	252
February	3,868	393	-209	747	270	3,035	258
March	3,754	454	21	854	208	3,167	257
April	3,788	638	-100	760	369	3,196	260
May	4,055	659	-114	810	298	3,492	264
June	4,209	687	-70	853	263	3,710	266
July	4,145	589	119	1,064	357	3,432	262
August	4,223	572	335	1,061	301	3,768	252
September	4,225	571	35	846	278	3,708	251
October	3,969	575	-112	666	375	3,391	254
November	3,904	559	36	940	342	3,217	253
December	3,920	490	90	1,069	325	3,105	250
Average	**3,997**	**561**	**-10**	**888**	**308**	**3,353**	
1987 January	3,852	469	-121	659	219	3,323	254
February	3,796	687	-389	352	320	3,422	265
March	3,766	663	-128	757	281	3,262	269
April	3,933	589	107	872	254	3,502	266
May	4,049	529	178	913	320	3,523	260
June	4,203	712	158	896	320	3,857	255
July	4,363	550	91	835	256	3,913	253
August	4,340	616	-148	693	238	3,876	257
September	4,350	611	-24	903	353	3,681	258
October	4,223	686	14	971	272	3,680	258
November	4,010	583	-20	975	305	3,294	258
December	4,050	633	261	1,091	330	3,523	250
Average	**4,080**	**610**	**1**	**829**	**289**	**3,572**	
1988 January	3,988	639	-143	785	354	3,345	254
February	3,941	570	-35	726	318	3,433	255
March	4,175	603	-269	656	328	3,525	264
April	4,052	697	-97	832	288	3,533	267
May	4,097	752	-341	471	274	3,763	277
June	4,278	703	76	759	379	3,920	275
July	4,333	652	-20	824	329	3,812	276
August	4,440	644	201	782	302	4,200	269
September	4,259	582	129	841	323	3,807	266
October	4,193	699	42	768	268	3,898	264
November	4,079	745	-59	808	303	3,655	266
11-Month Average	**4,168**	**663**	**-48**	**750**	**315**	**3,719**	
1987 11-Month Average	**4,083**	**608**	**-23**	**805**	**285**	**3,577**	
1986 11-Month Average	**4,005**	**568**	**-19**	**871**	**307**	**3,376**	

[a]Includes pentanes plus, other hydrocarbons and alcohol, unfinished oil, gasoline blending components, and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, and liquefied petroleum gases.

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

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

[d]In January 1975, 1981, 1983, and 1984, a new stock basis was established affecting stocks reported and stock withdrawal calculations. See Note 4 at end of this section.

[e]Due to a rounding difference, this value is 2,869 in the *Petroleum Supply Annual* and the *Petroleum Supply Monthly.*

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

Sources: See end of section.

Notes and Sources for the Petroleum Section

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 industry publications such 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.

Every 3 years an extensive survey is conducted to update the frames completely. The updating involves consolidating information from every known source including State agencies, Federal agencies (e.g., Environmental Protection Agency, Corps of Engineers, Census Bureau, etc.), and private industry directories. 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.

2. Motor Gasoline: Beginning in January 1981, the EIA expanded its universe to include non-refinery blenders; redefined motor gasoline into two categories (finished leaded and finished unleaded); and separated blending components from finished motor gasoline as a reporting category. Also, survey forms were modified to describe refinery operations more accurately. For further details, see the EIA, *Petroleum Supply Monthly.*

3. Distillate and Residual Fuel Oils: The requirement to report crude oil burned on leases and pipelines as either distillate or residual fuel oil has been eliminated. Prior to January 1981, the refinery input of unfinished oils number typically exceeded the number for 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 an unfinished oil input 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. For further details, see the EIA, *Petroleum Supply Monthly.*

4. New Stock Basis: In January 1975, 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--1,462.
- Motor Gasoline: 1974--225; 1980--263; 1982--244 (Total) and 203 (Finished).
- Distillate Fuel Oil: 1974--224; 1980--205; and 1982--186.
- Residual Fuel Oil: 1974--75; 1980--91; and 1982--68.
- Liquefied Petroleum Gases: 1974--113; 1980--128; and 1982--103.
- Other Petroleum Products: 1974--220; 1980--249; and 1982--259.
- Stock change calculations beginning in 1975, 1981, and 1983, were made 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 "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 withdrawals in each table. Under the new basis, end-of-year 1983 stocks, in million barrels would have been:

- Liquefied Petroleum Gases: 1983--108.
- Other Petroleum Products: 1983--248.

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).

Sources

- 1973 through 1976: U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys,* "Petroleum Statement, Annual" and "PAD Districts Supply/Demand, Annual."
- 1977 through 1980: Energy Information Administration (EIA), *Energy Data Reports,* "Petroleum Statement, Annual" and "PAD Districts Supply/Demand, Annual" and unleaded gasoline data from *Monthly Petroleum Statistics Report.*
- 1981 through 1987: EIA, *Petroleum Supply Annual.*
- January 1988 through November 1988: Detailed Statistics in appropriate issues of the *Petroleum Supply Monthly.*
- December 1988: Estimates based on EIA weekly data (except domestic crude oil production).
- January 1988 through December 1988: Domestic crude oil production estimate based on historical statistics from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior.

Section 4. Natural Gas

Total dry natural gas production in the United States during November 1988 was an estimated 1.4 trillion cubic feet, 1 percent[4] more than in November 1987.

Consumption of natural and supplemental gas in November 1988 was 1.5 trillion cubic feet, 2 percent higher than the level in November 1987.

Deliveries to residential consumers in October 1988 (latest data available) were 233 billion cubic feet, 4 percent higher than in October 1987. Total deliveries to industrial consumers during October were 539 billion cubic feet, 7 percent higher than in October 1987.

Imports of natural gas in November 1988 were 95 billion cubic feet, 11 percent lower than in the previous November.

Stocks of working gas[5] in underground natural gas storage reservoirs at the end of November 1988 totaled 3.2 trillion cubic feet, 5 percent above the level of stocks available 1 year earlier. Net withdrawals from storage during November 1988 were 25 billion cubic feet, 48 percent less than during the previous November.

[4]Percentage changes are based on numbers shown in the following tables.
[5]Gas available for withdrawal.

Table 4.1 Natural Gas Production
(Billion Cubic Feet)

	Gross Wet Gas Withdrawals[a]	Used for Repressuring[b]	Nonhydrocarbon Gases Removed[c]	Vented and Flared	Marketed Production (Wet)[d]	Extraction Loss[c]	Total Dry Gas Production[e]
1973 Total	**24,067**	**1,171**	**NA**	**248**	**[f] 22,648**	**917**	**[f] 21,731**
1974 Total	**22,850**	**1,080**	**NA**	**169**	**[f] 21,601**	**887**	**[f] 20,713**
1975 Total	**21,104**	**861**	**NA**	**134**	**[f] 20,109**	**872**	**[f] 19,236**
1976 Total	**20,944**	**859**	**NA**	**132**	**[f] 19,952**	**854**	**[f] 19,098**
1977 Total	**21,097**	**935**	**NA**	**137**	**[f] 20,025**	**863**	**[f] 19,163**
1978 Total	**21,309**	**1,181**	**NA**	**153**	**[f] 19,974**	**852**	**[f] 19,122**
1979 Total	**21,883**	**1,245**	**NA**	**167**	**[f] 20,471**	**808**	**[f] 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	**20,210**	**1,388**	**208**	**93**	**18,520**	**762**	**17,758**
1983 Total	**18,597**	**1,458**	**222**	**95**	**16,822**	**790**	**16,033**
1984 Total	**20,192**	**1,630**	**224**	**108**	**18,230**	**838**	**17,392**
1985 Total	**19,534**	**1,915**	**326**	**95**	**17,198**	**816**	**16,382**
1986 January	1,815	163	29	9	1,614	77	1,536
February	1,583	150	26	8	1,401	68	1,333
March	1,691	167	29	8	1,487	72	1,415
April	1,526	155	28	8	1,336	65	1,271
May	1,553	158	26	8	1,361	66	1,295
June	1,482	145	28	8	1,302	63	1,239
July	1,524	145	28	8	1,344	65	1,278
August	1,523	142	29	8	1,347	68	1,279
September	1,443	133	25	7	1,280	63	1,217
October	1,543	157	25	8	1,353	65	1,288
November	1,634	162	29	9	1,430	63	1,366
December	1,748	161	32	9	1,536	64	1,473
Total	**19,063**	**1,838**	**337**	**98**	**16,791**	**800**	**15,991**
1987 January	1,823	171	34	13	1,605	74	1,531
February	1,641	158	32	9	1,442	67	1,375
March	1,738	171	34	10	1,523	70	1,453
April	1,640	179	30	10	1,421	67	1,354
May	1,634	190	30	10	1,404	66	1,338
June	1,569	186	29	9	1,345	63	1,282
July	1,586	183	26	12	1,365	65	1,300
August	1,611	179	32	11	1,389	66	1,323
September	1,540	177	28	10	1,325	63	1,262
October	1,684	200	35	10	1,439	67	1,372
November	1,723	201	30	9	1,483	70	1,413
December	1,867	212	35	12	1,608	75	1,533
Total	**20,056**	**2,208**	**376**	**124**	**17,349**	**812**	**16,536**
1988 January	1,868	212	35	12	1,609	75	1,534
February	1,705	192	31	11	1,471	69	1,402
March	1,784	197	35	11	1,540	72	1,468
April	1,653	189	34	12	1,418	66	1,352
May	1,674	202	29	11	1,433	67	1,366
June	1,619	198	34	12	1,375	64	1,311
July	1,628	201	30	13	1,384	65	1,319
August	1,641	198	32	12	1,399	66	1,333
September	[R] 1,564	[R] 197	[R] 33	11	[R] 1,323	62	[R] 1,261
October	[E] 1,691	[E] 205	[E] 33	[E] 13	[E] 1,440	[E] 67	[E] 1,373
November	[E] 1,755	[E] 215	[E] 35	[E] 13	[E] 1,492	[E] 70	[E] 1,422
11-Month Total	**[E] 18,582**	**[E] 2,206**	**[E] 361**	**[E] 131**	**[E] 15,884**	**[E] 743**	**[E] 15,141**
1987 11-Month Total	**18,189**	**1,995**	**340**	**113**	**15,741**	**738**	**15,003**
1986 11-Month Total	**17,317**	**1,677**	**302**	**89**	**15,255**	**735**	**14,517**

[a]Gas withdrawn from gas and oil wells.
[b]Gas returned to formations for repressuring, pressure maintenance, and cycling.
[c]For definitions and further explanations, see Notes at end of section.
[d]Equal to gross withdrawals minus volumes used for repressuring, volumes of nonhydrocarbon gases removed, and volumes vented and flared. See Note 2 at end of section.
[e]Equal to marketed production (wet) minus extraction loss.
[f]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. • Data through 1987 are final. Subsequent data are preliminary.
Sources: See end of section.

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]	Total Supply/ Disposition[c]	Additions to Storage[a]	Exports[b]	Consumption[b]	Unaccounted for[e]
1973 Total	[d] 21,731	1,533	NA	1,033	24,297	1,974	77	22,049	196
1974 Total	[d] 20,713	1,701	NA	959	23,373	1,784	77	21,223	289
1975 Total	[d] 19,236	1,760	NA	953	21,949	2,104	73	19,538	235
1976 Total	[d] 19,098	1,921	NA	964	21,983	1,756	65	19,946	216
1977 Total	[d] 19,163	1,750	NA	1,011	21,924	2,307	56	19,521	41
1978 Total	[d] 19,122	2,158	NA	966	22,245	2,278	53	19,627	287
1979 Total	[d] 19,663	2,047	NA	1,253	22,964	2,295	56	20,241	372
1980 Total	19,403	1,972	155	985	22,515	1,949	49	19,877	640
1981 Total	19,181	1,930	176	904	22,191	2,228	59	19,404	501
1982 Total	17,758	2,164	145	933	21,000	2,472	52	18,001	475
1983 Total	16,033	2,270	132	920	19,354	1,822	55	16,835	[e] 642
1984 Total	17,392	2,098	110	843	20,443	2,295	55	17,951	[e] 143
1985 Total	16,382	2,397	126	949	19,855	2,163	57	17,281	354
1986 January	1,536	421	12	99	2,068	48	5	2,106	-91
February	1,333	375	11	74	1,793	54	3	1,849	-113
March	1,415	215	11	55	1,696	109	5	1,703	-121
April	1,271	73	8	43	1,395	142	6	1,333	-86
May	1,295	42	8	52	1,397	260	3	1,161	-27
June	1,239	24	8	44	1,315	260	6	1,039	10
July	1,278	29	8	48	1,363	281	6	1,039	37
August	1,279	26	8	51	1,364	285	6	1,007	66
September	1,217	25	8	54	1,304	244	5	958	97
October	1,288	48	9	69	1,414	192	5	1,041	176
November	1,366	200	10	70	1,646	74	6	1,276	290
December	1,473	358	12	90	1,933	36	6	1,710	181
Total	**15,991**	**1,837**	**113**	**750**	**18,692**	**1,984**	**61**	**16,221**	**427**
1987 January	1,531	521	11	101	2,164	38	5	2,051	70
February	1,375	325	9	84	1,793	35	3	1,859	-104
March	1,453	213	9	86	1,761	105	5	1,714	-63
April	1,354	101	8	68	1,532	166	3	1,422	-59
May	1,338	28	7	61	1,434	298	3	1,184	-51
June	1,282	21	7	58	1,368	252	5	1,099	12
July	1,300	27	8	66	1,401	230	5	1,099	67
August	1,323	43	8	75	1,450	245	5	1,134	66
September	1,262	19	7	73	1,361	231	5	1,058	67
October	1,372	86	8	93	1,559	148	5	1,238	168
November	1,413	155	9	107	1,684	105	6	1,436	137
December	1,533	365	10	121	2,029	59	5	1,843	122
Total	**16,536**	**1,905**	**101**	**992**	**19,534**	**1,911**	**54**	**17,137**	**432**
1988 January	1,534	576	17	133	2,260	49	5	[R] 2,188	[R] 18
February	1,402	456	14	116	1,988	53	5	[R] 2,044	[R] -114
March	1,468	248	13	109	1,838	102	5	[R] 1,869	[R] -138
April	1,352	81	11	97	1,541	166	5	[R] 1,465	[R] -95
May	1,366	34	11	93	1,504	292	5	[R] 1,314	[R] -107
June	1,311	25	10	92	1,438	290	4	[R] 1,176	[R] -32
July	1,319	30	8	99	1,456	304	5	[R] 1,186	[R] -39
August	1,333	30	10	93	1,466	296	5	[R] 1,246	[R] -81
September	[R] 1,261	31	10	117	[R] 1,419	317	5	[R] 1,112	[R] -15
October	[E] 1,373	88	11	[R] 105	[R] 1,577	212	4	1,248	[R] 113
November	[E] 1,422	173	12	95	1,702	148	5	1,467	82
11-Month Total	[E] **15,141**	**1,772**	**127**	**1,149**	**18,189**	**2,229**	**53**	**16,315**	**-408**
1987 11-Month Total	**15,003**	**1,539**	**91**	**872**	**17,507**	**1,853**	**50**	**15,294**	**310**
1986 11-Month Total	**14,517**	**1,478**	**101**	**659**	**16,755**	**1,949**	**56**	**14,512**	**238**

[a]Data for 1980 through 1987 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]For definitions and further explanations, 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. • Data through 1987 are final. Subsequent data are preliminary.
Sources: See end of section.

Table 4.3 Natural Gas[a] Consumption by End-Use Sector
(Billion Cubic Feet)

	Lease and Plant Fuel	Pipeline Fuel	Delivered to Consumers					Total Consumption
			Residential	Commercial[b]	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 January	89	50	791	392	600	184	1,967	2,106
February	77	43	685	345	542	157	1,729	1,849
March	82	42	580	291	538	170	1,579	1,703
April	73	36	363	189	474	198	1,224	1,333
May	75	38	236	131	449	231	1,047	1,161
June	71	37	155	99	416	260	930	1,039
July	74	38	126	89	410	301	926	1,039
August	74	38	117	89	412	276	894	1,007
September	70	36	131	91	384	247	852	958
October	74	38	185	116	411	217	929	1,041
November	79	38	346	189	436	187	1,157	1,276
December	85	47	599	299	507	175	1,580	1,710
Total	**923**	**485**	**4,314**	**2,318**	**5,579**	**2,602**	**14,814**	**16,221**
1987 January	106	53	741	382	584	185	1,892	2,051
February	95	45	689	361	511	158	1,719	1,859
March	100	44	575	303	501	191	1,570	1,714
April	94	42	402	213	465	206	1,286	1,422
May	93	42	223	132	451	243	1,049	1,184
June	89	40	147	97	442	284	970	1,099
July	91	38	126	93	432	319	970	1,099
August	93	40	117	90	455	339	1,001	1,134
September	89	38	126	100	437	268	931	1,058
October	94	41	223	140	502	238	1,103	1,238
November	99	43	354	201	522	217	1,294	1,436
December	108	51	592	303	592	197	1,684	1,843
Total	**1,149**	**519**	**4,315**	**2,414**	**5,895**	**2,844**	**15,468**	**17,137**
1988 January	107	56	R 857	R 432	R 569	167	R 2,025	R 2,188
February	97	49	R 762	R 401	R 565	170	R 1,898	R 2,044
March	102	47	R 601	R 332	R 584	203	R 1,720	R 1,869
April	94	41	R 402	R 226	R 502	199	R 1,330	R 1,465
May	95	43	R 266	163	R 508	239	R 1,176	R 1,314
June	91	42	R 156	R 116	R 491	280	R 1,043	R 1,176
July	92	43	R 126	R 109	R 487	328	R 1,051	R 1,186
August	93	43	R 118	115	R 533	345	R 1,110	R 1,246
September	87	42	126	R 111	R 513	233	R 983	R 1,112
October	95	43	233	157	539	182	1,110	R 1,248
10-Month Total	**953**	**449**	**3,647**	**2,162**	**5,291**	**2,346**	**13,445**	**14,848**
1987 10-Month Total	**944**	**423**	**3,369**	**1,911**	**4,780**	**2,431**	**12,491**	**13,858**
1986 10-Month Total	**759**	**396**	**3,369**	**1,832**	**4,636**	**2,241**	**12,077**	**13,236**

[a]Includes supplemental gaseous fuels.
[b]Includes deliveries to local, State, and Federal agencies engaged in nonmanufacturing activities.
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. • Data through 1987 are final. Subsequent data are preliminary.
Sources: See end of section.

Table 4.4 Underground Storage of Natural Gas
(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	Withdrawals	Net[b]
1973 Total	**2,864**	**2,034**	**4,898**	**305**	**17.6**	**1,974**	**1,533**	**441**
1974 Total	**2,912**	**2,050**	**4,962**	**16**	**.8**	**1,784**	**1,701**	**83**
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 January	3,842	2,213	6,056	-29	-1.3	48	414	-366
February	3,842	1,872	5,714	19	1.0	54	369	-315
March	3,838	1,764	5,602	21	1.2	109	213	-104
April	3,834	1,841	5,675	-18	-1.0	140	73	67
May	3,830	2,076	5,906	-53	-2.5	255	42	213
June	3,829	2,323	6,153	-28	-1.2	255	24	231
July	3,841	2,570	6,412	-35	-1.3	274	29	245
August	3,840	2,842	6,683	10	.4	279	26	253
September	3,840	3,066	6,906	-16	-.5	239	25	215
October	3,840	3,208	7,048	4	.1	189	48	141
November	3,820	3,077	6,897	-9	-.3	74	197	-123
December	3,819	2,749	6,567	142	5.5	36	352	-316
Total						**1,952**	**1,812**	**140**
1987 January	3,818	2,280	6,098	67	3.0	38	513	-475
February	3,815	1,988	5,803	116	6.2	35	320	-285
March	3,813	1,879	5,693	115	6.5	105	210	-105
April	3,812	1,938	5,750	97	5.3	163	101	62
May	3,811	2,206	6,017	130	6.3	293	28	265
June	3,810	2,437	6,247	113	4.9	248	21	227
July	3,813	2,636	6,449	65	2.5	226	27	199
August	3,813	2,836	6,648	-7	-.2	241	43	198
September	3,813	3,049	6,862	-17	-.6	227	19	209
October	3,813	3,106	6,919	-102	-3.2	146	86	60
November	3,792	3,059	6,851	-18	-.6	105	153	-48
December	3,792	2,756	6,548	7	.3	59	359	-300
Total						**1,887**	**1,881**	**6**
1988 January	3,792	2,229	6,021	-51	-2.3	49	576	-527
February	3,791	1,827	5,618	-161	-8.1	53	456	-402
March	3,790	1,684	5,474	-196	-10.4	102	248	-146
April	3,790	1,770	5,560	-168	-8.7	166	81	86
May	3,790	2,028	5,818	-178	-8.1	292	34	258
June	3,792	2,293	6,085	-144	-5.9	290	25	265
July	3,793	2,567	6,359	-69	-2.6	226	30	274
August	3,791	2,834	6,625	-1	-.1	296	30	266
September	3,791	3,121	6,912	72	2.4	317	31	286
October	3,792	3,243	7,035	137	4.4	212	88	123
November	3,803	3,197	6,999	138	4.5	148	173	-25

[a]Total underground storage capacity at the end of each calendar year (in billion cubic feet): 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; and 1987--8,124. Current capacity is 8,124.

[b]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.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding. • Data through 1987 are final. Subsequent data are preliminary.

Sources: See end of section.

Figure 4.1 Natural Gas Consumption, Production, and Imports

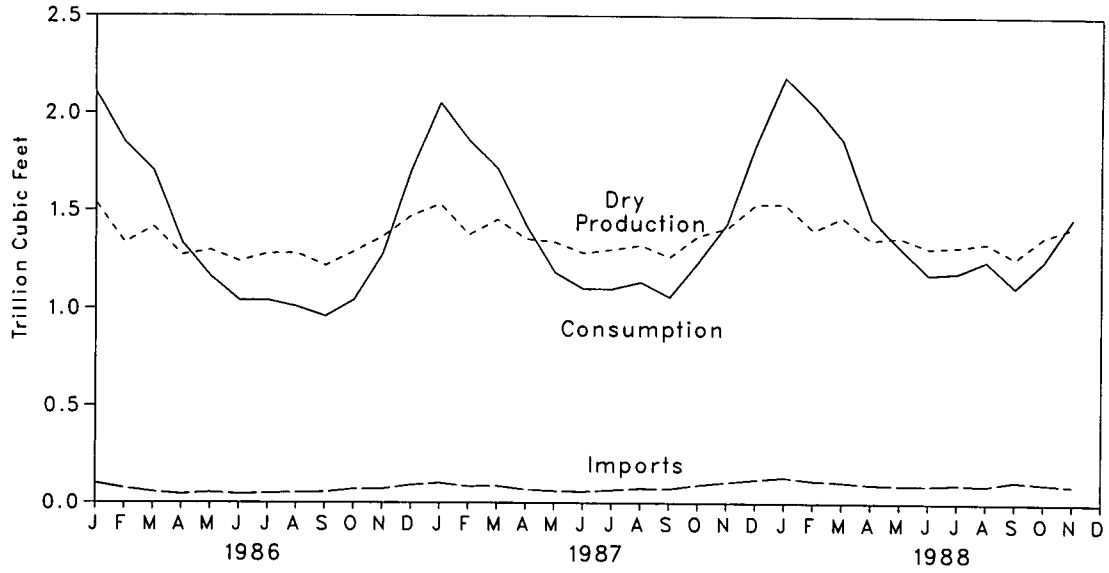
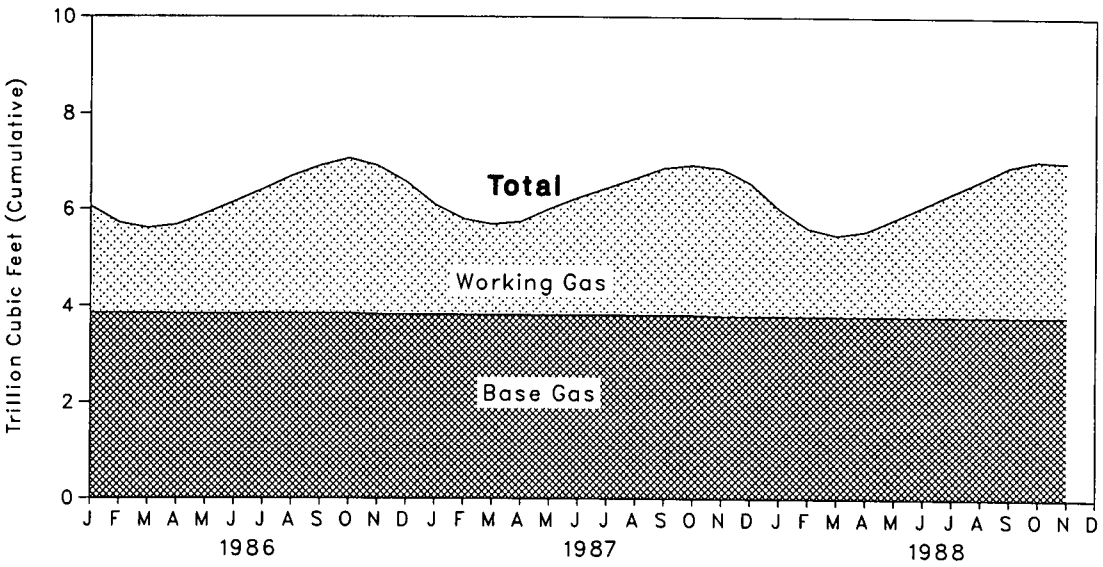


Figure 4.2 Natural Gas in Storage, End of Period



Notes and Sources for the Natural Gas Section

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) 1987.* These data are not available for periods prior to 1980. For 1987, of the 32 producing States, 22 reported data on nonhydrocarbon gases removed. These 22 States accounted for 58 percent of total 1987 gross withdrawals. In addition, gross withdrawals data from four States, which together accounted for 38 percent of the 1987 total production, did not include all or most of the nonhydrocarbon gases removed on leases. Two States reported quantities unknown but considered insignificant. For further information see the EIA *Natural Gas Monthly (NGM).*

Monthly data are reported by three States and computed for six States. All monthly data are considered preliminary until after publication of the EIA *NGA* for that year. For further information on methods of estimating preliminary monthly data, see the EIA *NGM.*

Monthly data are revised and considered final after publication of the EIA *NGA* by proportionally allocating the differences between annual data published in the EIA *NGA* and the sum of the preliminary monthly data (January-December).

2. Production: Annual data. Final annual data are from the EIA *NGA 1987.*

Estimated Monthly Data. All 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. All monthly data are considered preliminary until after publication of the EIA *NGA* for that year. Preliminary monthly data are gathered from reports from the Interstate Oil Compact Commission and the U.S. Minerals Management Service. Volumetric data are converted, as necessary to a standard 14.73 psia pressure base. Unless there are major changes, data are not revised until after publication of the EIA *NGA.*

Final monthly data. The difference between annual production data published in the EIA *NGA 1987* and the sum of preliminary monthly data (January-December) is allocated proportionally to the preliminary 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* for which they have been estimated based on 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 based on 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 each month based on its total natural gas disposition.

4. Supplemental Gaseous Fuels: Supplemental gaseous fuels are mainly synthetic natural gas, propane-air, and refinery gas. Other gases may also be included such as, coke oven gas, biomass gas, manufactured gas, and air injected for Btu stabilization.

Annual data beginning with 1980 are from the EIA *NGA 1987.* Unknown quantities of supplemental gaseous fuels are included in consumption data for 1979 and earlier years.

All monthly data are considered preliminary until after the publication of the EIA *NGA* for that year. 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. This ratio is applied to the monthly sum of these three elements to compute a monthy supplemental gaseous fuels figure.

5. Imports and Exports: The United States imports natural gas via pipeline from Mexico 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 liquefied natural gas via tanker to Japan.

Annual and final monthly data are published 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* for that year.

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

All final data are from the EIA, *NGA.* All 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. Unaccounted for: The "Unaccounted for" category represents the following: (1) quantities lost; (2) the net result of flow data metered at varying temperature and pressure conditions and converted to a standard temperature and pressure base; (3) metering inaccuracies; (4) differences between billing cycle and calendar period time frames; (5) the effect of variations in company accounting and billing practices; and (6) imbalances from EIA's 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 "Unaccounted for" category in 1983 followed by a decline of 0.5 trillion cubic feet 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. This 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.

All monthly data concerning underground storage are collected from the essentially identical Forms FPC-8 and EIA-191. Monthly data are revised after publication of the EIA *Underground Natural Gas Storage in the United States* for that heating year (April through March). In addition, injection and withdrawal data from the FPC-8/EIA-191 survey are adjusted to correspond to data from Form EIA-176 following publication of the EIA *Natural Gas Annual.*

The final monthly and annual storage and withdrawal data for 1980 through 1987 include both underground and liquefied natural gas (LNG) storage. Underground storage data are taken from the FPC-8/EIA-191 surveys in the manner described earlier. Annual data on LNG additions and withdrawals are taken 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 it to annual LNG data.

Sources

Production: 1973 through 1987: Energy Information Administration (EIA), *Natural Gas Annual 1987;* January 1988 forward: State reports to the Interstate Oil Compact Commission, data from the U.S. Minerals Management Service, and EIA estimates for States that do not report monthly data on a regular or timely basis.

Extraction Loss, Consumption, and Unaccounted For: 1973 through 1987: EIA, *Natural Gas Annual 1987;* January 1988 forward: EIA computations.

Withdrawals from and Additions to Storage: 1973 through 1987: EIA, *Natural Gas Annual 1987;* January 1988 forward: Form FPC-8 and Form EIA-191, "Underground Gas Storage Report."

Supplemental Gaseous Fuels: 1980 through 1987: EIA, *Natural Gas Annual 1987;* January 1988 forward: EIA computations.

Imports and Exports: 1973 through 1987: Form FPC-14, "Imports and Exports of Natural Gas"; January 1988 forward: EIA computations.

End-Use Consumption: All data except electric utility--1973 through 1987: EIA, *Natural Gas Annual, 1987;* January 1988 forward: Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," and EIA computations. Electric utility data--EIA, Form 759, "Monthly Power Plant Report" (formerly Form FPC-4).

Underground Storage: 1973 and 1974: American Gas Association, *Gas Facts;* 1975 through 1979: EIA, Form FPC-8 and Form EIA-191, and the *Natural Gas Annual;* 1980 forward: EIA, Form FPC-8, Form EIA-191, and Form 176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

Section 5. Oil and Gas Resource Development

In December 1988, the number of crews engaged in seismic exploration decreased by 14 from the previous month. The December 1988 total of 141 was the lowest monthly total recorded since 1935 and was 58 lower than the previous year. Of the total, 114 were land crews and 27 were marine vessels. The number of land crews was down by 58 from December 1987 but the marine vessels were the same as a year earlier.

The December 1988 rotary rig count of 924 was 1 percent higher than in the previous month but 20 percent lower than in December 1987. Of the total number of rigs in operation, 797 were onshore and 127 were offshore. The number of onshore rigs was down 23 percent from the number in December 1987 and the number of offshore rigs was down 1 percent.

Exploratory and development well completions during November 1988 totaled an estimated 2,300, down 17 percent from the previous month and 28 percent lower than the November 1987 total. Oil well completions were 1,030, down 34 percent from the level in November 1987, and gas well completions totaled 540, down 21 percent from the November 1987 total. Total footage drilled in November 1988 was 10.2 million feet, down 17 percent[6] from the total in October 1988 and down 29 percent from the total in November 1987.

Figure 5.1 Seismic Crews, Rotary Rigs, and Footage Drilled

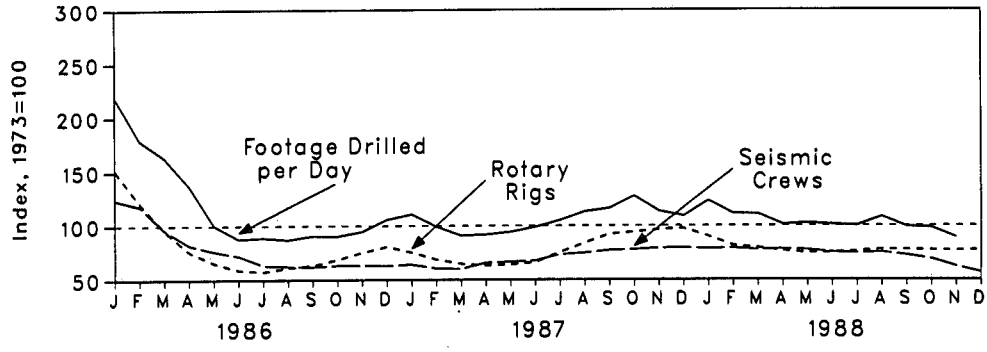
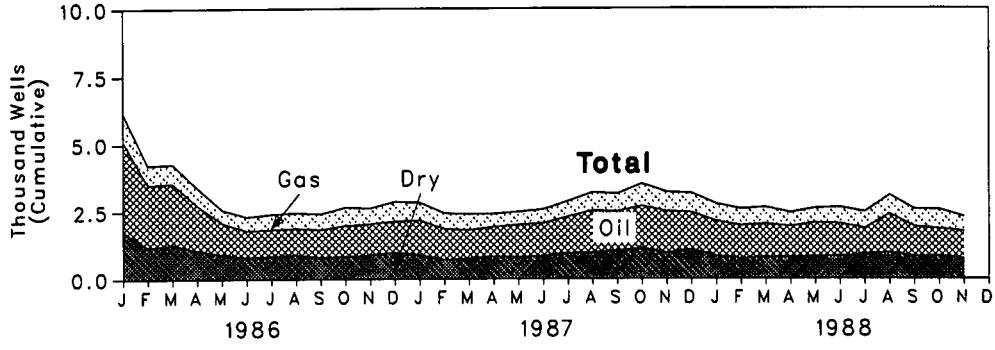


Figure 5.2 Exploratory and Development Wells Completed



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

Table 5.1 Seismic Crews and Rotary Rigs

	Crews Engaged in Seismic Exploration			Rotary Rigs in Operation[a]		
	Offshore	Onshore	Total	Offshore	Onshore	Total
	Monthly Average			Weekly Average		
1973 Average	**23**	**227**	**250**	**84**	**1,110**	**1,194**
1974 Average	**31**	**274**	**305**	**94**	**1,378**	**1,472**
1975 Average	**30**	**254**	**284**	**106**	**1,554**	**1,660**
1976 Average	**25**	**237**	**262**	**129**	**1,529**	**1,658**
1977 Average	**27**	**281**	**308**	**167**	**1,834**	**2,001**
1978 Average	**25**	**327**	**352**	**185**	**2,074**	**2,259**
1979 Average	**30**	**370**	**400**	**207**	**1,970**	**2,177**
1980 Average	**37**	**493**	**530**	**231**	**2,678**	**2,909**
1981 Average	**44**	**637**	**681**	**256**	**3,714**	**3,970**
1982 Average	**57**	**531**	**588**	**243**	**2,862**	**3,105**
1983 Average	**47**	**426**	**473**	**199**	**2,033**	**2,232**
1984 Average	**49**	**445**	**494**	**213**	**2,215**	**2,428**
1985 Average	**45**	**333**	**378**	**206**	**1,774**	**1,980**
1986 January	39	271	310	175	1,635	1,810
February	39	256	295	164	1,280	1,444
March	28	212	240	132	1,007	1,139
April	20	185	205	112	794	906
May	19	172	191	94	687	781
June	18	162	180	73	632	705
July	20	138	158	65	621	686
August	19	137	156	65	665	730
September	24	131	155	74	681	755
October	22	136	158	80	739	819
November	19	139	158	79	820	899
December	18	139	157	89	874	963
Average	**24**	**176**	**201**	**99**	**865**	**R 984**
1987 January	18	142	160	88	812	900
February	19	132	151	75	743	818
March	18	132	150	76	696	772
April	19	145	164	73	681	754
May	20	146	166	76	687	763
June	22	147	169	85	703	788
July	24	159	183	97	804	901
August	28	159	187	109	894	1,003
September	29	164	193	114	987	1,101
October	32	163	195	116	1,008	1,124
November	28	170	198	118	1,034	1,152
December	27	172	199	128	1,034	1,162
Average	**24**	**153**	**176**	**95**	**841**	**936**
1988 January	30	167	197	127	949	1,076
February	30	168	198	123	853	976
March	29	165	194	119	832	951
April	29	167	196	117	800	917
May	30	164	194	123	768	891
June	30	158	188	124	773	897
July	28	158	186	126	786	912
August	32	156	188	123	807	930
September	30	151	181	122	805	927
October	30	142	172	122	801	923
November	28	127	155	129	789	918
December	27	114	141	127	797	924
Average	**29**	**153**	**182**	**123**	**813**	**936**

[a]Monthly data are averages of 4- or 5-week reporting periods, not calendar months.
R=Revised data.
Note: Geographic coverage is the 50 States and the District of Columbia.
Sources: See end of section.

Table 5.2 Total Oil and Gas Wells Completed and Footage Drilled

	Wells Completed				Footage Drilled
	Oil	Gas	Dry	Total	
	Thousand Wells				Million Feet
1973 Total	**10.25**	**6.98**	**10.47**	**27.69**	**139.42**
1974 Total	**13.66**	**7.17**	**12.21**	**33.04**	**153.79**
1975 Total	**16.98**	**8.17**	**13.74**	**38.89**	**181.05**
1976 Total	**17.70**	**9.44**	**13.81**	**40.94**	**187.29**
1977 Total	**18.70**	**12.12**	**15.04**	**45.86**	**215.70**
1978 Total	**19.07**	**14.41**	**16.59**	**50.06**	**238.39**
1979 Total	**20.70**	**15.17**	**16.04**	**51.91**	**243.69**
1980 Total	**32.28**	**17.22**	**20.34**	**69.84**	**312.30**
1981 Total	**42.84**	**19.91**	**27.28**	**90.03**	**408.84**
1982 Total	**38.75**	**18.73**	**25.96**	**83.43**	**374.85**
1983 Total	**36.77**	**14.28**	**23.85**	**74.90**	**314.73**
1984 Total	**42.20**	**16.79**	**25.36**	**84.35**	**367.33**
1985 Total	**34.57**	**14.10**	**20.51**	**69.18**	**306.98**
1986 January	3.34	1.04	1.78	6.15	26.06
February	2.33	.72	1.18	4.22	19.86
March	2.29	.71	1.27	4.26	19.51
April	1.69	.66	1.05	3.40	16.18
May	1.18	.50	.90	2.59	12.30
June	.99	.52	.80	2.31	10.46
July	1.00	.57	.85	2.42	10.88
August	1.00	.58	.88	2.46	10.67
September	1.04	.59	.79	2.41	10.71
October	1.15	.68	.83	2.66	11.52
November	R 1.18	R .60	R .88	R 2.65	R 11.57
December	1.17	.73	.97	2.86	13.19
Total	**R 18.36**	**R 7.89**	**R 12.16**	**R 38.40**	**R 172.90**
1987 January	1.29	.67	.88	2.84	13.10
February	1.15	.59	.70	2.44	11.13
March	1.07	.60	.74	2.41	11.28
April	1.10	.50	.82	2.41	10.96
May	1.22	.48	.79	2.48	11.39
June	1.22	.52	.84	2.58	11.61
July	1.36	.58	.94	2.88	12.51
August	1.56	.68	.97	3.21	13.72
September	1.48	.66	1.02	3.16	14.15
October	1.57	.83	1.13	3.52	15.66
November	R 1.56	R .68	R .94	R 3.18	R 14.40
December	1.39	.72	1.07	3.18	15.11
Total	**R 15.96**	**R 7.50**	**10.83**	**R 34.29**	**R 155.02**
1988 January	1.30	.65	.83	2.77	13.57
February	1.24	.62	.73	2.59	12.47
March	1.26	.62	.77	2.65	12.92
April	1.17	.52	.76	2.45	11.90
May	R 1.19	R .53	R .79	R 2.51	R 11.57
June	1.21	.61	.83	2.65	11.58
July	R 1.27	.62	.89	R 2.77	R 12.02
August	1.14	.70	.96	2.81	R 12.83
September	1.11	.65	.82	2.58	11.31
October	R 1.22	.72	.83	R 2.77	R 12.31
November	1.03	.54	.73	2.30	10.19
11-Month Total	**13.12**	**6.78**	**8.95**	**28.84**	**132.68**
1987 11-Month Total	**14.57**	**6.78**	**9.76**	**31.11**	**139.91**
1986 11-Month Total	**17.19**	**7.16**	**11.19**	**35.54**	**159.71**

R=Revised data.

Notes: • Includes exploratory and development wells; excludes service wells, stratigraphic tests, and core tests. • Geographic coverage is the 50 States and the District of Columbia. • Totals and averages may not equal sum of components due to subsequent revisions and independent rounding. • Due to the method of estimation, data shown on this page are frequently revised. See end of section.

Source: See end of section.

Notes and Sources for the Oil and Gas Resource Development Section

Notes

Beginning in the March 1985 *Monthly Energy Review (MER)*, the Energy Information Administration (EIA) revised the exploratory and development wells drilled data series. In order to present a consistent series, historical as well as current statistics were adjusted.

In previous issues, the *MER* published statistics based on data on well completions reported to the American Petroleum Institute during a given month, as opposed to data on wells actually completed during the month. Because of the time lag from date of well completion to date of reporting, data on well completions reported are not as accurate an indicator of drilling activity as are data on well completions. For example, during 1982 well completions reported continued to rise even though the number of wells actually completed fell. Starting in the March 1985 issue of the *MER*, published figures have been EIA estimates of the number of wells actually completed in a given month and are shown in thousands, rounded to two decimal places. The associated footage drilled is shown in millions, also rounded to two decimal places.

The EIA estimates are calculated using an adjustment process that imputes total well counts and footage by type and class based on partial counts of well completions available from the reported data. That is, based on statistical analysis of the incomplete reported data, the process imputes the missing portions to determine values for total well completions and footage. Estimates for a given month are first published in the *MER* for that month, that is estimates for June 1984 are first published in the June 1984 *MER*. Revisions to the estimates are scheduled for the 6th, 12th, and 24th months following initial publication, as newly reported data refine the accuracy of the estimate. Unscheduled revisions to the published data will also be made when the latest estimate differs by more than 15 percent during the first 5 months, more than 10 percent during the next 6 months, more than 5 percent during the following 6 months, or more than 2 percent thereafter through 5 years. After 5 years, the actual reported data will be published.

The three well types considered are oil, gas, and dry. By convention, wells with both oil and gas zones are categorized as oil. Well classes are either development or exploratory; wells in any other class have been deleted. Exploratory well categories considered are new field wildcat, new pool wildcat, deeper pool test, or extension (American Association of Petroleum Geologists well classification codes 1 through 5).

Additional information may be obtained from "Estimating Well Completions," the feature article published in the March 1985 *MER*.

Sources

- Crews Engaged: Society of Exploration Geophysicists, "Monthly Seismic Crew Count" and annual reports published in their bulletins, *Geophysics* and *Leading Edge*.
- Rotary Rigs: Hughes Tool Company, "Rotary Rigs Running--by State."
- Wells and Footage Drilled: EIA computations based on well reports submitted to the American Petroleum Institute by Petroleum Information Corporation.

Section 6. Coal

Coal production in November 1988 totaled 86 million short tons, 9 percent[7] higher than in November 1987.

Exports of coal in October 1988 (latest data available) totaled 9 million short tons, 36 percent more than exports in October 1987.

Coal imports totaled 229 thousand short tons in October 1988, almost tripling the amount of imports in October 1987.

Electric utility coal consumption in October 1988 totaled 60 million short tons, 4 percent higher than in October 1987.

Electric utility coal stocks were 147 million short tons at the end of October 1988, 9 percent less than at the end of October 1987.

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

Figure 6.1 Coal Production, Consumption, Imports, and Exports

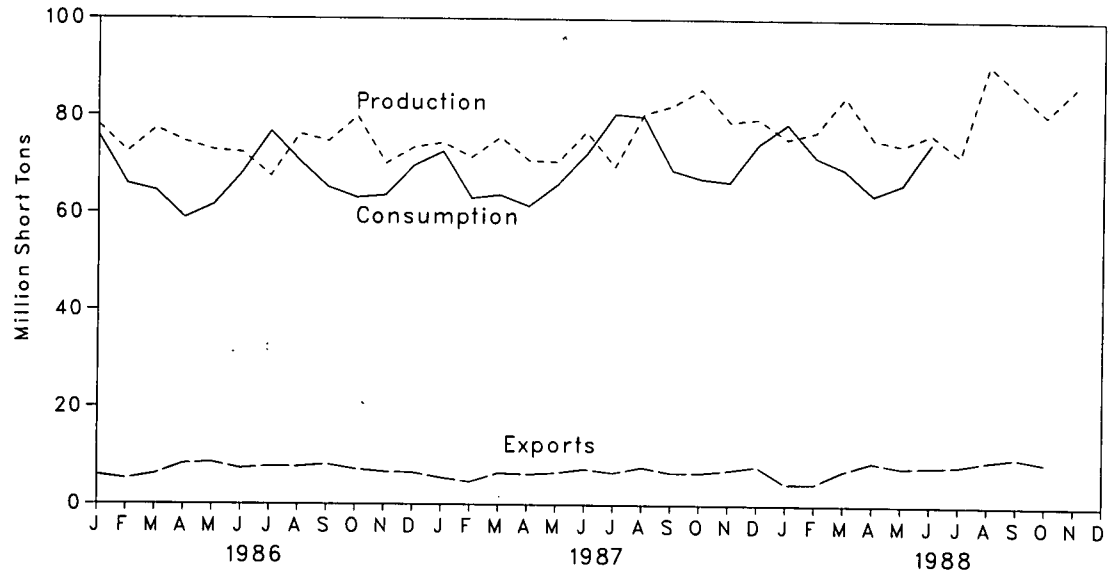


Figure 6.2 Coal Stocks, End of Period

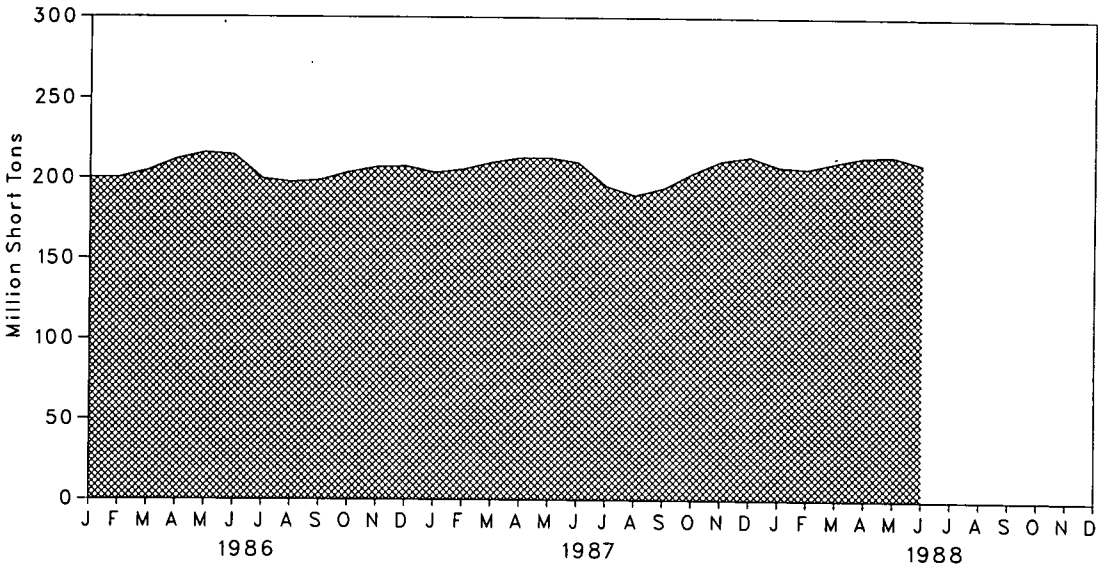


Table 6.1 Coal Overview
(Thousand Short Tons)

	Production	Consumption	Imports[a]	Exports[b]	Stocks[c]
1973 Total	**598,568**	**562,584**	**127**	**53,587**	**NA**
1974 Total	**610,023**	**558,402**	**2,080**	**60,661**	**NA**
1975 Total	**654,641**	**562,640**	**940**	**66,309**	**NA**
1976 Total	**684,913**	**603,790**	**1,203**	**60,021**	**NA**
1977 Total	**697,205**	**625,291**	**1,647**	**54,312**	**NA**
1978 Total	**670,164**	**625,225**	**2,953**	**40,714**	**NA**
1979 Total	**781,134**	**680,524**	**2,059**	**66,042**	**202,472**
1980 Total	**829,700**	**702,729**	**1,194**	**91,742**	**228,407**
1981 Total	**823,775**	**732,628**	**1,043**	**112,541**	**209,423**
1982 Total	**838,111**	**706,910**	**742**	**106,277**	**232,037**
1983 Total	**782,091**	**736,671**	**1,271**	**77,772**	**202,585**
1984 Total	**895,921**	**791,291**	**1,286**	**81,483**	**231,300**
1985 Total	**883,638**	**818,049**	**1,952**	**92,680**	**203,367**
1986 January	78,106	75,877	154	5,935	200,074
February	72,489	65,917	209	5,158	200,159
March	77,379	64,521	122	6,152	204,422
April	74,680	58,921	214	8,302	211,500
May	72,907	61,559	172	8,545	215,508
June	72,413	68,193	190	7,323	214,166
July	67,597	76,787	178	7,780	199,556
August	76,293	70,590	171	7,718	197,412
September	74,791	65,293	188	8,189	198,689
October	79,891	63,179	110	7,205	203,538
November	70,189	63,682	319	6,676	206,834
December	73,580	69,792	185	6,536	207,319
Total	**890,315**	**804,312**	**2,212**	**85,518**	
1987 January	74,681	72,648	134	5,471	203,432
February	71,662	63,091	85	4,643	205,551
March	75,857	63,784	111	6,462	209,733
April	71,044	61,472	229	6,229	212,699
May	70,707	65,950	135	6,557	212,788
June	77,072	72,204	118	7,328	209,976
July	69,774	80,479	120	6,611	195,431
August	80,707	79,935	191	7,758	189,919
September	82,477	68,984	164	6,665	194,373
October	85,992	67,299	86	6,633	203,544
November	79,242	66,634	263	7,210	211,067
December	79,549	74,462	109	8,042	213,780
Total	**918,762**	**836,941**	**1,747**	**79,607**	
1988 January	75,540	78,629	159	4,434	207,568
February	77,025	71,753	162	4,482	206,388
March	84,222	69,227	221	7,145	210,434
April	75,589	64,010	107	8,943	213,976
May	74,277	66,300	224	7,905	214,369
June	76,725	74,880	257	8,053	209,404
July	72,171	NA	203	8,303	NA
August	91,016	NA	205	9,322	NA
September	85,774	NA	29	10,066	NA
October	80,585	NA	229	9,010	NA
November	86,361	NA	NA	NA	NA
11-Month Total	**879,285**	**NA**	**NA**	**NA**	
1987 11-Month Total	**839,213**	**762,479**	**1,638**	**71,565**	
1986 11-Month Total	**816,735**	**734,520**	**2,026**	**78,982**	

[a]Includes Puerto Rico.

[b]Excludes shipments of anthracite to U.S. Armed Forces overseas (218 thousand short tons in 1982, 341 thousand short tons in 1983, 298 thousand short tons in 1984, 240 thousand short tons in 1985, 209 thousand short tons in 1986, and 278 thousand short tons in 1987).

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

NA=Not available.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Data through 1987 are final. Subsequent data are preliminary. • Totals may not equal sum of components due to independent rounding. • See Note at end of section for methodology used to calculate production, consumption, and stocks.

Sources: See end of section.

Table 6.2 Coal Consumption by End-Use Sector[a]
(Thousand Short Tons)

	Electric Utilities	Industrial		Residential and Commercial	Total
		Coke Plants	Other Industrial Including Transportation		
1973 Total	**389,212**	**94,101**	**68,154**	**11,117**	**562,584**
1974 Total	**391,811**	**90,191**	**64,983**	**11,417**	**558,402**
1975 Total	**405,962**	**83,598**	**63,670**	**9,410**	**562,640**
1976 Total	**448,371**	**84,704**	**61,799**	**8,916**	**603,790**
1977 Total	**477,126**	**77,739**	**61,472**	**8,954**	**625,291**
1978 Total	**481,235**	**71,394**	**63,085**	**9,511**	**625,225**
1979 Total	**527,051**	**77,368**	**67,717**	**8,388**	**680,524**
1980 Total	**569,274**	**66,657**	**60,347**	**6,452**	**702,729**
1981 Total	**596,797**	**61,015**	**67,395**	**7,422**	**732,628**
1982 Total	**593,666**	**40,908**	**64,096**	**8,240**	**706,910**
1983 Total	**625,211**	**37,033**	**65,979**	**8,448**	**736,671**
1984 Total	**664,399**	**44,022**	**73,744**	**9,128**	**791,291**
1985 Total	**693,841**	**41,056**	**75,372**	**7,779**	**818,049**
1986 January	64,034	3,508	7,443	893	75,877
February	55,050	3,324	6,761	781	65,917
March	53,898	3,555	6,511	557	64,521
April	48,114	3,602	6,401	805	58,921
May	51,420	3,533	6,120	486	61,559
June	58,892	3,071	5,846	384	68,193
July	68,021	2,591	5,705	470	76,787
August	61,709	2,578	5,860	444	70,590
September	56,536	2,534	5,634	589	65,293
October	54,116	2,523	5,878	662	63,179
November	54,158	2,545	6,279	701	63,682
December	59,108	2,641	7,146	896	69,792
Total	**685,056**	**36,006**	**75,583**	**7,667**	**804,312**
1987 January	62,414	2,645	6,865	724	72,648
February	53,715	2,506	6,236	634	63,091
March	54,647	2,681	6,005	452	63,784
April	51,435	3,298	6,137	603	61,472
May	56,484	3,235	5,868	364	65,950
June	63,500	2,812	5,605	288	72,204
July	70,736	3,265	5,973	504	80,479
August	70,075	3,249	6,135	476	79,935
September	59,259	3,193	5,899	633	68,984
October	57,117	3,297	6,228	656	67,299
November	55,961	3,326	6,653	694	66,634
December	62,551	3,452	7,572	888	74,462
Total	**717,894**	**36,957**	**75,175**	**6,914**	**836,941**
1988 January	67,779	3,219	6,806	825	78,629
February	61,247	3,062	6,767	677	71,753
March	58,609	3,339	6,779	499	69,227
April	54,014	3,518	5,871	606	64,010
May	56,343	3,696	5,904	357	66,300
June	65,168	3,362	5,911	438	74,880
July	71,289	NA	NA	NA	NA
August	75,112	NA	NA	NA	NA
September	61,547	NA	NA	NA	NA
October	59,530	NA	NA	NA	NA
10-Month Total	**630,638**	**NA**	**NA**	**NA**	**NA**
1987 10-Month Total	**599,383**	**30,180**	**60,950**	**5,332**	**695,845**
1986 10-Month Total	**571,790**	**30,820**	**62,158**	**6,070**	**670,838**

[a]See Note 2 at end of section.
NA=Not available.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Data through 1987 are final. Subsequent data are preliminary. • Totals may not equal sum of components due to independent rounding.
Sources: See end of section.

Table 6.3 Coal Stocks, End of Period
(Thousand Short Tons)

	Consumer				Producers and Distributors	Total[a]
	Electric Utilities	Coke Plants	Other Industrial	Total[a]		
1973 Year	**86,967**	**6,998**	**10,370**	**104,335**	**NA**	**NA**
1974 Year	**83,509**	**6,209**	**6,605**	**96,323**	**NA**	**NA**
1975 Year	**110,724**	**8,797**	**8,529**	**128,050**	**NA**	**NA**
1976 Year	**117,436**	**9,902**	**7,100**	**134,438**	**NA**	**NA**
1977 Year	**133,219**	**12,816**	**11,063**	**157,098**	**NA**	**NA**
1978 Year	**128,225**	**8,278**	**9,048**	**145,551**	**NA**	**NA**
1979 Year	**159,714**	**10,155**	**11,777**	**181,646**	**20,826**	**202,472**
1980 Year	**183,010**	**9,067**	**11,951**	**204,028**	**24,379**	**228,407**
1981 Year	**168,893**	**6,475**	**9,906**	**185,274**	**24,149**	**209,423**
1982 Year	**181,132**	**4,642**	**9,479**	**195,253**	**36,784**	**232,037**
1983 Year	**155,598**	**4,346**	**8,710**	**168,654**	**33,931**	**202,585**
1984 Year	**179,727**	**6,166**	**11,317**	**197,210**	**34,090**	**231,300**
1985 Year	**156,376**	**3,420**	**10,438**	**170,234**	**33,133**	**203,367**
1986 January	152,078	3,302	9,930	165,311	34,763	200,074
February	151,157	3,185	9,423	163,765	36,394	200,159
March	154,415	3,067	8,916	166,398	38,024	204,422
April	161,076	3,224	9,135	173,434	38,065	211,500
May	164,667	3,380	9,353	177,401	38,107	215,508
June	162,909	3,537	9,572	176,018	38,148	214,166
July	149,803	3,313	9,740	162,856	36,700	199,556
August	149,163	3,090	9,908	162,161	35,252	197,412
September	151,945	2,866	10,074	164,885	33,804	198,689
October	157,202	2,908	10,195	170,305	33,233	203,538
November	160,908	2,950	10,314	174,171	32,663	206,834
December	161,806	2,992	10,429	175,226	32,093	207,319
1987 January	157,061	2,886	9,903	169,850	33,582	203,432
February	158,322	2,780	9,377	170,479	35,071	205,551
March	161,648	2,675	8,850	173,173	36,560	209,733
April	165,103	3,028	8,881	177,012	35,686	212,699
May	165,683	3,382	8,911	177,976	34,813	212,788
June	163,361	3,735	8,941	176,037	33,939	209,976
July	150,217	3,603	9,393	163,213	32,217	195,431
August	146,106	3,472	9,845	159,422	30,496	189,919
September	151,961	3,340	10,297	165,598	28,775	194,373
October	160,942	3,521	10,457	174,920	28,624	203,544
November	168,274	3,703	10,617	182,594	28,472	211,067
December	170,797	3,884	10,777	185,459	28,321	213,780
1988 January	162,518	3,880	10,037	176,435	31,133	207,568
February	159,270	3,876	9,297	172,444	33,944	206,388
March	161,249	3,873	8,557	173,678	36,755	210,434
April	165,122	3,836	8,488	177,446	36,530	213,976
May	165,847	3,799	8,419	178,065	36,304	214,369
June	161,212	3,763	8,350	173,325	36,079	209,404
July	148,272	NA	NA	NA	NA	NA
August	141,278	NA	NA	NA	NA	NA
September	142,830	NA	NA	NA	NA	NA
October	146,941	NA	NA	NA	NA	NA

[a]Total excludes stocks held at retail dealers for consumption by the residential and commercial sector.
NA=Not available.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Data through 1987 are final. Subsequent data are preliminary.
• Totals may not equal sum of components due to independent rounding.
Sources: See end of section.

Notes and Sources for the Coal Section

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 (AAR) 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 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 (ICC). 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 the *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: Both monthly and quarterly consumption for electric utility plants are taken directly from reported data. Prior to 1980, monthly consumption at coke plants was also taken directly from reported data. Since that time, it has been estimated by proportioning reported quarterly data using the ratios of monthly to quarterly consumption in 1979, the last year in which monthly data were reported. Quarterly consumption is taken directly from reported data.

Prior to 1978, monthly consumption for the other industrial sector (i.e., all industrial users minus coke plants) was 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 subsequent years, monthly figures were derived from data reported on Forms EIA-3 and EIA-6. Beginning in 1980, monthly figures have been estimated by proportioning derived quarterly data using the ratios of monthly to quarterly consumption in 1979, the last year in which monthly data were reported on Form EIA-3. Quarterly consumption for the other industrial sector is derived from reported data by adding beginning stocks at manufacturing plants to current receipts and subtracting ending stocks at manufacturing plants. In this calculation, current receipts are taken as 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 are included where appropriate.

Prior to 1980, monthly consumption for the residential and commercial sector was derived by using reported data to modify baseline figures developed by the Bureau of Mines. Since that time, it has been estimated by proportioning reported quarterly data using the ratios of monthly to quarterly consumption 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 is taken directly from reported data and is defined as distribution to the residential and commercial sector as reported by coal producers and distributors on Form EIA-6.

3. Stocks: Both monthly and quarterly stocks at electric utility plants are taken directly from reported data. Prior to 1980, monthly stocks at coke plants were also taken directly from reported data. Since that time, they have been estimated by using one-third of the current quarterly change to indicate the monthly change in stocks. Quarterly stocks are taken directly from data reported on Form EIA-5.

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. During the period 1978 through 1982, they were derived by judgmentally proportioning reported quarterly data based on representative seasonal patterns of supply and demand. Since that time, they have been 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.

Prior to 1980, monthly and quarterly stock data for the residential and commercial sector were taken directly from reported data. Monthly and quarterly stock data are not available for the residential and commercial sector after December 1979.

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.

Additional information concerning coal production, consumption, and stock data and estimation procedures may be obtained in EIA's *Quarterly Coal Report,* DOE/EIA-0121.

Sources

Production: 1973 through September 1977: Bureau of Mines, *Minerals Yearbook* and *Mineral Industry Surveys;* October 1977 forward: Energy Information Administration (EIA), *Weekly Coal Production.*

Consumption and Stocks: 1973 through September 1977: Bureau of Mines, *Minerals Yearbook* and *Mineral Industry Surveys* (except Residential and Commercial Consumption and Stocks and Producers and Distributors Stocks);

- Electric Utilities--October 1977 forward: EIA, Form EIA-759 (formerly FPC Form 4), "Monthly Power Plant Report."
- Coke Plants--October 1977 through December 1980: EIA, Form EIA-5/5A, "Coke and Coal Chemicals-Monthly/Annual"; January 1981 forward: EIA, Form EIA-5/5A, "Coke Plant Report-Quarterly/Annual Supplement."
- Other Industrial--October 1977 through December 1979: EIA, Form EIA-3, "Monthly Fuel Consumption Report-Manufacturing Plants"; January 1980 forward: EIA, Form EIA-3, "Quarterly Fuel Consumption Report-Manufacturing Plants" and Form EIA-6, "Coal Distribution Report."
- Residential and Commercial Consumption and Stocks-1973 through 1976: Bureau of Mines, *Minerals Yearbook;* January 1977 through September 1977: Bureau of Mines, Form 6-1400-M, "Monthly Coal Report, Retail Dealers-Upper Lake Docks"; October 1977 through December 1979: EIA, Form EIA-2, "Monthly Coal Report, Retail Dealers-Upper Lake Docks" January 1980 forward: EIA, Form EIA-6, "Coal Distribution Report," (stock data are not collected).
- Producers and Distributors Stocks--January 1980 forward: EIA, Form EIA-6, "Coal Distribution Report."

Imports and Exports: Bureau of the Census, U.S. Department of Commerce, Monthly Reports IM-145 (Imports) and EM-522 (Exports).

Section 7. Electric Utilities

During October 1988, electric utilities generated 210 billion kilowatthours of electricity, 4 percent[8] above the October 1987 generation level. Coal-fired generation totaled 121 billion kilowatthours, 3 percent higher than the October 1987 level. Nuclear generation totaled 43 billion kilowatthours, 17 percent above the October 1987 level. Natural gas-fired generation was 17 billion kilowatthours in October 1988, 25 percent below the October 1987 level. Hydroelectric generation was 15 billion kilowatthours in October 1988, 16 percent below the level 1 year earlier. Petroleum-fired generation totaled 13 billion kilowatthours, 94 percent above the October 1987 level.

Sales of electricity to all ultimate consumers in the United States in October 1988 were 205 billion kilowatthours, 4 percent above the October 1987 sales. Sales to industrial consumers totaled 75 billion kilowatthours in October 1988, 3 percent above the level in October 1987. Sales to residential consumers during October 1988 were 64 billion kilowatthours, 5 percent above the level of sales during the previous October. Commercial sales were 59 billion kilowatthours, 5 percent above the amount sold to commercial consumers 1 year earlier. In October 1988, other sales totaled 7 billion kilowatthours, 2 percent below the October 1987 level.

Electric utility consumption of petroleum (excluding petroleum coke) during October 1988 was 22 million barrels, 92 percent above the October 1987 level. Coal consumption during October 1988 was 60 million short tons, 4 percent higher than the October 1987 rate. During October 1988, electric utilities consumed 182 billion cubic feet of natural gas, 24 percent below the October 1987 consumption level.

On October 31, 1988, utility stocks of all types of coal totaled 147 million short tons, 9 percent lower than the level on October 31, 1987. Stocks of petroleum (excluding petroleum coke) on October 31, 1988, totaled 71 million barrels, 3 percent above the level on October 31, 1987.

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

Table 7.1 Net Generation of Electricity by Electric Utilities
(Million Kilowatthours)

	Coal	Petroleum[a]	Natural Gas[b]	Nuclear Electric Power	Hydro-electric Power	Other[c]	Total
1973 Total	**847,651**	**314,343**	**340,858**	**83,479**	**272,083**	**2,294**	**1,860,710**
1974 Total	**828,433**	**300,931**	**320,065**	**113,976**	**301,032**	**2,703**	**1,867,140**
1975 Total	**852,786**	**289,095**	**299,778**	**172,505**	**300,047**	**3,437**	**1,917,649**
1976 Total	**944,391**	**319,988**	**294,624**	**191,104**	**283,707**	**3,883**	**2,037,696**
1977 Total	**985,219**	**358,179**	**305,505**	**250,883**	**220,475**	**4,063**	**2,124,323**
1978 Total	**975,742**	**365,060**	**305,391**	**276,403**	**280,419**	**3,315**	**2,206,331**
1979 Total	**1,075,037**	**303,525**	**329,485**	**255,155**	**279,783**	**4,387**	**2,247,372**
1980 Total	**1,161,562**	**245,994**	**346,240**	**251,116**	**276,021**	**5,506**	**2,286,439**
1981 Total	**1,203,203**	**206,421**	**345,777**	**272,674**	**260,684**	**6,054**	**2,294,812**
1982 Total	**1,192,004**	**146,797**	**305,260**	**282,773**	**309,213**	**5,164**	**2,241,211**
1983 Total	**1,259,424**	**144,499**	**274,098**	**293,677**	**332,130**	**6,456**	**2,310,285**
1984 Total	**1,341,681**	**119,808**	**297,394**	**327,634**	**321,150**	**8,638**	**2,416,304**
1985 Total	**1,402,128**	**100,202**	**291,946**	**383,691**	**281,149**	**10,724**	**2,469,841**
1986 January	130,190	11,088	17,472	36,219	21,377	1,123	217,470
February	110,982	9,529	14,925	32,721	23,222	956	192,336
March	110,390	10,073	16,149	30,773	28,465	984	196,834
April	98,995	9,227	18,961	30,477	27,523	891	186,074
May	104,900	10,435	21,947	31,924	27,205	903	197,315
June	120,154	11,563	24,767	31,334	26,223	973	215,015
July	136,654	16,296	28,712	35,894	24,072	1,045	242,672
August	123,618	15,466	26,352	37,483	21,189	1,058	225,166
September	113,957	10,677	23,457	36,593	21,114	895	206,692
October	108,584	9,873	20,876	36,214	21,335	872	197,754
November	109,045	10,464	18,044	34,944	23,153	781	196,432
December	118,362	11,894	16,845	39,463	25,965	1,022	213,551
Total	**1,385,831**	**136,585**	**248,508**	**414,038**	**290,844**	**11,503**	**2,487,310**
1987 January	126,631	11,927	17,788	39,975	25,412	1,017	222,749
February	109,648	10,502	15,120	36,598	21,226	940	194,034
March	111,920	10,007	18,349	37,290	23,248	1,034	201,849
April	105,474	7,912	19,602	33,518	22,025	965	189,496
May	115,155	8,146	23,239	34,320	24,202	1,012	206,074
June	129,351	10,655	27,090	36,560	20,863	1,071	225,589
July	143,503	12,547	30,512	40,056	20,195	1,103	247,915
August	143,194	11,289	32,262	41,352	18,446	1,101	247,645
September	120,777	7,696	25,678	39,666	18,180	1,011	213,008
October	117,743	6,819	22,985	36,492	17,955	1,015	203,009
November	114,172	9,803	21,005	37,438	16,857	983	200,258
December	126,213	11,189	18,992	42,006	21,087	1,013	220,500
Total	**1,463,781**	**118,493**	**272,621**	**455,270**	**249,695**	**12,267**	**2,572,127**
1988 January	137,439	15,960	16,281	44,658	22,214	1,033	237,586
February	126,085	11,920	16,499	42,246	19,165	898	216,813
March	119,858	9,763	19,750	43,912	19,514	1,041	213,838
April	108,945	7,491	19,255	40,067	19,102	959	195,818
May	114,993	7,194	23,154	40,650	21,230	922	208,144
June	131,755	9,758	26,757	44,079	18,829	1,004	232,183
July	143,886	14,058	31,289	49,828	16,904	1,084	257,048
August	151,877	16,061	32,714	48,985	16,447	1,064	267,148
September	124,244	10,016	22,233	46,270	16,270	1,001	220,035
October	121,118	13,237	17,316	42,581	15,112	1,014	210,377
10-Month Total	**1,280,200**	**115,458**	**225,249**	**443,278**	**184,787**	**10,018**	**2,258,989**
1987 10-Month Total	**1,223,396**	**97,500**	**232,624**	**375,827**	**211,751**	**10,270**	**2,151,368**
1986 10-Month Total	**1,158,424**	**114,228**	**213,619**	**339,630**	**241,726**	**9,700**	**2,077,327**

[a]Includes fuel oil Nos. 2, 4, 5, and 6, crude oil, kerosene, and petroleum coke.
[b]Includes supplemental gaseous fuels.
[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 through September 1977: Federal Power Commission, Form 4, "Monthly Power Plant Report," • October 1977 through 1981: Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report," • 1982 forward: Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Table 7.2 Electricity Sales[a] by End-Use Sector
(Million Kilowatthours)

	Residential		Commercial		Industrial		Other[b]		Total	
	Old	New	Old	New	Old	New	Old	New	Old	New
1973 Total	579,231		388,266		686,085		59,326		1,712,909	
1974 Total	578,184		384,826		684,875		58,039		1,705,924	
1975 Total	588,140		403,049		687,680		68,222		1,747,091	
1976 Total	606,452		425,094		754,069		69,631		1,855,246	
1977 Total	645,239		446,514		786,037		70,571		1,948,361	
1978 Total	674,466		461,163		809,078		73,215		2,017,922	
1979 Total	682,819		473,307		841,903		73,070		2,071,099	
1980 Total	717,495		488,155		815,067		73,732		2,094,449	
1981 Total	722,265		514,338		825,743		84,756		2,147,103	
1982 Total	729,520		526,397		744,949		85,575		2,086,441	
1983 Total	750,948		543,788		775,999		80,219		2,150,955	
1984 Total	777,654	780,092	578,281	577,275	840,588	838,718	81,849	88,887	2,278,372	2,284,972
1985 Total	790,977	793,828	608,968	604,679	824,523	835,207	85,075	91,988	2,309,543	2,325,702
1986 January[c]		82,755		53,377		65,400		7,246		208,779
February		70,949		50,481		65,373		6,863		193,665
March		65,318		48,256		67,018		6,837		187,430
April		56,647		47,243		66,783		6,275		176,949
May		54,266		48,867		68,076		6,804		178,012
June		63,986		57,121		67,973		6,872		195,953
July		80,365		61,100		68,814		7,533		217,812
August		80,425		60,528		68,737		7,254		216,943
September		68,543		57,711		69,396		7,156		202,807
October		62,875		53,256		69,487		7,025		192,642
November		58,589		50,278		65,239		6,255		180,362
December		72,945		53,250		65,995		7,290		199,480
Total		**817,663**		**641,469**		**808,292**		**83,409**		**2,350,835**
1987 January		82,132		54,503		65,528		7,435		209,598
February		73,435		52,216		65,259		7,157		198,066
March		67,370		51,259		67,803		7,021		193,453
April		60,014		49,706		67,962		6,854		184,536
May		58,499		53,465		69,910		7,050		188,924
June		68,859		59,265		72,365		7,308		207,798
July		83,751		64,427		73,485		7,586		229,249
August		88,160		65,103		74,520		7,669		235,451
September		73,439		61,269		74,419		7,280		216,407
October		60,848		55,915		73,147		7,136		197,046
November		60,008		52,118		70,870		7,104		190,100
December		73,099		54,462		69,999		7,254		204,814
Total		**849,613**		**673,707**		**845,266**		**86,854**		**2,455,440**
1988 January		89,529		58,723		69,984		6,873		225,109
February		80,248		56,682		70,701		6,767		214,398
March		71,560		55,127		71,435		6,560		204,682
April		61,395		53,456		70,782		6,365		191,998
May		57,566		54,379		72,471		6,410		190,826
June		68,218		61,567		74,690		6,917		211,392
July		85,362		65,189		76,827		7,208		234,585
August		93,870		67,809		80,153		7,348		249,180
September		77,532		64,936		75,976		7,148		225,592
October		63,767		58,914		75,076		6,967		204,724
10-Month Total		**749,046**		**596,782**		**738,095**		**68,563**		**2,152,486**
1987 10-Month Total		**716,506**		**567,128**		**704,398**		**72,496**		**2,060,527**
1986 10-Month Total		**686,129**		**537,941**		**677,058**		**69,864**		**1,970,992**

[a]Electricity sales to all ultimate consumers.
[b]Includes sales of electricity to Government, railways, street lighting authorities, and sales not included elsewhere.
[c]Beginning in January 1986, monthly Form EIA-826 electricity sales estimates, which are preliminary Form EIA-861 values, are based on a new sample and new expansion factors from data reported on Form EIA-861.

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

Sources: **Old Series:** • 1973 through February 1980: Federal Power Commission, FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income," • March 1980 through 1982: Federal Energy Regulatory Commission, FERC Form 5, "Electric Utility Company Monthly Statement," • 1983 through 1985, Energy Information Administration, Form EIA-826, "Electric Utility Company Monthly Statement." **New Series:** • 1984 and 1985 annual data: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report." • 1986 monthly and annual data: Energy Information Administration, Form EIA-826, "Electric Utility Company Monthly Statement." • 1987 monthly and annual, and 1988 monthly data: Energy Information Administration, Form EIA-826, "Monthly Electric Utility Sales and Revenue Report with State Distributions."

Figure 7.1 Coal Consumed to Produce Electricity

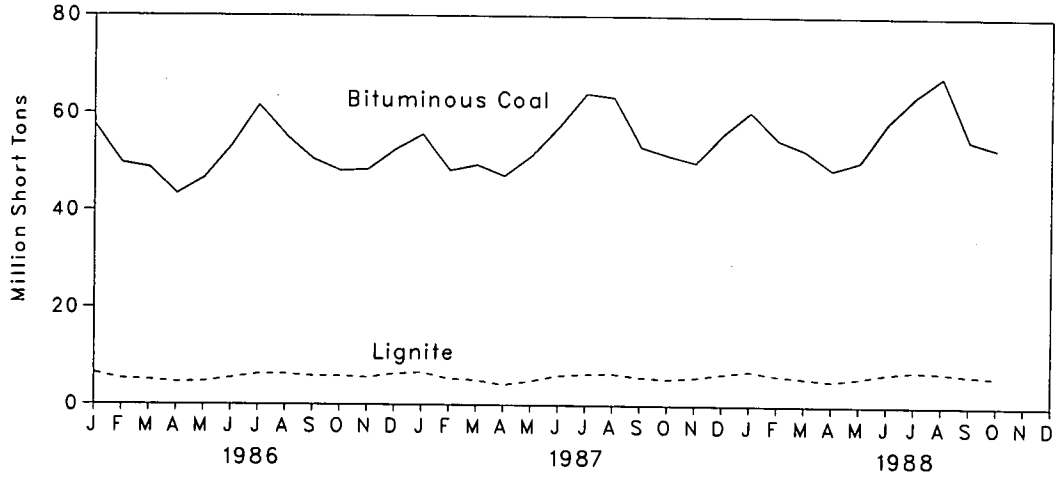


Figure 7.2 Petroleum Consumed to Produce Electricity

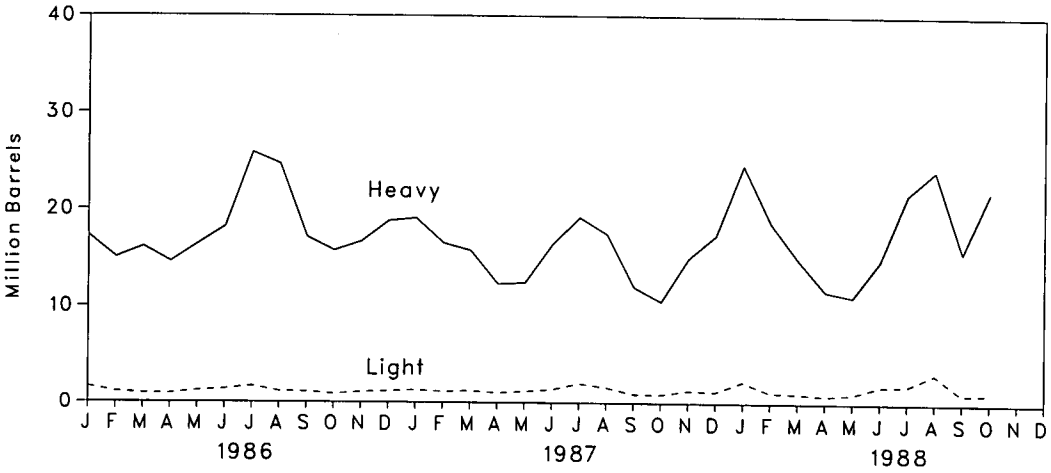


Figure 7.3 Natural Gas Consumed to Produce Electricity

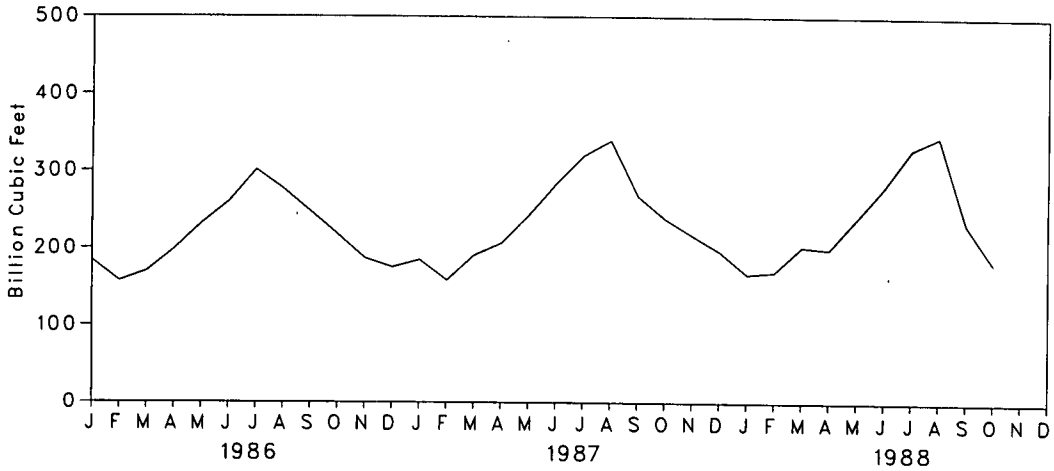


Table 7.3 Fossil Fuels Consumed by Electric Utilities To Generate Electricity

	Coal				Petroleum				
	Anthracite	Bituminous Coal	Lignite	Total	Heavy[a]	Light[b]	Total Liquids	Petroleum Coke	Natural Gas[c]
	Thousand Short Tons				Thousand Barrels			Thousand Short Tons	Million Cubic Feet
1973 Total	1,443	376,975	10,794	389,212	(d)	(d)	560,248	507	3,660,172
1974 Total	1,498	378,643	11,670	391,811	(d)	(d)	536,274	625	3,443,428
1975 Total	1,480	388,523	15,960	405,962	(d)	(d)	506,128	70	3,157,669
1976 Total	1,350	425,205	21,817	448,371	(d)	(d)	555,920	68	3,080,868
1977 Total	1,425	451,051	24,650	477,126	(d)	(d)	623,705	98	3,191,200
1978 Total	1,064	448,763	31,407	481,235	(d)	(d)	635,839	398	3,188,383
1979 Total	1,046	488,129	37,876	527,051	(d)	(d)	523,297	268	3,490,523
1980 Total	951	526,680	41,642	569,274	391,163	29,051	420,214	179	3,681,595
1981 Total	1,221	550,784	44,792	596,797	329,798	21,313	351,111	139	3,640,154
1982 Total	1,075	543,346	49,245	593,666	234,434	15,337	249,771	149	3,225,518
1983 Total	1,036	570,108	54,067	625,211	228,984	16,512	245,497	261	2,910,767
1984 Total	1,070	606,339	56,990	664,399	189,289	15,190	204,479	252	3,111,342
1985 Total	1,033	631,885	60,923	693,841	158,779	14,635	173,414	231	3,044,083
1986 January	67	57,525	6,442	64,034	17,254	1,688	18,942	15	184,024
February	50	49,711	5,289	55,050	14,978	1,100	16,077	15	157,070
March	88	48,737	5,073	53,898	16,090	928	17,018	23	169,697
April	84	43,391	4,639	48,114	14,538	893	15,431	23	198,143
May	68	46,629	4,723	51,420	16,386	1,209	17,595	25	231,041
June	64	53,332	5,496	58,892	18,173	1,390	19,564	24	260,163
July	67	61,669	6,285	68,021	25,839	1,727	27,567	26	300,870
August	64	55,331	6,314	61,709	24,633	1,150	25,782	31	276,163
September	47	50,574	5,916	56,536	17,102	1,107	18,209	31	246,674
October	57	48,151	5,907	54,116	15,714	869	16,584	26	216,738
November	84	48,451	5,623	54,158	16,656	1,076	17,731	34	186,605
December	88	52,634	6,386	59,108	18,794	1,189	19,983	38	175,181
Total	**829**	**616,134**	**68,093**	**685,056**	**216,156**	**14,326**	**230,482**	**313**	**2,602,370**
1987 January	68	55,682	6,664	62,414	19,069	1,317	20,386	28	184,722
February	75	48,243	5,397	53,715	16,510	1,149	17,658	29	158,341
March	79	49,428	5,140	54,647	15,741	1,227	16,968	28	190,893
April	75	47,153	4,207	51,435	12,297	1,033	13,330	23	206,438
May	91	51,415	4,977	56,484	12,420	1,183	13,603	31	242,615
June	100	57,307	6,093	63,500	16,384	1,407	17,790	26	283,554
July	105	64,203	6,428	70,736	19,193	2,075	21,268	28	319,239
August	95	63,456	6,524	70,075	17,470	1,648	19,118	31	338,646
September	72	53,338	5,850	59,259	12,015	924	12,939	31	268,080
October	66	51,572	5,479	57,117	10,538	891	11,429	35	238,185
November	60	50,095	5,805	55,961	14,995	1,307	16,302	27	216,781
December	85	55,930	6,535	62,551	17,380	1,207	18,587	30	196,556
Total	**972**	**647,824**	**69,098**	**717,894**	**184,011**	**15,367**	**199,378**	**348**	**2,844,051**
1988 January	77	60,543	7,159	67,779	24,571	2,307	26,878	24	166,906
February	85	54,899	6,263	61,247	18,677	1,127	19,804	27	169,789
March	92	52,742	5,775	58,609	14,909	1,031	15,940	36	202,716
April	87	48,670	5,258	54,014	11,637	794	12,431	33	199,422
May	88	50,409	5,847	56,343	11,072	988	12,059	33	239,132
June	74	58,320	6,774	65,168	14,810	1,851	16,661	42	280,274
July	99	63,881	7,309	71,289	21,647	1,920	23,567	47	328,433
August	106	67,929	7,077	75,112	24,097	3,201	27,298	41	344,668
September	86	54,942	6,519	61,547	15,640	1,000	16,640	31	232,712
October	83	53,284	6,162	59,530	20,809	1,094	21,904	30	181,684
10-Month Total	**876**	**565,619**	**64,143**	**630,638**	**177,868**	**15,313**	**193,181**	**342**	**2,345,736**
1987 10-Month Total	**827**	**541,798**	**56,758**	**599,383**	**151,636**	**12,853**	**164,489**	**290**	**2,430,714**
1986 10-Month Total	**657**	**515,050**	**56,083**	**571,790**	**180,707**	**12,061**	**192,768**	**241**	**2,240,584**

[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]Includes supplemental gaseous fuels.
[d]Prior to 1980, petroleum consumption data were not disaggregated by type of fuel. Disaggregation by prime mover type is provided in Table 7.5.

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

Figure 7.4 Coal Stocks at Electric Utilities, End of Period

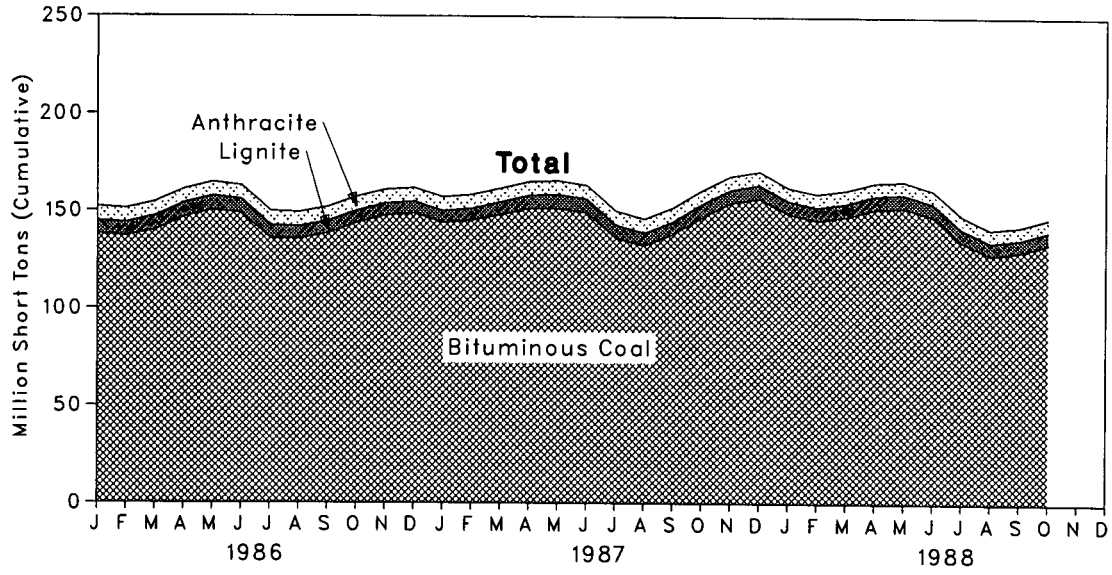


Figure 7.5 Petroleum Stocks at Electric Utilities, End of Period

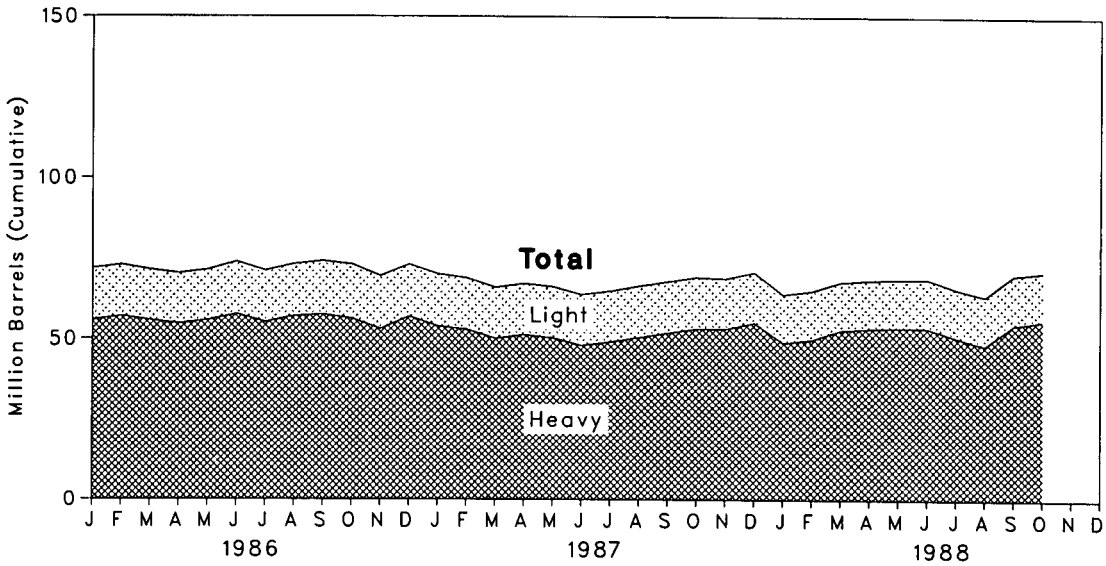


Table 7.4 Coal and Petroleum Stocks at Electric Utilities, End of Period

	Coal				Petroleum			
	Anthracite	Bituminous Coal	Lignite	Total	Heavy[a]	Light[b]	Total Liquids	Petroleum Coke
	Thousand Short Tons				Thousand Barrels			Thousand Short Tons
1973 Year	**1,066**	**84,941**	**961**	**86,967**	**(c)**	**(c)**	**89,216**	**312**
1974 Year	**930**	**81,712**	**867**	**83,509**	**(c)**	**(c)**	**112,917**	**35**
1975 Year	**982**	**107,927**	**1,815**	**110,724**	**(c)**	**(c)**	**125,257**	**31**
1976 Year	**1,000**	**114,130**	**2,306**	**117,436**	**(c)**	**(c)**	**121,696**	**32**
1977 Year	**2,321**	**128,210**	**2,688**	**133,219**	**(c)**	**(c)**	**144,031**	**44**
1978 Year	**2,178**	**123,020**	**3,027**	**128,225**	**(c)**	**(c)**	**118,788**	**198**
1979 Year	**3,274**	**152,981**	**3,459**	**159,714**	**(c)**	**(c)**	**131,422**	**183**
1980 Year	**4,741**	**174,154**	**4,115**	**183,010**	**105,351**	**30,023**	**135,374**	**52**
1981 Year	**5,537**	**158,258**	**5,098**	**168,893**	**102,042**	**26,094**	**128,136**	**42**
1982 Year	**6,080**	**170,480**	**4,573**	**181,132**	**95,515**	**23,369**	**118,884**	**41**
1983 Year	**6,507**	**145,250**	**3,841**	**155,598**	**70,573**	**18,801**	**89,375**	**55**
1984 Year	**6,710**	**167,118**	**5,899**	**179,727**	**68,503**	**19,116**	**87,619**	**50**
1985 Year	**7,189**	**142,144**	**7,043**	**156,376**	**57,304**	**16,386**	**73,689**	**49**
1986 January	7,182	138,077	6,819	152,078	55,797	16,147	71,943	52
February	7,172	136,944	7,042	151,157	56,956	16,020	72,976	50
March	7,146	140,023	7,246	154,415	55,649	15,821	71,470	36
April	7,127	146,639	7,310	161,076	54,556	15,793	70,350	28
May	7,133	150,164	7,370	164,667	55,665	15,764	71,429	34
June	7,148	148,686	7,075	162,909	57,611	16,319	73,930	36
July	7,158	135,630	7,016	149,803	55,023	16,145	71,168	43
August	7,117	135,542	6,504	149,163	56,964	16,221	73,185	42
September	7,146	138,396	6,403	151,945	57,474	16,686	74,160	45
October	7,158	143,855	6,189	157,202	56,148	17,009	73,157	41
November	7,119	147,597	6,191	160,908	53,000	16,575	69,575	42
December	7,099	148,665	6,042	161,806	56,841	16,269	73,111	40
1987 January	7,091	144,044	5,926	157,061	53,789	16,365	70,153	35
February	7,087	145,206	6,030	158,322	52,847	16,085	68,932	34
March	7,098	148,020	6,530	161,648	50,035	15,946	65,981	41
April	7,103	151,205	6,795	165,103	51,201	15,970	67,171	35
May	7,098	151,329	7,255	165,683	50,221	16,006	66,227	43
June	7,098	149,394	6,868	163,361	48,047	15,822	63,869	55
July	7,102	136,385	6,729	150,217	49,123	15,819	64,942	64
August	7,083	132,535	6,488	146,106	50,451	16,038	66,489	57
September	7,068	138,490	6,403	151,961	51,858	16,029	67,887	48
October	7,070	147,034	6,838	160,942	53,175	16,081	69,256	60
November	6,963	154,545	6,767	168,274	53,160	15,704	68,864	63
December	6,940	156,670	7,187	170,797	55,069	15,759	70,827	51
1988 January	6,905	148,956	6,657	162,518	48,948	15,070	64,018	56
February	6,864	145,823	6,583	159,270	49,899	15,246	65,145	55
March	6,821	147,601	6,826	161,249	52,848	14,985	67,833	58
April	6,780	151,493	6,848	165,122	53,361	15,109	68,471	54
May	6,732	152,261	6,853	165,847	53,648	15,067	68,715	56
June	6,785	147,750	6,677	161,212	53,531	15,319	68,850	77
July	6,659	134,971	6,641	148,272	50,680	15,152	65,832	73
August	6,614	128,029	6,635	141,278	48,223	15,329	63,552	63
September	6,601	129,707	6,522	142,830	54,636	15,511	70,146	82
October	6,611	133,959	6,371	146,941	55,830	15,256	71,085	83

[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]Prior to 1980, petroleum stock data were not disaggregated by type of fuel. Disaggregation by prime mover type is provided in Table 7.5.
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 through September 1977: Federal Power Commission, Form 4, "Monthly Power Plant Report," • October 1977 through 1981: Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report," • 1982 forward: Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Table 7.5 Petroleum Consumption and Stocks at Electric Utilities by Prime Mover Type
(Thousand Barrels)

	Petroleum Consumption			Petroleum Stocks, End of Period		
	Steam Plants	GT/IC[a]	Total Liquids	Steam Plants	GT/IC[a]	Total Liquids
1973 Total	**513,190**	**47,058**	**560,248**	**79,121**	**10,095**	**89,216**
1974 Total	**483,146**	**53,128**	**536,274**	**97,718**	**15,199**	**112,917**
1975 Total	**467,221**	**38,907**	**506,128**	**108,825**	**16,432**	**125,257**
1976 Total	**514,077**	**41,843**	**555,920**	**106,993**	**14,703**	**121,696**
1977 Total	**574,869**	**48,837**	**623,705**	**124,750**	**19,281**	**144,031**
1978 Total	**588,319**	**47,520**	**635,839**	**102,402**	**16,386**	**118,788**
1979 Total	**492,606**	**30,691**	**523,297**	**111,121**	**20,301**	**131,422**
1980 Total	**401,863**	**18,351**	**420,214**	**117,227**	**18,147**	**135,374**
1981 Total	**339,680**	**11,431**	**351,111**	**112,380**	**15,756**	**128,136**
1982 Total	**243,537**	**6,234**	**249,771**	**105,287**	**13,597**	**118,884**
1983 Total	**237,845**	**7,652**	**245,497**	**78,285**	**11,090**	**89,375**
1984 Total	**197,050**	**7,429**	**204,479**	**76,836**	**10,784**	**87,619**
1985 Total	**166,842**	**6,572**	**173,414**	**64,704**	**8,985**	**73,689**
1986 January	17,915	1,027	18,942	63,043	8,901	71,943
February	15,536	541	16,077	64,134	8,842	72,976
March	16,585	433	17,018	62,671	8,799	71,470
April	14,982	449	15,431	61,758	8,591	70,350
May	16,933	662	17,595	63,010	8,419	71,429
June	18,796	768	19,564	65,115	8,816	73,930
July	26,373	1,193	27,567	62,322	8,845	71,168
August	25,104	678	25,782	64,167	9,018	73,185
September	17,500	709	18,209	65,183	8,976	74,160
October	16,194	390	16,584	63,937	9,220	73,157
November	17,171	561	17,731	60,527	9,048	69,575
December	19,410	572	19,983	64,258	8,853	73,111
Total	**222,500**	**7,983**	**230,482**			
1987 January	19,718	668	20,386	61,042	9,111	70,153
February	17,004	655	17,658	59,907	9,025	68,932
March	16,335	633	16,968	57,052	8,929	65,981
April	12,873	457	13,330	58,250	8,921	67,171
May	13,017	586	13,603	57,521	8,706	66,227
June	16,976	814	17,790	55,063	8,806	63,869
July	19,754	1,513	21,268	56,236	8,706	64,942
August	17,948	1,170	19,118	57,748	8,741	66,489
September	12,441	498	12,939	58,902	8,984	67,887
October	11,108	321	11,429	60,138	9,117	69,256
November	15,651	651	16,302	59,873	8,991	68,864
December	17,994	593	18,587	61,705	9,123	70,827
Total	**190,818**	**8,560**	**199,378**			
1988 January	25,322	1,556	26,878	55,271	8,747	64,018
February	19,237	567	19,804	56,140	9,005	65,145
March	15,469	471	15,940	59,275	8,558	67,833
April	12,106	325	12,431	59,665	8,806	68,471
May	11,652	407	12,059	59,883	8,832	68,715
June	15,353	1,308	16,661	59,976	8,874	68,850
July	22,154	1,413	23,567	57,071	8,761	65,832
August	24,586	2,712	27,298	54,731	8,821	63,552
September	16,098	542	16,640	60,953	9,193	70,146
October	21,302	602	21,904	61,959	9,126	71,085
10-Month Total	**183,279**	**9,902**	**193,181**			
1987 10-Month Total	**157,173**	**7,315**	**164,489**			
1986 10-Month Total	**185,919**	**6,850**	**192,768**			

[a]GT/IC=Gas turbine and internal combustion plants.

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

Section 8. Nuclear

In October 1988, U.S. nuclear generating units produced a total of 43 net terawatthours (billion kilowatthours) of electricity, 17 percent[9] higher than in October 1987. Nuclear units generated at an average capacity factor of 60 percent, 7 percentage points higher than in October 1987. Nuclear power supplied 20.2 percent of the total electricity generated in October 1988, compared with 18.0 percent in October 1987.

No Low or Full Power Operating Licenses were issued by the Nuclear Regulatory Commission (NRC) during October 1988.

On October 31, 1988, there were 108 operable nuclear generating units in the United States, with a collective net summer generating capability of 95 million kilowatts of electricity. Two additional units (Seabrook 1 and Shoreham) had Low Power Operating Licenses from the NRC authorizing fuel loading and low-power testing. Of the 108 operable units, 33 units generated at less than 25 percent of capacity and 25 units were out of service at least part of the month for maintenance or refueling.

As of October 31, there were 126 domestic nuclear generating units in all stages of planning, construction, and operation, with an aggregate design capacity of 118 million kilowatts.

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

Figure 8.1 Nuclear and Total Net Generation of Electricity

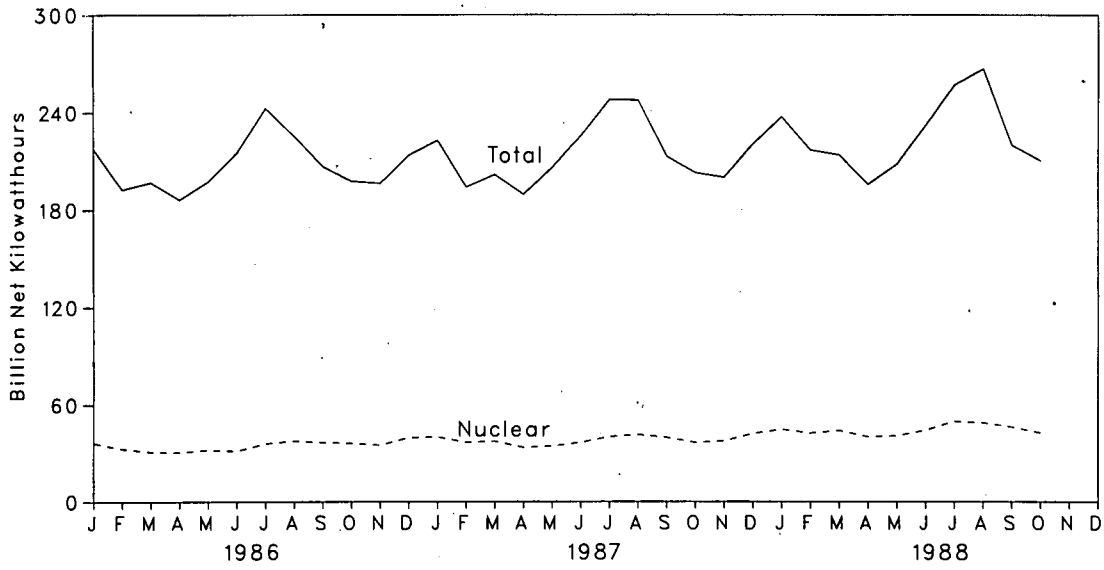


Figure 8.2 Nuclear Power Plants' Capacity Factor and Share of Total Net Generation

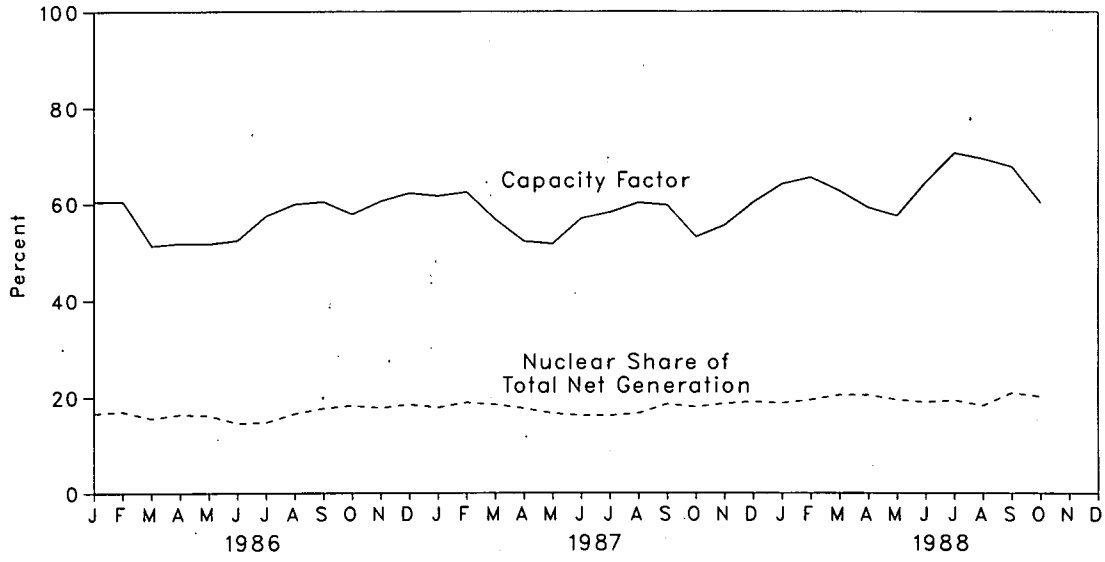


Table 8.1 Nuclear Power Plant Operations

	Operable Units[a] [b]	Nuclear Electricity Generation	Nuclear Portion of Domestic Electricity Generation	Net Summer Capability of Operable Units[a] [c]	Capacity Factor[d]
	Number	Million Net Kilowatthours	Percent	Million Net Kilowatts	Percent
1973 Year	**39**	**83,479**	**4.5**	**22.615**	**53.7**
1974 Year	**48**	**113,976**	**6.1**	**31.803**	**47.9**
1975 Year	**54**	**172,505**	**9.0**	**37.161**	**56.0**
1976 Year	**61**	**191,104**	**9.4**	**43.657**	**54.9**
1977 Year	**65**	**250,883**	**11.8**	**46.202**	**63.4**
1978 Year	**70**	**276,403**	**12.5**	**50.709**	**64.7**
1979 Year	**68**	**255,155**	**11.4**	**49.630**	**58.5**
1980 Year	**70**	**251,116**	**11.0**	**51.668**	**56.4**
1981 Year	**74**	**272,674**	**11.9**	**55.914**	**58.4**
1982 Year	**77**	**282,773**	**12.6**	**59.927**	**56.7**
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 January	96	36,219	16.7	80.604	60.4
February	96	32,721	17.0	80.604	60.4
March	96	30,773	15.6	80.604	51.3
April	97	30,477	16.4	81.863	51.8
May	98	31,924	16.2	82.995	51.7
June	98	31,334	14.6	82.995	52.4
July	99	35,894	14.8	84.048	57.4
August	99	37,483	16.6	84.048	59.9
September	99	36,593	17.7	84.048	60.5
October	99	36,214	18.3	84.048	57.8
November	100	34,944	17.8	85.241	56.9
December	100	39,463	18.5	85.241	62.2
Year		**414,038**	**16.6**		**56.9**
1987 January	102	39,975	17.9	87.248	61.6
February	102	36,598	18.9	87.248	62.4
March	103	37,290	18.5	88.446	56.7
April	103	33,518	17.7	89.330	52.2
May	103	34,320	16.7	89.330	51.7
June	103	36,560	16.2	89.330	56.9
July	105	40,056	16.2	91.581	58.2
August	106	41,352	16.7	92.417	60.2
September	106	39,666	18.6	92.417	59.7
October	106	36,492	18.0	92.417	53.1
November	107	37,438	18.7	93.676	55.5
December	107	42,006	19.1	93.676	60.3
Year		**455,270**	**17.7**		**57.4**
1988 January	107	44,658	18.8	93.676	64.1
February	106	42,246	19.5	92.836	65.5
March	107	43,912	20.5	94.075	62.7
April	107	40,067	20.5	94.075	59.2
May	108	40,650	19.5	95.091	57.5
June	108	44,079	19.0	95.091	64.5
July	108	49,828	19.4	95.091	70.5
August	108	48,985	18.3	95.091	69.3
September	108	46,270	21.0	95.091	67.7
October	108	42,581	20.2	95.091	60.2

[a]Monthly data are the status as of the last day of the month. Yearly data are the status as of December 31 of each year.
[b]See Note 1 at end of section.
[c]When possible, net summer capability is used. When a unit has not operated long enough to permit determination of a net summer capability, an estimation is made based on the net design electrical rating. For the definitions of net summer capability and net design electrical rating, 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.
Note: Geographic coverage is the 50 States and the District of Columbia.
Sources: See end of section.

Table 8.2 Status of Nuclear Generating Units[a]

	Licensed for Operation		Construction Permits		On Order	Announced	Total	Total Design Capacity[d]
	Operable[b]	In Startup[c]	Granted	Pending				
	Number of Units							Million Net Kilowatts
1973 Year	**39**	**3**	**51**	**58**	**48**	**20**	**219**	**212**
1974 Year	**48**	**5**	**58**	**80**	**28**	**16**	**235**	**234**
1975 Year	**54**	**2**	**69**	**73**	**19**	**19**	**236**	**236**
1976 Year	**61**	**0**	**72**	**66**	**16**	**19**	**234**	**236**
1977 Year	**65**	**1**	**80**	**52**	**13**	**9**	**220**	**220**
1978 Year	**70**	**0**	**90**	**32**	**9**	**4**	**205**	**204**
1979 Year	**68**	**0**	**91**	**21**	**3**	**0**	**183**	**179**
1980 Year	**70**	**2**	**82**	**12**	**3**	**0**	**169**	**163**
1981 Year	**74**	**0**	**75**	**11**	**3**	**0**	**163**	**157**
1982 Year	**77**	**2**	**60**	**3**	**2**	**0**	**144**	**135**
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 January	96	2	30	0	2	0	130	121
February	96	3	29	0	2	0	130	121
March	96	4	28	0	2	0	130	121
April	97	4	27	0	2	0	130	121
May	98	3	27	0	2	0	130	121
June	98	3	27	0	2	0	130	121
July	99	2	25	0	2	0	128	119
August	99	2	25	0	2	0	128	119
September	99	3	24	0	2	0	128	119
October	99	7	20	0	2	0	128	119
November	100	7	19	0	2	0	128	119
December	100	7	19	0	2	0	128	119
1987 January	102	6	18	0	2	0	128	119
February	102	6	18	0	2	0	128	119
March	103	6	17	0	2	0	128	119
April	103	5	17	0	2	0	127	119
May	103	6	16	0	2	0	127	119
June	103	6	16	0	2	0	127	119
July	105	4	16	0	2	0	127	119
August	106	3	16	0	2	0	127	119
September	106	4	15	0	2	0	127	119
October	106	4	15	0	2	0	127	119
November	107	3	15	0	2	0	127	119
December	107	4	14	0	2	0	127	119
1988 January	107	4	14	0	2	0	127	119
February	106	4	14	0	2	0	126	118
March	107	3	14	0	2	0	126	118
April	107	3	14	0	2	0	126	118
May	108	2	14	0	2	0	126	118
June	108	2	14	0	2	0	126	118
July	108	2	14	0	2	0	126	118
August	108	2	14	0	2	0	126	118
September	108	2	14	0	2	0	126	118
October	108	2	14	0	2	0	126	118

[a]Monthly data are the status as of the last day of the month. Annual data are the status as of December 31 of each year.
[b]See Note 1 at end of section.
[c]See Note 2 at end of section.
[d]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: See end of section.

Notes and Sources for the Nuclear Section

Notes

1. Operable Units: Nuclear generating units that have been issued a Full Power Operating License by the Nuclear Regulatory Commission (NRC). The Hanford-N unit (net summer capability of 840 MWe), was included prior to cold shutdown by the Department of Energy (DOE) in February 1988. The Shippingport unit (net summer capability of 60 MWe) operated by DOE was included prior to retirement from service on October 1, 1982, except during March 1974 through August 1977, when it was excluded because of a major core modification outage. The DOE-operated Experimental Breeder Reactor 2 unit (EBR-2) is not included because the electricity it generates is not distributed commercially.

Six units were deleted subsequent to their removal from service: Peach Bottom 1 (net summer capability of 40 MWe) and Indian Point 1 (net summer capability of 265 MWe), both out of service since November 1974; Humboldt Bay (net summer capability of 65 MWe), down since August 1976 for major seismic modifications and subsequently officially retired; Dresden 1 (net summer capability of 200 MWe), out of service since January 1979 for major modifications and officially retired in August 1984; Three Mile Island 2 (net summer capability of 880 MWe), whose core was severely damaged by a loss-of-coolant accident in March 1979; and LaCrosse (net summer capability of 51 MWe), out of service as of April 30, 1987.

Seven units with Full Power Operating Licenses have been shut down by the NRC for an extended period. The names of the seven units, their net summer capabilities, and dates of shut down are as follows: Browns Ferry 1, 1,065 MWe, March 1985; Browns Ferry 2, 1,065 MWe, September 1984; Browns Ferry 3, 1,065 MWe, March 1985; Sequoyah 1, 1,148 MWe, August 1985; Peach Bottom 2, 1,052, March 1987; Peach Bottom 3, 1,033 MWe, March 1987; and Pilgrim 1, 667 MWe, April 1986.

2. In Startup: Two units that have been issued a Low Power Operating License by the NRC authorizing fuel loading and low power testing prior to issuance of a Full Power Operating License. These units are Shoreham (804 MWe) and Seabrook 1 (1,186 MWe).

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

(a) Net Summer Capability--The steady hourly output which 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 the 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 monthly net summer capability. This fraction is then multiplied by 100 to obtain a percentage. Annual capacity factors are averages of the monthly values for that year.

Sources

Nuclear Units Licensed for Operation: Nuclear Regulatory Commission Report NUREG-0020, "Licensed Operating Reactors."

Electricity Generation: 1973 through September 1977--Federal Power Commission, Form 4, "Monthly Power Plant Report." October 1977 through 1981--Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report." 1982 forward--Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

Net Summer Capability: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Capacity Factor: Energy Information Administration, Office of Coal, Nuclear, Electric and Alternate Fuels.

Unit Construction and Planning Data: 1973 through June 1982--Compiled from various sources, primarily the Department of Energy, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones," Nuclear Regulatory Commission Report NUREG-0020, "Licensed Operating Reactors," and from the Energy Information Administration, Office of Coal, Nuclear, Electric and Alternate Fuels. July 1982 forward--Nuclear Regulatory Commission Report NUREG-0871, "Summary Information Report," Nuclear Regulatory Commission Report NUREG-0020, "Licensed Operating Reactors," and various trade journals.

Total Design Capacity: Nuclear Regulatory Commission report NUREG-0020, "Licensed Operating Reactors," Nuclear Regulatory Commission Report NUREG-0871, "Summary Information Report," and Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Section 9. Price

Crude Oil. The average price of domestic crude oil purchased at the wellhead was $10.60 per barrel in October 1988, 34 percent below the level in October 1987.

The refiner acquisition cost of imported crude oil in October 1988 was $13.03 per barrel, 30 percent below the October 1987 level. The cost of domestic crude oil in October 1988 was $12.90, a decrease of 30 percent from the October 1987 average.

Motor Gasoline. The national city average retail price of leaded regular gasoline at all types of stations was 90 cents per gallon in November 1988, 1 percent lower than the price in October 1988. The price of unleaded regular gasoline at all types of stations was 95 cents per gallon in November 1988, 1 percent lower than the price in October 1988. The price of unleaded premium gasoline averaged $1.12 per gallon in November 1988, slighly lower than the price in October 1988.

Residual Fuel Oil. The average price, excluding taxes, of residual fuel oil sold to end users in October 1988 was 31 cents per gallon, 5 percent below the previous month's price and 27 percent below the October 1987 average. The average resale price, excluding taxes, of residual fuel oil in October 1988 was 25 cents per gallon, 13 percent below the September 1988 average and 36 percent below the October 1987 average.

Aviation Fuel. The average price, excluding taxes, of aviation gasoline sold to end users in October 1988 was 89 cents per gallon, 3 percent lower than the price in the previous month and 2 percent lower than the price in October 1987. The average price, excluding taxes, of kerosene-type jet fuel sold to end users in October 1988 was 46 cents per gallon, 4 percent lower than the previous month's price and 22 percent lower than the price 1 year earlier.

No. 2 Distillate Fuel Oil. The October 1988 national average price of heating oil sold to residential customers was 75 cents per gallon, unchanged from the September 1988 price but 7 percent below the October 1987 price. The average price for resale was 42 cents per gallon in October 1988, 3 percent below the price in the previous month and 26 percent below the October 1987 average.

Electricity. Beginning with January 1986, there are 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.

The mean price of electricity to all ultimate consumers in the United States in October 1988 was 6.37 cents per kilowatthour, about the same as the October 1987 mean price. The national retail price of electricity to residential consumers in October 1988 was 7.71 cents per kilowatthour, 1 percent higher than the October 1987 price. The price of electricity to commercial consumers averaged 7.25 cents per kilowatthour in October 1988, 1 percent above the October 1987 price. The average electricity price to other consumers was 6.24 cents per kilowatthour, 9 percent below the price 1 year earlier.[10] The October national retail price of electricity to industrial users was 4.61 cents per kilowatthour, 2 percent below the October 1987 price.

Natural Gas. In September 1988 (latest data available), the average wellhead price of natural gas was $1.60 per thousand cubic feet, 3 percent above the September 1987 price. The average price of natural gas delivered to electric utility plants was $2.36 per thousand cubic feet in September 1988, 8 percent above the September 1987 price. The average price of natural gas used by residential consumers in October 1988 was $5.91 per thousand cubic feet, 1 percent more than the October 1987 price. The average price of natural gas used by industrial consumers in October 1988 was $2.82 per thousand cubic feet, 2 percent more than the October 1987 price.

[10]Statistics describing the sampling error in the average retail electricity price for other consumers are relatively large. The current price estimates for other consumers are probably low.

Figure 9.1 Crude Oil Prices

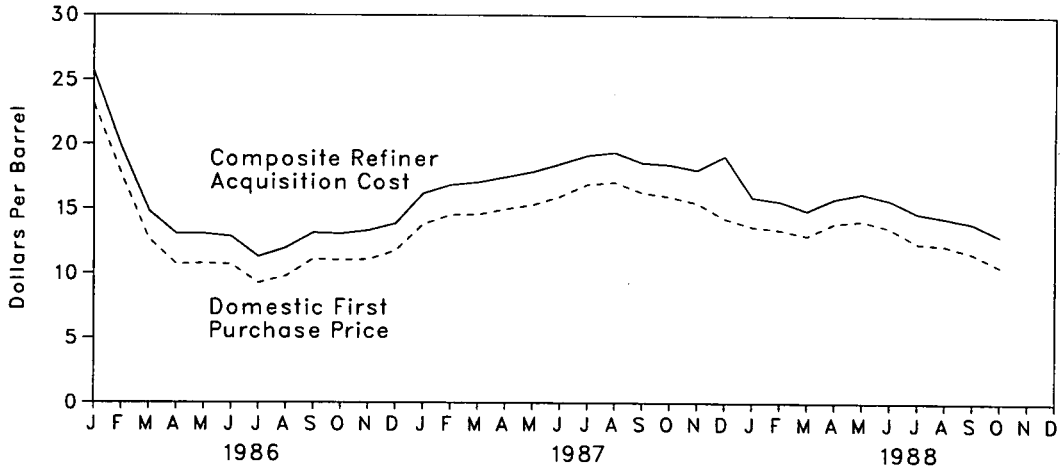


Figure 9.2 Refiner Sales Prices to End Users: Motor Gasoline, Diesel Fuel, and Jet Fuel

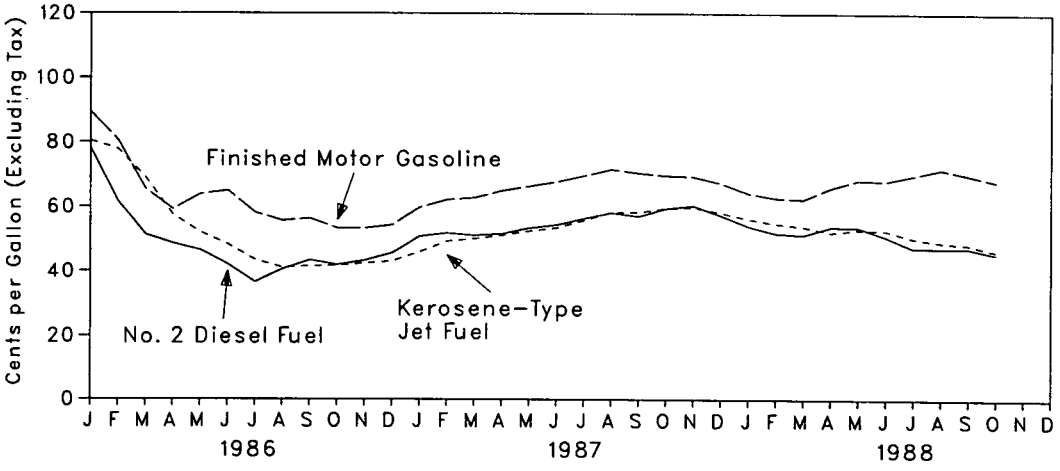


Figure 9.3 Refiner Sales Prices to End Users: No. 2 Fuel Oil, Propane, and Residual Fuel Oil

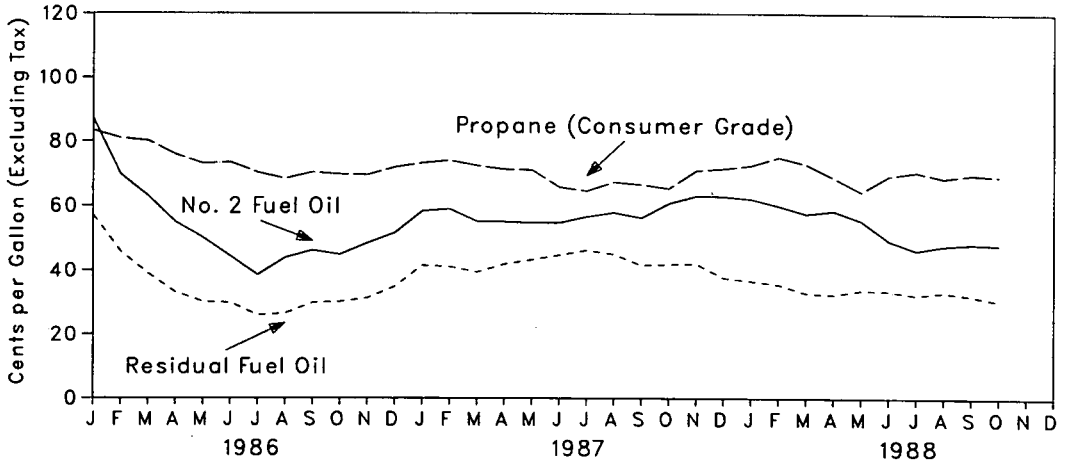


Table 9.1 Crude Oil Price Summary
(Dollars per Barrel)

	Domestic First Purchase Price[a]	FOB Cost of Imports[b]	Landed Cost of Imports[c]	Refiner Acquisition Cost[d]		
				Domestic	Imported	Composite
1976 Average	**8.19**	**12.17**	**13.34**	**8.84**	**13.48**	**10.89**
1977 Average	**8.57**	**13.24**	**14.31**	**9.55**	**14.53**	**11.96**
1978 Average	**9.00**	**13.30**	**14.38**	**10.61**	**14.57**	**12.46**
1979 Average	**12.64**	**20.19**	**21.65**	**14.27**	**21.67**	**17.72**
1980 Average	**21.59**	**32.27**	**33.95**	**24.23**	**33.89**	**28.07**
1981 Average	**31.77**	**35.10**	**36.52**	**34.33**	**37.05**	**35.24**
1982 Average	**28.52**	**32.11**	**33.18**	**31.22**	**33.55**	**31.87**
1983 Average	**26.19**	**27.73**	**28.93**	**28.87**	**29.30**	**28.99**
1984 Average	**25.88**	**27.44**	**28.46**	**28.53**	**28.88**	**28.63**
1985 Average	**24.09**	**25.83**	**26.66**	**26.66**	**26.99**	**26.75**
1986 January	23.12	21.46	22.88	25.91	24.93	25.63
February	17.65	15.11	16.23	20.31	18.11	19.76
March	12.62	12.62	13.55	15.02	14.22	14.80
April	10.68	11.60	12.45	13.01	13.15	13.05
May	10.75	11.05	12.22	12.99	13.17	13.05
June	10.68	10.85	11.90	13.12	12.25	12.83
July	9.25	9.74	10.87	11.44	10.91	11.26
August	9.77	10.59	11.51	11.97	11.87	11.93
September	11.09	11.78	12.70	13.29	12.85	13.13
October	11.00	11.98	13.10	13.20	12.78	13.05
November	11.05	12.63	13.55	13.22	13.46	13.30
December	11.73	13.84	14.50	13.66	14.17	13.84
Average	**12.51**	**12.52**	**13.49**	**14.82**	**14.00**	**14.55**
1987 January	13.79	15.30	16.16	16.01	16.45	16.16
February	14.51	15.95	16.86	16.77	16.98	16.83
March	14.54	16.31	17.05	16.93	17.26	17.04
April	14.95	16.79	17.53	17.21	17.89	17.44
May	15.29	17.20	17.91	17.63	18.25	17.85
June	15.95	17.53	18.34	18.33	18.71	18.47
July	16.88	17.90	18.87	19.04	19.26	19.13
August	17.06	17.72	18.88	19.39	19.32	19.36
September	16.25	17.09	18.04	18.57	18.57	18.57
October	15.95	16.56	17.67	18.36	18.53	18.43
November	15.46	16.41	17.52	17.94	18.14	18.02
December	14.27	14.73	16.03	17.02	17.20	17.09
Average	**15.40**	**16.69**	**17.65**	**17.76**	**18.13**	**17.90**
1988 January	13.64	13.66	14.92	15.82	16.10	15.92
February	13.41	13.76	14.72	15.61	15.61	15.61
March	12.95	13.46	14.48	14.92	14.82	14.88
April	13.91	14.28	15.17	15.88	15.69	15.81
May	14.11	14.49	15.51	16.35	16.02	16.22
June	13.57	13.99	14.89	15.83	15.52	15.71
July	12.36	13.27	14.08	14.65	14.80	14.71
August	12.20	R 12.94	R 13.70	14.36	14.37	14.36
September	11.61	R 12.41	R 13.17	13.97	13.90	13.94
October	10.60	11.50	12.15	12.90	13.03	12.96

[a]See Note 1 at end of section.
[b]See Note 2 at end of section.
[c]See Note 3 at end of section.
[d]See Note 4 at end of section.
R=Revised data.

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 of Crude Oil for the current month and for FOB and Landed Cost of Crude Oil Imports for the current 2 months are preliminary.

Sources: See end of section.

Table 9.2 FOB Cost of Crude Oil Imports from Selected Countries[a]
(Dollars per Barrel)

	Algeria	Indonesia	Iran	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela	Other Countries	Arab OPEC[b]	Total OPEC[c]
1976 Average	**13.05**	**12.76**	**11.61**	**NA**	**13.08**	**11.69**	**NA**	**11.32**	**NA**	**NA**	**NA**
1977 Average	**14.36**	**13.57**	**12.67**	**13.42**	**14.44**	**12.37**	**NA**	**12.68**	**NA**	**NA**	**NA**
1978 Average	**14.10**	**13.64**	**12.65**	**13.24**	**14.04**	**12.70**	**13.82**	**12.45**	**13.35**	**13.28**	**13.30**
1979 Average	**20.65**	**19.35**	**23.71**	**20.29**	**21.80**	**17.63**	**21.20**	**17.37**	**21.43**	**19.25**	**19.91**
1980 Average	**36.57**	**32.37**	**(d)**	**31.11**	**35.82**	**28.53**	**34.58**	**24.78**	**34.24**	**31.61**	**32.25**
1981 Average	**39.09**	**35.93**	**(d)**	**33.13**	**38.53**	**32.48**	**36.08**	**28.86**	**36.69**	**34.73**	**35.11**
1982 Average	**34.23**	**35.27**	**30.93**	**28.07**	**35.13**	**33.50**	**33.46**	**23.77**	**31.96**	**33.84**	**33.45**
1983 Average	**30.06**	**29.93**	**28.25**	**25.19**	**29.78**	**28.03**	**29.84**	**21.48**	**27.96**	**28.38**	**28.45**
1984 Average	**28.04**	**29.10**	**26.93**	**26.37**	**29.39**	**27.60**	**28.90**	**24.16**	**27.65**	**27.68**	**27.59**
1985 Average	**26.84**	**27.12**	**W**	**25.33**	**28.04**	**22.04**	**27.63**	**23.64**	**26.11**	**24.30**	**25.66**
1986 January	25.21	26.68	NA	19.96	26.17	12.75	25.15	21.40	23.21	14.74	21.02
February	W	W	W	14.26	19.83	11.64	17.82	12.56	16.82	11.63	13.99
March	W	13.32	W	11.60	15.78	11.95	15.62	10.45	13.43	12.15	12.53
April	W	10.77	W	10.39	14.54	12.12	12.14	10.48	11.87	12.04	11.82
May	12.17	11.28	W	10.72	13.58	7.91	13.25	10.82	11.91	8.80	10.46
June	W	11.84	W	9.93	12.31	8.54	12.91	9.54	11.88	9.03	10.33
July	W	10.00	W	8.61	10.99	10.15	10.38	7.71	10.55	10.20	9.85
August	W	9.82	W	10.55	11.44	9.35	10.45	9.96	11.52	9.80	10.36
September	W	12.22	NA	11.58	13.43	10.45	13.47	10.16	12.35	10.64	11.31
October	W	12.47	W	11.40	13.86	11.34	13.65	10.26	12.64	11.45	11.81
November	W	12.05	NA	11.78	13.88	13.65	14.05	10.73	12.84	13.37	12.64
December	W	W	W	12.73	15.04	15.15	15.26	12.68	13.80	14.98	14.13
Average	**13.62**	**13.19**	**W**	**11.84**	**14.35**	**11.36**	**13.84**	**10.92**	**13.32**	**11.59**	**12.21**
1987 January	16.30	15.22	W	15.55	17.38	14.51	17.42	13.75	15.72	14.81	14.92
February	16.00	17.75	W	15.34	18.07	W	W	13.93	16.52	16.12	15.84
March	W	16.91	W	16.02	17.72	W	17.36	14.76	16.31	16.37	16.34
April	W	17.24	W	16.40	18.44	W	17.79	15.29	16.83	16.46	16.78
May	W	17.28	W	17.68	18.68	16.77	18.36	15.65	17.14	16.83	16.92
June	W	17.67	W	17.78	18.75	W	18.61	16.24	17.58	16.76	17.24
July	W	17.89	W	18.75	18.93	16.43	19.33	16.49	18.07	16.72	17.35
August	18.09	18.46	W	17.54	19.58	W	19.55	15.70	18.18	17.03	17.35
September	W	17.74	W	16.27	18.58	W	18.35	15.50	17.47	16.89	17.05
October	W	17.66	W	16.64	18.69	12.74	18.40	15.69	17.39	14.22	16.01
November	W	17.56	NA	15.51	18.49	12.99	17.90	14.47	17.03	15.64	16.27
December	W	16.28	NA	12.72	17.61	12.35	W	13.23	15.99	13.29	14.50
Average	**16.79**	**17.40**	**W**	**16.36**	**18.47**	**15.12**	**18.28**	**15.08**	**17.11**	**15.80**	**16.43**
1988 January	W	16.62	NA	12.79	17.04	11.80	16.23	12.37	14.96	12.39	13.29
February	W	16.16	NA	12.91	15.69	12.80	W	12.31	14.59	13.15	13.68
March	W	13.65	NA	11.82	15.69	W	14.68	12.67	13.82	13.31	13.86
April	W	14.59	NA	13.65	16.10	12.77	15.20	13.44	14.70	13.37	14.23
May	W	15.63	NA	13.68	16.06	W	16.10	13.54	14.91	13.61	14.44
June	W	15.26	NA	12.82	15.60	12.71	15.32	13.80	14.17	13.26	14.17
July	W	14.06	NA	12.26	15.15	11.27	14.43	13.18	13.55	12.23	13.41
August	W	R 13.58	NA	12.37	14.93	W	14.86	12.65	13.07	R 11.86	R 12.91
September	W	R 12.84	NA	R 11.69	R 13.71	9.74	W	R 12.38	R 12.33	R 10.77	R 12.47
October	W	11.65	NA	9.97	12.94	W	12.69	12.98	11.37	10.98	12.17

[a]The Free on Board (FOB) cost at the country of origin excludes all costs related to insurance and transportation. See Note 2 at end of section.
[b]The Arab members of OPEC are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates.
[c]"Total OPEC" consists of Ecuador, Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members. The cost of imports from the Neutral Zone between Kuwait and Saudi Arabia is included in the cost of imports from "Total OPEC."
[d]No crude oil was imported.
R=Revised data. NA=Not available. W=Value withheld to avoid disclosure of individual company data.
Notes: • 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 the weighted average of the 12 monthly prices, including those prices that were not published. • Cargoes that were purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude 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: See end of section.

Table 9.3 Landed Cost of Crude Oil Imports from Selected Countries[a]
(Dollars per Barrel)

	Algeria	Canada	Indonesia	Iran	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela	Other Countries	Arab OPEC[b]	Total OPEC[c]
1975 Average	**12.72**	**12.72**	**13.79**	**12.21**	**NA**	**12.62**	**12.30**	**NA**	**11.65**	**NA**	**NA**	**NA**
1976 Average	**13.81**	**13.57**	**13.82**	**12.82**	**NA**	**13.80**	**13.04**	**NA**	**11.80**	**NA**	**NA**	**NA**
1977 Average	**15.20**	**14.21**	**14.63**	**13.80**	**13.75**	**15.25**	**13.61**	**NA**	**13.13**	**NA**	**NA**	**NA**
1978 Average	**14.91**	**14.50**	**14.64**	**13.88**	**13.54**	**14.86**	**13.92**	**NA**	**12.83**	**14.58**	**14.36**	**14.34**
1979 Average	**21.90**	**20.43**	**20.69**	**25.02**	**20.86**	**22.96**	**19.15**	**22.16**	**18.18**	**23.18**	**20.79**	**21.29**
1980 Average	**37.90**	**30.47**	**33.92**	**[d]**	**31.80**	**37.05**	**30.02**	**35.88**	**25.86**	**36.02**	**32.97**	**33.56**
1981 Average	**40.49**	**32.16**	**37.57**	**[d]**	**33.78**	**39.70**	**34.19**	**37.24**	**29.87**	**38.54**	**36.22**	**36.60**
1982 Average	**35.28**	**26.92**	**36.75**	**32.40**	**28.64**	**36.17**	**35.00**	**34.28**	**24.82**	**34.03**	**35.15**	**34.81**
1983 Average	**31.26**	**25.63**	**31.57**	**29.81**	**25.78**	**30.84**	**29.76**	**30.87**	**22.94**	**29.68**	**30.03**	**29.87**
1984 Average	**29.08**	**26.59**	**30.64**	**28.67**	**26.87**	**30.50**	**29.50**	**29.60**	**25.15**	**29.20**	**29.12**	**28.93**
1985 Average	**27.46**	**25.71**	**28.67**	**25.79**	**25.63**	**28.96**	**24.72**	**28.35**	**24.43**	**27.33**	**25.88**	**26.85**
1986 January	24.69	23.89	28.45	NA	20.33	27.73	14.54	25.36	22.21	24.95	17.57	22.68
February	W	17.42	W	W	14.61	21.18	13.80	18.22	13.27	17.58	13.88	15.40
March	W	12.96	14.94	W	11.94	16.44	13.60	16.02	11.04	14.89	13.52	13.67
April	W	11.69	12.29	W	10.74	15.02	13.66	13.00	11.13	13.20	13.44	12.97
May	13.27	12.11	12.74	W	11.06	14.22	10.68	14.17	11.44	13.21	11.43	11.98
June	W	12.74	13.27	W	10.26	13.95	10.49	13.65	10.24	12.66	11.08	11.70
July	W	11.19	11.72	W	8.93	12.11	11.33	11.83	8.45	11.34	11.45	11.14
August	W	11.71	11.45	11.18	10.87	12.29	11.27	11.56	10.66	11.86	11.63	11.54
September	12.88	12.52	13.67	W	11.95	14.11	12.08	14.15	10.86	13.18	12.53	12.60
October	W	12.47	14.18	W	11.74	14.64	12.84	14.76	10.87	13.91	13.00	13.15
November	13.19	12.51	13.96	NA	12.13	14.64	14.63	14.65	11.24	14.21	14.39	13.72
December	W	12.85	14.32	W	13.04	15.56	16.13	15.42	13.24	14.94	15.82	15.01
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 January	16.96	14.65	16.24	W	15.92	18.02	15.87	17.47	14.45	17.18	16.08	16.02
February	16.70	15.49	18.10	17.79	15.67	18.54	17.80	18.14	14.63	18.11	17.29	16.95
March	W	15.72	18.19	17.78	16.32	18.30	17.61	18.02	15.27	17.75	17.49	17.25
April	18.06	16.31	18.32	17.87	16.71	18.96	17.69	18.19	16.03	18.06	17.55	17.69
May	18.51	17.11	18.38	18.00	18.02	19.29	17.66	19.04	16.24	18.36	17.82	17.82
June	W	17.73	19.04	18.37	18.07	19.54	17.80	19.43	16.85	18.65	17.96	18.28
July	W	18.61	19.10	18.69	19.08	19.95	17.69	20.38	17.09	19.13	18.02	18.53
August	19.05	19.00	19.69	19.00	17.89	20.63	18.01	20.41	16.53	19.45	18.36	18.73
September	18.26	17.81	19.18	18.67	16.61	19.38	17.93	18.96	16.14	18.54	18.11	18.14
October	W	17.68	18.97	18.37	16.98	19.45	15.71	19.05	16.26	18.35	16.74	17.41
November	18.18	17.38	18.77	W	15.84	19.44	15.59	18.76	15.19	18.13	17.21	17.54
December	W	16.13	17.75	NA	13.09	18.50	14.79	17.99	13.90	17.15	15.46	16.05
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 January	W	14.58	17.99	W	13.16	17.91	13.23	17.56	13.10	16.34	14.16	14.61
February	W	14.37	17.44	NA	13.30	16.48	13.99	16.70	13.05	15.87	14.23	14.59
March	W	13.66	15.13	NA	12.22	16.45	14.12	15.72	13.50	15.13	14.35	14.77
April	W	14.39	16.30	NA	13.97	16.88	14.12	16.11	14.18	15.77	14.71	15.27
May	W	15.12	16.94	NA	14.09	17.00	14.51	16.97	14.24	16.01	15.05	15.50
June	W	14.67	16.40	NA	13.21	16.59	13.95	16.29	14.33	15.19	14.34	15.04
July	W	13.28	15.11	NA	12.67	15.68	13.17	15.52	13.78	14.68	13.63	14.25
August	W	13.13	R 14.90	NA	12.77	15.55	R 12.74	15.72	13.28	R 14.07	R 13.29	R 13.82
September	W	R 12.89	R 14.05	NA	R 12.09	R 14.49	R 12.19	R 14.38	R 12.96	R 13.30	R 12.36	R 13.16
October	W	11.74	12.89	NA	10.39	13.73	11.25	13.33	13.64	12.42	11.58	12.41

[a]See Note 3 at end of section.
[b]The Arab members of OPEC are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates.
[c]"Total OPEC" consists of Ecuador, Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members. The cost of imports from the Neutral Zone between Kuwait and Saudi Arabia is included in the cost of imports from "Total OPEC."
[d]No crude oil was imported.
R=Revised data. NA=Not available. W=Value withheld to avoid disclosure of individual company data.
Notes: • 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 the weighted average of the 12 monthly prices, including those prices that were not published. • Cargoes that were purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude 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: See end of section.

Table 9.4 U.S. City Average Retail Prices of Motor Gasoline[a]
(Cents per Gallon, Including Tax)

	Leaded Regular	Unleaded Regular	Unleaded Premium	Average for All Types[b]
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[c]	**131.1**	**137.8**	**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 January	110.7	119.4	133.6	119.0
February	103.4	112.0	128.2	111.9
March	89.4	98.1	116.0	98.3
April	81.5	88.8	106.1	89.5
May	85.2	92.3	107.5	92.7
June	88.5	95.5	110.0	95.8
July	82.2	89.0	104.5	89.5
August	77.8	84.3	99.9	84.8
September	79.7	86.0	101.0	86.4
October	77.1	83.1	98.7	83.7
November	76.2	82.1	98.0	82.7
December	76.4	82.3	98.4	83.0
Average	**85.7**	**92.7**	**108.5**	**93.1**
1987 January	80.6	86.2	100.7	86.8
February	84.8	90.5	104.7	91.1
March	85.6	91.2	105.2	91.8
April	87.9	93.4	107.3	94.0
May	88.8	94.1	107.9	94.8
June	90.6	95.8	109.8	96.6
July	92.1	97.1	111.5	98.0
August	94.6	99.5	113.9	100.4
September	94.0	99.0	113.6	100.0
October	93.1	97.6	112.8	98.8
November	92.8	97.6	112.5	98.7
December	91.2	96.1	111.9	97.5
Average	**89.7**	**94.8**	**109.3**	**95.7**
1988 January	88.1	93.3	109.5	94.7
February	85.9	91.3	108.2	92.8
March	85.0	90.4	107.4	92.0
April	88.3	93.0	108.8	94.6
May	91.1	95.5	110.5	97.0
June	91.0	95.5	111.1	97.1
July	92.3	96.7	112.3	98.4
August	94.5	98.7	113.8	100.4
September	93.3	97.4	113.0	99.2
October	91.0	95.6	111.9	97.5
November	90.4	94.9	111.6	97.2

[a]See Note 5 at end of section.
[b]Also includes types of gasoline not shown separately.
[c]In September 1981, the Bureau of Labor Statistics changed the weights used in the calculation of average motor gasoline prices. From September 1981 forward, in the average for all types category, gasohol is included and unleaded premium is weighted more heavily.
NA=Not available.
Note: Geographic coverage for 1974 through 1977 is 56 urban areas. For 1978 forward, it is 85 urban areas.
Sources: See end of section.

Table 9.5 Refiner Sales Prices of Residual Fuel Oil[a]
(Cents per Gallon, Excluding Tax)

	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 January	56.0	62.0	49.7	52.8	51.8	57.1
February	43.0	49.0	36.5	42.7	38.7	45.8
March	37.0	42.7	28.7	35.7	31.8	39.0
April	31.0	36.8	26.0	30.1	28.0	33.0
May	30.1	35.0	23.6	26.8	26.5	30.1
June	29.9	32.3	23.1	26.8	26.2	29.8
July	23.7	27.4	20.4	24.4	21.9	25.9
August	26.5	29.3	21.7	23.2	23.4	26.5
September	29.7	31.5	26.6	28.2	28.1	29.8
October	28.7	31.9	26.4	28.8	27.6	30.1
November	29.3	33.7	25.2	29.0	27.4	31.2
December	34.0	37.7	27.7	31.6	30.4	34.8
Average	**32.8**	**37.2**	**28.9**	**31.7**	**30.5**	**34.3**
1987 January	39.3	45.5	35.7	37.9	37.4	42.0
February	40.0	43.8	34.4	38.3	37.1	41.2
March	38.8	43.4	33.4	37.2	35.8	40.0
April	39.7	43.9	35.5	39.9	37.1	42.0
May	41.1	44.9	38.6	41.7	39.6	43.4
June	43.7	45.8	40.6	43.5	42.0	44.8
July	44.9	48.3	41.9	44.1	43.4	46.4
August	44.6	46.0	41.4	44.0	42.9	45.0
September	41.4	44.0	36.8	39.7	39.1	41.7
October	41.3	44.5	36.3	39.5	38.8	41.9
November	41.3	45.0	34.6	38.7	37.5	42.1
December	39.2	41.4	28.2	33.0	33.9	37.8
Average	**41.2**	**44.7**	**36.2**	**39.6**	**38.5**	**42.3**
1988 January	36.6	41.8	27.8	31.8	32.3	36.7
February	35.3	40.2	27.3	31.5	32.0	35.6
March	32.3	36.9	25.0	29.1	28.4	32.9
April	33.7	35.8	27.5	30.2	30.0	32.4
May	34.1	36.8	29.5	32.1	31.3	33.8
June	32.9	35.3	28.8	32.3	30.9	33.6
July	32.0	35.7	26.5	30.0	29.0	32.3
August	32.7	36.0	28.3	30.7	30.7	33.2
September	31.4	34.7	26.7	30.1	28.7	32.1
October	29.2	34.4	22.0	26.7	25.0	30.5

[a]Sales for resale, that is, wholesale sales, are those made to purchasers who are other than ultimate consumers. Sales to end users are to the ultimate consumer, including bulk customers such as agriculture, industry, and utilities, as well as commercial customers.

Notes: • 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 estimates. See Note 6 at end of section.

Sources: See end of section.

Table 9.6 Refiner Sales Prices of Petroleum Products for Resale[a]
(Cents per Gallon, Excluding Tax)

	Finished Motor Gasoline[b]	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 January	76.7	111.0	77.9	83.8	73.6	73.3	44.0
February	65.1	108.9	67.7	67.1	56.4	56.1	35.4
March	52.4	105.1	58.6	60.8	51.9	47.4	29.2
April	51.8	97.8	50.0	52.2	45.9	46.3	27.3
May	57.9	95.6	47.5	50.1	45.2	44.2	28.5
June	54.4	91.7	44.5	49.3	40.0	39.6	28.3
July	45.7	86.3	40.1	41.1	34.8	34.0	25.3
August	47.9	83.7	39.8	47.8	40.0	38.8	24.6
September	48.6	81.6	42.5	49.1	41.6	41.8	24.8
October	46.1	82.9	43.4	47.9	41.0	40.9	25.1
November	47.1	81.7	43.7	51.3	42.4	41.9	24.3
December	47.4	81.4	45.2	53.4	44.2	43.4	23.6
Average	**53.1**	**91.2**	**49.5**	**60.6**	**48.6**	**45.2**	**29.0**
1987 January	53.3	82.9	49.0	59.2	50.6	49.5	25.0
February	55.1	84.9	49.7	56.6	49.3	49.6	24.4
March	56.3	83.6	49.1	54.2	49.0	48.7	23.6
April	57.8	84.1	50.2	55.6	49.4	49.7	24.4
May	59.5	85.2	51.6	55.6	51.5	52.1	24.0
June	60.8	86.9	52.7	55.4	52.6	53.1	23.6
July	62.5	86.6	55.3	57.0	54.9	55.1	24.4
August	63.6	86.9	57.0	59.0	55.1	57.1	25.6
September	60.6	86.8	55.9	58.6	53.3	56.0	26.1
October	60.5	86.9	58.0	62.7	56.7	58.1	26.8
November	59.9	87.2	58.6	63.5	57.0	57.9	27.1
December	55.3	86.3	55.6	60.7	54.2	53.8	26.0
Average	**58.9**	**85.9**	**53.8**	**59.2**	**52.7**	**53.4**	**25.2**
1988 January	53.7	86.0	53.0	59.3	52.1	51.2	26.7
February	53.9	84.2	52.1	57.2	48.9	49.1	26.4
March	53.8	84.4	50.2	54.3	47.6	49.1	25.4
April	58.4	84.6	50.3	54.2	50.6	51.5	25.0
May	59.8	85.2	51.1	53.3	50.1	51.3	24.6
June	59.2	85.3	50.7	49.9	46.6	47.8	24.1
July	62.3	86.3	47.5	48.3	43.3	43.4	21.7
August	61.3	86.9	47.8	48.9	44.3	45.0	21.9
September	58.0	86.0	47.0	49.8	43.2	44.8	22.4
October	57.3	84.0	45.2	49.4	41.9	42.0	22.0

[a]Sales for resale, that is, wholesale sales, are those made to purchasers who are other than ultimate consumers. Sales to end users are those made directly to the ultimate consumer, including bulk customers such as agriculture, industry, and utilities, as well as residential and commercial customers.

[b]See Note 5 at end of section.

Notes: • 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 estimates. See Note 6 at end of section.

Sources: See end of section.

Table 9.7 Refiner Sales Prices of Petroleum Products to End Users[a]
(Cents per Gallon, Excluding Tax)

	Finished Motor Gasoline[b]	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 January	89.3	116.2	80.4	104.7	86.9	78.1	83.3
February	80.5	117.2	77.8	93.0	69.8	61.5	80.9
March	65.4	111.5	68.9	84.9	62.9	51.2	80.1
April	59.1	104.3	57.3	79.5	54.9	48.5	75.9
May	63.8	102.2	51.9	67.6	50.0	46.4	73.1
June	64.9	101.0	48.2	51.6	44.3	42.0	73.5
July	58.0	98.2	43.4	48.2	38.4	36.5	70.3
August	55.5	94.9	41.0	60.5	43.8	40.5	68.4
September	56.2	93.2	41.5	73.7	46.1	43.3	70.4
October	53.2	91.2	41.6	69.5	44.8	41.9	69.8
November	53.2	87.2	42.4	74.5	48.3	43.2	69.6
December	54.2	88.8	43.0	76.8	51.5	45.0	72.0
Average	**62.4**	**101.1**	**52.9**	**79.0**	**56.0**	**47.8**	**74.5**
1987 January	59.7	87.9	45.9	82.8	58.3	50.7	73.3
February	62.1	89.7	49.2	80.4	58.9	51.7	74.1
March	62.7	90.3	50.0	82.0	55.1	51.0	72.5
April	64.9	89.8	51.0	78.2	55.0	51.5	71.4
May	66.3	90.6	52.4	66.8	54.7	53.3	71.2
June	67.7	91.3	53.4	59.8	54.7	54.3	65.8
July	69.6	91.5	55.7	60.4	56.6	56.3	64.6
August	71.6	92.4	58.2	60.2	57.9	58.1	67.4
September	70.5	91.9	58.3	77.0	56.3	57.0	66.6
October	69.7	91.4	59.5	78.8	60.7	59.5	65.4
November	69.4	91.0	59.9	83.1	63.2	60.4	71.1
December	67.4	90.0	58.2	87.9	63.0	57.3	71.7
Average	**66.9**	**90.7**	**54.3**	**77.0**	**58.1**	**55.1**	**70.1**
1988 January	64.3	88.0	56.2	84.1	62.1	54.0	72.7
February	62.8	87.9	54.8	84.7	60.0	51.8	75.2
March	62.4	87.8	53.9	77.5	57.6	51.3	73.1
April	66.0	87.6	52.1	82.2	58.5	53.8	68.9
May	68.4	89.9	53.0	61.2	55.5	53.7	64.4
June	68.1	87.2	52.7	55.4	49.3	50.8	69.5
July	69.9	90.3	50.3	56.0	46.3	47.3	70.7
August	71.8	93.0	49.1	56.3	47.7	47.3	68.8
September	70.0	91.7	48.4	66.1	48.3	47.3	69.9
October	68.0	89.4	46.3	71.8	48.0	45.4	69.4

[a]Sales for resale, that is, wholesale sales, are those made to purchasers who are other than ultimate consumers. Sales to end users are those made directly to the ultimate consumer, including bulk customers such as agriculture, industry, and utilities, as well as residential and commercial customers.

[b]See Note 5 at end of section.

Notes: • 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 estimates. See Note 6 at end of section.

Sources: See end of section.

Table 9.8a Sales Prices of No. 2 Distillate to Residences for Selected States[a]
(Cents per Gallon, Excluding Tax)

	CT	ME	MA	NH	RI	VT	DE	DC
1978 Average	**50.1**	**48.6**	**48.8**	**50.3**	**50.7**	**50.8**	**47.8**	**50.7**
1979 Average	**72.0**	**68.8**	**70.9**	**72.5**	**72.8**	**72.5**	**68.2**	**74.2**
1980 Average	**98.3**	**96.3**	**97.8**	**100.4**	**101.1**	**101.5**	**95.4**	**102.6**
1981 Average	**121.7**	**120.4**	**121.3**	**123.7**	**123.8**	**125.4**	**117.3**	**127.4**
1982 Average	**118.3**	**115.5**	**117.6**	**117.4**	**120.1**	**120.1**	**111.3**	**124.5**
1983 Average	**109.1**	**102.8**	**109.1**	**104.1**	**110.5**	**112.9**	**106.0**	**117.0**
1984 Average	**112.1**	**103.9**	**111.6**	**108.4**	**111.4**	**111.9**	**109.6**	**118.7**
1985 Average	**108.0**	**99.7**	**107.0**	**102.4**	**106.7**	**107.7**	**104.6**	**114.3**
1986 January	111.5	101.1	105.9	103.7	101.8	109.0	102.3	116.5
February	99.5	90.9	90.6	88.6	93.4	100.2	93.9	105.5
March	93.5	86.5	85.8	84.3	84.6	95.6	87.0	97.6
April	86.2	77.9	76.8	75.2	79.7	89.0	77.1	93.2
May	80.7	74.5	74.2	70.7	76.6	84.7	74.3	87.9
June	77.6	68.5	68.7	65.4	69.0	78.9	73.7	81.7
July	68.5	59.4	65.6	63.3	69.2	70.8	65.5	74.7
August	66.9	58.5	65.0	63.3	69.1	68.8	66.6	70.7
September	68.4	58.2	67.8	63.0	69.6	69.4	67.0	72.1
October	68.9	58.7	68.2	64.3	68.7	69.5	66.6	74.2
November	70.2	59.3	69.3	65.3	71.6	70.5	67.9	77.0
December	72.5	66.3	72.6	69.5	74.6	72.4	71.2	80.8
Average	**89.0**	**74.4**	**82.1**	**75.9**	**82.8**	**86.6**	**85.0**	**93.1**
1987 January	80.0	72.7	80.5	76.2	79.8	78.2	78.1	87.3
February	83.4	73.1	80.3	75.4	81.5	79.5	79.4	92.6
March	82.2	74.2	79.6	74.0	81.5	79.1	79.4	91.9
April	82.4	75.0	79.0	73.5	81.4	78.4	77.9	91.6
May	82.8	74.9	79.9	74.7	80.8	79.8	78.4	91.0
June	81.6	74.1	78.6	74.4	79.5	79.9	74.8	92.3
July	82.2	74.5	78.7	74.3	80.5	80.8	74.7	90.2
August	82.0	74.8	77.2	75.7	79.4	80.3	74.8	92.4
September	82.5	74.7	78.9	76.0	80.5	81.1	76.2	91.4
October	84.3	73.4	81.0	78.0	83.0	83.5	78.8	92.1
November	87.3	75.2	83.1	79.3	86.2	84.3	82.4	93.5
December	87.8	79.1	83.7	81.9	87.1	84.9	82.5	95.3
Average	**83.4**	**74.7**	**80.6**	**76.5**	**82.5**	**81.1**	**79.3**	**91.8**
1988 January	89.2	80.1	85.7	82.4	88.1	85.9	83.7	95.8
February	88.5	79.6	84.1	81.6	87.0	85.6	83.1	95.5
March	87.5	79.1	83.3	80.3	85.2	84.8	NA	92.8
April	88.1	78.6	83.1	79.0	85.6	85.3	82.8	90.8
May	86.6	77.5	82.4	78.3	85.1	84.9	82.3	91.9
June	86.6	75.4	77.7	79.3	81.6	83.4	80.9	90.4
July	83.6	73.3	76.2	76.5	76.3	81.4	73.4	84.8
August	81.9	75.7	74.1	73.7	79.7	81.1	73.5	84.6
September	R 80.8	R 71.8	R 79.2	R 74.0	R 79.7	R 77.5	R 71.1	84.7
October	79.9	69.5	77.6	72.0	76.5	75.9	70.4	83.1

[a]The States are listed by geographic region of the country. State names are abbreviated as follows: CT - Connecticut, ME - Maine, MA - Massachusetts, NH - New Hampshire, RI - Rhode Island, VT - Vermont, DE - Delaware, DC - District of Columbia, MD - Maryland, NJ - New Jersey, NY - New York, PA - Pennsylvania, VA - Virginia, WV - West Virginia, IL - Illinois, IN - Indiana, MI - Michigan, MN - Minnesota, OH - Ohio, WI - Wisconsin, ID - Idaho, AK - Alaska, OR - Oregon, WA - Washington.

Footnotes continued on following page.

Table 9.8b Sales Prices of No. 2 Distillate to Residences for Selected States[a] (continued)

(Cents per Gallon, Excluding Tax)

	MD	NJ	NY	PA	VA	WV	IL	IN
1978 Average	**49.2**	**49.6**	**50.1**	**48.8**	**49.1**	**46.2**	**46.5**	**48.5**
1979 Average	**70.1**	**71.0**	**71.2**	**69.8**	**70.4**	**65.1**	**68.8**	**72.7**
1980 Average	**97.9**	**97.9**	**98.2**	**96.4**	**98.5**	**92.2**	**95.8**	**99.6**
1981 Average	**121.4**	**121.5**	**123.2**	**118.1**	**120.5**	**115.0**	**114.9**	**118.5**
1982 Average	**117.1**	**117.4**	**120.5**	**113.7**	**117.7**	**109.3**	**110.9**	**114.3**
1983 Average	**110.3**	**107.9**	**112.1**	**105.8**	**108.7**	**101.0**	**100.4**	**100.7**
1984 Average	**113.5**	**111.0**	**115.5**	**107.9**	**110.5**	**102.1**	**100.1**	**103.1**
1985 Average	**108.8**	**105.9**	**111.3**	**102.3**	**106.3**	**98.0**	**97.5**	**99.1**
1986 January	112.2	107.7	111.5	104.7	106.9	99.8	97.6	99.9
February	99.9	98.3	102.7	95.3	98.2	87.8	82.9	85.0
March	93.9	91.5	96.3	87.2	90.8	79.6	74.7	75.6
April	88.5	84.8	87.6	78.1	84.5	70.6	69.9	74.0
May	84.9	80.1	85.0	72.6	75.1	67.4	72.9	67.2
June	79.7	75.6	81.4	66.0	74.3	63.4	67.4	66.6
July	71.4	75.8	72.3	63.6	69.5	53.9	NA	60.1
August	70.7	72.4	71.3	62.6	71.5	59.7	64.7	65.6
September	70.2	73.4	73.7	63.6	70.9	61.3	65.5	66.7
October	72.4	74.7	73.9	64.1	69.5	63.0	60.0	65.2
November	73.5	74.6	76.0	66.1	68.9	67.3	NA	65.1
December	77.1	76.7	78.8	68.2	70.6	71.7	NA	68.5
Average	**91.4**	**90.2**	**91.1**	**81.4**	**86.6**	**74.6**	**NA**	**74.8**
1987 January	82.0	83.5	84.0	75.2	75.8	75.6	76.9	73.0
February	84.8	84.7	85.0	76.0	79.6	77.6	78.1	72.3
March	85.4	83.0	84.4	74.6	80.1	75.2	78.3	71.2
April	84.4	82.6	84.3	74.1	81.3	73.2	78.3	73.1
May	83.7	82.0	84.9	73.2	79.6	74.8	80.1	75.8
June	85.8	82.1	83.5	70.8	77.8	74.2	80.5	75.9
July	87.2	82.4	82.7	72.6	78.5	74.2	79.9	76.7
August	87.1	81.8	83.4	73.9	77.9	75.6	83.7	77.1
September	87.3	82.5	82.8	74.8	78.8	74.6	79.4	77.1
October	88.4	84.2	85.3	77.7	81.0	74.9	87.3	79.4
November	90.4	86.3	87.4	80.8	82.9	78.3	88.2	80.8
December	90.6	87.2	88.0	81.7	82.5	80.5	85.2	79.6
Average	**86.6**	**84.3**	**85.2**	**76.9**	**79.5**	**76.4**	**79.8**	**75.4**
1988 January	90.9	88.1	89.2	83.4	82.2	78.7	85.4	79.9
February	90.3	87.7	88.7	82.6	81.8	76.0	86.1	76.9
March	88.2	86.7	87.5	81.6	82.6	75.5	86.1	76.7
April	89.1	85.7	86.7	81.1	82.8	75.5	87.4	79.6
May	87.9	85.4	85.0	79.7	81.7	73.6	86.7	77.0
June	86.8	82.5	83.6	75.3	79.1	71.8	82.9	78.9
July	85.0	80.9	82.1	71.6	77.4	70.5	83.8	73.8
August	84.2	78.3	78.3	64.5	77.1	67.9	80.5	73.7
September	[R] 76.1	75.7	81.1	68.9	[R] 76.0	[R] 68.9	[R] 67.6	[R] 69.5
October	78.8	77.8	81.2	70.1	75.5	71.4	68.6	70.8

Footnotes continued on following page.

Table 9.8c Sales Prices of No. 2 Distillate to Residences for Selected States[a] (continued)
(Cents per Gallon, Excluding Tax)

	MI	MN	OH	WI	ID	AK	OR	WA	U.S. Average
1978 Average	**47.9**	**47.8**	**47.4**	**44.7**	**43.6**	**53.2**	**45.8**	**48.6**	**49.0**
1979 Average	**70.9**	**72.4**	**68.6**	**67.3**	**62.1**	**68.2**	**68.0**	**69.7**	**70.4**
1980 Average	**97.8**	**99.9**	**91.9**	**91.5**	**91.6**	**97.8**	**97.3**	**100.8**	**97.4**
1981 Average	**118.3**	**118.4**	**113.2**	**109.1**	**110.4**	**118.0**	**111.4**	**116.5**	**119.4**
1982 Average	**113.9**	**115.1**	**110.2**	**107.8**	**110.4**	**117.4**	**111.6**	**117.6**	**116.0**
1983 Average	**106.4**	**103.1**	**101.3**	**101.2**	**101.8**	**108.8**	**103.6**	**109.0**	**107.8**
1984 Average	**105.0**	**104.1**	**102.1**	**101.0**	**98.5**	**106.9**	**99.3**	**102.6**	**109.1**
1985 Average	**102.1**	**101.9**	**99.7**	**98.3**	**97.2**	**108.3**	**97.1**	**101.1**	**105.3**
1986 January	102.6	100.5	100.7	96.5	97.1	106.5	100.1	104.6	106.4
February	91.9	86.2	91.9	83.9	91.2	103.7	83.5	90.4	95.8
March	80.6	80.2	80.8	75.9	76.2	113.8	65.9	75.3	88.7
April	74.5	76.4	78.1	73.8	69.9	95.6	62.5	74.9	81.2
May	72.4	79.5	75.2	71.8	74.8	94.3	64.1	71.2	77.4
June	65.5	74.6	69.0	69.0	66.9	89.0	60.0	65.3	72.8
July	67.2	69.5	62.3	63.6	62.2	NA	55.7	60.2	67.0
August	69.7	67.6	62.5	63.7	58.6	84.2	55.6	60.6	66.3
September	70.7	70.0	64.2	67.9	59.4	89.2	61.9	66.9	68.1
October	69.8	67.7	61.5	63.3	60.8	79.2	62.3	68.2	67.4
November	70.3	68.0	61.0	66.0	62.1	80.1	62.6	68.8	68.2
December	72.5	68.3	64.8	69.0	61.6	85.4	63.9	66.7	70.6
Average	**81.0**	**79.2**	**77.7**	**75.6**	**73.8**	**94.9**	**70.4**	**77.5**	**83.6**
1987 January	76.6	71.8	71.1	72.6	63.1	86.4	68.1	73.0	78.5
February	76.7	71.7	73.3	73.9	65.1	86.9	71.4	75.9	79.9
March	76.1	71.6	71.9	74.0	65.7	83.3	70.9	76.1	79.1
April	74.7	71.8	71.1	74.1	65.4	76.5	70.3	75.9	78.7
May	75.1	72.4	70.9	71.6	65.2	78.2	69.5	74.0	78.6
June	76.1	72.7	75.0	74.3	70.0	84.6	67.6	74.2	77.8
July	77.1	75.5	76.5	73.5	70.5	87.5	NA	77.4	78.7
August	77.4	75.9	73.4	74.5	74.9	88.7	NA	79.3	78.8
September	77.4	74.4	74.6	74.3	77.3	89.5	77.1	81.2	78.9
October	78.1	78.9	76.9	77.5	76.3	92.6	75.1	82.8	81.2
November	80.9	79.7	79.1	79.3	77.3	92.3	74.7	84.3	83.5
December	80.2	77.0	78.7	78.4	76.8	90.6	75.8	84.8	84.0
Average	**77.5**	**74.6**	**74.7**	**75.1**	**68.8**	**86.5**	**72.5**	**79.5**	**80.3**
1988 January	81.6	76.9	76.7	77.2	74.5	88.4	75.9	82.8	84.9
February	80.8	75.7	76.5	76.4	72.3	87.4	75.0	82.1	84.0
March	78.4	74.8	76.5	76.1	70.8	89.1	74.3	81.9	83.3
April	78.6	74.7	77.3	78.1	73.6	88.8	74.4	82.5	83.2
May	77.0	74.5	74.7	76.6	72.7	89.4	74.8	82.4	81.9
June	73.7	73.6	72.4	74.3	70.5	87.8	74.0	77.6	79.3
July	73.4	75.8	70.0	72.9	67.6	85.4	66.6	72.7	77.0
August	74.0	72.3	69.2	71.4	64.5	85.4	64.4	69.8	74.0
September	R 74.6	72.3	R 71.4	R 69.4	R 67.5	R 88.2	R 64.7	R 73.7	R 75.3
October	76.5	71.0	70.9	68.9	67.0	86.6	NA	NA	75.3

Footnotes continued.
R=Revised data. NA=Not available.
Notes: • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration estimates. See Note 6 at end of section.
Sources: See end of section.

Table 9.9 Retail Prices[a] of Electricity
(Cents per kilowatthour)

	Residential		Commercial		Industrial		Other		Total[b]	
	Old Series[c]	New Series	Old Series[c]	New Series	Old Series[c]	New Series	Old Series[c]	New Series	Old Series[c]	New Series
1973 Average	**2.54**		**2.41**		**1.25**		**2.10**		**1.96**	
1974 Average	**3.10**		**3.04**		**1.69**		**2.75**		**2.49**	
1975 Average	**3.51**		**3.45**		**2.07**		**3.08**		**2.92**	
1976 Average	**3.73**		**3.69**		**2.21**		**3.27**		**3.09**	
1977 Average	**4.05**		**4.09**		**2.50**		**3.51**		**3.42**	
1978 Average	**4.31**		**4.36**		**2.79**		**3.62**		**3.69**	
1979 Average	**4.64**		**4.68**		**3.05**		**3.96**		**3.99**	
1980 Average	**5.36**		**5.48**		**3.69**		**4.76**		**4.73**	
1981 Average	**6.20**		**6.29**		**4.29**		**5.28**		**5.46**	
1982 Average	**6.86**		**6.86**		**4.95**		**5.92**		**6.13**	
1983 Average	**7.18**		**7.02**		**4.96**		**6.38**		**6.30**	
1984 Average	**7.54**		**7.33**		**5.04**		**6.78**		**6.52**	
1985 Average	**7.79**		**7.47**		**5.16**		**6.96**		**6.71**	
1986 January[d]	7.35	6.92	7.29	7.04	5.16	4.95	7.00	6.70	6.61	6.30
February	7.56	7.14	7.43	7.16	5.12	4.95	7.07	6.71	6.65	6.37
March	7.59	7.22	7.47	7.21	5.12	4.93	7.28	6.76	6.64	6.37
April	7.79	7.42	7.45	7.22	5.04	4.84	7.15	6.90	6.60	6.36
May	7.83	7.49	7.39	7.16	5.06	4.84	7.11	6.63	6.59	6.34
June	8.11	7.71	7.56	7.26	5.07	4.87	7.21	6.67	6.82	6.53
July	8.21	7.75	7.49	7.08	5.32	5.08	7.19	6.68	7.02	6.66
August	8.19	7.70	7.51	7.23	5.34	5.07	7.08	6.56	7.02	6.68
September	8.16	7.71	7.57	7.27	5.20	4.98	7.35	6.93	6.91	6.60
October	7.78	7.46	7.34	7.14	5.05	4.83	6.89	6.43	6.61	6.36
November	7.68	7.40	7.31	6.97	4.93	4.76	7.01	6.52	6.53	6.27
December	7.29	7.01	7.05	6.87	4.83	4.68	6.65	6.24	6.36	6.15
Average	**7.80**	**7.41**	**7.41**	**7.13**	**5.10**	**4.90**	**7.08**	**6.64**	**6.70**	**6.42**
1987 January[d]	7.24	6.93	7.06	6.86	4.84	4.71	6.86	6.46	6.40	6.18
February	7.29	6.95	7.06	6.86	4.78	4.64	6.86	6.53	6.35	6.13
March	7.47	7.14	7.16	6.96	4.79	4.67	6.88	6.54	6.40	6.19
April	7.61	7.26	7.18	6.94	4.75	4.62	7.45	6.87	6.40	6.17
May	7.79	7.47	7.16	6.92	4.79	4.65	6.97	6.56	6.44	6.22
June	8.15	7.80	7.36	7.09	4.97	4.79	7.13	6.77	6.75	6.49
July	8.27	7.80	7.40	7.07	5.12	4.90	7.02	6.66	6.94	6.61
August	8.22	7.76	7.39	7.10	5.06	4.85	7.07	6.70	6.92	6.60
September	8.12	7.66	7.42	7.13	4.99	4.80	7.11	6.90	6.78	6.48
October	7.98	7.63	7.44	7.20	4.84	4.72	7.11	6.83	6.61	6.38
November	7.66	7.39	7.26	7.06	4.68	4.59	6.86	6.46	6.38	6.20
December	7.37	7.09	7.03	6.86	4.69	4.60	6.79	6.43	6.32	6.14
Average	**7.78**	**7.41**	**7.25**	**7.01**	**4.86**	**4.72**	**7.01**	**6.64**	**6.57**	**6.32**
1988 January[d]	7.16	6.92	6.92	6.81	4.67	4.48	6.63	5.90	6.28	6.09
February	7.25	6.98	6.99	6.85	4.65	4.50	6.71	6.49	6.28	6.11
March	7.39	7.13	7.02	6.90	4.62	4.46	6.82	6.37	6.28	6.10
April	7.58	7.30	6.98	6.86	4.60	4.44	6.90	6.09	6.26	6.07
May	7.89	7.58	7.10	6.96	4.61	4.43	6.97	5.90	6.36	6.13
June	8.17	7.86	7.36	7.19	4.84	4.66	6.89	5.94	6.68	6.44
July	8.23	7.92	7.19	7.04	5.28	5.00	6.92	5.51	6.91	6.61
August	8.32	7.95	7.21	7.07	5.27	5.02	6.89	5.38	6.96	6.65
September	8.20	7.84	7.45	7.26	5.00	4.77	6.92	5.94	6.83	6.56
October	8.00	7.71	7.42	7.25	4.81	4.61	6.81	• 6.24	6.60	6.37

[a]Prices are calculated by dividing revenues by sales. Revenues may not correspond to sales for a particular month because of utility billing and accounting procedures. This could result in uncharacteristic increases or decreases in the monthly prices.

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

[c]Data through 1979 cover privately owned electric utilities in Classes A and B. Data for 1980 forward cover selected privately owned electric utilities in Class A whose electric operating revenues were $100 million or more during the previous year.

[d]See Note 7 at end of section.

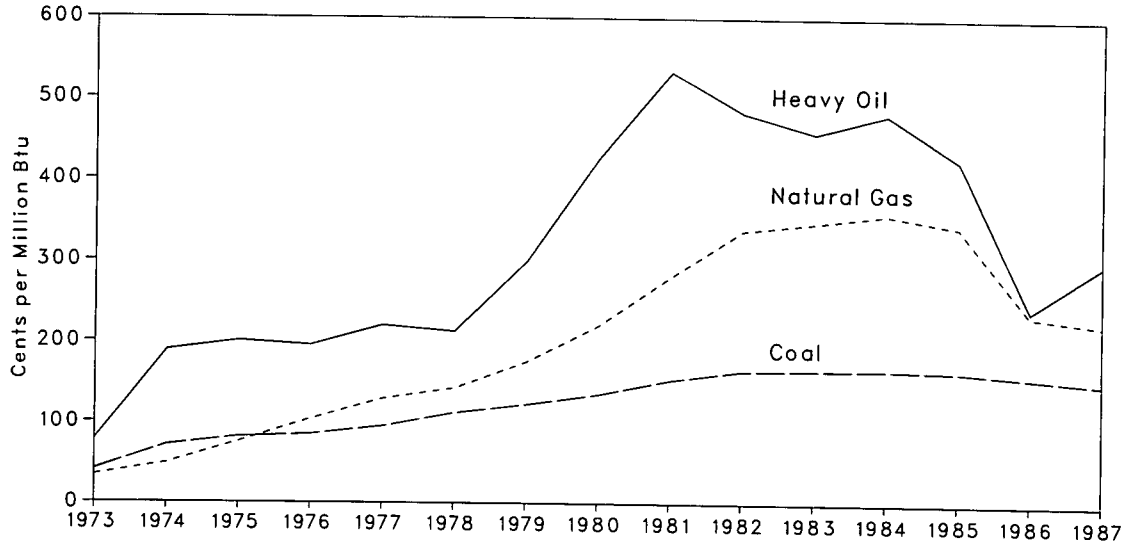
•Statistics describing the sampling error in the average retail electricity price for other consumers are relatively large. The current price estimates for other consumers are probably low.

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

Sources: See end of section.

Figure 9.4 Cost of Fossil Fuels Delivered to Steam-Electric Utility Plants

Yearly



Monthly

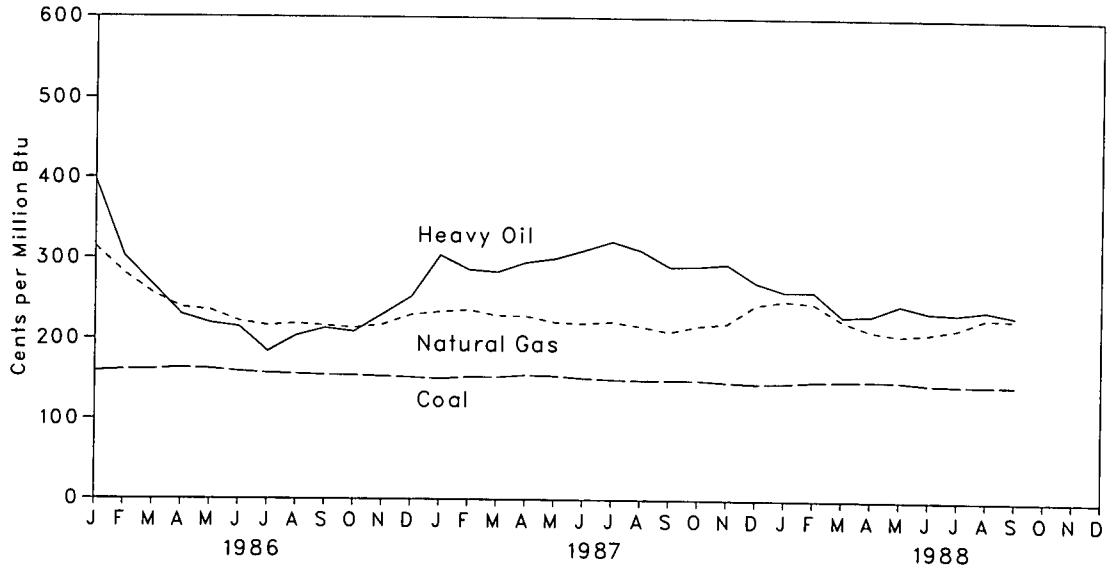


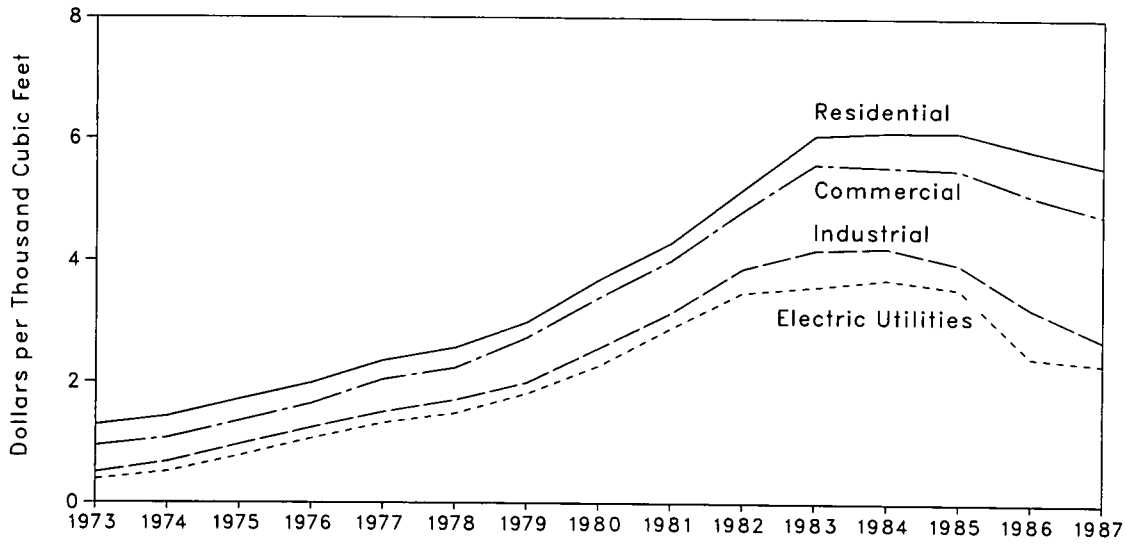
Table 9.10 Cost of Fossil Fuels Delivered to Steam-Electric Utility Plants[a]
(Cents per million Btu)

	Coal	Heavy Oil[b]	Natural Gas[c]	All Fossil Fuels[b]
1973 Average	**40.5**	**78.5**	**33.8**	**47.6**
1974 Average	**70.9**	**189.0**	**48.2**	**91.4**
1975 Average	**81.4**	**200.5**	**75.2**	**104.4**
1976 Average	**84.8**	**195.2**	**103.4**	**111.9**
1977 Average	**94.7**	**219.8**	**129.1**	**129.7**
1978 Average	**111.6**	**212.5**	**142.2**	**141.1**
1979 Average	**122.4**	**298.8**	**174.9**	**163.9**
1980 Average	**135.1**	**426.7**	**219.9**	**192.8**
1981 Average	**153.2**	**533.4**	**280.5**	**225.6**
1982 Average	**164.7**	**483.2**	**337.6**	**224.9**
1983 Average	**165.6**	**457.8**	**347.4**	**220.6**
1984 Average	**166.4**	**481.2**	**358.3**	**219.2**
1985 Average	**164.8**	**424.4**	**343.1**	**209.6**
1986 January	159.6	396.0	313.6	195.7
February	161.4	302.1	281.2	185.6
March	161.7	266.2	256.2	179.9
April	163.5	229.7	238.4	177.7
May	162.3	218.9	235.2	177.7
June	159.2	214.4	221.5	174.1
July	157.1	184.1	216.1	171.1
August	156.1	203.6	218.5	170.7
September	154.9	213.0	216.2	168.5
October	154.7	208.6	213.6	165.8
November	153.3	230.5	217.6	166.1
December	152.2	252.7	230.1	170.3
Average	**157.9**	**240.1**	**234.4**	**175.0**
1987 January	150.4	304.1	233.8	173.3
February	152.7	286.5	236.3	172.1
March	152.6	283.6	229.3	170.0
April	155.2	295.6	228.6	174.2
May	154.4	300.4	221.2	172.7
June	151.6	310.6	219.8	172.3
July	150.0	321.7	221.9	177.3
August	149.3	310.8	216.6	172.6
September	149.6	291.1	209.9	166.1
October	149.6	291.7	217.5	165.6
November	147.4	294.5	220.6	166.1
December	145.8	271.9	244.2	166.8
Average	**150.6**	**297.6**	**223.5**	**170.7**
1988 January	146.6	260.6	249.6	167.4
February	148.8	261.0	246.6	169.5
March	149.4	230.2	224.8	165.8
April	150.0	231.5	212.3	163.0
May	149.6	245.0	206.8	163.3
June	146.4	236.2	209.7	162.4
July	145.6	234.5	215.8	165.5
August	145.4	239.0	229.2	167.2
September	145.5	232.0	228.0	163.2
9-Month Average	**147.4**	**241.5**	**223.1**	**165.3**
1987 9-Month Average	**151.7**	**301.9**	**222.6**	**172.3**
1986 9-Month Average	**159.5**	**241.6**	**238.5**	**177.6**

[a]Data through 1982 cover all steam-electric utility plants with a capacity of 25 megawatts or greater. From 1974 through 1982, data include peaking units. Beginning with 1983, data cover steam-electric utility plants with a capacity of 50 megawatts or greater.
[b]See Note 8 at end of section.
[c]Includes supplemental gaseous fuels.
Note: Geographic coverage is the 50 States and the District of Columbia.
Sources: See end of section.

Figure 9.5 Natural Gas Prices

Yearly



Monthly

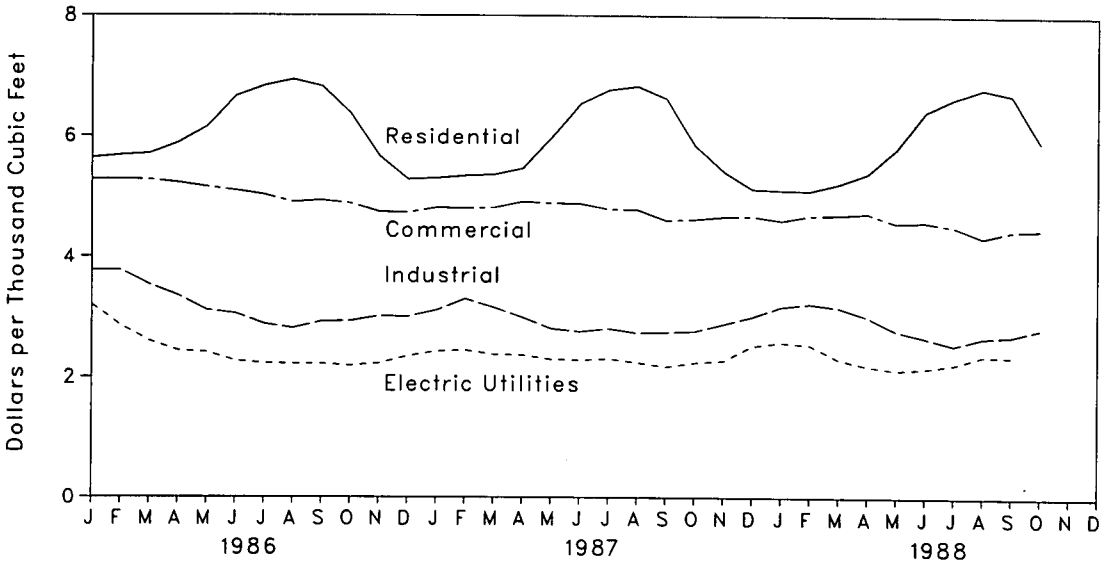


Table 9.11 Natural Gas Prices[a]
(Dollars per Thousand Cubic Feet)

	Wellhead	Major Interstate Pipeline Companies: Imports	Major Interstate Pipeline Companies: Purchases from Producers	City Gate	Delivered to Consumers[b]: Residential	Commercial	Industrial	Electric Utilities[c]	Average
1973 Average	**0.22**	**NA**	**NA**	**NA**	**1.29**	**0.94**	**0.50**	**0.38**	**0.73**
1974 Average	**.30**	**NA**	**NA**	**NA**	**1.43**	**1.07**	**.67**	**.51**	**.89**
1975 Average	**.44**	**NA**	**NA**	**NA**	**1.71**	**1.35**	**.96**	**.77**	**1.19**
1976 Average	**.58**	**NA**	**NA**	**NA**	**1.98**	**1.64**	**1.24**	**1.06**	**1.47**
1977 Average	**.79**	**NA**	**NA**	**NA**	**2.35**	**2.04**	**1.50**	**1.32**	**1.78**
1978 Average	**.91**	**2.21**	**0.83**	**NA**	**2.56**	**2.23**	**1.70**	**1.48**	**1.98**
1979 Average	**1.18**	**2.60**	**1.22**	**NA**	**2.98**	**2.73**	**1.99**	**1.81**	**2.34**
1980 Average	**1.59**	**4.42**	**1.63**	**NA**	**3.68**	**3.39**	**2.56**	**2.27**	**2.91**
1981 Average	**1.98**	**4.84**	**2.15**	**NA**	**4.29**	**4.00**	**3.14**	**2.89**	**3.51**
1982 Average	**2.46**	**4.94**	**2.72**	**NA**	**5.17**	**4.82**	**3.87**	**3.48**	**4.32**
1983 Average	**2.59**	**4.51**	**2.93**	**NA**	**6.06**	**5.59**	**4.18**	**3.58**	**4.82**
1984 Average	**2.66**	**4.08**	**2.91**	**3.95**	**6.12**	**5.55**	**4.22**	**3.70**	**4.85**
1985 Average	**2.51**	**3.19**	**2.85**	**3.75**	**6.12**	**5.50**	**3.95**	**3.55**	**4.72**
1986 January	2.28	2.81	2.63	3.52	5.63	5.28	3.77	3.20	4.73
February	2.26	2.79	2.61	3.52	5.67	5.28	3.77	2.85	4.72
March	2.16	3.36	2.66	3.50	5.70	5.27	3.53	2.60	4.53
April	2.10	3.14	2.37	3.33	5.88	5.22	3.35	2.44	4.24
May	1.96	2.75	2.46	3.15	6.16	5.15	3.11	2.41	3.90
June	1.85	2.56	2.56	3.11	6.67	5.09	3.05	2.27	3.65
July	1.80	2.78	2.40	3.08	6.84	5.02	2.88	2.23	3.42
August	1.77	2.59	2.24	3.04	6.94	4.90	2.81	2.22	3.39
September	1.78	2.26	2.05	3.02	6.83	4.93	2.92	2.22	3.54
October	1.73	2.22	2.27	2.94	6.38	4.88	2.93	2.19	3.71
November	1.77	1.84	2.07	2.90	5.66	4.74	3.01	2.23	3.98
December	1.76	1.99	2.11	2.99	5.28	4.73	3.00	2.35	4.15
Average	**1.94**	**2.53**	**2.39**	**3.22**	**5.83**	**5.08**	**3.23**	**2.43**	**4.13**
1987 January	1.74	1.90	2.16	2.98	5.30	4.81	3.11	2.43	4.46
February	1.73	2.21	2.11	3.03	5.34	4.80	3.30	2.45	4.54
March	1.73	2.30	2.08	2.91	5.36	4.81	3.16	2.38	4.39
April	1.69	2.25	2.11	2.86	5.46	4.91	2.99	2.37	4.20
May	1.65	2.22	2.20	2.81	5.98	4.89	2.81	2.30	3.85
June	1.65	2.26	2.19	2.84	6.55	4.88	2.76	2.28	3.60
July	1.66	2.73	2.22	2.92	6.78	4.79	2.81	2.31	3.51
August	1.63	2.17	2.12	2.89	6.84	4.78	2.74	2.25	3.39
September	1.56	2.17	2.29	2.83	6.64	4.61	2.75	2.18	3.49
October	1.57	1.98	1.99	2.69	5.85	4.63	2.77	2.25	3.74
November	1.64	1.94	2.06	2.76	5.42	4.67	2.89	2.28	3.98
December	1.70	2.00	2.17	2.84	5.13	4.68	3.01	2.53	4.21
Average	**1.67**	**2.14**	**2.12**	**2.87**	**5.54**	**4.78**	**2.94**	**2.32**	**4.05**
1988 January	1.99	1.62	2.02	R 2.88	5.11	R 4.60	R 3.19	2.59	R 4.42
February	1.87	2.02	2.22	2.92	5.10	R 4.68	3.23	R 2.54	4.39
March	1.78	2.32	2.03	2.82	R 5.21	R 4.69	R 3.18	2.31	R 4.26
April	R 1.66	2.36	2.09	R 2.72	5.39	R 4.72	3.01	2.20	R 4.10
May	R 1.59	2.00	2.14	2.67	5.80	R 4.56	2.78	2.13	R 3.81
June	1.60	1.88	2.05	2.77	R 6.42	R 4.58	R 2.68	2.16	R 3.52
July	1.60	2.34	1.93	2.76	R 6.65	R 4.51	R 2.55	2.23	R 3.32
August	1.60	1.88	2.09	2.86	R 6.81	4.33	2.67	2.37	R 3.38
September	1.60	1.95	2.11	2.99	6.71	R 4.44	R 2.70	2.36	3.58
October	NA	1.94	2.29	2.88	5.91	4.46	2.82	NA	NA

[a]Prices shown on this page are intended to include all taxes. See Note 9 at end of section.
[b]Includes supplemental gaseous fuels.
[c]Data through December 1982 cover all steam-electric utility plants with a capacity of 25 megawatts or greater. From 1974 through 1982, data include peaking units. Beginning with January 1983, data cover steam-electric utility plants with a capacity of 50 megawatts or greater.
[d]The decline from the previous month was primarily the result of refunds in the form of reduced charges.
R=Revised data. NA=Not available.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Data through 1987 are final. Subsequent data are preliminary.
Sources: See end of section.

Notes and Sources for the Price Section

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; after February 1976, the price represents an average of actual first purchase prices. The data series was previously called "Actual Domestic Wellhead Price."

2. FOB 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 EIA Form 14, the "Refiners' Monthly Cost Report." These prices were previously published from data collected on ERA Form 49, the "Domestic Crude Oil Entitlements Program Refiners Monthly Report." The ERA Form 49 was discontinued with the decontrol of crude oil on January 28, 1981. Crude oil purchases and costs are defined for EIA Form 14 in accordance with conventions used for ERA Form 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 in 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 ERA Form 51, the "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 ERA Form 49 excluded unfinished oils but included the Strategic Petroleum Reserve (SPR). Crude oil costs and volumes reported on the FEA Form P110-M-1 included unfinished oils but excluded SPR. Imported averages derived from ERA Form 49 exclude oil purchased for SPR, whereas the composite averages derived from ERA Form 49 include SPR. None of the prices derived from EIA Form 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 through 1978, 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 and Gas Plant Operator Sales Prices of Finished Motor Gasoline for Resale and to End Users are determined by the Energy Information Administration 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 FEA Form 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 annual data series have been generated for 1978-1980, and monthly series for 1981 and 1982, by estimating the prices that would have been published had the EIA-782 survey and system been in operation at that time. This form of estimation was performed after detailed adjustment 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 the Energy Information Administration.

7. Beginning with January 1986, national average price estimates are based on a statistically derived sample of both publicly and privately owned electric utilities. Prior to that time, national average price estimates were based on a sample of only privately owned electric utilities. Respondents to Form EIA-826, "Monthly Electric Utility Sales and Revenue Report with State Distributions," formerly the "Electric Utility Company Monthly Statement," consist of a sample of over 200 electric utilities that were statistically chosen using stratification techniques. The respondents were chosen from more than 3,000 electric utilities reporting on Form EIA-861, "Annual Electric Utility Report." This scheme differs from the cut-off sample used prior to January 1986. Data are shown for both the old and new series. Publication of both series will continue until sufficient information exists to estimate historical data based on the new series.

8. Heavy fuel oil prices include fuel oils No. 4, No. 5, and No. 6, and topped crude fuel oil prices. The weighted average for all fossil fuels includes both residual fuel oil prices and light oil (No. 2 fuel oil, kerosene, and jet fuel) prices.

9. Natural gas prices are intended to include all taxes. Instructions on the data collection forms specifically direct that all U.S., 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.

Sources

Petroleum and Petroleum Products:

- Domestic First Purchase Prices--Economic Regulatory Administration (ERA), January 1976: FEA Form 90, "Crude Petroleum Production Monthly Report"; February 1976 through September 1979: FEA Form P124, "Domestic Crude Oil Purchaser's (Monthly) Report"; October 1979 through December 1982: ERA Form 182, "Domestic Crude Oil First Purchase Report."; January 1983 forward: EIA Form 182, "Domestic Crude Oil First Purchase Report."
- Crude Oil Import Prices--Energy Information Administration (EIA), 1975 through January 1979: FEA Form F701-M-0, "Transfer Pricing Report"; February 1979 through September 1982: ERA Form 51, "Transfer Pricing Report"; October 1982 through June 1984: EP Form 51, "Monthly Foreign Crude Oil Transaction Report"; July 1984 forward: Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report."
- Refiner Acquisition Costs--EIA, January 1976: FEO Form 96, "Monthly Cost Allocation Report"; February 1976 through June 1978: FEA Form P110-M-1, "Refiners' Monthly Cost Allocation Report"; July 1978 through December 1980: ERA Form 49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report"; January 1981 forward: EIA Form 14, "Refiners' Monthly Cost Report."
- U.S. City Average Retail Motor Gasoline Prices--Bureau of Labor Statistics.
- No. 2 Distillate to Residences--January 1983 forward, EIA Form-782A, "Refiners/Gas Plant Operators' Monthly Petroleum Product Sales Report" and EIA-782B, "Resellers/Retailers' Monthly Petroleum Product Sales Report." Prices prior to January 1983 are EIA estimates using data from FEA Form P112-M-1/EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report" and EIA Form 9A, "No. 2 Distillate Price Monitoring Report." See Note 8 on the previous page for additional information on the estimated data.
- All Other Petroleum Products--January 1983 forward, EIA Form-782A, "Refiners/Gas Plant Operators' Monthly Petroleum Product Sales Report." Prices prior to January 1983 are EIA estimates using data from FEA Form 302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices." See Note 8 on the previous page for additional information on the estimated data.

Natural Gas:

- Average Wellhead--Annual data through 1982 from EIA, *Natural Gas Annual, 1973* through *1982.* Annual data for 1983 through 1987 from Form EIA-627, "Annual Quantity and Value of Natural Gas Report" and the U.S. Minerals Management Service. Monthly data are estimated primarily on the basis of values reported by State agencies in Mississippi, New Mexico, Oklahoma, and Texas. These States together account for almost 50 percent of total U.S. marketed production. Monthly data are adjusted to conform with final reported annual data.
- Imports and Purchases from Producers by Major Interstate Pipeline Companies--FERC Form 11,

"Interstate Pipeline Company Purchases, and Industrial Sales".

- City Gate--EIA, October 1983 forward: Form EIA--857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."
- Residential, Commercial, Industrial and Consumer Average-Annual data from EIA, Form EIA-176 "Annual Report of Natural and Supplemental Gas Supply and Disposition." Monthly data from EIA, Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." Monthly data are adjusted to conform to final reported annual data.
- Electric Utilities--EIA, FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Electricity:

- Cost of Fossil Fuels--EIA, FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."
- Retail Prices--EIA, January 1973 through February 1980: FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income"; March 1980 through December 1982: FERC Form 5, "Electric Utility Company Monthly Statement"; January 1983 through December 1986: Form EIA-826, "Electric Utility Company Monthly Statement"; January 1987 forward: Form EIA-826, "Monthly Electric Utility Sales and Revenue Report with State Distributions."

Section 10. International

Crude Oil Production. World crude oil production during October 1988 was 60 million barrels per day, up 1.2 million from the level in the previous month.

Organization of Petroleum Exporting Countries (OPEC) production during October 1988 averaged 22 million barrels per day, up 0.8 million from the level during the previous month. Production by the Arab members of OPEC during October 1988 averaged 15 million barrels per day, up 0.8 million from the September 1988 level. During October 1988, production increased in Saudi Arabia by 690 thousand, in both Libya and Qatar by 50 thousand, and in the United Arab Emirates by 35 thousand barrels per day. Production decreased in Kuwait by 10 thousand barrels per day but remained the same in Algeria and Iraq as during the previous month. Among the non-Arab members of OPEC, production during October 1988 increased in Indonesia by 100 thousand barrels per day. Production decreased in Iran by 100 thousand barrels per day but remained the same in Nigeria and Venezuela compared with the previous month.

Among the non-OPEC nations, Mexico, the United States, and Canada registered increases in October 1988 of 245 thousand, 74 thousand, and 45 thousand barrels per day, respectively. The United Kingdom registered a decrease of 45 thousand barrels per day in October 1988 compared with September 1988. Production in China and the U.S.S.R. was unchanged.

Petroleum Consumption. In July 1988, consumption in all Organization for Economic Cooperation and Development (OECD) countries was 35 million barrels per day, 3 percent lower than the level in July 1987. Compared with levels 1 year earlier, consumption was lower in Canada by 4 percent and in the United States by 3 percent but higher in Japan by 2 percent. Consumption in all European OECD countries combined in July 1988 was 12 million barrels per day, 3 percent below the level in the previous July. Consumption was lower in France by 7 percent, in both Italy and West Germany by 4 percent, and in the United Kingdom by 2 percent compared with levels 1 year earlier.

Petroleum Stocks. For all OECD countries, petroleum stocks at the end of July 1988 totaled 3.5 billion barrels, 6 percent above the stock level in July 1987. Stocks were higher in Japan by 14 percent, in Canada by 12 percent, and in the United States by 4 percent. Stock levels in all European OECD countries as of the end of July 1988 were 1.1 billion barrels, 4 percent higher than in July 1987. Stocks were up in Italy by 10 percent, in West Germany by 7 percent, and in the United Kingdom by 1 percent but down in France by 2 percent compared with levels 1 year earlier.

Nuclear Electricity Generation. In October 1988, the 20 non-Communist countries with nuclear capacity generated 135 gross terawatthours (billion kilowatthours) of nuclear-generated electricity, 9 percent more than in October 1987. (The actual difference may be greater since the current values do not include generation for the Netherlands' Borssele-1 unit which was not reported in time for publication.)

Based on *Nucleonics Week* information, as of October 31, 1988, there were 345 operable nuclear generating units in the 20 non-Communist countries. The units had a collective gross generating capacity of 280.4 gigawatts (million kilowatts).

South Korea's April, May, July, August, and September generation figures have been revised to include generation by the Ulchin-1 unit which became operable in April 1988. Spain's June, July, and August generation figures have been revised to include generation by the Trillo-1 unit which became operable in May 1988.

In October 1988, the 108 U.S. units accounted for 101.3 gross gigawatts, 36.1 percent of the total non-Communist nuclear generating capacity.

Table 10.1a World Crude Oil[a] Production
(Thousand Barrels per Day)

	Algeria	Iraq	Kuwait[b]	Libya	Qatar	Saudi Arabia[b]	United Arab Emirates	Arab OPEC[c]	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**	**15,986**	**1,307**	**5,350**	**1,783**	**2,346**
1976 Average	**1,075**	**2,415**	**2,145**	**1,933**	**497**	**8,577**	**1,936**	**18,578**	**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**	**18,527**	**1,635**	**5,242**	**1,897**	**2,165**
1979 Average	**1,224**	**3,477**	**2,500**	**2,092**	**508**	**9,532**	**1,831**	**21,164**	**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 January	995	1,650	1,115	1,100	333	4,310	1,179	10,711	1,459	2,275	1,211	1,730
February	895	1,650	1,315	900	301	4,551	1,369	10,951	1,336	2,166	1,413	1,730
March	945	1,650	1,515	900	324	3,972	1,321	10,627	1,336	1,950	1,615	1,730
April	945	1,500	1,520	900	167	4,556	1,274	10,861	1,377	2,166	1,716	1,730
May	945	1,710	1,510	1,100	333	4,208	1,416	11,222	1,464	2,275	1,615	1,730
June	945	1,800	1,650	1,200	398	5,068	1,511	12,571	1,387	2,275	1,554	1,755
July	945	1,800	1,805	1,150	371	5,700	1,511	13,281	1,382	2,220	1,570	1,770
August	945	1,800	1,733	1,150	371	6,209	1,539	13,746	1,462	1,841	1,782	2,115
September	945	1,800	1,118	990	259	4,651	1,274	11,037	1,346	1,625	1,312	1,760
October	945	1,800	1,130	1,000	278	4,855	1,283	11,291	1,361	1,625	1,337	1,750
November	945	1,605	1,350	1,000	278	5,164	1,132	11,473	1,407	1,841	1,337	1,780
December	945	1,510	1,250	1,000	278	5,164	1,151	11,297	1,366	2,166	1,337	1,855
Average	**945**	**1,690**	**1,419**	**1,034**	**308**	**4,870**	**1,330**	**11,596**	**1,390**	**2,035**	**1,484**	**1,787**
1987 January	950	1,650	1,250	950	285	3,930	1,235	10,250	1,280	2,600	1,290	1,670
February	950	1,670	1,165	950	250	3,796	1,215	9,996	1,250	2,500	1,190	1,670
March	950	1,700	1,105	850	200	3,239	1,195	9,238	1,265	2,500	1,280	1,806
April	950	1,900	1,125	925	150	3,955	1,235	10,240	1,280	2,300	1,182	1,700
May	950	1,900	1,090	930	280	4,119	1,265	10,534	1,300	2,600	1,347	1,725
June	950	2,000	1,180	950	350	4,159	1,435	11,024	1,300	2,500	1,412	1,765
July	1,020	1,950	1,772	1,100	450	4,517	1,605	12,414	1,330	2,500	1,412	1,886
August	1,020	2,200	1,772	1,200	420	4,667	1,855	13,133	1,450	2,700	1,400	1,795
September	1,020	2,300	1,740	900	330	4,567	1,995	12,852	1,310	2,100	1,350	1,745
October	1,020	2,500	1,375	1,000	320	4,552	1,895	12,662	1,320	2,400	1,400	1,750
November	1,020	2,550	1,390	950	300	4,169	1,895	12,274	1,320	2,200	1,450	1,745
December	1,020	2,600	1,350	950	300	4,527	1,645	12,392	1,320	2,200	1,350	1,745
Average	**985**	**2,079**	**1,361**	**972**	**304**	**4,186**	**1,541**	**11,428**	**1,311**	**2,426**	**1,340**	**1,751**
1988 January	950	2,550	1,330	1,000	340	4,230	1,205	11,605	1,220	2,100	1,350	1,745
February	990	2,600	1,200	1,000	400	4,350	1,055	11,595	1,220	2,000	1,400	1,750
March	1,020	2,650	1,205	1,000	300	4,310	1,255	11,740	1,270	2,100	1,350	1,765
April	955	2,650	1,300	950	300	4,550	1,425	12,130	1,320	2,200	1,400	1,805
May	985	2,600	1,210	1,000	300	4,565	1,405	12,065	1,320	2,200	1,450	1,805
June	985	2,700	1,410	1,000	300	4,565	1,405	12,365	1,320	2,100	1,450	1,805
July	985	2,600	1,375	1,000	300	4,625	1,430	12,315	1,320	2,300	1,400	1,805
August	985	2,600	1,570	1,000	300	5,170	1,905	13,530	1,320	2,300	1,450	1,805
September	985	2,700	1,660	1,050	300	5,260	1,965	13,920	1,220	2,500	1,500	1,880
October	985	2,700	1,650	1,100	350	5,950	2,000	14,735	1,320	2,400	1,500	1,880
10-Mo. Avg.	**983**	**2,635**	**1,392**	**1,010**	**319**	**4,760**	**1,507**	**12,605**	**1,285**	**2,221**	**1,425**	**1,805**

[a]Includes lease condensate, excludes natural gas plant liquids.

[b]Includes about one-half of the production in the Kuwait-Saudi Arabia Neutral Zone. In October 1988, total production in that region amounted to approximately 300 thousand barrels per day.

[c]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" production.

Footnotes continued on following page.

Table 10.1b World Crude Oil[a] Production (continued)
(Thousand Barrels per Day)

	Total OPEC[d]	Persian Gulf Nations[e]	Canada	Mexico	United Kingdom	United States	China	USSR	Other[f]	Market Economies[g]	World
1973 Average	**30,988**	**20,668**	**1,798**	**465**	**2**	**9,208**	**1,090**	**8,329**	**3,804**	**45,805**	**55,684**
1974 Average	**30,729**	**21,282**	**1,551**	**571**	**2**	**8,774**	**1,315**	**8,856**	**3,862**	**45,021**	**55,660**
1975 Average	**27,154**	**18,934**	**1,430**	**705**	**12**	**8,375**	**1,490**	**9,472**	**4,139**	**41,338**	**52,777**
1976 Average	**30,737**	**21,514**	**1,314**	**831**	**245**	**8,132**	**1,670**	**9,985**	**4,355**	**45,132**	**57,269**
1977 Average	**31,299**	**21,725**	**1,321**	**981**	**768**	**8,245**	**1,874**	**10,485**	**4,616**	**46,745**	**59,589**
1978 Average	**29,875**	**20,606**	**1,316**	**1,209**	**1,082**	**8,707**	**2,082**	**10,950**	**4,782**	**46,497**	**60,003**
1979 Average	**30,998**	**21,066**	**1,500**	**1,461**	**1,568**	**8,552**	**2,122**	**11,187**	**5,089**	**48,725**	**62,477**
1980 Average	**26,985**	**17,961**	**1,435**	**1,936**	**1,622**	**8,597**	**2,114**	**11,460**	**5,204**	**45,355**	**59,353**
1981 Average	**22,843**	**15,245**	**1,285**	**2,313**	**1,811**	**8,572**	**2,012**	**11,552**	**5,390**	**41,784**	**55,778**
1982 Average	**19,145**	**12,156**	**1,271**	**2,748**	**2,065**	**8,649**	**2,045**	**11,615**	**5,646**	**39,069**	**53,184**
1983 Average	**17,891**	**11,081**	**1,356**	**2,689**	**2,291**	**8,688**	**2,120**	**11,684**	**6,248**	**38,703**	**52,967**
1984 Average	**17,857**	**10,784**	**1,438**	**2,780**	**2,480**	**8,879**	**2,296**	**11,576**	**6,897**	**39,893**	**54,203**
1985 Average	**16,634**	**9,630**	**1,471**	**2,745**	**2,530**	**8,971**	**2,505**	**11,250**	**7,540**	**39,463**	**53,646**
1986 January	17,854	10,907	1,491	2,515	2,656	9,137	2,575	11,250	7,741	40,962	55,221
February	18,065	11,394	1,399	2,129	2,715	9,173	2,575	11,310	7,864	40,912	55,231
March	17,736	10,775	1,356	2,225	2,700	9,013	2,575	11,405	7,722	40,320	54,734
April	18,334	11,225	1,392	2,365	2,571	8,864	2,575	11,455	7,282	40,374	54,838
May	18,790	11,495	1,443	2,535	2,536	8,838	2,575	11,540	7,754	41,462	56,012
June	20,036	12,744	1,559	2,555	2,190	8,623	2,575	11,550	7,692	42,227	56,782
July	20,716	13,449	1,547	2,545	2,599	8,660	2,575	11,575	7,699	43,337	57,917
August	21,400	13,538	1,534	2,575	2,589	8,374	2,575	11,625	7,899	43,941	58,571
September	17,468	10,773	1,519	2,380	2,549	8,328	2,640	11,645	8,009	39,823	54,538
October	17,768	11,018	1,536	2,330	2,564	8,419	2,640	11,670	7,967	40,159	54,894
November	18,287	11,416	1,447	2,460	2,467	8,412	2,775	11,720	8,251	40,900	55,821
December	18,470	11,565	1,461	2,575	2,338	8,352	2,775	11,715	8,304	41,076	55,991
Average	**18,751**	**11,696**	**1,474**	**2,435**	**2,539**	**8,680**	**2,620**	**11,540**	**7,850**	**41,299**	**55,889**
1987 January	17,510	10,992	1,489	2,510	2,640	8,480	2,690	11,634	8,164	40,361	55,116
February	17,015	10,638	1,473	2,540	2,569	8,389	2,690	11,609	8,145	39,698	54,430
March	16,284	9,981	1,484	2,520	2,516	8,464	2,690	11,728	8,021	38,855	53,707
April	16,852	10,707	1,468	2,530	2,537	8,498	2,690	11,659	8,121	39,572	54,354
May	17,696	11,298	1,499	2,555	2,536	8,336	2,690	11,659	8,210	40,398	55,180
June	18,191	11,668	1,585	2,530	1,936	8,279	2,690	11,659	7,976	40,063	54,845
July	19,752	12,838	1,605	2,520	2,486	8,251	2,690	11,713	8,295	42,476	57,313
August	20,819	13,654	1,625	2,545	2,451	8,210	2,690	11,703	8,070	43,286	58,113
September	19,767	13,074	1,554	2,560	2,456	8,205	2,690	11,872	8,369	42,478	57,473
October	20,002	13,086	1,534	2,555	2,501	8,364	2,690	11,703	8,416	42,939	57,765
November	19,459	12,546	1,514	2,560	2,531	8,397	2,690	11,634	8,515	42,542	57,299
December	19,492	12,664	1,559	2,560	2,546	8,318	2,690	11,703	8,504	42,546	57,373
Average	**18,584**	**11,939**	**1,533**	**2,540**	**2,476**	**8,349**	**2,690**	**11,690**	**8,234**	**41,283**	**56,096**
1988 January	18,495	11,797	1,520	2,560	2,569	E 8,245	2,710	11,705	8,718	41,690	56,522
February	18,450	11,647	1,600	2,530	2,564	E 8,376	2,710	11,715	8,612	41,715	56,557
March	18,710	11,862	1,615	2,515	2,564	E 8,347	2,710	11,655	8,757	42,091	56,873
April	19,340	12,468	1,560	2,490	2,554	E 8,268	2,710	11,675	8,719	42,514	57,316
May	19,325	12,323	1,615	2,525	2,409	E 8,203	2,710	11,675	8,598	42,258	57,060
June	19,525	12,523	1,600	2,530	2,039	E 8,158	2,710	11,675	8,388	41,823	56,625
July	19,625	12,673	1,635	2,530	2,124	E 8,059	2,710	11,675	8,719	42,275	57,077
August	20,890	13,888	R 1,640	2,530	2,089	E 8,063	2,710	11,675	R 8,614	R 43,409	R 58,211
September	21,505	14,428	R 1,605	R 2,285	2,114	E 7,900	2,710	11,675	R 8,802	R 43,794	R 58,596
October	22,320	15,093	1,650	2,530	2,069	E 7,974	2,710	11,675	8,831	44,957	59,759
10-Mo. Avg.	**19,824**	**12,876**	**1,604**	**2,503**	**2,309**	**E 8,158**	**2,710**	**11,680**	**8,677**	**42,658**	**57,465**

Footnotes continued.

[d]"Total OPEC" consists of Algeria, Ecuador, 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" production.

[e]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" production.

[f]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 USSR.

[g]World excluding Albania, Bulgaria, China, Cuba, Czechoslovakia, East Germany, Hungary, Kampuchea, Laos, Mongolia, North Korea, Poland, Romania, U.S.S.R., Vietnam, and Yugoslavia.

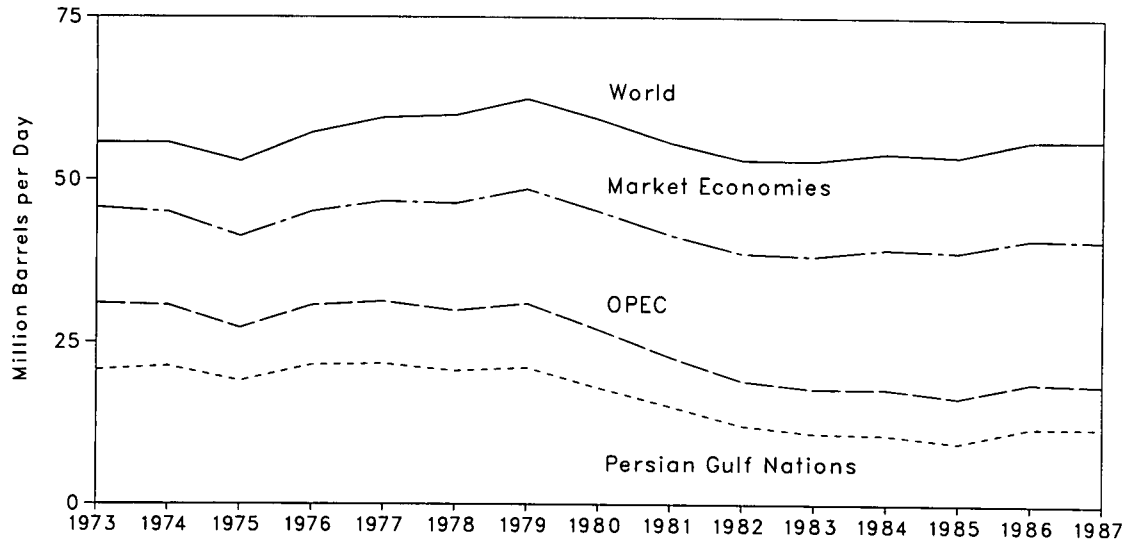
R=Revised data. E=Estimate.

Note: • 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**—1973 through 1987: Energy Information Administration (EIA), *Petroleum Supply Annual.* 1988: EIA, *Petroleum Supply Monthly.* • **Other Countries**—1973 through 1987 annual data: EIA, *International Energy Annual.* 1986 through 1988 monthly data: *Petroleum Intelligence Weekly,* the *Oil and Gas Journal,* and other industry sources. • **World**—1973 through 1987, EIA, *International Energy Annual.* 1986 through 1988 monthly data: Sum of all countries.

Figure 10.1 World Crude Oil Production

Yearly



Monthly

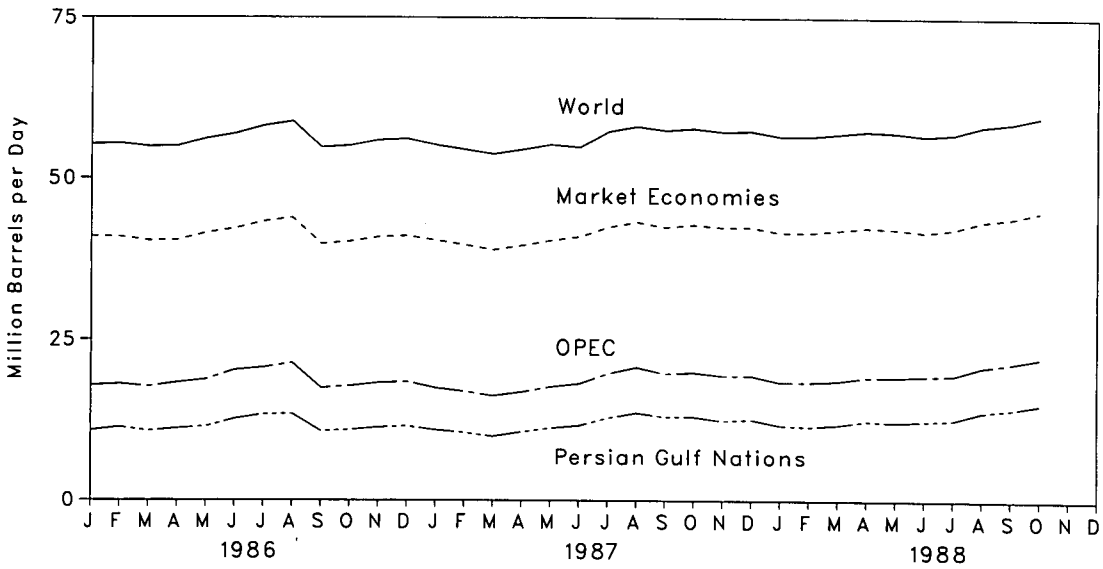
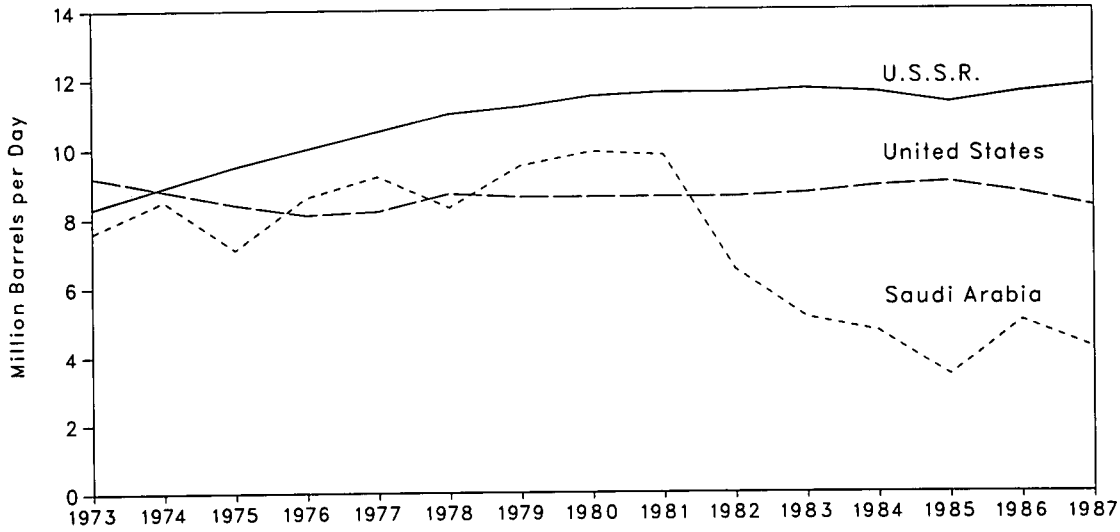


Figure 10.2 Crude Oil Production in Selected Countries

Yearly



Monthly

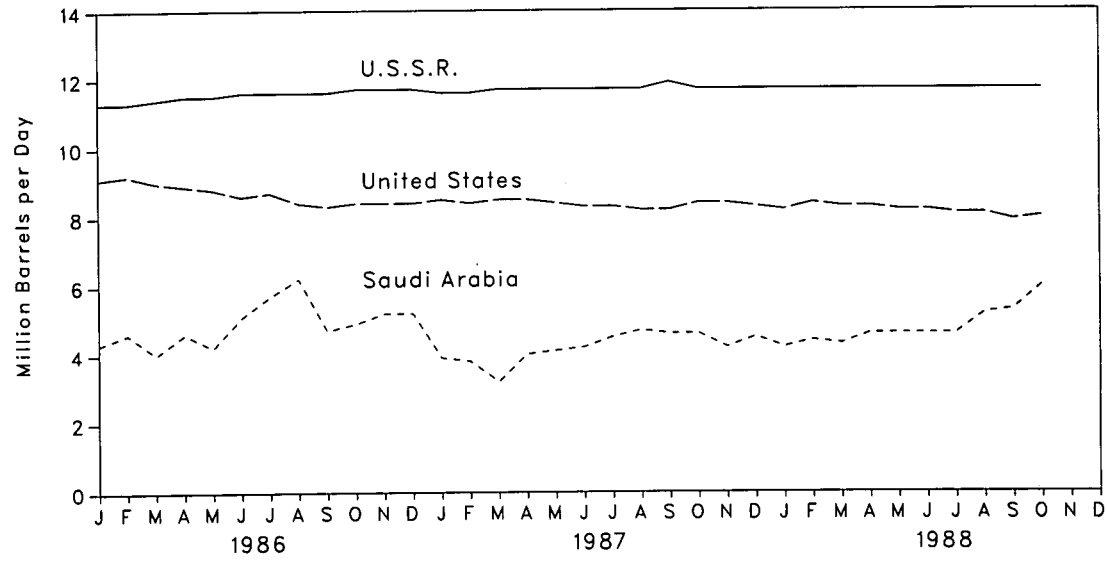


Figure 10.3 Petroleum Consumption in OECD Countries

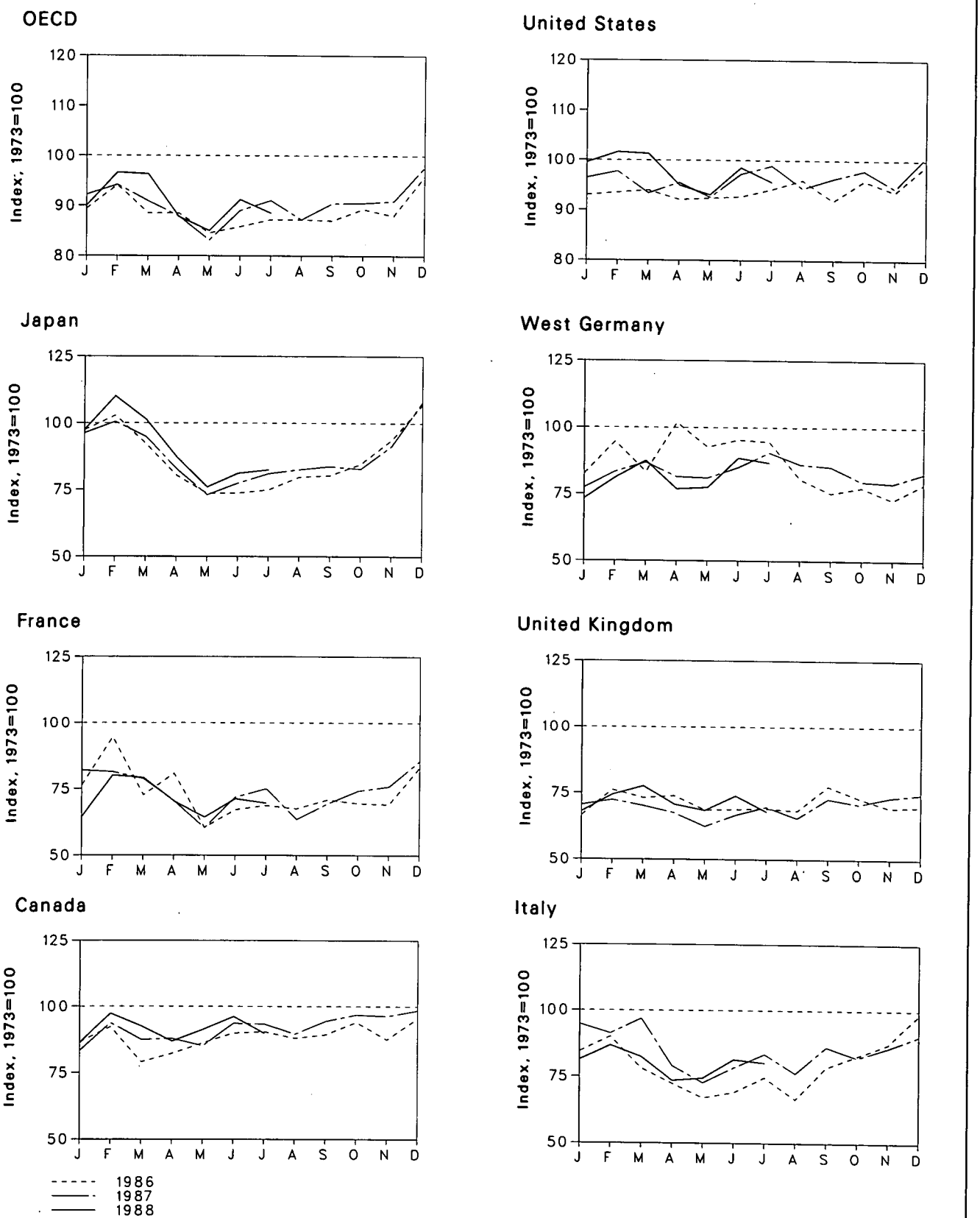


Table 10.2 Petroleum Consumption in OECD Countries[a]
(Thousand Barrels per Day)

	Canada	France	Italy	Japan	United Kingdom	United States	West Germany	OECD Europe[b]	Other OECD[c]	OECD[a]
1973 Average	**1,707**	**2,422**	**2,147**	**5,071**	**2,301**	**17,308**	**2,915**	**14,521**	**1,006**	**39,612**
1974 Average	**1,740**	**2,260**	**2,090**	**4,960**	**2,138**	**16,653**	**2,612**	**13,708**	**1,056**	**38,117**
1975 Average	**1,718**	**2,136**	**1,940**	**4,502**	**1,872**	**16,322**	**2,515**	**13,059**	**999**	**36,600**
1976 Average	**1,751**	**2,280**	**1,991**	**4,771**	**1,856**	**17,461**	**2,708**	**13,813**	**1,068**	**38,864**
1977 Average	**1,779**	**2,235**	**1,907**	**5,231**	**1,880**	**18,431**	**2,837**	**13,795**	**1,123**	**40,359**
1978 Average	**1,823**	**2,169**	**1,948**	**5,142**	**1,850**	**18,847**	**3,048**	**13,963**	**1,117**	**40,892**
1979 Average	**1,893**	**2,385**	**2,013**	**5,480**	**1,930**	**18,513**	**3,073**	**14,670**	**1,090**	**41,646**
1980 Average	**1,873**	**2,256**	**1,934**	**4,960**	**1,725**	**17,056**	**2,707**	**13,634**	**1,072**	**38,595**
1981 Average	**1,768**	**2,023**	**1,874**	**4,848**	**1,590**	**16,058**	**2,449**	**12,515**	**1,080**	**36,269**
1982 Average	**1,578**	**1,880**	**1,781**	**4,582**	**1,590**	**15,296**	**2,372**	**12,053**	**1,008**	**34,517**
1983 Average	**1,448**	**1,835**	**1,750**	**4,395**	**1,531**	**15,231**	**2,324**	**11,765**	**954**	**33,793**
1984 Average	**1,472**	**1,754**	**1,646**	**4,576**	**1,849**	**15,726**	**2,322**	**11,736**	**989**	**34,500**
1985 Average	**1,485**	**1,725**	**1,687**	**4,365**	**1,634**	**15,726**	**2,352**	**11,566**	**955**	**34,097**
1986 January	1,477	1,850	1,813	4,935	1,530	16,088	2,404	11,959	908	35,368
February	1,572	2,285	1,930	5,215	1,751	16,186	2,758	13,376	910	37,259
March	1,349	1,759	1,678	4,672	1,682	16,276	2,427	11,835	893	35,025
April	1,403	1,957	1,554	4,072	1,700	15,945	2,969	12,665	939	35,024
May	1,471	1,464	1,437	3,730	1,578	15,993	2,700	11,312	950	33,456
June	1,533	1,626	1,482	3,739	1,583	16,049	2,778	11,681	960	33,962
July	1,541	1,663	1,604	3,797	1,589	16,307	2,756	11,934	932	34,511
August	1,500	1,635	1,426	4,043	1,572	16,618	2,348	11,416	919	34,496
September	1,523	1,714	1,686	4,073	1,765	15,909	2,194	11,956	978	34,439
October	1,602	1,683	1,780	4,292	1,682	16,602	2,257	11,890	948	35,335
November	1,493	1,673	1,873	4,746	1,596	16,221	2,123	11,449	921	34,829
December	1,629	2,012	2,113	5,427	1,609	17,131	2,294	12,805	974	37,966
Average	**1,506**	**1,772**	**1,697**	**4,391**	**1,637**	**16,281**	**2,498**	**12,013**	**936**	**35,127**
1987 January	1,421	R 1,986	2,033	4,876	1,620	16,684	2,254	R 12,632	R 880	R 36,494
February	1,598	R 1,972	1,956	5,094	1,663	16,908	2,427	R 12,775	903	37,278
March	1,491	R 1,909	2,078	4,810	1,614	16,165	2,531	R 12,672	850	R 35,988
April	1,499	1,705	1,696	R 4,192	1,553	16,524	2,374	11,592	R 997	R 34,804
May	1,453	1,460	1,560	R 3,701	1,436	16,026	2,362	10,857	867	R 32,904
June	1,595	1,738	1,681	R 3,926	1,534	16,830	2,478	R 11,888	974	R 35,213
July	1,590	R 1,816	1,794	4,107	1,604	17,113	2,637	R 12,244	R 967	R 36,021
August	1,526	R 1,537	1,635	4,183	1,510	16,346	2,510	R 11,564	R 884	R 34,502
September	1,610	R 1,679	1,851	4,245	1,674	16,670	2,482	R 12,322	R 932	R 35,778
October	1,653	R 1,798	1,765	4,199	1,630	16,941	2,325	R 12,145	R 889	R 35,828
November	1,644	R 1,839	1,844	4,630	1,686	16,343	2,302	R 12,371	R 1,010	R 35,999
December	1,681	R 2,070	1,936	5,477	1,717	17,445	2,411	R 13,039	R 1,027	R 38,669
Average	**1,563**	**R 1,789**	**1,819**	**4,450**	**1,603**	**16,665**	**2,424**	**R 12,169**	**R 931**	**R 35,779**
1988 January	R 1,471	R 1,561	1,746	4,941	1,563	17,224	2,135	R 11,186	R 818	R 35,640
February	R 1,660	R 1,939	1,861	5,584	1,711	17,584	2,360	R 12,505	901	R 38,234
March	R 1,578	R 1,918	1,769	5,138	1,786	17,530	2,546	R 12,857	R 1,027	R 38,130
April	1,483	1,703	1,578	4,419	1,627	16,440	R 2,239	R 11,527	897	R 34,766
May	1,555	1,558	1,598	3,850	1,575	16,117	R 2,257	R 11,171	960	R 33,653
June	1,640	1,724	1,748	4,115	1,700	17,054	2,580	R 12,298	R 993	R 36,100
July	1,531	1,687	1,722	4,179	1,565	16,555	2,528	11,837	940	35,042
7-Mo. Average	**1,559**	**1,725**	**1,716**	**4,598**	**1,646**	**16,925**	**2,378**	**11,906**	**934**	**35,921**

[a]The Organization for Economic Cooperation and Development (OECD) consists of Canada, Japan, and the United States, as well as "OECD Europe" and "Other OECD."

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

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

R=Revised data.

Notes: • 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 1984 are final. Subsequent data are preliminary.

Sources: • U.S. data: Energy Information Administration, *Petroleum Supply Annual.* • OECD data: OECD, *Quarterly Oil Statistics, Monthly Oil Statistics.*

Figure 10.4 Petroleum Stocks in OECD Countries, End of Period

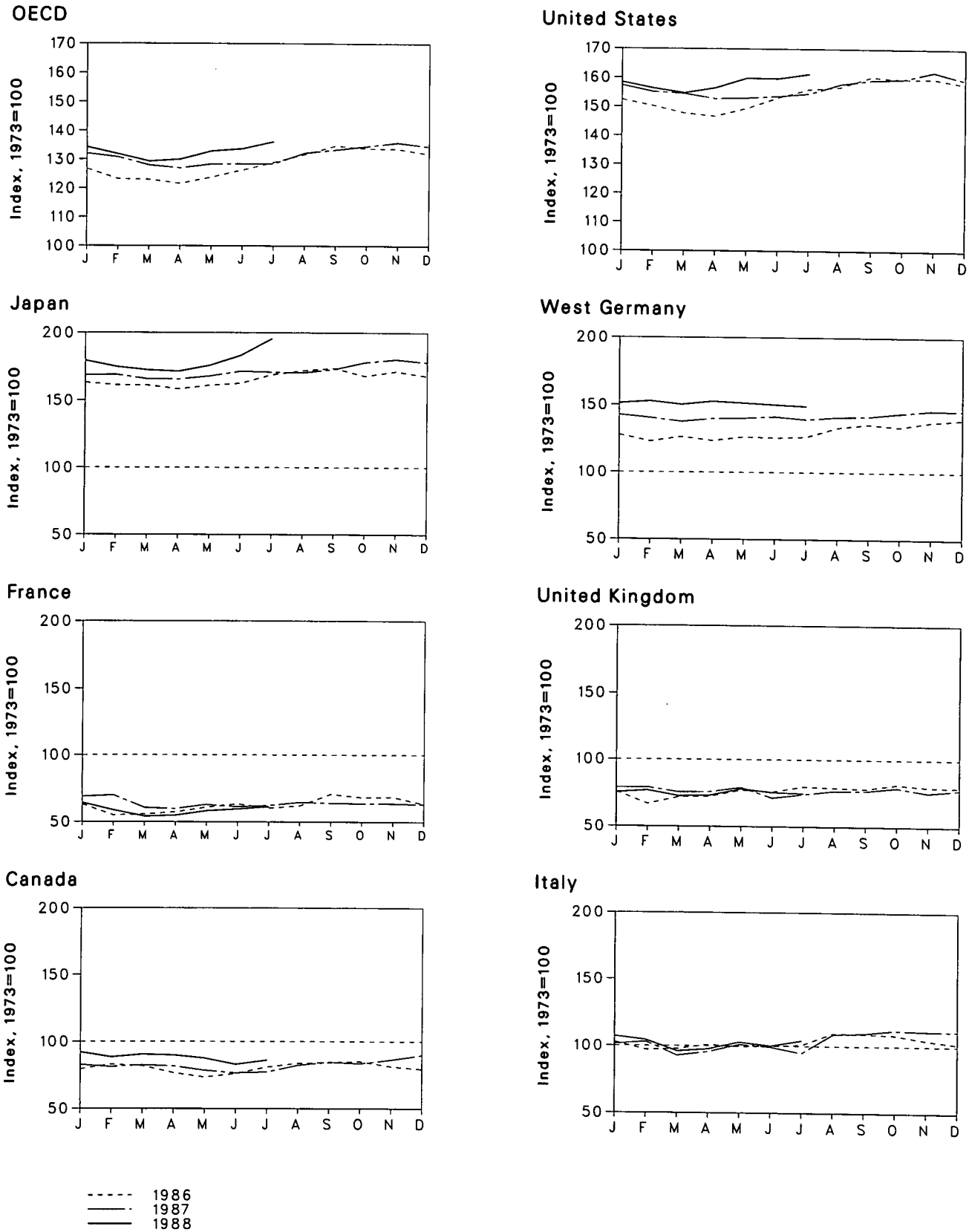


Table 10.3 Petroleum Stocks[a] in OECD Countries,[b] End of Period
(Million Barrels)

	Canada	France	Italy	Japan	United Kingdom	United States	West Germany	OECD Europe[c]	Other OECD[d]	OECD[b]
1973 Year	**140**	**201**	**152**	**303**	**156**	**1,008**	**181**	**1,070**	**67**	**2,588**
1974 Year	**145**	**249**	**167**	**370**	**161**	**1,074**	**213**	**1,227**	**64**	**2,880**
1975 Year	**174**	**225**	**143**	**375**	**165**	**1,133**	**187**	**1,154**	**67**	**2,903**
1976 Year	**153**	**234**	**143**	**380**	**165**	**1,112**	**208**	**1,205**	**68**	**2,918**
1977 Year	**167**	**239**	**161**	**409**	**148**	**1,312**	**225**	**1,268**	**68**	**3,224**
1978 Year	**144**	**201**	**154**	**413**	**157**	**1,278**	**238**	**1,219**	**68**	**3,122**
1979 Year	**150**	**226**	**163**	**460**	**169**	**1,341**	**272**	**1,353**	**75**	**3,379**
1980 Year	**164**	**243**	**170**	**495**	**168**	**1,392**	**319**	**1,464**	**72**	**3,587**
1981 Year	**161**	**214**	**167**	**482**	**143**	**1,484**	**297**	**1,337**	**67**	**3,531**
1982 Year	**136**	**193**	**179**	**484**	**125**	**1,430**	**272**	**1,258**	**68**	**3,376**
1983 Year	**121**	**153**	**149**	**470**	**118**	**1,454**	**249**	**1,142**	**68**	**3,255**
1984 Year	**128**	**152**	**159**	**479**	**112**	**1,556**	**239**	**1,130**	**69**	**3,362**
1985 Year	**113**	**139**	**157**	**494**	**123**	**1,519**	**233**	**1,092**	**66**	**3,284**
1986 January	111	127	156	494	118	1,535	231	1,069	67	3,276
February	116	110	147	488	104	1,514	223	1,002	68	3,189
March	115	112	149	488	112	1,489	229	1,021	70	3,183
April	107	115	153	480	113	1,479	224	1,015	65	3,147
May	103	122	151	488	120	1,506	229	1,046	60	3,203
June	107	127	152	493	118	1,543	228	1,061	67	3,270
July	113	121	153	512	125	1,573	229	1,072	69	3,339
August	118	124	167	521	123	1,582	242	1,121	69	3,410
September	118	142	166	527	122	1,618	246	1,153	72	3,488
October	119	137	165	509	127	1,610	243	1,153	73	3,465
November	114	138	159	520	124	1,612	249	1,144	73	3,462
December	111	127	155	509	124	1,593	252	1,133	72	3,418
1987 January	116	138	154	511	123	1,586	258	1,135	70	3,418
February	114	140	156	512	123	1,563	254	1,125	72	3,385
March	116	122	141	502	118	1,557	249	1,067	72	3,313
April	114	120	145	502	118	1,539	253	1,063	68	3,286
May	110	126	154	509	123	1,542	254	1,094	68	3,323
June	107	123	151	520	111	1,548	256	1,081	68	3,325
July	108	125	144	518	116	1,558	252	1,069	72	3,325
August	115	130	165	516	120	1,592	256	1,127	73	3,424
September	119	128	167	524	120	1,606	257	1,132	72	3,453
October	117	128	171	540	124	1,610	261	1,141	75	3,484
November	121	128	169	547	118	1,635	265	1,141	74	3,517
December	126	127	169	540	121	1,607	264	1,136	75	3,483
1988 January	129	129	163	544	117	1,597	274	1,136	71	3,477
February	124	118	159	530	120	1,575	277	1,112	73	3,414
March	127	R 108	146	522	113	1,559	272	R 1,071	68	R 3,347
April	126	110	148	519	114	1,578	276	1,072	69	R 3,364
May	123	117	156	533	122	1,612	274	R 1,103	68	R 3,439
June	116	120	152	555	118	1,611	272	R 1,109	67	R 3,459
July	121	123	158	593	117	1,627	270	1,112	71	3,523

[a]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 the United States), rail and truck cars, sea-going ships bunkers, service stations, retail stores, and tankers at sea.

[b]The Organization for Economic Cooperation and Development (OECD) includes Canada, Japan, and the United States, as well as "OECD Europe" and "Other OECD."

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

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

R=Revised data.

Notes: • 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 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, 1,420 in 1980, and 1,462 in 1982.

Sources: • U.S. data: Energy Information Administration, *Petroleum Supply Annual.* • OECD data: OECD, *Quarterly Oil Statistics, Monthly Oil Statistics.*

Table 10.4a Nuclear Electricity Generation by Non-Communist Countries[a]
(Billion Gross Kilowatthours)

	Argentina	Belgium	Brazil	Canada	Finland	France	India	Italy	Japan	Netherlands	Pakistan
1973 Total	0	0	0	15.3	0	14.7	2.5	3.1	9.4	1.1	0.5
1974 Total	1.0	0.1	0	15.4	0	14.7	1.9	3.4	18.9	3.3	.6
1975 Total	2.5	6.8	0	13.2	0	18.3	2.5	3.8	21.3	3.3	.5
1976 Total	2.6	10.0	0	18.0	0	15.8	3.2	3.8	36.6	3.9	.5
1977 Total	1.6	11.9	0	26.6	2.7	17.9	2.8	3.4	28.2	3.7	.3
1978 Total	2.9	12.5	0	33.0	3.3	30.6	2.3	4.5	53.1	4.1	.2
1979 Total	2.7	11.4	0	38.4	6.7	39.9	3.2	2.6	62.0	3.5	(s)
1980 Total	2.3	12.5	0	40.4	7.0	61.2	2.9	2.2	82.8	4.2	.1
1981 Total	2.8	12.8	0	43.3	14.5	105.2	3.1	2.7	86.0	3.7	.2
1982 Total	1.9	15.6	0.1	42.6	16.5	108.9	2.2	6.8	104.5	3.9	.1
1983 Total	3.4	24.1	.2	53.0	17.4	144.2	2.9	5.8	109.1	3.6	.2
1984 Total	4.5	27.7	2.1	53.8	18.5	191.2	4.1	6.9	127.2	3.8	.3
1985 Total	5.8	34.5	3.4	62.9	18.8	224.0	4.5	7.0	152.0	3.9	.3
1986 January	.6	3.8	(s)	6.5	1.8	25.6	.5	.9	15.0	.4	(s)
February	.6	2.8	0	6.2	1.6	22.8	.4	.5	13.5	.1	(s)
March	.5	3.6	0	7.0	1.8	23.6	.5	.9	14.5	.3	(s)
April	.5	3.7	0	6.0	1.7	21.0	.3	.9	12.4	.4	(s)
May	.7	3.2	0	5.7	1.4	16.3	.4	.7	12.8	.4	(s)
June	.4	2.9	0	5.4	1.1	16.7	.4	.9	15.0	.4	(s)
July	.4	3.0	0	5.3	1.3	18.8	.5	.9	15.2	.4	(s)
August	.6	3.1	0	6.6	1.4	16.5	.5	.9	14.8	.4	.1
September	.6	3.1	0	6.2	1.5	19.0	.4	.9	13.4	.4	.1
October	.2	3.2	0	6.6	1.8	22.4	.3	.8	12.7	.4	(s)
November	.2	3.0	(s)	6.4	1.7	24.1	.5	.3	11.7	.3	(s)
December	.3	3.3	.1	6.7	1.7	27.4	.5	.1	13.8	.4	(s)
Total	5.7	38.6	.1	74.6	18.8	254.3	5.1	8.7	164.8	4.2	.5
1987 January	.7	4.1	0	7.2	1.8	27.3	.5	.1	14.7	.2	.1
February	.5	3.6	0	6.7	1.6	25.2	.5	.1	13.0	(s)	(s)
March	.6	3.4	(s)	7.0	1.8	25.8	.4	(s)	15.1	.1	(s)
April	.7	3.3	.3	6.7	1.7	20.6	.5	0	14.4	.4	(s)
May	.6	2.9	.4	4.8	1.3	20.2	.4	0	14.2	.4	(s)
June	.4	2.3	.3	6.5	1.3	19.7	.5	0	13.9	.4	(s)
July	.7	3.2	0	6.8	1.4	18.3	.5	0	15.2	.4	(s)
August	.1	3.6	0	6.5	1.6	16.1	.5	0	14.9	.4	0
September	.4	3.6	0	6.3	1.7	20.1	.5	0	16.7	.4	0
October	0	3.6	0	7.4	1.8	20.6	.3	0	17.4	.2	0
November	0	4.0	0	7.1	1.7	24.5	.5	0	16.9	.4	(s)
December	.5	4.3	0	7.5	1.8	27.0	.4	0	16.5	.4	(s)
Total	5.2	41.9	1.0	80.6	19.4	265.5	5.5	.2	182.8	3.6	.3
1988 January	.5	3.9	0	6.6	1.8	26.1	.3	0	15.0	.3	.1
February	.5	3.2	0	7.1	1.6	24.5	.4	0	13.5	(s)	(s)
March	.5	3.7	0	7.5	1.8	26.0	.4	0	14.7	(s)	(s)
April	.2	3.4	0	6.4	1.7	21.0	.4	0	14.9	.2	0
May	.2	3.3	0	6.7	1.3	18.9	.5	0	15.7	.4	0
June	.2	2.7	0	6.1	1.4	20.1	.6	0	14.8	.4	0
July	.7	3.3	0	7.2	1.2	20.6	.7	0	15.5	.4	(s)
August	0	3.8	0	7.4	1.5	20.9	.6	0	15.8	.4	0
September	.5	3.9	0	6.9	1.7	23.4	.5	0	14.1	.4	0
October	.5	3.9	0	6.6	1.8	24.0	.5	0	13.6	(s)	0
10-Month Total	3.7	35.1	0	68.4	15.8	225.4	5.1	0	147.5	2.5	.2
1987 10-Month Total	4.8	33.6	1.0	66.0	15.9	214.0	4.6	.2	149.4	2.8	.2
1986 10-Month Total	5.1	32.3	0	61.6	15.3	202.8	4.2	8.3	139.3	3.5	.4

[a]Figures are for gross electricity generation, as opposed to net electricity generation. Net figures are generally less than gross figures by about 5 percent, the difference being the energy consumed by the generating plants themselves.

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

[c]Some Central Electricity Generating Board figures were unavailable for March 1988. This number does not reflect the total generation for March.

(s)=Less than 0.05 billion gross kilowatthours.

Footnotes continued on following page.

Table 10.4b Nuclear Electricity Generation by Non-Communist Countries[a] (continued)
(Billion Gross Kilowatthours)

	South Africa	South Korea	Spain	Sweden	Switzerland	Taiwan	United Kingdom[b]	West Germany	Non-Communist World Excluding U.S.	United States	Non-Communist World
1973 Total	**0**	**0**	**6.5**	**2.1**	**6.2**	**0**	**28.2**	**11.9**	**101.4**	**87.8**	**189.3**
1974 Total	**0**	**0**	**7.2**	**2.3**	**7.0**	**0**	**33.8**	**12.0**	**121.7**	**124.3**	**246.0**
1975 Total	**0**	**0**	**7.5**	**12.0**	**7.7**	**0**	**30.5**	**21.7**	**151.8**	**182.3**	**334.1**
1976 Total	**0**	**0**	**7.6**	**16.0**	**7.9**	**0**	**36.8**	**24.5**	**187.1**	**201.8**	**388.9**
1977 Total	**0**	**0.1**	**6.5**	**19.9**	**8.1**	**0.1**	**38.1**	**36.0**	**207.8**	**264.2**	**472.0**
1978 Total	**0**	**2.3**	**7.6**	**23.8**	**8.3**	**2.7**	**36.6**	**35.7**	**263.5**	**292.4**	**555.9**
1979 Total	**0**	**3.2**	**6.7**	**21.0**	**11.8**	**6.3**	**38.5**	**42.2**	**300.1**	**270.6**	**570.7**
1980 Total	**0**	**3.5**	**5.2**	**26.7**	**14.3**	**8.2**	**37.2**	**43.7**	**354.3**	**265.4**	**619.8**
1981 Total	**0**	**2.9**	**9.4**	**37.7**	**15.2**	**10.7**	**38.9**	**53.4**	**442.4**	**288.5**	**730.9**
1982 Total	**0**	**3.8**	**8.8**	**38.8**	**15.0**	**13.1**	**44.1**	**63.4**	**489.9**	**298.6**	**788.5**
1983 Total	**0**	**9.0**	**10.7**	**40.4**	**15.5**	**18.9**	**49.6**	**65.8**	**573.9**	**313.6**	**887.5**
1984 Total	**4.2**	**11.8**	**23.1**	**51.3**	**16.3**	**24.3**	**54.1**	**92.6**	**717.7**	**343.8**	**1,061.5**
1985 Total	**5.7**	**16.5**	**28.0**	**58.6**	**22.4**	**28.7**	**59.6**	**125.8**	**862.4**	**402.6**	**1,265.0**
1986 January	1.0	2.0	3.1	6.8	2.3	2.9	4.8	12.1	90.0	38.1	128.1
February	.6	1.7	2.5	6.4	2.1	2.1	5.3	10.4	79.8	34.1	113.8
March	.7	1.5	2.4	7.2	2.3	2.2	6.4	10.8	86.2	31.2	117.3
April	.7	1.6	3.0	6.7	2.2	2.0	4.2	9.8	77.0	32.2	109.2
May	.7	2.4	3.6	4.8	2.1	2.0	4.4	9.7	71.4	33.7	105.1
June	.2	2.2	3.9	4.1	1.2	1.6	5.1	9.2	70.6	33.2	103.8
July	.6	2.0	3.1	3.8	.9	1.8	4.1	8.1	70.2	38.0	108.3
August	.7	2.4	2.9	4.3	1.0	1.9	4.2	8.2	70.5	39.2	109.7
September	.9	2.1	2.7	5.1	1.9	2.0	4.9	9.2	74.3	37.9	112.1
October	1.0	3.0	3.4	6.5	2.3	2.4	4.1	8.9	80.0	37.9	117.9
November	1.3	2.2	3.4	6.9	2.1	2.8	4.8	10.4	82.3	36.3	118.7
December	.9	3.1	3.2	7.3	2.2	3.1	6.1	12.1	92.5	41.2	133.6
Total	**9.3**	**26.1**	**37.5**	**69.9**	**22.5**	**26.9**	**58.2**	**118.9**	**944.8**	**432.9**	**1,377.8**
1987 January	.7	3.2	3.4	7.2	2.3	3.2	5.0	12.2	93.9	42.0	135.9
February	.7	3.0	3.3	6.6	2.1	3.1	5.2	11.8	86.9	38.2	125.0
March	.8	2.5	4.0	7.1	2.3	3.0	6.7	12.6	93.3	39.2	132.5
April	.5	2.4	3.7	6.1	2.2	2.6	4.6	10.7	81.4	35.0	116.5
May	.7	3.1	2.1	4.8	1.9	3.2	4.4	8.7	74.3	36.3	110.6
June	.6	3.8	2.5	3.5	1.1	3.1	4.1	8.6	72.6	38.4	111.0
July	.4	3.3	3.3	2.7	1.3	3.0	3.4	8.6	72.5	42.9	115.3
August	.8	3.2	3.3	4.1	1.0	2.9	4.0	9.3	72.4	43.2	115.6
September	.3	2.9	3.5	5.1	1.9	2.5	5.1	10.3	81.3	41.9	123.2
October	.4	3.2	3.9	6.0	2.3	2.4	3.9	12.0	85.3	38.3	123.6
November	.7	3.4	3.9	6.8	2.2	2.1	3.7	12.5	90.4	39.4	129.8
December	0	3.8	4.2	7.2	2.3	2.1	6.2	12.9	97.1	43.7	140.8
Total	**6.6**	**37.8**	**41.3**	**67.2**	**23.0**	**33.1**	**56.2**	**130.2**	**1,001.3**	**478.5**	**1,479.8**
1988 January	.3	3.9	4.2	7.2	2.3	2.2	4.9	13.1	92.5	47.4	139.9
February	.7	3.1	2.9	4.5	2.2	2.0	4.3	12.4	82.7	44.5	127.2
March	1.1	2.6	3.5	7.2	2.3	2.7	[c] 1.8	13.5	89.3	46.2	135.4
April	1.3	[R] 2.9	3.7	4.0	2.2	2.6	4.5	11.4	80.9	42.2	[R] 123.1
May	1.4	[R] 2.8	4.4	5.4	2.0	2.2	4.3	11.0	[R] 80.3	42.7	[R] 123.0
June	1.3	NA	[R] 4.6	4.3	1.2	2.6	5.7	10.6	[R] 76.6	46.3	[R] 123.0
July	1.3	[R] 3.6	[R] 3.7	3.7	1.3	2.9	5.1	10.6	[R] 81.9	51.7	[R] 133.6
August	.8	[R] 3.5	[R] 3.6	3.6	1.0	3.0	5.3	10.0	[R] 81.2	51.7	[R] 133.0
September	.7	[R] 3.1	NA	4.5	1.5	2.9	6.0	12.2	[R] 82.2	48.7	[R] 130.9
October	.7	3.8	4.9	6.6	2.3	2.4	5.3	13.7	90.6	44.6	135.2
10-Month Total	**9.5**	**NA**	**NA**	**51.0**	**18.2**	**25.5**	**47.1**	**118.6**	**838.4**	**465.9**	**1,304.3**
1987 10-Month Total	**5.9**	**30.6**	**33.2**	**53.3**	**18.4**	**29.0**	**46.3**	**104.7**	**813.8**	**395.4**	**1,209.2**
1986 10-Month Total	**7.1**	**20.9**	**30.8**	**55.7**	**18.2**	**21.0**	**47.3**	**96.3**	**770.0**	**355.4**	**1,125.4**

Footnotes continued.

R=Revised data. NA=Not available.

Notes: • 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, revisions in annual data not reflected in the monthly data, or both. Data for countries may not sum to world totals due to independent rounding.

Source: *Nucleonics Week* (New York: McGraw-Hill Publishing Company).

Appendix. Conversion Factors

Using Conversion Factors

Physical conversion factors can be used to compare energy quantities expressed in units of volume and weight. For example, 6.65 barrels of crude oil weighs approximately 1 short ton, as indicated in Table A1.

However, the heat content in a "short ton" of crude oil is greater than the heat content of a short ton of coal. The heat content, measured in British thermal units (Btu), of a given quantity of energy can be calculated using the thermal conversion factors presented in Tables A2 through A9.

Based on the thermal conversion factor shown for crude oil (production) in Table A2, a short ton of crude oil has a heat content of approximately 39 million Btu (6.65 barrels $\times$5.8 million Btu per barrel = 38.57 million Btu, which rounds to 39). As calculated from the thermal conversion factor for coal of 22 million Btu (1 short ton $\times$21.922 million Btu per short ton = 21.922 million Btu, which rounds to 22). A short ton of crude oil, therefore, has a heat content almost two times greater than does a short ton of coal.

The thermal conversion factors in Tables A2 through A9 are computed from final annual data. When the current year's final data are not yet available 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 a section entitled "Thermal Conversion Factor Source Documentation," which follows Table A9 in this appendix.

Thermal conversion factors for hydrocarbon mixes (Table A2) 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.

Table A1. Physical Conversion Factors for Energy Units

Unit	Equivalent	
Crude Oil (Average Gravity)		
1 U.S. barrel	42	U.S. gallons
1 short ton	6.65	barrels
1 metric ton	7.33	barrels
Coal		
1 short ton	2,000	pounds
1 long ton	2,240	pounds
1 metric ton	2,204.62	pounds
1 metric ton	1,000	kilograms
Uranium		
1 short ton U_3O_8	0.769	metric ton of uranium
1 short ton UF_6	0.613	metric ton of uranium
1 metric ton UF_6	0.676	metric ton of uranium
Wood (Average Dry Hardwood)		
1 cord	1.25	short tons
1 cord	128	cubic feet
1 cubic foot	0.028	cubic meters

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A2. 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 400° F or less	5.248
Butane	4.326	Other Oils over 400° 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.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A3. Approximate Heat Content of Crude Oil,[a] Crude Oil and Products, and Natural Gas Plant Liquids
(Million Btu per Barrel)

	Crude Oil Only			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[b]	5.800	5.901	5.800	5.820	5.858	3.804

[a]Includes lease condensate.
[b]Preliminary.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A4. Approximate Heat Content of Petroleum Product Weighted Averages[a] (Million Btu per Barrel)

	Consumption					Imports	Exports	LPG Consumption
	Residential and Commercial	Industrial	Transportation	Electric Utilities	Total			
1973	5.387	5.565	5.397	6.245	5.515	5.983	5.752	3.746
1974	5.377	5.537	5.394	6.238	5.504	5.959	5.773	3.730
1975	5.358	5.527	5.392	6.250	5.494	5.935	5.747	3.715
1976	5.383	5.535	5.396	6.251	5.504	5.980	5.743	3.711
1977	5.389	5.552	5.402	6.249	5.518	5.908	5.796	3.677
1978	5.382	5.546	5.407	6.251	5.519	5.955	5.814	3.669
1979	5.471	5.416	5.430	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	5.310	5.434	6.258	5.448	5.659	5.837	3.643
1982	5.392	5.262	5.423	6.258	5.415	5.664	5.829	3.615
1983	5.286	5.273	5.416	6.255	5.406	5.677	5.800	3.614
1984	5.261	5.256	5.423	6.251	5.395	5.613	5.867	3.599
1985	5.203	5.265	5.421	6.247	5.387	5.572	5.819	3.603
1986	5.238	5.336	5.423	6.257	5.418	5.624	5.839	3.640
1987	5.211	5.312	5.421	6.249	5.403	5.633	5.873	3.659
1988[b]	5.211	5.312	5.421	6.249	5.403	5.633	5.873	3.659

[a]Weighted averages of the products included in each category are calculated using heat content values shown in Table A1.
[b]Preliminary.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A5. Approximate Heat Content of Natural Gas (Btu per Cubic Foot)

	Production		Consumption			Imports	Exports
	Dry	Marketed (Wet)	Non-Electric Utility Users	Electric Utilities	Total		
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[a]	1,031	1,112	1,031	1,032	1,031	999	1,011

[a]Preliminary.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

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

	Production	Consumption					Imports	Exports
		Residential and Commercial	Coke Plants	Other Industrial[a]	Electric Utilities	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[b]	21.922	23.404	26.799	22.381	21.136	21.517	25.000	26.291

[a]Includes transportation.
[b]Preliminary.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A7. 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[b]	21.918	22.800	26.800	22.360	21.143	21.514	25.000	26.304

[a]Includes transportation.
[b]Preliminary.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A8. Approximate Heat Content of Anthracite and Coal Coke
(Million Btu per Short Ton)

	Anthracite					Coal Coke Imports and Exports
	Production	Consumption			Imports and Exports	
		Non-Electric Utility Users	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[a]	23.108	26.293	15.962	22.435	25.400	24.800

[a]Preliminary.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A9. Approximate Heat Rates for Electricity
(Btu per Kilowatthour)

	By Type of Generation			Electricity Consumption
	Fossil Fuel Steam-Electric Power Plant Generation[a]	Nuclear Power Plant Generation	Geothermal Energy Power Plant Generation	
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	10,323	10,843	21,303	3,412
1985	10,339	10,813	21,263	3,412
1986	10,261	10,799	21,263	3,412
1987[b]	10,261	10,799	21,263	3,412
1988[b]	10,261	10,799	21,263	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.
Sources: See "Thermal Conversion Factor Source Documentation," which follows this table.

Thermal Conversion Factor Source Documentation

Approximate Heat Content of Petroleum Products

Asphalt. 1973 forward: 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. 1973 forward: EIA adopted the thermal conversion factor of 5.048 million Btu per barrel as adopted by the Bureau of Mines from the Texas Eastern Transmission Corporation publication *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Butane. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 4.326 million Btu per barrel as published in the *California Oil World and Petroleum Industry,* First Issue, April 1942.

Butane-Propane Mixture. 1973 forward: EIA adopted the Bureau of Mines calculation of 4.130 million Btu per barrel based on an assumed mixture of 60 percent butane and 40 percent propane. See "Butane" and "Propane."

Distillate Fuel Oil. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.825 million Btu per barrel as reported in a Bureau of Mines internal memorandum, *Bureau of Mines Standard Average Heating Value of Various Fuels, adopted January 3, 1950.*

Ethane. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 3.082 million Btu per barrel as published in the *California Oil World and Petroleum Industry,* First Issue, April 1942.

Ethane-Propane Mixture. 1979 forward: EIA 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. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 3.974 million Btu per barrel as published in the *California Oil World and Petroleum Industry,* First Issue, April 1942.

Jet Fuel, Kerosene Type. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel as published for "Jet Fuel, Commercial" by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Jet Fuel, Naphtha Type. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.355 million Btu per barrel as published for "Jet Fuel, Military" by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Kerosene. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel as reported in a Bureau of Mines internal memorandum, *Bureau of Mines Standard Average Heating Values of Various Fuels, adopted January 3, 1950.*

Lubricants. 1973 forward: EIA adopted the thermal conversion factor of 6.065 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Miscellaneous Products. 1973 forward: EIA adopted the thermal conversion factor of 5.796 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Motor Gasoline. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel as published for "Gasoline, Motor Fuel" by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985,* 1968.

Natural Gasoline. 1973 forward: EIA adopted the thermal conversion factor of 4.620 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Pentanes Plus. 1984 forward: 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 400 Degrees Fahrenheit or Less. 1973 forward: Assumed by EIA to be 5.248 million Btu per barrel, equal to the thermal conversion factor for special naphtha. See "Special Naphtha."

Petrochemical Feedstock, Oils Over 400 Degrees Fahrenheit. 1973 forward: Assumed by EIA to be 5.825 million Btu per barrel, equal to the thermal conversion factor for distillate fuel oil. See "Distillate Fuel Oil."

Petrochemical Feedstock, Still Gas. 1973 forward: Assumed by EIA to be 6.000 million Btu per barrel, equal to the thermal conversion factor for still gas. See "Still Gas."

Petroleum Coke. 1973 forward: EIA adopted the thermal conversion factor of 6.024 million Btu per barrel as reported in Btu per short ton in the Bureau of Mines

internal memorandum *Bureau of Mines Standard Average Heating Value of Various Fuels, adopted January 3, 1950.* The Bureau of Mines calculated this factor by dividing the 30,120,000 Btu per short ton as given in the referenced Bureau of Mines internal memorandum by 5.0 barrels per short ton as given in the Bureau of Mines Form 6-1300-M and successor EIA forms.

Plant Condensate. 1973 forward: Estimated to be 5.418 million Btu per barrel by EIA from data provided by McClanahan Consultants, Inc., Houston, Texas.

Propane. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 3.836 million Btu per barrel as published in the *California Oil World and Petroleum Industry,* First Issue, April 1942.

Residual Fuel Oil. 1973 forward: EIA adopted the thermal conversion factor of 6.287 million Btu per barrel as reported in the Bureau of Mines internal memorandum *Bureau of Mines Standard Average Heating Values of Various Fuels, adopted January 3, 1950.*

Road Oil. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 6.636 million Btu per barrel which was assumed to be equal to that of asphalt (see "Asphalt") and was first published by the Bureau of Mines in the *Petroleum Statement, Annual, 1970.*

Special Naphtha. 1973 forward: EIA adopted the Bureau of Mines thermal conversion factor of 5.248 million Btu per barrel which was assumed to be equal to that of total gasoline (aviation and motor) factor and was first published in the *Petroleum Statement, Annual, 1970.*

Still Gas. 1973 forward: 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. 1973 forward: EIA assumed the thermal conversion factor to be 5.825 million Btu per barrel or equal to that for distillate fuel oil (see "Distillate Fuel Oil") and first published in the *Annual Report to Congress, Volume 3, 1977.*

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

Wax. 1973 forward: EIA adopted the thermal conversion factor of 5.537 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956.*

Approximate Heat Content of Fuels

Petroleum

Crude Oil, Exports. 1973 forward: Assumed by EIA to be 5.800 million Btu per barrel or equal to the thermal conversion factor for crude oil produced in the United States. See "Crude Oil and Lease Condensate, Production."

Crude Oil, Imports. 1973 forward: Calculated annually by EIA by weighting the thermal conversion factor of each type of crude oil imported by the quantity imported. Thermal conversion factors for each type were calculated on a foreign country basis, by determining the average American Petroleum Institute (API) gravity of crude imported from each foreign country from Form ERA-60 in 1977 and converting average API gravity to average Btu content using National Bureau of Standards, Miscellaneous Publication No. 97, *Thermal Properties of Petroleum Products,* 1933.

Crude Oil and Lease Condensate, Production. 1973 forward: EIA adopted the thermal conversion factor of 5.800 million Btu per barrel as reported in a Bureau of Mines internal memorandum *Bureau of Mines Standard Average Heating Values of Various Fuels adopted January 3, 1950.*

Crude Oil and Petroleum Products, Exports. 1973 forward: Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product exported and crude oil exported weighted by the quantity of each petroleum product and crude oil exported. See "Petroleum Products, Exports" and "Crude Oil, Exports."

Crude Oil and Petroleum Products, Imports. 1973 forward: 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."

Natural Gas Plant Liquids, Production. 1973 forward: Calculated annually by EIA as the average of the thermal conversion factors of each natural gas plant liquid produced weighted by the quantity of each natural gas plant liquid produced.

Petroleum Products, Consumption. 1973 forward: Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed, weighted by the quantity of each petroleum product consumed.

Petroleum Products, Consumption by Electric Utilities. 1973-1986: 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.* 1987 forward: Estimated by EIA.

Petroleum Products, Consumption by Industrial Users. 1973-1986: 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.* 1987 forward: Estimated by EIA.

Petroleum Products, Consumption by Residential and Commercial Users. 1973-1986: 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.* 1987 forward: Estimated by EIA.

Petroleum Products, Consumption by Transportation Users. 1973-1986: 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.* 1987 forward: Estimated by EIA.

Petroleum Products, Exports. 1973 forward: Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product weighted by the quantity of each petroleum product exported.

Petroleum Products, Imports. 1973 forward: Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product imported weighted by the quantity of each petroleum product imported.

Petroleum Products, Liquefied Petroleum Gases (LPG) Consumption. 1973 forward: 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.

Natural Gas

Natural Gas, 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.
1980 forward: Calculated annually by EIA by dividing the total heat content of natural gas consumed by the total quantity of natural gas consumed. Heat content and quantity consumed are from Form EIA-176.

Natural Gas, Consumption by Electric Utilities. 1973 forward: Calculated annually by EIA by dividing the total heat content of natural gas received at electric utilities by the total quantity received at electric utilities. The heat contents and receipts are from FERC Form 423 and predecessor forms.

Natural Gas, Consumption by Non-Electric Utility Users. 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas consumed by non-electric utility consumers by the quantity of non-electric utility natural gas consumed. Data are from Forms EIA-176, FERC Form 423, EIA-759, and predecessor forms.

Natural Gas, Exports. 1973 forward: 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. 1973 forward: 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. 1973 forward: 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). 1973 forward: 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.

Coal and Coal Coke

Anthracite, Consumption. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of anthracite consumed by electric utilities and non-electric utilities by the total quantity of anthracite consumed.

Anthracite, Consumption by Electric Utilities. 1973 forward: Calculated annually by EIA by dividing the heat content of anthracite receipts at electric utilities by the quantity of anthracite received at electric util-

ities. Heat contents and receipts are from FERC Form 423 and predecessor forms.

Anthracite, Consumption by Non-Electric Utility Users. 1973 forward: Calculated annually by EIA by dividing the heat content of anthracite production less the heat content of the anthracite consumed at electric utilities, net exports, and shipments to U.S. Armed Forces overseas by the quantity of non-electric utility anthracite consumption less the quantity of anthracite stock changes, losses, and unaccounted for.

Anthracite, Imports and Exports. 1973 forward: 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. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of freshly mined anthracite (estimated to have an average heat content of 25.400 million Btu per short ton) and the heat content of anthracite recovered from culm banks and river dredging (estimated to have a heat content of 17.500 million Btu per short ton) by the total quantity of anthracite production.

Bituminous Coal and Lignite, Consumption. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite consumed by electric utilities, coal coke plants, other industrial plants, the residential and commercial sector, and the transportation sector by the sum of their respective tonnages.

Bituminous Coal and Lignite, Consumption by Coke Plants. 1973 forward: Estimated by EIA to be 26.800 million Btu per short ton based on an input/output analysis of coal carbonization.

Bituminous Coal and Lignite, Consumption by Electric Utilities. 1973 forward: Calculated annually by EIA by dividing the total heat content of bituminous coal and lignite received at electric utilities by the total quantity received at electric utilities. Heat contents and receipts are from FERC Form 423 and predecessor forms.

Bituminous Coal and Lignite, Consumption by Other Industrial 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 assuming that the bituminous coal and lignite delivered to other industrial users from each coal-producing district (reported on EIA Form 6 and predecessor Bureau of Mines Form 6-1419-Q) contained a heat value equal to bituminous coal and lignite received at electric utilities from each of the same coal-producing districts (reported on FERC Form 423). The average Btu value of coal by coal-producing district was applied to the volume of deliveries to other industrial users from each coal-producing district, and the sum total of the heat content was divided by the total volume of deliveries.

Bituminous Coal and Lignite, Consumption by Residential and Commercial Users. 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 district (reported on EIA Form 6 and predecessor Bureau of Mines Form 6-1419-Q) contained a heat value equal to bituminous coal and lignite received at electric utilities from each of the same coal-producing districts (reported on FERC Form 423). The average Btu value of coal by coal-producing district was applied to the volume of deliveries to residential and commercial users from each coal-producing district, and the total of the heat value was divided by the total volume of deliveries.

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

Bituminous Coal and Lignite, Imports. 1973 forward: EIA estimated the average thermal conversion factor to be 25.000 million Btu per short ton.

Bituminous Coal and Lignite, Production. 1973 forward: 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 the consumption sector. Producers' stock changes and unaccounted for were assumed to have the same conversion factor as consumption by all users.

Coal, Consumption. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite consumption by the sum of their respective tonnages.

Coal, Consumption by Electric Utilities. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite received at electric utilities by the sum of their respective tonnages received.

Coal, Consumption by Non-Electric Utility Users. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite

and anthracite consumed by non-electric utility users by the sum of their respective tonnages.

Coal, Exports. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite exported by the sum of their respective tonnages.

Coal, Imports. 1973 forward: Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite imported by the sum of their respective tonnages.

Coal, Production. 1973 forward: Calculated annually by EIA by dividing the sum of the total heat content of bituminous coal and lignite and anthracite production by the sum of their respective tonnages.

Coal Coke, Imports and Exports. 1973 forward: EIA adopted the Bureau of Mines estimate of 24.800 million Btu per short ton.

Approximate Heat Rates for Electricity

Fossil Fuel Steam-Electric Power Plant Generation. There is no generally accepted practice for measuring the thermal conversion rates for power plants that generate electricity from hydroelectric, wood and waste, wind photovoltaic, or solar thermal electric energy sources. EIA has selected a rate that is equal to the prevailing annual average heat rate factor for fossil-fueled steam-electric power plants. By using this factor, it is possible to evaluate fossil fuel requirements for replacing these sources during periods of interruption such as drought. The heat content of a kilowatthour of electricity produced, regardless of the generation process, is 3,412 Btu per kilowatthour. 1973 forward: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States as published by EIA in *Historical Plant Cost and Annual Production Expenses for Selected Electric Plants.*

Geothermal Energy Power Plant Generation. 1973 forward: 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 based on an informal survey of relevant plants.

Nuclear Power Plant Generation. 1973 forward: Calculated annually by EIA by dividing the total heat content consumed in reactors at nuclear plants by the total (net) electricity generated by nuclear plants as reported on Form FERC-1, EIA-412 and predecessor forms.

Glossary

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

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

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

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

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

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

City Gate Price of Natural Gas: Price of natural gas at the point it is transferred from a pipeline company to a local distribution company.

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

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

Commercial Sector: Nonmanufacturing business establishments, including hotels, motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; health, social, and educational institutions; and Federal, State, and local governments. Street lights, pumps, bridges, and public services are also included. (For allocation of individual fuels to end-use sectors, see the Notes and Sources for Section 2.)

Crude Oil Average Domestic First Purchase Price: 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; after February 1976, the price represents an average of actual first purchase prices. This price is frequently called the wellhead price.

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. Liquids produced at natural gas processing plants and mixed with crude oil are excluded where identifiable.

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

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

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). These may

be simple degree-day normals or population-weighted degree-day normals.

Degree-Days, Cooling: 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: 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 these 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, each composed of from three to eight States. The regions 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 these products are then summed to arrive at the national population-weighted degree-day figure.

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

Distillate Fuel Oil: Light fuel oils distilled during the refining process and 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. Included are products known as No. 1, No. 2, and No. 4 fuel oils, and No. 1, No. 2, and No. 4 diesel fuels, conforming to ASTM Specifications D396 or D975, respectively. No. 1 fuel oil is a light distillate fuel oil used in vaporizing pot-type burners. No. 2 fuel oil is used in atomizing-type burners for domestic heating or for moderate capacity commercial-industrial burner units. No. 4 fuel oil is a blend of distillate fuel oil and residual fuel oil that is used in commercial burner installations not equipped with preheating facilities; it is used extensively in industrial plants. Diesel fuel oils are used in compression-ignition engines.

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.

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

Electricity Generation: Net electricity (gross electricity output measured at the generator terminals, minus power plant use) generated at electric utilities. Excludes industrial electricity generation. International data are gross electricity output.

Electricity Sales: The gross electricity output measured at the generator terminals, minus power plant use and transmission and distribution losses. Included in each end-use sector are the following: commercial sales of electricity to businesses that generally require less than 1,000 kilowatts of service; industrial sales of electricity to businesses that generally require more than 1,000 kilowatts of service; residential sales of electricity to residences for household purposes; "other" sales of electricity to government, railways, street lighting authorities, and sales not elsewhere included.

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

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

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

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

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

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

F.o.b. (free on board) Price of Imported Crude Oil: The f.o.b. price is the price actually charged at the producing country's port of loading. The reported price includes deductions for any rebates and discounts and additions of premiums where applicable; it should be the actual price paid with no adjustments for credit terms.

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.

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 (as used at electric utilities): Hot water or steam, extracted from geothermal reservoirs in the earth's crust, which is supplied to steam turbines at electric utilities that drive generators to produce electricity.

Gross Energy Consumption: Total energy use including electrical system energy losses.

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

Hydroelectric Power: Electricity generated by an electric power plant whose turbines are driven by falling water.

Imports: Receipts of goods into the 50 States and the District of Columbia from foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories. (See **Petroleum Imports.**)

Industrial Sector: Manufacturing, construction, mining, agriculture, fishing, and forestry establishments. (For allocation of individual fuels to end-use sectors, see the Notes and Sources for Section 2.)

Isobutane: See **Butane.**

Landed Cost of Crude Oil Imports: The price of imported crude oil at the port of discharge. It includes the purchase price at the foreign port plus charges for transporting and insuring the crude oil from the purchase point to the port of discharge. It does not include import tariffs or fees, wharfage charges, or demurrage costs. Coverage includes the United States and its territories.

Lease and Plant Fuel: Natural gas used in lease operations, as gas processing plant fuel, and as net used for gas lift.

Lease Condensate: A natural gas liquid recovered from gas-well gas (associated and nonassociated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons. Generally, it is blended with crude oil for refining.

Lignite: A brownish-black coal of low rank with high inherent moisture and volatile matter. It is also referred to as brown coal. It conforms to ASTM Specification D388 for lignite and is used almost exclusively for electric power generation.

Liquefied Petroleum Gases (LPG): Ethane, propane, normal butane, ethane-propane mixtures, propane-butane mixtures, and isobutane produced at natural gas processing plants, including plants that fractionate raw natural gas plant liquids. LPG also includes liquefied refinery gases (ethylene, propylene, butylene, and isobutylene produced from crude oil at refineries).

Motor Gasoline, Finished: A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark-ignition engines and conforming to ASTM Specification D439. Included are finished leaded gasoline, finished unleaded gasoline, and gasohol. Excluded are blendstock that has not been blended into finished motor gasoline and alcohol that has not been blended into gasohol.

Motor Gasoline, Leaded Premium: A gasoline having an antiknock index of 93 with the use of lead additives or which contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. Includes gasohol.

Motor Gasoline, Leaded Regular: A gasoline having an antiknock index of 89 with the use of lead additives or which contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon.

Motor Gasoline, Total: Includes finished leaded motor gasoline (premium and regular), finished unleaded motor gasoline (premium and regular), motor gasoline blending components, and gasohol.

Motor Gasoline, Unleaded Premium: A gasoline having an antiknock index of 90 containing not more than 0.05 grams of lead per gallon and not more than 0.005 grams of phosphorus per gallon. Includes gasohol.

Motor Gasoline, Unleaded Regular: A gasoline having an antiknock index of 87 containing not more than 0.05 grams of lead per gallon and not more than 0.005 grams of phosphorus per gallon.

Natural Gas: A mixture of hydrocarbons and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in underground reservoirs.

Natural Gas Plant Liquids (NGPL): Those natural gas liquids that are recovered from natural gas processing plants, and in some situations, from natural gas field facilities, as well as those that are extracted by fractionators. Natural gas plant liquids are defined according to the published specifications of the ASTM and

the Gas Processors Association and are classified as follows: ethane, propane, normal butane, isobutane, pentanes plus, and other products from natural gas processing plants (i.e., products meeting the standards for finished petroleum products produced at natural gas processing plants, such as finished motor gasoline, finished aviation gasoline, special naphthas, kerosene, distillate fuel oil, and miscellaneous products).

Natural Gas Wellhead Price: The annual 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, as well as the U.S. Geological Survey (through 1981) and the U.S. Minerals Management Service (from 1982 forward). 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.

An estimate of the U.S. natural gas price is made each month based on monthly natural gas prices from four States: Mississippi, New Mexico, Oklahoma, and Texas.

Net Electricity Generation: Gross generation less electricity consumed at the generating plant for station use. Electricity required for pumping at pumped-storage plants is regarded as plant use and is deducted from gross generation.

Net Energy Consumption: Total energy use excluding electrical system energy losses.

Normal Butane: See **Butane.**

Nuclear Energy: Electricity generated by an electric power plant whose turbines are driven by steam generated in a reactor by heat from the fissioning of nuclear fuel.

Oil Well: A well completed for the production of crude oil from one or more oil zones or reservoirs. Wells producing both crude oil and natural gas are classified as oil wells.

Organization for Economic Cooperation and Development (OECD): Current members: Australia, Austria, Belgium, Canada, Denmark, Finland, France, West Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States and its territories (Guam, Puerto Rico, and the Virgin Islands).

Organization of the Petroleum Exporting Countries (OPEC): Current members: Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela. Data for Saudi Arabia and Kuwait include their shares from the Partitioned Zone (formerly Neutral Zone).

Pentanes Plus: A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. This product includes isopentane, natural gasoline, and plant condensate.

Petroleum: A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oils, petroleum products, natural gas plant liquids, and nonhydrocarbon compounds blended into finished petroleum products.

Petroleum Coke: A solid residue that is the final product of the condensation process in cracking. It consists of aromatic hydrocarbons very poor in hydrogen. Calcination of petroleum coke can yield almost pure carbon or artificial graphite suitable for production of carbon or graphite electrodes, structural graphite, motor brushes, dry cells, and similar products. This product is reported as marketable or catalyst coke.

Petroleum Imports: Imports of petroleum into the 50 States and the District of Columbia from foreign countries, Puerto Rico, the Virgin Islands, 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: Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, naphtha less than 400 °F end-point, other oils over 400 °F end-point, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Petroleum Products Supplied: Total petroleum products supplied is the sum of all petroleum products supplied. For each product, the amount supplied is calculated by summing production, crude oil burned directly, imports, and net withdrawals from primary stocks and subtracting exports.

Petroleum Stocks, Primary: Stocks of crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tankfarms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in transit from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve, is included. Excluded are stocks of foreign origin that are held in bonded warehouse storage.

Photovoltaic and Solar Thermal Energy (as used at electric utilities): Energy radiated by the sun as electro-

magnetic waves (electromagnetic radiation) that is converted at electric utilities into electricity by means of solar (photovoltaic) cells or concentrating (focusing) collectors.

Propane: A normally gaseous, paraffinic hydrocarbon (C_3H_8). It is extracted from natural gas or refinery gas streams, and includes all products covered by Gas Processors Association Specifications for commercial propane and HD-5 propane and ASTM Specification D1835. Propane is used primarily for residential and commercial heating and cooling, and also as a fuel for transportation. Industrial uses of propane include use as a petrochemical feedstock.

Propylene: A normally gaseous, olefinic hydrocarbon (C_3H_6) recovered from refinery processes. Quantities are included with "propane" data.

Refiner Acquisition Cost: 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.

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, geothermal, wind, photovoltaic, and solar thermal energy.

Reservoir Repressuring: The injection of natural gas into oil and gas reservoir formations for pressure maintenance and cycling.

Residential Sector: Private household establishments, which consume energy primarily for space heating, water heating, air conditioning, lighting, refrigeration, cooking, and clothes drying. (For allocation of individual fuels to end-use sectors, see the Notes and Sources for Section 2.)

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 and electricity generation. Imports of residual fuel oil include imported crude oil burned as fuel.

Rotary Rig: A machine, used for drilling wells, that employs a rotating tube attached to a bit for boring holes through rock.

Strategic Petroleum Reserve (SPR): Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Subbituminous Coal: A dull black coal of rank intermediate between lignite and bituminous coal. It conforms to ASTM Specification D388 for subbituminous coal, and is used almost exclusively for electric power generation. In this report, quantities are included with "bituminous coal" data.

Supplemental Gaseous Fuels: Consist primarily of synthetic natural gas, propane-air, and refinery (still) gas. May also include coke oven gas, biomass gas, manufactured gas, and air injected for Btu stabilization.

Synthetic Natural Gas (SNG): A product resulting from the manufacture, conversion, or reforming of hydrocarbons that may be easily substituted for, or interchanged with, pipeline-quality natural gas.

Transportation Sector: Private and public vehicles that move people and commodities. Included are automobiles, trucks, buses, motorcycles, railroads and railways (including streetcars), aircraft, ships, barges, and natural gas pipelines.

Unaccounted for Crude Oil: Represents the arithmetic difference between the indicated demand for crude oil and the total disposition of crude oil. Indicated demand is the sum of crude oil production and imports less changes in crude oil stocks. Total disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

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.

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 (see **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. Included are round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal, pulp waste, and spent pulping liquor.

Working Gas: The volume of gas in an underground storage reservoir above the designed level of the base. 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 season.

Order Form

Profiles of Foreign Direct Investment in U.S. Energy 1987

Published: December 1988
Energy Information Administration
DOE/EIA-0466(87)
Price per copy: $2.50

Company or Personal Name: _____

Additional Address/Attention Line: _____

Street Address: _____

City, State, ZIP Code: _____

Daytime Phone Number (area code first): _____

***** *Please include payment with this order form. Allow 2 weeks for delivery.* *****

Number of copies ____ x $2.50 = $ _____ (total due). (Foreign orders add 25%.)

☐ Check payable to Superintendent of Documents

☐ Money order payable to Superintendent of Documents

☐ Charge to Deposit Account No. _ _ _ _ _ _ _ _ Order No. _____

☐ Charge to: ☐ VISA ☐ MasterCard ☐ Choice Number _____

Signature _____ Expiration Date (Month/Year) __ __ / __ __

Mail order form to:
National Energy Information Center, EI-231
Energy Information Administration
Room 1F-048
Washington, DC 20585

Order Form

State Energy Price and Expenditure Report 1986

Published: October 1988
Energy Information Administration
DOE/EIA-0376(86)
Price per copy: $12.00

The State Energy Price and Expenditure Report 1986 presents energy price and expenditure estimates for the 50 States, the District of Columbia, and the United States for 1970, 1975, and 1980 through 1986. The estimates are provided by energy source (petroleum, natural gas, coal, and electricity) and by major end-use sector (residential, commercial, industrial, transportation, and electric utilities). The 239-page report includes technical documentation describing the data sources and estimation procedures used.

Company or Personal Name: _____

Additional Address/Attention Line: _____

Street Address: _____

City, State, ZIP Code: _____

Daytime Phone Number (area code first): _____

---

* * * * * ***Please include payment with this order form. Allow 2 weeks for delivery.*** * * * * *

Number of copies _____ x $12.00 = $ _____ (total due). (Foreign orders add 25%.)

☐ Check payable to Superintendent of Documents

☐ Money order payable to Superintendent of Documents

☐ Charge to Deposit Account No. _ _ _ _ _ _ _ _ Order No. _____

☐ Charge to: ☐ VISA ☐ MasterCard ☐ Choice Number _____

Signature _____ Expiration Date (Month/Year) _ _ / _ _

Mail order form to:
National Energy Information Center, EI-231
Energy Information Administration
Room 1F-048
Washington, DC 20585

AFTER THE DECLARATION OF INDEPENDENCE OUR FOUNDING FATHERS WROTE SOMETHING EVEN MORE IMPORTANT.

Ten years after the signing of the Declaration of Independence our founding fathers created what historians have called the greatest single document struck off by the hand and mind of man.

Our founding fathers created the Constitution of the United States.

For the first time in history, power was granted by the people to the government, and not by the government to the people.

The freedom unleashed by the Constitution allowed Americans to develop their talents and abilities to the fullest. And attain what is now known the world over as the *American Dream.*

As we commemorate the Bicentennial of the Constitution, there is no better way for you as an American to reaffirm the principles for which our country stands than to learn more about the Constitution.

The words we live by.

THE CONSTITUTION

The words we live by

To learn more about the Constitution write: Constitution, Washington, D.C. 20599. The Commission on the Bicentennial of The U.S. Constitution. Ad Council

Monthly Energy Review (ISSN 0095-7356)
Energy Information Administration
U.S. Department of Energy
Forrestal Building, EI-231
Washington, DC 20585

APPLICATION TO MAIL
AT SECOND-CLASS
RATES PENDING

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300