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Demand, Supply, and Price Outlook for Oxygenated Gasoline, Winter 1992-1993

by Tancred Lidderdale*

Abstract

This article analyzes the likely availability of oxygenated gasoline in carbon monoxide nonattainment areas of the United States during the coming winter. It presents projections of oxygenate demand and supply and concludes that oxygenate imports and drawdowns of inventories will be needed to supplement oxygenate production during the 1992-1993 winter. The article also examines the price premium likely to be associated with oxygenated gasoline.

Introduction

Title II of the Clean Air Act Amendments, enacted on November 15, 1990, sets forth several provisions related to mobile sources of air pollution:

Provision	Effective Date
Oxygenated Gasoline	November 1, 1992
Low-Sulfur On-Highway Diesel Fuel	October 1, 1993
Reformulated Gasoline, Phase 1	January 1, 1995
Leaded Gasoline Ban	January 1, 1996
Clean-Fueled Fleet Vehicles	January 1, 1998
Reformulated Gasoline, Phase 2	January 1, 2000

This analysis focuses on the oxygenated gasoline program and its impact on the demand, supply, and price of motor gasoline during the winter months of 1992-1993. Under the Clean Air Act Amendments of 1990, the Environmental Protection Agency (EPA) has designated 39 areas of the country as mobile source carbon monoxide (CO) nonattainment areas[1] (Figure 1). They are primarily metropolitan areas on the East and West Coasts. Beginning no later than November 1, 1992, all motor gasoline sold in the CO nonattainment areas (about 31 percent of total gasoline sales) during designated winter months (the "CO season") must contain at least 2.7 percent oxygen by weight in the form of blended oxygenates. The CO season lasts a minimum of 4 months, but it may be longer in areas where the duration of CO nonattainment is longer. (The New York metropolitan area, for example, will have a year-round program.)

Oxygenates are liquid organic compounds, such as alcohols and ethers, which contain oxygen and are approved by the EPA as "substantially similar" to motor gasoline. Because of the contained oxygen, blended oxygenates significantly lower the level of carbon monoxide produced during gasoline combustion. Several alcohols and ethers can be used as oxygenates, but only two are expected to be used in significant quantities in the coming winter months: methyl tertiary butyl ether (MTBE) and fuel ethanol. (Definitions of technical terms appear at the end of this article.)

The use of MTBE and fuel ethanol has grown in the last decade in response to octane demand resulting initially from the phaseout of lead from gasoline and later from rising demand for premium gasoline. Operable MTBE production capacity has grown from about 50 thousand barrels per day in 1986 to over 135 thousand barrels per day in 1992. The ethanol industry added about 13 thousand barrels per day of capacity annually between 1982 and 1985.[2] In 1992, capacity totaled about 94 thousand barrels per day.[3]

* The author is a refining industry analyst in the Energy Information Administration's Office of Energy Markets and End Use. Comments regarding this article may be addressed directly to Mr. Lidderdale on 202-586-7321.

[1]CO nonattainment areas refer to areas with carbon monoxide values of 9.5 parts per million or more, generally based on data for 1988 and 1989. The control area is the larger of the Consolidated Metropolitan Statistical Area (CMSA) or the Metropolitan Statistical Area (MSA) in which the nonattainment area is located.

[2]R. O. Jones and T. J. Lareau, "Meeting The Oxygenate Requirements of The 1990 Clean Air Act Amendments," American Petroleum Institute Research Study, No. 058 (Washington, DC, June 1991), p. 18.

[3]Energy Information Administration, Form EIA-822, "Oxygenate Operations Identification Survey," Fall 1991.

The oxygenated gasoline requirements are of particular concern to the petroleum industry because of the large volumes of oxygenate required, the seasonal nature of demand, and the short lead time available for installing new oxygenate production and storage facilities. Oxygenate production is expected to fall significantly short of demand during the 1992-1993 winter CO season and will have to be augmented by withdrawals from inventory and imports.

Highlights

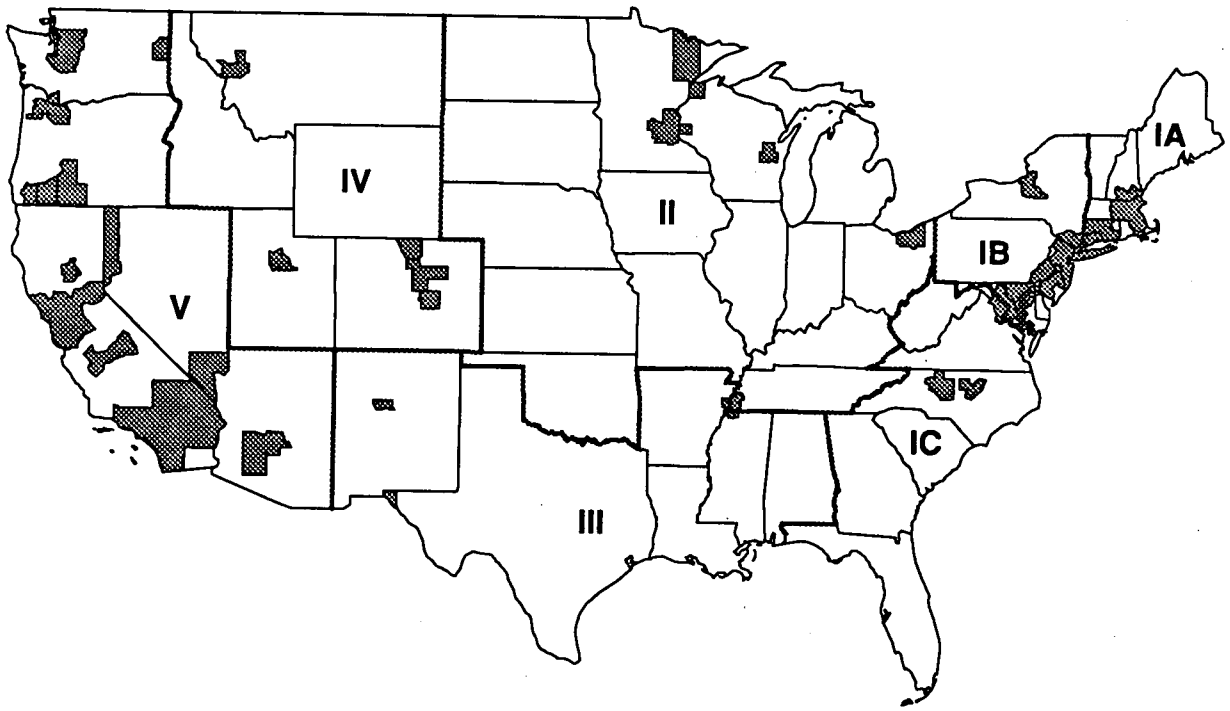
- Total demand for oxygenates during the 1992-1993 winter CO season is expected to range from 450 thousand to 500 thousand barrels per day (MTBE equivalent volume).[4] Demand projections for oxygenated gasoline are based on the 1990 populations of the designated CO nonattainment areas, projected per capita gasoline demands, corrections for "spillover" of oxygenated gasoline to attainment areas, and continued demand for MTBE and ethanol in attainment areas not affected by spillovers.

- Oxygenate production during the 1992-1993 winter CO season is projected to range from 280 thousand to 310 thousand barrels per day (MTBE equivalent volume). Estimates of oxygenate supply are based on the recent Form EIA-822, "Oxygenate Operations Identification Survey," supplemented by industry announcements of production capacity under construction.

- To meet the oxygenate shortfall during the 1992-1993 winter CO season, a MTBE working inventory of between 21 million and 33 million barrels will be required. On January 31, 1992, the MTBE inventory was 12.0 million barrels.[5] By June 30, 1992, the MTBE inventory had increased to 18.6 million barrels.

- Because winter production of oxygenates is expected to fall significantly short of demand during the CO season, oxygenates are projected to command a price premium over the traditional gasoline blend octane values. That price premium may correspond to the cost of storing oxygenates during the spring and summer to satisfy winter demand, the cost of exchanging aromatics for MTBE in European markets, or the cost

Figure 1. Carbon Monoxide Nonattainment Areas by PAD Sub-District, 1990



Sources: *Federal Register*, Vol. 56, No. 131 (Washington, DC, July 9, 1991), pp. 31148-31173; Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States 1991* (111 Edition) (Washington, DC, 1991), pp. 906-912; and Energy Information Administration, *Petroleum Supply Monthly*, (DOE/EIA-0109(92/02) (Washington, DC, March 1992), p. 109.

[4]That oxygenate demand estimate is an upward revision of the 425-thousand-barrels-per-day to 475-thousand-barrels-per-day range originally published in the *Short-Term Energy Outlook*, Second Quarter 1992, DOE/EIA-0202(92/2Q), p. 12.

[5]Energy Information Administration, Form EIA-819, "Monthly Oxygenate Report," January 1992.

of rail or truck transportation to move fuel ethanol from production sites in the Midwest to the CO nonattainment areas on the East and West Coasts. An oxygenated gasoline price premium of 3 to 5 cents per gallon over conventional unleaded gasoline is projected. That premium translates to a U.S. average unleaded motor gasoline price increase of 1 to 2 cents per gallon at the national level.

Oxygenate Demand

Projections of oxygenated gasoline demand begin with estimates of CO nonattainment area gasoline demand based on 1990 population counts and projected per capita gasoline demands. That baseline demand for oxygenated gasoline is then adjusted for factors that may increase or decrease demand both inside and outside CO nonattainment areas, such as the following:

- Delivery ("spillover") of oxygenated gasoline to attainment areas
- Reduced automobile fuel efficiency with oxygenated gasoline
- Price elasticity of demand.

Given a projected total demand for oxygenated gasoline, the demand for oxygenate blending components is estimated on the basis of the blending requirement of 2.7 percent oxygen by weight (2.0 percent in California). That measure is equivalent to 15 percent of MTBE or 7.4 percent of fuel ethanol by volume. Two corrections are then made to arrive at the projected U.S. total demand for oxygenate blending components:

- Continued demand for oxygenates in attainment areas (known as "non-migration")
- Overcompliance demand.

The baseline demand for oxygenated gasoline represents about 31 percent of total U.S. motor gasoline demand (Table 1). Spillovers increase the total oxygenated gasoline market share to about 38 percent of total motor gasoline supply. Oxygenated gasoline and continued demand for oxygenate blending components in attainment areas yields a total demand for oxygenate blending components of 475 thousand barrels per day in MTBE equivalent volume.

A range of uncertainty of plus or minus 25 thousand barrels per day in MTBE equivalent volume (i.e., total oxygenate demand of 450 thousand to 500 thousand barrels per day MTBE equivalent volume) encompasses a range in projected gasoline demand, plus the Energy Information Administration's (EIA) calculations of the uncertainties associated with the spillover or continued demand for oxygenates in attainment areas.[6]

Baseline Demand In Nonattainment Areas: Baseline demand for oxygenated gasoline is estimated by using the U.S. Census Bureau's 1990 population counts of CO nonattainment areas and assuming that per capita gasoline consumption in nonattainment areas is equal to statewide or Petroleum Administration for Defense (PAD) District per capita consumption. This estimation method is necessary because the geographic definitions of the CO nonattainment areas do not correspond with areas for which gasoline consumption data are available.

Approximately 33 percent of the U.S. total population lives in CO nonattainment areas, with the greatest concentrations in the Northeast and West Coast (Table 2). Nearly 90 percent of Californians live in nonattainment areas.

Based on the EIA's second quarter 1992 *Short-Term Energy Outlook* (*Outlook*), total motor gasoline supply is projected to average about 7.1 million barrels per day in the fourth quarter of 1992 and the first quarter of 1993. The distribution of motor gasoline supplies by disaggregated PAD District is derived from Federal Highway

Table 1. Projected Oxygenate Demand, Winter 1992-1993
(Thousand Barrels per Day)

Disposition	Gasoline	Oxygenate (MTBE Equivalent)
U.S. Total Motor Gasoline Demand	**7,100**	**N/A**
Baseline Demand in Nonattainment Areas	2,200	301
Spillover to Attainment Areas	485	71
Reduced Automobile Fuel Efficiency	48	7
Price Elasticity of Demand	-13	-2
Total Oxygenated Gasoline Demand	**2,720**	**377**
Continued Demand In Attainment Areas	N/A	55
Overcompliance Demand	N/A	43
Total Oxygenate Demand	**N/A**	**475**

N/A = Not applicable.

Sources: Energy Information Administration (EIA), *Short-Term Energy Outlook*, Second Quarter 1992, DOE/EIA-0202(92/2Q) (Washington, DC, May 1992), pp. 26-28, and EIA calculations.

[6]Twenty percent of the range of uncertainty (plus or minus 4 thousand barrels per day) is derived from the range of the high and low motor gasoline demand sensitivities in the Energy Information Administration's *Short-Term Energy Outlook*, Second Quarter 1992, pp. 26-28. The remaining 80 percent of the range is from an EIA calculation based on the effects of "spillover" to attainment areas and continued demand for oxygenates in attainment areas.

Administration (FHWA) monthly gasoline sales data obtained from State gasoline tax receipts.[7]

Baseline demand for oxygenated gasoline is derived by multiplying the PAD District-level gasoline demand projections by the proportion of the total PAD District population which lives in nonattainment areas. By this method, baseline demand for oxygenated gasoline is estimated to be about 31 percent of U.S. total motor gasoline demand (Table 3). Oxygenate demand (in MTBE equivalent volume) in the United States, excluding California, is 15 percent of oxygenated gasoline demand. In California, it is 11.1 percent.

Spillover to Attainment Areas: "Spillover" refers to the supply of oxygenated gasoline to attainment areas because segregation of oxygenated and conventional gasoline may be difficult or costly. That situation arises because the geographic definitions of nonattainment areas do not coincide with normal industry distribution patterns; that is, many pipelines and terminals serve both attainment and nonattainment areas.

Spillover is one of the most uncertain elements of oxygenate demand. Spillover is likely to be highest in PAD Districts IA, IB, and V (the Northeast and West Coast), where nonattainment areas represent 47 percent or more of the region's population. The Northeast has the added disadvantage of its distance from the refineries that supply the area. Nonattainment areas that are isolated or will be supplied with ethanol are not expected to have a significant spillover problem. Given these very general assumptions, an oxygenated gasoline spillover rate of 485 thousand

Table 2. Nonattainment Area Population by PAD Sub-District, 1990

PAD Sub-District	Nonattainment Area Population (Thousands)	Total Population (Thousands)	Nonattainment Area Population (Percent of Total)
IA — New England	6,219	13,206	47
IB — Central Atlantic	28,473	43,656	65
IC — Lower Atlantic	3,195	37,512	9
II — Midwest	6,328	71,377	9
III — Gulf Coast	1,196	31,687	4
IV — Rocky Mountain	2,769	7,277	38
V — West Coast (excluding California)	8,001	14,234	56
V — West Coast (California only)	26,466	29,760	89
U.S. Total	**82,647**	**248,710**	**33**

Sources: U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States 1991* (111 Edition) (Washington, DC, 1991), pp. 29-31, and EIA calculations.

Table 3. Projected Oxygenated Gasoline Baseline Demand, Winter 1992-1993
(Thousand Barrels per Day)

PAD Sub-District	Total Gasoline Demand	Nonattainment Area Population (Percent of Total)	Oxygenated Gasoline Demand	Oxygenate Demand (MTBE Equivalent)
IA — New England	345	47	162	24
IB — Central Atlantic	1,025	65	669	100
IC — Lower Atlantic	1,180	9	100	15
II — Midwest	2,105	9	187	28
III — Gulf Coast	1,005	4	38	6
IV — Rocky Mountain	205	38	78	12
V — West Coast (excluding California)	405	56	228	34
V — West Coast (California only)	830	89	738	82
U.S. Total	**7,100**	[a]**33**	**2,200**	**301**

[a]Thirty-three percent of the population consumes 31 percent of total motor gasoline.

Notes: Total gasoline demand represents the average over the forecast period October 1, 1992, through February 28, 1993. California oxygen requirement is assumed to be 2.0 percent by weight (11.1 percent by volume MTBE). For all other States, the requirement is 2.7 percent by weight (15 percent by volume MTBE).

Sources: Energy Information Administration, *Short-Term Energy Outlook*, Second Quarter 1992, p. 27, and Federal Highway Administration, *Highway Statistics 1990*, FHWA-PL-91-003 (Washington, DC, 1991), p. 10, and EIA calculations.

[7]Monthly gasoline sales data for January, February, November, and December 1990 are taken from the Federal Highway Administration, *Highway Statistics 1990*, FHWA-PL-91-003 (Washington, DC, 1991), p. 10. Complete data for 1991 are not yet available.

barrels per day (22 percent of baseline demand for oxygenated gasoline) is assumed.[8]

Automobile Fuel Efficiency: Some loss in fuel economy is expected to result because the energy (Btu) content of oxygenates is lower than that for average gasoline or octane blendstocks that the oxygenates will normally displace. The American Petroleum Institute reports the following gasoline and blending component heating values.[9]

Component	Btu per Gallon
Average Gasoline	114,000
MTBE	93,500
Ethanol	76,000

A blend of 15 percent by volume MTBE and 85 percent by volume average gasoline is calculated to depress the Btu value of average gasoline by 3,075 Btu per gallon, or 2.7 percent. With 7.4 percent ethanol in average gasoline, the Btu loss is 2,812 Btu per gallon, or 2.5 percent.

Those approximations are consistent with those of a Southwest Research Institute (SRI) study. SRI found that oxygenated blends of motor gasoline reduce carbon monoxide emissions but also reduce fuel efficiency when compared with a baseline 35 percent aromatic-enriched fuel.[10] The fuel economy of a 1990 Chevrolet Lumina with a blend of 16.4 percent MTBE was 0.5 miles per gallon (2.1 percent) lower than that for the baseline fuel. The fuel efficiency of a 10-percent ethanol blend was 0.9 miles per gallon (3.8 percent) lower than that for the baseline fuel.

This study assumes that average automobile fuel efficiency with oxygenated gasoline is 2.5 percent below that for conventional unleaded gasoline. Because the reduction in fuel efficiency is only associated with oxygenate blending above current levels, a net reduction in fuel efficiency of 1.5 percent in oxygenated gasoline markets is assumed.

Price Elasticity of Demand: Gasoline demand is relatively inelastic with respect to price. Based on the second-quarter 1992 *Outlook*, the short-term price elasticity of gasoline demand is about 0.09: a 5-percent increase in the price of gasoline will lead to a 0.45-percent reduction in gasoline demand.[11] Assuming an average fourth-quarter oxygenated gasoline demand of about 2.7 million barrels per day, a 5-percent increase in gasoline price in CO nonattainment areas will reduce oxygenated gasoline demand by only about 13 thousand barrels per day (and MTBE demand by 2 thousand barrels per day).

Continued Demand in Attainment Areas (Non-Migration): How much MTBE and ethanol will be redirected (migrate) from conventional to oxygenated gasoline is a significant uncertainty. The uncertainty centers on oxygenate demand in voluntary reformulated gasoline programs promoted by individual firms or for State and local mandated programs. Some ethanol will continue to be used for its chemical value and to make products, such as fructose. Varied State tax credits available for ethanol will tend to encourage suppliers to keep ethanol in those States giving credit rather than to ship it to a nonattainment area at significant added freight cost. This analysis assumes that about 55 thousand barrels per day of oxygenates (MTBE equivalent) will continue to be sold into attainment areas not exposed to spillover from nonattainment areas.

Overcompliance Demand: Oxygenate blending may exceed the levels mandated by the Clean Air Act Amendments (i.e., the oxygen concentration may exceed 2.7 percent by weight) for two reasons. First, additional oxygenate supplies may be required to provide a safety margin above the minimum oxygen requirement because of possible variance in laboratory analysis (also referred to as "compliance assurance demand"). However, overcompliance demand may not be a significant factor where States have an option to implement a "credit trading" program within their area. Credit trading programs would allow some gasoline to fall short of the 2.7-percent limit, providing that a compensating quantity exceeds the 2.7-percent specification. In no case can gasoline with less than 2.0 percent oxygen by weight be sold in those areas during the CO season. This analysis assumes that overcompliance precautions increase the total demand for oxygenates (in oxygenated gasoline) by 5 percent, which corresponds to about 18 thousand barrels per day.

Second, ethanol blending may exceed 2.7 percent by weight (7.4 percent by volume) because of the $0.54 per gallon of ethanol Federal tax credit for gasohol fuels. To qualify for the Federal tax credit, gasohol must contain a minimum of 10 percent of ethanol by volume.[12] Again,

[8]Industry estimates of spillover are highly variable. The National Petroleum Council, for example, conducted a survey of oil companies during early 1991 and reported that one-half of the survey respondents expect spillover to range from 10 percent to 20 percent. One-fourth of the respondents expected spillover to be greater than 20 percent and one-fourth expected it to be less than 10 percent. National Petroleum Council, *Petroleum Refining in the 1990's, Meeting the Challenges of the Clean Air Act* (Washington, DC, June 1991), p. 38.

[9]American Petroleum Institute, *Alcohols and Ethers, A Technical Assessment of Their Applications as Fuels and Fuel Components*, Publication 4261, Second Edition (Washington, DC, July 1988), p. 2.

[10]Inside Washington Publishers, *Alcohol Week's New Fuels Report*, Vol. 11, No. 43 (Washington, DC, October 29, 1990), p. 3.

[11]Elasticity of gasoline demand with respect to price is calculated by dividing the percentage difference in gasoline demand from the *Short-Term Energy Outlook's* (*Outlook*) low oil price and high oil price cases by the percentage difference in gasoline prices in those two price cases. Elasticities based on the second quarter 1992 *Outlook* are 8.6 percent and 9.6 percent for the fourth quarter 1992 and first quarter 1993, respectively.

[12]Some States also provide tax credits for gasohol fuels. Federal Highway Administration, *Highway Statistics 1990*, pp. 76-77.

credit trading programs may constrain the actual amount of overcompliance. It is not yet known how many States will participate or how the oxygen content in fuels will be averaged. This study assumes that additional oxygenate demand arising from Federal and State gasohol tax credit programs will total about 25,000 barrels per day (MTBE equivalent).

Oxygenate Supply

Projections of total oxygenate supply are derived by estimating operable capacity of existing and planned oxygenate production units. Assumed operating factors are then applied to that potential production capacity to account for possible feedstock limitations and normal or unexpected shutdowns.

Oxygenate Production Capacity

Projected oxygenate production capacities are based on data collected from the Form EIA-822, supplemented by periodic industry announcements of plants under construction. MTBE production capacity is expected to grow from the January 1, 1992, level of 135 thousand barrels per day to 202 thousand barrels per day by January 1, 1993. Refinery MTBE plants ("captive" units) that process C_4's from fluid catalytic crackers account for about 32 percent of January 1, 1992, capacity. The remaining MTBE production capacity (commonly called "merchant" capacity) is located in petrochemical plants processing isobutylene derived from isobutane dehydrogenation, tertiary butyl alcohol dehydration, or olefins plant raffinate byproduct (Table 4).

Ethanol operable production capacity is projected to increase from the January 1, 1992, level of 94 thousand barrels per day to 96 thousand barrels per day on January 1, 1993. Slow growth in ethanol production capacity is expected because of the handling problems with ethanol. "Nonfungible" gasoline/alcohol blends cannot be shipped through the existing product distribution system because ethanol has an affinity for water. Ethanol must be shipped in bulk containers (rail car or tank truck) to distribution terminals, where it is blended with gasoline and shipped to retail outlets by tank truck.

There is some small but growing production capacity for tertiary amyl methyl ether (TAME). In January 1991, five refiners had a total operable capacity of 550 barrels per calendar day of TAME. For January 1992, that capacity had been projected to increase to 3,690 barrels per calendar day.[13] An additional 13,470 barrels per day is in engineering or construction but is not expected to start up until 1993.[14]

Table 4. Projected Oxygenate Production, Winter 1992-1993
(Barrels per Day of MTBE Equivalent)

Production Type	Operable Capacity	Operating Factor (Percent)	Expected Production
Projected Capacity on October 1, 1992			
Captive Refinery Methyl Tertiary Butyl Ether (MTBE)	49,600	70	34,720
Merchant MTBE	126,285	85	107,340
Fuel Ethanol	192,730	75	144,550
Tertiary Amyl Methyl Ether (TAME)	3,710	70	2,600
Total	**372,325**	**N/A**	**289,210**
New Capacity Starting Up Fourth Quarter, 1992			
Captive Refinery MTBE	17,300	25	4,325
Merchant MTBE	8,890	25	2,225
Fuel Ethanol	3,790	25	950
TAME	0	0	0
Total	**29,980**	**N/A**	**7,500**
Total Winter 1992-1993			
Captive Refinery MTBE	66,900	N/A	39,045
Merchant MTBE	135,175	N/A	109,565
Fuel Ethanol	196,520	N/A	145,500
TAME	3,710	N/A	2,600
Total Production	**402,305**	**N/A**	**296,710**

N/A = Not applicable.

Sources: Form EIA-822, "Oxygenate Operations Identification Survey," Fall 1991, and periodic industry announcements of new plants in engineering or construction.

[13]Energy Information Administration, Form EIA-822, "Oxygenate Operations Identification Survey," Fall 1991.

[14]Information Resources Incorporated, *Octane Week*, Vol. VI, No. 12 (Washington, DC, August 12, 1991), pp. 1 and 3.

Oxygenate Production Operating Factors

Form EIA-822 compares production capacity reported for January 1, 1991, with the production volume reported for 1990. MTBE production in 1990 was 71.3 thousand barrels per day.[15] That production volume corresponds to calculated MTBE capacity utilization rates of 56.6 percent of operable capacity and 67.8 percent of operating capacity. (Definitions of "operable capacity" and "operating capacity" appear at the end of this article.)

The low MTBE capacity utilization rates are due to limited feedstock supply, poor market conditions, and plant shutdowns or operating problems. The limited feedstock supply problem is associated with refinery MTBE units, which are supplied by the C_4 byproduct stream from fluid catalytic cracking units. The operators of 17 of the 22 refinery MTBE units responding to the National Petroleum Refiner's Association (NPRA) 1991 survey identified feedstock availability as the primary reason for low capacity utilization rates. The NPRA survey of all 22 refinery MTBE plants revealed average capacity utilization rates between 1988 and 1990 ranging from 60 to 67 percent.[16]

This analysis assumes that refinery MTBE plants will operate at an average 70 percent of operable capacity while merchant plants will operate at an average 85 percent. The refinery MTBE plants are assumed to operate at higher than historical rates for two reasons. First, turnarounds on those units, which would normally be scheduled for the low gasoline demand winter months, will less likely be taken during the CO season. Second, new tolling arrangements (between refiners without MTBE plants and refiners with spare MTBE capacity), justified by an oxygenate price premium, should relieve feedstock shortages in some units. Lower operating factors are assumed for plants starting up in the fourth quarter of 1992. No production is included on the supply side for plants scheduled to start up in the first quarter of 1993.

The 1991 Form EIA-822 reports 1990 fuel ethanol production of 65 thousand barrels per day and calculated ethanol capacity utilization rates of 78.6 percent of operable capacity and 82.8 percent of operating capacity. An operating factor of 75 percent is assumed to allow for fructose production.

Fuel ethanol volumes are commonly discussed in terms of MTBE equivalent volume so that total oxygenate volumes are presented on a consistent basis. The equivalency is based on oxygen content such that one barrel of fuel ethanol contains the same number of pounds of oxygen as 2.04 barrels of MTBE (Table 5). Thus, projected fuel ethanol production of 145.5 thousand barrels per day of MTBE equivalent volume (Table 4) is equal to about 71.3 thousand barrels per day of actual fuel ethanol physical volume.

Because TAME is feedstock dependent on isoamylenes contained in the refinery fluid catalytic cracker byproduct stream (just as MTBE is dependent on contained isobutylene), an operating factor of 70 percent was assumed.

Supply-Demand Balance—Inventories and Imports

Because of seasonality in oxygenate demand introduced by the Clean Air Act Amendments of 1990, the winter oxygenate production shortfall must be made up from inventory or imports. Since oxygenate demand is projected to range from 450 thousand to 500 thousand barrels per day and domestic oxygenate production is projected to range from 280 thousand to 310 thousand barrels per day, the supply shortfall may be as little as 140 thousand barrels per day or as large as 220 thousand barrels per day.

Although the winter 1992-1993 CO season will last a minimum of 4 months,[17] a phase-in period will be needed to ensure oxygenated gasoline meets the minimum oxygen requirement on the first day of the official CO season. The phase-in period extends the length of the effective CO season and stretches the demand on inventories. For example, a 15-million-barrel MTBE working inventory can provide an average 125 thousand barrels per day for a 4-month CO season but only 100 thousand barrels per day over 5 months. This analysis assumes a 1-month lead-in period in estimates of required inventory build before the start of the CO season.[18]

Table 5. Volume Equivalency by Oxygen Content

Category	MTBE	Fuel Ethanol	TAME
Specific Gravity	0.774	0.794	0.770
Oxygen by Weight (percent)	18.15	34.73	15.66
Oxygen per Gallon of Oxygenates (pounds)	1.126	2.300	1.006

Source: *Federal Register*, Vol. 57, No. 24 (Washington, DC, February 5, 1992), "EPA Proposed Guidelines for Oxygenated Gasoline Credit Program Under Section 211(M) of the Clean Air Act, as Amended," pp. 4408-4448.

[15]Energy Information Administration, *Petroleum Supply Monthly*, DOE/EIA-0109(92/02) (Washington, DC, February 1992), pp. *xxxv-xlv*.

[16]Gulf Publishing Company, *Hydrocarbon Processing*, Vol. 70, No. 7 (Houston, TX, July 1991), p. 33.

[17]Some nonattainment areas have control periods that end on January 31. Those areas comprise about 15 percent of the total nonattainment area population. The shorter control periods may reduce total MTBE inventory requirements by about 2 million barrels.

[18]Total motor gasoline stocks during the winter 1992-1993 are projected to correspond to about 32 days of total motor gasoline supplied.

Some of the supply shortfall can be made up for by imports of MTBE or oxygenated gasoline. Under the assumption that 20 thousand barrels per day of MTBE will be supplied by imports, the demand on inventories will range from 120 thousand to 200 thousand barrels per day. That level corresponds to a required increase in working inventory of 18 to 30 million barrels. Assuming a minimum inventory of 3 million barrels, the October 1, 1992, target MTBE inventory falls between 21 million and 33 million barrels.

Inventories

MTBE supply from storage is one of the most important and uncertain factors in meeting the 1992-1993 winter oxygenate requirements. Oxygenate inventories are reported on Form EIA-822 and on Form EIA-819, "Monthly Oxygenate Report" (Table 6).

To achieve a 21-million-barrel target MTBE inventory level on October 1, 1992, about 0.8 million barrels per month of MTBE must be added to inventory. To reach a 33-million-barrel target, MTBE inventory accumulation must total about 4.8 million barrels per month. Accumulation of ethanol inventory may reduce the demand for MTBE inventory. However, because ethanol/gasoline blends are nonfungible, ethanol inventory is not expected to be a significant source of incremental supply.

Table 6. Oxygenate Inventories, December 1990 and January-June, 1992
(Thousand Barrels)

Date	MTBE	Ethanol[a]
December 31, 1990	3,599	1,433
January 31, 1992	11,986	1,076
February 29, 1992	12,621	1,287
March 31, 1992	13,958	1,462
April 30, 1992	14,943	1,457
May 31, 1992	15,840	1,858
June 30, 1992	18,640	1,941

[a]Ethanol is reported in physical volumes. To convert to MTBE equivalent volumes, multiply by 2.04.

Sources: Energy Information Administration, Form EIA-822, "Oxygenates Operation Identification Survey," Fall 1991, and Form EIA-819, "Monthly Oxygenate Report," January-June 1992.

Imports

During 1990 and the first half of 1991, imports of MTBE (from Saudi Arabia, France, and Venezuela) averaged about 1,150 barrels per day less than exports (which were primarily to Mexico).[19] Industry studies have projected MTBE net imports to range from 10 thousand to 30 thousand barrels per day during the 1992-1993 winter. The American Petroleum Institute, for example, assumes potential MTBE net imports of 10 thousand barrels per day at the end of 1992.[20] Cambridge Energy Research Associates projects MTBE net imports from Canada, Venezuela, and Saudi Arabia to range from 15 thousand to 30 thousand barrels per day.[21]

International MTBE production capacity is expected to show the same strong growth as in the United States. New 12.5-thousand-barrel-per-day MTBE plants began operation in Venezuela in February 1991[22] and in Alberta, Canada, in early 1992.[23] MTBE production capacity outside the United States is projected to increase from 112 thousand barrels per day at the end of 1991 to 165 thousand barrels per day at the end of 1992, and to 219 thousand barrels per day at the end of 1993.[24]

Projected worldwide demand (excluding the United States) for MTBE is expected to increase from 76 thousand barrels per day in 1990 to about 105 thousand barrels per day in 1993.[25] Strong growth in foreign demand for MTBE is expected in Mexico, Europe, and the Far East. Mexico already promotes an oxygenated fuels program motivated by serious air pollution problems in Mexico City and other large metropolitan areas. In Europe, the continuing shift to unleaded gasoline has increased demand for MTBE. Japan did not allow blending of MTBE into gasoline until November 1, 1991. Japanese refiners may value MTBE above its octane value because it will allow them to extract aromatics from their gasoline octane pool for sale to the higher value petrochemical markets.

Motor gasoline net imports account for about 5 percent of the Nation's demand for gasoline. The highest demand for imports is on the East Coast (PAD District I), which accounts for over 85 percent of total net gasoline imports, or about 10 percent of all PAD District I gasoline sales. Imports of gasoline should not be significantly affected by the new oxygenate requirements. Unleaded gasoline may continue to be imported with MTBE blended in at New York Harbor or ethanol blended in at terminal racks. Some

[19]Energy Information, Ltd., *Oil Market Listener*, (New York, NY, July 30, 1991), p. 17.

[20]R. O. Jones and T. J. Lareau, "Meeting the Oxygenate Requirements of the 1990 Clean Air Act Amendments," p. 19. The report also notes that "the estimates do not include possible imports if MTBE's price were to increase substantially, allowing the United States to bid oxygenates away from foreign domestic markets which normally would blend MTBE in local gasoline supplies."

[21]Cambridge Energy Research Associates, *The U.S. Refining Industry: Facing the Challenges of the 1990s* (Washington, DC, January 1992), p. 45.

[22]Information Resources, Incorporated, *Oxy-Fuel News*, Vol. II, No. 44 (Washington, DC, February 18, 1991), p. 1.

[23]Information Resources, Incorporated, *Oxy-Fuel News*, Vol. III, No. 48 (Washington, DC, March 16, 1992), p. 1.

[24]DeWitt and Co. estimates reported in Petroleum and Energy Intelligence Weekly, Inc., *Petroleum Intelligence Weekly*, Vol. XXX, No. 9 (New York, NY, March 4, 1991), p. 9.

[25]Petroleum and Energy Intelligence Weekly, Inc., *Petroleum Intelligence Weekly*, p. 9.

gasoline may also be shipped as oxygenated product, which may save some of the expense of shipping MTBE "neat" in smaller quantities.

Oxygenated Gasoline Costs

Because the production of oxygenates will fall significantly short of demand during the CO season, an oxygenate price premium will result which may get passed through to the price of oxygenated gasoline. The oxygenate price premium can be measured as the price of MTBE or ethanol above their values as conventional gasoline blendstocks. This analysis assumes that the price premium will reflect the short-term marginal cost of supplying oxygenates during the CO season.

Oxygenate Values

MTBE and fuel ethanol usage has grown in the last decade in response to octane demand resulting initially from the phaseout of lead from gasoline and later from rising demand for premium gasoline. The gasoline blend values of those oxygenates have traditionally been based on their blend octane numbers and vapor pressures.[26]

The new clean air legislation mandating a minimum oxygen content will drive a wedge between MTBE or ethanol prices and octane blending value since a substantial amount of these oxygenates will have to be used regardless of octane demand.

A significant portion of the 1992-1993 winter season oxygenate supply is projected to come from the MTBE inventory. Thus, an incentive must exist for refiners and blenders to store oxygenates during the summer for delivery during the winter CO season. That incentive must cover the costs of not only the physical storage fees but also the opportunity cost of the higher level of working capital and the cost of producing substitute octane during the summer. The rental cost for MTBE storage is about 1 cent per gallon per month.[27] The opportunity cost for tying up working capital as MTBE inventory is just over 1 cent per gallon per month (assuming a 15-percent annual return on investment). Thus, assuming that MTBE inventory accumulation should start about 9 months before the beginning of the CO season (and inventory capacity becomes available), an MTBE value appreciation of about 20 cents per gallon over octane value must be realized to justify the inventory decision of 9 months at 2.2 cents per gallon per month.

The price premium should also provide an incentive to minimize oxygenate use in attainment areas or in markets where oxygenates are relatively less valuable. The oxygenate premium may need to cover the costs of shipping ethanol from the Midwest by truck or rail to the Northeast or West Coast and possibly the tax incentives provided by some States for gasohol fuels. For example, a "one-shot" movement of a few rail cars of ethanol from Chicago to the New York metropolitan area would cost about 25 cents per gallon (the "point-to-point" rate for larger volumes would be lower).[28] Including possible foregone tax credits of 10 cents to 20 cents per gallon offered by some Midwestern States, an oxygenate premium of about 40 cents per gallon of ethanol may be required to displace ethanol from the Midwest attainment areas to Northeast nonattainment areas (which would be equivalent to about 20 cents per gallon MTBE on an oxygen equivalent basis).

Minimizing oxygenate supply to attainment areas also includes foreign markets. Thus, the oxygenate premium may also need to cover the cost of exchanging toluene or other domestically produced octane blendstock for MTBE produced in Europe or the Middle East. The transportation cost of moving 200 thousand barrels of MTBE from Rotterdam to the New York Harbor is about 3 cents per gallon.[29] The current import tariff on MTBE of 5.6 percent *ad valorem*[30] adds another 6 cents to 7 cents per gallon to the landed cost. Thus, the total cost for moving MTBE to the U.S. would be 10 cents per gallon. Since this MTBE is being displaced from a foreign octane market, the analysis also includes the replacement cost of octane. If moving toluene from the U.S. to Europe would cost a similar amount, the total cost of providing incremental MTBE from foreign sources would be about 20 cents per gallon.

For each of the three sources of incremental winter oxygenate supplies cited, an MTBE price premium of about 20 cents per gallon over octane value can be rationalized. Since oxygenated gasoline will be 15 percent MTBE by volume, this translates to a 3-cent-per-gallon premium for oxygenated gasoline over conventional unleaded gasoline. Because logistical constraints not specified in this analysis may exist, a range on the oxygenated gasoline price premium of 3 cents to 5 cents per gallon is assumed. Because oxygenated gasoline is projected to represent about 38 percent of the total gasoline market, that oxygenated gasoline price premium translates to an average U.S. unleaded motor gasoline price increase of 1 cent to 2 cents per gallon at the National level.

[26]Cambridge Energy Research Associates reports that an estimated 30 percent to 60 percent of ethanol production has been blended into finished gasoline so that the blend will qualify for Federal (and State) tax credits. In those applications, ethanol is described as a gasoline "extender" rather than source of octane. *The U.S. Refining Industry: Facing the Challenges of the 1990s*, (Washington, DC, January 1992), p. 2.

[27]EIA calculation based on discussions with energy industry sources.

[28]EIA calculation based on discussions with energy industry sources.

[29]EIA calculation based on discussions with energy industry sources.

[30]United States International Trade Commission, *Supplement 1 to Harmonized Tariff Schedule of the United States (1992)*, USITC Publication 2333 (Washington, DC, July 1992), p. 29-13.

Definitions

Alcohol: The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon, plus a hydroxyl group; CH_3-$(CH_2)_n$-OH (e.g., methanol, ethanol, and tertiary butyl alcohol).

C4: A mixture of light hydrocarbons which have the general formula C_4H_N, where N is the number of hydrogen atoms per molecule. Examples include butane (C_4H_{10}) and butylene (C_4H_8).

Captive Refinery MTBE Plants: MTBE production facilities primarily located within refineries. Those integrated refinery units produce MTBE from fluid catalytic cracker isobutylene with production dedicated to internal gasoline blending requirements.

CO Control Area: The carbon monoxide control area is the larger of the Consolidated Metropolitan Statistical Area (CMSA) or the Metropolitan Statistical Area (MSA) in which a CO nonattainment area is located.

CO Control Period ("Season"): The portion of the year in which a CO nonattainment area is prone to high ambient levels of carbon monoxide. This portion of the year is to be specified by the Environmental Protection Agency but is to be not less than 4 months in length.

CO Nonattainment Area: Areas with carbon monoxide design values of 9.5 parts per million or more, generally based on data for 1988 and 1989.

ETBE (Ethyl Tertiary Butyl Ether) $(CH_3)_3COC_2H_5$: An oxygenate blend stock. It is formed by the catalytic etherification of isobutylene with ethanol.

Ether: A generic term applied to a group of organic chemical compounds composed of carbon, hydrogen, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., methyl tertiary butyl ether).

Fluid Catalytic Cracking: The refining process of breaking down the larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules. Catalytic cracking is accomplished by the use of a catalytic agent and is an effective process for increasing the yield of gasoline from crude oil. Catalytic cracking processes fresh feeds and recycled feeds.

Fuel Ethanol (C_2H_5OH): An anhydrous denatured aliphatic alcohol. Eligible for gasoline blending as described in "Oxygenates" in this list of definitions.

Merchant MTBE Plants: MTBE production facilities primarily located within petrochemical plants rather than refineries. Production from those units is sold under contract or on the spot market to refiners or other gasoline blenders.

Methanol (CH_3OH): A light volatile alcohol. Eligible for gasoline blending as defined in "Oxygenates" in this list of definitions.

MTBE (Methyl Tertiary Butyl Ether) $(CH_3)_3COCH_3$: An ether eligible for gasoline blending as defined in "Oxygenates" in this list of definitions. It is formed by the catalytic etherification of isobutylene with methanol.

Motor Gasoline Blending of Oxygenates: Blending of gasoline and oxygenates under the Environmental Protection Agency's "Substantially Similar" Interpretive Rule (56 FR [February 11, 1991]).

Nonfungible Product: A gasoline blend or blendstock which cannot be shipped via existing petroleum product distribution systems because of incompatibility problems. Gasoline/ethanol blends, for example, are contaminated by water, which is typically present in petroleum product distribution systems.

Operable Capacity: The amount of capacity that, at the beginning of the period, is in operation; or not in operation and not under active repair, but capable of being placed in operation within 30 days; or not in operation but under active repair that can be completed within 90 days. Operable capacity is the sum of the operating and idle capacity and is measured in barrels per calendar day or barrels per steam day.

Operating Capacity: The component of operable capacity that is in operation at the beginning of the period.

Other Oxygenates: Other aliphatic alcohols and aliphatic ethers eligible for motor gasoline blending (e.g., isopropyl ether or n-propanol).

Oxygenates: Any substance which, when added to gasoline, increases the amount of oxygen in that gasoline blend.

Through a series of waivers and interpretive rules, the Environmental Protection Agency (EPA) has determined the allowable limits for oxygenates in unleaded gasoline. The "Substantially Similar" Interpretive Rules (56 FR [February 11, 1991]) allow blends of aliphatic alcohols other than methanol and aliphatic ethers, provided the oxygen content does not

exceed 2.7 percent by weight. The "Substantially Similar" Interpretive Rules also provide for blends of methanol up to 0.3 percent by volume exclusive of other oxygenates, and butanol or alcohols of a higher molecular weight up to 2.75 percent by weight.

Individual waivers pertaining to the use of oxygenates in unleaded gasoline have been issued by the EPA. They include:

Fuel Ethanol: Blends of up to 10 percent by volume anhydrous ethanol (200 proof).

Methanol: Blends of methanol and gasoline-grade tertiary butyl alcohol (GTBA) such that the total oxygen content does not exceed 3.5 percent by weight and the ratio of methanol to GTBA is less than or equal to 1. It is also specified that this blended fuel must meet ASTM volatility specifications.

Blends of up to 5.0 percent by volume methanol with a minimum 2.5 percent by volume co-solvent alcohols having a carbon number of 4 or less (i.e., ethanol, propanol, butanol, and/or GTBA). The total oxygen must not exceed 3.7 percent by weight, and the blend must meet ASTM volatility specifications as well as phase separation and alcohol purity specifications.

MTBE (Methyl Tertiary Butyl Ether): Blends of up to 15.0 percent by volume MTBE which must meet ASTM D4814 specifications. Blenders must take precautions that the blends are not used as base gasolines for other oxygenated blends.

Oxygenated Gasoline: Motor gasoline which contains no less than 2.7 percent oxygen by weight in the form of blended oxygenates.

TAME (Tertiary Amyl Methyl Ether) $(CH_3)_2(C_2H_5)COCH_3$: An oxygenate blend stock. It is formed by the catalytic etherification of isoamylene with methanol.

TBA (Tertiary Butyl Alcohol) $(CH_3)_3COH$: An alcohol used primarily as a chemical feedstock, a solvent, or feedstock for isobutylene production for MTBE. It is produced by direct hydration of isobutylene or as a co-product of propylene oxide production.

Tolling Arrangement: Contract arrangement under which a raw material or intermediate product stream from one company is delivered to the production facility of another company in exchange for the equivalent volume of finished products and payment of a processing fee.

Reprints Available

Most of the information in this article was published previously as Chapter 2 of the EIA's *Short-Term Energy Outlook Annual Supplement 1992*, DOE/EIA-0202(92) (Washington, DC, June 1992). Reprints of this article may be obtained free of charge from the National Energy Information Center, EI-231; Energy Information Administration; Forrestal Building, Room 1F-048; Washington, DC 20585; telephone, 202-586-8800; telecommunications device for the hearing impaired only, 202-586-1181.

Section 1. Energy Summary

The United States produced 1.8 percent less energy during the first five months of 1992 than during the same period in 1991, and U.S. consumption was up 1.6 percent. Net imports of all energy were 5.4 percent higher than during the first 5 months of 1991.

Energy production during May 1992 totaled 5.4 quadrillion Btu, a 2.8-percent decrease compared with the level of production during May 1991. Petroleum production decreased 3.2 percent, coal production fell 2.9 percent, and natural gas production increased 1.2 percent. All other forms of energy production combined were down 9.3 percent from the level of production during May 1991.

Energy consumption during May 1992 totaled 6.5 quadrillion Btu, 1.0 percent above the level of consumption during May 1991. Natural gas consumption increased 6.2 percent, petroleum consumption rose 1.4 percent, and coal consumption was up 0.4 percent. Consumption of all other forms of energy combined decreased 8.3 percent compared with the level 1 year earlier.

Net imports of energy during May 1992 totaled 1.2 quadrillion Btu, 2.9 percent below the level of net imports 1 year earlier. Net imports of petroleum decreased 6.6 percent, and net imports of natural gas were up 22.6 percent. Net exports of coal fell 6.4 percent compared with the level in May 1991.

Table 1.1 Energy Summary for May 1992

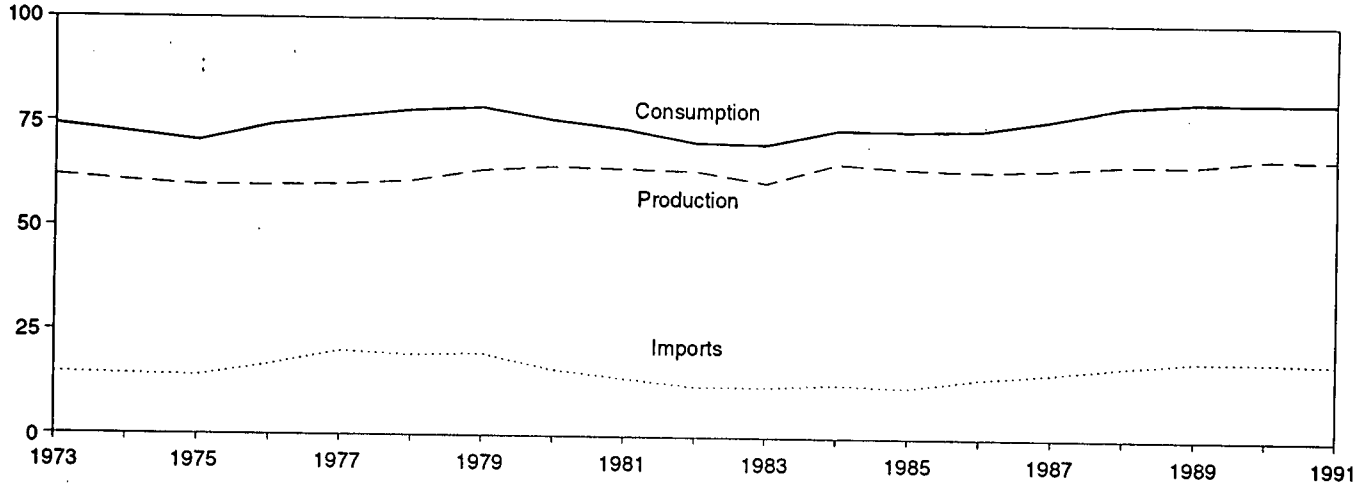
(Quadrillion Btu)

	May			Cumulative January Through May				
	1992	1991	Percent Change[a]	1992	1992 Daily Rate	1991	1991 Daily Rate	Percent Change[a]
Production[b]	5.448	5.603	-2.8	27.921	0.184	28.238	0.187	-1.8
Coal	1.686	1.736	-2.9	8.986	.059	8.975	.059	-.5
Natural Gas (Dry)	1.545	1.527	1.2	7.761	.051	7.748	.051	-.5
Petroleum[c]	1.479	1.528	-3.2	7.407	.049	7.543	.050	-2.4
Other[d]	.737	.812	-9.3	3.767	.025	3.972	.026	-5.8
Consumption[b]	6.468	6.406	1.0	34.892	.230	34.109	.226	1.6
Coal	1.488	1.481	.4	7.617	.050	7.480	.050	1.2
Natural Gas[e]	1.483	1.396	6.2	9.683	.064	9.302	.062	3.4
Petroleum	2.739	2.702	1.4	13.724	.090	13.297	.088	2.5
Other[f]	.758	.827	-8.3	3.868	.025	4.030	.027	-4.6
Net Imports	1.200	1.235	-2.9	5.615	.037	5.294	.035	5.4
Coal[g]	-.240	-.256	-6.4	-1.090	-.007	-.993	-.007	9.0
Natural Gas	.165	.135	22.6	.793	.005	.697	.005	13.0
Petroleum[h]	1.253	1.342	-6.6	5.811	.038	5.532	.037	4.3
Other[i]	.021	.014	48.4	.101	.001	.058	.000	72.8

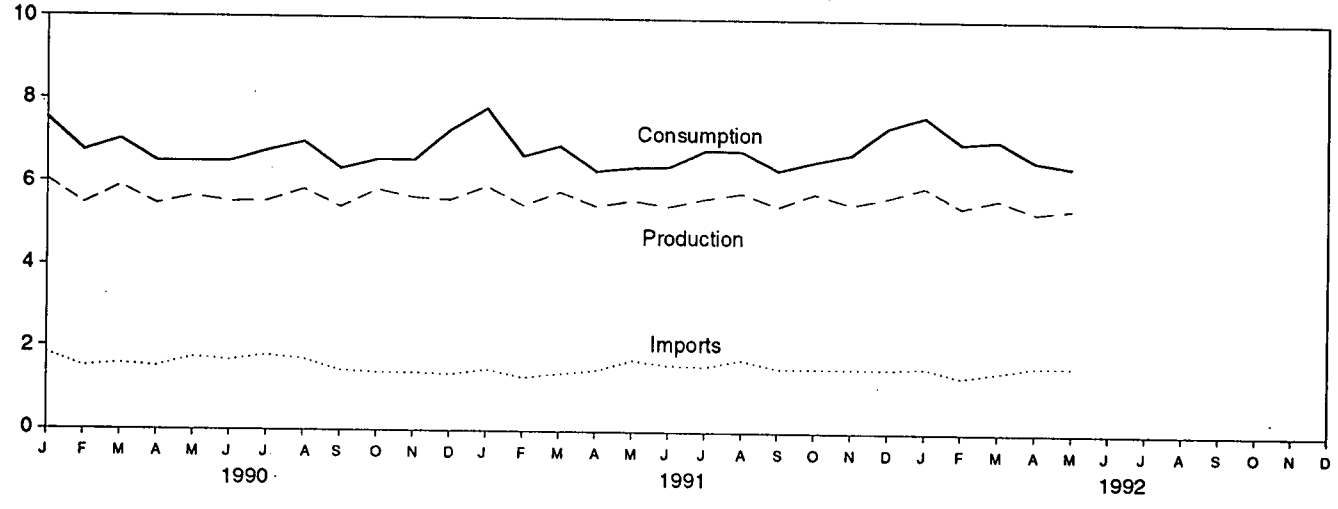
[a] Based on daily rates prior to rounding.
[b] Production and consumption totals exclude wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.
[c] Includes crude oil, lease condensate, and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

Figure 1.1 Energy Overview
(Quadrillion Btu)

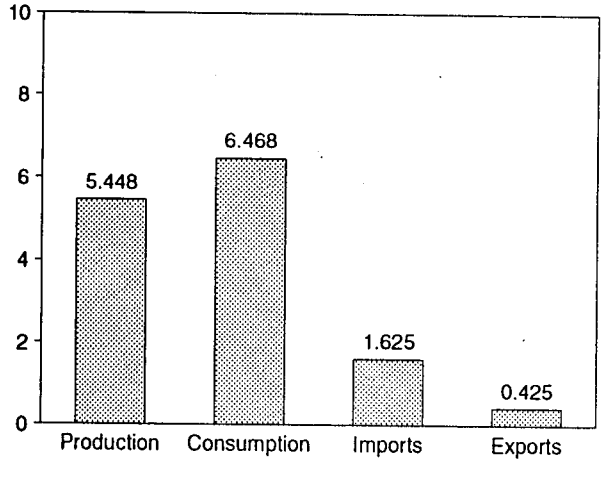
Consumption, Production, and Imports, 1973-1991



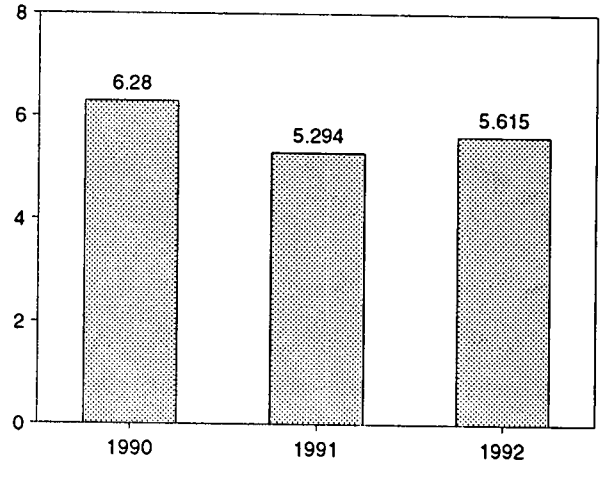
Consumption, Production, and Imports, Monthly



Overview, May 1992



Net Imports, January-May



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

Table 1.2 Energy Overview

(Quadrillion Btu)

	Production[a]	Consumption[a,b]	Imports	Exports	Net Imports
1973 Total	62.060	74.282	14.731	2.051	12.680
1974 Total	60.835	72.543	14.413	2.223	12.190
1975 Total	59.860	70.546	14.111	2.359	11.752
1976 Total	59.892	74.362	16.837	2.188	14.648
1977 Total	60.219	76.288	20.090	2.071	18.019
1978 Total	61.103	78.089	19.254	1.931	17.323
1979 Total	63.801	78.898	19.616	2.870	16.746
1980 Total	64.761	75.955	15.971	3.723	12.247
1981 Total	64.421	73.990	13.975	4.329	9.646
1982 Total	63.962	70.848	12.092	4.633	7.460
1983 Total	61.279	70.524	12.027	3.717	8.310
1984 Total	65.962	74.144	12.767	3.804	8.963
1985 Total	64.871	73.981	12.103	4.231	7.872
1986 Total	64.350	74.297	14.438	4.055	10.382
1987 Total	64.952	76.895	15.764	3.853	11.911
1988 Total	66.105	80.218	17.564	4.415	13.149
1989 Total	66.129	81.326	18.947	4.765	14.181
1990 January	6.035	7.533	1.829	.361	1.468
February	5.462	6.741	1.512	.330	1.182
March	5.895	7.025	1.587	.428	1.159
April	5.460	6.497	1.524	.387	1.136
May	5.651	6.491	1.747	.412	1.335
June	5.519	6.505	1.679	.412	1.267
July	5.539	6.761	1.798	.386	1.412
August	5.833	6.976	1.716	.438	1.277
September	5.405	6.338	1.448	.441	1.007
October	5.830	6.559	1.397	.418	.979
November	5.639	6.546	1.396	.460	.936
December	5.585	7.289	1.355	.437	.918
Total	67.853	81.262	18.987	4.910	14.077
1991 January	5.923	R7.814	R1.481	R.398	R1.083
February	5.461	R6.663	R1.295	R.466	R.829
March	5.794	R6.909	R1.389	R.396	R.993
April	5.458	R6.317	R1.478	R.325	R1.154
May	5.603	R6.406	R1.722	.486	R1.235
June	5.468	R6.430	R1.613	R.423	R1.190
July	5.656	R6.832	R1.588	.456	R1.132
August	5.794	R6.812	R1.749	R.446	R1.303
September	5.479	R6.361	R1.559	R.429	R1.130
October	5.795	R6.574	R1.557	R.428	R1.129
November	5.535	R6.757	R1.545	R.461	R1.084
December	5.708	R7.424	R1.550	R.489	R1.061
Total	67.675	R81.302	R18.527	R5.201	R13.325
1992 January	R5.961	R7.688	1.589	.456	1.133
February	R5.476	R7.028	1.357	.370	.988
March	R5.680	R7.101	1.490	.418	1.072
April	R5.356	R6.607	1.635	.413	1.223
May	5.448	6.468	1.625	.425	1.200
5-Month Total	27.921	34.892	7.696	2.081	5.615
1991 5-Month Total	28.238	34.109	7.365	2.071	5.294
1990 5-Month Total	28.503	34.287	8.198	1.918	6.280

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

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

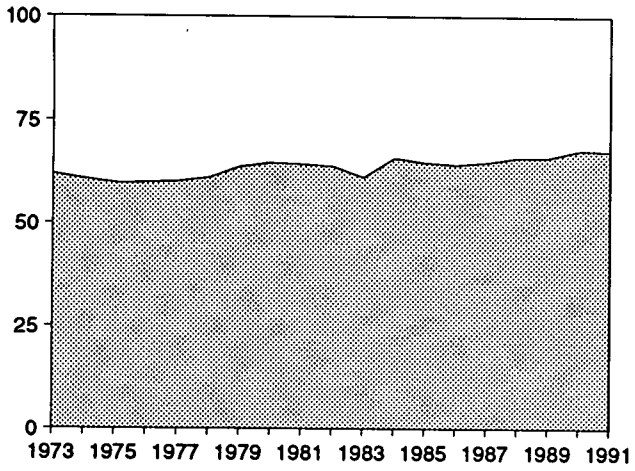
R=Revised data.

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

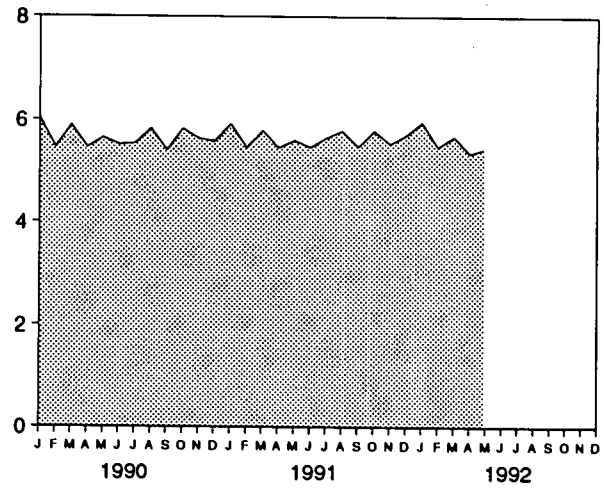
Sources: • **Production:** Table 1.3. • **Consumption:** Table 1.4. • **Imports and Exports:** Tables 3.1b, 4.2, 6.1, A3-A9, and Section 2, "Energy Consumption Notes and Sources," Notes 8 and 9. • **Net Imports:** Table 1.5.

Figure 1.2 Energy Production
(Quadrillion Btu)

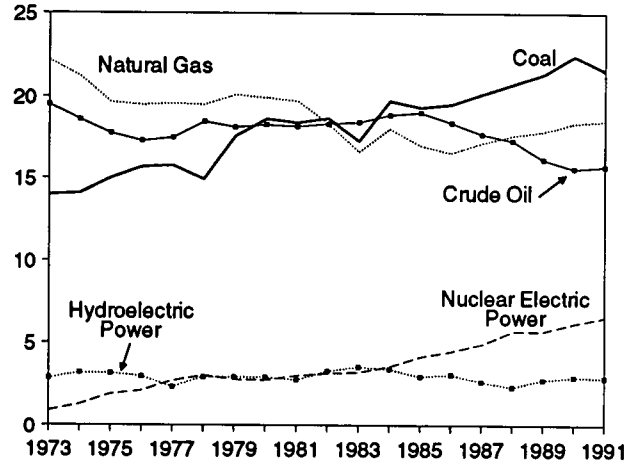
Total Production, 1973-1991



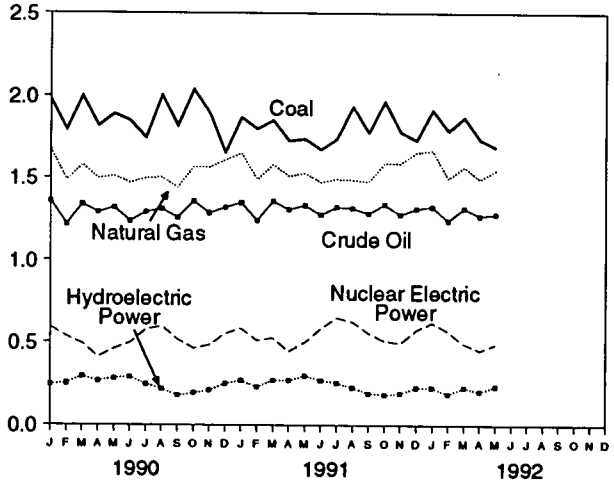
Total Production, Monthly



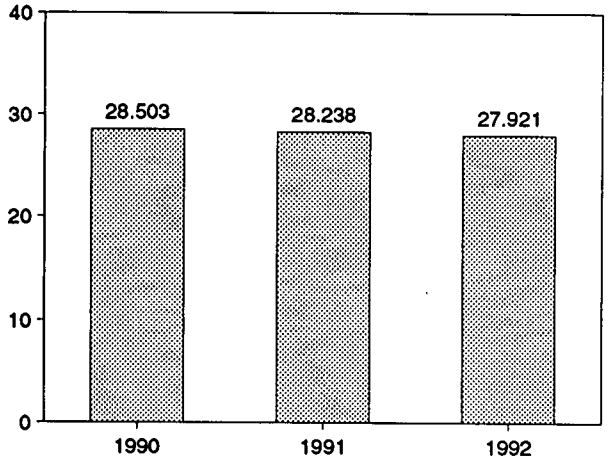
Production by Major Sources, 1973-1991



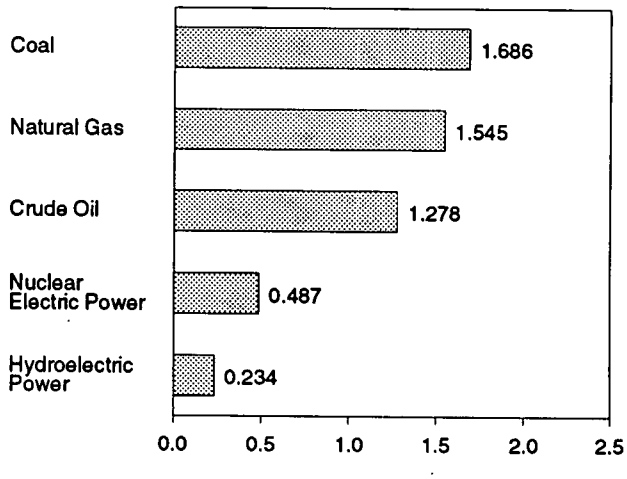
Production by Major Sources, Monthly



Total Production, January-May



Production by Major Sources, May 1992



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

Table 1.3 Energy Production by Source

(Quadrillion Btu)

	Coal	Natural Gas (Dry)	Crude Oil[a]	Natural Gas Plant Liquids	Nuclear Electric Power	Hydro-electric Power[b]	Other[c]	Total[d]
1973 Total	13.993	22.187	19.493	2.569	0.910	2.861	0.046	62.060
1974 Total	14.074	21.210	18.575	2.471	1.272	3.177	.056	60.835
1975 Total	14.990	19.640	17.729	2.374	1.900	3.155	.072	59.860
1976 Total	15.654	19.480	17.262	2.327	2.111	2.976	.081	59.892
1977 Total	15.755	19.565	17.454	2.327	2.702	2.333	.082	60.219
1978 Total	14.910	19.485	18.434	2.245	3.024	2.937	.068	61.103
1979 Total	17.539	20.076	18.104	2.286	2.776	2.931	.089	63.801
1980 Total	18.597	19.908	18.249	2.254	2.739	2.900	.114	64.761
1981 Total	18.376	19.699	18.146	2.307	3.008	2.758	.127	64.421
1982 Total	18.639	18.319	18.309	2.191	3.131	3.266	.108	63.962
1983 Total	17.246	16.593	18.392	2.184	3.203	3.527	.133	61.279
1984 Total	19.719	18.008	18.848	2.274	3.553	3.386	.174	65.962
1985 Total	19.325	16.980	18.992	2.241	4.149	2.970	.213	64.871
1986 Total	19.510	16.541	18.376	2.149	4.471	3.071	.232	64.350
1987 Total	20.142	17.136	17.675	2.215	4.906	2.635	.245	64.952
1988 Total	20.737	17.599	17.279	2.260	5.661	2.334	.235	66.105
1989 Total	21.345	17.847	16.117	2.158	5.677	2.767	.217	66.129
1990 January	1.976	1.668	1.357	.183	.589	.245	.018	6.035
February	1.790	1.485	1.218	.168	.534	.252	.016	5.462
March	1.999	1.575	1.337	.181	.492	.293	.018	5.895
April	1.815	1.494	1.289	.171	.411	.265	.014	5.460
May	1.888	1.509	1.318	.178	.459	.282	.017	5.651
June	1.846	1.468	1.236	.167	.495	.290	.017	5.519
July	1.741	1.494	1.290	.176	.573	.247	.017	5.539
August	2.004	1.499	1.310	.187	.595	.220	.017	5.833
September	1.814	1.439	1.257	.183	.518	.178	.016	5.405
October	2.039	1.563	1.356	.198	.463	.194	.017	5.830
November	1.893	1.560	1.285	.194	.481	.209	.016	5.639
December	1.651	1.606	1.319	.190	.551	.250	.017	5.585
Total	22.456	18.362	15.571	2.175	6.161	2.926	.202	67.853
1991 January	1.867	1.647	1.348	.194	.581	.268	.017	5.923
February	1.797	1.488	1.240	.181	.511	.229	.014	5.461
March	1.850	1.577	1.357	.199	.525	.270	.016	5.794
April	1.724	1.509	1.306	.190	.445	.269	.015	5.458
May	1.736	1.527	1.332	.196	.499	.298	.015	5.603
June	1.671	1.472	1.274	.186	.579	.270	.016	5.468
July	1.735	1.490	1.321	.191	.649	.254	.016	5.656
August	1.934	1.485	1.315	.192	.624	.227	.016	5.794
September	1.775	1.475	1.282	.185	.554	.193	.015	5.479
October	1.966	1.585	1.337	.199	.509	.183	.016	5.795
November	1.779	1.585	1.275	.194	.494	.191	.017	5.535
December	1.727	1.652	1.312	.199	.572	.228	.017	5.708
Total	21.563	18.491	15.701	2.306	6.542	2.880	.192	67.675
1992 January	R1.914	1.664	1.324	.199	.618	.226	.017	R5.961
February	R1.786	R1.496	1.240	.187	.564	.188	.015	R5.476
March	R1.868	R1.565	1.315	.200	.490	.226	.017	R5.680
April	1.732	R1.491	1.269	.195	.451	.204	.015	R5.356
May	1.686	1.545	1.278	.201	.487	.234	.016	5.448
5-Month Total	8.986	7.761	6.426	.981	2.610	1.077	.080	27.921
1991 5-Month Total	8.975	7.748	6.584	.959	2.560	1.333	.078	28.238
1990 5-Month Total	9.468	7.731	6.517	.881	2.484	1.338	.083	28.503

[a] Includes lease condensate.
[b] Electric utility and industrial production of hydroelectric power.
[c] "Other" production is electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
[d] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.

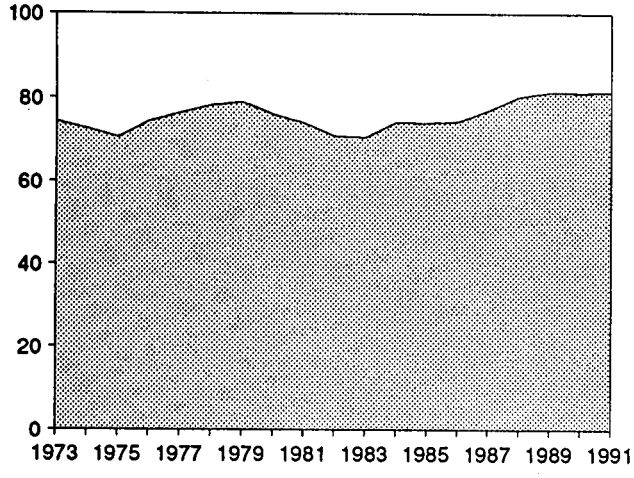
R=Revised data.

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

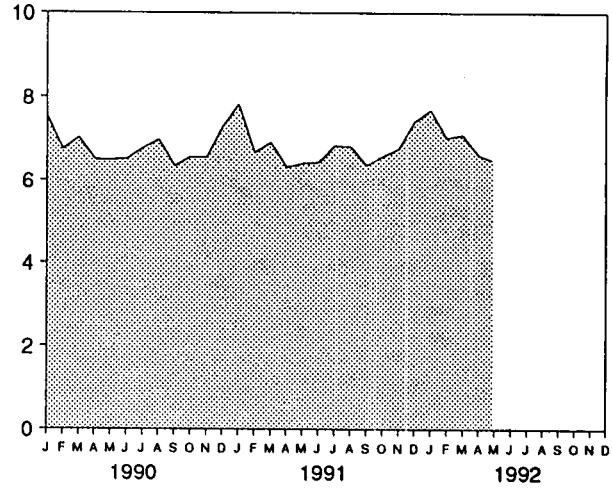
Sources: • **Coal:** Tables 6.1 and A6-A8. • **Natural Gas (Dry):** Tables 4.1 and A5. • **Crude Oil and Natural Gas Plant Liquids:** Tables 3.1a and A3. • **Nuclear Electric Power:** Tables 7.1 and A9. • **Hydroelectric Power:** Table 7.1; Section 2, "Energy Consumption Notes and Sources," Note 7; and Table A9. • **Other:** Section 2, "Energy Consumption Notes and Sources," Note 8, and Table A9.

Figure 1.3 Energy Consumption
(Quadrillion Btu)

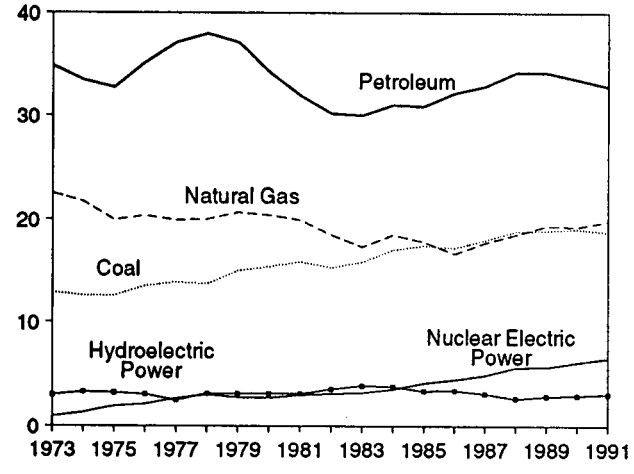
Total Consumption, 1973-1991



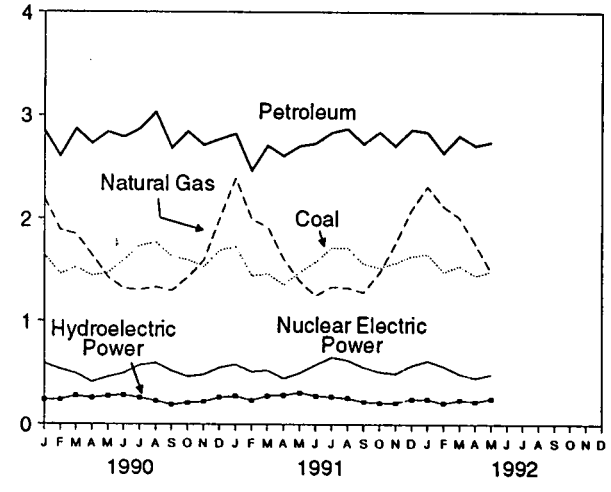
Total Consumption, Monthly



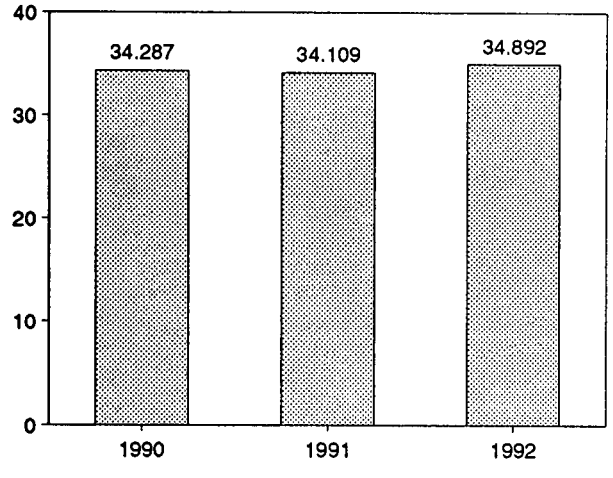
Consumption by Major Sources, 1973-1991



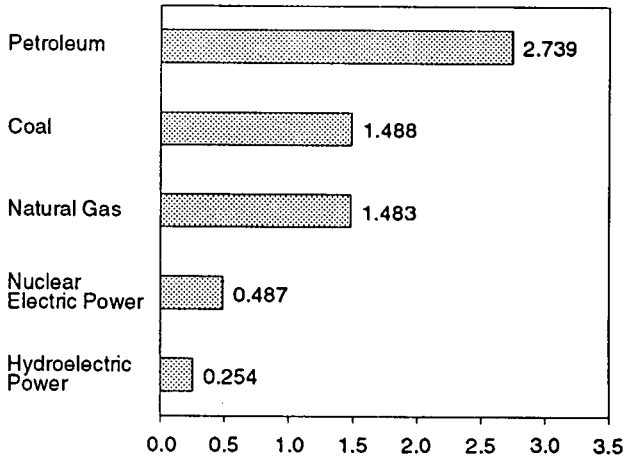
Consumption by Major Sources, Monthly



Total Consumption, January-May



Consumption by Major Sources, May 1992



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

Table 1.4 Energy Consumption by Source

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Nuclear Electric Power	Hydro-electric Power[b]	Other[c]	Total[d]
1973 Total	12.971	22.512	34.840	0.910	3.010	0.039	74.282
1974 Total	12.663	21.732	33.455	1.272	3.309	.112	72.543
1975 Total	12.663	19.948	32.731	1.900	3.219	.086	70.546
1976 Total	13.584	20.345	35.175	2.111	3.066	.081	74.362
1977 Total	13.922	19.931	37.122	2.702	2.515	.097	76.288
1978 Total	13.765	20.000	37.965	3.024	3.141	.193	78.089
1979 Total	15.039	20.666	37.123	2.776	3.141	.152	78.898
1980 Total	15.423	20.394	34.202	2.739	3.118	.079	75.955
1981 Total	15.907	19.928	31.931	3.008	3.105	.111	73.990
1982 Total	15.322	18.505	30.231	3.131	3.572	.086	70.848
1983 Total	15.894	17.357	30.054	3.203	3.899	.118	70.524
1984 Total	17.071	18.507	31.051	3.553	3.800	.163	74.144
1985 Total	17.478	17.834	30.922	4.149	3.398	.199	73.981
1986 Total	17.261	16.708	32.196	4.471	3.446	.215	74.297
1987 Total	18.008	17.745	32.865	4.906	3.117	.253	76.895
1988 Total	18.846	18.552	34.222	5.661	2.662	.274	80.218
1989 Total	18.925	19.384	34.211	5.677	2.881	.248	81.326
1990 January	1.646	2.194	2.846	.589	.242	.018	7.533
February	1.460	1.888	2.602	.534	.241	.016	6.741
March	1.523	1.847	2.866	.492	.278	.019	7.025
April	1.445	1.645	2.724	.411	.258	.014	6.497
May	1.472	1.430	2.837	.459	.276	.017	6.491
June	1.599	1.323	2.786	.495	.285	.018	6.505
July	1.734	1.309	2.866	.573	.259	.021	6.761
August	1.769	1.337	3.028	.595	.230	.017	6.976
September	1.634	1.302	2.680	.518	.187	.017	6.338
October	1.599	1.429	2.841	.463	.210	.018	6.559
November	1.530	1.591	2.710	.481	.219	.015	6.546
December	1.691	1.999	2.767	.551	.263	.018	7.289
Total	19.101	19.294	33.553	6.161	2.946	.207	81.262
1991 January	1.730	R2.390	2.819	.581	.277	.018	R7.814
February	1.445	R1.993	2.463	.511	.235	.015	R6.663
March	1.465	R1.916	2.706	.525	.280	.018	R6.909
April	1.359	R1.607	2.607	.445	.284	.016	R6.317
May	1.481	R1.396	2.702	.499	.311	.016	R6.406
June	1.579	R1.254	2.726	.579	.278	.015	R6.430
July	1.719	R1.341	2.832	.649	.271	.019	R6.832
August	1.719	R1.331	2.868	.624	.256	.014	R6.812
September	1.560	R1.287	2.721	.554	.221	.019	R6.361
October	1.525	R1.477	2.837	.509	.211	.015	R6.574
November	1.572	R1.760	2.702	.494	.211	.018	R6.757
December	1.637	R2.087	2.862	.572	.248	.017	R7.424
Total	18.791	R19.841	32.845	6.542	3.082	.201	R81.302
1992 January	R1.657	R2.310	2.836	.618	.246	.021	R7.688
February	R1.482	2.121	2.638	.564	.206	.018	R7.028
March	R1.541	R2.011	2.802	.490	.237	.020	R7.101
April	1.449	R1.758	2.709	.451	.222	.018	R6.607
May	1.488	1.483	2.739	.487	.254	.017	6.468
5-Month Total	7.617	9.683	13.724	2.610	1.164	.093	34.892
1991 5-Month Total	7.480	9.302	13.297	2.560	1.387	.083	34.109
1990 5-Month Total	7.545	9.004	13.875	2.484	1.295	.083	34.287

[a] Includes supplemental gaseous fuels.

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

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

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

R=Revised data.

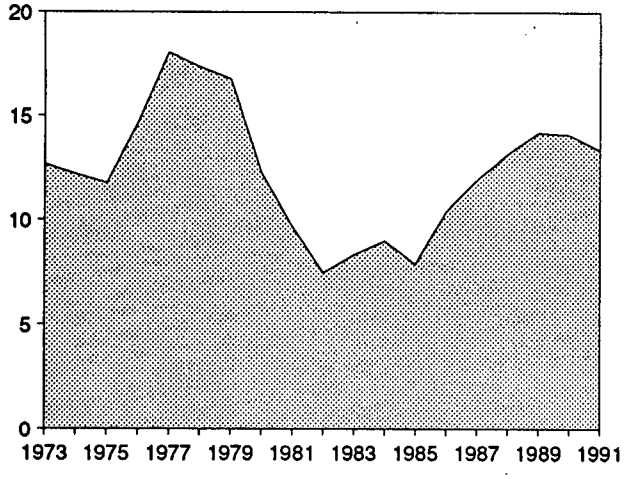
Notes: • See Note 2 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **Coal:** Tables 6.1 and A6-A8. • **Natural Gas:** Tables 4.2 and A5. • **Petroleum:** Tables 3.1a and A4. • **Nuclear Electric Power:** Tables 7.1 and A9. • **Hydroelectric Power:** Table 7.1; Section 2, "Energy Consumption Notes and Sources," Note 8; and Table A9. • **Other:** Section 2, "Energy Consumption Notes and Sources," Note 7, and Table A9.

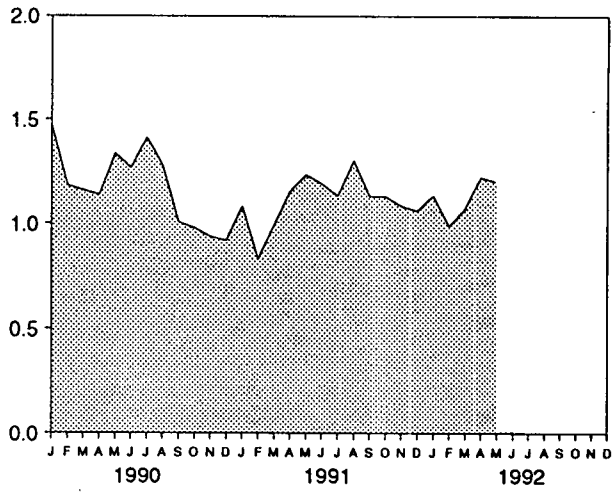
Figure 1.4 Energy Net Imports

(Quadrillion Btu, Except as Noted)

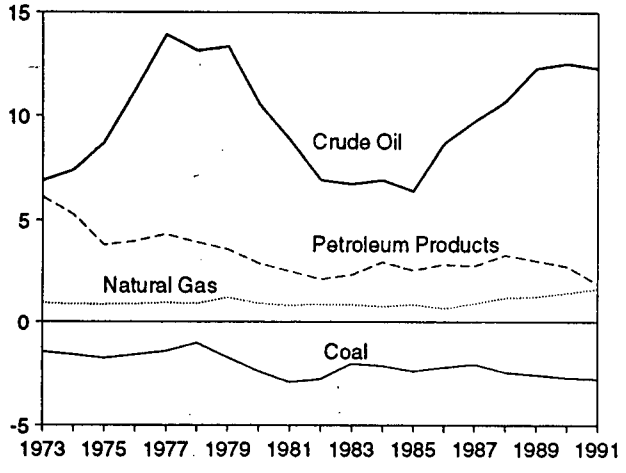
Total Net Imports, 1973-1991



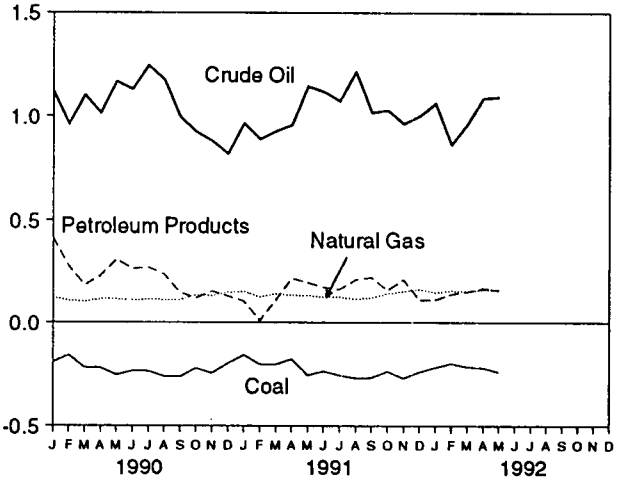
Net Imports, Monthly



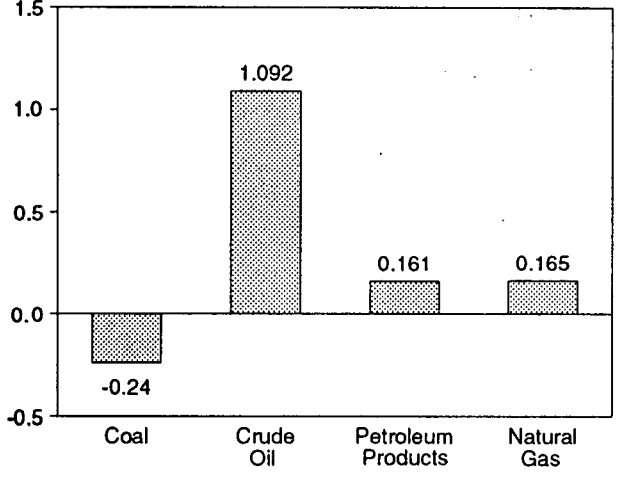
Net Imports by Major Sources, 1973-1991



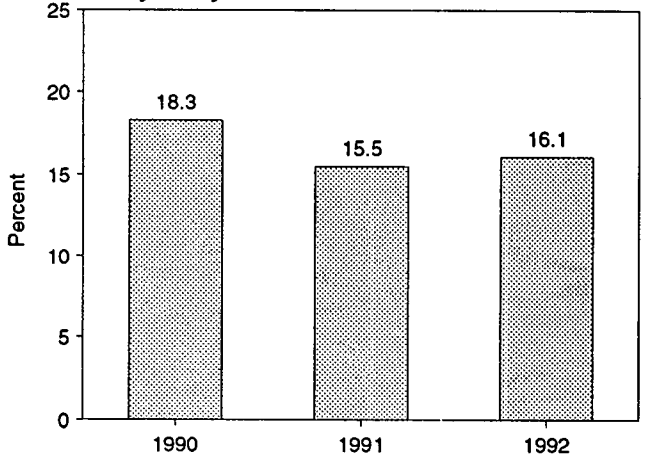
Net Imports by Major Sources, Monthly



Net Imports by Major Sources, May 1992



Net Imports as Share of Consumption, January-May



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

Table 1.5 Energy Net Imports by Source

(Quadrillion Btu)

	Coal	Natural Gas	Crude Oil[a]	Petroleum Products[b]	Electricity[c]	Coal Coke	Total
1973 Total	-1.422	0.981	6.883	6.097	0.148	-0.007	12.680
1974 Total	-1.568	.907	7.389	5.273	.133	.056	12.190
1975 Total	-1.738	.904	8.708	3.800	.064	.014	11.752
1976 Total	-1.567	.922	11.221	3.982	.089	(s)	14.648
1977 Total	-1.401	.981	13.921	4.321	.182	.015	18.019
1978 Total	-1.004	.941	13.125	3.932	.204	.125	17.323
1979 Total	-1.702	1.243	13.328	3.603	.211	.063	16.746
1980 Total	-2.391	.957	10.586	2.912	.217	-.035	12.247
1981 Total	-2.918	.857	8.854	2.522	.347	-.016	9.646
1982 Total	-2.768	.898	6.917	2.128	.306	-.022	7.460
1983 Total	-2.013	.885	6.731	2.351	.372	-.016	8.310
1984 Total	-2.119	.792	6.918	2.970	.414	-.011	8.963
1985 Total	-2.389	.896	6.381	2.570	.428	-.013	7.872
1986 Total	-2.193	.686	8.676	2.855	.375	-.017	10.382
1987 Total	-2.049	.937	9.748	2.784	.483	.009	11.911
1988 Total	-2.446	1.221	10.698	3.308	.328	.040	13.149
1989 Total	-2.566	1.278	12.296	3.029	.113	.030	14.181
1990 January	-.191	.127	1.119	.415	-.003	(s)	1.468
February	-.157	.111	.963	.276	-.011	(s)	1.182
March	-.220	.106	1.101	.186	-.015	.001	1.159
April	-.220	.118	1.015	.231	-.007	-.001	1.136
May	-.254	.118	1.167	.310	-.006	(s)	1.335
June	-.235	.112	1.128	.266	-.005	.001	1.267
July	-.236	.116	1.245	.272	.011	.003	1.412
August	-.261	.114	1.175	.239	.010	-.001	1.277
September	-.263	.114	.996	.150	.009	.001	1.007
October	-.222	.138	.925	.123	.015	.001	.979
November	-.246	.136	.881	.157	.010	-.001	.936
December	-.198	.151	.819	.133	.013	.001	.918
Total	-2.705	1.464	12.536	2.757	.020	.005	14.077
1991 January	-.156	R.155	.967	.108	E.008	.001	R1.083
February	-.202	R.128	.889	.008	E.006	.001	R.829
March	-.203	R.143	.928	.113	E.011	.002	R.993
April	-.176	R.137	.958	.219	E.015	.001	R1.154
May	-.256	R.135	1.144	.199	E.014	.001	R1.235
June	-.236	R.127	1.117	.176	E.008	-.001	R1.190
July	-.256	R.128	1.073	.166	E.017	.003	R1.132
August	-.270	R.118	1.215	.212	E.029	-.002	R1.303
September	-.267	R.124	1.018	.223	E.028	.004	R1.130
October	-.237	R.145	1.031	.162	E.028	-.001	R1.129
November	-.270	R.156	.965	.213	E.019	.001	R1.084
December	-.240	R.165	1.002	.114	E.020	(s)	R1.061
Total	-2.769	R1.663	12.308	1.912	E.202	.009	R13.325
1992 January	-.218	.150	1.064	.114	E.020	.004	1.133
February	-.198	.159	.864	.142	E.018	.003	.988
March	-.215	.156	.962	.154	E.011	.003	1.072
April	-.220	.164	1.087	.171	E.018	.003	1.223
May	-.240	.165	1.092	.161	E.021	.001	1.200
5-Month Total	-1.090	.793	5.069	.742	E.087	.014	5.615
1991 5-Month Total	-.993	.697	4.886	.646	E.054	.005	5.294
1990 5-Month Total	-1.043	.582	5.366	1.417	-.043	(s)	6.280

[a] Crude oil, lease condensate, and imports of crude oil for the Strategic Petroleum Reserve.
[b] Petroleum products, unfinished oils, pentanes plus, and gasoline blending components.
[c] Assumed to be hydroelectricity and estimated at the average input heat rate for fossil-fuel steam-electric power plant generation, which has ranged from 10.2 thousand Btu to 10.5 thousand Btu per kilowatthour since 1973. Actual heat rates applied in converting kilowatthours to Btu are listed by year in Table A9.

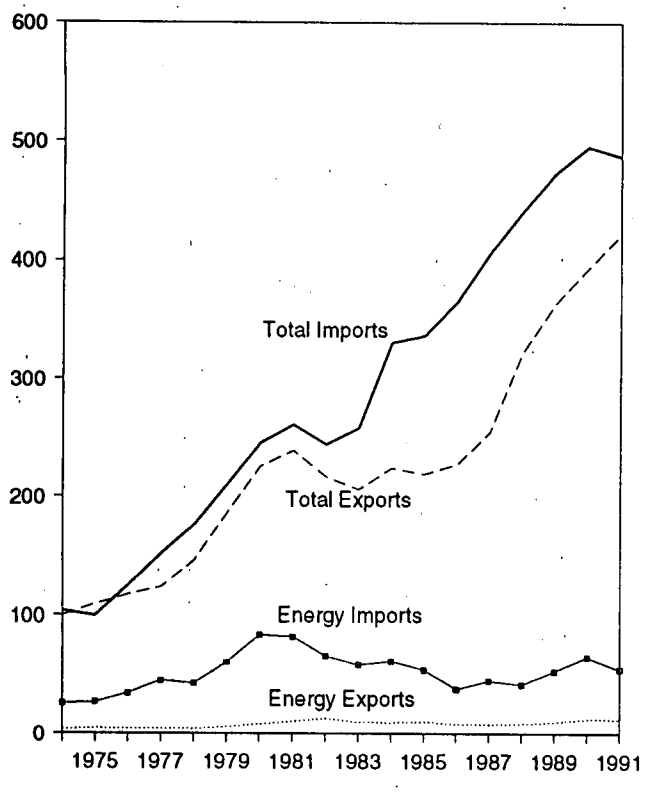
R=Revised data. E=Estimate. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.

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

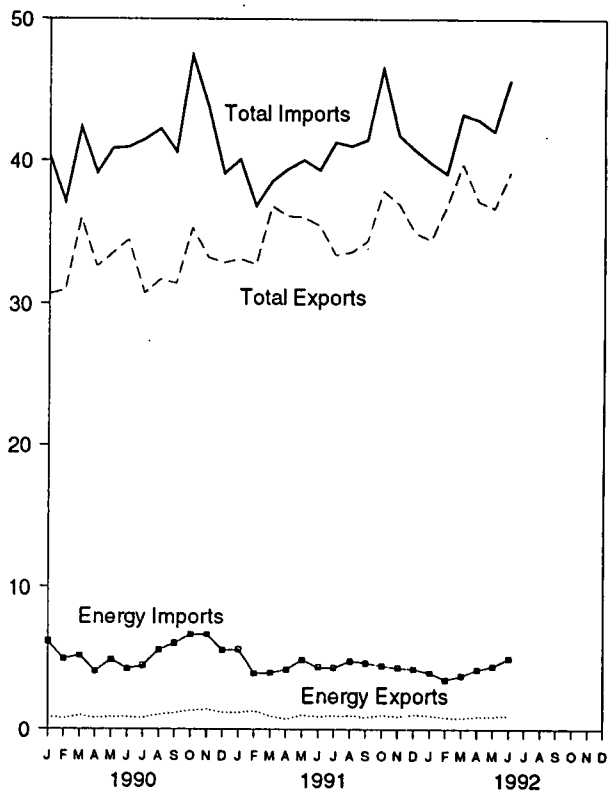
Sources: • **Coal:** Tables 6.1 and A6-A8. • **Natural Gas:** Tables 4.2 and A5. • **Crude Oil and Petroleum Products:** Tables 3.1b and A3. • **Electricity:** Section 2, "Energy Consumption Notes and Sources," Note 8, and Table A9. • **Coal Coke:** Section 2, "Energy Consumption Notes and Sources," Note 9, and Table A8.

Figure 1.5 Merchandise Trade Value
(Billion Dollars)

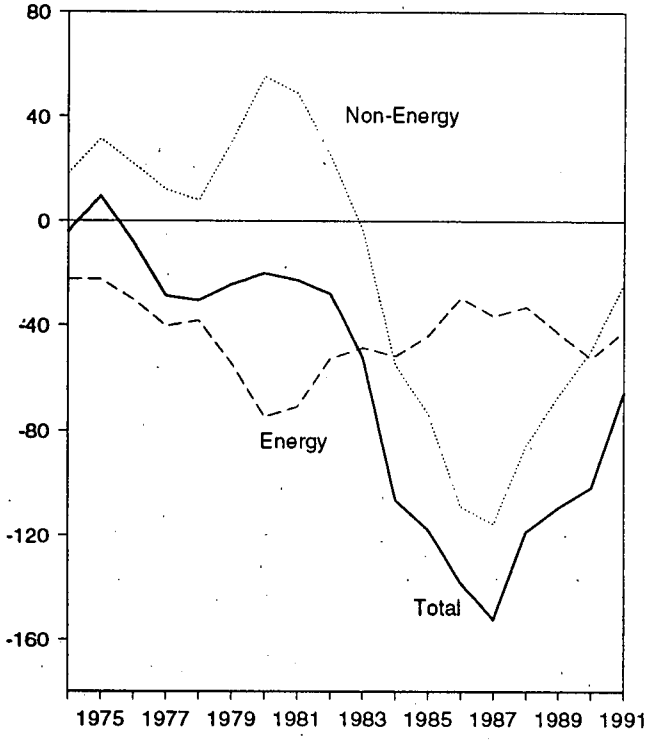
Imports and Exports, 1974-1991



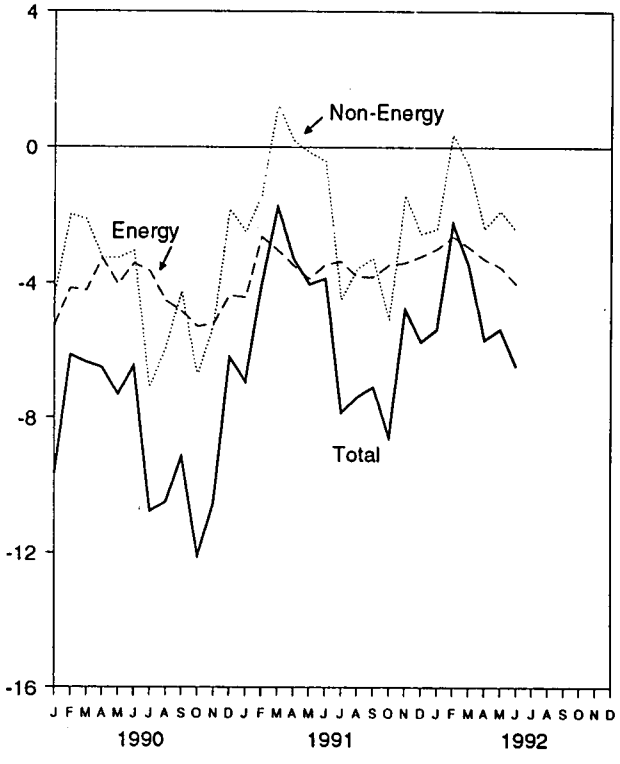
Imports and Exports, Monthly



Trade Balance, 1974-1991



Trade Balance, Monthly



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

Table 1.6 Merchandise Trade Value

(Million Dollars)

	Petroleum			Energy			Non-Energy Balance	Total Merchandise		
	Exports	Imports	Balance	Exports	Imports	Balance		Exports	Imports	Balance
1974 Total	792	24,668	-23,876	3,444	25,454	-22,010	18,126	99,437	103,321	-3,884
1975 Total	907	25,197	-24,289	4,470	26,476	-22,006	31,557	108,856	99,305	9,551
1976 Total	998	32,226	-31,228	4,226	33,996	-29,770	21,950	116,794	124,614	-7,820
1977 Total	1,276	42,368	-41,093	4,184	44,537	-40,354	12,001	123,182	151,534	-28,353
1978 Total	1,561	39,526	-37,965	3,881	42,096	-38,215	8,010	145,847	176,052	-30,205
1979 Total	1,914	56,715	-54,801	5,621	59,998	-54,377	30,455	186,363	210,285	-23,922
1980 Total	2,833	78,637	-75,803	7,982	82,924	-74,942	55,246	225,566	245,262	-19,696
1981 Total	3,696	76,659	-72,963	10,279	81,360	-71,081	48,814	238,715	260,982	-22,267
1982 Total	5,947	60,458	-54,511	12,729	65,409	-52,680	25,170	216,442	243,952	-27,510
1983 Total	4,557	53,217	-48,659	9,500	57,952	-48,452	-3,957	205,639	258,048	-52,409
1984 Total	4,470	56,924	-52,454	9,311	60,980	-51,669	-55,033	223,976	330,678	-106,703
1985 Total	4,707	50,475	-45,768	9,971	53,917	-43,946	-73,765	218,815	336,526	-117,712
1986 Total	3,640	35,142	-31,503	8,115	37,310	-29,195	-109,084	227,159	365,438	-138,279
1987 Total	3,922	42,285	-38,363	7,713	44,220	-36,506	-115,613	254,122	406,241	-152,119
1988 Total	3,693	38,787	-35,094	8,235	41,042	-32,807	-85,720	322,426	440,952	-118,526
1989 Total	5,021	49,704	-44,683	9,869	52,779	-42,910	-66,490	363,812	473,211	-109,399
1990 January	486	5,923	-5,437	881	6,171	-5,290	-4,349	30,664	40,304	-9,640
February	436	4,704	-4,269	781	4,938	-4,157	-1,993	30,962	37,112	-6,150
March	514	4,867	-4,352	976	5,205	-4,229	-2,140	35,971	42,339	-6,369
April	392	3,970	-3,578	828	4,101	-3,274	-3,253	32,617	39,144	-6,527
May	390	4,650	-4,259	872	4,913	-4,041	-3,267	33,539	40,846	-7,308
June	388	4,062	-3,674	866	4,286	-3,420	-3,056	34,470	40,946	-6,476
July	385	4,238	-3,853	837	4,482	-3,645	-7,114	30,736	41,495	-10,759
August	568	5,380	-4,812	1,055	5,601	-4,546	-5,963	31,723	42,232	-10,509
September	682	5,797	-5,115	1,175	6,050	-4,875	-4,282	31,444	40,602	-9,157
October	893	6,331	-5,438	1,332	6,659	-5,327	-6,758	35,310	47,395	-12,085
November	961	6,371	-5,410	1,426	6,673	-5,247	-5,282	33,267	43,796	-10,529
December	807	5,292	-4,485	1,204	5,581	-4,377	-1,834	32,889	39,100	-6,211
Total	6,901	61,583	-54,682	12,233	64,661	-52,428	-49,290	393,592	495,311	-101,718
1991 January	881	5,291	-4,410	1,188	5,627	-4,439	-2,492	33,165	40,095	-6,930
February	928	3,667	-2,739	1,327	3,958	-2,631	-1,424	32,775	36,830	-4,056
March	565	3,698	-3,133	951	3,971	-3,020	1,267	36,820	38,573	-1,753
April	397	3,976	-3,579	748	4,232	-3,484	198	36,137	39,424	-3,287
May	562	4,646	-4,084	1,031	4,904	-3,873	-159	36,024	40,056	-4,033
June	506	4,155	-3,649	936	4,387	-3,451	-413	35,480	39,344	-3,864
July	513	4,092	-3,579	987	4,347	-3,360	-4,493	33,444	41,297	-7,853
August	495	4,589	-4,094	998	4,824	-3,826	-3,571	33,633	41,030	-7,397
September	415	4,451	-4,036	884	4,699	-3,815	-3,271	34,391	41,478	-7,087
October	584	4,182	-3,598	1,031	4,490	-3,459	-5,111	37,897	46,466	-8,570
November	488	4,059	-3,570	943	4,346	-3,403	-1,406	36,970	41,778	-4,808
December	620	3,973	-3,353	1,058	4,271	-3,213	-2,549	34,996	40,758	-5,762
Total	6,954	50,777	-43,823	12,081	54,056	-41,974	-23,425	421,730	487,129	-65,399
1992 January	604	3,654	-3,050	1,001	3,992	-2,991	-2,407	34,469	39,867	-5,398
February	451	3,154	-2,703	864	3,490	-2,626	386	36,860	39,099	-2,240
March	417	3,434	-3,017	817	3,748	-2,931	-537	39,784	43,252	-3,468
April	516	3,890	-3,374	924	4,220	-3,297	-2,409	37,173	42,878	-5,705
May	521	4,178	-3,657	947	4,468	-3,521	R-1,867	R36,696	R42,085	R-5,389
June	559	4,690	-4,131	960	4,980	-4,020	-2,459	39,174	45,654	-6,479
6-Month Total	3,068	22,999	-19,931	5,512	24,898	-19,387	-9,292	224,156	252,835	-28,679
1991 6-Month Total	3,839	25,432	-21,593	6,181	27,080	-20,899	-3,023	210,400	234,322	-23,922
1990 6-Month Total	2,606	28,175	-25,569	5,204	29,615	-24,411	-18,058	198,223	240,691	-42,469

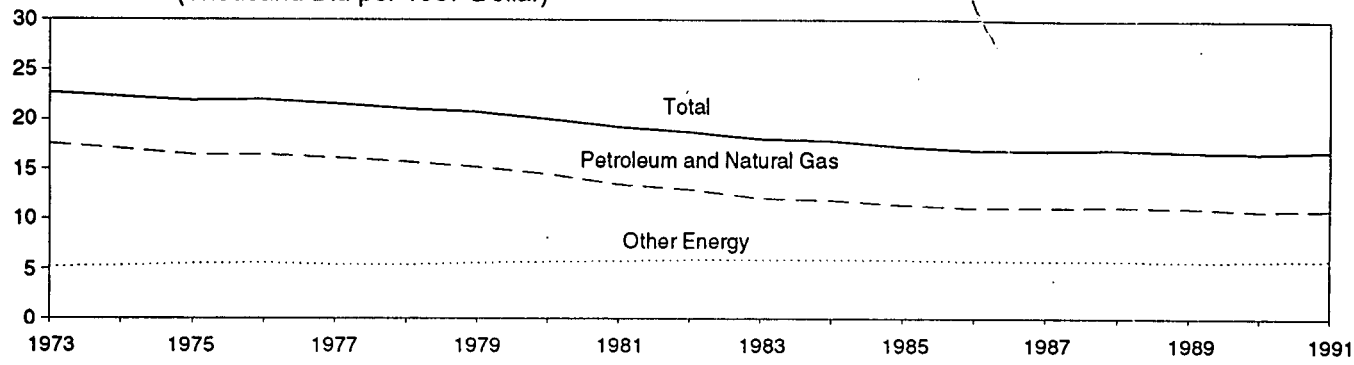
R=Revised data.

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

Sources: • **U.S. Department of Commerce, Bureau of the Census, Foreign Trade Division: Petroleum Exports—1974-1987**—"U.S. Exports," FT410, December issues. **1988**—"Report on U.S. Merchandise Trade 1988 Final Revisions." **1989**—"Report on U.S. Merchandise Trade 1989 Revisions." **1990**—"U.S. Merchandise Trade: 1990 Final Report." **1991**—"U.S. Merchandise Trade, 1991 Final Report," May 13, 1992. **1992**—"U.S. Merchandise Trade," FT900, monthly. **Petroleum Imports—1974-1987**—"U.S. Merchandise Trade," FT900, December issues, 1975-1988. **1988**—"Report on U.S. Merchandise Trade 1988 Final Revisions." **1989**—"Report on U.S. Merchandise Trade 1989 Revisions." **1990**—"U.S. Merchandise Trade: 1990 Final Report." **1991**—"U.S. Merchandise Trade, 1991 Final Report," May 13, 1992. **1992**—"U.S. Merchandise Trade," FT900, monthly. **Energy Exports and Imports—1974-1987**—U.S. merchandise trade press releases and database printouts for adjustments. **1988**—January-July, monthly FT900 supplement, 1989 issues. August-December, monthly FT900, 1989 issues. **1989**—Monthly FT900, 1990 issues. **1990**—"U.S. Merchandise Trade: 1990 Final Report." **1991**—"U.S. Merchandise Trade, 1991 Final Report," May 13, 1992. **1992**—Monthly FT900 issues. **Total Merchandise—1974-1987**—U.S. merchandise trade press releases and database printouts for adjustments. **1988**—"Report on U.S. Merchandise Trade 1988 Final Revisions," August 18, 1989. **1989**—"Report on U.S. Merchandise Trade 1989 Revisions," July 10, 1990. **1990**—"U.S. Merchandise Trade: 1990 Final Report," May 10, 1991. **1991**—"U.S. Merchandise Trade, 1991 Final Report," May 13, 1992. **1992**—Monthly FT900 issues. **Petroleum Balance, Energy Balance, and Non-Energy Balance**—Calculated by the Energy Information Administration.

Figure 1.6 Energy Consumption per Dollar of Gross Domestic Product

(Thousand Btu per 1987 Dollar)



Source: Table 1.7.

Table 1.7 Energy Consumption per Dollar of Gross Domestic Product

(Seasonally Adjusted at Annual Rates)

	Energy Consumption			Gross Domestic Product (GDP)	Energy Consumption per Dollar of GDP		
	Petroleum and Natural Gas	Other Energy	Total[a]		Petroleum and Natural Gas	Other Energy	Total
	Quadrillion Btu			Trillion 1987 Dollars	Thousand Btu per 1987 Dollar		
1973 Year	57.352	16.930	74.282	3.269	17.5	5.2	22.7
1974 Year	55.187	17.356	72.543	3.248	17.0	5.3	22.3
1975 Year	52.678	17.868	70.546	3.222	16.4	5.5	21.9
1976 Year	55.520	18.842	74.362	3.381	16.4	5.6	22.0
1977 Year	57.053	19.235	76.288	3.533	16.1	5.4	21.6
1978 Year	57.966	20.123	78.089	3.704	15.7	5.4	21.1
1979 Year	57.789	21.109	78.898	3.797	15.2	5.6	20.8
1980 Year	54.596	21.359	75.955	3.776	14.5	5.7	20.1
1981 Year	51.859	22.131	73.990	3.843	13.5	5.8	19.3
1982 Year	48.736	22.112	70.848	3.760	13.0	5.9	18.8
1983 Year	47.411	23.113	70.524	3.907	12.1	5.9	18.1
1984 Year	49.558	24.586	74.144	4.149	11.9	5.9	17.9
1985 Year	48.756	25.225	73.981	4.280	11.4	5.9	17.3
1986 Year	48.904	25.393	74.297	4.405	11.1	5.8	16.9
1987 Year	50.610	26.285	76.895	4.540	11.1	5.8	16.9
1988 Year	52.775	27.443	80.218	4.719	11.2	5.8	17.0
1989 Year	53.595	27.731	81.326	R4.838	11.1	5.7	16.8
1990 1st Quarter	52.073	28.426	80.499	R4.891	R10.6	5.8	16.5
2nd Quarter	54.124	28.438	82.562	R4.903	11.0	5.8	16.8
3rd Quarter	53.492	28.367	81.859	R4.883	R11.0	5.8	R16.8
4th Quarter	51.691	28.438	80.129	R4.834	R10.7	5.9	R16.6
Year	52.847	28.415	81.262	R4.878	10.8	5.8	R16.7
1991 1st Quarter	R52.382	R28.283	R80.665	R4.797	10.9	5.9	16.8
2nd Quarter	R52.223	R28.996	R81.219	R4.817	10.8	6.0	R16.9
3rd Quarter	R52.945	R28.720	R81.665	R4.832	R11.0	5.9	R16.9
4th Quarter	R53.175	R28.466	R81.641	R4.839	11.0	R5.9	R16.9
Year	R52.686	28.616	R81.302	R4.821	10.9	5.9	R16.9
1992 1st Quarter	R53.754	R28.117	R81.871	R4.874	11.0	R5.8	R16.8

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

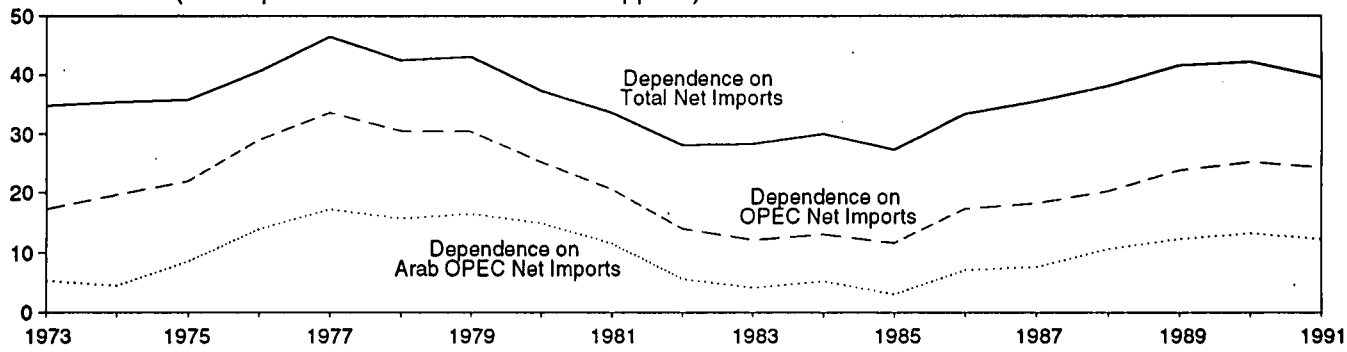
R=Revised data.

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

Sources: • **Energy Consumption:** Table 1.4. • **Gross Domestic Product: 1973-1990**—U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, February 1992, Table 2. **1991 forward**—U.S. Department of Commerce, Bureau of Economic Analysis, *United States Department of Commerce News*, July 30, 1992, Table 2.

Figure 1.7 U.S. Dependence on Petroleum Net Imports

(Net Imports as Percent of Product Supplied)



Source: Table 1.8.

Table 1.8 U.S. Dependence on Petroleum Net Imports

Annual Rate	Net Imports[a]			Petroleum Products Supplied	Net Imports as Percent of U.S. Petroleum Products Supplied		
	From Arab OPEC[b]	From OPEC[c]	From All Countries		From Arab OPEC[b]	From OPEC[c]	From All Countries
	Thousand Barrels per Day				Percent		
1973 Average	914	2,991	6,025	17,308	5.3	17.3	34.8
1974 Average	752	3,277	5,892	16,653	4.5	19.7	35.4
1975 Average	1,382	3,599	5,846	16,322	8.5	22.0	35.8
1976 Average	2,423	5,063	7,090	17,461	13.9	29.0	40.6
1977 Average	3,184	6,190	8,565	18,431	17.3	33.6	46.5
1978 Average	2,962	5,747	8,002	18,847	15.7	30.5	42.5
1979 Average	3,054	5,633	7,985	18,513	16.5	30.4	43.1
1980 Average	2,549	4,293	6,365	17,056	14.9	25.2	37.3
1981 Average	1,844	3,315	5,401	16,058	11.5	20.6	33.6
1982 Average	852	2,136	4,298	15,296	5.6	14.0	28.1
1983 Average	630	1,843	4,312	15,231	4.1	12.1	28.3
1984 Average	817	2,037	4,715	15,726	5.2	13.0	30.0
1985 Average	470	1,821	4,286	15,726	3.0	11.6	27.3
1986 Average	1,160	2,828	5,439	16,281	7.1	17.4	33.4
1987 Average	1,272	3,053	5,914	16,665	7.6	18.3	35.5
1988 Average	1,837	3,513	6,587	17,283	10.6	20.3	38.1
1989 Average	2,128	4,124	7,202	17,325	12.3	23.8	41.6
1990 1st Quarter	2,420	4,617	7,721	17,072	14.2	27.0	45.2
2nd Quarter	2,245	4,397	7,733	16,952	13.2	25.9	45.6
3rd Quarter	2,514	4,621	7,565	17,223	14.6	26.8	43.9
4th Quarter	1,795	3,513	5,643	16,708	10.7	21.0	33.8
Average	2,243	4,285	7,161	16,988	13.2	25.2	42.2
1991 1st Quarter	1,978	3,727	5,686	16,486	12.0	22.6	34.5
2nd Quarter	2,253	4,301	7,127	16,400	13.7	26.2	43.5
3rd Quarter	2,026	4,252	7,224	17,002	11.9	25.0	42.5
4th Quarter	1,971	3,974	6,452	16,959	11.6	23.4	38.0
Average	2,057	4,064	6,626	16,714	12.3	24.3	39.6
1992 1st Quarter	2,040	3,738	6,164	16,885	12.1	22.1	36.5

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

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

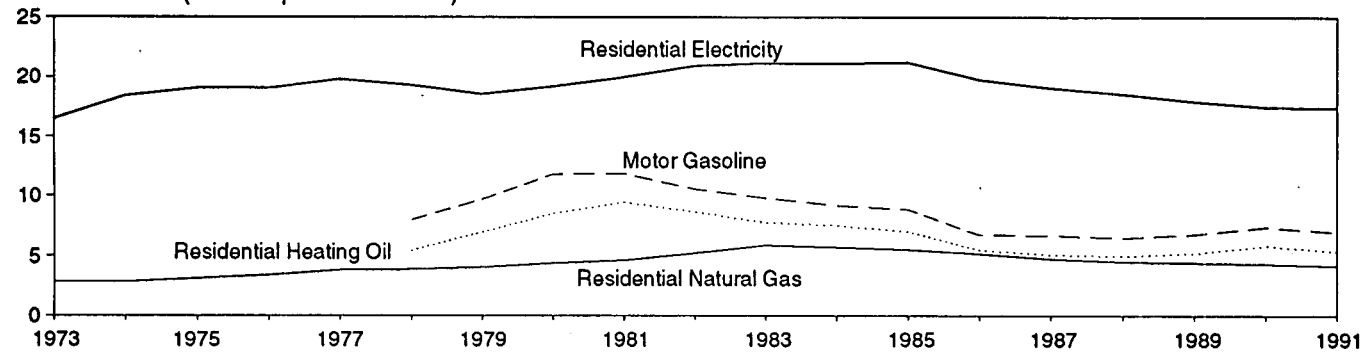
[c] OPEC consists of Ecuador, Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members.

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

Sources: • **Imports:** Tables 3.3a-3.3h. • **Exports: 1973-1976**—U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys.* **1977-1980**—Energy Information Administration (EIA), *Energy Data Reports,* "Petroleum Statement, Annual." **1981-1989**—EIA, *Petroleum Supply Annual.* **1990 forward**—EIA, *Petroleum Supply Monthly.* • **Petroleum Products Supplied:** Table 3.1a.

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

(Dollars per Million Btu)



Source: Table 1.9.

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

	Motor Gasoline		Residential Heating Oil		Residential Natural Gas		Residential Electricity	
	Cents per Gallon	Dollars per Million Btu	Cents per Gallon	Dollars per Million Btu	Cents per Thousand Cubic Feet	Dollars per Million Btu	Cents per Kilowatthour	Dollars per Million Btu
1973 Average	NA	NA	NA	NA	290.5	2.85	5.6	16.50
1974 Average	NA	NA	NA	NA	290.1	2.83	6.3	18.43
1975 Average	NA	NA	NA	NA	317.8	3.12	6.5	19.07
1976 Average	NA	NA	NA	NA	348.0	3.41	6.5	19.06
1977 Average	NA	NA	NA	NA	387.8	3.81	6.8	19.83
1978 Average	100.0	8.00	75.2	5.42	392.6	3.86	6.6	19.33
1979 Average	121.5	9.71	97.0	6.99	410.5	4.03	6.3	18.57
1980 Average	148.2	11.85	118.2	8.52	446.6	4.36	6.6	19.21
1981 Average	148.8	11.90	131.4	9.47	471.9	4.60	6.8	19.99
1982 Average	132.7	10.61	120.2	8.67	535.8	5.22	7.2	20.96
1983 Average	123.0	9.83	108.2	7.80	608.4	5.90	7.2	21.19
1984 Average	115.3	9.22	105.0	7.57	589.0	5.72	7.2	21.16
1985 Average	111.2	8.89	97.9	7.06	568.8	5.52	7.2	21.25
1986 Average	84.9	6.79	76.3	5.50	531.9	5.17	6.8	19.79
1987 Average	84.2	6.74	70.7	5.10	487.7	4.73	6.5	19.09
1988 Average	81.4	6.51	68.7	4.96	462.4	4.49	6.3	18.58
1989 Average	85.5	6.83	72.6	5.23	454.8	4.41	6.1	17.96
1990 1st Quarter	84.7	6.77	79.5	5.73	434.4	4.22	5.8	17.02
2nd Quarter	86.4	6.91	69.7	5.02	469.5	4.56	6.1	17.98
3rd Quarter	94.5	7.56	75.2	5.42	531.9	5.16	6.3	18.34
4th Quarter	106.5	8.52	92.1	6.64	435.3	4.23	5.9	17.17
Average	93.1	7.44	81.3	5.86	443.8	4.31	6.0	17.49
1991 1st Quarter	90.0	7.19	81.5	5.88	412.5	4.00	5.6	16.52
2nd Quarter	88.1	7.04	68.5	4.94	470.5	4.57	6.0	17.72
3rd Quarter	87.3	6.98	64.2	4.63	524.5	5.09	6.1	18.01
4th Quarter	86.1	6.88	69.6	5.02	416.8	4.05	5.8	17.03
Average	87.8	7.02	74.7	5.39	427.3	4.15	5.9	17.43
1992 1st Quarter	81.1	6.49	67.6	4.87	397.3	3.86	5.6	16.48

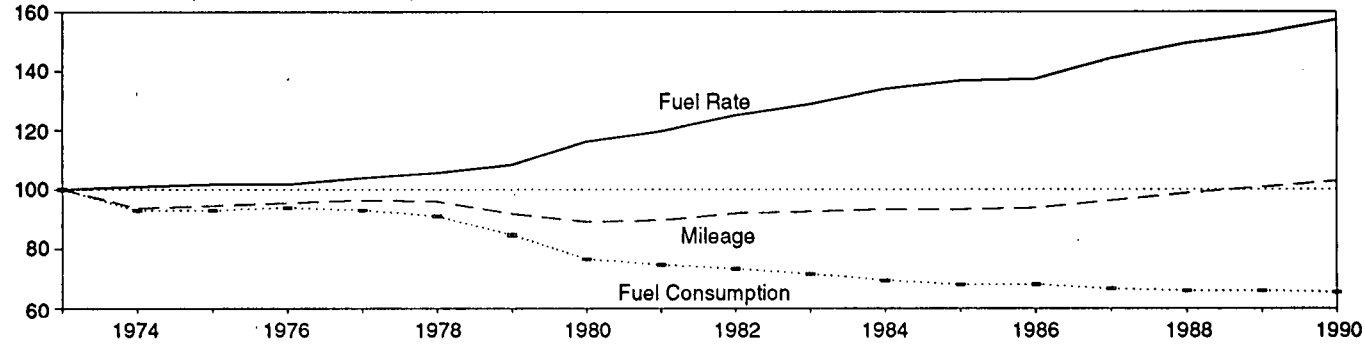
NA=Not available.

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

Sources: • **Annual Data:** Annual prices in Tables 9.4 (All Types), 9.8c, 9.11, and 9.9 (Monthly Series), adjusted by the CPI. • **Quarterly Data:** Simple averages of monthly prices in Tables 9.4 (All Types), 9.8c, 9.11, and 9.9 (Monthly Series), adjusted by the CPI. • **CPI: 1973-1989**—*Economic Report of the President,* February 1992, Table B-56. **1990 forward**—Council of Economic Advisers, *Economic Indicators,* July 1992, "Consumer Prices - All Urban Consumers." • **Conversion Factors:** Tables A2, A5, and A9.

Figure 1.9 Passenger Car Efficiency

(Index, 1973 = 100)



Source: Table 1.10.

Table 1.10 Passenger Car Efficiency

	Mileage		Fuel Consumption		Fuel Rate	
	Miles per Car	Index 1973=100.0	Gallons per Car	Index 1973=100.0	Miles per Gallon	Index 1973=100.0
1973	10,256	100.0	771	100.0	13.30	100.0
1974	9,606	93.7	716	92.9	13.42	100.9
1975	9,690	94.5	716	92.9	13.52	101.7
1976	9,785	95.4	723	93.8	13.53	101.7
1977	9,879	96.3	716	92.9	13.80	103.8
1978	9,835	95.9	701	90.9	14.04	105.6
1979	9,403	91.7	653	84.7	14.41	108.3
1980	9,141	89.1	591	76.7	15.46	116.2
1981	9,186	89.6	576	74.7	15.94	119.8
1982	9,428	91.9	566	73.4	16.65	125.2
1983	9,475	92.4	553	71.7	17.14	128.9
1984	9,558	93.2	536	69.5	17.83	134.1
1985	9,560	93.2	525	68.1	18.20	136.8
1986	9,608	93.7	526	68.2	18.27	137.4
1987	9,878	96.3	514	66.7	19.20	144.4
1988	10,121	98.7	509	66.0	19.87	149.4
1989	10,332	100.7	509	66.0	20.31	152.7
1990[a]	10,556	102.9	505	65.5	20.92	157.3

[a] Preliminary data.

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

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

Table 1.11 Population-Weighted Heating Degree-Days

Census Divisions	July 1 through July 31				
				Percent Change	
	Normal[a]	1991	1992	Normal to 1992	1991 to 1992
New England					
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	11	15	44	(c)	(c)
Middle Atlantic					
New Jersey, New York, Pennsylvania	0	0	6	(c)	(c)
East North Central					
Illinois, Indiana, Michigan, Ohio, Wisconsin	1	6	22	(c)	(c)
West North Central					
Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota	13	16	48	(c)	(c)
South Atlantic					
Delaware, Florida, Georgia, Maryland and the District of Columbia, North Carolina, South Carolina, Virginia, West Virginia	0	0	12	(c)	(c)
East South Central					
Alabama, Kentucky, Mississippi, Tennessee	0	0	0	(c)	(c)
West South Central					
Arkansas, Louisiana, Oklahoma, Texas	0	0	0	(c)	(c)
Mountain					
Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming	16	18	39	(c)	(c)
Pacific					
California, Oregon, Washington	22	12	12	(c)	(c)
U.S. Average[b]	5	5	16	(c)	(c)

[a] "Normal" is based on calculations of data from 1951 through 1980.
[b] Excludes Alaska and Hawaii.
[c] Percent change not meaningful: normal less than 100 or ratio incalculable.
Source: See Note 7 at end of section.

Table 1.12 Population-Weighted Cooling Degree-Days

Census Divisions	July 1 through July 31					Cumulative January 1 through July 31				
				Percent Change					Percent Change	
	Normal[a]	1991	1992	Normal to 1992	1991 to 1992	Normal[a]	1991	1992	Normal to 1992	1991 to 1992
New England Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	183	207	110	-39.9	-46.9	261	373	177	-32.2	-52.5
Middle Atlantic New Jersey, New York, Pennsylvania	250	297	214	-14.4	-27.9	416	638	337	-19.0	-47.2
East North Central Illinois, Indiana, Michigan, Ohio, Wisconsin	249	293	180	-27.7	-38.6	464	711	317	-31.7	-55.4
West North Central Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota	319	325	202	-36.7	-37.8	631	766	395	-37.4	-48.4
South Atlantic Delaware, Florida, Georgia, Maryland and the District of Columbia, North Carolina, South Carolina, Virginia, West Virginia	404	462	449	11.1	-2.8	1,052	1,335	1,007	-4.3	-24.6
East South Central Alabama, Kentucky, Mississippi, Tennessee	413	455	419	1.5	-7.9	938	1,122	824	-12.2	-26.6
West South Central Arkansas, Louisiana, Oklahoma, Texas	561	550	543	-3.2	-1.3	1,424	1,542	1,310	-8.0	-15.0
Mountain Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming	324	317	273	-15.7	-13.9	613	600	623	1.6	3.8
Pacific California, Oregon, Washington	195	165	194	-.5	17.6	284	216	326	14.8	50.9
U.S. Average[b]	317	341	288	-9.1	-15.5	670	829	586	-12.5	-29.3

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

Energy Summary Notes

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

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

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

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

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

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

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

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

1973	44.4	1989:	1st Quarter	121.7
1974	49.3		2nd Quarter	123.7
1975	53.8		3rd Quarter	124.7
1976	56.9		4th Quarter	125.9
1977	60.6		Year	124.0
1978	65.2	1990:	1st Quarter	128.0
1979	72.6		2nd Quarter	129.3
1980	82.4		3rd Quarter	131.6
1981	90.9		4th Quarter	133.7
1982	96.5		Year	130.7
1983	99.6	1991:	1st Quarter	134.8
1984	103.9		2nd Quarter	135.6
1985	107.6		3rd Quarter	136.7
1986	109.6		4th Quarter	137.7
1987	113.6		Year	136.2
1988	118.3	1992:	1st Quarter	138.7

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

There are several degree-day databases maintained by the National Oceanic and Atmospheric Administration. The information published in the *Monthly Energy Review (MER)* is developed by the National Weather Service Climate Analysis Center, Camp Springs, MD.

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

Section 2. Energy Consumption

U.S. total energy consumption in May 1992 was 6.5 quadrillion Btu. Petroleum products accounted for 42 percent[1] of the energy consumed in May 1992, while coal and natural gas each accounted for 23 percent.

Residential and commercial sector consumption was 2.0 quadrillion Btu in May 1992, down 3 percent from the May 1991 level. The sector accounted for 32 percent of May 1992 total consumption, down 1 percentage point from its 33-percent share in May 1991.

Industrial sector consumption was 2.5 quadrillion Btu in May 1992, up 4 percent from the May 1991 level. The industrial sector accounted for 39 percent of May 1992 total consumption, up 1 percentage point from its 38-percent share in May 1991.

Transportation sector consumption of energy was 1.9 quadrillion Btu in May 1992, up 1 percent from the May 1991 level. The sector accounted for 29 percent of May 1992 total consumption, about the same share as in May 1991.

Electric utility consumption of energy totaled 2.3 quadrillion Btu in May 1992, down 6 percent from the May 1991 level. Coal contributed 55 percent of the energy consumed by electric utilities in May 1992, while nuclear electric power contributed 21 percent; hydroelectric power and natural gas 11 percent each; petroleum 2 percent; and wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, about 1 percent.

Table 2.1 Energy Consumption Summary for May 1992

(Quadrillion Btu)

Energy Source	End-Use Sectors				Electric Utilities	Total
	Residential and Commercial	Industrial	Transportation	Total[a]		
Coal	0.009	0.214	([b])	0.220	1.267	1.488
Natural Gas[c]	.433	.752	.053	1.238	.244	1.483
Petroleum	.157	.704	1.823	2.684	.055	2.739
Nuclear Electric Power	–	–	–	–	.487	.487
Hydroelectric Power	–	.003	–	.003	.251	.254
Net Imports of Coal Coke	–	.001	–	.001	–	.001
Other[d]	–	–	–	–	.016	.016
Primary Consumption	.599	1.674	1.876	4.147	2.321	6.468
Electricity	.452	.272	.001	.725	–	–
Net Consumption	1.051	1.946	1.877	4.872	–	–
Electrical System Energy Losses	.994	.599	.003	1.595	–	–
Total Consumption[e]	2.045	2.545	1.880	6.468	–	–

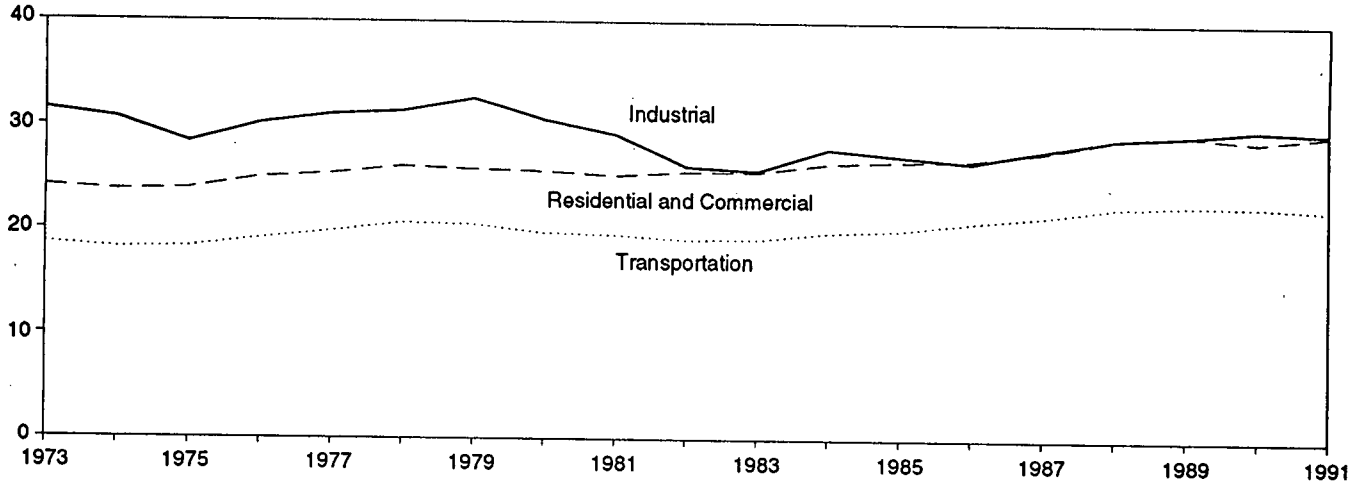
[a] Totals for coal and natural gas may not equal sum of sectors due to the use of sector-specific conversion factors.
[b] Small amounts of coal consumed for transportation are reported as industrial sector consumption.
[c] Includes supplemental gaseous fuels. Transportation sector is pipeline fuel only.
[d] "Other" is electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
[e] Excludes wood, waste, geothermal, wind, photovoltaic, and solar thermal energy, except for small amounts used by electric utilities to generate electricity for distribution.
– =Not applicable.
Note: Totals may not equal sum of components due to independent rounding.
Additional Notes and Sources: See Tables 2.2-2.6 and end of section.

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

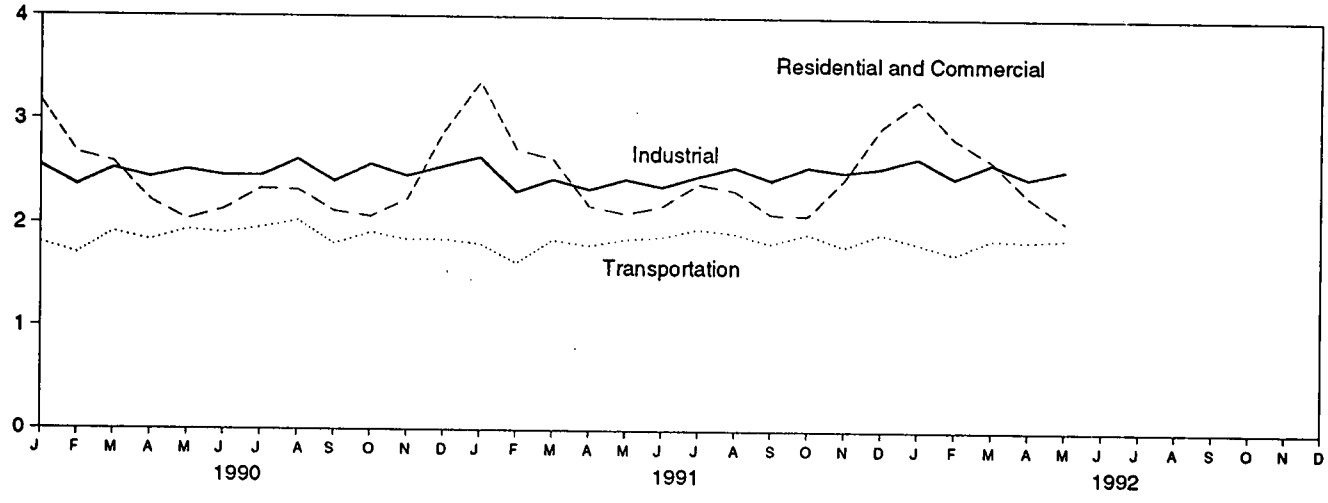
Figure 2.1 Energy Consumption by End-Use Sector

(Quadrillion Btu)

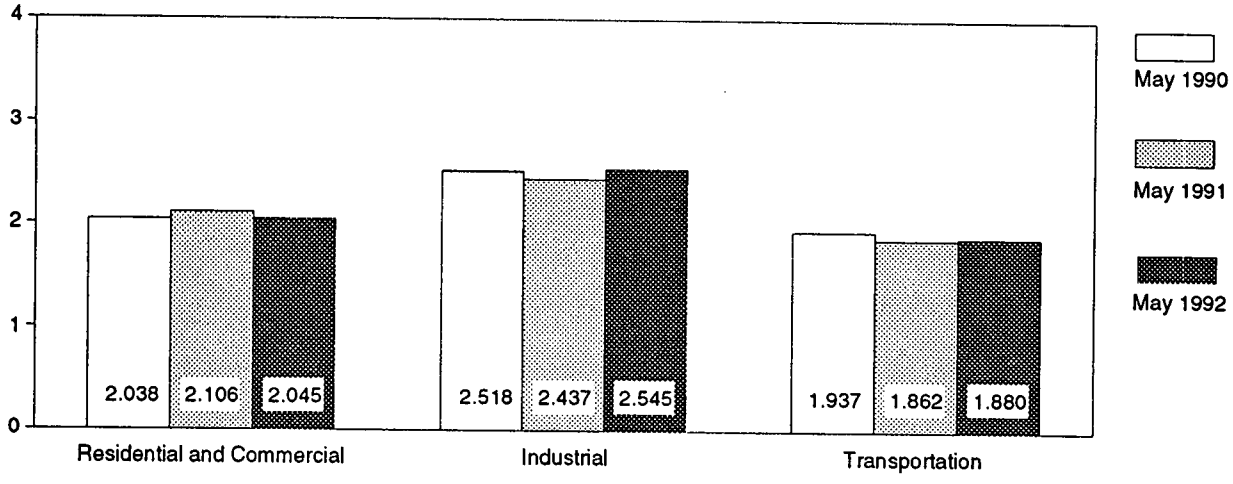
Consumption by End-Use Sector, 1973-1991



Consumption by End-Use Sector, Monthly



Consumption by End-Use Sector, May



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

Table 2.2 Energy Consumption by End-Use Sector

(Quadrillion Btu)

	Residential and Commercial		Industrial		Transportation			
	Net	Total	Net	Total	Net	Total	Net	Total
1973 Total	15.766	24.143	25.917	31.528	18.584	18.605	60.274	74.282
1974 Total	15.246	23.724	24.994	30.696	18.095	18.117	58.341	72.543
1975 Total	15.200	23.900	22.737	28.401	18.219	18.244	56.157	70.546
1976 Total	15.997	25.020	24.038	30.234	19.076	19.101	59.119	74.362
1977 Total	15.828	25.387	24.593	31.075	19.794	19.819	60.223	76.288
1978 Total	16.023	26.088	24.637	31.388	20.589	20.611	61.251	78.089
1979 Total	15.709	25.809	25.679	32.615	20.447	20.472	61.836	78.898
1980 Total	15.075	25.653	23.854	30.609	19.669	19.695	58.597	75.955
1981 Total	14.541	25.243	22.533	29.238	19.480	19.507	56.556	73.990
1982 Total	14.629	25.630	20.020	26.144	19.043	19.069	53.697	70.848
1983 Total	14.395	25.630	19.401	25.756	19.109	19.135	52.907	70.524
1984 Total	14.964	26.478	21.184	27.862	19.773	19.801	55.923	74.144
1985 Total	14.839	26.704	20.520	27.213	20.036	20.067	55.391	73.981
1986 Total	14.791	26.852	20.101	26.629	20.781	20.812	55.676	74.297
1987 Total	15.152	27.628	21.114	27.825	21.415	21.444	57.678	76.895
1988 Total	16.012	28.930	22.082	28.985	22.269	22.300	60.366	80.218
1989 Total	16.270	29.411	22.269	29.353	22.524	22.554	61.071	81.326
1990 January	2.014	3.173	2.025	2.552	1.806	1.808	5.846	7.533
February	1.689	2.671	1.835	2.364	1.705	1.707	5.228	6.741
March	1.545	2.586	1.942	2.526	1.912	1.914	5.397	7.025
April	1.275	2.220	1.881	2.441	1.835	1.837	4.990	6.497
May	1.027	2.038	1.901	2.518	1.934	1.937	4.860	6.491
June	.958	2.137	1.808	2.460	1.904	1.907	4.671	6.505
July	1.010	2.335	1.828	2.460	1.959	1.962	4.801	6.761
August	1.007	2.325	1.955	2.615	2.029	2.032	4.995	6.976
September	1.002	2.121	1.849	2.408	1.804	1.806	4.657	6.338
October	1.051	2.071	1.976	2.573	1.913	1.916	4.940	6.559
November	1.272	2.236	1.895	2.462	1.847	1.850	5.013	6.546
December	1.725	2.881	1.945	2.554	1.849	1.852	5.521	7.289
Total	15.576	28.797	22.838	29.929	22.497	22.528	60.919	81.262
1991 January	R2.123	R3.363	R2.070	R2.640	1.807	1.809	R6.003	R7.814
February	R1.744	R2.720	R1.819	R2.313	R1.626	R1.629	R5.190	R6.663
March	R1.578	R2.627	R1.873	R2.433	R1.848	R1.850	R5.297	R6.909
April	R1.233	R2.180	R1.792	R2.340	R1.795	R1.797	R4.819	R6.317
May	R1.017	R2.106	R1.800	R2.437	1.859	1.862	R4.678	R6.406
June	R.981	R2.180	R1.755	R2.367	1.879	1.882	R4.617	R6.430
July	R1.026	R2.396	R1.834	R2.470	1.959	1.963	R4.821	R6.832
August	R1.002	R2.331	R1.920	R2.559	R1.917	R1.920	R4.841	R6.812
September	R1.004	R2.105	R1.880	R2.434	1.820	1.823	R4.704	R6.361
October	R1.077	R2.094	R1.975	R2.562	R1.918	R1.920	R4.967	R6.574
November	R1.427	R2.447	R1.941	R2.515	R1.793	R1.796	R5.160	R6.757
December	R1.804	2.943	R1.982	R2.557	R1.921	R1.924	R5.708	R7.424
Total	R16.016	R29.492	R22.642	R29.629	R22.144	R22.176	R60.807	R81.302
1992 January	R2.008	R3.203	R2.084	R2.652	1.828	1.831	R5.922	R7.688
February	R1.828	R2.837	R1.948	R2.464	1.725	1.728	R5.502	R7.028
March	R1.601	R2.626	R2.027	R2.601	1.872	1.875	R5.499	R7.101
April	R1.342	R2.285	R1.918	R2.463	1.858	1.861	R5.116	R6.607
May	1.051	2.045	1.946	2.545	1.877	1.880	4.872	6.468
5-Month Total	7.829	12.996	9.923	12.725	9.161	9.173	26.910	34.892
1991 5-Month Total	7.695	12.997	9.355	12.163	8.935	8.948	25.986	34.109
1990 5-Month Total	7.551	12.687	9.584	12.401	9.192	9.204	26.321	34.287

R=Revised data.

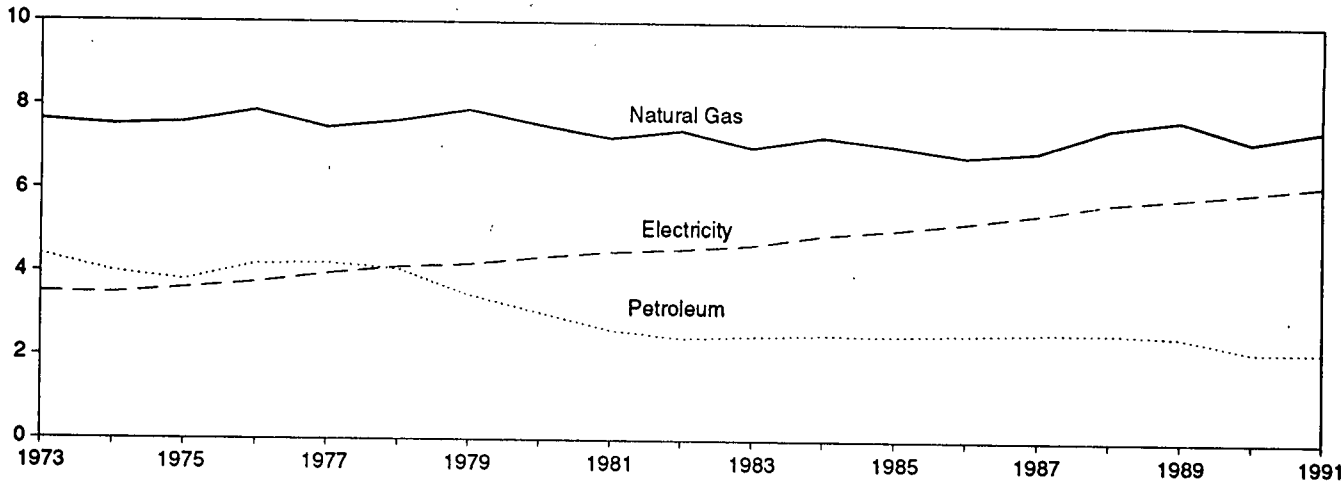
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding and the use of sector-specific conversion factors for natural gas and coal.

Additional Notes and Sources: See end of section.

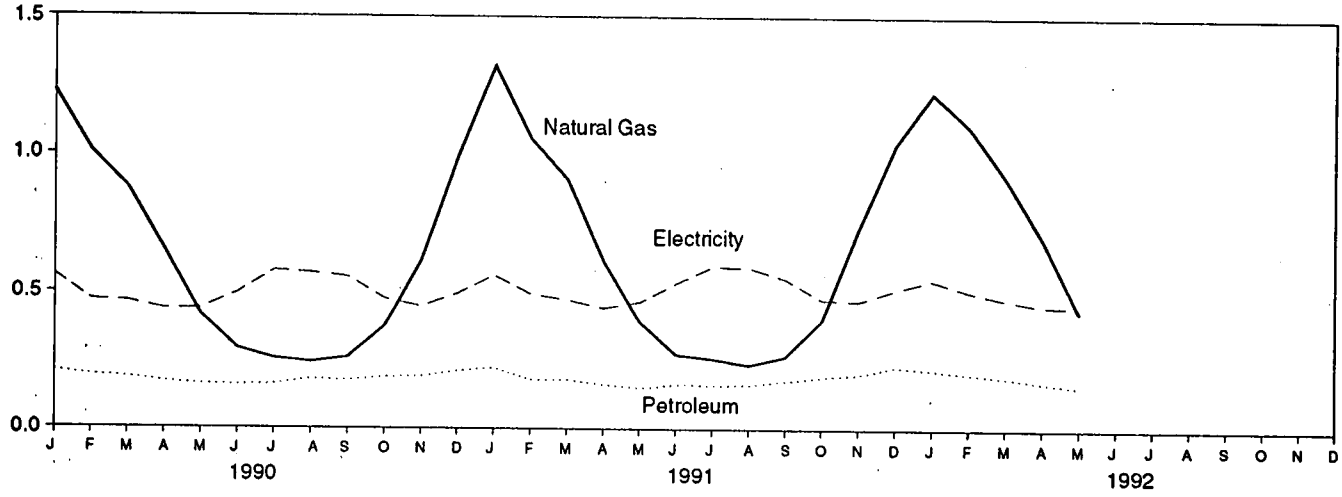
Figure 2.2 Residential and Commercial Energy Consumption

(Quadrillion Btu)

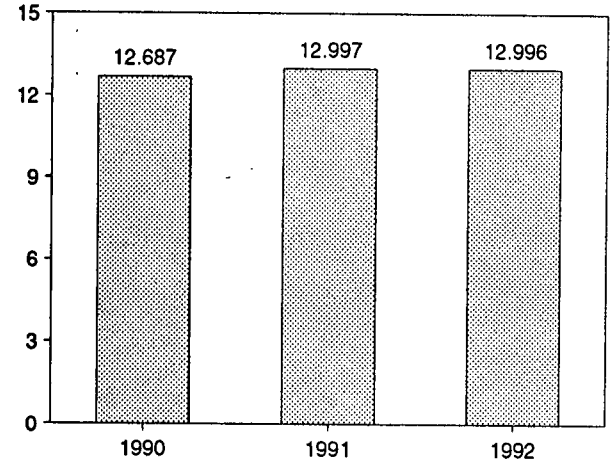
Consumption by Major Sources, 1973-1991



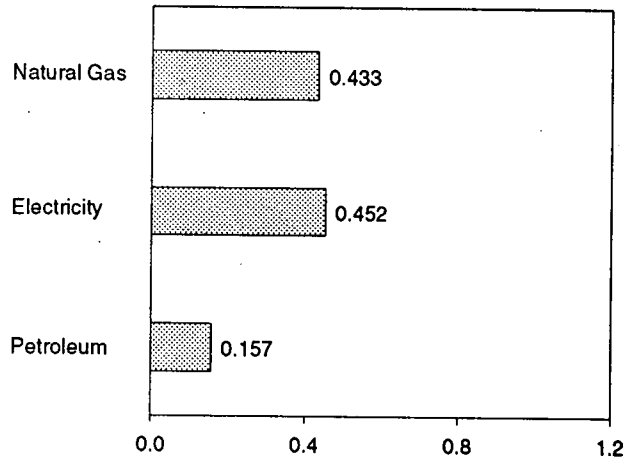
Consumption by Major Sources, Monthly



Total Consumption, January-May



Consumption by Major Sources, May 1992



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

Table 2.3 Residential and Commercial Energy Consumption

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Primary Consumption	Electricity	Net Consumption	Electrical System Energy Losses	Total Consumption[b]
1973 Total	0.254	7.626	4.391	12.270	3.495	15.766	8.377	24.143
1974 Total	.257	7.518	3.996	11.771	3.475	15.246	8.478	23.724
1975 Total	.209	7.581	3.805	11.595	3.604	15.200	8.700	23.900
1976 Total	.203	7.866	4.181	12.250	3.747	15.997	9.023	25.020
1977 Total	.205	7.461	4.206	11.873	3.955	15.828	9.559	25.387
1978 Total	.214	7.624	4.070	11.908	4.116	16.023	10.065	26.088
1979 Total	.187	7.891	3.448	11.525	4.184	15.709	10.101	25.809
1980 Total	.145	7.540	3.035	10.721	4.355	15.075	10.578	25.653
1981 Total	.167	7.243	2.634	10.043	4.497	14.541	10.703	25.243
1982 Total	.187	7.427	2.449	10.063	4.566	14.629	11.001	25.630
1983 Total	.192	7.024	2.498	9.715	4.680	14.395	11.235	25.630
1984 Total	.209	7.292	2.535	10.036	4.928	14.964	11.514	26.478
1985 Total	.176	7.079	2.522	9.777	5.061	14.839	11.866	26.704
1986 Total	.176	6.825	2.555	9.556	5.235	14.791	12.061	26.852
1987 Total	.162	6.954	2.593	9.709	5.443	15.152	12.475	27.628
1988 Total	.168	7.513	2.608	10.288	5.724	16.012	12.918	28.930
1989 Total	.146	7.731	2.535	10.411	5.859	16.270	13.141	29.411
1990 January	.016	1.224	.210	1.450	.564	2.014	1.158	3.173
February	.015	1.008	.194	1.217	.472	1.689	.982	2.671
March	.013	.879	.186	1.078	.467	1.545	1.041	2.586
April	.012	.655	.170	.837	.439	1.275	.945	2.220
May	.008	.418	.160	.586	.441	1.027	1.011	2.038
June	.009	.293	.158	.460	.498	.958	1.179	2.137
July	.012	.257	.161	.430	.580	1.010	1.325	2.335
August	.012	.244	.180	.435	.572	1.007	1.318	2.325
September	.009	.261	.175	.445	.557	1.002	1.119	2.121
October	.010	.375	.188	.573	.478	1.051	1.020	2.071
November	.014	.617	.191	.822	.450	1.272	.964	2.236
December	.024	.991	.212	1.227	.497	1.725	1.156	2.881
Total	.156	7.222	2.182	9.560	6.015	15.576	13.221	28.797
1991 January	.020	1.318	.223	1.561	.563	R2.123	1.239	R3.363
February	.014	R1.055	.179	R1.248	.496	R1.744	.977	R2.720
March	.013	R.911	.179	R1.102	.475	R1.578	1.049	R2.627
April	.009	R.617	.162	R.788	.445	R1.233	.947	R2.180
May	.008	R.394	.149	R.550	.467	R1.017	1.089	R2.106
June	.007	R.274	.163	R.445	.536	R.981	1.199	R2.180
July	.010	R.259	.160	R.429	.597	R1.026	1.371	R2.396
August	.009	R.237	.162	R.409	.594	R1.002	1.329	R2.331
September	.007	R.267	.176	R.450	.553	R1.004	1.101	R2.105
October	.008	R.400	.191	R.599	.478	R1.077	1.017	R2.094
November	.016	R.737	.202	R.955	.472	R1.427	1.020	R2.447
December	.020	R1.038	.231	R1.289	.515	R1.804	1.138	2.943
Total	.141	R7.506	2.178	R9.825	6.190	R16.016	13.476	R29.492
1992 January	R.017	R1.222	.219	R1.458	.549	R2.008	1.196	R3.203
February	R.014	R1.101	.205	R1.319	.508	R1.828	1.009	R2.837
March	.012	R.919	.191	R1.122	.479	R1.601	1.026	R2.626
April	.014	R.700	.172	R.886	.456	R1.342	.943	R2.285
May	.009	.433	.157	.599	.452	1.051	.994	2.045
5-Month Total	.065	4.376	.944	5.384	2.444	7.829	5.168	12.996
1991 5-Month Total	.064	4.294	.892	5.250	2.445	7.695	5.302	12.997
1990 5-Month Total	.065	4.184	.919	5.168	2.383	7.551	5.136	12.687

[a] Includes supplemental gaseous fuels.

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

R=Revised data.

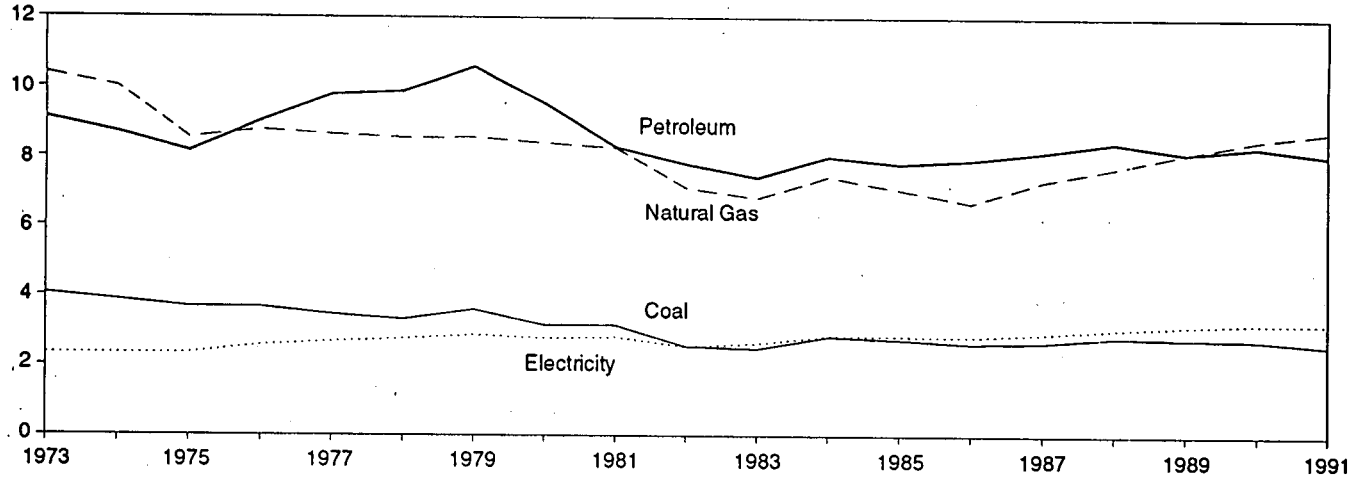
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Additional Notes and Sources: See end of section.

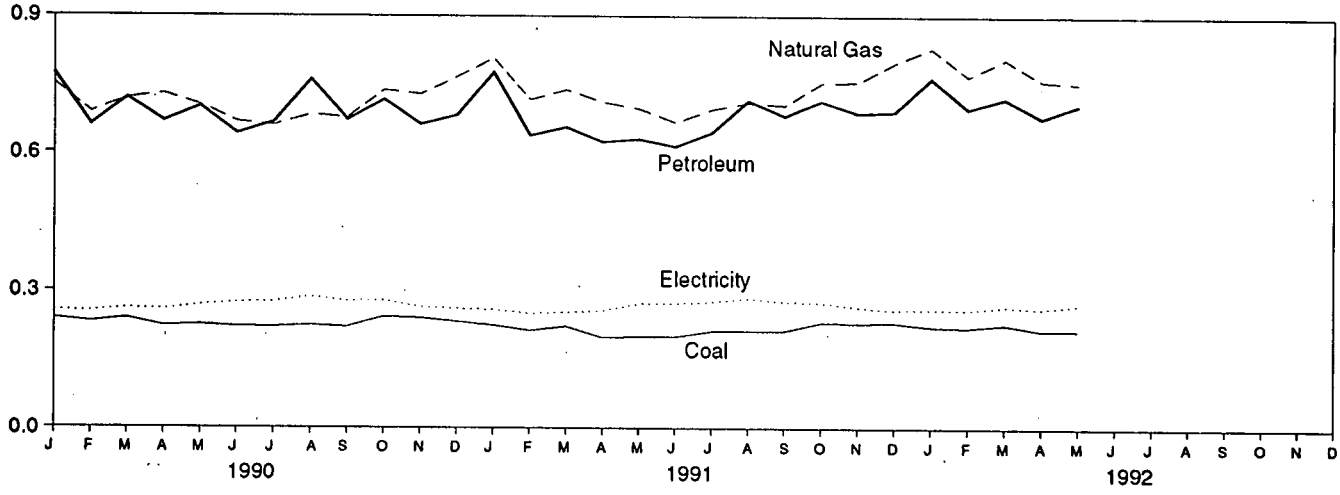
Figure 2.3 Industrial Energy Consumption

(Quadrillion Btu)

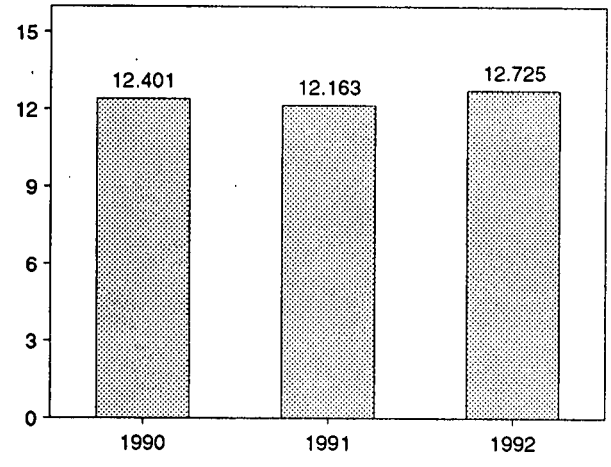
Consumption by Major Sources, 1973-1991



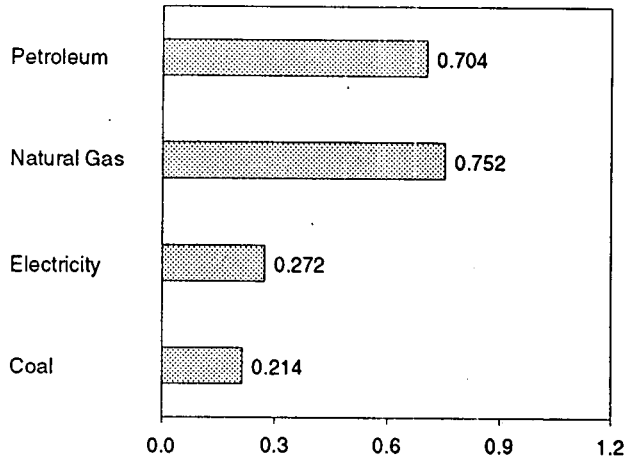
Consumption by Major Sources, Monthly



Total Consumption, January-May



Consumption by Major Sources, May 1992



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

Table 2.4 Industrial Energy Consumption

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Hydro-electric Power	Net Imports of Coal Coke	Primary Consumption	Electricity	Net Consumption	Electrical System Energy Losses	Total Consumption[b]
1973 Total	4.057	10.388	9.104	0.035	-0.007	23.576	2.341	25.917	5.611	31.528
1974 Total	3.870	10.004	8.694	.033	.056	22.657	2.337	24.994	5.701	30.696
1975 Total	3.667	8.532	8.146	.032	.014	20.391	2.346	22.737	5.664	28.401
1976 Total	3.661	8.762	9.010	.033	(s)	21.465	2.573	24.038	6.196	30.234
1977 Total	3.454	8.635	9.774	.033	.015	21.911	2.682	24.593	6.481	31.075
1978 Total	3.314	8.539	9.867	.032	.125	21.876	2.761	24.637	6.751	31.388
1979 Total	3.593	8.549	10.568	.034	.063	22.807	2.873	25.679	6.935	32.615
1980 Total	3.155	8.395	9.525	.033	-.035	21.073	2.781	23.854	6.755	30.609
1981 Total	3.157	8.257	8.285	.033	-.016	19.715	2.817	22.533	6.705	29.238
1982 Total	2.552	7.121	7.794	.033	-.022	17.479	2.542	20.020	6.124	26.144
1983 Total	2.490	6.826	7.420	.033	-.016	16.753	2.648	19.401	6.356	25.756
1984 Total	2.842	7.448	8.014	.033	-.011	18.325	2.859	21.184	6.679	27.862
1985 Total	2.760	7.080	7.805	.033	-.013	17.665	2.855	20.520	6.693	27.213
1986 Total	2.640	6.690	7.920	.033	-.017	17.267	2.834	20.101	6.529	26.629
1987 Total	2.673	7.323	8.148	.033	.009	18.185	2.928	21.114	6.711	27.825
1988 Total	2.828	7.696	8.427	.033	.040	19.023	3.059	22.082	6.903	28.985
1989 Total	2.787	8.131	8.130	.033	.030	19.111	3.158	22.269	7.084	29.353
1990 January	.239	.752	.774	.003	(s)	1.768	.257	2.025	.527	2.552
February	.231	.687	.660	.003	(s)	1.581	.255	1.835	.529	2.364
March	.239	.718	.719	.003	.001	1.680	.262	1.942	.584	2.526
April	.222	.728	.668	.003	-.001	1.621	.260	1.881	.560	2.441
May	.225	.703	.700	.003	(s)	1.632	.269	1.901	.617	2.518
June	.221	.667	.641	.003	.001	1.533	.275	1.808	.652	2.460
July	.220	.659	.666	.003	.003	1.551	.277	1.828	.632	2.460
August	.224	.682	.760	.002	-.001	1.668	.287	1.955	.661	2.615
September	.220	.676	.671	.002	.001	1.570	.278	1.849	.560	2.408
October	.243	.736	.715	.002	.001	1.696	.280	1.976	.597	2.573
November	.240	.727	.661	.002	-.001	1.630	.265	1.895	.567	2.462
December	.232	.766	.681	.002	.001	1.683	.262	1.945	.609	2.554
Total	2.756	8.502	8.316	.033	.005	19.612	3.226	22.838	7.091	29.929
1991 January	.224	R.807	.776	.003	.001	R1.812	.259	R2.070	.570	R2.640
February	.213	R.715	.637	.003	.001	R1.569	.251	R1.819	.494	R2.313
March	.222	R.737	.655	.003	.002	R1.619	.254	R1.873	.561	R2.433
April	.198	R.710	.623	.003	.001	R1.535	.257	R1.792	.548	R2.340
May	.200	R.695	.629	.003	.001	R1.528	.273	R1.800	.636	R2.437
June	.200	R.666	.613	.003	-.001	R1.481	.274	R1.755	.612	R2.367
July	.212	R.694	.644	.003	.003	R1.556	.277	R1.834	.636	R2.470
August	.212	R.709	.714	.002	-.002	R1.635	.285	R1.920	.639	R2.559
September	.213	R.703	.680	.002	.004	R1.602	.278	R1.880	.554	R2.434
October	.231	R.753	.713	.002	-.001	R1.699	.276	R1.975	.587	R2.562
November	.230	R.755	.686	.002	.001	R1.675	.266	R1.941	.574	R2.515
December	.231	R.798	.689	.002	(s)	R1.721	.260	R1.982	.575	R2.557
Total	2.587	R8.745	8.059	.033	.009	R19.432	3.209	R22.642	6.987	R29.629
1992 January	R.222	R.830	.764	.003	.004	R1.823	.261	R2.084	.568	R2.652
February	R.220	R.768	.696	.003	.003	R1.689	.260	R1.948	.515	R2.464
March	R.227	R.806	.719	.003	.003	R1.758	.268	R2.027	.574	R2.601
April	.214	R.758	.676	.003	.003	R1.655	.263	R1.918	.545	R2.463
May	.214	.752	.704	.003	.001	1.674	.272	1.946	.599	2.545
5-Month Total	1.097	3.915	3.558	.015	.014	8.599	1.324	9.923	2.802	12.725
1991 5-Month Total	1.057	3.665	3.321	.015	.005	8.062	1.293	9.355	2.808	12.163
1990 5-Month Total	1.157	3.589	3.521	.015	(s)	8.282	1.302	9.584	2.817	12.401

[a] Includes supplemental gaseous fuels.

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

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

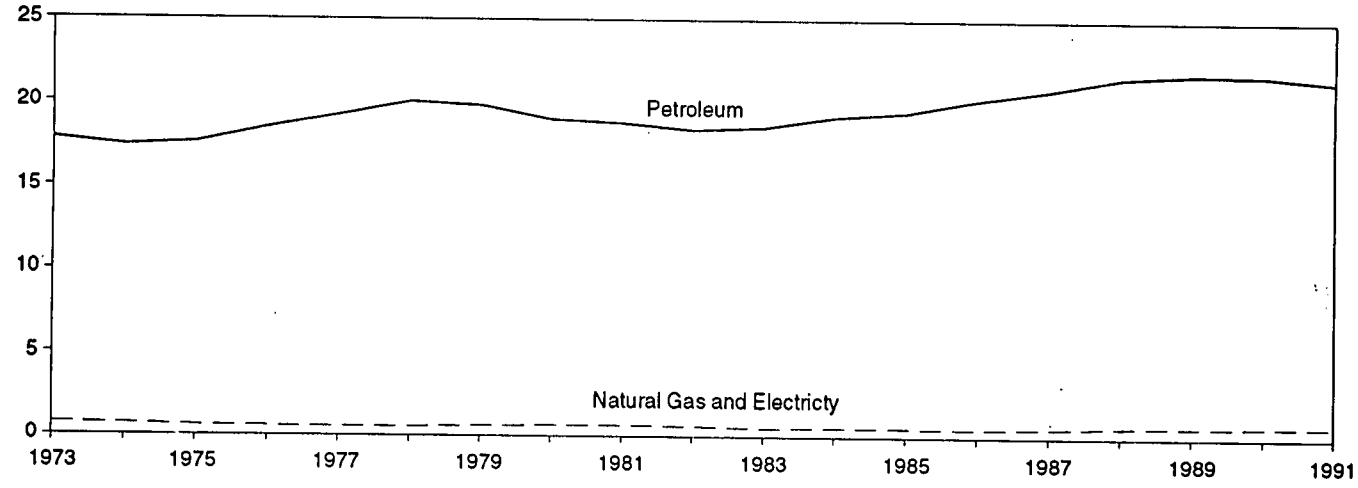
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Additional Notes and Sources: See end of section.

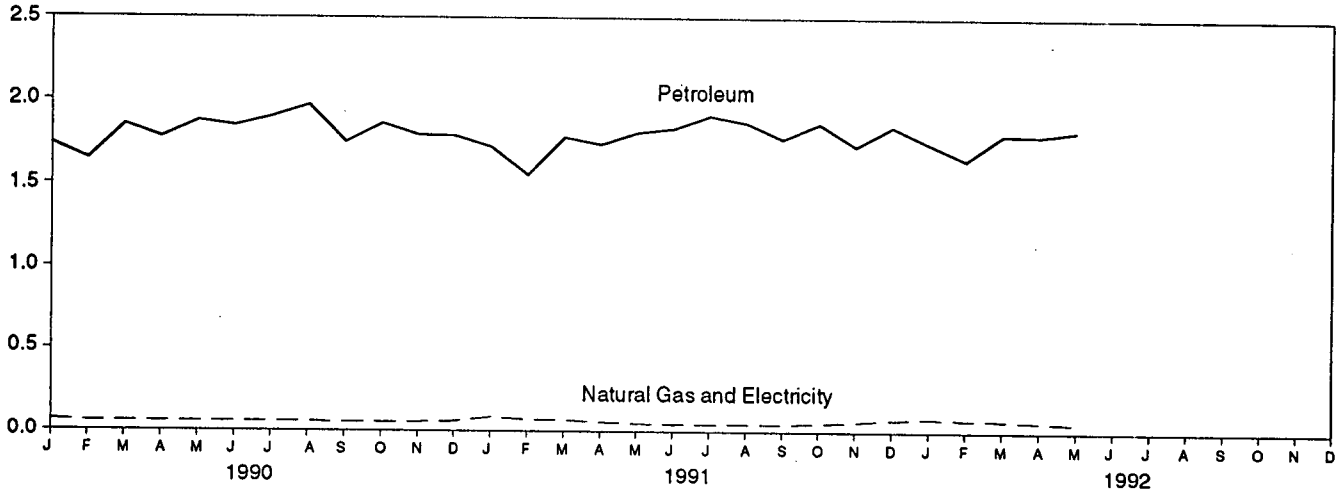
Figure 2.4 Transportation Energy Consumption

(Quadrillion Btu)

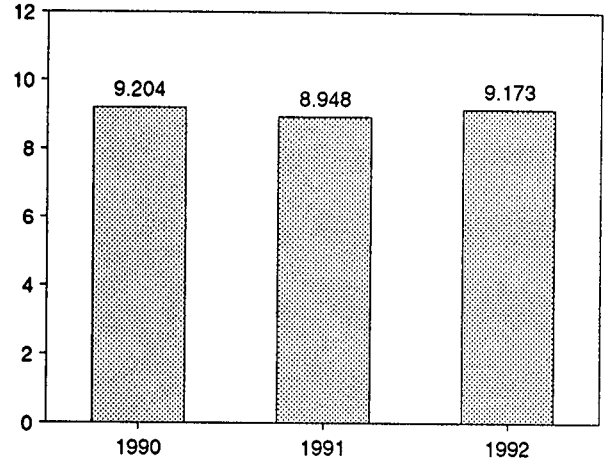
Consumption by Major Sources, 1973-1991



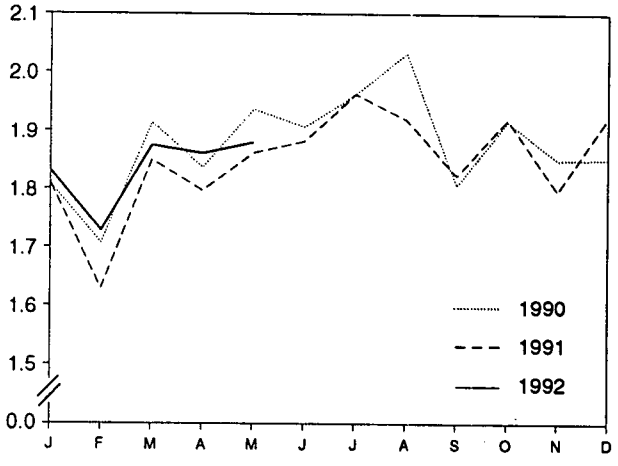
Consumption by Major Sources, Monthly



Total Consumption, January-May



Total Consumption, Monthly



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

Table 2.5 Transportation Energy Consumption

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum	Primary Consumption	Electricity	Net Consumption	Electrical System Energy Losses	Total Consumption[b]
1973 Total	0.003	0.743	17.831	18.576	0.008	18.584	0.020	18.605
1974 Total	.002	.685	17.399	18.086	.009	18.095	.022	18.117
1975 Total	.001	.595	17.614	18.209	.010	18.219	.025	18.244
1976 Total	(s)	.559	18.506	19.065	.010	19.076	.025	19.101
1977 Total	(s)	.543	19.241	19.784	.010	19.794	.025	19.819
1978 Total	(c)	.539	20.041	20.580	.009	20.589	.022	20.611
1979 Total	(c)	.612	19.825	20.436	.010	20.447	.025	20.472
1980 Total	(c)	.650	19.008	19.658	.011	19.669	.026	19.695
1981 Total	(c)	.658	18.811	19.469	.011	19.480	.026	19.507
1982 Total	(c)	.612	18.420	19.032	.011	19.043	.026	19.069
1983 Total	(c)	.505	18.593	19.098	.011	19.109	.026	19.135
1984 Total	(c)	.545	19.216	19.761	.012	19.773	.028	19.801
1985 Total	(c)	.519	19.504	20.024	.013	20.036	.030	20.067
1986 Total	(c)	.499	20.269	20.768	.013	20.781	.031	20.812
1987 Total	(c)	.535	20.867	21.402	.013	21.415	.029	21.444
1988 Total	(c)	.632	21.624	22.255	.014	22.269	.031	22.300
1989 Total	(c)	.649	21.861	22.510	.014	22.524	.031	22.554
1990 January	(c)	.066	1.739	1.805	.001	1.806	.002	1.808
February	(c)	.056	1.648	1.704	.001	1.705	.002	1.707
March	(c)	.058	1.853	1.911	.001	1.912	.002	1.914
April	(c)	.056	1.778	1.834	.001	1.835	.002	1.837
May	(c)	.057	1.876	1.933	.001	1.934	.003	1.937
June	(c)	.056	1.847	1.903	.001	1.904	.003	1.907
July	(c)	.056	1.902	1.957	.001	1.959	.003	1.962
August	(c)	.057	1.971	2.028	.001	2.029	.003	2.032
September	(c)	.054	1.749	1.802	.001	1.804	.002	1.806
October	(c)	.052	1.861	1.912	.001	1.913	.003	1.916
November	(c)	.055	1.792	1.846	.001	1.847	.002	1.850
December	(c)	.060	1.788	1.848	.001	1.849	.003	1.852
Total	(c)	.680	21.804	22.483	.014	22.497	.031	22.528
1991 January	(c)	.084	1.721	1.806	.001	1.807	.003	1.809
February	(c)	R.070	1.555	R1.625	.001	R1.626	.002	R1.629
March	(c)	R.067	1.780	R1.847	.001	R1.848	.003	R1.850
April	(c)	R.057	1.737	R1.794	.001	R1.795	.002	R1.797
May	(c)	.049	1.809	1.858	.001	1.859	.003	1.862
June	(c)	.044	1.833	1.877	.001	1.879	.003	1.882
July	(c)	.047	1.911	1.958	.001	1.959	.003	1.963
August	(c)	R.046	1.869	R1.915	.001	R1.917	.003	R1.920
September	(c)	.045	1.773	1.819	.001	1.820	.003	1.823
October	(c)	R.052	1.865	R1.917	.001	R1.918	.002	R1.920
November	(c)	R.062	1.730	R1.792	.001	R1.793	.002	R1.796
December	(c)	R.073	1.847	R1.920	.001	R1.921	.003	R1.924
Total	(c)	R.698	21.431	R22.129	.015	R22.144	.032	R22.176
1992 January	(c)	.081	1.745	1.827	.001	1.828	.003	1.831
February	(c)	.074	1.650	1.724	.001	1.725	.002	1.728
March	(c)	.071	1.800	1.871	.001	1.872	.002	1.875
April	(c)	.062	1.795	1.857	.001	1.858	.002	1.861
May	(c)	.053	1.823	1.876	.001	1.877	.003	1.880
5-Month Total	(c)	.341	8.814	9.155	.006	9.161	.012	9.173
1991 5-Month Total	(c)	.328	8.602	8.929	.006	8.935	.013	8.948
1990 5-Month Total	(c)	.291	8.894	9.186	.006	9.192	.012	9.204

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

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

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

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

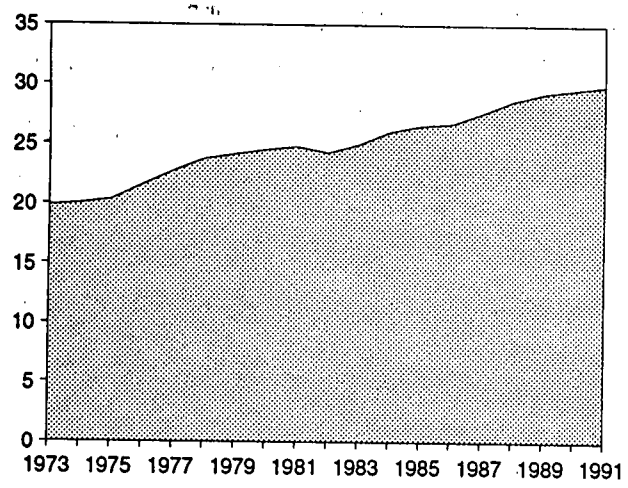
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Additional Notes and Sources: See end of section.

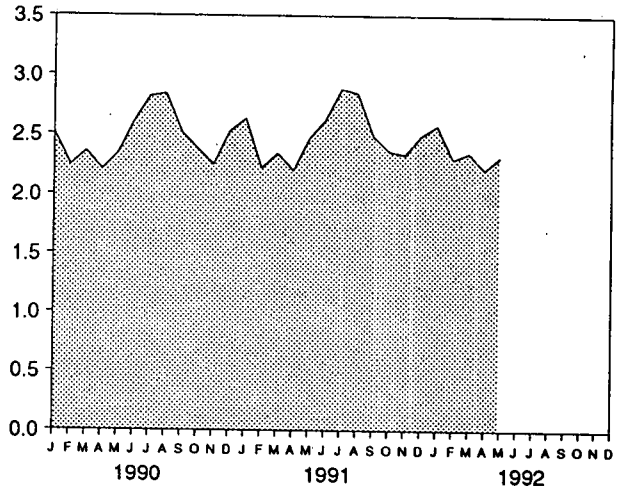
Figure 2.5 Energy Input at Electric Utilities

(Quadrillion Btu)

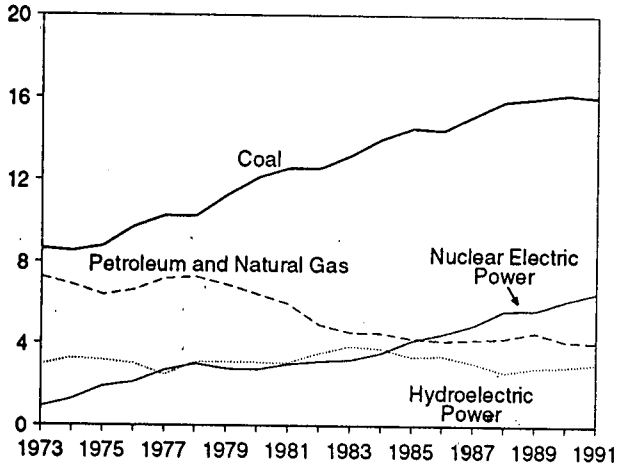
Total Input, 1973-1991



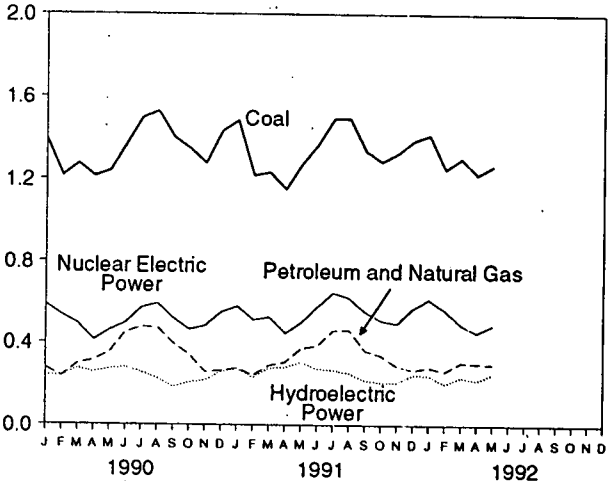
Total Input, Monthly



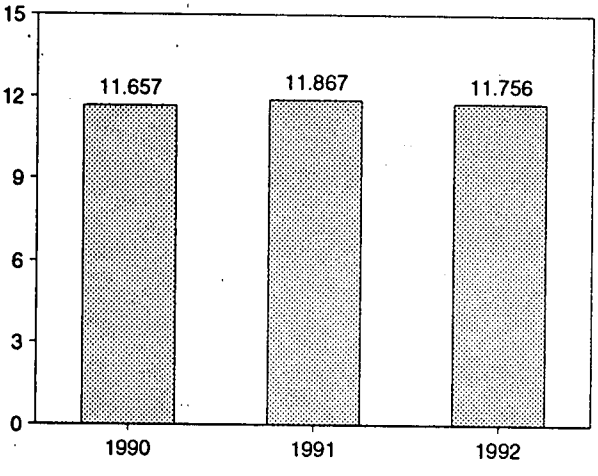
Input by Major Sources, 1973-1991



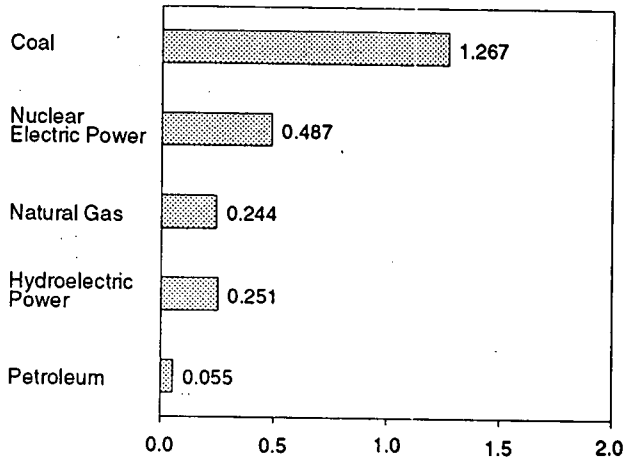
Input by Major Sources, Monthly



Total Input, January-May



Input by Major Sources, May 1992



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

Table 2.6 Energy Input at Electric Utilities

(Quadrillion Btu)

	Coal	Natural Gas[a]	Petroleum[b]	Nuclear Electric Power	Hydro-electric Power[c]	Other[d]	Total
1973 Total	8.658	3.748	3.515	0.910	2.975	0.046	19.852
1974 Total	8.534	3.519	3.365	1.272	3.276	.056	20.022
1975 Total	8.786	3.240	3.166	1.900	3.187	.072	20.350
1976 Total	9.720	3.152	3.477	2.111	3.032	.081	21.574
1977 Total	10.262	3.284	3.901	2.702	2.482	.082	22.713
1978 Total	10.238	3.297	3.987	3.024	3.110	.068	23.724
1979 Total	11.260	3.613	3.283	2.776	3.107	.089	24.128
1980 Total	12.123	3.810	2.634	2.739	3.085	.114	24.505
1981 Total	12.583	3.768	2.202	3.008	3.072	.127	24.760
1982 Total	12.582	3.342	1.568	3.131	3.539	.108	24.270
1983 Total	13.213	2.998	1.544	3.203	3.866	.133	24.956
1984 Total	14.020	3.220	1.286	3.553	3.767	.174	26.020
1985 Total	14.542	3.160	1.090	4.149	3.365	.213	26.519
1986 Total	14.444	2.691	1.452	4.471	3.413	.232	26.703
1987 Total	15.173	2.935	1.257	4.906	3.084	.245	27.600
1988 Total	15.850	2.709	1.563	5.661	2.630	.235	28.648
1989 Total	15.988	2.871	1.685	5.677	2.848	.217	29.286
1990 January	1.391	.151	.123	.589	.239	.018	2.510
February	1.216	.136	.100	.534	.238	.016	2.241
March	1.274	.190	.108	.492	.275	.018	2.358
April	1.213	.206	.108	.411	.255	.014	2.207
May	1.240	.252	.101	.459	.273	.017	2.341
June	1.367	.307	.141	.495	.281	.017	2.608
July	1.497	.337	.138	.573	.256	.017	2.819
August	1.530	.355	.117	.595	.227	.017	2.842
September	1.402	.311	.086	.518	.184	.016	2.518
October	1.347	.266	.077	.463	.207	.017	2.378
November	1.278	.191	.067	.481	.217	.016	2.249
December	1.434	.181	.085	.551	.260	.017	2.528
Total	16.189	2.882	1.250	6.161	2.914	.202	29.599
1991 January	1.485	.179	.099	.581	.274	.017	2.634
February	1.219	.151	.092	.511	.232	.014	2.220
March	1.233	.199	.092	.525	.278	.016	2.343
April	1.153	.223	.084	.445	.281	.015	2.201
May	1.274	.258	.115	.499	.308	.015	2.469
June	1.369	.269	.117	.579	.275	.016	2.625
July	1.495	.341	.118	.649	.268	.016	2.886
August	1.495	.339	.123	.624	.254	.016	2.851
September	1.339	.272	.091	.554	.219	.015	2.491
October	1.287	.272	.068	.509	.209	.016	2.362
November	1.327	.205	.084	.494	.208	.017	2.335
December	1.388	.175	.094	.572	.246	.017	2.493
Total	16.065	2.883	1.178	6.542	3.050	.192	29.909
1992 January	1.417	.175	.108	.618	.243	.017	2.578
February	1.250	.176	.087	.564	.203	.015	2.296
March	1.304	.215	.092	.490	.234	.017	2.350
April	1.224	.236	.066	.451	.219	.015	2.211
May	1.267	.244	.055	.487	.251	.016	2.321
5-Month Total	6.462	1.047	.408	2.610	1.149	.080	11.756
1991 5-Month Total	6.364	1.010	.482	2.560	1.372	.078	11.867
1990 5-Month Total	6.334	.935	.540	2.484	1.280	.083	11.657

[a] Includes supplemental gaseous fuels.

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

Energy Consumption Notes and Sources

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

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

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

- Residential—All private residences, whether occupied or vacant, owned or rented, including single-family homes, multifamily housing units, and mobile homes. Secondary homes, such as summer homes, are also included. Institutional housing, such as school dormitories, hospitals, and military barracks, generally are not included in the residential sector; they are included in the commercial sector. The SIC code used to classify an establishment as residential is 88 (Household).
- Commercial—Business establishments that are not engaged in transportation or in manufacturing or other types of industrial activity (agriculture, mining, or construction). Commercial establishments include hotels, motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; religious and nonprofit organizations; health, social, and educational institutions; and Federal, State, and local governments. Street lights, pumps, bridges, and public services are also included if the establishment operating them is considered commercial. SIC codes used to classify an establishment as commercial are 50 through 87, 89, and 91 through 97.
- Industrial—Manufacturing industries, which make up the largest part of the sector, along with mining, construction, agriculture, fisheries, and forestry. Establishments in the sector range from steel mills to small farms to companies assembling electronic components. The SIC codes used to classify establishments as industrial are 1 through 39.
- Transportation—Private and public vehicles that move people and commodities. Included are automobiles, trucks, buses, motorcycles, railroads and railways (including streetcars), aircraft, ships, barges, and natural gas pipelines. The SIC codes used to classify establishments as belonging to the transportation sector are 40 through 49.
- Electric Utility—Privately and publicly owned establishments that generate, transmit, distribute, and sell electricity primarily for use by the public and meet the definition of an electric utility. Nonutility power producers are not included in the electric utility sector.

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

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

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

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

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

- 1973-1975: DOI, BOM, *Minerals Yearbook*, "Natural Gas" chapter.
- 1976-1978: EIA, *Energy Data Reports*, "Natural Gas, Annual."
- 1979: EIA, *Natural Gas Production and Consumption 1979.*
- 1980-1990: EIA, *Natural Gas Annual.*
- 1991 forward: EIA, *Natural Gas Monthly.*
- Electric Utilities—1973-1976: Form FPC-4, "Monthly Power Plant Report"; 1977-1981: Federal Energy Regulatory Commission (FERC), Form FPC-4, "Monthly Power Plant Report"; 1982 forward: EIA, Form EIA-759, "Monthly Power Plant Report."
- American Gas Association, "Monthly Gas Utility Statistical Report," residential and commercial monthly sales data for 1973-1979, which are used to estimate monthly consumption values from EIA annual consumption values.

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

- 1973-1975: DOI, BOM, *Mineral Industry Surveys*, "Petroleum Statement, Annual."
- 1976-1980: EIA, *Energy Data Reports*, "Petroleum Statement, Annual."
- 1981-1990: EIA, *Petroleum Supply Annual.*
- 1991 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**—Product supplied is assigned to electric utilities and non-electric utilities as follows:

Electric Utilities, All Periods.

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

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

Non-Electric Utilities, Annual Estimates Through 1990.

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:

- Since 1979, residential deliveries data are directly from the "Deliveries" reports. 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.

- Since 1979, commercial deliveries data are directly from the "Deliveries" reports. 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.

- Since 1979, industrial deliveries data 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.

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

Non-Electric Utilities, Monthly Estimates Through 1990.

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

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

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

Non-Electric Utilities, 1991 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 1990.

- **Jet Fuel**—Through 1982, small amounts of kerosene-type jet fuel were consumed by electric utilities. Kerosene-type jet fuel deliveries to electric utilities as reported on the Form FERC-423 (formerly Form FPC-423) were used as estimates of this consumption. All remaining jet fuel (kerosene-type and naphtha-type) is consumed by the transportation sector.

- **Kerosene**—Total product supplied monthly is allocated to the major end-use sectors in proportion to annual 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 deliveries are directly from the "Deliveries" reports for 1979-1990. Deliveries for 1990 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.

  - Commercial deliveries are directly from the "Deliveries" reports for 1979-1990. Deliveries for 1990 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.

  - Industrial deliveries are directly from the "Deliveries" reports for 1979-1990. Deliveries for 1990 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 for consumption in internal combustion engines is allocated between the transportation and industrial sectors on the basis of data for special fuels used on highways published by the U.S. Department of Transportation, Federal Highway Administration, in *Highway Statistics*. The allocations of LPG sold for internal combustion engine use to the transportation sector range from a high of 67 percent in 1981 to a low of 37 percent in 1987.

  - LPG consumed annually by the industrial sector is estimated as the difference between LPG'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:

- 1973-1982: 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.

- 1984-1990: American Petroleum Institute (API), "Sales of Natural Gas Liquids and Liquefied Refinery Gases," which is based on an LPG sales survey jointly sponsored by API, the Gas Processors Association, and the National Liquefied Petroleum Gas Association.

- 1991 forward: The 1990 source is used to estimate succeeding periods.

- **Lubricants**—Total product supplied is allocated to the industrial and transportation sectors for all months according to proportions developed from annual sales of lubricants to the two sectors from U.S. Department of Commerce, Bureau of the Census, *Current Industrial Reports*, "Sales of Lubricating and Industrial Oils and Greases." The 1973 shares are applied to 1973 and 1974; the 1975 shares are applied to 1975 and 1976; and the 1977 shares are applied to 1977 forward.

- **Motor Gasoline**—Total product supplied monthly is allocated to the major end-use sectors in proportion to aggregations of annual sales categories 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 and miscellaneous and unclassified uses.

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

  - Transportation sales are the sum of sales for highway use (minus the sales of special fuels, which are primarily diesel fuel and are accounted for in the transportation sector of distillate fuel) and sales for marine use.

- **Petroleum Coke**—The portion consumed by electric utilities is from Form EIA-759, "Monthly Power Plant Report" (formerly Form FPC-4). The remaining petroleum coke is assigned to the industrial sector.

- **Residual Fuel**—Product supplied is assigned to electric utilities and non-electric utilities as follows:

  Electric Utilities, All Periods.

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

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

  Non-Electric Utilities, Annual Estimates Through 1990.

  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:

  - Since 1979, commercial deliveries data are directly from the "Deliveries" reports. 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.

  - Since 1979, industrial deliveries data 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.

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

  Non-Electric Utilities, Monthly Estimates Through 1990.

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

Report," No. 2 Fuel Oil Sales to End Users and for Resale, since 1983.

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

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

Non-Electric Utilities, 1991 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 1990.

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

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

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

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

Sources for electric utilities sector:

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

Sources for industrial sector:

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

Sources for imports and exports of electricity:

- 1973-September 1977: Unpublished Federal Power Commission data.
- October 1977-1980: Unpublished Economic Regulatory Administration (ERA) data.
- 1981: DOE, Office of Energy Emergency Operations, "Report on Electric Energy Exchanges with Canada and Mexico for Calendar Year 1981," April 1982 (revised June 1982).
- 1982 and 1983: DOE, ERA, *Electricity Exchanges Across International Borders.*
- 1984-1986: DOE, ERA, *Electricity Transactions Across International Borders.*
- 1987 and 1988: DOE, ERA, Form ERA-781R, "Annual Report of International Electrical Export/Import Data."
- 1989: DOE, Assistant Secretary for Fossil Energy, Form FE-781-R, "Annual Report of International Electrical Export/Import Data."
- 1990 forward: EIA estimates based on preliminary data from the National Energy Board of Canada and DOE, Assistant Secretary for Fossil Energy.

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

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

10. Electricity: End-use consumption of electricity is based on Table 7.2 sales data. "Other," which is primarily for use in government buildings, is added to the commercial sector, except for approximately 4 percent used by railroads and railways and attributed to the transportation sector. For 1973-1983 and 1992 forward, "Monthly Series" data are used directly. For 1984-1991, monthly estimates are created by dividing each month's "Monthly Series" value by the "Monthly Series" total for the year and multiplying by the

"Annual Series" value for the year. Kilowatthours are converted to Btu at the rate of 3,412 Btu per kilowatthour. See Table 7.2 for sources of the electricity sales data.

11. Electrical System Energy Losses: Electrical system energy losses are calculated as the difference between total energy input at electric utilities and the total energy content of electricity sold to end-use consumers. Most of those losses occur at steam-electric power plants (conventional and nuclear) in the conversion of heat energy into mechanical energy to turn electric generators. The loss is a thermodynamically necessary feature of the steam-electric cycle. Part of the energy input-to-output losses is a result of imputing fossil energy equivalent inputs for hydroelectric and other energy sources, since there is no generally accepted practice for measuring those thermal conversion rates. In addition to conversion losses, other losses include power plant use of electricity, transmission and distribution of electricity from power plants to end-use consumers (also called "line losses"), and unaccounted for electricity. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity sales. Overall, approximately 67 percent of total energy input is lost in conversion; of electricity generated, approximately 5 percent is lost in plant use and 9 percent is lost in transmission and distribution. Calculated electrical system energy losses may be less than actual losses, because primary consumption does not include the energy equivalent of utility purchases of electricity from non-electric utilities and from Canada and Mexico, although they are included in electricity sales.

Section 3. Petroleum

Total petroleum imports[2] averaged 8.4 million barrels per day in July 1992, 9 percent[3] higher than both the June 1992 rate and the July 1991 rate.

In July 1992, 17.2 million barrels per day of petroleum products were supplied for domestic use, 2 percent higher than the previous month and 1 percent higher than the July 1991 rate. Motor gasoline accounted for 44 percent of the total; distillate fuel oil, 16 percent; and residual fuel oil, 6 percent.

Motor gasoline supplied during July 1992 averaged 7.6 million barrels per day, 2 percent higher than the previous month and 1 percent higher than the July 1991 rate. Total motor gasoline stocks were 221 million barrels at the end of July 1992, 4 million barrels below the stock level in the previous month but 13 million barrels above the level 1 year earlier.

Distillate fuel oil supplied during July 1992 averaged 2.8 million barrels per day, 3 percent higher than the previous month and 5 percent above the July 1991 rate. Distillate fuel oil ending stocks for July 1992 were 117 million barrels, 13 million barrels above the stock level in the previous month but 8 million barrels below the stock level 1 year earlier.

Residual fuel oil supplied in July 1992 averaged 1.0 million barrels per day, 4 percent lower than the previous month and 14 percent lower than the July 1991 rate. Residual fuel oil stocks measured 38 million barrels at the end of July 1992, 2 million barrels below the stock level in the previous month and 6 million barrels below 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 April 1992.

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

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

	Field Production			Stock Change[a]			Ending Stocks[b]
	Total Domestic[c]	Crude Oil	Natural Gas Plant Production	Crude Oil[d]	Petroleum Products	Petroleum Products Supplied	Crude Oil[d] and Petroleum Products
	Thousand Barrels per Day						Million Barrels
1973 Average	10,975	9,208	1,738	-11	146	17,308	1,008
1974 Average	10,498	8,774	1,688	62	117	16,653	[g]1,074
1975 Average	10,045	8,375	1,633	[g]17	[g]15	16,322	1,133
1976 Average	9,774	8,132	*1,604	39	-96	17,461	1,112
1977 Average	9,913	8,245	1,618	170	378	18,431	1,312
1978 Average	10,328	8,707	1,567	78	-172	18,847	1,278
1979 Average	10,179	8,552	1,584	148	25	18,513	1,341
1980 Average	10,214	8,597	1,573	98	42	17,056	[g]1,392
1981 Average	10,230	8,572	1,609	[g]290	[g]-130	16,058	1,484
1982 Average	10,252	8,649	1,550	136	-283	15,296	[g]1,430
1983 Average	10,299	8,688	1,559	[g]214	[g]-234	15,231	1,454
1984 Average	10,554	8,879	1,630	199	81	15,726	1,556
1985 Average	10,636	8,971	1,609	50	-153	15,726	1,519
1986 Average	10,289	8,680	1,551	78	124	16,281	1,593
1987 Average	10,008	8,349	1,595	128	-87	16,665	1,607
1988 Average	9,818	8,140	1,625	1	-29	17,283	1,597
1989 Average	9,219	7,613	1,546	86	-129	17,325	1,581
1990 January	9,178	7,546	1,541	273	1,284	16,964	1,630
February	9,147	7,497	1,570	-330	507	17,175	1,635
March	9,034	7,433	1,526	1,057	-823	17,087	1,642
April	8,979	7,407	1,493	26	-83	16,778	1,640
May	8,923	7,328	1,502	479	532	16,915	1,672
June	8,645	7,106	1,458	72	378	17,165	1,685
July	8,735	7,173	1,484	-154	929	17,084	1,709
August	8,931	7,287	1,575	-227	-113	18,050	1,699
September	8,891	7,224	1,597	-896	887	16,512	1,698
October	9,301	7,542	1,667	111	-879	16,934	1,674
November	9,155	7,387	1,690	-364	-322	16,695	1,654
December	9,019	7,338	1,604	-528	-544	16,494	1,621
Average	8,994	7,355	1,559	-35	142	16,988	1,621
1991 January	9,255	7,500	1,647	-71	-1,027	16,893	1,587
February	9,424	7,637	1,695	231	-704	16,339	1,573
March	9,301	7,546	1,683	-239	-268	16,212	1,558
April	9,262	7,509	1,665	50	628	16,139	1,578
May	9,157	7,409	1,657	566	988	16,189	1,626
June	9,032	7,320	1,627	-299	546	16,878	1,634
July	9,056	7,347	1,622	-153	199	16,971	1,635
August	9,027	7,316	1,627	103	316	17,183	1,648
September	9,088	7,368	1,623	-156	653	16,848	1,663
October	9,212	7,437	1,686	51	-659	16,996	1,644
November	9,129	7,328	1,697	43	62	16,730	1,647
December	9,089	7,299	1,686	-611	-365	17,145	1,617
Average	9,168	7,417	1,659	-42	32	16,714	1,617
1992 January	[E]9,184	[E]7,363	1,686	534	-773	16,982	1,608
February	[E]9,170	[E]7,373	1,694	176	-967	16,885	1,585
March	[E]9,119	[E]7,315	1,695	-247	-273	16,789	1,569
April	[E]9,086	[E]7,291	1,704	310	75	16,772	1,581
May	[E]8,902	[E]7,110	1,701	-150	811	16,412	1,601
June	[RE]8,926	[RE]7,138	[R]1,701	[R]-577	[R]604	[R]16,928	[R]1,602
July	[PE]8,908	[PE]7,114	[E]1,703	[E]50	[E]318	[E]17,189	[E]1,626
7-Month Average	[PE]9,041	[PE]7,242	[E]1,698	[E]14	[E]-24	[E]16,851	[E]1,626
1991 7-Month Average	9,210	7,465	1,656	10	57	16,520	1,635
1990 7-Month Average	8,947	7,355	1,510	212	390	17,022	1,709

* Due to differences internal to Energy Information Administration data processing systems, some small discrepancies exist between the data in this table and the data in the *Petroleum Supply Annual* and *Petroleum Supply Monthly*. See Note 6 at end of section.

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

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

[c] Includes crude oil, natural gas plant liquids, other hydrocarbons, and alcohol.

[d] Includes stocks located in the Strategic Petroleum Reserve.

Footnotes continued on following page.

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

	Imports			Exports			
	Total	Crude Oil[e]	Petroleum Products	Total	Crude Oil	Petroleum Products	Net Imports[f]
	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 Average	6,224	4,178	2,045	785	154	631	5,439
1987 Average	6,678	4,674	2,004	764	151	613	5,914
1988 Average	7,402	5,107	2,295	815	155	661	6,587
1989 Average	8,061	5,843	2,217	859	142	717	7,202
1990 January	9,197	6,212	2,985	709	132	578	8,488
February	8,399	5,895	2,505	822	102	720	7,577
March	7,965	6,117	1,848	880	132	748	7,084
April	7,858	5,813	2,045	761	111	649	7,097
May	8,834	6,454	2,380	690	112	578	8,144
June	8,747	6,423	2,323	803	88	715	7,944
July	9,048	6,855	2,193	696	89	606	8,353
August	8,644	6,452	2,192	850	64	785	7,794
September	7,361	5,664	1,698	847	68	779	6,514
October	6,717	5,132	1,585	949	104	844	5,768
November	7,003	5,085	1,918	1,085	137	948	5,918
December	6,439	4,611	1,828	1,187	162	1,026	5,252
Average	8,018	5,894	2,123	857	109	748	7,161
1991 January	7,103	5,296	1,808	1,199	50	1,149	5,904
February	6,865	5,485	1,380	1,441	152	1,288	5,424
March	6,646	5,166	1,480	944	137	807	5,702
April	7,418	5,529	1,888	737	162	575	6,680
May	8,518	6,363	2,155	1,149	165	984	7,369
June	8,245	6,334	1,911	921	78	843	7,323
July	7,755	5,955	1,801	963	139	824	6,793
August	8,670	6,645	2,025	837	55	783	7,832
September	7,826	5,812	2,015	785	109	676	7,042
October	7,467	5,683	1,784	918	92	826	6,550
November	7,615	5,528	2,087	926	126	800	6,690
December	7,337	5,565	1,772	1,213	133	1,081	6,124
Average	7,627	5,782	1,844	1,001	116	885	6,626
1992 January	7,593	5,885	1,708	1,144	118	1,026	6,449
February	6,754	5,033	1,721	852	22	829	5,902
March	7,036	5,319	1,718	912	105	807	6,124
April	8,067	6,113	1,954	937	23	914	7,129
May	7,754	6,025	1,729	885	106	779	6,869
June	R7,761	R6,019	R1,742	R957	R107	R850	R6,804
July	E8,427	E6,712	E1,715	E857	E118	E739	E7,570
7-Month Average	E7,633	E5,878	E1,755	E935	E86	E849	E6,697
1991 7-Month Average	7,513	5,734	1,779	1,047	126	921	6,466
1990 7-Month Average	8,583	6,259	2,324	765	110	655	7,819

Footnotes continued.

[e] Includes crude oil for storage in the Strategic Petroleum Reserve.

[f] Net imports equals imports minus exports.

[g] In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations. See Note 4 at end of section.

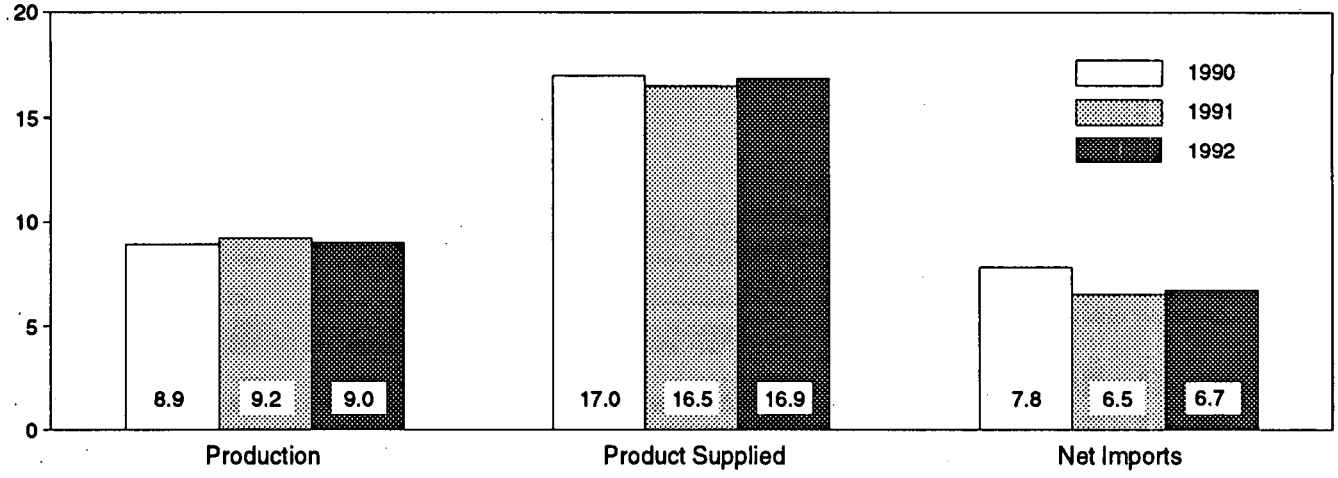
PE=Preliminary estimate. R=Revised data. E=Estimate.

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

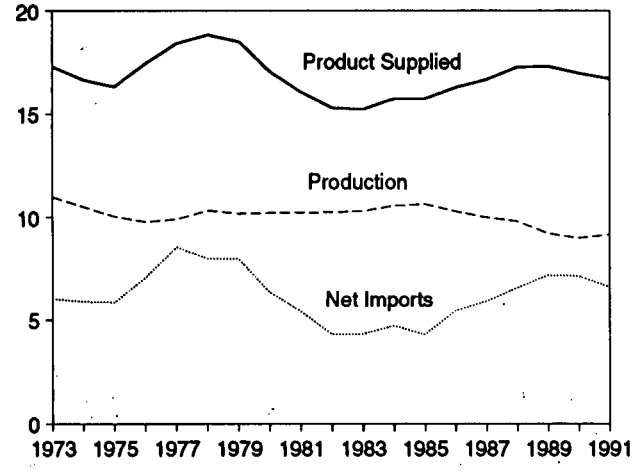
Source: Energy Information Administration, *Petroleum Supply Monthly*, August 1992, Table S1.

Figure 3.1 Petroleum Overview
(Million Barrels per Day)

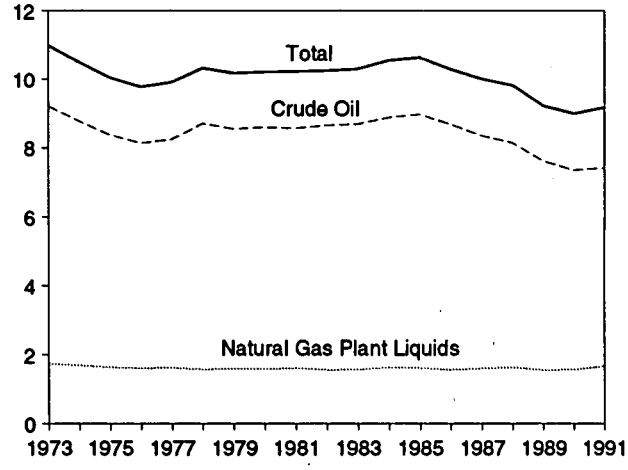
Overview, January-July



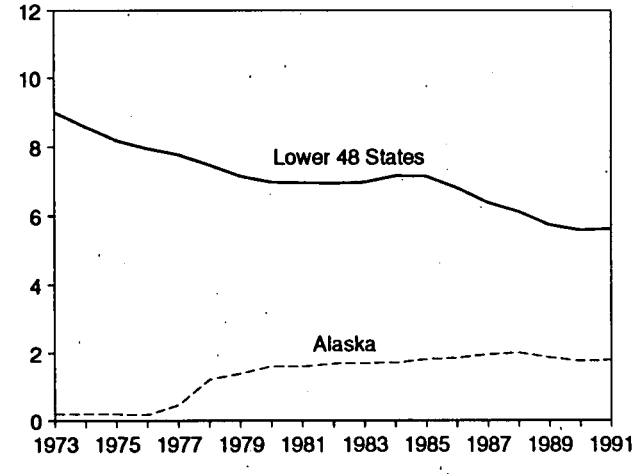
Overview, 1973-1991



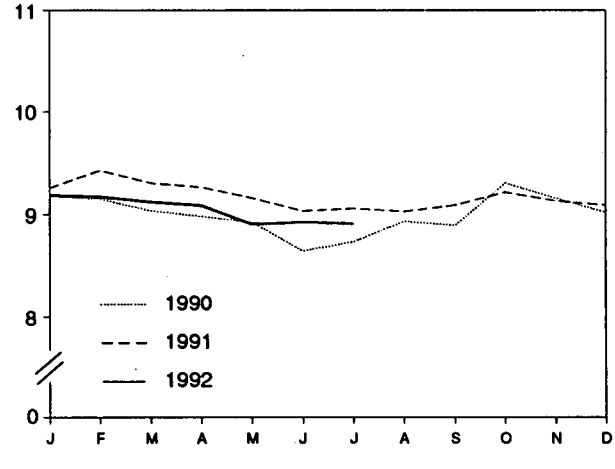
Production, 1973-1991



Crude Oil Production, 1973-1991



Total Production, Monthly

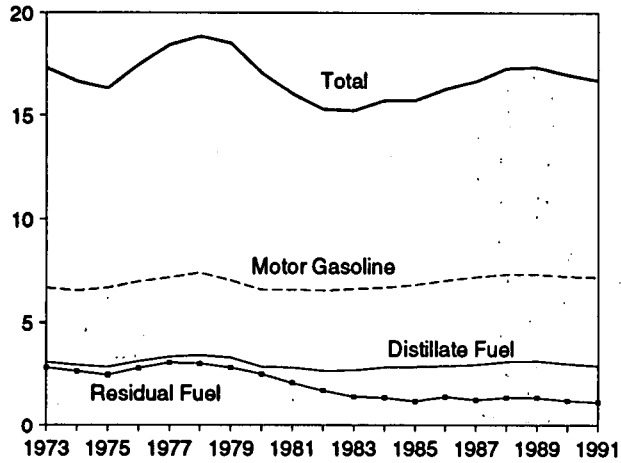


Note: Because vertical scales differ, graphs should not be compared.
Sources: Tables 3.1a, 3.1b, and 3.2a.

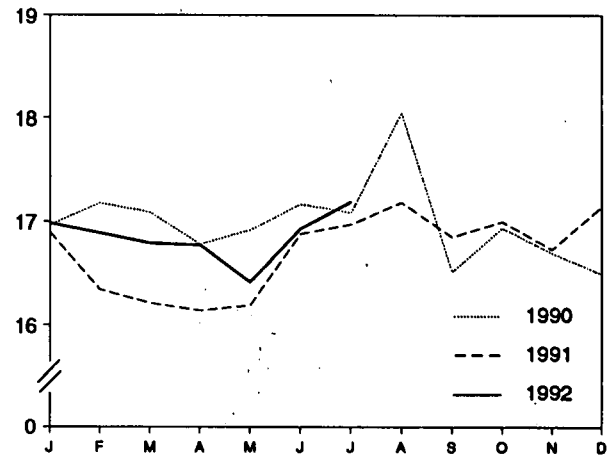
Figure 3.1 Petroleum Overview (Continued)

(Million Barrels per Day, Except as Noted)

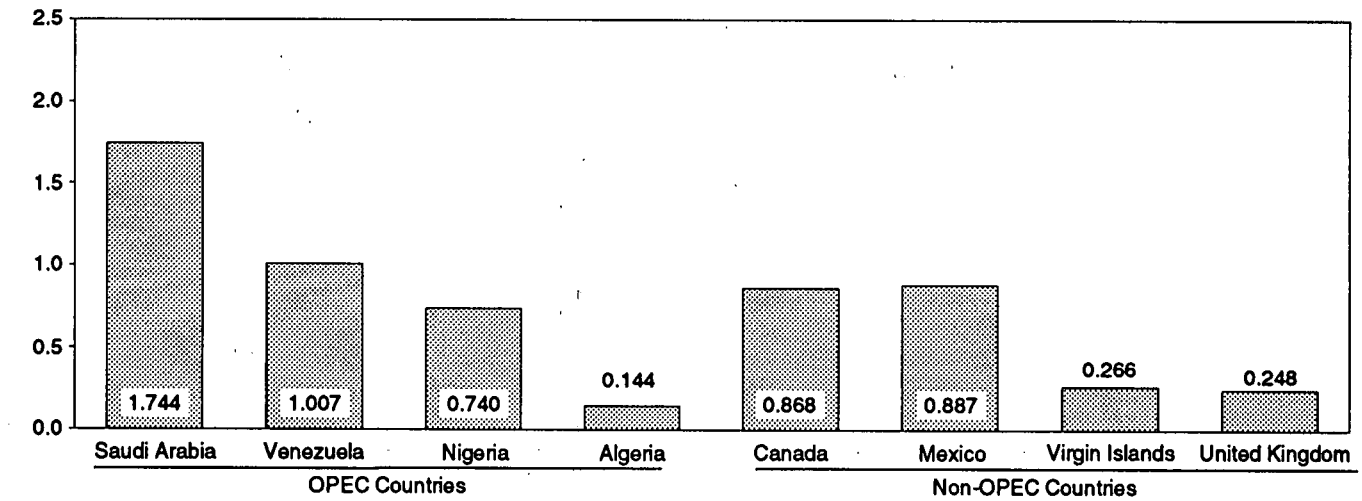
Product Supplied, 1973-1991



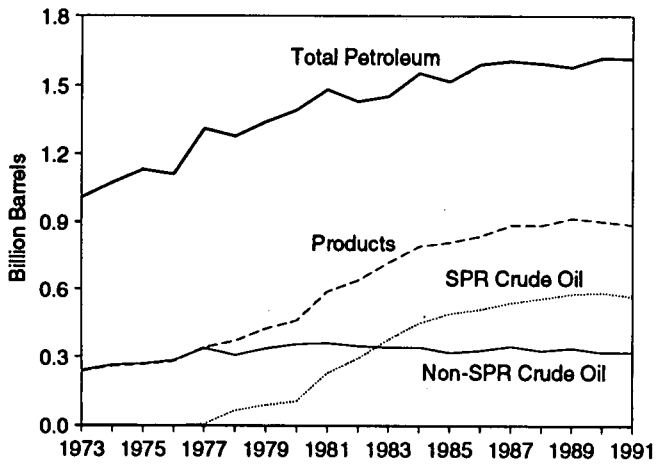
Total Product Supplied, Monthly



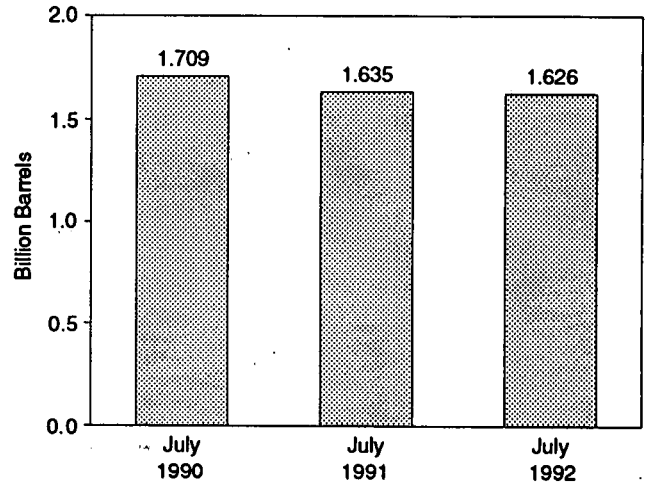
Imports from Selected Countries, June 1992



Stocks, End of Year, 1973-1991



Total Petroleum Stocks, End of Month



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

Table 3.2a Crude Oil Supply and Disposition: Supply

	Supply						
	Field Production		Imports			Unaccounted-for Crude Oil[d]	Crude Oil Used Directly[e]
	Total Domestic	Alaskan	Total	SPR[c]	Other		
	Thousand Barrels per Day						
1973 Average	9,208	198	3,244	–	3,244	3	-19
1974 Average	8,774	193	3,477	–	3,477	-25	-15
1975 Average	8,375	191	4,105	–	4,105	17	-17
1976 Average	8,132	173	5,287	–	5,287	77	* -19
1977 Average	8,245	464	6,615	21	6,594	-6	-14
1978 Average	8,707	1,229	6,356	* 161	6,195	-57	* -15
1979 Average	8,552	1,401	6,519	67	6,452	-11	* -14
1980 Average	8,597	1,617	5,263	44	5,219	34	* -14
1981 Average	8,572	1,609	4,396	256	4,141	83	-58
1982 Average	8,649	1,696	3,488	165	3,323	71	-59
1983 Average	8,688	1,714	3,329	234	3,096	114	–
1984 Average	8,879	1,722	3,426	197	3,229	185	–
1985 Average	8,971	1,825	3,201	118	3,083	145	–
1986 Average	8,680	1,867	4,178	48	4,130	139	–
1987 Average	8,349	1,962	4,674	73	4,601	145	–
1988 Average	8,140	2,017	5,107	51	5,055	196	–
1989 Average	7,613	1,874	5,843	56	5,787	200	–
1990 January	7,546	1,864	6,212	24	6,188	178	–
February	7,497	1,834	5,895	12	5,883	-98	–
March	7,433	1,819	6,117	44	6,073	540	–
April	7,407	1,802	5,813	38	5,775	-9	–
May	7,328	1,765	6,454	89	6,365	225	–
June	7,106	1,612	6,423	17	6,407	349	–
July	7,173	1,687	6,855	0	6,855	150	–
August	7,287	1,727	6,452	95	6,357	259	–
September	7,224	1,702	5,664	0	5,664	402	–
October	7,542	1,884	5,132	0	5,132	382	–
November	7,387	1,746	5,085	0	5,085	269	–
December	7,338	1,838	4,611	0	4,611	409	–
Average	7,355	1,773	5,894	27	5,867	258	–
1991 January	7,500	1,848	5,296	0	5,296	-59	–
February	7,637	1,908	5,485	0	5,485	324	–
March	7,546	1,887	5,166	0	5,166	43	–
April	7,509	1,798	5,529	0	5,529	236	–
May	7,409	1,771	6,363	0	6,363	513	–
June	7,320	1,757	6,334	0	6,334	59	–
July	7,347	1,775	5,955	0	5,955	403	–
August	7,316	1,731	6,645	0	6,645	11	–
September	7,368	1,787	5,812	0	5,812	484	–
October	7,437	1,843	5,683	0	5,683	-59	–
November	7,328	1,765	5,528	0	5,528	263	–
December	7,299	1,718	5,565	0	5,565	146	–
Average	7,417	1,798	5,782	0	5,782	195	–
1992 January	E 7,363	E 1,789	5,885	0	5,885	353	–
February	E 7,373	E 1,808	5,033	0	5,033	298	–
March	E 7,315	E 1,785	5,319	0	5,319	320	–
April	E 7,291	E 1,741	6,113	0	6,113	194	–
May	E 7,110	E 1,682	6,025	0	6,025	504	–
June	RE 7,138	RE 1,703	R 6,019	34	R 5,986	R 443	–
July	PE 7,114	PE 1,661	E 6,712	E 0	E 6,712	E 359	–
7-Month Average	PE 7,242	PE 1,738	E 5,878	E 5	E 5,873	E 354	–
1991 7-Month Average	7,465	1,820	5,734	0	5,734	216	–
1990 7-Month Average	7,355	1,769	6,259	32	6,227	195	–

* Due to differences internal to Energy Information Administration data processing systems, some small discrepancies exist between the data in this table and the data in the *Petroleum Supply Annual* and *Petroleum Supply Monthly*. See Note 6 at end of section.

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

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

[c] Strategic Petroleum Reserve.

[d] A balancing item.

[e] Beginning in January 1983, crude oil used directly as fuel is shown as product supplied.

[f] Stocks of Alaskan crude oil in transit are included beginning in January 1981. See Note 5 at end of section.

[g] Stock change is calculated by using new basis stock levels. See Note 4 at end of section.

Footnotes continued on following page.

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

	Disposition						Ending Stocks[a]		
	Crude Losses	Stock Change[b] SPR[c]	Stock Change[b] Other	Refinery Input	Exports	Product Supplied[e]	Total	SPR[c]	Other Primary
	Thousand Barrels per Day						Million Barrels		
1973 Average	13	–	-11	12,431	2	–	242	–	242
1974 Average	13	–	62	12,133	3	–	265	–	265
1975 Average	13	–	17	12,442	6	–	271	–	271
1976 Average	*14	–	39	13,416	8	–	285	–	285
1977 Average	16	20	150	14,602	50	–	348	7	340
1978 Average	16	163	-84	14,739	158	–	376	67	309
1979 Average	16	67	81	14,648	235	–	430	91	339
1980 Average	*14	45	52	13,481	287	–	[f]466	108	[f]358
1981 Average	5	336	[f]-46	12,470	228	–	594	230	363
1982 Average	3	174	-38	11,774	236	–	[g]644	294	[g]350
1983 Average	2	234	[g]-20	11,685	164	66	723	379	344
1984 Average	2	195	4	12,044	181	64	796	451	345
1985 Average	1	117	-67	12,002	204	60	814	493	321
1986 Average	(s)	50	28	12,716	154	49	843	512	331
1987 Average	(s)	80	49	12,854	151	34	890	541	349
1988 Average	(s)	52	-51	13,246	155	40	890	560	330
1989 Average	(s)	56	30	13,401	142	28	921	580	341
1990 January	(s)	24	249	13,491	132	40	930	581	349
February	0	12	-342	13,487	102	36	920	581	339
March	0	44	1,013	12,876	132	24	953	582	371
April	(s)	38	-12	13,051	111	24	954	583	370
May	0	89	389	13,386	112	30	969	586	383
June	(s)	16	56	13,689	88	29	971	587	384
July	0	0	-154	14,212	89	31	966	587	379
August	(s)	94	-321	14,142	64	18	959	590	370
September	(s)	(s)	-897	14,104	68	14	932	590	343
October	(s)	-8	120	12,825	104	15	936	589	346
November	(s)	-111	-253	12,953	137	13	925	586	339
December	(s)	-10	-517	12,708	162	15	908	586	323
Average	(s)	16	-51	13,409	109	24	908	586	323
1991 January	0	0	-71	12,735	50	23	906	586	320
February	0	-147	379	13,046	152	17	913	582	331
March	(s)	-422	183	12,839	137	18	905	568	337
April	(s)	0	50	13,042	162	21	907	568	338
May	(s)	0	566	13,539	165	15	924	568	356
June	(s)	(s)	-299	13,918	78	16	915	568	347
July	0	(s)	-153	13,703	139	15	911	569	342
August	0	(s)	103	13,800	55	13	914	569	345
September	0	0	-156	13,694	109	16	909	569	341
October	(s)	(s)	51	12,896	92	22	911	569	342
November	(s)	(s)	43	12,929	126	22	912	569	344
December	0	(s)	-611	13,465	133	23	893	569	325
Average	(s)	-47	5	13,301	116	18	893	569	325
1992 January	0	(s)	534	12,923	118	26	910	569	341
February	(s)	0	176	12,488	22	17	915	569	346
March	0	(s)	-247	13,077	105	18	907	569	339
April	0	0	310	13,254	23	11	916	569	348
May	0	(s)	-150	13,673	106	10	912	569	343
June	(s)	34	[R]-611	[R]14,058	[R]107	[R]12	[R]894	570	[R]325
July	[E] (s)	[E] (s)	[E]50	[E]14,006	[E]118	[E]11	[E]902	[E]570	[E]333
7-Month Average	[E] (s)	[E]5	[E]9	[E]13,360	[E]86	[E]15	[E]902	[E]570	[E]333
1991 7-Month Average	(s)	-81	92	13,261	126	18	911	569	342
1990 7-Month Average	(s)	32	180	13,456	110	31	966	587	379

Footnotes continued.

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

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

Source: Energy Information Administration, *Petroleum Supply Monthly*, August 1992, Table S2.

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

(Thousand Barrels per Day)

	Arab OPEC[a]							
	Algeria		Iraq		Kuwait[c]		Libya	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	136	120	4	4	47	42	164	133
1974 Average	190	180	0	0	5	5	4	4
1975 Average	282	264	2	2	16	4	232	223
1976 Average	432	408	26	26	5	1	453	444
1977 Average	559	544	74	74	48	42	723	704
1978 Average	649	634	62	62	6	5	654	638
1979 Average	636	608	88	88	8	5	658	642
1980 Average	488	456	28	28	27	27	554	548
1981 Average	311	261	(s)	0	0	0	319	317
1982 Average	170	90	3	3	5	2	26	23
1983 Average	240	176	10	10	14	7	0	0
1984 Average	323	194	12	12	36	24	1	0
1985 Average	187	84	46	46	21	4	4	0
1986 Average	271	78	81	81	68	28	0	0
1987 Average	295	115	83	82	84	70	0	0
1988 Average	300	58	345	343	92	80	0	0
1989 Average	269	60	449	441	157	155	0	0
1990 January	413	97	690	657	250	250	0	0
February	282	47	500	488	150	140	0	0
March	301	67	585	580	100	82	0	0
April	234	62	588	588	50	50	0	0
May	259	38	727	724	64	64	0	0
June	333	72	708	708	105	94	0	0
July	308	70	1,120	1,120	43	33	0	0
August	360	80	966	966	243	207	0	0
September	279	69	318	318	33	33	0	0
October	173	15	0	0	0	0	0	0
November	177	46	0	0	0	0	0	0
December	242	92	0	0	0	0	0	0
Average	280	63	518	514	86	79	0	0
1991 January	327	48	0	0	0	0	0	0
February	246	20	0	0	0	0	0	0
March	222	45	0	0	0	0	0	0
April	282	74	0	0	0	0	0	0
May	308	72	0	0	0	0	0	0
June	304	37	0	0	0	0	0	0
July	202	28	0	0	0	0	0	0
August	182	16	0	0	0	0	0	0
September	205	19	0	0	34	34	0	0
October	235	53	0	0	33	33	0	0
November	278	58	0	0	0	0	0	0
December	247	54	0	0	0	0	0	0
Average	253	44	0	0	6	6	0	0
1992 January	217	37	0	0	0	0	0	0
February	218	57	0	0	0	0	0	0
March	215	37	0	0	0	0	0	0
April	182	19	0	0	0	0	0	0
May	202	7	0	0	0	0	0	0
June	144	12	0	0	0	0	0	0
6-Month Average	197	28	0	0	0	0	0	0
1991 6-Month Average	282	50	0	0	0	0	0	0
1990 6-Month Average	304	64	635	626	120	113	0	0

See footnotes at end of Table 3.3h.

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

(Thousand Barrels per Day)

	Arab OPEC[a]						Total Arab OPEC[a]	
	Qatar		Saudi Arabia[c]		United Arab Emirates			
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	**7**	**7**	**486**	**462**	**71**	**71**	**915**	**838**
1974 Average	**17**	**17**	**461**	**438**	**74**	**69**	**752**	**713**
1975 Average	**18**	**18**	**715**	**701**	**117**	**117**	**1,383**	**1,330**
1976 Average	**24**	**24**	**1,230**	**1,222**	**254**	**254**	**2,424**	**2,378**
1977 Average	**67**	**67**	**1,380**	**1,373**	**335**	**333**	**3,185**	**3,136**
1978 Average	**64**	**64**	**1,144**	**1,142**	**385**	**385**	**2,963**	**2,930**
1979 Average	**31**	**31**	**1,356**	**1,347**	**281**	**281**	**3,058**	**3,002**
1980 Average	**22**	**22**	**1,261**	**1,250**	**172**	**172**	**2,551**	**2,503**
1981 Average	**7**	**7**	**1,129**	**1,112**	**81**	**77**	**1,848**	**1,774**
1982 Average	**7**	**7**	**552**	**530**	**92**	**81**	**854**	**736**
1983 Average	**(s)**	**0**	**337**	**321**	**30**	**18**	**632**	**533**
1984 Average	**5**	**4**	**325**	**309**	**117**	**90**	**819**	**634**
1985 Average	**(s)**	**0**	**168**	**132**	**45**	**35**	**472**	**300**
1986 Average	**13**	**12**	**685**	**618**	**44**	**38**	**1,162**	**854**
1987 Average	**0**	**0**	**751**	**642**	**61**	**56**	**1,274**	**965**
1988 Average	**0**	**0**	**1,073**	**911**	**29**	**23**	**1,839**	**1,415**
1989 Average	**2**	**2**	**1,224**	**1,116**	**28**	**21**	**2,130**	**1,794**
1990 January	0	0	1,214	1,055	37	0	2,605	2,060
February	0	0	1,557	1,372	18	18	2,506	2,065
March	0	0	1,157	1,060	17	17	2,161	1,805
April	43	43	1,149	950	9	0	2,073	1,693
May	0	0	1,225	1,076	73	60	2,349	1,963
June	0	0	1,153	1,041	20	0	2,318	1,916
July	0	0	1,369	1,242	13	13	2,853	2,478
August	0	0	1,189	1,052	0	0	2,757	2,305
September	0	0	1,286	1,168	0	0	1,915	1,588
October	0	0	1,619	1,473	0	0	1,792	1,488
November	0	0	1,581	1,431	0	0	1,758	1,477
December	0	0	1,587	1,431	14	0	1,843	1,523
Average	4	4	1,339	1,195	17	9	2,244	1,864
1991 January	0	0	1,934	1,782	0	0	2,261	1,830
February	0	0	1,566	1,538	0	0	1,812	1,559
March	0	0	1,683	1,646	0	0	1,905	1,691
April	0	0	1,764	1,702	0	0	2,046	1,776
May	0	0	2,258	2,053	0	0	2,566	2,124
June	0	0	1,841	1,795	0	0	2,145	1,832
July	0	0	1,725	1,641	0	0	1,928	1,670
August	0	0	2,019	1,964	7	0	2,208	1,980
September	0	0	1,708	1,562	0	0	1,947	1,615
October	0	0	1,671	1,545	18	18	1,956	1,649
November	0	0	1,778	1,626	16	0	2,072	1,684
December	0	0	1,645	1,566	0	0	1,892	1,620
Average	0	0	1,802	1,703	3	2	2,064	1,754
1992 January	0	0	1,971	1,865	18	0	2,206	1,902
February	0	0	1,776	1,687	0	0	1,995	1,745
March	0	0	1,707	1,568	0	0	1,922	1,605
April	0	0	1,734	1,524	0	0	1,916	1,543
May	0	0	1,764	1,584	0	0	1,966	1,591
June	0	0	1,744	1,610	0	0	1,888	1,621
6-Month Average	**0**	**0**	**1,783**	**1,640**	**3**	**0**	**1,983**	**1,668**
1991 6-Month Average	**0**	**0**	**1,846**	**1,756**	**0**	**0**	**2,128**	**1,806**
1990 6-Month Average	**7**	**7**	**1,238**	**1,089**	**29**	**16**	**2,334**	**1,916**

See footnotes at end of Table 3.3h.

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

(Thousand Barrels per Day)

	Non-Arab OPEC[a]							
	Ecuador		Gabon		Indonesia		Iran	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	48	47	0	0	213	200	223	216
1974 Average	42	42	23	23	300	284	469	463
1975 Average	57	57	27	27	390	379	280	278
1976 Average	51	51	28	26	539	537	298	298
1977 Average	57	55	42	35	541	507	535	530
1978 Average	54	38	41	38	573	533	555	554
1979 Average	42	30	42	42	420	380	304	297
1980 Average	27	17	26	25	348	314	9	8
1981 Average	48	38	35	35	366	318	0	0
1982 Average	42	32	40	40	248	226	35	35
1983 Average	61	56	59	59	338	315	48	48
1984 Average	55	47	58	57	343	304	10	10
1985 Average	67	56	52	51	314	292	27	27
1986 Average	77	64	26	25	318	297	19	19
1987 Average	29	23	35	35	285	262	98	98
1988 Average	47	33	16	15	205	186	[d] (s)	[d] (s)
1989 Average	89	80	50	49	183	158	0	0
1990 January	48	35	75	75	153	118	0	0
February	60	40	43	43	254	189	0	0
March	49	38	134	134	138	97	0	0
April	31	29	32	28	88	80	0	0
May	17	12	27	27	85	77	0	0
June	98	86	59	59	138	129	0	0
July	60	43	69	69	143	137	0	0
August	81	69	119	119	69	55	0	0
September	43	37	59	59	111	111	0	0
October	49	43	50	50	88	88	0	0
November	13	13	71	71	72	72	0	0
December	35	12	30	30	45	36	0	0
Average	49	38	64	64	114	98	0	0
1991 January	18	6	41	41	70	70	0	0
February	66	55	95	95	162	153	0	0
March	67	58	29	29	93	93	0	0
April	35	24	72	72	69	69	0	0
May	109	103	96	96	97	97	0	0
June	129	126	70	70	187	187	0	0
July	62	47	137	137	88	88	81	81
August	112	93	56	56	93	87	48	48
September	31	25	91	91	83	64	152	152
October	30	24	137	137	118	91	43	43
November	55	48	91	91	120	96	64	64
December	41	23	91	91	163	134	0	0
Average	63	53	84	84	111	102	32	32
1992 January	23	23	91	91	125	117	0	0
February	37	24	105	105	39	39	0	0
March	26	26	25	25	85	83	0	0
April	53	46	186	186	54	49	0	0
May	51	51	135	135	155	133	0	0
June	105	101	129	129	109	102	0	0
6-Month Average	49	45	111	111	95	88	0	0
1991 6-Month Average	71	62	67	67	112	111	0	0
1990 6-Month Average	50	40	62	62	141	114	0	0

See footnotes at end of Table 3.3h.

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

(Thousand Barrels per Day)

	Non-Arab OPEC[a]				Total Non-Arab OPEC[a]		Total OPEC[a]	
	Nigeria		Venezuela					
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	459	448	1,135	344	2,078	1,257	2,993	2,095
1974 Average	713	697	979	319	2,527	1,827	3,280	2,540
1975 Average	762	746	702	395	2,219	1,882	3,601	3,211
1976 Average	1,025	1,014	700	241	2,642	2,167	5,066	4,545
1977 Average	1,143	1,130	690	250	3,008	2,507	6,193	5,643
1978 Average	919	910	646	181	2,788	2,254	5,751	5,184
1979 Average	1,080	1,069	690	293	2,579	2,110	5,637	5,112
1980 Average	857	841	481	156	1,749	1,361	4,300	3,864
1981 Average	620	611	406	147	1,476	1,149	3,323	2,922
1982 Average	514	510	412	155	1,291	998	2,146	1,734
1983 Average	302	301	422	164	1,231	944	1,862	1,477
1984 Average	216	207	548	253	1,230	878	2,049	1,512
1985 Average	293	280	605	306	1,358	1,012	1,830	1,312
1986 Average	440	437	793	416	1,674	1,259	2,837	2,113
1987 Average	535	529	804	488	1,787	1,435	3,060	2,400
1988 Average	618	607	794	439	1,681	1,281	3,520	2,696
1989 Average	815	800	873	495	2,010	1,582	4,140	3,376
1990 January	830	830	1,155	696	2,260	1,754	4,865	3,813
February	833	816	898	564	2,088	1,652	4,594	3,717
March	1,054	1,031	893	543	2,268	1,843	4,429	3,648
April	969	941	1,005	692	2,125	1,772	4,198	3,465
May	1,008	997	1,087	705	2,225	1,818	4,574	3,781
June	778	760	1,070	704	2,142	1,737	4,460	3,653
July	860	855	1,007	665	2,139	1,769	4,992	4,246
August	881	881	1,014	617	2,164	1,741	4,921	4,046
September	755	743	1,062	740	2,029	1,690	3,944	3,277
October	557	536	982	717	1,725	1,434	3,517	2,921
November	574	555	1,142	725	1,871	1,435	3,629	2,912
December	499	461	975	616	1,585	1,155	3,428	2,678
Average	800	784	1,025	666	2,052	1,650	4,296	3,514
1991 January	504	481	1,005	673	1,637	1,271	3,898	3,101
February	721	717	959	686	2,003	1,705	3,815	3,264
March	531	531	998	631	1,718	1,342	3,623	3,033
April	677	649	845	470	1,698	1,283	3,744	3,059
May	860	838	997	581	2,158	1,715	4,724	3,839
June	832	827	1,135	705	2,354	1,915	4,498	3,747
July	833	817	1,102	683	2,304	1,855	4,232	3,525
August	1,016	983	1,070	701	2,394	1,966	4,602	3,946
September	489	467	1,163	790	2,009	1,589	3,956	3,204
October	651	623	1,087	777	2,067	1,694	4,023	3,343
November	704	674	1,065	671	2,099	1,644	4,171	3,328
December	617	593	987	655	1,899	1,496	3,791	3,116
Average	703	683	1,035	668	2,028	1,622	4,092	3,377
1992 January	593	566	1,105	787	1,935	1,583	4,141	3,485
February	322	303	1,008	655	1,511	1,126	3,506	2,871
March	441	409	1,098	793	1,676	1,336	3,598	2,941
April	798	788	1,058	710	2,148	1,779	4,064	3,322
May	773	773	1,031	745	2,145	1,837	4,111	3,428
June	740	740	1,007	694	2,089	1,765	3,978	3,387
6-Month Average	612	598	1,052	732	1,920	1,574	3,903	3,242
1991 6-Month Average	686	672	990	624	1,926	1,535	4,054	3,341
1990 6-Month Average	914	898	1,020	652	2,187	1,765	4,521	3,680

See footnotes at end of Table 3.3h.

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

(Thousand Barrels per Day)

	Non-OPEC[b]											
	Angola		Australia		Bahama Islands		Brazil		Canada		China	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	49	49	2	0	174	0	9	0	1,325	1,001	(s)	0
1974 Average	49	48	1	0	164	0	2	0	1,070	791	0	0
1975 Average	75	71	5	0	152	0	5	0	846	600	0	0
1976 Average	12	7	2	0	118	0	0	0	599	371	0	0
1977 Average	24	17	3	0	171	0	0	0	517	279	0	0
1978 Average	20	6	5	0	160	0	0	0	467	248	0	0
1979 Average	43	39	6	0	147	0	1	0	538	271	13	13
1980 Average	42	37	1	0	78	0	3	1	455	199	(s)	0
1981 Average	49	45	5	0	74	0	23	14	447	164	18	0
1982 Average	44	42	5	(s)	65	0	47	19	482	214	40	8
1983 Average	78	71	4	0	125	0	41	2	547	274	34	6
1984 Average	90	85	38	25	88	0	60	(s)	630	341	46	15
1985 Average	110	104	37	21	40	0	61	0	770	468	59	36
1986 Average	112	102	41	30	37	0	50	0	807	570	90	68
1987 Average	192	180	58	49	37	0	84	0	848	608	82	63
1988 Average	212	203	64	59	32	0	98	0	999	681	88	82
1989 Average	284	279	36	31	34	0	82	0	931	630	80	76
1990 January	262	262	41	41	80	0	48	0	982	605	121	121
February	346	346	58	55	78	0	45	0	946	585	53	51
March	296	296	41	41	35	0	8	0	850	583	83	83
April	281	281	25	20	51	0	40	0	925	617	80	74
May	235	235	69	69	29	0	114	0	981	654	66	65
June	260	260	44	44	36	0	82	0	942	699	49	43
July	303	303	126	101	25	0	93	0	899	659	132	122
August	134	134	56	33	40	0	45	0	952	676	79	77
September	135	123	57	45	45	0	8	0	924	632	47	42
October	139	139	31	31	9	0	12	0	917	636	85	85
November	238	238	28	28	0	0	74	0	902	645	113	113
December	224	224	64	60	13	0	16	0	987	713	47	47
Average	237	236	53	47	37	0	49	0	934	643	80	77
1991 January	232	232	21	21	25	0	31	0	978	718	68	63
February	202	202	0	0	14	0	13	0	1,135	881	102	96
March	186	186	0	0	0	0	0	0	1,058	764	96	96
April	337	337	55	55	35	0	17	0	1,103	768	113	113
May	220	220	64	57	42	0	31	0	1,027	752	119	113
June	205	205	43	31	30	0	41	0	986	705	144	139
July	264	264	20	20	19	0	21	0	848	615	88	88
August	298	298	37	22	78	0	27	0	1,011	694	85	75
September	230	230	24	24	29	0	19	0	1,137	849	91	86
October	300	300	13	0	51	0	16	0	936	639	29	24
November	213	213	25	13	46	0	45	0	1,107	796	96	96
December	359	359	13	13	53	0	8	0	1,083	759	65	65
Average	254	254	26	21	35	0	22	0	1,033	743	91	87
1992 January	360	360	11	11	63	0	18	0	1,023	783	144	144
February	246	246	10	10	47	0	12	0	1,143	831	75	69
March	339	339	0	0	76	0	0	0	1,094	829	75	75
April	381	381	39	22	67	0	17	0	1,111	833	86	69
May	264	264	0	0	46	0	18	0	972	756	124	114
June	286	286	21	21	57	0	28	0	868	645	106	95
6-Month Average	313	313	13	11	60	0	15	0	1,034	780	102	95
1991 6-Month Average	230	230	31	28	25	0	22	0	1,046	763	107	103
1990 6-Month Average	279	279	46	45	51	0	57	0	938	624	76	73

See footnotes at end of Table 3.3h.

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

(Thousand Barrels per Day)

	Non-OPEC[b]									
	Colombia		Italy		Malaysia		Mexico		Netherlands	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	9	2	125	0	12	1	16	1	53	0
1974 Average	5	0	74	0	12	1	8	2	43	0
1975 Average	9	0	27	0	8	5	71	70	19	4
1976 Average	21	6	39	0	18	16	87	87	8	0
1977 Average	17	0	51	0	66	55	179	177	31	4
1978 Average	20	0	38	0	42	37	318	316	5	2
1979 Average	18	0	30	0	66	52	439	437	23	7
1980 Average	4	0	4	0	70	61	533	507	2	(s)
1981 Average	1	0	11	0	36	33	522	469	30	(s)
1982 Average	5	0	18	(s)	20	18	685	645	35	(s)
1983 Average	10	0	18	(s)	4	3	826	766	65	3
1984 Average	8	0	45	(s)	1	0	748	659	65	3
1985 Average	23	0	60	(s)	3	1	816	715	58	0
1986 Average	87	57	76	0	12	11	699	621	54	0
1987 Average	148	115	54	1	13	12	655	602	60	0
1988 Average	134	106	65	5	19	19	747	674	61	0
1989 Average	172	136	34	3	39	39	767	716	49	0
1990 January	188	146	124	0	14	14	776	691	129	0
February	203	168	76	0	42	38	725	669	80	0
March	177	146	47	0	28	28	815	757	21	0
April	198	143	53	0	38	38	466	414	47	0
May	220	175	101	10	0	0	788	688	63	0
June	180	117	95	0	9	9	912	815	92	0
July	169	111	56	11	20	20	706	651	54	0
August	203	132	43	0	142	142	773	676	39	0
September	97	84	38	0	105	105	871	807	20	0
October	183	159	21	0	78	78	828	793	37	0
November	209	177	32	0	8	8	761	706	49	0
December	161	121	13	0	6	6	637	595	28	0
Average	182	140	58	2	41	40	755	689	55	0
1991 January	194	174	25	0	0	0	798	778	6	0
February	151	98	42	13	9	9	742	693	17	0
March	157	127	29	0	21	21	795	772	33	0
April	163	131	41	12	0	0	891	819	35	0
May	163	112	60	0	66	66	757	736	45	0
June	169	124	46	0	63	63	919	872	49	0
July	163	111	54	0	9	9	835	748	47	0
August	219	162	57	11	14	14	878	797	30	0
September	168	103	89	0	10	10	805	768	44	0
October	128	80	41	0	64	64	811	754	16	0
November	145	135	15	0	10	10	716	656	24	0
December	138	117	61	0	14	14	732	708	4	0
Average	163	123	47	3	24	24	807	759	29	0
1992 January	158	111	40	0	0	0	764	721	31	0
February	114	92	48	0	0	0	819	788	9	0
March	101	74	44	0	0	0	846	809	34	0
April	150	129	75	0	0	0	857	795	8	0
May	57	46	57	0	5	5	788	764	27	0
June	135	114	68	0	8	8	887	865	25	0
6-Month Average	119	94	55	0	2	2	827	790	22	0
1991 6-Month Average	166	128	40	4	27	27	817	779	31	0
1990 6-Month Average	194	149	83	2	21	21	748	673	72	0

See footnotes at end of Table 3.3h.

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

(Thousand Barrels per Day)

	Non-OPEC[b]											
	Netherlands Antilles		Norway		Puerto Rico		Spain		Trinidad and Tobago		United Kingdom	
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	585	0	1	0	99	0	26	0	255	60	15	0
1974 Average	511	0	1	1	90	0	12	0	251	63	8	0
1975 Average	332	0	17	12	90	0	1	0	242	115	14	(s)
1976 Average	275	0	36	35	88	0	1	0	274	104	31	13
1977 Average	211	0	50	48	105	0	10	0	289	134	126	97
1978 Average	229	0	104	104	94	0	3	0	253	142	180	169
1979 Average	231	0	75	75	92	0	4	0	190	123	202	197
1980 Average	225	0	144	144	88	0	1	0	176	115	176	173
1981 Average	197	0	119	114	62	0	1	(s)	133	102	375	369
1982 Average	175	0	102	102	50	0	3	(s)	112	92	456	441
1983 Average	189	0	66	65	40	0	2	(s)	96	83	382	365
1984 Average	188	0	114	112	42	0	11	0	94	87	402	378
1985 Average	40	0	32	31	28	0	29	1	113	98	310	278
1986 Average	25	0	60	53	21	0	53	0	125	93	350	317
1987 Average	29	0	80	70	21	0	55	0	106	75	352	304
1988 Average	36	0	67	62	22	0	68	0	97	71	315	254
1989 Average	42	0	138	127	32	0	67	0	94	73	215	160
1990 January	9	0	75	67	35	0	60	0	109	84	219	147
February	27	0	43	37	32	0	53	0	89	67	74	23
March	10	0	50	50	32	0	13	0	103	96	257	221
April	40	0	134	118	33	0	17	0	114	81	304	288
May	20	0	166	166	38	0	87	0	88	58	369	305
June	21	0	209	199	27	0	66	0	118	83	249	233
July	30	0	129	129	35	0	104	0	107	73	224	179
August	41	0	159	159	29	0	54	0	108	91	183	179
September	33	0	125	119	20	0	23	0	89	70	155	155
October	43	0	67	67	29	0	21	0	83	76	81	44
November	46	0	17	17	50	0	25	0	81	73	112	56
December	53	0	43	17	29	0	38	0	62	62	33	19
Average	31	0	102	96	32	0	47	0	96	76	189	155
1991 January	103	0	45	34	22	0	26	0	75	64	32	19
February	23	0	37	37	20	0	18	0	76	76	34	21
March	56	0	25	16	14	0	13	0	86	73	48	19
April	61	0	51	35	23	0	66	0	84	64	61	37
May	113	0	165	156	42	0	53	0	61	61	222	188
June	84	0	99	84	19	0	41	0	118	104	105	70
July	86	0	69	63	25	0	22	0	91	72	228	164
August	100	0	142	136	42	0	48	0	91	66	254	217
September	67	0	79	72	34	0	42	0	119	75	218	194
October	90	0	98	98	12	0	24	0	88	76	201	166
November	100	0	73	65	35	0	19	0	77	69	84	18
December	88	0	94	88	36	0	26	0	87	71	154	151
Average	81	0	82	74	27	0	33	0	88	72	138	106
1992 January	40	0	25	17	32	0	35	0	108	79	128	115
February	82	0	11	0	23	0	16	0	109	76	63	0
March	49	0	11	0	18	0	37	0	105	85	79	52
April	73	0	162	147	14	0	35	0	79	75	157	128
May	59	0	209	200	22	0	30	0	69	54	198	180
June	91	0	234	225	28	0	45	0	94	74	248	206
6-Month Average	65	0	109	98	23	0	33	0	94	74	146	114
1991 6-Month Average	74	0	71	61	23	0	36	0	83	74	84	60
1990 6-Month Average	21	0	114	107	33	0	49	0	104	78	248	205

See footnotes at end of Table 3.3h.

Table 3.3h Petroleum Imports: Former U.S.S.R., Virgin Islands, Total Non-OPEC, and Total Imports

(Thousand Barrels per Day)

	Non-OPEC[b]						Total Non-OPEC[b]		Total Imports	
	Former U.S.S.R.		Virgin Islands		Other Non-OPEC					
	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
1973 Average	26	0	329	0	153	36	3,263	1,149	6,256	3,244
1974 Average	20	0	391	0	122	30	2,832	937	6,112	3,477
1975 Average	14	0	406	0	120	14	2,454	893	6,056	4,105
1976 Average	11	2	422	0	203	101	2,247	742	7,313	5,287
1977 Average	12	2	466	0	287	157	2,614	971	8,807	6,615
1978 Average	8	1	428	0	239	146	2,612	1,172	8,363	6,356
1979 Average	1	0	431	0	269	192	2,819	1,407	8,456	6,519
1980 Average	1	0	388	0	219	162	2,609	1,399	6,909	5,263
1981 Average	5	(s)	327	0	236	163	2,672	1,474	5,996	4,396
1982 Average	1	0	316	0	306	174	2,968	1,754	5,113	3,488
1983 Average	1	(s)	282	0	378	215	3,189	1,853	5,051	3,329
1984 Average	13	(s)	294	0	411	210	3,388	1,914	5,437	3,426
1985 Average	8	(s)	247	0	394	137	3,237	1,888	5,067	3,201
1986 Average	18	(s)	244	0	426	144	3,387	2,065	6,224	4,178
1987 Average	10	0	272	0	459	196	3,617	2,274	6,678	4,674
1988 Average	29	0	242	0	487	196	3,882	2,411	7,402	5,107
1989 Average	48	0	321	0	457	197	3,921	2,467	8,061	5,843
1990 January	62	0	409	0	588	220	4,332	2,399	9,197	6,212
February	40	0	323	0	471	139	3,805	2,177	8,399	5,895
March	0	0	264	0	405	168	3,536	2,469	7,965	6,117
April	20	0	283	0	513	275	3,660	2,348	7,858	5,813
May	0	0	285	0	541	248	4,260	2,673	8,834	6,454
June	19	0	299	0	579	270	4,287	2,771	8,747	6,423
July	92	0	252	0	500	251	4,057	2,609	9,048	6,855
August	73	0	230	0	340	107	3,722	2,406	8,644	6,452
September	49	0	240	0	336	206	3,417	2,386	7,361	5,664
October	87	10	204	0	245	92	3,199	2,210	6,717	5,132
November	63	0	312	0	254	112	3,374	2,173	7,003	5,085
December	34	0	291	0	233	70	3,011	1,933	6,439	4,611
Average	45	1	282	0	417	180	3,721	2,381	8,018	5,894
1991 January	28	0	261	0	235	91	3,205	2,195	7,103	5,296
February	17	0	222	0	180	96	3,051	2,221	6,865	5,485
March	13	0	214	0	179	60	3,023	2,133	6,646	5,166
April	39	0	245	0	256	99	3,674	2,470	7,418	5,529
May	42	0	264	0	239	63	3,794	2,524	8,518	6,363
June	0	0	234	0	349	189	3,747	2,587	8,245	6,334
July	58	0	191	0	384	275	3,524	2,430	7,755	5,955
August	80	11	208	0	369	197	4,067	2,699	8,670	6,645
September	23	0	269	0	374	197	3,871	2,608	7,826	5,812
October	13	0	262	0	252	139	3,444	2,340	7,467	5,683
November	16	0	264	0	335	130	3,444	2,200	7,615	5,528
December	16	0	286	0	229	104	3,546	2,448	7,337	5,565
Average	29	1	243	0	282	137	3,535	2,405	7,627	5,782
1992 January	17	0	250	0	206	59	3,452	2,399	7,593	5,885
February	3	0	222	0	195	50	3,248	2,162	6,754	5,033
March	0	0	202	0	328	114	3,438	2,378	7,036	5,319
April	0	0	234	0	457	212	4,002	2,791	8,067	6,113
May	0	0	246	0	452	213	3,643	2,597	7,754	6,025
June	0	0	266	0	289	95	3,783	2,633	R7,761	R6,019
6-Month Average	3	0	237	0	322	124	3,595	2,495	7,498	5,736
1991 6-Month Average	23	0	240	0	240	99	3,418	2,355	7,472	5,696
1990 6-Month Average	23	0	310	0	517	221	3,983	2,477	8,504	6,157

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

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

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

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

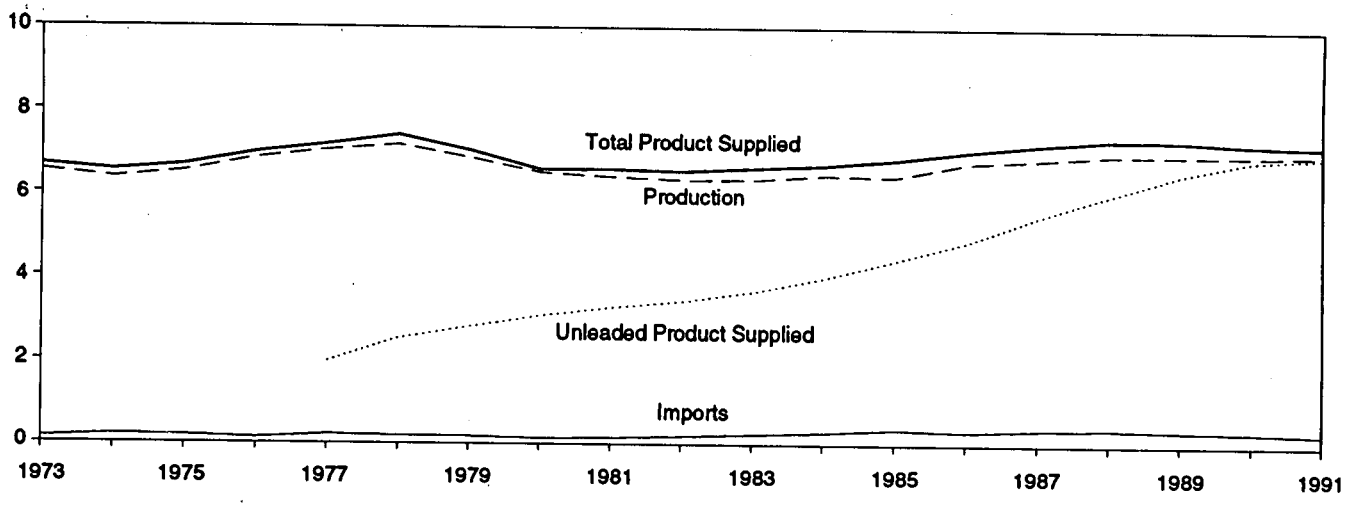
Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration, *Petroleum Supply Monthly*, August 1992, Table S3.

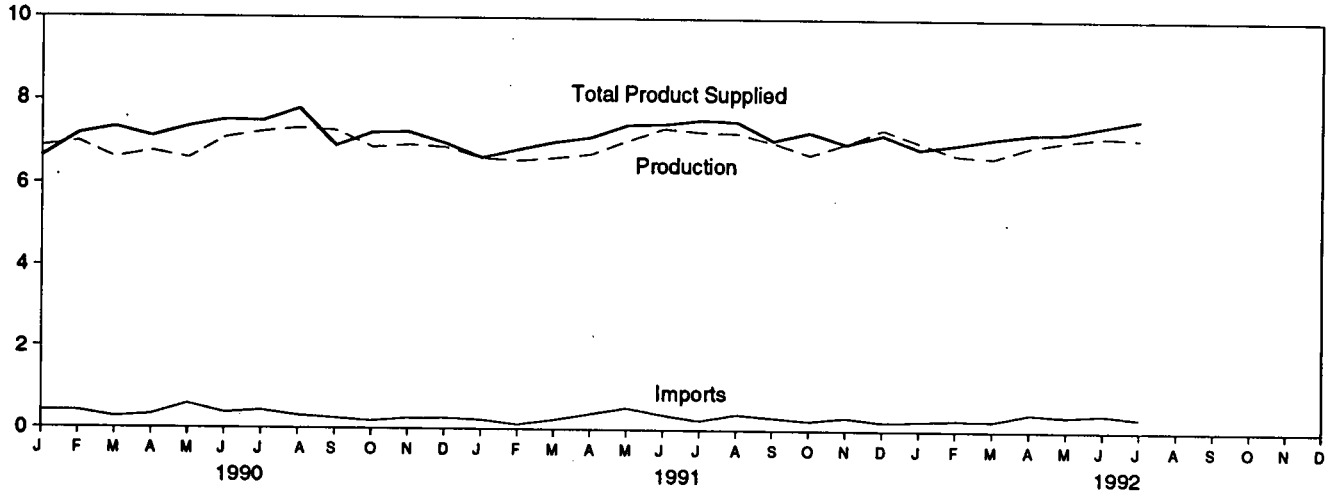
Figure 3.2 Finished Motor Gasoline

(Million Barrels per Day, Except as Noted)

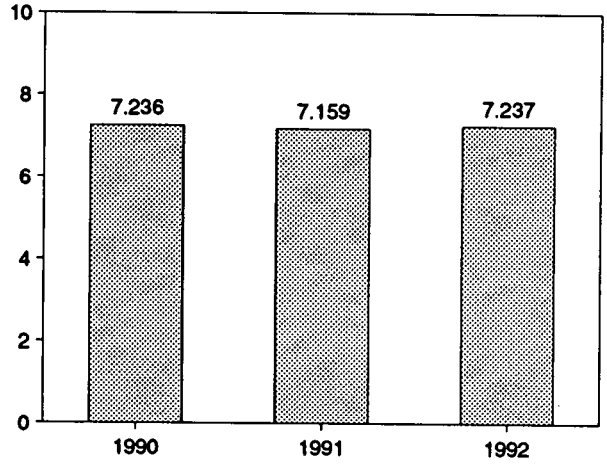
Overview, 1973-1991



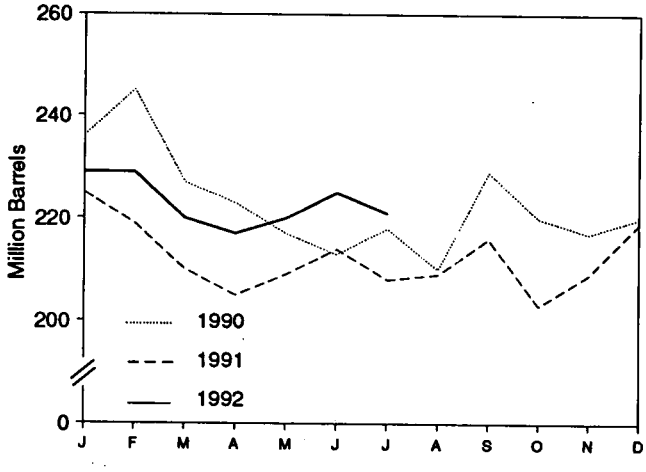
Overview, Monthly



Total Product Supplied, January-July



Total Stocks, End of Month



Note: Because vertical scales differ, graphs should not be compared.
Source: Table 3.4.

Table 3.4 Finished Motor Gasoline Supply and Disposition

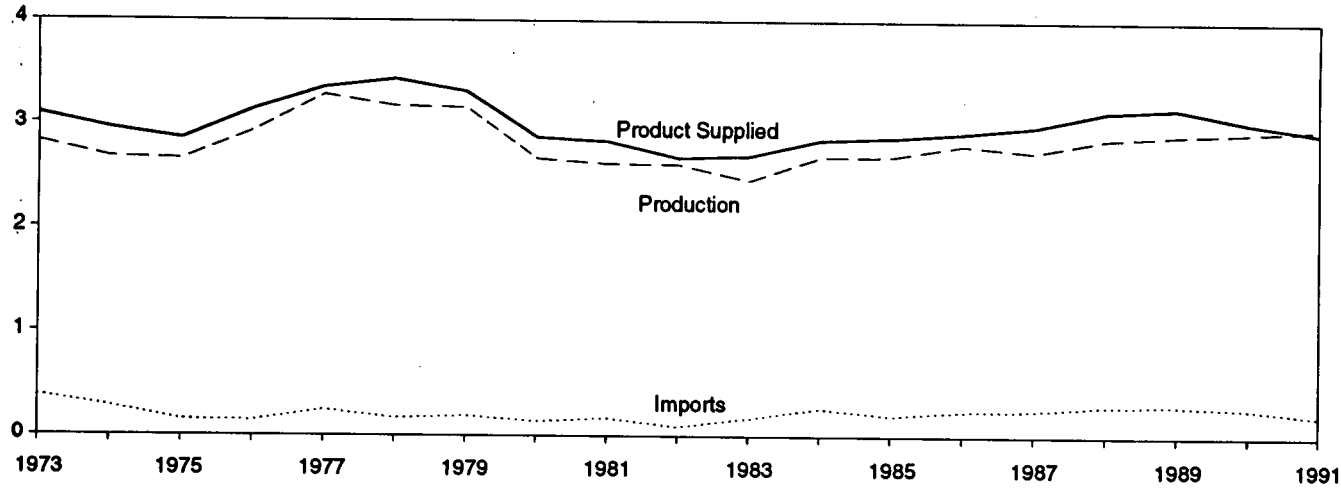
	Supply		Disposition					Ending Stocks[a]	
					Product Supplied				
	Total Production	Imports[b]	Stock Change[b,c]	Exports	Total	Unleaded[d]	Unleaded	Total Motor Gasoline[e]	Finished Motor Gasoline
	Thousand Barrels per Day						Percent of Total	Million Barrels	
1973 Average	6,535	134	-9	4	6,674	–	–	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	203
1982 Average	6,338	197	-25	20	6,539	3,409	52.1	[f]235	[f]194
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 Average	6,752	326	11	33	7,034	4,854	69.0	233	194
1987 Average	6,841	384	-15	35	7,206	5,470	75.9	226	189
1988 Average	6,956	405	3	22	7,336	5,995	81.7	228	190
1989 Average	6,963	369	-35	39	7,328	6,507	88.8	213	177
1990 January	6,879	417	621	31	6,643	6,246	94.0	236	196
February	6,989	411	169	53	7,179	6,703	93.4	245	201
March	6,613	270	-499	45	7,338	6,894	93.9	227	186
April	6,775	328	-45	28	7,121	6,704	94.1	223	184
May	6,610	585	-189	25	7,358	6,937	94.3	217	178
June	7,101	376	-93	52	7,519	7,099	94.4	213	176
July	7,238	432	133	41	7,496	7,090	94.6	218	180
August	7,326	313	-233	77	7,796	7,383	94.7	210	172
September	7,274	254	511	103	6,914	6,589	95.3	229	188
October	6,880	192	-244	90	7,226	6,883	95.3	220	180
November	6,940	259	-108	66	7,241	6,940	95.8	217	177
December	6,887	264	119	53	6,978	6,713	96.2	220	181
Average	6,959	342	10	55	7,235	6,850	94.7	220	181
1991 January	6,629	228	162	50	6,645	6,365	95.8	225	186
February	6,573	115	-252	102	6,838	6,577	96.2	219	179
March	6,643	235	-236	97	7,017	6,747	96.1	210	171
April	6,742	381	-67	53	7,137	6,863	96.2	205	169
May	7,063	528	95	59	7,437	7,156	96.2	209	172
June	7,351	364	160	99	7,456	7,184	96.4	214	177
July	7,274	232	-177	122	7,561	7,270	96.2	208	172
August	7,247	385	7	98	7,528	7,248	96.3	209	172
September	7,030	312	195	63	7,083	6,828	96.4	216	178
October	6,749	236	-354	58	7,281	7,038	96.7	203	167
November	7,018	322	228	104	7,008	6,829	97.4	209	173
December	7,354	216	267	79	7,224	7,083	98.0	219	182
Average	6,975	297	3	82	7,188	6,935	96.5	219	182
1992 January	7,043	237	300	87	6,893	6,761	98.1	229	191
February	6,753	270	-41	59	7,004	6,875	98.2	229	190
March	6,694	247	-275	71	7,145	7,010	98.1	220	181
April	6,958	428	41	90	7,255	7,138	98.4	217	183
May	7,100	370	101	82	7,288	7,178	98.5	220	186
June	[R]7,201	[R]419	[R]83	[R]86	[R]7,451	[R]7,344	[R]98.6	[R]225	[R]188
July	[E]7,157	[E]327	[E]-202	[E]67	[E]7,618	[E]7,513	[E]98.6	[E]221	[E]183
7-Month Average	[E]6,988	[E]328	[E]1	[E]78	[E]7,237	[E]7,118	[E]98.4	[E]221	[E]183
1991 7-Month Average	6,900	299	-43	83	7,159	6,883	96.1	208	172
1990 7-Month Average	6,885	403	12	39	7,236	6,811	94.1	218	180

[a] Stocks are totals as of end of period.
[b] Beginning in 1981, excludes blending components.
[c] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[d] Includes gasohol.
[e] Includes motor gasoline blending components.
[f] In January 1975, 1981, and 1983, numerous respondents were added to surveys, thereby affecting stocks reported and stock change calculations. See Note 4 at end of section.
[g] Beginning in January 1981, survey forms were modified. See Notes 1 and 2 at end of section.
R=Revised data. – =Not applicable. E=Estimate. (s)=Less than 500 barrels per day.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration, *Petroleum Supply Monthly*, August 1992, Table S4.

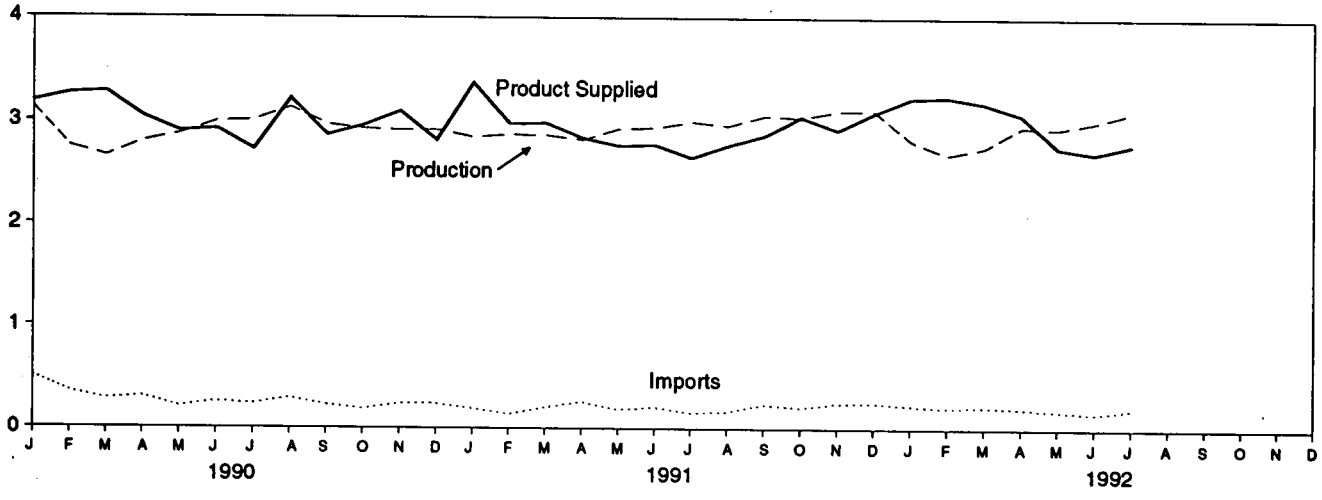
Figure 3.3 Distillate Fuel

(Million Barrels per Day, Except as Noted)

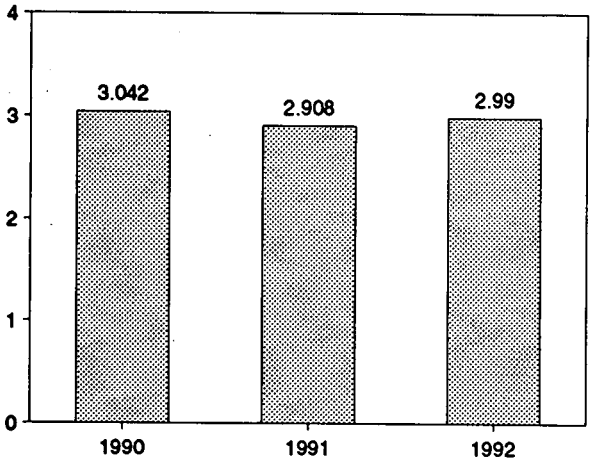
Overview, 1973-1991



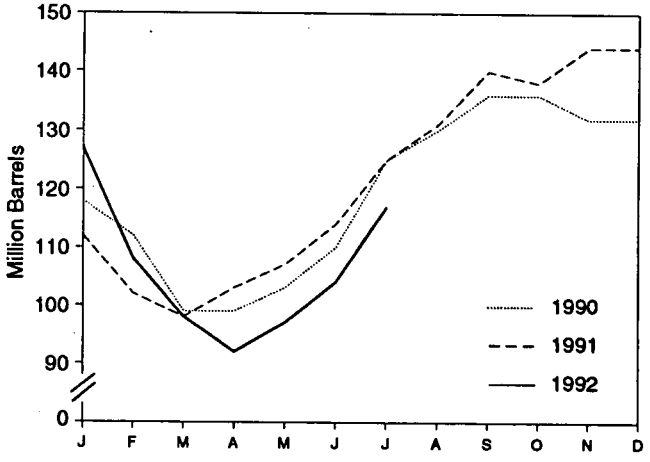
Overview, Monthly



Product Supplied, January-July



Stocks, End of Month



Source: Table 3.5.

Table 3.5 Distillate Fuel Oil Supply and Disposition

	Supply			Disposition			
	Total Production	Imports	Crude Oil Used Directly[a]	Stock Change[b]	Exports	Product Supplied[a]	Ending Stocks[c]
	Thousand Barrels per Day						Million Barrels
1973 Average	2,822	392	2	115	9	3,092	196
1974 Average	2,669	289	2	*10	2	2,948	[d]200
1975 Average	2,654	155	2	[d]*-41	1	2,851	209
1976 Average	2,924	146	1	-62	1	3,133	186
1977 Average	3,278	250	1	176	1	3,352	250
1978 Average	3,167	173	1	-93	3	3,432	216
1979 Average	3,153	193	1	34	3	3,311	229
1980 Average	2,662	142	1	-64	3	2,866	[d]205
1981 Average[e]	2,613	173	10	[d]-38	5	2,829	192
1982 Average	2,606	93	10	-35	74	2,671	[d]179
1983 Average	2,456	174	–	[d]-124	64	2,690	140
1984 Average	2,681	272	–	57	51	2,845	161
1985 Average	2,687	200	–	-48	67	2,868	144
1986 Average	2,798	247	–	31	100	2,914	155
1987 Average	2,731	255	–	-56	66	2,976	134
1988 Average	2,859	302	–	-30	69	3,122	124
1989 Average	2,899	306	–	-49	97	3,157	106
1990 January	3,130	505	–	388	62	3,185	118
February	2,753	357	–	-215	65	3,260	112
March	2,657	281	–	-415	75	3,277	99
April	2,803	308	–	9	59	3,043	99
May	2,874	209	–	108	75	2,900	103
June	2,996	257	–	246	84	2,923	110
July	3,008	236	–	487	30	2,726	125
August	3,131	293	–	156	51	3,218	130
September	2,968	226	–	207	123	2,864	136
October	2,928	190	–	8	150	2,960	136
November	2,915	238	–	-129	188	3,094	132
December	2,917	239	–	-7	347	2,816	132
Average	2,925	278	–	73	109	3,021	132
1991 January	2,845	192	–	-662	332	3,367	112
February	2,870	139	–	-359	393	2,976	102
March	2,865	206	–	-112	198	2,984	98
April	2,819	258	–	156	81	2,839	103
May	2,929	186	–	132	218	2,765	107
June	2,941	209	–	225	150	2,775	114
July	2,998	155	–	356	149	2,648	125
August	2,961	168	–	214	144	2,770	131
September	3,055	237	–	291	136	2,865	140
October	3,040	207	–	-59	259	3,047	138
November	3,103	249	–	206	224	2,921	144
December	3,107	252	–	-30	302	3,087	144
Average	2,962	205	–	31	215	2,921	144
1992 January	2,818	227	–	-541	360	3,226	127
February	2,681	207	–	-629	278	3,238	108
March	2,753	218	–	-346	138	3,179	98
April	2,954	202	–	-190	278	3,068	92
May	2,939	179	–	146	222	2,751	97
June	[R]3,002	[R]157	–	[R]258	[R]205	[R]2,696	[R]104
July	[E]3,097	[E]196	–	[E]366	[E]145	[E]2,782	[E]117
7-Month Average	[E]2,893	[E]198	–	[E]-131	[E]232	[E]2,990	[E]117
1991 7-Month Average	2,896	192	–	-35	216	2,908	125
1990 7-Month Average	2,890	307	–	91	64	3,042	125

* Due to differences internal to Energy Information Administration data processing systems, some small discrepancies exist between the data in this table and the data in the *Petroleum Supply Annual* and *Petroleum Supply Monthly*. See Note 6 at end of section.

[a] Beginning in January 1983, product supplied for distillate fuel oil does not include crude oil used directly.

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

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

[d] In January 1975, 1981, and 1983, numerous respondents were added to surveys, thereby affecting stocks reported and stock change calculations. See Note 4 at end of section. Due to a rounding difference, the 1975 stock change value is -40 in the *Petroleum Supply Annual* and the *Petroleum Supply Monthly*.

[e] Beginning in January 1981, survey forms were modified. See Note 1 at end of section.

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

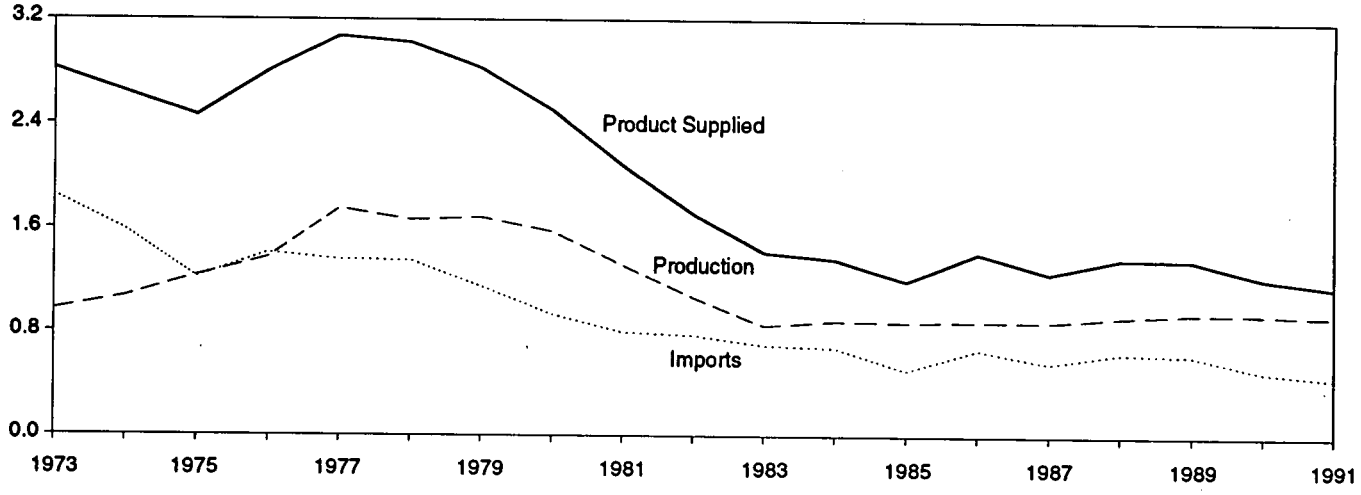
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration, *Petroleum Supply Monthly*, August 1992, Table S5.

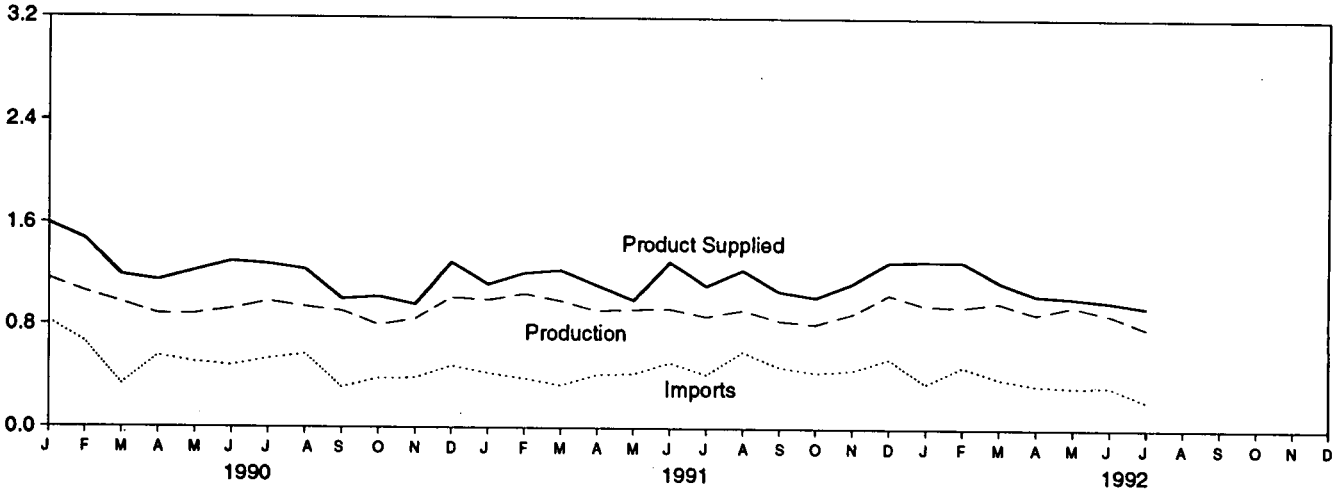
Figure 3.4 Residual Fuel

(Million Barrels per Day, Except as Noted)

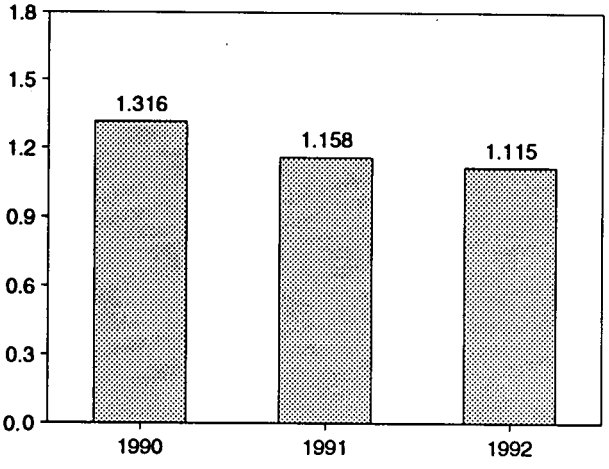
Overview, 1973-1991



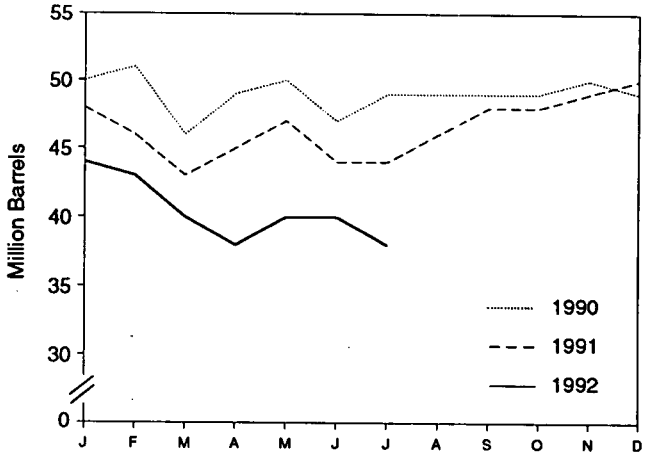
Overview, Monthly



Product Supplied, January-July



Stocks, End of Month



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

Table 3.6 Residual Fuel Oil Supply and Disposition

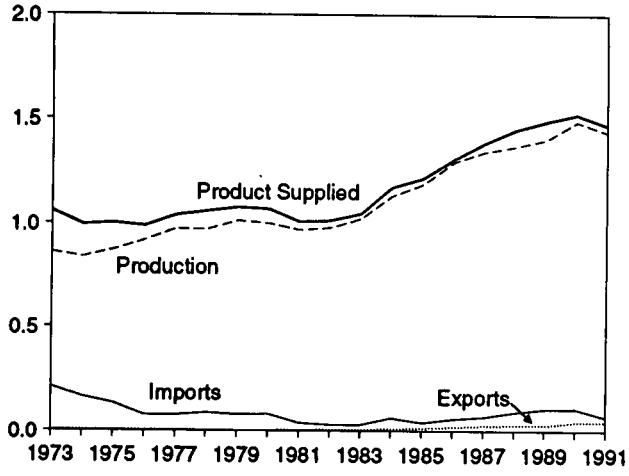
	Supply			Disposition			
	Total Production	Imports	Crude Oil Used Directly[a]	Stock Change[b]	Exports	Product Supplied[a]	Ending Stocks[c]
	Thousand Barrels per Day						Million Barrels
1973 Average	971	1,853	17	-5	23	2,822	53
1974 Average	1,070	1,587	13	17	14	2,639	[d]60
1975 Average	1,235	1,223	15	[d]-2	15	2,462	74
1976 Average	1,377	1,413	17	-5	12	2,801	72
1977 Average	1,754	1,359	13	48	6	3,071	90
1978 Average	1,667	1,355	13	1	13	3,023	90
1979 Average	1,687	1,151	12	15	9	2,826	96
1980 Average	1,580	939	12	-10	33	2,508	[d]92
1981 Average[e]	1,321	800	48	[d]-37	118	2,088	78
1982 Average	1,070	776	48	-32	209	1,716	[d]66
1983 Average	852	699	–	[d]-55	185	1,421	49
1984 Average	891	681	–	12	190	1,369	53
1985 Average	882	510	–	-7	197	1,202	50
1986 Average	889	669	–	-8	147	1,418	47
1987 Average	885	565	–	(s)	186	1,264	47
1988 Average	926	644	–	-8	200	1,378	45
1989 Average	954	629	–	-2	215	1,370	44
1990 January	1,163	825	–	205	186	1,597	50
February	1,060	663	–	36	214	1,474	51
March	976	335	–	-158	277	1,192	46
April	882	559	–	90	200	1,151	49
May	884	507	–	22	141	1,227	50
June	926	485	–	-98	207	1,302	47
July	987	536	–	72	171	1,280	49
August	944	574	–	-1	280	1,238	49
September	909	313	–	15	200	1,007	49
October	799	383	–	-3	160	1,026	49
November	846	387	–	25	243	965	50
December	1,021	484	–	-50	259	1,296	49
Average	950	504	–	13	211	1,229	49
1991 January	1,001	425	–	-19	320	1,124	48
February	1,050	384	–	-76	299	1,211	46
March	995	332	–	-85	178	1,234	43
April	916	416	–	68	145	1,119	45
May	929	425	–	50	300	1,003	47
June	933	512	–	-103	245	1,303	44
July	871	420	–	-1	176	1,117	44
August	925	599	–	68	216	1,240	46
September	838	481	–	78	168	1,074	48
October	814	438	–	6	217	1,029	48
November	896	455	–	24	189	1,139	49
December	1,051	547	–	28	264	1,307	50
Average	934	453	–	4	226	1,158	50
1992 January	964	352	–	-180	184	1,313	44
February	956	487	–	-46	176	1,314	43
March	989	392	–	-82	310	1,153	40
April	899	342	–	-72	265	1,048	38
May	964	328	–	55	207	1,030	40
June	[R]894	[R]334	–	[R]-2	[R]230	[R]1,000	[R]40
July	[E]786	[E]220	–	[E]-143	[E]193	[E]956	[E]38
7-Month Average	[E]922	[E]350	–	[E]-68	[E]224	[E]1,115	[E]38
1991 7-Month Average	955	416	–	-23	237	1,158	44
1990 7-Month Average	982	557	–	24	199	1,316	49

[a] Beginning in January 1983, product supplied for residual fuel oil does not include crude oil used directly.
[b] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[c] Stocks are totals as of end of period.
[d] In January 1975, 1981, and 1983, numerous respondents were added to surveys, thereby affecting stocks reported and stock change 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. – =Not applicable. E=Estimate. (s)=Less than 500 barrels per day.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration, *Petroleum Supply Monthly*, August 1992, Table S6.

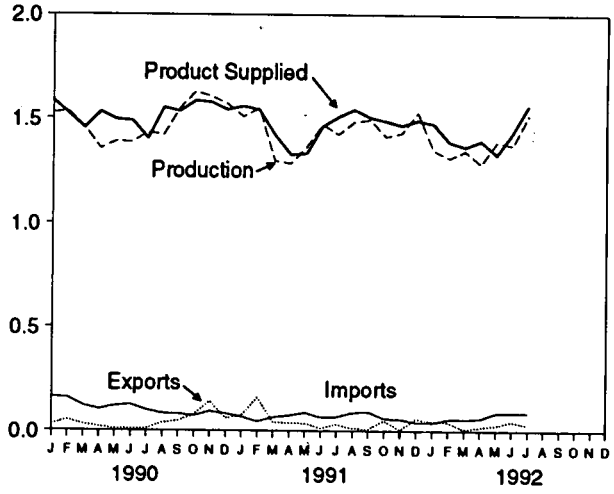
Figure 3.5 Jet Fuel

(Million Barrels per Day, Except as Noted)

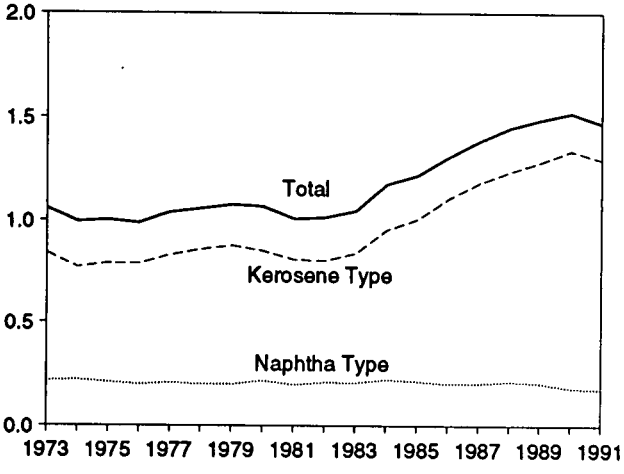
Total Jet Fuel Overview, 1973-1991



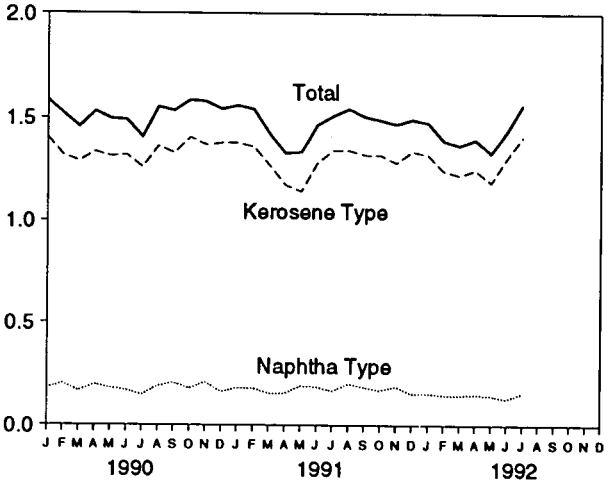
Total Jet Fuel Overview, Monthly



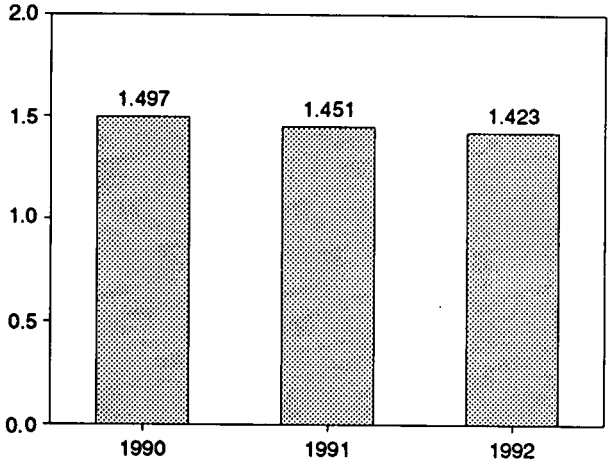
Product Supplied by Type, 1973-1991



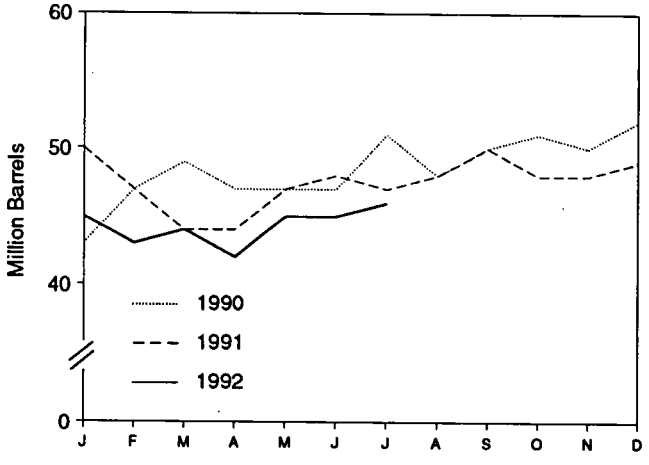
Product Supplied by Type, Monthly



Total Product Supplied, January-July



Total Stocks, End of Month



Source: Table 3.7.

Table 3.7 Jet Fuel Supply and Disposition

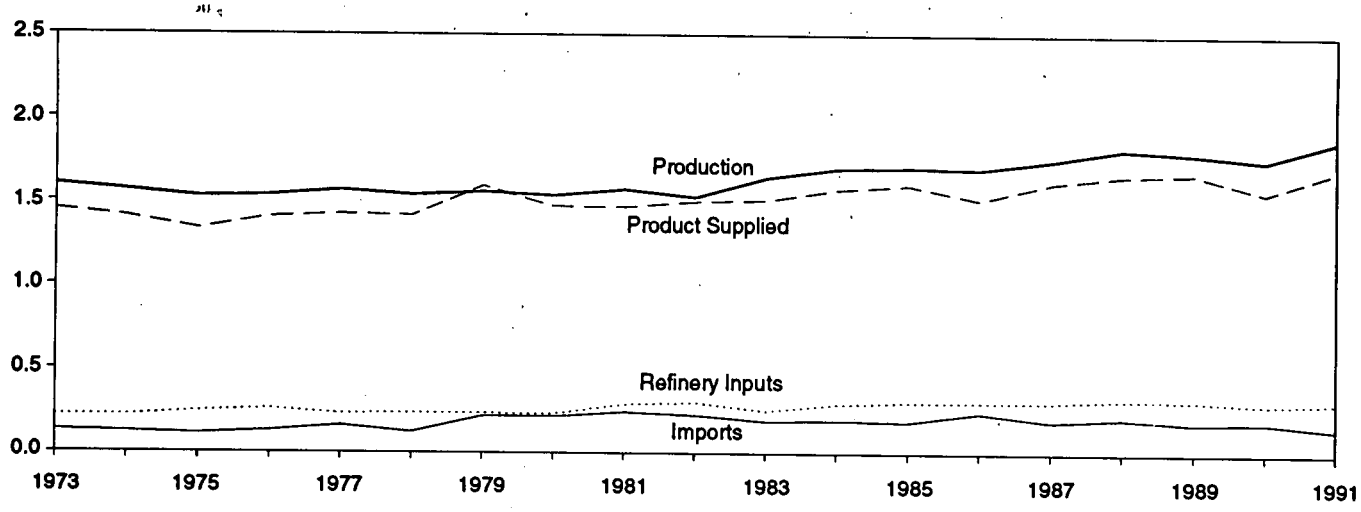
	Supply			Disposition				Ending Stocks[a]	
	Production		Imports	Stock Change[b]	Exports	Product Supplied			
	Total	Kerosene Type				Total	Kerosene Type	Total	Kerosene Type
	Thousand Barrels per Day							Million Barrels	
1973 Average	859	679	212	8	4	1,059	842	29	23
1974 Average	836	641	163	2	3	993	771	[c] 29	[c] 24
1975 Average	871	691	133	[c] 2	2	1,001	791	30	25
1976 Average	918	731	76	5	2	987	789	32	26
1977 Average	973	787	75	7	2	1,039	831	35	28
1978 Average	970	791	86	-2	1	1,057	858	34	28
1979 Average	1,012	835	78	13	1	1,076	876	39	33
1980 Average	999	811	80	10	1	1,068	851	[c] 42	[c] 36
1981 Average	968	775	38	[c] -4	2	1,007	809	41	34
1982 Average	978	778	29	-12	6	1,013	804	[c] 37	[c] 31
1983 Average	1,022	817	29	[c] (s)	6	1,046	839	39	32
1984 Average	1,132	919	62	9	9	1,175	953	42	35
1985 Average	1,189	983	39	-4	13	1,218	1,005	40	34
1986 Average	1,293	1,097	57	25	18	1,307	1,105	50	43
1987 Average	1,343	1,138	67	(s)	24	1,385	1,181	50	42
1988 Average	1,370	1,164	90	-17	28	1,449	1,236	44	38
1989 Average	1,403	1,197	106	-8	27	1,489	1,284	41	34
1990 January	1,527	1,340	163	76	30	1,584	1,404	43	37
February	1,530	1,330	158	120	50	1,519	1,316	47	40
March	1,457	1,256	120	92	30	1,455	1,289	49	42
April	1,357	1,179	103	-91	19	1,531	1,335	47	40
May	1,392	1,194	119	8	8	1,495	1,313	47	40
June	1,388	1,214	125	13	10	1,490	1,320	47	40
July	1,434	1,307	99	117	10	1,406	1,259	51	45
August	1,424	1,250	83	-82	37	1,552	1,363	48	43
September	1,548	1,339	81	48	47	1,534	1,329	50	44
October	1,630	1,463	71	39	77	1,585	1,406	51	45
November	1,606	1,445	93	-19	141	1,578	1,369	50	45
December	1,570	1,411	82	51	60	1,541	1,378	52	46
Average	1,488	1,311	108	31	43	1,522	1,340	52	46
1991 January	1,509	1,354	67	-55	73	1,559	1,378	50	44
February	1,548	1,384	44	-108	159	1,541	1,360	47	41
March	1,299	1,157	65	-99	40	1,423	1,270	44	38
April	1,286	1,135	73	-8	38	1,329	1,173	44	38
May	1,367	1,191	87	85	35	1,334	1,143	47	41
June	1,473	1,300	64	58	13	1,465	1,280	48	43
July	1,426	1,255	67	-47	31	1,509	1,343	47	41
August	1,486	1,316	88	21	11	1,543	1,343	48	42
September	1,495	1,322	92	71	10	1,506	1,321	50	45
October	1,415	1,253	59	-66	50	1,489	1,319	48	43
November	1,433	1,276	56	15	5	1,469	1,282	48	44
December	1,530	1,357	42	22	59	1,492	1,338	49	44
Average	1,438	1,274	67	-9	43	1,471	1,296	49	44
1992 January	1,350	1,199	39	-133	44	1,477	1,321	45	40
February	1,313	1,166	56	-63	42	1,390	1,243	43	38
March	1,347	1,215	56	29	7	1,367	1,221	44	39
April	1,284	1,131	59	-71	18	1,396	1,247	42	37
May	1,390	1,214	86	120	26	1,330	1,186	45	40
June	[R] 1,374	[R] 1,234	[R] 86	[R] -20	[R] 45	[R] 1,435	[R] 1,306	[R] 45	[R] 39
July	[E] 1,516	[E] 1,373	[E] 88	[E] 11	[E] 29	[E] 1,564	[E] 1,408	[E] 46	[E] 41
7-Month Average	[E] 1,369	[E] 1,220	[E] 67	[E] -17	[E] 30	[E] 1,423	[E] 1,276	[E] 46	[E] 41
1991 7-Month Average	1,414	1,252	67	-24	55	1,451	1,277	47	41
1990 7-Month Average	1,440	1,260	126	48	22	1,497	1,319	51	45

[a] Stocks are totals as of end of period.
[b] A negative number indicates a decrease in stocks and a positive number indicates an increase.
[c] In January 1975, 1981, and 1983, a new stock basis was established, thereby affecting stocks reported and stock change calculations. See Note 4 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.
Source: Energy Information Administration, *Petroleum Supply Monthly*, August 1992, Table S7.

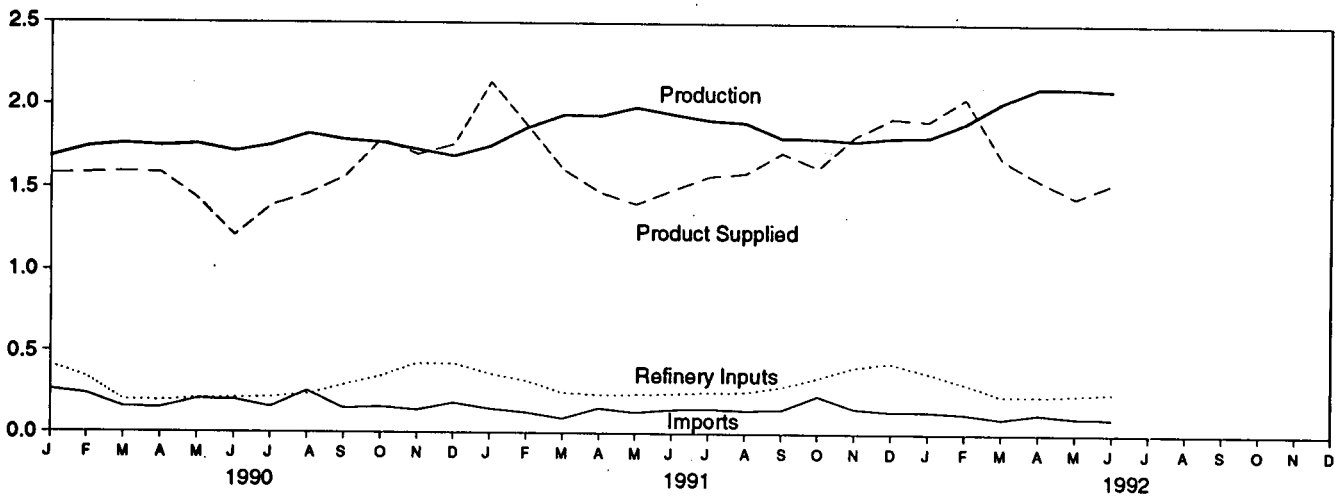
Figure 3.6 Liquefied Petroleum Gases

(Million Barrels per Day, Except as Noted)

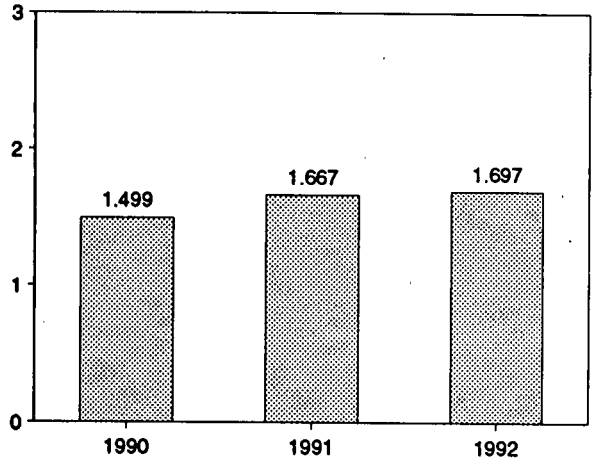
Overview, 1973-1991



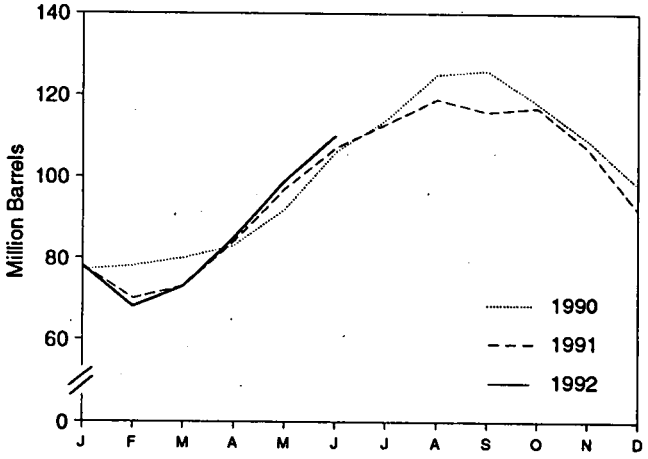
Overview, Monthly



Product Supplied, January-June



Stocks, End of Month



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

Table 3.8 Liquefied Petroleum Gases Supply and Disposition

	Supply		Disposition				
	Total Production	Imports	Stock Change[a]	Refinery Inputs	Exports	Product Supplied	Ending Stocks[b]
	Thousand Barrels per Day						Million Barrels
1973 Average	1,600	132	35	220	27	1,449	99
1974 Average	1,565	123	38	220	25	1,406	[c] 113
1975 Average	1,527	112	[c] 35	246	26	1,333	125
1976 Average	1,535	130	-24	260	25	1,404	116
1977 Average	1,566	161	55	233	18	1,422	136
1978 Average	1,537	123	-12	239	20	1,413	[c] 132
1979 Average	1,556	217	[c] -70	236	15	1,592	111
1980 Average	1,535	216	27	233	21	1,469	[c] 120
1981 Average	1,571	244	[c] 18	289	42	1,466	135
1982 Average	* 1,527	226	-111	300	65	1,499	[c] 94
1983 Average	1,642	190	[c] -4	253	73	1,509	[c] 101
1984 Average	1,697	195	[c] -19	291	48	1,572	101
1985 Average	1,704	187	-75	304	62	1,599	74
1986 Average	1,695	242	80	302	42	1,512	103
1987 Average	1,748	190	-15	304	38	1,612	97
1988 Average	1,817	209	1	321	49	1,656	97
1989 Average	1,791	181	-47	315	35	1,668	80
1990 January	1,684	261	-92	414	44	1,580	77
February	1,743	235	11	339	42	1,587	78
March	1,763	155	80	199	44	1,595	80
April	1,751	150	91	195	25	1,589	83
May	1,761	204	287	209	36	1,433	92
June	1,719	202	469	212	28	1,211	106
July	1,756	157	268	217	36	1,392	114
August	1,825	256	339	236	43	1,463	125
September	1,789	149	37	293	41	1,567	126
October	1,773	159	-243	348	38	1,790	118
November	1,731	140	-296	427	39	1,702	109
December	1,692	184	-370	427	58	1,762	98
Average	1,749	188	48	293	40	1,556	98
1991 January	1,753	148	-658	364	56	2,139	78
February	1,865	126	-271	322	60	1,880	70
March	1,942	91	113	249	56	1,615	73
April	1,937	154	346	237	31	1,477	84
May	1,989	129	428	239	45	1,407	97
June	1,949	148	328	245	32	1,492	107
July	1,913	151	211	253	24	1,575	113
August	1,899	143	175	255	18	1,594	119
September	1,806	147	-84	288	31	1,718	116
October	1,805	233	33	345	31	1,629	117
November	1,789	156	-330	413	40	1,821	107
December	1,810	139	-488	437	73	1,927	92
Average	1,871	147	-15	304	41	1,689	92
1992 January	1,814	139	-417	378	80	1,912	78
February	1,901	126	-366	312	33	2,048	68
March	2,025	97	158	236	43	1,684	73
April	2,114	126	401	235	45	1,559	85
May	2,113	105	477	245	44	1,452	99
June	2,101	100	344	257	59	1,541	110
6-Month Average	2,011	115	102	277	51	1,697	110
1991 6-Month Average	1,906	133	50	276	47	1,667	107
1990 6-Month Average	1,737	201	142	261	37	1,499	106

* Due to differences internal to Energy Information Administration data processing systems, some small discrepancies exist between the data in this table and the data in the *Petroleum Supply Annual* and *Petroleum Supply Monthly*. See Note 6 at end of section.

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

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

[c] In January 1975, 1979, 1981, 1983, and 1984, a new stock basis was established, thereby affecting stocks reported and stock change calculations. See Note 4 at end of section.

Notes: • Liquefied petroleum gases include ethane, propane, normal butane, and isobutane. • 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, *Petroleum Supply Monthly*, August 1992, Table S8.

Table 3.9 Other Petroleum Products Supply and Disposition

	Supply		Disposition				
	Total Production	Imports	Stock Change[a]	Refinery Inputs	Exports	Products Supplied	Ending Stocks[b]
	Thousand Barrels per Day						Million Barrels
1973 Average	2,833	290	1	750	162	2,211	179
1974 Average	2,722	269	25	665	172	2,129	[c]188
1975 Average	2,547	144	[c]-6	537	158	2,001	188
1976 Average	2,725	129	(s)	524	172	2,158	188
1977 Average	2,939	130	20	514	164	2,371	195
1978 Average	3,076	80	-12	492	165	2,511	191
1979 Average	3,141	116	24	352	208	2,673	200
1980 Average	2,957	130	15	310	197	2,566	[c]205
1981 Average	2,771	188	[c]-42	723	197	2,081	241
1982 Average	2,475	305	-68	787	205	* 1,857	[c]216
1983 Average	2,437	382	[c]-6	712	236	1,877	[c]217
1984 Average	2,500	503	[c]-32	791	236	2,007	198
1985 Average	2,532	550	22	886	227	1,947	206
1986 Average	2,704	504	-15	888	291	2,045	201
1987 Average	2,737	543	-1	829	264	2,187	200
1988 Average	2,773	645	22	799	294	2,303	208
1989 Average	2,771	627	12	797	305	2,285	213
1990 January	2,567	814	86	735	225	2,335	215
February	2,781	680	387	654	298	2,122	226
March	2,670	687	78	795	276	2,207	229
April	2,774	596	-138	869	318	2,320	224
May	2,847	756	295	544	292	2,471	234
June	2,907	879	-160	919	334	2,692	229
July	3,146	732	-148	958	317	2,752	224
August	3,097	673	-291	998	297	2,766	215
September	3,029	674	68	760	265	2,611	217
October	2,848	590	-436	1,211	329	2,334	204
November	2,788	800	206	1,010	270	2,102	210
December	2,644	575	-288	1,172	249	2,087	201
Average	2,842	705	-32	887	289	2,402	201
1991 January	2,653	748	204	844	317	2,036	207
February	2,668	573	363	726	275	1,876	217
March	2,576	551	151	819	239	1,919	222
April	2,724	607	133	753	228	2,217	226
May	2,853	800	198	900	327	2,228	232
June	3,030	615	-123	1,092	304	2,372	228
July	3,029	776	-143	1,081	321	2,545	224
August	2,993	642	-169	1,013	296	2,496	219
September	3,010	746	101	802	267	2,586	222
October	2,824	611	-218	944	211	2,498	215
November	2,750	850	-81	1,093	238	2,349	213
December	2,797	577	-163	1,147	304	2,085	208
Average	2,826	675	18	936	277	2,269	208
1992 January	2,704	713	197	815	272	2,135	214
February	2,645	574	177	928	240	1,875	219
March	2,735	710	243	721	239	2,242	226
April	2,869	797	-34	1,047	217	2,436	225
May	2,901	661	-87	899	199	2,551	223
June	3,078	645	-60	765	225	2,793	221
6-Month Average	2,822	684	73	861	232	2,341	221
1991 6-Month Average	2,751	651	152	857	282	2,110	228
1990 6-Month Average	2,756	736	89	753	290	2,360	229

* Due to differences internal to Energy Information Administration data processing systems, some small discrepancies exist between the data in this table and the data in the *Petroleum Supply Annual* and *Petroleum Supply Monthly*. See Note 6 at end of section.

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

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

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

(s)=Less than 500 barrels per day.

Notes: • Other petroleum products include 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, jet fuel, and liquefied petroleum gases. • 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, *Petroleum Supply Monthly*, August 1992, Table S9.

Petroleum Notes

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

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 in pipelines or burned on leases as either distillate or residual fuel oil has been eliminated. Prior to January 1981, the refinery input of unfinished oils 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, 1979, 1981, and 1983, numerous respondents were added to bulk terminal and pipeline surveys, affecting subsequent stocks reported and stock change calculations. Using the expanded coverage (new basis), the end-of-year stocks, in million barrels, would have been:

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

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

In January 1984, changes were made in the reporting of natural gas liquids. As a result, unfractionated stream, which was formerly included in "Other Petroleum Products Supply and Disposition" table, is now reported on a component basis (ethane, propane, normal butane, isobutane, and pentanes plus). Most of these stocks now appear in the "Liquefied Petroleum Gases Supply and Disposition" table. This change affects stocks reported and stock change calculations in each table. Under the new basis, end-of-year 1983 stocks, in million barrels, would have been:

- Liquefied Petroleum Gases: 1983—108.
- Other Petroleum Products: 1983—210.

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

6. Data Discrepancies: Due to differences internal to EIA data processing systems, some small discrepancies exist between data in the *Monthly Energy Review* and the *Petroleum Supply Annual* and *Petroleum Supply Monthly*. The data that have discrepancies are noted with an asterisk in Section 3 tables and are summarized on the following page.

6. Data Discrepancies (Continued). This listing summarizes the data discrepancies between the *Monthly Energy Review (MER)* and the *Petroleum Supply Annual (PSA)* and *Petroleum Supply Monthly (PSM).*

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

Section 4. Natural Gas

Total dry natural gas production in the United States during June 1992 was an estimated 1.4 trillion cubic feet, 1 percent[4] higher than during the previous June. Dry natural gas production during the first half of 1992 was 9.0 trillion cubic feet, slightly higher than the first half of 1991.

Consumption of natural and supplemental gas in June 1992 was 1.3 trillion cubic feet, 7 percent above the level in June 1991. Consumption of natural supplemental gas during the first half of 1992 was 11 trillion cubic feet, 4 percent above the first half of 1991.

Deliveries to residential consumers in May 1992 (latest data available) were 252 billion cubic feet, 10 percent higher than the previous May. Total deliveries to industrial consumers during May 1992 were 627 billion cubic feet, 10 percent above the previous May.

Imports of natural gas in June 1992 were 156 billion cubic feet, 17 percent higher than imports in the previous June. Imports of natural gas during the first half of 1992 were 1,020 billion cubic feet, 17 percent higher than imports during the first half of 1991.

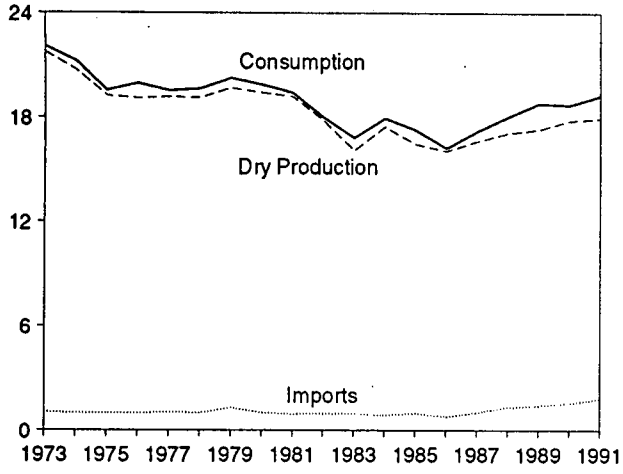
Stocks of working gas[5] in underground natural gas storage reservoirs at the end of June 1992 totaled 2.1 trillion cubic feet, 16 percent below the level of stocks available 1 year earlier. Net injections into storage during June 1992 were 318 billion cubic feet, 10 percent more than the amount injected during the previous June.

[4]Percentage changes are calculated using unrounded data.
[5]Gas available for withdrawal.

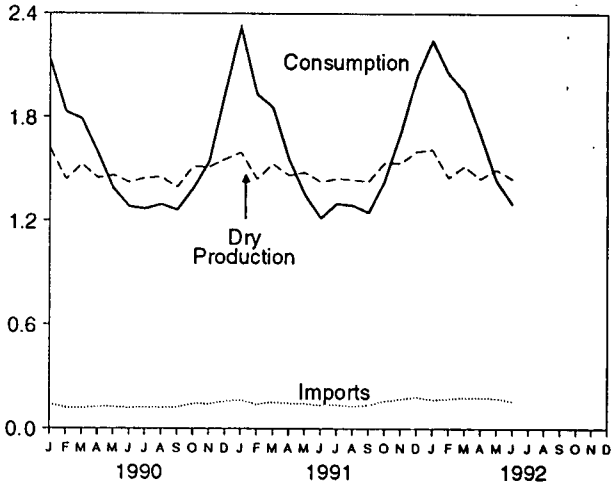
Figure 4.1 Natural Gas

(Trillion Cubic Feet)

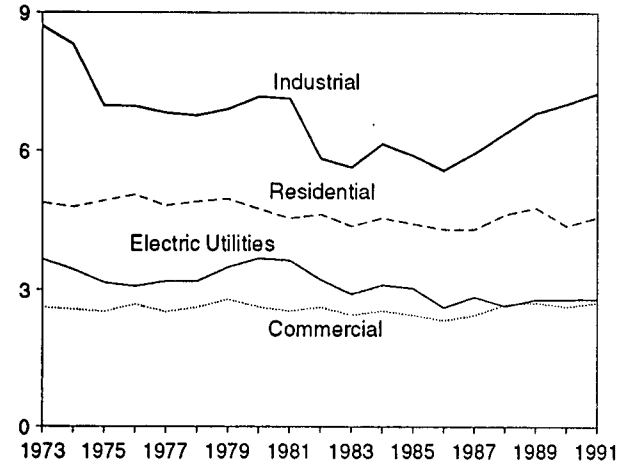
Overview, 1973-1991



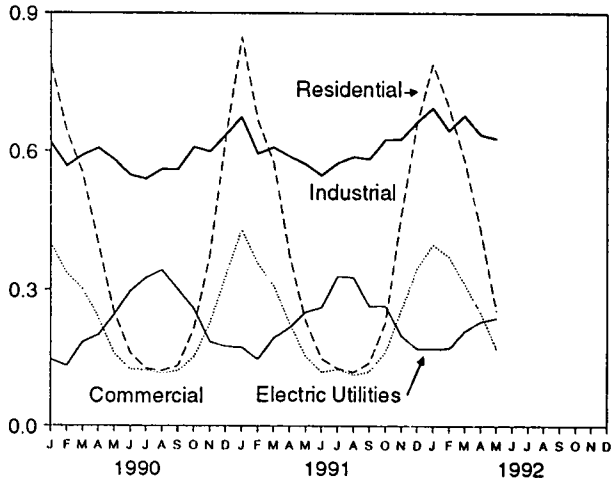
Overview, Monthly



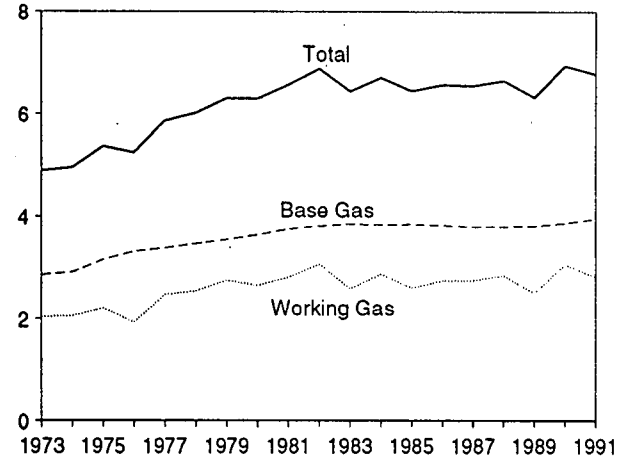
Consumption by Sector, 1973-1991



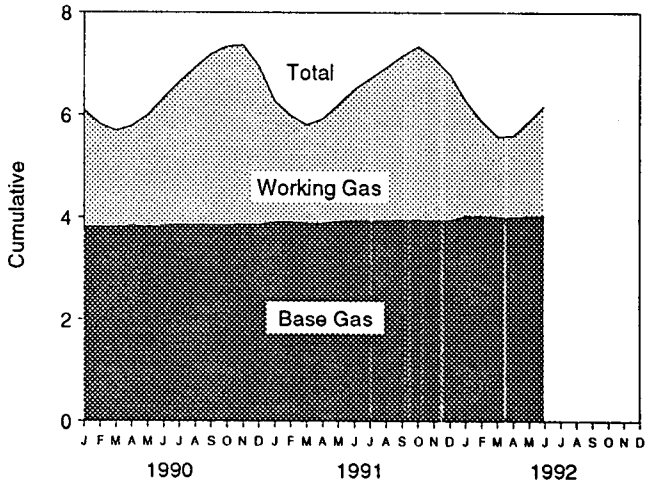
Consumption by Sector, Monthly



Underground Storage, End of Year, 1973-1991



Underground Storage, End of Month



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

Table 4.1 Natural Gas Production

(Billion Cubic Feet)

	Gross Withdrawals[a]	Repressuring[b]	Nonhydrocarbon Gases Removed[c]	Vented and Flared[d]	Marketed Production (Wet)[e]	Extraction Loss[f]	Total Dry Gas Production[g]
1973 Total	24,067	1,171	NA	248	[h] 22,648	917	[h] 21,731
1974 Total	22,850	1,080	NA	169	[h] 21,601	887	[h] 20,713
1975 Total	21,104	861	NA	134	[h] 20,109	872	[h] 19,236
1976 Total	20,944	859	NA	132	[h] 19,952	854	[h] 19,098
1977 Total	21,097	935	NA	137	[h] 20,025	863	[h] 19,163
1978 Total	21,309	1,181	NA	153	[h] 19,974	852	[h] 19,122
1979 Total	21,883	1,245	NA	167	[h] 20,471	808	[h] 19,663
1980 Total	21,870	1,365	199	125	20,180	777	19,403
1981 Total	21,587	1,312	222	98	19,956	775	19,181
1982 Total	20,272	1,388	208	93	18,582	762	17,820
1983 Total	18,659	1,458	222	95	16,884	790	16,094
1984 Total	20,267	1,630	224	108	18,304	838	17,466
1985 Total	19,607	1,915	326	95	17,270	816	16,454
1986 Total	19,131	1,838	337	98	16,859	800	16,059
1987 Total	20,140	2,208	376	124	17,433	812	16,621
1988 Total	20,999	2,478	460	143	17,918	816	17,103
1989 Total	21,074	2,475	362	142	18,095	785	17,311
1990 January	1,940	211	25	15	1,689	71	1,618
February	1,718	183	22	10	1,503	63	1,440
March	1,841	211	24	11	1,595	67	1,528
April	1,754	206	24	11	1,513	64	1,449
May	1,781	213	26	13	1,529	65	1,464
June	1,711	191	24	9	1,487	63	1,424
July	1,759	207	26	13	1,513	64	1,449
August	1,764	207	25	14	1,518	64	1,454
September	1,693	199	24	13	1,457	61	1,396
October	1,843	224	23	13	1,583	67	1,516
November	1,827	211	23	13	1,580	67	1,513
December	1,890	225	24	14	1,627	69	1,558
Total	21,523	2,489	289	150	18,594	784	17,810
1991 January	1,933	229	25	14	1,665	68	1,597
February	1,747	207	22	13	1,505	62	1,443
March	1,849	216	24	13	1,596	66	1,530
April	1,769	206	24	12	1,527	63	1,464
May	1,788	206	26	12	1,544	63	1,481
June	1,722	195	27	11	1,489	61	1,428
July	1,743	196	29	11	1,507	62	1,445
August	1,735	194	29	10	1,502	62	1,440
September	1,724	192	30	10	1,492	61	1,431
October	1,853	208	31	11	1,603	66	1,537
November	1,851	205	32	11	1,603	66	1,537
December	1,927	212	33	11	1,671	69	1,602
Total	21,641	2,466	332	139	18,705	769	17,935
1992 January	1,943	215	34	11	1,683	69	1,614
February	[R] 1,747	[R] 194	30	10	[R] 1,513	62	[R] 1,451
March	[R] 1,828	[R] 202	32	11	[R] 1,583	65	[R] 1,518
April	[R] 1,740	[R] 192	30	10	[R] 1,508	[R] 62	[R] 1,446
May	[E] 1,803	[E] 199	[E] 31	[E] 10	[E] 1,563	[E] 64	[E] 1,499
June	[E] 1,740	[E] 192	[E] 30	[E] 10	[E] 1,508	[E] 62	[E] 1,446
6-Month Total	[E] 10,801	[E] 1,194	[E] 187	[E] 62	[E] 9,358	[E] 384	[E] 8,974
1991 6-Month Total	10,808	1,259	148	75	9,326	383	8,943
1990 6-Month Total	10,745	1,215	145	69	9,316	393	8,923

[a] Gas withdrawn from gas and oil wells.
[b] The injection of natural gas into oil and gas formations for pressure maintenance and cycling purposes.
[c] See Note 1 at end of section.
[d] Vented: Natural gas released into the air on the base site or at processing plants. Flared: Natural gas burned in flares on the base site or at gas processing plants.
[e] "Gross Withdrawals" minus "Repressuring," "Nonhydrocarbon Gases Removed," and "Vented and Flared." See Note 2 at end of section.
[f] See Note 3 at end of section.
[g] "Marketed Production (Wet)" minus "Extraction Loss."
[h] May include unknown quantities of nonhydrocarbon gases.
R=Revised data. NA=Not available. E=Estimate.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Sources: • **1973-1984:** Energy Information Administration (EIA), *Natural Gas Annual 1990, Volume 1*, Table 95. • **1985 forward:** EIA, *Natural Gas Monthly*, August 1992, Table 1.

Table 4.2 Natural Gas Supply and Disposition

(Billion Cubic Feet)

	Supply						Disposition		
	Total Dry Gas Production	Withdrawals from Storage[a]	Supplemental Gaseous Fuels[b]	Imports[b]	Balancing Item[b]	Total Supply/ Disposition[c]	Additions to Storage[a]	Exports[b]	Consumption[b]
1973 Total	[d]21,731	1,533	NA	1,033	-196	24,101	1,974	77	22,049
1974 Total	[d]20,713	1,701	NA	959	-289	23,084	1,784	77	21,223
1975 Total	[d]19,236	1,760	NA	953	-235	21,714	2,104	73	19,538
1976 Total	[d]19,098	1,921	NA	964	-216	21,767	1,756	65	19,946
1977 Total	[d]19,163	1,750	NA	1,011	-41	21,883	2,307	56	19,521
1978 Total	[d]19,122	2,158	NA	966	-287	21,958	2,278	53	19,627
1979 Total	[d]19,663	2,047	NA	1,253	-372	22,591	2,295	56	20,241
1980 Total	19,403	1,972	155	985	-640	21,875	1,949	49	19,877
1981 Total	19,181	1,930	176	904	-500	21,691	2,228	59	19,404
1982 Total	17,820	2,164	145	933	-537	20,525	2,472	52	18,001
1983 Total	16,094	2,270	132	918	[e]-703	18,712	1,822	55	16,835
1984 Total	17,466	2,098	110	843	[e]-217	20,300	2,295	55	17,951
1985 Total	16,454	2,397	126	950	-428	19,499	2,163	55	17,281
1986 Total	16,059	1,837	113	750	-493	18,266	1,984	61	16,221
1987 Total	16,621	1,905	101	993	-444	19,176	1,911	54	17,211
1988 Total	17,103	2,270	101	1,294	-452	20,315	2,211	74	18,030
1989 Total	17,311	2,854	107	1,382	-218	21,435	2,528	107	18,801
1990 January	1,618	356	12	140	112	2,238	96	14	2,128
February	1,440	345	10	118	-3	1,910	71	8	1,831
March	1,528	267	11	116	8	1,930	128	11	1,791
April	1,449	141	10	123	73	1,796	194	6	1,596
May	1,464	44	9	123	57	1,697	304	6	1,387
June	1,424	41	9	117	33	1,624	335	6	1,283
July	1,449	26	10	120	7	1,612	337	5	1,270
August	1,454	40	9	118	11	1,632	330	5	1,297
September	1,396	36	9	120	4	1,565	295	7	1,263
October	1,516	66	9	142	-124	1,609	217	6	1,386
November	1,513	151	10	140	-126	1,688	139	6	1,543
December	1,558	490	12	156	-199	2,017	71	7	1,939
Total	17,810	2,002	120	1,532	-148	21,316	2,516	86	18,714
1991 January	1,597	640	11	[R]163	[R]-25	[R]2,386	58	[R]10	[R]2,318
February	1,443	364	10	[R]138	[R]50	[R]2,005	61	[R]11	[R]1,933
March	1,530	264	11	[R]151	[R]11	[R]1,967	99	[R]10	[R]1,858
April	1,464	84	10	[R]144	[R]79	[R]1,781	213	[R]9	[R]1,559
May	1,481	31	9	[R]141	[R]8	[R]1,670	308	8	[R]1,354
June	1,428	20	8	[R]133	[R]-56	[R]1,533	310	[R]7	[R]1,216
July	1,445	48	9	[R]135	[R]-60	[R]1,577	268	8	[R]1,301
August	1,440	55	9	[R]127	[R]-73	[R]1,558	257	[R]10	[R]1,291
September	1,431	48	8	[R]134	[R]-83	[R]1,538	279	[R]11	[R]1,248
October	1,537	73	10	[R]157	[R]-100	[R]1,677	230	[R]14	[R]1,433
November	1,537	327	9	[R]169	[R]-202	[R]1,840	118	[R]15	[R]1,707
December	1,602	428	11	[R]181	[R]-85	[R]2,137	95	[R]18	[R]2,024
Total	17,935	2,380	114	[R]1,773	[R]-532	[R]21,670	2,297	[R]129	[R]19,244
1992 January	1,614	572	12	165	[R]-48	[R]2,315	57	17	[R]2,241
February	[R]1,451	436	11	171	[R]55	2,124	53	14	2,057
March	[R]1,518	370	11	178	[R]-29	[R]2,048	73	24	[R]1,951
April	[R]1,446	140	10	177	[R]106	[R]1,879	159	15	[R]1,705
May	[E]1,499	50	9	173	[R]37	[R]1,768	320	10	[R]1,438
June	[E]1,446	40	8	156	18	1,668	358	9	1,301
6-Month Total	[E]8,974	1,608	61	1,020	139	11,802	1,020	89	10,693
1991 6-Month Total	8,943	1,403	59	870	67	11,342	1,049	55	10,238
1990 6-Month Total	8,923	1,194	61	737	280	11,195	1,128	51	10,016

[a] Data for 1980-1990 include underground storage and liquefied natural gas storage. All other data include underground storage only. Computation procedures are discussed in Note 8 at end of section.

[b] See Notes at end of section.

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

[d] May include unknown quantities of nonhydrocarbon gases.

[e] See Note 7 at end of section.

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

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

Sources: • **1973-1984: Supplemental Gaseous Fuels**—Energy Information Administration (EIA), *Natural Gas Annual 1990, Volume 2*, December 1991, Table 12. **All Other Data**—EIA, *Natural Gas Annual 1990, Volume 2*, December 1991, Table 2. • **1985 forward:** EIA, *Natural Gas Monthly*, August 1992, Table 2.

Table 4.3 Natural Gas Consumption by End-Use Sector

(Billion Cubic Feet)

	Lease and Plant Fuel	Pipeline Fuel[a]	Delivered to Consumers					Total Consumption
			Residential	Commercial	Industrial	Electric Utilities	Total	
1973 Total	1,496	728	4,879	2,597	8,689	3,660	19,825	22,049
1974 Total	1,477	669	4,786	2,556	8,292	3,443	19,077	21,223
1975 Total	1,396	583	4,924	2,508	6,968	3,158	17,558	19,538
1976 Total	1,634	548	5,051	2,668	6,964	3,081	17,764	19,946
1977 Total	1,659	533	4,821	2,501	6,815	3,191	17,329	19,521
1978 Total	1,648	530	4,903	2,601	6,757	3,188	17,449	19,627
1979 Total	1,499	601	4,965	2,786	6,899	3,491	18,141	20,241
1980 Total	1,026	635	4,752	2,611	7,172	3,682	18,216	19,877
1981 Total	928	642	4,546	2,520	7,128	3,640	17,834	19,404
1982 Total	1,109	596	4,633	2,606	5,831	3,226	16,295	18,001
1983 Total	978	490	4,381	2,433	5,643	2,911	15,367	16,835
1984 Total	1,077	529	4,555	2,524	6,154	3,111	16,345	17,951
1985 Total	966	504	4,433	2,432	5,901	3,044	15,811	17,281
1986 Total	923	485	4,314	2,318	5,579	2,602	14,814	16,221
1987 Total	1,149	519	4,315	2,430	5,953	2,844	15,542	17,211
1988 Total	1,096	614	4,630	2,670	6,383	2,636	16,320	18,030
1989 Total	1,070	629	4,781	2,718	6,816	2,787	17,102	18,801
1990 January	112	64	788	400	618	146	1,952	2,128
February	100	54	642	336	567	132	1,677	1,831
March	106	56	552	302	591	184	1,629	1,791
April	100	54	399	236	607	199	1,442	1,596
May	102	55	248	158	581	244	1,230	1,387
June	99	54	161	124	548	297	1,130	1,283
July	100	54	126	123	540	326	1,116	1,270
August	101	55	121	115	561	343	1,141	1,297
September	96	52	132	121	560	301	1,114	1,263
October	105	50	213	151	609	257	1,231	1,386
November	106	53	376	224	600	185	1,384	1,543
December	109	58	630	332	635	175	1,772	1,939
Total	1,236	660	4,389	2,623	7,018	2,787	16,818	18,714
1991 January	111	82	848	R431	R674	173	R2,126	R2,318
February	100	R68	667	R357	R595	146	R1,765	R1,933
March	106	R65	575	R309	R609	193	R1,687	R1,858
April	102	R55	374	R224	R589	216	R1,403	R1,559
May	103	48	230	R153	R572	249	R1,204	R1,354
June	99	43	148	R118	R548	260	R1,074	R1,216
July	100	46	127	R125	R574	330	R1,155	R1,301
August	100	R45	118	R112	R588	328	R1,146	R1,291
September	99	44	139	R120	R583	263	R1,105	R1,248
October	107	R50	226	R162	R625	263	R1,276	R1,433
November	107	R60	R461	R254	R626	198	R1,540	R1,707
December	111	R71	660	348	R663	170	R1,841	R2,024
Total	R1,244	R678	R4,573	R2,714	R7,246	2,788	R17,322	R19,244
1992 January	112	79	789	R398	R694	169	2,050	R2,241
February	R101	72	697	R372	R645	170	1,884	2,057
March	105	69	579	R313	R677	208	R1,777	R1,951
April	R100	60	432	R248	636	229	R1,545	R1,705
May	104	51	252	168	627	236	1,283	R1,438
5-Month Total	522	331	2,749	1,499	3,278	1,012	8,539	9,392
1991 5-Month Total	522	318	2,694	1,475	3,039	977	8,185	9,022
1990 5-Month Total	520	283	2,630	1,432	2,964	904	7,930	8,733

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

R=Revised data.

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

Sources: • **1973-1984:** Energy Information Administration (EIA), *Natural Gas Annual 1989*, Table 94. • **1985 forward:** EIA, *Natural Gas Monthly*, August 1992, Table 3.

Table 4.4 Natural Gas in Underground Storage

(Volumes in Billion Cubic Feet)

	Natural Gas in Underground Storage, End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total[a]	Volume	Percent	Injections[b]	Withdrawals[b]	Net[c]
1973 Total	2,864	2,034	4,898	305	17.6	1,974	1,533	442
1974 Total	2,912	2,050	4,962	16	.8	1,784	1,701	84
1975 Total	3,162	2,212	5,374	162	7.9	2,104	1,760	344
1976 Total	3,323	1,926	5,250	-286	-12.9	1,756	1,921	-165
1977 Total	3,391	2,475	5,866	549	28.5	2,307	1,750	557
1978 Total	3,473	2,547	6,020	72	2.9	2,278	2,158	120
1979 Total	3,553	2,753	6,306	207	8.1	2,295	2,047	248
1980 Total	3,642	2,655	6,297	-99	-3.6	1,896	1,910	-14
1981 Total	3,752	2,817	6,569	162	6.1	2,180	1,887	293
1982 Total	3,808	3,071	6,879	255	9.0	2,399	2,094	306
1983 Total	3,847	2,595	6,442	-476	-15.5	1,700	2,142	-442
1984 Total	3,830	2,876	6,706	281	10.8	2,252	2,064	188
1985 Total	3,842	2,607	6,448	-270	-9.4	2,128	2,359	-231
1986 Total	3,819	2,749	6,567	142	5.5	1,952	1,812	140
1987 Total	3,792	2,756	6,548	7	.3	1,887	1,881	6
1988 Total	3,800	2,850	6,650	94	3.4	2,174	2,244	-69
1989 Total	3,812	2,513	6,325	-337	-11.8	2,491	2,804	-313
1990 January	3,818	2,268	6,086	-241	-9.6	94	345	-251
February	3,814	1,999	5,813	5	.3	70	335	-265
March	3,818	1,867	5,685	91	5.1	125	261	-136
April	3,839	1,939	5,778	116	6.4	189	138	51
May	3,823	2,175	5,998	113	5.5	295	43	252
June	3,844	2,482	6,326	108	4.5	326	40	286
July	3,850	2,790	6,640	146	5.5	328	26	302
August	3,851	3,073	6,924	135	4.6	321	39	282
September	3,852	3,326	7,178	139	4.4	287	35	252
October	3,852	3,474	7,326	206	6.3	211	63	148
November	3,868	3,478	7,346	279	8.7	135	147	-12
December	3,868	3,070	6,939	557	22.2	70	478	-408
Total	3,868	3,070	6,939	557	22.2	2,451	1,949	502
1991 January	3,912	2,354	6,266	86	3.8	58	640	-581
February	3,913	2,075	5,988	76	3.8	61	364	-302
March	3,894	1,910	5,804	43	2.3	99	264	-165
April	3,895	2,029	5,924	90	4.6	213	84	130
May	3,931	2,272	6,203	97	4.5	308	31	277
June	3,946	2,555	6,501	73	2.9	310	20	290
July	3,942	2,769	6,711	-21	-.8	268	48	220
August	3,946	2,978	6,924	-95	-3.1	257	55	203
September	3,950	3,196	7,146	-130	-3.9	279	48	231
October	3,961	3,365	7,326	-109	-3.1	230	73	157
November	3,952	3,145	7,096	-333	-9.6	118	327	-209
December	3,954	2,824	6,778	-246	-8.0	95	428	-333
Total	3,954	2,824	6,778	-246	-8.0	2,297	2,380	-83
1992 January	4,048	2,213	6,260	-141	-6.0	57	572	-515
February	4,044	1,840	5,884	-235	-11.3	53	436	-383
March	4,033	1,543	5,576	-367	-19.2	73	370	-297
April	4,024	1,570	5,594	-459	-22.6	159	140	19
May	4,042	1,845	5,888	-427	-18.8	320	50	271
June	4,049	2,149	6,198	-406	-15.9	358	40	318

[a] Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1975--6,280(first data available); 1976--6,544; 1977--6,678; 1978--6,890; 1979--6,929; 1980--7,434; 1981--7,805; 1982--7,915; 1983--7,985; 1984--8,043; 1985--8,087; 1986--8,145; 1987, 1988, and 1989--8,124; and 1990--8125. Current capacity remains at 8,125.

[b] For 1980-1990, data differ from those shown on Table 4.2, which include liquefied natural gas storage for that period.

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

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

Sources: • **Storage Activity: 1973-1975**—Energy Information Administration (EIA), *Natural Gas Annual 1988, Volume II*, Table 9. **1976-1979**—EIA, *Natural Gas Production and Consumption 1979*, Table 1. **1980-1984**—EIA, *Natural Gas Annual 1988, Volume II*, Table 11. **1985 forward**—EIA, *Natural Gas Monthly*, August 1992, Table 17. • **Other Data: 1973**—American Gas Association (AGA), *Gas Facts, 1972 Data*, Table 57, and *Gas Facts, 1973 Data*, Table 57. **1974**—AGA, *Gas Facts, 1974 Data*, Table 40. **1975 and 1976**—Federal Energy Administration, Form FEA-G318-M-O, and Federal Power Commission (FPC), Form FPC-8. **1977 and 1978**—EIA, Form FEA-G318-M-O, and Federal Energy Regulatory Commission (FERC), Form FERC-8. **1979-1984**—EIA, Form EIA-191, and FERC, Form FERC-8. **1985 forward**—EIA, *Natural Gas Monthly*, August 1992, Table 17.

Natural Gas Notes

1. Nonhydrocarbon Gases Removed: Annual data on nonhydrocarbon gases removed from marketed production—carbon dioxide, helium, hydrogen sulfide, and nitrogen—are from the Energy Information Administration (EIA) *Natural Gas Annual (NGA) 1989.* Data are not available for periods prior to 1980. Monthly data are reported by three States and computed for six States. Monthly data are preliminary until after publication of the EIA *NGA*. Differences between annual data published in the EIA *NGA* and the sum of the preliminary monthly data (January-December) are allocated proportionally to the months to create final monthly data. For further information on methods of estimating preliminary monthly data, see the EIA *Natural Gas Monthly (NGM).*

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

Estimated monthly data. Data for the two most recent months presented are estimated. Some of the data for earlier months are also estimated or computed. For a discussion of computation and estimation procedures, see the EIA *NGM*.

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

Final monthly data. Differences between annual data in the EIA *NGA* and the sum of preliminary monthly data (January-December) are allocated proportionally to the months to create final monthly data.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

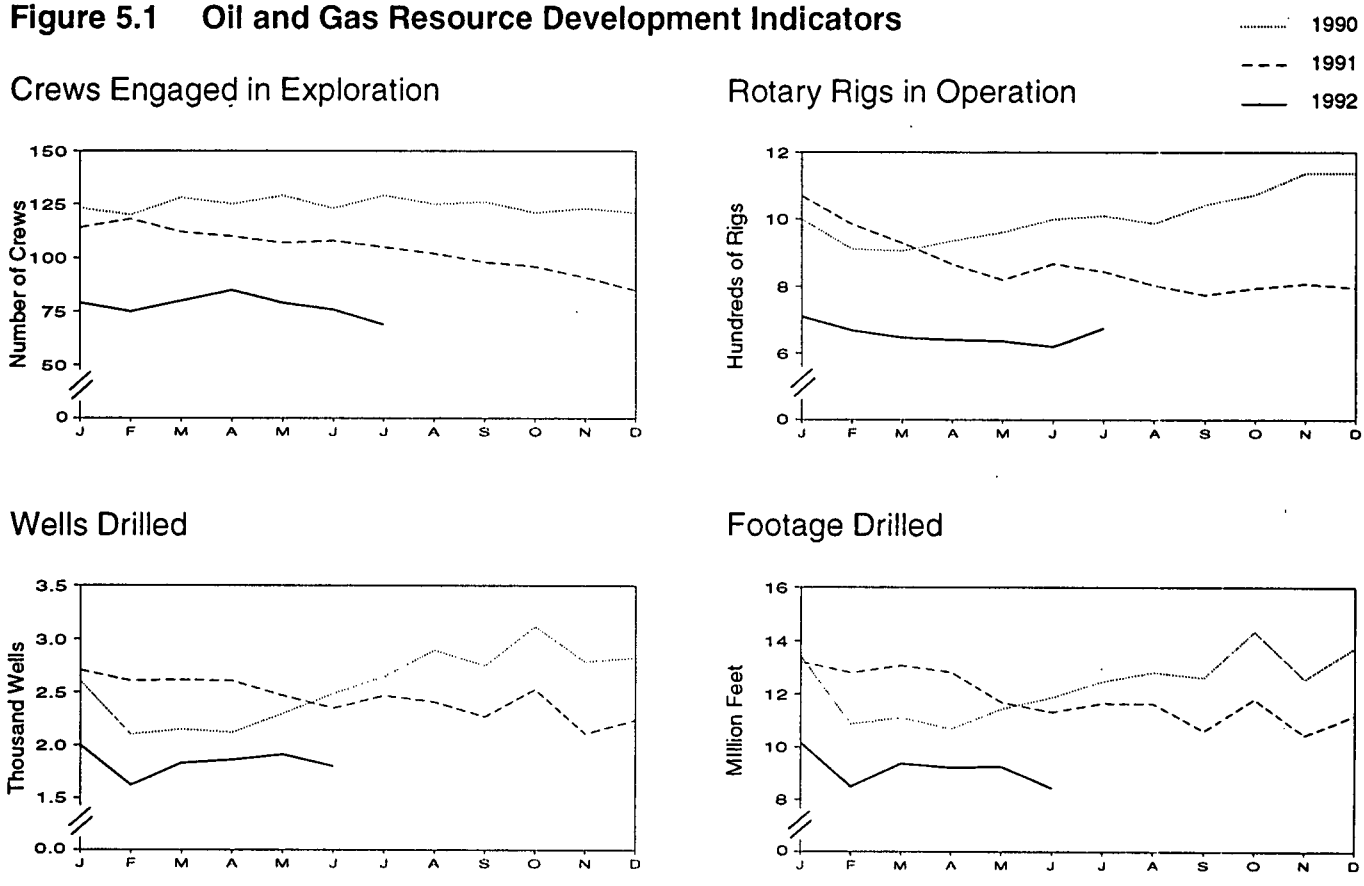
Section 5. Oil and Gas Resource Development

A total of 69 seismic exploration crews were active in July 1992, 36 fewer than a year earlier. Of the total, 60 were land crews and 9 were aboard marine vessels. The number of land crews was down by 29, and the number of operating marine vessels decreased by 7 vessels from the July 1991 count.

The July 1992 rotary rig count of 676 was 9 percent higher than in the previous month but 20 percent lower than in July 1991. Of the total number of rigs in operation, 628 were onshore and 48 were offshore. The number of onshore rigs was down 18 percent from the number in July 1991, and the number of offshore rigs was down 40 percent.

The estimated number of exploratory and development gas and oil wells drilled during June 1992 was 1,260, 7 percent lower than in May 1992 and 28 percent lower than in June 1991. The estimated number of oil wells drilled was 700 and the estimated number of gas wells was 560, down 28 percent and 27 percent, respectively, from the June 1991 levels. The estimated number of dry holes drilled in June 1992 was 550, unchanged from May 1992 but 11 percent lower than in June 1991. Total footage drilled in June 1992 was 8.43 million feet, down 9 percent from footage drilled in May 1992 and down 26 percent from that drilled in June 1991.

Figure 5.1 Oil and Gas Resource Development Indicators



Sources: Tables 5.1 and 5.2.

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 Average	24	176	201	99	865	964
1987 Average	24	153	176	95	841	936
1988 Average	29	153	182	123	813	936
1989 Average	23	109	132	105	764	869
1990 January	20	103	123	113	885	998
February	20	100	120	105	806	911
March	21	107	128	108	797	905
April	24	101	125	111	824	935
May	25	104	129	120	841	961
June	23	100	123	113	886	999
July	24	105	129	108	902	1,010
August	23	102	125	108	879	987
September	25	101	126	107	935	1,042
October	23	98	121	99	974	1,073
November	23	100	123	106	1,031	1,137
December	23	98	121	101	1,035	1,136
Average	23	102	125	108	902	1,010
1991 January	22	92	114	91	977	1,068
February	21	97	118	88	896	984
March	24	88	112	81	848	929
April	23	87	110	95	770	865
May	22	85	107	98	721	819
June	21	87	108	93	774	867
July	16	89	105	80	764	844
August	15	87	102	68	735	803
September	14	84	98	71	704	775
October	15	81	96	68	727	795
November	18	73	91	72	736	808
December	19	66	85	65	731	796
Average	19	85	104	81	779	860
1992 January	18	61	79	56	654	710
February	13	62	75	51	618	669
March	13	67	80	54	594	648
April	13	72	85	55	587	642
May	13	66	79	47	591	638
June	12	64	76	44	577	621
July	9	60	69	48	628	676
7-Month Average	13	65	78	50	609	659
1991 7-Month Average	21	89	110	90	817	906
1990 7-Month Average	22	103	125	111	851	962

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

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

Sources: • Crews Engaged in Seismic Exploration: Society of Exploration Geophysicists, "Monthly Seismic Crew Count," and annual reports in *Geophysics: The Leading Edge of Exploration.* • Rotary Rigs in Operation: Hughes Tool Company, "Rotary Rigs Running--by State."

Table 5.2 Oil and Gas Exploratory and Development Wells

	Wells Drilled				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	39.13	18.94	26.38	84.45	378.39
1983 Total	37.12	14.53	24.30	75.95	318.09
1984 Total	42.51	16.99	25.73	85.23	370.20
1985 Total	34.94	14.23	21.09	70.26	311.77
1986 Total	18.76	8.20	12.85	39.81	178.11
1987 Total	16.22	7.82	R11.61	R35.66	R162.11
1988 Total	13.42	8.33	10.26	32.01	153.81
1989 Total	10.33	9.11	R8.37	R27.81	R131.47
1990 January	1.01	.87	.73	2.61	13.42
February	.86	.71	.53	2.10	10.87
March	.86	.71	.58	2.15	11.11
April	.86	.64	.60	2.12	10.68
May	.88	.80	.62	2.30	11.44
June	R.92	.87	R.69	R2.49	R11.88
July	.97	.95	R.73	R2.65	R12.49
August	1.13	1.01	.75	2.90	12.83
September	1.07	.95	.73	2.75	12.63
October	1.26	1.06	.81	3.12	14.35
November	1.17	R.78	R.84	R2.79	R12.57
December	1.22	.87	R.75	R2.83	R13.74
Total	R12.21	R10.23	R8.36	R30.80	R148.02
1991 January	1.24	.88	.59	2.71	13.21
February	1.24	.72	.65	2.61	12.81
March	1.18	.80	.64	2.62	13.08
April	1.17	.76	.69	2.61	12.83
May	1.09	.72	.66	2.47	11.69
June	R.97	R.77	R.62	R2.35	R11.32
July	.97	.82	.68	2.47	11.66
August	1.02	.72	.67	2.41	11.64
September	.90	.72	.65	2.27	10.61
October	1.03	.77	.73	2.53	11.81
November	.85	.59	.67	2.11	10.44
December	R.83	R.73	R.68	R2.24	R11.19
Total	R12.47	R9.01	R7.93	R29.41	R142.29
1992 January	.84	.62	.55	2.00	10.15
February	.72	.49	.41	1.62	8.49
March	.85	R.48	.51	R1.83	R9.37
April	.83	.50	.53	1.86	9.22
May	.79	.57	.55	1.91	9.25
June	.70	.56	.55	1.80	8.43
6-Month Total	4.72	3.23	3.10	11.04	54.91
1991 6-Month Total	6.88	4.65	3.85	15.38	74.94
1990 6-Month Total	5.39	4.62	3.75	13.76	69.41

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.

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

Oil and Gas Resource Development Notes

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

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

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

Section 6. Coal

Coal production in June 1992 totaled 78 million short tons, 1 percent[6] higher than the 77 million short tons produced in June 1991. Coal production for January through June 1992 totaled 492 million short tons, slightly higher than the 491 million short tons produced during the comparable period of 1991.

Electric utility coal consumption in May 1992 totaled 61 million short tons, slightly lower than the consumption level in May 1991.

Electric utility coal stocks were 164 million short tons at the end of May 1992, compared with stocks of 165 million short tons at the end of May 1991.

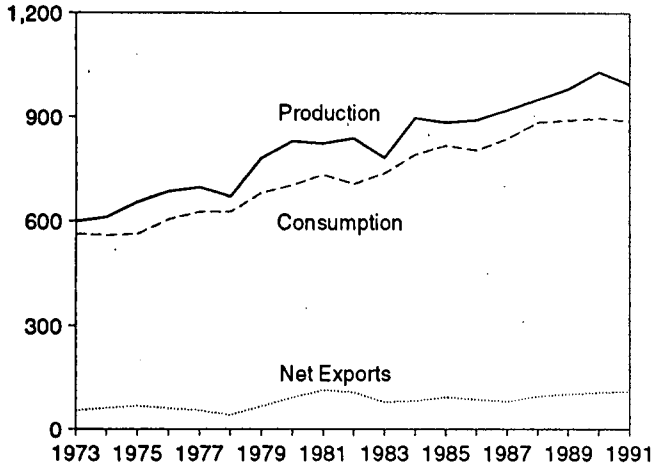
Exports of coal in May 1992 totaled 9 million short tons, 5 percent lower than exports in May 1991. Imports of coal in May 1992 totaled 339 thousand short tons, 91 thousand short tons higher than in May 1991.

[6]Calculated values are computed using unrounded data.

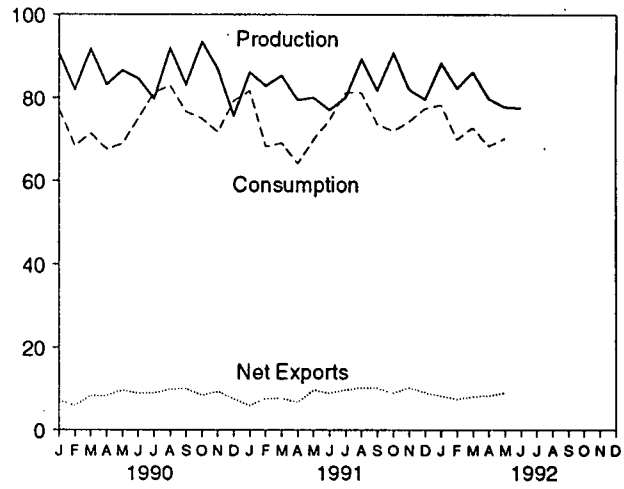
Figure 6.1 Coal

(Million Short Tons)

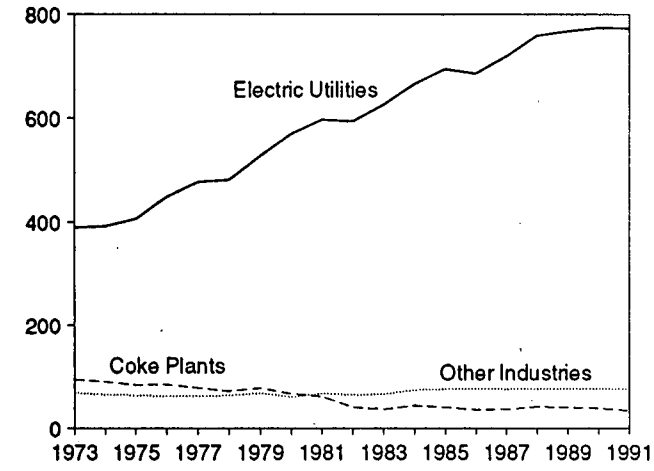
Overview, 1973-1991



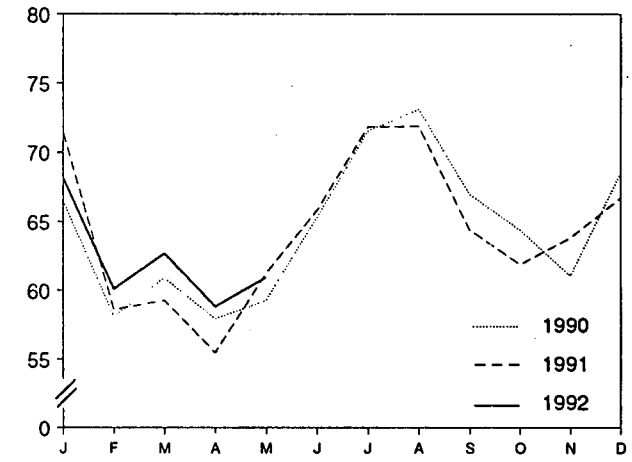
Overview, Monthly



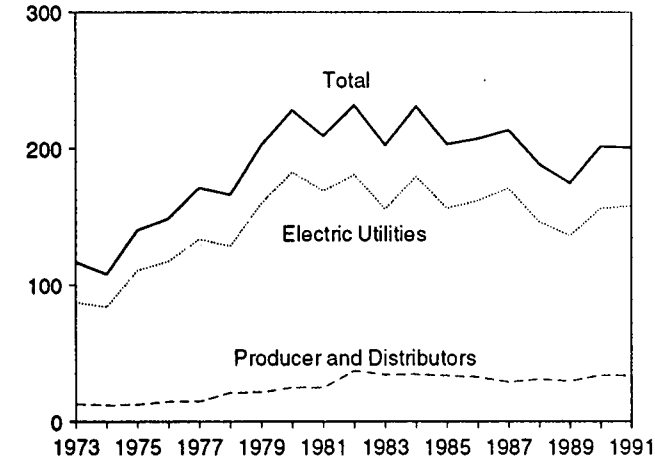
Consumption by Sector, 1973-1991



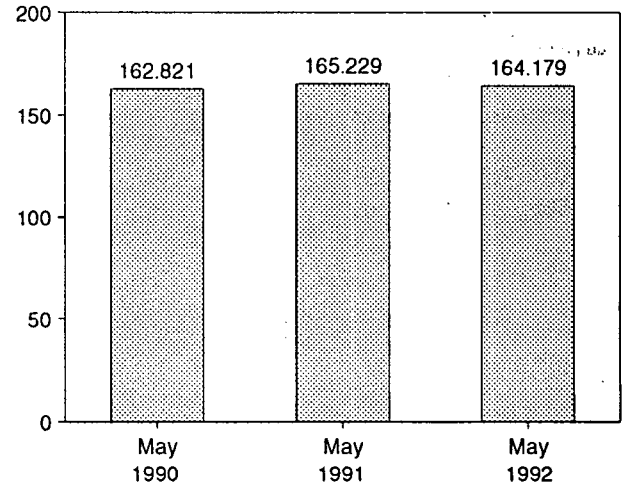
Consumption by Electric Utilities, Monthly



Stocks, End of Year, 1973-1991



Stocks at Electric Utilities, End of Month



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

Table 6.1 Coal Overview

(Thousand Short Tons)

	Production	Consumption	Imports[a]	Exports	Stocks[b]
1973 Total	598,568	562,584	127	53,587	116,865
1974 Total	610,023	558,402	2,080	60,661	107,957
1975 Total	654,641	562,640	940	66,309	140,158
1976 Total	684,913	603,790	1,203	60,021	148,659
1977 Total	697,205	625,291	1,647	54,312	171,323
1978 Total	670,164	625,225	2,953	40,714	166,246
1979 Total	781,134	680,524	2,059	66,042	202,472
1980 Total	829,700	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	791,296	1,286	81,483	231,300
1985 Total	883,638	818,049	1,952	92,680	203,367
1986 Total	890,315	804,231	2,212	85,518	207,319
1987 Total	918,762	836,941	1,747	79,607	213,780
1988 Total	950,265	883,642	2,134	95,023	188,831
1989 Total	980,729	889,699	2,851	100,815	175,087
1990 January	90,561	77,143	175	7,447	179,459
February	82,021	68,461	268	6,243	186,448
March	91,602	71,410	292	8,693	195,842
April	83,167	67,721	182	8,590	203,424
May	86,519	68,992	144	9,827	210,094
June	84,592	74,953	348	9,316	209,956
July	79,798	81,280	200	9,194	200,970
August	91,842	82,954	120	10,065	197,284
September	83,120	76,587	194	10,238	195,298
October	93,424	74,966	284	8,756	201,683
November	86,763	71,727	224	9,621	206,348
December	75,666	79,285	268	7,813	201,629
Total	1,029,076	895,480	2,699	105,804	201,629
1991 January	86,098	81,738	263	6,214	197,829
February	82,874	68,282	429	8,127	204,026
March	85,307	69,188	246	7,977	211,208
April	79,478	64,184	198	6,917	215,947
May	80,059	69,981	248	10,018	216,921
June	77,049	74,592	284	9,278	212,741
July	79,998	81,221	348	10,099	204,378
August	89,163	81,196	248	10,541	199,237
September	81,818	73,676	387	10,557	197,488
October	90,654	72,018	214	9,244	202,136
November	82,029	74,239	298	10,602	201,670
December	79,620	77,353	225	9,393	200,845
Total	994,147	887,668	3,390	108,969	200,845
1992 January	R88,226	R78,280	272	8,590	R200,062
February	R82,360	R70,001	213	7,759	R204,527
March	R86,114	R72,817	193	8,383	R208,420
April	79,839	E68,444	239	8,616	E209,165
May	77,748	E70,275	339	9,483	E210,694
June	77,517	NA	NA	NA	NA
6-Month Total	491,804	NA	NA	NA	NA
1991 6-Month Total	490,865	427,965	1,668	48,532	212,741
1990 6-Month Total	518,463	428,681	1,409	50,116	209,956

[a] Includes Puerto Rico.

[b] 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.

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

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Data through 1990 are final. Subsequent data are preliminary. • Annual and year-to-date totals are rounded sums of rounded data. Accordingly, they may not equal the sum of the months and may differ from values published elsewhere by the Energy Information Administration (EIA). • For methodology used to calculate production, consumption, and stocks, see Notes 1, 2, and 3 at end of section.

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

Table 6.2 Coal Consumption by End-Use Sector

(Thousand Short Tons)

	Residential and Commercial	Industrial		Electric Utilities	Total
		Coke Plants	Other Industrial Including Transportation		
1973 Total	11,117	94,101	68,154	389,212	562,584
1974 Total	11,417	90,191	64,983	391,811	558,402
1975 Total	9,410	83,598	63,670	405,962	562,640
1976 Total	8,916	84,704	61,799	448,371	603,790
1977 Total	8,954	77,739	61,472	477,126	625,291
1978 Total	9,511	71,394	63,085	481,235	625,225
1979 Total	8,388	77,368	67,717	527,051	680,524
1980 Total	6,452	66,657	60,347	569,274	702,729
1981 Total	7,422	61,015	67,395	596,797	732,628
1982 Total	8,240	40,908	64,096	593,666	706,910
1983 Total	8,448	37,033	65,979	625,211	736,671
1984 Total	9,130	44,022	73,745	664,399	791,296
1985 Total	7,779	41,056	75,372	693,841	818,049
1986 Total	7,667	35,924	75,583	685,056	804,231
1987 Total	6,914	36,957	75,175	717,894	836,941
1988 Total	7,130	41,888	76,252	758,372	883,642
1989 Total	6,167	40,508	76,134	766,888	889,699
1990 January	713	3,456	6,533	66,441	77,143
February	656	3,117	6,576	58,112	68,461
March	551	3,471	6,504	60,885	71,410
April	532	3,227	6,025	57,937	67,721
May	360	3,365	6,007	59,260	68,992
June	373	3,203	6,037	65,340	74,953
July	535	3,119	6,075	71,551	81,280
August	498	3,236	6,113	73,106	82,954
September	409	3,120	6,056	67,001	76,587
October	413	3,319	6,853	64,381	74,966
November	624	3,223	6,838	61,041	71,727
December	1,059	3,020	6,713	68,493	79,285
Total	6,724	38,877	76,330	773,549	895,480
1991 January	862	2,928	6,541	71,406	81,738
February	605	2,479	6,584	58,614	68,282
March	541	2,883	6,492	59,272	69,188
April	403	2,675	5,663	55,443	64,184
May	330	2,710	5,713	61,228	69,981
June	322	2,690	5,763	65,817	74,592
July	427	2,929	6,014	71,852	81,221
August	386	2,916	6,011	71,884	81,196
September	319	2,932	6,026	64,397	73,676
October	353	2,902	6,880	61,883	72,018
November	677	2,896	6,852	63,814	74,239
December	868	2,913	6,865	66,707	77,353
Total	6,094	33,854	75,405	772,316	887,668
1992 January	R735	R2,783	R6,624	68,137	R78,280
February	R582	R2,656	R6,663	60,100	R70,001
March	R526	R2,901	R6,712	62,678	R72,817
April	E593	E2,906	E6,114	E58,831	E68,444
May	E367	E3,023	E5,961	E60,924	E70,275
5-Month Total	E2,802	E14,269	E32,074	E310,671	E359,817
1991 5-Month Total	2,742	13,676	30,994	305,962	353,373
1990 5-Month Total	2,812	16,637	31,644	302,635	353,728

R=Revised data. E=Estimate.

Notes: • For sector-specific reporting and estimating information, see Note 2 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Data through 1990 are final. Subsequent data are preliminary. • Annual and year-to-date totals are rounded sums of rounded data. Accordingly, they may not equal the sum of the months and may differ from values published elsewhere by the Energy Information Administration (EIA).

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

Table 6.3 Coal Stocks, End of Period

(Thousand Short Tons)

	Consumer				Producers and Distributors	Total[a]
	Coke Plants	Other Industrial	Electric Utilities	Total[a]		
1973 Year	6,998	10,370	86,967	104,335	12,530	116,865
1974 Year	6,209	6,605	83,509	96,323	11,634	107,957
1975 Year	8,797	8,529	110,724	128,050	12,108	140,158
1976 Year	9,902	7,100	117,436	134,438	14,221	148,659
1977 Year	12,816	11,063	133,219	157,098	14,225	171,323
1978 Year	8,278	9,048	128,225	145,551	20,695	166,246
1979 Year	10,155	11,777	159,714	181,646	20,826	202,472
1980 Year	9,067	11,951	183,010	204,028	24,379	228,407
1981 Year	6,475	9,906	168,893	185,274	24,149	209,423
1982 Year	4,642	9,479	181,132	195,253	36,784	232,037
1983 Year	4,346	8,710	155,598	168,654	33,931	202,585
1984 Year	6,166	11,317	179,727	197,211	34,090	231,300
1985 Year	3,420	10,438	156,376	170,234	33,133	203,367
1986 Year	2,992	10,429	161,806	175,226	32,093	207,319
1987 Year	3,884	10,777	170,797	185,459	28,321	213,780
1988 Year	3,137	8,768	146,507	158,413	30,418	188,831
1989 Year	2,864	7,363	135,860	146,087	29,000	175,087
1990 January	3,123	7,237	138,067	148,426	31,033	179,459
February	3,382	7,110	142,890	153,382	33,066	186,448
March	3,641	6,984	150,118	160,743	35,099	195,842
April	3,674	7,127	156,925	167,726	35,698	203,424
May	3,706	7,270	162,821	173,798	36,296	210,094
June	3,739	7,413	161,908	173,061	36,895	209,956
July	3,387	7,810	153,957	165,153	35,816	200,970
August	3,255	8,206	151,085	162,546	34,738	197,284
September	3,124	8,603	149,913	161,639	33,659	195,298
October	3,192	8,640	156,271	168,104	33,579	201,683
November	3,260	8,678	160,911	172,850	33,499	206,348
December	3,329	8,716	156,166	168,210	33,418	201,629
1991 January	3,262	8,234	150,000	161,496	36,333	197,829
February	3,196	7,753	153,830	164,779	39,248	204,026
March	3,130	7,271	158,644	169,045	42,162	211,208
April	3,181	7,154	163,819	174,154	41,793	215,947
May	3,232	7,038	165,229	175,498	41,423	216,921
June	3,283	6,921	161,484	171,688	41,054	212,741
July	3,087	7,033	155,680	165,800	38,578	204,378
August	2,891	7,145	153,097	163,133	36,103	199,237
September	2,695	7,258	153,907	163,860	33,628	197,488
October	2,721	7,192	158,813	168,726	33,409	202,136
November	2,747	7,127	158,605	168,479	33,190	201,670
December	2,773	7,061	158,040	167,874	32,971	200,845
1992 January	R 2,800	R 6,613	155,395	R 164,808	R 35,254	R 200,062
February	R 2,827	R 6,165	157,997	R 166,990	R 37,537	R 204,527
March	R 2,854	R 5,717	160,028	R 168,600	R 39,820	R 208,420
April	E 3,253	E 7,276	162,636	E 173,165	E 36,000	E 209,165
May	E 3,327	E 7,188	164,179	E 174,694	E 36,000	E 210,694

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

R=Revised data. E=Estimate.

Notes: • For sector-specific reporting and estimating information, see Note 3 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Data through 1990 are final. Subsequent data are preliminary. • Totals may not equal sum of components due to independent rounding.

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

Coal Notes

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

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

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

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

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

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

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

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

5. Additional Information: More information concerning coal production, consumption, and stocks data and estimation procedures may be obtained in EIA's *Quarterly Coal Report.*

Section 7. Electricity

During May 1992, electric utilities generated 220 billion kilowatthours of electricity, 6 percent[7] less than the May 1991 generation level. Coal-fired generation totaled 124 billion kilowatthours, slightly above the May 1991 level. Nuclear generation totaled 46 billion kilowatthours, 2 percent less than the level 1 year earlier. Natural gas-fired generation was 23 billion kilowatthours, 3 percent below the May 1991 level. Hydroelectric generation totaled 22 billion kilowatthours, 22 percent below the May 1991 level. Petroleum-fired generation totaled 5 billion kilowatthours, 54 percent below the level 1 year earlier.

Sales of electricity to all ultimate consumers in the United States in May were 213 billion kilowatthours, 2 percent lower than sales during the May 1991 level. Sales to industrial consumers totaled 80 billion kilowatthours in May 1992, slightly lower than the level a year ago. Sales to residential consumers during May 1992 were 65 billion kilowatthours, 4 percent below the level of sales during the previous year. Commercial sales were 60 billion kilowatthours, 2 percent lower than the sales to commercial consumers 1 year earlier. In May 1992, other sales totaled 8 billion kilowatthours, 8 percent lower than the May 1991 level.

Electric utility consumption of coal during May 1992 was 61 million short tons, less than 1 percent below consumption in May 1991. Petroleum consumption (excluding petroleum coke) during May 1992 was 9 million barrels, 53 percent below the May 1991 level. During May 1992, electric utilities consumed 236 billion cubic feet of natural gas, 5 percent below the May 1991 consumption level.

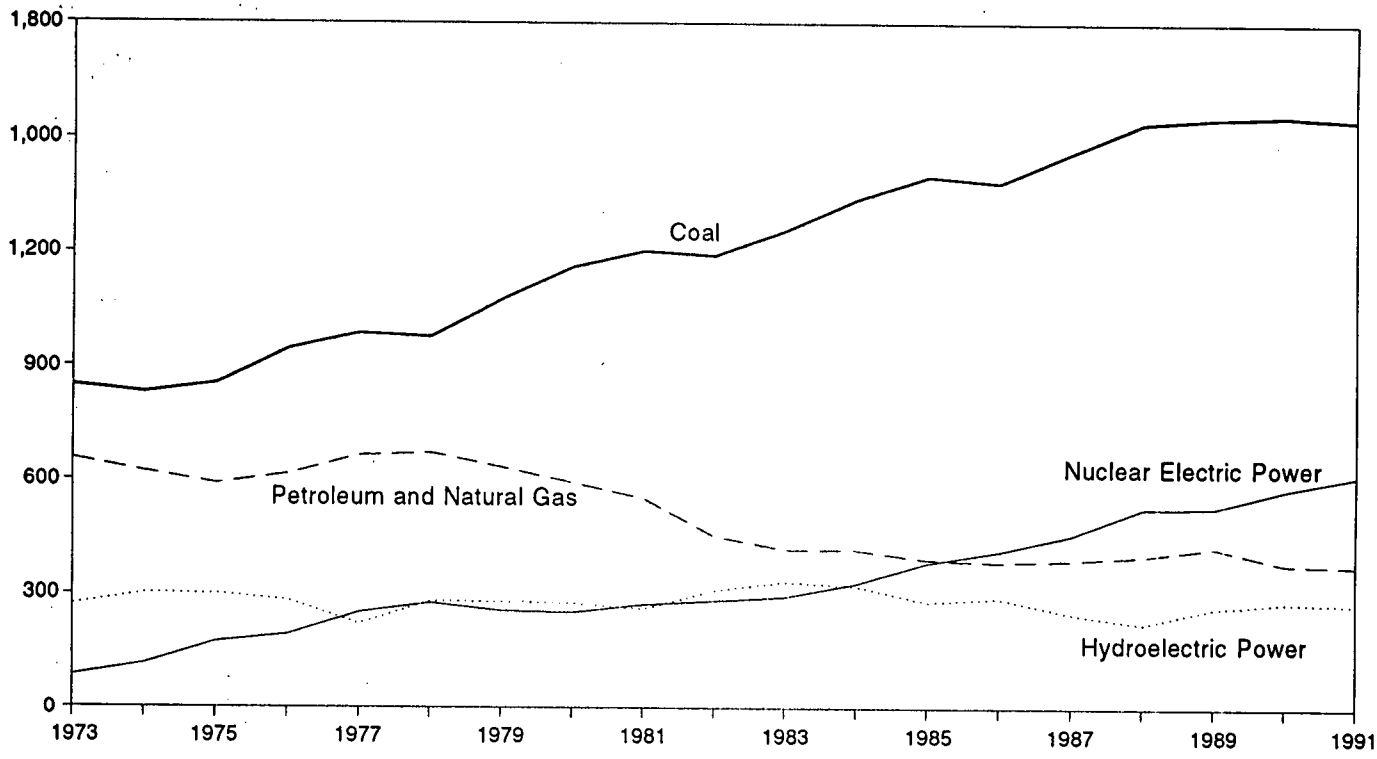
On May 31, 1992, electric utility stocks of all types of coal totaled 164 million short tons, 1 percent below the level on May 31, 1991. Stocks of petroleum (excluding petroleum coke) on May 31, 1992, totaled 70 million barrels, 3 percent below the level on May 31, 1991.

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

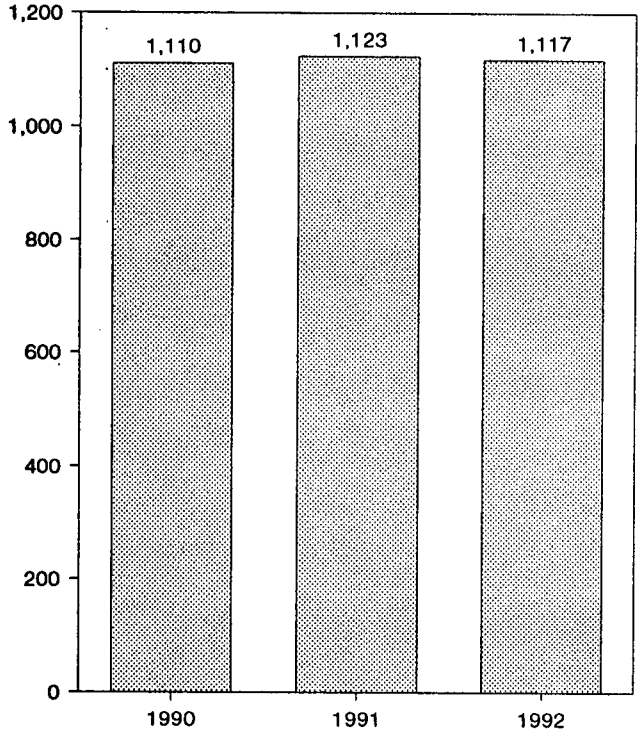
Figure 7.1 Electric Utility Net Generation of Electricity

(Billion Kilowatthours)

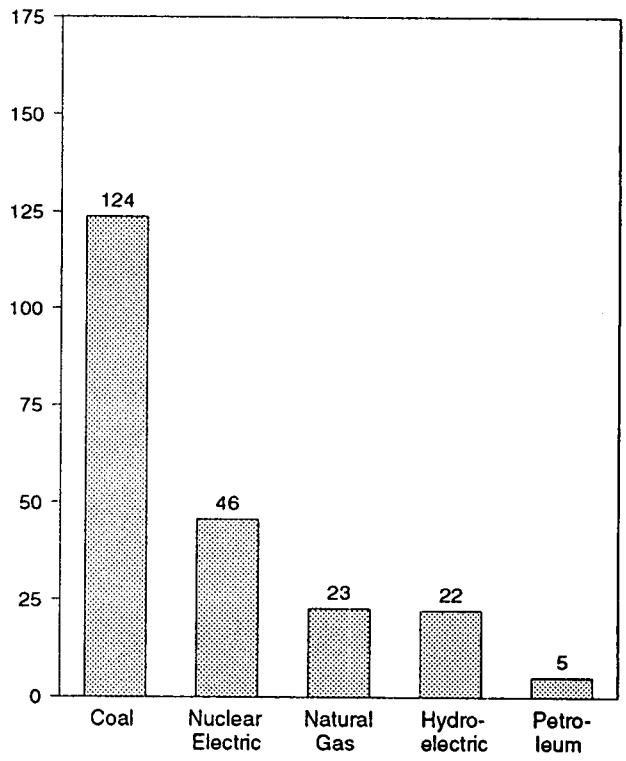
Net Generation by Source, 1973-1991



Net Generation, January-May



Net Generation by Source, May 1992



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

Table 7.1 Electric Utility Net Generation of Electricity

(Million Kilowatthours)

	Coal	Natural Gas[a]	Petroleum[b]	Nuclear Electric Power	Hydro-Electric Power	Other[c]	Total
1973 Total	**847,651**	**340,858**	**314,343**	**83,479**	**272,083**	**2,294**	**1,860,710**
1974 Total	**828,433**	**320,065**	**300,931**	**113,976**	**301,032**	**2,703**	**1,867,140**
1975 Total	**852,786**	**299,778**	**289,095**	**172,505**	**300,047**	**3,437**	**1,917,649**
1976 Total	**944,391**	**294,624**	**319,988**	**191,104**	**283,707**	**3,883**	**2,037,696**
1977 Total	**985,219**	**305,505**	**358,179**	**250,883**	**220,475**	**4,063**	**2,124,323**
1978 Total	**975,742**	**305,391**	**365,060**	**276,403**	**280,419**	**3,315**	**2,206,331**
1979 Total	**1,075,037**	**329,485**	**303,525**	**255,155**	**279,783**	**4,387**	**2,247,372**
1980 Total	**1,161,562**	**346,240**	**245,994**	**251,116**	**276,021**	**5,506**	**2,286,439**
1981 Total	**1,203,203**	**345,777**	**206,421**	**272,674**	**260,684**	**6,054**	**2,294,812**
1982 Total	**1,192,004**	**305,260**	**146,797**	**282,773**	**309,213**	**5,164**	**2,241,211**
1983 Total	**1,259,424**	**274,098**	**144,499**	**293,677**	**332,130**	**6,456**	**2,310,285**
1984 Total	**1,341,681**	**297,394**	**119,808**	**327,634**	**321,150**	**8,638**	**2,416,304**
1985 Total	**1,402,128**	**291,946**	**100,202**	**383,691**	**281,149**	**10,724**	**2,469,841**
1986 Total	**1,385,831**	**248,508**	**136,585**	**414,038**	**290,844**	**11,503**	**2,487,310**
1987 Total	**1,463,781**	**272,621**	**118,493**	**455,270**	**249,695**	**12,267**	**2,572,127**
1988 Total	**1,540,653**	**252,801**	**148,900**	**526,973**	**222,940**	**11,984**	**2,704,250**
1989 Total	**1,553,661**	**266,598**	**158,318**	**529,355**	**265,063**	**11,309**	**2,784,304**
1990 January	132,623	13,687	11,515	55,119	23,412	933	237,289
February	116,071	12,450	9,385	49,963	24,151	861	212,880
March	123,139	17,647	10,172	46,087	28,042	948	226,034
April	117,260	18,991	10,141	38,516	25,387	775	211,070
May	119,785	22,867	9,442	42,945	27,001	868	222,908
June	132,624	28,280	13,348	46,332	27,708	883	249,175
July	144,359	30,983	12,824	53,645	23,658	907	266,375
August	147,305	32,610	10,887	55,758	21,048	919	268,527
September	135,493	28,212	7,981	48,485	16,971	875	238,017
October	130,182	24,408	7,198	43,395	18,605	905	224,694
November	124,003	17,637	6,221	45,034	19,993	860	213,748
December	136,762	16,317	7,902	51,582	23,952	919	237,434
Total	1,559,606	264,089	117,017	576,862	279,926	10,651	2,808,151
1991 January	141,779	16,320	9,221	54,369	25,676	897	248,262
February	117,860	13,730	8,689	47,863	21,915	764	210,821
March	118,159	18,448	8,784	49,121	25,820	863	221,195
April	112,320	20,504	7,984	41,631	25,687	780	208,906
May	123,751	23,455	10,995	46,755	28,454	808	234,217
June	131,801	24,417	11,159	54,208	25,830	848	248,264
July	143,828	31,124	11,011	60,735	24,250	839	271,787
August	143,898	30,970	11,865	58,473	21,747	865	267,818
September	128,966	24,966	8,647	51,874	18,428	830	233,710
October	125,351	25,390	6,483	47,653	17,538	843	223,258
November	128,952	18,990	7,784	46,295	18,299	883	221,203
December	132,546	15,818	8,841	53,589	21,873	916	233,585
Total	1,549,212	264,131	111,463	612,565	275,516	10,137	2,823,025
1992 January	137,181	16,176	10,197	57,878	21,535	910	243,877
February	121,733	16,157	8,306	52,804	17,958	798	217,756
March	127,678	19,906	8,811	45,835	21,553	871	224,655
April	120,014	21,871	6,157	42,268	19,439	788	210,538
May	123,778	22,682	5,041	45,627	22,270	830	220,229
5-Month Total	630,384	96,793	38,513	244,412	102,755	4,198	1,117,054
1991 5-Month Total	**613,869**	**92,456**	**45,674**	**239,738**	**127,552**	**4,111**	**1,123,400**
1990 5-Month Total	**608,878**	**85,642**	**50,655**	**232,630**	**127,992**	**4,384**	**1,110,181**

[a] Includes supplemental gaseous fuel.

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

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

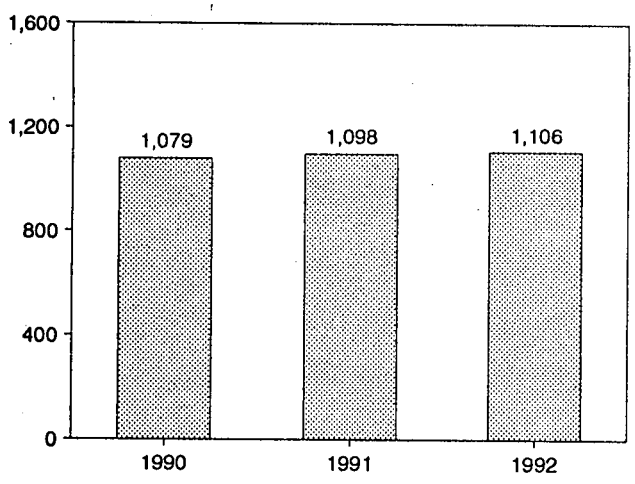
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • **1973-September 1977:** Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • **October 1977-1979:** Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • **1980:** Energy Information Administration (EIA), *Electric Power Monthly*, March 1991, Table 4. • **1981 and 1990 monthly data:** EIA, *Electric Power Monthly*, March 1992, Table 4. • **1982 forward (except 1990 monthly data):** EIA, *Electric Power Monthly*, August 1992, Table 4.

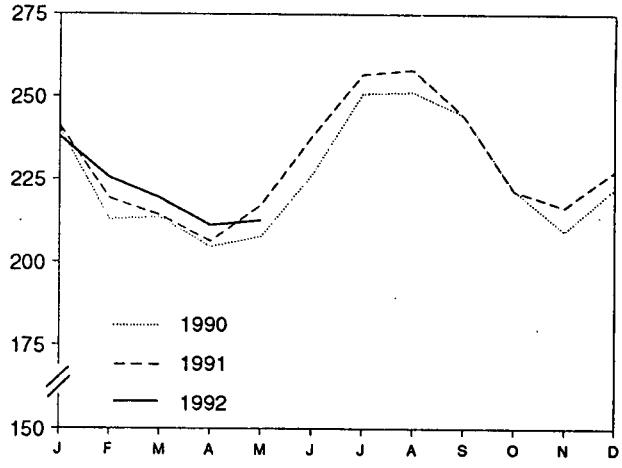
Figure 7.2 Electricity Sales

(Billion Kilowatthours)

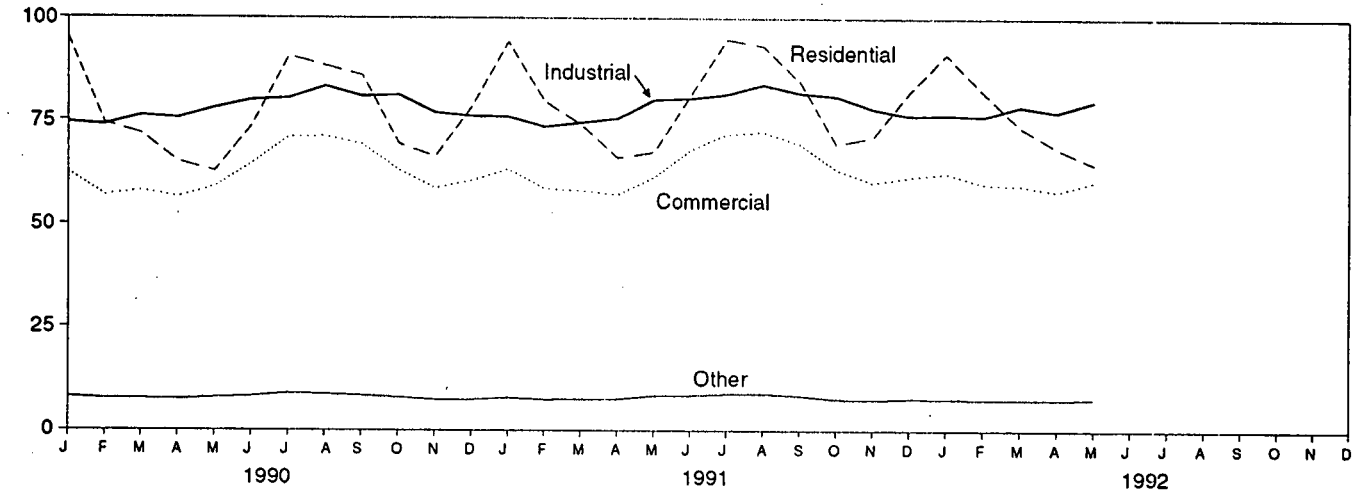
Total Sales, January-May



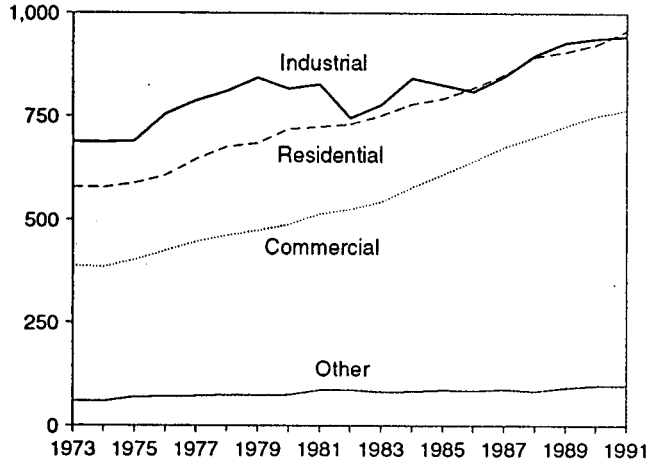
Total Sales, Monthly



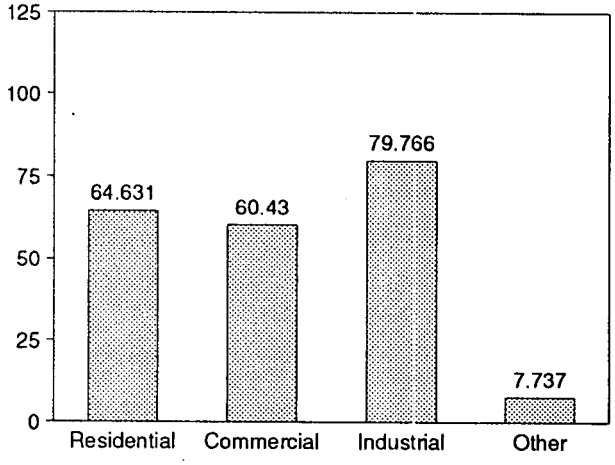
Sales by Sector, Monthly



Sales by Sector, 1973-1991



Sales by Sector, May 1992



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

Table 7.2 Electricity Sales by End-Use Sector

(Million Kilowatthours)

	Residential		Commercial		Industrial		Other[a]		Total	
	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series	Monthly Series[b]	Annual Series
1973 Total	579,231	NA	388,266	NA	686,085	NA	59,326	NA	1,712,909	NA
1974 Total	578,184	NA	384,826	NA	684,875	NA	58,039	NA	1,705,924	NA
1975 Total	588,140	NA	403,049	NA	687,680	NA	68,222	NA	1,747,091	NA
1976 Total	606,452	NA	425,094	NA	754,069	NA	69,631	NA	1,855,246	NA
1977 Total	645,239	NA	446,514	NA	786,037	NA	70,571	NA	1,948,361	NA
1978 Total	674,466	NA	461,163	NA	809,078	NA	73,215	NA	2,017,922	NA
1979 Total	682,819	NA	473,307	NA	841,903	NA	73,070	NA	2,071,099	NA
1980 Total	717,495	NA	488,155	NA	815,067	NA	73,732	NA	2,094,449	NA
1981 Total	722,265	NA	514,338	NA	825,743	NA	84,756	NA	2,147,103	NA
1982 Total	729,520	NA	526,397	NA	744,949	NA	85,575	NA	2,086,441	NA
1983 Total	750,948	NA	543,788	NA	775,999	NA	80,219	NA	2,150,955	NA
1984 Total	777,654	780,092	578,281	582,621	840,588	837,836	81,849	85,248	2,278,372	2,285,796
1985 Total	790,977	793,934	608,968	605,989	824,523	836,772	85,075	87,279	2,309,543	2,323,974
1986 Total	817,663	819,088	641,469	630,520	808,292	830,531	83,409	88,615	2,350,835	2,368,753
1987 Total	849,613	850,410	673,707	660,433	845,266	858,233	86,854	88,196	2,455,440	2,457,272
1988 Total	892,125	892,866	697,711	699,100	895,751	896,498	82,362	89,598	2,567,949	2,578,062
1989 Total	903,979	905,525	725,229	725,861	926,376	925,659	91,066	89,765	2,646,651	2,646,809
1990 January	95,190	–	62,462	–	74,472	–	8,088	–	240,212	–
February	74,343	–	56,905	–	73,891	–	7,643	–	212,781	–
March	71,747	–	57,990	–	76,114	–	7,631	–	213,482	–
April	65,048	–	56,490	–	75,528	–	7,479	–	204,545	–
May	62,731	–	58,936	–	78,021	–	7,914	–	207,602	–
June	73,661	–	64,571	–	79,901	–	8,196	–	226,327	–
July	90,590	–	70,912	–	80,345	–	9,009	–	250,855	–
August	88,257	–	71,103	–	83,232	–	8,764	–	251,356	–
September	85,927	–	69,244	–	80,813	–	8,402	–	244,385	–
October	69,410	–	63,091	–	81,152	–	7,979	–	221,633	–
November	66,282	–	58,657	–	76,909	–	7,428	–	209,276	–
December	78,288	–	60,474	–	76,050	–	7,404	–	222,216	–
Total	921,473	924,019	750,835	751,027	936,428	945,522	95,936	91,988	2,704,672	2,712,555
1991 January	94,059	–	63,285	–	75,908	–	7,919	–	241,170	–
February	79,616	–	58,515	–	73,535	–	7,433	–	219,099	–
March	74,015	–	58,074	–	74,511	–	7,469	–	214,069	–
April	66,031	–	57,084	–	75,520	–	7,592	–	206,227	–
May	67,396	–	61,364	–	80,022	–	8,400	–	217,183	–
June	81,087	–	67,903	–	80,356	–	8,509	–	237,854	–
July	94,699	–	71,797	–	81,396	–	8,885	–	256,776	–
August	93,086	–	72,293	–	83,743	–	8,971	–	258,093	–
September	84,657	–	69,429	–	81,739	–	8,469	–	244,295	–
October	69,378	–	63,406	–	80,968	–	7,637	–	221,389	–
November	71,054	–	60,089	–	77,952	–	7,461	–	216,556	–
December	81,997	–	61,499	–	76,300	–	7,780	–	227,577	–
Total	957,074	957,024	764,739	764,923	941,949	940,676	96,525	96,638	2,760,286	2,759,261
1992 January	91,207	–	62,450	–	76,504	–	7,718	–	237,880	–
February	82,028	–	59,817	–	76,122	–	7,501	–	225,467	–
March	73,607	–	59,493	–	78,560	–	7,539	–	219,198	–
April	68,430	–	58,024	–	77,195	–	7,450	–	211,098	–
May	64,631	–	60,430	–	79,766	–	7,737	–	212,564	–
5-Month Total	379,903	–	300,213	–	388,147	–	37,945	–	1,106,207	–
1991 5-Month Total	381,116	–	298,323	–	379,495	–	38,813	–	1,097,748	–
1990 5-Month Total	369,059	–	292,783	–	378,026	–	38,755	–	1,078,622	–

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

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

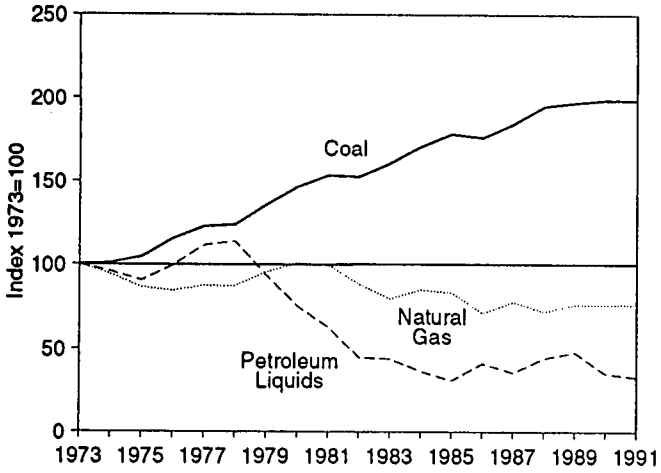
NA=Not available. – =Not applicable.

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

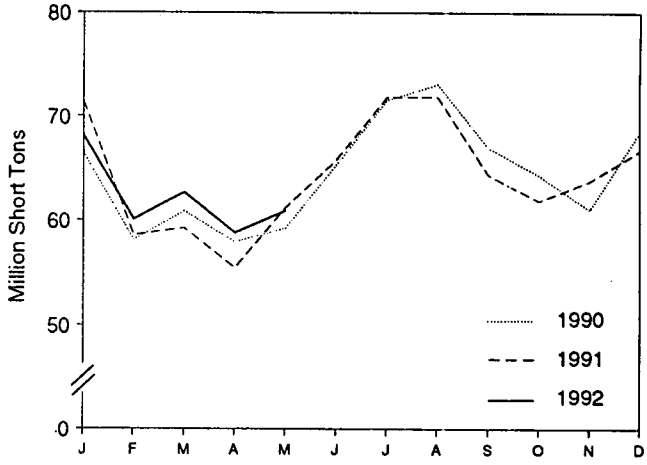
Sources: • **1973-1979: 1973-September 1977**—Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income." **October 1977-1979**—Federal Energy Regulatory Commission, Form FERC-5, "Electric Operating Revenue and Income." • **1980:** Energy Information Administration (EIA), *Electric Power Monthly*, March 1991, Table 51. • **1981 and 1990 monthly data:** EIA, *Electric Power Monthly*, March 1992, Table 51. • **1982 forward (except 1990 monthly data):** EIA, *Electric Power Monthly*, August 1992, Table 51.

Figure 7.3 Electric Utility Consumption and Stocks of Fossil Fuels

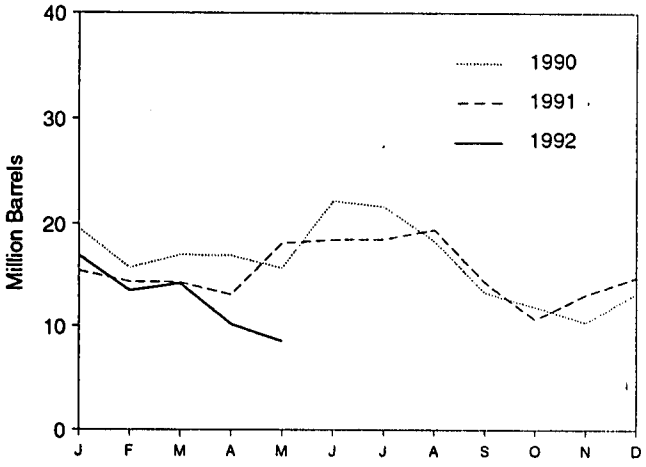
Fuels Consumed, 1973-1991



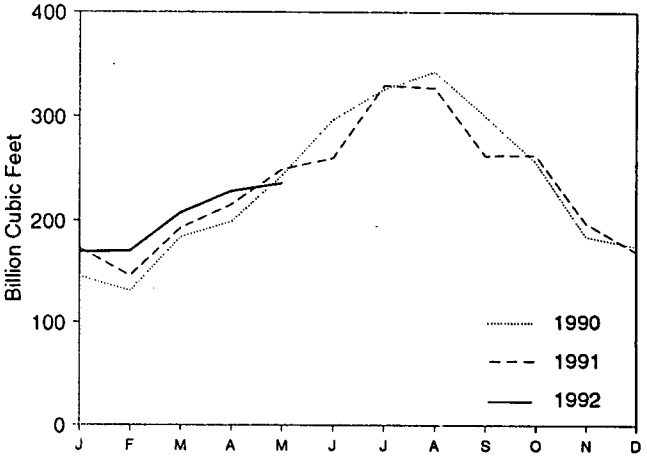
Coal Consumed, Monthly



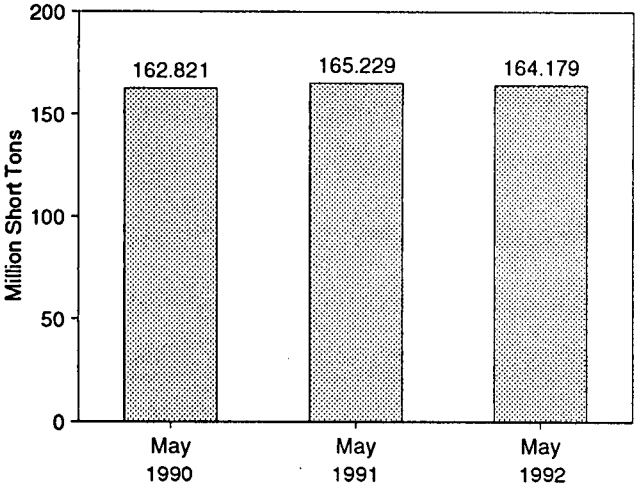
Petroleum Liquids Consumed, Monthly



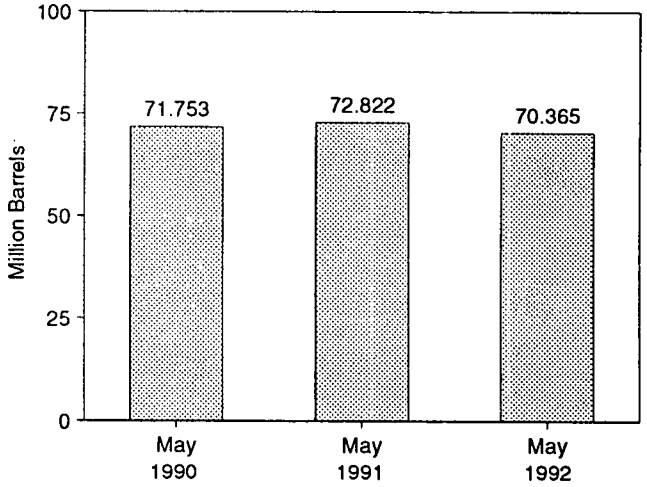
Natural Gas Consumed, Monthly



Coal Stocks, End of Month



Petroleum Liquids Stocks, End of Month



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

Table 7.3 Electric Utility Consumption of Fossil Fuels To Generate Electricity

	Coal				Petroleum						
					By Type of Petroleum		By Prime Mover Type				
	Anthracite	Bituminous Coal	Lignite	Total	Heavy Oil[a]	Light Oil[b]	Steam Plants	GT/IC[c]	Total Liquids	Petroleum Coke	Natural Gas[d]
	Thousand Short Tons				Thousand Barrels					Thousand Short Tons	Million Cubic Feet
1973 Total	1,443	376,975	10,794	389,212	NA	NA	513,190	47,058	560,248	507	3,660,172
1974 Total	1,498	378,643	11,670	391,811	NA	NA	483,146	53,128	536,274	625	3,443,428
1975 Total	1,480	388,523	15,960	405,962	NA	NA	467,221	38,907	506,128	70	3,157,669
1976 Total	1,350	425,205	21,817	448,371	NA	NA	514,077	41,843	555,920	68	3,080,868
1977 Total	1,425	451,051	24,650	477,126	NA	NA	574,869	48,837	623,705	98	3,191,200
1978 Total	1,064	448,763	31,407	481,235	NA	NA	588,319	47,520	635,839	398	3,188,363
1979 Total	1,046	488,129	37,876	527,051	NA	NA	492,606	30,691	523,297	268	3,490,523
1980 Total	951	526,680	41,642	569,274	391,163	29,051	401,863	18,351	420,214	179	3,681,595
1981 Total	1,221	550,784	44,792	596,797	329,798	21,313	339,680	11,431	351,111	139	3,640,154
1982 Total	1,075	543,346	49,245	593,666	234,434	15,337	243,537	6,234	249,771	149	3,225,518
1983 Total	1,036	570,108	54,067	625,211	228,984	16,512	237,845	7,652	245,497	261	2,910,767
1984 Total	1,070	606,339	56,990	664,399	189,289	15,190	197,050	7,429	204,479	252	3,111,342
1985 Total	1,033	631,885	60,923	693,841	158,779	14,635	166,842	6,572	173,414	231	3,044,083
1986 Total	829	616,134	68,093	685,056	216,156	14,326	222,500	7,983	230,482	313	2,602,370
1987 Total	972	647,824	69,098	717,894	184,011	15,367	190,818	8,560	199,378	348	2,844,051
1988 Total	1,063	681,048	76,260	758,372	229,327	18,769	235,817	12,279	248,096	409	2,635,613
1989 Total	1,049	688,504	77,335	766,888	241,960	25,491	250,315	17,136	267,451	517	2,787,012
1990 January	92	59,129	7,220	66,441	18,291	1,237	18,900	628	19,528	40	145,649
February	85	51,715	6,313	58,112	14,769	974	15,194	549	15,743	62	131,592
March	91	54,693	6,101	60,885	16,068	916	16,541	442	16,984	62	183,983
April	81	52,480	5,376	57,937	15,882	1,035	16,364	554	16,917	61	198,994
May	90	53,182	5,988	59,260	14,586	1,146	15,113	619	15,732	77	243,781
June	90	58,357	6,892	65,340	20,619	1,555	21,145	1,028	22,174	66	297,036
July	96	64,272	7,183	71,551	20,041	1,615	20,514	1,141	21,655	74	326,087
August	93	65,696	7,317	73,106	16,715	1,618	17,212	1,121	18,333	72	342,965
September	84	60,461	6,455	67,001	12,037	1,318	12,491	863	13,354	79	300,858
October	82	58,118	6,181	64,381	10,772	1,186	11,272	686	11,958	86	256,797
November	71	54,927	6,043	61,041	9,473	910	9,998	385	10,383	61	184,695
December	75	61,287	7,132	68,493	11,979	1,313	12,785	507	13,292	78	174,893
Total	1,031	694,317	78,201	773,549	181,231	14,823	187,531	8,523	196,054	819	2,787,332
1991 January	74	63,779	7,553	71,406	14,264	1,187	14,911	541	15,452	74	172,932
February	68	52,090	6,456	58,614	13,595	804	14,021	377	14,398	57	146,177
March	93	52,924	6,255	59,272	13,513	828	13,999	341	14,340	73	192,878
April	92	50,131	5,219	55,443	12,142	1,019	12,641	519	13,161	72	215,659
May	73	55,229	5,926	61,228	16,312	1,814	16,919	1,208	18,126	66	249,454
June	72	58,455	7,290	65,817	17,325	1,122	17,845	602	18,447	50	260,153
July	101	64,202	7,548	71,852	17,289	1,218	17,737	770	18,507	61	329,861
August	90	64,280	7,514	71,884	18,041	1,380	18,500	921	19,421	56	327,621
September	90	57,474	6,833	64,397	13,209	1,165	13,634	740	14,374	52	262,825
October	86	55,586	6,212	61,883	9,791	902	10,289	403	10,693	50	263,376
November	79	57,662	6,073	63,814	12,020	1,146	12,575	591	13,166	52	197,831
December	77	59,510	7,120	66,707	13,656	1,143	14,213	586	14,800	59	169,674
Total	994	691,322	79,999	772,316	171,157	13,729	177,286	7,600	184,886	722	2,788,443
1992 January	80	60,754	7,304	68,137	15,811	1,103	16,332	582	16,914	68	169,302
February	80	53,605	6,415	60,100	12,741	809	13,104	446	13,550	76	170,286
March	93	56,217	6,368	62,678	13,415	843	13,855	404	14,259	83	207,854
April	73	53,351	5,407	58,831	9,422	794	9,826	390	10,216	66	228,590
May	69	54,998	5,858	60,924	7,734	854	8,221	367	8,587	50	236,175
5-Month Total	393	278,925	31,353	310,671	59,123	4,403	61,337	2,189	63,526	344	1,012,207
1991 5-Month Total	400	274,154	31,408	305,962	69,826	5,652	72,492	2,986	75,478	341	977,101
1990 5-Month Total	439	271,199	30,998	302,635	79,596	5,308	82,113	2,792	84,904	303	904,000

[a] Heavy oil includes Grade Nos. 4, 5, and 6, and residual fuel oils.
[b] Light oil includes Grade No. 2 heating oil, kerosene, and jet fuel.
[c] GT/IC = Gas turbine and internal combustion plants.
[d] Includes supplemental gaseous fuels.
NA=Not available.
Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.
Sources: • **Prime Mover Type Data: 1973-September 1977**—Federal Power Commission (FPC), Form FPC-4, "Monthly Power Plant Report." • **October 1977-1981**—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." **1982 forward**—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • **All Other Data: 1973-September 1977**—FPC, Form FPC-4, "Monthly Power Plant Report." **October 1977-1979**—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." **1980**—EIA, *Electric Power Monthly*, March 1991, Table 17. • **1981 and 1990 monthly data**—EIA, *Electric Power Monthly*, March 1992, Table 17. • **1982 forward (except 1990 monthly data)**—EIA, *Electric Power Monthly*, August 1992, Table 17.

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

	Coal				Petroleum					
					By Type of Petroleum		By Prime Mover Type			
	Anthracite	Bituminous Coal	Lignite	Total	Heavy Oil[a]	Light Oil[b]	Steam Plants	GT/IC[c]	Total Liquids	Petroleum Coke
	Thousand Short Tons				Thousand Barrels					Thousand Short Tons
1973 Year	1,066	84,941	961	86,967	NA	NA	79,121	10,095	89,216	312
1974 Year	930	81,712	867	83,509	NA	NA	97,718	15,199	112,917	35
1975 Year	982	107,927	1,815	110,724	NA	NA	108,825	16,432	125,257	31
1976 Year	1,000	114,130	2,306	117,436	NA	NA	106,993	14,703	121,696	32
1977 Year	2,321	128,210	2,688	133,219	NA	NA	124,750	19,281	144,031	44
1978 Year	2,178	123,020	3,027	128,225	NA	NA	102,402	16,386	118,788	198
1979 Year	3,274	152,981	3,459	159,714	NA	NA	111,121	20,301	131,422	183
1980 Year	4,741	174,154	4,115	183,010	105,351	30,023	117,227	18,147	135,374	52
1981 Year	5,537	158,258	5,098	168,893	102,042	26,094	112,380	15,756	128,136	42
1982 Year	6,080	170,480	4,573	181,132	95,515	23,369	105,287	13,597	118,884	41
1983 Year	6,507	145,250	3,841	155,598	70,573	18,801	78,285	11,090	89,375	55
1984 Year	6,710	167,118	5,899	179,727	68,503	19,116	76,836	10,784	87,619	50
1985 Year	7,189	142,144	7,043	156,376	57,304	16,386	64,704	8,985	73,689	49
1986 Year	7,099	148,665	6,042	161,806	56,841	16,269	64,258	8,853	73,111	40
1987 Year	6,940	156,670	7,187	170,797	55,069	15,759	61,705	9,123	70,827	51
1988 Year	6,561	133,434	6,512	146,507	54,187	15,099	60,311	8,974	69,285	86
1989 Year	6,403	122,967	6,490	135,860	47,446	13,824	53,309	7,962	61,270	105
1990 January	6,360	125,226	6,482	138,067	54,365	15,410	60,421	9,353	69,775	114
February	6,315	130,281	6,294	142,890	58,169	15,622	64,454	9,337	73,791	108
March	6,294	137,522	6,302	150,118	57,728	15,249	63,746	9,231	72,977	104
April	6,298	143,648	6,979	156,925	55,419	14,837	61,314	8,942	70,256	93
May	6,315	149,130	7,377	162,821	56,321	15,432	62,341	9,412	71,753	102
June	6,376	148,278	7,255	161,908	53,347	15,356	59,397	9,306	68,703	110
July	6,420	140,429	7,108	153,957	56,294	15,618	62,386	9,525	71,911	109
August	6,441	137,678	6,966	151,085	57,320	15,468	63,342	9,446	72,788	113
September	6,486	136,716	6,711	149,913	60,274	15,574	66,336	9,512	75,848	95
October	6,513	142,465	7,294	156,271	61,835	16,142	68,143	9,833	77,977	83
November	6,528	147,112	7,271	160,911	65,160	16,411	71,414	10,157	81,571	84
December	6,499	142,650	7,016	156,166	67,030	16,471	73,306	10,195	83,501	94
1991 January	6,470	137,019	6,510	150,000	64,344	16,601	70,744	10,201	80,945	103
February	6,442	141,047	6,341	153,830	60,490	16,892	67,367	10,014	77,382	111
March	6,384	145,843	6,417	158,644	58,172	16,376	64,699	9,848	74,547	101
April	6,347	151,119	6,353	163,819	58,835	16,175	65,393	9,618	75,011	90
May	6,387	152,618	6,224	165,229	57,247	15,574	63,531	9,290	72,822	81
June	6,441	149,259	5,784	161,484	58,245	15,680	64,504	9,421	73,925	89
July	6,484	142,804	6,392	155,680	57,932	15,654	64,119	9,467	73,586	86
August	6,506	140,320	6,272	153,097	56,588	15,596	62,813	9,370	72,183	79
September	6,514	141,463	5,930	153,907	59,035	15,514	65,186	9,363	74,550	73
October	6,544	146,178	6,090	158,813	60,225	15,790	66,257	9,758	76,015	64
November	6,533	145,775	6,298	158,605	58,814	15,780	64,963	9,631	74,594	75
December	6,513	145,530	5,996	158,040	58,636	16,357	65,032	9,961	74,993	70
1992 January	6,488	143,224	5,683	155,395	52,593	16,105	58,924	9,775	68,698	72
February	6,455	146,190	5,352	157,997	54,560	15,668	60,905	9,323	70,228	62
March	6,398	147,974	5,656	160,028	54,513	15,601	60,851	9,264	70,115	56
April	6,379	149,870	6,387	162,636	52,817	15,398	59,060	9,155	68,215	47
May	6,370	150,942	6,867	164,179	55,160	15,205	61,161	9,204	70,365	63

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

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

Sources: • **Prime Mover Type Data: 1973-September 1977**—Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." **October 1977-1981**—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." **1982 forward**—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • **All Other Data: 1973-September 1977**—Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." **October 1977-1979**—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." **1980**—Energy Information Administration (EIA), *Electric Power Monthly*, March 1991, Table 28. **1981 and 1990 monthly data**—EIA, *Electric Power Monthly*, March 1992, Table 28. **1982 forward (except 1990 monthly data)**—EIA, *Electric Power Monthly*, August 1992, Table 28.

Section 8. Nuclear Energy

In May 1992, U.S. nuclear generating units produced a total of 46 net terawatthours (billion kilowatthours) of electricity, 2 percent[8] less than in May 1991. Nuclear units generated at an average capacity factor of 61.7 percent, 1 percentage point less than in May 1991. Nuclear power supplied 20.7 percent of the total electric utility-generated electricity in May 1992, compared with 20.0 percent in May 1991.

No low- or full-power licenses for nuclear power plants were issued by the Nuclear Regulatory Commission during May 1992.

On May 31, 1992, there were 110 operable nuclear generating units in the United States, with a collective net summer capability of 99.5 million kilowatts of electricity. Of the 110 operable units, 28 units generated at less than 25 percent of capacity because of maintenance, refueling, or repair outage, and 22 of the 28 units generated no electricity during the month.

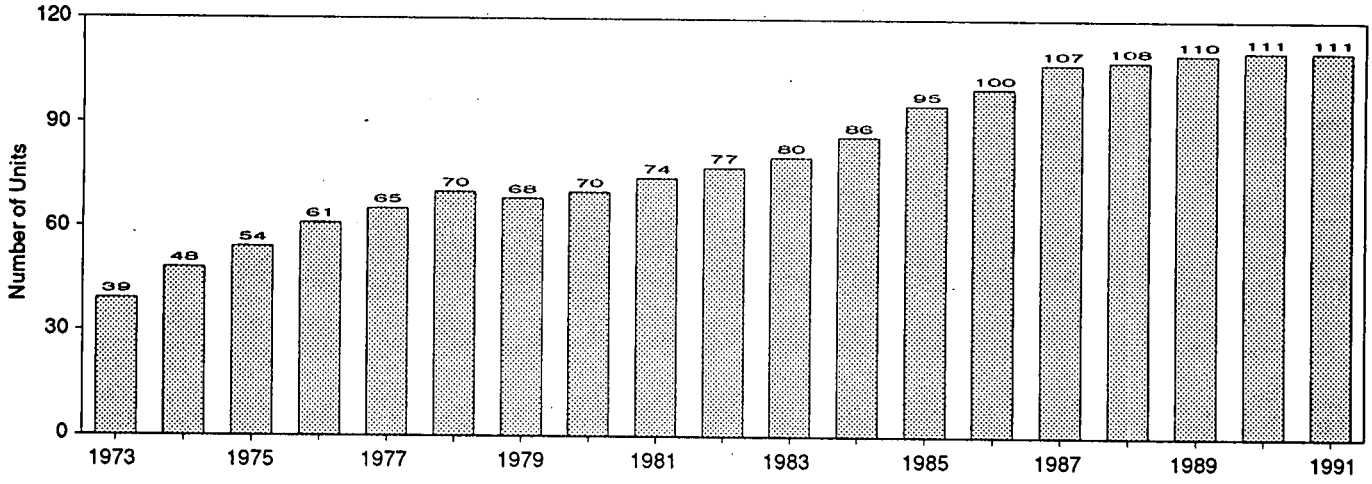
Two operable units, Browns Ferry 1 and 3, have been shut down since March 1985. Each unit had a capacity of 1,065 megawatts electric.

As of May 31, there were 118 domestic nuclear generating units in all stages of construction and operation. The aggregate net design capacity of operable units was 101.5 million kilowatts, and the design capacity of units under construction was 9.7 million kilowatts, for a total design capacity of 111.1 million kilowatts.

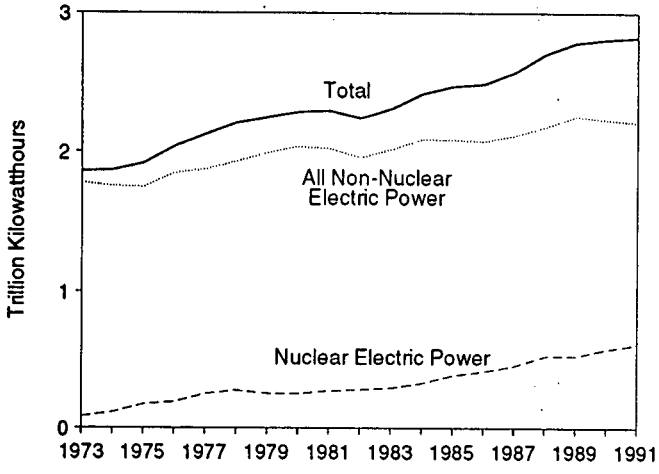
[8]Percentage changes are based on numbers shown in the following tables.

Figure 8.1 Nuclear Power Plant Operations

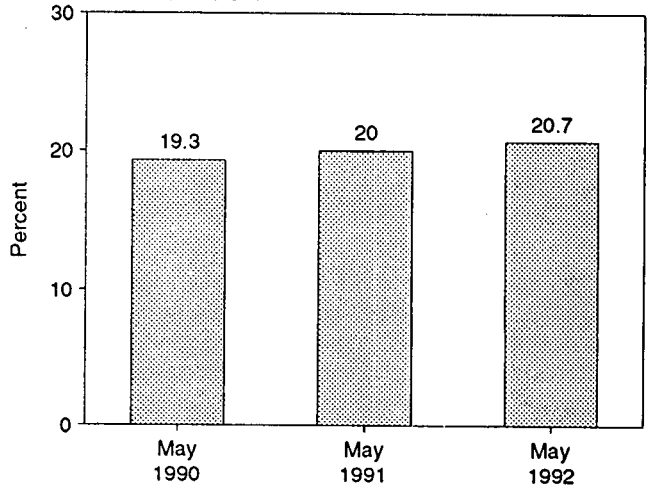
Operable Units, End of Year, 1973-1991



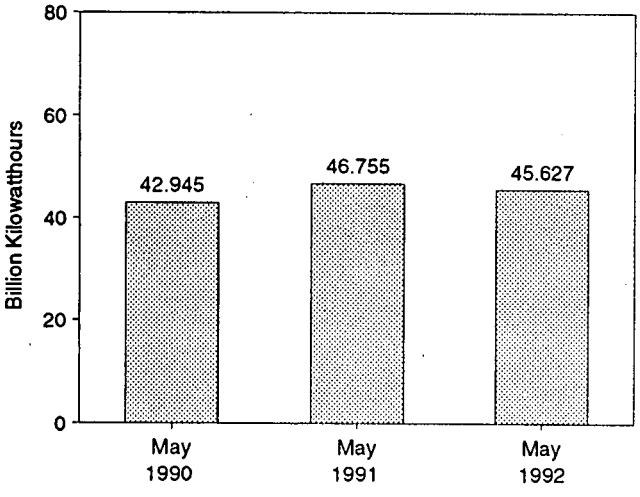
Net Generation of Electricity, 1973-1991



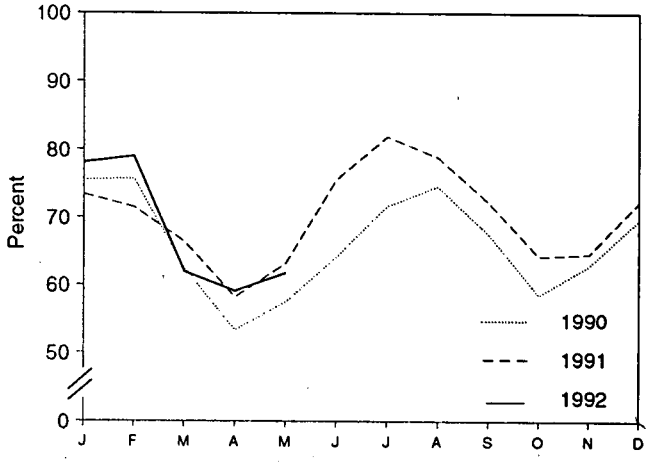
Nuclear Portion of Domestic Electricity Net Generation



Nuclear Electricity Net Generation



Capacity Factor, Monthly



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

Table 8.1 Nuclear Power Plant Operations

	Operable Units[a,b]	Nuclear Electricity Net Generation	Nuclear Portion of Domestic Electricity Net Generation	Net Summer Capability of Operable Units[a,c]	Capacity Factor[d]
	Number	Million Kilowatthours	Percent	Million Kilowatts	Percent
1973 Year	**39**	**83,479**	**4.5**	**22.683**	**53.5**
1974 Year	**48**	**113,976**	**6.1**	**31.867**	**47.8**
1975 Year	**54**	**172,505**	**9.0**	**37.267**	**55.9**
1976 Year	**61**	**191,104**	**9.4**	**43.822**	**54.7**
1977 Year	**65**	**250,883**	**11.8**	**46.303**	**63.3**
1978 Year	**70**	**276,403**	**12.5**	**50.824**	**64.5**
1979 Year	**68**	**255,155**	**11.4**	**49.747**	**58.4**
1980 Year	**70**	**251,116**	**11.0**	**51.810**	**56.3**
1981 Year	**74**	**272,674**	**11.9**	**56.042**	**58.2**
1982 Year	**77**	**282,773**	**12.6**	**60.035**	**56.6**
1983 Year	**80**	**293,677**	**12.7**	**63.009**	**54.4**
1984 Year	**86**	**327,634**	**13.6**	**69.652**	**56.3**
1985 Year	**95**	**383,691**	**15.5**	**79.397**	**58.0**
1986 Year	**100**	**414,038**	**16.6**	**85.241**	**56.9**
1987 Year	**107**	**455,270**	**17.7**	**93.583**	**57.4**
1988 Year	**108**	**526,973**	**19.5**	**94.695**	**63.5**
1989 Year	**110**	**529,355**	**19.0**	**98.161**	**62.2**
1990 January	110	55,119	23.2	98.161	75.5
February	110	49,963	23.5	98.161	75.7
March	111	46,087	20.4	99.311	62.4
April	112	38,516	18.2	100.461	53.3
May	112	42,945	19.3	100.461	57.5
June	112	46,332	18.6	100.461	64.1
July	112	53,645	20.1	100.497	71.7
August	112	55,758	20.8	100.497	74.6
September	111	48,485	20.4	99.624	67.5
October	111	43,395	19.3	99.624	58.5
November	111	45,034	21.1	99.624	62.8
December	111	51,582	21.7	99.624	69.6
Year	111	576,862	20.5	99.624	66.0
1991 January	111	54,369	21.9	99.624	73.4
February	111	47,863	22.7	99.624	71.5
March	111	49,121	22.2	99.624	66.3
April	111	41,631	19.9	99.624	58.2
May	111	46,755	20.0	99.624	63.1
June	111	54,208	21.8	99.624	75.6
July	111	60,735	22.3	99.624	81.9
August	111	58,473	21.8	99.624	78.9
September	111	51,874	22.2	99.624	72.3
October	111	47,653	21.3	99.624	64.2
November	111	46,295	20.9	99.624	64.5
December	111	53,589	22.9	99.624	72.3
Year	111	612,565	21.7	99.624	70.2
1992 January	111	57,878	23.7	99.624	78.1
February	110	52,804	24.2	99.457	79.0
March	110	45,835	20.4	99.457	61.9
April	110	42,268	20.1	99.457	59.1
May	110	45,627	20.7	99.457	61.7
5-Month Total	110	244,412	21.9	99.457	67.8
1991 5-Month Total	**111**	**239,738**	**21.3**	**99.624**	**66.4**
1990 5-Month Total	**112**	**232,630**	**21.0**	**100.461**	**64.6**

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

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

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

Table 8.2 Nuclear Generating Units, End of Period

	Licensed for Operation		Construction Permits		On Order	Announced	Total	Total Design Capacity[c]
	Operable[a]	In Startup[b]	Granted	Pending				
	Number of Units							Million Kilowatts
1973 Year	39	2	57	52	49	9	208	198
1974 Year	48	5	62	75	30	6	226	223
1975 Year	54	2	69	69	14	5	213	212
1976 Year	61	1	71	63	16	2	214	211
1977 Year	65	2	78	49	13	2	209	203
1978 Year	70	0	88	32	5	0	195	191
1979 Year	68	0	90	24	3	0	185	180
1980 Year	70	1	82	12	3	0	168	162
1981 Year	74	0	76	11	2	0	163	157
1982 Year	77	2	60	3	2	0	144	134
1983 Year	80	3	53	0	2	0	138	129
1984 Year	86	6	38	0	2	0	132	123
1985 Year	95	3	30	0	2	0	130	121
1986 Year	100	7	19	0	2	0	128	119
1987 Year	107	4	14	0	2	0	127	119
1988 Year	108	3	12	0	0	0	123	115
1989 Year	110	1	10	0	0	0	121	113
1990 January	110	1	10	0	0	0	121	113
February	110	2	9	0	0	0	121	113
March	111	1	9	0	0	0	121	113
April	112	0	9	0	0	0	121	113
May	112	0	9	0	0	0	121	113
June	112	0	9	0	0	0	121	113
July	112	0	9	0	0	0	121	113
August	112	0	9	0	0	0	121	113
September	[d] 111	0	9	0	0	0	[d] 120	113
October	111	0	9	0	0	0	120	113
November	111	0	9	0	0	0	120	113
December	111	0	8	0	0	0	119	111
1991 January	111	0	8	0	0	0	119	111
February	111	0	8	0	0	0	119	111
March	111	0	8	0	0	0	119	111
April	111	0	8	0	0	0	119	111
May	111	0	8	0	0	0	119	111
June	111	0	8	0	0	0	119	111
July	111	0	8	0	0	0	119	111
August	111	0	8	0	0	0	119	111
September	111	0	8	0	0	0	119	111
October	111	0	8	0	0	0	119	111
November	111	0	8	0	0	0	119	111
December	111	0	8	0	0	0	119	111
1992 January	111	0	8	0	0	0	119	111
February	110	0	8	0	0	0	118	111
March	110	0	8	0	0	0	118	111
April	110	0	8	0	0	0	118	111
May	110	0	8	0	0	0	118	111

[a] See Note 1 at end of section.
[b] See Note 2 at end of section.
[c] Net design electrical rating (DER) is used because many of the units were canceled prior to being assigned a net summer capability. See Note 3 at end of section.
[d] As of September 1990, Rancho Seco is deleted from this category, because the unit is not currently scheduled to operate.
Note: Geographic coverage is the 50 States and the District of Columbia.
Sources: • **Licensed for Operation: 1973-1982**—U.S. Department of Energy (DOE), Office of Nuclear Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones." **1983 forward**—Nuclear Regulatory Commission (NRC), "Licensed Operating Reactors" (NUREG-0020). • **Construction Permits, On Order, and Announced: 1973-1982**—Compiled from various sources, primarily DOE, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones"; EIA, Office of Coal, Nuclear, Electric and Alternate Fuels (CNEAF), "Nuclear Steam-Electric Units That Have Been in Operation as of 1957-1989"; EIA, CNEAF, "Nuclear Plant Cancellations: Causes, Costs, and Consequences"; and Utility Data Institute, Inc., "U.S. Nuclear Plant Statistics, 1987." **1983 forward**—NRC, "Summary Information Report" (NUREG-0871); NRC, "Licensed Operating Reactors" (NUREG-0020); and various journals. • **Total Design Capacity: 1973-1982**—Compiled from various sources, primarily DOE, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones"; EIA, CNEAF, "Nuclear Steam-Electric Units That Have Been in Operation as of 1957-1987"; EIA, CNEAF, "Monthly Report for Electric Utilities-Power Generation"; EIA, CNEAF, "Nuclear Plant Cancellations: Causes, Costs, and Consequences"; and Utility Data Institute, Inc., "U.S. Nuclear Plant Statistics, 1987." **1983 forward**—NRC, "Summary Information Report" (NUREG-0871); NRC, "Licensed Operating Reactors" (NUREG-0020); and EIA, Form EIA-860, "Annual Electric Generator Report."

Nuclear Energy Notes

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

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

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

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

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

(a) Net Summer Capability—The steady hourly output that generating equipment is expected to supply to system load, exclusive of auxiliary power, as demonstrated by test at the time of summer peak demand. Auxiliary power of a typical nuclear power plant is about 5 percent of gross generation.

(b) Net Design Capacity or Net Design Electrical Rating (DER)—The nominal net electrical output of 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 net summer capability at the end of the month. That fraction is then multiplied by 100 to obtain a percentage. Annual capacity factors are averages of the monthly values for that year.

Section 9. Energy Prices

Crude Oil. The average price of domestic crude oil purchased at the wellhead was $16.42 per barrel in May 1992, slightly higher than the level in May 1991. The refiner acquisition cost of imported crude oil in May 1992 was $18.79 per barrel, 4 percent above the May 1991 level. The cost of domestic crude oil in May 1992 was $18.86, 1 percent less than the May 1991 average.

Motor Gasoline. The national city average retail price of unleaded regular gasoline at all types of stations was $1.18 per gallon in June 1992, 2 percent higher than the price in June 1991. The price of unleaded premium gasoline averaged $1.36 per gallon in June 1992, 2 percent higher than the price in June 1991.

Residual Fuel Oil. The average price, excluding taxes, of residual fuel oil sold to end users in May 1992 was 33 cents per gallon, 12 percent higher than the previous month's price and 8 percent above the May 1991 average. The average resale price, exluding taxes, of residual fuel oil in May 1992 was 31 cents per gallon, 11 percent higher than the April 1992 average and 1 percent above the price 1 year earlier.

Aviation Fuel. The average price, excluding taxes, of aviation gasoline sold to end users in May 1992 was $1.02 per gallon, 3 percent higher than the previous month's price but 3 percent lower than the May 1991 price. The average price, excluding taxes, of kerosene-type jet fuel sold to end users in May 1992 was 61 cents per gallon, 6 percent higher than the previous month's price and 1 percent higher than the May 1991 average price.

No. 2 Distillate Fuel Oil. The May 1992 national average price, excluding taxes, of heating oil sold to residential customers was 92 cents per gallon, slightly lower than both the previous month's price and the May 1991 price. The average price of No. 2 fuel oil sold to all end users was 61 cents per gallon in May 1992, slightly higher than the April 1992 price and 3 percent higher than the May 1991 price.

Electricity. The average price of electricity sold to all ultimate consumers in the United States in May 1992 was 6.7 cents per kilowatthour, the same as the May 1991 mean price. The price of electricity sold to residential consumers in May 1992 averaged 8.4 cents per kilowatthour, 2 percent above the May 1991 price. The price of electricity sold to commercial consumers averaged 7.6 cents per kilowatthour in May 1992, 1 percent above the May 1991 price. The price of electricity sold to other consumers was 6.5 cents per kilowatthour, 3 percent higher than the May 1991 price. The price of electricity sold to industrial users in May 1992 averaged 4.8 cents per kilowatthour, unchanged from the price a year earlier.

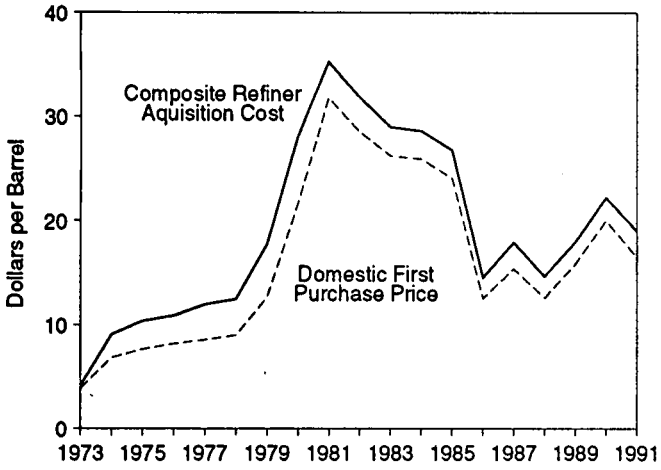
Beginning with January 1986, there were new series of national average price estimates based on a statistically derived sample of both publicly and privately owned electric utilities. Previously, average price estimates were derived from selected privately owned electric utilities and were not national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

Natural Gas. In April 1992 (the latest data available), the average wellhead price of natural gas was $1.46 per thousand cubic feet, 1 percent below the April 1991 price. The estimated average wellhead price of natural gas for May 1992 was $1.55.

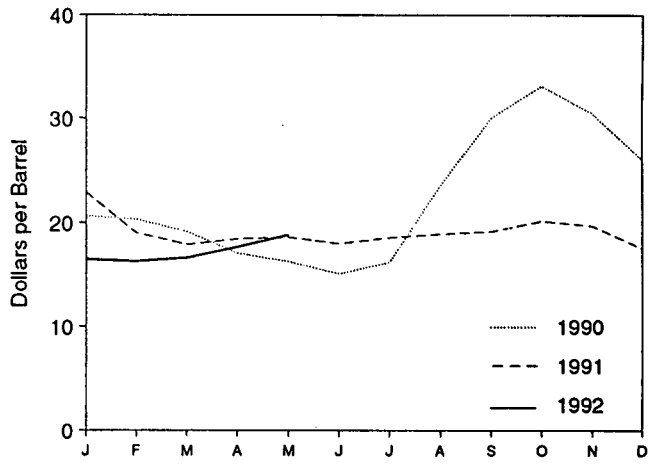
The average price of natural gas delivered to electric utility plants was $2.06 per thousand cubic feet in April 1992, 2 percent below the April 1991 price. The average price of natural gas used by residential consumers in May 1992 was $6.14 per thousand cubic feet, 2 percent below the May 1991 price. The average price of natural gas used by commercial consumers in May 1992 was $4.59 per thousand cubic feet, 2 percent less than the May 1991 price. The average price of natural gas used by industrial consumers in May 1992 was $2.41 per thousand cubic feet, 1 percent above the May 1991 price.

Figure 9.1 Petroleum Prices

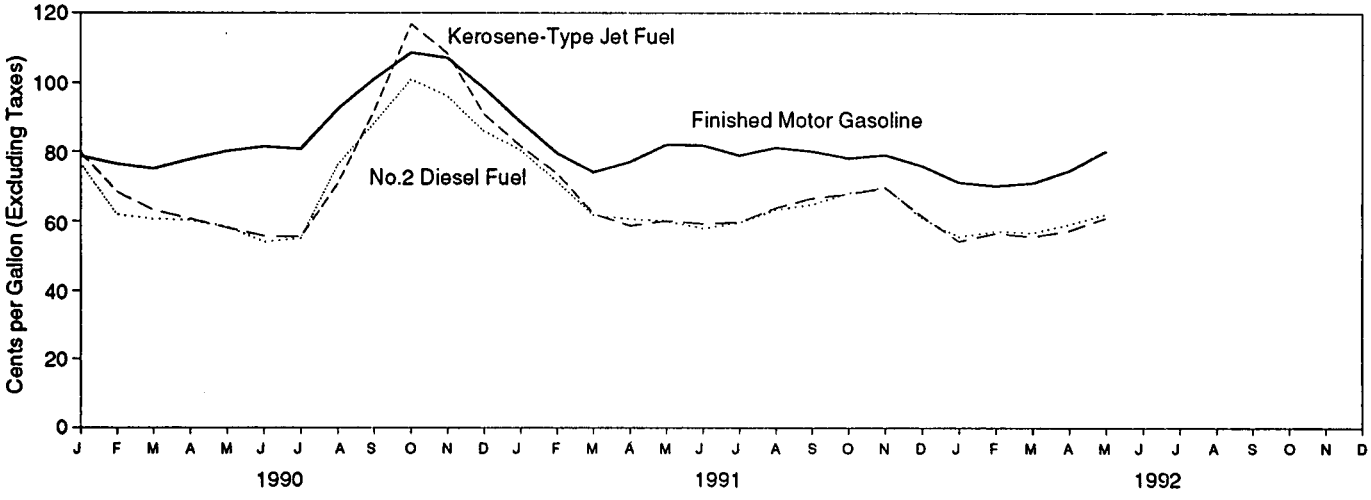
Crude Oil Prices, 1973-1991



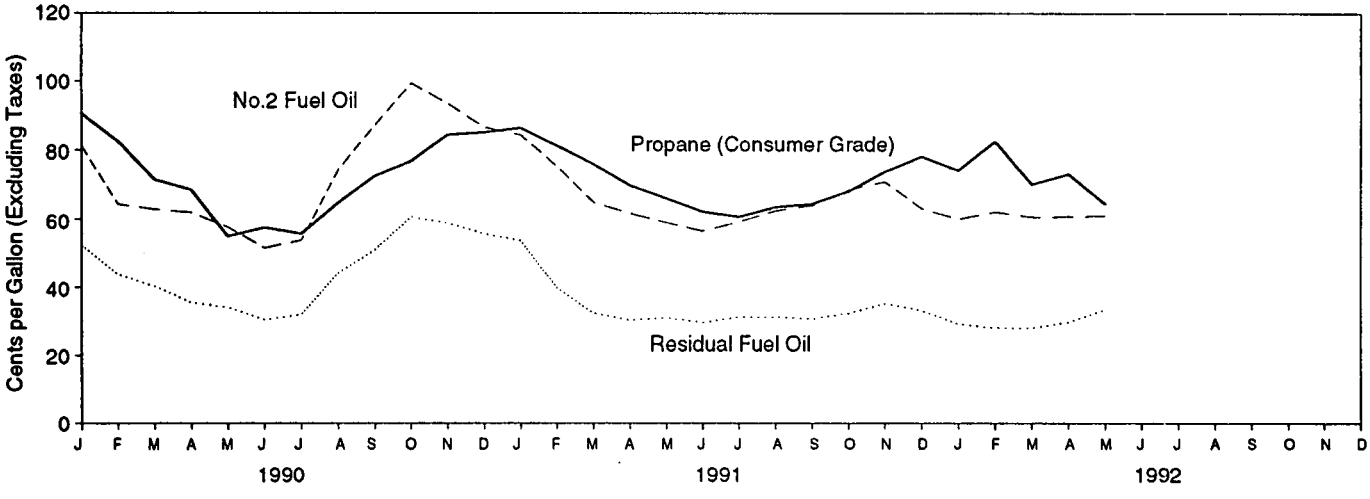
Composite Refiner Acquisition Cost, Monthly



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



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



Sources: Tables 9.1, 9.5, and 9.7.

Table 9.1 Crude Oil Price Summary

(Dollars per Barrel)

	Domestic First Purchase Price[b]	F.O.B. Cost of Imports[c]	Landed Cost of Imports[d]	Refiner Acquisition Cost[a]		
				Domestic	Imported	Composite
1973 Average	3.89	[e] 5.21	[e] 6.41	[E] 4.17	[E] 4.08	[E] 4.15
1974 Average	6.87	10.91	12.32	7.18	12.52	9.07
1975 Average	7.67	11.18	12.70	8.39	13.93	10.38
1976 Average	8.19	12.15	13.32	8.84	13.48	10.89
1977 Average	8.57	13.24	14.36	9.55	14.53	11.96
1978 Average	9.00	13.29	14.35	10.61	14.57	12.46
1979 Average	12.64	20.07	21.45	14.27	21.67	17.72
1980 Average	21.59	32.37	33.67	24.23	33.89	28.07
1981 Average	31.77	35.15	36.47	34.33	37.05	35.24
1982 Average	28.52	32.02	33.18	31.22	33.55	31.87
1983 Average	26.19	27.81	28.93	28.87	29.30	28.99
1984 Average	25.88	27.60	28.54	28.53	28.88	28.63
1985 Average	24.09	25.84	26.67	26.66	26.99	26.75
1986 Average	12.51	12.52	13.49	14.82	14.00	14.55
1987 Average	15.40	16.69	17.65	17.76	18.13	17.90
1988 Average	12.58	13.25	14.08	14.74	14.56	14.67
1989 Average	15.86	16.89	17.68	17.87	18.08	17.97
1990 January	18.49	18.81	19.81	20.75	20.51	20.64
February	18.16	18.01	18.96	20.75	19.78	20.31
March	16.57	16.91	17.93	19.32	18.94	19.14
April	14.52	14.94	15.96	17.37	16.66	17.05
May	13.82	14.50	15.30	16.45	16.07	16.27
June	12.79	13.84	14.99	15.06	15.15	15.11
July	14.03	16.52	17.65	15.86	16.54	16.19
August	21.87	23.84	24.63	22.96	24.26	23.55
September	28.46	29.07	29.48	30.14	29.88	30.03
October	30.86	30.75	31.47	33.32	32.88	33.14
November	27.53	27.55	28.34	30.75	30.19	30.52
December	22.63	23.24	24.05	26.46	25.56	26.09
Average	20.03	20.37	21.13	22.59	21.76	22.22
1991 January	19.58	19.94	20.89	23.25	22.41	22.90
February	16.22	16.31	17.26	19.53	18.30	19.02
March	15.08	15.88	17.16	18.12	17.59	17.89
April	16.14	16.64	17.81	18.56	18.27	18.43
May	16.41	16.42	17.82	18.98	18.14	18.60
June	15.55	15.84	17.17	18.16	17.78	17.98
July	16.32	16.67	17.78	18.91	18.14	18.57
August	16.57	16.94	18.11	19.10	18.71	18.92
September	16.67	17.49	18.64	19.31	19.00	19.17
October	17.70	18.53	19.36	20.39	19.92	20.18
November	17.07	17.84	18.51	20.01	19.35	19.72
December	14.66	15.16	16.22	17.84	17.17	17.56
Average	16.50	16.95	18.05	19.33	18.70	19.05
1992 January	13.93	14.30	15.25	16.75	16.10	16.47
February	14.07	14.58	15.52	16.49	16.00	16.28
March	14.12	[R] 14.93	[R] 15.97	16.81	16.36	16.62
April	15.37	[R] 16.36	[R] 17.12	[R] 17.88	17.37	17.66
May	16.42	17.27	18.09	18.86	18.79	18.83

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

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

Sources: • **Domestic First Purchase Price: 1973-1976**—U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. **1977**—Federal Energy Administration (FEA), based on Form FEA-P124, "Domestic Crude Oil Purchaser's Monthly Report." **1978 forward**—Energy Information Administration (EIA), *Petroleum Marketing Monthly*, August 1992, Table 1. • **F.O.B. and Landed Cost of Imports: October 1973-September 1977**—Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." **October-December 1977**—EIA, Form FEA-F701-M-0, "Transfer Pricing Report." **1978 forward**—EIA, *Petroleum Marketing Monthly*, August 1992, Table 1. • **Refiner Acquisition Cost: 1973**—EIA estimates. The domestic price was derived by adding estimated transportation costs to the reported domestic first purchase price. The imported price was derived by adding an estimated ocean transport cost to the average "Free Alongside Ship" value published by the U.S. Bureau of the Census. **1974-1976**—DOI, BOM, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. **1977**—**January-September**—FEA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report." **October-December**—EIA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report." **1978 forward**—EIA, *Petroleum Marketing Monthly*, August 1992, Table 1.

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

(Dollars per Barrel)

	Algeria	Indonesia	Iran	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela	Other Countries	Arab OPEC[a]	Total OPEC[b]
1973 Average[c]	7.23	5.67	4.24	NA	7.81	3.25	NA	5.39	4.84	4.06	5.43
1974 Average	13.23	11.99	10.85	W	12.44	10.17	NA	10.71	10.02	10.96	11.33
1975 Average	11.93	12.55	10.81	11.44	11.82	10.87	NA	11.04	10.86	11.18	11.34
1976 Average	13.05	12.76	11.61	12.22	13.08	11.62	W	11.39	11.92	12.06	12.23
1977 Average	14.35	13.57	12.68	13.42	14.44	12.38	14.11	12.63	13.19	13.13	13.29
1978 Average	14.12	13.61	12.65	13.24	14.05	12.70	13.82	12.38	13.35	13.28	13.31
1979 Average	20.53	19.03	22.93	20.27	21.69	17.28	21.70	16.90	21.10	19.27	19.88
1980 Average	36.67	32.17	NA	31.06	35.93	28.17	34.36	24.81	34.34	31.57	32.21
1981 Average	39.08	35.62	([d])	33.01	38.31	32.60	36.06	28.95	36.69	34.79	35.17
1982 Average	34.20	35.11	30.97	28.08	35.13	33.73	33.42	23.74	31.96	33.84	33.48
1983 Average	30.09	29.92	28.39	25.20	29.81	27.53	29.91	21.48	27.96	28.28	28.46
1984 Average	28.34	29.13	27.42	26.39	29.51	27.67	28.87	24.23	27.79	27.79	27.79
1985 Average	26.89	27.12	W	25.33	28.04	22.04	27.64	23.64	26.12	24.34	25.67
1986 Average	13.62	13.19	W	11.84	14.35	11.36	13.84	10.92	13.32	11.59	12.21
1987 Average	16.79	17.40	W	16.36	18.47	15.12	18.28	15.08	17.11	15.80	16.43
1988 Average	W	13.81	([d])	12.18	15.16	12.16	14.80	12.96	13.45	12.57	13.43
1989 Average	W	17.01	([d])	15.96	18.31	16.29	17.89	16.09	17.12	16.72	17.06
1990 January	W	19.25	([d])	18.04	21.22	W	21.00	16.73	19.13	17.96	18.67
February	W	19.43	([d])	16.68	20.41	W	W	16.01	18.36	16.64	18.11
March	W	18.98	([d])	16.24	18.41	W	W	15.95	16.82	14.98	16.85
April	W	17.38	([d])	13.30	16.79	11.44	16.13	15.57	14.77	13.02	15.09
May	W	16.19	([d])	12.11	16.50	12.97	15.69	14.60	14.19	12.42	14.67
June	W	15.20	([d])	10.74	15.58	W	W	13.11	13.89	14.56	14.59
July	W	15.06	([d])	12.84	17.12	W	15.10	16.66	17.79	20.27	18.17
August	W	19.12	([d])	21.16	25.65	31.09	21.18	24.33	22.63	28.97	25.44
September	W	W	([d])	27.04	32.74	W	33.05	27.71	30.02	28.02	29.23
October	W	35.41	([d])	29.15	37.31	28.73	32.53	26.39	33.13	29.85	30.39
November	W	W	([d])	27.18	33.56	21.20	W	22.96	29.56	23.39	26.77
December	W	W	([d])	22.58	29.38	14.41	W	20.41	25.32	16.17	21.87
Average	W	21.29	([d])	19.26	22.46	20.36	23.43	19.55	19.88	18.84	20.40
1991 January	W	W	([d])	19.39	24.68	12.69	W	17.04	21.22	16.04	19.45
February	W	20.82	([d])	13.62	20.48	14.06	W	14.50	17.12	14.56	16.73
March	W	W	([d])	13.59	19.44	W	24.50	14.90	16.18	15.21	16.47
April	W	16.80	([d])	15.34	19.12	15.51	W	15.38	16.90	16.01	16.98
May	W	W	W	15.24	19.30	15.05	W	14.79	16.95	15.64	16.65
June	W	16.77	([d])	14.65	18.38	14.88	W	13.54	16.33	15.54	16.10
July	W	W	W	15.25	19.44	W	19.45	14.85	17.44	15.52	16.73
August	W	W	W	15.49	20.12	15.74	W	14.62	17.82	16.33	17.07
September	W	W	W	15.39	21.08	16.10	20.24	15.52	18.79	16.96	17.60
October	W	18.17	W	16.93	22.55	17.20	W	16.44	19.52	17.95	18.80
November	W	W	([d])	16.31	21.60	15.49	21.67	14.78	18.97	16.88	17.63
December	W	W	([d])	13.47	18.99	13.14	W	12.62	16.57	14.59	15.12
Average	W	18.67	15.42	15.38	20.27	15.09	20.81	14.91	17.79	15.97	17.09
1992 January	W	W	([d])	12.45	18.58	13.11	([d])	12.32	15.36	14.27	14.55
February	W	W	([d])	12.40	18.28	14.23	W	12.53	15.95	14.96	14.90
March	([d])	W	([d])	12.67	18.07	[R]14.74	W	12.45	16.01	[R]15.05	[R]15.23
April	W	[R]15.73	([d])	[R]14.15	[R]19.58	14.51	W	[R]14.37	[R]17.15	15.25	[R]16.80
May	W	W	([d])	15.92	20.39	16.65	([d])	14.84	18.25	17.43	17.44

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

[b] "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."

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

[d] No data reported.

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

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

Sources: • **October 1973-September 1977:** Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." • **October 1977-December 1977:** Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report." • **1978 forward:** EIA, *Petroleum Marketing Monthly*, August 1992, Table 21.

Table 9.3 Landed Costs of Crude Oil Imports from Selected Countries

(Dollars per Barrel)

	Algeria	Canada	Indonesia	Iran	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela	Other Countries	Arab OPEC[a]	Total OPEC[b]
1973 Average[c]	8.39	5.33	7.22	6.48	NA	9.08	5.37	NA	5.99	6.99	5.92	6.85
1974 Average	13.97	11.48	13.20	12.48	W	13.16	11.63	NA	11.25	12.93	12.39	12.49
1975 Average	12.86	12.84	13.83	12.51	12.61	12.70	12.50	NA	12.36	12.66	12.71	12.70
1976 Average	13.90	13.36	13.85	12.86	12.64	13.81	13.06	W	11.89	13.36	13.31	13.32
1977 Average	15.24	14.13	14.65	13.86	13.82	15.29	13.69	14.83	13.11	14.56	14.30	14.35
1978 Average	14.93	14.41	14.65	13.89	13.56	14.88	13.94	14.53	12.84	14.58	14.36	14.34
1979 Average	21.88	20.22	20.63	24.21	20.77	22.97	18.95	22.97	17.65	22.86	20.79	21.29
1980 Average	37.92	30.11	33.92	NA	31.77	37.15	29.80	35.68	25.92	36.15	32.97	33.56
1981 Average	40.46	32.32	37.31	(d)	33.70	39.66	34.20	37.29	29.91	38.54	36.22	36.60
1982 Average	35.35	27.15	36.70	32.46	28.63	36.16	34.99	34.25	24.93	34.03	35.15	34.81
1983 Average	31.26	25.63	31.57	29.81	25.78	30.85	29.27	30.87	22.94	29.68	29.87	29.84
1984 Average	29.06	26.56	30.87	28.70	26.85	30.36	29.20	29.45	25.19	29.21	29.10	29.06
1985 Average	27.51	25.71	28.67	25.79	25.63	28.96	24.72	28.36	24.43	27.33	25.90	26.86
1986 Average	14.82	13.43	14.63	12.38	12.17	15.29	12.84	14.63	11.52	14.25	13.14	13.46
1987 Average	17.87	17.04	18.49	18.28	16.69	19.32	16.81	18.78	15.76	18.30	17.32	17.64
1988 Average	W	13.50	15.15	W	12.58	15.88	13.37	15.82	13.66	14.45	13.60	14.18
1989 Average	19.13	16.81	18.35	(d)	16.35	19.19	17.34	18.74	16.78	18.08	17.41	17.78
1990 January	W	18.52	20.86	(d)	18.49	22.36	19.18	21.56	17.86	20.45	19.33	19.77
February	W	18.52	21.21	(d)	17.13	21.46	18.32	W	16.69	19.56	18.27	18.98
March	W	17.30	20.65	(d)	16.64	19.69	16.63	20.61	16.64	18.22	16.65	17.68
April	W	15.65	18.98	(d)	13.79	18.06	14.50	17.92	16.30	16.18	14.68	15.83
May	W	15.44	17.83	(d)	12.76	17.53	14.21	17.10	15.47	15.27	14.02	15.15
June	W	14.00	16.43	(d)	11.29	16.62	16.31	17.24	14.00	15.21	15.53	15.53
July	17.67	15.01	15.96	(d)	13.37	18.04	19.89	16.68	17.40	18.57	19.85	19.01
August	W	21.26	20.23	(d)	21.50	26.71	28.84	23.80	25.08	23.23	26.97	26.31
September	W	27.80	26.88	(d)	27.38	33.41	30.06	30.26	28.56	29.46	30.10	30.27
October	W	31.04	36.61	(d)	29.61	37.72	30.46	33.75	27.00	34.51	30.75	31.08
November	W	28.60	W	(d)	27.64	34.55	26.37	W	23.77	30.42	26.71	27.77
December	W	23.60	28.53	(d)	23.00	30.45	20.92	W	21.30	27.59	21.35	23.26
Average	W	20.48	22.50	(d)	19.64	23.33	21.82	22.65	20.31	20.52	20.64	21.23
1991 January	W	20.81	W	(d)	19.98	26.00	18.56	W	18.35	24.07	18.98	20.21
February	W	17.05	22.61	(d)	14.23	21.66	16.15	W	15.76	19.42	16.26	17.43
March	W	15.20	20.03	(d)	14.15	20.60	17.07	25.77	16.18	18.59	17.22	17.88
April	W	16.26	18.80	(d)	15.85	20.31	17.65	20.56	16.34	18.76	17.75	18.22
May	W	16.28	W	W	15.81	20.50	17.29	20.21	15.85	19.55	17.45	17.99
June	W	16.22	18.25	(d)	15.16	19.78	16.95	19.35	14.54	18.36	17.10	17.36
July	W	17.20	17.70	17.03	15.85	20.68	17.36	20.41	15.92	18.82	17.49	17.87
August	W	17.60	W	W	15.74	21.15	17.79	20.71	15.63	19.27	17.95	18.26
September	W	17.84	W	W	15.79	22.09	18.25	21.16	16.43	20.34	18.48	18.73
October	W	18.38	19.64	W	17.32	23.66	18.76	22.07	17.26	20.88	19.06	19.60
November	W	17.53	21.05	(d)	16.51	22.66	17.06	22.71	15.67	21.02	17.50	18.27
December	W	15.87	W	(d)	13.96	19.96	15.14	20.29	13.46	18.67	15.59	15.99
Average	W	17.17	20.15	17.38	15.88	21.36	17.34	21.36	15.92	19.72	17.57	18.14
1992 January	W	14.83	W	(d)	13.02	19.34	14.80	W	13.20	17.40	15.15	15.38
February	W	15.57	W	(d)	12.78	19.10	15.44	W	13.47	17.56	15.70	15.78
March	(d)	15.68	W	(d)	13.02	18.92	R16.03	18.83	13.41	17.44	R16.12	R16.26
April	W	16.41	R17.32	(d)	R14.36	R20.28	R16.97	18.88	R15.06	R18.07	R17.14	R17.63
May	W	17.35	W	(d)	16.24	21.17	18.00	19.87	15.55	19.57	18.29	18.26

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

[b] "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."

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

[d] No data reported.

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

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

Sources: • **October 1973-September 1977:** Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." • **October 1977-December 1977:** Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report." • **1978 forward:** EIA, *Petroleum Marketing Monthly*, August 1992, Table 22.

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

(Cents per Gallon, Including Taxes)

	Leaded Regular	Unleaded Regular	Unleaded Premium	All Types[a]
1973 Average	38.8	NA	NA	NA
1974 Average	53.2	NA	NA	NA
1975 Average	56.7	NA	NA	NA
1976 Average	59.0	61.4	NA	NA
1977 Average	62.2	65.6	NA	NA
1978 Average	62.6	67.0	NA	65.2
1979 Average	85.7	90.3	NA	88.2
1980 Average	119.1	124.5	NA	122.1
1981 Average[b]	131.1	137.8	[c] 147.0	135.3
1982 Average	122.2	129.6	141.5	128.1
1983 Average	115.7	124.1	138.3	122.5
1984 Average	112.9	121.2	136.6	119.8
1985 Average	111.5	120.2	134.0	119.6
1986 Average	85.7	92.7	108.5	93.1
1987 Average	89.7	94.8	109.3	95.7
1988 Average	89.9	94.6	110.7	96.3
1989 Average	99.8	102.1	119.7	106.0
1990 January	100.6	104.2	123.0	109.0
February	101.1	103.7	122.7	108.6
March	99.9	102.3	121.8	107.6
April	102.7	104.4	123.3	109.6
May	104.4	106.1	124.8	111.4
June	107.7	108.8	127.1	114.0
July	108.9	108.4	127.2	113.9
August	119.8	119.0	136.9	124.6
September	129.7	129.4	146.7	134.7
October	135.4	137.8	155.4	143.1
November	135.1	137.7	155.9	143.2
December	133.5	135.4	153.7	141.0
Average	114.9	116.4	134.9	121.7
1991 January	124.6	124.7	143.1	130.4
February	113.7	114.3	132.1	119.8
March	104.7	108.2	126.4	113.8
April	106.2	110.4	128.1	115.9
May	NA	115.6	133.1	120.9
June	NA	116.0	133.8	121.4
July	NA	112.7	131.3	118.5
August	NA	114.0	131.8	119.6
September	NA	114.3	132.4	119.9
October	NA	112.2	130.7	118.0
November	NA	113.4	131.8	119.3
December	NA	112.3	130.9	118.2
Average	NA	114.0	132.1	119.6
1992 January	NA	107.3	126.7	113.5
February	NA	105.4	124.8	111.7
March	NA	105.8	125.0	112.2
April	NA	107.9	126.8	114.3
May	NA	113.6	131.7	119.7
June	NA	117.9	135.9	123.9

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

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

[c] Based on September through December data only.

NA=Not available.

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

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

Table 9.5 Refiner Prices of Residual Fuel Oil

(Cents per Gallon, Excluding Taxes)

	Residual Fuel Oil Sulfur Content Less Than or Equal to 1 Percent		Residual Fuel Oil Sulfur Content Greater Than 1 Percent		Average	
	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users
1978 Average	29.3	31.4	24.5	27.5	26.3	29.8
1979 Average	45.0	46.8	36.6	38.9	39.9	43.6
1980 Average	60.8	67.5	47.9	52.3	52.8	60.7
1981 Average	74.8	82.9	62.2	67.3	66.3	75.6
1982 Average	69.5	74.7	57.2	61.1	61.2	67.6
1983 Average	64.3	69.5	59.1	61.1	60.9	65.1
1984 Average	68.5	72.0	63.9	65.9	65.4	68.7
1985 Average	61.0	64.4	56.0	58.2	57.7	61.0
1986 Average	32.8	37.2	28.9	31.7	30.5	34.3
1987 Average	41.2	44.7	36.2	39.6	38.5	42.3
1988 Average	33.3	37.2	27.1	30.0	30.0	33.4
1989 Average	40.7	43.6	33.1	34.4	36.0	38.5
1990 January	56.0	60.1	42.0	45.2	48.2	52.2
February	44.4	51.5	34.6	37.3	38.1	43.7
March	39.7	45.4	31.9	35.5	34.8	40.2
April	36.1	39.6	31.2	32.6	33.4	35.5
May	34.5	37.9	28.3	31.4	30.5	34.1
June	31.1	34.2	24.8	27.6	27.1	30.4
July	33.2	36.3	25.4	28.4	29.1	31.9
August	49.1	50.7	41.4	39.4	44.5	44.1
September	56.4	59.4	46.1	46.2	50.9	50.7
October	64.1	68.6	53.1	54.8	57.7	60.5
November	63.3	66.5	49.7	53.9	55.6	58.7
December	57.6	62.2	43.0	50.2	48.6	55.5
Average	47.2	50.5	37.2	40.0	41.3	44.4
1991 January	51.4	59.4	48.7	49.7	49.7	53.4
February	34.9	43.7	32.3	37.1	33.4	39.7
March	36.2	38.2	24.2	28.2	28.2	32.3
April	33.6	37.6	25.8	27.1	28.7	30.2
May	36.5	36.6	27.7	27.6	30.3	31.0
June	32.0	35.3	28.6	26.9	29.7	29.5
July	32.6	36.4	27.6	28.2	29.0	31.2
August	33.4	36.8	25.9	27.7	27.9	31.1
September	33.7	36.8	25.4	27.3	27.9	30.6
October	34.1	38.5	27.6	29.7	29.5	32.3
November	36.6	40.8	27.9	31.8	30.7	35.1
December	34.8	40.0	26.1	28.8	28.9	33.1
Average	36.1	40.2	28.8	30.6	31.2	34.0
1992 January	30.7	35.7	21.3	24.7	24.1	29.1
February	33.4	36.2	20.8	23.7	25.1	28.0
March	31.2	34.8	21.4	24.4	24.5	27.9
April	32.0	35.3	25.6	27.4	27.6	29.7
May	33.7	37.2	29.3	31.9	30.5	33.4

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

Sources: Energy Information Administration (EIA), *Petroleum Marketing Monthly*, August 1992, Table 17.

Table 9.6 Refiner Prices of Petroleum Products for Resale

(Cents per Gallon, Excluding Taxes)

	Finished Motor Gasoline[a]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	43.4	53.7	38.6	40.4	36.9	36.5	23.7
1979 Average	63.7	72.1	66.0	62.4	56.9	57.4	29.1
1980 Average	94.1	112.8	86.8	86.4	80.3	80.1	41.5
1981 Average	106.4	125.0	101.2	106.6	97.6	97.2	46.6
1982 Average	97.3	122.8	95.3	101.8	91.4	91.4	42.7
1983 Average	88.2	117.8	85.4	89.2	81.5	80.8	48.4
1984 Average	83.2	116.5	83.0	91.6	82.1	80.3	45.0
1985 Average	83.5	113.0	79.4	87.4	77.6	77.2	39.8
1986 Average	53.1	91.2	49.5	60.6	48.6	45.2	29.0
1987 Average	58.9	85.9	53.8	59.2	52.7	53.4	25.2
1988 Average	57.7	85.0	49.5	54.9	47.3	47.3	24.0
1989 Average	65.4	95.0	58.3	66.9	56.5	56.7	24.7
1990 January	69.2	96.8	76.6	87.1	73.8	69.3	54.4
February	67.2	95.0	66.7	67.9	57.8	57.1	34.1
March	66.3	93.8	61.6	64.8	57.9	57.6	27.1
April	69.7	96.4	59.5	62.4	57.4	57.6	25.2
May	72.7	97.4	57.1	59.2	54.5	55.4	24.0
June	72.3	99.5	54.6	53.9	49.4	50.5	24.9
July	70.6	100.2	55.5	57.1	51.9	52.0	27.3
August	85.5	110.4	71.4	80.7	72.1	73.7	36.3
September	94.9	122.2	92.9	100.4	85.3	87.2	43.5
October	98.6	127.9	114.7	115.7	95.0	99.4	53.5
November	95.4	126.2	107.0	106.6	90.6	93.6	50.5
December	80.2	116.1	90.1	92.6	80.9	79.8	44.6
Average	78.6	106.3	77.3	83.9	69.7	69.4	38.6
1991 January	76.1	110.8	82.2	87.9	76.3	75.5	42.2
February	68.0	104.1	73.8	75.7	67.8	67.4	31.6
March	67.2	97.4	62.2	66.0	59.6	57.7	31.3
April	70.7	97.8	58.8	62.8	57.2	57.4	31.6
May	74.2	100.3	60.8	60.7	56.0	57.2	32.0
June	70.5	99.5	58.8	58.8	54.0	54.5	29.3
July	69.1	98.9	59.4	63.0	56.7	57.1	27.6
August	72.7	100.2	63.3	66.9	60.6	61.8	29.6
September	69.1	99.9	65.9	68.7	62.1	62.9	34.9
October	68.8	98.8	67.0	73.5	66.3	65.6	40.2
November	69.9	99.5	68.2	74.6	66.6	66.5	43.0
December	62.9	97.3	60.1	62.6	55.9	55.6	37.7
Average	69.9	100.1	65.0	72.0	62.2	61.5	34.8
1992 January	59.9	94.9	53.9	60.0	52.0	51.4	30.9
February	61.7	93.1	55.2	62.2	54.1	54.1	30.2
March	62.4	92.5	54.6	58.4	53.6	53.9	29.4
April	R66.6	96.4	56.5	61.7	56.6	57.0	29.0
May	71.4	100.4	60.8	62.5	58.8	60.1	29.4

[a] See Note 5 at end of section.

R=Revised data.

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

Sources: Energy Information Administration (EIA), *Petroleum Marketing Monthly*, August 1992, Table 4.

Table 9.7 Refiner Prices of Petroleum Products to End Users

(Cents per Gallon, Excluding Taxes)

	Finished Motor Gasoline[a]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	48.4	51.6	38.7	42.1	40.0	37.7	33.5
1979 Average	71.3	68.9	54.7	58.5	51.6	58.5	35.7
1980 Average	103.5	108.4	86.8	90.2	78.8	81.8	48.2
1981 Average	114.7	130.3	102.4	112.3	91.4	99.5	56.5
1982 Average	106.0	131.2	96.3	108.9	90.5	94.2	59.2
1983 Average	95.4	125.5	87.8	96.1	91.6	82.6	70.9
1984 Average	90.7	123.4	84.2	103.6	91.6	82.3	73.7
1985 Average	91.2	120.1	79.6	103.0	84.9	78.9	71.7
1986 Average	62.4	101.1	52.9	79.0	56.0	47.8	74.5
1987 Average	66.9	90.7	54.3	77.0	58.1	55.1	70.1
1988 Average	67.3	89.1	51.3	73.8	54.4	50.0	71.4
1989 Average	75.6	99.5	59.2	70.9	58.7	58.5	61.5
1990 January	78.8	102.0	79.8	101.7	81.2	76.5	90.8
February	76.5	102.4	68.4	82.6	64.3	61.9	82.6
March	75.1	100.9	63.2	84.1	62.8	60.6	71.5
April	77.9	101.4	60.7	76.6	61.9	60.3	68.5
May	80.2	103.6	58.1	67.0	57.5	58.4	54.8
June	81.5	104.2	55.7	59.9	51.4	54.0	57.4
July	80.8	103.9	55.4	60.0	53.6	55.0	55.6
August	92.4	112.8	70.7	90.6	74.2	76.2	64.7
September	101.2	125.6	92.1	104.4	87.3	88.4	72.5
October	108.7	134.4	116.8	121.2	99.4	101.0	76.9
November	107.2	131.7	108.4	119.6	93.5	96.0	84.6
December	98.4	122.5	90.9	112.1	86.8	85.9	85.3
Average	88.3	112.0	76.6	92.3	73.4	72.5	74.5
1991 January	88.7	112.1	81.6	105.0	84.5	80.4	86.6
February	79.6	106.4	73.7	93.5	75.3	71.3	81.3
March	74.1	101.3	62.1	88.8	64.8	61.7	76.0
April	77.1	101.1	58.7	73.8	61.6	60.6	69.8
May	82.1	105.3	60.1	69.3	58.9	60.1	66.0
June	81.9	105.2	59.3	62.3	56.3	57.9	62.1
July	79.0	103.6	59.7	64.7	59.1	59.5	60.6
August	81.2	105.8	63.8	68.7	62.3	63.3	63.4
September	80.2	105.7	66.6	73.6	63.9	64.8	64.4
October	78.2	104.6	67.8	81.6	68.5	68.1	68.0
November	79.1	104.3	69.6	94.3	70.8	69.7	73.8
December	76.0	102.0	61.5	85.8	63.0	60.9	78.2
Average	79.7	104.7	65.3	83.6	66.7	64.8	72.9
1992 January	71.2	98.5	54.2	82.7	59.9	55.5	74.2
February	70.2	98.5	56.5	78.0	62.0	57.1	82.6
March	71.0	98.0	55.5	79.1	60.5	56.6	70.1
April	74.6	99.1	57.3	77.9	R60.6	59.1	73.1
May	80.3	102.4	61.0	73.2	60.9	62.1	64.3

[a] See Note 5 at end of section.

R=Revised data.

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

Sources: Energy Information Administration (EIA), *Petroleum Marketing Monthly*, August 1992, Table 2.

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

(Cents per Gallon, Excluding Taxes)

	Maine	New Hampshire	Vermont	Massachusetts	Rhode Island	Connecticut	New York	New Jersey	Pennsylvania
1978 Average	48.6	50.3	50.8	48.8	50.7	50.1	50.1	49.6	48.8
1979 Average	68.8	72.5	72.5	70.9	72.8	72.0	71.2	71.0	69.8
1980 Average	96.3	100.4	101.5	97.8	101.1	98.3	98.2	97.9	96.4
1981 Average	120.4	123.7	125.4	121.3	123.8	121.7	123.2	121.5	118.1
1982 Average	115.5	117.4	120.1	117.6	120.1	118.3	120.5	117.4	113.7
1983 Average	102.8	104.1	112.9	109.1	110.5	109.1	112.1	107.9	105.8
1984 Average	103.9	108.4	111.9	111.6	111.4	112.1	115.5	111.0	107.9
1985 Average	99.7	102.4	107.7	107.0	106.7	108.0	111.3	105.9	102.3
1986 Average	74.4	75.9	86.6	82.1	82.8	89.0	91.1	90.2	81.4
1987 Average	74.7	76.5	81.1	80.6	82.5	83.4	85.2	84.3	76.9
1988 Average	77.7	78.2	82.6	82.1	83.6	85.3	86.3	84.8	77.8
1989 Average	89.4	89.3	90.5	92.6	93.9	92.9	95.8	91.8	85.1
1990 January	116.1	118.5	121.5	117.0	122.5	120.0	122.2	117.3	113.7
February	85.4	96.2	98.7	99.8	98.5	100.8	103.2	99.5	93.4
March	84.0	93.2	95.6	98.7	97.3	97.7	101.6	98.5	90.3
April	83.2	90.1	94.2	95.1	95.9	96.3	100.2	96.5	87.6
May	81.2	87.0	91.7	92.4	93.9	92.7	98.9	94.4	84.4
June	76.7	82.8	87.2	88.9	89.1	87.1	94.5	88.6	78.3
July	74.2	80.7	85.4	88.0	86.9	85.4	93.0	85.4	74.3
August	97.7	99.2	97.4	102.3	102.3	104.1	102.3	102.1	92.5
September	118.4	110.9	114.4	118.1	118.8	114.7	117.9	117.2	108.7
October	126.0	119.8	124.2	126.8	120.1	128.2	130.2	129.4	122.3
November	116.4	116.2	123.7	122.8	119.5	128.1	129.6	126.8	122.5
December	113.4	111.2	119.6	120.0	115.3	124.7	126.6	122.2	119.3
Average	98.9	102.8	107.0	108.4	108.6	109.8	112.5	108.7	102.6
1991 January	114.4	107.2	117.5	117.2	112.9	122.6	123.7	119.7	117.7
February	105.9	100.7	111.3	111.3	109.5	116.0	119.7	113.3	110.9
March	95.4	90.5	104.0	102.7	101.6	109.0	112.8	104.3	101.8
April	87.1	83.9	98.3	96.1	94.6	101.4	106.7	97.6	95.5
May	81.9	79.4	93.5	91.7	89.7	96.5	101.1	93.5	89.9
June	79.4	77.3	91.3	88.9	87.1	92.7	97.9	90.3	85.7
July	82.2	77.6	88.1	88.4	88.8	90.0	93.9	88.5	80.8
August	83.4	80.6	88.6	88.7	88.7	89.7	92.9	89.0	81.8
September	87.3	84.2	91.9	90.9	90.3	92.0	98.7	92.3	83.3
October	91.3	87.8	93.9	94.9	94.9	96.3	103.4	97.1	88.7
November	95.1	90.1	95.6	97.4	95.8	99.8	108.2	100.6	93.5
December	89.3	88.8	94.1	95.8	93.4	98.3	105.9	97.1	93.0
Average	96.0	91.6	101.8	102.8	99.8	106.1	111.1	104.0	99.7
1992 January	87.6	88.3	92.4	93.1	90.4	96.4	103.3	95.8	91.4
February	88.1	86.5	92.8	92.3	91.8	95.5	103.7	95.3	91.3
March	86.4	83.4	92.2	91.5	90.9	94.0	102.0	93.1	89.9
April	[R]85.5	[R]81.9	[R]91.7	91.4	90.4	93.0	[R]101.1	[R]92.8	[R]89.3
May	85.5	81.3	91.5	91.0	90.8	92.9	101.1	89.5	88.8

See footnotes at end of Table 9.8c.

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

(Cents per Gallon, Excluding Taxes)

	Delaware	District of Columbia	Maryland	Virginia	West Virginia	Ohio	Michigan	Indiana	Illinois	Wisconsin	Minnesota
1978 Average	47.8	50.7	49.2	49.1	46.2	47.4	47.9	48.5	46.5	44.7	47.8
1979 Average	68.2	74.2	70.1	70.4	65.1	68.6	70.9	72.7	68.8	67.3	72.4
1980 Average	95.4	102.6	97.9	98.5	92.2	91.9	97.8	99.6	95.8	91.5	99.9
1981 Average	117.3	127.4	121.4	120.5	115.0	113.2	118.3	118.5	114.9	109.1	118.4
1982 Average	111.3	124.5	117.1	117.7	109.3	110.2	113.9	114.3	110.9	107.8	115.1
1983 Average	106.0	117.0	110.3	108.7	101.0	101.3	106.4	100.7	100.4	101.2	103.1
1984 Average	109.6	118.7	113.5	110.5	102.1	102.1	105.0	103.1	100.1	101.0	104.1
1985 Average	104.6	114.3	108.8	106.3	98.0	99.7	102.1	99.1	97.5	98.3	101.9
1986 Average	85.0	93.1	91.4	86.6	74.6	77.7	81.0	74.8	NA	75.6	79.2
1987 Average	79.3	91.8	86.6	79.5	76.4	74.7	77.5	75.4	79.8	75.1	74.6
1988 Average	80.1	91.6	87.0	80.5	74.2	74.7	77.5	75.4	77.6	73.9	73.5
1989 Average	88.2	98.6	93.8	87.0	83.0	81.6	85.3	83.2	80.9	81.1	82.4
1990 January	119.4	119.0	119.8	117.8	109.2	96.0	103.5	99.8	94.9	91.6	99.7
February	97.1	96.4	100.9	102.9	89.5	82.8	92.1	86.2	83.1	83.9	88.1
March	93.2	94.4	98.8	97.9	87.1	82.5	88.7	83.8	83.4	83.1	85.6
April	91.8	93.1	97.5	94.9	83.7	82.3	86.5	84.1	82.2	82.9	85.6
May	90.1	94.2	94.9	90.4	83.0	83.1	83.7	82.4	78.3	81.0	85.1
June	83.2	93.2	89.4	88.0	83.4	82.6	81.1	72.8	73.8	79.5	80.3
July	77.9	97.6	86.2	89.8	79.2	81.6	82.4	74.7	76.7	77.6	82.8
August	93.1	107.1	100.2	102.4	98.1	93.3	100.3	98.0	96.9	92.0	101.4
September	112.0	116.1	115.7	114.7	116.3	115.3	113.2	110.7	NA	107.1	111.6
October	119.8	134.3	130.8	128.3	124.4	120.9	124.1	123.3	116.9	117.2	120.7
November	118.8	133.3	130.4	125.6	121.7	117.0	121.2	117.8	113.1	114.4	119.8
December	113.7	128.4	125.3	122.8	113.1	111.8	113.5	111.3	104.9	108.3	111.2
Average	105.8	107.8	111.9	110.6	99.1	98.1	100.9	99.3	96.1	94.2	101.4
1991 January	113.0	124.1	122.7	117.7	110.4	105.5	109.1	105.8	102.4	102.4	105.5
February	105.4	118.6	116.1	110.5	101.2	94.5	97.0	95.4	93.0	92.3	93.6
March	98.4	112.3	107.7	102.6	90.8	85.8	90.9	87.9	85.9	87.6	87.2
April	92.3	105.6	102.8	96.2	87.4	83.2	90.9	85.7	88.3	84.0	87.7
May	91.4	101.1	98.8	90.7	85.5	83.1	88.5	86.3	88.5	82.9	88.0
June	83.1	94.6	95.9	87.8	83.5	80.7	87.5	80.3	86.8	80.8	87.0
July	81.5	98.6	93.7	86.9	81.7	79.6	83.4	79.1	82.2	78.0	84.3
August	85.8	98.6	94.0	87.5	82.3	81.1	84.5	85.5	86.5	78.8	NA
September	87.3	101.7	96.7	90.7	84.7	84.8	86.6	85.5	86.9	82.7	83.7
October	92.8	104.0	100.0	93.9	89.5	88.7	89.4	85.8	88.7	85.4	86.6
November	96.9	107.3	103.4	96.7	91.8	91.8	92.7	87.1	92.4	90.2	89.2
December	94.9	107.7	102.6	95.2	89.0	85.9	89.9	82.9	89.8	85.4	84.5
Average	99.7	112.1	108.7	101.4	93.2	91.0	93.8	91.7	92.6	89.5	91.1
1992 January	94.4	107.3	101.5	94.2	85.5	81.9	86.6	77.0	85.2	80.6	79.5
February	92.7	107.3	100.8	93.7	86.9	83.0	86.5	78.7	85.6	80.4	79.6
March	92.4	105.3	100.2	93.7	86.6	82.5	86.6	79.7	88.1	79.3	78.9
April	91.5	[R]104.7	[R]99.1	92.6	85.6	[R]82.8	86.7	81.1	[R]87.7	[R]80.9	[R]81.0
May	90.2	102.2	96.8	92.4	84.3	83.4	86.2	83.3	89.2	81.5	83.9

See footnotes at end of Table 9.8c.

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

(Cents per Gallon, Excluding Taxes)

	Idaho	Washington	Oregon	Alaska	U.S. Average
1978 Average	43.6	48.6	45.8	53.2	49.0
1979 Average	62.1	69.7	68.0	68.2	70.4
1980 Average	91.6	100.8	97.3	97.8	97.4
1981 Average	110.4	116.5	111.4	118.0	119.4
1982 Average	110.4	117.6	111.6	117.4	116.0
1983 Average	101.8	109.0	103.6	108.8	107.8
1984 Average	98.5	102.6	99.3	106.9	109.1
1985 Average	97.2	101.1	97.1	108.3	105.3
1986 Average	73.8	77.5	70.4	94.9	83.6
1987 Average	68.8	79.5	72.5	86.5	80.3
1988 Average	68.8	78.5	70.9	86.9	81.3
1989 Average	77.8	87.4	80.2	96.4	90.0
1990 January	85.8	96.0	88.7	96.5	114.0
February	80.9	89.0	83.9	97.4	96.5
March	80.9	88.6	84.3	102.6	94.9
April	81.7	90.0	85.0	96.5	93.2
May	79.5	84.9	84.6	99.3	90.7
June	74.8	85.0	81.9	100.5	86.4
July	70.5	76.2	79.3	93.5	83.7
August	90.7	89.5	95.3	113.7	98.8
September	108.3	115.8	111.9	122.3	114.2
October	121.0	133.3	128.1	129.7	125.8
November	127.3	134.2	127.1	128.6	124.1
December	119.9	121.9	109.2	128.2	119.7
Average	97.4	102.9	97.0	110.1	106.3
1991 January	110.8	118.4	108.3	129.3	116.8
February	97.3	112.0	102.9	122.8	110.3
March	84.1	95.3	89.4	109.5	102.6
April	83.5	94.0	86.4	101.9	96.9
May	84.4	94.9	86.5	101.3	92.5
June	83.4	91.7	85.6	98.2	89.3
July	80.0	85.4	84.5	98.6	86.6
August	84.6	92.3	87.3	96.8	87.0
September	87.4	93.5	90.8	92.4	89.6
October	87.6	94.8	89.1	93.2	94.0
November	94.7	99.5	90.5	95.7	97.9
December	94.7	96.2	86.9	95.2	95.9
Average	95.3	101.7	93.4	105.2	101.8
1992 January	86.1	92.3	84.8	92.5	94.1
February	79.2	91.4	83.6	91.0	94.1
March	82.2	92.3	82.8	92.8	93.0
April	84.2	92.5	R86.9	R91.9	R92.5
May	84.4	95.3	91.6	94.7	92.4

R=Revised data.

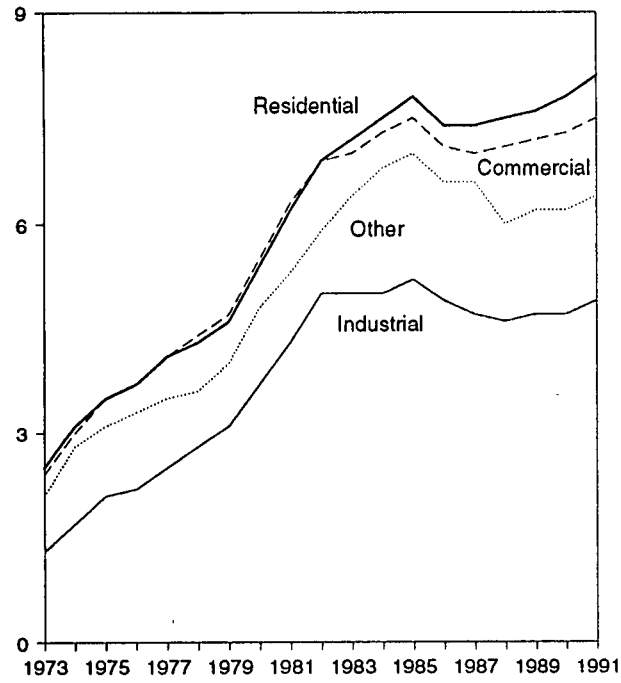
Notes: • States are grouped in Tables 9.8a, 9.8b, and 9.8c by geographic region of the country. • Values for the current month are preliminary. • Prices prior to 1983 are Energy Information Administration estimates. See Note 6 at end of section.

Sources: Energy Information Administration (EIA), *Petroleum Marketing Monthly*, August 1992, Table 16.

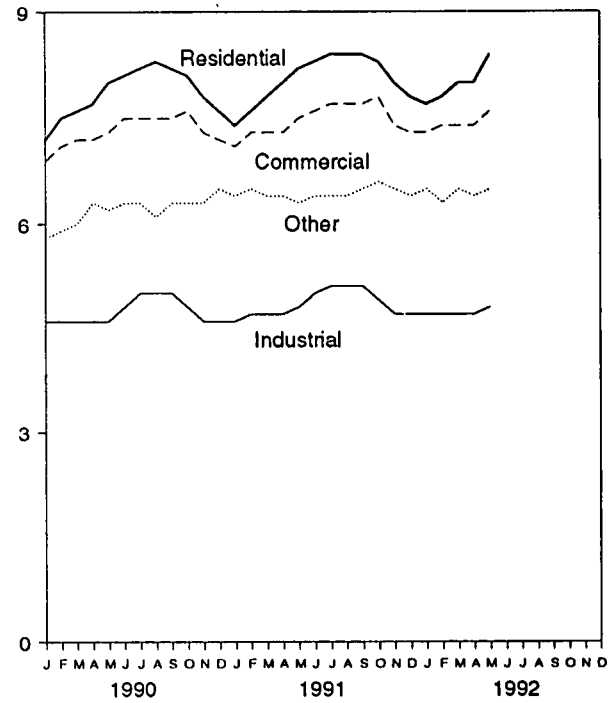
Figure 9.2 Electricity Retail Prices

(Cents per Kilowatthour)

Prices by Sector, 1973-1991



Prices by Sector, Monthly

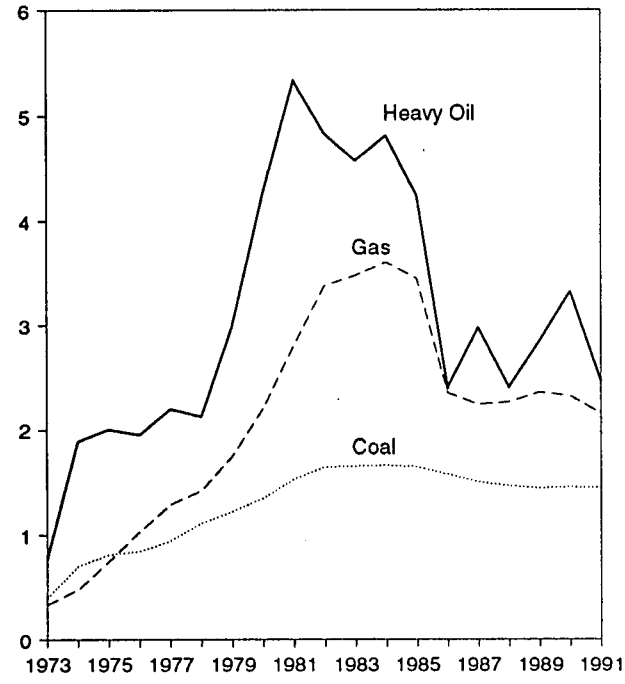


Source: Table 9.9, Monthly Series.

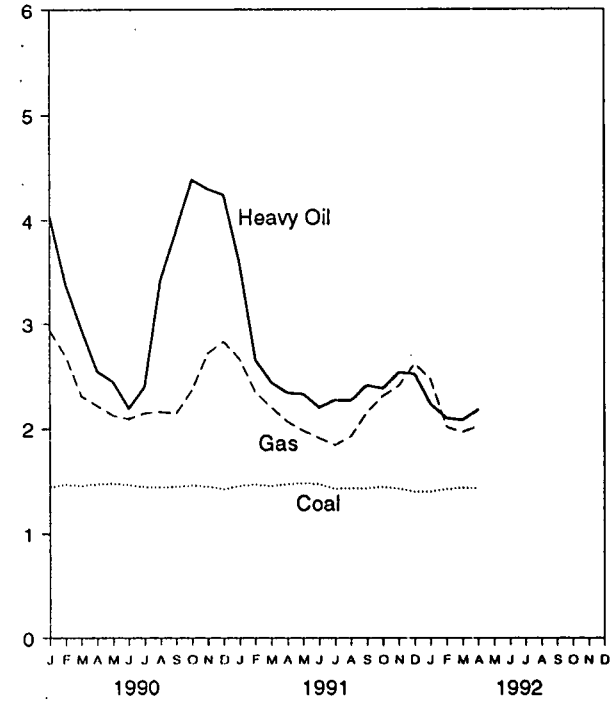
Figure 9.3 Cost of Fossil-Fuel Receipts at Steam-Electric Plants

(Dollars per Million Btu)

Fossil Fuels Costs, 1973-1991



Fossil Fuel Costs, Monthly



Source: Table 9.10.

Table 9.9 Electricity Retail Prices

(Cents per Kilowatthour)

	Residential		Commercial		Industrial		Other[a]		Total[b]	
	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series	Monthly Series[c]	Annual Series
1973 Average	2.5	NA	2.4	NA	1.3	NA	2.1	NA	2.0	NA
1974 Average	3.1	NA	3.0	NA	1.7	NA	2.8	NA	2.5	NA
1975 Average	3.5	NA	3.5	NA	2.1	NA	3.1	NA	2.9	NA
1976 Average	3.7	NA	3.7	NA	2.2	NA	3.3	NA	3.1	NA
1977 Average	4.1	NA	4.1	NA	2.5	NA	3.5	NA	3.4	NA
1978 Average	4.3	NA	4.4	NA	2.8	NA	3.6	NA	3.7	NA
1979 Average	4.6	NA	4.7	NA	3.1	NA	4.0	NA	4.0	NA
1980 Average	5.4	NA	5.5	NA	3.7	NA	4.8	NA	4.7	NA
1981 Average	6.2	NA	6.3	NA	4.3	NA	5.3	NA	5.5	NA
1982 Average	6.9	NA	6.9	NA	5.0	NA	5.9	NA	6.1	NA
1983 Average	7.2	NA	7.0	NA	5.0	NA	6.4	NA	6.3	NA
1984 Average	7.5	7.2	7.3	7.1	5.0	4.8	6.8	5.9	6.5	6.3
1985 Average	7.8	7.4	7.5	7.3	5.2	5.0	7.0	6.1	6.7	6.4
1986 Average	7.4	7.4	7.1	7.2	4.9	4.9	6.6	6.1	6.4	6.4
1987 Average	7.4	7.4	7.0	7.1	4.7	4.8	6.6	6.2	6.3	6.4
1988 Average	7.5	7.5	7.1	7.0	4.6	4.7	6.0	6.2	6.3	6.4
1989 Average	7.6	7.6	7.2	7.2	4.7	4.7	6.2	6.2	6.4	6.5
1990 January	7.2	–	6.9	–	4.6	–	5.8	–	6.3	–
February	7.5	–	7.1	–	4.6	–	5.9	–	6.3	–
March	7.6	–	7.2	–	4.6	–	6.0	–	6.4	–
April	7.7	–	7.2	–	4.6	–	6.3	–	6.4	–
May	8.0	–	7.3	–	4.6	–	6.2	–	6.5	–
June	8.1	–	7.5	–	4.8	–	6.3	–	6.7	–
July	8.2	–	7.5	–	5.0	–	6.3	–	6.9	–
August	8.3	–	7.5	–	5.0	–	6.1	–	6.9	–
September	8.2	–	7.5	–	5.0	–	6.3	–	6.9	–
October	8.1	–	7.6	–	4.8	–	6.3	–	6.7	–
November	7.8	–	7.3	–	4.6	–	6.3	–	6.5	–
December	7.6	–	7.2	–	4.6	–	6.5	–	6.4	–
Average	7.8	7.8	7.3	7.3	4.7	4.7	6.2	6.4	6.6	6.6
1991 January	7.4	–	7.1	–	4.6	–	6.4	–	6.4	–
February	7.6	–	7.3	–	4.7	–	6.5	–	6.5	–
March	7.8	–	7.3	–	4.7	–	6.4	–	6.6	–
April	8.0	–	7.3	–	4.7	–	6.4	–	6.5	–
May	8.2	–	7.5	–	4.8	–	6.3	–	6.7	–
June	8.3	–	7.6	–	5.0	–	6.4	–	6.9	–
July	8.4	–	7.7	–	5.1	–	6.4	–	7.1	–
August	8.4	–	7.7	–	5.1	–	6.4	–	7.1	–
September	8.4	–	7.7	–	5.1	–	6.5	–	7.0	–
October	8.3	–	7.8	–	4.9	–	6.6	–	6.9	–
November	8.0	–	7.4	–	4.7	–	6.5	–	6.6	–
December	7.8	–	7.3	–	4.7	–	6.4	–	6.6	–
Average	8.1	NA	7.5	NA	4.9	NA	6.4	NA	6.8	NA
1992 January	7.7	–	7.3	–	4.7	–	6.5	–	6.6	–
February	7.8	–	7.4	–	4.7	–	6.3	–	6.6	–
March	8.0	–	7.4	–	4.7	–	6.5	–	6.6	–
April	8.0	–	7.4	–	4.7	–	6.4	–	6.6	–
May	8.4	–	7.6	–	4.8	–	6.5	–	6.7	–
5-Month Average	8.0	–	7.4	–	4.7	–	6.4	–	6.6	–
1991 5-Month Average	7.8	–	7.3	–	4.7	–	6.4	–	6.5	–
1990 5-Month Average	7.5	–	7.2	–	4.6	–	6.0	–	6.4	–

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

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

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

NA=Not available. – =Not applicable.

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

Sources: • **Monthly Series: 1973-September 1977**—Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income." **October 1977-February 1980**—Federal Energy Regulatory Commission (FERC), Form FERC-5, "Electric Operating Revenue and Income." **March 1980-December 1980**—FERC, Form FERC-5, "Electric Utility Company Monthly Statement." **1981 and 1990 monthly data**—Energy Information Administration (EIA), *Electric Power Monthly*, March 1992, Table 59. **1982 forward (except 1990 monthly data)**—EIA, *Electric Power Monthly*, August 1992, Table 59. • **Annual Series:** EIA, *Electric Power Monthly*, August 1992, Table 59.

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

	Coal		Petroleum				Gas[a]		All Fossil Fuels[b]
			Heavy Oil[b]		Total[b,c]				
	Quantity (thousand short tons)	Cost (cents per million Btu)	Quantity (thousand barrels)	Cost (cents per million Btu)	Quantity (thousand barrels)	Cost (cents per million Btu)	Quantity (million cubic feet)	Cost (cents per million Btu)	Cost (cents per million Btu)
1973 Year	374,842	40.5	512,650	78.5	535,859	80.0	3,382,677	33.8	47.6
1974 Year	384,868	70.9	479,166	189.0	515,217	191.0	3,225,203	48.2	91.4
1975 Year	431,527	81.4	457,582	200.5	510,352	202.3	3,034,808	75.2	104.4
1976 Year	454,858	84.8	495,363	195.2	549,973	199.0	2,962,811	103.4	111.9
1977 Year	490,415	94.7	563,685	219.8	635,556	224.9	3,106,403	129.1	129.7
1978 Year	476,169	111.6	546,197	212.5	616,040	219.1	3,140,654	142.2	141.1
1979 Year	556,558	122.4	479,705	298.8	515,695	307.2	3,368,976	174.9	163.9
1980 Year	593,995	135.1	394,159	426.7	419,140	435.1	3,588,814	219.9	192.8
1981 Year	579,374	153.2	327,477	533.4	345,544	542.5	3,573,558	280.5	225.6
1982 Year	601,427	164.7	228,200	483.2	239,111	492.2	3,161,348	337.6	224.9
1983 Year	592,728	165.6	211,705	457.8	219,652	462.8	2,732,248	347.4	220.6
1984 Year	684,111	166.4	193,832	481.2	202,372	486.3	2,878,808	360.3	219.1
1985 Year	666,743	164.8	156,410	424.4	164,947	431.7	2,808,921	344.4	209.4
1986 Year	686,964	157.9	220,585	240.1	228,522	243.7	2,387,622	235.1	175.0
1987 Year	721,298	150.6	187,300	297.6	194,578	301.1	2,605,191	224.0	170.6
1988 Year	727,775	146.6	230,234	240.5	236,924	243.9	2,362,721	226.3	164.3
1989 Year	753,217	144.5	237,668	284.6	246,422	289.3	2,472,506	235.5	167.5
1990 January	67,636	144.6	26,481	403.9	27,415	409.6	126,806	293.8	182.3
February	62,296	146.6	19,190	338.2	19,683	340.7	113,552	269.3	171.2
March	67,536	145.7	15,023	295.2	15,494	299.3	166,055	231.0	163.1
April	63,888	147.3	13,521	254.7	13,977	260.4	181,153	221.7	162.1
May	64,958	147.8	15,000	244.7	15,534	250.6	220,420	212.5	162.4
June	63,649	146.6	18,068	219.4	18,612	224.1	267,995	209.3	161.9
July	63,427	144.6	22,149	239.9	22,783	243.8	294,671	214.6	164.8
August	70,571	144.5	18,773	341.1	19,321	346.2	304,429	215.9	169.1
September	65,715	144.7	13,520	389.9	14,038	397.8	269,002	214.3	168.6
October	69,170	146.2	13,254	438.8	13,969	452.4	225,855	236.8	173.2
November	65,393	144.8	13,378	430.1	13,900	439.0	164,781	271.9	174.0
December	62,386	142.4	13,923	424.7	14,625	434.0	156,262	283.1	174.3
Year	786,627	145.5	202,281	331.9	209,350	338.4	2,490,979	232.1	168.9
1991 January	63,356	145.7	11,478	359.5	12,325	373.8	164,872	266.8	170.2
February	61,059	146.9	10,417	265.6	10,887	275.7	137,559	234.7	161.3
March	63,537	145.4	11,269	244.2	11,667	251.2	182,833	220.0	159.2
April	60,747	147.3	13,119	234.2	13,468	239.5	203,862	206.7	160.3
May	63,005	148.3	14,730	233.1	15,276	240.1	233,424	198.2	160.8
June	61,488	147.2	17,122	220.2	17,671	226.1	244,415	191.2	159.3
July	64,752	142.7	17,169	227.2	17,701	233.0	310,723	184.6	156.0
August	69,552	143.2	16,831	226.7	17,298	232.4	306,419	192.7	156.7
September	65,071	143.4	15,590	241.4	16,063	247.7	248,900	215.4	160.3
October	66,043	144.4	9,658	238.3	10,287	252.8	251,431	231.0	161.6
November	62,634	142.8	11,289	253.4	11,832	264.4	186,721	240.7	160.5
December	65,318	140.1	14,453	252.2	15,120	260.3	159,214	261.9	159.5
Year	766,562	144.7	163,125	246.4	169,593	254.7	2,630,372	215.3	160.4
1992 January	64,551	139.9	12,039	223.2	12,535	229.9	159,873	247.0	155.5
February	61,530	142.4	13,634	210.0	14,105	216.3	160,427	201.7	153.0
March	63,808	143.7	12,779	208.2	13,184	214.0	198,183	196.8	153.9
April	60,632	142.9	10,144	217.8	10,553	225.6	218,648	202.5	155.0
4 Months	250,521	142.2	48,596	214.4	50,376	221.0	737,131	210.4	154.4
1991 4 Months	248,700	146.3	46,283	274.7	48,347	284.5	689,125	230.2	162.7
1990 4 Months	261,357	146.0	74,215	337.5	76,569	342.1	587,565	249.0	169.8

[a] Includes supplemental gaseous fuels.

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

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

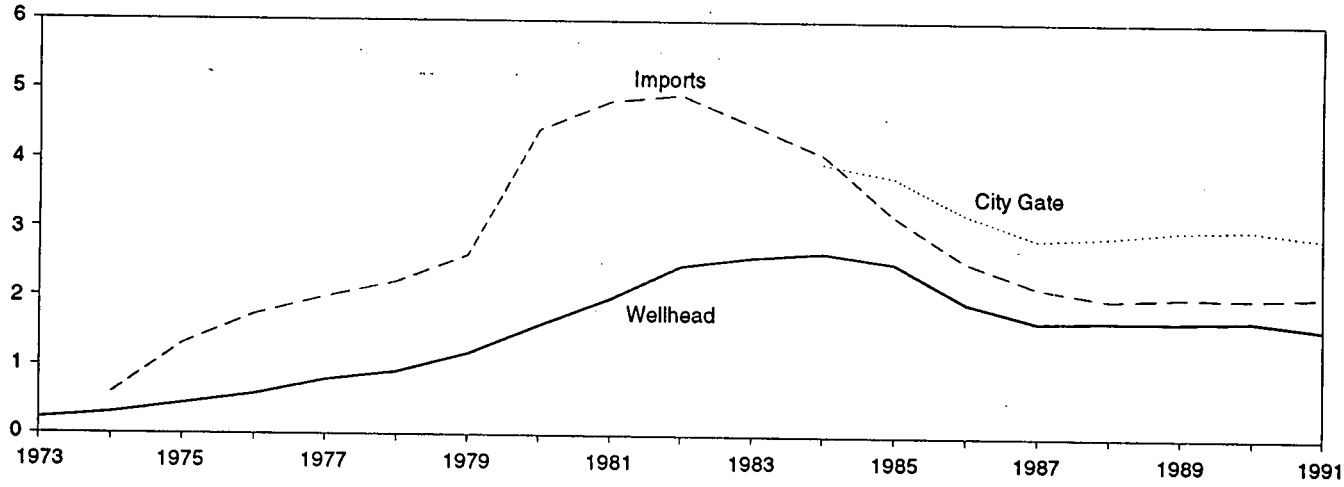
Notes: • Data for 1973-1982 cover all electric generating plants at which the generator nameplate capacity of all steam-electric units combined totaled 25 megawatts or greater. From 1974-1982, peaking units were included in the data and counted towards the 25-megawatt-or-greater total. Data for 1983-1990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

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

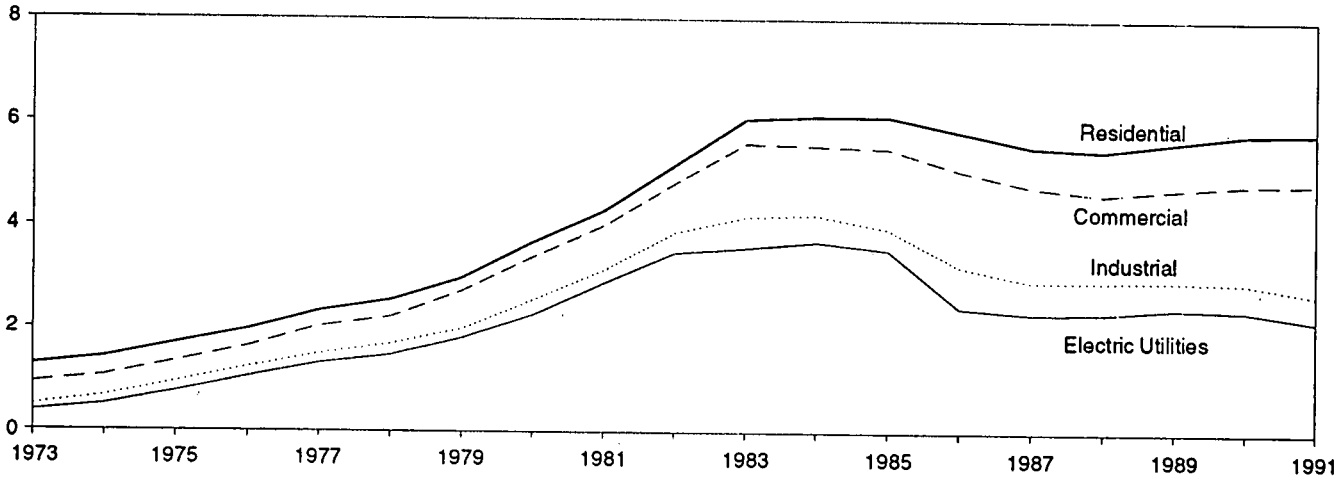
Figure 9.4 Natural Gas Prices

(Dollars per Thousand Cubic Feet)

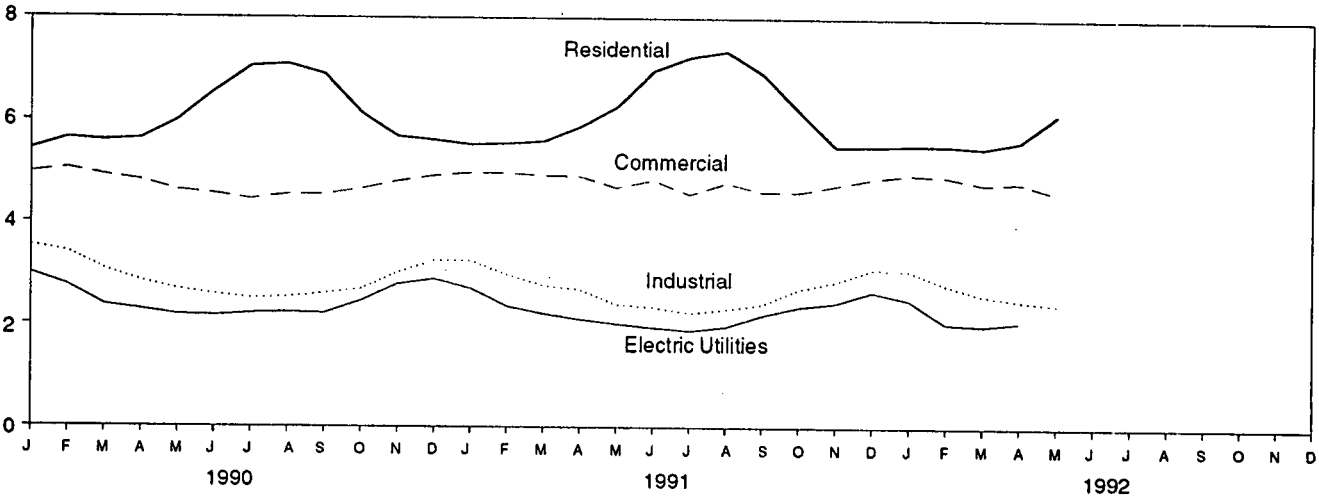
Selected Prices, 1973-1991



Delivered to Consumers, 1973-1991



Delivered to Consumers, Monthly



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

Table 9.11 Natural Gas Prices

(Dollars per Thousand Cubic Feet)

	Wellhead	Major Interstate Pipeline Companies		City Gate	Delivered to Consumers[a,b]			
		Imports	Purchases from Producers		Residential	Commercial	Industrial	Electric Utilities[b]
1973 Average	0.22	NA	NA	NA	1.29	0.94	0.50	0.38
1974 Average	.30	.59	.27	NA	1.43	1.07	.67	.51
1975 Average	.44	1.31	.37	NA	1.71	1.35	.96	.77
1976 Average	.58	1.73	.48	NA	1.98	1.64	1.24	1.06
1977 Average	.79	1.99	.70	NA	2.35	2.04	1.50	1.32
1978 Average	.91	2.21	.83	NA	2.56	2.23	1.70	1.48
1979 Average	1.18	2.60	1.22	NA	2.98	2.73	1.99	1.81
1980 Average	1.59	4.42	1.63	NA	3.68	3.39	2.56	2.27
1981 Average	1.98	4.84	2.15	NA	4.29	4.00	3.14	2.89
1982 Average	2.46	4.94	2.72	NA	5.17	4.82	3.87	3.48
1983 Average	2.59	4.51	2.93	NA	6.06	5.59	4.18	3.58
1984 Average	2.66	4.08	2.91	3.95	6.12	5.55	4.22	3.70
1985 Average	2.51	3.19	2.85	3.75	6.12	5.50	3.95	3.55
1986 Average	1.94	2.53	2.39	3.22	5.83	5.08	3.23	2.43
1987 Average	1.67	2.17	2.10	2.87	5.54	4.77	2.94	2.32
1988 Average	1.69	2.00	2.13	2.92	5.47	4.63	2.95	2.33
1989 Average	1.69	2.04	2.18	3.01	5.64	4.74	2.96	2.43
1990 January	2.23	2.04	2.42	3.24	5.43	4.97	3.53	3.00
February	1.85	2.25	2.17	3.10	5.65	5.05	3.41	2.76
March	1.55	1.99	1.94	2.94	5.60	4.92	3.08	2.37
April	1.49	2.00	2.17	2.83	5.64	4.82	2.85	2.28
May	1.47	2.08	1.98	2.81	6.00	4.63	2.68	2.18
June	1.48	1.91	2.18	3.00	6.56	4.56	2.58	2.16
July	1.49	1.88	2.00	3.03	7.04	4.45	2.50	2.21
August	1.51	1.93	1.86	2.91	7.08	4.55	2.52	2.23
September	1.56	1.89	1.93	2.92	6.89	4.55	2.60	2.21
October	1.76	1.90	2.18	2.81	6.14	4.66	2.69	2.45
November	1.94	2.21	2.45	3.14	5.69	4.81	3.02	2.79
December	2.04	2.27	2.58	3.19	5.62	4.92	3.25	2.89
Average	1.71	2.03	2.19	3.03	5.80	4.83	2.93	2.39
1991 January	1.94	2.24	2.23	3.08	5.53	4.98	[R]3.25	2.70
February	1.59	2.12	1.98	2.94	5.55	4.97	[R]2.98	2.35
March	1.47	1.94	2.06	2.79	5.60	4.93	[R]2.76	2.21
April	1.47	2.05	1.91	2.75	5.89	[R]4.91	[R]2.68	2.10
May	1.44	2.00	2.04	2.77	[R]6.27	[R]4.69	2.39	2.01
June	1.39	2.05	1.98	2.85	6.97	[R]4.84	[R]2.34	1.94
July	1.29	2.13	1.87	2.76	7.23	[R]4.56	[R]2.23	1.88
August	1.37	1.71	1.77	2.80	7.35	[R]4.79	2.30	1.96
September	1.54	1.85	1.81	2.93	6.92	4.61	[R]2.40	2.19
October	1.74	2.24	1.96	2.93	6.20	4.61	[R]2.70	2.35
November	1.83	2.20	2.01	2.92	5.50	[R]4.74	[R]2.85	2.43
December	1.93	2.09	2.13	3.06	5.51	4.88	[R]3.10	2.65
Average	1.59	2.06	2.01	2.91	5.82	4.85	[R]2.70	2.18
1992 January	1.69	2.20	2.10	2.90	5.53	4.96	3.07	2.49
February	1.35	1.98	1.70	2.74	5.53	4.92	2.79	2.03
March	1.42	1.45	1.90	2.61	5.48	4.77	[R]2.58	1.99
April	1.46	2.01	1.84	2.74	5.61	4.80	[R]2.48	2.06
May	[E]1.55	1.79	1.99	2.90	6.14	4.59	2.41	NA
5-Month Average	[E]1.49	1.89	1.91	2.78	5.59	4.85	2.68	NA
1991 5-Month Average	1.58	2.07	2.04	2.90	5.66	4.93	2.84	2.24
1990 5-Month Average	1.72	2.07	2.14	3.02	5.61	4.92	3.14	2.46

[a] Includes supplemental gaseous fuels.

[b] See Note 8 at end of section.

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

Notes: • Prices shown on this page are intended to include all taxes. See Note 8 at end of section. • Geographic coverage is the 50 States and the District of Columbia. • Data through 1988 are final. Subsequent data are preliminary. • Wellhead annual and year-to-date prices are simple averages of the monthly prices; all other annual and year-to-date prices are volume-weighted averages of the monthly prices.

Sources: • **Wellhead: 1973-1983**—Energy Information Administration (EIA), *Natural Gas Annual 1988, Volume 1*, Table 92. • **Major Interstate Pipeline Companies: 1974-1977**—Calculated from revenue and sales data reported to the Federal Power Commission (FPC) on Form FPC-11, "Natural Gas Pipeline Company Monthly Statement." **1978-1983**—EIA, *Natural Gas Monthly*, December 1984, Table 10. • **Delivered to Consumers: 1973-1983**—EIA, *Natural Gas Annual 1988, Volume 1*, Table 95. • **All Other Data (1984 forward):** EIA, *Natural Gas Monthly*, August 1992, Table 4.

Energy Prices Notes

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

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

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

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

The refiner acquisition cost of crude oil is the average price paid by refiners for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners concerned. Domestic crude oil is that oil produced in the United States or from the outer continental shelf as defined in 43 USC Section 1331. Imported crude oil is either that oil reported on Form ERA-51, "Transfer Pricing Report," or any crude oil that is not domestic oil. The composite cost is the weighted average of domestic and imported crude oil costs.

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

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

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

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

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

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

8. Natural gas prices are intended to include all taxes. Instructions on the data collection forms specifically direct that all 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.

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

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

Section 10. International Energy

Crude Oil Production. World crude oil production during May 1992 was 59 million barrels per day, down 0.7 million barrels per day from the level in the previous month.

Organization of Petroleum Exporting Countries (OPEC) production during May 1992 averaged 25 million barrels per day, up 0.2 million barrels per day from the level during the previous month. Production by the Arab members of OPEC during May 1992 averaged 15 million barrels per day, up 0.1 million barrels per day from the April 1992 level. During May 1992, production increased in both Kuwait and Saudi Arabia by 52 thousand barrels per day. Production decreased in Libya by 50 thousand barrels per day, and remained unchanged in Algeria, Iraq, Qatar, and the United Arab Emirates. Among the non-Arab members of OPEC, production during May 1992 increased in Venezuela by 100 thousand barrels per day. Production remained unchanged in Indonesia, Iran, and Nigeria.

Among the non-OPEC nations, production during May 1992 decreased in the former U.S.S.R. by 245 thousand barrels per day, in the United States by 181 thousand barrels per day, in the United Kingdom by 135 thousand barrels per day, in Canada by 35 thousand barrels per day, and in Mexico by 5 thousand barrels per day.

Petroleum Consumption. In March 1992, consumption in all Organization for Economic Cooperation and Development (OECD) countries was 38.1 million barrels per day, higher by 2 percent than the March 1991 level. Consumption was higher in the United States by 4 percent but slightly lower in Japan compared with levels 1 year earlier. In March 1992, consumption in all European OECD countries combined was 12.9 million barrels per day, 2 percent higher than consumption in the previous March. Consumption was higher in France by 14 percent, higher in Canada by 7 percent, higher in both Italy and the United Kingdom by 5 percent, but lower in Germany by 3 percent, compared with levels 1 year earlier.

Petroleum Stocks. For all OECD countries, petroleum stocks at the end of March 1992 totaled 3.5 billion barrels, 1 percent lower than the ending stock level in March 1991. Stocks were higher in the United States by 1 percent but lower in Japan by 1 percent, compared with levels 1 year earlier. In March 1992, stock levels in all European OECD countries totaled 1.1 billion barrels, 3 percent lower than the level in the previous March. Stocks were higher in Germany by 5 percent, higher in France by 2 percent, but lower in Italy by 11 percent, lower in the United Kingdom by 7 percent, and lower in Canada by 5 percent, compared with levels one year earlier.

Nuclear Electricity Generation. Based on *Nucleonics Week* information for May 1992, reporting countries with nuclear capacity generated 138 gross terawatthours[9] of nuclear-generated electricity, 1 percent more than in May 1991.

As of May 31, 1992, there were 353 operable nuclear generating units in the reporting countries. The units had a collective gross generating capacity of 298.7 gigawatts.[10] The 110 U.S. units accounted for 105.9 gross gigawatts, 35.4 percent of the total reported nuclear generating capacity.

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

Table 10.1a World Crude Oil Production: Algeria Through Venezuela

(Thousand Barrels per Day)

	Algeria	Iraq	Kuwait[a]	Libya	Qatar	Saudi Arabia[a]	United Arab Emirates	Arab OPEC[b]	Indonesia	Iran	Nigeria	Venezuela
1973 Average	1,097	2,018	3,020	2,175	570	7,596	1,533	18,009	1,339	5,861	2,054	3,366
1974 Average	1,009	1,971	2,546	1,521	518	8,480	1,679	17,724	1,375	6,022	2,255	2,976
1975 Average	983	2,262	2,084	1,480	438	7,075	1,664	15,985	1,307	5,350	1,783	2,346
1976 Average	1,075	2,415	2,145	1,933	497	8,577	1,936	18,579	1,504	5,883	2,067	2,294
1977 Average	1,152	2,348	1,969	2,063	445	9,245	1,999	19,221	1,686	5,663	2,085	2,238
1978 Average	1,231	2,563	2,131	1,983	487	8,301	1,831	18,525	1,635	5,242	1,897	2,165
1979 Average	1,224	3,477	2,500	2,092	508	9,532	1,831	21,163	1,591	3,168	2,302	2,356
1980 Average	1,106	2,514	1,656	1,787	472	9,900	1,709	19,144	1,577	1,662	2,055	2,168
1981 Average	1,002	1,000	1,125	1,140	405	9,815	1,474	15,961	1,605	1,380	1,433	2,102
1982 Average	987	1,012	823	1,150	330	6,483	1,250	12,035	1,339	2,214	1,295	1,895
1983 Average	968	1,005	1,064	1,105	295	5,086	1,149	10,672	1,343	2,440	1,241	1,801
1984 Average	1,014	1,209	1,157	1,087	394	4,663	1,146	10,670	1,412	2,174	1,388	1,798
1985 Average	1,037	1,433	1,023	1,059	301	3,388	1,193	9,434	1,325	2,250	1,495	1,677
1986 Average	945	1,690	1,419	1,034	308	4,870	1,330	11,596	1,390	2,035	1,467	1,787
1987 Average	1,048	2,079	1,585	972	293	4,265	1,541	11,783	1,343	2,298	1,341	1,752
1988 Average	1,040	2,685	1,492	1,175	346	5,086	1,565	13,389	1,342	2,240	1,450	1,903
1989 Average	1,095	2,897	1,783	1,150	380	5,064	1,860	14,229	1,409	2,810	1,716	1,907
1990 January	1,190	2,946	1,998	1,222	370	5,571	2,054	15,352	1,306	2,700	1,754	1,990
February	1,190	2,946	1,998	1,375	380	5,670	2,029	15,589	1,306	3,000	1,754	2,140
March	1,190	2,946	2,179	1,324	400	5,800	2,054	15,893	1,411	3,000	1,754	2,040
April	1,190	2,997	1,953	1,273	400	5,924	2,099	15,837	1,463	2,900	1,855	2,040
May	1,190	3,150	1,953	1,273	365	5,426	2,109	15,466	1,411	3,200	1,754	2,040
June	1,190	3,251	1,758	1,273	365	5,431	2,049	15,317	1,411	3,100	1,754	2,040
July	1,190	3,454	1,853	1,273	370	5,426	2,049	15,616	1,442	3,050	1,754	2,040
August	1,190	1,016	100	1,426	400	5,825	1,649	11,606	1,516	3,300	1,855	2,090
September	1,220	508	100	1,426	400	7,706	2,199	13,560	1,536	3,300	1,905	2,290
October	1,241	457	75	1,579	400	7,776	2,309	13,837	1,542	3,000	1,955	2,275
November	1,241	432	75	1,528	400	8,274	2,374	14,324	1,568	3,200	1,955	2,320
December	1,241	432	75	1,528	370	8,533	2,449	14,628	1,620	3,300	1,955	2,340
Average	1,205	2,040	1,172	1,375	385	6,449	2,119	14,745	1,462	3,088	1,834	2,137
1991 January	1,210	250	50	1,500	350	8,140	2,500	14,000	1,630	3,200	1,960	2,390
February	1,210	0	0	1,500	390	8,200	2,525	13,825	1,630	3,300	1,960	2,390
March	1,210	0	0	1,450	390	8,000	2,550	13,600	1,630	3,400	1,960	2,390
April	1,210	200	0	1,450	390	7,400	2,550	13,200	1,630	3,300	1,960	2,340
May	1,210	350	0	1,450	390	7,400	2,350	13,150	1,630	3,300	1,960	2,340
June	1,210	350	75	1,450	390	8,150	2,350	13,975	1,630	3,300	1,910	2,340
July	1,210	350	165	1,450	390	8,475	2,350	14,390	1,680	3,400	1,910	2,340
August	1,210	350	195	1,450	390	8,465	2,350	14,410	1,630	3,400	1,960	2,340
September	1,210	350	300	1,500	390	8,400	2,340	14,490	1,580	3,300	1,960	2,340
October	1,210	350	430	1,500	390	8,450	2,430	14,760	1,530	3,300	1,860	2,390
November	1,210	350	500	1,550	370	8,440	2,495	14,915	1,580	3,300	1,960	2,390
December	1,210	350	520	1,550	310	8,640	2,460	15,040	1,580	3,500	1,985	2,440
Average	1,210	273	187	1,483	378	8,181	2,437	14,149	1,613	3,334	1,945	2,369
1992 January	1,210	350	565	1,550	350	8,790	2,435	15,250	1,580	3,500	1,960	2,390
February	1,210	350	630	1,550	325	8,640	2,425	15,130	1,605	3,500	1,910	2,340
March	1,210	350	735	1,450	375	8,260	2,300	14,680	1,630	3,350	1,885	2,190
April	1,210	350	863	1,500	375	8,213	2,300	14,810	1,605	3,250	1,910	2,190
May	1,210	350	915	1,450	375	8,265	2,300	14,865	1,605	3,250	1,910	2,290
5-Mo. Avg.	1,210	350	742	1,499	360	8,432	2,351	14,945	1,605	3,369	1,915	2,280
1991 5-Mo. Avg.	1,210	163	10	1,470	382	7,823	2,494	13,552	1,630	3,300	1,960	2,370
1990 5-Mo. Avg.	1,190	2,998	2,017	1,292	383	5,677	2,070	15,627	1,380	2,960	1,774	2,048

[a] Includes about one-half of the production in the Kuwait-Saudi Arabia Neutral Zone from 1973 through July 1990 and in June 1991. Kuwaiti Neutral Zone output was discontinued following Iraq's invasion of Kuwait on August 2, 1990, but was resumed in June 1991. In May 1992, Neutral Zone production by both Kuwait and Saudi Arabia totaled about 330 thousand barrels per day.

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

[c] "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."

[d] 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."

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

Footnotes continue on following page.

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

(Thousand Barrels per Day)

	Total OPEC[c]	Persian Gulf Nations[d]	Canada	Mexico	United Kingdom	United States	China	Former U.S.S.R.	Other[e]	World
1973 Average	30,988	20,668	1,798	465	2	9,208	1,090	8,329	3,804	55,684
1974 Average	30,729	21,282	1,551	571	2	8,774	1,315	8,856	3,862	55,660
1975 Average	27,154	18,934	1,430	705	12	8,375	1,490	9,472	4,139	52,777
1976 Average	30,737	21,514	1,314	831	245	8,132	1,670	9,985	4,355	57,269
1977 Average	31,299	21,725	1,321	981	768	8,245	1,874	10,485	4,616	59,589
1978 Average	29,875	20,606	1,316	1,209	1,082	8,707	2,082	10,950	4,782	60,003
1979 Average	30,998	21,066	1,500	1,461	1,568	8,552	2,122	11,187	5,089	62,477
1980 Average	26,985	17,961	1,435	1,936	1,622	8,597	2,114	11,460	5,204	59,353
1981 Average	22,843	15,245	1,285	2,313	1,811	8,572	2,012	11,552	5,390	55,778
1982 Average	19,145	12,156	1,271	2,748	2,065	8,649	2,045	11,615	5,646	53,184
1983 Average	17,891	11,081	1,356	2,689	2,291	8,688	2,120	11,684	6,248	52,967
1984 Average	17,857	10,784	1,438	2,780	2,480	8,879	2,296	11,576	6,897	54,203
1985 Average	16,634	9,630	1,471	2,745	2,530	8,971	2,505	11,250	7,540	53,646
1986 Average	18,734	11,696	1,474	2,435	2,539	8,680	2,620	11,540	7,850	55,872
1987 Average	18,846	12,103	1,535	2,548	2,406	8,349	2,690	11,690	8,242	56,306
1988 Average	20,785	13,457	1,616	2,512	2,232	8,140	2,730	11,823	8,669	58,507
1989 Average	22,558	14,837	1,560	2,520	1,802	7,613	2,757	11,420	9,338	59,568
1990 January	23,643	15,683	1,477	2,520	1,911	7,546	2,796	11,296	9,578	60,767
February	24,340	16,066	1,498	2,520	1,811	7,497	2,776	10,933	9,655	61,030
March	24,658	16,420	1,604	2,510	1,935	7,433	2,746	11,296	9,744	61,927
April	24,655	16,315	1,548	2,510	1,916	7,407	2,746	11,109	9,766	61,657
May	24,402	16,245	1,528	2,485	1,886	7,328	2,746	10,940	9,774	61,089
June	24,173	15,997	1,508	2,465	1,831	7,106	2,756	10,766	9,659	60,264
July	24,453	16,245	1,543	2,485	1,743	7,173	2,716	10,679	9,577	60,370
August	20,936	12,333	1,543	2,535	1,624	7,287	2,751	10,560	9,593	56,830
September	23,162	14,256	1,548	2,626	1,753	7,224	2,811	10,472	9,795	59,391
October	23,194	14,061	1,599	2,646	1,857	7,542	2,776	10,205	9,921	59,740
November	23,957	14,798	1,568	2,666	1,820	7,387	2,801	10,153	10,211	60,562
December	24,433	15,201	1,594	2,666	1,671	7,338	2,761	10,181	10,141	60,784
Average	23,828	15,295	1,547	2,553	1,813	7,355	2,765	10,715	9,785	60,361
1991 January	23,770	14,532	1,555	2,660	1,675	7,500	2,785	10,295	10,118	60,358
February	23,700	14,455	1,615	2,674	1,905	7,637	2,795	9,600	10,152	60,078
March	23,550	14,383	1,540	2,669	2,069	7,546	2,790	10,010	10,145	60,319
April	23,000	13,881	1,440	2,655	1,525	7,509	2,795	9,955	10,036	58,915
May	22,930	13,832	1,500	2,695	1,395	7,409	2,795	9,870	10,136	58,730
June	23,705	14,652	1,520	2,720	1,525	7,320	2,805	9,470	9,873	58,939
July	24,290	15,168	1,530	2,690	1,805	7,347	2,805	9,470	9,944	59,881
August	24,310	15,188	1,575	2,660	1,827	7,316	2,805	9,095	9,607	59,196
September	24,240	15,119	1,545	2,675	1,896	7,368	2,800	9,545	10,134	60,203
October	24,420	15,388	1,500	2,680	1,990	7,437	2,800	9,165	10,191	60,184
November	24,725	15,495	1,615	2,660	1,975	7,328	2,805	9,055	10,276	60,439
December	25,125	15,820	1,580	2,675	1,980	7,299	2,800	9,025	10,368	60,852
Average	23,983	14,830	1,542	2,676	1,797	7,417	2,798	9,546	10,082	59,842
1992 January	25,260	16,030	1,585	2,675	1,885	E 7,363	2,800	8,930	R 10,541	R 61,039
February	25,040	15,910	1,560	2,665	1,875	E 7,373	2,800	R 8,465	R 10,390	R 60,168
March	24,350	15,410	R 1,620	2,680	1,725	E 7,315	R 2,805	R 8,575	R 10,447	R 59,517
April	24,385	R 15,387	R 1,555	R 2,680	1,805	E 7,291	R 2,805	R 8,840	R 10,516	R 59,877
May	24,540	15,492	1,520	2,675	1,670	E 7,110	2,805	8,595	10,240	59,155
5-Mo. Avg.	24,713	15,644	1,568	2,675	1,791	E 7,289	2,803	8,683	10,427	59,949
1991 5-Mo. Avg.	23,386	14,214	1,529	2,671	1,711	7,518	2,792	9,953	10,117	59,677
1990 5-Mo. Avg.	24,338	16,146	1,532	2,509	1,893	7,442	2,762	11,118	9,704	61,297

Footnotes continued.

R=Revised data. E=Estimate.

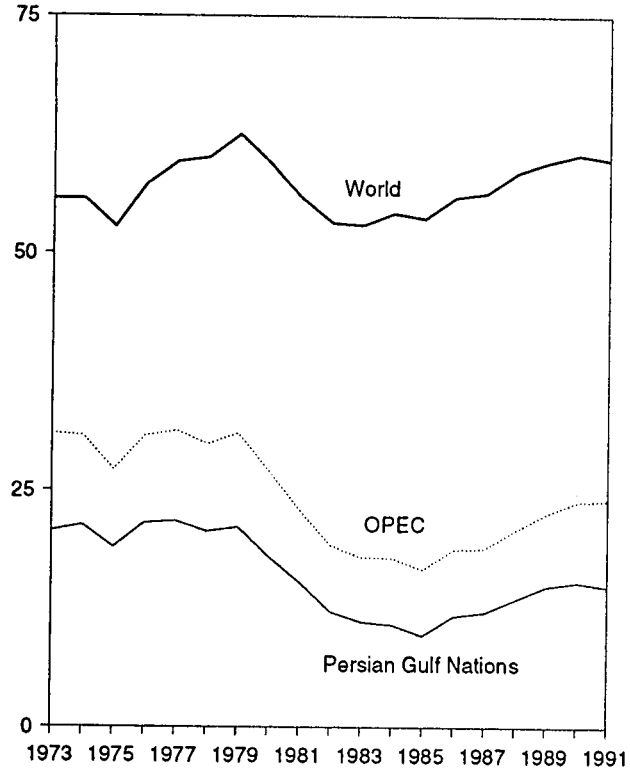
Notes: • Crude oil includes lease condensate but excludes natural gas plant liquids. • U.S. geographic coverage is the 50 States and the District of Columbia. • Monthly data are often preliminary figures and may not average to the annual totals because of rounding or because updates to the preliminary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

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

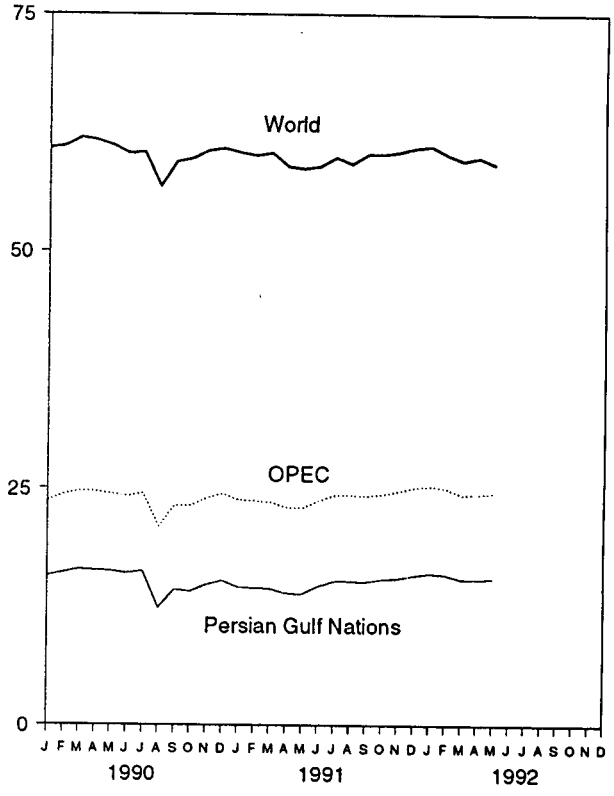
Figure 10.1 Crude Oil Production

(Million Barrels per Day)

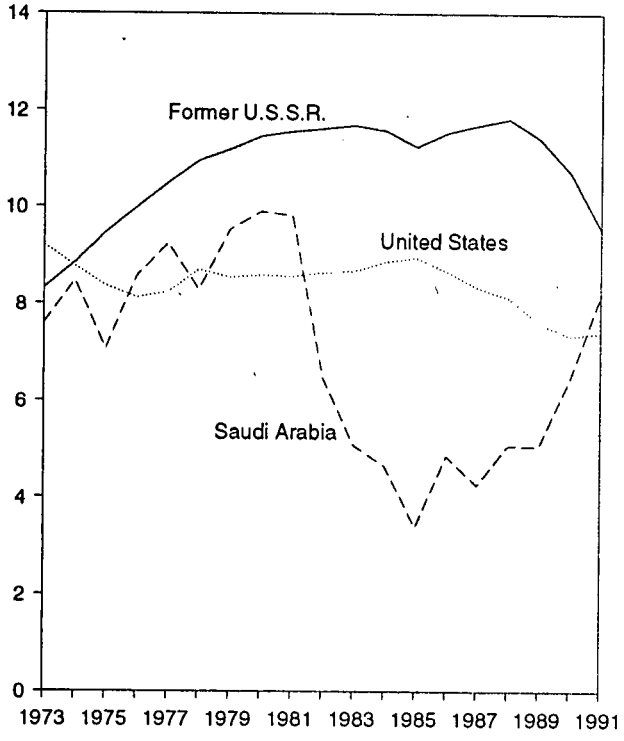
World Production, 1973-1991



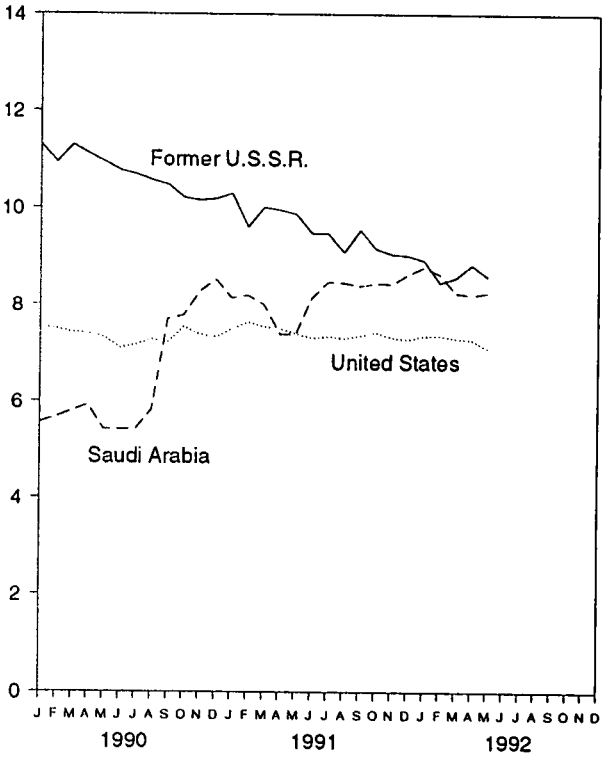
World Production, Monthly



Leading Producers, 1973-1991



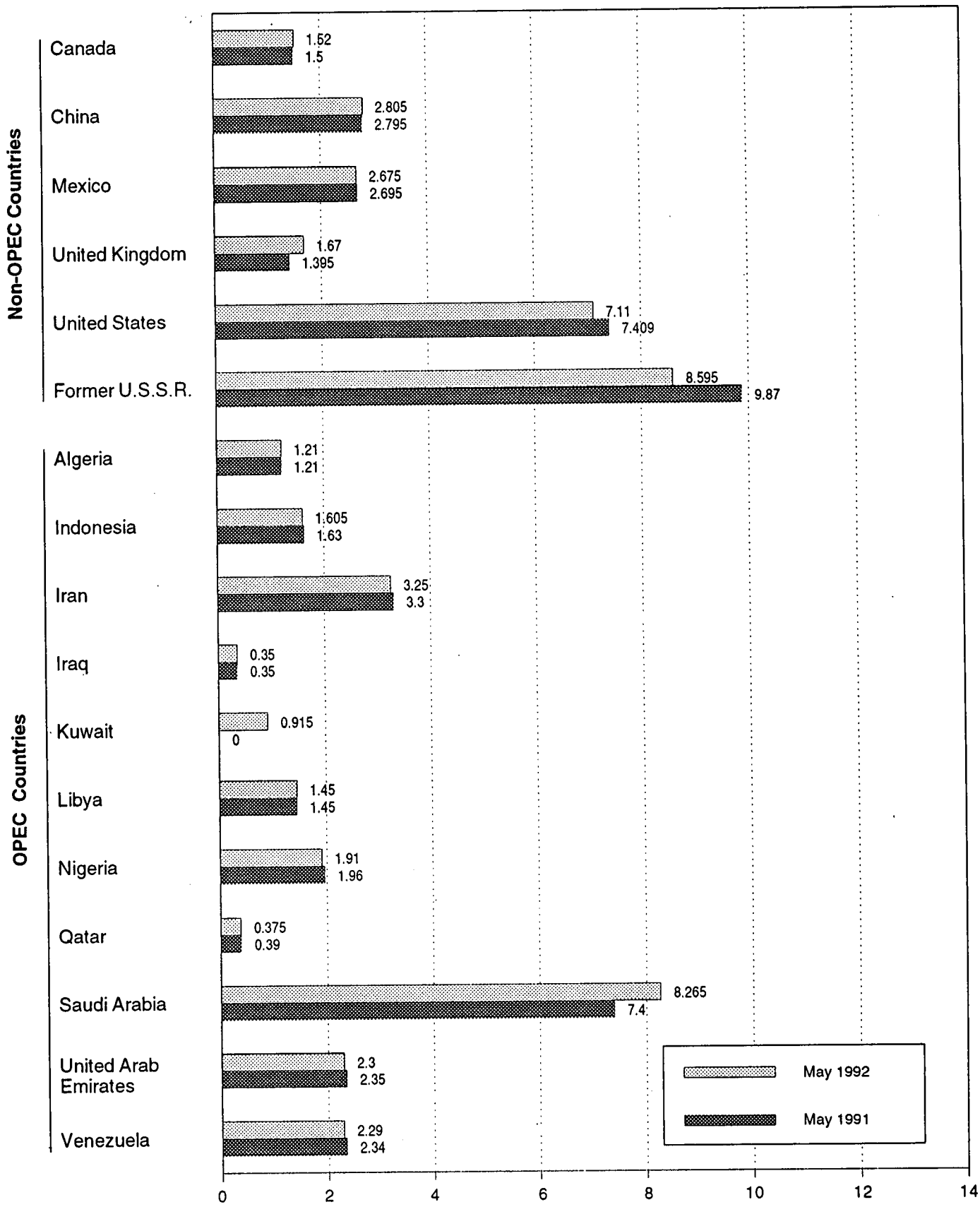
Leading Producers, Monthly



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

Figure 10.2 Crude Oil Production by Selected Country

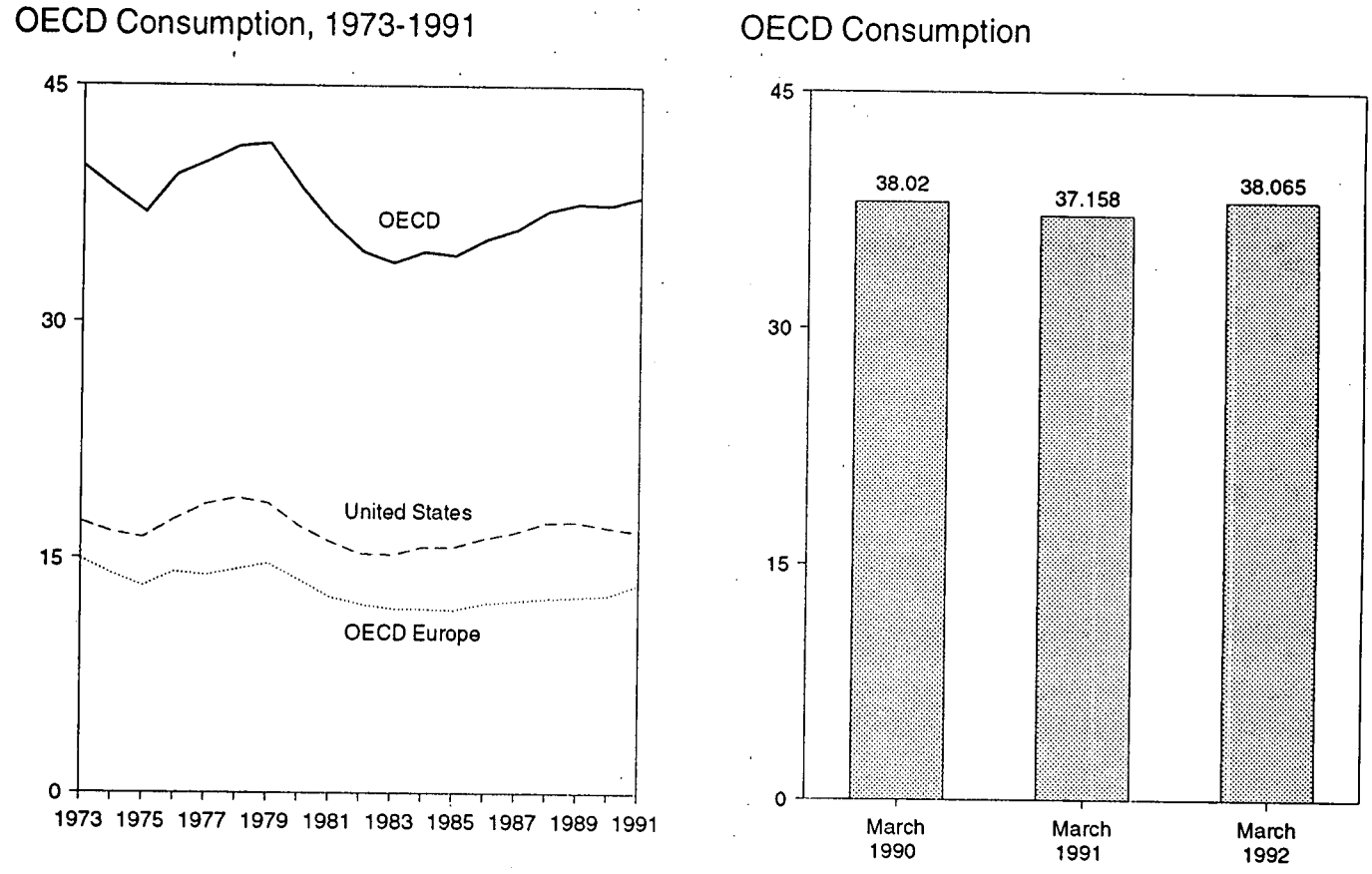
(Million Barrels per Day)

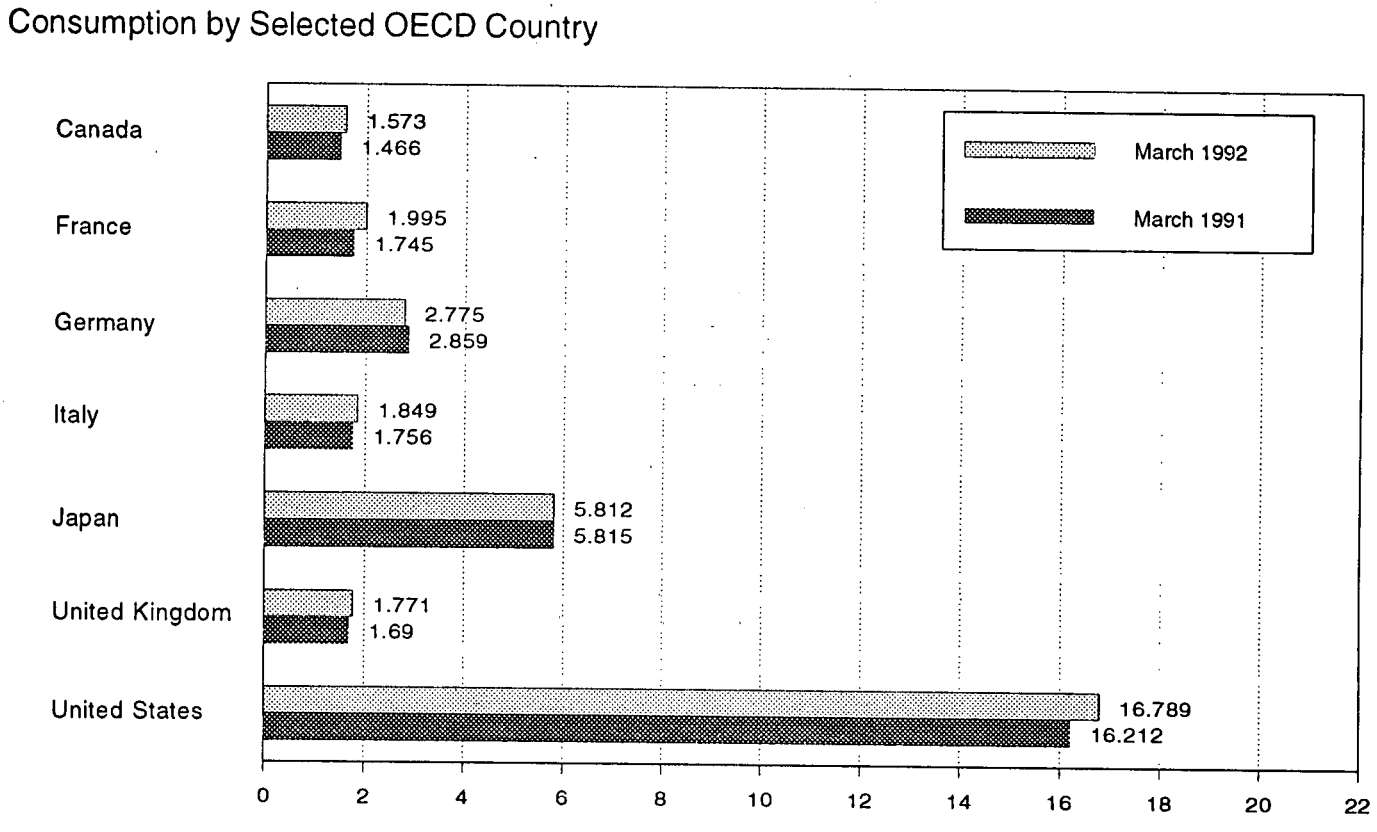


Note: OPEC is the Organization of Petroleum Exporting Countries.
Sources: Tables 10.1a and 10.1b.

Figure 10.3 Petroleum Consumption in OECD Countries

(Million Barrels per Day)





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

Table 10.2 Petroleum Consumption in OECD Countries

(Thousand Barrels per Day)

	Canada	France	Germany[a]	Italy	Japan	United Kingdom	United States	OECD Europe[b]	Other OECD[c]	OECD
1973 Average	1,729	2,601	3,055	2,068	4,949	2,341	17,308	14,925	988	39,900
1974 Average	1,779	2,447	2,748	2,004	4,864	2,210	16,653	13,988	1,095	38,379
1975 Average	1,779	2,252	2,650	1,855	4,621	1,911	16,322	13,217	1,041	36,980
1976 Average	1,818	2,420	2,877	1,971	4,837	1,892	17,461	14,124	1,119	39,358
1977 Average	1,850	2,294	2,865	1,897	4,880	1,905	18,431	13,916	1,160	40,237
1978 Average	1,902	2,408	2,927	1,952	4,945	1,938	18,847	14,290	1,204	41,187
1979 Average	1,971	2,463	3,003	2,039	5,050	1,971	18,513	14,667	1,178	41,379
1980 Average	1,873	2,256	2,707	1,934	4,960	1,725	17,056	13,634	1,072	38,595
1981 Average	1,768	2,023	2,449	1,874	4,848	1,590	16,058	12,515	1,080	36,269
1982 Average	1,578	1,880	2,372	1,781	4,582	1,590	15,296	12,053	1,008	34,517
1983 Average	1,448	1,835	2,324	1,750	4,395	1,531	15,231	11,765	954	33,793
1984 Average	1,472	1,754	2,322	1,646	4,576	1,849	15,726	11,736	989	34,500
1985 Average	1,504	1,775	2,338	1,717	4,384	1,634	15,726	11,681	976	34,271
1986 Average	1,506	1,772	2,498	1,738	4,439	1,649	16,281	12,102	951	35,279
1987 Average	1,548	1,789	2,424	1,855	4,484	1,603	16,665	12,255	958	35,911
1988 Average	1,693	1,797	2,422	1,836	4,752	1,697	17,283	12,427	939	37,093
1989 Average	1,733	1,857	2,280	1,930	4,983	1,738	17,325	12,531	998	37,570
1990 January	1,659	2,026	2,208	2,148	5,541	1,735	16,964	12,905	964	38,033
February	1,757	1,928	2,390	2,005	5,865	1,845	17,175	12,996	987	38,780
March	1,696	1,872	2,343	1,823	5,491	1,933	17,087	12,673	1,074	38,020
April	1,591	1,784	2,299	1,581	4,668	1,756	16,778	12,162	957	36,156
May	1,671	1,608	2,382	1,747	4,476	1,781	16,915	12,181	1,030	36,274
June	1,630	1,774	2,504	1,755	4,536	1,828	17,165	12,724	1,011	37,066
July	1,708	1,860	2,688	1,832	4,960	1,841	17,084	13,135	1,004	37,891
August	1,843	1,778	2,383	1,694	5,212	1,762	18,050	12,785	1,119	39,009
September	1,676	1,682	2,280	1,824	4,991	1,629	16,512	12,079	1,005	36,263
October	1,760	1,698	2,320	1,946	4,909	1,600	16,934	12,293	1,040	36,936
November	1,706	1,834	2,434	2,057	5,161	1,709	16,695	12,795	1,027	37,383
December	1,586	1,971	2,353	2,054	5,903	1,614	16,494	12,831	1,060	37,875
Average	1,690	1,818	2,382	1,872	5,140	1,752	16,988	12,629	1,024	37,471
1991 January	1,609	R2,169	3,000	R2,278	R5,849	R1,784	16,893	R14,444	R1,045	R39,841
February	R1,627	R1,996	R2,786	2,105	R6,134	R1,798	16,339	R13,764	R1,023	R38,887
March	R1,466	R1,745	2,859	R1,756	R5,815	R1,690	16,212	R12,594	1,071	R37,158
April	R1,581	R1,765	2,955	1,887	R5,019	R1,753	16,139	R13,001	1,065	R36,805
May	R1,632	R1,739	2,913	R1,772	R4,891	R1,764	16,189	R12,887	1,091	R36,690
June	R1,591	R1,806	3,270	R1,657	R4,772	R1,734	16,878	R13,204	931	R37,376
July	R1,705	R1,978	2,273	1,715	R5,010	R1,815	16,971	R12,596	988	R37,270
August	R1,677	R1,709	R2,610	1,653	R4,892	R1,776	17,183	12,653	977	R37,382
September	R1,574	R1,800	2,681	1,877	R4,746	R1,717	16,848	R12,924	R1,010	R37,102
October	R1,654	2,025	R2,920	2,174	R4,853	R1,825	16,996	R14,081	R1,096	R38,681
November	R1,578	1,904	R2,860	2,083	R5,577	R1,789	16,730	R13,636	R1,117	R38,639
December	R1,636	2,173	R2,831	2,279	R5,945	R1,725	17,145	R14,219	R1,028	R39,974
Average	R1,611	R1,901	2,829	R1,936	R5,288	R1,764	16,714	R13,332	1,037	R37,982
1992 January	1,679	2,166	R2,962	2,216	R5,562	R1,814	16,982	R14,566	R983	R39,771
February	R1,617	2,148	2,715	2,168	R6,430	1,790	16,885	R14,059	R1,024	R40,017
March	1,573	1,995	2,775	1,849	5,812	1,771	16,789	12,876	1,015	38,065
3-Mo. Average	1,623	2,102	2,820	2,076	5,924	1,792	16,885	13,829	1,007	39,268
1991 3-Mo. Average	1,565	1,969	2,885	2,044	5,926	1,756	16,486	13,595	1,047	38,620
1990 3-Mo. Average	1,702	1,942	2,311	1,992	5,625	1,837	17,072	12,853	1,009	38,261

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

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

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

R=Revised data.

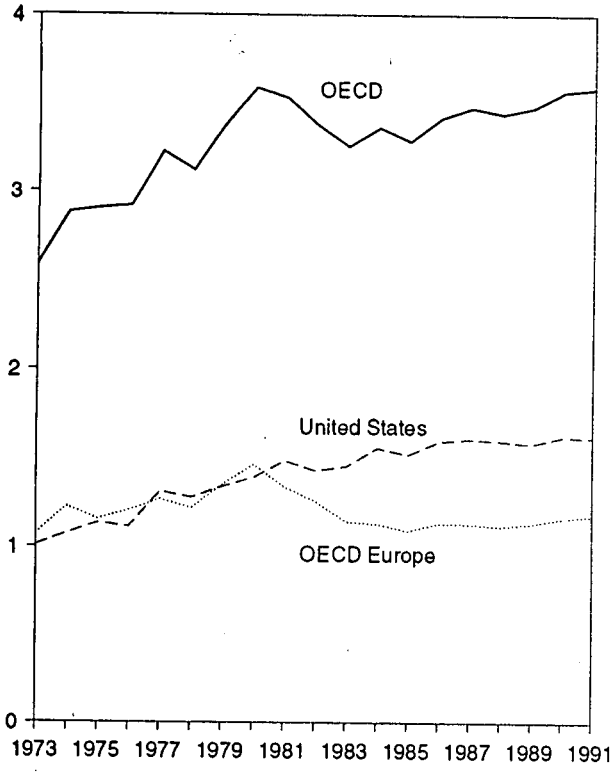
Notes: • The Organization for Economic Cooperation and Development (OECD) consists of Canada, Japan, and the United States, as well as "OECD Europe" and "Other OECD." • U.S. geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding. • Data through 1989 are final. Subsequent data are preliminary.

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

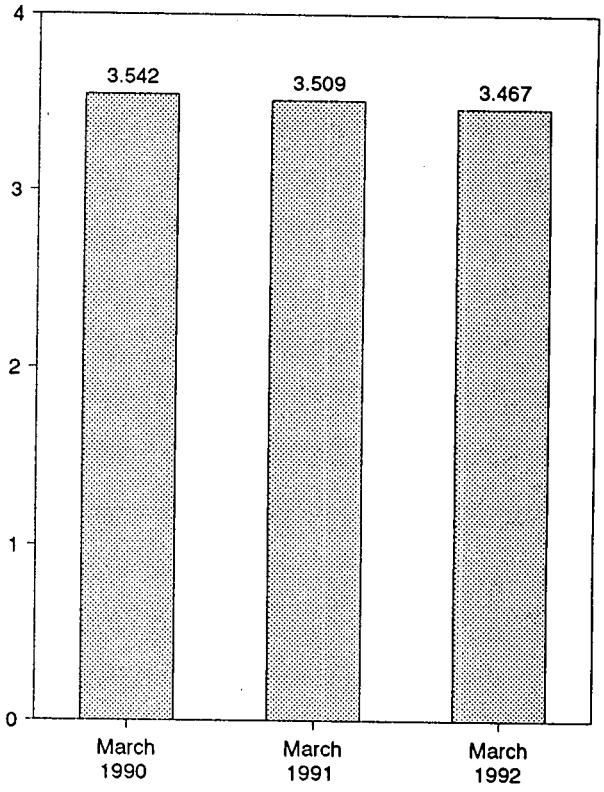
Figure 10.4 Petroleum Stocks in OECD Countries

(Billion Barrels)

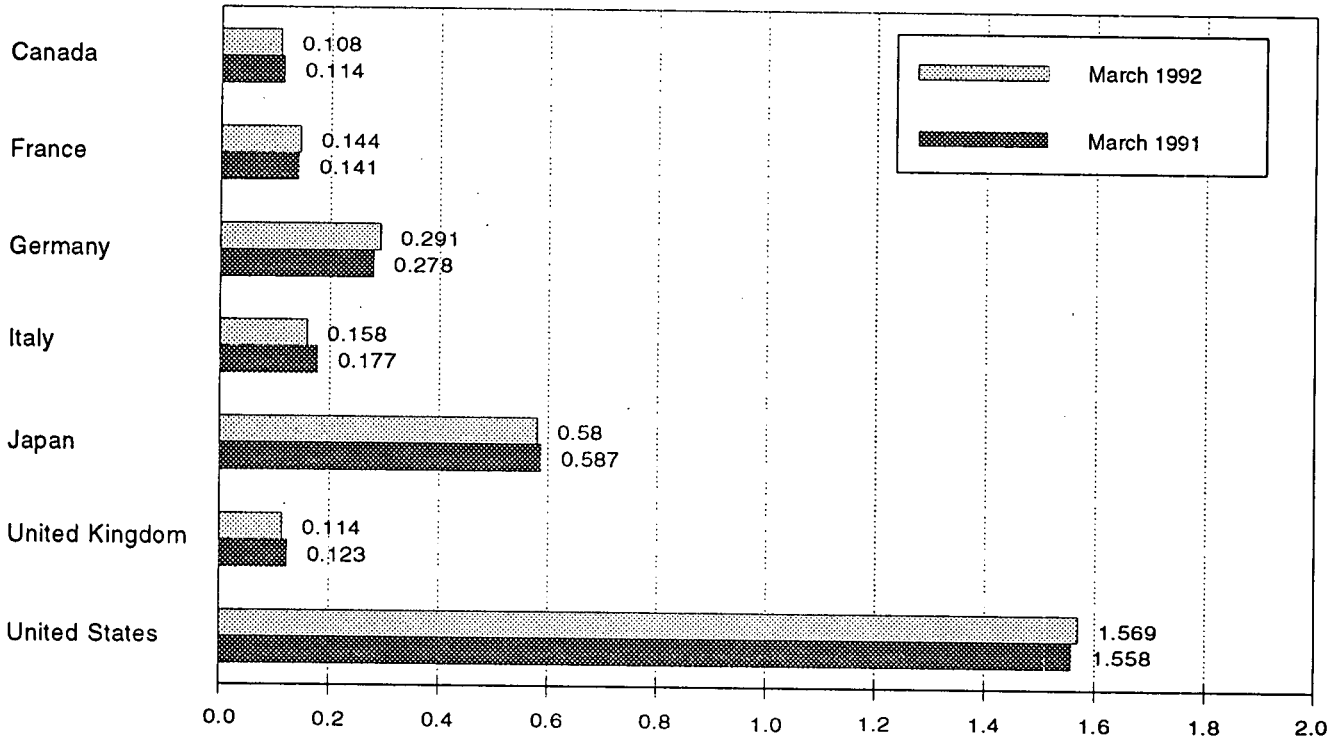
OECD Stocks, End of Year, 1973-1991



OECD Stocks, End of Month



Stocks by Selected Country, End of Month



Note: OECD is the Organization for Economic Cooperation and Development.
Source: Table 10.3.

Table 10.3 Petroleum Stocks in OECD Countries, End of Period

(Million Barrels)

	Canada	France	Germany[a]	Italy	Japan	United Kingdom	United States	OECD Europe[b]	Other OECD[c]	OECD
1973 Year	140	201	181	152	303	156	1,008	1,070	67	2,588
1974 Year	145	249	213	167	370	191	1,074	1,227	64	2,880
1975 Year	174	225	187	143	375	165	1,133	1,154	67	2,903
1976 Year	153	234	208	143	380	165	1,112	1,205	68	2,918
1977 Year	167	239	225	161	409	148	1,312	1,268	68	3,224
1978 Year	144	201	238	154	413	157	1,278	1,219	68	3,122
1979 Year	150	226	272	163	460	169	1,341	1,353	75	3,379
1980 Year	164	243	319	170	495	168	1,392	1,464	72	3,587
1981 Year	161	214	297	167	482	143	1,484	1,337	67	3,531
1982 Year	136	193	272	179	484	125	1,430	1,258	68	3,376
1983 Year	121	153	249	149	470	118	1,454	1,142	68	3,255
1984 Year	128	152	239	159	479	112	1,556	1,130	69	3,362
1985 Year	113	139	233	157	494	123	1,519	1,092	66	3,284
1986 Year	111	127	252	155	509	124	1,593	1,133	72	3,418
1987 Year	126	127	259	169	540	121	1,607	1,130	72	3,474
1988 Year	116	140	266	155	538	112	1,597	1,118	71	3,440
1989 Year	114	138	271	164	577	118	1,581	1,133	71	3,476
1990 January	112	133	273	162	574	119	1,630	1,128	68	3,513
February	116	134	267	158	569	116	1,635	1,134	74	3,528
March	121	131	268	163	581	121	1,642	1,126	71	3,542
April	126	135	270	159	578	114	1,640	1,146	77	3,567
May	121	146	268	155	590	125	1,672	1,174	77	3,634
June	119	147	270	160	579	120	1,685	1,179	75	3,637
July	117	149	271	155	578	119	1,709	1,169	71	3,645
August	114	150	274	167	583	122	1,699	1,181	72	3,649
September	112	150	269	173	585	123	1,698	1,177	73	3,645
October	113	148	268	172	592	119	1,674	1,184	76	3,640
November	115	142	263	167	596	117	1,654	1,150	72	3,587
December	121	140	265	172	590	112	1,621	1,163	73	3,568
1991 January	115	133	276	173	585	115	1,587	1,159	R73	R3,519
February	R114	136	276	169	567	118	1,573	1,154	71	R3,480
March	R114	141	278	177	587	123	1,558	1,176	74	R3,509
April	110	137	274	176	579	119	1,578	1,162	74	3,504
May	107	137	277	173	580	112	1,626	1,151	74	3,538
June	107	143	272	172	585	117	1,634	R1,155	71	3,551
July	118	145	283	168	588	112	1,635	1,164	72	3,578
August	116	151	282	170	604	117	1,648	R1,180	76	3,624
September	117	150	285	169	616	119	1,663	1,189	76	3,662
October	118	148	283	165	620	118	1,644	R1,184	72	R3,637
November	122	151	287	162	601	120	1,647	R1,191	70	R3,631
December	R119	152	286	160	R601	118	1,617	R1,175	R65	R3,576
1992 January	R116	148	R291	156	595	116	1,608	R1,152	68	R3,540
February	R109	144	R291	162	R590	117	1,585	R1,157	66	R3,507
March	108	144	291	158	580	114	1,569	1,144	66	3,467

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

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

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

R=Revised data.

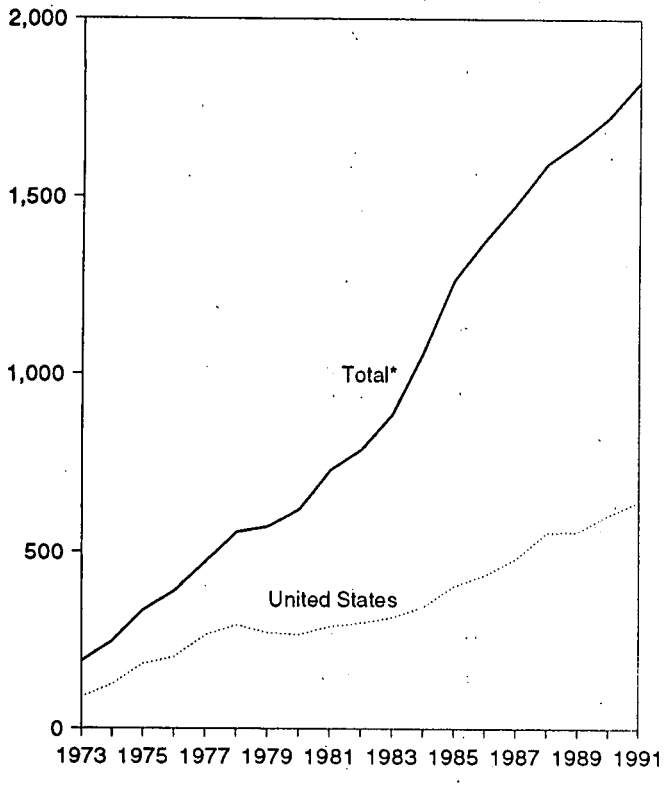
Notes: • Petroleum stocks include crude oil (including strategic reserves), unfinished oils, natural gas plant liquids, and refined products. Petroleum stocks include all nonmilitary petroleum held for storage, regardless of ownership, within each country in bulk terminals, refinery tanks, pipeline tankage, intercoastal tankers, tankers in port, and inland ship bunkers. Data exclude oil held in pipelines (except for the United States), rail and truck cars, sea-going ships' bunkers, service stations, retail stores, and tankers at sea. • The Organization for Economic Cooperation and Development (OECD) consists of Canada, Japan, and the United States, as well as "OECD Europe" and "Other OECD." • U.S. geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding. • In the United States in January 1975, 1981, and 1983, numerous respondents were added to bulk terminal and pipeline surveys, thereby affecting subsequent stocks reported. Using the new basis, the end-of-year U.S. stocks, in million barrels, would have been 1,121 in 1974, 1,425 in 1980, and 1,461 in 1982. • Data through 1989 are final. Subsequent data are preliminary.

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

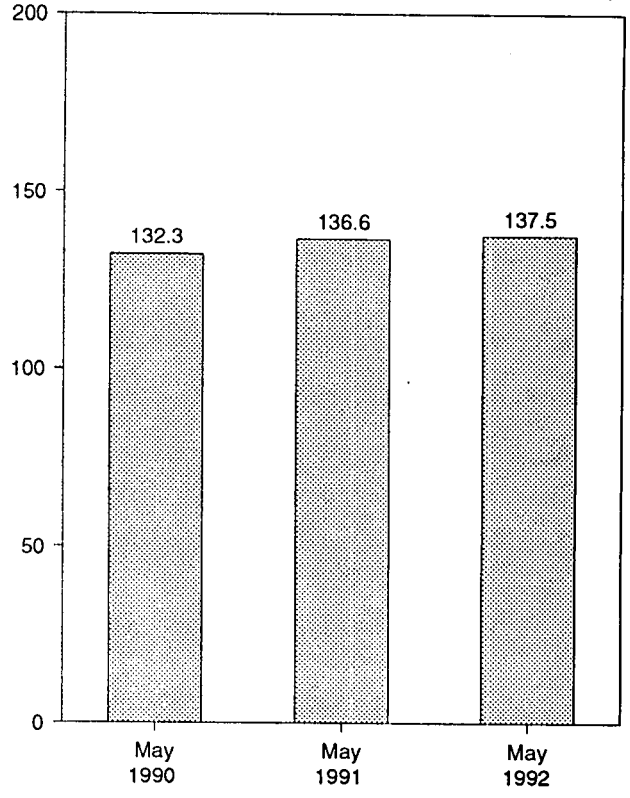
Figure 10.5 Nuclear Electricity Gross Generation

(Billion Kilowatthours)

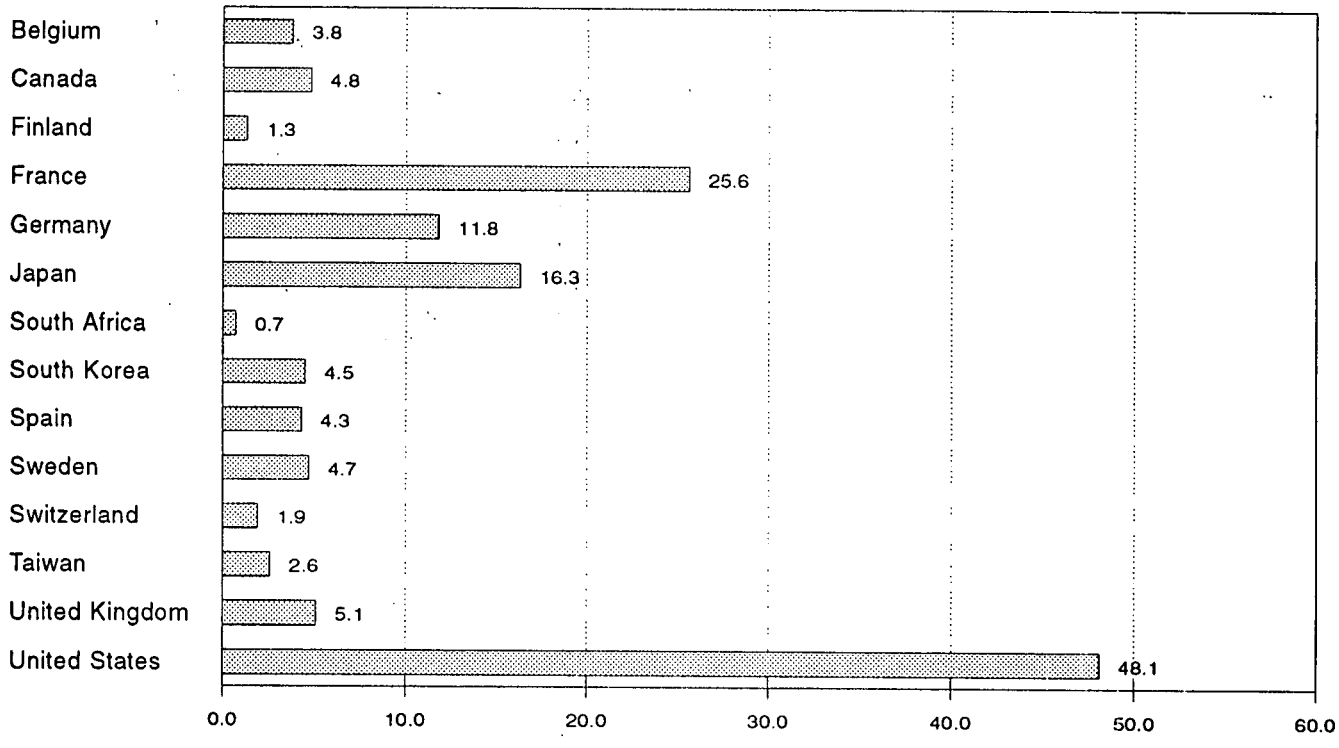
U.S. and Total* Generation, 1973-1991



Total* Generation



Generation by Selected Country, May 1992



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

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

Sources: Tables 10.4a-10.4c.

Table 10.4a Nuclear Electricity Gross Generation: Argentina Through India

(Billion Kilowatthours)

	Argentina	Belgium	Brazil	Canada	Finland	France	Germany[a]	India
1973 Total	0.0	0.0	0.0	15.3	0.0	14.7	11.9	2.5
1974 Total	1.0	.1	.0	15.4	.0	14.7	12.0	1.9
1975 Total	2.5	6.8	.0	13.2	.0	18.3	21.7	2.5
1976 Total	2.6	10.0	.0	18.0	.0	15.8	24.5	3.2
1977 Total	1.6	11.9	.0	26.6	2.7	17.9	36.0	2.8
1978 Total	2.9	12.5	.0	33.0	3.3	30.6	35.7	2.3
1979 Total	2.7	11.4	.0	38.4	6.7	39.9	42.2	3.2
1980 Total	2.3	12.5	.0	40.4	7.0	61.2	43.7	2.9
1981 Total	2.8	12.8	.0	43.3	14.5	105.2	53.4	3.1
1982 Total	1.9	15.6	.1	42.6	16.5	108.9	63.4	2.2
1983 Total	3.4	24.1	.2	53.0	17.4	144.2	65.8	2.9
1984 Total	4.5	27.7	2.1	53.8	18.5	191.2	92.6	4.1
1985 Total	5.8	34.5	3.4	62.9	18.8	224.0	125.8	4.5
1986 Total	5.7	38.6	.1	74.6	18.8	254.3	118.9	5.1
1987 Total	5.2	41.9	1.0	80.6	19.4	265.5	130.2	5.5
1988 Total	5.1	43.1	.3	85.6	19.3	274.9	145.2	6.1
1989 Total	5.0	41.2	1.6	83.2	18.8	302.5	149.6	4.0
1990 January	.5	3.9	.1	7.3	1.8	28.7	15.4	.4
February	.4	3.5	.2	5.8	1.6	23.5	12.8	.5
March	.7	4.2	.0	6.2	1.7	25.8	13.2	.5
April	.6	3.6	.1	5.8	1.7	26.6	12.8	.5
May	.6	2.9	.2	4.4	1.3	23.9	12.2	.4
June	.7	2.9	.2	5.1	1.3	23.3	9.8	.4
July	.7	3.5	.1	6.6	1.6	23.9	10.0	.5
August	.7	3.7	.3	6.2	1.2	23.3	9.3	.5
September	.5	3.3	.1	5.5	1.4	26.5	9.6	.5
October	.6	3.4	.2	7.1	1.8	27.6	13.0	.5
November	.7	3.6	.3	7.0	1.7	25.8	13.9	.5
December	.7	4.3	.2	7.2	1.8	30.4	15.2	.6
Total	7.4	42.7	2.0	75.8	18.9	316.4	147.2	5.9
1991 January	.5	4.2	.2	7.6	1.8	33.5	15.2	.5
February	.6	3.9	.2	7.4	1.6	30.0	13.6	.4
March	.6	4.2	.2	7.8	1.8	28.4	14.3	.6
April	.7	3.5	.2	6.7	1.4	25.3	12.5	.4
May	.7	3.4	.2	7.2	1.5	25.3	10.6	.4
June	.7	2.9	.2	7.1	1.6	23.6	10.0	.4
July	.7	3.5	.2	7.7	1.7	23.9	11.7	.3
August	E.7	3.8	.0	8.6	1.4	24.5	10.0	.4
September	E.7	3.0	.0	6.7	1.3	25.8	10.8	.4
October	E.8	3.2	.0	6.6	1.7	28.3	11.7	.5
November	E.7	3.3	.0	6.3	1.7	29.8	12.9	.6
December	E.5	4.0	.0	6.5	1.7	32.8	14.2	.5
Total	E8.1	42.9	1.4	86.2	19.2	331.3	147.3	5.4
1992 January	.6	4.3	.0	6.9	1.8	33.5	15.6	.5
February	E.7	4.0	.0	6.4	1.7	29.8	15.2	.5
March	E.7	4.0	.0	7.4	1.8	30.7	15.8	.5
April	E.7	3.4	.0	6.4	1.7	28.0	14.1	.4
May	E.7	3.8	.0	4.8	1.3	25.6	11.8	.4
5-Month Total	E3.5	19.4	.0	31.9	8.3	147.6	72.5	2.4
1991 5-Month Total	3.2	19.2	1.1	36.7	8.0	142.6	66.1	2.3
1990 5-Month Total	2.8	18.1	.7	29.4	8.1	128.6	66.4	2.3

See footnotes at end of Table 10.4c.

Table 10.4b Nuclear Electricity Gross Generation: Italy Through Spain

(Billion Kilowatthours)

	Italy	Japan	Mexico	Netherlands	Pakistan	South Africa	South Korea	Spain
1973 Total	3.1	9.4	0.0	1.1	0.5	0.0	0.0	6.5
1974 Total	3.4	18.9	.0	3.3	.6	.0	.0	7.2
1975 Total	3.8	21.3	.0	3.3	.5	.0	.0	7.5
1976 Total	3.8	36.6	.0	3.9	.5	.0	.0	7.6
1977 Total	3.4	28.2	.0	3.7	.3	.0	.1	6.5
1978 Total	4.5	53.1	.0	4.1	.2	.0	2.3	7.6
1979 Total	2.6	62.0	.0	3.5	(s)	.0	3.2	6.7
1980 Total	2.2	82.8	.0	4.2	.1	.0	3.5	5.2
1981 Total	2.7	86.0	.0	3.7	.2	.0	2.9	9.4
1982 Total	6.8	104.5	.0	3.9	.1	.0	3.8	8.8
1983 Total	5.8	109.1	.0	3.6	.2	.0	9.0	10.7
1984 Total	6.9	127.2	.0	3.8	.3	4.2	11.8	23.1
1985 Total	7.0	152.0	.0	3.9	.3	5.9	16.5	28.0
1986 Total	8.7	164.8	.0	4.2	.5	9.3	26.1	37.5
1987 Total	.2	182.8	.0	3.6	.3	6.6	37.8	41.2
1988 Total	.0	173.6	.0	3.7	.2	11.1	38.7	50.4
1989 Total	.0	183.7	.0	4.0	.1	11.7	47.2	56.1
1990 January	.0	15.0	.0	.3	(s)	.6	4.0	5.4
February	.0	12.0	.0	(s)	(s)	.5	4.6	4.5
March	.0	14.6	.0	(s)	(s)	.5	4.8	4.5
April	.0	15.6	.0	(s)	(s)	.6	4.3	4.8
May	.0	16.6	.0	.4	.1	1.2	4.0	4.1
June	.0	16.0	.0	.3	.1	1.2	4.4	3.5
July	.0	18.5	.0	.4	.1	1.1	5.1	4.4
August	.0	19.2	.4	.4	.1	.8	5.2	5.0
September	.0	15.8	.4	.4	(s)	.6	4.2	4.1
October	.0	15.8	.5	.4	.0	.6	4.4	3.9
November	.0	14.8	.4	.4	(s)	.5	4.0	4.7
December	.0	16.7	.4	.4	(s)	.6	3.8	5.4
Total	.0	191.9	2.1	3.5	.4	8.9	52.9	54.2
1991 January	.0	18.0	.5	.3	(s)	.6	4.1	5.3
February	.0	15.2	.4	.2	(s)	.5	4.5	4.6
March	.0	15.6	.5	.1	(s)	1.1	4.5	4.3
April	.0	12.8	.5	.2	(s)	.7	4.1	4.2
May	.0	12.6	.5	.4	.1	.7	4.1	4.8
June	.0	14.8	.4	.4	(s)	.6	4.8	4.4
July	.0	19.5	.4	.4	(s)	.7	5.5	4.7
August	.0	22.1	.4	.4	(s)	.7	5.2	5.2
September	.0	19.7	.0	.1	(s)	.8	4.7	4.5
October	.0	19.1	.0	(s)	.1	1.2	4.9	4.7
November	.0	17.6	.2	.4	(s)	1.1	4.8	4.4
December	.0	18.9	.5	.4	(s)	1.1	5.2	4.7
Total	.0	205.8	4.2	3.3	.4	9.7	56.3	55.6
1992 January	.0	18.5	.5	.4	(s)	.9	4.6	5.4
February	.0	17.1	.4	.3	.0	.4	4.0	4.6
March	.0	17.9	.5	.1	(s)	.4	4.2	4.2
April	.0	16.0	.5	.1	(s)	.4	4.5	3.6
May	.0	16.3	.5	.3	(s)	.7	4.5	4.3
5-Month Total	.0	85.6	2.3	1.2	.1	2.9	21.9	22.1
1991 5-Month Total	.0	74.1	2.3	1.2	.2	3.6	21.3	23.1
1990 5-Month Total	.0	73.8	.0	.8	.1	3.5	21.7	23.2

See footnotes at end of Table 10.4c.

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

(Billion Kilowatthours)

	Sweden	Switzerland	Taiwan	United Kingdom[b]	Total[c] Excluding U.S.	United States	Total[c]
1973 Total	2.1	6.2	0.0	28.2	101.4	87.8	189.3
1974 Total	2.3	7.0	.0	33.8	121.7	124.3	246.0
1975 Total	12.0	7.7	.0	30.5	151.8	182.3	334.1
1976 Total	16.0	7.9	.0	36.8	187.1	201.8	388.9
1977 Total	19.9	8.1	.1	38.1	207.8	264.2	472.0
1978 Total	23.8	8.3	2.7	36.6	263.5	292.4	555.9
1979 Total	21.0	11.8	6.3	38.5	300.1	270.6	570.7
1980 Total	26.7	14.3	8.2	37.2	354.3	265.4	619.8
1981 Total	37.7	15.2	10.7	38.9	442.4	288.5	730.9
1982 Total	38.8	15.0	13.1	44.1	489.9	298.6	788.5
1983 Total	40.4	15.5	18.9	49.6	573.9	313.6	887.5
1984 Total	51.3	16.3	24.3	54.1	717.7	343.8	1,061.5
1985 Total	58.6	22.4	28.7	59.7	862.7	402.7	1,265.4
1986 Total	69.9	22.5	26.9	58.2	944.8	434.1	1,378.9
1987 Total	67.2	23.0	33.1	56.2	1,001.2	479.5	1,480.7
1988 Total	69.4	22.7	29.9	59.4	1,038.7	554.1	1,592.8
1989 Total	65.6	22.8	28.3	71.6	1,097.1	557.0	1,654.1
1990 January	7.4	2.3	2.6	6.0	101.7	57.7	159.4
February	6.6	2.1	2.1	5.8	86.6	52.3	138.8
March	6.4	2.3	2.6	6.2	94.2	48.4	142.6
April	5.4	2.2	2.2	5.2	92.1	40.6	132.7
May	4.8	2.1	2.8	5.2	87.2	45.1	132.3
June	4.3	1.3	2.9	5.2	82.9	48.5	131.4
July	2.7	1.7	3.5	4.3	88.9	54.7	143.6
August	4.2	1.0	3.4	4.9	89.7	57.9	147.6
September	5.2	1.9	3.0	5.9	88.9	51.1	140.0
October	6.7	2.3	3.0	4.8	96.4	45.6	142.0
November	7.0	2.2	2.3	6.4	96.3	47.4	143.7
December	7.4	2.3	2.4	6.9	106.8	54.2	161.0
Total	68.2	23.6	32.9	66.6	1,121.5	603.4	1,724.9
1991 January	7.6	2.3	2.4	6.6	111.2	56.6	167.8
February	6.9	2.1	2.2	6.8	101.2	50.2	151.4
March	7.6	2.3	2.9	6.7	103.3	51.6	154.9
April	6.9	2.2	2.5	5.0	89.6	43.8	133.4
May	5.7	2.0	2.8	4.5	87.3	49.2	136.6
June	4.7	1.1	3.2	6.1	87.0	56.9	143.9
July	4.6	1.5	3.2	5.1	95.4	63.7	159.1
August	5.2	1.0	3.6	5.4	E 98.6	61.4	E 160.0
September	5.5	1.8	3.1	6.6	E 95.5	54.4	E 150.0
October	7.2	2.3	3.1	5.9	E 101.2	50.2	E 151.4
November	7.3	2.2	3.0	5.2	E 101.7	48.7	E 150.4
December	7.6	2.3	3.2	6.6	E 110.5	56.3	E 166.8
Total	76.8	22.9	35.3	70.4	E 1,182.6	643.0	E 1,825.6
1992 January	7.6	2.3	3.1	6.5	113.1	60.6	173.7
February	6.8	2.1	2.2	6.3	E 102.6	55.4	E 158.1
March	7.1	2.2	2.2	8.3	E 107.8	48.3	E 156.1
April	6.7	1.9	2.6	5.0	E 96.0	R 44.3	RE 140.4
May	4.7	1.9	2.6	E 5.1	E 89.4	48.1	E 137.5
5-Month Total	32.9	10.5	12.6	E 31.1	E 508.9	256.8	E 765.7
1991 5-Month Total	34.6	10.8	12.8	29.5	492.6	251.4	744.0
1990 5-Month Total	30.6	10.9	12.3	28.3	461.8	244.0	705.8

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

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

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

E=Estimate. (s)=Less than 0.05 billion kilowatthours.

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

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

Appendix. 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 of 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 by using the thermal conversion factors presented in Tables A2 through A9.

Based on the thermal conversion factor shown for crude oil (production) in Table A3, 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 equals 38.57 million Btu). As calculated from the thermal conversion factor for coal (production) in Table A6, a short ton of coal in 1988 had a heat content of 22 million Btu (1 short ton times 21.823 million Btu per short ton equals 21.823 million Btu). In 1988, therefore, a short ton of crude oil had a heat content almost two times greater than a short ton of coal.

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.

The thermal conversion factors in Tables A2 through A9 are computed from final annual data wherever possible. 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 noted as "preliminary." Sources are described in the section entitled "Thermal Conversion Factor Source Documentation," which follows Table A9 in this appendix.

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

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

[a] 60 percent butane and 40 percent propane.
[b] 70 percent ethane and 30 percent propane.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A3. Approximate Heat Content of Crude Oil, Crude Oil and Products, and Natural Gas Plant Liquids

(Million Btu per Barrel)

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

[a] Preliminary.
Note: Crude oil includes lease condensate.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table A9.

Table A4. Approximate Heat Content of Petroleum Product Weighted Averages

(Million Btu per Barrel)

	Consumption							
	Residential and Commercial	Industrial	Transportation	Electric Utilities	Total	Imports	Exports	LPG Consumption
1973	5.387	5.568	5.395	6.245	5.515	5.983	5.752	3.746
1974	5.377	5.538	5.394	6.238	5.504	5.959	5.773	3.730
1975	5.358	5.528	5.392	6.250	5.494	5.935	5.747	3.715
1976	5.383	5.538	5.395	6.251	5.504	5.980	5.743	3.711
1977	5.389	5.555	5.400	6.249	5.518	5.908	5.796	3.677
1978	5.382	5.553	5.404	6.251	5.519	5.955	5.814	3.669
1979	5.471	5.418	5.428	6.258	5.494	5.811	5.864	3.680
1980	5.468	5.376	5.440	6.254	5.479	5.748	5.841	3.674
1981	5.409	5.313	5.432	6.258	5.448	5.659	5.837	3.643
1982	5.392	5.263	5.422	6.258	5.415	5.664	5.829	3.615
1983	5.286	5.273	5.415	6.255	5.406	5.677	5.800	3.614
1984	5.384	5.223	5.422	6.251	5.395	5.613	5.867	3.599
1985	5.326	5.221	5.423	6.247	5.387	5.572	5.819	3.603
1986	5.357	5.286	5.427	6.257	5.418	5.624	5.839	3.640
1987	5.318	5.253	5.430	6.249	5.403	5.599	5.860	3.659
1988	5.323	5.247	5.434	6.250	5.410	5.618	5.842	3.652
1989	5.260	5.233	5.440	6.241	5.410	5.641	5.869	3.683
1990	5.212	5.272	5.445	6.247	5.411	5.614	5.838	3.625
1991	5.159	5.197	5.441	6.248	5.384	5.636	5.827	3.614
1992[a]	5.159	5.197	5.441	6.248	5.384	5.636	5.827	3.614

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

Table A5. Approximate Heat Content of Natural Gas

(Btu per Cubic Foot)

	Production		Consumption				
	Dry	Marketed (Wet)	Non-Electric Utility Users	Electric Utilities	Total	Imports	Exports
1973	1,021	1,093	1,020	1,024	1,021	1,026	1,023
1974	1,024	1,097	1,024	1,022	1,024	1,027	1,016
1975	1,021	1,095	1,020	1,026	1,021	1,026	1,014
1976	1,020	1,093	1,019	1,023	1,020	1,025	1,013
1977	1,021	1,093	1,019	1,029	1,021	1,026	1,013
1978	1,019	1,088	1,016	1,034	1,019	1,030	1,013
1979	1,021	1,092	1,018	1,035	1,021	1,037	1,013
1980	1,026	1,098	1,024	1,035	1,026	1,022	1,013
1981	1,027	1,103	1,025	1,035	1,027	1,014	1,011
1982	1,028	1,107	1,026	1,036	1,028	1,018	1,011
1983	1,031	1,115	1,031	1,030	1,031	1,024	1,010
1984	1,031	1,109	1,030	1,035	1,031	1,005	1,010
1985	1,032	1,112	1,031	1,038	1,032	1,002	1,011
1986	1,030	1,110	1,029	1,034	1,030	997	1,008
1987	1,031	1,112	1,031	1,032	1,031	999	1,011
1988	1,029	1,109	1,029	1,028	1,029	1,002	1,018
1989	1,031	1,107	1,031	1,030	1,031	1,004	1,019
1990	1,031	1,106	1,030	1,034	1,031	1,012	1,018
1991[a]	1,031	1,106	1,030	1,034	1,031	1,012	1,018
1992[a]	1,031	1,106	1,030	1,034	1,031	1,012	1,018

[a] Preliminary.
Source: 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[b]	Total		
1973	23.376	22.831	26.780	22.586	22.246	23.057	25.000	26.596
1974	23.072	22.479	26.778	22.419	21.781	22.677	25.000	26.700
1975	22.897	22.261	26.782	22.436	21.642	22.506	25.000	26.562
1976	22.855	22.774	26.781	22.530	21.679	22.498	25.000	26.601
1977	22.597	22.919	26.787	22.322	21.508	22.265	25.000	26.548
1978	22.248	22.466	26.789	22.207	21.275	22.017	25.000	26.478
1979	22.454	22.242	26.788	22.452	21.364	22.100	25.000	26.548
1980	22.415	22.543	26.790	22.690	21.295	21.947	25.000	26.384
1981	22.308	22.474	26.794	22.585	21.085	21.713	25.000	26.160
1982	22.239	22.695	26.797	22.712	21.194	21.674	25.000	26.223
1983	22.052	22.775	26.798	22.691	21.133	21.576	25.000	26.291
1984	22.010	22.844	26.799	22.543	21.101	21.573	25.000	26.402
1985	21.870	22.646	26.798	22.020	20.959	21.366	25.000	26.307
1986	21.913	22.947	26.798	22.198	21.084	21.462	25.000	26.292
1987	21.922	23.404	26.799	22.381	21.136	21.517	25.000	26.291
1988	21.823	23.571	26.799	22.360	20.900	21.328	25.000	26.299
1989	21.765	23.650	26.800	22.347	20.848	21.272	25.000	26.160
1990	21.827	23.137	26.799	22.457	20.929	21.331	25.000	26.202
1991[c]	21.690	23.204	26.800	22.276	20.801	21.169	25.000	26.188
1992[c]	21.690	23.204	26.800	22.276	20.801	21.169	25.000	26.188

[a] Includes transportation.
[b] Data shown in this column are not the same as those shown in the *Electric Power Monthly* (EPM). The EPM data report coal receipts; the data shown here represent coal consumption.
[c] Preliminary.
Source: See "Thermal Conversion Factor Source Documentation," which follows Table 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	21.817	23.135	26.800	22.341	20.905	21.324	25.000	26.308
1989	21.759	22.917	26.800	22.324	20.854	21.268	25.000	26.166
1990	21.819	22.678	26.800	22.444	20.935	21.330	25.000	26.207
1991[b]	21.687	22.579	26.800	22.260	20.807	21.167	25.000	26.192
1992[b]	21.687	22.579	26.800	22.260	20.807	21.167	25.000	26.192

[a] Includes transportation.
[b] Preliminary.
Source: 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					
		Consumption				
	Production	Non-Electric Utility Users	Electric Utilities	Total	Imports and Exports	Coal Coke Imports and Exports
1973	22.132	22.674	17.920	21.464	25.400	24.800
1974	21.711	22.330	17.200	20.919	25.400	24.800
1975	21.582	22.272	17.064	20.762	25.400	24.800
1976	22.045	22.618	17.526	21.254	25.400	24.800
1977	22.661	24.101	17.244	22.066	25.400	24.800
1978	23.079	24.388	17.104	22.398	25.400	24.800
1979	23.170	24.272	17.454	22.069	25.400	24.800
1980	22.869	22.719	17.652	21.405	25.400	24.800
1981	23.291	23.749	18.168	22.080	25.400	24.800
1982	23.289	24.578	18.160	22.518	25.400	24.800
1983	22.734	24.536	16.516	21.583	25.400	24.800
1984	23.107	25.128	17.018	22.322	25.400	24.800
1985	22.428	23.031	16.784	20.817	25.400	24.800
1986	23.084	24.399	15.578	21.512	25.400	24.800
1987	23.108	26.293	15.962	22.435	25.400	24.800
1988	23.266	26.021	17.312	22.423	25.400	24.800
1989	23.385	27.196	16.310	22.623	25.400	24.800
1990	22.574	25.199	16.140	21.668	25.400	24.800
1991[a]	22.572	26.011	15.858	21.706	25.400	24.800
1992[a]	22.572	26.011	15.858	21.706	25.400	24.800

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

Table A9. Approximate Heat Rates for Electricity

(Btu per Kilowatthour)

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

[a] This thermal conversion factor is used for hydroelectric power generation and for wood and waste, wind, photovoltaic, and solar thermal energy consumed at electric utilities.
[b] Preliminary.
Source: See "Thermal Conversion Factor Source Documentation," which follows this table.

Thermal Conversion Factor Source Documentation

Approximate Heat Content of Petroleum and Natural Gas Plant Liquids

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

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

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

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

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

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

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

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

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

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

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

Ethane-Propane Mixture. EIA calculated 3.308 million Btu per barrel based on an assumed mixture of 70 percent ethane and 30 percent propane. See "Ethane" and "Propane."

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

Jet Fuel, Kerosene Type. EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel as published for "Jet Fuel, Commercial" by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Energy Markets 1947-1985,* a 1968 release of historical and projected statistics.

Jet Fuel, Naphtha Type. EIA adopted the Bureau of Mines thermal conversion factor of 5.355 million Btu per barrel as published for "Jet Fuel, Military" by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Energy Markets 1947-1985,* a 1968 release of historical and projected statistics.

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

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

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

Motor Gasoline. EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel as published for "Gasoline, Motor Fuel" by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Energy Markets 1947-1985,* a 1968 release of historical and projected statistics.

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

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

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

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

Petrochemical Feedstocks, Oils Equal to or Greater Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.825 million Btu per barrel, equal to the thermal conversion factor for distillate fuel oil. See "Distillate Fuel Oil."

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

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

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

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

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

Petroleum Products, Consumption by Residential and Commercial Users. Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the residential and commercial sector, weighted by the estimated quantity of each petroleum product consumed in the residential and commercial sector. The quantity of petroleum products consumed is estimated in the State Energy Data System as documented in the *State Energy Data Report.*

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

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

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

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

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

Propane. EIA adopted the Bureau of Mines thermal conversion factor of 3.836 million Btu per barrel as

published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

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

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

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

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

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

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

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

Approximate Heat Content of Natural Gas

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

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

Natural Gas, Consumption by Non-Electric Utility Users. 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-423, EIA-759, and predecessor forms.

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

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

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

Natural Gas Production, Marketed (Wet). Calculated annually by EIA by adding the heat content of dry natural gas production and the total heat content of natural gas plant liquids production and dividing this sum by the total quantity of marketed (wet) natural gas production.

Approximate Heat Content of Coal and Coal Coke

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

Anthracite, Consumption by Non-Electric Utility Users. 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. EIA assumed the anthracite imports and exports to be freshly mined

anthracite having an estimated heat content of 25.40 million Btu per short ton.

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

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

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

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

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

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

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

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

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

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

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

Coal, Consumption by Non-Electric Utility Users. 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. Calculated annually by EIA by dividing the sum of the heat content of bituminous coal and lignite and anthracite exported by the sum of their respective tonnages.

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

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

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

Approximate Heat Rates for Electricity

Fossil-Fueled Steam-Electric Plant Generation. There is no generally accepted practice for measuring the thermal conversion rates for power plants that generate electricity from hydroelectric, wood and waste, wind, photovoltaic, or solar thermal energy sources. EIA has selected a rate that is equal to the prevailing annual average heat rate factor for fossil-fueled steam-electric power plants in the United States. By using that factor, it is possible to evaluate fossil fuel requirements for replacing those sources during periods of interruption such as droughts. The heat content of a kilowatthour of electricity produced, regardless of the generation process, is 3,412 Btu per kilowatthour. 1973-1990: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published by EIA in *Electric Plant Cost and Power Production Expenses 1990*, Table 11. 1991 forward: 1990 value used as an estimate.

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

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

Glossary

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

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

ASTM: The American Society for Testing and Materials.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Commercial Sector: The commercial sector, as defined economically, consists of business establishments that are not engaged in transportation or in manufacturing or other types of industrial activity (agriculture, mining, or construction). Commercial establishments include hotels, motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; religious and nonprofit organizations; health, social, and educational institutions; and Federal, State, and local governments. Street lights, pumps, bridges, and public services are also included if the establishment operating them is considered commercial. SIC codes used to classify an establishment as commercial are 50 through 87, 89, and 91 through 97.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Distillate Fuel Oil: A general classification for one of the petroleum fractions produced in conventional distillation operations. Included are products known as No. 1, No. 2, and No. 4 fuel oils and No. 1, No. 2, and No. 4 diesel fuels. It is used primarily for space heating, on-and off-highway diesel engine fuel (including railroad engine fuel and fuel for agricultural machinery), and electric power generation.

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

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

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

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

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

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

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

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

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

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

Electric Utilities: All privately owned companies and all publicly owned agencies engaged in the generation, transmission, or distribution of electric power for public use. Publicly owned agencies include municipal electric utilities; Federal power projects, such as the Tennessee Valley Authority (TVA); rural electrification cooperatives; power districts; and State power projects.

Electric Utility: A corporation, person, agency, authority, or other legal entity or instrumentality that owns and/or operates facilities within the United States, its territories, or Puerto Rico for the generation, transmission, distribution, or sale of electric energy, primarily for use by the public. An entity that solely operates qualifying facilities under the Public Utility Regulatory Policies Act of 1978 is not considered an electric utility.

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

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

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

kilowatthours, while heat energy is usually measured in British thermal units.

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

Energy Consumption, End-Use: Primary end-use energy consumption is the sum of fossil fuel consumption by the four end-use sectors (residential, commercial, industrial, and transportation) and generation of hydroelectric power by nonelectric utilities. **Net end-use energy consumption** includes electric utility sales to those sectors but excludes electrical system energy losses. **Total end-use energy consumption** includes both electric utility sales to the four end-use sectors *and* electrical system energy losses.

Energy Consumption, Total: The sum of fossil fuel consumption by the five sectors (residential, commercial, industrial, transportation, and electric utility) plus hydroelectric power, nuclear electric power, net imports of coal coke, and electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

Energy Source: A substance, such as petroleum, natural gas, or coal, that supplies heat or power. In Energy Information Administration reports, electricity and renewable forms of energy, such as biomass, geothermal, wind, and solar, are considered to be energy sources.

Ethane: A normally gaseous straight-chain hydrocarbon (C_2H_6). It is a colorless, paraffinic gas that boils at a temperature of -127.48° F. It is extracted from natural gas and refinery gas streams.

Ethylene: An olefinic hydrocarbon (C_2H_4) recovered from refinery processes or petrochemical processes.

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

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

f.a.s.: See **Free Alongside Ship.**

Federal Energy Regulatory Commission (FERC): The Federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. FERC is an independent regulatory agency within the Department of Energy and is the successor to the Federal Power Commission.

Federal Power Commission (FPC): The predecessor agency of the Federal Energy Regulatory Commission. The Federal Power Commission was created by an Act of Congress under the Federal Water Power Act on June 10, 1920. It was charged originally with regulating the electric power and natural gas industries. It was abolished on September 30, 1977, when the Department of Energy was created. Its functions were divided between the Department of Energy and the Federal Energy Regulatory Commission, an independent regulatory agency.

First Purchase Price: The marketed first sales price of domestic crude oil, consistent with the removal price defined by the provisions of the Windfall Profits Tax on Domestic Crude Oil (Public Law 96-223, Sec. 4998 (c)).

Flared Natural Gas: Natural gas burned in flares on the base site or at gas processing plants.

f.o.b.: See **Free On Board.**

Footage Drilled: Total footage for wells in various categories, as reported for any specified period, includes (1) the deepest total depth (length of well bores) of all wells drilled from the surface, (2) the total of all bypassed footage drilled in connection with reported wells, and (3) all new footage drilled for directional sidetrack wells. Footage reported for directional sidetrack wells does not include footage in the common bore, which is reported as footage for the original well. In the case of old wells drilled deeper, the reported footage is that which was drilled below the total depth of the old well.

Fossil Fuel: Any naturally occurring organic fuel, such as petroleum, coal, and natural gas.

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

Free Alongside Ship (f.a.s.): The value of a commodity at the port of exportation, generally including the purchase price, plus all charges incurred in placing the commodity alongside the carrier at the port of exportation.

Free on Board (f.o.b.): A transaction whereby the seller makes the product available within an agreed-on period at a given port at a given price. It is the responsibility of the buyer to arrange for the transportation and insurance.

Full-Power Operation: Operation of a nuclear generating unit at 100 percent of its design capacity. Full-power operation precedes commercial operation.

Gasohol: A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol) limited to 10 percent by volume of alcohol. Gasohol is included in finished leaded and unleaded motor gasoline.

Gas-Turbine Electric Power Plant: A plant in which the prime mover is a gas turbine. A gas turbine typically consists of an axial-flow air compressor, one or more combustion chambers where liquid or gaseous fuel is burned and the hot gases expand to drive the generator and then are used to run the compressor.

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

Geothermal Energy: Energy from the internal heat of the Earth, which may be residual heat, friction heat, or a result of radioactive decay. The heat is found in rocks and fluids at various depths and can be extracted by drilling and/or pumping.

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

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.

Heat Content of a Quantity of Fuel, Gross: The total amount of heat released when a fuel is burned. Coal, crude oil, and natural gas all include chemical compounds of carbon and hydrogen. When those fuels are burned, the carbon and hydrogen combine with oxygen in the air to produce carbon dioxide and water. Some of the energy released in burning goes into transforming the water into steam and is usually lost. The amount of heat spent in transforming the water into steam is counted as part of gross heat content but is not counted as part of net heat content. Also referred to as the higher heating value. Btu conversion factors typically used in EIA represent gross heat content.

Heat Content of a Quantity of Fuel, Net: The amount of useable heat energy released when a fuel is burned under conditions similar to those in which it is normally used. Also referred to as the lower heating value. Btu conversion factors typically used in EIA represent gross heat content.

Heavy Oil: The fuel oils remaining after the lighter oils have been distilled off during the refining process. Except for start-up and flame stabilization, virtually all petroleum used in steam-electric power plants is heavy oil.

Hydrocarbon: An organic chemical compound of hydrogen and carbon in the gaseous, liquid, or solid phase. The molecular structure of hydrocarbon compounds varies from the simplest (methane, the primary constituent of natural gas) to the very heavy and very complex.

Hydroelectric Power: The production of electricity from the kinetic energy of falling water.

Hydroelectric Power Plant: A plant in which the turbine generators are driven by falling water.

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

Industrial Sector: The industrial sector comprises manufacturing industries, which make up the largest part of the sector, along with mining, construction, agriculture, fisheries, and forestry. Establishments in the sector range from steel mills, to small farms, to companies assembling electronic components. The SIC codes used to classify establishments as industrial are 1 through 39.

Internal Combustion Electric Power Plant: A power plant in which the prime mover is an internal combustion engine. Diesel or gas-fired engines are the principal types used in electric power plants. The plant is usually operated during periods of high demand for electricity.

Jet Fuel: The term includes kerosene-type jet fuel and naphtha-type jet fuel. Kerosene-type jet fuel is a kerosene-quality product used primarily for commercial turbojet and turboprop aircraft engines. Naphtha-type jet fuel is a fuel in the heavy naphthas range used primarily for military turbojet and turboprop aircraft engines.

Kerosene: A petroleum distillate that has a maximum distillation temperature of 401° F at the 10-percent recovery point, a final boiling point of 572° F, and a minimum flash point of 100° F. Included are the two grades designated in ASTM D3699 (No. 1-K and No. 2-K) and all grades of kerosene called range or stove oil. Kerosene is used in space heaters, cook stoves, and water heaters; it is suitable for use as an illuminant when burned in wick lamps.

Lease and Plant Fuel: Natural gas used in well, field, and lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors), and as fuel in natural gas processing plants.

Lease Condensate: A natural gas liquid recovered from gas well gas (associated and non-associated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons.

Light Oil: Lighter fuel oils distilled off during the refining process. Virtually all petroleum used in internal combustion and gas-turbine engines is light oil.

Lignite: A brownish-black coal of low rank with a high content of moisture and volatile matter. Often referred to as brown coal. It is used almost exclusively for electric power generation. It conforms to ASTM Specification D388-84 for lignite.

Liquefied Natural Gas (LNG): Natural gas (primarily methane) that has been liquefied by reducing its temperature to -260° F at atmospheric pressure.

Liquefied Petroleum Gases (LPG): Ethane, ethylene, propane, propylene, normal butane, butylene, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate new natural gas plant liquids.

Low-Power Testing: The period of time between a nuclear generating unit's initial fuel loading date and the issuance of its operating (full-power) license. The maximum level of operation during that period is 5 percent of the unit's design thermal rating.

Lubricants: Substances used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacturing of other products or as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Excluded are byproducts of lubricating oil refining, such as aromatic extracts derived from solvent extraction or tars derived from deasphalting. Included are all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. Lubricants categories are paraffinic and naphthenic.

Miscellaneous Petroleum Products: All finished petroleum products not classified elsewhere—for example, petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils.

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

Motor Gasoline, Finished: A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that has been blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as given in ASTM Specification D439 or Federal Specification VV-G-1690B, includes a range in distillation temperatures from 122 to 158° F at the 10-percent recovery point and from 365 to 374° F at the 90-percent recovery point. The Reid Vapor Pressure ranges from 9 to 15 pounds per square inch. Motor gasoline includes finished leaded gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

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

Motor Gasoline, Finished Leaded: Motor gasoline that contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Motor Gasoline, Finished Leaded Premium: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than 90 and containing more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon.

Motor Gasoline, Finished Leaded Regular: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than or equal to 87 and less than or equal to 90 and containing more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

Motor Gasoline, Finished Unleaded: Motor gasoline containing not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes unleaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Motor Gasoline, Finished Unleaded Midgrade: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than or equal to 88 and less than or equal to 90 and containing not more than 0.05 gram of phosphorus per gallon.

Motor Gasoline, Finished Unleaded Premium: Motor gasoline having an antiknock index, calculated as (R+M)/2, greater than 90 and containing not more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

Motor Gasoline, Finished Unleaded Regular: Motor gasoline having an antiknock index, calculated as (R+M)/2, of 87 containing not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon.

Motor Gasoline Retail Prices: Motor gasoline prices calculated each month by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index (CPI). Those prices are collected in 85 urban areas selected to represent all urban consumers—about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-service).

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

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

Natural Gas, Dry: The marketable portion of natural gas production, which is obtained by subtracting extraction losses, including natural gas liquids removed at natural gas processing plants, from total production.

Natural Gas Marketed Production: Gross withdrawals of natural gas from production reservoirs, less gas used for reservoir repressuring; nonhydrocarbon gases removed in treating and processing operations; and quantities vented and flared.

Natural Gas Plant Liquids (NGPL): Natural gas liquids recovered from natural gas in processing plants and, in some situations, from natural gas field facilities, as well as those extracted by fractionators. Natural gas plant liquids are defined according to the published specifications of the Gas Processors Associations and the American Society for Testing and Materials as follows: ethane, propane, normal butane, isobutane, pentanes plus, and other products from natural gas processing plants (i.e., products meeting the standards for finished petroleum products produced at natural gas processing plants, such as finished motor gasoline, finished aviation gasoline, special naphthas, kerosene, distillate fuel oil, and miscellaneous products).

Natural Gas Wellhead Price: The wellhead price of natural gas is calculated by dividing the total reported value at the wellhead by the total quantity produced as reported by the appropriate agencies of individual producing States and the U.S. Minerals Management Service. The price includes all costs prior to shipment from the lease, including gathering and compression costs, in addition to State production, severance, and similar charges.

Natural Gas, Wet: Natural gas prior to the extraction of liquids and other miscellaneous products.

Net Consumption: See **Energy Consumption, End-Use.**

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

Nuclear Electric Power Plant: A single-unit or multiunit facility in which heat produced in one or more reactors by the fissioning of nuclear fuel is used to drive one or more steam turbines.

Nuclear Reactor: An apparatus in which the nuclear fission chain can be initiated, maintained, and controlled so that energy is released at a specific rate. The reactor includes fissionable material (fuel), such as uranium or plutonium; fertile material; moderating material (unless it is a fast reactor); a heavy-walled pressure vessel; shielding to protect personnel; provision for heat removal; and control elements and instrumentation.

Offshore: That geographic area that lies seaward of the coastline. In general, the coastline is the line of ordinary low water along with that portion of the coast that is in direct contact with the open sea or the line marking the seaward limit of inland water.

Oil: See **Crude Oil (Including Lease Condensate).**

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

Operable (nuclear): A U.S. nuclear generating unit is considered operable after it completes low-power testing and is issued a full-power operating license by the Nuclear Regulatory Commission. A foreign nuclear generating unit is considered operable once it has generated electricity to the grid.

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

Organization of Petroleum Exporting Countries (OPEC): Countries that have organized for the purpose of negotiating with oil companies on matters of oil production, prices, and future concession rights. Current members are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Pentanes Plus: A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. 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 residue that is the final product of the condensation process in cracking. The product is either marketable petroleum coke or catalyst petroleum coke.

Petroleum Coke, Catalyst: The carbonaceous residue that is deposited on and deactivates the catalyst used in many catalytic operations (e.g., catalytic cracking). Carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon, which is used as a fuel in the refining process. That carbon or coke is not recoverable in a concentrated form.

Petroleum Coke, Marketable: Those grades of coke produced in delayed or fluid cokers that may be recovered as relatively pure carbon. Marketable petroleum coke may be sold as is or further purified by calcining.

Petroleum Consumption: The sum of all refined petroleum products supplied. For each refined petroleum product, the amount supplied is calculated by adding production and imports, then subtracting changes in primary stocks (net withdrawals are a plus quantity and net additions are a minus quantity) and exports.

Petroleum Imports: Imports of petroleum into the 50 States and the District of Columbia from foreign countries and from Puerto Rico, the Virgin Islands, and other U.S. territories and possessions. Included are imports for the Strategic Petroleum Reserve and withdrawals from bonded warehouses for onshore consumption, offshore bunker use, and military use. Excluded are receipts of foreign petroleum into bonded warehouses and into U.S. territories and U.S. Foreign Trade Zones.

Petroleum Products: Products obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Petroleum Products Supplied: See **Petroleum Consumption.**

Petroleum Stocks, Primary: For individual products, quantities that are held at refineries, in pipelines, and at bulk terminals that have a capacity of 50,000 barrels or more, or that are in transit thereto. Stocks held by product retailers and resellers, as well as tertiary stocks held at the point of consumption, are excluded. Stocks of individual products held at gas processing plants are excluded from individual product estimates but are included in other oils estimates and total.

Photovoltaic and Solar Thermal Energy (as used at electric utilities): Energy radiated by the sun as electromagnetic waves (electromagnetic radiation) that is converted at electric utilities into electricity by means of solar (photovoltaic) cells or concentrating (focusing) collectors.

Primary Consumption: See **Energy Consumption, End-Use.**

Propane: A normally gaseous straight-chain hydrocarbon (C_3H_8). It is a colorless paraffinic gas that boils at a temperature of -43.67° F. It is extracted from natural gas or refinery gas streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HD-5 propane.

Propylene: An olefinic hydrocarbon (C_3H_6) recovered from refinery or petrochemical processes.

Refiner Acquisition Cost of Crude Oil: The cost of crude oil to the refiner, including transportation and fees. The composite cost is the weighted average of domestic and imported crude oil costs.

Refinery (petroleum): An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Renewable Energy: Energy obtained from sources that are essentially inexhaustible (unlike, for example, the fossil fuels, of which there is a finite supply). Renewable sources of energy include wood, waste, photovoltaic, and solar thermal energy.

Reservoir Repressuring: The injection of a pressurized fluid (such as air, gas, or water) into oil and gas reservoir formations to effect greater ultimate recovery.

Residential Sector: The residential sector is considered to consist of all private residences, whether occupied or vacant, owned or rented, including single-family homes, multifamily housing units, and mobile homes. Secondary homes, such as summer homes, are also included. Institutional housing, such as school dormitories, hospitals, and military barracks, generally are not included in the residential sector; they are included in the commercial sector. The SIC code used to classify an establishment as residential is 88 (Household).

Residual Fuel Oil: The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations and that conform to ASTM Specifications D396 and 975. Included are No. 5, a residual fuel oil of medium viscosity; Navy Special, for use in steam-powered vessels in government service and in shore power plants; and No. 6, which includes Bunker C fuel oil and is used for commercial and industrial heating, electricity generation, and to power ships. Imports of residual fuel oil include imported crude oil burned as fuel.

Road Oil: Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades, from 0, the most liquid, to 5, the most viscous.

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

Short Ton (coal): A unit of weight equal to 2,000 pounds.

SIC: See **Standard Industrial Classification.**

Solar Energy: The radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.

Standard Industrial Classification (SIC): A set of codes developed by the Office of Management and Budget which categorizes industries into groups with similar economic activities.

Startup Test Phase of Nuclear Power Plant: A nuclear power plant that has been licensed by the Nuclear Regulatory Commission to operate but is still in the initial testing phase, during which the production of electricity may not be continuous. In general, when the electric utility is satisfied with the plant's performance, it formally accepts the plant from the manufacturer and places it in commercial operation status. A request is then submitted to the appropriate utility rate commission to include the power plant in the rate base calculation.

Steam-Electric Power Plant: A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

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

Subbituminous Coal: A dull, black coal of rank intermediate between lignite and bituminous coal. It conforms to ASTM Specification D388-84 for subbituminous coal.

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

Synthetic Natural Gas (SNG): A manufactured product chemically similar in most respects to natural gas, resulting from the conversion or reforming of petroleum hydrocarbons. It may easily be substituted for or interchanged with pipeline quality natural gas. Also referred to as substitute natural gas.

Total Consumption: See **Energy Consumption, End-Use.**

Transportation Sector: 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. The SIC codes used to classify establishments as belonging to the transportation sector are 40 through 49.

Unaccounted-for Crude Oil: Arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production phase imports, less changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Underground Storage: The storage of natural gas in underground reservoirs at a different location from which it was produced.

United States: Unless otherwise noted, "United States" in this publication means the 50 States and the District of Columbia. U.S. exports include shipments to U.S. territories, and imports include receipts from U.S. territories.

Vented Natural Gas: Gas released into the air on the base site or at processing plants.

Wellhead Price: The value of crude oil or natural gas at the mouth of the well.

Wind Energy (as used at electric utilities): The kinetic energy of wind converted at electric utilities into mechanical energy by wind turbines (i.e., blades rotating from a hub) that drive generators to produce electricity for distribution.

Wood and Waste (as used at electric utilities): Wood energy, garbage, bagasse, sewerage gas, and other industrial, agricultural, and urban refuse used to generate electricity for distribution.

Wood Energy: Wood and wood products used as fuel, including round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal, pulp waste, and spent pulping liquor.

Working Gas: The gas in a reservoir that is in addition to the base (cushion) gas. It may or may not be completely withdrawn during any particular withdrawal season. Conditions permitting, the total working capacity could be used more than once during any given season.

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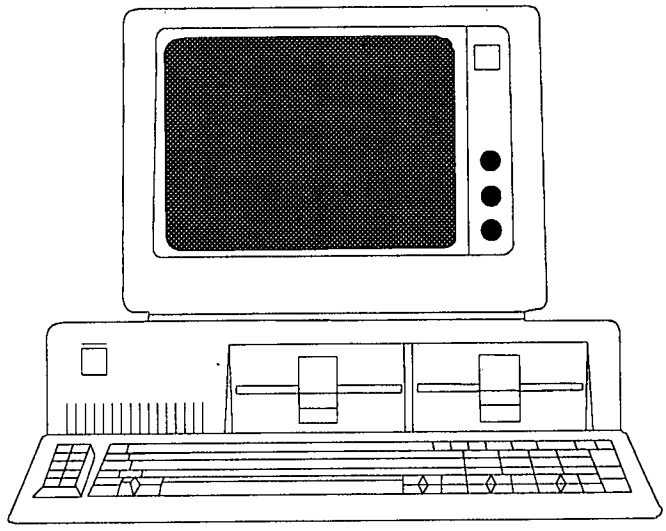

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