

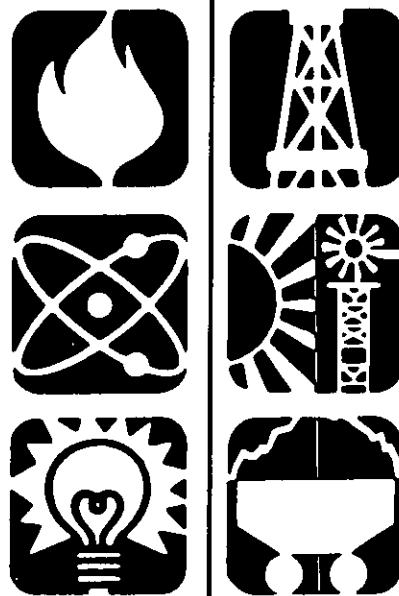
DOE/EIA-0035(83/12 [2])

# Monthly Energy Review

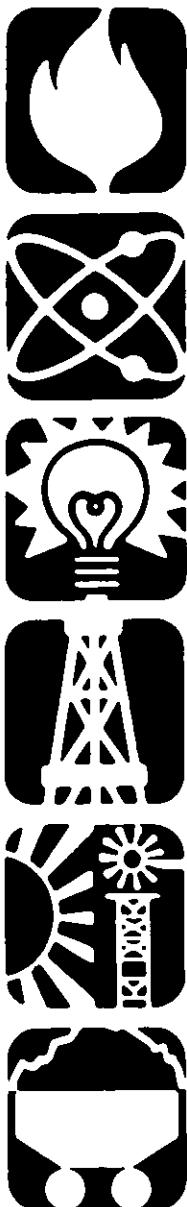
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See Special Notice Inside



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

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

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

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# Special Notice

## Publications Date Change

The Energy Information Administration (EIA) is undertaking a program to make the dates of its periodicals consistent and explicit. Beginning in January 1984, issues of all EIA periodicals will be dated according to the bulk of the data in them, NOT (as in the past) the date of publication. The data date will be displayed prominently on covers, title pages, and spines. The publication date will be less prominently displayed.

Some monthly periodicals will have to have more than one December issue (designated December 1983 [1], December 1983 [2], etc.). Once the bulk of the data in these periodicals is vintage January 1984, the periodical will be dated January 1984. In the case of the *Monthly Energy Review*, for example, there will be four "December 1983" issues; the January 1984 issue will be published in April. Other monthly periodicals will follow similar procedures.

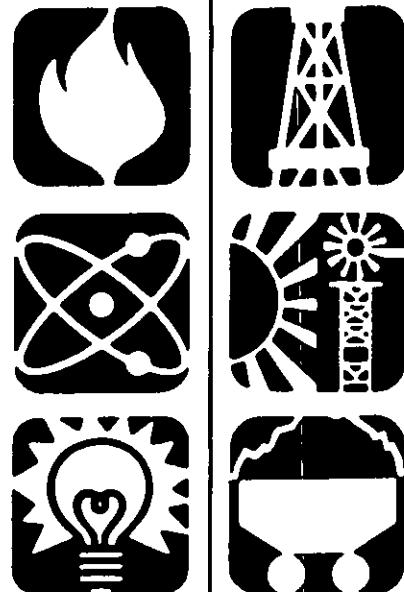


# Monthly Energy Review

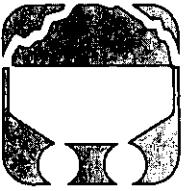
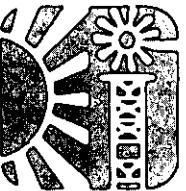
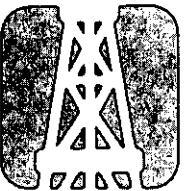
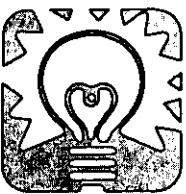
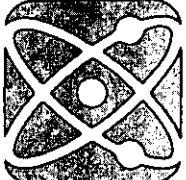
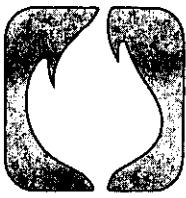
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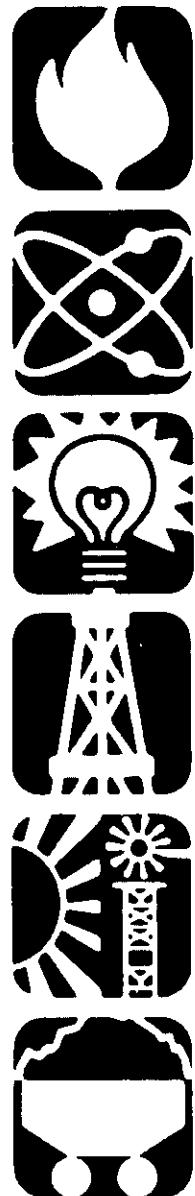
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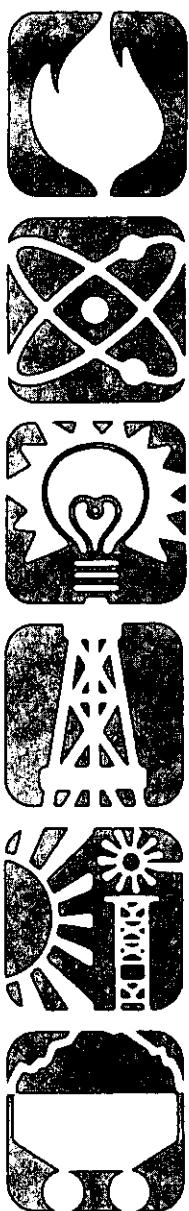
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## Articles

Feature articles on energy-related subjects and highlights from recently published Energy Information Administration reports are often included in this publication. The following articles and highlights have appeared in previous issues:

Energy Consumption .....	March 1975
Nuclear Power .....	April 1975
The Price of Crude Oil.....	June 1975
U.S. Coal Resources and Reserves .....	July 1975
Propane, A National Energy Resource.....	September 1975
Short-Term Energy Supply and Demand Forecasting at FEA .....	October 1975
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Exploring for Oil and Gas .....	November 1983

# The Influence of Federal Actions on Petroleum Exploration

by  
Bob Eberle\* and David Morehouse\*  
Energy Information Administration

The pervasive nature of oil and gas in everyday life has resulted in an intricate mix of technology, resources, finance, philosophical and legislative conflict, foreign policy needs, and fluctuating government goals. The complex interweaving of these forces has influenced government actions that in turn have powerfully affected the U.S. energy industry for the past 50 years. The November 1983 *Monthly Energy Review* (MER) feature article, "Exploring for Oil and Gas," discussed geologic and technical factors that affect petroleum exploration. This article focuses on the range and variety of government actions affecting the domestic petroleum production industry in terms of benefit expectations and incentives to explore and drill.

Government's relationship to the private sector has been an issue in the petroleum industry, as in other industries. For example, import and production quotas have been used as effective government actions and have had the same effect on domestic production as a subsidy and the same effect on domestic consumption as a consumption tax. Tax policy also has been a focus for government action. Consumer taxes directly, and producer taxes indirectly, have resulted in higher retail prices for both oil and gas. Special corporate income tax provisions were used for many years to encourage production. Currently, a direct tax on production acts in the opposite direction. In the 1970's, the occurrence of energy shortages raised the question of legislative rationing versus allocation by price. Discussion of resource development decisions versus environmental preservationist goals has heightened public awareness of Federal resource policy. Federal influence on resource area availability becomes a significant factor in oil exploration decisions, as federally controlled

lands become a larger share of the undeveloped resource base.

On the international scene, rather traditional questions have helped shape Federal policy. The relationship of Mideast oil to the world balance of power remains a major reason for interest by the major powers in that otherwise barren land. The questions of energy independence and energy supply security have done much to shape U.S. energy policy in the past decade.

Historically, government's strongest and most enduring energy interest has been in the production, distribution, and consumption of oil. Out of this interest evolved, from the 1930's to the present, a succession of domestic energy-economic policies.

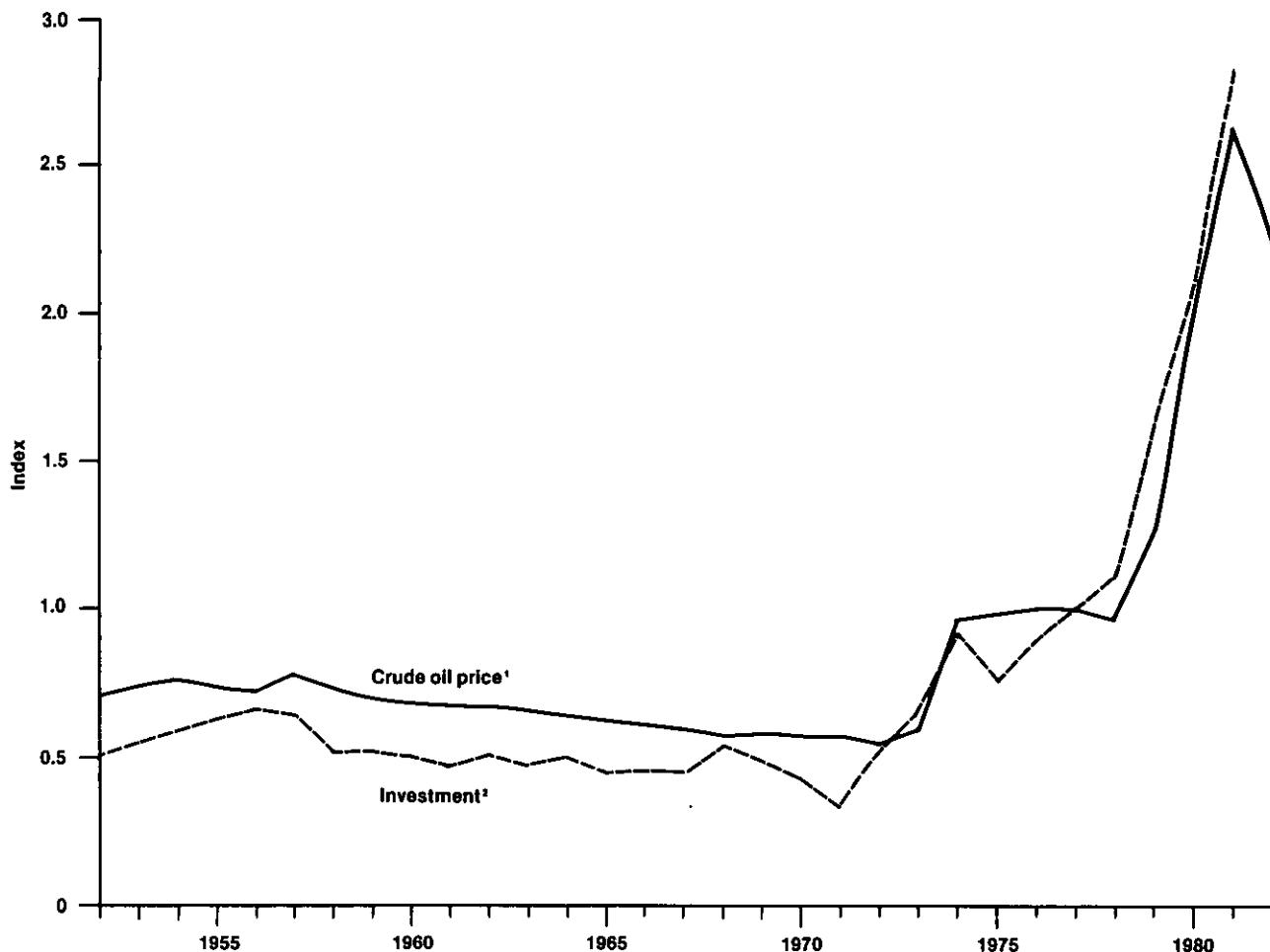
Most of these policies dealt primarily with the production of oil and gas, and altered the petroleum industry's future expectations, which in turn altered its exploration investment decisions. As noted in the November 1983 MER article, deciding to drill for oil or gas is fundamentally a capital investment decision, involving an outlay of cash in return for an expected flow of monetary benefits. For such an investment decision, timing and volume of cash flow, time value of money, alternative uses for the capital involved, and the success versus failure risk associated with the project must be considered. Figure 1 illustrates the extent to which exploration and development investment appears to have been affected by the price of crude oil.

Government's energy-economic policies can affect the exploration decision process by changing industry's expectations regarding the discounted benefits, costs, or risks associated with exploration, development of discoveries for production, and production itself. This effect can be accom-

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\*Mr. Eberle is an Energy Information Administration (EIA) Special Projects Officer, and Mr. Morehouse is an EIA Supervisory Geologist.

**Figure 1. The Relationship of Exploration and Development Investment to Crude Oil Price, 1952-1982**



<sup>1</sup> Average domestic crude oil price, normalized and deflated to 1977 base year.

<sup>2</sup> Domestic investment in oil and gas exploration and development, normalized and deflated to 1977 base year.

Sources: For crude oil price data, 1952-1982—Energy Information Administration, 1982 Annual Energy Review, DOE/EIA-0384(82), Washington, D.C., 1983. For investment data, 1952-1979—Chase Manhattan Bank, Capital Investment in the World Petroleum Industry, New York, 1980. For 1980-1981, U.S. Department of Commerce, Bureau of the Census, Annual Survey of Oil and Gas, Washington, D.C., 1981.

plished through modification of expected product price as well as alteration of the expected benefits or costs through tax policy, land management policy, and trade policy. All of these have been used alone or in combination. The following discussion traces the principal influence of these Federal policies on domestic oil exploration since their inception. Figure 2 provides a time line showing when various policies were initiated.

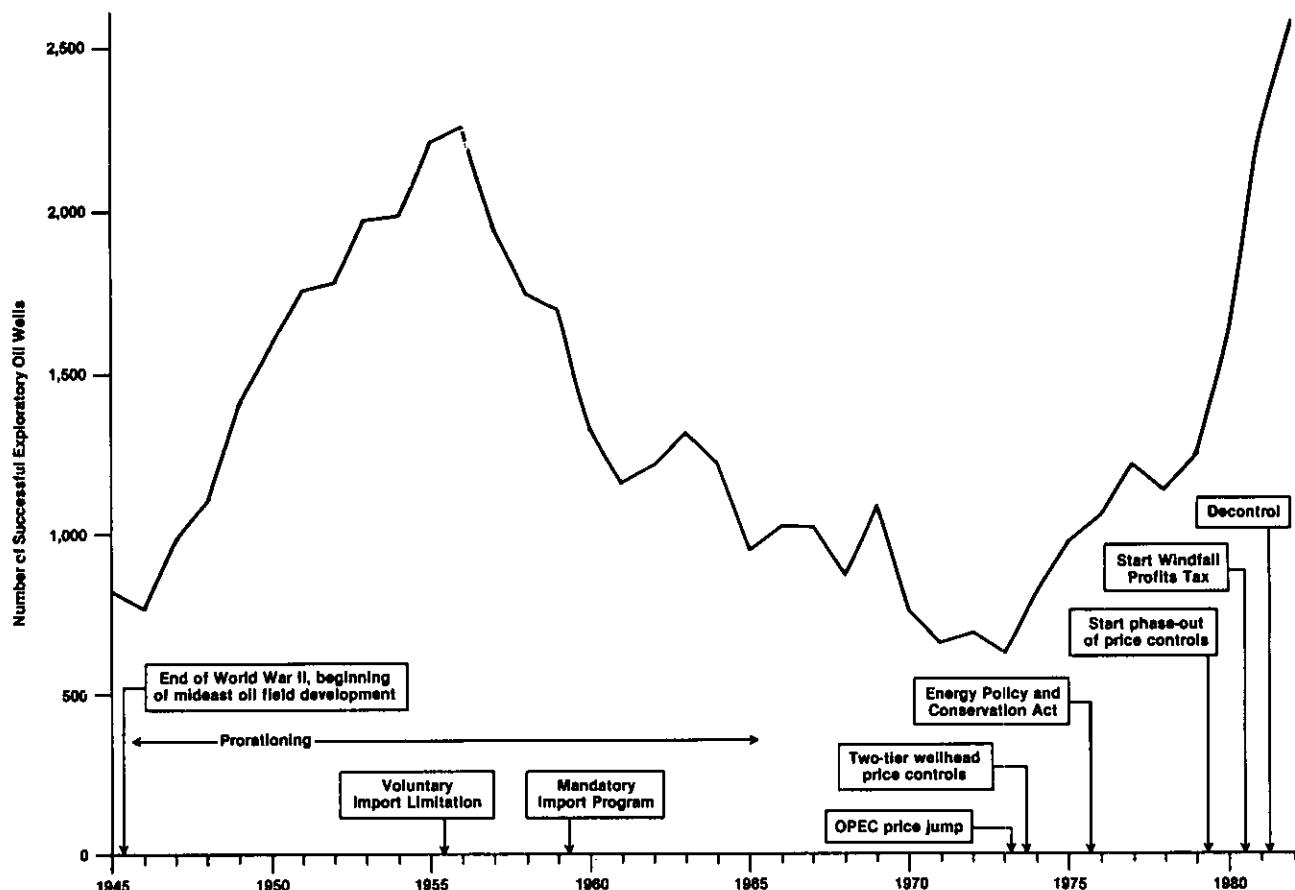
### Early Events and Prorationing

The first Federal intervention in domestic oil production occurred during World War I, a time when allocation of many strategic resources took place. For oil, this intervention took place via cooperative efforts between the industry's Petroleum War Services Committee and the Oil Division of the United States Fuel Administration. Out of this ef-

fort grew, after the war, the American Petroleum Institute (API) and, in 1924, President Coolidge's Federal Oil Conservation Board.

In the early 1920's, uncontrolled drilling in newly discovered large, prolific fields produced a huge surplus production capacity. Oil was being produced from some of these fields at rates exceeding those consonant with maintaining sufficient natural forces in the reservoirs to ensure maximum recovery over the life of the field. The API, as the representative of industry, favored continuing cooperative control of production from domestic wells as a means to conserve resources, to curtail surplus production, and to maintain price levels. The Federal Oil Conservation Board agreed to support this view and recommended that producing States be allowed to impose production quotas, which some did between 1928 and 1933.

**Figure 2. Major Events and Domestic Oil Exploration, 1945-1982**



Note: Includes Alaska. Excludes stratigraphic and core tests.

Source: American Petroleum Institute, *Basic Petroleum Data Book*, Volume I, No. 1, October 1975, and Volume III, No. 2, May 1983, Washington, D.C.

In 1935, Arkansas, California, Colorado, Illinois, Kansas, Michigan, New Mexico, Oklahoma, and Texas became the initial signatories to an Interstate Oil Compact, designed to prevent production of oil in excess of State quotas from being sold in other States at lower prices. The Federal Government supported the Compact with the Connally Hot Oil Act of 1935, which prohibited such transactions. Overproduction was due in large part to the lack of protection for mineral rights associated with the "law of capture." Under the law of capture, oil belongs to whoever produces it from the ground, without regard for the rights of other mineral owners within a reservoir. This resulted in extreme economic pressure to exploit a field, by drilling unneeded wells and producing oil at extreme rates, even though such action might do irreversible damage to the future production capabilities of the oil field.

The intent of the Interstate Oil Compact and the Connally Hot Oil Act was to halt wasteful exploita-

tion of oil fields. However, the laws of Alabama, Kansas, Louisiana, Michigan, New Mexico, North Dakota, Oklahoma, and Texas allowed those States to control production not only to eliminate waste, but also to meet expected market demand. Thus, these eight States really constituted a federally sanctioned cartel capable of setting the domestic price of oil. Using monthly forecasts of oil demand by State, prepared by the U.S. Bureau of Mines, these eight States in fact began setting production quotas (called allowables) on a well-by-well basis. Often these quotas were substantially lower than an individual well's maximum efficient producing rate. Thus, production was constrained through prorationing of allowable production in order to maintain domestic crude oil prices at a higher level than a freely competitive wellhead market would have set. As a result, consumer prices were higher.

Prorationing acted in two ways to increase overall exploration and development drilling above the

levels that otherwise would have prevailed. Producer cash flow was enhanced through higher prices, thereby making more exploration dollars available. Secondly, the prorationing system created incentives for additional drilling, typically to qualify for larger allowables. The effect of these incentives was to create unneeded excess capacity during the very period when prorationing was being used to constrain production.

### **Post-World War II Events Affecting Oil Prices**

Prorationing's initial years were ones of relative stability; but this stability was altered by the development of truly huge, cheaply recoverable petroleum deposits in the Middle East immediately after World War II. Even though these deposits were only partly developed in the late 1940's and early 1950's, world supplies of oil outran world demand, and world prices fell steadily. Foreign crude oil imported into the United States became cheaper than domestic crude oil delivered to domestic refineries, threatening the domestic production industry.

In response, the Federal Government in 1955 promoted a voluntary limit on imports of crude oil. This voluntary effort was ineffectual due to the pressures of competition, and, in March 1959, a Mandatory Import Program was established by Presidential Proclamation. These import controls protected the Interstate Oil Compact arrangement by limiting foreign capture of domestic markets. However, the Program also required that price increases of domestic crude oil be consonant with the national security objective of maintaining a healthy domestic industry without placing an undue burden on consumers. Domestic producers were thus given protection from foreign competition, while continuing to benefit from the use of prorationing to maintain domestic prices at a level above world prices. Alternately, the Compact States were constrained from raising prices further, under threat of a loss of Federal protection against cheap foreign oil. The oil-producing States effectively relinquished unrestricted use of prorationing as a price support mechanism in favor of what amounted to a promise by the Federal Government to limit foreign competition. Under this arrangement, crude oil prices did not rise significantly until 1973.

Over a period of several years, this policy of price-stability-by-design had the unintended effect of

gradually moving the Federal Government from encouragement of artificially high oil prices to a policy of unconcern regarding the developing cost-price squeeze that caused domestic exploration to be scaled down during the latter half of the 1960's.

The oil industry's cost-price squeeze developed as a result of the combined effects of inflation and the progressively higher finding costs associated with developing a finite resource base. The price realized per barrel of oil fell slowly, in real terms, while at the same time real operating costs rose. The impact of these inflationary forces was amplified by the fact that larger and easier-to-find oil reservoirs tend to be found earlier in the exploration cycle of a given geographic area. The phenomenon, wherein successive discoveries in a given area tend to become smaller on average with the passage of time, is common to all mineral resource commodities. Thus, because the onshore area of the contiguous 48 States had been explored thoroughly enough by the early 1960's to locate the most readily discoverable larger fields, this period was also one of intrinsically growing exploration costs per barrel of oil found. A number of large fields were found offshore and in Alaska, but their discovery did not materially change the overall cost picture due to the inherently higher costs associated with activity in these difficult environments. Advanced drilling and exploration technologies were employed in both the traditional and more hostile environments, but were not sufficient to reverse the trend toward higher finding costs.

Originally, the import control program was structured to limit crude oil imports to a small portion of U.S. demand, but through the 1960's it was undercut by legislated exemptions. The stabilization of crude oil prices, in conjunction with increases in exploration costs, led to reduced real domestic exploration investment (Figure 1) and reduced reserve additions. From 1952 to 1973, petroleum imports increased from 13 percent of U.S. demand to 35 percent, a more than fivefold increase in the actual number of barrels. In the same period, annual domestic crude oil production rose from 2.3 billion barrels to 3.5 billion barrels in 1970, and then began to decline as the production capacity of the proved reserves was reached. Excluding the extraordinary discovery of the Prudhoe Bay Field (reserves booked in 1970), the last year

in which the net change of proved reserves had been positive was 1967. The growth of production in the remainder of the preembargo period came primarily from older fields, during a time when exploration and reserves development were declining.

### **Policy Actions Subsequent to the Emergence of OPEC**

After 1950, the Persian Gulf oil-producing nations witnessed a softening of the price relationship between what they were paid for their crude oil and the prices they were being charged for foreign goods. For example, in 1972 the average price of Arab crude oil was nearly the same as it had been 20 years before, while during the same time the price of goods imported from the United States had increased by about 80 percent. As M. A. Adelman has described in *The World Petroleum Market*, the oil exporting nations' resentment over the price question led to the formation of the Organization of the Petroleum Exporting Countries (OPEC) in 1960.

Throughout the decade of the 1960's, the OPEC cartel, which was created for the purpose of controlling exploration and production rights, was relatively ineffective. However, in 1973, with an eye to the upsurge in world inflation and to the United States' lack of spare production capacity, resulting from the post-1955 exploration decline (Figure 2), the OPEC nations were finally able to capitalize on their role as major world oil producers by increasing sharply the price of their oil on the world market.

The shock of the 1973 OPEC price increase was felt in the months following termination of domestic wage and price controls on all industry in America. The result was the reimposition of a price freeze for domestic crude oil and petroleum products, under the authority of the Economic Stabilization Act.

In August 1973, a two-tier crude oil pricing system was established, embodying four artificial categories of crude production. Through a complex procedure, the pricing system sought to reward both new production from discoveries and increased production from old fields with uncontrolled prices, while keeping constant the price allowed for unincreased production from old fields. A released oil provision effectively in-

creased the returns to some limited categories of production above the world oil price, but the effect of the provision was more than offset by the effect of controls on the price of old oil. An unintended side effect of the pricing system was to encourage imports of additional amounts of uncontrolled oil into the United States and to erode further the strategic position of the domestic industry in the U.S. market. Most analysts also conclude that the complex regulations, and the belief that decontrol must soon follow, discouraged domestic output.

The crude oil pricing system effectively held the average price of domestic oil well below the world price. It made no provision for adjusting the price of old oil for inflation or for any future world price increases. Since the petroleum industry heavily funds its exploration budget out of cash flow and makes exploration decisions based on future benefit expectations, this pricing policy effectively retarded the increase in domestic exploration that would normally have been expected in response to rapidly increasing prices and a perceived oil shortage. The result was that domestic oil exploration increased at only a moderate pace during the energy crisis decade of the 1970's (Figure 2).

### **Steps to Increase Domestic Production**

The Energy Policy and Conservation Act (EPCA) of 1975 provided a change of policy and recognition that a healthy domestic petroleum industry needed to be able to charge competitive prices. This recognition, combined with a strategic need to relieve the United States of its massive dependence on OPEC oil, resulted in a policy intended to gradually bring all domestic oil prices to world levels. The EPCA foresaw no further world price increase; it was based upon a weighted average price of all the domestic crude oil categories, escalated for general inflation plus 3 percent per year. The different categories of crude oil were started at their individual price levels and were escalated in ways designed eventually to equate their prices with the average. Not all categories of oil, however, would reach the average simultaneously, and old oil would reach the average last. Prices of some categories of oil that had been uncontrolled under previous rules were recontrolled under EPCA, although certain of the more restrictive terms of the old oil price controls were eased.

While slowly moving oil pricing toward free market conditions, the process was fraught with difficult

administrative problems, some of which are still being interpreted in the courts, and by unforeseen additional world price increases, which pushed the goal of price parity far into the future. Again, domestic petroleum exploration was discouraged relative to that which would have been expected under free market conditions.

In June 1979 the President, perceiving a need to equalize domestic and foreign crude oil prices, ordered a 27-month administrative phaseout to allow prices of the various categories of production (by that time there were seven) to rise more rapidly to a competitive price level. This phaseout was, through Executive Order, replaced by immediate decontrol in January 1981. The policy change to decontrol of wellhead prices resulted in a surge of domestic exploration activity which, by the end of 1981, had generated the greatest domestic drilling of exploratory oil wells since the 1950's (Figure 2).

### Tax Policies and Their Effects

While\* policy actions in the pricing and trade spheres were taking place, other policies affecting taxation of the industry were also instituted. The earliest of these was the establishment of oil depletion allowances, which permitted producers to charge a percentage of their gross income as a deductible business expense, reducing their income tax liability. From 1926 through 1968, the oil depletion allowance was 27.5 percent; from 1969 through 1974, it was 22.0 percent. In 1975, it was set to zero for large integrated firms, while for other producers the 22.0-percent rate was retained through 1980 and then decreased incrementally to reach 15.0 percent in 1984. Since producers see income taxes as a cost, the reduction of taxes afforded by the depletion allowance served to enhance producer revenues, which could be used to finance exploration for new reserves. For example, in *Economics, An Introduction to Analysis and Policy*, George L. Bach estimated that in 1967 the allowance amounted to about \$4 billion and reduced the effective overall tax rate of the industry to 20 percent, as opposed to 48 percent for most other business, but that effect has now been substantially reduced. It is significant to note that during the 1970's, when concern regarding energy independence was greatest, a significant portion of these benefits were repealed.

A similar but less important effect relates to tax rulings as to which of the costs associated with

exploration and drilling can be expensed in the year incurred and which must be capitalized. The more exploratory costs a firm may expense from pre-tax income, the more funds it has available for current reinvestment, and the greater are the prospective returns on investment. This is one aspect of current oil and gas taxation policy that tends to encourage investment in exploration and drilling.

With the decontrol of crude oil prices, the government simultaneously imposed an excise tax called the Windfall Profit Tax (WPT), effective March 1980. The WPT was designed to parallel the decontrol process and was, therefore, complexly structured to set a crude oil base price and to tax the differential between that base and the market price at a 30- to 70-percent rate. Like the system of crude oil price controls, the WPT tended to discourage domestic production, played a role in increasing U.S. consumption of imported oil, and may have contributed to OPEC's ability to arbitrarily set prices.

The WPT assigned oil production to three tax categories with different base prices and tax rates and with various qualifications, modifications, and exemptions for different producer classes. Essentially, the lowest base price and highest tax rate (70 percent) were applied to old oil, an intermediate price and rate were assigned to stripper and Naval Petroleum Reserves oil, and a relatively high (but not market) base price and the lowest tax rate (30 percent) were applied to new oil and to production categories that are the most expensive to produce.

The WPT was designed to be phased out after \$227.3 billion had been collected or after 11 years, whichever came first. The target tax amount is approximately 3.6 times the domestic petroleum industry's 1980 expenditures for exploration, development, and production, and nearly 11 times its 1980 exploration expenditures alone.

The most significant effect of a WPT-type excise tax is the same as that of a price lower than the market price—an immediate reduction in the cash flow benefits expected by producers. Consequently, exploration, drilling, and reserve additions are reduced relative to what they would have been in absence of the tax. Had the WPT taxed away all of the difference between the controlled price and the market price, the rapid increase in oil drilling

which occurred in 1979-1981 would have been blunted.

The negative impacts of the WPT relate primarily to the fact that domestic producers receive only a portion of the price that their crude oil brings on the world market. Thus, at the 1983 world oil price of \$29 per barrel, U.S. major producers would receive about \$18 per barrel for old oil and \$26 per barrel for new oil. In April 1983, an EIA analysis of the WPT showed that "the tax should result in lower domestic crude oil production," with the negative impacts of the WPT being reinforced by "moderation in the upward trend in world oil prices." While the exact effect of the WPT rate mix on funds available for exploration has yet to be determined, clearly less is available for reinvestment with the WPT than without it.

### **The Growing Importance of Land Management Decisions**

Aside from price regulation, taxation, and trade policies, the Federal Government can affect the level of exploration and reserve additions by managing access to portions of the undeveloped resource base. The Federal Government owns or manages in the public interest in excess of 700 million acres of onshore land and nearly all of the offshore continental shelf. The onshore acreage alone is roughly one-third of the total U.S. land area. Of that portion located in the lower-48 States onshore, about 90 percent is located in nine western States. The United States Geological Survey estimates indicate that about half of the undiscovered recoverable oil and gas resource base is located under federally managed lands.

Prior to the 1950's, almost all Federal lands were managed under a concept of multiple use fostered by the conservation movement, which developed in the early part of the century. For most lands, this continues to be the policy. However, for certain areas the multiple use concept is potentially inappropriate. An effort to set aside large, permanent wilderness areas began in the 1920's, and gained momentum during the 1950's and early 1960's. In 1964, Congress passed the Wilderness Act, requiring several land-management branches of the U.S. Government to review their holdings and to determine which should be designated permanent wilderness closed to all development. Several studies have since been made, with the results of each challenged by advocates of resource development as being too restrictive and

by advocates of preservation as insufficient or flawed in methodology. These studies have resulted in selected actions to withdraw certain of these lands as wilderness areas, and to open others to multiple use. Currently, 74 million acres of roadless areas are under review by the Bureau of Land Management and the Forest Service. Thus, the precise limits on areas where exploration and development will be permanently prohibited remain unsettled, as does the ultimate impact of this policy on domestic resource availability.

Of federally controlled lands, approximately 650 million acres are currently designated as available for minerals exploration. On this land, the resource use question revolves around the solution to environmental and jurisdictional questions. The Reagan Administration has endeavored to make additional resource exploration opportunities available. Congress has exerted strong resistance. The active forces in the public arena include, on the one hand, environmental advocates, who are concerned that irreversible environmental damage will be done to lands opened to resource development. On the other hand, there are resource developers and pro-growth advocates, who fear a disruption in the American lifestyle if Federal lands are not open to resource exploration and development and who believe adverse environmental impacts can be mitigated or avoided. Until a consensus is reached, it is uncertain to what extent exploration and development of resources located under federally controlled lands will be permitted. The result of restricting development in Federal lands assuredly would be some combination of lower domestic supply, greater imports, and higher domestic prices, since producers would be forced to drill in higher-cost, lower-yield areas, or to forego some portion of their planned exploration program.

### **Conclusion**

Over several decades, Federal policy has increasingly become a pivotal element in the private sector's oil exploration decisionmaking. From the 1920's through the 1960's, government policy encouraged oil exploration by assisting the industry to maintain a crude oil price, through the prorationing mechanism, above what a free market would have set. Additionally, this policy encouraged unnecessary drilling through its assignment of production allowables. Investment in the petroleum industry was also encouraged by Fed-

eral depletion allowances and by expensing of exploration costs.

During the 1970's energy crisis, there was a reversal of Federal policies. Federal influence reached a zenith with the enactment of crude oil price controls, administered through a complex federally directed program that maintained domestic crude oil prices far below world prices. By the latter part of the decade, the continuing decline of domestic oil reserves and consequent degradation of U.S. self-sufficiency prompted a Federal decision to decontrol crude oil pricing. Federal influence over the decision to explore and drill for oil shifted to discriminatory taxation of producer revenues (via the WPT), and to a confrontational atmosphere surrounding Federal lands resource development policy. The question of which Federal lands should be made available for immediate development has not yet been decided. Decisions concerning the leasing of Federal lands will have a major impact on domestic petroleum exploration and reserve additions during the remainder of this century.

While government actions in the immediate post-World War II era clearly acted to favor exploration, government actions since 1973 appear to have had a strong negative impact on petroleum exploration activity and current production capability. On balance, Federal policies since 1973 have worked to reduce the incentives to explore and drill. Even though decontrol of wellhead prices resulted in a surge of oil exploration beginning in 1980, the Windfall Profit Tax continues to reduce industry funds available for reinvestment and to reduce the incentives to explore and drill.

Federal actions have resulted in industry decisions different from what they would have been in a free wellhead market situation. To the extent that decisions to explore for oil have been foregone as a result of government policies, reserve additions and current production capability have been reduced.

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# Part 1

# Executive Summary

## Overview

### January through October Summary

The United States produced 5.5 percent less energy during the first 10 months of 1983 than during the same period in 1982, and U.S. energy consumption was down 2.2 percent. Net imports of all energy were 10.1 percent higher, but net imports of petroleum were down 1.8 percent compared to the first 10 months of 1982.

### Production

Energy production during October 1983 totaled 5.3 quadrillion Btu, a 0.8-percent increase compared to the level of production during October 1982. Coal production increased 3.3 percent while petroleum production remained the same. Natural gas production fell 3.3 percent. Production of all other forms of energy combined increased 7.3 percent compared to production 1 year earlier.

<sup>1</sup>All percentage increases/decreases are calculated using a daily rate prior to rounding.

### Energy Summary

(Quadrillion (10<sup>15</sup>) Btu)

	October			Cumulative January through October			
	1983	1982	Percent Change	1983	1982	1982 Daily Rate	Percent Change <sup>1</sup>
<b>Total Production</b>	<b>5.270</b>	<b>5.230</b>	<b>+0.8</b>	<b>50.528</b>	<b>0.166</b>	<b>53.483</b>	<b>0.176</b>
Petroleum <sup>2</sup>	1.751	1.751	0.0	17.139	0.056	17.086	0.056
Natural Gas	1.374	1.421	-3.3	13.245	0.044	15.118	0.050
Coal	1.639	1.586	+3.3	14.514	0.048	15.915	0.052
Other <sup>3</sup>	0.506	0.471	+7.3	5.630	0.019	5.363	0.018
<b>Total Consumption</b>	<b>5.659</b>	<b>5.553</b>	<b>+1.9</b>	<b>57.605</b>	<b>0.189</b>	<b>58.923</b>	<b>0.194</b>
Petroleum <sup>4</sup>	2.524	2.509	+0.6	24.836	0.082	25.347	0.083
Natural Gas	1.292	1.346	-4.0	13.688	0.045	15.102	0.050
Coal	1.310	1.200	+9.2	13.192	0.043	12.860	0.042
Other <sup>5</sup>	0.533	0.498	+7.0	5.889	0.019	5.614	0.018
<b>Net Imports</b>	<b>0.713</b>	<b>0.621</b>	<b>+15.0</b>	<b>6.662</b>	<b>0.022</b>	<b>6.053</b>	<b>0.020</b>
Petroleum <sup>6</sup>	0.835	0.781	+7.0	7.373	0.024	7.507	0.025
Natural Gas	0.062	0.073	-15.3	0.723	0.002	0.699	0.002
Coal <sup>7</sup>	(0.210)	(0.259)	(-18.9)	(1.693)	(0.006)	(2.404)	(0.008)
Other <sup>8</sup>	0.027	0.026	+2.6	0.259	0.001	0.251	0.001

<sup>1</sup> Based on daily rates prior to rounding.

<sup>2</sup> Includes crude oil, lease condensate, and natural gas plant liquids.

<sup>3</sup> Includes hydroelectric, nuclear, and geothermal power and electricity produced from wood and waste.

<sup>4</sup> Includes refined petroleum products and natural gas plant liquids.

<sup>5</sup> Includes hydroelectric, nuclear, and geothermal power, electricity produced from wood and waste, and net imports of electricity and coal coke.

<sup>6</sup> Includes crude oil, lease condensate, refined petroleum products, unfinished oils, natural gasoline, plant condensate, and imports of crude oil for the Strategic Petroleum Reserve.

<sup>7</sup> Parentheses indicate exports are greater than imports.

<sup>8</sup> Includes net imports of electricity and coal coke.

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

### Consumption

Energy consumption during October 1983 totaled 5.7 quadrillion Btu, 1.9 percent above the level of consumption during October 1982. Coal consumption increased 9.2 percent and petroleum consumption was up 0.6 percent. Natural gas consumption decreased 4.0 percent. Consumption of all other forms of energy combined increased 7.0 percent compared to consumption during October 1982.

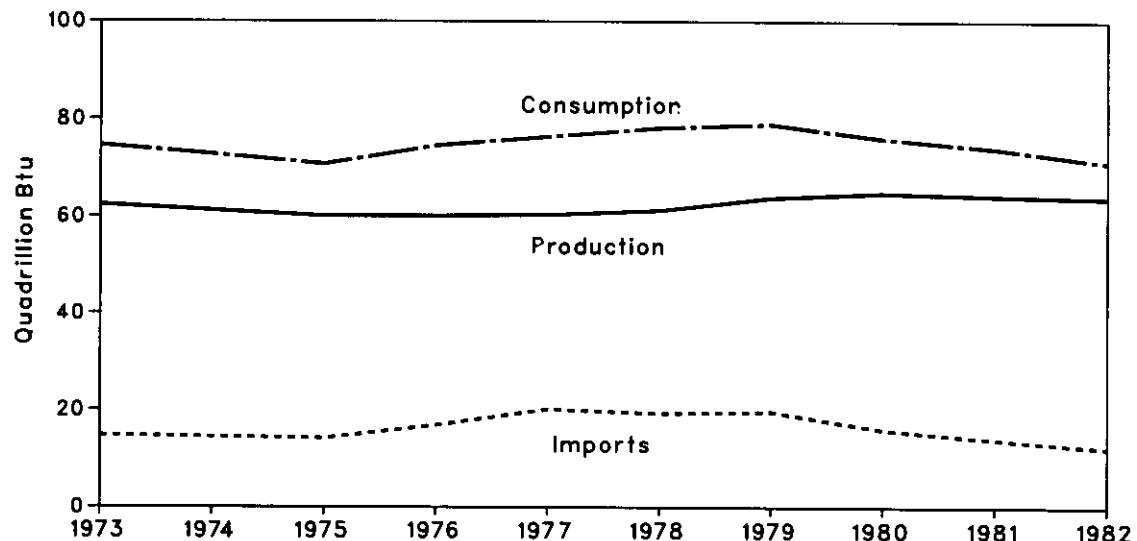
### Net Imports

Net imports of energy during October 1983 totaled 0.7 quadrillion Btu, 15.0 percent above the level of imports during October 1982. Net imports of petroleum increased 7.0 percent, while net imports of natural gas decreased 15.3 percent. Net exports of coal were down 18.9 percent compared to the level in October 1982.

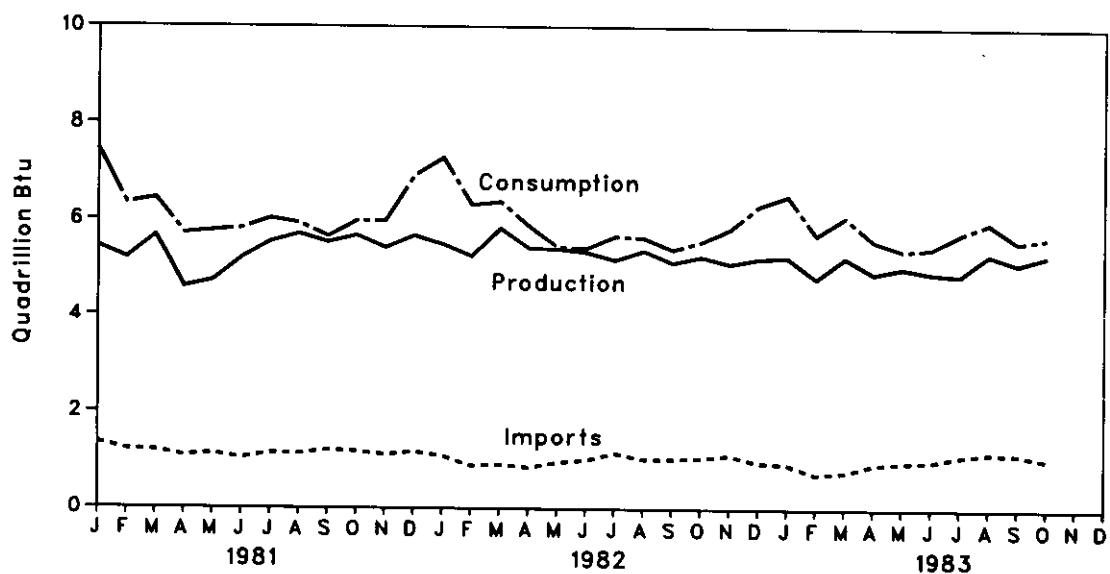
## **Executive Summary**

### **Energy Summary**

**Yearly**



**Monthly**



# Executive Summary

## Energy Summary<sup>1</sup>

		Energy Production <sup>2</sup>	Energy Consumption <sup>2</sup>	Energy Imports <sup>2</sup>	Energy Exports
Quadrillion (10 <sup>12</sup> ) Btu					
1973	TOTAL	62.433	74.609	14.732	2.073
1974	TOTAL	61.229	72.759	14.417	2.241
1975	TOTAL	60.059	70.707	14.113	2.389
1976	TOTAL	60.091	74.510	16.838	2.213
1977	TOTAL	60.293	76.332	20.092	2.097
1978	TOTAL	61.231	78.175	19.261	1.952
1979	TOTAL	63.851	78.910	19.620	2.900
1980	TOTAL	64.812	75.988	15.972	3.726
1981	January	5.428	7.459	1.346	0.261
	February	5.169	6.331	1.210	0.278
	March	5.660	6.439	1.193	0.370
	April	4.576	5.708	1.084	0.325
	May	4.711	5.764	1.131	0.274
	June	5.180	5.816	1.041	0.246
	July	5.524	6.022	1.140	0.393
	August	5.699	5.923	1.132	0.420
	September	5.520	5.649	1.201	0.412
	October	5.671	5.972	1.179	0.466
	November	5.403	5.975	1.109	0.440
	December	5.666	6.921	1.172	0.431
	TOTAL	64.207	73.979	13.939	4.318
1982	January	5.478	7.284	1.086	0.318
	February	5.228	6.312	0.890	0.376
	March	5.828	6.379	0.915	0.442
	April	5.400	5.873	0.859	0.426
	May	5.387	5.433	0.960	0.419
	June	5.318	5.405	1.014	0.415
	July	5.156	5.669	1.154	0.385
	August	5.356	5.633	1.034	0.358
	September	5.102	5.382	1.034	0.376
	October	5.230	5.553	1.059	0.438
	November	5.082	5.827	1.117	0.351
	December	5.193	6.307	0.966	0.322
	TOTAL	63.757	71.057	12.089	4.626
1983	January	5.218	6.517	0.935	0.302
	February	4.782	5.705	0.727	0.264
	March	5.218	6.081	0.773	0.318
	April	4.888	R5.581	0.930	0.311
	May	5.008	R5.373	0.973	0.342
	June	4.901	R5.420	0.997	0.334
	July	R4.856	R5.741	1.107	0.273
	August	R5.293	R5.965	1.171	0.346
	September	R5.094	R5.563	1.151	0.325
	October	5.270	5.659	1.038	0.325

<sup>1</sup>For definitions, see Notes on the last page of this section.

<sup>2</sup>The sum of domestic energy production and net imports of energy does not equal domestic energy consumption. The difference is attributed to stock changes; losses and gains in conversion, transportation, and distribution; the addition of blending compounds; shipments of anthracite to U.S. Armed Forces in Europe; and adjustments to account for discrepancies between reporting systems.

R=Revised data.

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

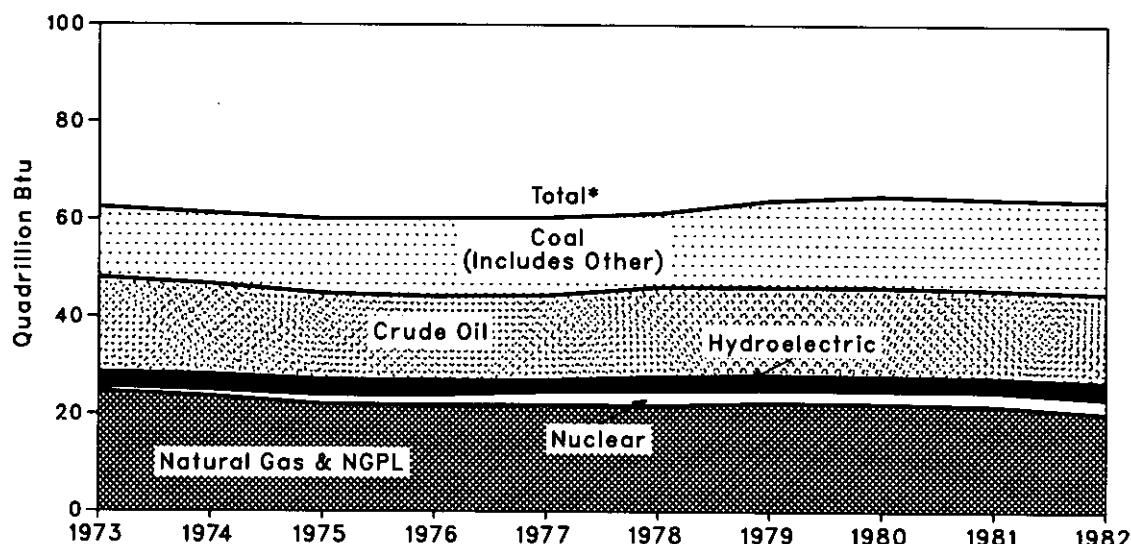
• Totals may not equal sum of components due to independent rounding.

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

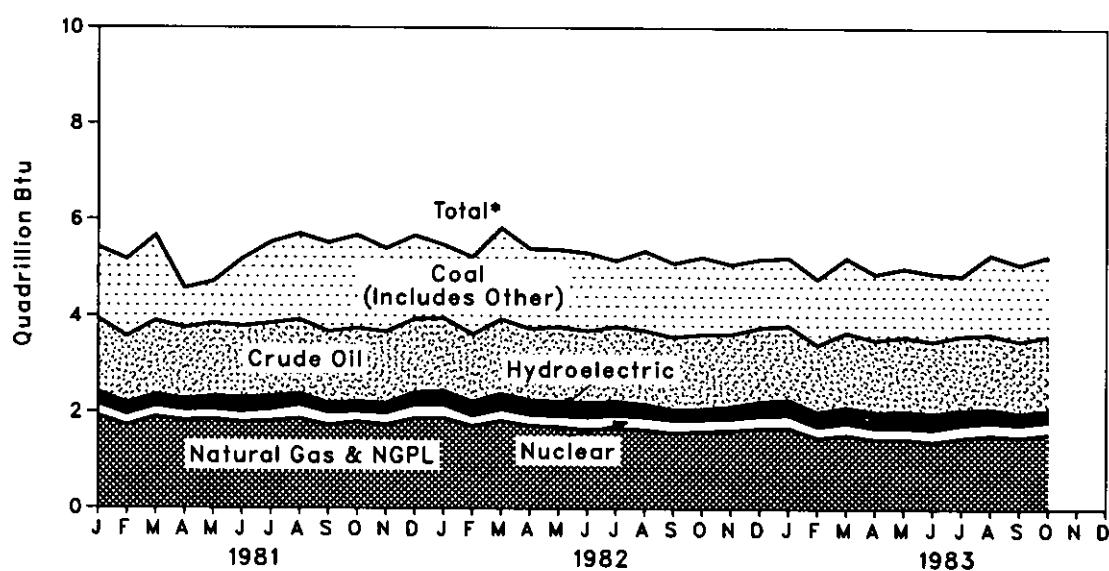
## Executive Summary

### Production of Energy by Source

Yearly



Monthly



\*Btu equivalents for all fuels were cumulated to create total.

# Executive Summary

## Production of Energy by Source

		Coal <sup>1</sup>	Crude Oil <sup>2</sup>	NGPL <sup>3</sup>	Natural Gas (Dry)	Hydro-electric Power <sup>4</sup>	Nuclear Electric Power	Other <sup>5</sup>	Total Energy Produced	Yearly Cumulative Energy Produced
Quadrillion (10 <sup>12</sup> ) Btu										
1973	TOTAL	14.366	19.493	2.569	22.187	2.861	0.910	0.046	62.433	
1974	TOTAL	14.468	18.575	2.471	21.210	3.177	1.272	0.056	61.229	
1975	TOTAL	15.189	17.729	2.374	19.640	3.155	1.900	0.072	60.059	
1976	TOTAL	15.853	17.262	2.327	19.480	2.976	2.111	0.081	60.091	
1977	TOTAL	15.829	17.454	2.327	19.565	2.333	2.702	0.082	60.293	
1978	TOTAL	15.037	18.434	2.245	19.485	2.937	3.024	0.068	61.231	
1979	TOTAL	17.651	18.104	2.286	20.076	2.931	2.715	0.089	63.851	
1980	TOTAL	18.640	18.249	2.254	19.916	2.900	2.739	0.114	64.812	
1981	January	1.476	1.535	0.201	1.709	0.235	0.259	0.011	5.428	5.428
	February	1.588	1.397	0.182	1.535	0.222	0.236	0.010	5.169	10.597
	March	1.752	1.549	0.198	1.693	0.217	0.240	0.011	5.660	16.256
	April	0.812	1.489	0.188	1.633	0.218	0.225	0.010	4.576	20.833
	May	0.853	1.529	0.194	1.656	0.254	0.215	0.010	4.711	25.544
	June	1.378	1.501	0.188	1.595	0.277	0.231	0.010	5.180	30.724
	July	1.659	1.528	0.189	1.622	0.264	0.252	0.011	5.524	36.248
	August	1.764	1.543	0.197	1.664	0.227	0.294	0.011	5.699	41.947
	September	1.829	1.497	0.190	1.539	0.187	0.266	0.011	5.520	47.467
	October	1.908	1.540	0.195	1.603	0.190	0.224	0.011	5.671	53.138
	November	1.715	1.494	0.192	1.545	0.199	0.249	0.010	5.403	58.541
	December	1.709	1.544	0.194	1.676	0.251	0.284	0.010	5.666	64.207
	TOTAL	18.443	18.146	2.307	19.469	2.741	2.974	0.127	64.207	
1982	January	1.503	1.530	0.192	1.682	0.282	0.280	0.009	5.478	5.478
	February	1.593	1.413	0.172	1.542	0.280	0.220	0.008	5.228	10.706
	March	1.879	1.558	0.191	1.630	0.313	0.248	0.007	5.828	16.534
	April	1.647	1.495	0.182	1.539	0.293	0.238	0.007	5.400	21.934
	May	1.592	1.561	0.185	1.510	0.294	0.236	0.008	5.387	27.321
	June	1.606	1.504	0.178	1.465	0.294	0.262	0.010	5.318	32.639
	July	1.355	1.557	0.184	1.485	0.286	0.278	0.010	5.156	37.795
	August	1.632	1.552	0.186	1.452	0.251	0.273	0.010	5.356	43.151
	September	1.521	1.514	0.179	1.393	0.209	0.277	0.010	5.102	48.253
	October	1.586	1.565	0.186	1.421	0.207	0.254	0.011	5.230	53.483
	November	1.434	1.513	0.190	1.436	0.244	0.253	0.011	5.082	58.565
	December	1.414	1.546	0.198	1.470	0.291	0.266	0.009	5.193	63.757
	TOTAL	18.763	18.309	2.224	18.024	3.245	3.084	0.108	63.757	
1983	January	1.390	1.552	0.203	1.480	0.308	0.274	0.011	5.218	5.218
	February	1.354	1.406	0.174	1.304	0.293	0.242	0.008	4.782	10.000
	March	1.533	1.560	0.188	1.349	0.318	0.261	0.010	5.218	15.218
	April	1.357	1.511	0.177	1.275	0.315	0.244	0.009	4.888	20.106
	May	1.410	1.561	0.181	1.281	0.327	0.241	0.007	5.008	25.114
	June	1.395	1.510	0.179	1.222	0.322	0.264	0.010	4.901	30.015
	July	R1.229	1.555	0.187	R1.299	0.294	0.279	0.012	R4.856	R34.870
	August	R1.633	1.556	0.190	R1.349	0.271	0.279	0.016	R5.293	R40.164
	September	R1.573	1.508	0.188	R1.311	0.228	0.271	0.014	R5.094	R45.257
	October	1.639	1.556	0.195	1.374	0.217	0.273	0.015	5.270	50.528

<sup>1</sup>Includes bituminous coal, lignite, and anthracite.

<sup>2</sup>Includes lease condensate.

<sup>3</sup>Natural gas plant liquids.

<sup>4</sup>Includes industrial and utility production of hydropower.

<sup>5</sup>Includes geothermal power and electricity produced from wood and waste.

R=Revised data.

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

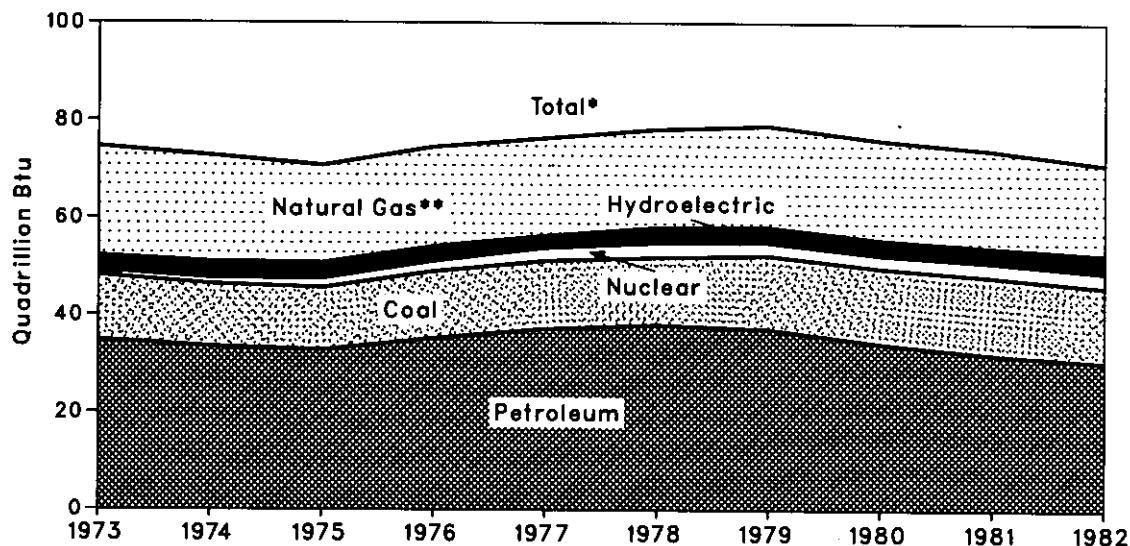
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Source: • Energy Information Administration calculations based on data reported elsewhere in this publication.

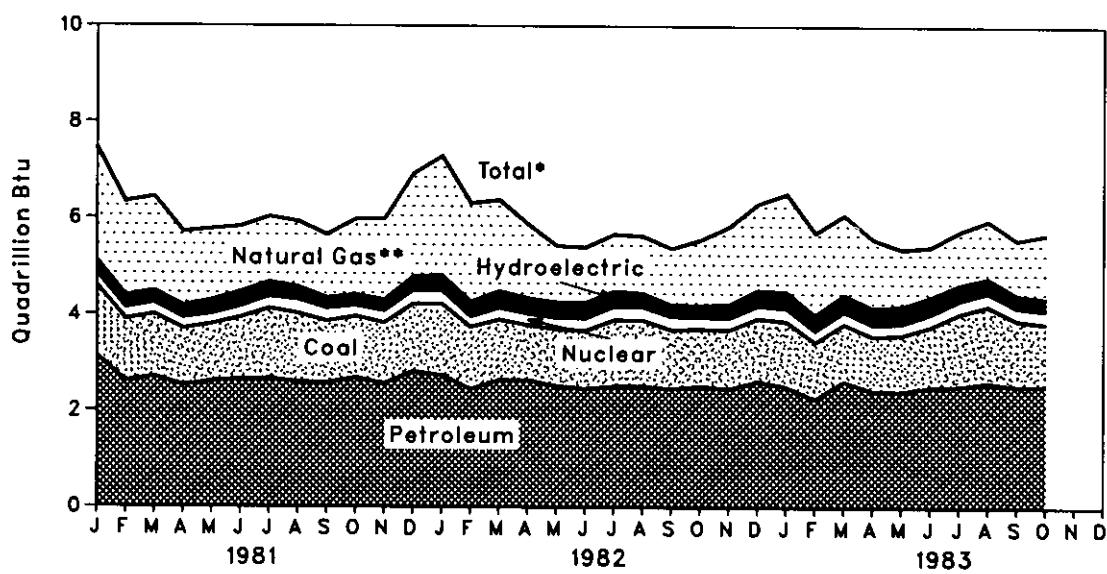
## Executive Summary

### Consumption of Energy by Source

Yearly



Monthly



\*Btu equivalents for all fuels were cumulated to create total.

\*\*Includes net imports of coal coke and other.

# Executive Summary

## Consumption of Energy by Source

		Natural Gas (Dry)	Petro- leum	Hydro- electric Power <sup>2</sup>	Nuclear Electric Power	Net Imports of Coal Coke <sup>3</sup>		Total Energy Con- sumed	Yearly Cumulative Energy Consumed
	Coal <sup>1</sup>						Other <sup>4</sup>		
Quadrillion (10 <sup>18</sup> ) Btu									
1973	TOTAL	13.300	22.512	34.840	3.010	0.910	(0.008)	0.046	74.609
1974	TOTAL	12.876	21.732	33.455	3.309	1.272	0.059	0.056	72.759
1975	TOTAL	12.823	19.948	32.731	3.219	1.900	0.014	0.072	70.707
1976	TOTAL	13.733	20.345	35.175	3.066	2.111	0.000	0.081	74.510
1977	TOTAL	13.964	19.931	37.122	2.515	2.702	0.015	0.082	76.332
1978	TOTAL	13.846	20.000	37.965	3.141	3.024	0.131	0.068	78.175
1979	TOTAL	15.109	20.666	37.123	3.141	2.715	0.066	0.089	78.910
1980	TOTAL	15.461	20.391	34.202	3.118	2.739	(0.037)	0.114	75.988
1981	January	1.473	2.341	3.113	0.263	0.259	0.000	0.011	7.459
	February	1.302	1.946	2.592	0.247	0.236	(0.001)	0.010	6.331
	March	1.310	1.950	2.686	0.244	0.240	(0.003)	0.011	6.439
	April	1.191	1.528	2.509	0.245	0.225	(0.001)	0.010	5.708
	May	1.200	1.465	2.593	0.281	0.215	0.000	0.010	5.764
	June	1.301	1.344	2.631	0.304	0.231	(0.004)	0.010	5.816
	July	1.469	1.349	2.649	0.292	0.252	0.000	0.011	6.022
	August	1.437	1.348	2.578	0.255	0.294	0.000	0.011	5.923
	September	1.302	1.299	2.559	0.214	0.266	(0.002)	0.011	5.649
	October	1.290	1.560	2.672	0.218	0.224	(0.003)	0.011	5.972
	November	1.280	1.663	2.548	0.226	0.249	0.000	0.010	5.975
	December	1.418	2.132	2.803	0.278	0.284	(0.003)	0.010	6.921
	<b>TOTAL</b>	<b>15.973</b>	<b>19.926</b>	<b>31.931</b>	<b>3.066</b>	<b>2.974</b>	<b>(0.017)</b>	<b>0.127</b>	<b>73.979</b>
1982	January	1.498	2.465	2.723	0.310	0.280	0.000	0.009	7.284
	February	1.303	2.038	2.441	0.305	0.220	(0.001)	0.008	6.312
	March	1.270	1.888	2.628	0.341	0.248	(0.002)	0.007	6.379
	April	1.161	1.525	2.623	0.320	0.238	(0.001)	0.007	5.873
	May	1.196	1.167	2.507	0.322	0.236	(0.003)	0.008	5.433
	June	1.220	1.145	2.451	0.320	0.262	(0.004)	0.010	5.405
	July	1.392	1.176	2.503	0.314	0.278	(0.003)	0.010	5.669
	August	1.385	1.182	2.506	0.278	0.273	(0.001)	0.010	5.633
	September	1.237	1.171	2.455	0.236	0.277	(0.003)	0.010	5.382
	October	1.200	1.346	2.509	0.235	0.254	(0.001)	0.011	5.553
	November	1.239	1.601	2.453	0.271	0.253	(0.002)	0.011	5.827
	December	1.313	1.786	2.616	0.319	0.266	(0.001)	0.009	6.307
	<b>TOTAL</b>	<b>15.412</b>	<b>18.489</b>	<b>30.416</b>	<b>3.571</b>	<b>3.084</b>	<b>(0.023)</b>	<b>0.108</b>	<b>71.057</b>
1983	January	1.376	2.029	2.494	0.335	0.274	(0.001)	0.011	6.517
	February	1.190	1.695	2.253	0.318	0.242	(0.001)	0.008	5.705
	March	1.207	1.644	2.615	0.345	0.261	(0.001)	0.010	6.081
	April	R1.150	1.423	2.415	0.341	0.244	(0.002)	0.009	R5.581
	May	R1.184	1.181	2.407	0.355	0.241	(0.002)	0.007	R5.373
	June	R1.270	1.031	2.498	0.349	0.264	(0.001)	0.010	R5.420
	July	R1.518	R1.093	2.519	0.322	0.279	(0.002)	0.012	R5.741
	August	R1.603	R1.175	2.595	0.298	0.279	(0.001)	0.016	R5.965
	September	R1.384	R1.125	2.516	0.255	0.271	(0.001)	0.014	R5.563
	October	1.310	1.292	2.524	0.245	0.273	(0.001)	0.015	5.659
									57.605

<sup>1</sup>Includes bituminous coal, lignite, and anthracite.

<sup>2</sup>Includes industrial and utility production and net imports of electricity.

<sup>3</sup>Parentheses indicate exports are greater than imports.

<sup>4</sup>Includes geothermal power and electricity produced from wood and waste.

R=Revised data.

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

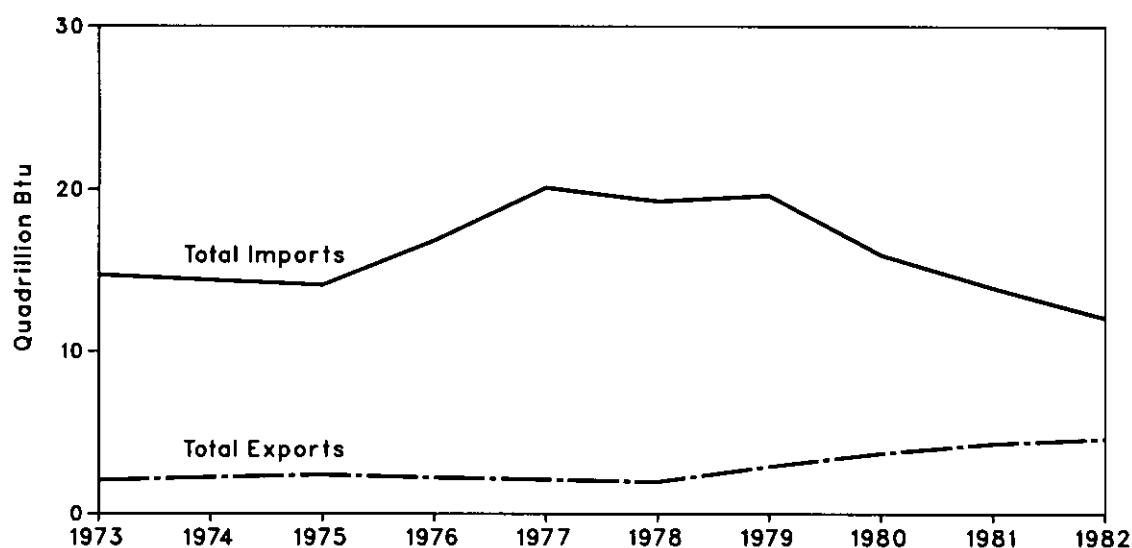
• Totals may not equal sum of components due to independent rounding.

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

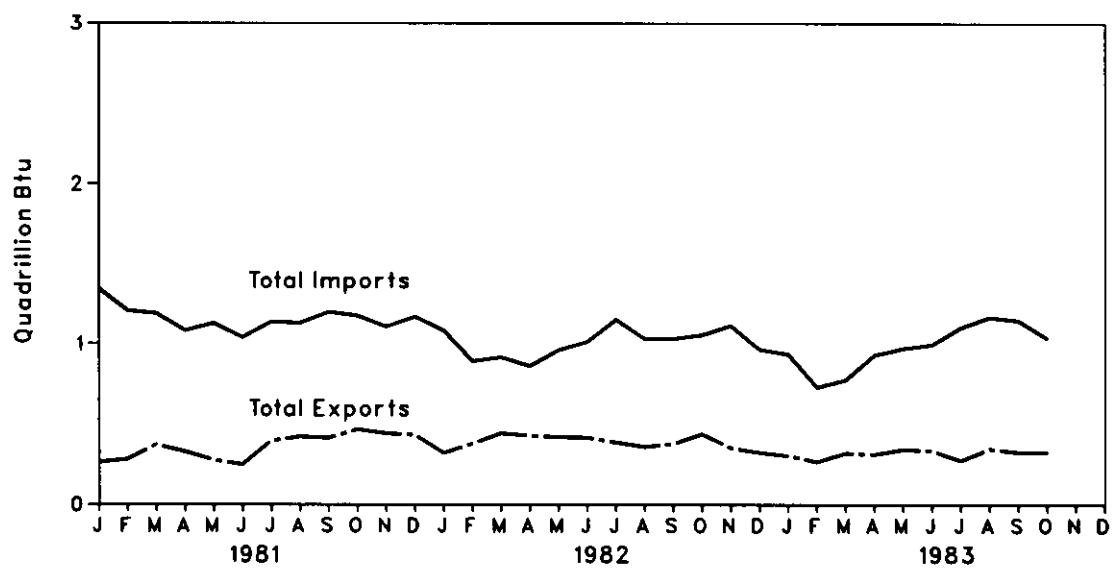
## **Executive Summary**

### **Energy Imports and Exports**

**Yearly**



**Monthly**



# Executive Summary

## Net Imports<sup>1</sup> of Energy by Source

		Crude Oil <sup>2</sup>	Refined Petro- leum Products <sup>4</sup>	Natural Gas (Dry)	Electri- city	Coal Coke	Total Net Imports	Yearly Cumulative Net Imports of Energy
Quadrillion (10 <sup>12</sup> ) Btu								
1973	TOTAL	(1.443)	6.883	0.981	0.148	(0.008)	12.659	
1974	TOTAL	(1.585)	7.389	0.907	0.133	0.059	12.175	
1975	TOTAL	(1.766)	8.708	0.904	0.064	0.014	11.725	
1976	TOTAL	(1.590)	11.221	0.982	0.089	0.000	14.625	
1977	TOTAL	(1.424)	13.921	4.321	0.981	0.182	0.015	17.995
1978	TOTAL	(1.024)	13.125	3.932	0.941	0.204	0.131	17.309
1979	TOTAL	(1.730)	13.328	3.603	1.243	0.211	0.066	16.720
1980	TOTAL	(2.390)	10.586	2.912	0.957	0.217	(0.037)	12.246
1981	January	(0.151)	0.829	0.293	0.087	0.028	0.000	1.085
	February	(0.175)	0.762	0.240	0.081	0.025	(0.001)	0.932
	March	(0.252)	0.778	0.196	0.076	0.028	(0.003)	0.823
	April	(0.215)	0.723	0.161	0.065	0.027	(0.001)	0.759
	May	(0.157)	0.717	0.210	0.059	0.028	0.000	0.857
	June	(0.158)	0.687	0.181	0.061	0.027	(0.004)	0.794
	July	(0.281)	0.728	0.210	0.062	0.028	0.000	0.747
	August	(0.292)	0.717	0.189	0.060	0.028	0.000	0.712
	September	(0.310)	0.794	0.219	0.062	0.027	(0.002)	0.790
	October	(0.321)	0.749	0.184	0.075	0.028	(0.003)	0.713
	November	(0.308)	0.658	0.214	0.078	0.027	0.000	0.668
	December	(0.299)	0.712	0.215	0.089	0.028	(0.003)	0.741
	<b>TOTAL</b>	<b>(2.918)</b>	<b>8.854</b>	<b>2.522</b>	<b>0.855</b>	<b>0.325</b>	<b>(0.017)</b>	<b>9.621</b>
1982	January	(0.160)	0.623	0.181	0.096	0.028	0.000	0.768
	February	(0.234)	0.438	0.206	0.081	0.025	(0.001)	0.515
	March	(0.273)	0.461	0.181	0.078	0.028	(0.002)	0.473
	April	(0.283)	0.467	0.153	0.071	0.027	(0.001)	0.433
	May	(0.262)	0.550	0.166	0.063	0.028	(0.003)	0.541
	June	(0.279)	0.653	0.146	0.056	0.027	(0.004)	0.599
	July	(0.239)	0.725	0.195	0.063	0.028	(0.003)	0.769
	August	(0.190)	0.640	0.144	0.056	0.028	(0.001)	0.676
	September	(0.225)	0.603	0.196	0.062	0.027	(0.003)	0.658
	October	(0.259)	0.613	0.167	0.073	0.028	(0.001)	0.621
	November	(0.202)	0.629	0.228	0.087	0.027	(0.002)	0.767
	December	(0.157)	0.506	0.161	0.106	0.028	(0.001)	0.644
	<b>TOTAL</b>	<b>(2.763)</b>	<b>6.907</b>	<b>2.124</b>	<b>0.892</b>	<b>0.326</b>	<b>(0.023)</b>	<b>7.463</b>
1983	January	(0.115)	0.509	0.097	0.117	0.028	(0.001)	0.633
	February	(0.113)	0.327	0.127	0.098	0.025	(0.001)	0.463
	March	(0.162)	0.371	0.132	0.087	0.028	(0.001)	0.455
	April	(0.156)	0.535	0.144	0.073	0.027	(0.002)	0.620
	May	(0.179)	0.533	0.189	0.062	0.028	(0.002)	0.630
	June	(0.187)	0.586	0.181	0.057	0.027	(0.001)	0.663
	July	(0.159)	0.672	0.243	0.052	0.028	(0.002)	0.833
	August	(0.216)	0.722	0.238	0.055	0.028	(0.001)	0.825
	September	(0.194)	0.706	0.228	0.061	0.027	(0.001)	0.826
	October	(0.210)	0.596	0.239	0.062	0.028	(0.001)	0.713

<sup>1</sup>Net imports equals imports minus exports. Parentheses indicate exports are greater than imports.

<sup>2</sup>Includes bituminous coal, lignite, and anthracite.

<sup>3</sup>Includes crude oil, lease condensate, and imports of crude oil for the Strategic Petroleum Reserve.

<sup>4</sup>Includes refined petroleum products, unfinished oils, natural gasoline, and plant condensate.

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

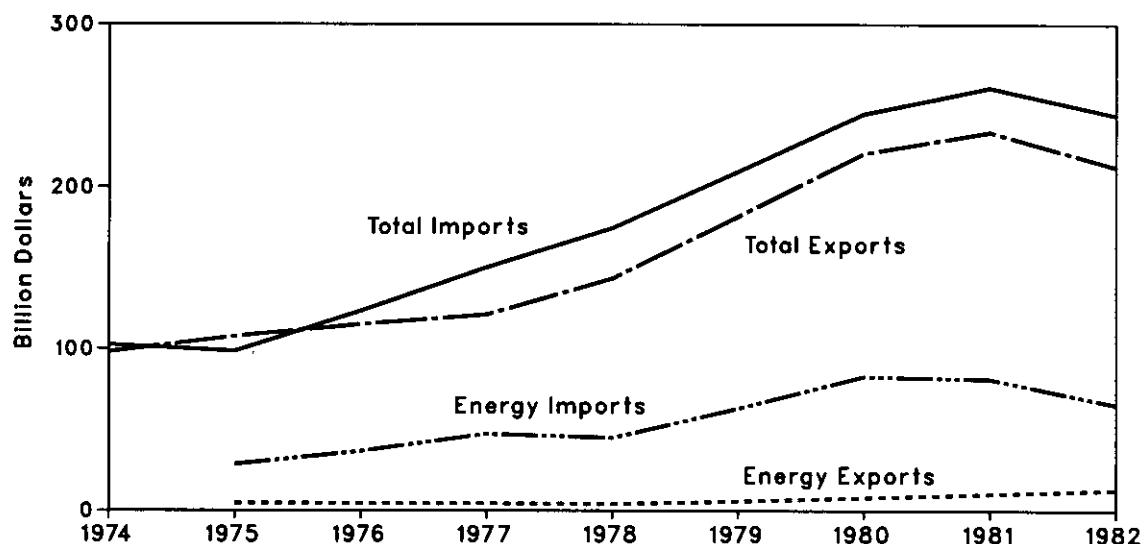
• Totals may not equal sum of components due to independent rounding.

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

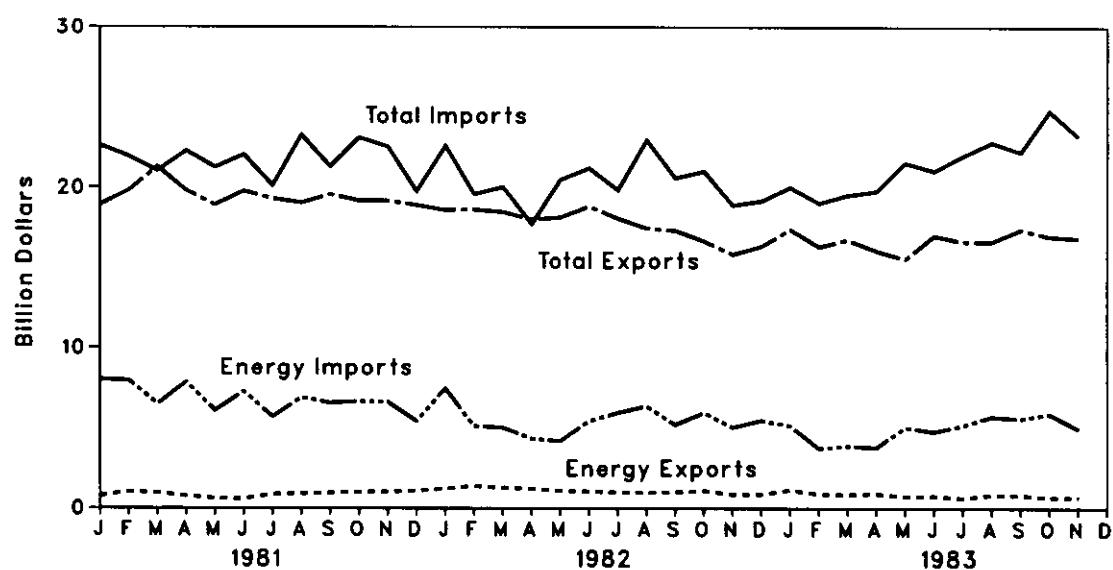
## Executive Summary

### Merchandise Trade Value

Yearly



Monthly



# Executive Summary

## Merchandise Trade Value

	Exports			Imports			Trade Balance		
	Energy	All Other		Energy	All Other		Energy	All Other	
		Total	Total		Total	Total		Total	Total
Million dollars									
1974	TOTAL	NA	NA	98,092	NA	NA	102,559	NA	NA
1975	TOTAL	4,470	103,182	107,652	28,325	70,178	98,503	-23,855	+33,004
1976	TOTAL	4,226	110,997	115,223	36,384	87,093	123,477	-32,158	+23,904
1977	TOTAL	4,184	117,048	121,232	47,153	103,237	150,390	-42,969	+13,811
1978	TOTAL	3,882	139,799	143,681	44,763	129,994	174,757	-40,881	+9,805
1979	TOTAL	5,675	176,185	181,860	63,077	146,381	209,458	-57,402	+29,804
1980	TOTAL	7,982	212,644	220,626	82,924	161,947	244,871	-74,942	+50,697
1981	January	756	18,146	18,902	8,007	14,609	22,616	-7,251	+3,537
	February	999	18,789	19,788	7,939	13,977	21,916	-6,940	+4,812
	March	939	20,339	21,278	6,471	14,558	21,029	-5,532	+5,781
	April	738	19,048	19,786	7,831	14,418	22,249	-7,093	+4,630
	May	593	18,306	18,899	6,075	15,157	21,232	-5,482	+3,149
	June	565	19,185	19,750	7,252	14,753	22,005	-6,687	+4,432
	July	847	18,442	19,289	5,687	14,427	20,114	-4,840	+4,015
	August	884	18,147	19,031	6,876	16,366	23,242	-5,992	+1,781
	September	939	18,612	19,551	6,555	14,719	21,274	-5,616	+3,893
	October	991	18,172	19,163	6,638	16,439	23,077	-5,648	+1,733
	November	997	18,156	19,153	6,608	15,900	22,508	-5,611	+2,256
	December	1,067	17,818	18,885	5,422	14,324	19,746	-4,355	+3,494
	TOTAL	10,279	223,398	233,677	81,360	179,622	260,982	-71,081	+43,776
1982	January	1,205	17,379	18,584	7,439	15,134	22,573	-6,234	+2,245
	February	1,361	17,253	18,614	5,107	14,463	19,570	-3,746	+2,790
	March	1,256	17,206	18,462	5,009	15,010	20,019	-3,753	+2,196
	April	1,201	16,804	18,005	4,312	13,402	17,714	-3,111	+3,402
	May	1,065	17,059	18,124	4,167	16,310	20,477	-3,102	+749
	June	1,035	17,788	18,823	5,427	15,760	21,187	-4,392	+2,028
	July	974	17,086	18,060	5,943	13,906	19,849	-4,969	+3,180
	August	961	16,502	17,463	6,353	16,577	22,930	-5,392	-75
	September	998	16,322	17,320	5,201	15,380	20,581	-4,203	+942
	October	1,072	15,599	16,671	5,947	15,059	21,006	-4,875	+540
	November	847	15,005	15,852	5,037	13,855	18,892	-4,190	+1,150
	December	855	15,492	16,347	5,468	13,686	19,154	-4,613	+1,806
	TOTAL	12,729	199,464	212,193	65,409	178,543	243,952	-52,680	+20,921
1983	January	1,132	16,261	17,393	5,142	14,879	20,021	-4,010	+1,382
	February	878	15,448	16,326	3,704	15,311	19,015	-2,826	+137
	March	850	15,902	16,752	3,865	15,660	19,525	-3,015	+241
	April	892	15,182	16,074	3,763	16,008	19,771	-2,871	-826
	May	724	14,842	15,566	5,033	16,481	21,514	-4,309	-1,639
	June	752	16,256	17,008	4,767	16,257	21,024	-4,015	-1
	July	628	16,001	16,629	5,164	16,786	21,950	-4,536	-785
	August	828	15,802	16,630	5,703	17,079	22,782	-4,875	-1,277
	September	800	16,587	17,387	5,571	16,604	22,175	-4,771	-17
	October	682	16,269	16,951	5,872	18,891	24,763	-5,190	-2,622
	November	660	16,188	16,848	4,951	18,228	23,179	-4,291	-2,040

NA=Not available.

Notes: • Annual totals are unadjusted and may not equal the sum of monthly totals, which are adjusted for seasonal and working-day variation, if present and identifiable.

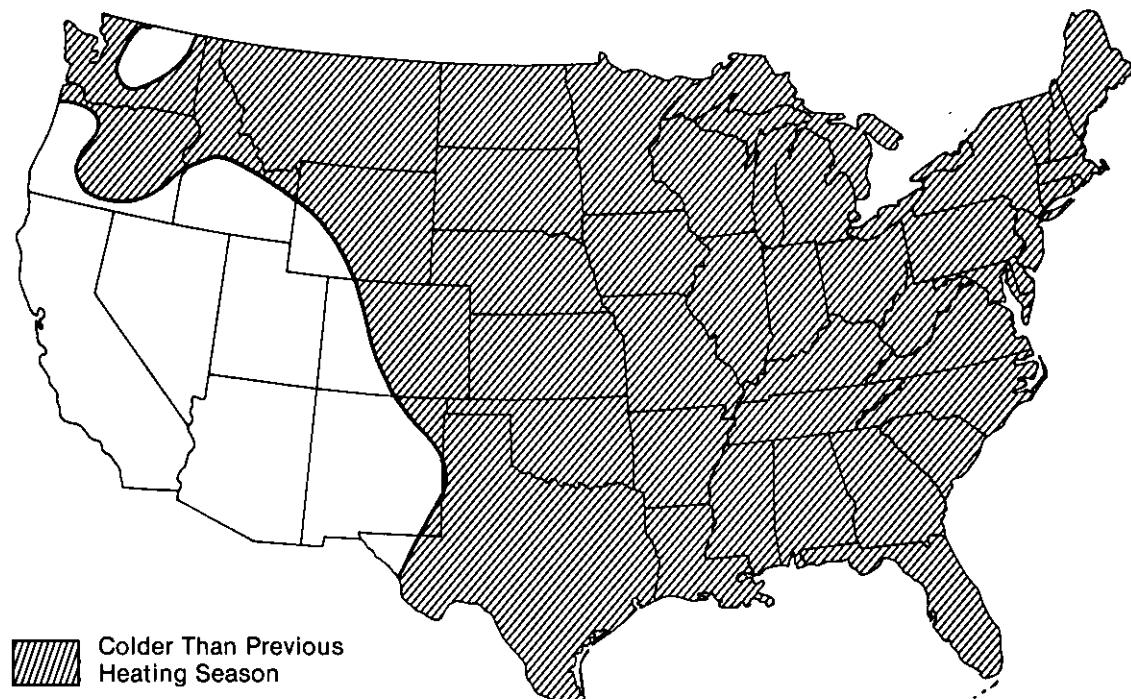
• The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory (which is comprised of the 50 States, the District of Columbia, and Puerto Rico) and the Virgin Islands.

Additional Notes and Sources: • See the last page of this section.

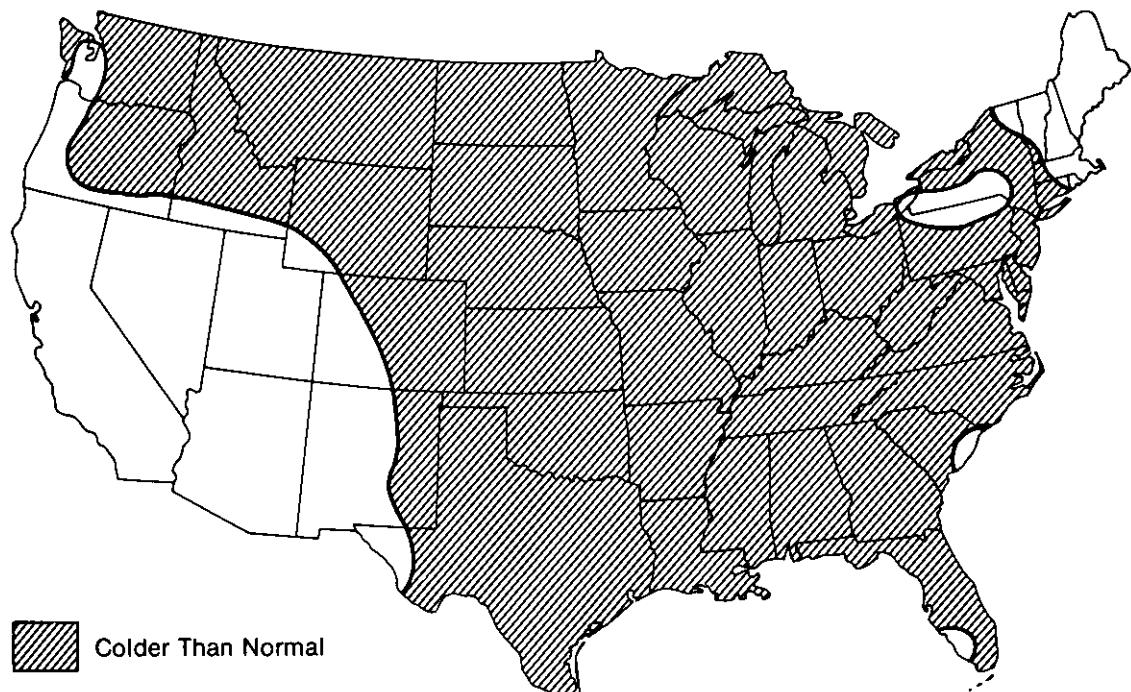
## **Executive Summary**

### **Heating Degree-Days Accumulated from July 1, 1983, through December 31, 1983**

#### Departure from Previous Heating Season



#### Departure from Normal



Source: • Department of Commerce—National Oceanic and Atmospheric Administration.

## Executive Summary

### Population Weighted Heating Degree-Days<sup>1</sup>

Census Divisions	December 1 through December 31			Cumulative July 1 through December 31						
				Percent Change						
	Normal <sup>2</sup>	1982	1983	Normal to 1983	1982 to 1983	Normal <sup>2</sup>	1982	1983	Normal to 1983	1982 to 1983
New England Conn., Maine, Mass., N.H., R.I., Vt.	1,099	918	1,127	2.5	22.8	2,421	2,190	2,353	-2.8	7.4
Middle Atlantic N.J., N.Y., Pa.	1,014	824	1,099	8.4	33.4	2,134	1,893	2,214	3.7	17.0
Eastern North Central Ill., Ind., Mich., Ohio, Wisc.	1,126	870	1,413	25.5	62.4	2,358	2,094	2,597	10.1	24.0
Western North Central Iowa, Kans., Minn., Mo., Nebr., N.Dak., S.Dak.	1,209	1,041	1,667	37.9	60.1	2,558	2,444	2,935	14.7	20.1
South Atlantic Del., Fla., Ga., Md. and D.C., N.C., S.C., Va., W.Va.	594	454	677	14.0	49.1	1,143	962	1,226	7.3	27.4
Eastern South Central Ala., Ky., Miss., Tenn.	700	521	896	28.0	72.0	1,385	1,134	1,534	10.8	35.3
Western South Central Ark., La., Okla., Tex.	506	458	802	58.5	75.1	894	844	1,116	24.8	32.2
Mountain Ariz., Colo., Idaho, Mont., Nev., N.Mex., Utah, Wyo.	950	961	1,078	13.5	12.2	2,236	2,313	2,234	-0.1	-3.4
Pacific Coast Calif., Oreg., Wash.	565	560	536	-5.1	-4.3	1,362	1,224	1,080	-20.7	-11.8
<b>U.S. AVERAGE<sup>3</sup></b>	<b>847</b>	<b>706</b>	<b>1,011</b>	<b>19.4</b>	<b>43.2</b>	<b>1,782</b>	<b>1,606</b>	<b>1,873</b>	<b>5.1</b>	<b>16.6</b>

<sup>1</sup> See Note on the last page of this section for explanation of degree-days.

<sup>2</sup> Normal is based on calculations of data from 1951 through 1980.

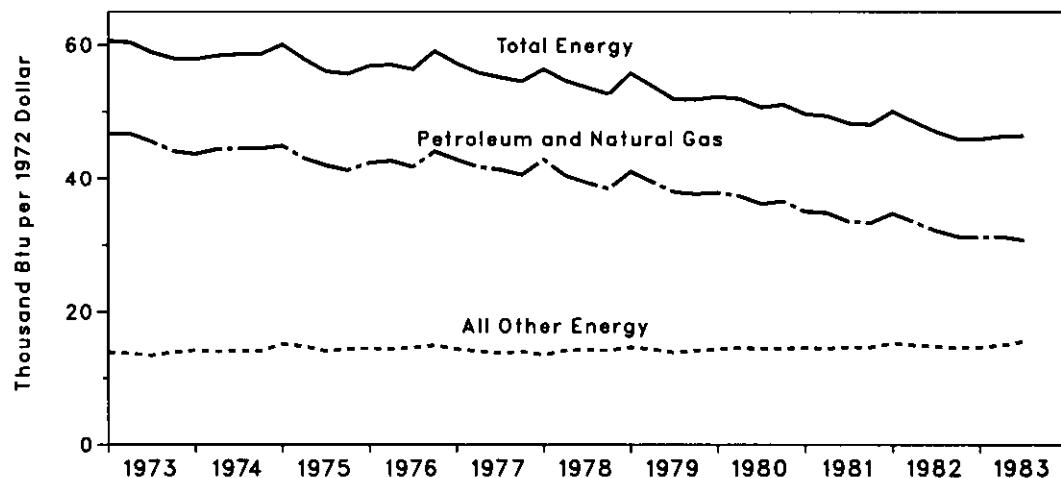
<sup>3</sup> Excludes Alaska and Hawaii.

## Executive Summary

### Energy Indicator—Energy Consumption per Dollar of Gross National Product (Seasonally Adjusted)

	Annual Rate of Energy Consumption	Gross National Product (GNP)	Energy Consumption per Dollar of GNP (Seasonally Adjusted)		
			Total Energy	Petroleum and Natural Gas	All Other Energy
			Quadrillion Btu	Trillion 1972 dollars	Thousand Btu per 1972 dollar
1973	74.609	1.254	59.5	45.7	13.8
1974	72.759	1.246	58.4	44.3	14.1
1975	70.707	1.232	57.4	42.8	14.6
1976	74.510	1.298	57.4	42.8	14.6
1977	76.332	1.370	55.7	41.6	14.1
1978	78.175	1.439	54.3	40.3	14.0
1979	78.910	1.479	53.4	39.1	14.3
1980	75.988	1.475	51.5	37.0	14.5
1981	1st Qtr <sup>2</sup>	75.105	49.7	35.1	14.6
	2nd Qtr <sup>2</sup>	74.729	49.4	34.9	14.5
	3rd Qtr <sup>2</sup>	73.706	48.3	33.6	14.7
	4th Qtr <sup>2</sup>	72.413	48.1	33.4	14.7
	YEAR	73.979	48.9	34.3	14.6
1982	1st Qtr <sup>2</sup>	74.407	50.1	34.8	15.3
	2nd Qtr <sup>2</sup>	72.150	48.5	33.5	15.0
	3rd Qtr <sup>2</sup>	69.771	47.0	32.2	14.8
	4th Qtr <sup>2</sup>	67.989	45.9	31.3	14.6
	YEAR	71.057	47.8	32.9	14.9
1983	1st Qtr <sup>2</sup>	68.332	45.9	31.2	14.7
	2nd Qtr <sup>2</sup>	R70.610	46.3	31.3	15.0
	3rd Qtr <sup>2</sup>	R72.103	46.4	R30.8	R15.6

### Quarterly Energy Consumption per Dollar of Gross National Product<sup>2</sup> (Seasonally Adjusted)



<sup>1</sup>Current dollars are converted to 1972 dollars by the Department of Commerce, Bureau of Economic Analysis.

<sup>2</sup>Quarterly data are seasonally adjusted and shown at annual rates.

R=Revised data.

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

• Yearly data may not equal sum of quarters due to seasonality adjustments and independent rounding.

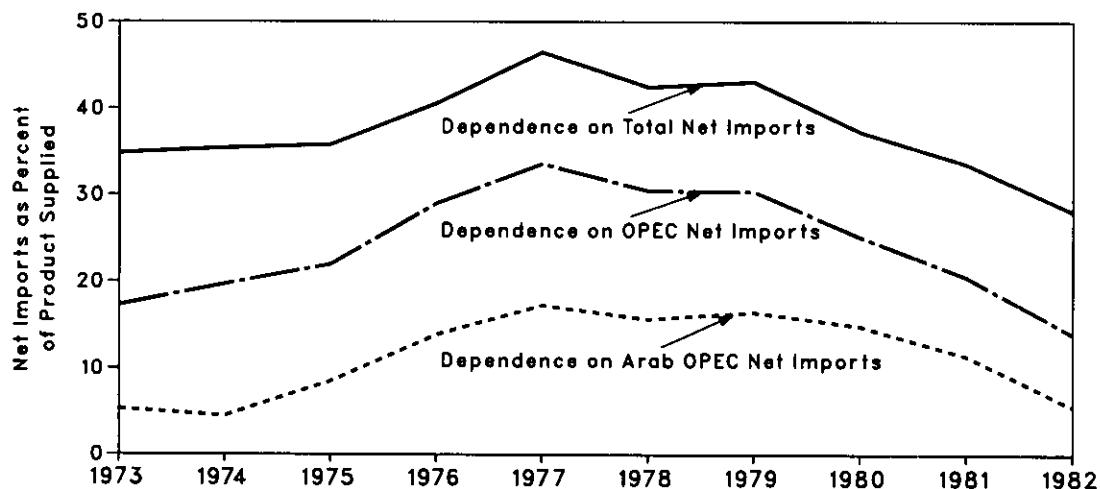
Sources: • See the last page of this section.

## Executive Summary

### Energy Indicator—U.S. Dependence on Petroleum Net Imports<sup>1</sup>

		Net Imports <sup>2</sup>			Domestic Petroleum Products Supplied	Net Imports as Percent of U.S. Petroleum Products Supplied		
		from Arab OPEC <sup>3</sup> Countries	from All OPEC <sup>4</sup> Countries	from All Countries		from Arab OPEC <sup>3</sup> Countries	from All OPEC <sup>4</sup> Countries	from All Countries
<b>ANNUAL RATE</b>		Thousand Barrels per Day						Percent
1973	AVERAGE	915	2,991	6,025	17,308	5.3	17.3	34.8
1974	AVERAGE	751	3,277	5,892	16,653	4.5	19.7	35.4
1975	AVERAGE	1,382	3,598	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	8,585	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	5,632	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	1st Qtr	2,060	3,804	5,964	17,113	12.0	22.2	34.9
	2nd Qtr	1,786	3,117	5,099	15,597	11.5	20.0	32.7
	3rd Qtr	1,857	3,181	5,400	15,532	12.0	20.5	34.8
	4th Qtr	1,679	3,167	5,151	16,008	10.5	19.8	32.2
	AVERAGE	1,845	3,315	5,401	16,058	11.5	20.6	33.6
1982	1st Qtr	1,105	2,391	4,038	15,891	7.0	15.1	25.4
	2nd Qtr	817	1,925	4,074	15,292	5.3	12.6	26.6
	3rd Qtr	820	2,239	4,720	14,893	5.5	15.0	31.7
	4th Qtr	672	1,990	4,353	15,120	4.4	13.2	28.8
	AVERAGE	851	2,136	4,298	15,296	5.6	14.0	28.1
1983	1st Qtr	346	1,139	3,024	15,015	2.3	7.6	20.1
	2nd Qtr	446	1,655	4,142	14,764	3.0	11.2	28.1
	3rd Qtr	841	2,478	5,297	15,223	5.5	16.3	34.8

### U.S. Dependence on Petroleum Net Imports



<sup>1</sup>Beginning in October 1977, Strategic Petroleum Reserves are included.

<sup>2</sup>Net imports equals imports minus exports. Imports from OPEC countries exclude indirect imports which are refined products imported primarily from Caribbean and West European areas and refined from crude oil produced in OPEC countries.

<sup>3</sup>Includes Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates.

<sup>4</sup>Includes Arab OPEC countries plus Ecuador, Gabon, Indonesia, Iran, Nigeria, and Venezuela.

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

Sources: • See the last page of this section.

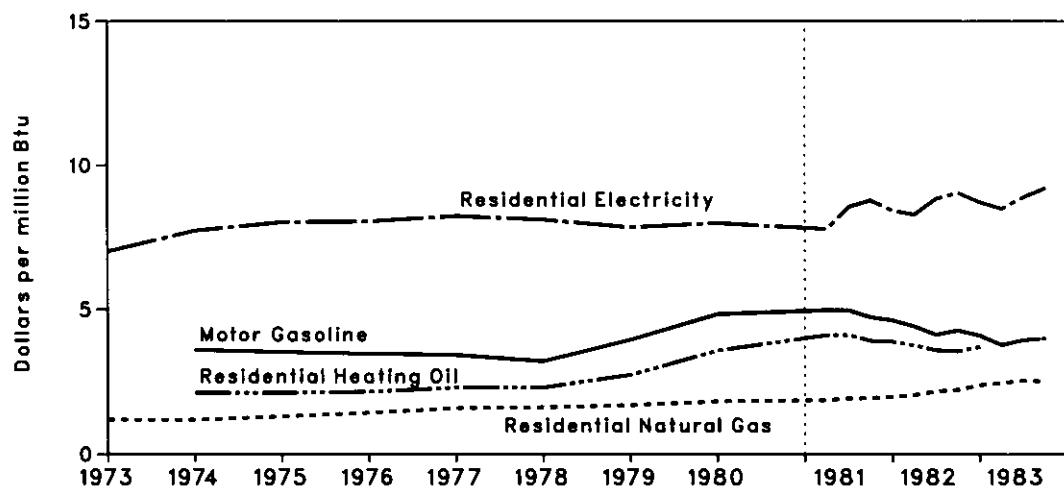
## Executive Summary

### Energy Indicator—Cost of Fuels to End Users in Constant (1972) Dollars

		Leaded Regular Motor Gasoline		Residential Heating Oil		Residential Natural Gas		Residential Electricity	
		cent/gal	\$/MMBtu	cent/gal	\$/MMBtu	cent/Mcf	\$/MMBtu	cent/kWh	\$/MMBtu
1973	AVERAGE	NA	NA	NA	NA	R121.4	1.19	2.39	7.00
1974	AVERAGE	45.1	3.61	29.4	2.12	R121.3	R1.18	2.63	7.71
1975	AVERAGE	44.1	3.53	29.3	2.11	R132.9	1.30	2.73	8.00
1976	AVERAGE	43.4	3.47	29.8	2.15	R145.5	1.43	2.74	8.03
1977	AVERAGE	42.9	3.43	31.8	2.29	162.2	1.59	2.80	8.21
1978	AVERAGE	40.1	3.21	31.7	2.29	R164.2	1.62	2.76	8.09
1979	AVERAGE	49.4	3.95	37.8	2.73	R171.8	R1.69	2.67	7.83
1980	AVERAGE	60.5	4.84	49.7	3.58	R186.8	R1.82	2.72	7.97
1981	1st Qtr	62.1	4.97	57.0	4.11	R190.6	R1.86	2.65	7.77
	2nd Qtr	62.1	4.97	57.2	4.12	R197.0	R1.92	2.91	8.53
	3rd Qtr	59.3	4.74	54.4	3.92	R197.4	R1.93	2.99	8.76
	4th Qtr	57.9	4.63	54.0	3.89	R202.2	R1.97	2.87	8.41
	AVERAGE	60.4	4.83	55.7	4.01	R197.3	R1.92	2.85	8.35
1982	1st Qtr	55.3	4.42	52.2	3.76	R208.5	R2.03	2.82	8.26
	2nd Qtr	51.7	4.13	49.8	3.59	R221.6	R2.16	3.01	8.82
	3rd Qtr	53.5	4.28	49.4	3.56	R226.4	R2.21	3.08	9.03
	4th Qtr	51.3	4.10	51.3	3.70	R243.0	R2.37	2.97	8.70
	AVERAGE	53.0	4.24	51.4	3.71	R224.1	R2.19	2.97	8.70
1983	1st Qtr	47.1	3.77	NA	NA	R251.3	R2.45	2.89	8.47
	2nd Qtr	49.3	3.94	NA	NA	R259.1	R2.53	3.03	8.88
	3rd Qtr	50.0	4.00	NA	NA	257.7	2.51	3.14	9.20

The source for residential natural gas data has been changed to the Energy Information Administration data now shown on page 93.

### Average Cost of Fuels to End Users in Constant (1972) Dollars



R=Revised data. NA=Not available.

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

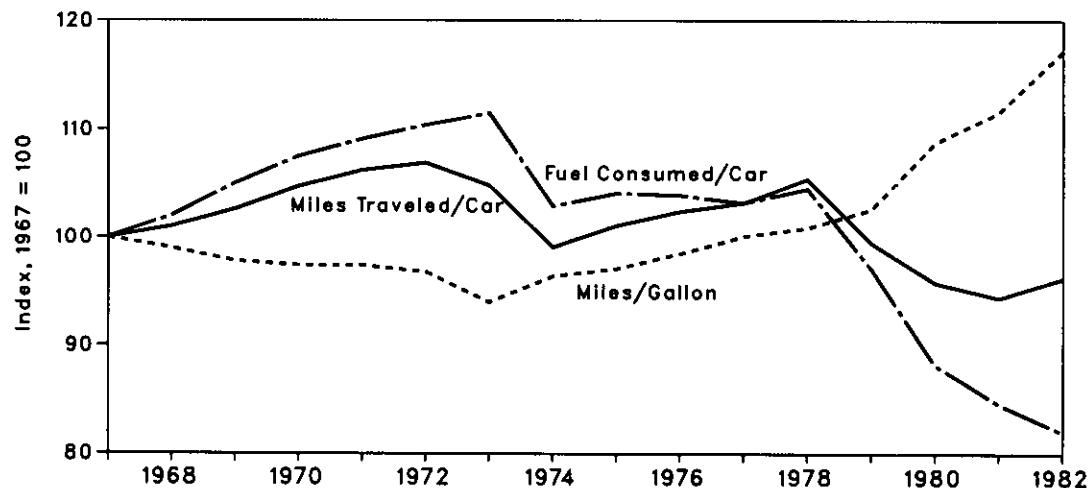
Sources: • See the last page of this section.

## Executive Summary

### Energy Indicator—U.S. Passenger Car Efficiency

	Average Fuel Consumed per Car		Average Miles Traveled per Car		Average Miles Traveled per Gallon of Fuel Consumed	
	Gallons	Index	Miles	Index	Miles	Index
1967	684	100.0	9,531	100.0	13.93	100.0
1968	698	102.0	9,627	101.0	13.79	99.0
1969	718	105.0	9,782	102.6	13.63	97.8
1970	735	107.5	9,978	104.7	13.57	97.4
1971	746	109.1	10,121	106.2	13.57	97.4
1972	755	110.4	10,184	106.9	13.49	96.8
1973	763	111.5	9,992	104.8	13.10	94.0
1974	704	102.9	9,448	99.1	13.43	96.4
1975	712	104.1	9,634	101.1	13.53	97.1
1976	711	103.9	9,763	102.4	13.72	98.5
1977	706	103.2	9,839	103.2	13.94	100.1
1978	715	104.5	10,046	105.4	14.06	100.9
1979	664	97.1	9,485	99.5	14.29	102.6
1980	603	88.2	9,135	95.8	15.15	108.8
1981	579	84.6	9,002	94.4	15.54	111.6
1982	561	82.0	9,167	96.2	16.33	117.2

U.S. Passenger Car Efficiency Index



Note: • Geographic coverage is the 50 States and the District of Columbia.  
 Sources: • See the last page of this section.

## Notes and Sources for the Executive Summary Section

### Notes

**1. Domestic Production:** Domestic production of energy includes production of coal (anthracite, bituminous coal, and lignite), crude oil and lease condensate, natural gas plant liquids, natural gas (dry), electric utility and industrial production of hydropower, and electricity generated from nuclear power, geothermal power, and wood and waste. The volumetric data were converted to approximate heat contents (Btu values) of these energy sources using conversion factors listed on the inside back cover of this publication.

**2. Domestic Consumption:** Domestic consumption of energy includes consumption of coal (anthracite, bituminous coal, and lignite), natural gas (dry), refined petroleum products supplied, electric utility and industrial production of hydropower, net imports of electricity produced from hydropower, net imports of coke made from coal, and electricity generated from nuclear power, geothermal power, and wood and waste. Approximate heat contents (Btu values) were derived using conversion factors listed on the inside back cover of this publication.

**3. U.S. Energy Imports:** U.S. energy imports include imports of bituminous coal, crude oil (including crude oil imported for the Strategic Petroleum Reserve), refined petroleum products, natural gas (dry), electricity produced from hydropower, and coke made from coal.

**4. U.S. Energy Exports:** U.S. energy exports include bituminous coal, crude oil, refined petroleum products, natural gas (dry), electricity produced from hydropower, and coke made from coal.

**5. Merchandise Trade Value:** The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory (which includes the 50 United States, the District of Columbia, and Puerto Rico) and the Virgin Islands. The statistics exclude imports into Guam, American Samoa, and other U.S. possessions, as well as shipments between the United States and Puerto Rico and the Virgin Islands, between the United States and other U.S. possessions, and between any of these outlying areas. From January 1981 forward, import data presented are on a customs value basis. All other values are on a free alongside ship (f.a.s.) basis. Monthly data are adjusted for seasonal and working-day variation, if present and identifiable; annual data are unadjusted, and annual totals may not equal sum of monthly totals. Statistics include nonmonetary gold. Statistics exclude Department of Defense Military Program Grant-Aid shipments. "All Other" and "Total" columns include foreign exports (i.e., reexports). The "Energy" columns include mineral fuels, lubricants, and related material. "Imports" represent general imports (i.e., entries for immediate consumption, entries into customs bonded warehouses, and entries for the Strategic Petroleum Reserve). "Trade Balance" is exports minus imports; a positive balance indicates a surplus trade value and a negative balance indicates a deficit trade value. The "All Other" columns are calculated by subtracting "Energy" from "Total."

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

There are several degree-day data bases maintained by the National Oceanic and Atmospheric Administration. The information published in the *Monthly Energy Review* (MER) is developed by the National Weather Service Climate Analysis Center, Camp Springs, Maryland. 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 these 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 in use 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, North Carolina, which compiles data from some 8,000 weather stations.

### Sources

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

• 1981 forward: U.S. Department of Commerce, Bureau of the Census, "Summary of U.S. Export and Import Merchandise Trade," most recent monthly issue.

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

**U.S. Dependence on Petroleum Net Imports:** • Imports and products supplied—Part 3 of this publication.

• Exports—1973 through 1976: Bureau of Mines, *Mineral Industry Surveys*; 1977 through 1981: Energy Information Administration (EIA), *Energy Data Reports*, "Petroleum Statement, Annual;" 1982 forward: EIA, *Petroleum Statement, Monthly*.

**Cost of Fuels to End Users in Constant (1972) Dollars:** • Motor gasoline—Bureau of Labor Statistics.

• Heating oil—Energy Information Administration (EIA), 1974 and 1975: Form CLC-92, "No. 2 Heating Oil Monthly Price Adjustment Report"; 1976 forward: FEA Form P112-M-1 and EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report."

• Natural gas—Annual data from EIA, *Natural Gas Annual*, 1973 through 1982 based on Form EIA-176, 'Supply and Distribution of Natural Gas' and predecessors. Monthly data are EIA estimates based on the Bureau of Labor Statistics Urban Consumer Price Index for natural gas and are adjusted to conform with final reported annual data. See Note 9 in the Notes and Sources for the Price Section.

• Electricity—Federal Energy Regulatory Commission (FERC), 1973 through February 1980: FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income"; March 1980 forward: FERC Form 5, "Electric Utility Company Monthly Statement."

• Deflator (The Consumer Price Index)—U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*.

**U.S. Passenger Car Efficiency:** • Indexes prepared from statistics published by the U.S. Department of Transportation, Federal Highway Administration, Federal Highway Statistics Division, "Highway Statistics," Table VM-1.

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## Energy Consumption

Total U.S. energy consumption in October 1983 was 5.7 quadrillion Btu, 1.9 percent above the October 1982 level.

Residential and commercial sector consumption was 1.8 quadrillion Btu in October 1983, up 0.7 percent from the October 1982 level. The residential and commercial sector accounted for 31.3 percent of the October 1983 total, down from the sector's 31.6-percent share in October 1982.

Industrial sector consumption was 2.3 quadrillion Btu in October 1983, up 3.3 percent from the October 1982 level. This sector consumed 40.4 percent of the October 1983 total, up from the sector's 39.9-percent share in October 1982.

Transportation sector consumption was 1.6 quadrillion Btu in October 1983, up 1.1 percent from the October 1982 level. This sector consumed 28.2 percent of the October 1983 total, down from the sector's 28.4-percent share in October 1982.

The electric utilities consumption was an estimated 2.0 quadrillion Btu of energy in October 1983, 5.6 percent higher than in October 1982. Coal contributed 54.4 percent of the energy consumed by electric utilities in October 1983, while nuclear contributed 13.9 percent; natural gas, 13.2 percent; hydroelectric, 12.4 percent; petroleum, 5.4 percent; and geothermal and wood and waste, 0.8 percent.

## Energy Consumption Summary for October 1983

(Quadrillion (10<sup>15</sup>) Btu)

Primary Energy Source	Sector					TOTAL
	Residential and Commercial	Industrial	Transportation	Electric Utilities		
Coal	0.020	0.214	0.000	1.069	1.310	
Natural Gas (dry)	0.333	0.656	0.043	0.260	1.292	
Petroleum	0.221	0.649	1.548	0.106	2.524	
Hydroelectric	0.000	0.002	0.000	0.243	0.245	
Nuclear	0.000	0.000	0.000	0.273	0.273	
Net Coke Imports	0.000	(0.001)	0.000	0.000	(0.001)	
Other	0.000	0.000	0.000	0.015	0.015	
<b>TOTAL PRIMARY ENERGY</b>	<b>0.575</b>	<b>1.520</b>	<b>1.591</b>	<b>1.966</b>	<b>5.659</b>	
Electricity Sales	0.366	0.235	0.001	(0.602)		
Net Energy Consumption	0.940	1.755	1.592		4.294	
Electrical Energy Losses	0.829	0.533	0.002	(1.364)	1.364	
<b>TOTAL ENERGY CONSUMED</b>	<b>1.769</b>	<b>2.288</b>	<b>1.594</b>		<b>5.659</b>	

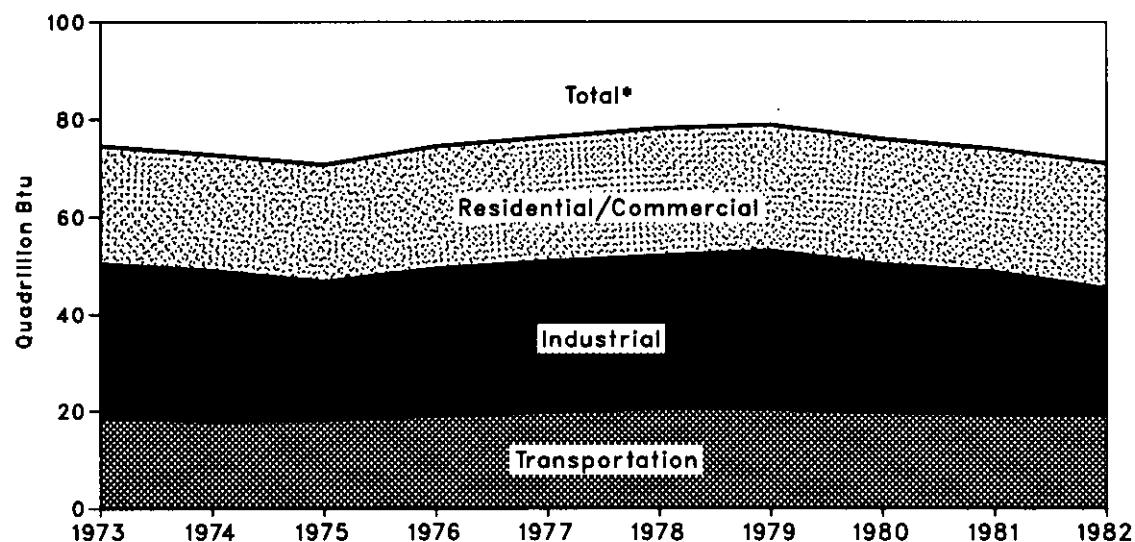
Notes: • Totals may not equal sum of components due to independent rounding and, in the case of coal, the use of preliminary conversion factors.

• Additional notes and sources for this table and all other tables in this section are provided on the last four pages of this section.

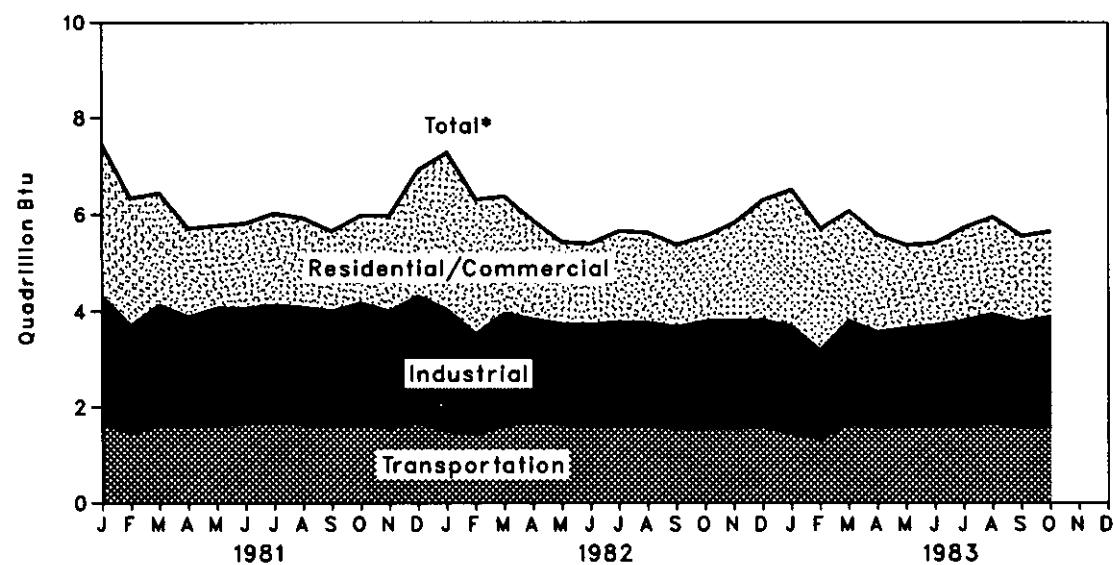
# Consumption

## Consumption of Energy by End-Use Sector

Yearly



Monthly



\*Btu consumption for all sectors were cumulated to create total.

# Consumption

## Consumption of Energy by End-Use Sector

		Residential and Commercial	Industrial	Transportation	Total Energy Consumed
Quadrillion (10 <sup>12</sup> ) Btu					
1973	TOTAL	24.179	31.846	18.577	74.609
1974	TOTAL	23.761	30.900	18.091	72.759
1975	TOTAL	23.928	28.569	18.209	70.707
1976	TOTAL	25.041	30.393	19.068	74.510
1977	TOTAL	25.392	31.149	19.785	76.332
1978	TOTAL	26.108	31.493	20.574	78.175
1979	TOTAL	25.796	32.652	20.457	78.910
1980	TOTAL	25.666	30.638	19.683	75.988
1981	January	3.154	2.647	1.657	7.459
	February	2.640	2.222	1.471	6.331
	March	2.316	2.510	1.614	6.439
	April	1.833	2.278	1.599	5.708
	May	1.705	2.425	1.633	5.764
	June	1.758	2.392	1.662	5.816
	July	1.900	2.419	1.699	6.022
	August	1.845	2.421	1.654	5.923
	September	1.656	2.392	1.603	5.649
	October	1.809	2.524	1.640	5.972
	November	1.988	2.418	1.571	5.975
	December	2.608	2.633	1.677	6.921
	TOTAL	25.213	29.282	19.480	73.979
1982	January	R3.252	R2.513	1.513	7.284
	February	R2.789	2.084	1.437	6.312
	March	2.423	2.330	1.623	6.379
	April	R2.039	R2.117	1.716	5.873
	May	1.700	2.082	1.647	5.433
	June	R1.679	R2.108	1.611	5.405
	July	1.886	R2.140	1.631	5.669
	August	1.864	R2.147	1.610	5.633
	September	1.709	R2.097	1.568	5.382
	October	1.757	2.214	1.577	5.553
	November	2.021	2.227	1.572	5.827
	December	2.486	2.213	1.598	6.307
	TOTAL	R25.606	R26.272	19.105	71.057
1983	January	2.829	2.219	1.459	6.517
	February	2.518	1.834	1.346	5.705
	March	2.274	2.142	1.656	6.081
	April	R2.017	R1.976	1.585	R5.581
	May	R1.722	R2.047	1.599	R5.373
	June	R1.702	R2.076	1.632	R5.420
	July	R1.924	R2.182	1.621	R5.741
	August	R2.019	R2.259	1.672	R5.965
	September	R1.780	R2.190	R1.584	R5.563
	October	1.769	2.288	1.594	5.659

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 preliminary conversion factors after 1981.  
Additional Notes and Sources: • See the last four pages of this section.

# Consumption

## Consumption of Energy by the Residential and Commercial Sector

		Coal	Natural Gas (Dry)	Petroleum	Electricity Sales	Electrical Energy Losses	Total Energy Consumed	Yearly Cumulative Energy Consumed
Quadrillion (10 <sup>12</sup> ) Btu								
1973	TOTAL	0.291	7.828	4.391	3.495	8.377	24.179	
1974	TOTAL	0.292	7.518	3.996	3.475	8.480	23.761	
1975	TOTAL	0.238	7.581	3.805	3.804	8.700	23.928	
1976	TOTAL	0.227	7.886	4.181	3.747	9.020	25.041	
1977	TOTAL	0.225	7.461	4.206	3.955	9.545	25.392	
1978	TOTAL	0.239	7.824	4.070	4.116	10.060	26.108	
1979	TOTAL	0.210	7.891	3.448	4.184	10.084	25.796	
1980	TOTAL	0.160	7.539	3.035	4.355	10.578	25.668	
1981	January	0.022	1.268	0.437	0.425	1.002	3.154	3.154
	February	0.018	1.122	0.293	0.391	0.816	2.640	5.794
	March	0.012	0.911	0.202	0.355	0.836	2.316	8.110
	April	0.014	0.590	0.148	0.325	0.756	1.833	9.943
	May	0.012	0.421	0.155	0.321	0.796	1.705	11.648
	June	0.008	0.291	0.148	0.365	0.947	1.758	13.406
	July	0.011	0.241	0.138	0.429	1.081	1.900	15.306
	August	0.011	0.236	0.149	0.431	1.019	1.845	17.152
	September	0.015	0.246	0.153	0.392	0.850	1.656	18.808
	October	0.016	0.390	0.249	0.348	0.807	1.809	20.617
	November	0.021	0.583	0.257	0.336	0.790	1.988	22.605
	December	0.026	0.942	0.306	0.380	0.954	2.608	25.213
	TOTAL	0.188	7.242	2.635	4.497	10.653	25.213	
1982	January	0.025	1.343	0.367	R0.440	1.077	R3.252	R3.252
	February	0.017	1.221	0.273	R0.409	0.869	R2.789	R6.040
	March	0.014	0.947	0.206	R0.373	0.884	2.423	R8.464
	April	0.018	0.705	0.173	0.346	0.797	R2.039	R10.502
	May	0.012	0.381	0.161	R0.327	0.819	1.700	R12.203
	June	0.009	0.279	0.146	R0.358	0.888	R1.679	R13.882
	July	0.016	0.245	0.131	R0.412	1.082	1.886	R15.768
	August	0.017	0.234	0.142	R0.431	1.042	1.864	R17.632
	September	0.016	0.247	0.153	R0.403	0.891	1.709	R19.342
	October	0.016	0.342	0.232	0.349	0.817	1.757	R21.098
	November	0.021	0.605	0.232	0.340	0.824	2.021	R23.120
	December	0.025	0.877	0.270	0.381	0.933	2.486	R25.606
	TOTAL	0.208	7.426	2.486	R4.566	10.922	R25.606	
1983	January	0.025	1.080	0.310	0.413	1.001	2.829	2.829
	February	0.016	1.048	0.238	0.390	0.826	2.518	5.348
	March	0.014	0.820	0.192	0.366	0.882	2.274	7.621
	April	R0.018	0.697	0.151	0.352	0.799	R2.017	R9.638
	May	R0.012	0.426	0.145	0.327	0.811	R1.722	R11.360
	June	R0.010	0.290	0.142	0.359	0.902	R1.702	R13.062
	July	R0.015	0.233	0.128	0.431	1.118	R1.924	R14.986
	August	R0.014	0.223	0.145	0.470	1.166	R2.019	R17.005
	September	R0.019	0.233	0.149	0.449	0.931	R1.780	R18.785
	October	0.020	0.333	0.221	0.366	0.829	1.769	20.555

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 the last four pages of this section.

# Consumption

## Consumption of Energy by the Industrial Sector

		Coal	Natural Gas (Dry)	Petro-leum	Hydro-electric	Net Coke Imports	Electricity Sales	Electrical Energy Losses	Total Energy Consumed	Yearly Cumulative Energy Consumed
Quadrillion (10 <sup>12</sup> ) Btu										
1973	TOTAL	4.349	10.388	9.132	0.035	(0.008)	2.341	5.610	31.846	
1974	TOTAL	4.048	10.003	8.720	0.033	0.059	2.337	5.700	30.900	
1975	TOTAL	3.797	8.532	8.182	0.032	0.014	2.346	5.665	28.569	
1976	TOTAL	3.786	8.761	9.043	0.033	0.000	2.573	6.197	30.393	
1977	TOTAL	3.498	8.636	9.809	0.033	0.015	2.682	6.476	31.149	
1978	TOTAL	3.372	8.539	9.905	0.032	0.131	2.761	6.755	31.493	
1979	TOTAL	3.636	8.549	10.582	0.034	0.066	2.873	6.912	32.652	
1980	TOTAL	3.181	8.394	9.535	0.033	(0.037)	2.781	6.751	30.638	
1981	January	0.299	0.754	0.823	0.003	0.000	0.229	0.539	2.647	2.647
	February	0.277	0.526	0.707	0.003	(0.001)	0.230	0.480	2.222	4.869
	March	0.279	0.690	0.754	0.003	(0.003)	0.234	0.552	2.510	7.379
	April	0.260	0.588	0.654	0.003	(0.001)	0.232	0.542	2.278	9.658
	May	0.239	0.668	0.700	0.003	0.000	0.234	0.580	2.425	12.083
	June	0.232	0.616	0.665	0.003	(0.004)	0.244	0.635	2.392	14.475
	July	0.270	0.641	0.644	0.003	0.000	0.245	0.616	2.419	16.893
	August	0.273	0.667	0.651	0.002	0.000	0.246	0.581	2.421	19.314
	September	0.266	0.675	0.684	0.002	(0.002)	0.242	0.525	2.392	21.706
	October	0.268	0.807	0.666	0.002	(0.003)	0.236	0.548	2.524	24.230
	November	0.270	0.756	0.634	0.002	0.000	0.226	0.530	2.418	26.648
	December	0.271	0.870	0.725	0.002	(0.003)	0.219	0.549	2.633	29.282
	TOTAL	3.205	8.257	8.308	0.033	(0.017)	2.817	6.677	29.282	
1982	January	0.271	0.793	0.706	0.003	0.000	0.215	R0.526	R2.513	R2.513
	February	0.254	0.520	0.639	0.003	(0.001)	0.214	R0.455	2.084	R4.597
	March	0.244	0.622	0.721	0.003	(0.002)	0.220	R0.522	2.330	R6.927
	April	0.227	0.514	0.668	0.003	(0.001)	0.214	R0.492	R2.117	R9.044
	May	0.219	0.480	0.635	0.003	(0.003)	0.213	R0.534	2.082	R11.125
	June	0.204	0.523	0.625	0.003	(0.004)	0.217	R0.539	R2.108	R13.234
	July	0.198	0.528	0.639	0.003	(0.003)	0.214	0.562	R2.140	R15.374
	August	0.200	0.537	0.671	0.002	(0.001)	0.216	0.523	R2.147	R17.521
	September	0.192	0.582	0.667	0.002	(0.003)	0.205	0.453	R2.097	R19.618
	October	0.201	0.678	0.642	0.002	(0.001)	0.208	0.486	2.214	R21.832
	November	0.204	0.708	0.605	0.002	(0.002)	0.207	0.502	2.227	R24.059
	December	0.207	0.626	0.690	0.002	(0.001)	0.199	0.489	2.213	R26.272
	TOTAL	2.821	7.109	7.907	0.033	(0.023)	R2.542	R6.083	R26.272	
1983	January	0.219	0.665	0.656	0.003	(0.001)	0.198	0.480	2.219	2.219
	February	0.203	0.406	0.594	0.003	(0.001)	0.202	0.427	1.834	4.053
	March	0.194	0.553	0.691	0.003	(0.001)	0.206	0.496	2.142	6.195
	April	R0.211	0.469	0.619	0.003	(0.002)	0.207	0.470	R1.976	R8.171
	May	R0.204	0.490	0.607	0.003	(0.002)	0.214	0.530	R2.047	R10.218
	June	R0.188	0.451	0.642	0.003	(0.001)	0.226	0.567	R2.076	R12.293
	July	R0.216	R0.500	0.654	0.003	(0.002)	0.226	0.586	R2.182	R14.475
	August	R0.219	R0.549	0.662	0.002	(0.001)	0.237	0.589	R2.259	R16.734
	September	R0.212	R0.547	0.700	0.002	(0.001)	0.237	0.492	R2.190	R18.924
	October	0.214	0.656	0.649	0.002	(0.001)	0.235	0.533	2.288	21.212

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 the last four pages of this section.

# Consumption

## Consumption of Energy by the Transportation Sector

		Coal	Natural Gas (Dry)	Petroleum	Electricity Sales	Electrical Energy Losses	Total Energy Consumed	Yearly Cumulative Energy Consumed
Quadrillion (10 <sup>12</sup> ) Btu								
1973	TOTAL	0.003	0.743	17.803	0.009	0.020	18.577	
1974	TOTAL	0.002	0.685	17.374	0.009	0.022	18.091	
1975	TOTAL	0.001	0.595	17.579	0.010	0.025	18.209	
1976	TOTAL	(1)	0.559	18.473	0.010	0.025	19.068	
1977	TOTAL	(1)	0.543	19.207	0.010	0.025	19.785	
1978	TOTAL	(1)	0.539	20.004	0.009	0.022	20.574	
1979	TOTAL	(1)	0.612	19.810	0.010	0.025	20.457	
1980	TOTAL	(1)	0.648	18.999	0.011	0.026	19.683	
1981	January	(1)	0.077	1.577	0.001	0.002	1.657	1.657
	February	(1)	0.065	1.403	0.001	0.002	1.471	3.128
	March	(1)	0.065	1.547	0.001	0.002	1.614	4.742
	April	(1)	0.050	1.546	0.001	0.002	1.599	6.342
	May	(1)	0.048	1.582	0.001	0.002	1.633	7.974
	June	(1)	0.044	1.614	0.001	0.002	1.662	9.636
	July	(1)	0.044	1.652	0.001	0.002	1.699	11.335
	August	(1)	0.044	1.607	0.001	0.002	1.654	12.990
	September	(1)	0.043	1.557	0.001	0.002	1.603	14.592
	October	(1)	0.051	1.586	0.001	0.002	1.640	16.232
	November	(1)	0.055	1.512	0.001	0.002	1.571	17.803
	December	(1)	0.071	1.603	0.001	0.002	1.677	19.480
	TOTAL	(1)	0.657	18.786	0.011	0.026	19.480	
1982	January	(1)	0.081	1.428	0.001	0.003	1.513	1.513
	February	(1)	0.068	1.367	0.001	0.002	1.437	2.950
	March	(1)	0.063	1.558	0.001	0.002	1.623	4.574
	April	(1)	0.050	1.663	0.001	0.002	1.716	6.290
	May	(1)	0.039	1.605	0.001	0.002	1.647	7.937
	June	(1)	0.038	1.570	0.001	0.002	1.611	9.548
	July	(1)	0.039	1.589	0.001	0.002	1.631	11.179
	August	(1)	0.039	1.568	0.001	0.002	1.610	R12.790
	September	(1)	0.039	1.526	0.001	0.002	1.568	14.357
	October	(1)	0.044	1.530	0.001	0.002	1.577	15.934
	November	(1)	0.053	1.516	0.001	0.002	1.572	17.506
	December	(1)	0.059	1.536	0.001	0.002	1.598	19.105
	TOTAL	(1)	0.612	18.455	0.011	R0.027	19.105	
1983	January	(1)	0.067	1.390	0.001	0.002	1.459	1.459
	February	(1)	0.056	1.287	0.001	0.002	1.346	2.806
	March	(1)	0.054	1.599	0.001	0.002	1.656	4.462
	April	(1)	0.047	1.536	0.001	0.002	1.585	6.047
	May	(1)	0.039	1.558	0.001	0.002	1.599	7.647
	June	(1)	0.034	1.595	0.001	0.002	1.632	9.278
	July	(1)	0.036	1.582	0.001	0.002	1.621	10.899
	August	(1)	0.039	1.630	0.001	0.002	1.672	12.571
	September	(1)	R0.037	1.544	0.001	0.002	R1.584	R14.155
	October	(1)	0.043	1.548	0.001	0.002	1.594	15.749

\*Since 1976, the amount of coal consumed by the transportation sector has been negligible.

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 the last four pages of this section.

# Consumption

## Energy Input at Electric Utilities

	Coal	Natural Gas (Dry)	Petro-leum <sup>1</sup>	Hydro-electric power <sup>2</sup>	Nuclear Electric Power	Other <sup>3</sup>	Total Energy Input	Yearly Cumulative Energy Input
Quadrillion (10 <sup>12</sup> ) Btu								
1973 TOTAL	8.658	3.748	3.515	2.975	0.910	0.046	19.852	
1974 TOTAL	8.535	3.519	3.365	3.276	1.272	0.056	20.023	
1975 TOTAL	8.786	3.240	3.166	3.187	1.900	0.072	20.350	
1976 TOTAL	9.720	3.152	3.477	3.032	2.111	0.081	21.573	
1977 TOTAL	10.243	3.284	3.901	2.482	2.702	0.082	22.694	
1978 TOTAL	10.236	3.297	3.987	3.110	3.024	0.068	23.722	
1979 TOTAL	11.264	3.609	3.283	3.107	2.715	0.089	24.068	
1980 TOTAL	12.122	3.807	2.634	3.085	2.739	0.114	24.501	
1981 January	1.153	0.239	0.275	0.260	0.259	0.011	2.198	2.198
February	1.010	0.232	0.188	0.244	0.236	0.010	1.919	4.117
March	1.020	0.283	0.184	0.241	0.240	0.011	1.979	6.097
April	0.921	0.299	0.160	0.242	0.225	0.010	1.858	7.955
May	0.949	0.327	0.156	0.278	0.215	0.010	1.935	9.890
June	1.056	0.394	0.203	0.301	0.291	0.010	2.194	12.084
July	1.184	0.425	0.214	0.289	0.252	0.011	2.374	14.458
August	1.149	0.403	0.171	0.252	0.294	0.011	2.279	16.737
September	1.022	0.336	0.165	0.212	0.266	0.011	2.012	18.750
October	1.008	0.312	0.171	0.216	0.224	0.011	1.941	20.691
November	0.991	0.268	0.146	0.224	0.249	0.010	1.886	22.577
December	1.120	0.248	0.169	0.276	0.284	0.010	2.105	24.682
TOTAL	12.583	3.764	2.202	3.033	2.974	0.127	24.682	
1982 January	1.198	0.246	0.221	0.307	0.280	0.009	2.261	2.261
February	1.031	0.228	0.162	0.302	0.220	0.008	1.950	4.211
March	1.010	0.255	0.144	0.338	0.248	0.007	2.001	6.213
April	0.917	0.255	0.120	0.317	0.238	0.007	1.853	8.065
May	0.962	0.267	0.106	0.318	0.236	0.008	1.897	9.962
June	1.000	0.306	0.111	0.317	0.262	0.010	2.005	11.967
July	1.165	0.365	0.144	0.311	0.278	0.010	2.273	14.240
August	1.156	0.374	0.125	0.276	0.273	0.010	2.214	16.453
September	1.021	0.303	0.110	0.233	0.277	0.010	1.954	18.407
October	0.977	0.282	0.106	0.233	0.254	0.011	1.862	20.270
November	1.008	0.234	0.100	0.269	0.253	0.011	1.875	22.145
December	1.073	0.222	0.120	0.316	0.266	0.009	2.006	24.151
TOTAL	12.517	3.335	1.568	3.538	3.084	0.108	24.151	
1983 January	1.125	0.215	0.137	0.332	0.274	0.011	2.094	2.094
February	0.965	0.183	0.134	0.315	0.242	0.008	1.848	3.942
March	0.992	0.215	0.133	0.342	0.261	0.010	1.952	5.895
April	0.919	0.210	0.110	0.338	0.244	0.009	1.830	7.725
May	0.963	0.226	0.097	0.352	0.241	0.007	1.885	9.610
June	1.062	0.256	0.119	0.346	0.264	0.010	2.056	11.666
July	1.273	0.325	0.155	0.319	0.279	0.012	2.363	14.029
August	1.353	0.364	0.158	0.296	0.279	0.016	2.466	16.495
September	1.143	0.309	0.123	0.252	0.271	0.014	2.112	18.607
October	1.069	0.260	0.106	0.243	0.273	0.015	1.966	20.573

<sup>1</sup>Includes petroleum products reported as "oil consumed in steam plants" through 1979 and "heavy oil" from 1980 forward, which are assumed to be residual fuel oil; petroleum products reported as "oil consumed in gas turbine and internal combustion engine plants" through 1979 and "light oil" from 1980 forward, which are assumed to be distillate fuel oil and kerosene; and petroleum coke.

<sup>2</sup>Includes net imports of electricity.

<sup>3</sup>Includes geothermal power and electricity produced from wood and waste.

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 the last four pages of this section.

## Notes and Sources for the Consumption Section

**1. End-Use Sectors:** Energy use is assigned to the major end-use sectors according to the following guidelines as closely as possible:

- Residential and commercial sector—Energy consumed by private household establishments primarily for space heating, water heating, air conditioning, cooking, and clothes drying; by non-manufacturing business establishments, including motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; by health, social, and educational institutions; and by Federal, State, and local governments.
- Industrial sector—Energy consumed by manufacturing, construction, mining, agriculture, fishing, and forestry establishments.
- Transportation sector—Energy consumed to move people and commodities in both the public and private sectors, including military, railroad, vessel bunkering, and marine uses, as well as the pipeline transmission of natural gas.
- Electric utility sector—Energy consumed by privately- and publicly-owned establishments that generate electricity primarily for resale.

**2. Conversion Factors:** See the inside back cover of this publication for factors applied in converting physical unit data into British thermal units (Btu).

**3. Coal:** Coal is anthracite, bituminous coal, and lignite.

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

**4. Natural Gas:** Total natural gas consumption is estimated monthly based on a supply disposition balance calculation. Residential and commercial sector monthly consumption is estimated by allocating the EIA annual residential and commercial sector consumption to the months in proportion to the American Gas Association (AGA) monthly sales to the residential and commercial sector. For current incomplete years, the AGA monthly sales data are used temporarily. Monthly transportation consumption (which is natural gas for pipeline use) for complete years is estimated by allocating the EIA annual transportation total to the months based on each month's total natural gas consumption as a share of the annual total natural gas consumption. For the current incomplete year, each month's transportation total is estimated by applying the percentage of total natural gas accounted for by the transportation sector in the same month a year ago to the current month's total natural gas consumption. Electric utilities consumption of natural gas is available monthly from EIA Form 759 (formerly FPC Form 4), "Monthly Power Plant Report." Each month's industrial sector consumption is estimated by subtracting the residential and commercial, transportation, and electric utilities sectors consumption from the total natural gas consumption.

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

**5. 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* is the series called "petroleum products supplied" in the Part 3, Petroleum section.

- Sources for petroleum products supplied by individual products are:
- 1973 through 1975: DOI, BOM, *Mineral Industry Surveys*, "Petroleum Statement, Annual."
  - 1976 through 1980: EIA, *Energy Data Reports*, "Petroleum Statement, Annual."
  - 1981: EIA, *Petroleum Supply Annual*.
  - 1982 forward: EIA, *Petroleum Supply Monthly*.

Specific petroleum products' end-use allocation procedures follow:

- Aviation Gasoline—All product supplied is assigned to the transportation sector.
- Asphalt—All product supplied is assigned to the industrial sector.
- Distillate Fuel
  - *Electric Utility Sector, All Periods.* Monthly and annual consumption in 1973 through 1979 is assumed to be the amount of oil (minus small amounts of kerosene and kerosene-type jet fuel deliveries) reported as consumed in internal combustion and gas turbine engine plants. From January 1980, electric utility consumption of distillate fuel is assumed to be the petroleum products reported as "light oil" (minus kerosene deliveries) consumed at utilities. Sources: 1973 through September 1977—FPC Form 4, "Monthly Power Plant Report;" October 1977 through 1981—FERC, FPC Form 4, "Monthly Power Plant Report;" 1982 forward—EIA, Form EIA-759, "Monthly Power Plant Report."

## Notes and Sources for the Consumption Section (continued)

### — **Nonutility Sectors, Annual Estimates.**

The aggregate nonutility use of distillate fuel is total distillate fuel supplied minus the electric utility consumption. The nonutility annual totals are allocated into the individual nonutility 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" reports (based primarily on data collected by Form EIA-172) as follows:

- Residential sector deliveries are taken directly from the "Deliveries" report for 1979 through 1981. Deliveries for 1981 are used as estimates for 1982. Prior to 1979, each year's subtotal of the heating plus industrial category deliveries is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares;
- Commercial sector deliveries are taken directly from the "Deliveries" report for 1979 through 1981. Deliveries for 1981 are used as estimates for 1982. Prior to 1979, each year's subtotal of the heating plus industrial category deliveries is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares;
- Industrial sector deliveries for 1979 through 1981 are the sum of deliveries for industrial, farm, oil company, off-highway, diesel, and all other uses. Deliveries for 1981 are used as estimates for 1982. Prior to 1979, each year's subtotal of the heating plus industrial category deliveries is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares, and this estimated industrial portion is added to oil company, off-highway diesel, and all other uses; and
- Transportation sector deliveries are the sum of deliveries for railroad, vessel bunkering, on-highway diesel, and military uses for all years. Deliveries for 1981 are used as estimates for 1982.

### — **Nonutility Sectors, Monthly Estimates Through 1981.**

- Residential and commercial sector monthly consumption is estimated by allocating the annual sector estimates to months in proportion to each month's share of the year's sales of No. 2 heating oil as reported in the "Monthly Report of Heating Oil Sales" by the Ethyl Corporation from 1973 through 1980 and the American Petroleum Institute since January 1981.
- The transportation sector highway use portion is allocated into the months in proportion to each month's share of the year's total sales for highway use as reported by the Federal Highway Administration's Table MF-25, "Private and Commercial Highway Use of Special Fuels by Months." The remaining transportation use of distillate fuel (i.e., for railroads, vessel bunkering, and military use) is evenly distributed over the months, adjusted for the number of days per month.
- Industrial sector monthly estimates are made by subtracting the residential and commercial, transportation, and electric utility sector estimates from each month's total distillate fuel supplied.

### — **Nonutility Sectors, 1982 Forward.**

Each month's nonutility consumption subtotal is disaggregated into the major end-use sectors in proportion to the shares each sector held of the nonutility subtotal in the same month in 1981.

- **Jet Fuel**—Small amounts in 1975 through 1977 are used by the industrial sector, and small amounts in all periods are consumed by the electric utility sector. All remaining jet fuel 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" reports (based primarily on data collected by Form EIA-172) as follows:
  - Residential sector deliveries are taken directly from the "Deliveries" report for 1979 through 1981. Deliveries for 1981 are used as estimates for 1982 forward. Prior to 1979, each year's category called "heating" is split into residential, commercial, and industrial in proportion to the 1979 shares;
  - Commercial sector deliveries are taken directly from the "Deliveries" report for 1979 through 1981. Deliveries for 1981 are used as estimates for 1982 forward. Prior to 1979, each year's category called "heating" is split into residential, commercial, and industrial in proportion to the 1979 shares; and
  - Industrial sector deliveries are taken directly from the "Deliveries" report for 1979 through 1981. Deliveries for 1981 are used as estimates for 1982 forward. Prior to 1979, each year's 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)**

- 1973 through 1981: 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 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 equal the annual consumption of LPG by the sector;
  - Sixteen percent of LPG sales for internal combustion engine use is estimated to be for transportation end-use; this estimated portion is converted from thousand gallons per year to thousand barrels per year and assumed to equal the annual consumption of LPG by the transportation sector; and
  - 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 source of the sales data is EIA's "Sales of Liquefied Petroleum Gases and Ethane" reports, based primarily on data collected by Form EIA-174.

- 1982 forward: The 1981 annual end-use shares are applied for succeeding periods to estimate the amount of the total LPG supplied that is consumed by each major end-use sector.

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

## Notes and Sources for the Consumption Section (continued)

- **Motor Gasoline**—Total product supplied monthly is allocated to the major end-use sectors in proportion to aggregations of annual sales categories formed from the U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, Tables MF-21, MF-24, and MF-25, as follows:
  - Commercial sales are the sum of sales for public non-highway use, miscellaneous use, and unclassified use;
  - Industrial sales are the sum of sales for agriculture, construction, and industrial and commercial use as classified in the *Highway Statistics*; and
  - Transportation sales are the sum of sales for highway use (minus the sales of special fuels, which are primarily diesel fuel and are accounted for in the transportation sector of distillate fuel) and sales for marine use.
- **Petroleum Coke**—The portion consumed by the electric utility sector is from EIA Form 759, "Monthly Power Plant Report" (formerly FPC Form 4). The remaining portion is assigned to the industrial sector.
- **Residual Fuel**
  - **Electric Utility Sector, All Periods.** Monthly and annual consumption 1973 through 1979 is assumed to be the amount of oil reported as consumed in steam electric plants. From January 1980, electric utility consumption of residual fuel is assumed to be the petroleum products reported as "heavy oil" consumed at utilities. Sources: 1973 through September 1977—FPC Form 4, "Monthly Power Plant Report;" October 1977 through 1981—FERC, FPC Form 4, "Monthly Power Plant Report;" 1982 forward—EIA, Form EIA-759, "Monthly Power Plant Report."
  - **Nonutility Sectors, Annual Estimates.** The aggregate nonutility use of residual fuel is total residual fuel supplied minus the electric utility consumption. The nonutility annual totals are allocated into the individual nonutility 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" reports (based primarily on data collected by Form EIA-172) as follows:
    - Commercial sector deliveries are taken directly from the "Deliveries" report for 1979 through 1981. Deliveries for 1981 are used as estimates for 1982. Prior to 1979, each year's subtotal of the heating plus industrial category deliveries is split into commercial and industrial in proportion to the 1979 shares;
    - Industrial sector deliveries for 1979 through 1981 are the sum of deliveries for industrial, oil company, and all other uses. Deliveries for 1981 are used as estimates for 1982. Prior to 1979, each year's subtotal of the heating plus industrial category deliveries is split into commercial and industrial in proportion to the 1979 shares; and this estimated industrial portion is added to oil company and all other uses; and
    - Transportation sector deliveries are the sum of deliveries for railroad, vessel bunkering, and military uses for all years. Deliveries for 1981 are used as estimates for 1982.
  - **Nonutility Sectors, Monthly Estimates Through 1981.**
    - Commercial sector monthly consumption is estimated by allocating the annual commercial sector estimates to 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 for 1973 through 1980 and the American Petroleum Institute since January 1981.
    - Transportation sector monthly estimates are made by evenly distributing the annual sector estimate over the months, adjusted for the number of days per month.
    - Industrial sector monthly estimates are made by subtracting the commercial, transportation, and electric utility sector estimates from each month's total residual fuel supplied.
  - **Nonutility Sectors, 1982 Forward.** Each month's nonutility consumption subtotal is disaggregated into the major end-use sectors in proportion to the shares each sector held of the nonutility subtotal in the same month in 1981.
- **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.

**6. Hydroelectric:** Includes electricity generated by hydropower at electric utilities, small amounts in the industrial sector, and net imports of electricity, which are assumed to be generated by hydropower and are included in the hydroelectricity in the electric utilities sector.

*Sources for electric utilities sector:*

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

*Sources for industrial sector:*

- 1973 through 1978: FPC Forms 4 and 12-C.
- 1979: FPC Form 4 and EIA estimates.
- 1980 forward: EIA estimates.

Note: For 1977 forward, monthly data are not available from above sources and were estimated by seasonalizing the annual numbers in proportion to each month's hydroelectricity generation in the electric utility sector.

*Sources for imports and exports of electricity:*

- 1973 through 1980 annual: DOE, Economic Regulatory Administration, "Report on Electric Energy Exchanges with Canada and Mexico."
- 1981 annual: DOE, Office of Energy Emergency Operations, "Report on Electric Energy Exchanges with Canada and Mexico for Calendar Year 1981," April 1982 (revised June 1982).
- 1981 monthly: Estimates are derived from annual data by dividing by the number of days in the year and multiplying by the number of days in the month.
- 1982 forward: EIA estimates.

## Notes and Sources for the Consumption Section (continued)

### 7. Nuclear:

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

8. Net Coke Imports: This is coke made from coal. Net imports means imports minus exports, and the parentheses indicate that exports are greater than imports.

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

9. Other Energy: "Other" is electricity produced from geothermal power and from wood and waste.

*Sources:* same as Note 7 above, for Nuclear.

10. Electricity Sales: From the sources cited below the following sales categories are available: residential, commercial, industrial, and other. For the end-use estimates in this section, the "other" category (which is primarily sales for use in government buildings) is added to the commercial sector except for approximately 4 percent, which represents the transportation sector use of electricity. Sales of electricity are converted into Btu at the rate of 3,412 Btu per kilowatt-hour.

*Sources of sales data:*

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

11. Electrical Energy Losses: Total electrical energy losses (i.e., incurred in the generation and transmission of electricity plus plant use and unaccounted for) are estimated as the difference between total energy input at utilities and electricity sold to the end-users. Total losses are disaggregated to the end-use sectors in proportion to each sector's share of total electricity sales. In general, about 65 percent of total energy input at utilities is lost in the form of heat, and an additional 3 percent is lost in the transmission and distribution of the electricity to the end-user.



# Part 3

# Petroleum

## Crude Oil and Refined Petroleum Products\*

Domestic crude oil production during December 1983 was estimated to be 8.6 million barrels per day, 0.1 percent below the rate in November 1983 but 0.2 percent above the rate in December 1982.

Total petroleum imports averaged 4.9 million barrels per day in December 1983, 4.3 percent less than the November 1983 rate but 7.3 percent more than the December 1982 rate.

In December 1983, 15.6 million barrels per day of petroleum products were supplied for domestic use, 0.3 percent above the level in November 1983 and 0.6 percent above the level in the previous December. Motor gasoline accounted for 42.4 percent of the total; distillate fuel oil, 20.9 percent; and residual fuel oil, 8.9 percent.

Motor gasoline supplied during December 1983 averaged 6.6 million barrels per day, 0.2 percent below the rate in November

1983 but 1.0 percent above the rate in the previous December. Stocks of motor gasoline totaled 228 million barrels at the end of December 1983, 8 million barrels below the stocks reported at the end of November 1983.

Distillate fuel oil supplied during December 1983 averaged 3.3 million barrels per day, 12.9 percent higher than the November 1983 rate and 13.8 percent higher than the December 1982 level. Distillate fuel oil stocks were 144 million barrels at the end of December 1983, 17 million barrels below the level at the end of the previous month.

Residual fuel oil supplied in December 1983 averaged 1.4 million barrels per day, 2.3 percent higher than in November 1983 but 13.1 percent lower than the December 1982 rate. Residual fuel oil stocks measured 48 million barrels at the end of December 1983, 6 million barrels below the level at the end of November 1983.

\*Estimates for the most current month are based on Energy Information Administration (EIA) weekly data (except crude production) and will be revised to conform with data from the EIA Petroleum Reporting System as available. For the most recent month, crude production is an EIA estimate based on historical and provisional data through September 1983. The total import data above include imports into the Strategic Petroleum Reserve.

# Petroleum

## Crude Oil<sup>1</sup> and Petroleum Products Overview

		Field Production			Stock Withdrawal <sup>2</sup>		Ending Stocks <sup>3</sup>	
		Total Domestic <sup>4</sup>	Crude Oil	Natural Gas Plant Production	Crude Oil <sup>5</sup>	Petroleum Products	Petroleum Products Supplied	Crude Oil <sup>6</sup> and Petroleum Products
Thousand barrels per day								
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	*1,074
1975	AVERAGE	10,045	8,375	1,633	-17	-145	16,322	1,133
1976	AVERAGE	9,774	8,132	1,603	-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	*1,392
1981	January	10,231	8,540	1,652	*50	*1,159	18,430	1,388
	February	10,294	8,604	1,653	-278	250	16,989	1,389
	March	10,272	8,613	1,624	-632	224	15,907	1,401
	April	10,195	8,557	1,599	-595	148	15,350	1,415
	May	10,160	8,501	1,593	-391	-374	15,353	1,438
	June	10,287	8,629	1,594	-135	406	16,095	1,430
	July	10,098	8,500	1,548	-360	91	15,682	1,439
	August	10,243	8,583	1,614	397	-999	15,263	1,457
	September	10,281	8,604	1,612	-285	-341	15,655	1,476
	October	10,225	8,563	1,598	-760	477	15,822	1,485
	November	10,269	8,586	1,630	-325	-233	15,593	1,501
	December	10,220	8,585	1,590	-170	745	16,596	1,484
	AVERAGE	10,230	8,572	1,609	-290	130	16,058	
1982	January	10,128	8,509	1,578	-401	1,298	16,124	1,456
	February	10,312	8,702	1,563	-242	1,230	16,001	1,428
	March	10,284	8,667	1,572	121	1,047	15,560	1,392
	April	10,188	8,591	1,542	-37	1,583	16,046	1,346
	May	10,244	8,683	1,518	29	-66	14,847	1,347
	June	10,212	8,646	1,511	40	-489	14,998	1,360
	July	10,229	8,658	1,513	-147	-926	14,821	1,393
	August	10,215	8,634	1,524	-440	-44	14,839	1,408
	September	10,279	8,701	1,518	263	-447	15,022	1,414
	October	10,299	8,701	1,530	-548	-47	14,859	1,432
	November	10,359	8,697	1,609	-398	-361	15,009	1,455
	December	10,276	8,598	1,628	128	688	15,487	*1,430
	AVERAGE	10,252	8,649	1,550	-136	283	15,296	
1983	January	10,356	8,634	1,668	*567	*865	14,765	1,453
	February	10,298	8,660	1,585	-382	1,128	14,772	1,432
	March	10,259	8,677	1,544	56	1,765	15,484	1,375
	April	10,229	8,686	1,502	-438	431	14,779	1,376
	May	10,231	8,682	1,483	68	-759	14,250	1,397
	June	10,262	8,676	1,514	-163	-242	15,281	1,409
	July	10,237	8,647	1,536	118	-922	14,913	1,434
	August	10,257	8,653	1,561	-781	-289	15,366	1,467
	September	10,323	8,666	1,598	-191	-634	15,396	1,492
	October	10,317	8,654	1,604	R-180	R-456	R14,947	R1,512
	November	10,310	8,624	1,636	182	-128	15,533	1,510
	December	NA	8,612	NA	-233	838	15,583	1,479
	AVERAGE	NA	8,656	NA	-209	128	15,090	

<sup>1</sup>Includes lease condensate.

<sup>2</sup>A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>3</sup>Stocks are totals as of end of period.

<sup>4</sup>Includes crude oil, natural gas plant production, other hydrocarbons, and alcohol.

<sup>5</sup>Includes stocks located in the Strategic Petroleum Reserve.

<sup>6</sup>Includes crude oil for storage in the Strategic Petroleum Reserve.

\*Net imports equals imports minus exports.

In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stocks withdrawal calculations. See Note 5 on the last page of this section.

Footnotes continued on following page.

# Petroleum

## Crude Oil<sup>1</sup> and Petroleum Products Overview (continued)

		Imports			Exports			Net Imports <sup>2</sup>
		Total	Crude Oil <sup>3</sup>	Petroleum Products	Total	Crude Oil	Petroleum Products	
Thousand barrels per day								
1973	AVERAGE	6,256	3,244	3,012	231	2	229	6,025
1974	AVERAGE	6,112	3,477	2,635	221	3	218	5,892
1975	AVERAGE	6,056	4,105	1,951	209	6	204	5,846
1976	AVERAGE	7,313	5,287	2,026	223	8	215	7,090
1977	AVERAGE	8,807	6,615	2,193	243	50	193	8,565
1978	AVERAGE	8,363	6,356	2,008	362	158	204	8,002
1979	AVERAGE	8,456	6,519	1,937	471	235	236	7,985
1980	AVERAGE	6,909	5,263	1,646	544	287	258	6,365
1981	January	6,827	4,932	1,895	558	339	219	6,270
	February	6,772	4,873	1,899	569	198	371	6,203
	March	6,028	4,521	1,507	586	210	376	5,442
	April	5,668	4,338	1,330	570	198	372	5,098
	May	5,775	4,287	1,489	595	312	283	5,180
	June	5,435	4,061	1,375	420	123	297	5,015
	July	5,816	4,296	1,521	571	257	314	5,245
	August	5,767	4,179	1,588	644	204	440	5,123
	September	6,365	4,740	1,624	519	194	325	5,845
	October	5,959	4,380	1,579	738	226	512	5,221
	November	5,741	4,046	1,695	701	278	423	5,041
	December	5,843	4,137	1,706	656	189	467	5,187
	AVERAGE	5,996	4,396	1,599	595	228	367	5,401
1982	January	5,332	3,693	1,639	829	238	591	4,503
	February	4,807	2,990	1,817	804	304	499	4,003
	March	4,484	2,874	1,610	882	321	561	3,602
	April	4,378	2,849	1,529	786	174	611	3,593
	May	4,811	3,309	1,503	803	262	542	4,008
	June	5,327	3,836	1,491	703	94	609	4,624
	July	5,890	4,248	1,642	741	229	512	5,149
	August	5,244	3,851	1,392	858	304	554	4,386
	September	5,414	3,636	1,778	791	184	606	4,624
	October	5,306	3,670	1,636	932	270	662	4,374
	November	5,744	3,862	1,882	786	262	524	4,958
	December	4,606	3,000	1,605	860	193	667	3,746
	AVERAGE	5,113	3,488	1,625	815	238	579	4,298
1983	January	4,372	2,938	1,434	973	117	856	3,399
	February	3,691	2,268	1,423	865	262	603	2,825
	March	3,629	2,232	1,398	801	174	627	2,829
	April	4,744	3,154	1,590	809	88	721	3,935
	May	4,898	3,234	1,664	848	280	568	4,049
	June	5,218	3,502	1,716	774	144	630	4,443
	July	5,690	3,868	1,822	571	145	426	5,119
	August	6,036	4,174	1,863	663	172	491	5,373
	September	6,088	4,221	1,867	684	177	507	5,403
	October	R5,256	R3,446	R1,810	R576	140	436	4,680
	November	5,168	3,312	1,856	679	186	494	4,489
	December†	4,944	3,400	1,544	NA	NA	NA	NA
	AVERAGE	4,985	3,318	1,667	NA	NA	NA	NA

Footnotes continued.

†Italics denote estimates based upon preliminary data. R=Revised data. NA=Not available.

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

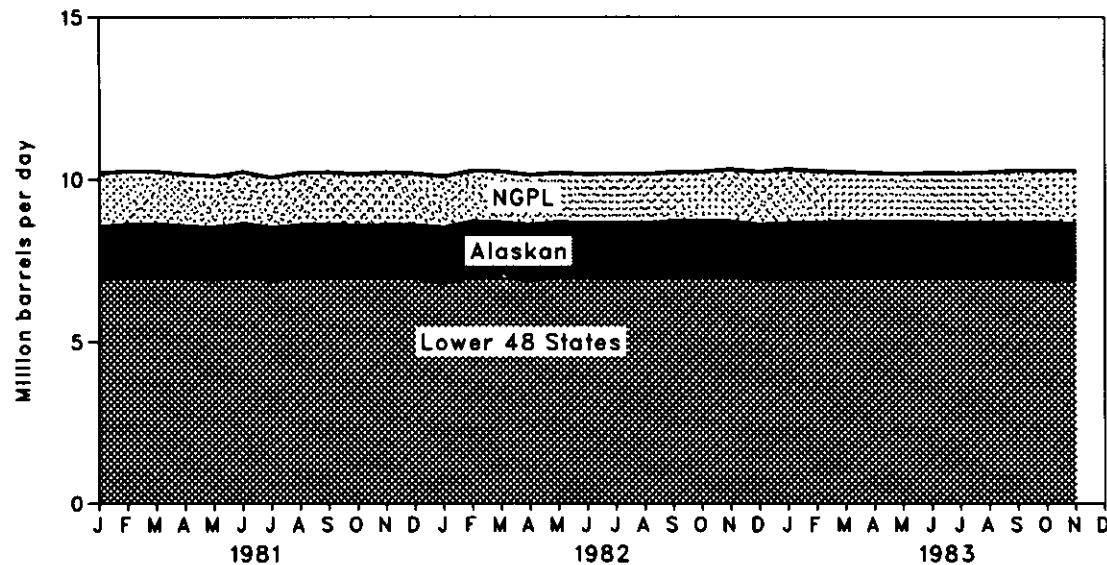
• Totals may not equal sum of components due to independent rounding.

Sources: • See the last page of this section.

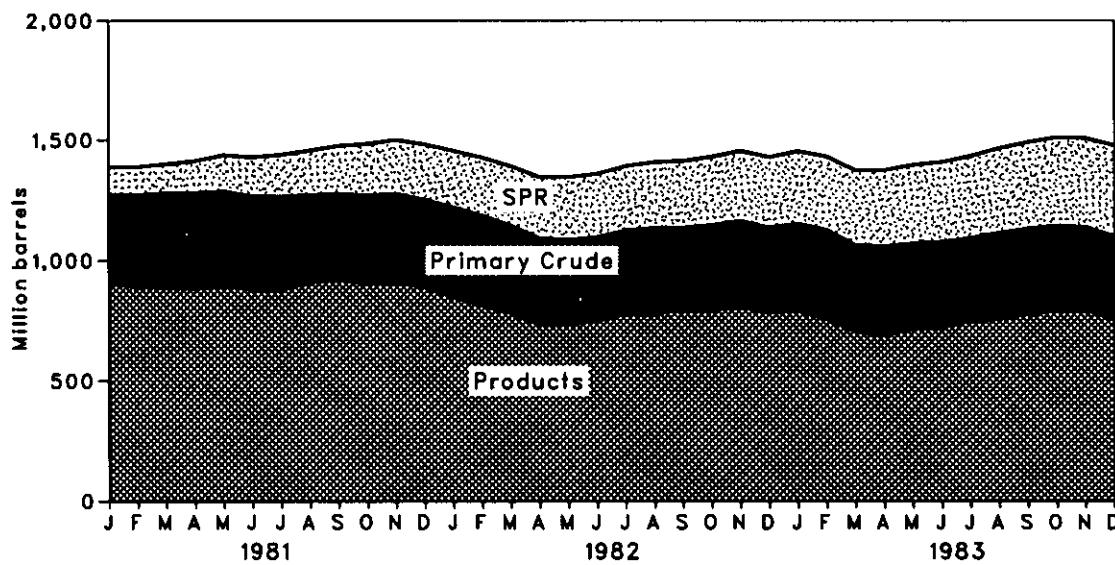
# Petroleum

## Overview

### Production of Crude Oil and Natural Gas Plant Liquids



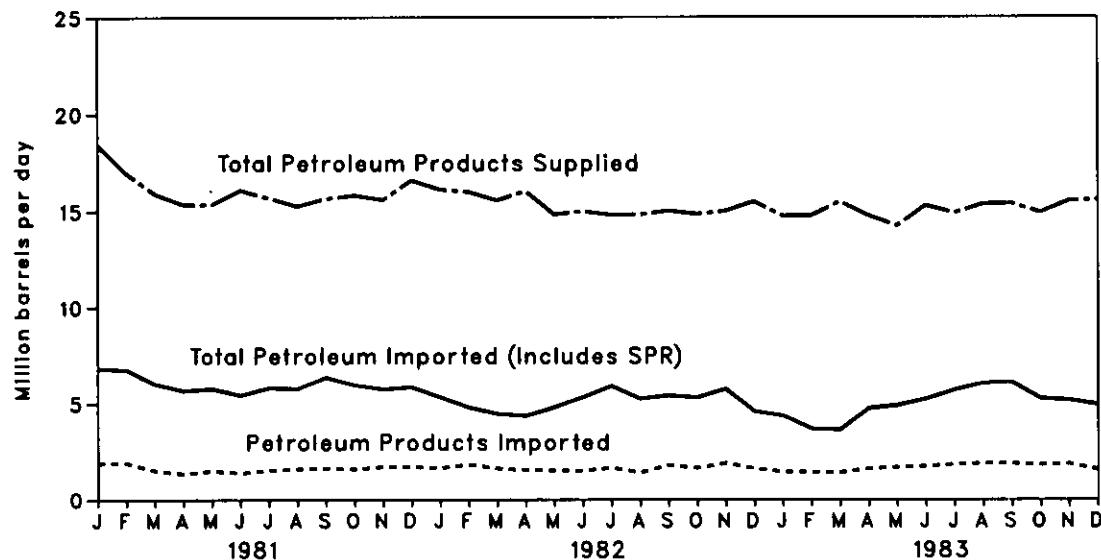
### Stocks



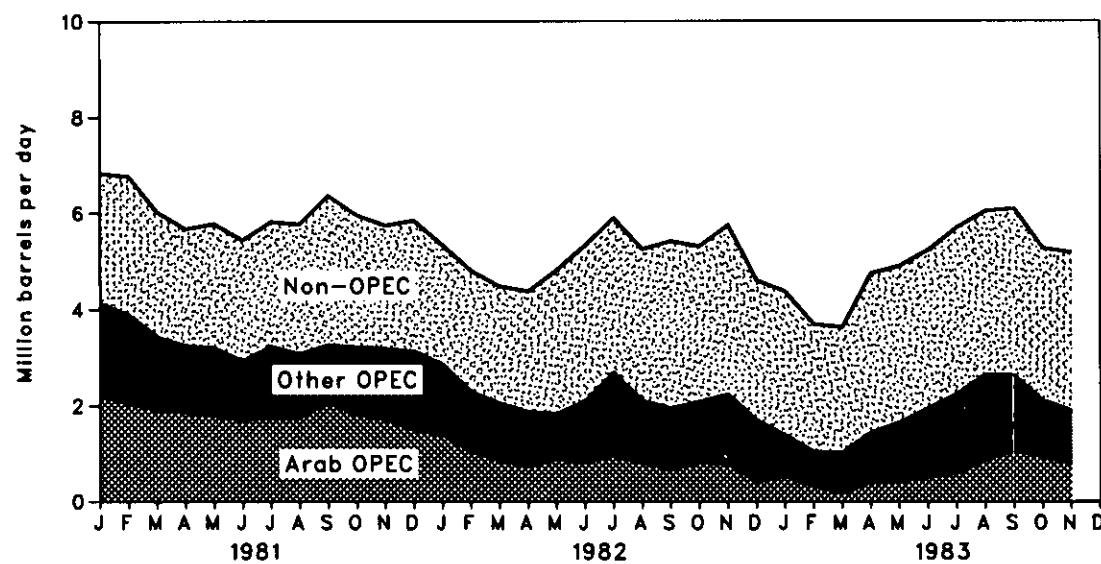
## Petroleum

## Overview

### **Products Supplied and Imports**



### Petroleum Imports by Source



# Petroleum

## Crude Oil<sup>1</sup> Supply and Disposition

Supply								
	Field Production		Imports		Stock Withdrawals <sup>2</sup>		Unaccounted for Crude Oil	
	Total Domestic	Alaskan	Total	SPR <sup>3</sup>	Other	SPR <sup>4</sup>	Other	
Thousand barrels per day								
1973	AVERAGE	9,208	198	3,244	3,244		11	3
1974	AVERAGE	8,774	193	3,477	3,477		-62	-25
1975	AVERAGE	8,375	191	4,105	4,105		-17	17
1976	AVERAGE	8,132	173	5,287	5,287		-39	77
1977	AVERAGE	8,245	464	6,615	21	6,594	-20	-6
1978	AVERAGE	8,707	1,229	6,356	162	6,195	-163	84
1979	AVERAGE	8,552	1,401	6,519	67	6,452	-67	-81
1980	AVERAGE	8,597	1,617	5,263	44	5,219	-45	-52
1981	January	8,540	1,606	4,932	106	4,826	-151	201
	February	8,604	1,619	4,873	80	4,793	-127	-150
	March	8,613	1,618	4,521	140	4,382	-155	-477
	April	8,557	1,608	4,338	272	4,066	-444	-151
	May	8,501	1,580	4,287	386	3,901	-513	122
	June	8,629	1,632	4,061	318	3,743	-434	299
	July	8,500	1,605	4,296	175	4,121	-324	-36
	August	8,583	1,602	4,179	257	3,922	-372	769
	September	8,604	1,607	4,740	435	4,305	-486	201
	October	8,563	1,596	4,380	453	3,927	-501	-259
	November	8,586	1,614	4,046	271	3,774	-259	-66
	December	8,585	1,623	4,137	165	3,971	-252	82
	AVERAGE	8,572	1,609	4,396	256	4,141	-336	46
1982	January	8,509	1,705	3,693	170	3,523	-159	-242
	February	8,702	1,707	2,990	159	2,830	-213	-29
	March	8,667	1,696	2,874	185	2,689	-235	357
	April	8,591	1,691	2,849	190	2,659	-233	196
	May	8,683	1,707	3,309	204	3,105	-176	205
	June	8,646	1,665	3,836	105	3,732	-105	144
	July	8,658	1,710	4,248	97	4,150	-97	-50
	August	8,634	1,697	3,851	208	3,643	-208	-232
	September	8,701	1,705	3,636	139	3,497	-143	406
	October	8,701	1,706	3,670	216	3,454	-216	-332
	November	8,697	1,676	3,862	180	3,683	-179	-219
	December	8,598	1,682	3,000	124	2,877	-125	252
	AVERAGE	8,649	1,696	3,488	165	3,323	-174	38
1983	January	8,634	1,698	2,938	219	2,720	-219	-348
	February	8,660	1,725	2,268	197	2,071	-197	-185
	March	8,677	1,726	2,232	201	2,031	-184	240
	April	8,686	1,710	3,154	205	2,949	-197	-241
	May	8,682	1,710	3,234	289	2,945	-293	362
	June	8,676	1,710	3,502	190	3,312	-188	25
	July	8,647	1,705	3,868	274	3,594	-264	382
	August	8,653	1,712	4,174	350	3,823	-358	-423
	September	8,666	1,722	4,221	309	3,912	-307	116
	October	8,654	1,731	R3,446	R202	R3,244	R-201	R21
	November	8,624	1,713	3,312	171	3,141	-135	317
	December	8,612	1,713	3,400	270	3,129	-229	-4
	AVERAGE	8,656	1,715	3,318	240	3,078	-232	23
								NA

<sup>1</sup>Includes lease condensate.

<sup>2</sup>Stocks are totals as of end of period.

<sup>3</sup>A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>4</sup>Strategic Petroleum Reserve.

<sup>5</sup>Beginning in January 1983, crude oil used directly as fuel is shown as product supplied.

<sup>6</sup>Stocks of Alaskan crude oil in transit were included beginning in January 1981. Stock withdrawals are calculated using new basis stock levels. See Note 6 on the last page of this section.

Footnotes continued on following page.

# Petroleum

## Crude Oil<sup>1</sup> Supply and Disposition (continued)

	Supply		Disposition			Ending Stocks <sup>2</sup>			
	Crude Used Directly <sup>a</sup>	Crude Losses	Refinery Inputs	Exports	Product Supplied <sup>b</sup>	Total	SPR <sup>c</sup>	Other Primary	
Thousand barrels per day									
1973	AVERAGE	-19	13	12,431	2	NA	242	242	
1974	AVERAGE	-15	13	12,133	3	NA	265	265	
1975	AVERAGE	-17	13	12,442	6	NA	271	271	
1976	AVERAGE	-18	15	13,416	8	NA	285	285	
1977	AVERAGE	-14	16	14,602	50	NA	348	7	340
1978	AVERAGE	-14	16	14,739	158	NA	376	67	309
1979	AVERAGE	-13	16	14,648	235	NA	430	91	339
1980	AVERAGE	-13	15	13,481	287	NA	466	108	358
1981	January	-43	6	13,247	339	NA	486	112	374
	February	-55	3	12,902	198	NA	494	116	378
	March	-57	6	12,383	210	NA	514	121	393
	April	-59	3	12,091	198	NA	532	134	397
	May	-59	3	12,309	312	NA	544	150	394
	June	-58	7	12,415	123	NA	548	163	385
	July	-58	7	12,261	257	NA	559	173	386
	August	-58	5	12,908	204	NA	547	185	362
	September	-61	4	12,505	194	NA	555	199	356
	October	-63	3	12,057	226	NA	579	215	364
	November	-64	4	12,240	278	NA	589	223	366
	December	-63	4	12,349	189	NA	594	230	363
	AVERAGE	-58	5	12,470	228	NA			
1982	January	-63	3	11,599	238	NA	606	235	371
	February	-64	2	11,236	304	NA	613	241	372
	March	-63	5	11,276	321	NA	609	249	361
	April	-65	3	11,392	174	NA	610	256	355
	May	-62	3	11,806	262	NA	609	261	348
	June	-60	7	12,494	94	NA	608	264	344
	July	-60	3	12,446	229	NA	613	267	346
	August	-57	2	11,871	304	NA	626	274	353
	September	-56	4	12,146	184	NA	619	278	341
	October	-51	2	11,749	270	NA	636	285	351
	November	-51	1	11,724	262	NA	648	290	358
	December	-53	1	11,514	193	NA	644	294	350
	AVERAGE	-59	3	11,774	236	NA			
1983	January	NA	2	11,070	117	54	661	301	361
	February	NA	3	10,635	262	69	672	306	366
	March	NA	2	10,854	174	70	670	312	359
	April	NA	2	11,436	88	68	684	318	366
	May	NA	1	11,789	280	63	681	327	355
	June	NA	1	12,287	144	64	686	332	354
	July	NA	2	12,347	145	65	683	341	342
	August	NA	1	12,141	172	64	707	352	355
	September	NA	1	12,445	177	66	713	361	352
	October	NA	1	R11,784	140	63	R718	367	R351
	November	NA	2	12,003	186	64	713	371	341
	December†	NA	NA	11,404	NA	NA	727	378	349
	AVERAGE	NA	NA	11,688	NA	NA			

Footnotes continued.

<sup>a</sup>Italics denote estimates based upon preliminary data. R=Revised data. NA=Not available.

<sup>b</sup>Notes: • Geographic coverage is the 50 States and the District of Columbia.

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

Sources: • See the last page of this section.

# Petroleum

## Crude Oil and Petroleum Product Imports

### Imports from OPEC Sources<sup>1</sup>

		Algeria	Libya	Saudi Arabia	United Arab Emirates	Indonesia	Iran	Nigeria	Venezuela	Other OPEC <sup>2</sup>	Total OPEC	Total Arab OPEC <sup>3</sup>
Thousand barrels per day												
1973	AVERAGE	136	164	486	71	213	223	459	1,135	106	2,993	915
1974	AVERAGE	190	4	461	74	300	469	713	979	88	3,280	752
1975	AVERAGE	282	232	715	117	390	280	762	702	122	3,601	1,383
1976	AVERAGE	432	453	1,230	254	539	298	1,025	700	134	5,066	2,424
1977	AVERAGE	559	723	1,380	335	541	535	1,143	690	287	6,193	3,185
1978	AVERAGE	649	654	1,144	385	573	555	919	645	226	5,751	2,963
1979	AVERAGE	636	658	1,356	281	420	304	1,080	690	212	5,637	3,056
1980	AVERAGE	488	554	1,261	172	348	9	857	481	130	4,300	2,551
1981	January	341	500	1,284	93	424	0	908	549	27	4,127	2,219
	February	381	468	1,122	93	406	0	866	463	92	3,891	2,064
	March	352	485	1,027	47	328	0	771	360	54	3,425	1,912
	April	263	485	1,034	68	307	0	812	237	39	3,245	1,867
	May	393	443	933	17	297	0	664	331	124	3,203	1,796
	June	356	380	865	60	367	0	528	248	118	2,922	1,703
	July	333	251	1,073	80	340	0	651	466	38	3,233	1,757
	August	348	274	1,082	61	377	0	321	523	84	3,070	1,765
	September	336	154	1,477	96	371	0	323	359	149	3,264	2,063
	October	242	147	1,342	90	427	0	412	389	172	3,220	1,820
	November	210	132	1,270	112	353	0	517	535	56	3,184	1,724
	December	176	122	1,045	158	400	0	684	411	132	3,129	1,502
	AVERAGE	311	319	1,129	81	366	0	620	406	90	3,323	1,848
1982	January	254	161	877	111	289	0	663	376	128	2,859	1,403
	February	139	92	693	89	244	0	584	355	102	2,297	1,054
	March	91	37	555	155	200	0	522	399	91	2,051	860
	April	85	0	511	122	215	0	427	426	85	1,871	740
	May	179	0	601	116	236	0	222	422	54	1,830	897
	June	115	0	593	94	215	72	537	361	110	2,096	820
	July	159	0	660	108	327	69	910	356	95	2,685	965
	August	181	0	489	133	271	27	574	299	133	2,107	818
	September	179	0	432	57	191	21	477	518	69	1,943	677
	October	249	7	494	61	242	108	313	504	106	2,084	810
	November	247	14	489	47	283	34	479	528	115	2,235	797
	December	155	0	237	12	265	88	462	399	73	1,690	421
	AVERAGE	170	26	552	92	248	35	514	412	97	2,146	854
1983	January	204	0	282	47	255	43	186	324	43	1,384	533
	February	104	0	214	9	217	0	92	371	28	1,035	326
	March	63	0	103	0	138	0	121	425	173	1,023	183
	April	228	0	180	(s)	210	0	186	508	125	1,438	409
	May	284	0	122	12	324	37	352	444	69	1,645	419
	June	300	0	175	40	502	38	402	335	146	1,938	515
	July	282	0	182	58	464	112	525	431	187	2,240	599
	August	370	0	426	45	416	213	464	477	230	2,641	866
	September	413	0	587	21	516	86	324	472	208	2,627	1,074
	October	261	0	638	16	368	12	307	337	169	2,108	938
	November	165	0	545	56	318	21	214	435	135	1,891	789
	AVERAGE	244	0	314	28	339	52	290	415	138	1,821	606

<sup>1</sup>Excludes petroleum imported into the United States indirectly from OPEC countries, primarily from Caribbean and West European areas, as refined petroleum products that were refined from crude oil produced in OPEC countries.

<sup>2</sup>Includes Ecuador, Gabon, Iraq, Kuwait, and Qatar.

<sup>3</sup>Includes Algeria, Libya, Saudi Arabia, United Arab Emirates, Iraq, Kuwait, and Qatar.

Footnotes continued on following page.

# Petroleum

## Crude Oil and Petroleum Product Imports (continued)

Imports from Non-OPEC Sources <sup>1</sup>												
		Bahamas	Canada	Mexico	Nether- lands Antilles	Trinidad and Tobago	United Kingdom	Puerto Rico	Virgin Islands	Other Non- OPEC	Total Non- OPEC	Total Imports
Thousand barrels per day												
<b>1973</b>	<b>AVERAGE</b>	<b>174</b>	<b>1,325</b>	<b>16</b>	<b>585</b>	<b>255</b>	<b>15</b>	<b>99</b>	<b>329</b>	<b>465</b>	<b>3,263</b>	<b>6,256</b>
<b>1974</b>	<b>AVERAGE</b>	<b>164</b>	<b>1,070</b>	<b>8</b>	<b>511</b>	<b>251</b>	<b>8</b>	<b>90</b>	<b>391</b>	<b>340</b>	<b>2,832</b>	<b>6,112</b>
<b>1975</b>	<b>AVERAGE</b>	<b>152</b>	<b>846</b>	<b>71</b>	<b>332</b>	<b>242</b>	<b>14</b>	<b>90</b>	<b>406</b>	<b>300</b>	<b>2,454</b>	<b>6,056</b>
<b>1976</b>	<b>AVERAGE</b>	<b>118</b>	<b>599</b>	<b>87</b>	<b>275</b>	<b>274</b>	<b>31</b>	<b>88</b>	<b>422</b>	<b>353</b>	<b>2,247</b>	<b>7,313</b>
<b>1977</b>	<b>AVERAGE</b>	<b>171</b>	<b>517</b>	<b>179</b>	<b>211</b>	<b>289</b>	<b>128</b>	<b>105</b>	<b>466</b>	<b>550</b>	<b>2,614</b>	<b>8,807</b>
<b>1978</b>	<b>AVERAGE</b>	<b>160</b>	<b>467</b>	<b>318</b>	<b>229</b>	<b>253</b>	<b>180</b>	<b>94</b>	<b>429</b>	<b>484</b>	<b>2,613</b>	<b>8,363</b>
<b>1979</b>	<b>AVERAGE</b>	<b>147</b>	<b>538</b>	<b>439</b>	<b>231</b>	<b>190</b>	<b>202</b>	<b>92</b>	<b>431</b>	<b>548</b>	<b>2,819</b>	<b>8,456</b>
<b>1980</b>	<b>AVERAGE</b>	<b>78</b>	<b>455</b>	<b>533</b>	<b>225</b>	<b>176</b>	<b>176</b>	<b>88</b>	<b>388</b>	<b>491</b>	<b>2,609</b>	<b>6,909</b>
<b>1981</b>	January	39	543	401	198	150	233	89	494	552	2,701	6,827
	February	84	546	437	227	163	271	46	481	626	2,881	6,772
	March	74	472	488	227	93	263	45	370	571	2,603	6,028
	April	68	412	418	198	139	402	40	365	380	2,423	5,668
	May	122	365	522	213	105	368	58	344	474	2,573	5,775
	June	51	353	538	196	124	397	67	262	525	2,513	5,435
	July	77	382	384	212	178	553	50	206	541	2,583	5,816
	August	69	378	489	255	123	592	68	184	539	2,698	5,767
	September	111	423	708	163	169	528	72	265	661	3,100	6,365
	October	63	449	669	161	121	351	60	303	562	2,739	5,959
	November	63	547	628	168	108	253	76	294	421	2,557	5,741
	December	70	501	587	148	125	280	73	367	563	2,714	5,843
	<b>AVERAGE</b>	<b>74</b>	<b>447</b>	<b>522</b>	<b>197</b>	<b>133</b>	<b>375</b>	<b>62</b>	<b>327</b>	<b>534</b>	<b>2,672</b>	<b>5,996</b>
<b>1982</b>	January	58	513	425	179	106	346	62	334	452	2,474	5,332
	February	67	537	476	221	120	181	38	362	508	2,510	4,807
	March	43	437	503	189	118	294	62	307	480	2,433	4,484
	April	82	360	476	184	166	247	36	266	690	2,507	4,378
	May	77	419	766	152	95	516	47	302	607	2,981	4,811
	June	32	481	797	148	129	557	58	322	708	3,231	5,327
	July	64	536	783	158	118	433	38	376	698	3,204	5,890
	August	80	443	853	145	106	520	24	317	650	3,137	5,244
	September	92	493	897	195	89	631	51	278	746	3,472	5,414
	October	45	459	682	148	109	666	52	262	801	3,222	5,306
	November	51	553	860	212	90	623	81	334	706	3,508	5,744
	December	88	561	689	174	102	438	48	336	480	2,916	4,606
	<b>AVERAGE</b>	<b>65</b>	<b>482</b>	<b>685</b>	<b>175</b>	<b>112</b>	<b>456</b>	<b>50</b>	<b>316</b>	<b>627</b>	<b>2,968</b>	<b>5,113</b>
<b>1983</b>	January	68	536	849	218	73	315	40	299	588	2,988	4,372
	February	92	592	722	179	81	193	50	192	554	2,655	3,691
	March	86	488	760	187	78	240	43	162	563	2,606	3,629
	April	167	452	981	216	85	421	20	183	781	3,306	4,744
	May	135	501	944	153	108	483	42	235	651	3,252	4,898
	June	137	576	831	181	120	424	48	252	712	3,281	5,218
	July	69	633	849	191	103	369	37	364	836	3,450	5,690
	August	142	540	891	194	90	461	40	313	725	3,395	6,036
	September	137	523	832	251	82	472	33	308	822	3,461	6,088
	October	164	539	771	172	106	414	48	370	565	3,149	5,256
	November	143	542	717	144	110	334	55	440	793	3,278	5,168
	<b>AVERAGE</b>	<b>122</b>	<b>538</b>	<b>832</b>	<b>190</b>	<b>94</b>	<b>376</b>	<b>41</b>	<b>284</b>	<b>690</b>	<b>3,168</b>	<b>4,989</b>

Footnotes continued.

<sup>1</sup>Includes petroleum imported into the United States indirectly from OPEC countries, primarily from Caribbean and West European areas, as refined petroleum products that were refined from crude oil produced in OPEC countries.

(s)=Less than 500 barrels per day.

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

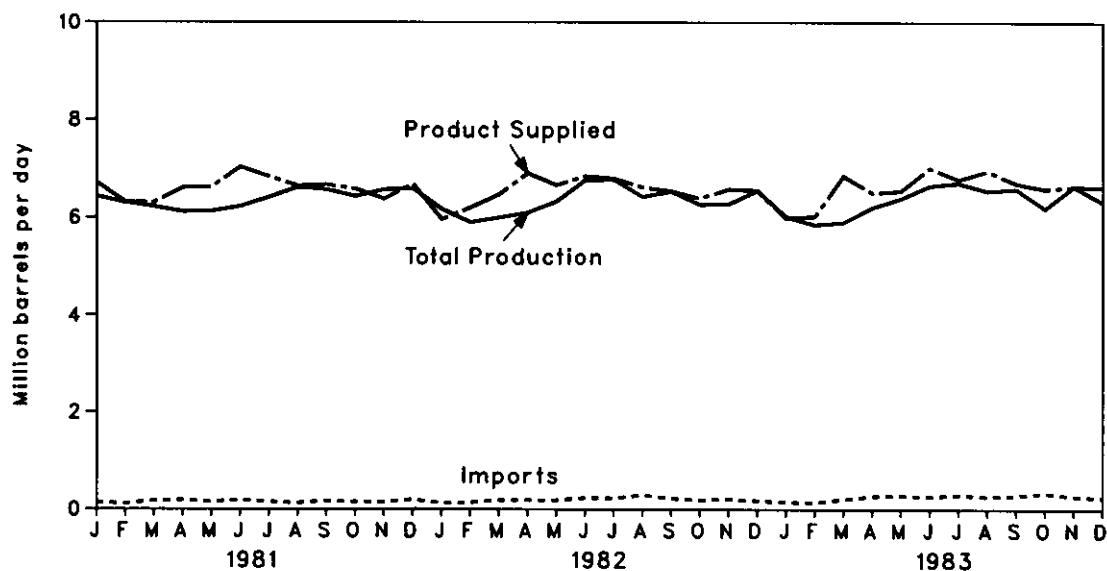
• Totals may not equal sum of components due to independent rounding.

• Beginning in October 1977, Strategic Petroleum Reserve imports are included.

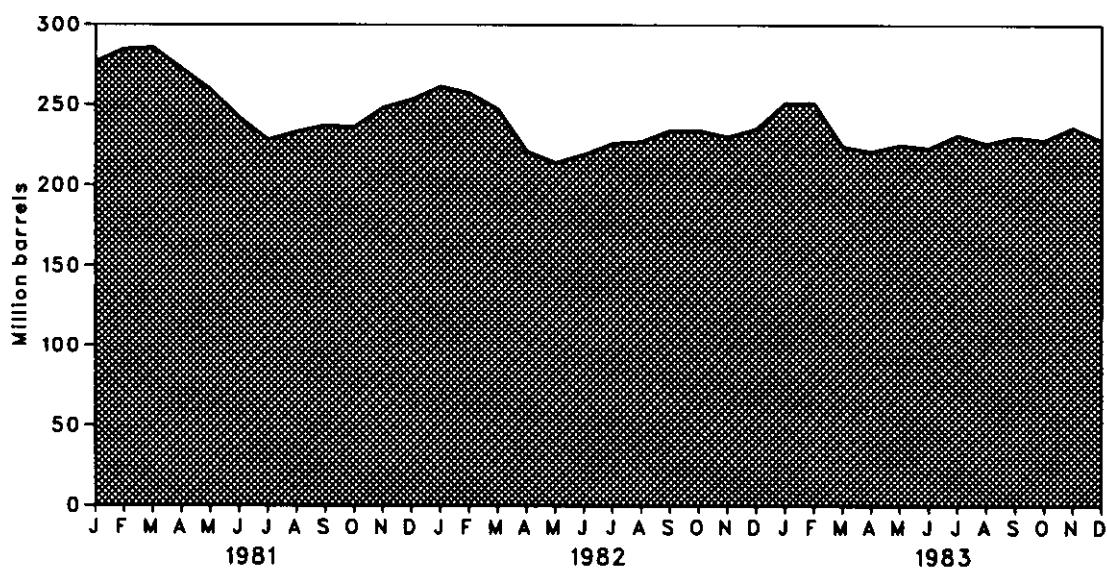
Sources: • See the last page of this section.

## Petroleum Motor Gasoline

### **Products Supplied, Total Production, and Imports**



## **Stocks**



# Petroleum

## Finished Motor Gasoline Supply and Disposition

		Supply			Disposition				Ending Stocks <sup>1</sup>	
		Total Production	Imports <sup>2</sup>	Stock Withdrawal <sup>3</sup>	Exports	Product Supplied			Total Motor Gasoline <sup>4</sup>	Finished Motor Gasoline
						Total	Unleaded <sup>5</sup>	Unleaded Percent of Total		
Thousand barrels per day										
1973	AVERAGE	6,535	134	9	4	6,674			209	
1974	AVERAGE	6,360	204	-24	2	6,537			*218	
1975	AVERAGE	6,520	184	-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	*261	
1981	January <sup>†</sup>	6,715	138	-421	(s)	6,431	3,141	48.8	276	227
	February	6,308	111	-118	1	6,301	3,095	49.1	284	230
	March	6,213	171	-81	(s)	6,303	3,097	49.1	285	232
	April	6,114	186	303	(s)	6,602	3,284	49.7	272	223
	May	6,122	150	344	1	6,615	3,115	47.1	259	213
	June	6,220	186	622	1	7,028	3,419	48.6	242	194
	July	6,405	151	268	(s)	6,823	3,424	50.2	228	186
	August	6,611	124	-95	3	6,637	3,344	50.4	233	189
	September	6,564	169	-70	2	6,662	3,338	50.1	237	191
	October	6,426	147	7	3	6,578	3,257	49.5	236	190
	November	6,564	148	-338	1	6,373	3,198	50.2	248	201
	December	6,586	197	-91	11	6,681	3,444	51.5	253	203
	AVERAGE	6,405	157	28	2	6,588	3,264	49.5		
1982	January	6,167	128	-316	18	5,961	3,067	51.5	261	213
	February	5,899	133	172	8	6,196	3,210	51.8	257	208
	March	5,994	183	334	44	6,466	3,358	51.9	247	198
	April	6,095	185	650	33	6,897	3,495	50.7	221	179
	May	6,319	182	177	23	6,655	3,415	51.3	214	173
	June	6,754	230	-134	14	6,835	3,565	52.2	219	177
	July	6,768	225	-178	24	6,790	3,577	52.7	226	183
	August	6,419	291	-81	16	6,614	3,526	53.3	227	185
	September	6,527	223	-198	22	6,531	3,404	52.1	234	191
	October	6,262	185	-42	15	6,391	3,351	52.4	234	192
	November	6,273	211	101	11	6,574	3,451	52.5	230	189
	December	6,542	178	-165	7	6,549	3,485	53.2	*235	*194
	AVERAGE	6,338	197	25	20	6,539	3,409	52.1		
1983	January	6,020	148	-186	(s)	5,981	3,352	56.0	251	208
	February	5,848	142	32	(s)	6,022	3,257	54.1	251	207
	March	5,897	205	765	23	6,843	3,620	52.9	224	184
	April	6,202	273	27	1	6,501	3,505	53.9	221	183
	May	6,386	284	-128	1	6,540	3,547	54.2	225	187
	June	6,646	265	118	22	7,008	3,796	54.2	223	183
	July	6,704	297	-210	18	6,773	3,752	55.4	231	190
	August	6,539	260	159	13	6,946	3,836	55.2	226	185
	September	6,582	285	-160	14	6,693	3,671	54.8	230	190
	October	R6,188	R335	R60	2	R6,581	3,698	56.2	R228	R188
	November	6,636	269	-274	2	6,629	3,714	56.0	236	196
	December <sup>†</sup>	6,310	241	71	NA	6,614	NA	NA	228	191
	AVERAGE	6,332	251	24	NA	6,598	NA	NA		

<sup>1</sup>Stocks are totals as of end of period.

<sup>2</sup>Beginning in 1981, excludes blending components.

<sup>3</sup>A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>4</sup>Includes gasohol.

<sup>5</sup>Includes motor gasoline blending components.

<sup>†</sup>In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 5 on the last page of this section.

<sup>‡</sup>Beginning in January 1981, survey forms were modified. See Note 2 on the last page of this section.

<sup>§</sup>Italics denote estimates based upon preliminary data. R=Revised data. NA=Not available. (s)=Less than 500 barrels per day.

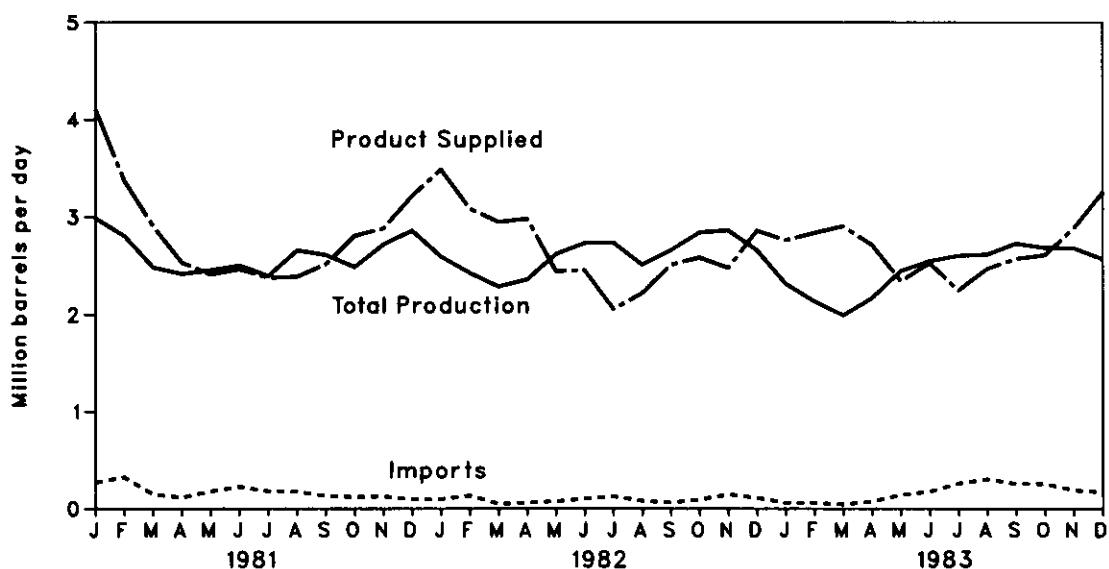
Notes: • Geographic coverage is the 50 States and the District of Columbia.

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

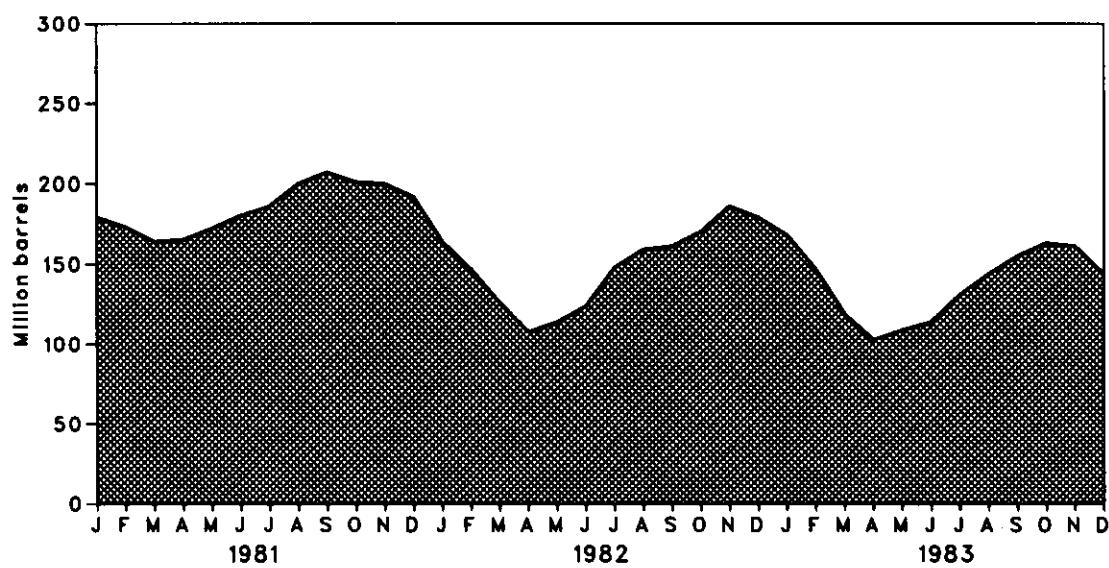
Sources: • See the last page of this section.

## Petroleum Distillate Fuel Oil

### **Product Supplied, Total Production, and Imports**



## **Stocks**



# Petroleum

## Distillate Fuel Oil Supply and Disposition

	Supply			Disposition		Ending Stocks <sup>1</sup>
	Total Production	Imports	Stock Withdrawal <sup>2</sup>	Crude Used Directly <sup>3</sup>	Exports	
	Thousand barrels per day					
1973 AVERAGE	2,822	392	-115	2	9	3,092 196
1974 AVERAGE	2,669	289	-9	2	2	2,948 200
1975 AVERAGE	2,654	155	-40	2	1	2,851 209
1976 AVERAGE	2,924	146	62	1	1	3,133 186
1977 AVERAGE	3,278	250	-176	1	1	3,352 250
1978 AVERAGE	3,167	173	93	1	3	3,432 216
1979 AVERAGE	3,153	193	-34	1	3	3,311 229
1980 AVERAGE	2,662	142	64	1	3	2,866 205
1981 January <sup>5</sup>	2,989	273	-836	11	(s)	4,109 179
February	2,809	325	246	11	17	3,373 173
March	2,484	147	264	9	(s)	2,904 164
April	2,418	116	-9	10	3	2,532 165
May	2,454	179	-232	10	(s)	2,411 172
June	2,501	225	-270	9	(s)	2,464 180
July	2,395	179	-204	10	2	2,378 186
August	2,656	174	-450	8	(s)	2,388 200
September	2,610	129	-235	10	1	2,513 207
October	2,485	119	197	9	5	2,803 201
November	2,716	124	36	11	6	2,880 200
December	2,856	95	277	11	26	3,212 192
AVERAGE	2,613	173	38	10	5	2,829
1982 January	2,591	97	876	10	90	3,484 164
February	2,427	132	605	11	90	3,085 147
March	2,288	48	682	10	84	2,945 126
April	2,358	59	612	13	64	2,978 108
May	2,618	74	-183	10	75	2,444 114
June	2,729	102	-335	10	55	2,452 124
July	2,734	125	-789	11	24	2,058 148
August	2,507	80	-339	10	40	2,218 159
September	2,657	61	-85	12	139	2,507 161
October	2,838	91	-289	8	66	2,581 170
November	2,860	145	-514	8	24	2,475 186
December	2,655	109	225	10	143	2,855 179
AVERAGE	2,606	93	35	10	74	2,671
1983 January	2,314	58	-561	NA	173	2,760 168
February	2,136	58	742	NA	105	2,832 147
March	1,991	42	926	NA	59	2,900 119
April	2,169	73	518	NA	47	2,713 103
May	2,444	141	-193	NA	50	2,341 109
June	2,545	175	-154	NA	40	2,526 114
July	2,600	259	-556	NA	55	2,248 131
August	2,612	302	-403	NA	43	2,467 144
September	2,725	253	-374	NA	37	2,568 155
October	R2,682	R255	R-275	NA	55	R2,608 R163
November	2,679	189	65	NA	54	2,879 161
December†	2,566	170	560	NA	NA	3,250 144
AVERAGE	2,457	165	114	NA	NA	2,673

<sup>1</sup>Stocks are totals as of end of period.

<sup>2</sup>A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>3</sup>Beginning in January 1983, product supplied does not include crude oil used directly. See Note 4 on the last page of this section.

<sup>4</sup>In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 5 on the last page of this section.

<sup>5</sup>Beginning January 1981, survey forms were modified. See Note 2 on the last page of this section.

<sup>†</sup>Italics denote estimates based upon preliminary data. R=Revised data. NA=Not available. (s)=Less than 500 barrels per day.

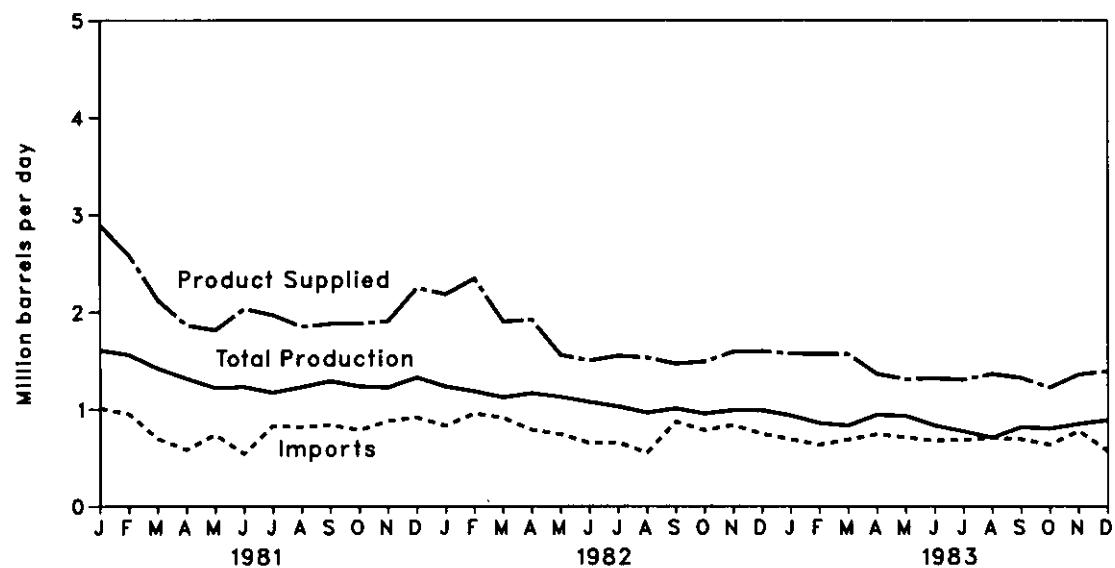
Notes: • Geographic coverage is the 50 States and the District of Columbia.

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

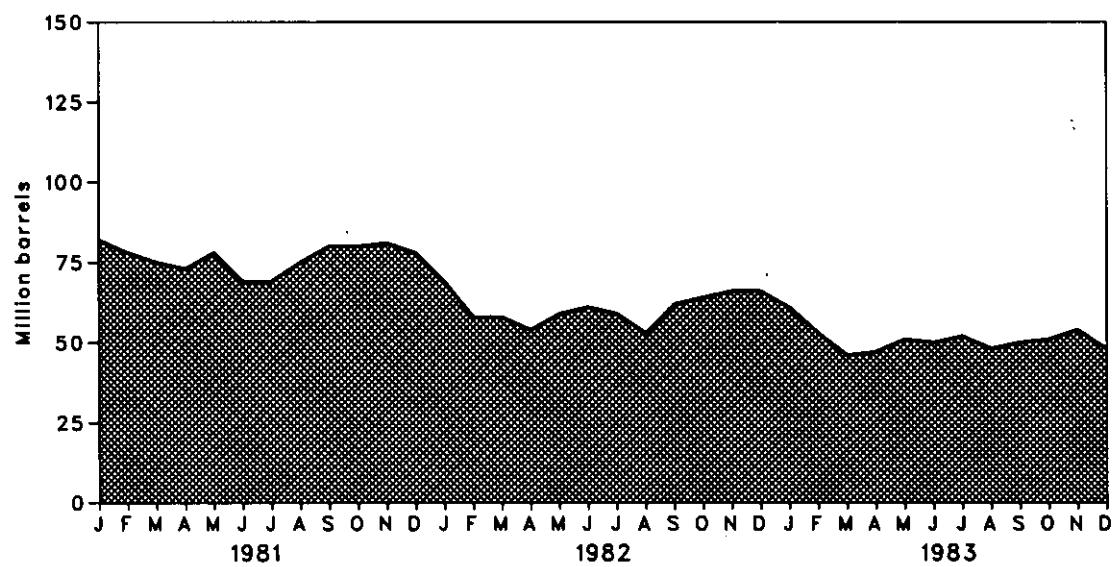
Sources: • See the last page of this section.

# Petroleum Residual Fuel Oil

### **Product Supplied, Total Production, and Imports**



## Stocks



# Petroleum

## Residual Fuel Oil Supply and Disposition

		Supply			Disposition		Ending Stocks <sup>1</sup>	
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Crude Used Directly <sup>3</sup>	Exports	Product Supplied <sup>3</sup>	
		Thousand barrels per day						
1973	AVERAGE	971	1,853	5	17	23	2,822	53
1974	AVERAGE	1,070	1,587	-17	13	14	2,639	460
1975	AVERAGE	1,235	1,223	-2	15	15	2,462	74
1976	AVERAGE	1,377	1,413	5	17	12	2,801	72
1977	AVERAGE	1,754	1,359	-48	13	6	3,071	90
1978	AVERAGE	1,667	1,355	-1	13	13	3,023	90
1979	AVERAGE	1,687	1,151	-15	12	9	2,826	96
1980	AVERAGE	1,580	939	10	12	33	2,508	42
1981	January <sup>4</sup>	1,612	1,015	-302	32	65	2,896	82
	February	1,565	954	150	44	125	2,588	78
	March	1,424	699	100	48	145	2,126	75
	April	1,320	584	66	49	151	1,868	73
	May	1,223	741	-170	49	25	1,817	78
	June	1,232	540	291	49	76	2,037	69
	July	1,174	830	2	48	82	1,971	69
	August	1,231	819	-179	50	69	1,852	75
	September	1,292	841	-176	51	126	1,882	80
	October	1,238	786	8	54	202	1,884	80
	November	1,227	880	-49	53	203	1,909	81
	December	1,329	916	110	52	157	2,250	78
	AVERAGE	1,321	800	37	48	118	2,088	
1982	January	1,235	831	301	53	235	2,185	69
	February	1,186	956	363	53	213	2,344	58
	March	1,123	912	12	53	197	1,903	58
	April	1,166	788	150	52	234	1,923	54
	May	1,128	742	-172	52	191	1,560	59
	June	1,074	652	-57	50	217	1,501	61
	July	1,028	657	56	49	239	1,550	59
	August	965	551	203	47	235	1,531	53
	September	1,008	872	-306	44	148	1,470	62
	October	955	783	-57	43	234	1,490	64
	November	989	837	-94	43	182	1,591	66
	December	989	747	6	43	186	1,598	66
	AVERAGE	1,070	776	32	48	209	1,716	
1983	January	935	691	-243	NA	294	1,574	61
	February	857	632	270	NA	191	1,568	53
	March	833	686	220	NA	169	1,569	46
	April	942	743	-10	NA	310	1,364	47
	May	930	709	-139	NA	190	1,310	51
	June	832	676	28	NA	219	1,317	50
	July	771	682	-58	NA	90	1,306	52
	August	706	705	115	NA	165	1,362	48
	September	815	690	-47	NA	134	1,324	50
	October	R799	R634	R-56	NA	153	R1,224	R51
	November	848	777	-101	NA	167	1,358	54
	December <sup>†</sup>	886	570	77	NA	NA	1,389	48
	AVERAGE	846	683	44	NA	NA	1,388	

<sup>1</sup>Stocks are totals as of end of period.

<sup>2</sup>A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>3</sup>Beginning in January 1983, product supplied does not include crude oil used directly. See Note 4 on the last page of this section.

<sup>4</sup>In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 5 on the last page of this section.

<sup>†</sup>Beginning in January 1981, survey forms were modified. See Note 2 on the last page of this section.

<sup>†</sup>Italics denote estimates based upon preliminary data. R=Revised data. NA=Not available.

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

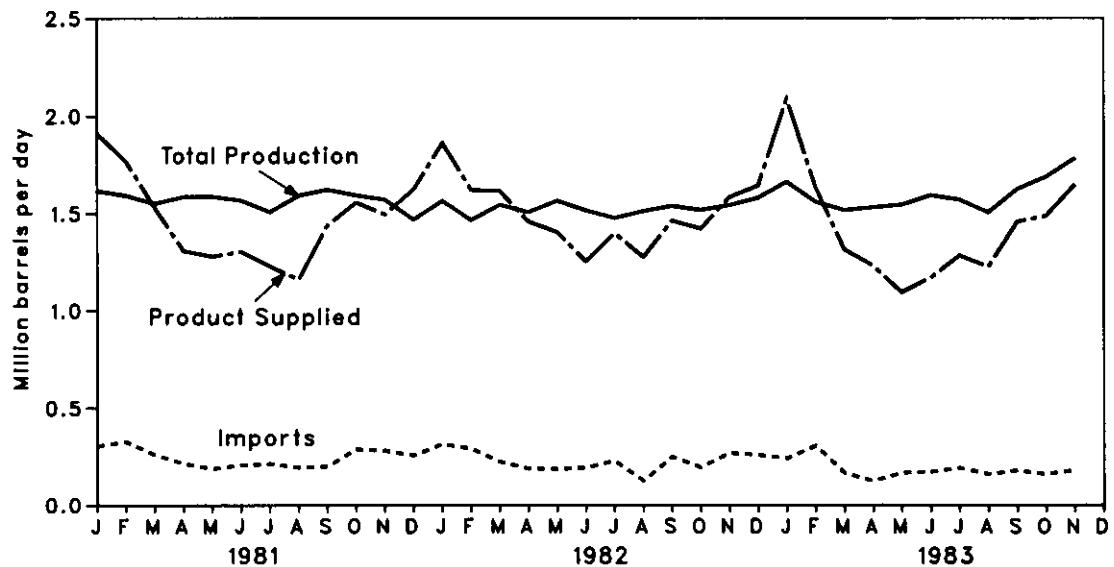
• Totals may not equal sum of components due to independent rounding.

Sources: • See the last page of this section.

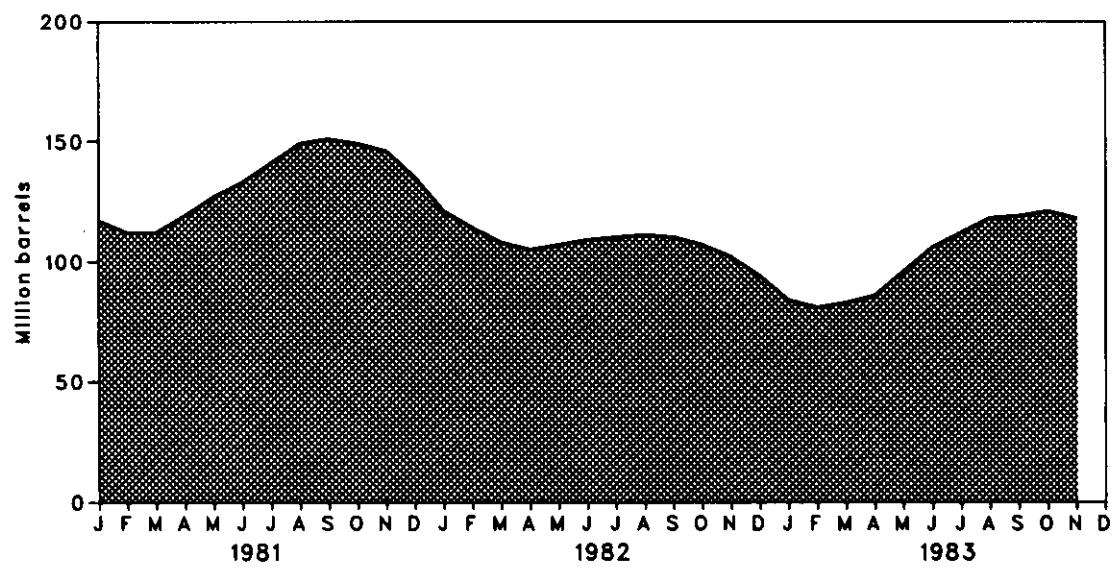
## Petroleum

## Liquefied Petroleum Gases

### **Product Supplied, Total Production, and Imports**



## Stocks



# Petroleum

## Liquefied Petroleum Gases Supply and Disposition

		Supply			Disposition			Ending Stocks <sup>1</sup>
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Refinery Inputs	Exports	Product Supplied	
		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	113
1975	AVERAGE	1,527	112	-35	246	26	1,333	125
1976	AVERAGE	1,535	130	24	260	25	1,404	116
1977	AVERAGE	1,566	161	-55	233	18	1,422	136
1978	AVERAGE	1,537	123	12	239	20	1,413	132
1979	AVERAGE	1,556	217	70	236	15	1,592	111
1980	AVERAGE	1,535	216	-27	233	21	1,469	120
1981	January	1,617	306	-363	352	21	1,913	117
	February	1,593	327	173	303	21	1,769	112
	March	1,551	260	-4	257	20	1,530	112
	April	1,586	214	-236	231	26	1,308	119
	May	1,587	189	-258	220	19	1,279	127
	June	1,567	206	-208	237	24	1,304	133
	July	1,507	213	-258	215	17	1,229	141
	August	1,592	195	-242	235	149	1,160	149
	September	1,622	199	-75	287	21	1,438	151
	October	1,593	287	72	320	76	1,556	149
	November	1,571	280	86	383	58	1,495	146
	December	1,468	255	379	428	50	1,624	135
	AVERAGE	1,571	244	-18	289	42	1,466	
1982	January	1,565	314	443	391	67	1,863	121
	February	1,466	291	243	327	51	1,621	114
	March	1,544	223	211	289	74	1,615	108
	April	1,506	188	98	257	77	1,458	105
	May	1,565	186	-71	234	43	1,403	107
	June	1,515	192	-86	262	106	1,254	109
	July	1,476	227	-13	253	37	1,399	110
	August	1,511	125	-45	254	61	1,276	111
	September	1,538	247	37	274	85	1,463	110
	October	1,517	194	97	306	81	1,421	107
	November	1,542	267	175	363	37	1,583	102
	December	1,580	258	256	395	56	1,642	94
	AVERAGE	1,528	226	111	300	65	1,499	
1983	January	1,662	240	-618	313	118	2,088	84
	February	1,560	305	84	237	76	1,636	81
	March	1,517	166	-51	189	127	1,316	83
	April	1,531	124	-107	198	116	1,232	86
	May	1,545	167	-326	207	84	1,094	96
	June	1,593	172	-333	205	59	1,169	106
	July	1,571	191	-206	217	55	1,284	112
	August	1,505	160	-183	229	29	1,225	118
	September	1,625	178	-23	236	86	1,457	119
	October	1,688	160	-61	268	32	1,487	121
	November	1,784	180	78	361	33	1,648	118
	AVERAGE	1,598	185	-47	242	74	1,420	

<sup>1</sup>Stocks are totals as of end of period.

<sup>2</sup>A negative number indicates an increase in stocks and a positive number indicates a decrease.

\*In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 5 on the last page of this section.

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

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

•Liquefied Petroleum Gases includes ethane, propane, butane, butane-propane mixtures, ethane-propane mixtures, and isobutane.

Sources: • See the last page of this section.

# Petroleum

## Other Petroleum Products<sup>1</sup> Supply and Disposition

		Supply			Disposition			Ending Stocks <sup>2</sup> Million barrels
		Total Production	Imports	Stock Withdrawal <sup>3</sup>	Refinery Inputs	Exports	Product Supplied	
Thousand barrels per day								
1973	AVERAGE	3,693	502	-9	750	166	3,270	208
1974	AVERAGE	3,558	432	-28	665	174	3,123	218
1975	AVERAGE	3,424	277	-2	537	160	3,002	219
1976	AVERAGE	3,643	206	-5	524	175	3,145	220
1977	AVERAGE	3,912	205	-27	514	165	3,410	230
1978	AVERAGE	4,046	166	14	492	167	3,568	225
1979	AVERAGE	4,153	195	-37	352	209	3,749	238
1980	AVERAGE	3,956	210	-23	311	198	3,634	247
1981	January	3,821	162	-80	851	132	3,081	296
	February	3,723	182	-200	538	208	2,958	302
	March	3,722	230	-55	642	210	3,043	304
	April	3,711	230	24	733	192	3,040	303
	May	3,892	229	-58	594	238	3,231	305
	June	3,925	218	-29	656	197	3,261	306
	July	3,852	149	284	791	212	3,282	297
	August	3,876	276	-33	676	219	3,225	298
	September	3,718	286	215	883	176	3,159	291
	October	3,503	241	193	710	227	3,000	285
	November	3,579	262	33	784	154	2,935	284
	December	3,543	243	71	805	223	2,829	282
	AVERAGE	3,739	226	46	723	199	3,088	
1982	January	3,171	269	-7	624	180	2,631	282
	February	3,403	305	-153	663	138	2,755	287
	March	3,466	243	-191	725	161	2,631	293
	April	3,408	309	73	796	204	2,790	290
	May	3,317	318	184	824	210	2,785	285
	June	3,547	315	123	812	216	2,954	281
	July	3,660	408	-1	856	187	3,023	281
	August	3,583	346	217	743	202	3,201	274
	September	3,533	375	105	749	213	3,051	271
	October	3,529	383	244	915	266	2,976	264
	November	3,498	423	-28	837	269	2,786	264
	December	3,324	313	366	885	275	2,842	253
	AVERAGE	3,453	334	80	787	211	2,869	
1983	January	3,222	297	-371	570	271	2,307	271
	February	3,270	287	-1	680	232	2,645	271
	March	3,400	298	-94	570	249	2,786	273
	April	3,363	377	3	596	247	2,901	273
	May	3,448	364	26	694	242	2,902	273
	June	3,674	427	99	715	292	3,197	270
	July	3,703	393	106	757	209	3,237	266
	August	3,774	435	23	689	242	3,302	266
	September	3,861	460	-31	768	236	3,287	267
	October	3,579	427	-124	701	195	2,985	270
	November	3,560	442	101	912	238	2,955	267
	AVERAGE	3,534	383	-25	695	241	2,956	

<sup>1</sup>Includes natural gasoline, isopentane, unfractionated stream, plant condensate, other liquids, and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, liquefied petroleum gases, and ethane.

<sup>2</sup>Stocks are totals as of end of period.

<sup>3</sup>A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>4</sup>In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock withdrawal calculations. See Note 5 on the last page of this 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: • See the last page of this section.

## Notes and Sources for the Petroleum Section

### Notes

1. During 1981 the listing (frame) of operators of all facilities required to complete each monthly survey was updated. The refinery frame was found to be complete and accurate, although the frames for bulk terminals, pipelines, and crude oil stocks facilities were found to be outdated. A variety of sources (published directories, listings, and exploratory surveys) were researched for potential new respondents. As a result of this research, a significant number of respondents were added to the frames. The increase in the respondents for the frames affects the stocks of crude oil and petroleum products. For further details, see the Energy Information Administration (EIA), *Petroleum Supply Monthly*.
2. Research conducted by the EIA in the latter half of 1980 indicated changes had taken place in the petroleum industry that were not being adequately reflected in the EIA survey forms. First, the flows of unfinished oils and the redesignation of finished products were not being accurately described on the EIA survey forms. Second, a substantial amount of motor gasoline was being produced at non-refinery "downstream blending stations" but was not being reported. Although empirical information is not available to precisely measure the historical effects, estimates of the magnitude of the differences in the major series affected are shown in the EIA, *Petroleum Supply Monthly*. Beginning in January 1981, the EIA modified its survey forms, changed definitions of gasoline (motor and aviation), and added the non-refinery blenders previously not reported.
3. **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*.
4. **Distillate and Residual Fuel Oils:** The requirement to report crude oil burned on leases and pipelines as either distillate or residual fuel oil has been eliminated. Prior to January 1981, the refinery input of unfinished oils number typically exceeded the number for available supply of unfinished oils. This 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. This imbalance between supply and disposition of unfinished oils would then be subtracted from the production of distillate and residual fuel oils. Two-thirds of this difference was subtracted from distillate and one-third from residual. Beginning in January 1981, the EIA modified its survey forms to account for redesigned product and discontinued the above-mentioned adjustment. For further details, see the EIA, *Petroleum Supply Monthly*.
5. **New Stock Basis:** In January 1975, 1981, and 1983, numerous respondents were added to bulk terminal and pipeline surveys affecting subsequent stocks reported and stock withdrawal calculations. Using the expanded coverage (new basis), the end-of-year stocks, in million barrels, would have been:
  - Crude Oil and Petroleum Products: 1974—1,121; 1980—1,420; and 1982—1,462.
  - Motor Gasoline: 1974—225; 1980—263; 1982—244 (Total) and 203 (Finished).
  - Distillate Fuel Oil: 1974—224; 1980—205; and 1982—186.
  - Residual Fuel Oil: 1974—75; 1980—91; and 1982—68.
  - Liquefied Petroleum Gases: 1974—113; 1980—128; and 1982—103.
  - Other Petroleum Products: 1974—220; 1980—249; and 1982—259.
6. 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 withdrawal calculations. Using the expanded coverage (new basis), 1980 end-of-year stocks, in million barrels, would have been 488 (Total) and 380 (Other Primary).

### Sources

- 1973 through 1976: U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys*, "Petroleum Statement, Annual" and "PAD Districts Supply/Demand, Annual."
- 1977 through 1980: Energy Information Administration (EIA), *Energy Data Reports*, "Petroleum Statement, Annual" and "PAD Districts Supply/Demand, Annual" and unleaded gasoline data from *Monthly Petroleum Statistics Report*.
- January 1981 through December 1982: EIA, *Petroleum Supply Annual*.
- January 1983 through November 1983: Detailed statistics in appropriate issues of the *Petroleum Supply Monthly* (except domestic crude oil production).
- December 1983: Estimates based on EIA weekly data (except domestic crude oil production).
- January 1983 through December 1983: Domestic crude oil production estimate based on historical statistics from State Conservation Agencies and the U.S. Geological Survey.



# Part 4

## Natural Gas

### Natural Gas

Total dry natural gas production in the United States during November 1983 was an estimated 1.4 trillion cubic feet (Tcf). This was 4.0 percent lower than in November 1982. Output during the first 11 months of 1983 totaled 14.4 Tcf, 11.7 percent less than during the period January through November 1982.

Consumption of natural and supplemental gas in November 1983 was an estimated 1.5 Tcf, 4.5 percent lower than in November 1982. Estimated consumption during the period January through November 1983 totaled 14.8 Tcf, 8.9 percent lower than during the comparable 1982 period.

Deliveries to industrial consumers, the principal end users of natural and supplemental gas, during October 1983 (latest data available) were an estimated 555 billion cubic feet (Bcf). This was 44.1 percent of total

October 1983 consumption and was 3.1 percent lower than deliveries to industrial consumers in October 1982.

Imports of natural gas in November 1983 were an estimated 80 Bcf, 12.1 percent lower than in the previous November. During the first 11 months of 1983, imports of natural gas totaled an estimated 838 Bcf, 1.6 percent higher than during the comparable 1982 period. Receipts of foreign gas during November 1983 included Algerian liquefied natural gas (LNG) equivalent to approximately 10 Bcf.

Stocks of working gas\* in underground natural gas storage reservoirs at the end of November 1983 totaled 3.2 Tcf. This was 4.1 percent below stocks available a year earlier. Net withdrawals from storage during November 1983 were 80 Bcf, the same as the volume of the previous November.

The second paragraph of the note in the last issue should have read:

The "Total Marketed Production" and the "Total Dry Production" data series in previous issues are not the same as the "Marketed Production" and the "Total Dry Gas Production" data series shown in the new tables. The previous series may be reconstructed by adding "**Nonhydrocarbon Gas Removed**" to the two new data series.

\*Gas available for withdrawal.

# Natural Gas

## Production Summary

		Gross Wet Gas Withdrawals <sup>1</sup>	Used for Repressuring <sup>2</sup>	Nonhydro-carbon Gas Removed <sup>3</sup>	Vented and Flared	Marketed Production (Wet) <sup>4</sup>	Extraction Loss <sup>5</sup>	Total Dry Gas Production <sup>6</sup>
Billion cubic feet								
1973	TOTAL	24,067	1,171	NA	248	*22,648	917	*21,731
1974	TOTAL	22,850	1,080	NA	169	*21,601	887	*20,713
1975	TOTAL	21,104	861	NA	134	*20,109	872	*19,236
1976	TOTAL	20,944	859	NA	132	*19,952	854	*19,098
1977	TOTAL	21,097	935	NA	137	*20,025	863	*19,163
1978	TOTAL	21,309	1,181	NA	153	*19,974	852	*19,122
1979	TOTAL	21,883	1,245	NA	167	*20,471	808	*19,663
1980	TOTAL	21,870	1,365	199	125	20,180	777	19,403
1981	January	1,890	108	20	10	1,752	68	1,684
	February	1,702	101	18	10	1,573	61	1,512
	March	1,871	109	18	9	1,735	67	1,668
	April	1,808	108	18	8	1,674	65	1,609
	May	1,838	115	18	7	1,698	66	1,632
	June	1,770	109	19	8	1,634	63	1,571
	July	1,797	106	20	9	1,663	65	1,598
	August	1,841	108	18	10	1,705	66	1,639
	September	1,716	114	18	7	1,577	61	1,516
	October	1,781	113	18	7	1,643	64	1,579
	November	1,714	108	17	6	1,583	61	1,522
	December	1,860	114	20	8	1,718	67	1,651
	TOTAL	21,587	1,312	222	98	19,956	775	19,181
1982	January	1,865	108	19	9	1,728	71	1,657
	February	1,712	101	18	8	1,584	65	1,519
	March	1,816	115	19	7	1,675	69	1,606
	April	1,714	108	18	7	1,581	65	1,516
	May	1,692	117	17	7	1,552	64	1,488
	June	1,643	114	16	7	1,505	62	1,443
	July	1,667	119	15	7	1,526	63	1,463
	August	1,638	120	18	8	1,492	61	1,431
	September	1,570	116	16	6	1,431	59	1,372
	October	1,610	126	16	8	1,460	60	1,400
	November	1,621	119	18	9	1,476	61	1,415
	December	1,663	125	19	10	1,510	62	1,448
	TOTAL	20,210	1,388	208	93	18,520	762	17,758
1983	January	1,668	122	19	7	1,520	62	1,458
	February	1,471	108	16	6	1,340	55	1,285
	March	1,534	124	17	7	1,386	57	1,329
	April	1,453	120	16	7	1,310	54	1,256
	May	1,450	111	16	8	1,316	54	1,262
	June	1,399	118	19	7	1,256	52	1,204
	July	R1,485	125	R18	7	R1,335	55	R1,280
	August	R1,537	124	R20	7	R1,386	57	R1,329
	September	R1,492	R119	19	7	R1,347	R55	R1,292
	October	R1,566	R128	19	R7	R1,412	R58	R1,354
	November	1,570	128	19	7	1,416	58	1,358

<sup>1</sup>Gas withdrawn from gas and oil wells.

<sup>2</sup>Gas returned to formations for repressuring, pressure maintenance, and cycling.

<sup>3</sup>For definitions and further explanations, see Notes on the last two pages of this section.

<sup>4</sup>Equal to gross withdrawals minus volumes used for repressuring, volumes of nonhydrocarbon gases removed, and volumes vented and flared. See Note 2 on the last two pages of this section for further explanation.

<sup>5</sup>Equal to marketed production (wet) minus extraction loss.

<sup>6</sup>May include unknown quantities of nonhydrocarbon gases.

R=Revised data. 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.

• Italics denote estimated data. Data for 1973 through 1982 are final. All other data are preliminary unless otherwise indicated.

Sources: • See the last page of this section.

# Natural Gas

## Supply and Disposition of Dry Natural Gas and Supplemental Gaseous Fuels

		Supply				Disposition			
		Total Dry Gas Production	With-drawals from Storage <sup>1</sup>	Supplemental Gaseous Fuels <sup>2</sup>	Imports <sup>3</sup>	Total Supply/Disposition <sup>4</sup>	Additions to Storage <sup>5</sup>	Exports <sup>6</sup>	Consumption <sup>7</sup>
Billion cubic feet									
1973	TOTAL	121,731	1,533	NA	1,033	24,297	1,974	77	22,049
1974	TOTAL	120,713	1,701	NA	959	23,373	1,784	77	21,223
1975	TOTAL	119,236	1,760	NA	953	21,949	2,104	73	19,538
1976	TOTAL	119,098	1,921	NA	963	21,983	1,756	65	19,946
1977	TOTAL	119,163	1,750	NA	1,011	21,924	2,307	56	19,521
1978	TOTAL	119,122	2,158	NA	966	22,245	2,278	53	19,627
1979	TOTAL	119,663	2,047	NA	1,253	22,964	2,295	56	20,241
1980	TOTAL	119,403	1,972	155	985	22,515	1,949	49	19,877
1981	January	1,684	571	20	91	2,366	38	5	2,279
	February	1,512	385	17	85	1,999	60	5	1,895
	March	1,668	239	17	80	2,004	56	5	1,899
	April	1,609	56	14	69	1,748	213	5	1,488
	May	1,632	27	13	62	1,734	261	4	1,426
	June	1,571	28	12	65	1,676	321	5	1,309
	July	1,598	27	12	66	1,703	342	5	1,314
	August	1,639	15	12	64	1,730	369	5	1,313
	September	1,516	9	12	67	1,604	293	6	1,265
	October	1,579	51	14	79	1,723	158	5	1,519
	November	1,522	127	15	82	1,746	82	5	1,619
	December	1,651	396	19	93	2,159	35	5	2,076
	<b>TOTAL</b>	<b>19,181</b>	<b>1,930</b>	<b>176</b>	<b>904</b>	<b>22,191</b>	<b>2,228</b>	<b>59</b>	<b>19,404</b>
1982	January	1,657	697	19	98	2,471	24	3	2,400
	February	1,519	461	16	85	2,081	51	5	1,984
	March	1,606	274	15	82	1,977	91	5	1,838
	April	1,516	112	12	72	1,712	185	2	1,485
	May	1,488	11	9	65	1,573	394	3	1,136
	June	1,443	11	9	61	1,524	364	6	1,115
	July	1,463	12	9	67	1,551	362	5	1,145
	August	1,431	36	9	61	1,537	342	6	1,151
	September	1,372	20	9	66	1,467	285	5	1,140
	October	1,400	62	11	77	1,550	197	5	1,311
	November	1,415	168	13	91	1,687	85	5	1,559
	December	1,448	299	14	110	1,871	88	5	1,739
	<b>TOTAL</b>	<b>17,758</b>	<b>2,165</b>	<b>145</b>	<b>933</b>	<b>21,001</b>	<b>2,472</b>	<b>52</b>	<b>18,001</b>
1983	January	1,458	450	16	120	2,044	24	5	1,976
	February	1,285	324	13	102	1,724	35	5	1,650
	March	1,329	266	13	91	1,699	58	5	1,601
	April	1,256	162	11	76	1,505	81	4	1,386
	May	1,262	41	9	64	1,376	189	3	1,150
	June	1,204	22	8	61	1,295	254	5	1,004
	July	R1,280	25	9	56	R1,370	267	5	R1,064
	August	R1,329	35	9	58	R1,431	248	4	R1,144
	September	R1,292	27	9	65	R1,393	259	5	R1,095
	October	R1,354	35	10	R65	R1,464	166	4	R1,258
	November	1,358	152	12	80	1,602	72	5	1,489

<sup>1</sup>Monthly and annual data for 1980 through 1982 include underground storage and liquefied natural gas storage. All other data include underground storage only. Computation procedures are discussed in Note 8 on the last two pages of this section.

<sup>2</sup>For definitions and further explanations see Notes on the last two pages of this section.

<sup>3</sup>Data for 1978 through 1982 do not include intratank receipts and deliveries.

<sup>4</sup>May include unknown quantities of nonhydrocarbon gases.

R=Revised data. 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.

• Italics denote estimated data. Data for 1973 through 1982 are final. All other data are preliminary unless otherwise indicated.

Sources: • See the last page of this section.

# Natural Gas

## Natural and Supplemental Gas Consumption

		Delivered to Consumers							
		Lease and Plant Fuel	Pipeline Fuel	Residential	Commercial <sup>1</sup>	Industrial	Electric Utilities	Total	Total Consumption
Billion cubic feet									
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	January	81	75	831	406	654	232	2,123	2,279
	February	73	63	740	355	440	224	1,759	1,895
	March	81	63	585	304	593	273	1,755	1,899
	April	78	49	372	204	496	289	1,361	1,488
	May	79	47	260	151	573	316	1,300	1,426
	June	76	43	168	116	525	381	1,190	1,309
	July	77	43	136	99	548	411	1,194	1,314
	August	79	43	123	107	571	390	1,191	1,313
	September	73	42	133	107	585	325	1,150	1,265
	October	76	50	232	148	711	302	1,393	1,519
	November	74	54	364	205	663	259	1,491	1,619
	December	80	69	601	318	769	239	1,927	2,076
	<b>TOTAL</b>	<b>928</b>	<b>642</b>	<b>4,546</b>	<b>2,520</b>	<b>7,128</b>	<b>3,640</b>	<b>17,834</b>	<b>19,404</b>
1982	January	104	79	866	444	669	238	2,217	2,400
	February	95	66	786	405	412	220	1,823	1,984
	March	100	61	602	322	506	247	1,677	1,838
	April	95	49	451	237	407	246	1,341	1,485
	May	93	38	233	139	375	258	1,005	1,136
	June	90	37	165	107	420	296	988	1,115
	July	91	38	138	101	424	353	1,016	1,145
	August	89	38	123	105	435	361	1,024	1,151
	September	86	38	136	105	482	293	1,016	1,140
	October	87	43	204	130	573	273	1,181	1,311
	November	88	52	372	218	603	226	1,419	1,559
	December	90	58	557	299	520	215	1,591	1,739
	<b>TOTAL</b>	<b>1,109</b>	<b>596</b>	<b>4,633</b>	<b>2,606</b>	<b>5,831</b>	<b>3,226</b>	<b>16,295</b>	<b>18,001</b>
1983	January	91	65	697	357	558	208	1,820	1,976
	February	80	55	673	349	316	177	1,515	1,650
	March	83	53	525	275	457	208	1,465	1,601
	April	78	46	449	231	379	203	1,262	1,386
	May	79	38	269	147	399	218	1,033	1,150
	June	75	33	176	107	365	248	896	1,004
	July	80	35	130	97	R408	314	R949	R1,064
	August	R83	38	119	99	R453	352	R1,023	R1,144
	September	R81	R36	124	103	R452	299	R978	R1,095
	October	85	42	195	130	555	251	1,131	1,258

<sup>1</sup>Includes deliveries to local, State, and Federal agencies engaged in nonmanufacturing activities.

R=Revised data.

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

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

• Data for 1973 through December 1982 are final. All other data are preliminary unless otherwise indicated.

Sources: • See the last page of this section.

# Natural Gas

## Underground Natural Gas Storage—All Operators

	Natural Gas in Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total <sup>1</sup>	Volume	Percent	Injections	Withdrawals	Net <sup>2</sup>
Volumes in Billion cubic feet								
1973	TOTAL	2,864	2,034	4,898	305	17.6	1,974	1,533
1974	TOTAL	2,912	2,050	4,962	16	0.8	1,784	1,701
1975	TOTAL	3,162	2,212	5,374	162	7.9	2,104	1,760
1976	TOTAL	3,323	1,926	5,250	-286	-12.9	1,756	1,921
1977	TOTAL	3,391	2,475	5,866	549	28.5	2,307	1,750
1978	TOTAL	3,473	2,547	6,020	72	2.9	2,278	2,158
1979	TOTAL	3,553	2,753	6,306	207	8.1	2,295	2,047
1980	TOTAL	3,642	2,655	6,297	-89	-3.6	1,896	1,910
1981	January	3,642	2,152	5,795	-172	-7.4	37	558
	February	3,648	1,824	5,472	-28	-1.5	59	376
	March	3,654	1,631	5,285	37	2.3	55	234
	April	3,670	1,764	5,434	73	4.3	208	55
	May	3,684	1,977	5,660	-22	-1.1	255	26
	June	3,681	2,252	5,933	-46	-2.0	314	27
	July	3,699	2,558	6,257	-29	-1.1	335	26
	August	3,713	2,882	6,595	28	1.0	361	15
	September	3,720	3,152	6,872	53	1.7	287	9
	October	3,726	3,248	6,974	61	1.9	155	50
	November	3,731	3,201	6,932	175	5.8	80	124
	December	3,752	2,817	6,569	162	6.1	34	387
	<b>TOTAL</b>						<b>2,180</b>	<b>1,887</b>
1982	January	3,751	2,182	5,932	29	1.4	24	673
	February	3,750	1,787	5,536	-37	-2.0	50	446
	March	3,766	1,604	5,370	-26	-1.6	88	265
	April	3,778	1,676	5,454	-88	-5.0	180	108
	May	3,780	2,034	5,814	57	2.9	382	11
	June	3,778	2,369	6,147	117	5.2	353	11
	July	3,780	2,704	6,484	146	5.7	351	12
	August	3,781	2,998	6,778	116	4.0	332	35
	September	3,782	3,251	7,033	99	3.1	277	20
	October	3,785	3,364	7,149	116	3.6	191	60
	November	3,772	3,309	7,081	108	3.4	83	163
	December	3,808	3,071	6,879	255	9.0	86	289
	<b>TOTAL</b>						<b>2,399</b>	<b>2,094</b>
1983	January	3,813	2,644	6,457	462	21.2	24	450
	February	3,811	2,356	6,167	569	31.9	35	324
	March	3,812	2,148	5,959	544	33.9	58	266
	April	3,818	2,074	5,893	398	23.8	81	162
	May	3,818	2,222	6,041	188	9.3	189	41
	June	3,819	2,454	6,272	85	3.6	254	22
	July	3,826	2,696	6,522	-8	-0.3	267	25
	August	3,823	2,908	6,732	-89	-3.0	248	35
	September	3,823	3,140	6,964	-110	-3.4	259	27
	October	3,825	3,269	7,094	-95	-2.8	166	35
	November	3,838	3,174	7,013	-135	-4.1	72	152

<sup>1</sup>Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1978—6,890; 1979—6,929; 1980—7,434; 1981—7,805; and 1982—7,915. Current total capacity is 7,965.

<sup>2</sup>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 on the last two pages of this section.

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

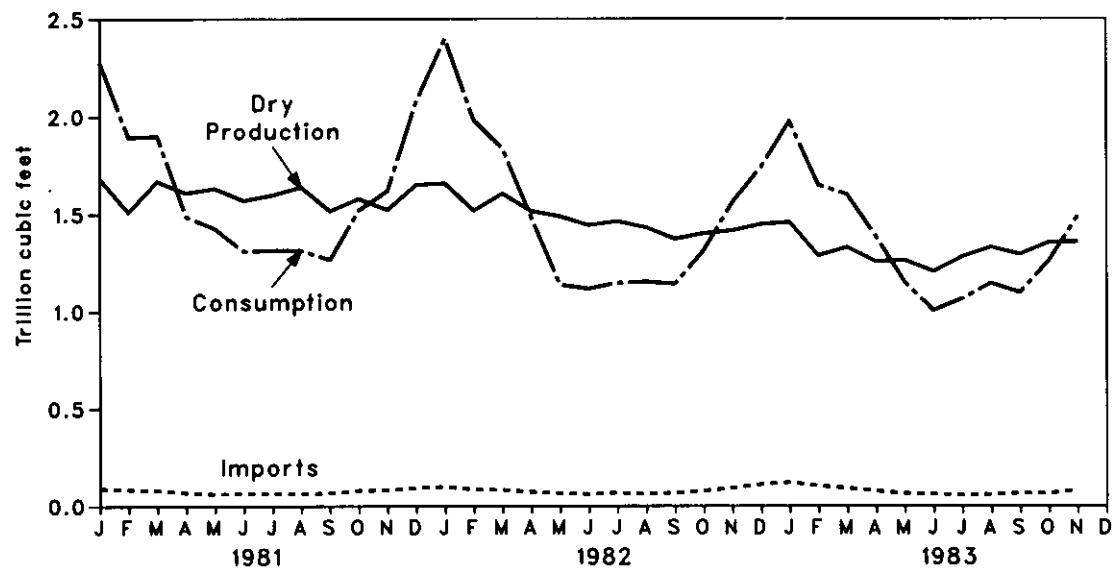
• Totals may not equal sum of components due to independent rounding.

• Data for 1978 through 1982 are final. All other data are preliminary unless otherwise noted.

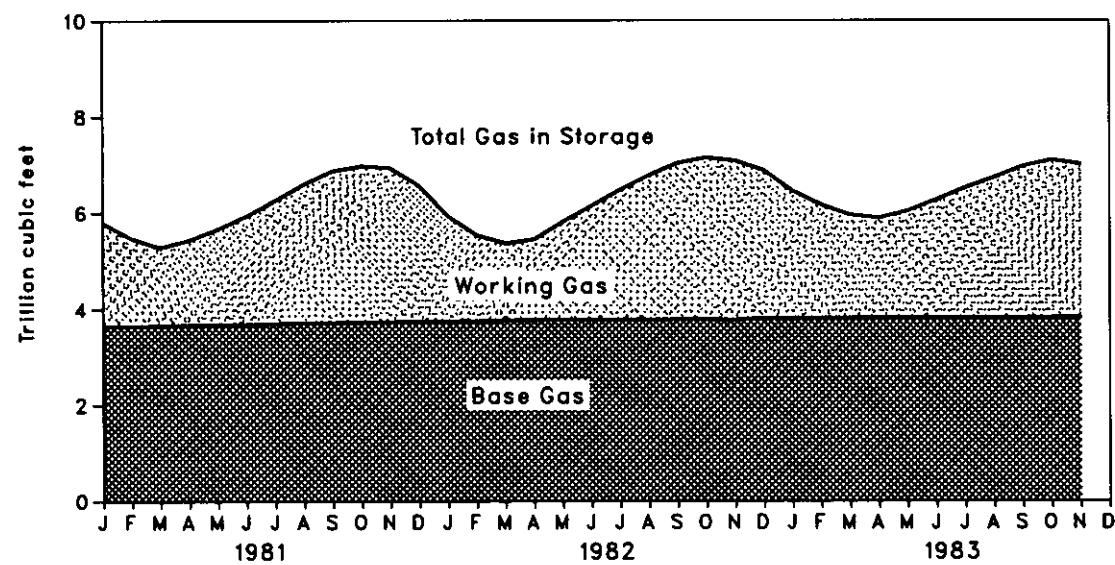
Sources: • See the last page of this section.

## Natural Gas

### Consumption, Dry Production, and Imports



### Gas in Storage



## Notes and Sources for the Natural Gas Section

### Notes

**1. Nonhydrocarbon Gases Removed:** Annual data on nonhydrocarbon gases removed from marketed production—carbon dioxide, helium, hydrogen sulfide, and nitrogen—are from the EIA *Natural Gas Annual, 1982*. These data are not available for periods prior to 1980. For 1982, of the 31 producing States, 18 reported data on nonhydrocarbon gases removed. These 18 States accounted for 53 percent of total 1982 gross withdrawals. In addition, gross withdrawals data from two States, which together accounted for 40 percent of the 1982 total production, did not include all or most of the nonhydrocarbon gases removed on leases. No estimates are made for the two States not reporting nonhydrocarbon gases removed. For further information, see the Energy Information Administration (EIA) *Natural Gas Monthly*.

Monthly data are reported by two States and computed for four States. All monthly data are considered preliminary until after publication of the EIA *Natural Gas Annual* for the year in which the report month falls. Three States report monthly data on nonhydrocarbon gases removed; the rest of the data is estimated. For further information on methods of estimating preliminary monthly data, see the EIA *Natural Gas Monthly*.

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

**2. Production:** Annual data. Final annual data are from the Energy Information Administration (EIA) *Natural Gas Annual, 1982*.

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

Preliminary monthly data. All monthly data are considered preliminary until after publication of the EIA *Natural Gas Annual* for the year in which the report month falls. Preliminary monthly data are gathered from reports from the Interstate Oil Compact Commission and the U.S. Minerals Management Service. Volumetric data are converted, as necessary to a standard 14.73 psia pressure base. Unless there are major changes, data are not revised until after publication of the EIA *Natural Gas Annual*.

Final monthly data. The difference between annual production data published in the EIA *Natural Gas Annual, 1982* and the sum of preliminary monthly data (January-December) is allocated proportionally to the preliminary monthly data.

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

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

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

Monthly data are revised and considered final after the publication of the EIA *Natural Gas Annual*. Final monthly data are estimated by allocating annual extraction loss data to each month based on its total natural gas disposition.

**4. Supplemental Fuels:** Supplemental gaseous fuels are mainly synthetic natural gas, propane-air, and refinery gas. Other gases may also be included. During 1982, coke oven gas, biomass gas, manufactured gas, and air injected for Btu stabilization were reported in this category.

Annual data beginning with 1980 are from the EIA *Natural Gas Annual, 1982*. Unknown quantities of supplemental gaseous fuels are included in consumption data for 1979 and earlier years.

All monthly data are considered preliminary until after the publication of the EIA *Natural Gas Annual* for the year in which the report month falls. Monthly estimates are based on the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. This ratio is applied to the monthly sum of these three elements to compute a monthly supplemental gaseous fuels figure.

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

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

Preliminary monthly data are EIA estimates. For a discussion of estimation procedures, see the EIA *Natural Gas Monthly*. Preliminary data are revised after the publication of the EIA *U.S. Imports and Exports of Natural Gas* for the calendar year in which the month falls.

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

All final data are from the EIA, *Natural Gas Annual*. All monthly data are considered preliminary until after publication of the EIA *Natural Gas Annual*. For more detailed information on the methods of estimating preliminary and final monthly data, see the EIA *Natural Gas Monthly*.

**7. Unaccounted For:** The "unaccounted for" category represents quantities lost, the net result of flow data metered at varying temperature and pressure conditions and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; and imbalances from EIA's merger of data reporting systems which vary in scope, format, definitions, and type of respondents. For additional explanatory information, see the EIA *Natural Gas Monthly*.

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

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

The final monthly and annual storage and withdrawal data for 1980 through 1982 include both underground and liquefied natural gas (LNG) storage. Underground storage data are taken from the FPC-8/EIA-191 survey in the following manner. Annual data on LNG additions and withdrawals are taken from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying it to annual LNG data.

(Notes and Sources for the Natural Gas Section are continued on the next page.)

## Notes and Sources for the Natural Gas Section (continued)

### Sources

**Production:** 1973 through 1982: Energy Information Administration (EIA), *Natural Gas Annual, 1982*, Appendix B; January 1983 forward: State reports to the Interstate Oil Compact Commission, data from the U.S. Minerals Management Service, and EIA estimates for States that do not report monthly data on a regular or timely basis.

**Extraction Loss, Consumption, and Unaccounted For:** 1973 through 1982: EIA, *Natural Gas Annual, 1982*, Appendix B; January 1983 forward: EIA computations.

**Withdrawals from and Additions to Storage:** 1973 through 1982: EIA, *Natural Gas Annual, 1982*, Appendix B; January 1983 forward: Form FPC-8 and Form EIA-191, "Underground Gas Storage Report".

**Supplemental Gaseous Fuels:** 1980 through 1982: EIA, *Natural Gas Annual, 1982*, Appendix B; January 1983 forward: EIA computations.

**Imports and Exports:** 1973 through 1982: Form FPC-14, "Imports and Exports of Natural Gas"; January 1983 forward: EIA computations.

**End-Use Consumption:** •All data except electric utility—1973 through 1982: EIA, *Natural Gas Annual, 1982*, Appendix B; January 1983 forward: EIA computations. •Electric utility data—EIA, Form 759, "Monthly Power Plant Report" (formerly Form FPC-4).

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

# Part 5

# Oil and Gas Resource Development

## Oil and Gas Resource Development

The November 1983 rotary rig count of 2,572 was 2.9 percent higher than the November 1982 count of 2,500. The 159 rigs operating offshore were 34.0 percent fewer than those working in November 1982.

In November 1983, the reported total wells drilled were 6,368, a 8.5-percent decrease from the 6,962 reported for November 1982. Oil well completions reported during November 1983 were 3,237, a 1.3-percent decrease from the comparable 1982 figure of 3,279. Gas well completions of 1,140 were reported for November 1983, 31.2 percent less than 1982's figure of 1,658. Total reported footage drilled for November 1983 of 26.8 million feet decreased 13.9 percent from the November 1982 figure of 31.1 million feet.

In November 1983, 495 crews were engaged in seismic exploration, 1.4 percent fewer than during November 1982. The 446 land crews employed during November 1983 were 1.3 percent fewer than those reported during November 1982. The 49 marine vessels working during November 1983 were 2.0 percent fewer than those in November 1982.

# Oil and Gas Resource Development

		Rotary Rigs in Operation <sup>1</sup>	Exploratory and Development Wells Drilled <sup>2</sup>				Total Footage of Wells Drilled <sup>2</sup>	
			Oil	Gas	Dry	Total		
		Monthly average					Thousand feet	
1973	AVERAGE	1,194	TOTAL	9,902	6,385	10,305	26,592	136,391
1974	AVERAGE	1,472	TOTAL	12,784	7,240	11,674	31,698	150,551
1975	AVERAGE	1,660	TOTAL	16,408	7,580	13,247	37,235	174,434
1976	AVERAGE	1,658	TOTAL	17,059	9,085	13,621	39,765	181,780
1977	AVERAGE	2,001	TOTAL	18,912	11,378	14,692	44,982	210,848
1978	AVERAGE	2,259	TOTAL	17,775	13,064	16,218	47,057	227,110
1979	AVERAGE	2,177	TOTAL	19,383	14,681	15,752	49,816	238,659
1980	AVERAGE	2,909	TOTAL	27,026	15,730	18,089	60,845	284,461
1981	January	3,386		1,794	964	1,339	4,097	19,907
	February	3,502		2,459	1,046	1,610	5,115	22,726
	March	3,595		3,099	1,423	1,883	6,405	30,166
	April	3,728		2,905	1,600	1,546	6,051	27,836
	May	3,816		2,604	1,159	1,675	5,438	24,842
	June	3,926		3,497	1,320	2,105	6,922	31,689
	July	3,998		2,790	1,116	1,698	5,604	25,542
	August	4,131		3,140	1,260	1,874	6,274	28,933
	September	4,242		3,414	1,978	2,014	7,406	33,630
	October	4,352		3,772	1,879	2,099	7,750	35,520
	November	4,436		3,591	1,584	2,069	7,244	32,263
	December	4,520		4,619	2,586	3,078	10,283	48,594
	AVERAGE	3,970	TOTAL	37,671	17,894	22,973	78,538	381,407
1982	January	4,436		2,798	954	2,132	5,884	28,167
	February	4,160		3,036	1,430	2,234	6,700	31,985
	March	3,816		3,736	1,480	2,479	7,695	37,896
	April	3,460		3,674	1,530	2,287	7,491	36,439
	May	3,178		3,451	1,940	2,205	7,596	36,987
	June	2,908		3,888	1,891	2,521	8,300	38,962
	July	2,746		3,290	1,703	1,931	6,924	31,111
	August	2,620		2,865	1,588	1,917	6,370	28,836
	September	2,482		3,363	1,599	2,330	7,292	32,611
	October	2,402		2,833	1,210	2,125	6,168	27,274
	November	2,500	R3,279	R1,658	R2,025	R6,962	R31,130	
	December	2,696		4,090	1,966	2,361	8,417	34,737
	AVERAGE	3,105	TOTAL	40,298	18,953	26,549	85,800	396,017
1983	January	2,622		2,381	892	1,651	4,924	20,998
	February	2,192		2,899	1,190	2,223	6,312	27,758
	March	2,003		3,462	1,606	2,644	7,712	34,360
	April	1,846		3,028	1,401	1,985	6,414	27,459
	May	1,926		3,186	1,745	1,827	6,758	28,544
	June	1,979		3,514	1,237	2,105	6,856	28,050
	July	2,039		2,683	1,132	1,640	5,455	22,953
	August	2,156		2,641	1,075	1,533	5,249	22,582
	September	2,252		3,733	1,271	2,019	7,023	30,325
	October	2,382		2,970	1,211	1,699	5,880	24,887
	November	2,572		3,237	1,140	1,991	6,368	26,811

<sup>1</sup>These data are for operating rotary rigs reported by the Hughes Tool Company during the reporting period. Monthly figures are averages of a 4- or 5-week reporting period and are not calendar months.

<sup>2</sup>These data are for wells drilled reported to the American Petroleum Institute (API) during the reporting period. They exclude service wells and stratigraphic and core tests. Data reported for the first 2 months of each quarter cover 4 weeks of drilling activity, and data for the last month of the quarter cover 5 weeks of drilling activity.

R=Revised data.

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

• Totals reflect subsequent data revisions and therefore may not agree with cumulative monthly data.

Sources: • Rotary Rigs: Hughes Tool Company, "Rotary Rigs Running—By State."

• Wells: API, "Monthly Drilling Report" and "Quarterly Review of Drilling Statistics for the United States."

## Oil and Gas Resource Development

		Crews Engaged in Seismic Exploration			Line-Miles of Seismic Exploration		
		Offshore	Onshore	Total	Offshore <sup>1</sup>	Onshore <sup>1</sup>	Total <sup>1</sup>
		Monthly average			Annual total		
1973	AVERAGE	23	227	250	258,944	127,160	386,104
1974	AVERAGE	31	274	305	341,784	158,629	500,413
1975	AVERAGE	30	254	284	309,283	150,694	459,977
1976	AVERAGE	25	237	262	228,303	142,926	369,229
1977	AVERAGE	27	281	308	124,676	120,072	244,748
1978	AVERAGE	25	327	352	174,607	135,899	310,506
1979	AVERAGE	30	370	400	193,212	163,929	357,141
1980	AVERAGE	37	493	530	202,694	184,088	386,782
1981	January	38	553	591			
	February	41	561	602			
	March	40	570	610			
	April	40	605	645			
	May	42	619	661			
	June	44	652	696			
	July	43	668	711			
	August	46	689	735			
	September	47	697	744			
	October	52	689	741			
	November	52	681	733			
	December	47	656	703			
	AVERAGE	44	637	681	338,201	256,201	594,402
1982	January	53	642	695			
	February	53	625	678			
	March	52	597	649			
	April	55	571	626			
	May	61	551	612			
	June	69	546	615			
	July	66	527	593			
	August	62	500	562			
	September	59	476	535			
	October	51	465	516			
	November	50	452	502			
	December	49	428	477			
	AVERAGE	57	531	588	558,464	248,483	806,947
1983	January	49	407	456			
	February	47	404	451			
	March	45	402	447			
	April	39	410	449			
	May	39	410	449			
	June	43	428	471			
	July	46	437	483			
	August	49	435	484			
	September	57	444	501			
	October	50	448	498			
	November	49	446	495			

<sup>1</sup>Monthly data not available.

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

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

Sources: • Society of Exploration Geophysicists, "Monthly Seismic Crew Count" and annual reports published in their bulletins, *Geophysics* and *Leading Edge*.



## Coal

Coal production in December 1983 was 65.5 million short tons, 3.7 percent more than the 63.1 million short tons produced in December 1982. Coal production in calendar year 1983 was 784.9 million short tons, 6.4 percent less than the record-high 838.1 million short tons produced in 1982.

Electric utility coal consumption in October 1983 totaled 50.7 million short tons, 9.4 percent more than consumption in October 1982.

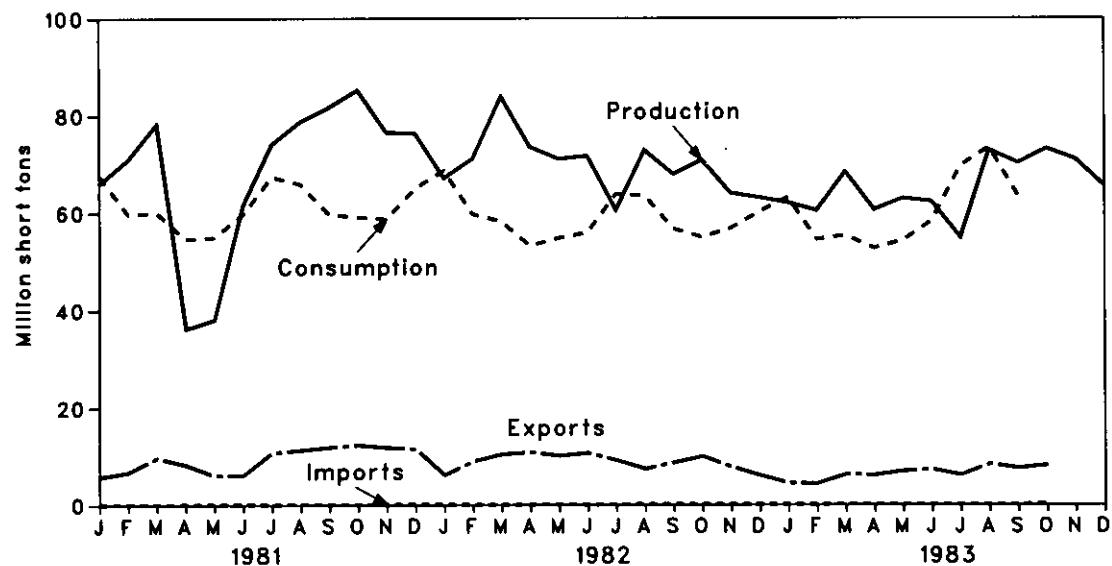
Electric utility coal stocks of 166.6 million short tons at the end of October 1983 were 14.0 million short tons (7.8 percent) below the level 1 year earlier.

Imports of coal in October 1983 totaled 190 thousand short tons, 124 thousand short tons more than the amount imported in October 1982. Exports of coal in October 1983 totaled 8.1 million short tons, 18.5 percent less than the amount exported during October 1982. Coal exports in October 1983 were principally to Europe (34.2 percent), Canada (31.4 percent), and Japan (21.5 percent).

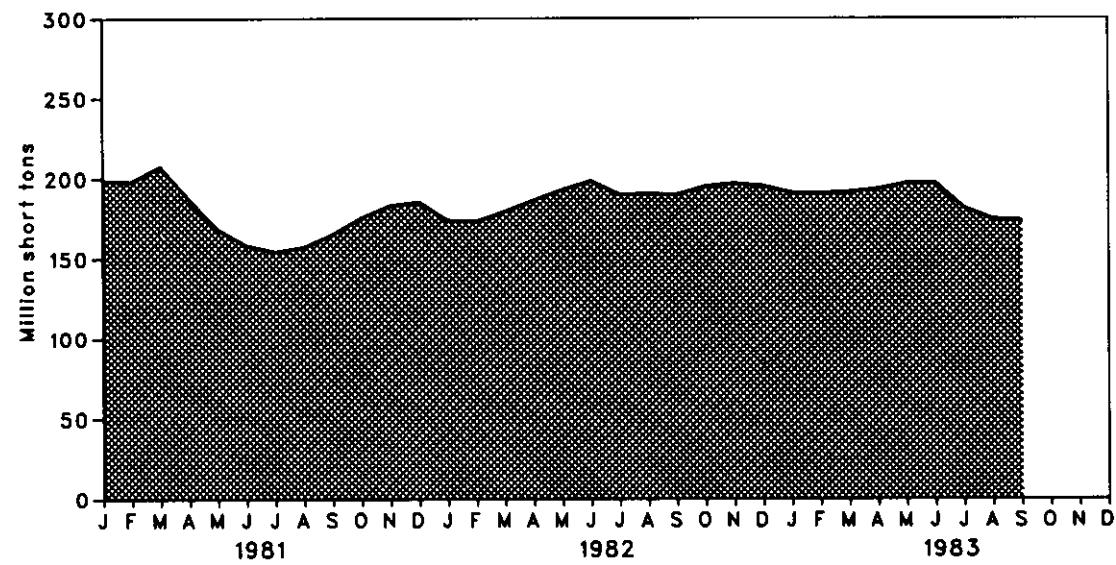
## Coal

### Bituminous Coal, Lignite, and Anthracite

#### Production, Consumption, Imports, and Exports



#### Stocks



# Coal

## Bituminous Coal, Lignite, and Anthracite

		Production	Domestic Consumption	Imports <sup>1</sup>	Exports <sup>2</sup>	Stocks <sup>3</sup>
Thousand short tons						
1973	TOTAL	598,568	562,584	127	53,587	104,335
1974	TOTAL	610,023	558,402	2,080	60,661	96,323
1975	TOTAL	654,641	562,641	940	66,309	128,050
1976	TOTAL	684,913	603,790	1,203	60,021	134,438
1977	TOTAL	697,205	625,291	1,647	54,312	157,098
1978	TOTAL	670,164	625,225	2,953	40,714	145,551
1979	TOTAL	781,134	680,524	2,059	68,042	181,646
1980	TOTAL	829,700	702,729	1,194	91,742	204,028
1981	January	65,927	67,580	35	5,795	198,603
	February	70,918	59,735	104	6,771	197,962
	March	78,266	60,069	77	9,710	207,340
	April	36,253	54,649	63	8,271	187,143
	May	38,100	55,025	96	6,086	168,126
	June	61,555	59,685	138	6,158	158,274
	July	74,076	67,394	13	10,762	154,423
	August	78,782	65,896	150	11,315	157,141
	September	81,720	59,722	69	11,900	164,970
	October	85,241	59,161	94	12,360	175,384
	November	76,577	58,695	76	11,849	183,044
	December	76,360	65,017	127	11,564	185,274
	TOTAL	823,775	732,627	1,043	112,541	
1982	January	67,138	68,692	71	6,177	173,931
	February	71,169	59,746	30	8,964	173,193
	March	83,943	58,236	12	10,423	179,484
	April	73,587	53,274	10	10,831	186,458
	May	71,127	54,844	109	10,110	192,926
	June	71,720	55,950	9	10,680	198,377
	July	60,535	63,828	69	9,182	189,997
	August	72,898	63,528	131	7,385	190,310
	September	67,951	56,734	71	8,683	189,967
	October	70,852	55,034	66	9,972	195,107
	November	64,055	56,831	87	7,807	196,700
	December	63,136	60,214	76	6,064	195,254
	TOTAL	838,112	706,911	742	106,277	
1983	January†	62,103	63,118	78	4,471	191,130
	February†	60,487	54,573	71	4,382	190,782
	March†	68,462	55,364	120	6,291	191,530
	April†	60,630	R52,765	144	6,115	193,402
	May†	62,980	R54,323	102	6,952	196,982
	June†	62,323	R58,274	133	7,279	197,037
	July†	R54,917	69,632	87	6,140	181,410
	August†	R72,949	73,507	115	8,380	174,598
	September†	R70,281	63,466	97	7,525	173,733
	October†	R73,201	NA	190	8,131	NA
	November†	71,039	NA	NA	NA	NA
	December†	65,494	NA	NA	NA	NA
	TOTAL	784,866	NA	NA	NA	NA

<sup>1</sup>Bituminous coal was the only type of coal imported during the years shown above.

<sup>2</sup>Excludes shipments of anthracite to U.S. Armed Forces overseas (335,000 short tons in 1982).

<sup>3</sup>Stocks held by electric utilities, coke plants, and general industry at the end of period. Excludes stocks at retail dealers that are consumed by the residential and commercial sector.

†Preliminary data. R=Revised data. 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.

• See Note on the last page of this section for methodology used to calculate production, consumption, and stocks.

Sources: • See the last page of this section.

# Coal

## Consumption—Bituminous Coal, Lignite, and Anthracite

		Industrial				Total
		Electric Utilities	Coke Plants <sup>1</sup>	Other Industrial <sup>2</sup>	Residential and Commercial	
				Including Transportation		
Thousand short tons						
1973	TOTAL	389,212	94,101	68,154	11,117	562,584
1974	TOTAL	391,811	90,191	64,983	11,417	558,402
1975	TOTAL	405,962	83,598	63,670	9,410	562,641
1976	TOTAL	448,371	84,704	61,799	8,916	603,790
1977	TOTAL	477,126	77,739	61,472	8,954	625,291
1978	TOTAL	481,235	71,394	63,085	9,511	625,225
1979	TOTAL	527,051	77,368	67,717	8,388	680,524
1980	TOTAL	569,274	66,657	60,347	6,451	702,729
1981	January	54,688	5,465	6,532	895	67,580
	February	47,914	5,177	5,932	712	59,735
	March	48,398	5,532	5,665	474	60,069
	April	43,677	4,862	5,548	562	54,649
	May	44,999	4,259	5,297	470	55,025
	June	50,080	4,460	4,845	300	59,685
	July	56,144	5,449	5,371	430	67,394
	August	54,483	5,434	5,520	459	65,896
	September	48,483	5,340	5,312	587	59,722
	October	47,800	5,158	5,577	626	59,161
	November	47,014	5,037	5,793	851	58,695
	December	53,116	4,842	6,003	1,056	65,017
	TOTAL	596,797	61,014	67,395	7,421	732,627
1982	January	56,825	4,444	6,430	993	68,692
	February	48,878	4,340	5,835	693	59,746
	March	47,884	4,173	5,616	563	58,236
	April	43,490	3,708	5,373	703	53,274
	May	45,622	3,622	5,133	467	54,844
	June	47,424	3,481	4,681	364	55,950
	July	55,248	3,121	4,831	628	63,828
	August	54,838	3,058	4,962	670	63,528
	September	48,414	2,924	4,759	637	56,734
	October	46,330	2,757	5,287	660	55,034
	November	47,799	2,693	5,494	845	56,831
	December	50,914	2,587	5,695	1,018	60,214
	TOTAL	593,666	40,908	64,097	8,240	708,911
1983	January†	53,351	2,813	5,963	990	63,118
	February†	45,772	2,742	5,399	660	54,573
	March†	47,039	2,567	5,200	557	55,364
	April†	43,589	3,206	R5,252	R718	R52,765
	May†	45,691	R3,151	R5,012	R469	R54,323
	June†	50,362	2,734	R4,787	R391	R58,274
	July†	60,390	3,269	5,374	599	69,632
	August†	64,170	3,252	5,520	565	73,507
	September†	54,212	3,196	5,307	751	63,466
	October†	50,689	NA	NA	NA	NA

<sup>1</sup>Bituminous coal and anthracite only. Lignite is not used at coke plants.

<sup>2</sup>See Note on the last page of this section.

†Preliminary data. R=Revised data. 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: • See the last page of this section.

# Coal

## Stocks<sup>1</sup>—Bituminous Coal, Lignite, and Anthracite

		Industrial		
	Electric Utilities	Coke Plants <sup>2</sup>	Other Industrial	Total <sup>3</sup>
Thousand short tons				
1973	88,967	6,998	10,370	104,335
1974	83,509	6,209	6,605	96,323
1975	110,724	8,797	8,529	128,050
1976	117,436	9,902	7,100	134,438
1977	133,219	12,816	11,063	157,098
1978	128,225	8,278	9,048	145,551
1979	159,714	10,155	11,777	181,646
1980	183,010	9,067	11,951	204,028
1981	January	176,975	9,634	198,603
	February	175,715	10,211	197,962
	March	183,983	10,788	207,340
	April	169,221	6,952	187,143
	May	153,415	4,850	168,126
	June	144,520	4,500	158,274
	July	140,124	5,074	154,423
	August	142,318	5,648	157,141
	September	149,526	6,163	164,970
	October	159,676	6,308	175,384
	November	167,002	6,392	183,044
	December	168,893	6,475	185,274
1982	January	158,469	6,207	173,931
	February	158,136	5,909	173,193
	March	164,518	5,612	179,484
	April	171,390	5,931	186,458
	May	177,461	6,231	192,926
	June	182,513	6,532	198,377
	July	174,503	6,166	189,997
	August	175,194	5,800	190,310
	September	175,225	5,434	189,967
	October	180,571	5,171	195,107
	November	182,368	4,908	196,700
	December	181,132	4,642	195,254
1983	January†	177,832	4,338	191,130
	February†	178,310	4,034	190,782
	March†	179,883	3,728	191,530
	April†	181,371	4,089	193,402
	May†	184,567	4,450	196,982
	June†	184,236	4,812	197,037
	July†	168,576	4,489	181,032
	August†	162,088	4,165	174,598
	September†	161,368	3,842	173,733
	October†	166,574	NA	NA

<sup>1</sup>Stocks held by electric utilities, coke plants, and general industry at end of period.

<sup>2</sup>Bituminous coal and anthracite only. Lignite is not used at coke plants.

<sup>3</sup>Total excludes stocks at retail dealers that are consumed by the residential and commercial sector.

†Preliminary data. 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: • See the last page of this section.

## Notes and Sources for the Coal Section

### Note

Preliminary estimates of monthly coal production are based on the number of railcars loaded at mines as reported weekly to the Association of American Railroads and the average coal tonnage carried per railcar as reported quarterly to the Interstate Commerce Commission by Class 1 railroads. The amount of coal production shipped by rail (estimated for each railroad by multiplying the number of railcars of coal loaded by the average coal tonnage carried per railcar) is multiplied by the ratio of total production as reported on Form EIA-6, "Coal Distribution Report," to production shipped by rail for the corresponding quarter of the previous year to arrive at the monthly coal production estimate. Final monthly and annual coal production data are derived from the Form EIA-6 and State coal production reports.

Domestic coal consumption data in this series approximate actual consumption. Coal consumption at electric utility plants is derived directly from Form EIA-759, "Monthly Power Plant Report." Prior to 1980, monthly coal consumption at coke plants was derived directly from Form EIA-5, "Coke and Coal Chemicals Monthly." For 1980 and subsequent years, monthly coal consumption at coke plants is derived from the quarterly coal consumption reported on Form EIA-5, "Coke Plant Report—Quarterly." These quarterly coal consumption figures are converted to monthly coal consumption figures using the ratios of monthly to quarterly consumption in 1979, the last year that coke plant data was collected monthly on Form EIA-5. These ratios by month (January-December) are: 0.3377, 0.3200, 0.3423; 0.3529, 0.3462, 0.3009; 0.3364, 0.3347, 0.3289; and 0.3273, 0.3301, 0.3426.

Prior to 1978, coal consumption for the "Other Industrial" sector (i.e. industrial users minus coke plants) was derived by using monthly data reported on Form EIA-3, "Monthly Fuel Consumption Report—Manufacturing Plants" to modify baseline coal consumption figures from the most recent Census of Manufacturers or Annual Survey of Manufacturers, Bureau of the Census, U.S. Department of Commerce. For 1978 and subsequent years, the data sources used to compute monthly coal consumption for the "Other Industrial" sector are:

- (a) Form EIA-3, "Quarterly Coal Consumption Report—Manufacturing Plants."
- (b) Form EIA-6, "Coal Distribution Report." (Quarterly)

The basic assumption used in deriving a quarterly estimate for coal consumption for the "Other Industrial" sector is that consumption is equal to beginning stocks plus receipts minus ending stocks. In terms of an equation, consumption can be expressed as

$$C = S_b + R - S_e \quad (1)$$

where  $S_b$  = beginning stocks

$R$  = receipts

$S_e$  = ending stocks.

The change in stocks ( $S_b - S_e$ ) can be denoted by  $\Delta S$ . From equation (1), consumption is

$$C = \Delta S + R. \quad (2)$$

Form EIA-6 provides complete coverage of the "Other Industrial" sector. The quarterly receipts ( $R$ ) are equated to the coal distribution to the "Other Industrial" sector as reported on Form EIA-6. Form EIA-3 provides almost total coverage of the stock change for the "Other Industrial" sector and hence  $\Delta S$  is equated to this figure.

Given the estimated quarterly consumption for the "Other Industrial" sector ( $C$ ), the monthly consumption for the sector ( $C_m$ ) can be estimated for each month in the quarter as

$$C_m = (C_{m3}/C_3) \times C \quad (3)$$

where  $C_{m3}/C_3$  is the ratio of monthly to quarterly coal consumption as reported on Form EIA-3. For the 1978 coal consumption figures, the ratios used are based on 1978 EIA-3 data. For 1979 and subsequent years, the ratios used are based on the 1979 EIA-3 data. These 1979 ratios by month (January-December) are: 0.3593, 0.3264, 0.3143; 0.3485, 0.3332, 0.3183; 0.3317, 0.3407, 0.3276; and 0.3045, 0.3253, 0.3702.

For 1980 and subsequent years, quarterly coal consumption in the residential and commercial sector is equated to the quarterly coal distribution to that sector as reported on Form EIA-6, "Coal Distribution Report." These quarterly coal consumption figures are converted to monthly coal consumption figures using the ratios of monthly to quarterly coal deliveries to this sector in 1979 as reported on Form EIA-2, "Monthly Coal Report—Retail Dealers and Upper Lake Docks." These 1979 ratios by month (January-December) are: 0.4002, 0.3502, 0.2496; 0.4805, 0.2901, 0.2294; 0.3126, 0.2952, 0.3922; and 0.2931, 0.3101, 0.3968.

Prior to 1980, monthly coal consumption for the residential and commercial sector was derived by using monthly data reported on Form EIA-2 to modify baseline coal consumption figures developed by the Bureau of Mines, U.S. Department of the Interior.

### Sources

**Production:** 1973 through September 1977: Bureau of Mines, *Minerals Yearbook* and *Mineral Industry Surveys*; October 1977 forward: Energy Information Administration (EIA), "Weekly Coal Production Report" from selected State agencies and EIA Form 6, "Coal Distribution Report."

**Consumption and Stocks:** 1973 through September 1977: Bureau of Mines, *Minerals Yearbook* and *Mineral Industry Surveys*;

- Electric Utilities—October 1977 forward: EIA, EIA Form 759 (formerly FPC Form 4), "Monthly Power Plant Report."
- Other Industrial—October 1977 through December 1979: EIA, EIA Form 3, "Monthly Fuel Consumption Report-Manufacturing Plants"; January 1980 forward: EIA, EIA Form 3, "Quarterly Fuel Consumption Report-Manufacturing Plants" and EIA Form 6, "Coal Distribution Report."

- Coke Plants—October 1977 through December 1980: EIA, EIA Form 5/5A, "Coke and Coal Chemicals-Monthly/Annual"; January 1981 forward: EIA, EIA Form 5/5A, "Coke and Coal Chemicals—Quarterly/Annual."

- Residential and Commercial—October 1977 through December 1979: EIA, EIA Form 2, "Monthly Coal Report, Retail Dealers and Upper Lake Docks"; January 1980 forward: EIA, EIA Form 6, "Coal Distribution Report."

**Imports/Exports:** 1973 through September 1977: Bureau of Mines, *Minerals Yearbook* and *Mineral Industry Surveys*; October 1977 forward: Bureau of the Census, Monthly Reports IM-145 (Imports) and EM-522 (Exports).

# Part 7

## Electric Utilities

### Electric Utilities

October 1983 production of electricity by utilities was 182.2 billion kilowatt-hours, 5.3 percent above the October 1982 production level. Coal-fired production totaled 102.0 billion kilowatt-hours, 8.7 percent above the October 1982 level. Nuclear production totaled 25.1 billion kilowatt-hours, 7.8 percent above the October 1982 level. Gas-fired production was 23.8 billion kilowatt-hours in October 1983, 7.8 percent below the October 1982 level. Hydroelectric production was 20.7 billion kilowatt-hours, 4.9 percent above the level 1 year earlier. Petroleum-fired production totaled 9.9 billion kilowatt-hours, 0.6 percent above the October 1982 level.

Sales of electricity to all ultimate consumers in the United States in October 1983 were 176.3 billion kilowatt-hours, 7.9 percent above October 1982 sales. Sales to residential consumers during October 1983 were 55.4 billion kilowatt-hours, 5.2 percent above the level of sales during the same month in 1982. Commercial sales were 45.5 billion kilowatt-hours, 6.2 percent more than the amount sold to commercial consumers in

October 1982. Sales to industrial consumers totaled 68.9 billion kilowatt-hours in October 1983, 13.3 percent more than the 1982 figure. In October 1983, other sales totaled 6.5 billion kilowatt-hours, 8.4 percent below the October 1982 level.

Electric utility petroleum consumption (excluding petroleum coke) during October 1983 was 16.9 million barrels, virtually the same as the October 1982 level. Coal consumption for October 1983 was 50.7 million short tons, 9.4 percent above the October 1982 level. During October 1983, consumption of natural gas by electric utilities was 251.1 billion cubic feet, 8.0 percent below the October 1982 level.

On October 31, 1983, utility stocks of anthracite, bituminous coal, and lignite totaled 166.6 million short tons. Stockpiles were 7.8 percent below the level of October 1982. Petroleum stocks (excluding petroleum coke) on October 31, 1983, totaled 96.4 million barrels, 20.0 percent below the level on the same date in 1982.

# Electric Utilities

## Net Electricity Generation by Primary Energy Source

		Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas	Nuclear	Hydro	Other <sup>3</sup>	Total
Million kilowatt-hours								
1973	TOTAL	847,651	314,343	340,858	83,479	272,083	2,294	1,860,710
1974	TOTAL	828,433	300,931	320,065	113,976	301,032	2,703	1,867,140
1975	TOTAL	852,786	289,095	299,778	172,505	300,047	3,437	1,917,649
1976	TOTAL	944,391	319,988	294,624	191,104	283,707	3,883	2,037,696
1977	TOTAL	985,219	358,179	305,505	250,883	220,475	4,063	2,124,323
1978	TOTAL	975,742	365,060	305,391	276,403	280,419	3,315	2,206,331
1979	TOTAL	1,075,037	303,525	329,485	255,155	279,783	4,387	2,247,372
1980	TOTAL	1,161,562	245,994	346,240	251,116	276,021	5,506	2,286,439
1981	January	111,765	25,963	22,081	23,779	22,338	540	206,467
	February	97,653	17,444	21,339	21,595	21,099	483	179,613
	March	99,482	16,957	25,997	22,004	20,572	541	185,553
	April	88,109	15,106	27,460	20,646	20,723	500	172,545
	May	88,941	14,508	30,070	19,723	24,081	483	177,806
	June	99,837	18,972	35,885	21,166	26,370	473	202,702
	July	112,854	20,072	38,712	23,080	25,133	523	220,373
	August	108,403	16,001	36,918	26,946	21,615	520	210,403
	September	97,664	15,566	30,850	24,398	17,822	538	186,838
	October	97,046	16,213	28,917	20,556	18,088	531	181,352
	November	94,841	13,847	24,670	22,783	18,963	465	175,570
	December	106,608	15,772	22,877	25,997	23,879	457	195,590
	TOTAL	1,203,203	206,421	345,777	272,674	260,684	6,054	2,294,812
1982	January	113,124	20,674	22,621	25,678	26,896	411	209,403
	February	96,906	15,217	20,920	20,188	26,690	380	180,299
	March	97,625	13,495	23,598	22,755	29,885	330	187,687
	April	88,116	11,192	23,231	21,785	27,928	328	172,580
	May	92,997	9,868	24,291	21,639	27,971	381	177,147
	June	95,314	10,419	27,959	24,026	27,953	458	186,128
	July	110,617	13,380	33,340	25,467	27,294	485	210,584
	August	110,124	11,753	34,418	24,986	23,894	480	205,656
	September	96,896	10,363	27,649	25,391	19,896	468	180,662
	October	93,769	9,885	25,804	23,248	19,750	509	172,966
	November	95,547	9,313	21,466	23,235	23,297	520	173,377
	December	100,970	11,238	19,963	24,376	27,760	415	184,722
	TOTAL	1,192,004	146,797	305,260	282,773	309,213	5,164	2,241,211
1983	January	108,164	12,881	19,720	25,090	29,318	506	195,680
	February	92,692	12,586	16,659	22,204	27,950	395	172,485
	March	95,598	12,557	19,686	23,897	30,302	455	182,494
	April	88,114	10,337	19,174	22,352	29,988	424	170,389
	May	91,296	9,050	20,444	22,064	31,193	356	174,403
	June	101,512	11,130	23,091	24,158	30,692	462	191,046
	July	121,633	14,636	29,605	25,602	28,033	565	220,074
	August	129,313	14,870	33,147	25,581	25,824	738	229,472
	September	108,868	11,299	28,040	24,830	21,711	678	195,426
	October	101,951	9,941	23,783	25,060	20,726	711	182,172

<sup>1</sup>Includes bituminous coal, lignite, and anthracite.

<sup>2</sup>Includes fuel oil No. 2, No. 4, No. 5, No. 6, crude oil, kerosene, and petroleum coke.

<sup>3</sup>Includes geothermal and wood and waste.

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

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

Sources: • 1973 through September 1977: Federal Power Commission, Form 4, "Monthly Power Plant Report"; October 1977 through 1981: Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report"; 1982 forward: Energy Information Administration Form 759, "Monthly Power Plant Report."

# Electric Utilities

## Electricity Sales<sup>1</sup>

		Residential	Commercial	Industrial	Other <sup>2</sup>	Total
Million kilowatt-hours						
1973	TOTAL	579,231	388,266	686,085	59,328	1,712,910
1974	TOTAL	578,184	384,826	684,875	58,039	1,705,924
1975	TOTAL	588,140	403,049	687,680	68,222	1,747,091
1976	TOTAL	606,452	425,094	754,069	69,631	1,855,246
1977	TOTAL	645,239	446,514	788,037	70,571	1,948,361
1978	TOTAL	674,466	461,163	809,078	73,215	2,017,922
1979	TOTAL	682,819	473,307	841,903	73,070	2,071,099
1980	TOTAL	717,495	488,156	815,067	73,732	2,094,449
1981	January	74,087	43,229	67,076	7,557	191,949
	February	66,359	41,345	67,411	7,092	182,207
	March	57,660	39,541	68,590	7,035	172,826
	April	50,914	37,910	68,138	6,562	163,525
	May	48,348	39,331	68,714	6,780	163,173
	June	56,165	44,244	71,641	6,777	178,827
	July	69,990	48,989	71,712	7,124	197,814
	August	70,299	49,003	72,010	7,147	198,459
	September	61,098	46,977	71,011	7,164	186,250
	October	52,989	42,183	69,154	7,024	171,350
	November	51,965	39,747	66,161	7,143	165,016
	December	62,391	41,839	64,124	7,351	175,705
	TOTAL	722,265	514,338	825,742	84,756	2,147,101
1982	January	R76,264	R44,947	R62,939	R7,929	R192,079
	February	R69,128	R43,459	R62,778	R7,441	R182,805
	March	R60,498	R41,710	R64,496	R7,255	R173,959
	April	R54,918	R40,036	R62,723	R6,836	R164,512
	May	R49,092	R40,021	R62,480	R6,976	R158,569
	June	R54,083	R44,206	R63,684	R6,766	R168,739
	July	R65,704	R48,211	R62,617	R7,035	R183,567
	August	R69,906	R49,720	R63,306	R6,808	R189,740
	September	R63,053	R48,068	R59,980	R7,194	R178,296
	October	52,638	42,864	60,830	7,084	163,416
	November	52,136	40,572	60,651	7,122	160,479
	December	62,102	42,584	58,464	7,128	170,278
	TOTAL	R729,519	R526,397	R744,949	R85,575	R2,086,440
1983	January	69,929	44,011	57,931	7,251	179,122
	February	65,094	42,495	59,085	6,922	173,596
	March	59,003	41,589	60,267	6,902	167,781
	April	56,314	40,689	60,565	6,297	163,865
	May	49,648	40,273	62,697	6,214	158,832
	June	54,101	45,080	66,111	6,228	171,519
	July	68,923	50,818	66,094	6,759	192,594
	August	78,074	53,138	69,598	6,884	207,695
	September	72,885	52,131	69,603	6,962	201,581
	October†	55,374	45,517	68,924	6,492	176,307

<sup>1</sup>Electricity sales to all ultimate consumers.

<sup>2</sup>Includes street lighting and transportation uses.

†Initial estimates.

R=Revised data. For further explanation of factors used in revising data, see the Technical Notes section of the Energy Information Administration (EIA), *Electric Power Monthly*.

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

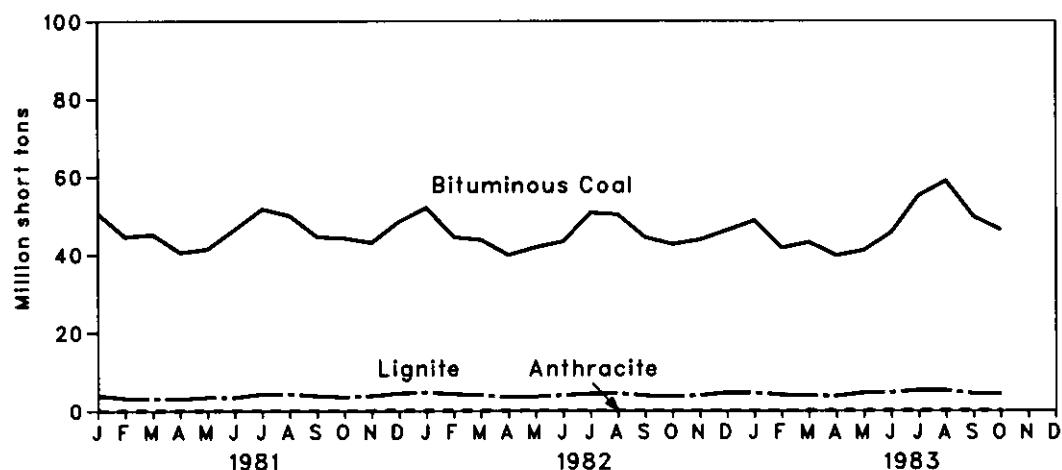
• Totals may not equal sum of components due to independent rounding.

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

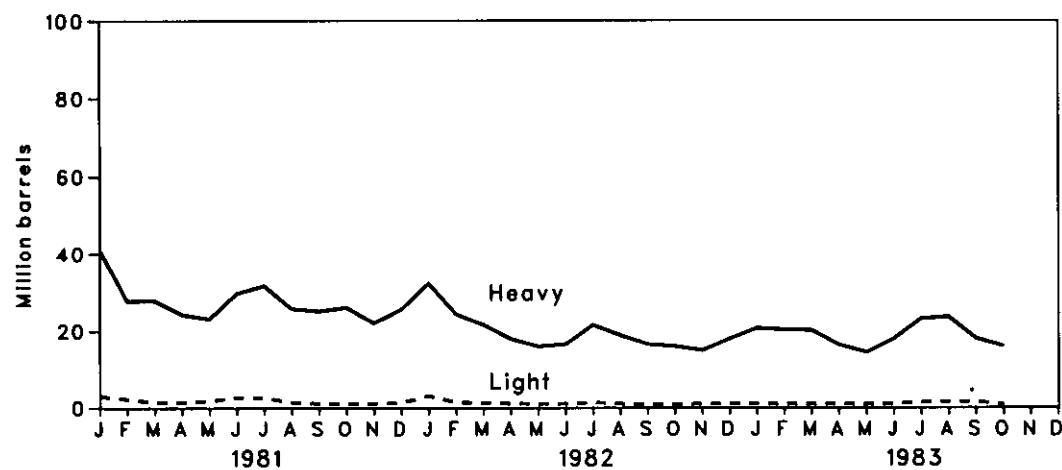
## Electric Utilities

### Primary Energy Consumed to Produce Electricity

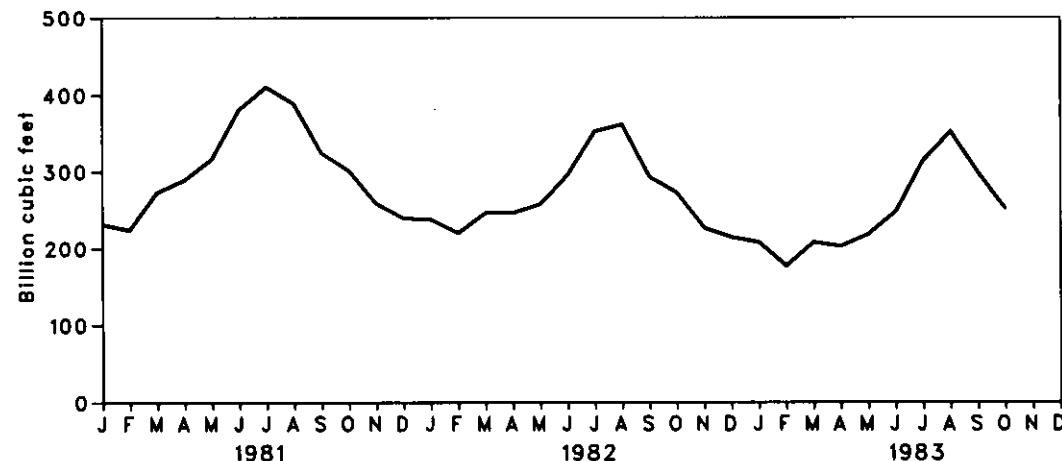
#### Coal Consumption



#### Petroleum Consumption



#### Natural Gas Consumption



# Electric Utilities

## Primary Energy Consumed to Produce Electricity

		Coal				Petroleum			Natural Gas	
		Anthracite	Bituminous Coal	Lignite	Total	Heavy <sup>1</sup>	Light <sup>2</sup>	Total Liquids	Petroleum Coke	Million cubic feet
						(*)	(*)	(*)	(*)	
Thousand short tons										
1973	TOTAL	1,443	376,975	10,794	389,212	(*)	(*)	560,248	507	3,660,172
1974	TOTAL	1,498	378,643	11,670	391,811	(*)	(*)	536,274	625	3,443,428
1975	TOTAL	1,480	388,523	15,960	405,962	(*)	(*)	506,128	70	3,157,669
1976	TOTAL	1,350	425,205	21,817	448,371	(*)	(*)	555,920	68	3,080,868
1977	TOTAL	1,425	451,051	24,650	477,126	(*)	(*)	623,705	98	3,191,200
1978	TOTAL	1,064	448,763	31,407	481,235	(*)	(*)	635,839	398	3,188,363
1979	TOTAL	1,046	488,129	37,876	527,051	(*)	(*)	523,297	268	3,490,523
1980	TOTAL	951	526,680	41,642	569,274	391,163	29,051	420,214	179	3,681,595
1981	January	81	50,635	3,972	54,688	40,885	3,047	43,931	10	231,606
	February	58	44,583	3,272	47,914	27,755	2,242	29,997	9	224,003
	March	75	45,168	3,155	48,398	27,862	1,405	29,267	9	273,431
	April	73	40,535	3,069	43,677	24,229	1,356	25,585	7	289,053
	May	91	41,405	3,503	44,999	23,130	1,795	24,925	14	316,310
	June	105	46,503	3,471	50,080	29,699	2,705	32,404	13	380,775
	July	102	51,705	4,337	56,144	31,628	2,615	34,243	11	410,666
	August	133	50,010	4,339	54,483	25,760	1,422	27,182	13	389,564
	September	98	44,557	3,828	48,483	25,137	1,145	26,282	13	324,828
	October	115	44,161	3,524	47,800	26,078	1,123	27,201	15	301,670
	November	141	43,032	3,841	47,014	22,042	1,139	23,181	12	258,811
	December	148	48,487	4,481	53,116	25,593	1,319	26,912	12	239,436
	TOTAL	1,221	550,784	44,792	596,797	329,798	21,313	351,111	139	3,640,154
1982	January	89	52,014	4,723	56,825	32,269	3,131	35,399	10	237,675
	February	83	44,478	4,317	48,878	24,351	1,421	25,772	9	220,032
	March	73	43,751	4,060	47,884	21,617	1,304	22,921	4	246,550
	April	88	39,888	3,515	43,490	17,913	1,132	19,045	11	246,344
	May	98	41,845	3,678	45,622	15,939	991	16,930	12	257,848
	June	94	43,340	3,990	47,424	16,539	1,053	17,592	13	295,557
	July	108	50,769	4,371	55,248	21,550	1,360	22,910	11	352,818
	August	95	50,283	4,460	54,838	18,873	1,053	19,926	13	361,351
	September	67	44,431	3,916	48,414	16,544	921	17,464	9	293,232
	October	81	42,598	3,650	46,330	15,990	870	16,860	17	273,003
	November	100	43,756	3,943	47,799	14,908	1,007	15,916	18	226,477
	December	99	46,192	4,622	50,914	17,940	1,094	19,035	22	214,630
	TOTAL	1,075	543,346	49,245	593,666	234,434	15,337	249,771	149	3,225,518
1983	January	73	48,695	4,583	53,351	20,728	1,122	21,850	17	208,337
	February	73	41,668	4,032	45,772	20,305	996	21,301	19	176,965
	March	75	43,095	3,870	47,039	20,174	957	21,131	16	208,010
	April	92	39,716	3,781	43,589	16,374	1,066	17,440	24	202,919
	May	104	41,002	4,585	45,691	14,360	949	15,309	30	218,186
	June	88	45,584	4,690	50,362	17,879	1,034	18,913	23	247,858
	July	89	55,082	5,219	60,390	23,144	1,472	24,616	25	314,373
	August	92	58,879	5,200	64,170	23,610	1,542	25,152	24	352,170
	September	86	49,745	4,381	54,212	18,021	1,507	19,529	25	298,540
	October	91	46,263	4,335	50,689	15,993	870	16,863	22	251,120

<sup>1</sup>Heavy oil includes Grade Nos. 4, 5, and 6, and residual fuel oils.

<sup>2</sup>Light oil includes Grade No. 2 heating oil, kerosene, and jet fuel.

\*Prior to 1980, petroleum consumption data were not disaggregated by type of fuel. Disaggregation by prime mover type is provided in the last table of this section.

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

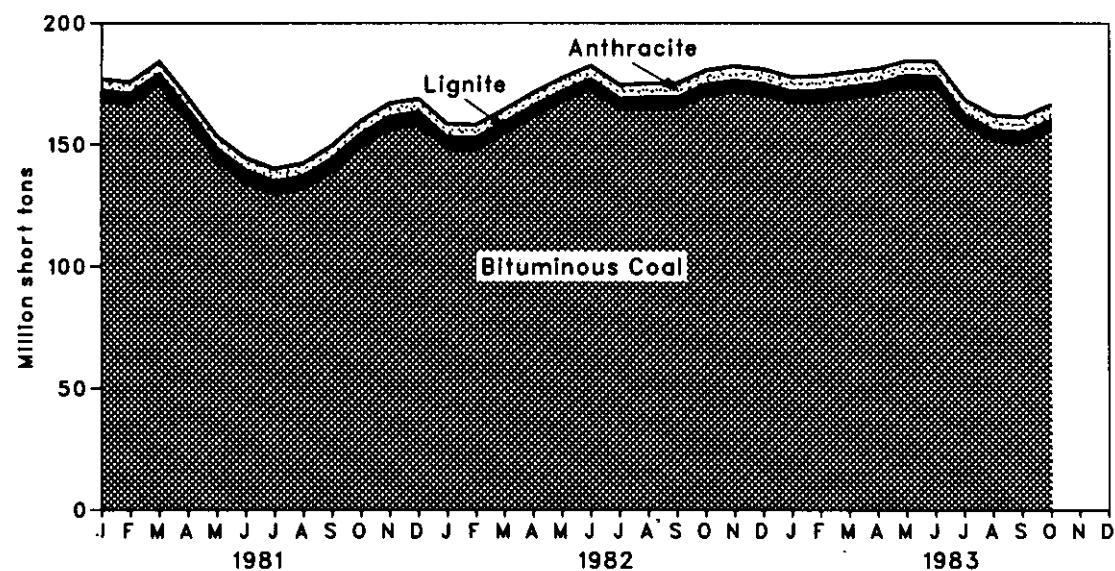
• Totals may not equal sum of components due to independent rounding.

Sources: • 1973 through September 1977: Federal Power Commission, Form 4, "Monthly Power Plant Report"; October 1977 through 1981: Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report"; 1982 forward: Energy Information Administration Form 759, "Monthly Power Plant Report."

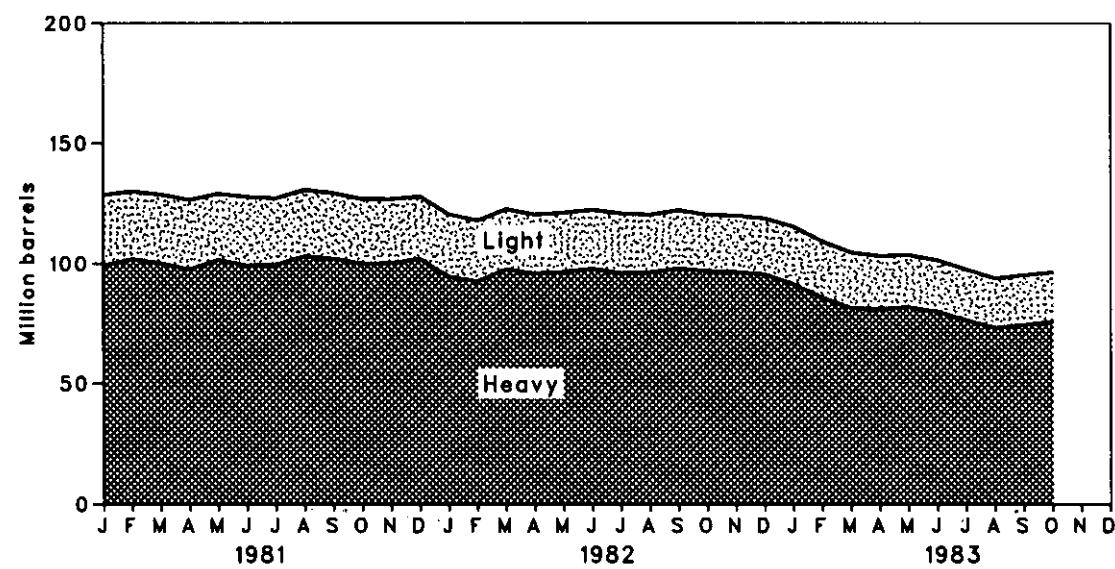
## Electric Utilities

### Coal and Petroleum Stocks at End of Period

#### Coal Stocks (Bituminous Coal, Lignite, and Anthracite)



#### Petroleum Stocks



# Electric Utilities

## Coal and Petroleum Stocks at End of Period

	Coal				Petroleum			
	Anthracite	Bituminous Coal	Lignite	Total	Heavy <sup>1</sup>	Light <sup>2</sup>	Total Liquids	Petroleum Coke
								Thousand short tons
1973	1,066	84,941	961	86,967	(*)	(*)	89,216	312
1974	930	81,712	867	83,509	(*)	(*)	112,917	35
1975	982	107,927	1,815	110,724	(*)	(*)	125,257	31
1976	1,000	114,130	2,306	117,436	(*)	(*)	121,696	32
1977	2,321	128,210	2,688	133,219	(*)	(*)	144,031	44
1978	2,178	123,020	3,027	128,225	(*)	(*)	118,788	198
1979	3,274	152,981	3,459	159,714	(*)	(*)	131,422	183
1980	4,741	174,154	4,115	183,010	105,351	30,023	135,374	52
1981	January	4,824	167,884	4,267	176,975	99,196	29,535	128,732
	February	4,859	166,552	4,304	175,715	101,867	28,328	130,195
	March	4,951	174,554	4,478	183,983	100,178	28,732	128,911
	April	5,035	159,645	4,541	169,221	97,629	29,024	126,652
	May	5,008	143,500	4,907	153,415	101,574	27,671	129,245
	June	5,081	134,321	5,119	144,520	99,398	28,547	127,945
	July	5,269	129,684	5,171	140,124	99,603	27,729	127,332
	August	5,337	132,072	4,909	142,318	103,104	27,714	130,817
	September	5,428	138,808	5,290	149,526	102,104	27,403	129,506
	October	5,512	148,952	5,213	159,676	100,008	27,055	127,063
	November	5,548	156,360	5,094	167,002	100,301	26,715	127,016
	December	5,537	158,258	5,098	168,893	102,042	26,094	128,136
1982	January	5,437	148,404	4,628	158,469	94,609	26,162	120,771
	February	5,401	148,118	4,617	158,136	92,622	25,418	118,040
	March	5,488	154,724	4,305	164,518	97,706	25,136	122,842
	April	5,542	161,720	4,128	171,390	95,984	24,636	120,620
	May	5,569	167,805	4,088	177,461	96,607	24,796	121,403
	June	5,603	172,819	4,092	182,513	97,959	24,647	122,606
	July	5,658	164,688	4,157	174,503	96,085	25,008	121,093
	August	5,791	165,182	4,221	175,194	96,345	24,193	120,538
	September	5,896	165,065	4,264	175,225	98,160	24,225	122,385
	October	5,992	170,281	4,298	180,571	96,920	23,595	120,515
	November	6,060	171,832	4,476	182,368	96,618	23,553	120,171
	December	6,080	170,480	4,573	181,132	95,515	23,369	118,884
1983	January	6,107	167,515	4,210	177,832	91,474	23,942	115,416
	February	6,104	167,843	4,362	178,310	85,847	23,438	109,284
	March	6,143	169,538	4,201	179,883	81,632	23,199	104,831
	April	6,120	170,815	4,436	181,371	81,243	22,084	103,327
	May	6,145	173,969	4,453	184,567	82,007	21,742	103,749
	June	6,230	173,483	4,524	184,236	80,092	21,435	101,527
	July	6,299	158,711	3,566	168,576	76,543	21,130	97,673
	August	6,380	151,671	4,038	162,088	73,257	20,649	93,906
	September	6,435	150,762	4,171	161,368	74,560	20,688	95,248
	October	6,506	156,012	4,056	166,574	75,874	20,554	96,428

<sup>1</sup>Heavy oil includes Grade Nos. 4, 5, and 6, and residual fuel oils.

<sup>2</sup>Light oil includes Grade No. 2 heating oil, kerosene, and jet fuel.

\*Prior to 1980, petroleum stock data were not disaggregated by type of fuel. Disaggregation by prime mover type is provided in the last table of this 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: • 1973 through September 1977: Federal Power Commission, Form 4, "Monthly Power Plant Report"; October 1977 through 1981: Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report"; 1982 forward: Energy Information Administration Form 759, "Monthly Power Plant Report."

# Electric Utilities

## Petroleum Consumption and Stocks by Prime Mover Type

		Petroleum Consumption			Petroleum Stocks at End of Period		
		Steam Plants	GT/IC <sup>1</sup>	Total Liquids	Steam Plants	GT/IC <sup>1</sup>	Total Liquids
Thousand barrels							
1973	TOTAL	513,190	47,058	560,248	79,121	10,095	89,216
1974	TOTAL	483,146	53,128	536,274	97,718	15,199	112,917
1975	TOTAL	467,221	38,907	506,128	108,825	16,432	125,257
1976	TOTAL	514,077	41,843	555,920	106,993	14,703	121,696
1977	TOTAL	574,869	48,837	623,705	124,750	19,281	144,031
1978	TOTAL	588,319	47,520	635,839	102,402	16,386	118,788
1979	TOTAL	492,606	30,691	523,297	111,121	20,301	131,422
1980	TOTAL	401,863	18,351	420,214	117,227	18,147	135,374
1981	January	41,904	2,027	43,931	110,533	18,199	128,732
	February	28,948	1,049	29,997	112,879	17,315	130,195
	March	28,492	775	29,267	111,490	17,421	128,911
	April	25,028	557	25,585	109,455	17,197	126,652
	May	23,958	967	24,925	112,172	17,073	129,245
	June	30,673	1,731	32,404	109,988	17,957	127,945
	July	32,577	1,666	34,243	110,476	16,856	127,332
	August	26,598	584	27,182	114,016	16,801	130,817
	September	25,762	520	26,282	112,992	16,515	129,506
	October	26,646	556	27,201	110,900	16,164	127,063
	November	22,749	432	23,181	110,939	16,077	127,016
	December	26,345	567	26,912	112,380	15,756	128,136
	<b>TOTAL</b>	<b>339,680</b>	<b>11,431</b>	<b>351,111</b>			
1982	January	33,832	1,567	35,399	105,475	15,296	120,771
	February	25,249	524	25,772	102,883	15,157	118,040
	March	22,371	550	22,921	108,142	14,699	122,842
	April	18,553	492	19,045	106,143	14,477	120,620
	May	16,614	316	16,930	106,701	14,702	121,403
	June	17,241	351	17,592	108,189	14,417	122,606
	July	22,192	718	22,910	106,170	14,923	121,093
	August	19,508	418	19,926	106,438	14,100	120,538
	September	17,146	318	17,464	108,177	14,208	122,385
	October	16,547	313	16,860	106,701	13,813	120,515
	November	15,591	325	15,916	106,361	13,809	120,171
	December	18,694	341	19,035	105,287	13,597	118,884
	<b>TOTAL</b>	<b>243,537</b>	<b>6,234</b>	<b>249,771</b>			
1983	January	21,373	477	21,850	101,246	14,170	115,416
	February	20,885	416	21,301	95,459	13,825	109,284
	March	20,728	403	21,131	91,288	13,543	104,831
	April	16,997	444	17,440	90,796	12,531	103,327
	May	14,968	341	15,309	91,276	12,473	103,749
	June	18,436	477	18,913	89,199	12,328	101,527
	July	23,745	871	24,616	85,599	12,074	97,673
	August	24,167	985	25,152	82,192	11,714	93,906
	September	18,532	996	19,529	83,509	11,740	95,248
	October	16,518	345	16,863	84,779	11,649	96,428

<sup>1</sup>GT/IC=Gas turbine and internal combustion plants.

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

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

Sources: • 1973 through September 1977: Federal Power Commission, Form 4, "Monthly Power Plant Report"; October 1977 through 1981: Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report"; 1982 forward: Energy Information Administration Form 759, "Monthly Power Plant Report."

# Part 8

## Nuclear

### Nuclear

During October 1983, U.S. nuclear powerplants generated a total of 25.1 billion net kilowatt-hours (kWh) of electricity, equivalent to an average hourly output of 33.6 million net kWh. This was 2.5 percent below the average hourly generation for September 1983, but 7.8 percent above the comparable output for October 1982. Nuclear power supplied 13.8 percent of the electricity generated by domestic utilities in October 1983. This was the second highest contribution of nuclear power to domestic electricity production; the highest level was attained in September 1982.

As of October 31, 1983, there were 81 licensed U.S. power reactors with a total capacity of 64.1 thousand net megawatts electric (MWe). Of the 81 units, 1 was in low-power testing (Grand Gulf-1), 4 were in power ascension (LaSalle-1, McGuire-2, San Onofre-3, and Summer-1), and 22 units generated no electricity or operated substantially

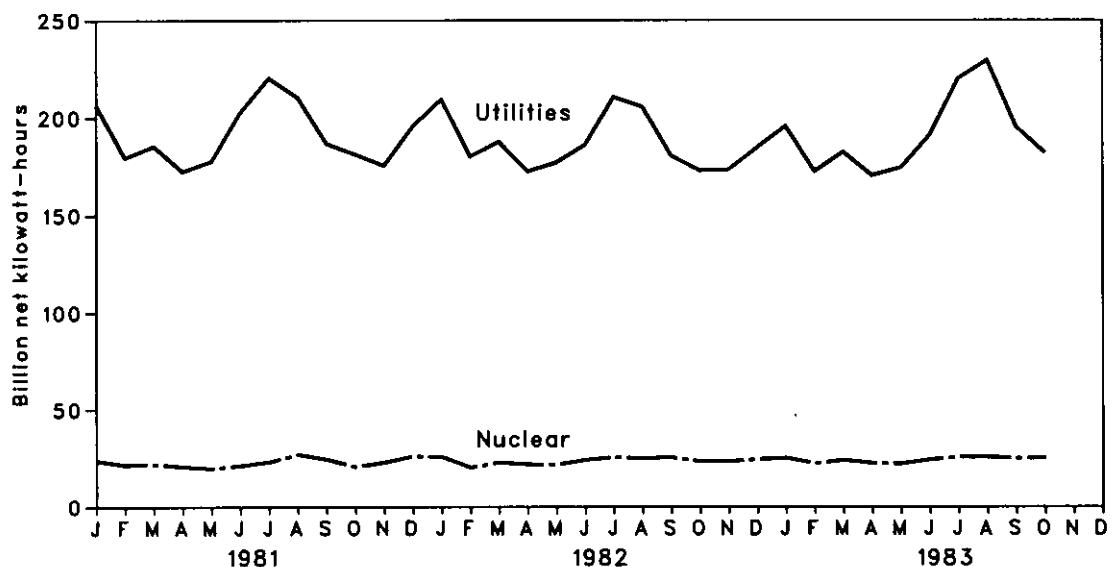
below capacity in October (Arkansas Nuclear I-2, Arnold, Browns Ferry-1, Browns Ferry-3, Calvert Cliffs-1, Cook-1, Dresden-3, Farley-2, Indian Point-2, Indian Point-3, Millstone-2, Oconee-2, Oyster Creek, Palisades, Peach Bottom-2, Point Beach-1, Quad Cities-2, San Onofre-1, St. Lucie-1, Three Mile Island-1, Turkey Point-3, and Zion-1).

Two planned nuclear reactor units were cancelled during October 1983: Clinton-2, a 950-net MWe boiling water reactor, was cancelled by Illinois Power; and work was terminated on the 350-net MWe Clinch River breeder project due to congressional rejection of a funding amendment on October 26. With these cancellations, there were, as of October 31, 1983, 141 domestic nuclear powerplants in all stages of planning, construction, or operation with an aggregate design capacity of 133 thousand net MWe.

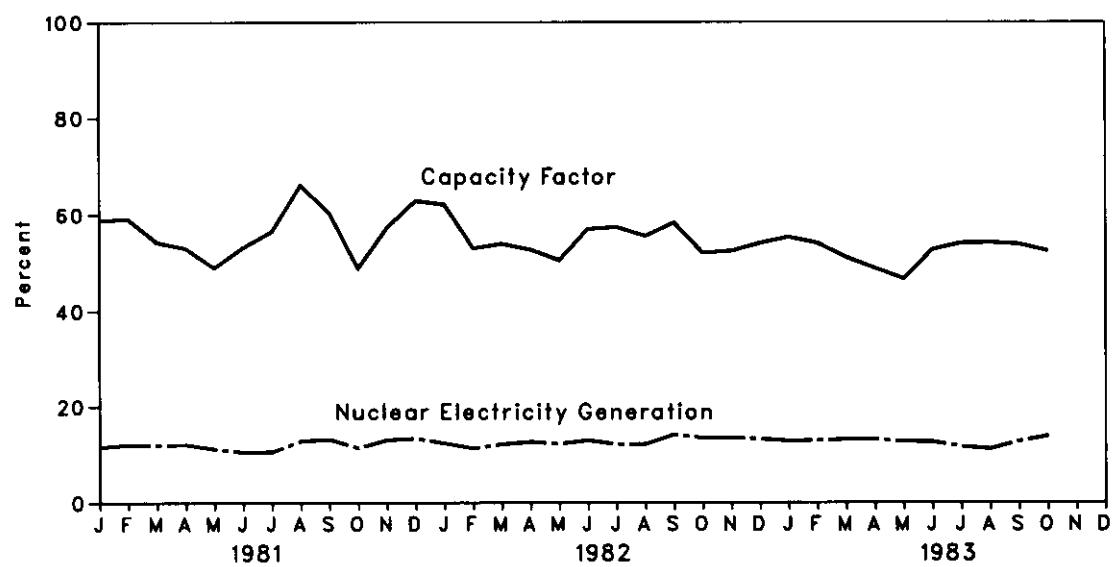
# Nuclear

## Nuclear Powerplant Operations

### Electricity Generated by Utilities and by Nuclear Powerplants



### Nuclear Portion of Electricity Generation and Capacity Factor\*



\*Percentage of Maximum Dependable Capacity utilized.

# Nuclear

## Nuclear Powerplant Operations<sup>1</sup>

	Reactors Licensed For Operation <sup>2</sup>	Nuclear-Based Electricity Generation	Nuclear Portion of Domestic Electricity Generation		Maximum Dependable Capacity <sup>3</sup>	Capacity Factor <sup>4</sup>
			Million net kilowatt-hours	Percent		
1973	40	83,479	4.5	19,843	63.2	
1974	55	113,976	6.1	35,732	43.5	
1975	58	172,505	9.0	35,794	55.2	
1976	65	191,104	9.4	44,609	53.5	
1977	68	250,883	11.8	47,155	62.9	
1978	72	276,403	12.5	50,824	63.9	
1979	71	255,155	11.4	50,944	57.6	
1980	72	251,116	11.0	52,597	55.1	
1981	January	73	23,779	11.5	54,374	58.8
	February	73	21,595	12.0	54,372	59.1
	March	73	22,004	11.9	54,429	54.3
	April	73	20,646	12.0	54,095	53.1
	May	73	19,723	11.1	54,074	49.0
	June	74	21,166	10.4	55,214	53.2
	July	74	23,080	10.5	54,998	56.4
	August	74	26,946	12.8	54,820	66.1
	September	75	24,398	13.1	56,037	60.5
	October	75	20,556	11.3	56,412	48.9
	November	74	22,783	13.0	55,328	57.2
	December	74	25,997	13.3	55,524	62.9
	YEAR	74	272,674	11.9	55,524	58.6
1982	January	74	25,678	12.3	55,471	62.2
	February	75	20,188	11.2	56,608	53.1
	March	75	22,755	12.1	56,609	54.0
	April	76	21,785	12.6	57,424	52.8
	May	76	21,639	12.2	57,415	50.6
	June	77	24,026	12.9	58,560	57.0
	July	78	25,467	12.1	59,601	57.4
	August	79	24,986	12.1	60,521	55.5
	September	79	25,391	14.1	60,501	58.3
	October	78	23,248	13.4	59,921	52.1
	November	79	23,235	13.4	61,523	52.5
	December	79	24,376	13.2	60,528	54.1
	YEAR	79	282,773	12.6	60,528	55.0
1983	January	79	25,090	12.8	61,030	55.3
	February	79	22,204	12.9	61,117	54.1
	March	80	23,897	13.1	62,697	51.2
	April	81	22,352	13.1	63,515	48.9
	May	81	22,064	12.7	63,495	46.7
	June	81	24,158	12.6	63,553	52.8
	July	81	25,602	11.6	63,552	54.1
	August	81	25,581	11.1	63,492	54.2
	September	81	24,830	12.7	63,924	53.9
	October	81	25,060	13.8	64,064	52.5

<sup>1</sup>Monthly data are the status as of the last day of the month. Yearly data are the status as of December 31 of each year.

<sup>2</sup>See Note 1 on the last page of this section.

<sup>3</sup>In this table, when possible, net maximum dependable capacity (MDC) is used. When a reactor has not been operating long enough to permit determination of an MDC, the net design electrical rating (DER) is used. The capacities for some units have been reduced by the imposition of a "power limit" by the Nuclear Regulatory Commission or by the operating utility. Beginning in January 1980, the reduced capacities are used for these units. For the definitions of MDC and DER, see Note 2 on the last page of this section.

<sup>4</sup>The monthly capacity factors are computed as the actual monthly generation divided by the maximum possible generation for that month, where the maximum possible generation is the number of hours in the month multiplied by the monthly maximum dependable capacity (MDC). This fraction is then multiplied by 100 to obtain a percentage. Monthly capacity factors are averaged to obtain annual values. For the definition of MDC, see Note 2 on the last page of this section.

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

Sources: • See the last page of this section.

# Nuclear

## Status of Nuclear Reactor Units<sup>1</sup>

		Reactors Licensed For Operation <sup>2</sup>	Construction Permits Granted	Construction Permits Pending	Reactor Units on Order	Reactor Units Announced	Total Reactor Units	Total Design Capacity <sup>3</sup> (Million Net Kilowatts)
1973		40	51	58	48	20	217	212
1974		55	58	80	28	16	235	234
1975		58	69	73	19	19	236	236
1976		65	72	66	16	19	235	236
1977		68	80	52	13	9	221	220
1978		72	90	32	9	4	206	204
1979		71	91	21	3	0	186	180
1980		72	82	12	3	0	169	163
1981	January	73	81	12	3	0	169	163
	February	73	81	12	3	0	169	163
	March	73	81	12	3	0	169	163
	April	73	81	12	3	0	169	163
	May	73	81	12	3	0	169	163
	June	74	80	12	3	0	169	163
	July	74	80	12	3	0	169	163
	August	74	79	12	3	0	168	162
	September	75	78	11	3	0	167	161
	October	75	77	11	3	0	166	160
	November	74	78	11	3	0	166	160
	December	74	75	11	3	0	163	157
1982	January	74	73	11	3	0	161	154
	February	75	72	6	2	0	155	147
	March	75	72	6	2	0	155	147
	April	76	71	6	2	0	155	147
	May	76	71	6	2	0	155	147
	June	77	70	6	2	0	155	147
	July	78	67	6	2	0	153	145
	August	79	64	5	2	0	150	141
	September	79	64	3	2	0	148	138
	October	78	64	3	2	0	147	138
	November	79	60	3	2	0	144	135
	December	79	60	3	2	0	144	135
1983	January	79	60	3	2	0	144	135
	February	79	60	3	2	0	144	135
	March	80	59	3	2	0	144	135
	April	81	57	3	2	0	143	134
	May	81	57	3	2	0	143	134
	June	81	57	3	2	0	143	134
	July	81	57	3	2	0	143	134
	August	81	57	3	2	0	143	134
	September	81	57	3	2	0	143	134
	October	81	56	2	2	0	141	133

<sup>1</sup>Monthly data are the status as of the last day of the month. Annual data are the status as of December 31 of each year.

<sup>2</sup>See Note 1 on the last page of this section.

<sup>3</sup>Net design electrical rating is used because many of the units in this table have not been operating long enough for a maximum dependable capacity to be determined. See Note 2 on the last page of this section.

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

Sources: • See the last page of this section.

## Notes and Sources for the Nuclear Section

### Notes

**1. Reactors Licensed for Operation:** This column includes units that have received Full Power and/or Low Power Licenses from the Nuclear Regulatory Commission with two exceptions. Hanford, an 850-net megawatt (MWe) reactor operated by the Department of Energy, is included, although it is not licensed by the NRC, because it distributes commercial electricity. The Experimental Breeder Reactor-2 is not included, although it generates electricity, because it does not distribute the electricity commercially. Three units that had been inoperative for at least 9 months prior to January 1980 are deleted from subsequent entries in the tables: Humboldt Bay (capacity=65 MWe), which requires major seismic modifications; Dresden-1 (capacity=200 MWe), which also needs major modifications; and Three Mile Island-2 (capacity=906 MWe), whose core was severely damaged by a loss-of-coolant accident in March 1979. Shippingport (capacity=60 MWe), which was a second reactor operated by the Department of Energy, was officially retired from service on October 1, 1982, and is deleted from subsequent entries in the tables.

**2. Capacity:** Nuclear powerplants may have more than one type of capacity rating, including:

(a) Gross Maximum Dependable Capacity (MDC)—The gross electrical output measured at the output terminals of the turbine generator(s) during the most restrictive seasonal conditions (usually summer).

(b) Net Maximum Dependable Capacity (MDC)—The gross MDC less the station service load. The typical station service load for a nuclear plant is about 5 percent of its gross generation.

(c) 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.

### Sources

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

**Electricity Generation:** •1973 through September 1977—Federal Power Commission, Form 4, "Monthly Power Plant Report."

•October 1977 through 1981—Federal Energy Regulatory Commission, FPC Form 4, "Monthly Power Plant Report."

•1982 forward—Energy Information Administration, Form EIA-759, "Monthly Power Plant Report."

**Maximum Dependable Capacity:** •Nuclear Regulatory Commission Report NUREG-0020, "Licensed Operating Reactors."

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

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

**Total Design Capacity:** •Nuclear Regulatory Commission Report NUREG-0020, "Licensed Operating Reactors" and Nuclear Regulatory Commission Report NUREG-0871, "Summary Information Report."



## Price

### Crude Oil

The average price of domestic crude oil purchased at the wellhead was \$26.04 per barrel in October 1983. This was 0.2 percent below the previous month's level and 9.4 percent below the level in October 1982.

During October 1983, the composite refiner acquisition cost of crude oil was \$29.14 per barrel, \$0.17 per barrel (0.6 percent) above the previous month's price of \$28.97. The price of imported crude oil increased \$0.13 per barrel from the September 1983 level to \$29.67 per barrel in October. This price was 10.8 percent below the October 1982 level. The price of domestic crude oil in October 1983 was \$28.88, an increase of \$0.19 per barrel from the September 1983 average.

### Motor Gasoline

The national average retail price of all grades and all types of motor gasoline was \$1.22 per gallon in November 1983. Leaded regular gasoline at all types of stations sold for an average of \$1.16 per gallon in November, \$0.02 (1.4 percent) lower than the price in October 1983. The price of unleaded regular gasoline at all types of stations was \$1.24 per gallon in November, \$0.01 (1.1 percent) lower than the price in October.

### Natural Gas

The average wellhead price of marketed natural gas production in September 1983 was \$2.66 per thousand cubic feet (Mcf), \$0.05 per Mcf more than in August 1983 and \$0.10

per Mcf (3.9 percent) more than the September 1982 price. The average price of natural gas delivered to electric utility plants was \$3.70 per Mcf in September, down \$0.05 per Mcf (1.3 percent) from the August 1983 price but up \$0.03 (0.8 percent) from the September 1982 price. The average price of natural gas used by residential consumers in November 1983 was \$6.03 per Mcf, \$0.06 less than in October 1983 but \$0.35 per Mcf (6.2 percent) more than the November 1982 price.

### Electricity

The average retail price of electricity sold by selected privately owned utilities to all types of consumers in October 1983 was 6.41 cents per kilowatt-hour (kWh), a 1.7-percent decrease from the September 1983 price but 1.3 percent more than the October 1982 price of 6.33 cents per kWh. The average price of electricity sold to residential consumers in October 1983 was 7.50 cents per kWh, a decrease of 0.7 percent from the previous month's average price but 4.0 percent above the October 1982 price. The average price of electricity sold to commercial consumers was 7.19 cents per kWh in October 1983, a 0.6-percent increase compared to the September 1983 price and up 1.4 percent from the October 1982 price. The average electricity price to industrial users during October 1983 was 5.01 cents per kWh, a 0.2-percent increase from the price during the previous month but 1.6 percent less than during October 1982.



# Price

## Petroleum Price Summary

	<b>Actual Domestic Average Wellhead Price<sup>1</sup></b>	<b>Refiner Acquisition Cost of Crude Oil<sup>2</sup></b>			<b>No. 6 Residual Oil Price Average<sup>3</sup></b>	
		<b>Domestic</b>	<b>Imported</b>	<b>Composite</b>	<b>Wholesale<sup>4</sup></b>	<b>Retail<sup>4</sup></b>
Dollars per barrel						
<b>1976 AVERAGE</b>	<b>8.19</b>	<b>8.84</b>	<b>13.48</b>	<b>10.89</b>	<b>10.72</b>	<b>11.49</b>
<b>1977 AVERAGE</b>	<b>8.57</b>	<b>9.55</b>	<b>14.53</b>	<b>11.96</b>	<b>11.96</b>	<b>13.23</b>
<b>1978 AVERAGE</b>	<b>9.00</b>	<b>10.61</b>	<b>14.57</b>	<b>12.46</b>	<b>11.51</b>	<b>12.75</b>
<b>1979 AVERAGE</b>	<b>12.64</b>	<b>14.27</b>	<b>21.67</b>	<b>17.72</b>	<b>17.66</b>	<b>18.67</b>
<b>1980 AVERAGE</b>	<b>21.59</b>	<b>24.23</b>	<b>33.89</b>	<b>28.07</b>	<b>23.14</b>	<b>26.09</b>
<b>1981</b>						
January	28.85	32.71	38.85	34.86	31.14	33.65
February	34.14	36.27	39.00	37.28	31.81	36.04
March	34.70	36.97	38.31	37.48	31.78	36.11
April	34.05	35.58	38.41	36.58	30.56	34.70
May	32.71	35.21	37.84	36.11	30.41	34.11
June	31.71	34.20	37.03	35.03	25.95	31.03
July	31.13	33.76	36.58	34.70	26.52	30.57
August	31.13	33.79	35.82	34.46	27.01	30.52
September	31.13	33.47	35.44	34.11	26.20	30.33
October	31.00	33.48	35.43	34.07	26.78	30.32
November	30.98	33.49	36.21	34.33	27.99	30.16
December	30.72	33.51	35.95	34.33	27.26	30.90
<b>AVERAGE</b>	<b>31.77</b>	<b>34.33</b>	<b>37.05</b>	<b>35.24</b>	<b>28.86</b>	<b>32.50</b>
<b>1982</b>						
January	30.87	33.39	35.54	33.95	27.07	29.83
February	29.76	32.71	35.48	33.40	26.29	30.02
March	28.31	31.08	34.07	31.81	25.73	29.50
April	27.65	30.27	32.82	30.83	25.46	28.21
May	27.67	30.37	32.78	31.02	26.52	28.93
June	28.11	30.79	33.79	31.74	26.62	29.59
July	28.33	30.92	33.44	31.74	25.97	29.33
August	28.18	30.85	32.95	31.45	26.34	28.44
September	27.99	30.76	33.03	31.40	26.49	28.43
October	28.74	31.38	33.28	31.98	27.52	29.28
November	28.70	31.57	33.09	32.07	28.31	29.84
December	28.12	30.80	32.85	31.29	26.81	28.47
<b>AVERAGE</b>	<b>28.52</b>	<b>31.22</b>	<b>33.55</b>	<b>31.87</b>	<b>26.55</b>	<b>29.08</b>
<b>1983</b>						
January	27.22	30.55	31.40	30.73	NA	NA
February	26.41	29.16	30.76	29.49	NA	NA
March	26.08	28.69	28.43	28.64	NA	NA
April	25.85	28.45	27.95	28.33	NA	NA
May	26.08	28.68	28.53	28.64	NA	NA
June	25.98	28.67	29.23	28.85	NA	NA
July	25.86	28.74	28.76	28.75	NA	NA
August	26.03	28.58	29.50	28.88	NA	NA
September	R26.08	28.69	29.54	28.97	NA	NA
October	†26.04	28.88	29.67	29.14	NA	NA
November	NA	NA	NA	NA	NA	NA

<sup>1</sup>See Note 1 on the last two pages of this section.

<sup>2</sup>See Note 2 on the last two pages of this section.

<sup>3</sup>Wholesale refers to the price of residual fuel oil sold to other refiners and resellers, including bulk plants, branded and unbranded jobbers, and other residual dealers. Retail refers to the price at which residual fuel oil is sold to ultimate consumers such as utility, industrial, commercial, and residential accounts.

<sup>4</sup>Excludes tax.

<sup>5</sup>Wholesale refers to the price of diesel fuel sold to other refiners and resellers, including branded and unbranded jobbers and commercial accounts. Retail refers to the price at which company-owned and operated retail dealers sell to customers.

Footnotes continued on following page.

# Price

## Petroleum Price Summary (continued)

	No. 2 Diesel Price Average <sup>a</sup>		No. 2 Heating Oil Price Average		Gasoline Price Average All Types <sup>a</sup>	Propane Price Average <sup>a</sup>	Butane Price Average <sup>a</sup>
	Wholesale <sup>b</sup>	Retail <sup>b</sup>	Wholesale	Retail	Retail	Wholesale <sup>b</sup>	Wholesale <sup>b</sup>
Cents per gallon							
1976 AVERAGE	31.9	34.7	32.6	40.6	NA	20.6	21.9
1977 AVERAGE	36.1	39.3	36.9	46.0	NA	25.0	25.4
1978 AVERAGE	37.1	40.2	38.7	49.4	65.2	24.0	23.0
1979 AVERAGE	58.2	62.4	53.0	65.6	88.2	29.5	45.8
1980 AVERAGE	81.2	87.3	82.2	97.8	122.1	42.4	62.9
1981 January	92.5	100.9	98.6	114.4	126.9	46.5	66.1
February	99.5	106.1	106.0	123.4	135.3	48.2	63.0
March	101.7	108.8	106.3	125.5	138.8	48.3	62.1
April	101.3	107.7	105.2	123.9	138.1	49.3	60.1
May	100.8	106.8	104.0	122.7	137.0	48.6	56.8
June	99.5	106.6	103.0	120.9	136.2	46.0	52.7
July	98.8	103.8	102.7	121.0	135.3	46.0	56.5
August	97.8	105.9	102.2	119.4	134.8	47.2	60.6
September	97.6	104.8	101.6	119.7	135.8	47.7	64.6
October	97.4	105.3	101.1	118.8	135.3	47.3	64.7
November	98.3	105.2	102.3	120.8	135.1	47.5	61.6
December	98.3	105.1	102.6	122.0	134.8	45.5	55.4
AVERAGE	98.5	106.2	102.6	120.5	135.3	47.2	60.4
1982 January	98.0	105.3	101.5	122.0	134.1	43.1	51.8
February	94.8	103.2	98.3	120.7	131.8	38.3	48.9
March	90.2	98.0	91.3	115.3	126.8	35.7	49.6
April	86.6	96.1	90.0	113.2	121.0	34.9	56.1
May	89.1	97.6	95.1	114.3	122.4	35.4	65.6
June	93.5	102.2	98.5	116.2	129.6	36.9	67.9
July	93.4	101.1	98.6	115.8	131.8	39.7	69.7
August	92.3	99.3	96.7	115.9	131.0	43.8	72.2
September	92.4	99.8	97.7	115.2	129.5	49.5	77.4
October	95.7	102.1	102.0	119.6	128.0	51.0	75.7
November	97.3	104.5	101.5	121.6	126.8	53.2	76.1
December	91.2	100.3	95.9	119.6	124.4	49.5	72.6
AVERAGE	92.7	100.5	97.4	118.6	128.1	43.3	64.8
1983 January	NA	NA	NA	NA	121.3	NA	NA
February	NA	NA	NA	NA	117.0	NA	NA
March	NA	NA	NA	NA	113.5	NA	NA
April	NA	NA	NA	NA	119.8	NA	NA
May	NA	NA	NA	NA	124.3	NA	NA
June	NA	NA	NA	NA	126.1	NA	NA
July	NA	NA	NA	NA	127.2	NA	NA
August	NA	NA	NA	NA	126.9	NA	NA
September	NA	NA	NA	NA	125.7	NA	NA
October	NA	NA	NA	NA	123.9	NA	NA
November	NA	NA	NA	NA	122.4	NA	NA

Footnotes continued.

<sup>a</sup>Beginning with September 1981, the Bureau of Labor Statistics changed the weights used in the calculation of average motor gasoline prices. In the average for all types category, gasohol is now included and unleaded premium is weighted more heavily. See Note 5 on the last two pages of this section for additional information on motor gasoline prices.

<sup>b</sup>Wholesale refers to the price at which refiners, resellers, retailers, and gas plants sell to one another, including sales to agricultural and industrial accounts. Excludes butane/propane mixtures.

<sup>c</sup>Preliminary data. R=Revised data. NA=Not available.

Note: • Geographic coverage is the 50 States and the District of Columbia, except for the refiner acquisition cost of crude oil, which is the 50 States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.

Sources: • See the last two pages of this section.

## Price

### FOB Cost of Crude Oil Imports from Selected Countries<sup>1</sup>

		Algeria	Indonesia	Iran	Libya	Mexico	Nigeria	Saudi Arabia	United Arab Emirates	United Kingdom	Venezuela
Dollars per barrel											
1976	AVERAGE	13.05	12.76	11.61	12.55	NA	13.08	11.69	11.94	NA	11.32
1977	AVERAGE	14.36	13.57	12.67	13.90	13.42	14.44	12.37	12.83	NA	12.68
1978	AVERAGE	14.10	13.64	12.65	13.75	13.24	14.04	12.70	13.24	13.82	12.45
1979	AVERAGE	20.65	19.35	23.71	22.43	20.29	21.80	17.63	19.58	21.20	17.37
1980	AVERAGE	36.57	32.37	(*)	36.41	31.11	35.82	28.53	NA	34.58	24.78
1981	January	39.37	36.54	(*)	40.52	35.88	40.11	32.39	NA	38.34	32.87
	February	40.13	36.13	(*)	40.73	36.57	40.03	32.60	NA	39.41	30.36
	March	40.30	36.40	(*)	40.25	35.60	39.85	32.73	NA	39.50	31.24
	April	39.70	36.38	(*)	40.04	33.81	39.92	32.41	NA	38.85	29.93
	May	39.57	36.09	(*)	38.91	34.45	39.11	32.13	NA	37.16	28.39
	June	39.20	36.95	(*)	39.85	30.30	38.44	32.42	NA	35.84	30.50
	July	38.06	35.47	(*)	38.70	32.72	39.25	32.07	NA	34.89	29.25
	August	39.34	35.61	(*)	39.45	31.23	39.55	31.95	NA	34.38	27.08
	September	39.60	35.82	(*)	36.74	30.37	36.04	32.09	NA	34.44	28.14
	October	36.90	35.08	(*)	36.36	30.83	35.45	33.56	NA	34.87	27.27
	November	36.55	35.53	(*)	37.15	31.80	36.41	33.49	NA	35.97	28.39
	December	37.35	36.08	(*)	36.78	31.29	36.49	33.70	NA	36.46	28.02
	AVERAGE	39.09	35.93	(*)	39.44	33.13	38.53	32.48	NA	36.08	28.86
1982	January	36.96	35.53	(*)	35.69	29.67	36.23	33.40	NA	36.20	29.07
	February	35.56	35.59	(*)	34.64	30.92	35.92	33.50	NA	34.00	28.94
	March	31.50	35.74	(*)	34.21	27.86	34.94	33.77	NA	30.78	22.89
	April	30.54	35.69	(*)	(*)	26.96	33.80	33.49	NA	32.49	21.89
	May	33.32	34.82	31.11	(*)	28.53	35.22	32.97	NA	32.43	22.31
	June	34.72	35.95	W	(*)	28.18	35.18	33.80	NA	33.67	22.25
	July	34.35	35.22	31.44	(*)	28.32	35.15	33.26	NA	33.66	23.50
	August	33.03	35.63	31.17	(*)	27.67	35.13	32.63	NA	33.17	20.71
	September	34.20	35.24	W	(*)	27.95	34.70	32.98	NA	33.30	23.58
	October	34.26	35.25	W	(*)	27.82	35.05	33.54	NA	33.93	22.93
	November	34.44	34.99	29.80	(*)	27.63	35.02	33.59	NA	34.08	23.74
	December	34.86	34.73	29.09	(*)	27.63	33.18	34.04	NA	33.21	26.21
	AVERAGE	34.23	35.27	30.93	35.12	28.07	35.13	33.50	NA	33.46	23.77
1983	January	W	34.71	W	(*)	26.90	W	W	NA	32.77	21.58
	February	W	33.74	W	(*)	25.69	W	W	NA	30.95	21.82
	March	31.07	29.69	W	(*)	24.53	29.52	30.03	NA	29.16	20.04
	April	29.37	29.57	W	(*)	24.18	29.63	W	NA	30.07	20.05
	May	29.54	29.31	W	(*)	24.60	29.72	W	NA	29.61	19.88
	June	29.80	29.59	W	(*)	24.13	29.57	W	NA	28.92	20.80
	July	30.15	29.73	28.41	(*)	24.92	29.81	27.91	NA	30.00	19.89
	August	30.32	29.60	28.19	(*)	25.15	29.92	27.83	NA	29.88	21.56
	September	R30.33	R29.77	R28.03	(*)	25.10	R29.59	R27.73	NA	R30.33	R21.81
	October†	29.96	30.27	29.68	(*)	25.62	30.29	28.24	NA	30.07	22.77

<sup>1</sup>The Free on Board (FOB) cost excludes all costs related to insurance and transportation. See Note 3 on the last two pages of this section.

\*No crude oil was imported.

†Preliminary data. R=Revised data. NA=Not available.

W=Value withheld to avoid disclosure of company data.

Note: • Prices shown through December 1980 are for the month of reporting; prices since then are for the month of loading.

Sources: • See the last two pages of this section.

## Price

### Landed Cost of Crude Oil Imports from Selected Countries<sup>1</sup>

		Algeria	Canada	Indonesia	Iran	Libya	Mexico	Nigeria	Saudi Arabia	United Arab Emirates	United Kingdom	Venezuela
Dollars per barrel												
1975	AVERAGE	12.72	12.72	13.79	12.21	12.35	NA	12.62	12.30	12.87	NA	11.65
1976	AVERAGE	13.81	13.57	13.82	12.82	13.58	NA	13.80	13.04	13.30	NA	11.80
1977	AVERAGE	15.20	14.21	14.63	13.80	14.87	13.75	15.25	13.61	14.04	NA	13.13
1978	AVERAGE	14.91	14.50	14.64	13.88	14.72	13.54	14.86	13.92	14.39	NA	12.83
1979	AVERAGE	21.90	20.43	20.69	25.02	23.68	20.86	22.96	19.15	21.90	22.16	18.18
1980	AVERAGE	37.90	30.47	33.92	(*)	37.72	31.80	37.05	30.02	NA	35.88	25.86
1981	January	41.25	34.26	38.08	(*)	41.81	36.81	41.55	34.06	NA	39.90	33.80
	February	41.90	33.73	37.86	(*)	42.19	37.23	41.46	34.38	NA	40.69	31.20
	March	41.62	33.88	38.11	(*)	41.60	36.42	40.98	34.42	NA	40.72	32.09
	April	40.96	33.74	37.95	(*)	41.58	34.42	41.04	34.16	NA	40.02	30.97
	May	40.81	32.70	37.72	(*)	40.46	34.83	40.10	33.73	NA	38.31	29.39
	June	40.31	32.67	38.73	(*)	41.44	31.03	39.60	34.29	NA	37.04	31.46
	July	39.59	31.19	37.20	(*)	40.27	33.18	40.05	33.72	NA	35.87	29.22
	August	40.65	30.44	37.07	(*)	40.30	31.77	40.85	33.23	NA	35.40	28.11
	September	41.62	30.83	37.52	(*)	37.73	30.84	37.20	33.66	NA	35.26	29.12
	October	37.52	31.17	36.39	(*)	38.15	31.34	36.64	34.88	NA	36.00	28.27
	November	37.43	31.04	36.84	(*)	38.50	32.42	37.59	34.91	NA	36.87	29.27
	December	38.14	31.37	37.31	(*)	38.89	31.85	37.52	35.37	NA	37.44	29.00
	AVERAGE	40.49	32.16	37.57	(*)	40.92	33.78	39.70	34.19	NA	37.24	29.87
1982	January	38.19	31.05	36.88	(*)	36.91	30.21	37.37	34.44	NA	36.78	29.82
	February	37.09	28.80	36.81	(*)	35.28	31.47	37.06	34.51	NA	35.04	30.09
	March	32.25	26.71	37.17	(*)	34.80	28.69	35.81	34.92	NA	31.35	23.92
	April	31.66	24.86	36.87	(*)	(*)	27.58	34.82	34.80	NA	33.19	23.09
	May	34.24	24.90	36.50	32.01	(*)	29.18	36.06	34.28	NA	33.22	23.44
	June	35.41	24.63	37.35	W	(*)	28.76	36.15	35.20	NA	34.41	23.43
	July	35.26	26.62	37.04	32.08	(*)	28.95	36.19	35.04	NA	34.67	24.61
	August	33.87	26.40	36.81	31.84	(*)	28.19	36.16	34.28	NA	33.88	21.90
	September	34.88	26.52	36.65	W	(*)	28.50	35.56	34.45	NA	34.01	24.53
	October	35.41	26.91	36.83	33.28	(*)	28.22	35.98	35.21	NA	34.56	23.90
	November	35.82	26.78	36.49	32.66	(*)	28.17	36.04	35.41	NA	34.74	24.91
	December	35.70	27.35	36.19	32.73	(*)	28.19	34.54	36.43	NA	34.05	27.09
	AVERAGE	35.28	26.92	36.75	32.40	36.05	28.64	36.17	35.00	NA	34.28	24.82
1983	January	33.20	27.62	36.12	W	(*)	27.50	W	W	NA	33.48	23.20
	February	32.17	26.19	35.07	W	(*)	26.15	32.24	W	NA	33.33	23.36
	March	31.24	24.78	31.17	W	(*)	25.06	30.49	31.63	NA	29.92	21.48
	April	30.55	24.35	31.14	W	(*)	24.65	30.63	W	NA	30.84	21.45
	May	30.48	24.32	30.82	W	(*)	25.17	30.75	W	NA	30.60	21.24
	June	30.88	24.88	31.40	29.10	(*)	24.81	30.56	W	NA	30.02	22.07
	July	31.36	25.45	31.46	30.06	(*)	25.34	30.91	29.53	NA	30.86	21.30
	August	31.85	25.45	31.65	29.57	(*)	25.80	31.21	29.39	NA	30.83	22.82
	September	R31.78	25.71	R31.27	R29.31	(*)	25.66	R30.70	R29.53	NA	R31.39	R23.12
	October†	30.98	25.98	31.36	30.37	(*)	26.36	31.20	29.98	NA	31.00	24.34

<sup>1</sup>See Note 4 on the last two pages of this section.

<sup>2</sup>No crude oil was imported.

<sup>†</sup>Preliminary data. R=Revised data. NA=Not available.

W=Value withheld to avoid disclosure of company data.

Note: • Prices shown through December 1980 are for the month of reporting; prices since then are for the month of loading.

Sources: • See the last two pages of this section.

# Price

## U.S. City Average Retail Prices for Motor Gasoline<sup>1</sup>

		Leaded Regular	Unleaded Regular	Leaded Premium	Average for All Types
Cents per gallon, including tax					
1974	AVERAGE	53.2	NA	56.9	NA
1975	AVERAGE	56.7	NA	60.9	NA
1976	AVERAGE	59.0	61.4	63.6	NA
1977	AVERAGE	62.2	65.6	67.4	NA
1978	AVERAGE	62.6	67.0	69.4	65.2
1979	AVERAGE	85.7	90.3	92.2	88.2
1980	AVERAGE	119.1	124.5	128.1	122.1
1981	January	123.8	129.8	133.8	126.9
	February	132.1	138.2	141.0	135.3
	March	135.2	141.7	144.9	138.8
	April	134.4	141.2	145.1	138.1
	May	133.3	140.0	144.7	137.0
	June	132.4	139.1	144.6	136.2
	July	131.5	138.2	144.6	135.3
	August	131.0	137.6	144.4	134.8
	September <sup>2</sup>	130.5	137.6	145.6	135.8
	October	129.9	137.1	145.7	135.3
	November	129.7	136.9	146.2	135.1
	December	129.3	136.5	146.0	134.8
	AVERAGE	131.1	137.8	143.9	135.3
1982	January	128.5	135.8	145.6	134.1
	February	126.0	133.4	143.8	131.8
	March	120.6	128.4	140.7	126.8
	April	114.8	122.5	136.8	121.0
	May	116.6	123.7	137.9	122.4
	June	124.2	130.9	140.8	129.6
	July	126.3	133.1	145.0	131.8
	August	125.4	132.3	145.8	131.0
	September	123.6	130.8	144.1	129.5
	October	121.9	129.5	141.3	128.0
	November	120.7	128.3	141.2	126.8
	December	118.1	126.0	137.1	124.4
	AVERAGE	122.2	129.6	141.7	128.1
1983	January	114.6	122.8	135.3	121.3
	February	109.9	118.7	131.8	117.0
	March	106.4	115.1	127.4	113.5
	April	113.1	121.5	132.1	119.8
	May	117.7	125.9	137.6	124.3
	June	119.7	127.7	142.9	126.1
	July	120.7	128.8	144.6	127.2
	August	120.3	128.5	143.7	126.9
	September	118.9	127.4	140.5	125.7
	October	117.2	125.5	137.2	123.9
	November	115.6	124.1	135.6	122.4

<sup>1</sup>See Note 5 on the last two pages of this section.

<sup>2</sup>Beginning with September 1981, the Bureau of Labor Statistics changed the weights used in the calculation of average motor gasoline prices. In the average for all types category, gasohol is now included and unleaded premium is weighted more heavily.

NA=Not available.

Note: • Geographic coverage for 1974 through 1977 is 56 urban areas. For 1978 forward it is 85 urban areas.

Sources: • See the last two pages of this section.

# Price

## Aviation Fuel

		Aviation Gasoline		Naphtha-Type <sup>1</sup>		Kerosene-Type	
		Wholesale <sup>2</sup>	Retail <sup>2</sup>	Retail <sup>2</sup>	Wholesale <sup>2</sup>	Retail <sup>2</sup>	
Cents per gallon, excluding tax							
1976	AVERAGE	42.4	43.1	31.5	32.5	31.2	
1977	AVERAGE	46.7	47.7	35.0	36.7	35.8	
1978	AVERAGE	51.0	52.1	37.5	38.9	38.9	
1979	AVERAGE	68.5	69.5	52.3	66.5	55.1	
1980	AVERAGE	107.2	109.4	88.2	87.5	87.4	
1981	January	118.9	121.6	99.2	97.1	95.7	
	February	121.3	128.1	102.7	103.6	101.6	
	March	127.2	131.1	106.9	104.8	106.3	
	April	117.5	131.3	109.0	103.8	106.4	
	May	120.7	133.5	109.1	104.4	106.2	
	June	116.5	132.1	107.6	102.3	104.8	
	July	120.1	133.4	106.3	100.5	103.8	
	August	120.0	132.5	105.7	101.4	103.3	
	September	121.0	133.5	105.6	103.0	103.3	
	October	117.2	134.5	104.8	99.9	101.1	
	November	114.4	133.2	104.5	101.9	102.6	
	December	116.8	131.9	103.8	101.9	102.2	
	AVERAGE	118.8	131.5	105.7	102.0	103.1	
1982	January	122.4	133.2	101.7	101.3	101.6	
	February	122.0	134.0	101.3	100.0	101.0	
	March	117.0	134.8	98.4	97.6	99.6	
	April	113.4	132.7	96.0	93.0	96.8	
	May	109.6	132.7	94.1	91.7	95.5	
	June	114.7	132.5	98.4	94.1	95.3	
	July	120.4	134.4	98.7	94.3	95.3	
	August	117.7	132.6	97.3	95.0	95.4	
	September	115.7	130.0	98.2	95.5	95.1	
	October	116.6	131.5	98.5	98.4	95.8	
	November	118.4	131.7	96.4	98.2	96.4	
	December	119.6	130.3	94.0	93.7	95.6	
	AVERAGE	116.7	132.4	97.7	96.1	96.9	

<sup>1</sup>Nearly all naphtha-type fuels are sold directly to the Defense Fuel Supply Center. Consequently, wholesale prices are not applicable.

<sup>2</sup>Wholesale refers to the price of aviation fuel sold to other refiners and resellers, including bulk plants, branded and unbranded jobbers, and aviation fuel distributors. Retail refers to the price of aviation fuel sold to ultimate consumers, including commercial airline and military accounts.

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

Sources: • See the last two pages of this section.

## Price

### National Average Heating Oil Prices<sup>1</sup>

		Refiners' Average Selling Price to Resellers and Retailers	Average Purchase Price Paid by Distributors for Heating Oil <sup>2</sup>	Average Distributor Margin on Residential Heating Oil <sup>2</sup>	Average Selling Price to Residential Customers <sup>2</sup>
Cents per gallon					
1976	AVERAGE	31.4	32.6	NA	40.6
1977	AVERAGE	35.7	36.9	NA	46.0
1978	AVERAGE	37.2	38.7	11.0	49.4
1979	AVERAGE	55.9	53.0	12.8	65.6
1980	AVERAGE	80.0	82.2	15.8	97.8
1981	January	94.9	98.6	15.1	114.4
	February	102.5	106.0	16.1	123.4
	March	102.8	106.3	17.6	125.5
	April	100.9	105.2	17.7	123.9
	May	100.7	104.0	17.6	122.7
	June	99.3	103.0	16.9	120.9
	July	98.5	102.7	17.1	121.0
	August	98.2	102.2	16.2	119.4
	September	97.8	101.6	17.2	119.7
	October	98.0	101.1	16.6	118.8
	November	100.0	102.3	17.6	120.8
	December	100.6	102.6	18.3	122.0
	AVERAGE	99.3	102.6	16.8	120.5
1982	January	99.1	101.5	19.3	122.0
	February	94.7	98.3	21.3	120.7
	March	87.4	91.3	22.6	115.3
	April	86.0	90.0	22.0	113.2
	May	91.2	95.1	18.4	114.3
	June	95.4	98.5	16.9	116.2
	July	93.8	98.6	16.3	115.8
	August	92.5	96.7	18.2	115.9
	September	93.3	97.7	16.3	115.2
	October	98.8	102.0	16.7	119.6
	November	99.2	101.5	19.0	121.6
	December	89.9	95.9	22.9	119.6
	AVERAGE	93.2	97.4	20.2	118.6

<sup>1</sup>See Note 6 on the last two pages of this section.

<sup>2</sup>Average selling prices, purchase prices, and dealer margins represent sales for residential heating oil only.

NA = Not available.

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

Sources: • See the last two pages of this section.

# Price

## Residential Heating Oil Prices by Region

Standard Federal Region <sup>1</sup>											
Cents per gallon											
		1	2	3	4	5	6	7	8	9	10
1980	January	91.8	91.0	90.2	88.6	90.4	W	90.0	90.2	89.6	91.0
	February	96.7	95.3	94.7	93.0	93.5	W	93.6	93.5	95.8	95.7
	March	98.7	97.2	96.5	94.8	94.3	W	95.1	95.9	93.9	97.6
	April	99.2	97.3	96.6	94.1	94.5	W	95.3	99.5	94.7	99.0
	May	98.7	97.3	96.4	94.2	95.8	W	95.2	97.7	95.5	98.6
	June	99.8	97.9	96.8	95.1	95.8	W	95.3	98.4	96.0	99.8
	July	100.3	98.1	96.6	94.2	96.2	W	93.1	97.0	96.7	100.2
	August	100.2	97.9	96.8	94.8	95.7	W	95.4	92.1	99.7	100.4
	September	100.5	98.2	97.0	94.7	95.7	W	93.7	93.0	97.2	100.6
	October	101.1	98.8	97.4	95.6	95.9	W	94.7	94.1	98.6	100.4
	November	102.5	103.0	99.9	101.5	98.8	W	95.2	98.5	101.0	103.1
	December	108.2	108.5	105.3	106.6	103.4	W	99.6	101.8	W	105.6
1981	January	116.2	117.1	113.2	114.0	110.4	W	106.3	108.6	W	107.5
	February	125.8	126.6	123.0	124.4	117.8	W	114.2	113.1	W	113.7
	March	127.6	128.4	125.0	125.3	119.3	W	115.4	119.3	111.5	116.5
	April	126.8	126.6	122.7	124.8	118.3	W	114.7	118.4	W	117.5
	May	125.5	125.6	122.1	118.8	117.3	W	114.5	115.1	114.1	115.6
	June	124.1	123.6	121.1	115.9	116.5	W	112.5	116.0	W	117.1
	July	123.3	122.9	120.6	120.2	116.0	W	115.9	116.2	W	118.3
	August	122.7	122.2	117.9	117.4	115.1	W	112.1	116.9	W	117.7
	September	122.7	121.4	118.5	120.5	116.2	W	111.6	116.8	W	117.8
	October	122.5	122.0	115.3	117.6	116.3	W	112.0	115.8	W	118.2
	November	123.3	123.2	119.5	118.2	116.7	W	114.1	115.8	W	118.8
	December	124.8	124.7	120.7	119.0	117.4	W	112.4	117.1	W	120.0
1982	January	125.3	124.7	120.6	118.7	117.1	W	112.7	116.1	W	119.7
	February	123.2	123.7	119.3	115.3	116.0	W	110.9	114.9	W	119.5
	March	117.4	119.0	112.3	112.9	111.0	W	106.4	109.7	W	118.1
	April	113.9	116.6	112.2	109.4	108.7	W	100.8	106.3	W	116.0
	May	115.9	117.1	113.2	111.7	110.8	W	108.7	108.4	W	116.6
	June	117.5	118.5	115.2	113.5	114.4	W	111.8	112.3	W	116.0
	July	117.7	118.5	113.4	115.2	113.6	W	111.7	W	W	115.9
	August	118.6	118.8	113.9	112.4	111.9	W	W	W	W	116.3
	September	119.4	119.3	W	115.0	112.4	W	W	114.2	W	116.2
	October	122.3	122.4	118.5	117.3	114.8	W	110.5	113.1	W	117.4
	November	124.2	124.7	120.1	118.4	115.9	W	110.2	114.7	W	118.9
	December	122.2	122.9	117.8	114.1	113.0	W	107.3	112.0	W	118.6

<sup>1</sup>Standard Federal Regions are defined in Note 7 on the last two pages of this section.

W=Value withheld to avoid disclosure of company data.

Sources: • See the last two pages of this section.

# Price

## Average No. 6 Residual Fuel Oil Prices

		0.0 to 0.3 percent sulfur		0.31 to 1.0 percent sulfur		Greater than 1.0 percent sulfur		Average	
		Whole-sale	Retail	Whole-sale	Retail	Whole-sale	Retail	Whole-	Retail
								sale	Retail
Dollars per barrel, excluding taxes									
1976	AVERAGE	12.20	12.54	10.83	11.79	9.98	10.43	10.72	11.49
1977	AVERAGE	13.45	14.36	12.09	13.45	11.31	12.27	11.96	13.23
1978	AVERAGE	12.77	14.47	11.95	12.78	10.73	11.70	11.51	12.75
1979	AVERAGE	19.87	21.21	18.33	19.33	15.89	16.44	17.66	18.67
1980	AVERAGE	26.41	31.13	24.91	27.59	20.77	22.11	23.14	26.09
1981	January	34.27	37.23	32.12	33.96	29.12	31.35	31.14	33.65
	February	38.04	41.60	34.96	37.32	28.96	32.02	31.81	36.04
	March	37.78	41.19	34.47	38.01	29.55	31.95	31.78	36.11
	April	35.66	41.71	33.10	35.94	28.35	30.56	30.56	34.70
	May	33.61	41.09	32.53	35.94	28.77	30.64	30.41	34.11
	June	28.01	38.30	26.71	32.38	25.33	27.16	25.95	31.03
	July	29.56	39.02	27.38	31.93	25.62	25.96	26.52	30.57
	August	30.48	36.57	27.77	32.04	26.03	26.20	27.01	30.52
	September	29.91	39.17	27.46	32.08	24.80	26.26	26.20	30.33
	October	30.26	39.90	28.64	31.88	24.96	26.18	26.78	30.32
	November	31.71	39.48	29.63	31.02	26.09	26.45	27.99	30.16
	December	31.40	37.65	28.29	32.19	25.39	26.53	27.26	30.90
	AVERAGE	32.97	39.31	30.56	33.69	27.07	28.57	28.86	32.50
1982	January	33.03	37.56	28.90	31.13	24.60	25.94	27.07	29.83
	February	31.67	38.41	29.30	30.95	23.60	24.70	26.29	30.02
	March	30.95	38.96	27.60	30.57	23.45	24.21	25.73	29.50
	April	30.11	36.77	27.08	30.00	23.57	24.40	25.46	28.21
	May	30.38	37.97	27.89	30.05	25.15	25.94	26.52	28.93
	June	27.98	38.93	28.26	30.89	25.35	26.56	26.62	29.59
	July	30.05	37.46	27.39	29.84	24.19	26.49	25.97	29.33
	August	28.86	31.82	27.50	30.37	25.40	26.02	26.34	28.44
	September	30.22	32.41	27.73	30.45	25.21	25.93	26.49	28.43
	October	31.98	33.51	29.51	32.24	25.72	26.59	27.52	29.28
	November	32.28	34.14	29.44	32.24	26.30	26.99	28.31	29.84
	December	31.31	32.59	28.19	30.25	25.16	26.22	26.81	28.47
	AVERAGE	30.92	36.34	28.27	30.71	24.76	25.82	26.55	29.08

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

• Wholesale refers to the price of residual fuel sold to other refiners and resellers, including bulk plants, branded and unbranded jobbers, and other residual dealers. Retail refers to the price at which residual fuel oil is sold to ultimate consumers such as utility, industrial, commercial, and residential accounts.

Sources: • See the last two pages of this section.

# Price

## National Average Natural Gas Prices

		Wellhead Price	Imports by Major Interstate Pipeline Companies	Purchased from Producers by Major Interstate Pipeline Companies	Industrial Sales by Major Interstate Pipeline Companies	Purchased by Electric Plants <sup>1</sup>	Residential Price <sup>2</sup>
Dollars per thousand cubic feet							
1973	AVERAGE	0.22	NA	NA	NA	0.35	1.29
1974	AVERAGE	0.30	NA	NA	NA	0.49	1.43
1975	AVERAGE	0.45	NA	NA	NA	0.77	1.71
1976	AVERAGE	0.58	NA	NA	NA	1.06	1.98
1977	AVERAGE	0.79	NA	NA	NA	1.33	2.35
1978	AVERAGE	0.91	2.21	0.83	1.54	1.48	2.56
1979	AVERAGE	1.18	2.60	1.22	2.01	1.80	2.98
1980	AVERAGE	1.59	4.42	1.63	2.54	2.28	3.68
1981	January	1.77	4.33	1.83	2.94	2.51	3.94
	February	1.81	4.51	1.89	3.00	2.67	3.99
	March	1.86	4.61	1.91	3.01	2.71	4.06
	April	1.93	4.88	2.07	2.96	2.81	4.11
	May	1.95	4.82	2.15	3.00	2.92	4.29
	June	1.95	4.83	2.16	3.06	2.95	4.30
	July	2.01	4.86	2.20	3.08	2.97	4.32
	August	2.02	4.89	2.27	3.24	2.99	4.30
	September	2.08	4.88	2.26	3.22	2.95	4.47
	October	2.11	5.00	2.31	3.34	3.07	4.50
	November	2.15	5.01	2.38	3.38	3.07	4.53
	December	2.16	4.97	2.36	3.35	2.97	4.55
	AVERAGE	1.98	4.80	2.15	3.13	2.91	4.29
1982	January	2.23	4.86	2.38	3.59	3.07	4.65
	February	2.30	4.92	2.46	3.58	3.18	4.69
	March	2.35	4.89	2.38	3.61	3.25	4.78
	April	2.40	5.06	2.44	3.61	3.32	4.86
	May	2.45	4.93	2.63	3.62	3.42	5.17
	June	2.45	4.86	3.06	3.66	3.57	5.20
	July	2.47	5.00	2.79	3.71	3.69	5.23
	August	2.53	5.07	2.84	3.75	3.67	5.23
	September	2.56	5.05	2.80	3.88	3.67	5.41
	October	2.60	5.02	2.97	3.91	3.68	5.66
	November	2.62	5.01	3.02	3.98	3.61	5.68
	December	2.62	4.97	3.19	4.00	3.64	5.74
	AVERAGE	2.46	4.97	2.75	3.72	3.49	5.17
1983	January	2.63	5.03	3.27	4.32	3.57	5.84
	February	2.64	5.09	3.15	4.33	3.41	5.85
	March	2.61	5.01	3.06	4.23	3.44	5.94
	April	2.57	4.66	2.90	4.37	3.34	6.04
	May	2.56	4.40	3.03	4.24	3.54	6.20
	June	R2.51	4.41	2.93	4.22	3.58	6.18
	July	R2.56	4.31	2.96	4.24	3.72	6.20
	August	R2.61	3.93	2.90	4.23	3.75	6.16
	September	2.66	4.02	2.87	4.07	3.70	6.17
	October	NA	NA	NA	NA	NA	6.09
	November	NA	NA	NA	NA	NA	6.03

The Bureau of Labor Statistics residential price series has been replaced with Energy Information Administration data and estimates. See Notes and Sources on pages 95 and 96.

<sup>1</sup>Includes all steam and gas turbine engine electric utility generating plants with a combined capacity of 25 megawatts or greater through December 1982. Beginning with January 1983 data, coverage is of steam electric utility generating plants with a combined capacity of 50 megawatts or greater. Small quantities of coke oven gas, refinery gas, and blast furnace gas are included.

<sup>2</sup>This is a new data series. See Note 9 and the special box on the last two pages of this section.

R=Revised data. NA=Not available.

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

• Data for 1973 through December 1982 are final. All other data are preliminary unless otherwise indicated.

Sources: • See the last page of this section.

# Price

## Electricity

**Cost of Fossil Fuels Delivered  
to Steam-Electric Utility Plants<sup>1</sup>**

**Average Retail Electricity Prices  
for Privately Owned Utilities<sup>2</sup>**

		Coal	Residual Oil <sup>b</sup>	Gas <sup>c</sup>	All Fossil Fuels <sup>d</sup>	Residential	Average Retail Electricity Prices for Privately Owned Utilities <sup>2</sup>			
							Commercial	Industrial	Other	Total <sup>e</sup>
					Cents per million Btu		Cents per kilowatt-hour			
1973	AVERAGE	40.5	78.8	33.8	47.5	2.54	2.41	1.25	2.10	1.96
1974	AVERAGE	71.0	191.0	48.1	90.9	3.10	3.04	1.69	2.75	2.49
1975	AVERAGE	81.4	201.4	75.4	103.0	3.51	3.45	2.07	3.08	2.92
1976	AVERAGE	84.8	195.9	103.4	110.4	3.73	3.69	2.21	3.27	3.09
1977	AVERAGE	94.7	220.4	130.0	127.7	4.05	4.09	2.50	3.51	3.42
1978	AVERAGE	111.6	212.3	143.8	139.3	4.31	4.36	2.79	3.62	3.69
1979	AVERAGE	122.4	299.7	175.4	162.1	4.64	4.68	3.05	3.96	3.99
1980	AVERAGE	135.1	427.9	221.4	190.4	5.36	5.48	3.69	4.76	4.73
1981	January	142.7	540.2	245.9	219.2	5.43	5.72	3.94	4.92	4.96
	February	146.3	572.9	260.5	218.2	5.52	5.83	3.95	5.01	4.99
	March	148.3	583.9	264.0	215.0	5.76	6.01	4.04	5.33	5.12
	April	146.9	568.3	273.5	241.9	5.99	6.14	4.07	5.20	5.20
	May	146.7	552.8	282.7	250.6	6.26	6.29	4.16	5.47	5.36
	June	152.7	506.1	286.3	234.6	6.49	6.48	4.36	5.37	5.59
	July	156.5	496.3	288.6	227.5	6.58	6.47	4.48	5.61	5.76
	August	157.0	494.4	291.1	220.2	6.62	6.49	4.49	5.52	5.78
	September	157.2	501.0	286.5	212.3	6.63	6.48	4.49	5.65	5.74
	October	160.2	511.9	300.7	217.7	6.57	6.52	4.40	5.31	5.64
	November	159.1	521.0	300.0	215.1	6.42	6.48	4.46	5.43	5.61
	December	156.7	505.0	291.4	215.5	6.32	6.46	4.56	*4.60	5.65
	AVERAGE	153.2	529.4	282.5	222.5	6.20	6.29	4.29	5.28	5.46
1982	January	160.9	484.6	301.0	226.4	6.22	6.49	4.66	5.44	5.74
	February	164.1	487.6	310.4	220.7	6.35	6.68	4.70	5.83	5.84
	March	165.7	470.9	315.8	219.8	6.58	6.79	4.83	6.38	5.97
	April	164.6	478.0	323.4	214.3	6.72	6.81	4.84	5.77	5.99
	May	165.1	485.7	331.6	215.7	6.94	6.86	4.95	5.91	6.09
	June	167.0	479.6	345.8	224.7	7.08	6.94	4.92	6.01	6.18
	July	164.5	468.8	335.9	237.6	7.18	6.98	5.12	6.13	6.38
	August	164.7	458.8	355.7	227.6	7.22	6.91	5.15	6.09	6.40
	September	165.9	464.4	358.5	226.9	7.18	6.97	5.25	6.07	6.41
	October	164.9	479.3	360.4	220.1	7.21	7.09	5.09	5.81	6.33
	November	165.3	493.4	351.5	218.2	6.94	7.04	4.88	5.69	6.14
	December	162.9	456.3	355.4	216.8	6.71	6.78	5.01	5.85	6.11
	AVERAGE	164.7	475.5	340.6	222.5	6.86	6.86	4.95	5.92	6.13
1983	January	166.7	444.0	346.9	214.6	6.65	6.78	5.03	5.91	6.13
	February	167.7	439.7	331.9	212.1	6.73	6.86	4.96	5.97	6.12
	March	168.1	421.0	334.9	213.9	6.93	6.93	5.07	6.16	6.23
	April	168.1	435.5	325.5	215.2	6.91	6.86	4.92	6.15	6.12
	May	165.1	443.7	343.5	215.0	7.20	7.04	4.89	6.60	6.21
	June	167.3	450.2	346.7	219.8	7.41	7.13	4.96	6.62	6.35
	July	165.5	464.7	R361.1	R236.6	7.50	7.13	5.11	6.24	6.53
	August	164.4	464.8	363.1	229.6	7.52	7.06	5.01	6.37	6.51
	September	164.1	480.1	358.1	226.1	7.55	7.15	5.00	6.58	6.52
	October†	NA	NA	NA	NA	7.50	7.19	5.01	6.66	6.41

<sup>1</sup>Includes all steam-electric utility generating plants with a capacity of 25 megawatts or greater through December 1982. Beginning with January 1983 data, coverage is for steam-electric plants with a capacity of 50 megawatts or greater.

<sup>2</sup>The 1973 through 1979 data are for Classes A and B privately owned electric utilities only. The 1980 and forward data are for selected Class A utilities whose electric operating revenues were \$100 million or more during the previous year.

<sup>3</sup>See Note 8 on the last two pages of this section.

<sup>4</sup>Includes small quantities of coke oven gas, refinery gas, and blast furnace gas.

<sup>5</sup>Average price for total sales to ultimate consumers.

<sup>6</sup>Includes a major adjustment by one utility.

<sup>7</sup>Initial estimates. R=Revised data. NA=Not available.

Note: • Geographic coverage for fossil fuels is the lower 48 States and the District of Columbia. For electricity it is the 50 States and the District of Columbia.

Sources: • See the last two pages of this section.

## Notes and Sources for the Price Section

### Notes

1. The actual domestic average price represents the average price at which all domestic crude oil is purchased. Prior to February 1976, the domestic crude oil wellhead price represented an estimate of the average of posted prices; after February 1976, the wellhead price represents an average of first sale prices.
2. Beginning with January 1981, refiner acquisition costs of crude oil are from data collected on EIA Form 14, the "Refiners' Monthly Cost Report." These prices were previously published from data collected on ERA Form 49, the "Domestic Crude Oil Entitlements Program Refiners Monthly Report." The ERA Form 49 was discontinued with the decontrol of crude oil on January 28, 1981. Crude oil purchases and costs are defined for EIA Form 14 in accordance with conventions used for ERA Form 49. Also, the respondents for the two forms are essentially the same. However, due to possible different interpretations of the filing requirements and a different method for handling prior period adjustments, care must be taken in comparing the data collected on the two forms.

The costs previously published for January 1981, viz., \$30.87 per barrel for domestic crude, \$37.59 per barrel for imported, and \$33.40 per barrel for the composite, were from data collected on ERA Form 49. The revised costs are from data collected on EIA Form 14. The January prices are being replaced because the EIA Form 49 data were based on only the 27 days of controlled activity, and because there was considerable recentification of oil, which occurred in January.

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

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

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

4. 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.

5. The motor gasoline prices are calculated monthly by the Bureau of Labor Statistics in conjunction with the construction of the Consumer Price Index (CPI). For the period 1974 through 1978, prices were collected in 56 urban areas. For the period 1978 forward, prices were collected from a new sample of service stations in 85 urban areas selected to represent all urban consumers—about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-serve).

6. The survey and method used to derive data for March 1976 forward differ from those used for prior months. Data for January 1974 through February 1976 are derived from a survey of distributors, and prices and margins are computed as unweighted averages. The average distributor purchase price and average dealer margin for March 1976 forward are for distributors only, whereas the average selling price includes both refiners and distributors. Data for March 1976 forward are computed as sales weighted averages.

7. Standard Federal Regions are defined as follows:

Region 1 —Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island;

Region 2 —New York, New Jersey, Puerto Rico, Virgin Islands;

Region 3 —Pennsylvania, Maryland, West Virginia, Virginia, the District of Columbia, Delaware;

Region 4 —Kentucky, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, Florida, Canal Zone;

Region 5 —Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio;

Region 6 —Texas, New Mexico, Oklahoma, Arkansas, Louisiana;

Region 7 —Kansas, Missouri, Iowa, Nebraska;

Region 8 —Montana, North Dakota, South Dakota, Wyoming, Utah, Colorado;

Region 9 —California, Nevada, Arizona, Hawaii, Trust Territory of the Pacific Islands, American Samoa, Guam;

Region 10 —Washington, Oregon, Idaho, Alaska.

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

9. The monthly national average price of residential natural gas is based on data from the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) for natural gas (piped) and on data from the Form EIA-176. Initial monthly estimates are obtained by multiplying the annual average price of residential natural gas collected on the Form EIA-176 by the ratio of monthly values of the CPI-U gas for consecutive months. When a subsequent year's annual average price becomes available, the initial monthly estimates are adjusted to this annual average.

### Sources

**Petroleum and Petroleum Products:** • Actual domestic average wellhead prices—Economic Regulatory Administration (ERA), January 1976: FEA Form 90, "Crude Petroleum Production Monthly Report"; February 1976 through September 1979: FEA Form P124, "Domestic Crude Oil Purchaser's (Monthly) Report"; October 1979 through December 1982: ERA Form 182, "Domestic Crude Oil First Purchase Report"; January 1983 forward: EIA Form 182, "Domestic Crude Oil First Purchase Report."

• Refiner acquisition costs—Energy Information Administration (EIA), January 1976: FEO Form 96, "Monthly Cost Allocation Report"; February 1976 through June 1978: FEA Form P110-M-1, "Refiners' Monthly Cost Allocation Report"; July 1978 through December 1980: ERA Form 49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report"; January 1981 forward: EIA Form 14, "Refiners' Monthly Cost Report."

• No. 6 residual oil prices—EIA, FEA Form P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices."

• No. 2 diesel prices—EIA, FEA Form P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices."

• No. 2 heating oil (residential heating oil) prices—EIA, 1976 through October 1980: FEA Form P112-M-1/EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report" and EIA Form 9A, "No. 2 Distillate Price Monitoring Report"; November 1980 forward: EIA Form 9A, "No. 2 Distillate Price Monitoring Report."

(Notes and Sources for the Price Section are continued on the next page.)

## Notes and Sources for the Price Section (continued)

### Petroleum and Petroleum Products (continued):

- Motor gasoline prices—Bureau of Labor Statistics.
- Propane and butane prices—EIA, FEA Form P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices."
- Crude oil imports costs—Environmental Protection, Safety and Emergency Preparedness, 1975 through January 1979; FEA Form F701-M-0, "Transfer Pricing Report"; February 1979 through September 1982; ERA Form 51, "Transfer Pricing Report"; October 1982 forward; EP Form 51, "Monthly Foreign Crude Oil Transaction Report."

- Aviation fuel prices—EIA, FEA Form P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices."

**Natural Gas:** • Average wellhead price—annual data from EIA, *Natural Gas Annual*, 1973 through 1982. Monthly data are estimated primarily on the basis of values reported by State agencies in New Mexico, Oklahoma, and Texas. These States together account for almost 50 percent of total U.S. marketed production. Monthly data are adjusted to conform with final reported annual data.

• Imports, Purchased from Producers, and Industrial Sales by Major Interstate Pipeline Companies—FERC Form 11, "Interstate Pipeline Company Purchases, and Industrial Sales".

- Electric plant data—EIA, FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

• Residential Price—Annual data from EIA, *Natural Gas Annual*, 1973 through 1982. Monthly data are EIA estimates based on the Bureau of Labor Statistics Urban Consumer Price Index CPI(U) for Natural Gas and are adjusted to conform with final reported annual data. See Note 9 on the previous page for estimation procedures.

**Electricity:** • Cost of fossil fuels—EIA, FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

• Retail prices—EIA, January 1973 through February 1980; FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income"; March 1980 through December 1982; FERC Form 5, "Electric Utility Company Monthly Statement"; January 1983 forward; EIA Form 826, "Electric Utility Company Monthly Statement."

Beginning with this issue, the Energy Information Administration (EIA) has developed a new monthly residential natural gas price series based on annual data collected on Form EIA-176. These data give total annual sales and revenues for each class of service and thereby permit direct calculation of the average annual residential natural gas price for all consumers in the nation. Initial monthly estimates are obtained by multiplying the annual average by the ratio of monthly values of the Bureau of Labor Statistics (BLS) Consumer Price Index for All Urban Consumers (CPI-U) for natural gas (piped) for consecutive months. When a subsequent year's annual average price becomes available, the initial monthly estimates are adjusted to that annual average.

The series previously published had been used because it is the only monthly residential natural gas price regularly collected by the Federal government. These data give BLS residential natural gas prices based on surveys of first "100 therm" block sales in major cities and regions throughout the nation. The series is referred to as the "U.S. City Average" and does not strictly represent the average residential gas price. Since natural gas usage depends on locale, climate, weather, and equipment, typical customers may use more or less than 100 therms during a month. For comparison, the two data series are shown below:

Average Residential Natural Gas Price		
	Previous Series <sup>1</sup>	New Series <sup>2</sup>
		Dollars per thousand cubic feet
1973	AVERAGE	1.08
1974	AVERAGE	1.25
1975	AVERAGE	1.54
1976	AVERAGE	1.85
1977	AVERAGE	2.26
1978	AVERAGE	2.63
1979	AVERAGE	3.23
1980	AVERAGE	3.95
1981	January	4.10
	February	4.13
	March	4.21
	April	4.25
	May	4.61
	June	4.61
	July	4.64
	August	4.70
	September	4.90
	October	4.91
	November	4.88
	December	4.75
	AVERAGE	4.56
1982	January	4.86
	February	4.87
	March	5.06
	April	5.18
	May	5.63
	June	5.62
	July	5.60
	August	5.56
	September	5.82
	October	6.11
	November	5.94
	December	6.06
	AVERAGE	5.53
1983	January	6.15
	February	6.15
	March	6.17
	April	6.37
	May	6.63
	June	6.63
	July	6.62
	August	6.59
	September	6.66
	October	6.57
	November	6.40
		6.03

<sup>1</sup>Monthly data from BLS surveys of first "100 therm" block sales in major cities and regions throughout the nation.

<sup>2</sup>Annual data from EIA, *Natural Gas Annual*, 1973 through 1982. Monthly data are EIA estimates based on the BLS Urban Consumer Price Index for natural gas and are adjusted to conform with final reported annual data.

## International

### Crude Oil Production

World crude oil production during October 1983 was 54.1 million barrels per day, down 0.2 million barrels per day (0.4 percent) from the September 1983 level.

Organization of Petroleum Exporting Countries (OPEC) output during October 1983 averaged 18.8 million barrels per day, down 0.2 million barrels per day from the level during the previous month. Average production by Arab members of OPEC was 11.5 million barrels per day, down less than 0.1 million barrels per day from the September 1983 level. Production levels remained the same as during the previous month in Algeria and Libya, while Kuwait showed a 65-thousand-barrel-per-day decrease in production during the month. Saudi Arabia and the United Arab Emirates experienced slight decreases in production. Iraq reported an increase of 50 thousand barrels per day. Among non-Arab OPEC countries, production in Nigeria increased by 70 thousand barrels per day, while production in Iran decreased by 300 thousand barrels per day.

Among the non-OPEC nations, production decreased in every country reporting. Mexico experienced a production decrease of 75 thousand barrels per day while production decreased in Canada by 45 thousand barrels per day and in the United Kingdom by 30 thousand barrels per day. The United States reported a slight decrease in production during the month.

### Petroleum Consumption

Preliminary petroleum consumption data for October 1983 were available for France, Italy, and the United States. Compared to October 1982 levels, consumption during October 1983 increased in the United States by 88 thousand barrels per day and in Italy by 70 thousand barrels per day. France experienced a 110-thousand-barrel-per-day decrease in consumption from the level of 1 year earlier.

### Petroleum Stocks

Preliminary data for October 1983 indicate that petroleum stock levels were down compared to October 1982 levels in every country reporting except the United States. Petroleum stocks in Canada, Italy, and Japan were down compared to the October 31, 1982, level by 17.8, 11.3, and 6.4 percent, respectively. The United Kingdom and West Germany showed declines of 4.4 and 4.3 percent, respectively. The United States reported a 5.6-percent increase in stocks compared to the level at the end of October 1982.

Petroleum stocks for all Organization for Economic Cooperation and Development members stood at 3,300 million barrels on September 30, 1983 (latest data available), a decrease of 73 million barrels (2.2 percent) compared to stocks held on September 30, 1982.

### Nuclear Electricity Production

In October 1983, the 19 non-Communist nations with significant nuclear power capacity generated 79.9 gross terawatt-hours (billion kilowatt-hours) of nuclear-based electricity. This was the highest monthly aggregate nuclear electricity output for these nations. On a per-hour basis, this output was up 1.6 percent from September 1983 generation and up 22.4 percent compared to generation in October 1982.

On October 8, 1983, Almarez-2, a 930-gross megawatt pressurized water reactor in Spain, operated by Union Electrica-Fenosa, generated its first electricity. With the addition of Almarez-2 there were, as of October 31, 1983, 247 operational power reactors in the non-Communist countries with a collective generating capacity of 170.0 gross gigawatts (million kilowatts). The 81 U.S. units accounted for 68.6 gross gigawatts (40 percent) of this capacity.

# International

## Crude Oil Production for Major Petroleum Producing Countries

		Algeria	Iraq	Kuwait <sup>1</sup>	Libya	Qatar	Saudi Arabia <sup>1</sup>	United Arab Emirates	Arab Members of OPEC <sup>2</sup>	Indonesia	Iran
Thousand barrels per day											
1973	AVERAGE	1,097	2,018	3,020	2,175	570	7,596	1,533	18,009	1,339	5,861
1974	AVERAGE	1,009	1,971	2,546	1,521	518	8,480	1,679	17,724	1,375	6,022
1975	AVERAGE	983	2,262	2,084	1,480	438	7,075	1,664	15,986	1,307	5,350
1976	AVERAGE	1,075	2,415	2,145	1,933	497	8,577	1,936	18,578	1,504	5,883
1977	AVERAGE	1,152	2,348	1,969	2,063	445	9,245	1,999	19,221	1,686	5,663
1978	AVERAGE	1,161	2,563	2,131	1,983	487	8,301	1,831	18,457	1,635	5,242
1979	AVERAGE	1,154	3,477	2,500	2,092	508	9,532	1,831	21,094	1,591	3,168
1980	AVERAGE	1,012	2,514	1,656	1,787	472	9,900	1,709	19,050	1,577	1,662
1981	January	950	600	1,765	1,600	505	10,265	1,620	17,305	1,630	1,600
	February	950	700	1,565	1,650	480	10,265	1,605	17,215	1,620	1,700
	March	950	1,000	1,560	1,600	505	10,110	1,610	17,335	1,635	1,700
	April	900	1,000	995	1,600	515	10,195	1,570	16,775	1,630	1,600
	May	900	1,000	990	1,400	435	10,140	1,550	16,415	1,600	1,500
	June	800	1,000	1,080	1,200	340	10,180	1,435	16,035	1,600	1,600
	July	725	1,100	1,200	750	380	10,170	1,415	15,740	1,600	1,400
	August	600	1,100	830	700	295	10,330	1,480	15,335	1,600	1,100
	September	550	1,100	855	700	365	9,155	1,465	14,190	1,600	1,100
	October	700	1,100	985	700	360	9,685	1,480	15,010	1,600	920
	November	750	1,100	890	900	340	8,640	1,365	13,985	1,600	930
	December	800	1,100	895	1,000	340	8,645	1,430	14,210	1,580	1,200
	AVERAGE	805	1,000	1,125	1,140	405	9,815	1,474	15,764	1,605	1,380
1982	January	800	1,500	805	1,000	405	8,655	1,450	14,615	1,490	1,100
	February	700	1,500	840	600	375	8,440	1,375	13,830	1,450	1,200
	March	600	1,500	745	600	300	7,145	1,365	12,255	1,400	1,800
	April	600	900	680	700	230	6,630	1,215	10,955	1,245	1,800
	May	620	750	720	800	320	5,870	1,125	10,205	1,240	2,500
	June	650	750	840	1,000	410	6,670	1,210	11,530	1,305	2,500
	July	650	800	870	1,300	275	6,170	1,160	11,225	1,305	2,500
	August	700	800	920	1,300	340	5,920	1,155	11,135	1,240	2,200
	September	800	800	885	1,400	285	5,685	1,155	11,010	1,300	2,700
	October	800	800	860	1,700	380	5,660	1,155	11,355	1,370	2,700
	November	800	800	915	1,700	310	5,615	1,155	11,295	1,400	2,700
	December	800	800	850	1,750	305	5,250	1,155	10,910	1,360	2,800
	AVERAGE	710	972	827	1,158	329	6,470	1,214	11,680	1,339	2,214
1983	January	700	800	780	1,100	255	4,750	1,030	9,415	1,155	2,500
	February	600	800	895	900	200	3,710	1,030	8,195	945	2,500
	March	600	800	960	900	170	3,610	1,010	8,050	1,100	2,500
	April	700	800	900	1,000	260	4,100	1,120	8,880	1,200	2,300
	May	600	900	1,030	1,100	275	4,530	1,150	9,585	1,300	2,400
	June	700	900	1,035	1,100	300	4,735	1,150	9,920	1,400	2,500
	July	700	1,000	1,085	1,100	300	5,535	1,150	10,870	1,300	2,800
	August	700	1,000	1,180	1,100	265	6,030	1,160	11,435	1,350	2,500
	September	700	950	1,375	1,150	310	5,925	1,160	11,570	1,400	2,700
	October	700	1,000	1,310	1,150	320	5,910	1,140	11,530	1,400	2,400

<sup>1</sup>Includes about one-half of the production in the former Kuwait-Saudi Arabia Neutral Zone. In October 1983, total production in this region amounted to approximately 410,000 barrels per day.

<sup>2</sup>Arab members of the Organization of Petroleum Exporting Countries (OPEC) include Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates.

\*OPEC total includes production in Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, United Arab Emirates, Indonesia, Iran, Nigeria, Venezuela, Ecuador, and Gabon.

Footnotes continued on following page.

## International

### Crude Oil Production for Major Petroleum Producing Countries (continued)

		Nigeria	Vene-zuela	Total OPEC*	Canada	Mexico	United Kingdom	United States	China	USSR	Other†	World
Thousand barrels per day												
1973	AVERAGE	2,054	3,366	30,989	1,800	465	2	9,208	1,090	8,465	3,655	55,674
1974	AVERAGE	2,255	2,976	30,729	1,684	571	2	8,774	1,315	9,000	3,777	55,852
1975	AVERAGE	1,783	2,346	27,155	1,439	705	12	8,375	1,490	9,625	4,079	52,880
1976	AVERAGE	2,067	2,294	30,738	1,295	831	245	8,132	1,670	10,143	4,258	57,312
1977	AVERAGE	2,085	2,238	31,298	1,320	981	768	8,245	1,874	10,682	4,517	59,685
1978	AVERAGE	1,897	2,166	29,805	1,313	1,209	1,082	8,707	2,082	11,185	4,674	60,057
1979	AVERAGE	2,302	2,356	30,928	1,496	1,461	1,568	8,552	2,122	11,460	4,948	62,535
1980	AVERAGE	2,055	2,168	26,891	1,435	1,936	1,622	8,597	2,114	11,773	5,170	59,538
1981	January	1,900	2,220	25,025	1,390	2,220	1,765	8,540	2,024	11,900	5,111	57,975
	February	1,960	2,195	25,075	1,390	2,120	1,820	8,604	2,025	11,900	5,161	58,095
	March	1,875	2,240	25,190	1,280	2,365	1,885	8,613	2,025	11,900	5,152	58,410
	April	1,625	2,200	24,215	1,330	2,540	1,750	8,557	2,011	11,900	5,122	57,425
	May	1,295	2,200	23,380	1,250	2,545	1,770	8,501	2,025	11,900	5,264	56,635
	June	1,350	1,990	22,945	1,235	2,300	1,765	8,629	2,025	11,900	5,066	55,865
	July	770	1,760	21,620	1,270	2,095	1,750	8,500	2,010	11,900	5,215	54,360
	August	710	1,960	21,050	1,235	2,260	1,760	8,583	2,020	11,900	4,962	53,770
	September	1,065	2,080	20,385	1,265	2,480	1,830	8,604	1,990	11,900	5,166	53,620
	October	1,250	1,970	21,200	1,120	2,490	1,845	8,563	2,020	11,900	5,247	54,385
	November	1,590	2,230	20,575	1,280	2,090	1,840	8,586	2,020	11,900	5,109	53,400
	December	1,820	2,260	21,230	1,380	1,980	1,870	8,585	2,020	11,900	5,135	54,100
	AVERAGE	1,433	2,102	22,646	1,285	2,313	1,811	8,572	2,012	11,909	5,352	55,900
1982	January	1,765	1,985	21,285	1,218	2,315	1,905	8,509	2,020	11,900	5,488	54,640
	February	1,395	1,730	19,950	1,275	2,550	1,955	8,702	2,020	11,900	5,558	53,910
	March	945	1,870	18,615	1,182	2,545	2,000	8,667	2,020	11,900	5,341	52,270
	April	890	1,490	16,725	928	2,780	2,110	8,591	2,025	11,900	5,481	50,540
	May	1,310	1,480	17,075	1,114	2,715	2,085	8,683	2,025	11,900	5,528	51,125
	June	1,645	1,500	18,845	1,330	2,790	2,140	8,646	2,025	11,900	5,489	53,165
	July	1,280	1,800	18,450	1,235	2,790	2,120	8,658	2,025	12,000	5,507	52,785
	August	1,105	2,000	18,045	1,300	2,795	2,125	8,634	2,025	12,000	5,551	52,475
	September	1,170	1,990	18,515	1,300	2,830	2,175	8,701	2,025	12,000	5,499	53,045
	October	1,480	2,160	19,430	1,310	2,900	2,165	8,701	2,040	12,410	5,489	54,445
	November	1,355	2,300	19,415	1,420	2,940	2,220	8,697	2,040	12,410	5,683	54,825
	December	1,215	2,325	18,985	1,300	3,025	2,315	8,598	2,040	12,410	5,732	54,405
	AVERAGE	1,295	1,891	18,784	1,241	2,749	2,117	8,649	2,029	12,000	5,593	53,162
1983	January	880	2,085	16,415	1,230	2,980	2,135	8,634	2,085	12,410	5,853	51,742
	February	675	1,780	14,370	1,360	2,295	2,315	8,660	2,085	12,410	5,958	49,453
	March	905	2,080	15,000	1,395	2,415	2,265	8,677	2,085	12,410	5,916	50,163
	April	1,150	1,715	15,620	1,260	2,670	2,170	8,686	2,085	12,410	5,994	50,895
	May	1,625	1,685	16,945	1,300	2,795	2,235	8,682	2,085	11,900	6,043	51,985
	June	1,535	1,690	17,435	1,365	2,775	2,045	8,676	2,085	11,900	6,049	52,330
	July	1,710	1,695	18,770	1,480	2,685	2,280	8,647	2,105	12,365	5,568	53,900
	August	1,300	1,730	18,735	R1,420	2,775	2,290	8,653	2,105	12,385	5,822	R54,185
	September	1,220	1,725	19,005	1,435	2,735	2,385	8,666	2,105	11,900	6,069	54,300
	October	1,290	1,740	18,760	1,390	2,660	2,355	8,654	2,105	11,900	6,236	54,060

Footnotes continued.

\*Other is a calculated total derived from the difference between world production and the nations represented above.

R=Revised data.

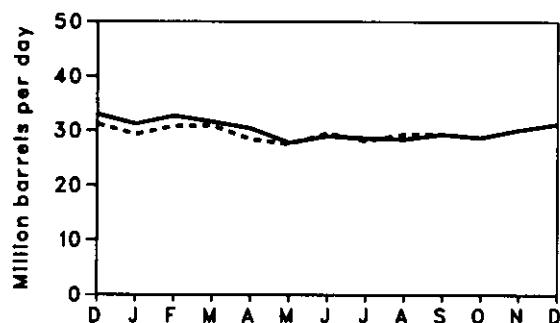
Notes: • U.S. geographic coverage is the 50 States and the District of Columbia.

• 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: • See the last page of this section.

## International Petroleum Consumption

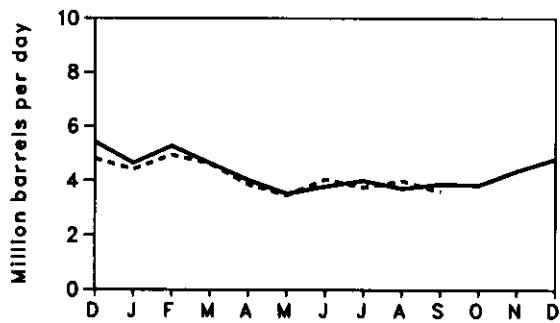
Total IEA



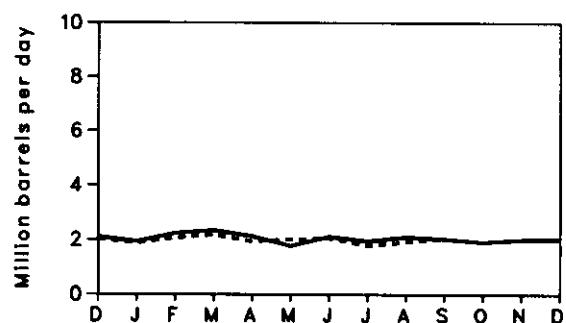
United States



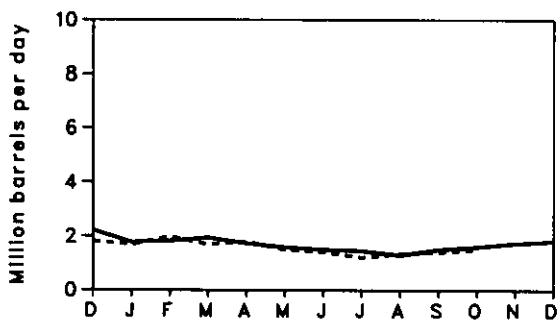
Japan\*



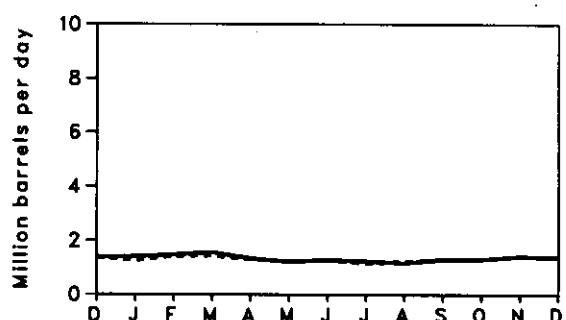
West Germany



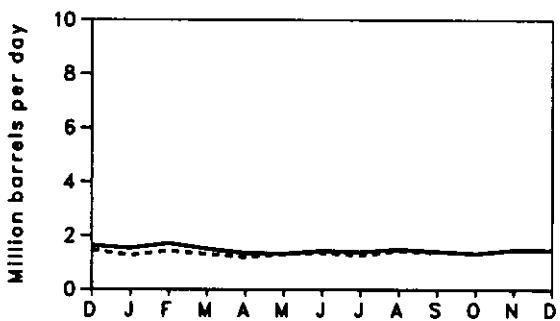
France\*\*



United Kingdom



Canada



Italy\*\*\*



\*Excludes liquefied petroleum gases and condensates.

\*\*Not a member of IEA.

\*\*\*Principal products only.

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# International

## Petroleum Consumption for Major Non-Communist Industrialized Countries<sup>1</sup>

		Canada	France <sup>2</sup>	Italy	Japan	United Kingdom	United States	West Germany	Other IEA <sup>3</sup>	Total IEA <sup>4</sup>
Thousand barrels per day										
1973	AVERAGE	1,597	2,219	1,525	5,000	1,958	17,308	2,693	4,069	34,150
1974	AVERAGE	1,630	2,094	1,521	4,872	1,829	16,653	2,408	4,047	32,960
1975	AVERAGE	1,595	1,925	1,468	4,568	1,633	16,322	2,319	3,905	31,810
1976	AVERAGE	1,647	2,075	1,503	4,786	1,601	17,461	2,507	4,265	33,770
1977	AVERAGE	1,661	1,973	1,476	5,015	1,655	18,431	2,478	4,214	34,930
1978	AVERAGE	1,701	2,077	1,551	5,115	1,683	18,847	2,596	4,387	35,880
1979	AVERAGE	1,768	2,107	1,607	5,173	1,690	18,513	2,664	4,487	35,900
1980	AVERAGE	1,730	1,965	1,602	4,680	1,420	17,056	2,360	4,152	33,000
1981	January	1,760	2,310	1,880	4,980	1,400	18,430	2,230	4,420	35,100
	February	1,770	2,170	2,195	5,350	1,460	16,989	2,510	4,126	34,400
	March	1,550	1,790	1,895	5,020	1,430	15,907	2,100	3,598	31,500
	April	1,600	1,500	1,785	4,140	1,290	15,350	1,810	3,925	29,900
	May	1,490	1,670	1,410	3,600	1,190	15,353	1,880	3,977	28,900
	June	1,635	1,600	1,510	3,915	1,210	16,095	2,155	3,880	30,400
	July	1,620	1,450	1,580	4,160	1,170	15,682	2,150	4,138	30,500
	August	1,630	1,160	1,360	4,100	1,125	15,263	2,111	3,711	29,300
	September	1,595	1,425	1,715	4,060	1,285	15,655	2,085	3,905	30,300
	October	1,585	1,655	1,600	4,085	1,390	15,822	2,305	4,013	30,800
	November	1,595	2,010	1,650	4,610	1,470	15,593	2,030	4,052	31,000
	December	1,635	2,215	1,930	5,425	1,380	16,596	2,100	3,934	33,000
	AVERAGE	1,615	1,745	1,705	4,445	1,325	16,058	2,120	4,032	31,300
1982	January	1,530	1,770	1,800	4,645	1,400	16,124	1,935	3,766	31,200
	February	1,715	1,815	1,795	5,275	1,465	16,001	2,230	4,219	32,700
	March	1,510	1,940	1,805	4,640	1,560	15,560	2,340	4,185	31,600
	April	1,350	1,730	1,560	4,015	1,340	16,046	2,125	3,964	30,400
	May	1,325	1,580	1,510	3,515	1,210	14,847	1,770	3,623	27,800
	June	1,430	1,505	1,520	3,780	1,280	14,998	2,115	3,877	29,000
	July	1,390	1,455	1,475	3,995	1,235	14,821	1,955	3,729	28,600
	August	1,500	1,295	1,410	3,705	1,170	14,839	2,105	3,671	28,400
	September	1,410	1,510	1,630	3,865	1,295	15,022	2,035	4,043	29,300
	October	1,335	1,605	1,555	3,830	1,305	14,859	1,922	3,894	28,700
	November	1,470	1,735	1,650	4,355	1,415	15,009	2,005	4,196	30,100
	December	1,460	1,815	1,670	4,810	1,380	15,487	2,025	4,368	31,200
	AVERAGE	1,450	1,645	1,614	4,196	1,337	15,296	2,045	3,962	29,900
1983	January	1,260	1,685	1,675	4,410	1,260	14,765	1,875	4,055	29,300
	February	1,430	1,985	1,865	4,950	1,415	14,772	2,060	4,308	30,800
	March	1,305	1,685	1,605	4,625	1,430	15,484	2,180	4,271	30,900
	April	1,190	1,785	1,415	3,850	1,300	14,779	1,940	3,926	28,400
	May	1,320	1,500	1,470	3,460	1,230	14,250	2,010	3,760	27,500
	June	1,360	1,405	1,475	4,040	1,255	15,281	2,060	4,029	29,500
	July	1,265	1,210	1,365	3,745	1,160	14,913	1,785	3,867	28,100
	August	1,440	1,350	1,315	R3,990	1,220	15,366	1,920	R4,049	R29,300
	September	1,380	1,415	1,590	3,590	1,300	15,396	2,040	4,104	29,400
	October	NA	1,495	1,625	NA	NA	14,947	NA	NA	NA

<sup>1</sup>These data represent inland consumption, i.e., sales of petroleum products excluding refinery fuel, refinery losses, and ocean bunkers except for the United States, where it represents domestic products supplied.

<sup>2</sup>Not a member of the International Energy Agency (IEA).

<sup>3</sup>Other is a calculated total derived from the difference between total IEA consumption and the IEA nations represented above.

<sup>4</sup>The 21 signatory nations of the IEA are listed in Note 1 on the last page of this section.

R=Revised data. NA=Not available.

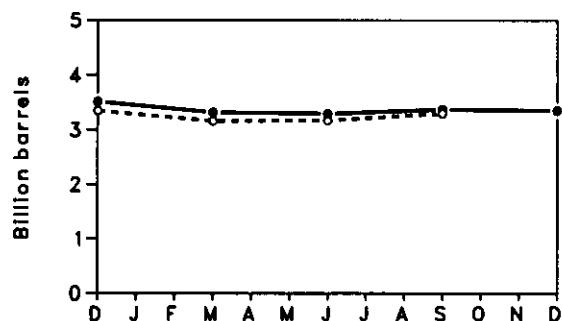
Notes: • U.S. geographic coverage is the 50 States and the District of Columbia.

• Data for 1980 through 1983 are preliminary.

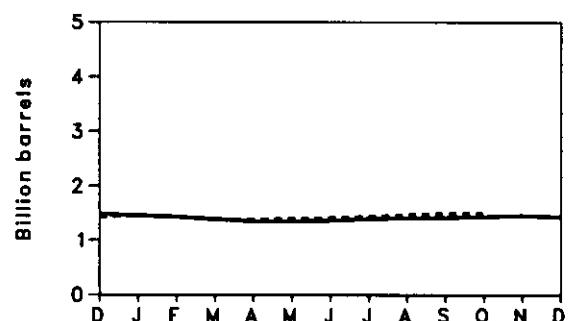
Sources: • See the last page of this section.

## International Petroleum Stocks

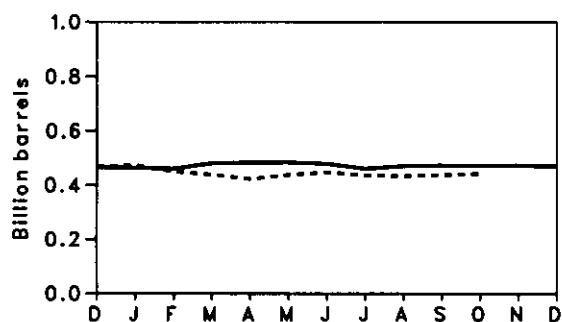
Total OECD



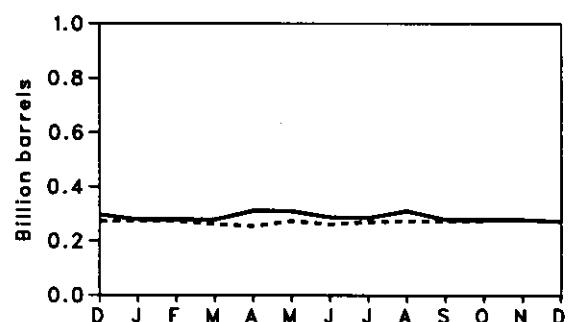
United States



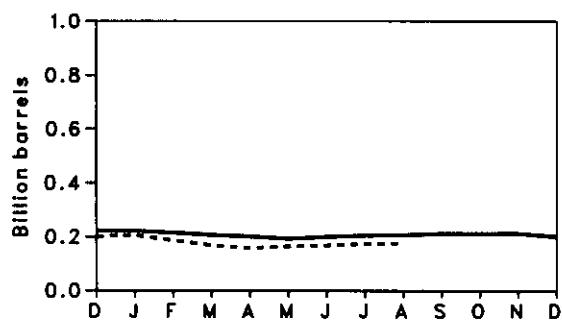
Japan



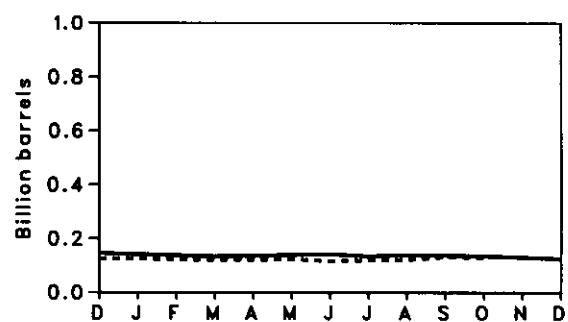
West Germany



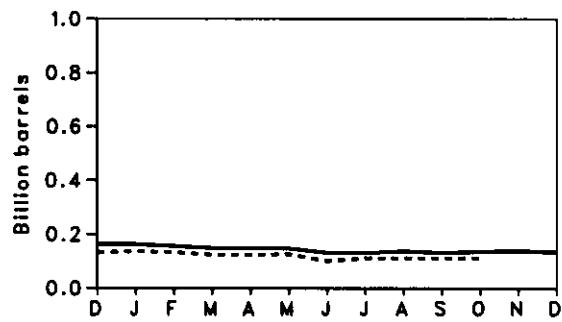
France



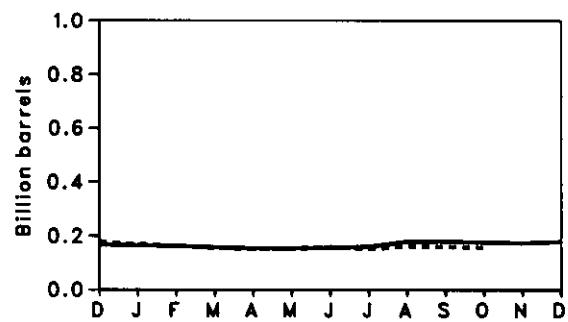
United Kingdom



Canada



Italy



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## International

### Petroleum Stocks for Major Non-Communist Industrialized Countries at End of Period<sup>1</sup>

	Canada	France	Italy	Japan	United Kingdom	United States	West Germany	Other OECD <sup>2</sup>	Total OECD <sup>3</sup>
Million barrels									
1973	149	203	NA	303	156	1,008	NA	NA	NA
1974	164	240	169	370	191	1,074	215	NA	NA
1975	167	239	143	375	164	1,133	190	NA	NA
1976	156	231	142	394	165	1,112	214	NA	NA
1977	170	241	162	399	147	1,312	236	485	3,152
1978	148	214	153	422	147	1,278	239	487	3,089
1979	156	231	163	457	163	1,341	273	574	3,358
1980	171	254	173	481	169	1,392	323	610	3,573
1981	January	169	234	155	479	168	1,388	319	NA
	February	162	235	184	457	170	1,389	312	NA
	March	165	227	158	452	164	1,401	317	581
	April	174	235	169	484	165	1,415	322	NA
	May	176	229	173	496	162	1,438	321	NA
	June	179	225	171	484	158	1,430	312	598
	July	179	228	177	476	153	1,439	305	NA
	August	184	233	189	483	151	1,457	308	NA
	September	181	241	187	493	151	1,476	307	591
	October	172	238	188	500	149	1,485	303	NA
	November	163	230	178	483	147	1,501	300	NA
	December	164	222	167	466	145	1,484	297	575
1982	January	163	222	165	464	NA	1,456	280	NA
	February	156	215	162	460	NA	1,428	280	NA
	March	149	207	158	480	133	1,392	279	524
	April	148	201	154	483	NA	1,346	312	NA
	May	147	193	154	484	NA	1,347	310	NA
	June	131	200	156	478	141	1,360	288	541
	July	130	205	160	460	134	1,393	286	NA
	August	137	207	179	470	139	1,408	311	NA
	September	131	212	179	472	137	1,414	280	548
	October	135	212	177	471	135	1,432	279	NA
	November	138	213	174	472	130	1,455	280	NA
	December	133	201	179	469	125	1,430	273	542
1983	January	136	206	170	473	125	1,453	274	NA
	February	133	187	163	450	121	1,432	274	NA
	March	123	168	155	438	120	1,375	262	520
	April	123	158	151	422	120	1,376	255	NA
	May	125	164	152	437	123	1,397	274	NA
	June	100	168	159	447	116	1,409	262	508
	July	110	174	151	436	119	1,434	270	NA
	August	110	176	161	433	121	1,467	274	NA
	September	110	NA	160	437	131	1,492	274	NA
	October	111	NA	157	441	129	1,512	267	NA

<sup>1</sup>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.

<sup>2</sup>"Other OECD" includes Organization of Economic Cooperation and Development (OECD) members not shown.

<sup>3</sup>The members of OECD are listed in Note 2 on the last page of this section.

R=Revised data. NA=Not available.

Notes: • U.S. geographic coverage is the 50 States and the District of Columbia.

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

Sources: • See the last page of this section.

# International

## Nuclear Electricity Generation by Non-Communist Countries<sup>1</sup>

	Argen-tina	Belgium	Brazil	Canada	Finland	France	India	Italy	Japan	Nether-lands	Paki-stan	
Billion gross kilowatt-hours												
1973	TOTAL	0	0	0	18.3	0	11.6	1.9	3.1	9.4	1.1	0.5
1974	TOTAL	1.0	0.1	0	15.4	0	14.7	2.5	3.4	18.1	3.3	0.6
1975	TOTAL	2.5	6.8	0	13.2	0	18.3	2.5	3.8	22.2	3.3	0.5
1976	TOTAL	2.6	10.0	0	18.0	0	15.8	3.2	3.8	36.7	3.9	0.5
1977	TOTAL	1.6	11.9	0	26.8	2.7	17.9	2.8	3.4	28.1	3.7	0.3
1978	TOTAL	2.9	12.5	0	32.9	3.3	30.5	2.3	4.4	53.2	4.1	0.2
1979	TOTAL	2.7	11.4	0	38.4	6.7	39.9	3.2	2.6	62.0	3.5	(s)
1980	TOTAL	2.3	12.5	0	40.4	7.0	61.2	2.9	2.2	82.8	4.2	0.1
1981	January	0.3	1.2	0	3.2	1.3	9.3	0.2	0.2	8.2	0.1	(s)
	February	0.2	1.0	0	3.5	0.9	8.6	0.2	0.3	7.1	(s)	(s)
	March	0.3	0.6	0	3.9	1.4	8.8	0.3	0.1	7.8	0.3	0
	April	0.2	0.7	0	3.3	1.5	8.3	0.3	0.6	7.9	0.4	0
	May	0.2	1.2	0	3.4	1.0	8.9	0.4	0.3	8.0	0.4	(s)
	June	0.2	1.2	0	3.6	0.7	8.3	0.3	0.1	6.7	0.4	(s)
	July	0.3	1.3	0	4.0	0.8	8.4	0.3	0.3	8.3	0.4	(s)
	August	0.2	1.2	0	4.0	1.4	7.7	0.2	0.1	8.5	0.4	(s)
	September	0.3	0.9	0	3.3	1.5	8.5	0.2	0.1	6.4	0.4	(s)
	October	0.2	1.0	0	3.4	1.4	8.1	0.2	0.1	5.6	0.4	(s)
	November	0.2	1.3	0	3.5	1.3	9.3	0.2	0.1	5.3	0.4	(s)
	December	0.2	1.3	0	4.1	1.2	11.0	0.3	0.4	6.1	0.3	(s)
	TOTAL	2.8	12.8	0	43.3	14.5	105.2	3.1	2.7	86.0	3.7	0.2
1982	January	0.3	1.3	0	4.1	1.5	11.0	0.2	0.6	8.1	0.4	(s)
	February	0.2	0.8	0	3.2	1.5	10.0	0.2	0.7	7.7	0.1	(s)
	March	0.3	0.5	0	3.5	1.7	10.6	0.2	0.7	9.2	(s)	0
	April	0.3	1.0	(s)	3.7	1.6	10.1	0.2	0.5	9.7	0.3	0
	May	0.3	1.3	(s)	3.1	1.3	9.0	0.2	0.7	9.5	0.4	0
	June	0.3	1.2	(s)	3.3	0.9	7.8	0.1	0.6	9.5	0.4	0
	July	0.2	1.3	0	3.6	1.2	8.3	0.1	0.6	9.8	0.4	0
	August	0	1.2	0	3.9	1.5	7.0	0.2	0.4	9.7	0.4	(s)
	September	(s)	0.7	0	3.2	1.5	7.2	0.1	0.6	8.0	0.4	(s)
	October	0	1.7	0	4.0	1.4	6.6	0.2	0.6	7.5	0.4	(s)
	November	(s)	1.8	0	3.3	1.3	8.3	0.3	0.3	7.8	0.4	0
	December	0.2	1.8	0	3.8	1.3	13.0	0.2	0.5	8.1	0.4	(s)
	TOTAL	1.9	15.6	0.1	42.6	16.5	108.9	2.2	6.8	104.5	3.9	0.1
1983	January	0.2	1.9	0	4.3	1.7	13.8	0.2	0.2	8.0	0.4	(s)
	February	0.2	1.4	0	4.5	1.5	10.9	0.1	0.1	6.8	(s)	(s)
	March	0.2	0.7	(s)	4.6	1.6	11.3	0.2	0.1	7.9	(s)	(s)
	April	0.2	1.6	(s)	4.3	1.5	10.5	0.2	0.1	8.4	0.2	(s)
	May	0.2	2.5	0	3.9	1.2	9.6	0.3	0.7	9.2	0.3	(s)
	June	0.2	2.5	0	4.4	1.0	9.3	0.3	0.7	9.1	0.4	(s)
	July	0.3	2.5	0	4.8	1.3	11.0	0.2	0.7	9.5	0.4	0
	August	0.1	2.4	0	3.8	1.6	12.1	0.3	0.5	10.4	0.4	(s)
	September	0.2	2.1	0	4.4	1.5	12.4	0.3	0.6	9.8	0.4	(s)
	October	0.2	2.2	0	4.7	1.4	13.0	0.3	0.6	9.8	0.4	(s)

<sup>1</sup>Figures are for gross electricity generation, as opposed to net electricity generation. Net figures are generally less than gross figures by about 5 percent, which represents the energy consumed by the generating plants themselves.

\*The United Kingdom assesses generation at 4-, 5- or 6-week intervals, rather than by calendar month.

(s)=Less than 0.05 billion gross kilowatt-hours.

Footnotes continued on the following page.

# International

## Nuclear Electricity Generation by Non-Communist Countries<sup>1</sup> (continued)

		South Korea	Spain	Sweden	Switzer-land	Taiwan	United Kingdom <sup>2</sup>	West Germany	Non- Communist World Excluding U.S.	United States	Total Non- Communist World
Billion gross kilowatt-hours											
1973	<b>TOTAL</b>	0	6.5	2.1	6.2	0	28.0	11.9	100.7	88.0	188.7
1974	<b>TOTAL</b>	0	7.2	1.6	7.0	0	34.0	12.0	121.1	104.5	225.6
1975	<b>TOTAL</b>	0	7.5	12.0	7.7	0	30.5	21.7	152.7	181.7	334.4
1976	<b>TOTAL</b>	0	7.6	16.0	7.9	0	36.8	24.5	187.3	201.8	389.1
1977	<b>TOTAL</b>	0.1	6.5	19.9	8.1	0.1	38.1	35.8	207.8	263.3	471.0
1978	<b>TOTAL</b>	2.3	7.6	23.8	8.3	2.7	36.7	35.9	263.6	292.7	556.3
1979	<b>TOTAL</b>	3.2	6.7	21.0	11.8	6.3	38.5	42.2	300.1	270.6	570.7
1980	<b>TOTAL</b>	3.5	5.2	26.7	14.3	8.2	37.2	43.7	354.4	265.4	619.8
1981	January	0.3	0.8	3.5	1.5	0.8	3.8	5.0	39.7	25.7	65.4
	February	0	0.6	3.6	1.4	0.7	3.4	4.6	36.2	22.6	58.8
	March	0	0.7	3.7	1.5	0.8	4.2	4.9	39.1	23.1	62.2
	April	0	0.6	3.3	1.4	0.8	2.8	4.4	36.5	21.7	58.2
	May	0.2	0.8	2.8	1.4	0.8	2.5	4.3	36.6	20.9	57.4
	June	0.4	0.8	2.8	0.7	0.8	3.3	4.1	34.5	22.6	57.1
	July	0.4	1.1	1.4	0.6	0.8	2.5	5.2	36.1	24.8	61.0
	August	0.4	1.0	2.6	1.0	0.8	2.5	3.9	36.0	28.3	64.2
	September	0.3	0.6	3.0	1.3	0.8	3.1	3.3	33.9	25.7	59.6
	October	0.3	1.2	3.3	1.5	1.2	2.7	4.0	34.7	21.6	56.3
	November	0.3	0.6	3.6	1.4	1.0	3.1	4.3	36.0	24.0	60.1
	December	0.4	0.7	4.1	1.5	1.1	4.9	5.4	43.1	27.5	70.6
	<b>TOTAL</b>	2.9	9.4	37.7	15.2	10.7	38.9	53.4	442.4	288.5	730.9
1982	January	0.4	1.0	4.0	1.5	0.8	3.4	5.9	44.5	27.1	71.6
	February	0.4	0.9	3.3	1.3	1.0	3.5	5.4	40.0	21.3	61.3
	March	0.4	0.5	3.8	1.5	1.0	4.1	5.3	43.2	24.0	67.1
	April	0.2	0.4	3.8	1.4	0.8	3.3	5.3	42.5	22.8	65.3
	May	0	0.5	2.5	1.2	0.8	2.6	5.6	39.0	22.8	61.8
	June	(s)	0.7	1.9	0.6	1.0	3.3	4.2	35.6	25.3	60.9
	July	0.3	0.6	1.2	0.9	1.2	3.3	4.5	37.6	26.8	64.4
	August	0.4	0.7	2.0	1.0	1.2	3.7	4.5	37.7	26.4	64.1
	September	0.4	0.7	3.7	1.2	1.3	4.2	5.4	38.6	26.7	65.3
	October	0.4	1.0	4.2	1.5	1.4	3.7	5.2	39.8	25.4	65.3
	November	0.4	0.9	4.0	1.4	1.1	3.8	5.8	41.0	24.2	65.3
	December	0.4	0.9	4.2	1.5	1.4	5.1	6.5	49.2	25.8	75.0
	<b>TOTAL</b>	3.8	8.8	38.8	15.0	13.1	44.1	63.4	489.9	298.6	788.5
1983	January	0.5	1.0	4.2	1.5	1.5	4.8	6.5	49.9	27.4	77.3
	February	0.4	0.9	3.7	1.4	0.8	4.3	5.6	42.5	23.8	66.5
	March	0.6	0.9	4.1	1.5	1.8	4.9	6.0	46.7	25.0	71.7
	April	0.4	0.8	3.3	1.5	1.7	4.3	4.0	43.0	23.4	66.4
	May	0.2	0.4	2.4	1.2	2.0	3.4	2.9	40.5	23.9	64.4
	June	0.7	0.6	2.4	0.5	2.0	3.9	4.2	42.0	25.7	67.8
	July	0.7	0.6	1.6	1.2	1.6	3.3	5.1	44.8	27.3	72.1
	August	0.9	1.0	2.7	1.0	1.4	3.7	4.6	46.9	27.9	74.8
	September	R1.1	1.0	3.0	1.4	1.2	R4.4	6.0	49.8	26.2	76.0
	October	0.8	1.1	3.6	1.5	1.6	3.7	7.4	52.4	27.6	79.9

Footnotes continued.

R=Revised data.

Notes: • U.S. geographic coverage is the 50 States and the District of Columbia.

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

Sources: • See the last page of this section.

## Notes and Sources for the International Section

### Notes

1. The 21 signatory nations of the International Energy Agency (IEA) are Australia, Austria, Belgium, Canada, Denmark, West Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Australia and Portugal joined the IEA as new members in 1979 and 1980, respectively. In an effort to maintain comparability within this time series, consumption data for these two countries have been incorporated into the IEA total for all years.
2. The members of the Organization of Economic Cooperation and Development (OECD) are Australia, Austria, Belgium, Canada, Denmark, Finland, France, West Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Total OECD excludes the United States Territories.

### Sources

**Crude Oil Production:** • 1973-1981 annual data: Energy Information Administration, *1981 International Energy Annual*.

- U.S. annual and monthly data: Energy Information Administration, *Petroleum Supply Monthly*.
- 1980-1983 monthly data (except U.S. and World): Central Intelligence Agency, "International Energy Statistical Review," and other industry sources.
- 1980-1983 monthly data for World: Sum of data for all countries using above sources.

**Petroleum Consumption:** • Central Intelligence Agency, "International Energy Statistical Review" (except the United States).

- United States data: Energy Information Administration, *Petroleum Supply Monthly*.
- IEA totals for latest months are Energy Information Administration estimates.

**Petroleum Stocks:** • Canada: Energy, Mines and Resources Canada, *Energy Information Handbook*; Statistics Canada, *Refined Petroleum Products*. • France: Comite Professionel du Petrole, *Petrole 80: Activite de L'Industrie Petroliere* and *Bulletin Mensuel*. • West Germany and Italy: OECD, *Quarterly Oil Statistics* and *Monthly Oil Statistics*. • Japan: Ministry of International Trade and Industry, *Yearbook of Coal, Petroleum, and Coke Statistics 1979; Energy Production: Supply and Demand Statistics Report*. • United Kingdom: United Kingdom Department of Energy, *Digest of United Kingdom Energy Statistics 1981* and *Energy Trends*; and OECD, *Monthly Oil Statistics*. • United States: 1973 through 1979: Energy Information Administration (EIA), *Energy Data Reports*, "Petroleum Statement, Annual"; January 1980 forward: EIA, *Petroleum Supply Monthly*. • Other OECD: OECD, *Quarterly Oil Statistics*. • Total OECD: Sum of data for all OECD member countries using above sources.

**Nuclear Electricity Generation:** • *Nucleonics Week*.

## Definitions

### **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. Includes metaanthracite and semianthracite. Conforms to ASTM Specification D388 for anthracite.

### **Bituminous Coal**

A coal that is high in carbonaceous matter having a volatility greater than anthracite and a calorific value greater than lignite. Often referred to in the United States as soft coal. Includes subbituminous coal and conforms to ASTM Specification D388 for bituminous and subbituminous coal.

### **British Thermal Unit (Btu)**

The amount of energy required to raise the temperature of 1 pound of water 1 degree Fahrenheit at or near 39.2 degrees Fahrenheit. One Btu is equivalent to about 252 calories. An average Btu content of fuel is a heat value per unit quantity of fuel as determined from tests of fuel samples.

### **Coke (Coal)**

Bituminous coal from which constituents have been driven off by heat so that the fixed carbon and the ash are fused together. It is used primarily in blast furnaces for smelting ores, especially iron ore.

### **Crude Oil**

A mixture of hydrocarbons that is in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Statistically, crude oil reported at refineries, in pipelines, at pipeline terminals, and on leases may include lease condensate, shale oil, and tar sands oil.

### **Crude Oil Refinery Input**

Total crude oil (including lease condensate) input to crude oil distillation units and other units for processing.

### **Crude Oil Stocks**

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

### **Distillate Fuel Oil**

A light fuel oil distilled off during the refining process. Included are products known as No. 1 and No. 2 heating oils, diesel fuels, and No. 4

fuel oil, which conform to either ASTM Specification D396 or D975. These products are used primarily for space heating, on- and off-highway diesel engine fuel (including railroad engine fuel), and electric power generation.

### **Electricity Production**

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

### **Ethane**

A normally gaseous, colorless hydrocarbon ( $C_2H_6$ ) produced at natural gas processing plants and refineries. It is used primarily as petrochemical feedstock for eventual production of chemicals and plastic materials.

### **Exports**

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

### **Full-Serve Station**

Station at which services such as pumping gas, washing windows, and checking under the hood are performed by attendants.

### **Imports**

Receipts into the 50 States and the District of Columbia of foreign goods (including receipts of goods from U.S. territories and U.S. Foreign Trade Zones) that are classified by customs officials as "imports for consumption" or "withdrawals from bonded warehouse for consumption," including withdrawals from bonded warehouses for military offshore use and for bunkering of vessels or aircraft engaged in international commerce. Included are imports for the Strategic Petroleum Reserve. Excluded are receipts into bonded warehouses and into U.S. territories and U.S. Foreign Trade Zones.

### **Landed Cost of Imported Crude Oil**

Includes the purchase price at the foreign port (or U.S. land border), transportation and insurance costs, wharfage and demurrage, brokerage fees, import fees and duties, license (ticket) fees, and transportation costs to the refinery. Averages are computed based on major importers, which account for an estimated 90 to 95 percent of total crude oil



imports. Coverage includes the United States and its territories.

#### **Lease Condensate**

A natural gas liquid recovered from gas-well gas in lease separators and field facilities. It consists primarily of pentanes and heavier hydrocarbons. Generally, it is blended with crude oil for refining.

#### **Lignite**

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

#### **Liquefied Petroleum Gases**

Propane, propylene, butane, butylene, ethane-propane mixtures, propane-butane mixtures, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids. Formerly called "liquefied gases."

#### **Line Miles of Seismic Exploration**

The distance along the earth's surface that is covered by seismic surveying.

#### **Maximum Dependable Capacity, Net**

Represents the dependable main-unit net capacity of domestic nuclear powerplant reactors and generally varies throughout the year because the unit efficiency varies with seasonal cooling water temperature variations. Usually maximum dependable capacity is the highest net dependable output of the turbine generator during the most restrictive seasonal conditions (usually summer).

#### **Motor Gasoline**

See Motor Gasoline, Finished, and Motor Gasoline, Total.

#### **Motor Gasoline, Average Retail Selling Price**

The average price (including taxes) of sales of motor gasoline to retail customers at service stations.

#### **Motor Gasoline, Finished**

Beginning in January 1981, "Motor Gasoline" was redefined as "Finished Motor Gasoline," which is a complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives that have been blended to form a fuel suitable for use in spark ignition engines. Included are premium and regular grade, both leaded and unleaded, gasohol, and all other refinery products listed in ASTM Specification D439. Excludes any blendstock until blending has been completed and the blendstock is incorporated in the finished gasoline and no longer separately identified. Also excludes any alcohol to be used in the blending of gasohol.

#### **Motor Gasoline, Premium Grade**

Finished motor gasoline that has an antiknock designation of 3 or more for unleaded motor gasoline and 4 or more for leaded motor gasoline.

#### **Motor Gasoline, Regular Grade**

Motor gasoline that has an antiknock designation of 2 or less for unleaded motor gasoline and 3 or less for leaded motor gasoline.

#### **Motor Gasoline, Total**

This includes finished leaded motor gasoline, finished unleaded motor gasoline, motor gasoline blending components, and gasohol.

#### **Natural Gas**

A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions.

#### **Natural Gas Plant Liquids**

Those portions of natural gas that are liquefied at natural gas processing plants, including natural gasoline plants, cycling plants, and fractionators, and, in some instances, field facilities. Products obtained include ethane, liquefied petroleum gases (propane, butane, isobutane, propane-butane mixtures, ethane-propane mixtures), isopentane, natural gasoline, unfractionated streams, plant condensate, and minor quantities of finished products such as motor gasoline, aviation gasoline, special naphthas, jet fuel, kerosene, distillate fuel oil, and miscellaneous products.

#### **Petroleum**

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

#### **Petroleum Coke**

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

#### **Petroleum Products**

Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, natural gasoline and isopentane, plant condensate, unfractionated stream, ethane, liquefied petroleum gases, aviation gasoline, motor gasoline,

naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, naphtha less than 400°F end-point, other oils over 400°F end-point, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

#### **Propane**

A colorless, highly volatile hydrocarbon ( $C_3H_8$ ) that is gaseous at ordinary atmospheric conditions and readily recovered as a liquid at natural gas processing plants and refineries. Propane is used primarily for residential and commercial heating and cooling, and also as a fuel for transportation and industrial uses, including petrochemical feedstocks.

#### **Refined Petroleum Product Supplied**

Total refined petroleum product supplied is the sum of all refined petroleum products supplied. For each product the amount supplied is derived by summing production, imports, and crude oil burned directly, and subtracting changes in primary stocks (net withdrawals is a plus quantity; net additions is a minus quantity) and exports.

#### **Refiner Acquisition Cost**

The cost to the refiner, including transportation and fees, of crude oil. The composite cost is the average of domestic and imported crude oil costs and represents the amount of crude oil cost that refiners may pass on to their customers.

#### **Residual Fuel Oil**

The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as No. 5 and No. 6 fuel oil that conform to ASTM Specification D396, Navy Special Fuel Oil, Bunker C fuel oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes.

#### **Rotary Rig**

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

#### **Self-Serve Station**

Station at which services such as pumping gas, washing windows, and checking under the hood are not performed by attendants.

#### **Startup Test Phase of Nuclear Powerplant**

A nuclear powerplant that has been licensed by the Nuclear Regulatory Commission to operate, but that is in the initial testing phase during which production of electricity may not be continuous. In general, when the electric utility is satisfied with the plant's performance, it formally accepts the plant from the manufacturer, and places it in "commercial operation" status. A request is then submitted to the appropriate utility rate commission to include the powerplant in the rate base calculation.

#### **Stocks (Refined Petroleum Product)**

Stocks held at refineries, natural gas processing plants, bulk terminals, and pipelines (including pipeline fill) where the storage capacity exceeds 50,000 barrels or where refined petroleum products are received by tanker, barge, or pipeline. Stocks held in secondary storage facilities, such as those held by jobbers, dealers, independent marketers, and consumers, are excluded.

#### **Strategic Petroleum Reserve**

Petroleum inventories (currently only crude oil) held in Government-owned underground storage for use during periods of major supply interruptions. Congress enacted legislation to establish a Strategic Petroleum Reserve in Title I, Part B, of the Energy Policy and Conservation Act of 1975, Public Law 94-163.

#### **Synthetic Natural Gas (SNG)**

A product resulting from the manufacture, conversion, or reforming of hydrocarbons that may be easily substituted for or interchanged with pipeline-quality natural gas.

#### **Unaccounted for Crude Oil**

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

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## Conversion Factors

Approximate Heat Content of Various Fuels	Units	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982-83†
<b>Anthracite</b>											
Production.....	Million Btu/short ton	23.17	22.56	23.39	22.77	23.18	23.52	23.59	23.35	23.69	23.69
Imports and exports.....	Million Btu/short ton	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40
Consumption, average.....	Million Btu/short ton	22.71	21.95	21.74	22.15	22.69	22.97	22.70	22.16	22.10	22.10
Electric utility consumption*.....	Million Btu/short ton	17.92	17.20	17.06	17.53	17.24	17.10	17.45	17.65	18.17	18.17
Non-utility consumption.....	Million Btu/short ton	24.34	23.75	23.65	23.84	24.99	25.17	25.20	23.74	25.12	25.12
<b>Bituminous coal and lignite</b>											
Production.....	Million Btu/short ton	24.01	23.73	23.20	23.15	22.70	22.43	22.59	22.46	22.38	22.38
Imports.....	Million Btu/short ton	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Exports.....	Million Btu/short ton	27.00	27.00	27.00	27.00	27.00	27.00	27.00	26.40	26.18	26.18
Consumption, average.....	Million Btu/short ton	23.65	23.07	22.80	22.75	22.33	22.14	22.20	22.00	21.80	21.80
Electric utility consumption*.....	Million Btu/short ton	22.26	21.80	21.66	21.69	21.48	21.28	21.38	21.30	21.09	21.09
Non-utility consumption.....	Million Btu/short ton	26.84	26.12	25.81	25.87	25.13	25.07	25.06	24.96	24.96	24.96
<b>Coal coke</b>											
Crude petroleum <sup>1</sup>											
Production.....	Million Btu/barrel	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800
Imports.....	Million Btu/barrel	5.817	5.827	5.821	5.808	5.810	5.802	5.812	5.818	5.818	5.818
Exports.....	Million Btu/barrel	5.600	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800
<b>Crude petroleum and products</b>											
Imports, average.....	Million Btu/barrel	5.897	5.884	5.858	5.856	5.834	5.839	5.810	5.796	5.795	5.775
Exports, average.....	Million Btu/barrel	5.752	5.774	5.748	5.745	5.797	5.808	5.832	5.820	5.821	5.821
<b>Petroleum products</b>											
Consumption, average.....	Million Btu/barrel	5.515	5.504	5.494	5.504	5.518	5.519	5.494	5.479	5.448	5.448
Residential and commercial.....	Million Btu/barrel	5.387	5.377	5.358	5.383	5.389	5.382	5.471	5.468	5.408	5.354
Industrial.....	Million Btu/barrel	5.559	5.530	5.520	5.529	5.546	5.542	5.415	5.373	5.306	5.383
Transportation.....	Million Btu/barrel	5.399	5.397	5.395	5.399	5.405	5.409	5.430	5.442	5.438	5.429
Electric utility.....	Million Btu/barrel	6.245	6.238	6.250	6.251	6.249	6.251	6.258	6.254	6.258	6.258
Imports.....	Million Btu/barrel	5.983	5.959	5.935	5.980	5.908	5.955	5.811	5.748	5.659	5.659
Exports.....	Million Btu/barrel	5.752	5.773	5.747	5.743	5.796	5.814	5.864	5.841	5.837	5.837
LPG consumption average*.....	Million Btu/barrel	3.746	3.730	3.715	3.711	3.877	3.669	3.680	3.674	3.643	3.643
Natural gas plant liquid production.....	Million Btu/barrel	4.049	4.011	3.984	3.964	3.941	3.925	3.955	3.914	3.930	3.930
Natural gas, dry											
Production.....	Btu/cubic foot	1,021	1,024	1,021	1,020	1,021	1,019	1,021	1,016	1,015	1,015
Consumption*.....	Btu/cubic foot	1,021	1,024	1,021	1,020	1,021	1,019	1,021	1,026	1,027	1,027
Electric utility consumption*.....	Btu/cubic foot	1,024	1,022	1,026	1,023	1,029	1,034	1,034	1,034	1,034	1,034
Non-utility consumption.....	Btu/cubic foot	1,020	1,024	1,020	1,019	1,019	1,016	1,018	1,024	1,025	1,025
Imports.....	Btu/cubic foot	1,026	1,027	1,026	1,025	1,026	1,030	1,037	1,022	1,014	1,014
Exports*.....	Btu/cubic foot	1,023	1,016	1,014	1,013	1,013	1,013	1,013	1,013	1,011	1,011
Wet natural gas production.....	Btu/cubic foot	1,093	1,097	1,095	1,093	1,093	1,088	1,092	1,088	1,091	1,091
Hydropower*.....	Btu/kWh	10,389	10,442	10,406	10,373	10,435	10,361	10,353	10,388	10,388	10,388
Nuclear power*.....	Btu/kWh	10,903	11,181	11,013	11,047	10,769	10,941	10,840	10,908	10,908	10,908
Geothermal power*.....	Btu/kWh	21,674	21,674	21,611	21,611	21,611	21,611	21,545	21,697	21,594	21,594
Electricity consumption.....	Btu/kWh	3,412	3,412	3,412	3,412	3,412	3,412	3,412	3,412	3,412	3,412
<b>Approximate Heat Content of Refined Petroleum Products</b>	Million Btu/barrel										
Asphalt.....		6.636									
Aviation gasoline .....		5.048									
Butane .....		4.326									
Butane-propane mixture*.....		4.130									
Distillate fuel oil.....		5.825									
Ethane .....		3.082									
Ethane-propane mixture*.....		3.308									
Isobutane.....		3.974									
Jet fuel—kerosene type.....		5.670									
Jet fuel—naphtha type.....		5.355									
Kerosene.....		5.670									
Lubricants.....		6.065									
Motor gasoline.....		5.253									
Natural gasoline.....		4.620									
Petrochemical feedstocks											
Naphtha 40° F or less.....		5.248									
Other oils over 40° F.....		5.825									
Still gas.....		6.000									
Petroleum coke.....		6.024									
Plant condensate.....		5.418									
Propane.....		3.836									
Residual fuel oil.....		6.287									
Road oil.....		6.636									
Special naphtha.....		5.248									
Still gas.....		6.000									
Unfinished oils.....		5.825									
Unfractionated stream.....		5.418									
Wax.....		5.537									
Miscellaneous.....		5.796									

\* Includes lease condensate.

† LPG consumption average is the annual weighted average of the LPG product supplied components: ethane, ethylene, propane, propylene, butane, butylene, butane-propane mixture, ethane-propane mixture, and isobutane.

\* There is no generally accepted practice for measuring hydropower thermal conversion rates. The hydropower factors on this page are the prevailing rate factors at fossil fuel steam electric powerplants. By using the heat rate factor, it is possible to evaluate fossil fuel requirements for replacing hydropower production during periods of drought. Furthermore, it allows for better comparisons with certain other countries such as Norway where hydropower is the principal means for producing electricity. Similarly, the nuclear power and geothermal power conversion factors represent the thermal conversion equivalent of the uranium and geothermal steam consumed at powerplants. The heat content of a kilowatt-hour of electricity produced, regardless of the generation process, is 3,412 Btu per kilowatt-hour.

\* 60 percent butane and 40 percent propane.

\* 70 percent ethane and 30 percent propane.

\* Based on data reported in Energy Information Administration (and predecessor) surveys.

† Preliminary data.

Note: For a listing of sources for the approximate heat content values, see pages 241-246, 1982 Annual Energy Review, DOE/EIA-0384(82).

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