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# Preface

The Energy Information Administration (EIA) quarterly forecasts of short-term energy supply, demand, and prices are revised in January, April, July, and October for publication in the Short-Term Energy Outlook (Outlook). Methodology volumes, published periodically, contain descriptions of major changes in the forecasting system, analyze previous forecast errors, and provide detailed analyses of current issues that affect EIA's short-term energy forecasts. The principal users of the Outlook are managers and energy analysts in private industry and government. The projections in this volume extend through the first half of 1986.

The forecasts are produced using the Short-Term Integrated Forecasting System (STIFS). The STIFS model uses two principal driving variables: a macroeconomic forecast and the world oil price assumptions. Macroeconomic forecasts produced by Data Resources, Inc., (DRI) are adjusted by EIA to reflect EIA projections of the world price of crude oil, which differ from DRI estimates. EIA's Oil Market Simulation Model is used to project the world oil prices.

The three projections for petroleum supply and demand are based on low, middle, and high economic growth scenarios which incorporate high, middle, and low crude oil price trajectories. The discussion and tables in this volume primarily refer to the middle, or base case, scenario and, unless otherwise noted, to the domestic situation. Other cases examining the sensitivity of total petroleum demand to varying assumptions about prices, weather, and economic activity are shown in Table 13. Discussions of the world oil price refer to the cost of imported crude oil to U.S. refiners.

The forecasts and historical data are based on EIA data published in the Monthly Energy Review, Petroleum Supply Monthly, and other EIA publications. Minor discrepancies between the data in these publications and the historical data in this Outlook are due to independent rounding. All percentage changes are calculated from the values in the tables rather than from the rounded numbers cited in the text.

## Annual Energy Outlook, 1984 Published January 1985

The Short-Term Energy Outlook provides forecasts of the energy situation for 1985 and the first half of 1986. For readers interested in midterm forecasts, the Annual Energy Outlook, 1984 is now available. This report provides forecasts of energy supply, demand, and prices for 1990 and 1995. In addition to a base case discussion, the report examines the effects of higher and lower assumptions about economic growth and world oil prices, and also discusses many of the other uncertainties important to the midterm energy outlook.



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# 1. Highlights

The projections in this Short-Term Energy Outlook (Outlook) extend from the second quarter of 1985 through the first half of 1986. (The base case assumptions and projections are summarized in Table 1.) The energy picture for 1985 is projected to be different from that for 1984, mainly because of the slower rate of increase expected for economic activity. The economy in 1984 experienced very rapid growth. As a result, the demand for most energy sources in 1984 was up significantly from 1983 levels, in some instances reversing downward trends that had persisted for several years. In contrast, 1985 is projected to be a year of much slower economic expansion compared to 1984. The combination of assumed lower economic growth and continued energy conservation in 1985 is expected to result in much slower growth in energy demand than during 1984. Economic growth is assumed to continue during the first half of 1986, and energy demand during that period is projected to be slightly higher than the first-half 1985 level.

The highlights from the base case are as follows:

- Domestic petroleum demand in 1984 showed an increase, on an annual basis, for the first time since 1978. Because of the economic expansion, domestic petroleum consumption in 1984 averaged about 15.7 million barrels per day--over 3 percent higher than the 1983 level. Despite continued economic growth assumed for this year, however, a slight decline in U.S. petroleum demand is projected between 1984 and 1985. Petroleum demand in the first half of 1986 is projected to be about the same as the first-half 1985 level.
- Net oil imports are expected to fall slightly from nearly 4.7 million barrels per day in 1984 to an average of about 4.5 million barrels per day in 1985, and to remain constant between first-half 1985 and first-half 1986, despite the zero fill rate assumed for the Strategic Petroleum Reserve in fiscal year 1986. The price of imported crude oil to the United States is assumed to remain at about \$28 per barrel (in nominal terms) through 1985 and the first half of 1986. This analysis assumes that the existing downward pressure on oil prices does not result in any additional price decrease and that no serious disruption of world oil markets occurs, an event that could have major impacts on the domestic oil price and on the supply, demand, and import situation.
- Consumption of natural gas is projected to rise to nearly 18.0 trillion cubic feet in 1985, assuming only moderate increases in natural gas prices, with the increase supplied by storage withdrawals and increased Canadian imports. Natural gas consumption is projected to fall slightly between first-half 1985 and first-half 1986. Natural gas production is expected to remain stable at about 17.2 trillion cubic feet in 1985, and first-half 1986 production is projected to be about equal to year-earlier levels.
- Domestic coal consumption is expected to increase to 835 million tons in 1985 (about 6 percent higher than the 1984 level), with coal production at 898 million tons (about 1 percent above the year-earlier level). Coal consumption and production in the first half of 1986 are forecast to rise by about 4 percent from year-earlier levels.

**Table 1. Summary of Base Case Assumptions and Projections**

	History			Projections	Annual Percentage Change		
	1982	1983	1984	1985	1982-1983	1983-1984	1984-1985
<b>Assumptions</b>							
Real Gross National Product (billion 1972 dollars) .....	1,480	1,535	1,639	1,690	3.7	6.8	3.1
Index of Industrial Production (Mfg.) (index, 1967=100) .....	137.5	148.2	164.8	169.2	7.8	11.2	2.7
Average Cost of Imported Crude Oil (nominal dollars per barrel) .....	33.55	29.30	28.88	27.90	-12.7	-1.4	-3.4
<b>Price Projections (nominal values)<sup>a</sup></b>							
Motor Gasoline <sup>b</sup> (dollars per gallon) .....	1.28	1.22	1.20	1.18	-4.7	-1.6	-1.7
Retail No. 2 Heating Oil (dollars per gallon) .....	1.16	1.08	1.09	1.07	-6.9	0.9	-1.8
Residential Natural Gas (dollars per thousand cubic feet) ....	5.17	6.06	6.06	6.20	17.2	0.0	2.3
Residential Electricity (cents per kilowatthour) .....	6.86	7.18	7.56	7.74	4.7	5.3	2.4
<b>Consumption Projections</b>							
Total Market Economies Petroleum Consumption (million barrels per day)	46.3	45.2	45.9	46.1	-2.4	1.5	0.4
U.S. Total Petroleum Consumption (million barrels per day) .....	15.30	15.23	15.71	15.58	-0.5	3.2	-0.8
Motor Gasoline .....	6.54	6.62	6.70	6.76	1.2	1.2	0.9
Distillate Fuel Oil .....	2.67	2.69	2.85	2.92	0.7	5.9	2.5
Residual Fuel Oil .....	1.72	1.42	1.36	1.16	-17.4	-4.2	-14.7
Other Petroleum <sup>c</sup> .....	4.37	4.50	4.80	4.74	3.0	6.7	-1.3
Net Petroleum Imports (million barrels per day, including SPR <sup>d</sup> ) .....	4.30	4.31	4.66	4.47	0.2	8.1	-4.1
Coal Consumption (million short tons) .....	707	737	791	835	4.2	7.3	5.6
Natural Gas Consumption (trillion cubic feet) .....	18.00	16.83	17.48	17.95	-6.5	3.9	2.7
Electricity Generation (billion kilowatthours) .....	2,241.2	2,310.3	2,416.3	2,484.3	3.1	4.6	2.8
Total Energy Consumption <sup>e</sup> (quadrillion Btu) .....	70.82	70.50	73.72	75.29	-0.5	4.6	2.1
Thousand Btu/1972 Dollar of GNP .....	47.85	45.93	44.98	44.55	-4.0	-2.1	-1.0

<sup>a</sup>All prices include taxes, except retail no. 2 heating oil prices.

<sup>b</sup>Average for all grades and services.

<sup>c</sup>Includes crude oil, pentanes plus, other hydrocarbons and alcohol, unfinished oil, and gasoline blending components.

<sup>d</sup>SPR = Strategic Petroleum Reserve.

<sup>e</sup>The conversion from physical units to Btu is calculated by STIFS using a subset of Monthly Energy Review (MER) conversion factors. Consequently, the historical data will not precisely match that published in the MER.

Note: Minor discrepancies with other published EIA historical data are due to independent rounding.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035 (85/01), 1983 International Energy Annual, DOE/EIA-0219(83), Petroleum Marketing Monthly, DOE/EIA-0380 (85/01), Petroleum Supply Monthly, DOE/EIA-0109(85/02), Petroleum Supply Annual, 1983, DOE/EIA-0340(83)/1, Natural Gas Monthly, DOE/EIA-0130(85/02), Electric Power Monthly, DOE/EIA-0226(85/02), and Quarterly Coal Report, DOE/EIA-0121(84/4Q); Organization for Economic Cooperation and Development, Quarterly Oil Statistics, Third Quarter 1984; Petroleum Economics Limited, World Quarterly Primary Energy and Supply/Demand, October 1984. Macroeconomic projections are based on modifications to Data Resources, Inc., forecast CONTROL0485.

- An increase of nearly 3 percent in total electricity generation is projected from 1984 to 1985, and a further increase of 2 percent is expected between first-half 1985 and first-half 1986. Generation levels from coal and nuclear power are projected to rise from 1984 to 1985, while natural gas-fired, petroleum-fired, and hydroelectric generation levels are expected to decline. These trends are expected to continue into the first half of 1986. Net imports of electricity are expected to be about 41 billion kilowatthours in 1985, an increase of 3 billion kilowatthours from the 1984 level. This increasing trend is projected to continue in the first half of 1986.
- Total U.S. energy consumption (as measured by gross energy consumption) is projected to rise by 2 percent, to 75.3 quadrillion Btu, in 1985 and by nearly 1 percent between first-half 1985 and first-half 1986. The energy intensity of U.S. economic activity is projected to decline to 44.6 thousand Btu per 1972 dollar of real GNP in 1985. With U.S. energy use projected to rise less rapidly than real GNP from the first half of 1985 to the first half of 1986, a further slight decline in the energy/GNP ratio is expected.

The forecasts previously discussed are the base case projections. Additional sensitivity cases are discussed in the consumption section for petroleum supply and disposition, based on the combined effects of alternative assumptions about economic growth, oil prices, and weather. Should the imported crude oil prices, economic growth rates, or weather during the forecast period differ from the base case assumptions, it is estimated that:

- For each 1-percent increase in GNP above the base case level, petroleum consumption and total imports in 1985 would increase by about 145,000 barrels per day (approximately 0.9 percent and 2.8 percent, respectively).
- For each \$1-per-barrel (approximately 3.6 percent) decline in the price of imported crude oil, petroleum consumption and total imports in 1985 would increase by 110,000 barrels per day (approximately 0.7 percent and 2.1 percent, respectively).
- For each 10-percent increase in heating degree days (from the base case level) during the first and fourth quarters, petroleum consumption and total imports for those two quarters would increase by an average of about 270,000 barrels per day (approximately 1.7 percent and 5.2 percent, respectively).

Assuming that the impacts of prices, income, and weather on petroleum demand are symmetrical, the above estimates would also hold for changes in the opposite direction. However, some published studies comparing higher versus lower price effects suggest that the effect of price decreases on consumption could be smaller.

## 2. The Outlook

### Forecast Assumptions

#### World Oil Prices

In the base case, the nominal price of imported crude oil delivered to U.S. refiners is assumed to remain at about \$28 per barrel through the first half of 1986 for the following reasons:

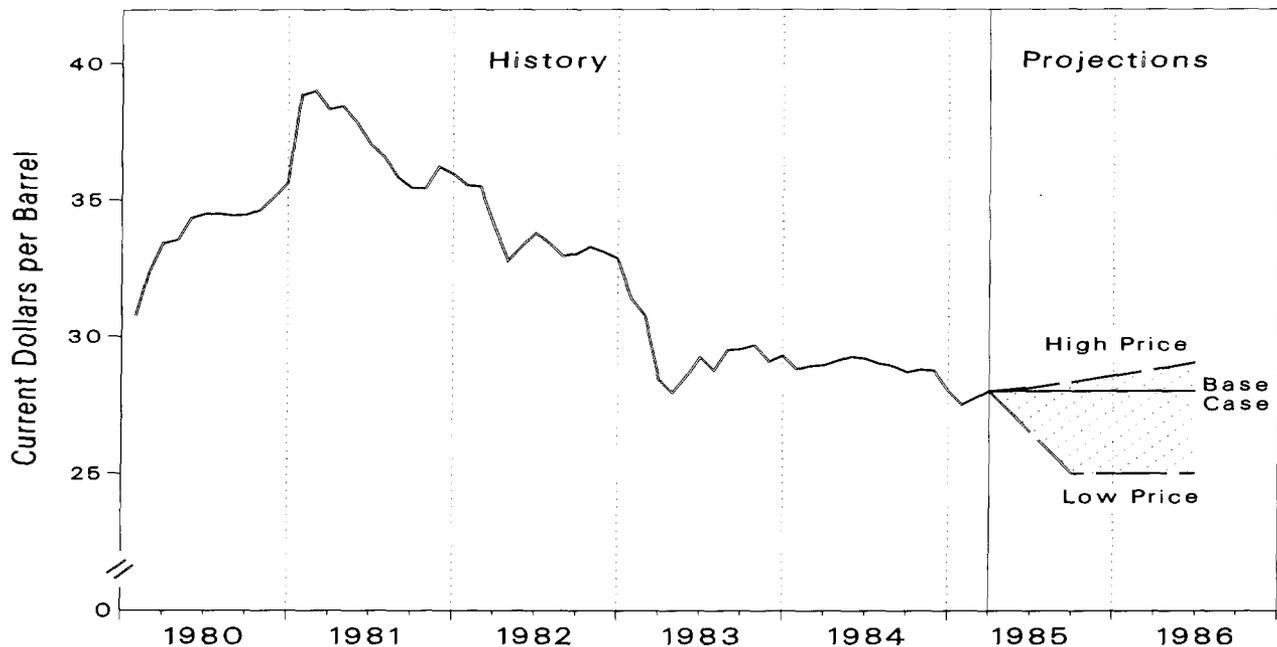
- The assumed slight increase in demand for oil in the market economy countries is expected to offset the downward pressure on oil prices resulting from continued substitution of other fuels for oil in electricity generation, past high production by members of the Organization of Petroleum Exporting Countries (OPEC), and increased production by non-OPEC countries.
- The existing differentials between the official prices of OPEC's light and heavy crude oil are assumed to be maintained, partially removing one of the factors exerting downward pressure on prices.
- The current OPEC policy to reduce downward pressure on crude oil prices by restraining oil production and monitoring prices is assumed to be partially successful. However, OPEC's production rate is assumed to be adjusted to meet projected demand at the official prices.

In addition to the base case, two alternative forecasts are presented in this Outlook incorporating differing economic growth and price assumptions in order to provide a range of energy consumption projections (Figure 1). The petroleum price assumptions associated with these cases are as follows:

- High Economic Growth Case: As a result of lower levels of world petroleum demand and/or higher levels of production than expected in the base case, the average price of imported crude oil to U.S. refiners is assumed to fall to \$25 per barrel by the third quarter of 1985 and to remain at that level through the first half of 1986.
- Low Economic Growth Case: As a result of increased tension and concern about the availability of future supply in the oil market, the price of imported crude oil is assumed to rise at the U.S. rate of inflation, reaching \$29 per barrel by the end of the first half of 1986.

The assumptions used to generate the high and low projections are designed to produce the widest probable variation in demand, given the current range of forecasts for these variables. For example, the high growth case uses the low world oil price assumption. This scenario does not imply that high economic growth will result in a lower oil price, nor is this case necessarily inconsistent. Rather, these sensitivity cases are designed to show the effects of the extreme ranges of these variables on petroleum demand.

Figure 1. Imported Crude Oil Prices



Sources: • History: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01) (Washington, DC, 1985). • Projections: Table 2.

## Macroeconomic Activity

The base case projections assume that economic growth will continue through mid-1986, but at a lower rate than in 1984. Based on the Data Resources, Inc., forecast (DRJ CONTROL0485), as modified to reflect EIA's imported crude oil price assumptions, growth in real gross national product (GNP) between 1984 and 1985 is assumed to be 3.1 percent, considerably lower than the 6.8 percent growth experienced between 1983 and 1984. Growth in real disposable personal income is projected to be 3.2 percent in 1985, while manufacturing growth is expected to be somewhat lower at 2.7 percent for the year. Slower growth this year is expected to be the result of less expansion in both consumption and investment, as well as lower contributions of government purchases and net exports to overall growth. (Assumptions pertaining to the price of imported crude oil, the economy, and the weather are shown in Table 2.)

Growth in real GNP between first-half 1985 and first-half 1986 is projected to be 2.4 percent. Real disposable income growth is projected to be somewhat higher over this interval, at 2.8 percent. Manufacturing growth also is assumed to exceed real GNP growth in the first half of 1986, increasing at a projected rate of 3.0 percent from year-earlier levels, based on the stabilization expected for net exports.

**Table 2. Macroeconomic, Price, and Weather Assumptions for Low, Base and High Economic Growth Cases**

Assumptions	History					Economic Growth Case					Projections							
	1982		1983		1984		1985		1986		1985		1986		1986			
	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	Year	1st	2nd		
Macroeconomic <sup>a</sup>																		
Real Gross National Product	1,480	1,491	1,525	1,550	1,573	1,535	1,611	1,639	1,645	1,662	1,639	1,668	1,690	1,706	1,725	1,697	1,741	1,757
Percent Change from Prior Year	-2.1	0.5	3.0	4.9	6.4	3.7	8.0	7.5	6.1	5.7	6.8	3.5	3.1	3.7	3.8	3.5	4.1	4.0
GNP Implicit Price Deflator (Index, 1972=100)	207.4	212.9	214.3	215.9	218.2	215.3	220.6	222.4	224.6	226.1	223.4	229.0	230.1	231.8	233.7	231.2	235.7	237.8
Percent Change from Prior Year	6.0	4.4	3.6	3.5	3.8	3.8	3.6	3.8	4.0	3.6	3.8	3.8	3.4	2.9	2.8	3.2	2.2	2.5
Real Disposable Personal Income	1,059	1,073	1,082	1,102	1,124	1,095	1,148	1,165	1,177	1,187	1,169	1,194	1,203	1,212	1,222	1,208	1,230	1,240
Percent Change from Prior Year	0.9	1.9	2.6	4.2	5.2	3.4	7.0	7.7	6.8	5.6	6.8	4.0	3.3	3.0	2.9	3.3	3.0	3.1
Index of Industrial Production (Mfg.) (Index, 1967=100)	137.5	138.4	145.2	152.8	156.5	148.2	161.0	164.4	167.2	166.5	164.8	166.8	169.4	172.0	175.0	170.8	178.1	181.0
Percent Change from Prior Year	-8.5	-1.0	5.1	11.0	16.4	7.8	16.3	13.2	9.4	6.4	11.2	3.6	3.0	2.9	5.0	3.6	6.8	6.8
Oil Price	(U.S. nominal dollars/barrel)																	
Imported Crude Oil Price <sup>c</sup>	33.55	30.20	28.57	29.27	29.35	29.30	28.89	29.19	28.87	28.52	28.88	27.50	26.50	25.00	25.00	26.00	25.00	25.00
U.S. Refiners' Cost <sup>d</sup>	31.87	29.62	28.61	28.87	28.94	28.99	28.76	28.79	28.69	28.28	28.63	27.10	28.10	28.30	28.60	28.10	28.80	29.00
Weather <sup>e</sup>	(number of degree days)																	
Heating Degree Days	4,753	2,227	662	64	1,801	4,754	2,423	588	107	1,525	4,643	2,466	539	88	1,669	4,762	2,398	539
Cooling Degree Days	1,095	18	270	876	70	1,234	17	360	749	82	1,208	22	328	754	62	1,166	28	328

<sup>a</sup>Macroeconomic projections from three Data Resources, Inc., model forecasts are seasonally adjusted at annual rates and modified as appropriate to the three world oil price cases. Macroeconomic data for the first quarter of 1985 are estimated.

<sup>b</sup>Seasonally adjusted at annual rates.

<sup>c</sup>Cost of imported crude oil to U.S. refiners.

<sup>d</sup>U.S. Refiner Acquisition Cost of foreign and domestic crude oil.

<sup>e</sup>Population-weighted average degree days, revised December 1981. A degree day indicates the temperature variation from 65°F (calculated as the simple average of the daily minimum and maximum temperatures).

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01); Bureau of Economic Analysis, U.S. Department of Commerce, Survey of Current Business, as revised, March 1985; National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Monthly State, Regional, and National Heating/Cooling Degree Days Weighted by Population, March 1985; Federal Reserve System, Statistical Release G-12.3., March 1985. Macroeconomic projections are based on modifications to Data Resources, Inc., forecasts CONTROL0485, OPTIM0485, and WFAN050485.

The possibility of either significantly faster or slower growth in economic aggregates should be considered because of uncertainties regarding economic policy, exchange rates, inflation and interest rates, and other important variables. Recent figures for the first quarter of 1985 (which were lower than had been anticipated) suggest that the base case assumptions for economic growth in the forecast period may be too high. Two alternative cases, designated as high and low economic growth, are presented to show a range of possible energy demands. The high economic growth case is based on a higher assumed level of economic growth, combined with a lower world oil price than in the base case; the reverse is true for the low economic growth case. Real GNP growth rates between 1984 and 1985 and between first-half 1985 and first-half 1986 are as follows: high growth, 3.5 percent and 4.2 percent, respectively; low growth, 2.1 percent and 1.3 percent, respectively. The high growth case assumes a more robust growth than the base case throughout the forecast period, while the low growth case assumes a mild recession during the second half of 1985, followed by a return to growth in 1986. High and low economic growth alternatives are based on DRI forecasts OPTIMO485 and WEAK850485, respectively, modified to reflect oil prices lower and higher than those assumed in the base case.

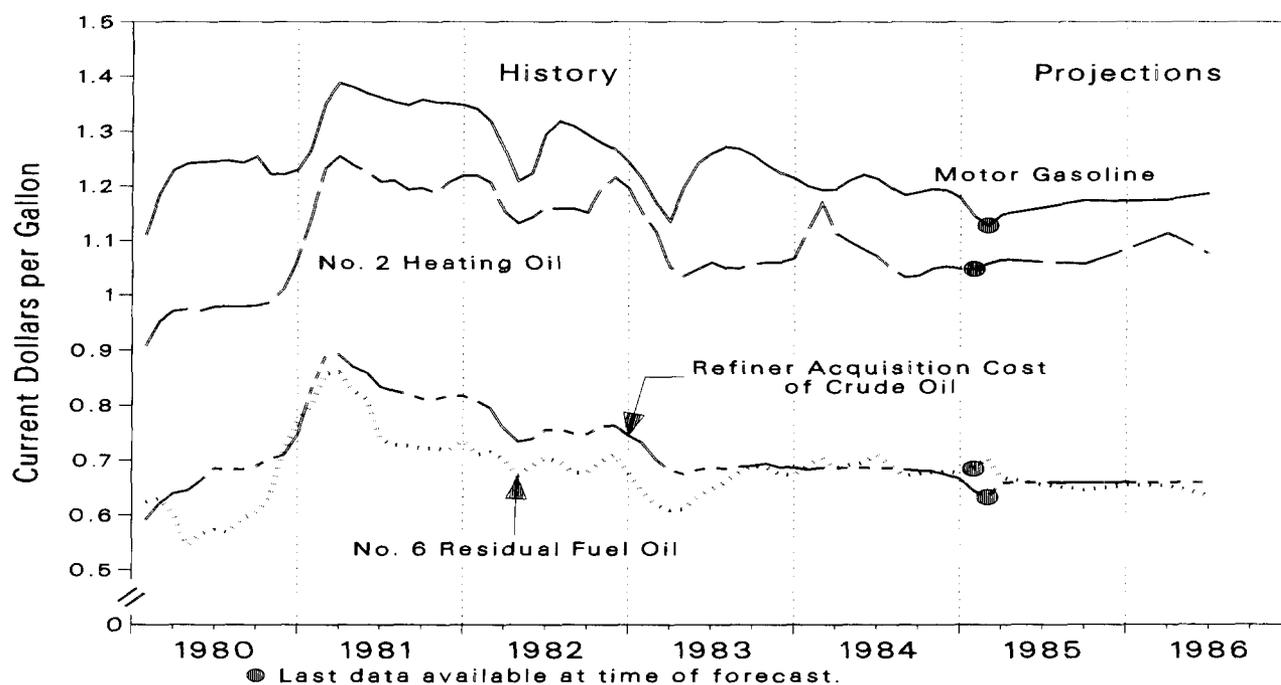
## Energy Product Prices

Prices of petroleum products are expected to decline in nominal terms between 1984 and 1985 following the decrease in world oil prices during the first quarter of 1985 (Figure 2 and Table 3). In contrast, residential natural gas and electricity prices between 1984 and 1985 are projected to increase by less than the rate of inflation (as measured by the GNP implicit price deflator shown on Table 2).

The average price of motor gasoline, which was \$1.22 and \$1.20 per gallon in 1983 and 1984, respectively, is expected to decline by an additional 2 cents per gallon over the year 1985. The decline in the annual average price, attributable mainly to the decrease in crude oil prices and the low first-quarter gasoline price, includes a 2-cent-per-gallon increase expected to occur as a result of the ruling by the Environmental Protection Agency (EPA) to reduce the lead content in gasoline. This requirement is expected to contribute an initial price increase of about 1 cent per gallon, with a total projected increase of about 2 cents per gallon when more stringent requirements go into effect in 1986. In the first half of 1986, gasoline prices are expected to increase by less than the rate of inflation as refiner margins are projected to increase.

Residential heating oil prices averaged \$1.09 per gallon in 1984 and are projected to be slightly below that level during 1985. The abnormally mild weather in the fourth quarter of 1984 and high stock levels kept heating oil prices low throughout the past winter. The price of heating oil is projected to be somewhat higher in the first half of 1986 compared to year-earlier levels and is assumed to follow normal seasonal fluctuations.

Figure 2. Retail Prices For Petroleum Products



Sources: ● History: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01) (Washington, DC, 1985). ● Projections: Table 3.

The average price of residual fuel oil increased by 4 cents per gallon in 1984, even though U.S. demand for residual fuel oil decreased. This situation appears to have been caused by events in the international fuel oil market. Based on preliminary data, the British coal strike resulted in an increase in Great Britain's demand for residual fuel oil of about 400,000 barrels per day, and the price of residual fuel oil rose on the international market. In addition, residual fuel oil is now readily interchangeable with heavier crude oils as a heavy feedstock and thus has shared in their increased demand and price. With the ending of the British coal strike, the price of residual fuel oil is expected to decline by 3 cents per gallon in 1985. Continued declines in demand for this fuel are expected in 1986, leading to further expected price decreases of 3 to 4 cents per gallon in the first half of next year compared to year-earlier levels.

The residential price of electricity is projected to increase by about 2 percent between 1984 and 1985. Reasons for this relatively low expected increase in electricity prices include low fossil fuel prices, lower finance costs, and a lag in the rate base adjustment as new plants come on line. However, the cost of the plants added to the system in 1985 is expected to have more of an effect on prices in the first half of 1986; residential electricity prices are projected to increase by more than 6 percent between first-half 1985 and first-half 1986.

The residential price of natural gas is expected to increase only by about 2 percent between 1984 and 1985. The partial deregulation of natural gas that occurred on January 1, 1985, is expected to add upward pressure on wellhead prices because of contract terms that tie natural gas prices to the price of other fuels or to the prices of previously deregulated gas. Nevertheless, the downward pressure on natural gas prices resulting from current market conditions is expected to continue to dominate the transition during 1985. Although there have been some isolated upward price adjustments, average wellhead prices are expected to remain stable. End-use prices of natural gas between first-half 1985 and first-half 1986 are projected to increase at about the rate of inflation.

Because of the uncertainty about the future price of natural gas, three alternative assumptions about future natural gas prices were developed. The base case assumes that the wellhead price remains flat in real terms throughout the forecast period. The low price case assumes that the wellhead price remains nearly flat in nominal terms. The high price case is based partly on the high oil price scenario and assumes that as the world price of crude oil increases, so will the natural gas wellhead price. In addition, the high price case assumes that natural gas contract issues regarding prices are largely resolved in favor of the producer.

## International Petroleum Markets

### Current Situation

The international oil market continues to maintain a tenuous balance between supply and demand, as reflected in the fairly stable spot prices of crude oil since the middle of February. Support for oil prices on the supply side has come from OPEC holding estimated production close to its quota of 16 million barrels per day and also from OPEC's reduction of the differential between its official contract prices of heavy and light crude oils in response to market forces. As the price of lighter oils moved more in line with their spot prices, one cause of downward pressure on prices was removed. Support for oil prices on the demand side resulted from increased consumption during the 25 percent colder-than-normal weather in Europe during the first quarter of 1985 and the increased use of residual fuel oil for electricity generation in Great Britain during the coal strike.

With the end of the coal strike in Great Britain, however, European demand for petroleum has returned to its underlying downward trend. Also, the sustained increase in crude oil production from non-OPEC countries has reduced the demand for OPEC's crude oil, imposing pressure on OPEC members to maintain the discipline necessary to avoid further declines in oil prices. Additional downward pressure on oil prices could occur if refiners do not replenish commercial oil inventories at the seasonally projected rates following the drawdown during this past winter. Despite the recent market weakness, however, the intensification of the war between Iran and Iraq serves as a reminder that there exists a possibility of a disruption in the oil supply and upward pressure on world oil prices.

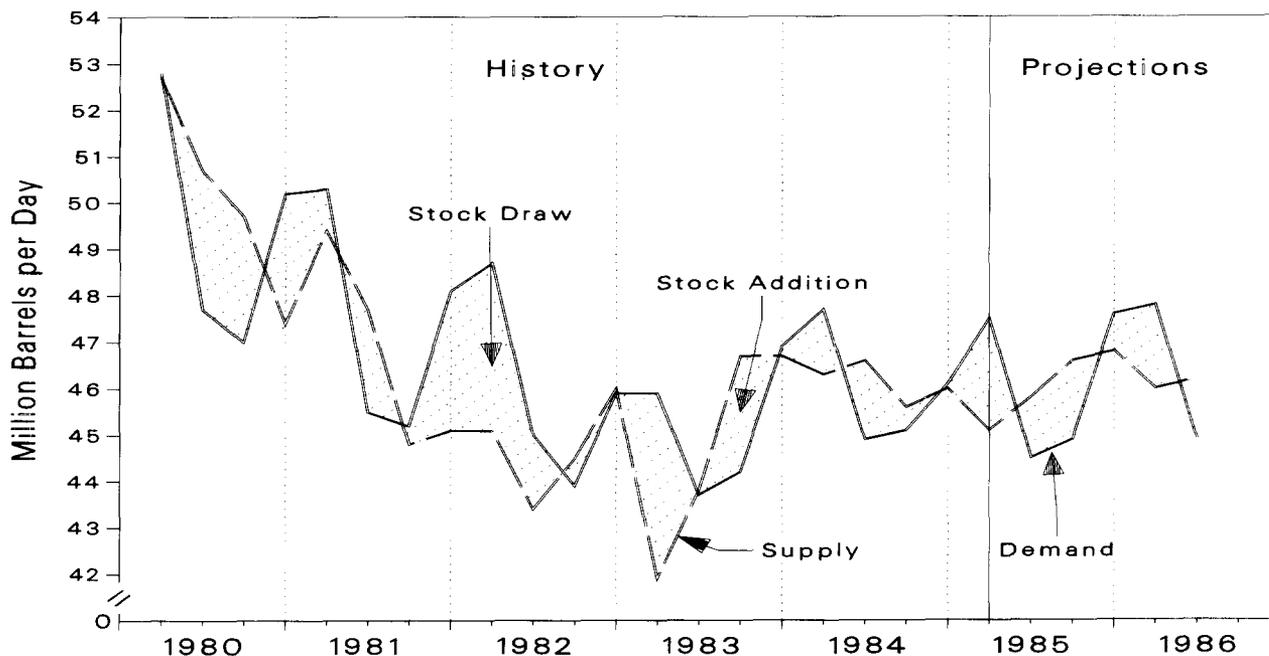
In 1984, oil consumption in the market economies is estimated to have been about 1.5 percent above the 1983 level, due to strong economic growth in the United States and Japan (Tables 4 and 5). This represents the first year-to-year increase in oil consumption in 4 years (Figure 3). Oil supply in the market economies

increased by about 1.2 million barrels per day between 1983 and 1984 as a result of a 3-percent increase in production. This supply increase is solely the result of increased production in non-OPEC countries. After producing at higher rates in the first half of 1984, OPEC's production fell in the second half of the year, leaving average daily output from OPEC in 1984 at about the same level as in 1983.

## International Petroleum Forecast

World economic growth is expected to remain strong through 1985 and the first half of 1986, but at a rate lower than was experienced during 1984 (Table 5). Total petroleum demand (product supplied) in the market economies is projected to increase by about 0.2 million barrels per day during 1985; increases expected in Europe and "other" market economy countries partially offset the slight decrease expected for U.S. petroleum demand in 1985. Petroleum demand in the developing countries is expected to pick up in 1985 and the first half of 1986, if economic conditions in these countries improve as projected.

Figure 3. Market Economies Supply and Demand



Sources: ● History: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01) and 1983 International Energy Annual, DOE/EIA-0219(83) (Washington, DC); Organization for Economic Cooperation and Development, Quarterly Oil Statistics, Third Quarter 1984; Petroleum Economics Limited, World Quarterly Primary Energy and Supply/Demand, October 1984. ● Projections: Table 4.

Although OPEC's average crude oil production is expected to exceed its latest production quota (of 16 million barrels per day) by about 0.6 to 0.8 million barrels per day in 1985, total OPEC oil production (including natural gas liquids) is forecast to decrease by about 4 percent between 1984 and 1985. Non-OPEC production (including production of natural gas liquids) is expected to increase by about 800,000 barrels per day in 1985. Net exports of oil from the Communist countries are forecast to decrease by about 200,000 barrels per day between 1984 and 1985. Consequently, no increase in the total supply of oil to the market economies is forecast between 1984 and 1985, compared with the nearly 3-percent increase observed between 1983 and 1984.

Commercial petroleum stocks in the market economies at the end of 1985 are projected to be about the same as year-earlier levels. At the end of the first quarter of 1985, total petroleum stocks (including strategic petroleum reserves) in the market economies are projected to be at a level equivalent to about 104 days of forward consumption (at the next quarter's average consumption rate), which is considerably above the 88 days of forward consumption held during the market turbulence in 1979.

## **U.S. Petroleum Outlook**

### **Overview**

U.S. petroleum demand (product supplied) is expected to decline slightly in 1985, after posting a 3-percent increase in 1984, the first year-to-year increase in 6 years. (The base case forecast is shown in Table 6; alternative cases for high and low growth are shown in Tables 7 and 8, respectively.) Growth in the economy in 1985, although lower than the rate in 1984, is projected to induce some growth in petroleum demand, but not enough to offset the declines associated with continued efficiency improvements, conservation, and fuel switching. During the first half of 1986, total petroleum demand is projected to remain close to year-earlier levels. Net petroleum imports are projected to average nearly 4.5 million barrels per day in 1985, 4 percent below the 1984 level, and to remain constant between first-half 1985 and first-half 1986.

### **Motor Gasoline**

Motor gasoline product supplied averaged 6.7 million barrels per day in 1984, or 1 percent higher than the level in 1983 (Table 9). In 1985, gasoline demand is expected to increase only slightly from year-earlier levels, as increases in demand resulting from a higher level of vehicle travel are projected to be offset by decreases in demand attributable to improvements in vehicle efficiency. However, between first-half 1985 and first-half 1986, increases in travel demand are expected to be lower than increases in efficiency, leading to a decrease in product supplied of almost 2 percent.

According to the U.S. Department of Transportation, the efficiency (in terms of average, observed on-the-road miles per gallon) of passenger cars in the United States increased at an average annual rate of 3.7 percent between 1978 and 1982,

and at a noticeably slower rate of 2.8 percent between 1982 and 1983.<sup>1</sup> Total motor vehicle travel (approximately 85 to 90 percent of which was gasoline-powered) increased by 4.2 percent from 1983 to 1984 on an average daily basis. Gasoline consumption increased by approximately 1.2 percent over the same period, suggesting an improvement in vehicle-miles per gallon between 1983 and 1984 of about 3 percent, below the average increase observed between 1978 and 1982, but slightly above the rate between 1982 and 1983.

In the forecast period, automobile efficiency is expected to grow by less than 3 percent on an average annual basis, and growth in motor vehicle travel is expected to average about 2.5 percent annually through mid-1986. Combined, these projections imply little growth in fuel consumption for motor vehicle travel in 1985 and modest declines in the first half of 1986. Continued, long-run efficiency effects in response to price increases experienced during the late 1970's have had a dampening effect on gasoline demand, although these effects could be attenuated if the decline in real gasoline prices resumes.

## Distillate Fuel Oil

As a result of the moderation in economic growth, particularly in the industrial sector, distillate fuel oil consumption is projected to increase only by about 2 percent between 1984 and 1985 (Table 10). This small increase follows a 6-percent jump experienced in 1984, the largest percentage rise in distillate demand on an annual basis since 1976. The substantial growth during 1984 was primarily the result of increased industrial production, which was up by 11 percent from year-earlier levels. While demand for both diesel fuel and heating oil increased during 1984, the percentage change for heating oil was lower, probably because of a continued reduction in the number of households using distillate oil for space heating. Concurrent with the stabilization in the economic recovery, the year-to-year rate of growth in distillate consumption moderated in each quarter of 1984, from 13-percent growth in the first quarter to a 4-percent decline by the last quarter.

With less than 3-percent growth in industrial production expected in 1985, distillate demand is projected to increase by about 2 percent between 1984 and 1985, to 2.9 million barrels per day. Falling real prices and assumed normal weather during the fourth quarter of 1985 contribute to the expected increase in distillate consumption for space heating. A slight decrease in the demand for diesel fuel is expected in 1985 because 1984 was an unusually strong year for diesel consumption and because of the dampening effect of the 6-cent-per-gallon increase in the excise tax for on-highway diesel fuel, which became effective on August 1, 1984.

Essentially no change from year-earlier levels is forecast for distillate consumption during the first half of 1986. While some growth in industrial production is assumed, its impact on distillate oil demand is expected to be offset by the effect of assumed normal weather during that period (compared to the first quarter of 1985 when heating degree days were 3 percent above normal).

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<sup>1</sup>U.S. Department of Transportation, Federal Highway Administration, Highway Statistics Division, Highway Statistics (Annual), Table VM-1 (Washington, DC, 1983).

## Summer Outlook for Motor Gasoline

Automobile travel in the third quarter of 1985 is projected to be about 2.5 percent above year-earlier levels. However, the effect of this increase on gasoline consumption is expected to be largely offset by a 1.7-percent increase in the miles per gallon (MPG) of the stock of automobiles in the third quarter over the year-earlier level. Gasoline supplies this summer should be adequate to meet anticipated demand during the peak driving season without any abnormal price increase, although gasoline stocks are expected to be much tighter than last year.

The forecast seasonal peak in gasoline consumption in the third quarter of 1985 is slightly lower than the average level during the third quarter for the period 1978 to 1984. (The peak year for gasoline consumption was 1978.) For the third quarter of 1985, gasoline consumption is projected to increase by less than 1 percent from year-earlier levels, averaging 6.9 million barrels per day, despite the assumed increase in real disposable personal income of 2.7 percent over the same period. Between the first and third quarters of 1985, motor gasoline prices are projected to increase by 6 cents per gallon, a rate of increase somewhat higher than would be expected from normal seasonal patterns because of the abnormally low prices in the first quarter. This increase contrasts with the slight decline in price that occurred between the first and third quarters of 1984, attributable to the abnormally high level of gasoline stocks last year. Stock levels, in turn, were partly the result of unexpectedly weak growth in motor gasoline demand and partly a byproduct of unexpectedly strong growth in fuel oil output. Since December, gasoline stocks have been drawn down rapidly, and gasoline prices are expected to rebound from the low first-quarter levels.

The range of uncertainty surrounding the motor gasoline forecast is illustrated by the three demand cases (Tables 7, 8, and 9). Most of the uncertainty centers on the likely lower bound on gasoline prices for the next several quarters, which is reflective of the downside uncertainty for crude oil prices (Tables 1 and 2). In the low oil price case, gasoline prices are assumed to be about 6 percent lower than in the base case for the third quarter of 1985, a result which is almost entirely explained by the assumption of \$25 per barrel oil in that case. This lower oil price explains virtually all of the 18,000 barrel-per-day difference in gasoline demand between the base case and the high economic case growth in that quarter.

Stocks of finished motor gasoline are at the lower end of the normal range for the summer driving season (Table 9). At the beginning of the third quarter of 1985, stocks of finished motor gasoline are forecast to represent 26.0 days of supply, which is below the 29.8 days of supply observed for the third quarter of 1984, but about the same as the level in the third quarter of 1983. (Days of supply is calculated as the opening total primary stock level for the quarter divided by the product supplied value for that quarter.) As a result, significantly more of the summer gasoline demand in 1985 is expected to be met through a combination of domestic production (refinery output) and imports than was the case in 1984.

## Residual Fuel Oil

Total consumption of residual fuel oil has declined steadily since 1977, reaching a level in 1984 that is less than half the amount used in 1977. This fuel has shown the largest rate of decrease of any of the petroleum products. The rate of decrease, however, has changed significantly in recent years: The average rate of decrease in residual fuel oil consumption was more than 17 percent per year between 1981 and 1983, but only 4 percent between 1983 and 1984 (Table 11). Total consumption of residual fuel oil is expected to drop by 15 percent between 1984 and 1985.

Nonutility demand for residual fuel oil is projected to decrease by about 9 percent between 1984 and 1985, mainly because of slower economic growth, continued conservation, and industrial fuel switching. During the first half of 1986, nonutility demand is projected to rise slightly in response to decreases in the price of residual fuel oil. Demand for residual fuel oil at electric utilities is also projected to decline between 1984 and 1985, by about 24 percent. Despite projections of falling prices, residual fuel oil is expected to remain a relatively high-priced fuel option for electric utilities.

## Other Petroleum Products

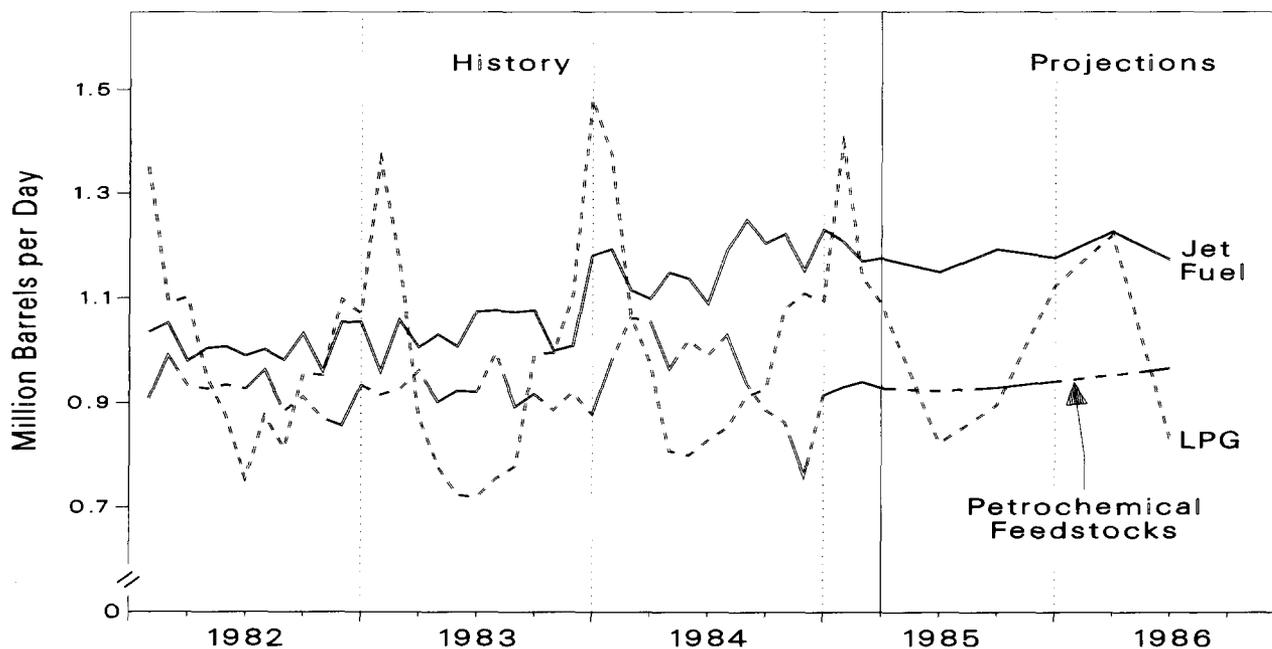
Jet fuel, petrochemical feedstocks, and liquefied petroleum gases (LPG) are the principal components of the other products category, accounting for 3.1 million barrels per day out of a total of 4.7 million barrels per day in 1984 (Table 12). The remaining products, grouped under the miscellaneous category, include kerosene, still gas, road oil and asphalt, petroleum coke, lubricants, waxes, aviation gasoline, special naphthas, and other small-volume petroleum products. Following a healthy increase of close to 7 percent from 1983 to 1984, "other" product supplied is projected to decline slightly in 1985 and then start growing again in 1986.

LPG products supplied for domestic consumption averaged 1.0 million barrels per day in 1984 (Figure 4). This average reflects lower-than-normal demand in the fourth quarter associated with the unusually warm weather experienced in many areas of the country. LPG consumption is projected to grow slightly throughout the forecast period with conservation efforts moderating the effects of overall economic growth.

Jet fuel demand in 1985 is expected to remain fairly constant at about 1.2 million barrels per day, following the 12-percent increase from 1983 to 1984. Modest growth is anticipated for the latter part of 1985 and the first half of 1986 as real disposable personal income and the demand for air travel (measured by passenger seat-miles) continue to rise.

Petrochemical feedstock product supplied grew rapidly through the first half of 1984. During the third and fourth quarters of 1984, however, demand began to slacken, along with a slowdown in the rate of growth in organic chemicals manufacturing. Feedstock product supplied is projected to fall slightly to 930,000 barrels per day during 1985; this decline reflects continued deterioration in the trade balance for petrochemicals, as well as relatively little growth in the chemical industry overall. Feedstock demands are expected to return to an upward trend in 1986, corresponding to stronger growth in chemical manufacturing. This projection reflects some downward pressure on demand for domestically produced feedstocks as output from Saudi Arabia's three world-scale plants begins to compete with U.S. products for international markets.

Figure 4. Major Components of Other Petroleum Demand



Sources: • History: Energy Information Administration, Petroleum Supply Annual (1982-1983), DOE/EIA-0340(82,83)/1, Petroleum Supply Monthly, DOE/EIA-0109(85/02), and Weekly Petroleum Status Report, DOE/EIA-0208(85-15) (Washington, DC). • Projections: Table 12.

Miscellaneous product supplied is projected to decline slightly in 1985 from the 1984 level of 1.6 million barrels per day. By early 1986, however, the demand for miscellaneous products is projected to start growing again. Only demand for kerosene is projected to decline throughout the forecast period, corresponding to the historical evidence that kerosene demand declines as income increases.

## Domestic Crude Oil Production

Domestic crude oil production (including lease condensate) increased to nearly 8.8 million barrels per day in 1984, from 8.7 million barrels per day in 1983, and is projected to grow to 8.9 million barrels per day in 1985 (Table 6). Total U.S. production of crude oil is expected to remain essentially unchanged in the first half of 1986 compared to year-earlier levels.

Production from the Alaskan North Slope is expected to increase by nearly 4 percent from 1984 to 1985, as additional production comes on line from the Kuparuk River field. North Slope production is expected to continue at the 1985 rate through the first half of 1986. Subarctic crude oil production is expected to rise by more than 1 percent between 1984 and 1985, with Louisiana production projected to show the greatest increase. Subarctic production during the first half of 1986 is expected to remain level at 7.2 million barrels per day.

## Petroleum Inventories

Total primary petroleum stocks were drawn down by 119 million barrels during the first quarter of 1985 (Table 6), following the usual trend of maintaining relatively low inventories when oil prices are weak. As a result of this first-quarter drawdown, total petroleum stocks in 1985 are projected to remain below 1984 levels, ending the year at 1,066 million barrels. Total petroleum stocks at the end of the first quarter of 1985 are estimated to be 986 million barrels, about 67 million barrels below the corresponding level in 1984. Motor gasoline stocks continue to run somewhat counter to normal seasonal patterns, with the unexpected stock build of last summer followed by a stock decrease in January and February. Because these changes brought motor gasoline stocks to within 10 million barrels of the observed minimum level, increased refinery production of motor gasoline is expected during the summer driving season. In addition, motor gasoline imports are likely to remain relatively high through the driving season.

Stocks in the SPR currently are forecast to reach 489 million barrels by October 1985. At the end of March 1985, SPR crude oil inventories had surpassed 461 million barrels. Crude oil fill rates for the SPR are projected to average 150,000 barrels per day between April and September of 1985 (based on estimates provided by the Office of the Deputy Assistant Secretary for Strategic Petroleum Reserve, U.S. Department of Energy). The SPR fill rates for fiscal year 1986 (beginning in October 1985) are assumed to be zero based on the current budgetary proposal.

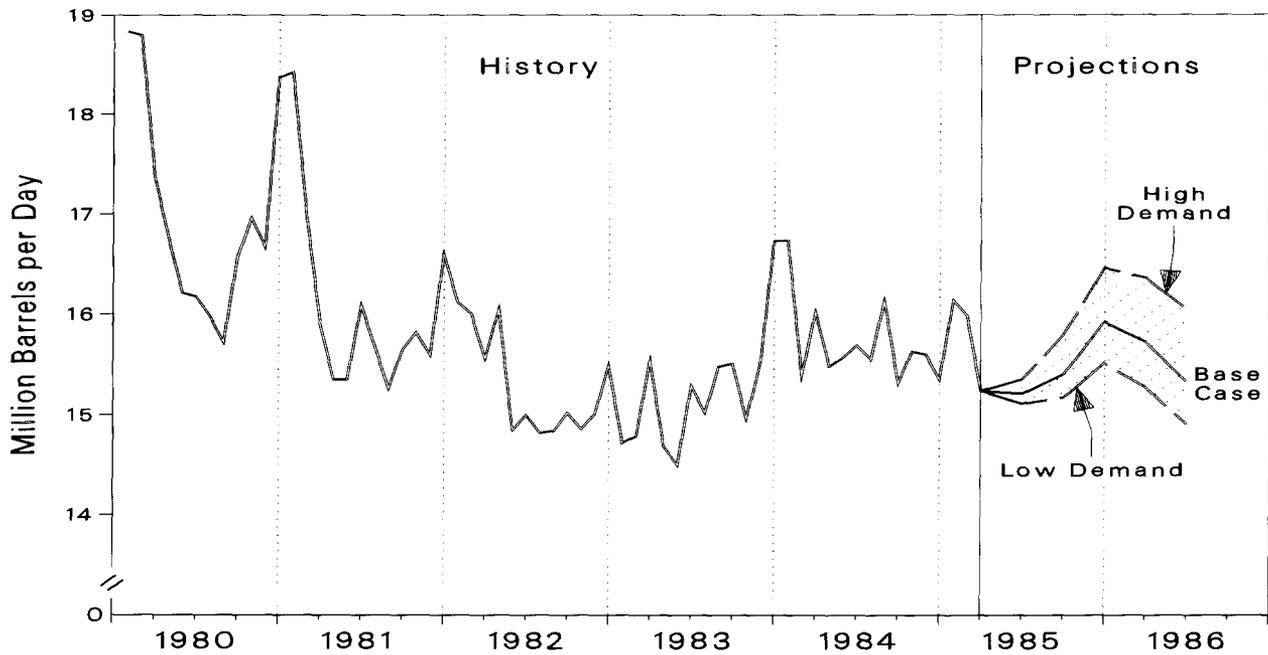
## Petroleum Demand Sensitivities

Table 13 and Figure 5 show the response of petroleum demand to changes in price, income, and weather. The sensitivity cases were developed as follows:

- The low and high price demands are based on the price paths shown in Table 3, holding the variables representing economic activity at their base case levels.
- The economic sensitivity cases are derived from the low and high economic growth assumptions given in Table 2, holding prices at their base case trajectories.
- The weather sensitivity cases are based on variations in population-weighted heating degree days and cooling degree days of 10 percent in the first and fourth quarters and 15 percent in the second and third quarters, respectively.

The range of petroleum demand projected for 1985 is about 500,000 barrels per day, with the largest sources of uncertainty being prices and income. During the first half of 1986, income contributes most to the uncertainty range, which averages about 1.1 million barrels per day overall. The weather uncertainty is most important in the first quarter, however, with the positive or negative impacts on demand due to adverse or favorable heating degree days varying by as much as 660,000 barrels per day.

Figure 5. Total Petroleum Demand



Sources: • History: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01) (Washington, DC, 1985). • Projections: Tables 6, 7, and 8.

## Impacts of the British Coal Strike

The British coal strike lasted nearly 1 year (from March 1983 to March 1984) and appears to have had a considerable impact on world energy markets. These impacts can be classified into direct effects on the coal market and indirect effects on the petroleum market, as reviewed below.

- Direct Impacts - Because of the strike, coal production in Britain dropped dramatically in 1984; when all data for 1984 are available, it is likely that coal production will be less than half the 1983 level. Likewise, British coal exports during the first 8 months of 1984 declined by more than 45 percent from year-earlier levels. During this period, the United States more than doubled metallurgical coal exports to Britain.
- Indirect Impacts - Based on preliminary data, petroleum consumption in Britain for March 1984 through January 1985 increased by 32 percent compared to year-earlier levels. Much of this increase was attributable to higher use of residual fuel oil to replace coal, primarily in electricity generation. As a consequence of this increased demand on the world market, prices for residual fuel oil during 1984 were much firmer than those for other petroleum products. The production of residual fuel oil resulted in excess supplies of lighter products, particularly motor gasoline, and spot prices of gasoline remaining below those of residual oil for much of the past winter. Heavy crude prices have held steady or increased slightly, due to the demand for residual fuel oil production, while light crude prices have fallen, presumably due to the surplus of gasoline.

With the ending of the coal strike, normal consumption patterns are assumed to return to the U.S. and European petroleum markets, and most of these effects have already been or are expected to be reversed. Residual fuel oil consumption is expected to fall, and the surplus of gasoline in international markets induced by fuel oil production should be eliminated. In time, the values of heavy crudes are expected to fall and the values of light crudes are expected to rise. This process will be gradual and will depend on the actions of other players, including OPEC members.

## Projections of Other Major Energy Sources

### Natural Gas

Total natural gas consumption and production ended 4-year declines in 1984, increasing by about 4 percent and 7 percent, respectively, from year-earlier levels (Table 14). Essentially no change in natural gas production is expected between 1984 and 1985, while natural gas consumption is projected to increase by almost 3 percent during the same period. The projection for natural gas demand reflects the effects of the assumed continuation of economic growth and only moderate increases in natural gas prices during 1985 and the first half of 1986. No substantial changes in the nominal price of natural gas are anticipated from the partial deregulation that went into effect in January of this year. The level of natural gas in underground storage is projected to decline between the end of 1984 and the end of 1985, in light of the slight downward trend expected in natural gas demand during 1986.

Natural Gas Demand. Total demand for natural gas was 17.5 trillion cubic feet in 1984, and is projected to increase to nearly 18.0 trillion cubic feet in 1985. In 1984, electric utility consumption of natural gas was almost 7 percent above year-earlier levels, as a result of the increase in total electricity generation and the moderation in natural gas price increases. In 1985, electric utility demand for natural gas is projected to be slightly lower than in 1984, as higher levels of generation from coal and nuclear power are expected to reduce the requirements for natural gas. Total natural gas consumption in the first half of 1986 is projected to decline by about 1 percent from year-earlier levels.

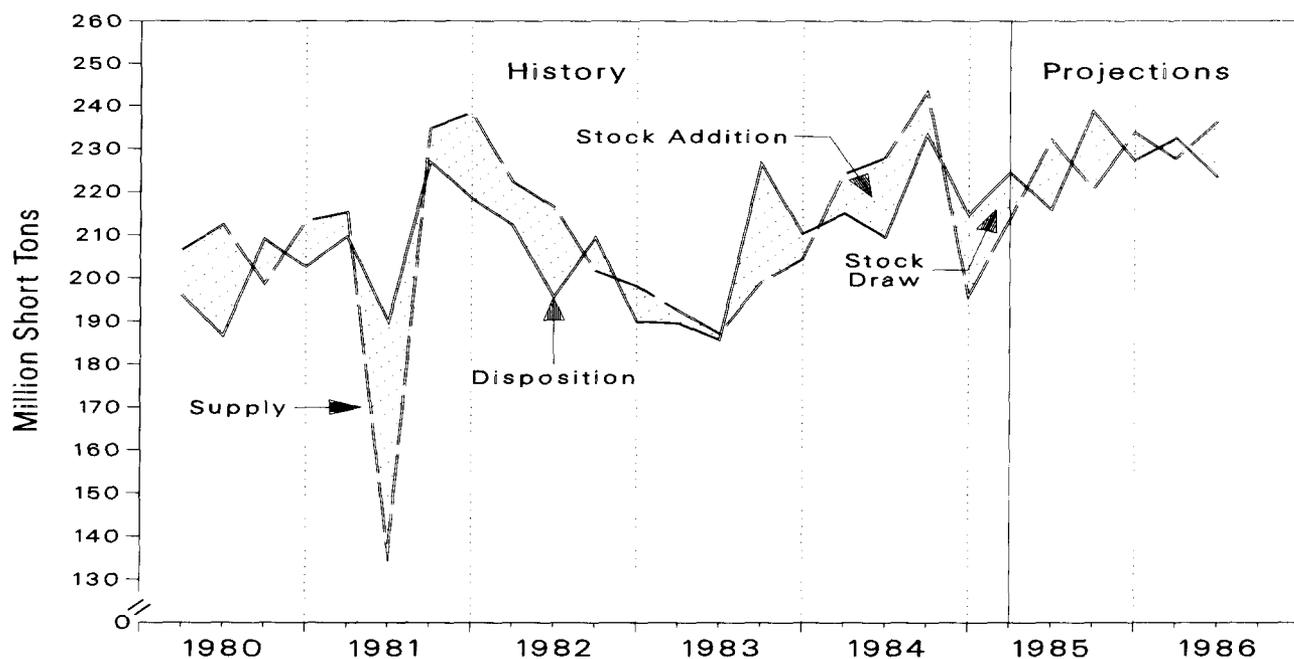
Natural Gas Supply. Total dry gas production in 1985 is projected to remain at the 1984 level of 17.2 trillion cubic feet and to show essentially no change between first-half 1985 and first-half 1986. These projections for natural gas production are based on the expectation of limited growth in end-use consumption. A lower price floor on Canadian pipeline exports of natural gas to the United States is expected to lead to an increase in U.S. imports of natural gas in 1985 and to promote the stabilization of U.S. prices. Net pipeline imports of natural gas were 820 billion cubic feet in 1984 and are projected to be 950 billion cubic feet in 1985.

### Coal

Healthy growth in domestic consumption of coal and heavy anticipatory stockpiling during the first three quarters of last year pushed domestic coal production to a record level of 890 million tons in 1984 (Table 15). Although coal production is expected to remain strong in 1985, increases such as the 14 percent (108 million tons) exhibited in 1984 are not expected to recur because coal exports are expected to drop off significantly and domestic stockpiles of coal appear adequate.

Coal Production. Although a large portion of the increase in coal production experienced in 1984 was needed to meet increases in utility and industrial coal consumption, a significant portion of the increase was for stockpiling in anticipation of a possible fourth-quarter strike (Figure 6). Some of the increased coal use in 1985 is expected to be supplied from net stock reductions. This development, along with lower coal exports, is expected to hold the increase in coal production to about 8 million tons in 1985. For the first half of 1986, coal production is projected to be 463 million tons, or 4 percent higher than the year-earlier level, with most of the increase occurring in utility coal use.

Figure 6. Coal Supply and Disposition



Sources: • History: Energy Information Administration, Quarterly Coal Report, DOE/EIA-0121(84/4Q) (Washington, DC, 1985). • Projections: Table 15.

Domestic Coal Consumption. The increase in domestic coal consumption from 1983 to 1984 was more than 7 percent overall, with a 19-percent increase for coke plants, a 6-percent increase for electric utilities, and a 12-percent increase for other consumption. Total coal consumption is expected to increase by nearly 6 percent in 1985, led mainly by increases in the electric utility market, and by about 4 percent between first-half 1985 and first-half 1986. Increases projected for coal consumption at electric utilities reflect the increase in electricity expected to be generated from coal-fired plants. Average utilization rates at coal-fired generating plants are estimated to have exceeded 52 percent in 1984.<sup>2</sup> The current projections assume an increase in coal plant utilization to more than 53 percent in 1985 and nearly 54 percent in 1986 on an annual basis.

<sup>2</sup>Electric plant utilization is defined as monthly generation (kilowatthours) divided by capacity, which is defined as the nameplate rating (kilowatts) times the number of hours in the month. The utilization figures are based on estimated monthly capacity numbers which are derived from the same data source used in the Energy Information Administration, Inventory of Power Plants in the United States, DOE/EIA-0095(83) (Washington, DC, 1984).

Coking coal consumption in 1985 is expected to maintain its 1984 level of 44 million tons. Behind this forecast is the expectation that raw steel<sup>3</sup> production in 1985 will remain near the estimated 1984 level of 91 million tons. Some improvement in steel output is expected for 1986, increasing coking coal consumption by perhaps 2 million tons in the first half of that year.

Projections for retail and general industry coal consumption have been revised downward to 87 million tons for 1985 compared to the projection of 89 million tons reported in the January 1985 Outlook. With additional 1984 data and revisions to previous data since the last Outlook, the coal intensity of industrial growth for 1984 appears to have been lower than previously anticipated. Instead of 13 percent growth in other industrial coal use from an 11-percent growth in industrial output (growth estimates from the January Outlook), an 11-percent growth in industrial output resulted in a 12-percent growth rate for other industrial coal consumption. This development has led to somewhat diminished expectations for the coal intensity of industrial growth in 1985.

Forecasts of coal consumed in the manufacture of synthetic fuels are included in the retail and general industry category beginning in the first quarter of 1985. During 1984, coal consumed in manufacturing synthetic natural gas was 1.7 million tons. Total coal consumed for synfuels is expected to be 4.6 million tons in 1985 and then rise to 5.2 million tons in 1986 on an annual basis.

Coal Exports. Although coal exports increased slightly between 1983 and 1984, this reversal of the downward slide of U.S. coal exports from the 1981 peak of 113 million tons is expected to be short-lived. From the 1984 level of 81 million tons, coal exports are expected to decline to about 72 million tons in 1985. Temporary increases in Canadian requirements for steam coal imports, along with possible excess stockpiling by importers anticipating a U.S. coal strike, had a positive net effect on coal exports for 1984. In addition, because of the extended miners' strike in Great Britain during 1984, U.S. exports of metallurgical coal to that country (and to certain European countries) increased significantly<sup>4</sup> (see coal strike box). In 1985, these sources of increased demand for U.S. export coal are expected to disappear, particularly after the settlement of the British coal strike. Slow economic growth in Europe and continued strength of the dollar should keep overall demand for U.S. export coal relatively weak. No improvement in coal exports is expected through the first half of 1986.

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<sup>3</sup>The estimate of steel production in 1984 is based on preliminary data from the American Iron and Steel Institute Form AIS-7.

<sup>4</sup>See Energy Information Administration, Weekly Coal Production, DOE/EIA-0218(85/07), Table 15 (Washington, DC, 1985).

## Electric Power

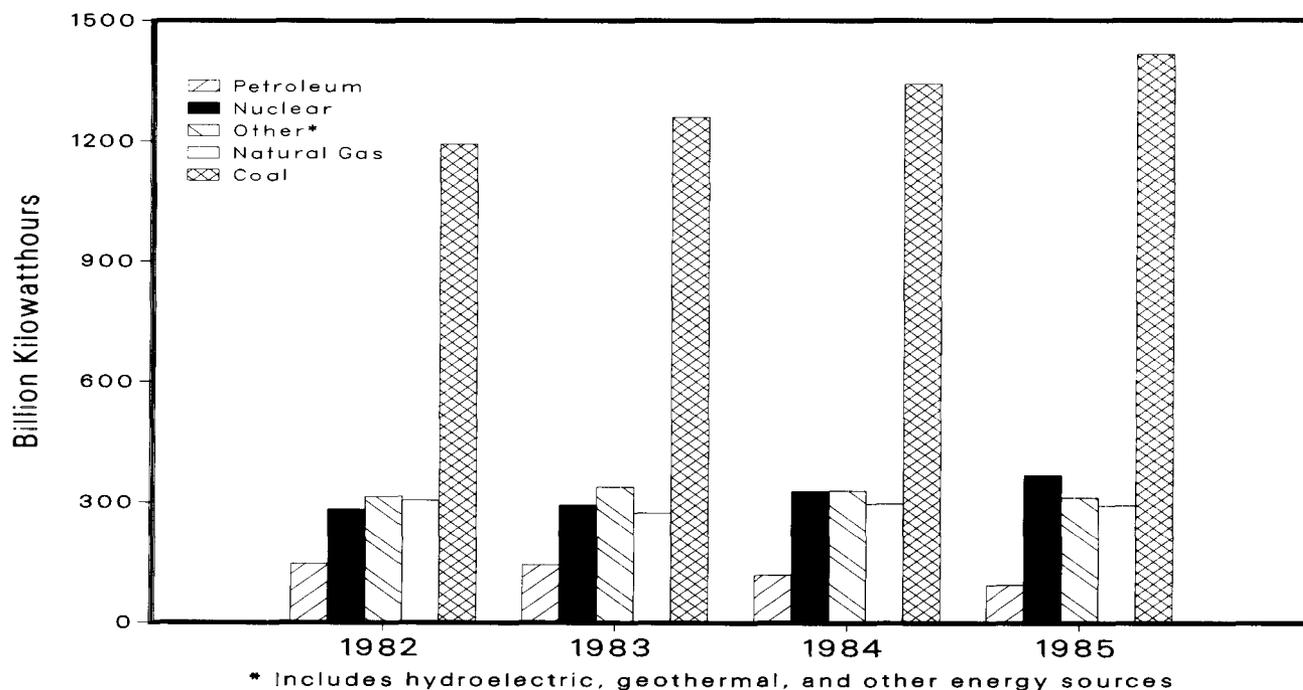
Electricity generation is expected to increase by nearly 3 percent between 1984 and 1985, following an increase of almost 5 between 1983 and 1984 (Table 16). This increase reflects a continuation in the upward trend in total generation in response to the economic expansion. With the moderation in economic activity expected in 1986, total electricity generation is projected to increase by almost 2 percent between first-half 1985 and first-half 1986.

The nominal price of residential electricity increased by about 5 percent between 1983 and 1984, a rate slightly higher than the overall rate of inflation.

Electricity prices are expected to increase by about 2 percent between 1984 and 1985 and by about 6 percent between first-half 1985 and first-half 1986 (Table 3).

Generation by Energy Source. Fuel shares of electricity generation in 1985 are projected to be: 57 percent coal, 15 percent nuclear power, 12 percent natural gas, 4 percent petroleum, 12 percent hydroelectric power, and less than 1 percent for other energy sources (Figure 7). The projected increase of 68 billion kilowatthours in total generation between 1984 and 1985 is expected to be supplied primarily by coal and nuclear power.

Figure 7. Electricity Generation by Fuel Source



Sources: ● History: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01) (Washington, DC, 1985). ● Projections: Table 16.

Nuclear generation is projected to increase by about 12 percent between 1984 and 1985, to 368 billion kilowatthours, following the 12-percent increase between 1983 and 1984. This forecast assumes full power operation of 9 new reactors (Catawba 1, Byron 1, Waterford 3, Fermi 2, Limerick 1, Watts Bar 1, Diablo Canyon 2, Palo Verde 1, and Wolf Creek) totaling more than 10 gigawatts in 1985, and 4 additional reactors (Shoreham, Comanche Peak 1, Perry 1, and River Bend) totaling 4 gigawatts during the first half of 1986.

Coal-fired generation of electricity is expected to increase by more than 5 percent from 1984 to 1985 as the demand for electricity continues to increase and as new coal generating capacity begins operation. The outlook for coal-fired generation between the first half of 1985 and the first half of 1986 shows an increase of more than 3 percent. Following the projected addition of nearly 7 gigawatts of coal-fired capacity in 1985, more than 4 additional gigawatts of capacity are expected during the first half of 1986.

Hydroelectric generation in 1985 is projected to be about 304 billion kilowatthours, a level above normal because of excellent water storage conditions but below the forecast published in the January 1985 Outlook because of abnormally dry months during the beginning of 1985. Assuming both normal precipitation and normal water storage levels in the first half of 1986, a decrease in hydropower generation is projected from year-earlier levels.

The combined amount of oil- and natural gas-fired generation is projected to fall through the forecast period, with gas generation falling slightly and oil generation dropping sharply. The lower forecast for oil-fired generation is based on the expected continuation of the rapid downward trend experienced during 1984 and the assumption that most of the increase in total generation not supplied by coal or nuclear power will be from natural gas.

Net Electricity Imports. Electricity imports have increased significantly in recent years and are becoming an important source of electricity for some regions of the country. A decade of rising oil prices in the United States has encouraged areas dependent on oil-fired generation in the Northeast to purchase electricity from Canada, which currently has a surplus of hydroelectric power. In addition, small net amounts of electricity were imported from Mexico for the first time in 1984.

Net imports of electricity are expected to have increased by about 3 billion kilowatthours in 1984, from a level of more than 35 billion kilowatthours in 1983, and accounted for more than 1 percent of total U.S. electricity supply (Table 16). This increase is attributable both to increased purchases of power (more than half of which is generated from hydroelectric power) over existing lines and to the opening of new transmission lines (the Niagara Interties from Canada and the Imperial Valley-La Rosita Line from Mexico). Transmission capability also is being improved within the United States to increase the ability of the electrical system to move purchased power. Net electricity imports in 1985 are projected to reach 41 billion kilowatthours, mainly as a result of increased purchases over existing transmission lines. A major transmission line between New England and Canada is expected to come into service in the first half of 1986, and electricity imports during that period are forecast to be nearly 8 percent higher than the first-half 1985 level.

## The Use of Petroleum for Electricity Generation

Between 1978 and 1984, the use of petroleum at electric utilities\* declined at an average annual rate of 17 percent, one of the largest decreases in demand for any petroleum product. Between 1983 and 1984, electric utility use of petroleum fell by 17 percent, even though total electricity generation increased by nearly 5 percent and all use of petroleum increased by 3 percent over this period.

This trend can be more fully explained by examining utility petroleum use at the State level. In 1984, electric utilities in six States (New York, Florida, Massachusetts, Pennsylvania, Connecticut, and New Jersey) accounted for 77 percent of total electric utility use of oil.\*\* Between 1983 and 1984, oil consumption at utilities in these States as a group dropped by 16 percent, while the use of coal increased by 7 percent, nuclear power increased by almost 25 percent, and natural gas increased by nearly 10 percent. Most of the increase in coal-fired and nuclear power generation was attributable to increases in the utilization of existing capacity. During 1984, only 2.1 gigawatts of new coal capacity and 1.1 gigawatts of new nuclear capacity (totaling only 2 percent of total generating capacity in 1984) came on line in these six States.\*\*\*

The decreasing trend in utility use of petroleum is expected to continue, with generation from oil projected to drop by 21 percent between 1984 and 1985 and by an additional 3 percent between first-half 1985 and first-half 1986. This forecast is based on the assumptions that:

- New coal and nuclear generating capacity in the six major States using petroleum will be 2.2 gigawatts in 1985.
- Utilization of existing coal-fired and nuclear capacity will show a moderate increase.
- Use of natural gas to generate electricity in these States will show a moderate increase.
- Use of petroleum to generate electricity in most other States will experience moderate declines.

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\*Electric utility use of oil consists almost entirely of residual fuel oil and a small amount of distillate fuel oil.

\*\*See Energy Information Administration, Electric Power Monthly, DOE/EIA-0226(84/12) (Washington, DC, 1985).

\*\*\*Electric utility estimates supplied to the Generating Unit Reference File (GURF), Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels (Washington, DC, 1985).

## Total Domestic Energy Balance

Total energy consumption (measured as gross energy consumption) in 1984 was above the previous year's level for the first time since 1979, reaching 73.7 quadrillion Btu (Table 17). The increase of nearly 5 percent in total energy consumption from 1983 to 1984 was accompanied by an increase in real GNP of almost 7 percent over that period. Total energy consumption is projected to increase by 2 percent, to 75.3 quadrillion Btu, between 1984 and 1985 and by about 1 percent between the first half of 1985 and the first half of 1986.

Gross national product grew faster than energy consumption between 1983 and 1984, resulting in the 14th consecutive yearly decline in the energy/GNP ratio, to 45.0 thousand Btu per 1972 dollar of real GNP in 1984 (Table 1). This decrease in the energy intensity of the economy is expected to continue through the forecast period: The ratio is expected to fall to 44.6 thousand Btu per 1972 dollar of real GNP in 1985 and to decline further during the first half of 1986.

**Table 3. Quarterly Energy Prices (Nominal), History and Projections**

Product	History						Projections							
	1983 Year	1984				Year	1985				1986			
		1st	2nd	3rd	4th		1st	Price <sup>1</sup>	2nd	3rd	4th	Year	1st	2nd
<b>Petroleum</b>														
Gasoline <sup>2</sup> (dollars per gallon) .....	1.22	1.20	1.22	1.19	1.19	1.20	1.14	Low	1.15	1.13	1.11	1.13	1.09	1.12
								Base	1.18	1.20	1.18	1.18	1.17	1.20
								High	1.19	1.21	1.20	1.19	1.20	1.24
No. 2 Heating Oil, Wholesale (dollars per gallon) .....	0.82	0.86	0.83	0.79	0.79	0.82	0.79	Low	0.77	0.73	0.75	0.76	0.77	0.73
								Base	0.80	0.80	0.83	0.80	0.84	0.80
								High	0.81	0.81	0.84	0.81	0.87	0.83
No. 2 Heating Oil, Retail (dollars per gallon) .....	1.08	1.13	1.08	1.04	1.05	1.09	1.06	Low	1.03	0.99	1.01	1.02	1.04	1.01
								Base	1.06	1.06	1.08	1.07	1.11	1.08
								High	1.06	1.07	1.10	1.07	1.14	1.10
No. 6 Residual Fuel Oil <sup>3</sup> (dollars per gallon) .....	0.65	0.69	0.70	0.68	0.68	0.69	0.69	Low	0.63	0.59	0.60	0.63	0.60	0.58
								Base	0.66	0.65	0.65	0.66	0.65	0.63
								High	0.66	0.65	0.66	0.66	0.67	0.65
Propane, Consumer Grade (dollars per gallon) .....	0.71	0.77	0.73	0.72	0.73	0.74	0.76	Low	0.69	0.66	0.65	0.69	0.66	0.64
								Base	0.73	0.73	0.71	0.73	0.70	0.69
								High	0.74	0.74	0.76	0.75	0.77	0.77
<b>Other</b>														
Coal, Delivered to Utilities (dollars per million Btu) ..	1.66	1.64	1.68	1.67	1.67	1.66	1.67	Low	1.64	1.65	1.67	1.66	1.69	1.71
								Base	1.69	1.71	1.73	1.70	1.76	1.78
								High	1.72	1.75	1.77	1.73	1.79	1.81
Natural Gas, Residential <sup>4</sup> (dollars per thousand cu. ft.)	6.06	5.99	6.11	6.21	6.15	6.06	6.12	Low	6.13	6.08	6.09	6.11	6.04	6.14
								Base	6.19	6.20	6.28	6.20	6.29	6.46
								High	6.23	6.31	6.48	6.29	6.60	6.86
Natural Gas, to Utilities (dollars per million Btu) ..	3.47	3.44	3.55	3.69	3.57	3.56	3.53	Low	3.60	3.72	3.58	3.61	3.58	3.68
								Base	3.64	3.80	3.69	3.67	3.72	3.83
								High	3.66	3.86	3.81	3.72	3.89	4.05
Electricity, Residential (cents per kilowatthour) ...	7.18	6.97	7.60	8.03	7.63	7.56	7.18	Low	7.65	8.01	7.74	7.65	7.50	8.08
								Base	7.77	8.15	7.86	7.74	7.64	8.24
								High	7.89	8.28	8.01	7.84	7.79	8.41

<sup>1</sup>The low prices are used with the high economic growth assumptions and the high prices are used with the low economic growth assumptions referred to in Table 2.

<sup>2</sup>Average for all grades and services.

<sup>3</sup>Retail residual fuel oil--average, all sulfur contents.

<sup>4</sup>Historical data was revised through September 1984.

Notes: First quarter 1985 estimated for all fuels, except gasoline and residential natural gas.

All prices exclude taxes, except gasoline, residential natural gas, and electricity prices.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01) and Petroleum Marketing Monthly, DOE/EIA-0380(85/01).

**Table 4. International Petroleum Balance  
(Million Barrels per Day, Except Closing Stocks)**

	History					Projections							
	1983 Year	1st	2nd	1984 3rd	4th	Year	1st	2nd	1985 3rd	4th	Year	1st	1986 2nd
<b>Supply<sup>1</sup></b>													
Production													
U.S. (50 States)	10.8	10.9	11.0	11.0	11.1	11.0	11.1	11.1	11.1	11.2	11.1	11.2	11.1
OPEC	18.6	19.2	19.3	18.2	17.8	18.6	17.3	17.6	18.4	18.5	17.9	17.8	17.9
Other Non-OPEC	13.5	14.3	14.3	14.4	15.1	14.5	15.2	15.1	15.2	15.3	15.2	15.4	15.3
Total Market Economies	42.9	44.5	44.6	43.6	44.0	44.1	43.6	43.8	44.7	44.9	44.3	44.4	44.3
Net Communist Exports	1.9	1.8	2.0	2.0	2.0	2.0	1.5	2.0	1.9	1.9	1.8	1.6	1.9
Total Supply	44.8	46.3	46.6	45.6	46.0	46.1	45.1	45.8	46.6	46.8	46.1	46.0	46.2
<b>Net Stock Withdrawals (+) or Additions (-)</b>													
U.S. (50 States excl. SPR)	0.3	0.3	-0.4	0.1	-0.2	-0.1	1.3	-0.6	-0.4	0.1	0.1	0.7	-0.3
U.S. SPR	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.1	0.0	-0.1	0.0	0.0
Other Market Economies	0.3	1.3	-1.1	-0.4	0.5	0.1	1.2	-0.5	-1.2	0.6	0.0	1.1	-1.0
Total Stock Withdrawals (+)	0.4	1.4	-1.7	-0.5	0.1	-0.2	2.4	-1.3	-1.7	0.7	0.0	1.9	-1.3
<b>Product Supplied</b>													
U.S. (50 States)	15.2	16.1	15.6	15.7	15.5	15.7	15.8	15.2	15.4	15.9	15.6	15.7	15.3
U.S. Territories	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Japan	4.4	5.3	4.1	4.2	4.5	4.5	5.0	4.1	4.2	4.8	4.5	5.2	4.1
OECD Europe	11.8	12.4	11.3	11.2	12.0	11.7	12.6	11.1	11.1	12.4	11.8	12.6	11.2
Other Market Economies	13.5	13.6	13.6	13.7	13.8	13.7	13.8	13.8	14.0	14.1	13.9	14.0	13.9
Total Market Economies	45.2	47.7	44.9	45.1	46.1	45.9	47.5	44.5	44.9	47.6	46.1	47.8	44.9
<b>Closing Stocks (billion barrels)</b>	4.8	4.6	4.8	4.8	4.8	4.8	4.6	4.7	4.9	4.8	4.8	4.6	4.8

<sup>1</sup>Includes production of crude oil and natural gas liquids, other hydrogen and hydrocarbons for refinery feedstock, refinery gains, alcohol, liquids produced from coal and other sources, and net exports from Communist countries.

Note: Minor discrepancies with other published EIA historical data are due to rounding.

Sources: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01) and 1983 International Energy Annual, DOE/EIA-0219(83); Organization for Economic Cooperation and Development, Quarterly Oil Statistics, Third Quarter 1984; and Petroleum Economics Limited, World Quarterly Primary Energy and Supply/Demand, October 1984.

**Table 5. International Economic Growth  
(Percent Change from Previous Period)**

	Annual Average 1970-1983	1984 <sup>1</sup>	1985	First Half 1986
OECD Total <sup>2</sup>	2.8	4.5	3.1	2.5
United States <sup>3</sup>	2.7	6.8	3.1	2.4
Western Europe	2.4	2.2	2.4	2.2
Japan <sup>3</sup>	4.6	5.7	5.2	3.3
Other OECD <sup>4</sup>	3.1	5.1	3.5	2.1

<sup>1</sup>Preliminary estimates for Organization for Economic Cooperation and Development (OECD) countries.

<sup>2</sup>Gross domestic product.

<sup>3</sup>Gross national product.

<sup>4</sup>Canada, Australia, and New Zealand.

Sources: Historical data: Organization for Economic Cooperation and Development, Main Economic Indicators, March 1985. Forecasts: Wharton Economic Forecasting Associates, World Economic Outlook, December 1984; Data Resources, Inc., Canadian Forecast, CONTROL031585, European Forecast CONTROL03145, and Japanese Forecast, JPCONTROL0385.

**Table 6. Quarterly Supply and Disposition of Petroleum: Base Case  
(Million Barrels per Day, Except Stocks)**

	1983				1984				1985				1986	
	Year		Year		Year		Year		Year		Year		1st	2nd
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd
<b>Supply</b>														
Production														
Crude Oil	6.69	6.70	6.73	6.77	6.83	6.76	6.93	6.93	6.93	6.91	6.93	6.92	6.91	6.92
Alaska, North Slope	1.65	1.67	1.71	1.68	1.63	1.67	1.73	1.73	1.73	1.73	1.73	1.73	1.72	1.73
Subarctic <sup>1</sup>	7.04	7.03	7.02	7.09	7.20	7.09	7.20	7.20	7.20	7.18	7.20	7.19	7.18	7.19
Natural Gas Liquids	1.56	1.60	1.61	1.66	1.66	1.63	1.63	1.60	1.60	1.59	1.65	1.62	1.72	1.61
Other Domestic	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.04	0.04	0.05
Processing Gain	0.49	0.54	0.56	0.55	0.57	0.56	0.48	0.54	0.54	0.55	0.55	0.54	0.51	0.54
Total Production	10.79	10.89	10.95	11.03	11.09	10.99	11.07	11.11	11.11	11.10	11.16	11.11	11.16	11.11
<b>Imports (including SPR)</b>														
Crude Oil	3.33	3.15	3.59	3.40	3.48	3.40	2.65	3.78	3.40	3.76	3.37	3.40	2.60	3.46
Refined Products	1.72	2.26	1.93	1.80	1.92	1.98	1.67	1.74	1.76	1.69	1.96	1.76	1.94	1.72
Total Imports	5.05	5.41	5.51	5.20	5.40	5.38	4.32	5.52	5.16	5.45	5.33	5.16	4.54	5.18
<b>Exports</b>														
Crude Oil	0.16	0.19	0.20	0.15	0.18	0.18	0.17	0.15	0.15	0.14	0.16	0.15	0.17	0.13
Refined Products	0.58	0.47	0.55	0.49	0.63	0.54	0.62	0.51	0.49	0.49	0.53	0.54	0.55	0.52
Total Exports	0.74	0.66	0.76	0.64	0.81	0.72	0.79	0.66	0.62	0.62	0.68	0.69	0.72	0.65
Net Imports (incl. SPR)	4.31	4.74	4.76	4.56	4.59	4.66	3.53	4.86	4.83	4.83	4.65	4.47	3.82	4.52
<b>Primary Stock Levels<sup>2</sup></b> (million barrels)														
Opening	1167.13	1074.55	1052.24	1088.44	1083.11	1074.55	1104.57	985.58	1039.01	1076.17	1104.57	1065.55	1065.55	1000.17
Closing	1074.55	1052.24	1088.44	1083.11	1104.57	1104.57	985.58	1039.01	1076.17	1065.55	1065.55	1065.55	1000.17	1029.55
Net Withdrawals (million barrels per day)....	0.25	0.25	-0.40	0.06	-0.23	-0.08	1.32	-0.59	-0.40	-0.40	0.12	0.11	0.73	-0.32
SPR Fill Rate Additions (-) (million barrels per day).....	-0.23	-0.14	-0.24	-0.19	-0.21	-0.20	-0.12	-0.17	-0.13	-0.13	0.00	-0.11	0.00	0.00
Total Primary Supply	15.12	15.73	15.07	15.45	15.24	15.37	15.80	15.21	15.40	15.40	15.92	15.58	15.72	15.32
<b>Product Supplied</b>														
Motor Gasoline	6.62	6.34	6.88	6.86	6.70	6.70	6.48	6.90	6.92	6.92	6.72	6.76	6.30	6.82
Distillate Fuel Oil	2.69	3.20	2.79	2.59	2.82	2.85	3.28	2.76	2.51	2.51	3.12	2.92	3.17	2.83
Residual Fuel Oil	1.42	1.74	1.30	1.22	1.21	1.36	1.36	1.03	1.06	1.06	1.20	1.16	1.44	1.02
Other Products <sup>3</sup>	4.50	4.77	4.61	5.01	4.80	4.80	4.66	4.52	4.92	4.92	4.88	4.74	4.82	4.65
Total Product Supplied	15.23	16.06	15.58	15.67	15.53	15.71	15.78	15.21	15.40	15.40	15.92	15.58	15.72	15.32
Unaccounted for	-0.11	-0.32	-0.51	-0.21	-0.29	-0.33	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Total Disposition	15.12	15.73	15.07	15.45	15.24	15.37	15.80	15.21	15.40	15.40	15.92	15.58	15.72	15.32

SFR = Strategic Petroleum Reserve.  
<sup>1</sup>Lower 48 States and southern Alaska.  
<sup>2</sup>Excludes crude oil for the Strategic Petroleum Reserve (SPR).  
<sup>3</sup>Includes reclassified petroleum products.  
 Note: Minor discrepancies with other EIA published historical data are due to rounding.  
 Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-0340(83)/1;  
Petroleum Supply Monthly, DOE/EIA-0109, Jan. 1984 to Feb. 1985; and March data, Weekly Petroleum Status Report,  
 DOE/EIA-0208(85-02).



**Table 8. Quarterly Supply and Disposition of Petroleum: Low Economic Growth Case  
(Million Barrels per Day, Except Stocks)**

	History				Projections								
	1983		1984		1985		1986						
	1st	2nd	3rd	4th	1st	2nd	3rd	4th					
<b>Supply</b>													
Production													
Crude Oil	8.69	8.70	8.73	8.77	8.83	8.76	8.93	8.93	8.93	8.92	8.91	8.91	8.92
Alaska, North Slope	1.65	1.67	1.71	1.68	1.63	1.67	1.73	1.73	1.73	1.73	1.73	1.72	1.73
Subarctic	7.04	7.03	7.02	7.09	7.20	7.09	7.20	7.20	7.20	7.19	7.18	7.19	7.19
Natural Gas Liquids	1.56	1.60	1.61	1.63	1.66	1.63	1.63	1.65	1.65	1.62	1.62	1.72	1.61
Other Domestic	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.05
Processing Gain	0.49	0.54	0.56	0.55	0.57	0.56	0.48	0.53	0.53	0.52	0.54	0.50	0.53
Total Production	10.79	10.89	10.95	11.03	11.09	10.99	11.07	11.11	11.15	11.11	11.11	11.16	11.10
<b>Imports (including SPR)</b>													
Crude Oil	3.33	3.15	3.59	3.40	3.48	3.40	2.65	3.61	3.13	3.25	3.59	2.33	3.18
Refined Products	1.72	2.26	1.93	1.80	1.92	1.98	1.67	1.69	1.76	1.68	1.58	1.76	1.58
Total Imports	5.05	5.41	5.51	5.20	5.40	5.38	4.32	5.30	4.90	4.92	5.17	4.09	4.76
<b>Exports</b>													
Crude Oil	0.16	0.19	0.20	0.15	0.18	0.18	0.17	0.15	0.16	0.15	0.14	0.17	0.13
Refined Products	0.58	0.67	0.55	0.49	0.63	0.54	0.62	0.51	0.53	0.54	0.49	0.55	0.52
Total Exports	0.74	0.66	0.76	0.64	0.81	0.72	0.79	0.66	0.68	0.69	0.62	0.72	0.65
Net Imports (incl. SPR)	4.31	4.74	4.76	4.56	4.59	4.66	3.53	4.64	4.22	4.24	4.54	3.37	4.11
<b>Primary Stock Levels<sup>2</sup></b> (million barrels)													
Opening	1167.13	1074.55	1052.24	1088.44	1093.11	1074.55	1104.57	985.56	1027.57	1104.57	1027.57	1046.07	979.56
Closing	1074.55	1052.24	1088.44	1093.11	1104.57	1104.57	985.56	1027.57	1059.06	1046.07	1059.06	979.56	1007.79
Net Withdrawals (million barrels per day)...	0.25	0.25	-0.40	0.06	-0.23	-0.08	1.32	-0.46	-0.34	0.14	-0.34	0.74	-0.31
SPR Fill Rate Additions(-) (million barrels per day).....	-0.23	-0.14	-0.24	-0.19	-0.21	-0.20	-0.12	-0.17	-0.13	0.00	-0.11	0.00	0.00
Total Primary Supply	15.12	15.73	15.07	15.45	15.24	15.37	15.80	15.11	15.17	15.40	15.17	15.27	14.90
<b>Product Supplied</b>													
Motor Gasoline	6.62	6.34	6.88	6.86	6.70	6.70	6.48	6.88	6.86	6.71	6.86	6.19	6.69
Distillate Fuel Oil	2.69	3.20	2.79	2.59	2.82	2.85	3.28	2.74	2.45	3.02	2.87	3.06	2.74
Residual Fuel Oil	1.42	1.74	1.30	1.22	1.21	1.36	1.36	1.00	1.00	1.11	1.00	1.32	0.93
Other Products <sup>3</sup>	4.50	4.77	4.61	5.01	4.80	4.80	4.66	4.50	4.86	4.77	4.86	4.70	4.54
Total Product Supplied	15.23	16.06	15.58	15.67	15.53	15.71	15.78	15.11	15.17	15.51	15.17	15.27	14.90
Unaccounted for	-0.11	-0.32	-0.51	-0.21	-0.29	-0.33	0.02	0.00	0.00	0.00	0.01	0.00	0.00
Total Disposition	15.12	15.73	15.07	15.45	15.24	15.37	15.80	15.11	15.17	15.40	15.17	15.27	14.90

SPR = Strategic Petroleum Reserve.  
<sup>1</sup>Lower 48 States and southern Alaska.  
<sup>2</sup>Excludes crude oil for the Strategic Petroleum Reserve (SPR).  
<sup>3</sup>Includes reclassified petroleum products.  
 Note: Minor discrepancies with other EIA published historical data are due to rounding.  
 Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983; DOE/EIA-0360(83)/1; Petroleum Supply Monthly, DOE/EIA-0109, Jan. 1984 to Feb. 1985; and March data, Weekly Petroleum Status Report, DOE/EIA-0208(85-02).

**Table 9. Quarterly Supply and Disposition of Motor Gasoline: Base Case  
(Million Barrels per Day, Except Stocks)**

	1983				History				Projections					
	Year				1984				1985					
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	Year	Year	1st	2nd		
<b>Supply</b>														
Domestic Production <sup>1</sup> .....	6.34	6.24	6.60	6.49	6.54	6.47	6.47	5.92	6.51	6.67	6.45	6.39	6.04	6.42
Imports .....	0.25	0.29	0.30	0.27	0.30	0.29	0.29	0.31	0.36	0.32	0.34	0.34	0.30	0.34
Exports .....	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Net Imports .....	0.24	0.29	0.30	0.27	0.29	0.29	0.29	0.31	0.36	0.32	0.34	0.33	0.29	0.34
<b>Primary Finished Stock Levels<sup>2</sup></b> (million barrels)														
Opening .....	202.03	185.50	202.80	204.17	194.46	185.50	185.50	205.39	183.03	179.99	186.51	205.39	192.05	194.84
Closing .....	185.50	202.80	204.17	194.46	205.39	205.39	205.39	183.03	179.99	186.51	192.05	192.05	194.84	189.62
Net Withdrawals (million barrels per day)....	0.05	-0.19	-0.02	0.11	-0.12	-0.05	-0.05	0.25	0.03	-0.07	-0.06	0.04	-0.03	0.06
Total Primary Supply .....	6.62	6.34	6.88	6.86	6.70	6.70	6.70	6.47	6.90	6.92	6.72	6.75	6.30	6.82
<b>Disposition</b>														
Leaded .....	2.97	2.69	2.86	2.75	2.54	2.71	2.71	2.38	2.45	2.37	2.19	2.35	1.95	2.00
Unleaded .....	3.65	3.65	4.02	4.11	4.17	3.99	3.99	4.09	4.45	4.55	4.53	4.41	4.35	4.82
Total Product Supplied .....	6.62	6.34	6.88	6.86	6.70	6.70	6.70	6.48	6.90	6.92	6.72	6.76	6.30	6.82
Unaccounted for .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Disposition .....	6.62	6.34	6.88	6.86	6.70	6.70	6.70	6.47	6.90	6.92	6.72	6.75	6.30	6.82

<sup>1</sup>Refinery production plus production at natural gas processing plants.

<sup>2</sup>Includes stocks at natural gas processing plants. Excludes stocks of reclassified motor gasoline blending components.

Note: Minor discrepancies with other EIA published historical data are due to rounding.

Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-0340(83)/1; Petroleum Supply Monthly, DOE/EIA-0107, Jan. 1984 to Feb. 1985; and March data, Weekly Petroleum Status Report, DOE/EIA-0208(85-02).

**Table 10. Quarterly Supply and Disposition of Distillate Fuel Oil: Base Case  
(Million Barrels per Day, Except Stocks)**

	1983				History				Projections				
	Year				1984				1985				
	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	
<b>Supply</b>													
Refinery Output .....	2.46	2.64	2.62	2.71	2.77	2.69	2.45	2.72	2.67	2.81	2.66	2.54	2.66
Imports .....	0.17	0.28	0.25	0.25	0.31	0.27	0.19	0.25	0.26	0.29	0.25	0.23	0.23
Exports .....	0.06	0.05	0.04	0.05	0.06	0.05	0.05	0.03	0.03	0.03	0.03	0.05	0.03
Net Imports .....	0.11	0.23	0.20	0.20	0.24	0.22	0.14	0.22	0.24	0.25	0.21	0.18	0.21
<b>Primary Stock Levels (million barrels)</b>													
Opening .....	185.53	140.26	109.64	112.87	143.21	140.26	161.14	98.37	114.83	151.61	161.14	146.01	106.16
Closing .....	140.26	109.64	112.87	143.21	161.14	161.14	98.37	114.83	151.61	146.01	146.01	106.16	109.78
Net Withdrawals (million barrels per day)....	0.12	0.34	-0.04	-0.33	-0.19	-0.06	0.70	-0.18	-0.40	0.06	0.04	0.44	-0.04
Total Primary Supply .....	2.69	3.20	2.79	2.59	2.82	2.85	3.28	2.76	2.51	3.12	2.92	3.17	2.83
<b>Product Supplied</b>													
Nonutility Shipments .....	2.66	3.15	2.74	2.55	2.78	2.81	3.24	2.73	2.49	3.09	2.89	3.14	2.80
Electric Utility Shipments .....	0.03	0.05	0.05	0.03	0.04	0.04	0.04	0.03	0.02	0.03	0.03	0.03	0.03
Total Product Supplied .....	2.69	3.20	2.79	2.59	2.82	2.85	3.28	2.76	2.51	3.12	2.92	3.17	2.83
Electric Utility Consumption Electric Utility Stock Levels (million barrels)	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.02	0.03	0.03	0.03	0.04	0.02
Opening .....	23.37	18.80	19.06	19.81	18.92	18.80	19.12	18.06	18.81	17.92	19.12	18.12	17.06
Closing .....	18.80	19.06	19.81	18.92	19.12	19.12	18.06	18.81	17.92	18.12	18.12	17.06	17.81
Net Additions (million barrels per day)....	-0.01	0.00	0.01	-0.01	0.00	0.00	-0.01	0.01	-0.01	0.00	-0.00	-0.01	0.01
Electric Utility Discrepancy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unaccounted for .....	-0.00	-0.00	-0.00	0.00	0.00	-0.00	0.00	0.00	0.00	-0.00	0.00	-0.00	0.00
Total Disposition .....	2.69	3.20	2.79	2.59	2.82	2.85	3.28	2.76	2.51	3.12	2.92	3.17	2.83

Note: Minor discrepancies with other EIA published historical data are due to rounding.  
Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1993, DOE/EIA-0340(83)/1;  
the Petroleum Supply Monthly, DOE/EIA-0109, Jan. 1984 to Feb. 1985; the Monthly Energy Review, DOE/EIA-0035(85/01);  
the Electric Power Monthly, DOE/EIA-0226(85/02); and March data, Weekly Petroleum Status Report, DOE/EIA-0208(85-02).

**Table 11. Quarterly Supply and Disposition of Residual Fuel Oil: Base Case  
(Million Barrels per Day, Except Stocks)**

	History				Projections						
	1983		1984		1985		1986				
	Year	1st	2nd	3rd	4th	Year	1st	2nd			
<b>Supply</b>											
Refinery Output .....	0.85	0.95	0.84	0.82	0.97	0.89	0.98	0.82	0.87	0.95	0.82
Imports .....	0.70	0.93	0.62	0.59	0.56	0.67	0.57	0.40	0.53	0.47	0.42
Exports .....	0.18	0.15	0.17	0.19	0.25	0.19	0.27	0.18	0.20	0.20	0.19
Net Imports .....	0.51	0.78	0.45	0.40	0.31	0.46	0.29	0.22	0.33	0.27	0.46
<b>Primary Stock Levels (million barrels)</b>											
Opening .....	68.53	48.50	47.64	46.81	46.97	48.50	53.21	46.23	46.79	53.21	47.87
Closing .....	48.50	47.64	46.81	46.97	53.21	53.21	45.57	46.79	47.87	47.87	45.22
Net Withdrawals (million barrels per day)...	0.05	0.01	0.01	0.00	-0.07	-0.01	0.08	-0.01	-0.01	0.01	0.03
Total Primary Supply .....	1.42	1.74	1.30	1.22	1.21	1.36	1.36	1.03	1.20	1.16	1.44
<b>Product Supplied</b>											
Nonutility Shipments .....	0.86	1.11	0.85	0.69	0.76	0.85	0.91	0.72	0.80	0.77	0.93
Electric Utility Shipments .....	0.56	0.63	0.45	0.52	0.44	0.51	0.45	0.32	0.40	0.39	0.51
Total Product Supplied .....	1.42	1.74	1.30	1.22	1.21	1.36	1.36	1.03	1.20	1.16	1.44
Electric Utility Consumption Electric Utility Stock Levels (million barrels)	0.63	0.64	0.47	0.53	0.43	0.52	0.49	0.34	0.42	0.42	0.51
Opening .....	95.51	70.57	69.98	68.10	67.37	70.57	68.50	64.44	60.71	68.50	59.13
Closing .....	70.57	69.98	68.10	67.37	68.50	68.50	64.44	62.14	59.13	59.13	58.55
Net Additions (million barrels per day)...	-0.07	-0.01	-0.02	-0.01	0.01	-0.01	-0.05	-0.03	-0.02	-0.03	-0.01
Electric Utility Discrepancy .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unaccounted for .....	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Disposition .....	1.42	1.74	1.30	1.22	1.21	1.36	1.36	1.03	1.20	1.16	1.44

Note: Minor discrepancies with other EIA published historical data are due to rounding.

Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-0340(83)/1; the Petroleum Supply Monthly, DOE/EIA-0109, Jan. 1984 to Feb. 1985; the Monthly Energy Review, DOE/EIA-0035(85/01); the Electric Power Monthly, DOE/EIA-0226(85/02); and March data, Weekly Petroleum Status Report, DOE/EIA-0208(85-02).

**Table 12. Quarterly Supply and Disposition of Other Petroleum Products: Base Case  
(Million Barrels per Day, Except Stocks)**

	History				Projections								
	1984				1985				1986				
	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	
<b>Supply</b>													
Net Refinery Output <sup>b</sup> .....	2.53	2.58	2.65	2.81	2.24	2.57	2.46	2.63	2.79	2.43	2.59	2.51	2.85
Natural Gas Plant Output .....	1.56	1.60	1.61	1.66	1.66	1.63	1.64	1.60	1.59	1.65	1.62	1.72	1.61
Other Domestic <sup>c</sup> .....	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.05
Net Imports .....	0.29	0.49	0.42	0.44	0.45	0.45	0.32	0.43	0.40	0.51	0.41	0.46	0.41
<b>Primary Stocks</b> (million barrels)													
Opening .....	359.88	356.43	356.42	371.90	373.14	356.43	341.31	328.95	353.81	351.76	341.31	334.02	332.35
Closing .....	356.43	356.42	371.90	373.14	341.31	341.31	328.95	353.81	351.76	334.02	334.02	332.35	362.18
Net Withdrawals .....	0.01	0.00	-0.17	-0.01	0.35	0.04	0.14	-0.27	0.02	0.19	0.02	0.02	-0.33
(million barrels per day)													
Total Primary Supply ...	4.43	4.71	4.55	4.94	4.74	4.73	4.60	4.44	4.85	4.82	4.68	4.75	4.59
<b>Product Supplied</b>													
Jet Fuel .....	1.05	1.14	1.13	1.21	1.20	1.17	1.18	1.15	1.19	1.18	1.18	1.22	1.17
Liquefied Petroleum Gases <sup>d</sup> .....	0.98	1.14	0.81	0.90	1.09	0.99	1.22	0.82	0.89	1.12	1.01	1.22	0.83
Petrochemical Feedstocks <sup>e</sup> .....	0.92	1.03	0.99	0.95	0.85	0.96	0.92	0.92	0.93	0.94	0.93	0.95	0.97
Miscellaneous <sup>f</sup> .....	1.48	1.40	1.62	1.88	1.59	1.62	1.29	1.55	1.84	1.58	1.56	1.36	1.62
Total Product Supplied .....	4.43	4.71	4.55	4.94	4.74	4.73	4.60	4.44	4.85	4.82	4.68	4.75	4.59
Unaccounted for .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Disposition .....	4.43	4.71	4.55	4.94	4.74	4.73	4.60	4.44	4.85	4.82	4.68	4.75	4.59

<sup>a</sup> Excludes crude oil product supplied and other components of the crude oil supply/demand balance, all of which are accounted for under the total petroleum supply and disposition table.

<sup>b</sup> Includes refinery production of all other products less natural gas liquids, LRG's, and "other liquids" input to refineries.

<sup>c</sup> Field production of other hydrocarbons and alcohol.

<sup>d</sup> Includes propane, normal butane, and isobutane.

<sup>e</sup> Includes ethane plus naphtha and other oils designated for petrochemical feedstock use.

<sup>f</sup> Includes all petroleum products supplied except motor gasoline, distillate, residual fuel, liquefied petroleum gases, petrochemical feedstocks, and jet fuel.

Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-0340(83)/1, Petroleum Supply Monthly, DOE/EIA-0109(85/02), and Weekly Petroleum Status Report, DOE/EIA-0208(85-15). Data for March 1985 are preliminary.

**Table 13. Petroleum Demand Sensitivity Differentials  
(Million Barrels per Day)**

Sensitivities	1985				1986	
	2nd	3rd	4th	Year	1st	2nd
Demand in 50 States						
Low Price .....	15.34	15.73	16.24	15.76	16.08	15.68
Base Case .....	15.21	15.40	15.92	15.58	15.72	15.32
High Price .....	15.18	15.37	15.84	15.53	15.67	15.22
Weather Sensitivity						
Adverse Weather .....	0.03	0.02	0.21	0.07	0.33	0.03
Favorable Weather .....	-0.02	-0.02	-0.21	-0.06	-0.33	-0.03
Economic Sensitivity						
High Economic Activity .....	0.02	0.07	0.14	0.06	0.23	0.33
Low Economic Activity .....	-0.07	-0.20	-0.42	-0.17	-0.31	-0.21
Combined Sensitivity Differentials <sup>a</sup> (excl. price)						
Upper Range .....	0.04	0.07	0.25	0.09	0.40	0.33
Lower Range .....	0.07	0.20	0.47	0.18	0.45	0.21
Range of Projected Demand						
High Demand <sup>b</sup> .....	15.38	15.80	16.49	15.85	16.48	16.01
Low Demand <sup>c</sup> .....	15.11	15.17	15.37	15.35	15.22	15.01

<sup>a</sup>The upper range of the differentials is calculated by taking the square root of the sum of the squared adverse weather and high economic activity sensitivities. The lower range of differentials is calculated by taking the square root of the sum of the squared favorable weather and low economic activity sensitivities.

<sup>b</sup>Low Price demand plus the combined effects of adverse weather and high economic activity.

<sup>c</sup>High Price demand less the combined effects of favorable weather and low economic activity.

**Table 14. Quarterly Supply and Disposition of Natural Gas  
(Trillion Cubic Feet)**

	History						Projections						
	1983	1984				Year	1985				1986		
	Year	1st	2nd	3rd	4th	1st	2nd	3rd	4th	Year	1st	2nd	
<b>Supply</b>													
Total Dry Gas Production <sup>1</sup> .....	16.03	4.49	4.22	4.17	4.33	17.21	4.45	4.20	4.22	4.37	17.24	4.46	4.21
Net Imports of Dry Gas .....	0.79	0.22	0.19	0.17	0.23	0.82	0.27	0.22	0.20	0.26	0.95	0.29	0.23
Net Imports of LNG .....	0.08	0.00	0.00	-0.01	0.00	-0.02	0.00	0.00	0.00	0.00	-0.01	0.00	0.00
Supplemental Gaseous Fuels .....	0.13	0.04	0.03	0.03	0.04	0.14	0.05	0.03	0.03	0.04	0.16	0.05	0.03
Total New Supply .....	17.03	4.76	4.44	4.36	4.60	18.15	4.76	4.45	4.45	4.67	18.34	4.80	4.47
<b>Underground Working Gas Storage</b>													
Opening .....	3.07	2.60	1.57	2.14	3.00	2.60	2.88	1.75	2.27	3.15	2.88	2.81	1.79
Closing .....	2.60	1.57	2.14	3.00	2.88	2.88	1.75	2.27	3.15	2.81	2.81	1.79	2.37
Net Withdrawals <sup>2</sup> .....	0.44	1.06	-0.57	-0.85	0.16	-0.21	1.13	-0.52	-0.88	0.34	0.07	1.02	-0.58
Total Primary Supply <sup>1</sup> .....	17.47	5.82	3.87	3.50	4.76	17.94	5.90	3.93	3.57	5.01	18.40	5.82	3.89
<b>Consumption</b>													
Electric Utilities .....	2.91	0.61	0.78	0.99	0.73	3.11	0.64	0.77	0.96	0.69	3.06	0.60	0.73
Refinery Fuel .....	0.57	0.16	0.16	0.16	0.16	0.64	0.15	0.15	0.16	0.15	0.61	0.14	0.15
All Other Uses <sup>3</sup> .....	13.35	4.93	2.81	2.24	3.75	13.73	5.02	2.88	2.32	4.06	14.28	4.98	2.90
Subtotal .....	16.83	5.69	3.76	3.39	4.64	17.48	5.81	3.80	3.44	4.90	17.95	5.72	3.78
Unaccounted for .....	0.64	0.12	0.12	0.11	0.11	0.46	0.09	0.13	0.13	0.11	0.45	0.10	0.11
Total Disposition .....	17.47	5.82	3.87	3.50	4.76	17.94	5.90	3.93	3.57	5.01	18.40	5.82	3.89

LNG=Liquefied Natural Gas.

<sup>1</sup>Excludes nonhydrocarbon gases removed.

<sup>2</sup>Net withdrawals may vary from the difference between opening and closing stocks of gas in working gas storage due to book transfers between base and working gas categories, and other storage operator revisions of working gas inventories.

<sup>3</sup>Includes residential, commercial, and industrial uses other than for refinery fuel, plus use of supplemental gas.

Note: Minor discrepancies with other EIA published historical data are due to rounding.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01); Natural Gas Monthly, DOE/EIA-0130(85/02); and Electric Power Monthly, DOE/EIA-0226(85/02).

**Table 15. Quarterly Supply and Disposition of Coal  
(Million Short Tons)**

	History				Projections								
	1983		1984		1985		1986						
	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	
Supply													
Production .....	782	224 <sup>2</sup>	228 <sup>2</sup>	243 <sup>2</sup>	196 <sup>2</sup>	890 <sup>2</sup>	213 <sup>2</sup>	232	220	233	898	227	236
Primary Stock Levels <sup>1</sup>													
Opening .....	37	34	34	31	30	34	34	34	34	34	34	34	34
Closing .....	34	34	31	30	34	34	34 <sup>2</sup>	34	34	34	34	34	34
Net Withdrawals .....	3	0	3	1	-4	0	0 <sup>2</sup>	0	0	0	0	0	0
Imports .....	1	0	0	0	0	1	0 <sup>2</sup>	1	1	1	2	1	1
Exports .....	78	15	24	25	17	81	16 <sup>2</sup>	18	20	18	72	15	18
Total New Domestic Supply .....	708	209 <sup>2</sup>	208 <sup>2</sup>	219 <sup>2</sup>	174 <sup>2</sup>	810 <sup>2</sup>	198 <sup>2</sup>	214	201	215	829	213	219
Secondary Stock Levels <sup>3</sup>													
Opening .....	195	169	174	194	208	169	198	187	203	185	198	192	187
Closing .....	169	174	194	208	198	198	187 <sup>2</sup>	203	185	192	192	187	200
Net Withdrawals .....	27	-6	-20	-14	10	-29	11 <sup>2</sup>	-16	18	-7	6	5	-13
Total Indicated Consumption .....	735	203 <sup>2</sup>	188 <sup>2</sup>	205 <sup>2</sup>	184 <sup>2</sup>	781 <sup>2</sup>	209 <sup>2</sup>	198	219	209	835	217	206
Domestic Consumption													
Coke Plants .....	37	11	12	11	10	44	11 <sup>2</sup>	11	10	11	44	12	12
Electric Utilities .....	625	167	154	178	166	664	175 <sup>2</sup>	167	188	174	704	182	173
Retail and General Industry <sup>4</sup> .....	74	22	20	19	22	83	23 <sup>2</sup>	20	20	24	87	24	21
Total Domestic Consumption ..	737	200	186	208	197	791	209 <sup>2</sup>	193	219	209	835	217	206
Discrepancy <sup>5</sup> .....	-2	3 <sup>2</sup>	2 <sup>2</sup>	-3 <sup>2</sup>	-13 <sup>2</sup>	-11 <sup>2</sup>	0 <sup>2</sup>	0	0	0	0	0	0

<sup>1</sup>Primary stocks are those held at the mines, preparation plants, and distribution points.

<sup>2</sup>Estimated.

<sup>3</sup>Secondary stocks are those held by users. Most of the secondary stocks are held by electric utilities.

<sup>4</sup>Included in retail and general industry coal consumption is consumption at coal gasification plants of 1.7 million tons for 1984, and an estimated 1.0 million tons for the first quarter of 1985. For the forecast, synfuels account for 1.1, 1.2, and 1.3 million tons for quarters 2 through 4, respectively, for 1985, and 1.3 million tons per quarter for 1986.

<sup>5</sup>Historical period discrepancy reflects unaccounted for shipper and receiver reporting discrepancies.

Note: Rows and columns may not add due to independent rounding. Zeros indicate amounts of less than 500,000 tons.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01); and Quarterly Coal Report, DOE/EIA-0121(84/4Q).

**Table 16. Quarterly Supply and Disposition of Electricity  
(Billion Kilowatthours)**

	History				Projections								
	1984				1985				1986				
	1st	2nd	3rd	4th	Year	1st <sup>3</sup>	2nd	3rd	4th	Year	1st	2nd	
Generation													
Coal	1259.4	313.1	357.7	334.2	1341.7	354.1	335.7	376.9	348.9	1415.6	364.7	347.9	347.9
Petroleum	144.5	27.0	30.9	25.0	119.8	28.1	19.3	23.4	24.0	94.8	28.7	17.4	17.4
Natural Gas	274.1	74.8	94.5	70.4	297.4	61.5	73.8	91.4	66.1	292.8	57.7	69.4	69.4
Nuclear Power	293.7	85.1	86.9	80.2	327.6	95.3	82.1	97.2	93.6	368.2	100.7	95.3	95.3
Hydropower	332.1	88.1	73.5	69.0	321.1	81.0	88.1	68.1	66.6	303.8	78.0	81.5	81.5
Geothermal Power and Other <sup>1</sup>	6.5	1.9	2.0	2.5	8.6	2.5	2.0	2.3	2.3	9.1	2.3	2.2	2.2
Total Generation	2310.3	583.0	645.7	581.3	2416.3	622.5	601.0	659.3	601.5	2484.3	632.2	613.8	613.8
Net Imports	35.3	8.8	8.1	10.4	38.0	9.5	8.8	11.4	11.2	41.0	10.2	9.5	9.5
Total Supply	2345.6	591.8	656.4	591.8	2454.3	632.0	609.8	670.7	612.8	2525.3	642.4	623.3	623.3
T & D Loss <sup>2</sup>	194.7	34.2	45.9	45.1	177.2	45.4	43.4	49.4	45.9	184.1	46.7	44.9	44.9
Total Consumption (sales) ...	2151.0	591.0	610.5	546.6	2277.1	586.6	566.4	621.3	566.9	2341.2	595.7	578.4	578.4

<sup>1</sup>Includes wind, wood, and waste.  
<sup>2</sup>Transmission and distribution losses through the power network, calculated as total supply minus total sales.  
<sup>3</sup>Estimated first quarter 1985 data.  
 Note: Minor discrepancies with other EIA published historical data are due to rounding.  
 Source: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(85/01); and Electric Power Monthly, DOE/EIA-0026(85/02).



# Forecast Conversion Factors Used in STIFS

Most of the conversion factors used by the Short-Term Integrated Forecasting System (STIFS) are the 1984 EIA standard conversion factors (found in the Monthly Energy Review). Special factors used in STIFS are derived from data in the Monthly Energy Review or from energy data reports such as the Petroleum Supply Monthly.

Product Identification	Unit	Btu/Unit
<b>A. Thermal Content of Fuels and Energy</b>		
Crude Oil Production .....	barrel .....	5,800,000
Crude Oil Imports .....	barrel .....	5,823,000
Unfinished Oils .....	barrel .....	5,825,000
Total Petroleum Consumed .....	barrel .....	5,393,000
Total Petroleum Imports .....	barrel .....	5,659,000
Total Petroleum Exports .....	barrel .....	5,871,000
Motor Gasoline .....	barrel .....	5,253,000
Jet Fuel .....	barrel .....	5,608,000
Distillate Fuel Oil .....	barrel .....	5,825,000
Refinery Fuel (liquids) .....	barrel .....	5,595,000
All Refinery Inputs .....	barrel .....	5,769,000
Residual Fuel Oil .....	barrel .....	6,287,000
LPG and LRG .....	barrel .....	3,599,000
Ethane .....	barrel .....	3,082,000
Natural Gas Liquids (production) .....	barrel .....	3,960,000
Natural Gas Consumption (dry) .....	cubic foot .....	1,031
Natural Gas Production (dry) .....	cubic foot .....	1,031
Natural Gas Imports .....	cubic foot .....	1,024
Natural Gas Exports .....	cubic foot .....	1,010
Supplemental Gaseous Fuel .....	cubic foot .....	1,031
Natural Gas Refinery Fuel .....	cubic foot .....	1,031
Natural Gas to Utilities .....	cubic foot .....	1,030
Bituminous Coal and Lignite Prod. ....	short ton .....	22,122,000
Bituminous Coal & Lignite Consumed .....	short ton .....	21,698,000
Coal to Electric Utilities .....	short ton .....	21,213,000
General Industry and Retail Coal .....	short ton .....	22,763,000
Coking Coal .....	short ton .....	26,800,000
Coke .....	short ton .....	24,800,000
Bituminous Coal and Lignite Imports .....	short ton .....	25,000,000
Bituminous Coal and Lignite Exports .....	short ton .....	26,445,000
<b>B. Efficiency of Conversion Processes</b>		
1. Electric Power Generation Fuel or Power Source:		
	Btu/kWh (heat rate)	
Coal .....	10,508	
Crude Oil .....	10,724	
Distillate Fuel Oil .....	13,501	
Residual Fuel Oil .....	10,720	
Geothermal and Other Energy .....	21,303	
Nuclear Energy .....	10,905	
Natural Gas .....	10,796	
Hydropower .....	10,445	
2. Other Conversion Processes		
	Btu Out/Btu In	
Coke .....	0.69	
Synthetic Gas .....	0.95	



# Need Information on Electric Power?

The Energy  
Information  
Administration  
has Data and  
Projections on:

- Production
- Consumption
- Prices
- Stocks of Fuels

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