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# **Short-Term Energy Outlook**

## **Quarterly Projections**

**July 1986**

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

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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*). A methodology volume, published annually, analyzes previous forecast errors and provides 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 1987.

The forecasts are produced using the Short-Term Integrated Forecasting System (STIFS). The STIFS model uses two principal driving variables: a macroeconomic forecast and world oil price assumptions. Macroeconomic forecasts produced by Data Resources, Inc. (DRI), are adjusted by EIA to reflect EIA assumptions about 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. (These models are available on tape from the National Energy Information Center.)

The three projections for petroleum supply and demand are based on low, middle, and high 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 on page 32). 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.

## Model Documentation Now Available

The Energy Information Administration recently published a report documenting the version of the Short-Term Integrated Forecasting System used to prepare the January 1986 *Short-Term Energy Outlook*. The report describes the individual models used to project demands and prices, outlines the data sources and procedures used to prepare supply estimates, and provides a summary of the forecast integration process. The *Short-Term Integrated Forecasting System Model Documentation* report is available on microfiche and in blowback form from the National Technical Information Service (NTIS).

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Also, a limited number of photocopies are available from the National Energy Information Center. (See inside front cover for address.)



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# 1. Highlights

Declining oil prices have not resulted in large increases in demand or sharp decreases in supply. The world oil price fell from a first-quarter 1986 average of \$20 per barrel to an estimated \$13 per barrel in the second quarter, reflecting the continued overproduction of oil worldwide and the failure of the Organization of Petroleum Exporting Countries (OPEC) to agree on production levels necessary to bolster prices. In the forecast

period, oil prices are assumed to begin increasing in the fourth quarter of 1986 and reach about \$18 per barrel by the end of 1987. The drop in oil prices is a major factor in the very low aggregate inflation levels experienced so far this year. Lower oil prices also have led to decreases in natural gas prices, particularly at electric utilities.

## *Petroleum Demand Up in 1986...*

U.S. demand for petroleum products in the base case is projected to increase by 3 percent in 1986, to 16.2 million barrels per day. Lower gasoline prices and higher personal income are expected to boost travel demand by more than 5 percent in 1986 and raise summer gasoline sales to levels not seen since 1978. The steady, 8-year decline in residual fuel oil consumption is expected to be reversed in 1986, mainly because of much stronger demand for oil at electric utilities.

## *...but Flat in 1987*

In 1987, an increase in the demand for distillate fuel oil is expected to be balanced by a decrease in residual fuel oil demand, with motor gasoline demand remaining flat. (The base case assumptions and projections are summarized in Table 1.)

## *Gradual Increase for Petroleum Prices in 1987*

The price of imported crude oil to refineries in the United States in the base case is assumed to average about \$13 per barrel (in nominal terms) through the third quarter of 1986, and then rise gradually to \$18 per barrel by the fourth quarter of 1987. Now that the initial increases in product margins have faded, the prices of petroleum products are expected to follow the pattern of world crude oil prices, rising slowly through 1987, but to levels still well below prices experienced during 1985. The nominal price of gasoline this summer is projected to average 34 cents per gallon lower than last year's level, representing the lowest summer level since 1978.

## *Imports Up as Domestic Production Drops*

Domestic crude oil production is forecast to decrease by about 200,000 barrels per day between 1985 and 1986 and by another 170,000 barrels per day between 1986 and 1987. With a small increase in Alaskan production, total domestic production in 1987 is forecast to be 8.6 million barrels per day. To balance the increase in demand and decrease in domestic production, net oil imports are expected to average nearly 5.1 million barrels per day in 1986 and nearly 5.3 million barrels per day in 1987, up sharply from the 1985 level of 4.3 million barrels per day.

***Natural Gas Demand,  
Production, and Imports  
Down in 1986***

Consumption of natural gas is projected to decrease between 1985 and 1986, to about 16.7 trillion cubic feet, with the major drop occurring at electric utilities where switching from natural gas to oil is expected. Domestic production of natural gas is projected to drop by less than 1 percent between 1985 and 1986, and to remain near that level in 1987. Imports of natural gas from Canada are projected to drop in 1986 because of lower domestic demand, but to return to the 1985 level in 1987 as demand increases. The nominal price of natural gas is projected to drop sharply in 1986, attempting (with only partial success) to remain competitive with oil prices, but to rise slightly in 1987.

***Coal and Electricity Use  
Continue Growth***

A 1-percent increase in total electricity generation is projected in 1986, followed by an increase of 3 percent between 1986 and 1987. Generation levels from all fuel sources except natural gas are expected to show increases in 1986, with a relatively large jump in oil-fired generation because of lower oil prices. The real price of electricity is forecast to drop slightly over the forecast period. Based on the increase in coal demand at electric utilities, domestic coal consumption is expected to increase to 819 million tons in 1986 (up only slightly from the 1985 level), with coal production at 909 million tons (up nearly 3 percent from the year-earlier level). Coal consumption and production in 1987 are forecast to increase by nearly 3 percent from the 1986 levels.

***Energy Intensity Continues to  
Decline***

Total U.S. energy consumption (as measured by gross energy consumption) is projected to increase by 1 percent in 1986 to 74.9 quadrillion Btu and then to increase by 2 percent between 1986 and 1987. The energy intensity of U.S. economic activity is projected to be 20.5 thousand Btu per 1982 dollar of real gross national product in 1986, a slight decline from the year-earlier level, and fall further to 20.4 thousand Btu per 1982 dollar of real GNP in 1987.

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 alternative assumptions about world oil prices. Should the imported crude oil prices, economic growth rates, or weather during the forecast period differ from the base case assumptions (with all other factors held constant), it is estimated that:

- For each 1-percent increase in real disposable personal income above the base case level, petroleum consumption and total imports in 1987 would increase by about 200,000 barrels per day (approximately 1.2 percent and 3.3 percent, respectively).
- For each \$1-per-barrel (approximately 6.1 percent) decline in the price of imported crude oil, petroleum consumption and total imports in 1987 would increase by about 80,000 barrels per day (approximately 0.5 percent and 1.3 percent, respectively).
- For each 10-percent increase in heating degree-days (from the base case level) during the first and fourth quarters (the heating season), petroleum consumption and total imports for those two quarters would increase by an average of about 240,000 barrels per day (approximately 1.4 percent and 3.9 percent, respectively).

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

Assumptions and Projections	Year				Annual Percentage Change		
	1984	1985	1986	1987	1984-1985	1985-1986	1986-1987
<b>Assumptions</b>							
Real Gross National Product (billion 1982 dollars) .....	<b>3,492</b>	<b>3,570</b>	<i>3,654</i>	<i>3,759</i>	<del>2.2</del> <b>2.7</b>	<del>2.4</del> <b>2.5</b>	<del>2.9</del> <b>2.6</b>
Index of Industrial Production (Mfg.) (index, 1977: 100) .....	<b>123.9</b>	<b>127.1</b>	<i>129.2</i>	<i>133.4</i>	<b>2.6</b>	<del>1.1</del> <b>1.7</b>	<del>3.2</del> <b>-3.3</b>
Average Cost of Imported Crude Oil (nominal dollars per barrel) .....	<b>28.88</b>	<b>27.03</b>	<i>14.70</i>	<i>16.30</i>	<b>-6.4</b>	<b>-45.6</b>	<b>10.9</b>
<b>Price Projections (nominal values)<sup>a</sup></b>							
Motor Gasoline <sup>b</sup> (dollars per gallon) .....	<b>1.20</b>	<b>1.20</b>	<i>.95</i>	<i>.99</i>	<b>.0</b>	<b>-20.8</b>	<b>4.2</b>
Retail No. 2 Heating Oil (dollars per gallon) .....	<b>1.09</b>	<b>1.05</b>	<i>.76</i>	<i>.79</i>	<b>-3.7</b>	<b>-27.6</b>	<b>3.9</b>
Residential Natural Gas (dollars per thousand cubic feet) .....	<b>6.12</b>	<b>6.13</b>	<i>5.81</i>	<i>5.84</i>	<b>.2</b>	<b>-5.2</b>	<b>.5</b>
Residential Electricity (cents per kilowatthour) .....	<b>7.54</b>	<b>7.79</b>	<i>7.89</i>	<i>8.07</i>	<b>3.3</b>	<b>1.3</b>	<b>2.3</b>
<b>Consumption Projections</b>							
Total Market Economies Petroleum Consumption (million barrels per day) .....	<b>46.2</b>	<b>45.9</b>	<i>47.0</i>	<i>47.7</i>	<b>-6</b>	<b>2.4</b>	<b>1.5</b>
U.S. Total Petroleum Consumption (million barrels per day) .....	<b>15.73</b>	<b>15.73</b>	<i>16.20</i>	<i>16.25</i>	<b>.0</b>	<b>3.0</b>	<b>.3</b>
Motor Gasoline .....	<b>6.69</b>	<b>6.83</b>	<i>6.96</i>	<i>6.96</i>	<b>2.1</b>	<b>1.9</b>	<b>.0</b>
Distillate Fuel Oil .....	<b>2.84</b>	<b>2.87</b>	<i>2.93</i>	<i>3.03</i>	<b>1.1</b>	<b>2.1</b>	<b>3.4</b>
Residual Fuel Oil .....	<b>1.37</b>	<b>1.20</b>	<i>1.34</i>	<i>1.25</i>	<b>-12.4</b>	<b>11.7</b>	<b>-6.7</b>
Other Petroleum <sup>c</sup> .....	<b>4.82</b>	<b>4.83</b>	<i>4.96</i>	<i>5.00</i>	<b>.2</b>	<b>2.7</b>	<b>.8</b>
Net Petroleum Imports (million barrels per day, including SPR <sup>d</sup> ) .....	<b>4.72</b>	<b>4.29</b>	<i>5.05</i>	<i>5.26</i>	<b>-9.1</b>	<b>17.7</b>	<b>4.2</b>
Coal Consumption (million short tons) .....	<b>791</b>	<b>818</b>	<i>819</i>	<i>843</i>	<b>3.4</b>	<b>.1</b>	<b>2.9</b>
Natural Gas Consumption (trillion cubic feet) .....	<b>17.95</b>	<b>17.32</b>	<i>16.67</i>	<i>17.06</i>	<b>-3.5</b>	<b>-3.8</b>	<b>2.3</b>
Electricity Generation (billion kilowatthours) .....	<b>2,416.3</b>	<b>2,469.8</b>	<i>2,498.8</i>	<i>2,579.1</i>	<b>2.2</b>	<b>1.2</b>	<b>3.2</b>
Total Energy Consumption <sup>e</sup> (quadrillion Btu) .....	<b>73.86</b>	<b>73.96</b>	<i>74.88</i>	<i>76.54</i>	<b>.1</b>	<b>1.2</b>	<b>2.2</b>
Thousand Btu/1982 Dollar of GNP .....	<b>21.15</b>	<b>20.72</b>	<i>20.49</i>	<i>20.36</i>	<b>-2.0</b>	<b>-1.1</b>	<b>-6</b>

<sup>a</sup> All prices include taxes, except prices for No. 2 heating oil and residential electricity.

<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.

Notes: Minor discrepancies with other published EIA historical data are due to independent rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); *International Energy Annual 1984* DOE/EIA-0219(84); *Petroleum Marketing Monthly*, DOE/EIA-0380(86/04); *Petroleum Supply Monthly*, DOE/EIA-0109(86/04); *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Natural Gas Monthly*, DOE/EIA-0130(86/05); *Electric Power Monthly*, DOE/EIA-0226(86/05); and *Quarterly Coal Report*, DOE/EIA-0121(86/1Q); Organization for Economic Cooperation and Development, *Quarterly Oil Statistics, First Quarter 1986*; Petroleum Economics Limited, *World Quarterly Primary Energy and Supply/Demand*, April 1986. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0786.



## 2. The Outlook

### International Petroleum Markets

#### Current Situation

The unprecedented drop in the nominal price of crude oil that occurred in the first quarter of this year stabilized at the \$12-\$15 per barrel level in the second quarter of 1986, with fluctuations sometimes becoming extreme for some grades of crude oil. Day-to-day volatility in the oil price was sparked by current perceptions of Saudi Arabian marketing intentions, Norwegian strikes or threatened strikes affecting the oil platforms, gasoline inventories and demand in North America, and the perceived cohesiveness or lack thereof in the Organization of Petroleum Exporting Countries (OPEC).

Crude oil prices have become more sensitive to product price movements and inventory/demand situations, factors that were not as important before the advent of netback pricing arrangements for crude oil (see Netback Pricing box in Crude Oil Production Section). Crude oil prices in mid-May hit a peak for the quarter as expectations of an impending inventory crunch for motor gasoline forced up gasoline spot and futures prices. This caused crude oil spot prices on the U.S. Gulf Coast to top briefly at over \$17 per barrel for light sweet grades such as the benchmark West Texas Intermediate (WTI). Subsequently, prices dropped in response to high petroleum product production, as lower than expected consumption caused gasoline inventories to balloon counter to expectations based on normal seasonal patterns. As perceptions of excess product inventories swept the marketplace, both product and crude oil prices retreated rapidly in late May and into June, falling below \$13 per barrel by June 10 and below \$11 per barrel by July 10.

The collapse in oil prices that occurred in the first quarter of this year now appears to have the dynamics to be sustained for at least the next several months, given the current market situation. The structure of the market has changed radically, with spot prices for products being the basis for calculating crude oil prices by the various exporters. This type of formula pricing, and oil sold by longer term netback arrangements,

accounted for the majority of crude supplies in international trade during the second quarter of 1986, as opposed to the official fixed price contracts used a year earlier.

OPEC oil ministers have been unable to present a united front to oil consuming countries. In late June, they once again failed to reach an agreement on the basic issue of production sharing under a quota. Basically, agreement is forestalled because Algeria, Iran, and Libya hold the position that there should be a sharp reduction in OPEC crude oil production to enable a price rebound to \$28 per barrel. However, implicit in their stand is that the other ten countries of OPEC, chief among them Saudi Arabia, would make the sacrifice in production cuts. The remaining nine members reportedly would be content with a "stabilization" of the market price in the range of \$17 to \$19 per barrel. However, without the cooperation of all OPEC members, this goal appears to be unattainable under current market conditions. OPEC is currently producing crude oil at a very high rate, with the excess production apparently going into stocks on land and at sea.

Saudi Arabia, the one nation that has the most influence over oil prices, appears to be content with the current situation. In the short term, exporting 5 million barrels per day of crude oil and product at \$10 per barrel yields the same revenue as the 2 million barrels per day at \$25 per barrel experienced last summer. In the longer term, the drop in oil prices will help ensure a market for the vast Saudi oil reserves well into the next century.

The price drop for petroleum products is beginning to change consumption patterns. In the member countries of the Organization for Economic Cooperation and Development (OECD), heavy fuel oil consumption has dropped steadily since 1979, accounting for more than 60 percent of the nearly 8 million barrel per day drop in OECD oil consumption from 1979 to 1985. However, in the last quarter of 1985, the reduction in heavy fuel oil consumption slowed considerably, and consumption actually rose in some OECD markets (the U.S. in particular) in the first quarter of 1986 compared with year-earlier levels. The current price of heavy fuel oil and the increase in economic activity relative to 1985 levels are expected to result in greater use of, as well as switching to, heavy fuel oil in the electric utility and industrial sectors capable of burning oil.

# International Petroleum Forecast

Total petroleum demand (product supplied from current production and primary stock drawdown) in the market economies is projected to increase by about 1.1 million barrels per day between 1985 and 1986 (Figure 1). This growth is attributed to two factors: lower oil prices and higher economic growth rates for the market economies. The lower oil prices are already resulting in increased consumption in the United States, Japan, and Europe (Table 2 on page 23). In 1987, petroleum demand in the market economies is expected to be 0.7 million barrels per day higher than 1986 levels.

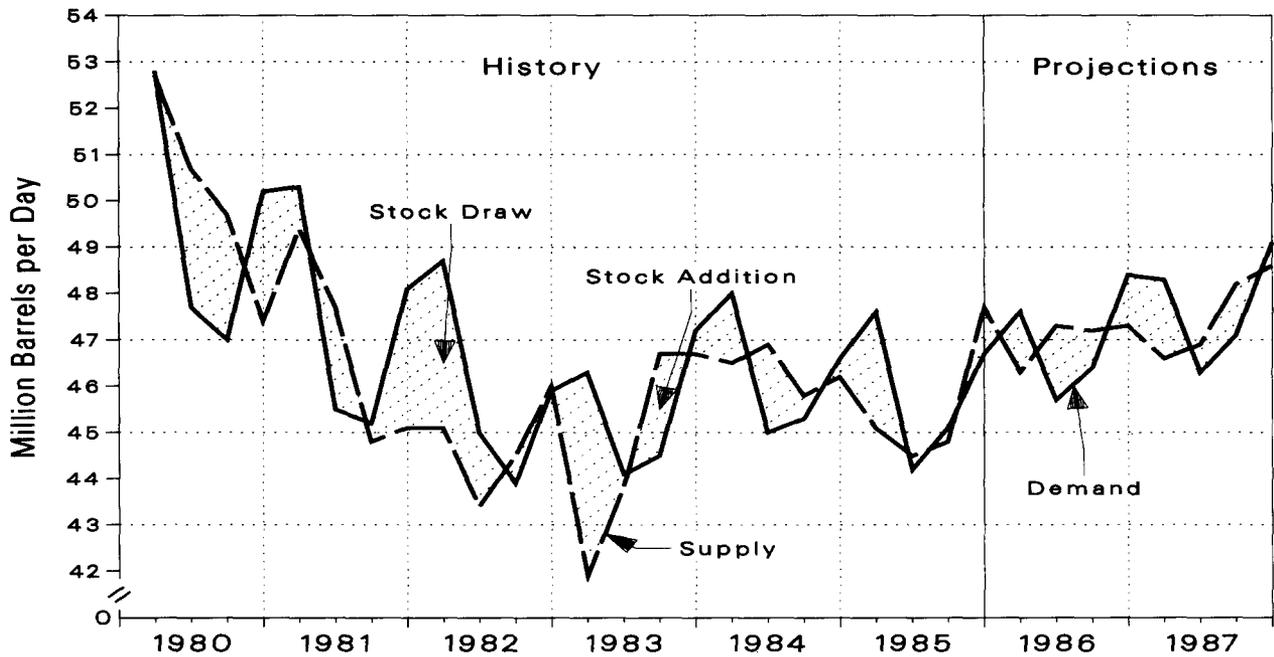
The full effect of the oil price drop will be felt differently from country to country, based upon the relationship of the domestic currency to the dollar and the degree to which increased local excise taxes and import fees mask the stimulating effect on consumption of the fall in oil prices. For example, from June 1985 to June 1986, the drop in local gasoline prices (including taxes) in the Federal Republic of Germany was 23 percent in local currency.<sup>1</sup> However, in Italy the drop in local

gasoline prices (including taxes) was only 5.5 percent; in Japan, the drop was 9.5 percent. For heavy fuel oil, where excise taxes are a far smaller factor of the consumer price, respective price declines for the three countries were 59 percent, 67 percent, and 32 percent in June 1986 compared to year-earlier levels.

Total OPEC oil production (including natural gas liquids) is forecast to increase by about 9 percent between 1985 and 1986, from 17.2 to 18.7 million barrels per day. Non-OPEC oil production (including liquids produced from natural gas, coal, and other sources) is expected to average about 26.7 million barrels per day, an increase of less than 100,000 barrels per day from the 1985 level. The total supply of oil to the market economies is projected to increase by about 3 percent between 1985 and 1986 based on expected production increases in OPEC and non-OPEC countries.

The forecasts for petroleum demand are based on the expectation that the economic growth rate in the industrial countries will be 2.6 percent between 1985 and 1986 and 2.9 percent between 1986 and 1987 (Table 3 on page 23). This reflects a continuation of the economic growth rate of 2.9 percent per year experienced between 1970 and 1984.

**Figure 1. Market Economies Petroleum Supply and Disposition**



Sources: ● History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04) and *International Energy Annual 1984* DOE/EIA-0219(84) (Washington, DC); Organization for Economic Cooperation and Development, *Quarterly Oil Statistics, First Quarter 1986*; Petroleum Economics Limited, *World Quarterly Primary Energy and Supply/Demand*, April 1986. ● Projections: Table 2.

<sup>1</sup>International Energy Agency, *End-June Oil Market Report* (Paris, France, June 1986).

# Forecast Assumptions

## World Oil Prices

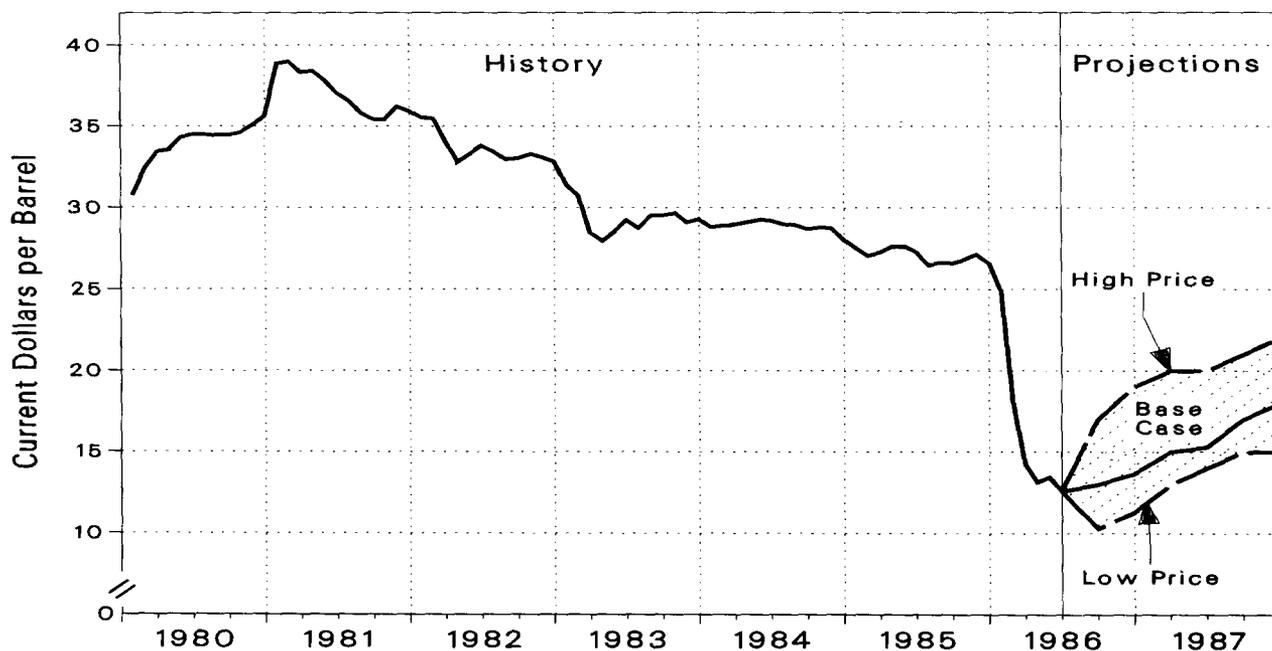
In the base case, the nominal price of imported crude oil delivered to U.S. refiners is assumed to average about \$13 per barrel in the third quarter of 1986, and then slowly increase to \$18 per barrel by the end of 1987 (Figure 2). This price path is based on the assumption that crude oil production will exceed demand increases, thereby sustaining the current market surplus. However, because of the high degree of uncertainty about world oil prices, two alternative cases are presented in this *Outlook* to provide a range of energy projections (Table 4 on page 24). The same economic assumptions are used in all three cases, modified only for the feedback effects due to the various oil price

assumptions. The petroleum price assumptions associated with these cases are as follows:

*Low Price Case:* As a result of OPEC's assumed high production levels and weak worldwide demand, oil prices are assumed to fall to about \$10 per barrel in the third quarter of 1986. Demand is assumed to recover slightly at the beginning of the 1986-1987 heating season, with oil prices increasing gradually to \$15 per barrel by the summer of 1987.

*High Price Case:* As a result of OPEC's assumed lowering of production levels to near its 1985 quota, oil prices are pushed up to \$19 per barrel by the end of 1986 and to \$22 per barrel by the end of 1987.

Figure 2. Imported Crude Oil Prices



Sources: ● History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04) (Washington, DC, 1986). ● Projections: Table 4.

## A Comparison of Energy Forecasts for 1986: Before and After the World Oil Price Drop

Between December 1985 and June 1986, the average refiner acquisition cost of crude oil imported to the United States dropped by over 50 percent, to under \$13 per barrel. Energy markets in this country and throughout the world have responded to this price drop. Revisions to the EIA outlook for energy supply, demand, and prices also reflect this change, although the forecast revisions are relatively small considering the dramatic change in price. The table below compares selected 1986 forecast values presented in the January 1986 *Short-Term Energy Outlook* and in the current publication (which reflects history through June) to show the effect of lower oil prices through June of 1986 on the forecasts for 1986. Forecasting equations and model assumptions other than those for oil prices also changed between these two reports, so all differences cannot be strictly attributed to lower oil prices alone, although the price change is a major factor.

Forecast Variables	Forecasts for 1986		Change	
	January 1986 <i>Outlook</i>	July 1986 <i>Outlook</i>	Actual	Percent
Refiner Acquisition Cost of Imported Crude Oil (\$ per barrel)	\$24.80	\$14.70	-\$10.10	-40.7
	(million barrels per day)			
Total Petroleum Consumption	15.80	16.20	0.40	2.5
Motor Gasoline Consumption	6.88	6.96	0.08	1.2
Domestic Crude Oil Production	8.96	8.77	-0.19	-2.1
Crude Oil Imports (including imports for SPR)	3.45	3.77	0.32	9.3
Net Refined Product Imports	1.11	1.28	0.17	15.3
Gross National Product (billion \$ 1982)	\$3,470	\$3,654	\$184	5.3

The directions of these changes are consistent with the expected effects of falling prices. The outlook for petroleum demand in 1986 was revised upward. Increased consumption of motor gasoline, which accounts for over 40 percent of total petroleum demand, contributed only one fifth of this change. Industrial and utility heavy fuel oil consumption (because of greater substitution potential) account for most of the remaining change. The outlook for domestic oil production in 1986 has been reduced, with a larger projected increase in petroleum imports to maintain a balance between supply and demand. Notable in the import response is that crude oil imports, rather than product imports, are projected to fill in most of this gap (see discussion of changes in domestic and foreign refinery economics in main text). Finally, the outlook for the domestic economy is for higher short-term growth in response to lower oil prices, although economic growth in general has not responded as much as anticipated.

## Macroeconomic Activity

The base case projections assume that economic growth will be slightly higher in 1986 than was experienced in 1985. Based on the Data Resources, Inc., forecast (DRI CONTROL0786), as modified to reflect EIA's imported crude oil price assumptions, growth in real gross national product (GNP) between 1985 and 1986 is assumed to be 2.4 percent, compared with a 2.2-percent growth experienced in 1985. Growth in real disposable personal income is projected to be 3.2 percent in 1986, twice the rate recorded in 1985. Manufacturing growth is expected to be 1.7 percent for the year, noticeably lower than the projection from the April 1986 *Outlook*. Currently high inventory-to-sales ratios, particularly in the nondurable consumer goods sectors, are expected to put downward pressure on manufacturing activity in the near term. Tighter stock levels by the end of the year, combined with continued income growth, imply stronger manufacturing growth by 1987. (Assumptions for the price of imported crude oil, the economy, and the weather are shown on Table 4 on page 24.)

In 1987, real GNP is projected to be 2.9 percent higher than the year-earlier level. Real disposable income growth is projected to be 2.4 percent above the 1986 level, and manufacturing growth is expected to be 3.3 percent higher. Real GNP growth rates between 1985 and 1986 and between 1986 and 1987 are as follows: high oil price case, 2.4 percent and 2.6 percent, respectively; low oil price case, 2.4 percent and 3.0 percent, respectively. In the high and low oil price cases, the DRI base case economic forecasts are adjusted to incorporate the effects of higher (and lower) oil prices assumed in this *Outlook*.

After the analysis for this *Outlook* was completed, revised data for both GNP and real disposable personal income were released by the Bureau of Economic Analysis (BEA). The revisions go back to 1983, and would imply revised GNP annual growth rates (using the latest DRI forecast for 1986-87) as follows: 1985, 2.7 percent; 1986, 2.4 percent; and 1987, 2.4 percent. These revised data will be used in the analysis for the October 1986 *Outlook*.

## Energy Product Prices

The rapid decline in the world oil price is expected to lower all petroleum product prices through the third quarter of 1986 ( Figure 3 on page 10 and Table 5 on page 25). The world price of crude oil is projected to increase by the fourth quarter of this year and continue to rise through 1987, causing corresponding increases, with some lags, in energy product prices.

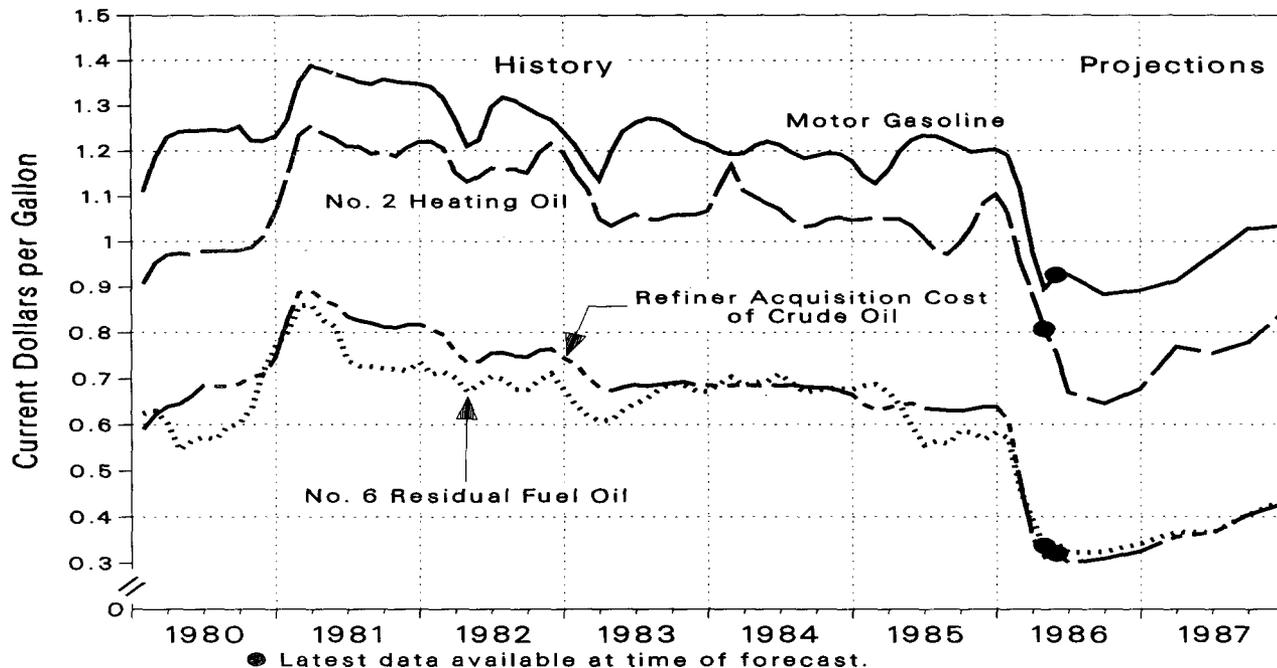
The most obvious sign to the consumer of lower world oil prices was the corresponding fall in gasoline prices from \$1.22 per gallon in third-quarter 1985 to 93 cents per gallon in second-quarter 1986. Gasoline prices are projected to decrease by 25 cents per gallon for the year 1986, and increase by only 4 cents per gallon in 1987 because world oil prices are assumed to rise. High inventories of gasoline this summer prevented gasoline prices from showing the normal seasonal increase during this peak driving period. However, in 1987, normal seasonal patterns are assumed and, as a result, gasoline prices are expected to peak in the third quarter of 1987. Both refiner and retail margins for motor gasoline are projected to increase twice as fast as the rate of inflation in 1986, with nearly all of this increase attributable to the high retail and refiner margins that were sustained in the first half of the year when crude oil prices fell precipitously. By the beginning of third-quarter 1986, the adjustment to lower crude oil prices appeared to have been completed and both refiner and retail margins have decreased to year-earlier levels. Both margins are expected to remain relatively constant during 1987, except for seasonal fluctuations.

Retail heating oil prices also are expected to follow the price path of world crude oil. The winter of 1985-1986 began with a sharp increase in price due to low inventories and colder-than-normal fourth-quarter weather. In the first quarter of 1986, however, retail heating oil prices declined by 10 cents per gallon as world oil prices collapsed. Prices are projected to bottom out by the third quarter of 1986 because of the continued low oil price and because seasonal demand is at its trough. A steady increase in both crude oil costs and margins is projected to lead to higher heating oil prices in 1987, with an increase to 84 cents per gallon projected by the fourth quarter, compared with the estimated year-earlier level of 68 cents per gallon.

Diesel fuel prices are expected to follow the same pattern as that of heating oil. Prices in the second quarter of 1986 dropped 18 cents per gallon from the first-quarter level of \$1.04, and the average price for the year is projected to be 89 cents per gallon, 26 cents per gallon below the 1985 price. As oil prices increase through 1987, diesel prices are projected to be 6 cents per gallon above the 1986 level.

Residual fuel oil prices are also expected to follow the crude oil price path. Residual fuel oil prices tend to fluctuate near crude oil prices, depending on supply and demand conditions. From 1977 through 1985, demand for this fuel decreased steadily, and its price tended to be below the world oil price except during unusual circumstances (such as during the British coal strike of 1984-85, when higher demand for residual fuel oil increased prices temporarily). In the first quarter of 1986, crude oil prices were about 80 cents per barrel below the residual fuel oil price, as prices of all petroleum products tended to lag the decline in crude prices. However, with increased demand for heavy fuel oil at electric utilities and in industry, the price of residual

**Figure 3. Retail Prices for Petroleum Products**



Sources: ● History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04) (Washington, DC, 1986). ● Projections: Table 5.

fuel oil is expected to remain above the crude oil price through the forecast period.

The drop in the price of crude oil ultimately should induce declines in the prices of fuels other than petroleum products, although these declines are not expected to be as steep. However, in circumstances where the other fuels compete directly with a petroleum product, such as natural gas to electric utilities, the price of natural gas is projected to shadow the price of heavy oil (mainly residual fuel oil), as natural gas producers, distributors, and marketers attempt to maintain their sales to utilities. The nominal price of coal to electric utilities, which is still considerably lower, on average, than the price of the other fossil fuels, is expected to fall slightly in 1986 and then rise back up near the 1985 level in 1987.

The nominal price of natural gas in the residential sector is projected to fall by more than 5 percent in 1986 and then to increase slightly in 1987, following no significant price change between 1984 and 1985. The primary reason for the 1986 decline is the drop

in wellhead prices, stemming from deregulation and from the effect of lower oil prices. In the residential sector, the lack of direct oil/gas competition and limits to short-term fuel switching are projected to mitigate sharper declines in the natural gas price. This sector also must carry some of the burden of lower natural gas prices to utilities and industry.

Residential electricity prices increased by more than 3 percent in 1985, or at about the rate of inflation. In 1986, prices are expected to increase by about 1 percent or half the rate of inflation (implying a slight drop in real terms). Lower fuel costs and capital costs are expected to slow the built-in increases allowed by public utility commissions for past construction and additions to the rate base from new nuclear and coal plants. In 1987, electricity prices are expected to increase by about 2 percent, a rate still slightly below the rate of inflation. Projected increases in the price of natural gas and oil used to generate electricity are the main reasons for the slightly larger increase in the latter part of the forecast period.

# U. S. Petroleum Outlook

## Overview

Due partly to apparent fuel switching by electric utilities from natural gas to residual fuel oil, U.S. petroleum product supplied is projected to increase by 3.0 percent in 1986, to 16.2 million barrels per day. With prices projected to rise somewhat in 1987, demand is expected to continue at about year-earlier levels. Despite large percentage increases in demand for residual fuel oil and jet fuel, opportunities for short-term increases in the demand for other major products such as motor gasoline and distillate fuel oil are limited. Net petroleum imports (crude oil plus petroleum products) are projected to average more than 5 million barrels per day in 1986, 18 percent above the 1985 level, with another 4-percent increase expected in 1987. These increases result from increased demand, decreased crude oil production, and a slight buildup projected for total stocks in 1986. (The base case forecast is shown in Table 6 on page 26; alternative cases for high and low world oil prices are shown in Table 8 on page 28)

## Motor Gasoline

Average retail gasoline prices this year are projected to be lower in real terms than they have been in many years, with the price of leaded regular gasoline lower than at any time since at least 1949.<sup>2</sup> Partly as a result of this significant price break, gasoline demand in 1986 is projected to increase by nearly 2 percent from 1985 levels, bringing 1986 demand to an average of 6.96 million barrels per day (Table 9 on page 29). This growth in gasoline demand conceals even stronger growth in travel demand of more than 5 percent projected for 1986. An apparent surge in vehicle efficiency during the first half of 1986 is expected to contribute to a surprisingly high rate of growth (more than 3 percent) in average miles per gallon (mpg) for the year 1986. This higher efficiency is expected to hold gasoline demand growth in the 2 percent range. A rebound in gasoline prices and slower income growth in 1987 are expected to result in steady gasoline demand in 1987 compared with 1986 levels, despite slower growth in average vehicle efficiency.

Dramatically lower oil prices in 1986, resulting in refiner acquisition costs of imported oil as low as \$13 per barrel, lead to the projected 22-percent decline in real retail gasoline prices for all of 1986. Sharply lower gasoline prices, coupled with a noticeable rebound in

personal income growth (from 1.6 percent in 1985 to 3.2 percent in 1986), would be expected to increase domestic motor vehicle travel by approximately 5 percent in 1986. Additional growth of 1 to 2 percent is projected for 1987 compared with year-earlier levels, largely because personal income is expected to rise by 2.4 percent in 1987. Real gasoline prices are expected to rebound by the first quarter of 1987, resulting in higher average prices in 1987 compared to 1986. In response to the higher prices, growth in travel is expected to taper off considerably by the second quarter of 1987.

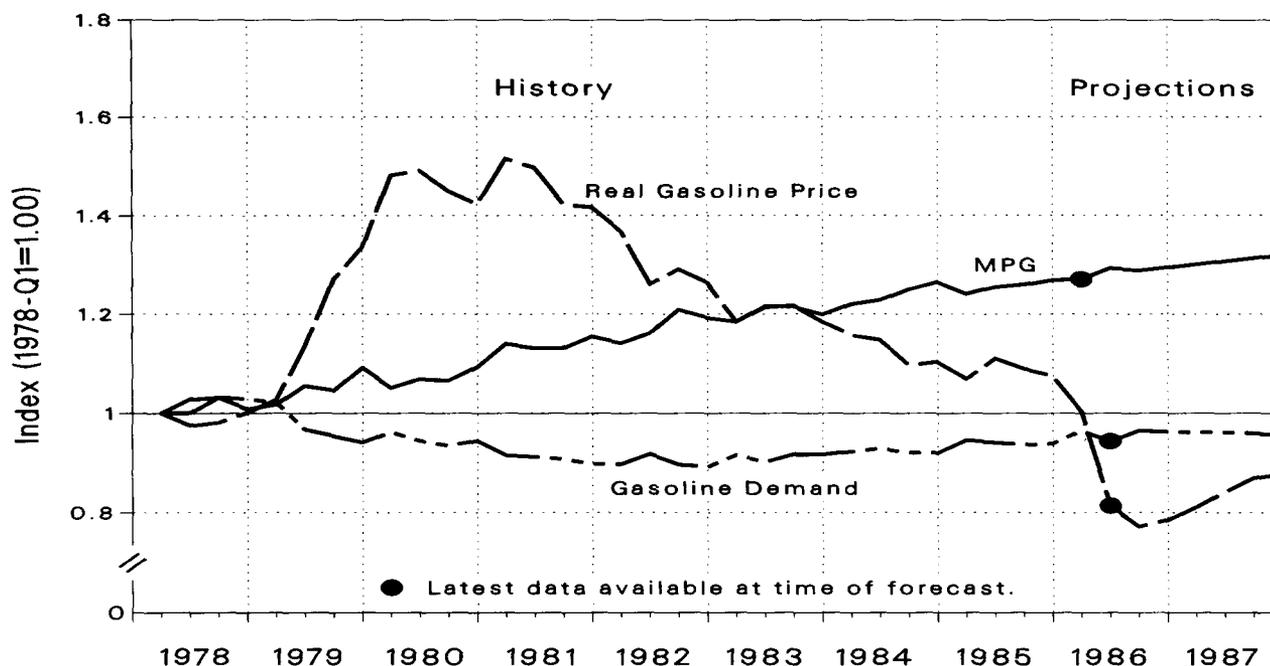
Increases in average miles per gallon are expected to continue in the forecast period because the trend toward more efficient cars (stemming from past increases in fuel costs) makes the average efficiency of new cars substantially greater than that of vehicles leaving the fleet and greater than that of the average existing fleet. When motor fuel prices are falling, the expectation is that growth in automobile efficiency will tend to decline, particularly in the long run. Because gasoline prices have been falling steadily in real terms since 1981, it was not surprising that growth in miles per gallon slowed to 1.2 percent in 1985, compared with 2.9 percent per year experienced between 1981 and 1984 (Figure 4 on page 12). However, it is surprising that, with real gasoline prices lower by an average of nearly 17 percent, miles per gallon during the first half of 1986 apparently was 3.4 percent ahead of the comparable period in 1985. A possible explanation for this is the surge in new car sales in 1985 (7 percent higher than 1984 sales and 21 percent above the average annual sales total for 1982 to 1984), driven largely by falling interest rates and strong dealer incentives. Higher sales may have temporarily boosted the new car share of the total fleet above trend levels, resulting in unexpectedly high efficiency gains so far this year. It is assumed that fleet efficiency growth will remain relatively strong through 1986, but will taper off to below 2 percent on an annual basis by mid-1987. Despite the dramatic price declines expected in 1986, gasoline demand in the short run is not projected to exceed levels observed in 1979, even though vehicle travel in the United States is expected to be 21 percent higher in 1986 than in 1979.

## Distillate Fuel Oil

As a result of the sharp decreases in oil prices, distillate fuel oil consumption is projected to increase by about 2.1 percent between 1985 and 1986 (Table 10 on page 29), to over 2.9 million barrels per day. A further increase of 3.4 percent is forecast for 1987. The combination of lower prices and moderate increases in industrial output is expected to increase industrial and trans-

<sup>2</sup>Base on an internal Energy Information Administration analysis. The real retail price of leaded regular gasoline in May 1986 (adjusted for inflation by the GNP implicit price deflator) was 83 cents per gallon, compared to an annual average real price of 127.4 cents per gallon in 1949. The lowest annual average real price observed for leaded regular gasoline during the 1949 to 1985 period occurred in 1972 at 86.7 cents per gallon.

**Figure 4. Motor Gasoline Demand, Vehicle Efficiency, and Real Gasoline Price**



Sources: ● History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04) (Washington, DC, 1986); Federal Highway Administration, *Traffic Volume Trends* (monthly). ● Projections: Tables 5 and 9 and from unpublished output from the Energy Information Administration's Short Term Integrated Forecasting System.

portation demand for distillate fuel oil in 1986. Despite a rebound in prices in 1987, even stronger growth in industrial activity is expected to generate additional non-heating demand for distillate fuel oil. Moderating the impact of these increases on total distillate demand, however, is little or no increase expected in residential consumption of heating oil beyond that directly attributable to changes in heating degree-days. Residential consumption is not believed to respond directly to price changes in the short run, although in the long run there could be some rebound in installations of distillate-burning furnaces if the current price advantage over natural gas persists.

## Residual Fuel Oil

In 1986, total residual fuel oil demand is projected to increase by 12 percent, reversing the 8-year declining trend (Table 11 on page 30). Total consumption of residual fuel oil had declined by more than 60 percent between 1977 and 1985, showing the largest rate of decrease of any of the major petroleum products. The decline in the use of this fuel accounted for nearly 70 percent of the decline in total petroleum product demand over this period. The decline in residual fuel

consumption between 1984 and 1985 was 12 percent, even though prices dropped by almost the same amount. Decreases occurred in both nonutility and utility demands for residual fuel oil, although the drop was greater in the utility sector.

The principal reason for this expected turnaround in residual fuel oil demand in 1986 is the 40-percent decrease projected for the price of this fuel between 1985 and 1986 (Table 5 on page 25). As a result, some switching to residual fuel oil away from natural gas is expected, mostly at electric utilities and, to a more limited extent, in the industrial and commercial sectors. Utility demand for residual fuel oil is projected to increase by more than 20 percent in 1986. In contrast, nonutility residual fuel oil demand is projected to increase by only 2.5 percent in 1986, reflecting the smaller amount of oil/gas competition in those sectors.

Total residual fuel oil demand is projected to decline by 7 percent between 1986 and 1987, although still remaining above the 1985 level. All of the decrease is expected in the electric utility sector because of increased contributions from coal and nuclear power. Nonutility demand is projected to increase slightly in 1987, with this increase occurring in the first half of the year when weather is assumed to return to normal levels after the very mild weather experienced in the first quarter of 1986.

## Other Petroleum Products

The supply of other petroleum products is projected to grow by 3 percent between 1985 and 1986 and by less than 1 percent between 1986 and 1987. Jet fuel, petrochemical feedstocks, and liquefied petroleum gases (LPG) are the principal components of the other products category, accounting for 3.2 million barrels per day out of a total of nearly 4.8 million barrels per day during 1985 (Table 12 on page 31). The remaining products, grouped under the miscellaneous category, include petroleum coke, kerosene, still gas, road oil and asphalt, lubricants, waxes, aviation gasoline, special naphthas, and other small-volume petroleum products.

LPG demand is expected to remain flat in 1986 (Figure 5), despite a decline in prices, because short-term demand for these fuels (mainly propane in the residential sector) is not very sensitive to changes in price or income. Assuming normal weather in 1987, LPG demand is projected to increase by 2 percent from the year-earlier level. Jet fuel demand is projected to increase by 4 percent between 1985 and 1986 but remain stable between 1986 and 1987. The 1986 increase reflects the combined impact of higher income and lower fuel costs, while the sluggish demand in 1987 reflects the anticipated increase in fuel costs. The use of petroleum to produce petrochemicals is expected to increase by 2 percent in 1986, corresponding to anticipated increases in output in the chemical sector.

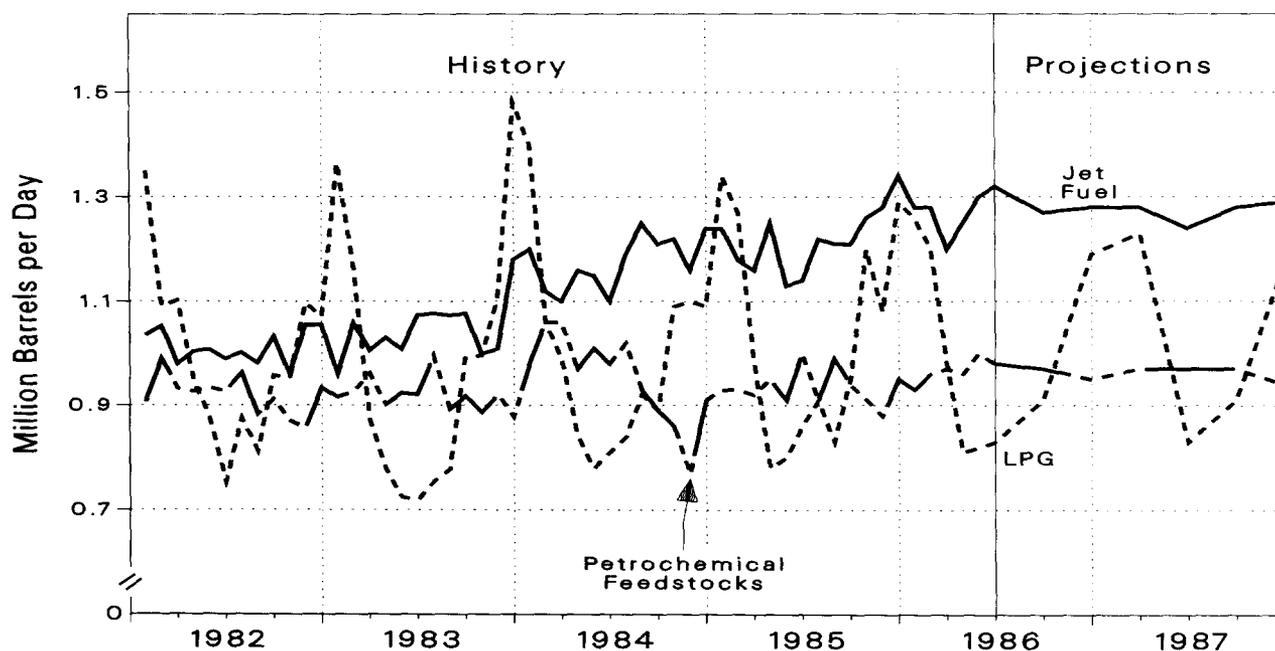
Feedstock product supplied is projected to remain at the 1986 level in 1987, as the demand that would otherwise follow higher levels of activity in the chemical sector is expected to be offset by the dampening effect of higher petroleum prices. Demand for miscellaneous petroleum products is expected to grow by nearly 4 percent in 1986, with only a slight increase anticipated in 1987. Only kerosene demand is projected to decline significantly in 1987, corresponding to the historical evidence that kerosene demand declines as income rises.

## Petroleum Demand Sensitivities

Table 13 on page 32 and Figure 6 show the response of petroleum demand to changes in price, income, and weather. The sensitivity cases were developed as follows:

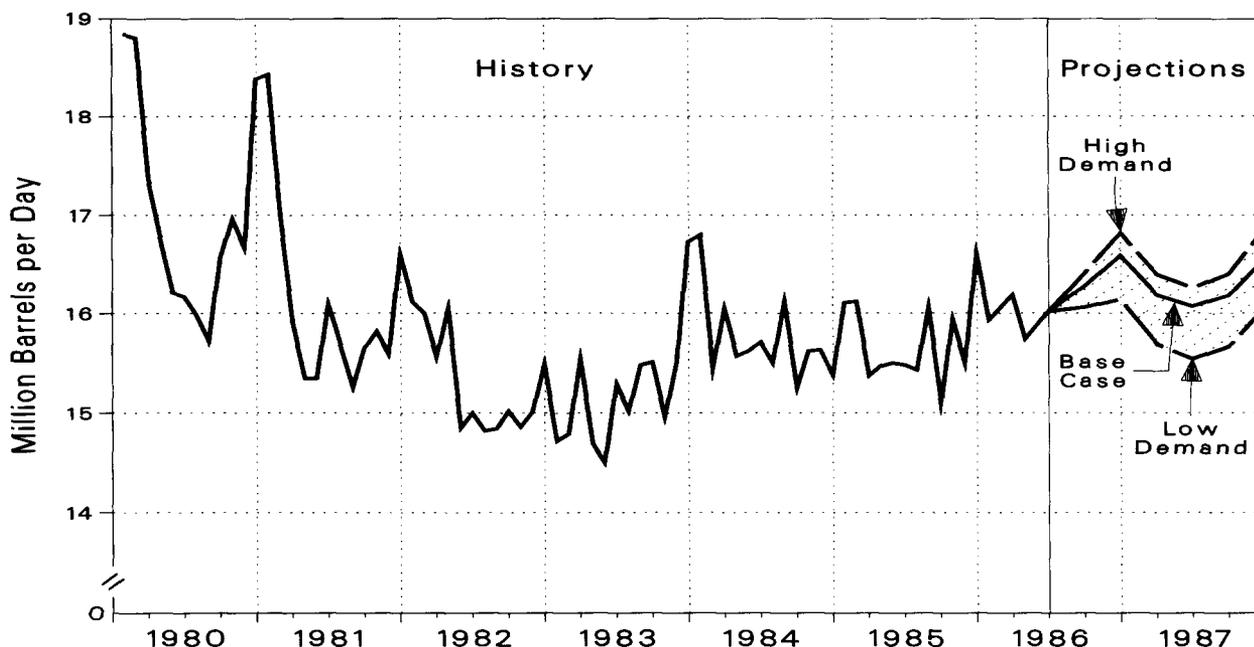
- The low and high price demands are based on the price paths shown in Table 5 on page 25, holding the variables representing economic activity at their base case levels.
- The economic sensitivity cases are derived from the low and high economic growth assumptions given in Table 4 on page 24, holding prices at their base case trajectories.

**Figure 5. Major Components of Other Petroleum Demand**



Sources: • History: Energy Information Administration, *Petroleum Supply Annual* (1982-1985), DOE/EIA-0340(82/85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1986 to May, 1986; and *Weekly Petroleum Status Report*, DOE/EIA-0708(86-28) (Washington, DC). • Projections: Table 12.

**Figure 6. Total Petroleum Demand**



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0036(86/04) (Washington, DC, 1986). • Projections: Tables 6, 7, and 8.

- 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.

During the second half of 1986, prices are expected to contribute most to the uncertainty range, which averages about 0.3 million barrels per day overall. The uncertainty attributed to income in 1986 is relatively small. Weather is an important source of uncertainty because of the fourth quarter variations in heating degree days. During 1987, the overall uncertainty range of 0.9 million barrels per day is dominated by price uncertainty of 0.5 million barrels per day.

## Domestic Crude Oil Production

Domestic production of crude oil in the base case is projected to decline by 2.2 percent, or approximately 200,000 barrels per day, between 1985 and 1986, to less than 8.8 million barrels per day (Table 6 on page 26). In 1987, domestic production of crude oil is expected to be 8.6 million barrels per day, a further 1.9-percent decline. These declines would be even greater without

the 1.6-percent increases in Alaskan production expected in both 1986 and 1987. Near-term increases in Alaskan production are the result of increased flow from the Kuparuk River field during 1986 and from the Lisburne reservoir of the Prudhoe Bay field. Oil production in the lower 48 States is expected to decrease by 3.2 percent in 1986 to 6.92 million barrels per day and drop by an additional 3 percent in 1987.

In the low oil price case, domestic production of crude oil is projected to decline by nearly 2.7 percent between 1985 and 1986, with a further 2.4-percent decrease expected between 1986 and 1987 (Table 7 on page 27). In the high oil price case, domestic oil production is projected to decline by 1.3 percent between 1985 and 1986 and then drop by 0.8 percent in 1987 (Table 8 on page 28). Production estimates in 1987 for the price cases range between 8.52 million barrels per day and 8.78 million barrels per day.

Production declines in all three cases are driven by lower oil prices, which cause marginal wells to be shut in and drilling to decline sharply. Roughly 14 percent of U.S. oil production comes from 453,000 stripper wells (those producing less than 10 barrels per day), producing at an average of 2.8 barrels per day as of January 1985, according to a recent study by the Interstate Oil Compact Commission.<sup>3</sup> These low-yield and generally high operating cost wells are expected to be especially vulnerable to falling prices. The loss of

<sup>3</sup>Interstate Oil Compact Commission, *National Stripper Well Study*, (Oklahoma City, Oklahoma, January 1, 1985).

production from 100,000 of these wells at the average rate of 2.8 barrels per day would be 280,000 barrels per day, or roughly 3 percent of 1985 U.S. production. At lower oil prices, the percentage loss of oil production is greater for each successive dollar drop in price. For example, the eventual loss of marginal production with a \$5.00 price drop from \$15.00 to \$10.00 per barrel is greater than that for a \$10.00 price drop from \$25.00 to \$15.00 per barrel.

Suspension of some developmental drilling has a small, but immediate impact on production. Many shut-in marginal wells probably can be returned to production if oil prices rise in the near future to a level that covers operating costs. A price sufficient to cover short-run marginal costs, however, may not ensure full cost recovery for major new exploration and development projects. Thus, any impact of lower oil prices would be cumulative over time as a slowdown in exploration and development, along with continued production from existing wells, results in the depletion of the U.S. oil reserve base. A drop in current exploratory drilling, which will result if prices are expected by industry to remain low, would constrain production for several years because of the expected loss of new field discoveries.

According to the Hughes rig count,<sup>4</sup> active rotary rigs in the United States engaged in exploratory and development well drilling averaged about 797 during the second quarter of 1986, compared with an average of 1,867 during the same quarter a year earlier. Important offshore projects initiated in 1985 or earlier, however, where large initial cost outlays have already been made, are still scheduled to come on stream. At least two fields, Point Arguello and Point Pedernales, in the California Federal Offshore are scheduled for development early in 1987. In the Gulf of Mexico, deep water projects in the Green Canyon area have been approved for development, and start of production is scheduled as early as mid-1987 on one of these projects. There are also expected increases in Alaskan production during 1986 and 1987, as previously noted. New production projects with long lead times from the offshore and Alaska thus are expected to moderate the decline due to the loss in current production from marginal wells and reduced developmental drilling. In this forecast, the impact of current oil prices on production in late 1986 and 1987 are moderated somewhat because, in all three oil price cases, prices are assumed to bottom out in the third quarter of 1986 and increase slowly through 1987.

## Refinery Activity, Imports, and Stocks

Domestic petroleum product demand can be met from different combinations of three basic sources: refinery production, product imports, and, for shorter periods, stock drawdown. Refinery activity levels, in turn, are related to crude oil imports and stock requirements. Domestic refinery activity is the most important source for all the major petroleum products, but net product imports and inventories can contribute significantly in meeting peak demands for individual fuels throughout the year. During the 1986-1987 forecast horizon, lower oil prices and higher petroleum demand are projected to have a significant influence on the contribution from each of these basic sources of supply.

Most of the increase in petroleum demand projected in this *Outlook* is forecast to be met from domestic refining, which in turn will be supported by sustained higher crude oil import levels (because domestic oil production is forecast to decline slightly). Refinery runs of crude oil are projected to increase by 640,000 barrels per day, or 5 percent, in 1986 but then fall by 1 percent in 1987. Second-quarter 1986 refinery runs were at the highest levels since the fourth quarter of 1980. Net imports of crude oil (excluding imports for the Strategic Petroleum Reserve (SPR)) are projected to increase by 850,000 barrels per day in 1986, or 30 percent, and by another 3 percent in 1987 (Table 6 on page 26).

The outlook for increased reliance on refinery production and crude oil imports rather than refined product imports results from an assessment of the impact of lower oil prices on relative refining costs in this country and abroad. Essentially, the refineries in the United States, which are designed to produce a high percentage yield of gasoline and distillates, require more crude oil per unit of final output to fuel their very energy-intensive conversion processes. As a result, the drop in oil prices earlier this year reduced U.S. refining costs for gasoline and distillates more than those at offshore heavy-product refineries. Compared with recent years, it is expected that it will be increasingly more economical to import crude oil and refine it domestically than to import finished product. Thus, while net crude oil imports are forecast to increase significantly in 1986, total net imports of petroleum products are forecast to remain essentially constant over the same period.

<sup>4</sup>Hughes Tool Company, *Rotary Rigs Running--by State*, April-June 1986, (Houston, Texas, 1986).

Residual fuel oil is the one exception to this product import trend. Net imports of residual fuel oil are projected to increase by 150,000 barrels per day, or by 48 percent, between 1985 and 1986. This increase would meet more than 100 percent of the increased demand for residual fuel oil projected for that year; the excess is being used to build stocks to levels that will provide a normal level of days of supply for the increased demand. An explanation for this trend toward increased imports can again be found in changes in the relative economics of refining domestically and abroad. Just as the light product refineries of the United States have experienced a relative improvement in the costs of producing gasoline and distillates, offshore heavy oil refineries (especially in the Caribbean Basin) have experienced a marked improvement in their own costs of producing residual fuel oil. Residual fuel oil imports are projected to remain at higher levels as long as this fuel can maintain its current competitive position with respect to natural gas in U.S. plants with fuel switching capability.

Changes in stock levels for crude oil and the major refined products are projected to reflect forecast changes in refinery activity and product demand. Accordingly, as refinery production has increased in response to higher total product demand, private crude oil stocks (excluding the Strategic Petroleum Reserve) are projected to increase to 327 million barrels by the end of 1986 and be at the same level at the end of 1987, compared with 321 million barrels at the end of 1985.

Refined product stocks are projected to be 710 million barrels at the end of 1986, 5 million barrels above the year-earlier level. This represents 44 days of supply,

based on the next quarter's anticipated rate of product supplied (Table 6 on page 26), the same number as at the end of 1985. Motor gasoline stocks at the end of the second quarter of 1986 were 8 million barrels higher than at the same time last year, reflecting the modest response of gasoline consumption to lower prices observed so far. Further small decreases in finished gasoline stocks projected over the summer, to 189 million barrels by the end of the third quarter, are consistent with a general increased reliance by industry on current refining activity to meet peak-season demands. Similarly, net gasoline imports this summer are projected to be slightly lower than the level last year.

Distillate stocks through this summer are expected to remain near last year's levels. As refineries operate at very high levels, only a small part of increased distillate production is going into heating oil stocks (about 230,000 barrels per day in third-quarter 1986). Most distillate production is being exported or used to offset imports. A more pronounced stock buildup should begin in the fourth quarter of 1986, but year-end distillate stock levels are projected to reach only 141 million barrels, 2.5 million barrels lower than at the end of 1985.

The Strategic Petroleum Reserve's (SPR) fill rate is projected to average 35,000 barrels per day for fiscal year 1987, as directed in the Consolidated Omnibus Budget Reconciliation Act of 1985. This rate would put the total SPR inventory at about 515 million barrels at the end of that fiscal year (September 30, 1987). The SPR reached the 500 million barrel mark in June 1986. It is assumed that no further oil will be added to the SPR in the fourth quarter of 1987.

## Petroleum Forecasting Uncertainty and Netback Pricing

A major uncertainty underlying these petroleum supply forecasts stems from the large and growing role of netback pricing arrangements in world oil markets. If crude oil can be processed and the resulting refined product marketed within the time frame specified in the netback contract for establishing crude and product price benchmarks, refiners bear much less risk in buying netback oil. As long as specified netback margins continue to offer refiners a profitable return, purchases of oil under such agreements will remain high. At a more basic level, however, it must be realized that the current weakness in world oil markets reflects a struggle for market share and that netback arrangements represent a convenient vehicle for reducing prices to increase crude oil sales. Thus, to the extent that U.S. petroleum demand does not respond to the resulting lower product prices, any increases in netback purchases by this country must be offset by decreases in domestic production or other imports (of either non-netback crude or refined product). The exact impact of increased oil purchases through netback agreements on domestic supply is not clear at this time.

Further uncertainty in the forecasts arises from the choices available to refiners for disposing of this oil and the potential secondary consequences of these choices for product prices and demand. For example, netback purchases could be used to build crude oil stocks. Such stock building would help ease the task of short-term market analysis because petroleum product prices and end-use consumption levels would be insulated from the effects of increased oil supply, since no additional product would move to market. This course of action is considered very unlikely, however, because refiners would again be exposed to full product price risk. Data for the first half of 1986 indicate that crude oil stocks have indeed been relatively stable.

Thus, new netback purchases may be expected to be processed promptly at refineries. However, if refinery processing of this crude increases beyond the current relatively high levels, capacity utilization rates and unit production costs will increase as well, with the result that increasingly favorable netback margins will be required to make this additional processing profitable.

Given the decision to buy and process more oil, the industry next must choose between storing and selling the resulting refined product. When this product is ultimately sold, the associated increase in product supply will place downward pressure on product price. Thus, to maintain the contracted and presumably favorable netback margin, product must be disposed of quickly. For this reason, major increases in primary product stocks in response to increased imports of netback oil are also not considered very likely.

Assuming that refiners have successfully moved this refined product beyond their own distribution systems, thereby securing their anticipated netback profit, it is still not clear whether this product will be moved into secondary storage (at local distributors and retail outlets), held in storage by consumers, or consumed immediately. (The sum of all three activities is reflected in EIA product supplied data.) Most of the uncertainty underlying these forecasts concerns this ultimate disposition. Short-term demand for most petroleum products (except industrial and utility fuels) does not appear sufficiently responsive to sustain much higher demand. But, with real product prices now in a range significantly below EIA's recent forecasting experience, there may be some surprises. At the same time, however, unless refiners offer special incentives to distributors or consumers, there is currently little reason for these entities to build stocks in a period of declining prices. As a result, competition at the wholesale and retail levels among all major refined products may be expected to remain intense in the near future.

# Projections of Other Major Energy Sources

## Natural Gas

Higher oil consumption appears to be contributing to lower natural gas use in 1986. Total natural gas consumption is projected to decline by almost 4 percent between 1985 and 1986, but then increase by more than 2 percent between 1986 and 1987 (Table 14 on page 33) as oil prices recover. Natural gas demand at electric utilities is expected to decline by nearly 15 percent between 1985 and 1986, to 2.59 trillion cubic feet, and then hold steady, decreasing by only about 1 percent in 1987. Despite lower natural gas prices in 1986 and moderate growth for the economy, electric utilities are projected to use more oil for generation this year because the price of natural gas has not decreased as much as that for fuel oil in recent months. By 1987, higher oil prices should improve the competitive position of natural gas relative to oil at electric utilities. Natural gas demand for the "all other uses" category is projected to decrease by nearly 2 percent between 1985 and 1986 and to increase by more than 3 percent between 1986 and 1987, partially reflecting the change in the rate of growth of industrial activity.

Natural gas production is expected to decline by close to 1 percent between 1985 and 1986 and drop slightly between 1986 and 1987. Low levels of natural gas stocks at the end of 1985 are projected to result in net stock additions in 1986. Net imports of natural gas from Canada are expected to decline by 17 percent between 1985 and 1986 because natural gas prices in the United States have fallen lower than the export price allowed by the Canadian National Energy Board.

## Coal

Excess domestic coal stocks that were evident at the beginning of 1985 have been substantially reduced, leading to the projection of moderate growth in coal production to about 909 million tons in 1986. Coal production in 1985 is estimated to have been about 886 million tons, 1 percent below the 1984 level (Table 15 on page 34 and Figure 7 on page 19). Continued growth in domestic coal use is projected to push pro-

duction in 1987 to 933 million tons, nearly 3 percent above the 1986 level.

Total domestic coal consumption is forecast to remain flat between 1985 and 1986 (Table 15 on page 34). Utility consumption in 1986 is projected to decline slightly, in contrast with the high growth experienced in the previous 2 years. Modest growth in industrial coal use in 1986 and 1987 will not contribute much to domestic coal demand growth in the short term.

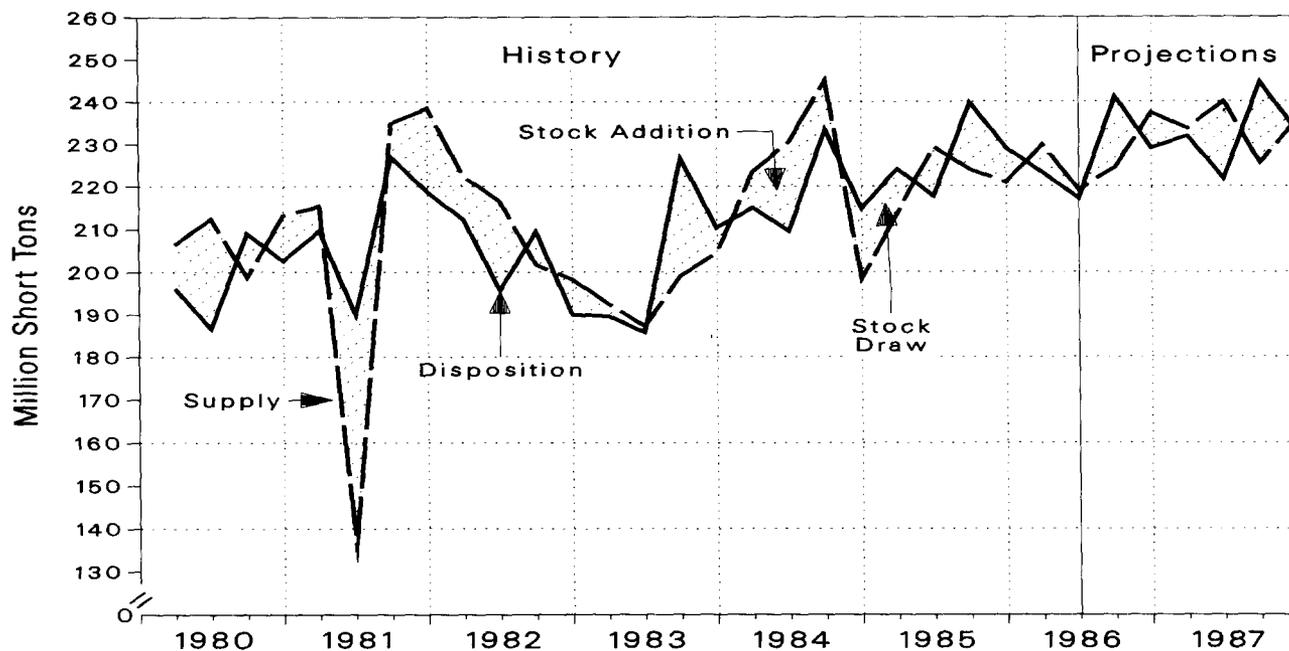
Electric utility coal consumption in 1986 is projected to be 693 million tons, about the same as the 1985 level. This expected development contrasts with the nearly 5-percent growth observed between 1984 and 1985. Utility coal consumption growth in 1985 was high due to increased utilization of existing coal plants and new coal capacity that became operational during a period of relatively high growth in electricity demand. High utilization rates were also partly attributable to the sharp drop in hydroelectric availability as a result of lower-than-normal water levels in 1985. Hydroelectric generation, which, when available, tends to displace coal-fired generation in certain regions of the country, is projected to increase in 1986. Additional factors explaining the slowing of coal consumption growth in 1986 include the continued growth expected in nuclear generation, the slowing of coal-fired capacity additions, and some switching from coal to oil use at electric utilities due to drastically lower oil prices (see Fuel Switching Box).

Average utilization rates for coal-fired plants are not expected to improve over the forecast period compared to 1985 levels. Utilization rates at coal-fired generating plants are estimated to have averaged 53.0 percent in 1985.<sup>5</sup> The current projections imply a decline in plant utilization in 1986 to 52 percent. Utilization rates for coal plants should improve slightly in 1987 over year-earlier levels, based on a growth rate of nearly 4 percent in utility coal consumption between 1986 and 1987.

In 1986, coking coal consumption is projected to fall to about 40 million tons from 41 million tons in 1985 because of the weak overall performance expected for the domestic steel industry. However, this forecast tends to discount any significant impact from possible tightening of steel import quotas. Hence, the forecast could be higher should import restrictions become binding. Aside from quotas, continued declines in the value of the dollar may weaken imported steel demand in the United States, leading to higher domestic steel production and possibly higher coking coal demand. Whether any incremental steel production results in

<sup>5</sup>Electric plant utilization is defined here as monthly generation (kilowatthours) divided by the product of nameplate capacity (kilowatts) and the number of hours in the month. The utilization figures are based on 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(84) (Washington, DC, 1984).

**Figure 7. Coal Supply and Disposition**



Sources: • History: Energy Information Administration, *Quarterly Coal Report*, DOE/EIA-0121(86/1Q) (Washington, DC, 1986). • Projections: Table 15.

higher coke production and higher coking coal demand depends on whether or not that incremental production is captured by producers using basic oxygen furnaces or electric arc furnaces (such as the mini-mills). In any case, the trend toward greater use of continuous casting will raise steel mill yields and reduce the relative requirements for coking coal in the future.

With a projected annual rate of increase of more than 2 percent in industrial output between 1985 and 1987, growth of more than 2 percent per year in coal consumption in the retail and general industry sector is projected for the forecast period. This projection mainly reflects an increase in industrial coal consumption, including manufacturing consumption (other than at coke plants). Some of the growth in 1986 within this sector is due to synfuels manufacture, including the assumed continuation of the Great Plains Coal Gasification Project.

Coal exports are projected to fall by about 5 million tons between 1985 and 1986, to 88 million tons. Despite projected economic expansion in Europe and elsewhere, continued reductions in Canadian steam coal requirements and expanded competition from Colombia in European steam coal markets are projected to result in reduced U.S. coal exports in 1986. Metallurgical coal exports to Japan also are expected to fall no-

ticeably in the short run. Total U.S. exports are projected to remain at 88 million tons in 1987.

## Electric Power

Electricity generation is projected to increase by more than 1 percent between 1985 and 1986 and by more than 3 percent between 1986 and 1987 (Table 16 on page 35). These increases are smaller than the projections published in the April 1986 *Outlook* because of lower than expected electricity demand in the beginning of 1986 and lower assumed economic growth in 1987. One factor responsible for the relatively slow growth in total electricity generation is the sluggish industrial sector, which experienced nearly a 2-percent drop in electricity sales between 1984 and 1985, while total generation showed a 2-percent increase.<sup>6</sup> This decline in industrial electricity use continued into 1986, with demand in the first quarter off by more than 1 percent from year-earlier levels. If demand for electricity by several of the major electricity-intensive industries (especially chemicals and primary metals) begins to experience a recovery during the forecast period, total electricity generation may be higher than projected here.

<sup>6</sup>Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04) (Washington, DC, 1986).

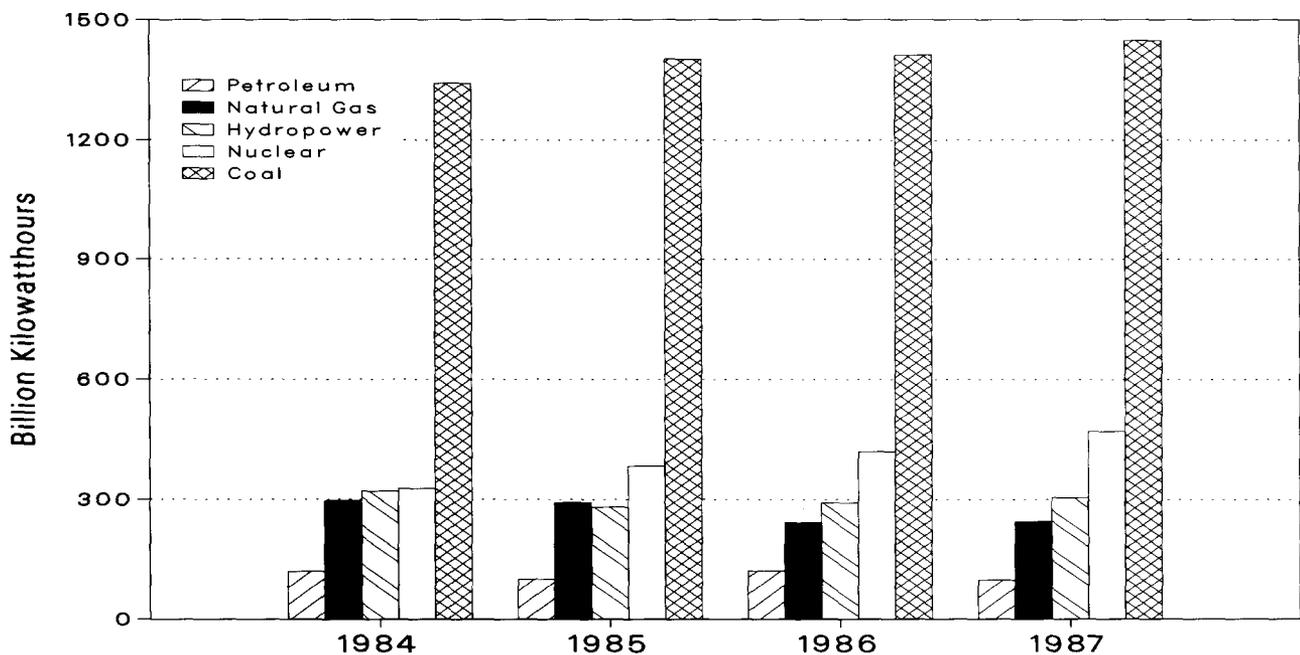
The real price of electricity is expected to decline slightly over the forecast period, mainly because of falling fuel costs. Electricity prices remain difficult to forecast because of the uncertainty associated with the inclusion of the costs of new generating capacity being added to the rate base. However, fuel costs to electric utilities are projected to continue to drop over the near term: the real prices of residual fuel oil and natural gas to utilities are expected to decline by 38 percent and 28 percent, respectively, between 1985 and 1986. The real price of coal also is projected to fall over the forecast period. This significant downward movement in the prices of fuels used to generate electricity is expected to counteract any upward price pressure from capital additions.

Significant gains are expected for nuclear and coal-fired generation over the forecast period (Figure 8). Nuclear generation is projected to increase by nearly 10 percent between 1985 and 1986, to more than 420 billion kilowatt-hours. An additional increase of 12 percent is expected in 1987. Output from new capacity is the major reason for these projected increases. This forecast assumes the addition of 6 new units (Millstone 3, Palo Verde 2, Catawba 2, Perry 1, Hope Creek 1, and Clinton 1) totaling nearly 7 gigawatts in 1986, and 8 additional units (Seabrook 1, Harris 1, Nine Mile Point 2, Byron 2, Braidwood 1, Watts Bar 1, Palo Verde 3, and Vogtle 1) totaling 9 gigawatts in 1987. A total of 109 nuclear units are expected to be operable in the United States by the end of 1987. This forecast

for nuclear generation is lower than that published in the April 1986 *Outlook* in part because of delays in the assumed startup dates for several new units. Some delays have occurred because local jurisdictions in the United States where several new plants are located have cited the Chernobyl nuclear accident in the Soviet Union as a reason for withdrawing support for the existing emergency evacuation plans. This support has been withdrawn in order to allow time to examine their adequacy, especially the radius of the area needed to be evacuated in case of emergency. Furthermore, major outages, in particular the total shutdown of the nuclear units at the Tennessee Valley Authority, have affected the forecast.

Coal-fired generation is expected to increase only slightly between 1985 and 1986 and by 3 percent between 1986 and 1987. These increases are slightly lower than the projected growth in total electricity generation because of the expected growth in nuclear generation and, to some extent, the flattening out of coal-fired capacity additions. More than 2 gigawatts of coal capability are expected to be added in 1986, and over 4 additional gigawatts are expected in 1987. The new capacity additions shown for 1986 are lower than the value published in the April *Outlook* because several plants previously reported as coming online in 1986 are now classified as having begun operation in 1985, thus lowering the anticipated 1986 increase.

**Figure 8. Electricity Generation by Fuel Source**



Sources: ● History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04) (Washington, DC, 1986). ● Projections: Table 16.

The combined amount of oil- and natural gas-fired generation is projected to fall by 6 percent between 1985 and 1986, and decline by an additional 7 percent between 1986 and 1987. This downward trend is attributed to the significant increases in generation from other fuels, although projected total generation from these two fuels is higher than the forecast published in the April 1986 *Outlook* as a result of the response expected to the rapid declines in the prices of both fuels. The level of oil generation is expected to increase by almost 22 billion kilowatthours in 1986 in response to the drop in world oil prices (See Fuel Switching box), but then fall off in 1987 as the oil price is assumed to rise. The level of natural gas generation is forecast to fall by 15 percent in 1986 and then fall again slightly in 1987. However, its share of combined oil and gas generation is projected to increase in 1987, as the oil-fired generation drops below the 1985 level.

Hydroelectric generation in 1986 is expected to be above the year-earlier level, but not as high as forecast in the previous *Outlook* because of reduced expectations for generation in the Tennessee Valley Authority region this year. Hydroelectric generation is assumed to return to normal levels in 1987. Growth in generation from other sources, mainly geothermal, is projected to increase over the forecast period as new capacity comes online.

Net electricity imports have experienced a significant upward trend since the late 1970's. Most of the electricity comes from Canada, which currently has surplus generating capacity. In addition, a small amount of

electricity was imported from Mexico in 1985 by the southwestern area of the country. Net electricity imports are projected to rise to 44 billion kilowatthours in 1986, an increase of 3 billion kilowatthours over the 1985 level (Table 16 on page 35). This increase is expected to result partly from the improvement of transmission capability within the United States but mostly from the opening of the Phase I transmission facilities between Hydro-Quebec of Canada and New England in the second half of 1986. Net electricity imports are expected to increase by an additional 3 billion kilowatthours between 1986 and 1987, mainly due to the full-service operation of the Phase I facilities.

## Total Domestic Energy Balance

Total energy consumption is forecast to increase by more than 1 percent between 1985 and 1986, to 74.9 quadrillion Btu (Table 17 on page 36). Based on higher economic growth assumed for 1987, total energy consumption is projected to increase by more than 2 percent between 1986 and 1987. The energy/GNP ratio in 1986 is projected to be 20.5 thousand Btu per 1982 dollar of real GNP, down slightly from the 20.7 thousand Btu per 1982 dollar of real GNP in 1985. The energy/GNP ratio in 1987 is projected to decline slightly from the 1986 level.

## Recent Fuel Switching at Electric Utilities

With the recent drop in crude oil prices, the downward trend in oil use at electric utilities has begun to reverse, resulting in changing fuel purchasing patterns in several areas of the country. Since the oil price increases of the 1970's, electric utilities have greatly reduced their use of oil-fired generation relative to other less expensive sources such as coal and nuclear power. From 1978 through 1985, oil-fired generation declined an average of 17 percent per year, from 17 percent of total electricity generation nationwide in 1978 to 4 percent in 1985.<sup>7</sup> During the same period, coal-fired generation increased by about 5 percent per year, while gas-fired generation dropped by less than 1 percent per year.

Generation from oil for January through April of this year was up 16 percent from the same period in 1985, despite a decline of more than 1 percent in total electricity generation. The large decline in imported crude oil prices (from \$24.92 per barrel in January 1986 to \$13.14 per barrel in April) resulted in prices of residual fuel oil competitive with those of natural gas in some areas of the country. For the first 4 months of 1986, oil-fired generation in the New England census region, New York, New Jersey, and California increased significantly, while gas-fired generation in these areas decreased from year-earlier levels.<sup>8</sup> These regions have a large amount of dual-fired generating units (those capable of burning either oil or gas), where oil can be substituted for gas when the relative prices change.

Not all gas to oil switching is necessarily the result of price competition with natural gas, however. Factors such as environmental constraints limit gas-to-oil switching at some utilities: California has a substantial number of dual-fired generating units, but they are subject to regulations limiting the burning of fuel oil. Another factor is a temporary loss of generating capacity: The 46-percent increase in oil-fired generation in the South Atlantic census region for the first four months of 1986 was partly due to nuclear plant shutdowns, as total generation declined somewhat and gas-fired generation rose by 6 percent in that region. Furthermore, a coal plant in Florida (which is in the South Atlantic census region) was shut down in May of 1986 and is not expected to resume operation until mid-September. As a result, that Florida utility is now relying on two oil-fired generating units.<sup>9</sup>

The possibility of continued switching to oil from natural gas in dual-fired boilers will depend primarily on the relative prices of the two fuels. Nationally, utility oil prices for the first quarter of 1986 were 32 percent below those for the first quarter of 1985, although still above the price of natural gas. Oil prices are expected to fall below those for utility natural gas in the second half of 1986. Residual fuel oil prices are expected to again rise above utility natural gas prices, starting in the first quarter of 1987. Regional price levels depend on contractual obligations for fuel purchases and transportation and distribution costs and thus may differ considerably from the national averages shown here. Furthermore, "interruptible" gas (which allows the buyer to backout of a sale at little or no cost if the buyer can find a better price) is more available to utilities during the spring and summer than in the winter. This situation may result in further switching to cheaper-priced residual fuel oil in some regions during the second and third quarters of 1986. Oil-fired generation is expected to rise by 21 percent between 1985 and 1986, while gas-fired generation is expected to fall by 15 percent. In 1987, however, gradually rising oil prices are expected to reverse the switching seen in 1986, so that generation from oil is projected to decline to slightly below the 1985 level, and generation from natural gas is projected to decrease by a small amount.

<sup>7</sup>Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04) (Washington, DC, 1986).

<sup>8</sup>Energy Information Administration, *Electric Power Monthly*, DOE/EIA-0226(86/04) (Washington, DC, 1986).

<sup>9</sup> *Coal Week*, June 2, 1986.

**Table 2. International Petroleum Balance  
(Million Barrels per Day, Except Closing Stocks)**

	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply<sup>a</sup></b>													
Production													
U.S. (50 States) .....	<b>11.1</b>	<b>11.3</b>	<b>11.2</b>	<i>11.0</i>	<i>10.9</i>	<i>10.9</i>	<i>10.9</i>	<i>10.8</i>	<i>10.7</i>	<i>10.8</i>	<b>11.2</b>	<i>11.0</i>	<i>10.8</i>
OPEC .....	<b>16.2</b>	<b>19.0</b>	<b>18.6</b>	<i>19.2</i>	<i>18.6</i>	<i>18.6</i>	<i>18.3</i>	<i>18.6</i>	<i>19.9</i>	<i>20.1</i>	<b>17.2</b>	<i>18.7</i>	<i>19.2</i>
Other Non-OPEC .....	<b>15.3</b>	<b>15.7</b>	<b>15.6</b>	<i>15.4</i>	<i>15.9</i>	<i>16.0</i>	<i>16.1</i>	<i>15.9</i>	<i>15.9</i>	<i>16.0</i>	<b>15.4</b>	<i>15.7</i>	<i>16.0</i>
Total Market Economies .....	<b>42.6</b>	<b>46.0</b>	<b>45.3</b>	<i>45.6</i>	<i>45.4</i>	<i>45.5</i>	<i>45.4</i>	<i>45.3</i>	<i>46.6</i>	<i>47.0</i>	<b>43.8</b>	<i>45.4</i>	<i>46.1</i>
Net Communist Exports .....	<b>2.2</b>	<b>1.7</b>	<b>1.0</b>	<i>1.7</i>	<i>1.8</i>	<i>1.8</i>	<i>1.2</i>	<i>1.6</i>	<i>1.6</i>	<i>1.6</i>	<b>1.7</b>	<i>1.6</i>	<i>1.5</i>
Total Supply .....	<b>44.8</b>	<b>47.7</b>	<b>46.3</b>	<i>47.3</i>	<i>47.2</i>	<i>47.3</i>	<i>46.6</i>	<i>46.9</i>	<i>48.2</i>	<i>48.6</i>	<b>45.5</b>	<i>47.0</i>	<i>47.6</i>
<b>Net Stock Withdrawals or Additions (-)</b>													
U.S. (50 States excl. SPR) .....	<b>.2</b>	<b>-1</b>	<b>.4</b>	<i>-.3</i>	<i>-.1</i>	<i>.0</i>	<i>.5</i>	<i>.0</i>	<i>-.2</i>	<i>-.1</i>	<b>.2</b>	<i>.0</i>	<i>.1</i>
U.S. SPR .....	<b>-1</b>	<b>.0</b>	<b>.0</b>	<i>-.1</i>	<i>.0</i>	<i>.0</i>	<i>.0</i>	<i>.0</i>	<i>.0</i>	<i>.0</i>	<b>-1</b>	<i>.0</i>	<i>.0</i>
Other Market Economies .....	<b>.0</b>	<b>-1.0</b>	<b>.6</b>	<i>-1.4</i>	<i>-.8</i>	<i>1.0</i>	<i>1.1</i>	<i>-.7</i>	<i>-1.0</i>	<i>.5</i>	<b>.1</b>	<i>-.2</i>	<i>.0</i>
Total Stock Withdrawals .....	<b>.1</b>	<b>-1.2</b>	<b>.9</b>	<i>-1.8</i>	<i>-.9</i>	<i>1.0</i>	<i>1.6</i>	<i>-.8</i>	<i>-1.2</i>	<i>.4</i>	<b>.2</b>	<i>-.2</i>	<i>.0</i>
<b>Product Supplied</b>													
U.S. (50 States) .....	<b>15.5</b>	<b>16.0</b>	<b>16.1</b>	<i>15.9</i>	<i>16.4</i>	<i>16.5</i>	<i>16.1</i>	<i>15.9</i>	<i>16.4</i>	<i>16.5</i>	<b>15.7</b>	<i>16.2</i>	<i>16.2</i>
U.S. Territories .....	<b>.3</b>	<b>.3</b>	<b>.3</b>	<i>.3</i>	<b>.3</b>	<i>.3</i>	<i>.3</i>						
Japan .....	<b>4.0</b>	<b>4.6</b>	<b>5.0</b>	<i>4.0</i>	<i>4.1</i>	<i>4.6</i>	<i>5.1</i>	<i>4.1</i>	<i>4.2</i>	<i>4.8</i>	<b>4.3</b>	<i>4.4</i>	<i>4.5</i>
OECD Europe .....	<b>11.4</b>	<b>11.8</b>	<b>12.3</b>	<i>11.4</i>	<i>11.5</i>	<i>12.6</i>	<i>12.6</i>	<i>11.7</i>	<i>11.7</i>	<i>12.9</i>	<b>11.7</b>	<i>12.0</i>	<i>12.2</i>
Other Market Economies .....	<b>13.8</b>	<b>14.0</b>	<b>13.9</b>	<i>14.0</i>	<i>14.1</i>	<i>14.3</i>	<i>14.2</i>	<i>14.2</i>	<i>14.5</i>	<i>14.7</i>	<b>13.9</b>	<i>14.1</i>	<i>14.4</i>
Total Market Economies .....	<b>45.1</b>	<b>46.7</b>	<b>47.6</b>	<i>45.7</i>	<i>46.4</i>	<i>48.4</i>	<i>48.3</i>	<i>46.3</i>	<i>47.1</i>	<i>49.1</i>	<b>45.9</b>	<i>47.0</i>	<i>47.7</i>
Statistical Discrepancy .....	<b>.2</b>	<b>.1</b>	<b>.3</b>	<i>.2</i>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<b>.2</b>	<i>.2</i>	<i>.1</i>
<b>Closing Stocks</b> (billion barrels) .....	<b>4.7</b>	<b>4.8</b>	<b>4.7</b>	<i>4.9</i>	<i>5.0</i>	<i>4.9</i>	<i>4.7</i>	<i>4.8</i>	<i>4.9</i>	<i>4.9</i>	<b>4.8</b>	<i>4.9</i>	<i>4.9</i>

<sup>a</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.

SPR: Strategic Petroleum Reserve

Notes: Minor discrepancies with other published EIA historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); and *International Energy Annual 1984* (DOE/EIA-0219(84)); Organization for Economic Cooperation and Development, *Quarterly Oil Statistics, First Quarter 1986*.

**Table 3. International Economic Growth  
(Percent Change from Previous Period)**

	Annual Average 1970-1984	1985	1986	1987
OECD Total <sup>a</sup> .....	<b>2.9</b>	<b>2.7</b>	<i>2.6</i>	<i>2.9</i>
United States <sup>b</sup> .....	<b>3.0</b>	<b>2.2</b>	<i>2.4</i>	<i>2.9</i>
Western Europe .....	<b>2.4</b>	<b>2.3</b>	<i>2.6</i>	<i>2.7</i>
Japan .....	<b>4.6</b>	<b>4.6</b>	<i>2.9</i>	<i>3.2</i>
Other OECD <sup>c</sup> .....	<b>3.3</b>	<b>4.3</b>	<i>3.2</i>	<i>3.1</i>

<sup>a</sup> Weighted average of growth in gross national product for the United States and growth in gross domestic product for the other countries of the Organization for Economic Cooperation and Development (OECD).

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

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

Note: Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Organization for Economic Cooperation and Development, *Main Economic Indicators*, March 1986. Forecasts: Data Resources, Inc., United States Forecast, CONTROL0786; Wharton Economic Forecasting Associates, *World Economic Outlook* December 1985.

**Table 4. Macroeconomic, Price, and Weather Data Assumptions for Low, Base, and High World Oil Price Cases**

Assumptions	1985		1986		World Oil Price Case	1986		1987				Year		
	3rd	4th	1st	2nd		3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Macroeconomic<sup>a</sup></b>														
Real Gross National Product (billion 1982 dollars) .....					Low	<i>3,671</i>	<i>3,690</i>	<i>3,719</i>	<i>3,751</i>	<i>3,778</i>	<i>3,804</i>	-	<i>3,654</i>	<i>3,763</i>
	<b>3,584</b>	<b>3,591</b>	<b>3,617</b>	<b>3,639</b>	Base	<i>3,672</i>	<i>3,689</i>	<i>3,715</i>	<i>3,747</i>	<i>3,774</i>	<i>3,799</i>	<b>3,570</b>	<i>3,654</i>	<i>3,759</i>
					High	<i>3,675</i>	<i>3,687</i>	<i>3,709</i>	<i>3,739</i>	<i>3,763</i>	<i>3,787</i>		<i>3,655</i>	<i>3,750</i>
Percent Change from Prior Year .....					Low	<i>2.4</i>	<i>2.8</i>	<i>2.8</i>	<i>3.1</i>	<i>2.9</i>	<i>3.1</i>		<i>2.4</i>	<i>3.0</i>
	<b>2.1</b>	<b>2.1</b>	<b>1.9</b>	<b>2.3</b>	Base	<i>2.5</i>	<i>2.7</i>	<i>2.7</i>	<i>3.0</i>	<i>2.8</i>	<i>3.0</i>	<del>2.2</del>	<del>2.4</del>	<del>2.9</del>
					High	<i>2.5</i>	<i>2.7</i>	<i>2.5</i>	<i>2.7</i>	<i>2.4</i>	<i>2.7</i>		<i>2.4</i>	<i>2.6</i>
GNP Implicit Price Deflator (index, 1982: 100) .....					Low	<i>115.0</i>	<i>115.4</i>	<i>116.1</i>	<i>116.7</i>	<i>117.5</i>	<i>118.6</i>	-	<i>114.7</i>	<i>117.2</i>
	<b>112.1</b>	<b>113.0</b>	<b>113.8</b>	<b>114.4</b>	Base	<i>114.9</i>	<i>115.5</i>	<i>116.2</i>	<i>116.8</i>	<i>117.7</i>	<i>118.7</i>	<b>111.7</b>	<i>114.7</i>	<i>117.4</i>
					High	<i>114.8</i>	<i>115.5</i>	<i>116.5</i>	<i>117.2</i>	<i>118.1</i>	<i>119.3</i>		<i>114.6</i>	<i>117.8</i>
Percent Change from Prior Year .....					Low	<i>2.6</i>	<i>2.1</i>	<i>2.0</i>	<i>2.0</i>	<i>2.2</i>	<i>2.8</i>		<i>2.7</i>	<i>2.2</i>
	<b>3.2</b>	<b>3.1</b>	<b>3.1</b>	<b>2.8</b>	Base	<i>2.5</i>	<i>2.2</i>	<i>2.1</i>	<i>2.1</i>	<i>2.4</i>	<i>2.8</i>	<del>3.3</del>	<del>2.7</del>	<del>2.4</del>
					High	<i>2.4</i>	<i>2.2</i>	<i>2.4</i>	<i>2.4</i>	<i>2.9</i>	<i>3.3</i>		<i>2.6</i>	<i>2.8</i>
Real Disposable Personal Income <sup>b</sup> (billion 1982 dollars) .....					Low	<i>2,604</i>	<i>2,619</i>	<i>2,639</i>	<i>2,656</i>	<i>2,667</i>	<i>2,677</i>	-	<i>2,594</i>	<i>2,660</i>
	<b>2,503</b>	<b>2,517</b>	<b>2,551</b>	<b>2,601</b>	Base	<i>2,599</i>	<i>2,610</i>	<i>2,631</i>	<i>2,649</i>	<i>2,660</i>	<i>2,666</i>	<b>2,509</b>	<i>2,590</i>	<i>2,652</i>
					High	<i>2,593</i>	<i>2,595</i>	<i>2,612</i>	<i>2,630</i>	<i>2,641</i>	<i>2,648</i>		<i>2,585</i>	<i>2,633</i>
Percent Change from Prior Year .....					Low	<i>4.0</i>	<i>4.1</i>	<i>3.4</i>	<i>2.1</i>	<i>2.4</i>	<i>2.2</i>		<i>2.3</i>	<i>2.5</i>
	<b>.9</b>	<b>1.3</b>	<b>2.7</b>	<b>2.7</b>	Base	<i>3.8</i>	<i>3.7</i>	<i>3.1</i>	<i>1.8</i>	<i>2.3</i>	<i>2.1</i>	<del>1.6</del>	<del>2.2</del>	<del>2.4</del>
					High	<i>3.6</i>	<i>3.1</i>	<i>2.4</i>	<i>1.1</i>	<i>1.9</i>	<i>2.0</i>		<i>3.0</i>	<i>1.9</i>
Index of Industrial Production (Mfg.) (index, 1977: 100) .....					Low	<i>129.3</i>	<i>130.7</i>	<i>131.7</i>	<i>133.5</i>	<i>135.1</i>	<i>136.4</i>	-	<i>129.4</i>	<i>134.2</i>
	<b>127.6</b>	<b>128.2</b>	<b>128.9</b>	<b>128.5</b>	Base	<i>129.2</i>	<i>130.2</i>	<i>131.1</i>	<i>132.8</i>	<i>134.2</i>	<i>135.3</i>	<b>127.1</b>	<i>129.2</i>	<i>133.4</i>
					High	<i>129.1</i>	<i>129.6</i>	<i>130.0</i>	<i>131.5</i>	<i>132.6</i>	<i>133.4</i>		<i>129.0</i>	<i>131.9</i>
Percent Change from Prior Year .....					Low	<i>1.3</i>	<i>2.0</i>	<i>2.2</i>	<i>3.9</i>	<i>4.5</i>	<i>4.4</i>		<i>2.6</i>	<i>1.8</i>
	<b>1.6</b>	<b>1.9</b>	<b>2.3</b>	<b>1.5</b>	Base	<i>1.3</i>	<i>1.6</i>	<i>1.7</i>	<i>3.3</i>	<i>3.9</i>	<i>3.9</i>	<del>1.7</del>	<del>1.7</del>	<del>3.7</del>
					High	<i>1.2</i>	<i>1.1</i>	<i>.9</i>	<i>2.3</i>	<i>2.7</i>	<i>2.9</i>		<i>1.5</i>	<i>2.2</i>
<b>Oil Price</b>														
Imported Crude Oil Price <sup>c</sup> (U.S. dollars/barrel) .....					Low	<i>10.30</i>	<i>11.30</i>	<i>13.00</i>	<i>14.00</i>	<i>15.00</i>	<i>15.00</i>	-	<i>13.40</i>	<i>14.30</i>
	<b>26.56</b>	<b>26.84</b>	<b>19.05</b>	<b>13.00</b>	Base	<i>13.00</i>	<i>13.70</i>	<i>15.00</i>	<i>15.30</i>	<i>17.00</i>	<i>18.00</i>	<b>27.03</b>	<i>14.70</i>	<i>16.30</i>
					High	<i>17.00</i>	<i>19.00</i>	<i>20.00</i>	<i>20.00</i>	<i>21.00</i>	<i>22.00</i>		<i>17.00</i>	<i>20.80</i>
U.S. Refiners' Cost <sup>d</sup> (U.S. dollars/barrel) .....					Low	<i>10.30</i>	<i>11.30</i>	<i>13.00</i>	<i>14.00</i>	<i>15.00</i>	<i>15.00</i>	-	<i>13.70</i>	<i>14.30</i>
	<b>26.52</b>	<b>26.77</b>	<b>20.11</b>	<b>12.90</b>	Base	<i>13.00</i>	<i>13.70</i>	<i>15.00</i>	<i>15.30</i>	<i>17.00</i>	<i>18.00</i>	<b>26.76</b>	<i>14.90</i>	<i>16.30</i>
					High	<i>17.00</i>	<i>19.00</i>	<i>20.00</i>	<i>20.00</i>	<i>21.00</i>	<i>22.00</i>		<i>17.30</i>	<i>20.80</i>
<b>Weather<sup>e</sup></b>														
Heating Degree Days .....	<b>92</b>	<b>1,748</b>	<b>2,209</b>	<b>465</b>		<i>88</i>	<i>1,668</i>	<i>2,401</i>	<i>538</i>	<i>88</i>	<i>1,668</i>	<b>4,773</b>	<b>4,430</b>	<b>4,695</b>
Cooling Degree Days .....	<b>711</b>	<b>87</b>	<b>33</b>	<b>352</b>		<i>754</i>	<i>62</i>	<i>28</i>	<i>328</i>	<i>754</i>	<i>62</i>	<b>1,154</b>	<b>1,201</b>	<b>1,172</b>

<sup>a</sup> Macroeconomic projections from the Data Resources, Inc., model forecast are seasonally adjusted at annual rates and modified as appropriate to the three world oil price cases.

<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 degrees Fahrenheit (calculated as the simple average of the daily minimum and maximum temperatures).

Note: Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); Bureau of Economic Analysis, U.S. Department of Commerce, *Survey of Current Business*, as revised, June 1986; National Oceanic and Atmospheric Administration, U.S. Department of Commerce, *Monthly State, Regional, and National Heating/Cooling Degree Days Weighted by Population*; Federal Reserve System, *Statistical Release G.12.3*, July 1986. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0786.

**Table 5. Quarterly Energy Prices (Nominal), History and Projections**

Product	1985		1986		World Oil Price Case	1986		1987				Year		
	3rd	4th	1st	2nd		3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Petroleum</b>														
Imported Crude Oil Price <sup>a</sup> (dollars per barrel)	<b>26.56</b>	<b>26.84</b>	<b>19.05</b>	<b>13.00</b>	Low	<i>10.30</i>	<i>11.30</i>	<i>13.00</i>	<i>14.00</i>	<i>15.00</i>	<i>15.00</i>	-	<i>13.40</i>	<i>14.30</i>
					Base	<i>13.00</i>	<i>13.70</i>	<i>15.00</i>	<i>15.30</i>	<i>17.00</i>	<i>18.00</i>	<b>27.03</b>	<i>14.70</i>	<i>16.30</i>
					High	<i>17.00</i>	<i>19.00</i>	<i>20.00</i>	<i>20.00</i>	<i>21.00</i>	<i>22.00</i>	-	<i>17.00</i>	<i>20.80</i>
Gasoline <sup>b</sup> (dollars per gallon)	<b>1.22</b>	<b>1.20</b>	<b>1.10</b>	<b>.93</b>	Low	<i>.85</i>	<i>.82</i>	<i>.84</i>	<i>.91</i>	<i>.97</i>	<i>.96</i>	-	<i>.92</i>	<i>.92</i>
					Base	<i>.88</i>	<i>.89</i>	<i>.91</i>	<i>.97</i>	<i>1.03</i>	<i>1.03</i>	<b>1.20</b>	<i>.95</i>	<i>.99</i>
					High	<i>.93</i>	<i>1.02</i>	<i>1.07</i>	<i>1.14</i>	<i>1.18</i>	<i>1.18</i>	-	<i>.99</i>	<i>1.14</i>
No. 2 Diesel Oil, Retail (dollars per gallon)	<b>1.13</b>	<b>1.20</b>	<b>1.04</b>	<b>.86</b>	Low	<i>.78</i>	<i>.79</i>	<i>.88</i>	<i>.90</i>	<i>.93</i>	<i>.95</i>	-	<i>.87</i>	<i>.91</i>
					Base	<i>.81</i>	<i>.84</i>	<i>.92</i>	<i>.93</i>	<i>.97</i>	<i>1.00</i>	<b>1.15</b>	<i>.89</i>	<i>.95</i>
					High	<i>.86</i>	<i>.94</i>	<i>1.02</i>	<i>1.03</i>	<i>1.05</i>	<i>1.07</i>	-	<i>.92</i>	<i>1.05</i>
No. 2 Heating Oil, Wholesale (dollars per gallon)	<b>.73</b>	<b>.83</b>	<b>.61</b>	<b>.43</b>	Low	<i>.36</i>	<i>.38</i>	<i>.44</i>	<i>.45</i>	<i>.47</i>	<i>.49</i>	-	<i>.47</i>	<i>.51</i>
					Base	<i>.41</i>	<i>.44</i>	<i>.49</i>	<i>.49</i>	<i>.52</i>	<i>.56</i>	<b>.77</b>	<i>.47</i>	<i>.51</i>
					High	<i>.50</i>	<i>.56</i>	<i>.61</i>	<i>.60</i>	<i>.62</i>	<i>.65</i>	-	<i>.52</i>	<i>.62</i>
No. 2 Heating Oil, Retail (dollars per gallon)	<b>.98</b>	<b>1.07</b>	<b>.97</b>	<b>.74</b>	Low	<i>.61</i>	<i>.62</i>	<i>.72</i>	<i>.72</i>	<i>.73</i>	<i>.78</i>	-	<i>.74</i>	<i>.74</i>
					Base	<i>.65</i>	<i>.68</i>	<i>.77</i>	<i>.75</i>	<i>.78</i>	<i>.84</i>	<b>1.05</b>	<i>.76</i>	<i>.79</i>
					High	<i>.70</i>	<i>.79</i>	<i>.89</i>	<i>.87</i>	<i>.88</i>	<i>.94</i>	-	<i>.80</i>	<i>.89</i>
No. 6 Residual Fuel Oil <sup>c</sup> (dollars per barrel)	<b>23.89</b>	<b>24.26</b>	<b>19.87</b>	<b>13.33</b>	Low	<i>11.10</i>	<i>12.10</i>	<i>13.50</i>	<i>14.10</i>	<i>15.10</i>	<i>15.40</i>	-	<i>14.10</i>	<i>14.50</i>
					Base	<i>13.60</i>	<i>14.40</i>	<i>15.40</i>	<i>15.40</i>	<i>17.00</i>	<i>18.30</i>	<b>25.60</b>	<i>15.30</i>	<i>16.50</i>
					High	<i>17.40</i>	<i>19.50</i>	<i>20.20</i>	<i>19.70</i>	<i>20.80</i>	<i>22.20</i>	-	<i>17.50</i>	<i>20.70</i>
<b>Electric Utility Fuels</b>														
Coal (dollars per million Btu)	<b>1.64</b>	<b>1.63</b>	<b>1.61</b>	<b>1.61</b>	Low	<i>1.54</i>	<i>1.55</i>	<i>1.55</i>	<i>1.56</i>	<i>1.56</i>	<i>1.57</i>	-	<i>1.58</i>	<i>1.56</i>
					Base	<i>1.62</i>	<i>1.62</i>	<i>1.63</i>	<i>1.64</i>	<i>1.65</i>	<i>1.65</i>	<b>1.65</b>	<i>1.62</i>	<i>1.64</i>
					High	<i>1.65</i>	<i>1.66</i>	<i>1.67</i>	<i>1.68</i>	<i>1.68</i>	<i>1.69</i>	-	<i>1.63</i>	<i>1.68</i>
Heavy Oil <sup>d</sup> (dollars per million Btu)	<b>3.97</b>	<b>4.14</b>	<b>3.18</b>	<b>2.45</b>	Low	<i>1.99</i>	<i>2.15</i>	<i>2.37</i>	<i>2.46</i>	<i>2.62</i>	<i>2.67</i>	-	<i>2.44</i>	<i>2.53</i>
					Base	<i>2.39</i>	<i>2.50</i>	<i>2.67</i>	<i>2.66</i>	<i>2.92</i>	<i>3.13</i>	<b>4.24</b>	<i>2.63</i>	<i>2.85</i>
					High	<i>2.99</i>	<i>3.32</i>	<i>3.43</i>	<i>3.36</i>	<i>3.52</i>	<i>3.75</i>	-	<i>2.99</i>	<i>3.52</i>
Natural Gas (dollars per million Btu)	<b>3.36</b>	<b>3.27</b>	<b>2.83</b>	<b>2.42</b>	Low	<i>2.40</i>	<i>2.48</i>	<i>2.48</i>	<i>2.56</i>	<i>2.66</i>	<i>2.80</i>	-	<i>2.53</i>	<i>2.62</i>
					Base	<i>2.42</i>	<i>2.53</i>	<i>2.54</i>	<i>2.62</i>	<i>2.74</i>	<i>2.90</i>	<b>3.43</b>	<i>2.55</i>	<i>2.70</i>
					High	<i>2.45</i>	<i>2.62</i>	<i>2.79</i>	<i>2.91</i>	<i>3.05</i>	<i>3.24</i>	-	<i>2.58</i>	<i>3.00</i>
<b>Other Residential</b>														
Natural Gas (dollars per 1,000 cu. ft.)	<b>7.11</b>	<b>5.96</b>	<b>5.66</b>	<b>6.02</b>	Low	<i>6.40</i>	<i>5.53</i>	<i>5.33</i>	<i>5.67</i>	<i>6.46</i>	<i>5.57</i>	-	<i>5.71</i>	<i>5.55</i>
					Base	<i>6.74</i>	<i>5.71</i>	<i>5.61</i>	<i>5.97</i>	<i>6.81</i>	<i>5.86</i>	<b>6.13</b>	<i>5.81</i>	<i>5.84</i>
					High	<i>6.87</i>	<i>5.82</i>	<i>5.71</i>	<i>6.09</i>	<i>6.94</i>	<i>5.98</i>	-	<i>5.86</i>	<i>5.96</i>
Electricity (cents per kilowatthour)	<b>8.20</b>	<b>7.74</b>	<b>7.49</b>	<b>8.01</b>	Low	<i>8.05</i>	<i>7.66</i>	<i>7.34</i>	<i>7.94</i>	<i>8.32</i>	<i>7.89</i>	-	<i>7.82</i>	<i>7.85</i>
					Base	<i>8.23</i>	<i>7.84</i>	<i>7.52</i>	<i>8.14</i>	<i>8.53</i>	<i>8.09</i>	<b>7.79</b>	<i>7.89</i>	<i>8.07</i>
					High	<i>8.39</i>	<i>8.01</i>	<i>7.69</i>	<i>8.34</i>	<i>8.74</i>	<i>8.30</i>	-	<i>8.00</i>	<i>8.27</i>

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

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

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

<sup>d</sup> Heavy fuel oil prices include fuel oils No. 4., No. 5, and No. 6, and topped crude fuel oil prices.

Notes: Second quarter 1986 estimated for all fuels, except gasoline. All prices exclude taxes, except gasoline, residential natural gas, and diesel. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); and *Petroleum Marketing Monthly* DOE/EIA-0380(86/04).

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
<b>Crude Oil Supply</b>													
Domestic Production <sup>a</sup> .....	<b>8.90</b>	<b>8.97</b>	<b>8.94</b>	<b>8.79</b>	<i>8.71</i>	<i>8.66</i>	<i>8.66</i>	<i>8.61</i>	<i>8.56</i>	<i>8.56</i>	<b>8.97</b>	<i>8.77</i>	<i>8.60</i>
Alaska .....	<b>1.82</b>	<b>1.84</b>	<b>1.82</b>	<b>1.86</b>	<i>1.87</i>	<i>1.86</i>	<i>1.89</i>	<i>1.89</i>	<i>1.89</i>	<i>1.89</i>	<b>1.83</b>	<i>1.86</i>	<i>1.89</i>
Lower 48 .....	<b>7.08</b>	<b>7.13</b>	<b>7.12</b>	<b>6.92</b>	<i>6.83</i>	<i>6.79</i>	<i>6.77</i>	<i>6.71</i>	<i>6.68</i>	<i>6.67</i>	<b>7.15</b>	<i>6.92</i>	<i>6.71</i>
Net Imports (Including SPR) <sup>b</sup> .....	<b>2.96</b>	<b>3.44</b>	<b>2.94</b>	<b>3.96</b>	<i>4.13</i>	<i>4.03</i>	<i>3.42</i>	<i>3.93</i>	<i>4.12</i>	<i>4.00</i>	<b>3.00</b>	<i>3.77</i>	<i>3.87</i>
Gross Imports (Excluding SPR) .....	<b>3.02</b>	<b>3.59</b>	<b>3.07</b>	<b>4.06</b>	<i>4.31</i>	<i>4.20</i>	<i>3.58</i>	<i>4.08</i>	<i>4.26</i>	<i>4.20</i>	<b>3.08</b>	<i>3.91</i>	<i>4.04</i>
SPR Imports .....	<b>.14</b>	<b>.05</b>	<b>.05</b>	<b>.05</b>	<i>.00</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<i>.00</i>	<b>.12</b>	<i>.03</i>	<i>.03</i>
Exports .....	<b>.19</b>	<b>.20</b>	<b>.18</b>	<b>.15</b>	<i>.18</i>	<i>.20</i>	<i>.20</i>	<i>.18</i>	<i>.18</i>	<i>.20</i>	<b>.20</b>	<i>.18</i>	<i>.19</i>
SPR Stock Withdrawn or Added (-) .....	<b>-.14</b>	<b>-.04</b>	<b>-.04</b>	<b>-.05</b>	<i>.00</i>	<i>-.03</i>	<i>-.03</i>	<i>-.03</i>	<i>-.03</i>	<i>.00</i>	<b>-.12</b>	<i>-.03</i>	<i>-.03</i>
Other Stock Withdrawn or Added (-) .....	<b>.29</b>	<b>-.04</b>	<b>-.22</b>	<b>.19</b>	<i>.03</i>	<i>-.07</i>	<i>-.06</i>	<i>.02</i>	<i>.11</i>	<i>-.07</i>	<b>.07</b>	<i>-.02</i>	<i>.00</i>
Products Supplied and Losses .....	<b>-.06</b>	<b>-.06</b>	<b>-.06</b>	<b>-.06</b>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<b>-.06</b>	<i>-.06</i>	<i>-.06</i>
Unaccounted-for Crude .....	<b>.18</b>	<b>.13</b>	<b>.43</b>	<b>.16</b>	<i>.12</i>	<i>.13</i>	<i>.12</i>	<i>.13</i>	<i>.12</i>	<i>.14</i>	<b>.15</b>	<i>.21</i>	<i>.13</i>
Crude Oil Input to Refineries .....	<b>12.14</b>	<b>12.40</b>	<b>11.98</b>	<b>12.99</b>	<i>12.91</i>	<i>12.65</i>	<i>12.04</i>	<i>12.59</i>	<i>12.81</i>	<i>12.56</i>	<b>12.00</b>	<i>12.64</i>	<i>12.50</i>
<b>Other Supply</b>													
NGL Production .....	<b>1.58</b>	<b>1.65</b>	<b>1.68</b>	<b>1.61</b>	<i>1.54</i>	<i>1.66</i>	<i>1.70</i>	<i>1.57</i>	<i>1.54</i>	<i>1.65</i>	<b>1.61</b>	<i>1.62</i>	<i>1.62</i>
Other Hydrocarbon and Alcohol Inputs .....	<b>.06</b>	<b>.07</b>	<b>.04</b>	<b>.04</b>	<i>.06</i>	<i>.06</i>	<i>.05</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<b>.06</b>	<i>.05</i>	<i>.05</i>
Crude Oil Product Supplied .....	<b>.06</b>	<b>.06</b>	<b>.06</b>	<b>.06</b>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<b>.06</b>	<i>.06</i>	<i>.06</i>
Processing Gain .....	<b>.59</b>	<b>.58</b>	<b>.55</b>	<b>.57</b>	<i>.56</i>	<i>.56</i>	<i>.53</i>	<i>.55</i>	<i>.57</i>	<i>.56</i>	<b>.56</b>	<i>.56</i>	<i>.55</i>
Net Product Imports <sup>c</sup> .....	<b>1.17</b>	<b>1.36</b>	<b>1.15</b>	<b>1.13</b>	<i>1.29</i>	<i>1.57</i>	<i>1.21</i>	<i>1.28</i>	<i>1.42</i>	<i>1.67</i>	<b>1.29</b>	<i>1.28</i>	<i>1.40</i>
Gross Product Imports <sup>c</sup> .....	<b>1.72</b>	<b>2.04</b>	<b>1.78</b>	<b>1.78</b>	<i>1.81</i>	<i>2.14</i>	<i>1.78</i>	<i>1.84</i>	<i>1.95</i>	<i>2.25</i>	<b>1.87</b>	<i>1.88</i>	<i>1.96</i>
Product Exports .....	<b>.55</b>	<b>.68</b>	<b>.63</b>	<b>.65</b>	<i>.52</i>	<i>.57</i>	<i>.56</i>	<i>.56</i>	<i>.53</i>	<i>.58</i>	<b>.58</b>	<i>.59</i>	<i>.56</i>
Product Stock Withdrawn or Added (-) <sup>d</sup> .....	<b>-.06</b>	<b>-.09</b>	<b>.59</b>	<b>-.51</b>	<i>-.15</i>	<i>.03</i>	<i>.59</i>	<i>-.04</i>	<i>-.28</i>	<i>.00</i>	<b>.15</b>	<i>-.01</i>	<i>.06</i>
Total Product Supplied, Domestic Use .....	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.88</b>	<i>16.28</i>	<i>16.59</i>	<i>16.19</i>	<i>16.07</i>	<i>16.18</i>	<i>16.55</i>	<b>15.73</b>	<i>16.20</i>	<i>16.25</i>
<b>Disposition</b>													
Motor Gasoline .....	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.05</b>	<i>7.15</i>	<i>7.00</i>	<i>6.62</i>	<i>7.14</i>	<i>7.11</i>	<i>6.95</i>	<b>6.83</b>	<i>6.96</i>	<i>6.96</i>
Jet Fuel .....	<b>1.21</b>	<b>1.29</b>	<b>1.25</b>	<b>1.29</b>	<i>1.27</i>	<i>1.28</i>	<i>1.28</i>	<i>1.24</i>	<i>1.28</i>	<i>1.29</i>	<b>1.22</b>	<i>1.27</i>	<i>1.27</i>
Distillate Fuel Oil .....	<b>2.55</b>	<b>2.97</b>	<b>3.28</b>	<b>2.72</b>	<i>2.67</i>	<i>3.07</i>	<i>3.30</i>	<i>2.89</i>	<i>2.78</i>	<i>3.17</i>	<b>2.87</b>	<i>2.93</i>	<i>3.03</i>
Residual Fuel Oil .....	<b>1.09</b>	<b>1.27</b>	<b>1.42</b>	<b>1.28</b>	<i>1.26</i>	<i>1.40</i>	<i>1.37</i>	<i>1.25</i>	<i>1.09</i>	<i>1.32</i>	<b>1.20</b>	<i>1.34</i>	<i>1.25</i>
Other Oils Supplied <sup>e</sup> .....	<b>3.73</b>	<b>3.67</b>	<b>3.46</b>	<b>3.54</b>	<i>3.93</i>	<i>3.84</i>	<i>3.62</i>	<i>3.55</i>	<i>3.92</i>	<i>3.83</i>	<b>3.61</b>	<i>3.69</i>	<i>3.73</i>
Total Product Supplied .....	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.88</b>	<i>16.28</i>	<i>16.59</i>	<i>16.19</i>	<i>16.07</i>	<i>16.18</i>	<i>16.55</i>	<b>15.73</b>	<i>16.20</i>	<i>16.25</i>
Total Petroleum Net Imports .....	<b>4.14</b>	<b>4.80</b>	<b>4.08</b>	<b>5.09</b>	<i>5.42</i>	<i>5.60</i>	<i>4.63</i>	<i>5.21</i>	<i>5.53</i>	<i>5.66</i>	<b>4.29</b>	<i>5.05</i>	<i>5.26</i>
<b>Closing Stocks (million barrels)</b>													
Crude Oil (Excluding SPR) <sup>f</sup> .....	<b>317.4</b>	<b>320.9</b>	<b>340.9</b>	<b>323.3</b>	<i>320.7</i>	<i>327.1</i>	<i>332.2</i>	<i>330.8</i>	<i>320.7</i>	<i>327.1</i>	<b>320.9</b>	<i>327.1</i>	<i>327.1</i>
Total Motor Gasoline .....	<b>223.1</b>	<b>222.8</b>	<b>219.9</b>	<b>229.0</b>	<i>224.0</i>	<i>227.3</i>	<i>225.9</i>	<i>218.1</i>	<i>222.6</i>	<i>226.7</i>	<b>222.8</b>	<i>227.3</i>	<i>226.7</i>
Finished Motor Gasoline .....	<b>187.4</b>	<b>190.3</b>	<b>185.0</b>	<b>194.3</b>	<i>188.8</i>	<i>195.2</i>	<i>191.9</i>	<i>185.1</i>	<i>187.6</i>	<i>194.7</i>	<b>190.3</b>	<i>195.2</i>	<i>194.7</i>
Blending Components .....	<b>35.6</b>	<b>32.5</b>	<b>34.9</b>	<b>34.7</b>	<i>35.2</i>	<i>32.1</i>	<i>34.0</i>	<i>32.9</i>	<i>34.9</i>	<i>32.0</i>	<b>32.5</b>	<i>32.1</i>	<i>32.0</i>
Jet Fuel .....	<b>42.0</b>	<b>40.5</b>	<b>47.4</b>	<b>45.5</b>	<i>45.9</i>	<i>43.8</i>	<i>44.8</i>	<i>46.5</i>	<i>45.9</i>	<i>44.2</i>	<b>40.5</b>	<i>43.8</i>	<i>44.2</i>
Distillate Fuel Oil .....	<b>117.4</b>	<b>143.7</b>	<b>99.3</b>	<b>105.6</b>	<i>126.6</i>	<i>141.2</i>	<i>96.3</i>	<i>100.3</i>	<i>122.4</i>	<i>137.5</i>	<b>143.7</b>	<i>141.2</i>	<i>137.5</i>
Residual Fuel Oil .....	<b>43.4</b>	<b>50.4</b>	<b>38.8</b>	<b>40.2</b>	<i>47.9</i>	<i>53.7</i>	<i>45.2</i>	<i>41.6</i>	<i>42.0</i>	<i>45.0</i>	<b>50.4</b>	<i>53.7</i>	<i>45.0</i>
Other Oils <sup>g</sup> .....	<b>270.0</b>	<b>247.2</b>	<b>245.9</b>	<b>277.7</b>	<i>267.6</i>	<i>243.6</i>	<i>244.6</i>	<i>253.7</i>	<i>253.3</i>	<i>232.8</i>	<b>247.2</b>	<i>243.6</i>	<i>232.8</i>
Total Stocks (Excluding SPR) .....	<b>1013.2</b>	<b>1025.5</b>	<b>992.1</b>	<b>1021.2</b>	<i>1032.7</i>	<i>1036.6</i>	<i>988.9</i>	<i>991.0</i>	<i>1007.0</i>	<i>1013.3</i>	<b>1025.5</b>	<i>1036.6</i>	<i>1013.3</i>
Crude Oil in SPR .....	<b>489.3</b>	<b>493.3</b>	<b>496.9</b>	<b>501.6</b>	<i>501.9</i>	<i>505.1</i>	<i>508.2</i>	<i>511.4</i>	<i>514.7</i>	<i>514.7</i>	<b>493.3</b>	<i>505.1</i>	<i>514.7</i>
Total Stocks (Including SPR) .....	<b>1502.4</b>	<b>1518.8</b>	<b>1489.0</b>	<b>1522.8</b>	<i>1534.6</i>	<i>1541.7</i>	<i>1497.2</i>	<i>1502.4</i>	<i>1521.6</i>	<i>1528.0</i>	<b>1518.8</b>	<i>1541.7</i>	<i>1528.0</i>

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

<sup>b</sup> Net Imports equals Gross Imports plus SPR Imports minus Exports.

<sup>c</sup> Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

<sup>d</sup> Includes an estimate of minor product stock change based on monthly data.

<sup>e</sup> Includes crude oil product supplied, natural gas liquids, liquefied refinery gases, other liquids, and all finished petroleum products except motor gasoline, jet fuels, and distillate and residual fuel oils.

<sup>f</sup> Includes crude oil in transit to refineries.

<sup>g</sup> Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly* DOE/EIA-0109, Jan. 1986 to April 1986; *Weekly Petroleum Status Report*, DOE/EIA-0208(86-23,24,28).

**Table 7. Quarterly Supply and Disposition of Petroleum: Low World Oil Price Case  
(Million Barrels per Day, Except Stocks)**

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
<b>Crude Oil Supply</b>													
Domestic Production <sup>a</sup> .....	<b>8.90</b>	<b>8.97</b>	<b>8.94</b>	<b>8.79</b>	<i>8.62</i>	<i>8.59</i>	<i>8.58</i>	<i>8.54</i>	<i>8.51</i>	<i>8.44</i>	<b>8.97</b>	<i>8.73</i>	<i>8.52</i>
Alaska .....	<b>1.82</b>	<b>1.84</b>	<b>1.82</b>	<b>1.86</b>	<i>1.87</i>	<i>1.86</i>	<i>1.89</i>	<i>1.89</i>	<i>1.89</i>	<i>1.89</i>	<b>1.83</b>	<i>1.86</i>	<i>1.89</i>
Lower 48 .....	<b>7.08</b>	<b>7.13</b>	<b>7.12</b>	<b>6.92</b>	<i>6.75</i>	<i>6.73</i>	<i>6.69</i>	<i>6.64</i>	<i>6.63</i>	<i>6.55</i>	<b>7.15</b>	<i>6.88</i>	<i>6.63</i>
Net Imports (Including SPR) <sup>b</sup> .....	<b>2.96</b>	<b>3.44</b>	<b>2.94</b>	<b>3.96</b>	<i>4.29</i>	<i>4.19</i>	<i>3.61</i>	<i>4.07</i>	<i>4.31</i>	<i>4.19</i>	<b>3.00</b>	<i>3.85</i>	<i>4.05</i>
Gross Imports (Excluding SPR) .....	<b>3.02</b>	<b>3.59</b>	<b>3.07</b>	<b>4.06</b>	<i>4.47</i>	<i>4.36</i>	<i>3.77</i>	<i>4.22</i>	<i>4.46</i>	<i>4.39</i>	<b>3.08</b>	<i>4.00</i>	<i>4.21</i>
SPR Imports .....	<b>.14</b>	<b>.05</b>	<b>.05</b>	<b>.05</b>	<i>.00</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<i>.00</i>	<b>.12</b>	<i>.03</i>	<i>.03</i>
Exports .....	<b>.19</b>	<b>.20</b>	<b>.18</b>	<b>.15</b>	<i>.18</i>	<i>.20</i>	<i>.20</i>	<i>.18</i>	<i>.18</i>	<i>.20</i>	<b>.20</b>	<i>.18</i>	<i>.19</i>
SPR Stock Withdrawn or Added (-) .....	<b>-.14</b>	<b>-.04</b>	<b>-.04</b>	<b>-.05</b>	<i>.00</i>	<i>-.03</i>	<i>-.03</i>	<i>-.03</i>	<i>-.03</i>	<i>.00</i>	<b>-.12</b>	<i>-.03</i>	<i>-.03</i>
Other Stock Withdrawn or Added (-) .....	<b>.29</b>	<b>-.04</b>	<b>-.22</b>	<b>.19</b>	<i>.01</i>	<i>-.08</i>	<i>-.06</i>	<i>.02</i>	<i>.11</i>	<i>-.09</i>	<b>.07</b>	<i>-.03</i>	<i>.00</i>
Products Supplied and Losses .....	<b>-.06</b>	<b>-.06</b>	<b>-.06</b>	<b>-.06</b>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<b>-.06</b>	<i>-.06</i>	<i>-.06</i>
Unaccounted-for Crude .....	<b>.18</b>	<b>.13</b>	<b>.43</b>	<b>.16</b>	<i>.13</i>	<i>.17</i>	<i>.13</i>	<i>.16</i>	<i>.13</i>	<i>.22</i>	<b>.15</b>	<i>.22</i>	<i>.16</i>
Crude Oil Input to Refineries .....	<b>12.14</b>	<b>12.40</b>	<b>11.98</b>	<b>12.99</b>	<i>12.98</i>	<i>12.77</i>	<i>12.17</i>	<i>12.69</i>	<i>12.96</i>	<i>12.70</i>	<b>12.00</b>	<i>12.68</i>	<i>12.63</i>
<b>Other Supply</b>													
NGL Production .....	<b>1.58</b>	<b>1.65</b>	<b>1.68</b>	<b>1.61</b>	<i>1.54</i>	<i>1.67</i>	<i>1.70</i>	<i>1.57</i>	<i>1.55</i>	<i>1.65</i>	<b>1.61</b>	<i>1.62</i>	<i>1.62</i>
Other Hydrocarbon and Alcohol Inputs .....	<b>.06</b>	<b>.07</b>	<b>.04</b>	<b>.04</b>	<i>.06</i>	<i>.06</i>	<i>.05</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<b>.06</b>	<i>.05</i>	<i>.06</i>
Crude Oil Product Supplied .....	<b>.06</b>	<b>.06</b>	<b>.06</b>	<b>.06</b>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<b>.06</b>	<i>.06</i>	<i>.06</i>
Processing Gain .....	<b>.59</b>	<b>.58</b>	<b>.55</b>	<b>.57</b>	<i>.57</i>	<i>.57</i>	<i>.53</i>	<i>.56</i>	<i>.58</i>	<i>.57</i>	<b>.56</b>	<i>.57</i>	<i>.56</i>
Net Product Imports <sup>c</sup> .....	<b>1.17</b>	<b>1.36</b>	<b>1.15</b>	<b>1.13</b>	<i>1.44</i>	<i>1.69</i>	<i>1.22</i>	<i>1.43</i>	<i>1.54</i>	<i>1.81</i>	<b>1.29</b>	<i>1.35</i>	<i>1.50</i>
Gross Product Imports <sup>c</sup> .....	<b>1.72</b>	<b>2.04</b>	<b>1.78</b>	<b>1.78</b>	<i>1.96</i>	<i>2.27</i>	<i>1.79</i>	<i>1.99</i>	<i>2.07</i>	<i>2.40</i>	<b>1.87</b>	<i>1.95</i>	<i>2.06</i>
Product Exports .....	<b>.55</b>	<b>.68</b>	<b>.63</b>	<b>.65</b>	<i>.52</i>	<i>.57</i>	<i>.56</i>	<i>.56</i>	<i>.53</i>	<i>.58</i>	<b>.58</b>	<i>.59</i>	<i>.56</i>
Product Stock Withdrawn or Added (-) <sup>d</sup> .....	<b>-.06</b>	<b>-.09</b>	<b>.59</b>	<b>-.51</b>	<i>-.24</i>	<i>.00</i>	<i>.66</i>	<i>-.12</i>	<i>-.35</i>	<i>-.01</i>	<b>.15</b>	<i>-.04</i>	<i>.04</i>
Total Product Supplied, Domestic Use .....	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.88</b>	<i>16.41</i>	<i>16.82</i>	<i>16.40</i>	<i>16.26</i>	<i>16.40</i>	<i>16.85</i>	<b>15.73</b>	<i>16.30</i>	<i>16.48</i>
<b>Disposition</b>													
Motor Gasoline .....	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.05</b>	<i>7.17</i>	<i>7.04</i>	<i>6.67</i>	<i>7.18</i>	<i>7.15</i>	<i>7.00</i>	<b>6.83</b>	<i>6.98</i>	<i>7.00</i>
Jet Fuel .....	<b>1.21</b>	<b>1.29</b>	<b>1.25</b>	<b>1.29</b>	<i>1.28</i>	<i>1.29</i>	<i>1.29</i>	<i>1.25</i>	<i>1.29</i>	<i>1.30</i>	<b>1.22</b>	<i>1.28</i>	<i>1.28</i>
Distillate Fuel Oil .....	<b>2.55</b>	<b>2.97</b>	<b>3.28</b>	<b>2.72</b>	<i>2.69</i>	<i>3.10</i>	<i>3.33</i>	<i>2.92</i>	<i>2.81</i>	<i>3.22</i>	<b>2.87</b>	<i>2.95</i>	<i>3.07</i>
Residual Fuel Oil .....	<b>1.09</b>	<b>1.27</b>	<b>1.42</b>	<b>1.28</b>	<i>1.33</i>	<i>1.50</i>	<i>1.45</i>	<i>1.31</i>	<i>1.17</i>	<i>1.43</i>	<b>1.20</b>	<i>1.38</i>	<i>1.34</i>
Other Oils Supplied <sup>e</sup> .....	<b>3.73</b>	<b>3.67</b>	<b>3.46</b>	<b>3.54</b>	<i>3.96</i>	<i>3.89</i>	<i>3.66</i>	<i>3.59</i>	<i>3.98</i>	<i>3.89</i>	<b>3.61</b>	<i>3.71</i>	<i>3.78</i>
Total Product Supplied .....	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.88</b>	<i>16.41</i>	<i>16.82</i>	<i>16.40</i>	<i>16.26</i>	<i>16.40</i>	<i>16.85</i>	<b>15.73</b>	<i>16.30</i>	<i>16.48</i>
Total Petroleum Net Imports .....	<b>4.14</b>	<b>4.80</b>	<b>4.08</b>	<b>5.09</b>	<i>5.73</i>	<i>5.88</i>	<i>4.83</i>	<i>5.50</i>	<i>5.85</i>	<i>6.00</i>	<b>4.29</b>	<i>5.20</i>	<i>5.55</i>
<b>Stocks (million barrels)</b>													
Crude Oil (Excluding SPR) <sup>f</sup> .....	<b>317.4</b>	<b>320.9</b>	<b>340.9</b>	<b>323.3</b>	<i>322.8</i>	<i>330.4</i>	<i>335.6</i>	<i>333.4</i>	<i>323.6</i>	<i>331.9</i>	<b>320.9</b>	<i>330.4</i>	<i>331.9</i>
Total Motor Gasoline .....	<b>223.1</b>	<b>222.8</b>	<b>219.9</b>	<b>229.0</b>	<i>225.9</i>	<i>230.3</i>	<i>226.5</i>	<i>221.6</i>	<i>226.1</i>	<i>230.3</i>	<b>222.8</b>	<i>230.3</i>	<i>230.3</i>
Finished Motor Gasoline .....	<b>187.4</b>	<b>190.3</b>	<b>185.0</b>	<b>194.3</b>	<i>190.8</i>	<i>198.1</i>	<i>192.5</i>	<i>188.8</i>	<i>191.2</i>	<i>198.3</i>	<b>190.3</b>	<i>198.1</i>	<i>198.3</i>
Blending Components .....	<b>35.6</b>	<b>32.5</b>	<b>34.9</b>	<b>34.7</b>	<i>35.1</i>	<i>32.1</i>	<i>34.0</i>	<i>32.8</i>	<i>35.0</i>	<i>32.0</i>	<b>32.5</b>	<i>32.1</i>	<i>32.0</i>
Jet Fuel .....	<b>42.0</b>	<b>40.5</b>	<b>47.4</b>	<b>45.5</b>	<i>45.8</i>	<i>43.9</i>	<i>44.5</i>	<i>47.0</i>	<i>46.8</i>	<i>44.9</i>	<b>40.5</b>	<i>43.9</i>	<i>44.9</i>
Distillate Fuel Oil .....	<b>117.4</b>	<b>143.7</b>	<b>99.3</b>	<b>105.6</b>	<i>127.3</i>	<i>143.2</i>	<i>97.4</i>	<i>102.4</i>	<i>125.4</i>	<i>141.2</i>	<b>143.7</b>	<i>143.2</i>	<i>141.2</i>
Residual Fuel Oil .....	<b>43.4</b>	<b>50.4</b>	<b>38.8</b>	<b>40.2</b>	<i>50.1</i>	<i>55.0</i>	<i>45.2</i>	<i>41.5</i>	<i>44.0</i>	<i>48.8</i>	<b>50.4</b>	<i>55.0</i>	<i>48.8</i>
Other Oils <sup>g</sup> .....	<b>270.0</b>	<b>247.2</b>	<b>245.9</b>	<b>277.7</b>	<i>270.9</i>	<i>247.6</i>	<i>246.7</i>	<i>258.5</i>	<i>261.1</i>	<i>238.7</i>	<b>247.2</b>	<i>247.6</i>	<i>238.7</i>
Total Stocks (Excluding SPR) .....	<b>1013.2</b>	<b>1025.5</b>	<b>992.1</b>	<b>1021.2</b>	<i>1042.8</i>	<i>1050.4</i>	<i>995.9</i>	<i>1004.4</i>	<i>1027.0</i>	<i>1035.9</i>	<b>1025.5</b>	<i>1050.4</i>	<i>1035.9</i>
Crude Oil in SPR .....	<b>489.3</b>	<b>493.3</b>	<b>496.9</b>	<b>501.6</b>	<i>501.9</i>	<i>505.1</i>	<i>508.2</i>	<i>511.4</i>	<i>514.7</i>	<i>514.7</i>	<b>493.3</b>	<i>505.1</i>	<i>514.7</i>
Total Stocks (Including SPR) .....	<b>1502.4</b>	<b>1518.8</b>	<b>1489.0</b>	<b>1522.8</b>	<i>1544.7</i>	<i>1555.5</i>	<i>1504.1</i>	<i>1515.9</i>	<i>1541.7</i>	<i>1550.5</i>	<b>1518.8</b>	<i>1555.5</i>	<i>1550.5</i>

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

<sup>b</sup> Net Imports equals Gross Imports plus SPR Imports minus Exports.

<sup>c</sup> Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

<sup>d</sup> Includes an estimate of minor product stock change based on monthly data.

<sup>e</sup> Includes crude oil product supplied, natural gas liquids, liquefied refinery gases, other liquids, and all finished petroleum products except motor gasoline, jet fuels, and distillate and residual fuel oils.

<sup>f</sup> Includes crude oil in transit to refineries.

<sup>g</sup> Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1986 to April 1986; *Weekly Petroleum Status Report*, DOE/EIA-0208(86-23,24,28).

**Table 8. Quarterly Supply and Disposition of Petroleum: High World Oil Price Case  
(Million Barrels per Day, Except Stocks)**

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Crude Oil Supply													
Domestic Production <sup>a</sup>	8.90	8.97	8.94	8.79	8.84	8.82	8.81	8.78	8.76	8.75	8.97	8.85	8.78
Alaska	1.82	1.84	1.82	1.86	1.87	1.86	1.89	1.89	1.89	1.89	1.83	1.86	1.89
Lower 48	7.08	7.13	7.12	6.92	6.97	6.96	6.92	6.89	6.87	6.86	7.15	6.99	6.89
Net Imports (Including SPR) <sup>b</sup>	2.96	3.44	2.94	3.96	3.79	3.54	2.92	3.37	3.56	3.48	3.00	3.56	3.33
Gross Imports (Excluding SPR)	3.02	3.59	3.07	4.06	3.97	3.71	3.09	3.52	3.70	3.68	3.08	3.70	3.50
SPR Imports	.14	.05	.05	.05	.00	.03	.03	.03	.03	.00	.12	.03	.03
Exports	.19	.20	.18	.15	.18	.20	.20	.18	.18	.20	.20	.18	.19
SPR Stock Withdrawn or Added (-)	-.14	-.04	-.04	-.05	.00	-.03	-.03	-.03	-.03	.00	-.12	-.03	-.03
Other Stock Withdrawn or Added (-)	.29	-.04	-.22	.19	.08	-.05	-.04	.02	.10	-.08	.07	.00	.00
Products Supplied and Losses	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06
Unaccounted-for Crude	.18	.13	.43	.16	.14	.14	.14	.14	.14	.15	.15	.22	.14
Crude Oil Input to Refineries	12.14	12.40	11.98	12.99	12.78	12.36	11.74	12.22	12.46	12.23	12.00	12.53	12.16
<b>Other Supply</b>													
NGL Production	1.58	1.65	1.68	1.61	1.54	1.66	1.70	1.57	1.55	1.65	1.61	1.62	1.62
Other Hydrocarbon and Alcohol Inputs	.06	.07	.04	.04	.06	.06	.05	.06	.06	.06	.06	.05	.06
Crude Oil Product Supplied	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06
Processing Gain	.59	.58	.55	.57	.56	.55	.51	.54	.55	.55	.56	.56	.54
Net Product Imports <sup>c</sup>	1.17	1.36	1.15	1.13	1.08	1.37	1.04	1.10	1.24	1.53	1.29	1.18	1.23
Gross Product Imports <sup>c</sup>	1.72	2.04	1.78	1.78	1.60	1.94	1.60	1.67	1.77	2.11	1.87	1.77	1.79
Product Exports	.55	.68	.63	.65	.52	.57	.56	.56	.53	.58	.58	.59	.56
Product Stock Withdrawn or Added (-) <sup>d</sup>	-.06	-.09	.59	-.51	-.02	.08	.59	-.02	-.27	-.02	.15	.03	.07
Total Product Supplied, Domestic Use	15.54	16.02	16.06	15.88	16.06	16.14	15.69	15.54	15.66	16.05	15.73	16.04	15.74
<b>Disposition</b>													
Motor Gasoline	6.96	6.82	6.64	7.05	7.13	6.92	6.52	7.02	7.00	6.85	6.83	6.94	6.85
Jet Fuel	1.21	1.29	1.25	1.29	1.27	1.27	1.26	1.22	1.26	1.27	1.22	1.27	1.25
Distillate Fuel Oil	2.55	2.97	3.28	2.72	2.64	2.99	3.20	2.79	2.68	3.07	2.87	2.91	2.93
Residual Fuel Oil	1.09	1.27	1.42	1.28	1.15	1.21	1.18	1.06	.92	1.14	1.20	1.26	1.08
Other Oils Supplied <sup>e</sup>	3.73	3.67	3.46	3.54	3.88	3.75	3.53	3.45	3.80	3.72	3.61	3.66	3.62
Total Product Supplied	15.54	16.02	16.06	15.88	16.06	16.14	15.69	15.54	15.66	16.05	15.73	16.04	15.74
Total Petroleum Net Imports	4.14	4.80	4.08	5.09	4.86	4.91	3.96	4.48	4.79	5.00	4.29	4.74	4.56
<b>Stocks (million barrels)</b>													
Crude Oil (Excluding SPR) <sup>f</sup>	317.4	320.9	340.9	323.3	315.5	319.7	323.2	321.4	311.9	319.0	320.9	319.7	319.0
Total Motor Gasoline	223.1	222.8	219.9	229.0	221.5	223.5	223.1	213.4	216.6	221.2	222.8	223.5	221.2
Finished Motor Gasoline	187.4	190.3	185.0	194.3	188.0	192.7	189.0	182.3	184.6	191.5	190.3	192.7	191.5
Blending Components	35.6	32.5	34.9	34.7	33.6	30.8	34.1	31.1	32.0	29.7	32.5	30.8	29.7
Jet Fuel	42.0	40.5	47.4	45.5	44.1	42.2	43.7	44.6	44.3	42.7	40.5	42.2	42.7
Distillate Fuel Oil	117.4	143.7	99.3	105.6	124.4	137.9	93.3	97.5	119.0	134.5	143.7	137.9	134.5
Residual Fuel Oil	43.4	50.4	38.8	40.2	41.3	46.1	36.3	33.3	35.0	39.8	50.4	46.1	39.8
Other Oils <sup>g</sup>	270.0	247.2	245.9	277.7	268.1	242.5	243.1	252.1	250.7	229.6	247.2	242.5	229.6
Total Stocks (Excluding SPR)	1013.2	1025.5	992.1	1021.2	1014.9	1011.9	962.7	962.4	977.5	986.7	1025.5	1011.9	986.7
Crude Oil in SPR	489.3	493.3	496.9	501.6	501.9	505.1	508.2	511.4	514.7	514.7	493.3	505.1	514.7
Total Stocks (Including SPR)	1502.4	1518.8	1489.0	1522.8	1516.8	1517.0	1470.9	1473.8	1492.1	1501.4	1518.8	1517.0	1501.4

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

<sup>b</sup> Net Imports equals Gross Imports plus SPR Imports minus Exports.

<sup>c</sup> Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

<sup>d</sup> Includes an estimate of minor product stock change based on monthly data.

<sup>e</sup> Includes crude oil product supplied, natural gas liquids, liquefied refinery gases, other liquids, and all finished petroleum products except motor gasoline, jet fuels, and distillate and residual fuel oils.

<sup>f</sup> Includes crude oil in transit to refineries.

<sup>g</sup> Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

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Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1986 to April 1986; *Weekly Petroleum Status Report*, DOE/EIA-0208(86-23,24,28).

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Domestic Production <sup>a</sup> .....	<b>6.64</b>	<b>6.50</b>	<b>6.29</b>	<b>6.86</b>	<i>6.85</i>	<i>6.80</i>	<i>6.37</i>	<i>6.77</i>	<i>6.82</i>	<i>6.73</i>	<b>6.42</b>	<i>6.70</i>	<i>6.67</i>
Imports .....	<b>.35</b>	<b>.37</b>	<b>.29</b>	<b>.30</b>	<i>.24</i>	<i>.27</i>	<i>.22</i>	<i>.30</i>	<i>.31</i>	<i>.30</i>	<b>.38</b>	<i>.27</i>	<i>.28</i>
Exports .....	<b>.01</b>	<b>.02</b>	<b>.00</b>	<b>.00</b>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<b>.01</b>	<i>.00</i>	<i>.00</i>
Net Imports .....	<b>.34</b>	<b>.36</b>	<b>.29</b>	<b>.30</b>	<i>.24</i>	<i>.27</i>	<i>.22</i>	<i>.30</i>	<i>.31</i>	<i>.30</i>	<b>.37</b>	<i>.27</i>	<i>.28</i>
Net Withdrawals .....	<b>-.01</b>	<b>-.03</b>	<b>.06</b>	<b>-.10</b>	<i>.06</i>	<i>-.07</i>	<i>.04</i>	<i>.07</i>	<i>-.03</i>	<i>-.08</i>	<b>.04</b>	<i>-.01</i>	<i>.00</i>
<b>Total Primary Supply</b> .....	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.05</b>	<i>7.15</i>	<i>7.00</i>	<i>6.62</i>	<i>7.14</i>	<i>7.11</i>	<i>6.95</i>	<b>6.83</b>	<i>6.96</i>	<i>6.96</i>
<b>Disposition</b>													
Leaded .....	<b>2.41</b>	<b>2.31</b>	<b>2.15</b>	<b>2.27</b>	<i>1.97</i>	<i>1.80</i>	<i>1.62</i>	<i>1.66</i>	<i>1.56</i>	<i>1.45</i>	<b>2.43</b>	<i>2.05</i>	<i>1.57</i>
Unleaded .....	<b>4.55</b>	<b>4.51</b>	<b>4.49</b>	<b>4.78</b>	<i>5.18</i>	<i>5.20</i>	<i>5.00</i>	<i>5.48</i>	<i>5.54</i>	<i>5.50</i>	<b>4.41</b>	<i>4.91</i>	<i>5.38</i>
<b>Total Product Supplied</b> .....	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.05</b>	<i>7.15</i>	<i>7.00</i>	<i>6.62</i>	<i>7.14</i>	<i>7.11</i>	<i>6.95</i>	<b>6.83</b>	<i>6.96</i>	<i>6.96</i>
<b>Stocks</b>													
Primary Finished Stock Levels <sup>b</sup> (million barrels)													
Opening .....	<b>186.25</b>	<b>187.45</b>	<b>190.31</b>	<b>184.96</b>	<i>194.29</i>	<i>188.82</i>	<i>195.17</i>	<i>191.87</i>	<i>185.15</i>	<i>187.65</i>	<b>205.19</b>	<i>190.31</i>	<i>195.17</i>
Closing .....	<b>187.45</b>	<b>190.31</b>	<b>184.96</b>	<b>194.29</b>	<i>188.82</i>	<i>195.17</i>	<i>191.87</i>	<i>185.15</i>	<i>187.65</i>	<i>194.66</i>	<b>190.31</b>	<i>195.17</i>	<i>194.66</i>

Sub 72.4  
1986 69.4

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

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

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1986 to April 1986; *Weekly Petroleum Status Report*, DOE/EIA-0208(86-23,24,28).

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Refinery Output .....	<b>2.61</b>	<b>3.06</b>	<b>2.71</b>	<b>2.78</b>	<i>2.79</i>	<i>3.00</i>	<i>2.67</i>	<i>2.78</i>	<i>2.84</i>	<i>3.05</i>	<b>2.69</b>	<i>2.82</i>	<i>2.84</i>
Imports .....	<b>.13</b>	<b>.28</b>	<b>.22</b>	<b>.15</b>	<i>.18</i>	<i>.30</i>	<i>.21</i>	<i>.24</i>	<i>.26</i>	<i>.36</i>	<b>.20</b>	<i>.21</i>	<i>.27</i>
Exports .....	<b>.11</b>	<b>.08</b>	<b>.14</b>	<b>.13</b>	<i>.08</i>	<i>.07</i>	<i>.08</i>	<i>.09</i>	<i>.08</i>	<i>.07</i>	<b>.07</b>	<i>.11</i>	<i>.08</i>
Net Imports .....	<b>.02</b>	<b>.20</b>	<b>.08</b>	<b>.01</b>	<i>.11</i>	<i>.23</i>	<i>.13</i>	<i>.15</i>	<i>.18</i>	<i>.29</i>	<b>.13</b>	<i>.11</i>	<i>.19</i>
Net Withdrawals .....	<b>-.08</b>	<b>-.29</b>	<b>.49</b>	<b>-.07</b>	<i>-.23</i>	<i>-.16</i>	<i>.50</i>	<i>-.04</i>	<i>-.24</i>	<i>-.16</i>	<b>.05</b>	<i>.01</i>	<i>.01</i>
<b>Disposition</b>													
Electric Utility Consumption .....	<b>.04</b>	<b>.04</b>	<b>.04</b>	<b>.04</b>	<i>.05</i>	<i>.05</i>	<i>.04</i>	<i>.04</i>	<i>.05</i>	<i>.05</i>	<b>.04</b>	<i>.05</i>	<i>.04</i>
Utility Stock Additions .....	<b>-.01</b>	<b>.00</b>	<b>-.01</b>	<b>.00</b>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<b>-.01</b>	<i>-.01</i>	<i>.00</i>
Electric Utility Shipments .....	<b>.03</b>	<b>.04</b>	<b>.04</b>	<b>.04</b>	<i>.05</i>	<i>.05</i>	<i>.03</i>	<i>.04</i>	<i>.04</i>	<i>.04</i>	<b>.03</b>	<i>.04</i>	<i>.04</i>
Nonutility Shipments .....	<b>2.52</b>	<b>2.93</b>	<b>3.25</b>	<b>2.68</b>	<i>2.62</i>	<i>3.02</i>	<i>3.26</i>	<i>2.85</i>	<i>2.74</i>	<i>3.13</i>	<b>2.84</b>	<i>2.89</i>	<i>2.99</i>
<b>Total Product Supplied</b> .....	<b>2.55</b>	<b>2.97</b>	<b>3.28</b>	<b>2.72</b>	<i>2.67</i>	<i>3.07</i>	<i>3.30</i>	<i>2.89</i>	<i>2.78</i>	<i>3.17</i>	<b>2.87</b>	<i>2.93</i>	<i>3.03</i>
<b>Stocks</b>													
Electric Utility Stock Levels (million barrels)													
Opening .....	<b>17.22</b>	<b>16.44</b>	<b>16.39</b>	<b>15.73</b>	<i>15.35</i>	<i>14.90</i>	<i>14.45</i>	<i>14.01</i>	<i>13.57</i>	<i>13.26</i>	<b>19.12</b>	<i>16.39</i>	<i>14.45</i>
Closing .....	<b>16.44</b>	<b>16.39</b>	<b>15.73</b>	<b>15.35</b>	<i>14.90</i>	<i>14.45</i>	<i>14.01</i>	<i>13.57</i>	<i>13.26</i>	<i>13.01</i>	<b>16.39</b>	<i>14.45</i>	<i>13.01</i>
Primary Stock Levels (million barrels)													
Opening .....	<b>109.69</b>	<b>117.37</b>	<b>143.67</b>	<b>99.26</b>	<i>105.56</i>	<i>126.57</i>	<i>141.20</i>	<i>96.27</i>	<i>100.31</i>	<i>122.42</i>	<b>161.07</b>	<i>143.67</i>	<i>141.20</i>
Closing .....	<b>117.37</b>	<b>143.67</b>	<b>99.26</b>	<b>105.56</b>	<i>126.57</i>	<i>141.20</i>	<i>96.27</i>	<i>100.31</i>	<i>122.42</i>	<i>137.54</i>	<b>143.67</b>	<i>141.20</i>	<i>137.54</i>

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1986 to April 1986; *Monthly Energy Review*, DOE/EIA-0035(86/04); *Electric Power Monthly*, DOE/EIA-0226(86/05); *Weekly Petroleum Status Report*, DOE/EIA-0208(86-23,24,28).

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Refinery Output .....	<b>0.76</b>	<b>0.97</b>	<b>0.87</b>	<b>0.89</b>	<i>0.87</i>	<i>0.93</i>	<i>0.89</i>	<i>0.87</i>	<i>0.82</i>	<i>0.90</i>	<b>0.88</b>	<i>0.89</i>	<i>0.87</i>
Imports .....	<b>.49</b>	<b>.62</b>	<b>.59</b>	<b>.57</b>	<i>.60</i>	<i>.72</i>	<i>.55</i>	<i>.49</i>	<i>.40</i>	<i>.63</i>	<b>.51</b>	<i>.62</i>	<i>.52</i>
Exports .....	<b>.12</b>	<b>.24</b>	<b>.17</b>	<b>.18</b>	<i>.13</i>	<i>.18</i>	<i>.16</i>	<i>.15</i>	<i>.13</i>	<i>.18</i>	<b>.20</b>	<i>.16</i>	<i>.16</i>
Net Imports .....	<b>.37</b>	<b>.38</b>	<b>.42</b>	<b>.40</b>	<i>.47</i>	<i>.53</i>	<i>.39</i>	<i>.34</i>	<i>.28</i>	<i>.45</i>	<b>.31</b>	<i>.46</i>	<i>.36</i>
Net Withdrawals .....	<b>-.04</b>	<b>-.08</b>	<b>.13</b>	<b>-.01</b>	<i>-.08</i>	<i>-.06</i>	<i>.09</i>	<i>.04</i>	<i>.00</i>	<i>-.03</i>	<b>.01</b>	<i>-.01</i>	<i>.02</i>
<b>Disposition</b>													
Electric Utility Consumption .....	<b>.45</b>	<b>.44</b>	<b>.53</b>	<b>.53</b>	<i>.54</i>	<i>.51</i>	<i>.39</i>	<i>.42</i>	<i>.45</i>	<i>.46</i>	<b>.44</b>	<i>.53</i>	<i>.43</i>
Utility Stock Additions .....	<b>-.03</b>	<b>.01</b>	<b>-.02</b>	<b>-.01</b>	<i>-.01</i>	<i>.00</i>	<i>-.02</i>	<i>-.01</i>	<i>-.02</i>	<i>-.03</i>	<b>-.03</b>	<i>-.01</i>	<i>-.02</i>
Electric Utility Shipments .....	<b>.41</b>	<b>.45</b>	<b>.52</b>	<b>.52</b>	<i>.53</i>	<i>.51</i>	<i>.37</i>	<i>.41</i>	<i>.44</i>	<i>.43</i>	<b>.40</b>	<i>.52</i>	<i>.41</i>
Nonutility Shipments .....	<b>.68</b>	<b>.82</b>	<b>.90</b>	<b>.75</b>	<i>.72</i>	<i>.90</i>	<i>1.00</i>	<i>.84</i>	<i>.65</i>	<i>.88</i>	<b>.80</b>	<i>.82</i>	<i>.84</i>
Total Product Supplied .....	<b>1.09</b>	<b>1.27</b>	<b>1.42</b>	<b>1.28</b>	<i>1.26</i>	<i>1.40</i>	<i>1.37</i>	<i>1.25</i>	<i>1.09</i>	<i>1.32</i>	<b>1.20</b>	<i>1.34</i>	<i>1.25</i>
<b>Stocks</b>													
Electric Utility Stock Levels (million barrels)													
Opening .....	<b>59.63</b>	<b>56.49</b>	<b>57.30</b>	<b>55.81</b>	<i>54.88</i>	<i>54.35</i>	<i>53.97</i>	<i>52.30</i>	<i>51.27</i>	<i>49.86</i>	<b>68.50</b>	<i>57.30</i>	<i>53.97</i>
Closing .....	<b>56.49</b>	<b>57.30</b>	<b>55.81</b>	<b>54.88</b>	<i>54.35</i>	<i>53.97</i>	<i>52.30</i>	<i>51.27</i>	<i>49.86</i>	<i>47.37</i>	<b>57.30</b>	<i>53.97</i>	<i>47.37</i>
Primary Stock Levels (million barrels)													
Opening .....	<b>39.62</b>	<b>43.36</b>	<b>50.38</b>	<b>38.83</b>	<i>40.19</i>	<i>47.93</i>	<i>53.71</i>	<i>45.22</i>	<i>41.59</i>	<i>42.01</i>	<b>53.00</b>	<i>50.38</i>	<i>53.71</i>
Closing .....	<b>43.36</b>	<b>50.38</b>	<b>38.83</b>	<b>40.19</b>	<i>47.93</i>	<i>53.71</i>	<i>45.22</i>	<i>41.59</i>	<i>42.01</i>	<i>44.96</i>	<b>50.38</b>	<i>53.71</i>	<i>44.96</i>

Note: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.  
Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1986 to April 1986; *Monthly Energy Review*, DOE/EIA-0035(86/04); *Electric Power Monthly*, DOE/EIA-0226(86/05); *Weekly Petroleum Status Report*, DOE/EIA-0208(86-23,24,28).

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Net Refinery Output <sup>b</sup> .....	<b>2.72</b>	<b>2.46</b>	<b>2.67</b>	<b>3.04</b>	<i>2.97</i>	<i>2.48</i>	<i>2.65</i>	<i>2.73</i>	<i>2.90</i>	<i>2.44</i>	<b>2.57</b>	<i>2.79</i>	<i>2.68</i>
Natural Gas Plant Output .....	<b>1.58</b>	<b>1.65</b>	<b>1.68</b>	<b>1.61</b>	<i>1.54</i>	<i>1.66</i>	<i>1.70</i>	<i>1.57</i>	<i>1.54</i>	<i>1.64</i>	<b>1.61</b>	<i>1.62</i>	<i>1.61</i>
Other Domestic <sup>c</sup> .....	<b>.06</b>	<b>.07</b>	<b>.04</b>	<b>.04</b>	<i>.06</i>	<i>.06</i>	<i>.05</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<b>.06</b>	<i>.05</i>	<i>.05</i>
Net Imports .....	<b>.45</b>	<b>.43</b>	<b>.35</b>	<b>.42</b>	<i>.47</i>	<i>.54</i>	<i>.47</i>	<i>.49</i>	<i>.65</i>	<i>.64</i>	<b>.47</b>	<i>.45</i>	<i>.56</i>
Net Withdrawals .....	<b>.08</b>	<b>.30</b>	<b>-.09</b>	<b>-.33</b>	<i>.10</i>	<i>.32</i>	<i>-.04</i>	<i>-.11</i>	<i>-.01</i>	<i>.27</i>	<b>.06</b>	<i>.00</i>	<i>.03</i>
<b>Total Primary Supply</b> .....	<b>4.88</b>	<b>4.90</b>	<b>4.65</b>	<b>4.78</b>	<i>5.13</i>	<i>5.06</i>	<i>4.83</i>	<i>4.73</i>	<i>5.14</i>	<i>5.05</i>	<b>4.76</b>	<i>4.91</i>	<i>4.94</i>
<b>Disposition</b>													
Jet Fuel .....	<b>1.21</b>	<b>1.29</b>	<b>1.25</b>	<b>1.29</b>	<i>1.27</i>	<i>1.28</i>	<i>1.28</i>	<i>1.24</i>	<i>1.28</i>	<i>1.29</i>	<b>1.22</b>	<i>1.27</i>	<i>1.27</i>
Liquefied Petroleum Gas <sup>d</sup> .....	<b>.90</b>	<b>1.20</b>	<b>1.14</b>	<b>.82</b>	<i>.91</i>	<i>1.19</i>	<i>1.23</i>	<i>.83</i>	<i>.91</i>	<i>1.17</i>	<b>1.02</b>	<i>1.02</i>	<i>1.04</i>
Petrochemical Feedstocks <sup>e</sup> .....	<b>.95</b>	<b>.91</b>	<b>.95</b>	<b>.98</b>	<i>.97</i>	<i>.95</i>	<i>.97</i>	<i>.97</i>	<i>.97</i>	<i>.94</i>	<b>.94</b>	<i>.96</i>	<i>.96</i>
Miscellaneous <sup>f</sup> .....	<b>1.83</b>	<b>1.50</b>	<b>1.30</b>	<b>1.69</b>	<i>1.97</i>	<i>1.64</i>	<i>1.35</i>	<i>1.69</i>	<i>1.99</i>	<i>1.64</i>	<b>1.59</b>	<i>1.65</i>	<i>1.67</i>
<b>Total Product Supplied</b> .....	<b>4.88</b>	<b>4.90</b>	<b>4.65</b>	<b>4.78</b>	<i>5.13</i>	<i>5.06</i>	<i>4.83</i>	<i>4.73</i>	<i>5.14</i>	<i>5.05</i>	<b>4.76</b>	<i>4.91</i>	<i>4.94</i>
<b>Stock</b>													
Primary Stocks													
(million barrels)													
Opening .....	<b>354.86</b>	<b>347.65</b>	<b>320.20</b>	<b>328.21</b>	<i>357.88</i>	<i>348.63</i>	<i>319.50</i>	<i>323.35</i>	<i>333.10</i>	<i>334.21</i>	<b>341.08</b>	<i>320.20</i>	<i>319.50</i>
Closing .....	<b>347.65</b>	<b>320.20</b>	<b>328.21</b>	<b>357.88</b>	<i>348.63</i>	<i>319.50</i>	<i>323.35</i>	<i>333.10</i>	<i>334.21</i>	<i>309.07</i>	<b>320.20</b>	<i>319.50</i>	<i>309.07</i>

<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, liquefied refinery gases, 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.

Note: Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly* DOE/EIA-0109, Jan. 1986 to April 1986; and *Weekly Petroleum Status Report*, DOE/EIA-0208(86-23,24,28). Data for May and June 1986 are preliminary.

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

Sensitivities	1986		1987				Year	
	3rd	4th	1st	2nd	3rd	4th	1986	1987
<b>Demand in 50 States</b>								
Low Price .....	<i>16.40</i>	<i>16.77</i>	<i>16.35</i>	<i>16.20</i>	<i>16.33</i>	<i>16.75</i>	<i>16.29</i>	<i>16.41</i>
Base Case .....	<i>16.28</i>	<i>16.59</i>	<i>16.19</i>	<i>16.07</i>	<i>16.18</i>	<i>16.55</i>	<i>16.20</i>	<i>16.25</i>
High Price .....	<i>16.09</i>	<i>16.21</i>	<i>15.80</i>	<i>15.66</i>	<i>15.80</i>	<i>16.20</i>	<i>16.07</i>	<i>15.87</i>
<b>Weather Sensitivity</b>								
Adverse Weather .....	.00	.18	.29	.02	.00	.18	.05	.12
Favorable Weather .....	.00	-.18	-.29	-.02	.00	-.18	-.05	-.12
<b>Economic Sensitivity</b>								
High Economic Activity .....	.01	.03	.05	.05	.06	.07	.01	.06
Low Economic Activity .....	-.01	-.06	-.09	-.11	-.13	-.14	-.02	-.12
<b>Combined Sensitivity Differentials<sup>a</sup> (excl. price)</b>								
Upper Range .....	.01	.18	.29	.05	.06	.19	.05	.15
Lower Range .....	.01	.19	.30	.11	.13	.23	.05	.19
<b>Range of Projected Demand</b>								
High Demand <sup>b</sup> .....	<i>16.41</i>	<i>16.95</i>	<i>16.64</i>	<i>16.25</i>	<i>16.39</i>	<i>16.94</i>	<i>16.34</i>	<i>16.56</i>
Low Demand <sup>c</sup> .....	<i>16.08</i>	<i>16.02</i>	<i>15.50</i>	<i>15.55</i>	<i>15.67</i>	<i>15.97</i>	<i>16.02</i>	<i>15.67</i>

<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 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.

Note: Forecast values in *italics*.

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Total Dry Gas Production <sup>a</sup> .....	<b>3.90</b>	<b>4.20</b>	<b>4.23</b>	<b>3.95</b>	<i>3.92</i>	<i>4.23</i>	<i>4.26</i>	<i>3.95</i>	<i>3.92</i>	<i>4.18</i>	<b>16.44</b>	<i>16.33</i>	<i>16.30</i>
Net Imports .....	<i>.17</i>	<i>.24</i>	<i>.21</i>	<i>.13</i>	<i>.18</i>	<i>.22</i>	<i>.30</i>	<i>.18</i>	<i>.16</i>	<i>.24</i>	<b>.89</b>	<i>.74</i>	<i>.88</i>
Supplemental Gaseous Fuels .....	<i>.04</i>	<i>.04</i>	<i>.04</i>	<i>.03</i>	<i>.03</i>	<i>.04</i>	<i>.04</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<b>.15</b>	<i>.14</i>	<i>.14</i>
Total New Supply .....	<b>4.10</b>	<b>4.49</b>	<b>4.48</b>	<b>4.12</b>	<i>4.13</i>	<i>4.49</i>	<i>4.60</i>	<i>4.16</i>	<i>4.11</i>	<i>4.45</i>	<b>17.48</b>	<i>17.22</i>	<i>17.32</i>
<b>Underground Working Gas Storage</b>													
Opening .....	<b>2.35</b>	<b>3.08</b>	<b>2.61</b>	<b>1.76</b>	<i>2.31</i>	<i>3.17</i>	<i>2.79</i>	<i>1.71</i>	<i>2.31</i>	<i>3.10</i>	<b>2.88</b>	<i>2.61</i>	<i>2.79</i>
Closing .....	<b>3.08</b>	<b>2.61</b>	<b>1.76</b>	<b>2.31</b>	<i>3.17</i>	<i>2.79</i>	<i>1.71</i>	<i>2.31</i>	<i>3.10</i>	<i>2.67</i>	<b>2.61</b>	<i>2.79</i>	<i>2.67</i>
Net Withdrawals <sup>b</sup> .....	<i>-.74</i>	<i>.46</i>	<i>.85</i>	<i>-.55</i>	<i>-.86</i>	<i>.38</i>	<i>1.08</i>	<i>-.60</i>	<i>-.79</i>	<i>.43</i>	<b>.23</b>	<i>-.18</i>	<i>.12</i>
Total Primary Supply <sup>a</sup> .....	<b>3.36</b>	<b>4.95</b>	<b>5.34</b>	<b>3.56</b>	<i>3.27</i>	<i>4.87</i>	<i>5.68</i>	<i>3.56</i>	<i>3.32</i>	<i>4.88</i>	<b>17.72</b>	<i>17.04</i>	<i>17.44</i>
<b>Disposition</b>													
Electric Utilities .....	<b>.97</b>	<b>.69</b>	<b>.51</b>	<b>.70</b>	<i>.83</i>	<i>.56</i>	<i>.61</i>	<i>.60</i>	<i>.80</i>	<i>.54</i>	<b>3.04</b>	<i>2.59</i>	<i>2.55</i>
Refinery Fuel .....	<i>.12</i>	<i>.13</i>	<i>.12</i>	<i>.13</i>	<i>.13</i>	<i>.13</i>	<i>.12</i>	<i>.13</i>	<i>.13</i>	<i>.13</i>	<b>.49</b>	<i>.52</i>	<i>.52</i>
All Other Uses <sup>c</sup> .....	<b>2.18</b>	<b>4.03</b>	<b>4.61</b>	<b>2.65</b>	<i>2.21</i>	<i>4.09</i>	<i>4.86</i>	<i>2.74</i>	<i>2.28</i>	<i>4.12</i>	<b>13.79</b>	<i>13.56</i>	<i>14.00</i>
Subtotal .....	<b>3.27</b>	<b>4.85</b>	<b>5.24</b>	<b>3.48</b>	<i>3.18</i>	<i>4.78</i>	<i>5.59</i>	<i>3.47</i>	<i>3.21</i>	<i>4.79</i>	<b>17.32</b>	<i>16.67</i>	<i>17.06</i>
Total Disposition .....	<b>3.36</b>	<b>4.95</b>	<b>5.34</b>	<b>3.56</b>	<i>3.27</i>	<i>4.87</i>	<i>5.68</i>	<i>3.56</i>	<i>3.32</i>	<i>4.88</i>	<b>17.72</b>	<i>17.04</i>	<i>17.44</i>
Unaccounted for .....	<b>.09</b>	<b>.10</b>	<b>.10</b>	<b>.08</b>	<i>.09</i>	<i>.09</i>	<i>.09</i>	<i>.09</i>	<i>.11</i>	<i>.09</i>	<b>.39</b>	<i>.37</i>	<i>.38</i>

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

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

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); *Natural Gas Monthly*, DOE/EIA-0130(86/05); and *Electric Power Monthly*, DOE/EIA-0226(86/05).

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Production .....	<b>b 223</b>	<b>b 220</b>	<b>b 229</b>	<b>c 219</b>	<i>224</i>	<i>237</i>	<i>233</i>	<i>240</i>	<i>225</i>	<i>235</i>	<b>b 886</b>	<i>909</i>	<i>933</i>
<b>Primary Stock Levels<sup>a</sup></b>													
Opening .....	<b>35</b>	<b>33</b>	<b>33</b>	<b>38</b>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<b>34</b>	<i>33</i>	<i>30</i>
Closing .....	<b>33</b>	<b>33</b>	<b>38</b>	<b>c 30</b>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<b>33</b>	<i>30</i>	<i>30</i>
Net Withdrawals .....	<b>3</b>	<b>-1</b>	<b>-5</b>	<b>c 8</b>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<b>1</b>	<i>3</i>	<i>0</i>
Imports .....	<b>1</b>	<b>0</b>	<b>0</b>	<b>c 1</b>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<b>2</b>	<i>2</i>	<i>2</i>
Exports .....	<b>26</b>	<b>24</b>	<b>17</b>	<b>c 23</b>	<i>25</i>	<i>23</i>	<i>18</i>	<i>23</i>	<i>24</i>	<i>23</i>	<b>93</b>	<i>88</i>	<i>88</i>
Total New Domestic Supply .....	<b>b 201</b>	<b>b 196</b>	<b>b 208</b>	<b>c 204</b>	<i>200</i>	<i>214</i>	<i>215</i>	<i>218</i>	<i>201</i>	<i>213</i>	<b>b 796</b>	<i>826</i>	<i>847</i>
<b>Secondary Stock Levels<sup>d</sup></b>													
Opening .....	<b>188</b>	<b>176</b>	<b>170</b>	<b>166</b>	<i>180</i>	<i>163</i>	<i>172</i>	<i>173</i>	<i>192</i>	<i>173</i>	<b>197</b>	<i>170</i>	<i>172</i>
Closing .....	<b>176</b>	<b>170</b>	<b>166</b>	<b>c 180</b>	<i>163</i>	<i>172</i>	<i>173</i>	<i>192</i>	<i>173</i>	<i>175</i>	<b>170</b>	<i>172</i>	<i>175</i>
Net Withdrawals .....	<b>12</b>	<b>6</b>	<b>4</b>	<b>c -14</b>	<i>17</i>	<i>-8</i>	<i>-2</i>	<i>-18</i>	<i>19</i>	<i>-2</i>	<b>27</b>	<i>-1</i>	<i>-3</i>
Total Indicated Consumption .....	<b>b 212</b>	<b>b 202</b>	<b>b 212</b>	<b>c 190</b>	<i>216</i>	<i>206</i>	<i>214</i>	<i>199</i>	<i>220</i>	<i>210</i>	<b>b 823</b>	<i>825</i>	<i>843</i>
<b>Disposition</b>													
Coke Plants .....	<b>10</b>	<b>10</b>	<b>10</b>	<b>c 11</b>	<i>9</i>	<i>9</i>	<i>11</i>	<i>9</i>	<i>9</i>	<i>9</i>	<b>41</b>	<i>40</i>	<i>39</i>
Electric Utilities .....	<b>184</b>	<b>173</b>	<b>173</b>	<b>c 159</b>	<i>188</i>	<i>174</i>	<i>180</i>	<i>170</i>	<i>191</i>	<i>178</i>	<b>694</b>	<i>693</i>	<i>718</i>
Retail and General Industry <sup>e</sup> .....	<b>20</b>	<b>23</b>	<b>23</b>	<b>c 20</b>	<i>20</i>	<i>23</i>	<i>23</i>	<i>21</i>	<i>20</i>	<i>23</i>	<b>83</b>	<i>85</i>	<i>87</i>
Total Domestic Consumption .....	<b>214</b>	<b>205</b>	<b>206</b>	<b>c 190</b>	<i>216</i>	<i>206</i>	<i>214</i>	<i>199</i>	<i>220</i>	<i>210</i>	<b>818</b>	<i>819</i>	<i>843</i>
Discrepancy <sup>f</sup> .....	<b>b -1</b>	<b>b -3</b>	<b>b 6</b>	<b>c 0</b>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<b>b 5</b>	<i>6</i>	<i>0</i>

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

<sup>b</sup> Preliminary.

<sup>c</sup> Estimated.

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

<sup>e</sup> Includes consumption at coal gasification plants of 4.8 million tons for 1985. For the first half of 1986 and for the forecast, symfuels account for 1.5 million tons per quarter.

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

Notes: Rows and columns may not add due to independent rounding. Zeros indicate amounts of less than 500,000 tons. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); and *Quarterly Coal Report*, DOE/EIA-0121(86/1Q).

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

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd <sup>a</sup>	4th	1st	2nd	3rd	4th	1985	1986	1987
Net Generation													
Coal .....	<b>370.1</b>	<b>347.7</b>	<b>351.4</b>	<b>326.1</b>	<i>377.5</i>	<i>350.2</i>	<i>363.3</i>	<i>343.4</i>	<i>384.1</i>	<i>358.1</i>	<b>1402.1</b>	<i>1405.2</i>	<i>1449.0</i>
Petroleum .....	<b>25.6</b>	<b>25.7</b>	<b>30.7</b>	<b>30.8</b>	<i>31.0</i>	<i>29.3</i>	<i>21.8</i>	<i>24.0</i>	<i>25.9</i>	<i>26.4</i>	<b>100.2</b>	<i>121.7</i>	<i>98.1</i>
Natural Gas .....	<b>92.4</b>	<b>66.6</b>	<b>48.5</b>	<b>66.6</b>	<i>79.4</i>	<i>53.4</i>	<i>58.1</i>	<i>57.9</i>	<i>76.5</i>	<i>52.0</i>	<b>291.9</b>	<i>248.0</i>	<i>244.5</i>
Nuclear Power .....	<b>104.5</b>	<b>95.2</b>	<b>99.7</b>	<b>94.5</b>	<i>114.7</i>	<i>111.3</i>	<i>114.2</i>	<i>110.1</i>	<i>124.9</i>	<i>121.0</i>	<b>383.7</b>	<i>420.2</i>	<i>470.2</i>
Hydropower .....	<b>60.0</b>	<b>68.4</b>	<b>73.5</b>	<b>81.1</b>	<i>66.9</i>	<i>70.2</i>	<i>79.9</i>	<i>83.5</i>	<i>71.3</i>	<i>70.2</i>	<b>281.1</b>	<i>291.7</i>	<i>304.8</i>
Geothermal Power and Other <sup>b</sup> .....	<b>2.7</b>	<b>3.0</b>	<b>3.1</b>	<b>2.8</b>	<i>3.0</i>	<i>3.2</i>	<i>3.2</i>	<i>3.1</i>	<i>3.1</i>	<i>3.2</i>	<b>10.7</b>	<i>11.9</i>	<i>12.5</i>
Total Generation .....	<b>655.3</b>	<b>606.5</b>	<b>606.9</b>	<b>601.9</b>	<i>672.4</i>	<i>617.6</i>	<i>640.5</i>	<i>621.9</i>	<i>685.8</i>	<i>630.9</i>	<b>2469.8</b>	<i>2498.8</i>	<i>2579.1</i>
Net Imports .....	<b>12.5</b>	<b>9.9</b>	<b>10.1</b>	<b>9.4</b>	<i>12.2</i>	<i>12.3</i>	<i>10.8</i>	<i>10.0</i>	<i>13.0</i>	<i>13.1</i>	<b>40.9</b>	<i>44.0</i>	<i>47.0</i>
Total Supply .....	<b>667.7</b>	<b>616.4</b>	<b>617.0</b>	<b>611.3</b>	<i>684.6</i>	<i>629.9</i>	<i>651.3</i>	<i>632.0</i>	<i>698.8</i>	<i>644.0</i>	<b>2510.8</b>	<i>2542.8</i>	<i>2626.1</i>
T & D Loss <sup>c</sup> .....	<b>49.3</b>	<b>56.6</b>	<b>26.3</b>	<b>47.5</b>	<i>65.8</i>	<i>66.9</i>	<i>36.4</i>	<i>34.8</i>	<i>70.9</i>	<i>72.7</i>	<b>201.2</b>	<i>206.5</i>	<i>214.8</i>
Total Consumption (sales) .....	<b>618.4</b>	<b>559.7</b>	<b>590.7</b>	<b>563.8</b>	<i>618.8</i>	<i>562.9</i>	<i>614.9</i>	<i>597.2</i>	<i>627.9</i>	<i>571.3</i>	<b>2309.5</b>	<i>2336.2</i>	<i>2411.3</i>

<sup>a</sup> Estimated.

<sup>b</sup> Includes wind, wood, and waste.

<sup>c</sup> Transmission and distribution losses through the power network, calculated as total supply minus total sales.

Notes: Minor discrepancies with other EIA published historic data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); and *Electric Power Monthly*, DOE/EIA-0226(86/05).

**Table 17. Quarterly Supply and Disposition of Total Energy  
(Quadrillion Btu)**

Supply and Disposition	1985		1986				1987				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1985	1986	1987
<b>Supply</b>													
Production													
Petroleum <sup>a</sup> .....	<b>5.30</b>	<b>5.36</b>	<b>5.24</b>	<b>5.19</b>	<i>5.18</i>	<i>5.20</i>	<i>5.10</i>	<i>5.09</i>	<i>5.11</i>	<i>5.14</i>	<b>21.23</b>	<i>20.82</i>	<i>20.44</i>
Natural Gas <sup>b</sup> .....	<b>4.02</b>	<b>4.34</b>	<b>4.36</b>	<b>4.07</b>	<i>4.04</i>	<i>4.36</i>	<i>4.39</i>	<i>4.07</i>	<i>4.04</i>	<i>4.31</i>	<b>16.95</b>	<i>16.84</i>	<i>16.81</i>
Coal .....	<b>4.88</b>	<b>4.82</b>	<b>5.02</b>	<b>4.78</b>	<i>4.95</i>	<i>5.24</i>	<i>5.16</i>	<i>5.30</i>	<i>4.98</i>	<i>5.20</i>	<b>19.38</b>	<i>19.99</i>	<i>20.63</i>
Nuclear Power .....	<b>1.13</b>	<b>1.03</b>	<b>1.08</b>	<b>1.02</b>	<i>1.24</i>	<i>1.21</i>	<i>1.24</i>	<i>1.19</i>	<i>1.35</i>	<i>1.31</i>	<b>4.16</b>	<i>4.56</i>	<i>5.10</i>
Hydropower <sup>c</sup> .....	<b>.62</b>	<b>.70</b>	<b>.76</b>	<b>.84</b>	<i>.69</i>	<i>.72</i>	<i>.82</i>	<i>.86</i>	<i>.73</i>	<i>.72</i>	<b>2.90</b>	<i>3.01</i>	<i>3.14</i>
Geothermal Power and Other <sup>d</sup> .....	<b>.06</b>	<b>.06</b>	<b>.07</b>	<b>.06</b>	<i>.06</i>	<i>.07</i>	<i>.07</i>	<i>.07</i>	<i>.06</i>	<i>.07</i>	<b>.23</b>	<i>.25</i>	<i>.27</i>
Subtotal .....	<b>16.02</b>	<b>16.32</b>	<b>16.53</b>	<b>15.97</b>	<i>16.18</i>	<i>16.80</i>	<i>16.78</i>	<i>16.58</i>	<i>16.28</i>	<i>16.75</i>	<b>64.85</b>	<i>65.47</i>	<i>66.39</i>
Net Imports													
Crude Oil .....	<b>1.59</b>	<b>1.85</b>	<b>1.54</b>	<b>2.10</b>	<i>2.21</i>	<i>2.16</i>	<i>1.80</i>	<i>2.09</i>	<i>2.21</i>	<i>2.14</i>	<b>6.38</b>	<i>8.02</i>	<i>8.24</i>
Other Petroleum .....	<b>.59</b>	<b>.68</b>	<b>.56</b>	<b>.56</b>	<i>.65</i>	<i>.79</i>	<i>.60</i>	<i>.64</i>	<i>.71</i>	<i>.84</i>	<b>2.57</b>	<i>2.56</i>	<i>2.79</i>
Natural Gas .....	<b>.17</b>	<b>.25</b>	<b>.21</b>	<b>.13</b>	<i>.18</i>	<i>.22</i>	<i>.30</i>	<i>.18</i>	<i>.16</i>	<i>.24</i>	<b>.89</b>	<i>.75</i>	<i>.88</i>
Coal and Coke .....	<b>-.67</b>	<b>-.63</b>	<b>-.44</b>	<b>-.59</b>	<i>-.64</i>	<i>-.60</i>	<i>-.47</i>	<i>-.58</i>	<i>-.63</i>	<i>-.59</i>	<b>-2.40</b>	<i>-2.27</i>	<i>-2.28</i>
Electricity .....	<b>.13</b>	<b>.10</b>	<b>.10</b>	<b>.10</b>	<i>.12</i>	<i>.13</i>	<i>.11</i>	<i>.10</i>	<i>.13</i>	<i>.13</i>	<b>.42</b>	<i>.45</i>	<i>.48</i>
Subtotal .....	<b>1.80</b>	<b>2.25</b>	<b>1.97</b>	<b>2.30</b>	<i>2.53</i>	<i>2.70</i>	<i>2.33</i>	<i>2.43</i>	<i>2.58</i>	<i>2.77</i>	<b>7.86</b>	<i>9.51</i>	<i>10.10</i>
Primary Stocks													
Net Withdrawals .....	<b>-.56</b>	<b>.33</b>	<b>.99</b>	<b>-.53</b>	<i>-.97</i>	<i>.31</i>	<i>1.38</i>	<i>-.62</i>	<i>-.88</i>	<i>.36</i>	<b>.63</b>	<i>-.19</i>	<i>.24</i>
SPR Fill Rate Additions(-) .....	<b>-.07</b>	<b>-.02</b>	<b>-.02</b>	<b>-.03</b>	<i>.00</i>	<i>-.02</i>	<i>-.02</i>	<i>-.02</i>	<i>-.02</i>	<i>.00</i>	<b>-.25</b>	<i>-.07</i>	<i>-.06</i>
Secondary Stocks <sup>e</sup>													
Net Withdrawals .....	<b>.28</b>	<b>.12</b>	<b>.10</b>	<b>-.30</b>	<i>.39</i>	<i>-.16</i>	<i>-.06</i>	<i>-.36</i>	<i>.42</i>	<i>-.02</i>	<b>.69</b>	<i>.02</i>	<i>-.02</i>
<b>Total Supply<sup>f</sup> .....</b>	<b>17.46</b>	<b>18.99</b>	<b>19.57</b>	<b>17.41</b>	<i>18.12</i>	<i>19.63</i>	<i>20.42</i>	<i>18.01</i>	<i>18.39</i>	<i>19.85</i>	<b>73.78</b>	<i>74.74</i>	<i>76.67</i>
<b>Disposition</b>													
Nonutility Uses													
Petroleum .....	<b>7.42</b>	<b>7.66</b>	<b>7.46</b>	<b>7.46</b>	<i>7.72</i>	<i>7.90</i>	<i>7.61</i>	<i>7.61</i>	<i>7.73</i>	<i>7.91</i>	<b>29.83</b>	<i>30.53</i>	<i>30.86</i>
Natural Gas <sup>g</sup> .....	<b>2.37</b>	<b>4.28</b>	<b>4.87</b>	<b>2.87</b>	<i>2.42</i>	<i>4.35</i>	<i>5.13</i>	<i>2.96</i>	<i>2.48</i>	<i>4.38</i>	<b>14.71</b>	<i>14.50</i>	<i>14.95</i>
Coal <sup>h</sup> .....	<b>.71</b>	<b>.76</b>	<b>.77</b>	<b>.79</b>	<i>.71</i>	<i>.77</i>	<i>.79</i>	<i>.69</i>	<i>.72</i>	<i>.78</i>	<b>2.92</b>	<i>3.04</i>	<i>2.99</i>
Subtotal .....	<b>10.50</b>	<b>12.71</b>	<b>13.10</b>	<b>11.12</b>	<i>10.85</i>	<i>13.01</i>	<i>13.53</i>	<i>11.26</i>	<i>10.93</i>	<i>13.07</i>	<b>47.46</b>	<i>48.08</i>	<i>48.80</i>
Electric Utility Inputs													
Petroleum .....	<b>.28</b>	<b>.28</b>	<b>.33</b>	<b>.33</b>	<i>.34</i>	<i>.32</i>	<i>.24</i>	<i>.27</i>	<i>.29</i>	<i>.29</i>	<b>1.09</b>	<i>1.32</i>	<i>1.09</i>
Natural Gas .....	<b>1.00</b>	<b>.71</b>	<b>.53</b>	<b>.72</b>	<i>.86</i>	<i>.58</i>	<i>.63</i>	<i>.62</i>	<i>.82</i>	<i>.56</i>	<b>3.15</b>	<i>2.68</i>	<i>2.64</i>
Coal .....	<b>3.86</b>	<b>3.62</b>	<b>3.63</b>	<b>3.35</b>	<i>3.92</i>	<i>3.63</i>	<i>3.77</i>	<i>3.56</i>	<i>3.99</i>	<i>3.72</i>	<b>14.55</b>	<i>14.53</i>	<i>15.03</i>
Nuclear Power .....	<b>1.13</b>	<b>1.03</b>	<b>1.08</b>	<b>1.02</b>	<i>1.24</i>	<i>1.21</i>	<i>1.24</i>	<i>1.19</i>	<i>1.35</i>	<i>1.31</i>	<b>4.16</b>	<i>4.56</i>	<i>5.10</i>
Hydropower <sup>i</sup> .....	<b>.75</b>	<b>.81</b>	<b>.86</b>	<b>.93</b>	<i>.81</i>	<i>.85</i>	<i>.93</i>	<i>.96</i>	<i>.87</i>	<i>.86</i>	<b>3.32</b>	<i>3.46</i>	<i>3.62</i>
Geothermal Power and Other .....	<b>.06</b>	<b>.06</b>	<b>.07</b>	<b>.06</b>	<i>.06</i>	<i>.07</i>	<i>.07</i>	<i>.07</i>	<i>.06</i>	<i>.07</i>	<b>.23</b>	<i>.25</i>	<i>.27</i>
Subtotal .....	<b>7.08</b>	<b>6.51</b>	<b>6.49</b>	<b>6.42</b>	<i>7.24</i>	<i>6.66</i>	<i>6.88</i>	<i>6.68</i>	<i>7.38</i>	<i>6.81</i>	<b>26.50</b>	<i>26.80</i>	<i>27.74</i>
<b>Gross Energy Consumption<sup>f</sup> .....</b>	<b>17.58</b>	<b>19.22</b>	<b>19.59</b>	<b>17.53</b>	<i>18.09</i>	<i>19.67</i>	<i>20.41</i>	<i>17.94</i>	<i>18.32</i>	<i>19.88</i>	<b>73.96</b>	<i>74.88</i>	<i>76.54</i>
Electric Utility Adjustments													
Conversion Loss <sup>j</sup> .....	<b>4.97</b>	<b>4.60</b>	<b>4.47</b>	<b>4.49</b>	<i>5.12</i>	<i>4.73</i>	<i>4.78</i>	<i>4.64</i>	<i>5.24</i>	<i>4.86</i>	<b>18.61</b>	<i>18.83</i>	<i>19.51</i>
<b>Total Net Energy .....</b>	<b>12.61</b>	<b>14.62</b>	<b>15.12</b>	<b>13.04</b>	<i>12.96</i>	<i>14.93</i>	<i>15.63</i>	<i>13.30</i>	<i>13.08</i>	<i>15.02</i>	<b>55.35</b>	<i>56.06</i>	<i>57.03</i>
<b>Total Disposition .....</b>	<b>17.46</b>	<b>18.99</b>	<b>19.57</b>	<b>17.41</b>	<i>18.12</i>	<i>19.63</i>	<i>20.42</i>	<i>18.01</i>	<i>18.39</i>	<i>19.85</i>	<b>73.78</b>	<i>74.74</i>	<i>76.67</i>
Unaccounted for .....	<b>-.11</b>	<b>-.23</b>	<b>-.02</b>	<b>-.12</b>	<i>.04</i>	<i>-.03</i>	<i>.01</i>	<i>.07</i>	<i>.08</i>	<i>-.02</i>	<b>-.18</b>	<i>-.14</i>	<i>.13</i>

<sup>a</sup> Includes crude oil and lease condensate, natural gas liquids, hydrogen, etc., input to oil refineries.

<sup>b</sup> Total dry gas production excluding nonhydrocarbon gases removed.

<sup>c</sup> Includes industrial production.

<sup>d</sup> Includes wood and waste used to generate electricity.

<sup>e</sup> Primarily electric utility stocks.

<sup>f</sup> This total excludes approximately 2 quadrillion Btu of wood.

<sup>g</sup> Includes natural gas used as refinery fuel.

<sup>h</sup> Includes net imports of coal coke.

<sup>i</sup> Includes industrial hydroelectric production and net imports of electricity.

<sup>j</sup> Includes plant use and transmission and distribution losses.

SPR: Strategic Petroleum Reserve.

Notes: The conversion from physical units to Btu is calculated by STIFS using a subset of *Monthly Energy Review* conversion factors. Consequently, the historical data will not precisely match that published in the *Monthly Energy Review*. In addition, minor discrepancies with EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/04); and *Electric Power Monthly*, DOE/EIA-0226(86/05).

**Table 18. 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>Thermal Content of Fuels and Energy</b>		
Crude Oil Production.....	barrel .....	5,800,000
Crude Oil Imports .....	barrel .....	5,832,000
Unfinished Oils .....	barrel .....	5,825,000
Petroleum Products Consumption .....	barrel .....	5,387,000
Petroleum Products Imports .....	barrel .....	5,572,000
Petroleum Products Exports .....	barrel .....	5,819,000
Motor Gasoline .....	barrel .....	5,253,000
Jet Fuel .....	barrel .....	5,615,000
Distillate Fuel Oil .....	barrel .....	5,825,000
Residual Fuel Oil .....	barrel .....	6,287,000
LPG and LRG (excluding ethane) .....	barrel .....	3,895,000
Ethane .....	barrel .....	3,082,000
Natural Gas Liquids (production) .....	barrel .....	3,805,000
Natural Gas Consumption (dry) .....	cubic foot .....	1,031
Natural Gas Production (dry) .....	cubic foot .....	1,031
Natural Gas Imports .....	cubic foot .....	1,005
Natural Gas Exports .....	cubic foot .....	1,010
Natural Gas Refinery Fuel .....	cubic foot .....	1,031
Natural Gas to Utilities .....	cubic foot .....	1,035
Bituminous Coal and Lignite Prod. ....	short ton .....	21,876,000
Bituminous Coal & Lignite Consumed .....	short ton .....	21,376,000
Coal to Electric Utilities .....	short ton .....	20,968,000
General Industry and Retail Coal .....	short ton .....	21,978,000
Coking Coal .....	short ton .....	26,800,000
Coke .....	short ton .....	24,800,000
Bituminous Coal Imports.....	short ton .....	25,000,000
Bituminous Coal and Lignite Exports .....	short ton .....	26,320,000
<b>Efficiency of Conversion Processes</b>		
<b>Electric Power Generation Fuel or Power Source:</b>		
	Btu/kWh (heat rate)	
Coal .....	10,376	
Distillate Fuel Oil .....	13,501	
Residual Fuel Oil .....	10,901	
Geothermal and Other Energy .....	21,303	
Nuclear Energy .....	10,843	
Natural Gas .....	10,740	
Hydropower .....	10,211	



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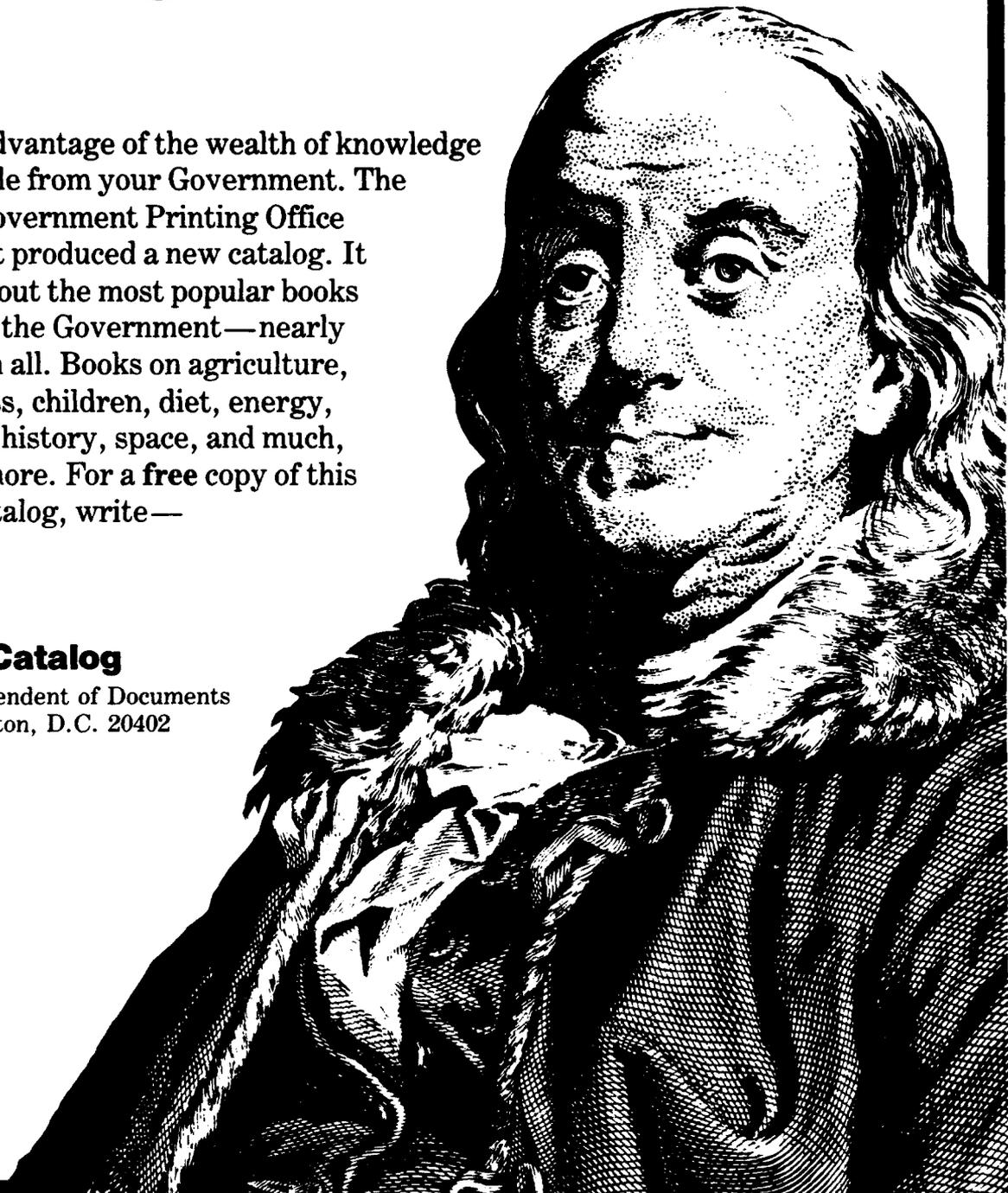


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