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# **Short-Term Energy Outlook**

## **Quarterly Projections**

**October  
1986**

**Energy Information Administration**  
Office of Energy Markets and End Use  
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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)*. An evaluation volume, published annually, analyzes previous forecast errors. 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 36. 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.



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# 1. Highlights

The U.S. refiners' acquisition cost of imported crude oil fell from a first-quarter 1986 average of \$19 per barrel to an estimated \$12 per barrel in the third quarter, reflecting continued overproduction of oil worldwide. Contrary to what may have been expected, however, demand for petroleum products has not skyrocketed in response to these lower prices. The major limiting factor on growth in demand for both oil and natural gas has been the sluggish growth experienced

in the industrial sector. The only exception is demand for residual fuel oil at electric utilities which has increased significantly in recent months. Lower oil prices also have led to decreases in natural gas prices, particularly at electric utilities. In the forecast period, oil prices in the base case are assumed to begin increasing in the fourth quarter of 1986 and reach about \$17 per barrel by the end of 1987.

## *Oil Prices Firm on Assumed Continuation of OPEC Accord*

Oil prices have firmed recently and are expected to increase to about \$17 per barrel by the end of 1987 if the Organization of Petroleum Exporting Countries (OPEC) can maintain its recent agreement and hold production at current levels. Any major increase in OPEC oil production, however, could result in a sharp price decline. The prices of petroleum products are projected to rise slightly in 1987, following the world crude oil price. The nominal price of motor gasoline is expected to increase by about 4 percent in 1987, to 98 cents per gallon.

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

U.S. demand for petroleum in the base case is projected to increase by nearly 3 percent in 1986, to almost 16.2 million barrels per day, the highest level since 1980. Major reasons for this increase are growth in gasoline demand and higher summer oil use at electric utilities (up about 34 percent from year-earlier levels).

## *...but Smaller Increases in 1987*

In 1987, increases in the demand for distillate fuel oil and other petroleum products are expected to offset a projected decline in residual fuel oil consumption, leading to a projected increase of only 1 percent in total petroleum demand. (The base case assumptions and projections are summarized in Table 1.)

## *Domestic Oil Production Down Slightly*

In both 1986 and 1987, domestic oil production should fall only slightly (about 2 percent per year) in response to the sharply lower prices. However, should prices remain low, production should fall further in the longer term.

## *Petroleum Imports Continue to Rise*

To balance the projected increase in demand and the decrease in domestic production, net oil imports are expected to average nearly 5.2 million barrels per day in 1986 and nearly 5.4 million barrels per day in 1987, up from 4.3 million barrels per day in 1985. About one-quarter to one-third of this increase in imports is attributed to expected product stock building in 1986.

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

Consumption of natural gas is projected to decrease between 1985 and 1986, to about 16.5 trillion cubic feet, with the major drop experienced at electric utilities where switching from natural gas to oil occurred last summer. Domestic production of natural gas is projected to drop by about 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 higher levels in 1987 as demand increases.

## *Natural Gas Prices Fall Sharply in 1986*

The nominal price of natural gas has fallen markedly in 1986. The residential sector price in 1986 is expected to average 6 percent below the 1985 level, while the electric utility price is expected to be 27 percent lower. The much larger percentage decrease at electric utilities is because of the more direct competition with oil in this sector. Many electric utilities can switch to oil in the short run.

*Electricity Use Continues Growth*

A 1-percent increase in total electricity generation is projected in 1986, followed by an increase of more than 2 percent between 1986 and 1987. A relatively large jump in oil-fired generation is expected in 1986 because of lower oil prices. The real price of electricity is projected to drop slightly over the forecast period.

*Coal Use Down In 1986, Recovering In 1987*

Domestic coal consumption is expected to be 813 million tons in 1986 (down slightly from the 1985 level), with coal production at 890 million tons (up slightly from the year-earlier level). Coal consumption and production in 1987 are forecast to increase by about 2 and 3 percent, respectively, from the 1986 levels.

*Decline in Energy Intensity Continues Despite Cheaper Oil*

Total U.S. energy consumption (as measured by gross energy consumption) is projected to increase by less than 1 percent in 1986 and by more than 2 percent 1987, to 76.1 quadrillion Btu. The energy intensity of U.S. economic activity is projected to be 20.2 thousand Btu per 1982 dollar of real gross national product in 1986, a slight decline from the year-earlier level, and fall further to 20.1 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 gross national product above the base case level, petroleum consumption and total imports in 1987 would increase by about 150,000 barrels per day (approximately 0.9 percent and 2.8 percent, respectively).
- For each \$1-per barrel (approximately 6.3 percent) decline in the price of imported crude oil, petroleum consumption and total imports in 1987 would increase by about 70,000 barrels per day (approximately 0.4 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 220,000 barrels per day (approximately 1.4 percent and 4.2 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>3,490</b>	<b>3,585</b>	<i>3,676</i>	<i>3,774</i>	<b>2.7</b>	<i>2.5</i>	<i>2.7</i>
Index of Industrial Production (Mfg.) (index, 1977: 100) .....	<b>123.4</b>	<b>126.4</b>	<i>128.9</i>	<i>133.0</i>	<b>2.4</b>	<i>2.0</i>	<i>3.2</i>
Average Cost of Imported Crude Oil (nominal dollars per barrel) .....	<b>28.88</b>	<b>27.03</b>	<i>14.60</i>	<i>15.80</i>	<b>-6.4</b>	<i>-46.0</i>	<i>8.2</i>
<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>.94</i>	<i>.98</i>	<b>.0</b>	<i>-21.7</i>	<i>4.3</i>
Retail No. 2 Heating Oil (dollars per gallon) .....	<b>1.09</b>	<b>1.05</b>	<i>.77</i>	<i>.80</i>	<b>-3.7</b>	<i>-26.7</i>	<i>3.9</i>
Residential Natural Gas (dollars per thousand cubic feet) .....	<b>6.12</b>	<b>6.13</b>	<i>5.79</i>	<i>5.80</i>	<b>.2</b>	<i>-5.5</i>	<i>.2</i>
Residential Electricity (cents per kilowatthour) .....	<b>7.54</b>	<b>7.79</b>	<i>7.84</i>	<i>7.94</i>	<b>3.3</b>	<i>.6</i>	<i>1.3</i>
<b>Consumption Projections</b>							
Total Market Economies Petroleum Consumption (million barrels per day) .....	<b>46.7</b>	<b>46.4</b>	<i>47.6</i>	<i>48.4</i>	<b>-6</b>	<i>2.6</i>	<i>1.7</i>
U.S. Total Petroleum Consumption (million barrels per day) .....	<b>15.73</b>	<b>15.73</b>	<i>16.15</i>	<i>16.37</i>	<b>.0</b>	<i>2.7</i>	<i>1.4</i>
Motor Gasoline .....	<b>6.69</b>	<b>6.83</b>	<i>7.02</i>	<i>7.00</i>	<b>2.1</b>	<i>2.8</i>	<i>-3</i>
Distillate Fuel Oil .....	<b>2.84</b>	<b>2.87</b>	<i>2.90</i>	<i>3.03</i>	<b>1.1</b>	<i>1.0</i>	<i>4.5</i>
Residual Fuel Oil .....	<b>1.37</b>	<b>1.20</b>	<i>1.38</i>	<i>1.25</i>	<b>-12.4</b>	<i>15.0</i>	<i>-9.4</i>
Other Petroleum <sup>c</sup> .....	<b>4.82</b>	<b>4.83</b>	<i>4.84</i>	<i>5.08</i>	<b>.2</b>	<i>.2</i>	<i>5.0</i>
Net Petroleum Imports (million barrels per day, including SPR <sup>d</sup> ) .....	<b>4.72</b>	<b>4.29</b>	<i>5.16</i>	<i>5.35</i>	<b>-9.1</b>	<i>20.3</i>	<i>3.7</i>
Coal Consumption (million short tons) .....	<b>791</b>	<b>818</b>	<i>813</i>	<i>831</i>	<b>3.4</b>	<i>-6</i>	<i>2.2</i>
Natural Gas Consumption (trillion cubic feet) .....	<b>17.95</b>	<b>17.28</b>	<i>16.53</i>	<i>16.79</i>	<b>-3.7</b>	<i>-4.3</i>	<i>1.6</i>
Electricity Generation (billion kilowatthours) .....	<b>2,416.3</b>	<b>2,469.8</b>	<i>2,492.1</i>	<i>2,551.3</i>	<b>2.2</b>	<i>.9</i>	<i>2.4</i>
Total Energy Consumption <sup>e</sup> (quadrillion Btu) .....	<b>74.01</b>	<b>73.93</b>	<i>74.26</i>	<i>76.06</i>	<b>-.1</b>	<i>.4</i>	<i>2.4</i>
Thousand Btu/1982 Dollar of GNP .....	<b>21.21</b>	<b>20.62</b>	<i>20.20</i>	<i>20.15</i>	<b>-2.8</b>	<i>-2.0</i>	<i>-.2</i>

<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(86/07); *International Energy Annual 1984* DOE/EIA-0219(84); *Petroleum Marketing Monthly*, DOE/EIA-0380(86/07); *Petroleum Supply Monthly*, DOE/EIA-0109(86/07); *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Natural Gas Monthly*, DOE/EIA-0130(86/08); *Electric Power Monthly*, DOE/EIA-0226(86/08); and *Quarterly Coal Report*, DOE/EIA-0121(86/2Q); Organization for Economic Cooperation and Development, *Quarterly Oil Statistics, Second Quarter 1986*; Petroleum Economics Limited, *World Quarterly Primary Energy and Supply/Demand*, July 1986. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0986.

Table printed at 0947, November 4, 1986



## 2. The Outlook

### International Petroleum Markets

#### Current Situation

In early August, shortly after publication of the latest international market assessment in the July 1986 *Outlook*, OPEC surprised many independent observers in patching together an agreement that has succeeded in strengthening prices. The incremental increase in oil prices since late July has averaged between \$4 and \$5 per barrel.

The agreement has injected a degree of stability into an oil market still shaky from the plunge in world oil prices that began in the early part of the year. After 10 days of meetings, the OPEC ministers had become desperate for a production agreement that would overcome the conflicting political and economic positions dividing the cartel and raise oil prices. Hope for agreement on production cuts had diminished greatly until Iran, in a surprise role, proposed that OPEC temporarily return to the national production quotas established in October 1984. This proposal, adopted unanimously with some added conditions, requires all OPEC members other than Iraq to reduce production during September and October to within these quotas. The agreement exempts Iraq from quota restrictions. The agreement, which will probably be effective for the remainder of 1986, could reduce total OPEC production of crude oil to about 16.7 million barrels per day for September and October, and 16.9 million barrels per day in November and December, down from an average of 19.9 million barrels per day in the second quarter of 1986.

Even if all members keep production within their quotas, a fundamental question remains as to whether the agreement will produce the desired results. A reduced OPEC production level of 16.7 million barrels per

day may not be low enough to counteract the vast amount of oversupply (estimated at 1 to 2 million barrels per day) produced in the 3 months prior to September that resulted in an earlier-than-normal seasonal stock build in the market economies. The large stocks that currently exist threaten to reduce the demand surge for OPEC oil that normally would be expected to occur with the onset of the winter heating season. The agreement, therefore, will provide price support only if suppliers are willing to hold stocks. If significant cheating on production quotas or some other sign of price weakness occurs and stocks are drawn down, oil prices could drop rapidly. Price stability may not occur, however, because exports from OPEC countries have been running much stronger in September and October than the production numbers alone would indicate.

The war between Iran and Iraq, which has been going on for the past 6 years at various levels of intensity, could heat up or be resolved at any time. Recently, Iraq has increased the frequency and effectiveness of its bombing attacks against Iranian oil production, refining and export facilities, and ships. Iran has been massing men and material for what it bills as the final victory. Both countries have been harassing shipping in the Persian Gulf and are exploring alternative ways to maximize export capacity in the face of the hostile actions of its neighbor. Iraq has been investing in expanded pipeline throughput capacity in Turkey and Saudi Arabia, while Iran has been moving its export facilities further from Iraqi airfields. Lower oil prices are having a negative impact on the non-OPEC oil industry. The decreases in oil revenues have forced oil companies to severely cut their budgets for drilling, oil exploration, and research. Although these cutbacks are likely to constrain future non-OPEC production capacity, the short-term impact is less severe. In the near-term, production increases outside the United States are expected to at least offset the declines in U.S. production. Total non-OPEC production is expected to average from 26.6 to 26.8 million barrels per day in 1986, compared with an average of 26.7 million barrels per day in 1985. Increases in non-OPEC production to as much as 27.0 million barrels per day are possible in 1987.

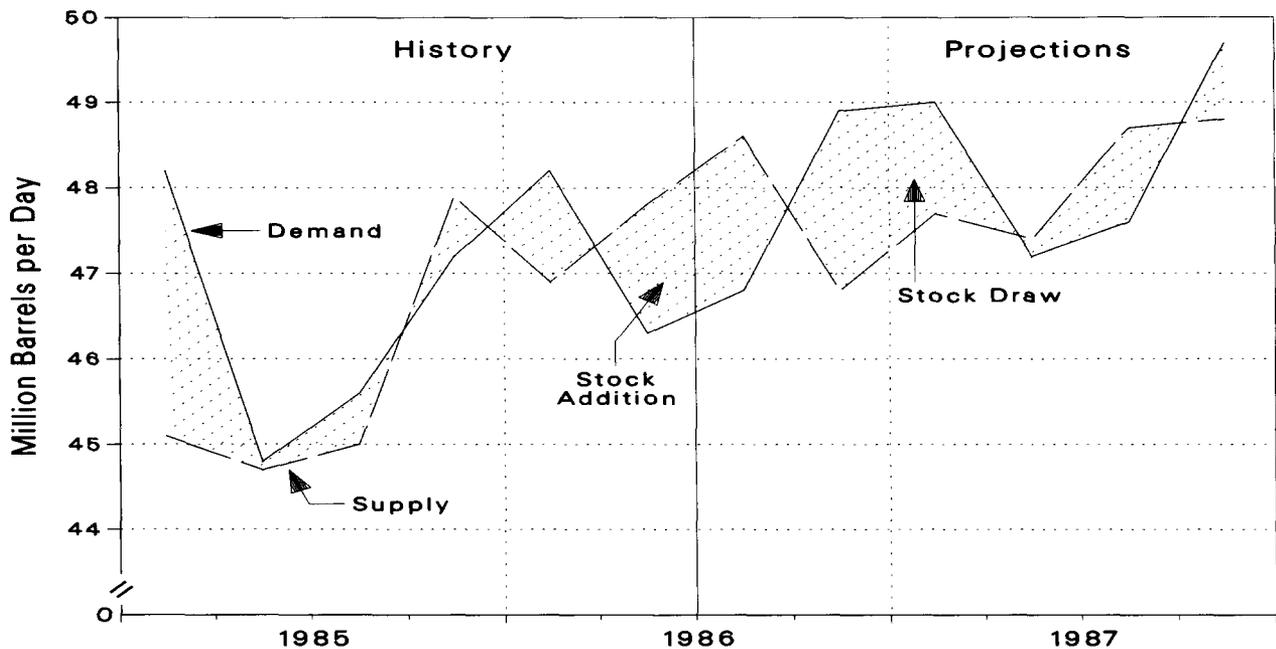
September marked the anniversary of a 1985 agreement which coordinated the efforts of the major industrial countries in reducing the value of the U.S. dollar. Since the highs of February 1985, the U.S. dollar has tumbled by about 40 percent against the yen and by similar large amounts against the major continental currencies. Since the July 1986 *Outlook*, the dollar has continued to erode against the European Monetary System currencies but has strengthened against the pound and has recently stabilized against the yen and deutsche mark. The dollar drop should have a somewhat stimulating effect on oil consumption in the industrialized countries, because oil is traded in dollar terms which, when translated into German marks or French francs, will magnify the drop in oil prices.

## International Petroleum Forecast

Lower petroleum prices have aided the economies of the oil-dependent consuming nations, especially those nations with high debt burdens. Petroleum demand in the market economies is expected to increase in 1986, due to lower prices and economic growth, to 47.6 million barrels per day (Figure 1). In 1987, further increases in consumption to 48.4 million barrels per day are expected given the projected oil price path. In 1986, third-quarter consumption is projected to be about 1.2 million barrels per day above year-earlier levels, while fourth-quarter consumption could be as much as 1.7 million barrels per day higher than the fourth-quarter 1985 level (Table 2 on page 26).

The forecasts for petroleum demand are based on the expectations that the economic growth rate in the industrial countries will be 2.5 percent between 1985 and 1986 and 2.8 percent between 1986 and 1987 (Table 3 on page 26). Each of these estimates has been decreased by 0.1 percent since the last *Outlook* based on a less sanguine view of the economic vigor of economic expansion in the industrial nations.

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



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/07) and *International Energy Annual 1985* DOE/EIA-0219(85) (Washington, DC); Organization for Economic Cooperation and Development, *Quarterly Oil Statistics, Second Quarter 1986*; Petroleum Economics Limited, *World Quarterly Primary Energy and Supply/Demand*, July 1986. • Projections: Table 2.

Market analysts estimate that OPEC production exceeded demand for OPEC crude oil by 1 to 2 million barrels per day during the second and third quarters of 1986. This excess supply and uncertainty over what type of production policy OPEC will pursue after the interim agreement expires, make future OPEC production levels difficult to predict. OPEC production (including natural gas liquids) in the fourth quarter of 1986 could range from 17.8 to 19.3 million barrels per day. On average, 1986 OPEC production is expected to range between 19.1 and 19.8 million barrels per day, an increase of 1.9 to 2.6 million barrels per day over the 1985 level. Although these figures indicate that OPEC achieved its goal of increasing market share, the success of this strategy has come at the expense of huge revenue losses for some OPEC countries and wider divisions within the cartel. It appears that OPEC now realizes that the market required reassurance of cartel cooperation in order to stabilize. If OPEC nations remain within their production quotas and consuming countries do not draw down stocks in large volumes, the demand for OPEC oil will be maintained and prices may reach about \$15 per barrel by the end of the fourth quarter. However, if OPEC is unable to control production or if demand during the heating season is weak, further downward pressure on prices is likely.

At the beginning of the fourth quarter of 1986, total petroleum stocks (including the Strategic Petroleum Reserve) in the market economies are estimated to be equivalent to about 100 to 104 days of forward consumption (at fourth-quarter 1986 rates). Low prices in the second and third quarters led to stock builds throughout the distribution chain to levels much higher than in 1985. How this extra margin of stocks will be used depends on the price expectations of buyers and refiners. Stocks in the market economies are projected to be drawn by 1.0 to 2.2 million barrels per day during the fourth quarter of 1986. Weak demand or expectations that even cheaper crude will be available in the future may encourage greater stock draw. Stocks of 4.9 to 5.0 billion barrels at the end of 1986 reflect additions to stocks during the year at levels influenced by lower oil prices and the uncertainty over changing market conditions.

Non-OPEC countries are projected to rely on imports for 37 to 41 percent of their oil consumption during 1987.<sup>1</sup> Japan depends almost entirely on imports to meet demand. Organization for Economic Cooperation and Development (OECD) countries in Europe also rely heavily on imports, with 59 to 69 percent of consumption projected to be supplied by imports during 1987. On average for 1987, 50 to 75 percent of Japanese consumption is expected to be provided by imports flowing through the Strait of Hormuz. The United States is expected to import very little oil (about 3 to 5 percent of consumption) through the Strait during 1987. During the fourth quarter of 1985

(the latest quarter for which complete data are available), the OECD countries imported 37 percent of their net oil imports from the entire Persian Gulf region.

## Forecast Assumptions

### World Oil Prices

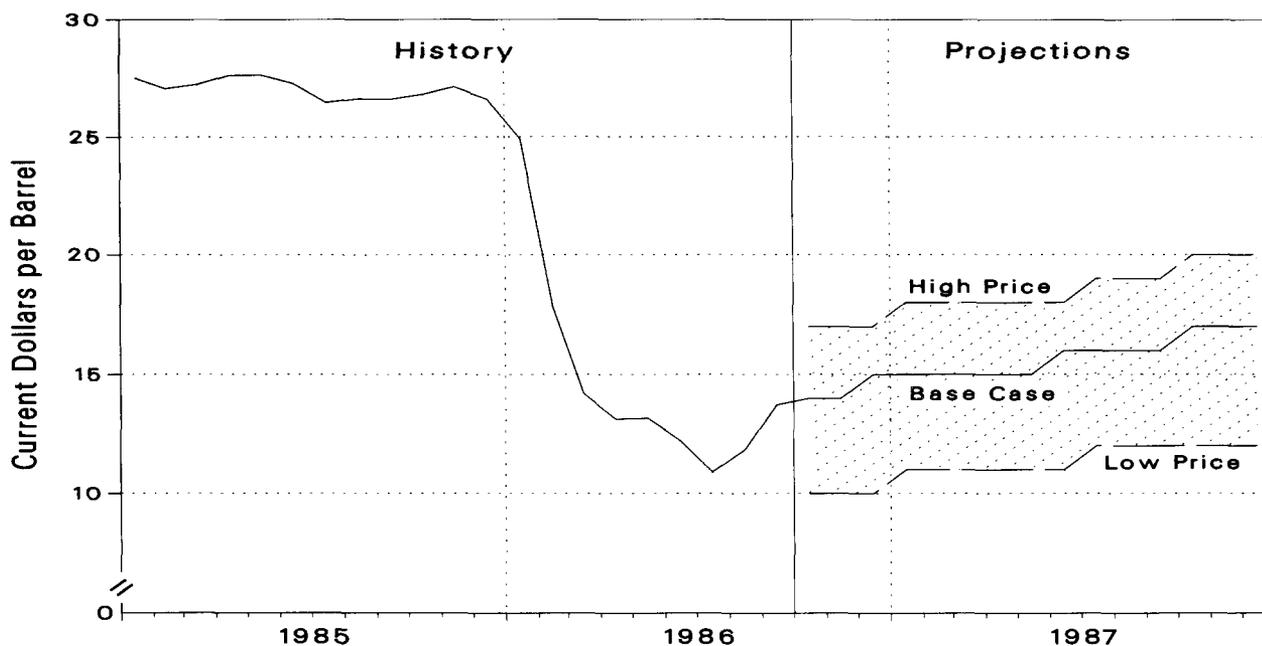
In the base case, the nominal price of imported crude oil delivered to U.S. refiners is assumed to average between \$14 and \$15 per barrel in the fourth quarter of 1986, and then gradually increase to \$17 per barrel by the end of 1987 (Figure 2 on page 8). This price path is based on the assumptions that world crude oil production will exceed the slow but steady increases in demand, thereby sustaining the current market surplus, and that the OPEC agreement will hold together, with limited cheating. 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 27). The same initial 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 a general breakdown in OPEC's production restraint agreement and weak worldwide demand, oil prices are assumed to fall to about \$10 per barrel in the fourth quarter of 1986. Demand for oil is assumed to recover slightly during the 1986-1987 heating season, with oil prices increasing gradually to \$12 per barrel by the summer of 1987.

*High Price Case:* As a result of OPEC's strict adherence to its production quota throughout 1987 and more rapid growth in oil demand, oil prices are assumed to be pushed up to \$17 per barrel by the end of 1986 and to \$20 per barrel by the end of 1987.

<sup>1</sup>Energy Information Administration, International Contingency and Information Division, "International Petroleum Statistics Report, October 25, 1986" (Internal Report).

**Figure 2. Imported Crude Oil Prices**



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/07) (Washington, DC, 1986). • Projections: Table 4.

## Macroeconomic Activity

The base case projections assume that economic growth will improve in 1987, but not enough to exceed the 1985 growth rate. Based on the Data Resources, Inc., September 1986 macroeconomic forecast (DRI CONTROL0986), as modified to reflect EIA's imported crude oil price assumptions, growth in real gross national product (GNP) between 1986 and 1987 is assumed to be 2.7 percent, up from 2.5 percent expected for 1986 and equal to the revised rate for 1985.<sup>2</sup> (Assumptions for the price of imported crude oil, the economy, and the weather are shown on Table 4 on page 27.)

This assumed GNP growth for 1987 is critically dependent on improvement in the trade sector, because real consumption growth is expected to slump in 1987 to a rate of 2.0 percent, compared to the 3.5-percent rate expected in 1986. The 1986 growth in consumption is partly related to influences such as incentive sales

in the automobile industry, used to clear out large inventories resulting from overproduction early in the year. This source of growth is expected to have a counterpart in reduced sales in 1987, contributing to a depressed short-run outlook for consumption. The turnaround in trade, which is expected to be evident by the fourth quarter of 1986, provides the impetus for the modest growth assumed in 1987 through substitution of domestic production for previously imported goods and an expansion of world demand for U.S. goods. Therein lies the basis for the expected 3.2-percent growth in 1987 in the manufacturing sector, compared to a relatively poor 2.0-percent showing in 1986.

The high and low macroeconomic forecasts shown in Table 4 on page 27 reflect only the impacts of the higher and lower oil price assumptions on income and consumption. Because the long-awaited trade effects of the depreciating dollar dominate the growth prospects for 1987, little difference in the short-run economic outlook is generated by the alternate oil price cases. Most of the improvement in GNP growth expected in the low oil price case is due to higher consumption growth stemming from noticeably higher disposable personal income.

<sup>2</sup>The GNP growth figures for this *Outlook* reflect the July 1986 Commerce Department revisions in the data for 1983 through first-quarter 1986. These revisions noticeably increased the GNP growth rate for 1984 to 1985, from 2.2 percent to 2.7 percent.

## Recent Macroeconomic Developments Amidst Low Oil Prices

Conditions for the revival of a flagging economy seemed to have arrived this year as sharply lower oil prices paved the way for a relatively painless pursuit of easier money, lower interest rates, and a purposeful attack on the still overvalued U.S. dollar. However, following real GNP growth of 3.8 percent (calculated on an annual basis) in the first quarter of 1986 (relative to the fourth quarter of 1985), growth slowed to only 0.6 percent in the second quarter (Table 4 on page 27). Currently, the major economic forecasting services are calling for an overall 1986 growth rate between 2.5 percent and 3.1 percent, with perhaps as little as 2.6 percent additional growth in 1987. Why, with external conditions apparently so favorable, has the recovery resisted revival?

There are at least four factors that help to explain the current weakness apparent in the macroeconomy amidst seemingly favorable conditions. These factors are: (1) the negative direct effects of sharply lower oil prices; (2) the lag in response of the economy to the falling dollar (the "J-Curve" effect); (3) the adjustments in importer and/or exporter margins that counteract relative price effects of dollar depreciation; and (4) the uncertainty about tax reform.

It has long been recognized that falling oil prices have both positive and negative effects on the U.S. economy, which consists of a large oil producing sector as well as a large oil consuming sector. Obviously, falling oil prices tend to generate cash flow problems for the oil and gas exploration and production industry, particularly when the price drops are very sudden. For the oil and gas industry (and for closely related industries), the impact on cash flow and investment from this year's price decline has been dramatic and immediate. Many of these negative effects are likely to be outweighed in the long run by the increase in consumer purchasing power and resulting additional business investment in equipment and other property. However, these positive aspects of lower oil prices on the economy are expected to occur only after a lag.

There is stark evidence in recent financial reports that the decline in oil and gas profitability and investment has been steep. From a nonstatistical sample of 8 major petroleum companies, year-to-year profits in the oil and gas sector were down by 69 percent through the first half of 1986.<sup>3</sup> Capital and exploratory expenditures for major petroleum companies declined by 18 percent during the same period.<sup>4</sup> If oil prices remain low or even firm up somewhat in the coming months, spending by this sector could worsen notice-

ably in the short run because the current spending levels include funds for the completion of long-term drilling projects which would not have been initiated under the current price regime. In the macroeconomic forecast for this *Outlook*, the investment growth rate between 1985 and 1986 is half the level it would be if oil- and gas-related investments were not in such a slump.

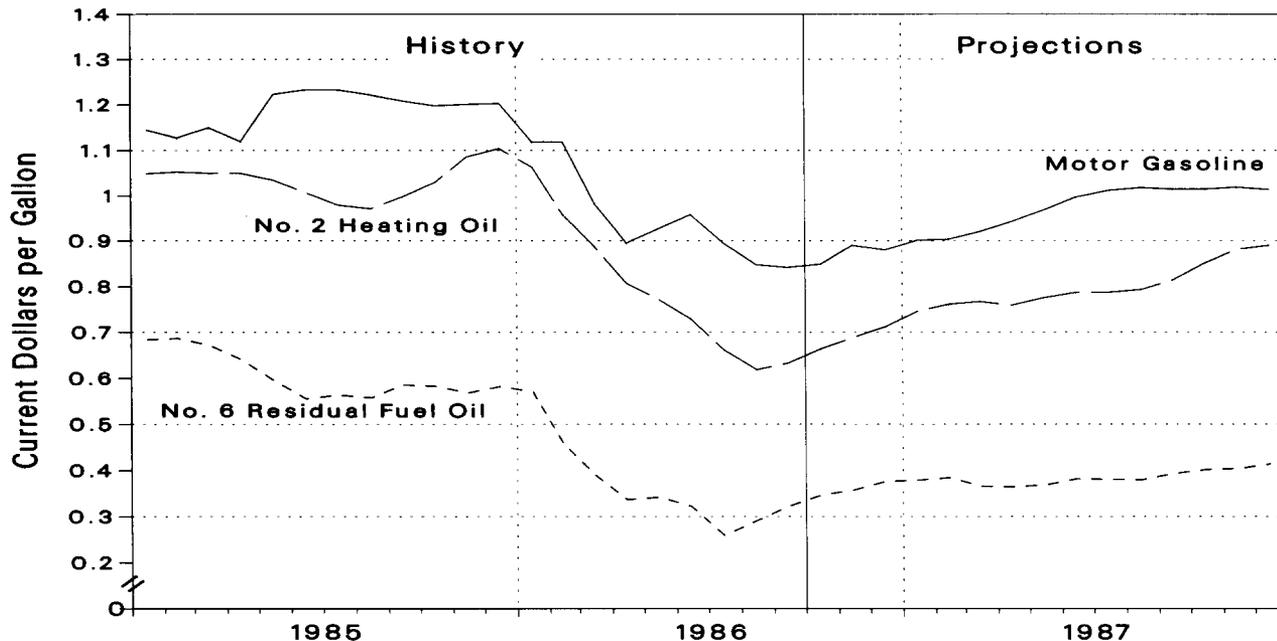
In the foreign trade area, improvement of the U.S. goods and services trade deficit (in real terms) has been elusive. Real GNP growth underlying the April 1986 *Outlook* (the first report following the drop in oil prices) was predicated on a steady decline in the real trade deficit beginning in the first quarter of 1986. However, reasonable growth in the domestic industrial sector awaits the turnaround in the trade sector. For the current *Outlook*, a declining trade deficit is not expected until the fourth quarter of 1986, explaining why projected improvements in the growth of industrial output have been pushed back. Two general reasons why the trade sector has not improved as expected are: (1) the turning point in the response of the domestic trade deficit to a change in relative prices of domestic versus imported goods due to a dollar depreciation (the "J-curve" effect) is difficult to predict and tends to become a moving target if exchange rates change continuously (as opposed to changing discretely and then remaining at some new level); and (2) rather than lose market share, importers into U.S. markets have evidently chosen to reduce margins, thus offsetting a large part of any relative price change due to exchange rate changes. Thus, U.S. prices of foreign goods have not increased as much as anticipated.

Another factor that may have had a negative impact on economic growth this year is impending tax reform. Although the effect of anticipated tax reform on current demand is difficult to quantify, certain aspects of the tax reform debate relating to business investment are worth noting. It became clear early on that, whatever final tax reform was adopted, many tax shelters and previously favored forms of capital investment were likely to become less attractive. Uncertainty about the possible nature of transition rules, and the probability of some retroactive provisions (such as the repeal of the Investment Tax Credit), may have helped reduce investment spending this year. For 1987, Data Resources, Inc. estimates that the current tax reform bill will lower real GNP by about 0.4 percent, and by an average of 0.3 percent over the 1986-to-1991 period. Most of this impact is concentrated in the area of nonresidential fixed investment.

<sup>3</sup>Energy Information Administration, Economics and Statistics Division, "U.S. Energy Industry Financial Developments, Second Quarter 1986" (Internal Periodic Report).

<sup>4</sup> *Ibid.*

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



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/07) (Washington, DC, 1986). • Projections: Table 5.

## Energy Product Prices

The sharp decline in the world oil price lowered all petroleum product prices through the third quarter of 1986 (Figure 3 and Table 5 on page 28). The world oil price is expected to increase in the fourth quarter of this year and continue to rise through the last quarter of 1987, causing corresponding increases, with some lags, in energy prices.

The lower world oil price caused gasoline prices to fall by 23 cents per gallon between the first and third quarters of this year, and the average price for 1986 is projected to be 26 cents per gallon below the year-earlier level. In 1987, gasoline prices are projected to increase by 4 cents per gallon as world oil prices increase moderately. Although gasoline prices normally peak during the summer driving season, low world oil prices and high inventories kept prices from rising during the past several months. The assumption of normal seasonal patterns in 1987, along with a

steady increase in the world price of crude oil, should cause prices to peak in the third quarter of next year. Both retail and refiner margins increased considerably in the first quarter of this year compared to year-earlier levels because of a lag in product price declines when crude oil prices fell. Retail margins in the first quarter of 1986 were 8 cents per gallon above year-earlier levels. Both margins are expected to stabilize throughout the forecast period.

Retail heating oil prices are expected to follow the price path of world crude oil. Heating oil prices fell by 30 cents per gallon between the fourth quarter of 1985 and the second quarter of 1986 and, for this year as a whole, prices are expected to be 28 cents per gallon below the 1985 level. Stock levels have been built up at an unusually rapid pace in the third quarter of this year, causing days' supply of distillate fuel (stocks divided by demand) to remain steady between the third and fourth quarters, rather than dipping as normal seasonal patterns usually dictate. As a result, refiners margins are expected to remain constant between the third and fourth quarters of this year. Assuming a continuation of high stock levels and normal winter weather, the price of heating oil is expected to increase only moderately (by about 3 cents per gallon in 1987), about the same as the increase in crude oil costs.

Diesel fuel prices are expected to follow the same pattern as that for heating oil because both fuels are middle distillates. The price of diesel fuel in 1986 is expected to be 28 cents per gallon lower than the 1985 price. Prices are expected to increase by 4 cents per gallon in 1987.

The price of residual fuel oil in late spring 1986 briefly dropped below that for natural gas in many utility markets in the eastern and coastal regions. As a result, demand for residual fuel, which had been declining since 1977, has increased sharply. Increasing demand is expected to dissolve the price difference between crude oil and residual fuel oil, and residual fuel prices are projected to rise to approximately 40 to 50 cents per barrel above crude oil prices in 1986 and 1987. (In 1985, residual fuel oil prices were \$1.37 per barrel lower than the imported crude oil price.) If the price of crude oil were to increase considerably, such as in the high world oil price case (reaching \$20 a barrel by the fourth quarter of 1987), residual fuel oil would be a less attractive competitor with natural gas, demand would decline, and its price would drop below that for crude oil.

The drop in the price of crude oil is expected to cause declines in the prices of fuels other than petroleum products. These declines are not expected to be as steep, except in the case where another fuel competes directly with a petroleum product. The price path of natural gas delivered to electric utilities is expected to mirror that of heavy oil delivered to utilities (mainly residual fuel oil), as natural gas producers, distributors, and marketers attempt to maintain their share of sales to utilities. Coal prices paid by electric utilities are expected to fall by 3 percent in 1986 and remain constant in 1987 as the coal spot market responds to the falling price of oil.

The nominal price of natural gas in the residential sector is projected to fall by about 6 percent in 1986 and then remain essentially unchanged in 1987. The primary reason for the 1986 decline is the drop in wellhead prices. The lack of direct oil/gas competition in the residential sector and limits to short-term fuel switching are projected to mitigate sharper declines in the natural gas price. It will be interesting to see if the new campaign by heating oil distributors for increased sales will protect residential gas users from further price increases.

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 less than 1 percent or, in real terms, drop by 2 percent. Lower fuel costs and less expensive capital costs are expected to offset the additions to the rate base for past construction of nuclear and coal plants. In 1987, electricity prices could increase by slightly over 1 percent (still lower than the rate of inflation), as fuel costs, mainly oil and gas, start to rise.

## Overview

Total petroleum demand in 1986 is projected to average 16.2 million barrels per day, an increase of about 2.7 percent from the 1985 level. Led by strong increases in residual fuel oil and jet fuel demands, total petroleum demand is expected to reach its highest level since 1980. A further increase of 1.4 percent is projected in 1987, with increased consumption of distillate fuel oil and other petroleum products (including jet fuel) offsetting expected declines in the demand for residual fuel oil. Most of the increase in distillate fuel oil is expected in the transportation sector; the declines for residual fuel oil demand are projected to occur at electric utilities.

Net petroleum imports (crude oil plus petroleum products) in 1986 are expected to average almost 5.2 million barrels per day in 1986, a 20-percent increase over the 1985 level and the highest level of imports in 5 years. The increased level of imports reflects lower world oil prices, slightly decreased domestic production, and stock buildups. A further increase of 4 percent is projected for 1987. (The base case forecast is shown in Table 6 on page 29; alternative cases for high and low world oil prices are shown in Table 7 on page 30 and Table 8 on page 31, respectively.)

## Motor Gasoline

Average retail gasoline prices this year are projected to be lower in real terms than they have been in decades. Partly as a result of this significant price break, gasoline demand in 1986 is projected to increase by nearly 3 percent from 1985 levels, bringing 1986 demand to an average of 7.02 million barrels per day (Table 9 on page 32). 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.

The projected growth in gasoline demand in 1986 conceals growth in travel demand of more than 5 percent now projected for 1986. Dramatically lower oil prices in 1986, resulting in refiner acquisition costs of imported oil as low as \$12 per barrel, led to the projected 24-percent decline in real retail gasoline prices for all of 1986. Sharply lower gasoline prices, coupled with a rebound in personal income growth (from 2 percent in 1985 to 3 percent in 1986), are expected to result in an increase in domestic motor

vehicle travel of approximately 5 percent in 1986. Growth in vehicle miles traveled is projected to slow to 2.6 percent in 1987, as growth in personal income is assumed to slow to 2.1 percent and gasoline prices are projected to rise.

Vehicle efficiency is projected to improve by close to 3 percent in 1986 (Figure 4). This unusually high rate of growth in efficiency is expected to hold gasoline demand growth in the 3-percent range, despite the rapid growth in vehicle miles traveled. The anticipated large rise in efficiency for 1986 appears to be attributable to the high volume of new cars that have entered the fleet during 1985 and 1986. The higher efficiency rates associated with new cars (approximately 22 miles per gallon for all new cars, compared to 17 miles per gallon for the existing fleet) is expected to continue to push up the fleet average in 1987, but at a slower rate than anticipated for 1986.

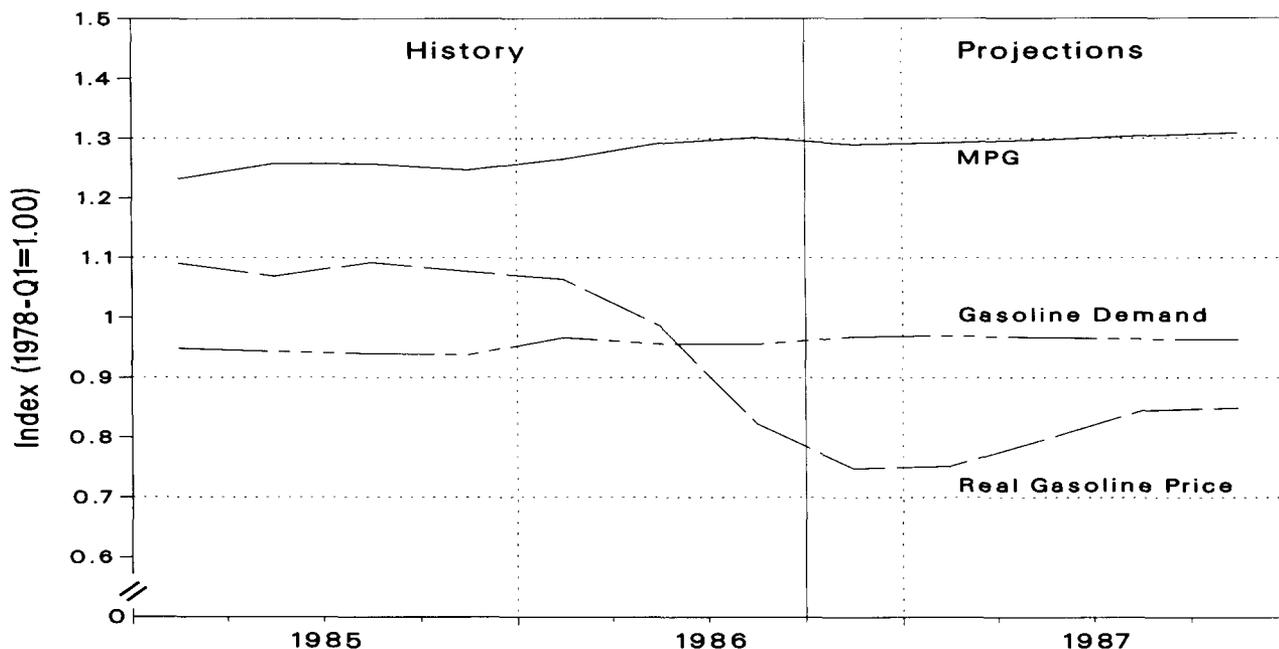
Despite the dramatic price declines experienced in 1986, gasoline demand in the short run is not projected to exceed levels observed in 1979, even though vehicle travel in the United States is expected to be 21 percent

higher in 1986 than in 1979. Estimated average fleet efficiency has risen from 14.2 miles per gallon in 1979 to 17.4 miles per gallon in 1986.

## Distillate Fuel Oil

Stagnant industrial demand in 1986 is expected to hold overall distillate fuel oil consumption to 2.9 million barrels per day, only 1 percent above the 1985 demand (Table 10 on page 33 and Figure 5 on page 13). Despite sharply lower prices, general sluggishness in industrial activity (growth estimated at only 2.0 percent in 1986) has reduced opportunities for switching to distillate fuel oil in the industrial sector. Residential heating oil demand is not expected to grow in response to lower prices, because very little switching is possible in the short run except for those consumers who use wood for back-up heat (approximately 25 percent of heating oil consumers in 1982).

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

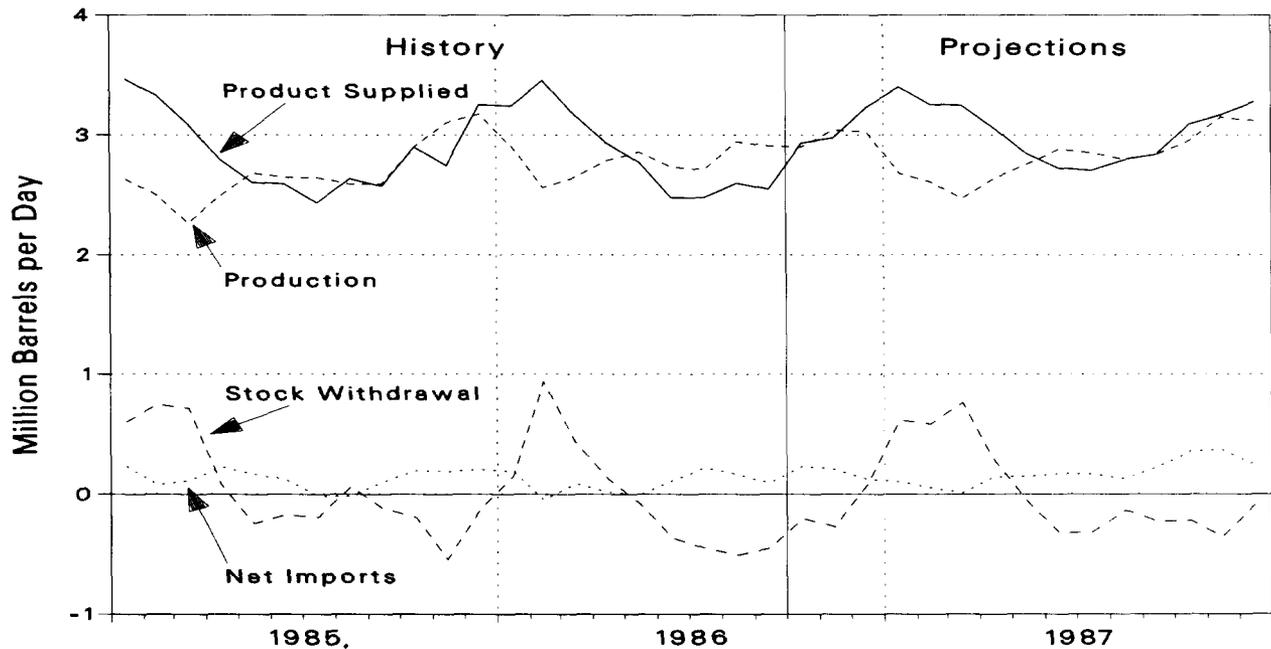


Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/07) (Washington, DC, 1986); Federal Highway Administration, *Traffic Volume Trends* (monthly). • Projections: Tables 5 and 9 and from unpublished output from the Energy Information Administration's Short Term Integrated Forecasting System.

In 1987, demand is projected to increase by more than 4 percent, to 3.0 million barrels per day. The important variable in 1987 is industrial production, which is expected to increase by 3.2 percent. Most of the growth for distillate consumption is expected in non-heating uses, particularly transportation diesel. Higher oil prices, however, may reduce the incentive for switch-

ing away from natural gas in the industrial and commercial sectors, leading to no growth in oil use. Residential demand for distillate fuel oil next year is expected to increase only slightly because of the higher number of heating degree-days assumed for the first quarter of 1987 compared to the relatively mild weather during the first quarter of 1986.

**Figure 5. Components of Distillate Fuel Oil Supply**



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 July 1986; and *Weekly Petroleum Status Report*, DOE/EIA-0208(86-37,41) (Washington, DC). • Projections: Table 10.

## Winter Outlook for Distillate Fuel Oil

Despite the lowest prices for distillate fuel oil in 8 years, demand for distillate is expected to increase by only about 60,000 barrels per day, to 3.18 million barrels per day, during the winter of 1986-1987 compared to the year-earlier level. This modest increase of about 2 percent is expected to be met primarily out of refinery production, but with a significantly higher percentage of demand met from stocks than in recent years.

Prices of heating oil are expected to be about 72 cents per gallon during the winter of 1986-1987, a decline of about 30 percent from last winter's prices (Table 5 on page 28). The drop in crude oil prices is the major reason for the decline, with the refiners' acquisition cost of crude oil falling to \$14.60 per barrel from last winter's average of \$22.95 per barrel, which translates into a decline of almost 20 cents per gallon. However, an additional reason for the price decrease is a drop in wholesale margins, from an average of 17 cents per gallon last winter to a projected 11 cents per gallon for the upcoming heating season. This decrease in margins reflects the improved stock situation, with primary stock levels at about 152 million barrels at the opening of the fourth quarter, compared to 117 million barrels at the beginning of fourth-quarter 1985. Unlike the situation last winter, oil prices are expected to rise between the fourth quarter of 1986 and the first quarter of 1987; the normal pattern is for prices to rise somewhat during the peak of the winter. Last winter this pattern was disrupted by the decline in crude oil prices at the beginning of 1986, offsetting the typical margin increases in the first quarter.

Demand for distillate fuel oil in the fourth quarter of 1986 is projected to be 3.05 million barrels per day, an increase of 3 percent from the rate one year earlier (Table 10 on page 33). The main reason for the increase is lower prices, averaging almost 40 percent below levels of a year ago. The lower prices are expected to increase distillate demand mostly for industrial and transportation uses, with some switching away from natural gas, particularly in industry. Residential heating use is expected to be only marginally affected by the lower prices, for two reasons. First, there is very little switching potential in the short run, other than for those consumers who also use significant amounts of wood. Most additional use would come as a result of higher thermostat settings. Second, heating degree-days were 5-percent higher than normal during the fourth quarter of 1985; assumed normal weather during the fourth quarter of 1986 would imply reduced space heating requirements. In the first quarter of 1987, projected demand is 3.30 million barrels per day, only slightly higher than the year-earlier level of 3.28 million barrels per day. Despite assumed higher heating degree-days (weather in the first quarter of 1986 was 8-percent warmer than normal) and continued low prices, a slowdown in the rate of economic growth is expected to hold down demand for non-heating uses, particularly in the industrial and commercial sectors. Opening stock levels for the upcoming winter are higher than they have been for the previous 3 winters. In part, this situation reflects the high refinery utilization rates of recent months (averaging above 85 percent, the highest in several years) and higher imports of distillate during the past summer, as suppliers attempted to take advantage of lower foreign prices prior to an expected autumn price increase. It is expected that refinery production of distillate will continue at relatively high levels through the fourth quarter, but begin to decline as the heating season winds down in the first quarter of 1987. Withdrawals from stocks are expected to average about 260,000 barrels per day during the winter, much higher than last winter's 100,000 barrels per day, as refiners work their currently high stock levels down to a typical post-winter minimum around 100 million barrels.

The above discussion assumes normal heating degree-days for the upcoming winter. If the winter were a sustained 10-percent colder than normal, it is estimated that additional distillate demand would average 140,000 barrels per day throughout the winter quarters. The most likely source of this additional demand would be imports. There remains a considerable surplus of crude oil in world markets, and distillate can be readily produced by foreign refineries, given their orientation toward the heavier end of the product slate. In addition, overseas prices remain low, despite recent decisions by the major oil exporters to reduce production. Whether the lowered production rates can be sustained and prices raised remains an uncertain prospect at this time.

## Residual Fuel Oil

Total residual fuel oil demand is projected to decrease by 9 percent in 1987, following an expected 15-percent increase in 1986 (Table 11 on page 34). This large jump in demand forecast for 1986 represents the first annual increase in demand for this fuel since 1977. Most of the increased demand has occurred in the utility sector where a 40-percent reduction in the price of heavy oil (mostly residual fuel oil) has caused utilities to switch from natural gas, and in some cases coal, increasing residual fuel demand in this sector by an estimated 34 percent compared with the year-earlier level. Nonutility demand, mainly for bunker and industrial uses, is projected to remain constant between 1985 and 1986.

The price of residual fuel oil is expected to increase moderately in 1987. In addition, new coal-fired and nuclear-powered electricity generating capacity is expected to come online. These two factors are expected to lead to a significant decline in utility demand for residual fuel oil. Between 1986 and 1987, nonutility demand is expected to remain flat, while utility consumption is expected to drop by 22 percent. Although the 1987 forecast for total residual fuel oil is still above the actual level in 1985, demand could vary considerably depending on future prices for residual fuel oil and natural gas and the amount of switching between these two fuels at utilities.

## Other Petroleum Products

Other petroleum products demand accounts for about 30 percent of total petroleum demand throughout the forecast period. The demand for other petroleum products is projected to grow by 5 percent between 1986 and 1987, after essentially no change between 1985 and 1986 (Table 12 on page 35). Jet fuel, petrochemical feedstocks, and liquefied petroleum gas (LPG) are the principal components of the other products category, and are projected to average 3.4 million barrels per day in 1987 out of 5.0 million barrels per day projected for total other petroleum products demand. This share is expected to remain near the 1985 share over the forecast period. The remaining products are grouped under the miscellaneous category: petroleum coke, kerosene, still gas, road oil and asphalt, lubricants, waxes, aviation gasoline, special naphthas, and other small-volume petroleum products.

Demand for LPG is forecast to increase by 5 percent between 1986 and 1987, as the winter weather in 1987 is assumed to return to normal and thus be colder than the year earlier. Demand in 1986 is expected to decline by 2 percent, despite declines in petroleum prices. Jet fuel demand is projected to rise by about 2 percent in 1987, as increases in disposable personal income are expected to outpace increases in fuel costs. This follows an increase of nearly 7 percent in 1986, largely as a combined result of higher personal income and lower fuel costs than in 1985. The use of petroleum to produce petrochemicals is expected to increase by only 2 percent in 1987, despite an increase of nearly 4 percent in output expected in the chemical sector. Higher petroleum prices are assumed to offset demand that would otherwise follow increases in chemical output.

This 1987 demand pattern is similar to 1986, when demand for petrochemicals is expected to increase by a little over 1 percent while growth in chemical production is projected to be 4 percent. Demand in the miscellaneous products category is projected to grow by nearly 8 percent in 1987 after an expected decrease of 3 percent in 1986. Demands for kerosene and petroleum coke are expected to decline somewhat in 1987, while demands for all other miscellaneous products are projected to either increase or remain near their 1986 level.

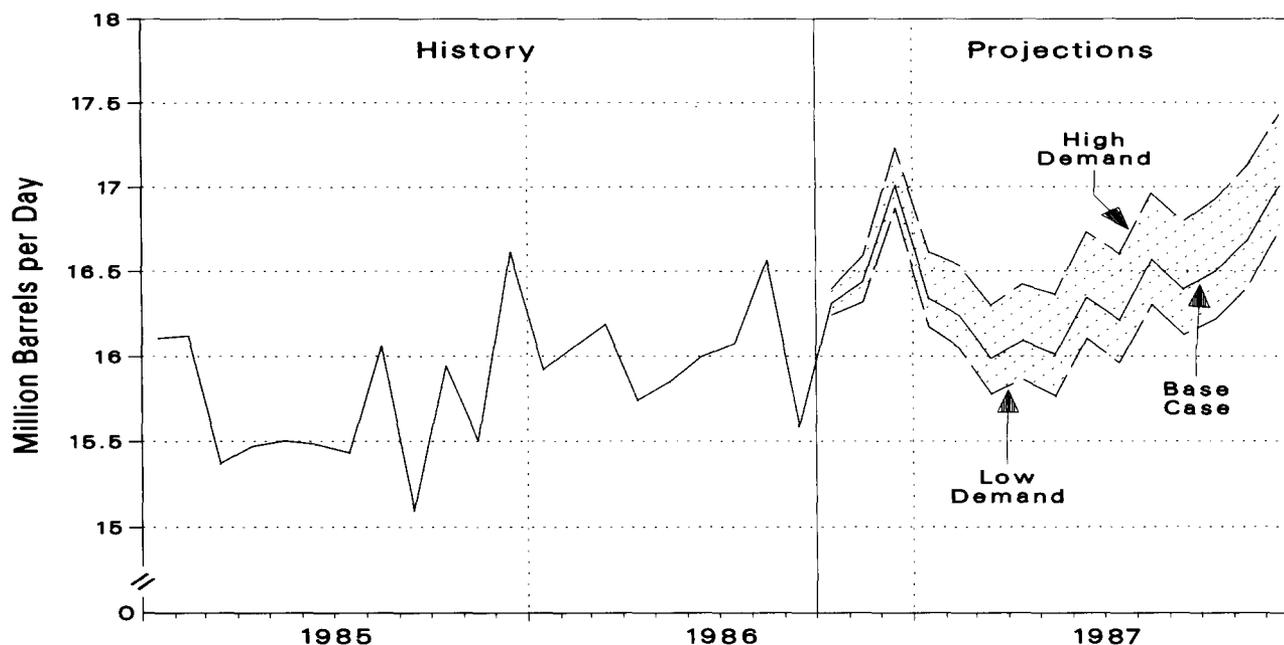
## Petroleum Demand Sensitivities

Table 13 on page 36 and Figure 6 on page 16 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 28 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 27, holding prices at their base case trajectories.
- The weather sensitivity cases are based on variations in population weighted heating degree-days and cooling degree-days of 10 percent in the first and fourth quarters and 15 percent in the second and third quarters.

For the remainder of 1986, prices and weather contribute most to the uncertainty range, which averages 0.6 million barrels per day in the fourth quarter. In 1987, price uncertainty dominates the total petroleum uncertainty range of 0.8 million barrels per day, although the weather sensitivity is important in the first quarter.

**Figure 6. Total Petroleum Demand**



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(86/07) (Washington, DC, 1986). • Projections: Tables 6, 7, and 8.

## Domestic Crude Oil Production

The short-term outlook for total production of crude oil shows moderate declines--about 2 percent in both 1986 and 1987--to 8.7 million barrels per day (Table 6 on page 29). Changes projected for each of the major producing regions of the country do not all conform to this trend. For example, oil production in the lower 48 States is expected to average 6.9 million barrels per day in 1987, a projected average annual decrease of 2.4 percent. In contrast, Alaskan production is expected to increase by 1.9 percent in 1986 and a further 2.0 percent in 1987, to 1.9 million barrels per day.

Total oil production is also projected to decline through 1987 in both the high and low oil price cases. The total projected range in 1987 crude oil prices of \$7.40 per barrel (difference between high and low price assumptions) is associated with a range in 1987 oil production forecasts of 270,000 barrels per day.

The many low-yield, high-operating cost wells in the long established oil fields of the Midwest and Southwest have been hardest hit by the drop in oil prices. Much of the production lost since the first of this year has been from these areas, with Texas reporting the biggest production declines of all the States. The impact of lower oil prices has been mitigated somewhat because several States and the Federal Government have extended the time that a well can be shut-in before it is required to be plugged and abandoned. Meanwhile, in the frontier regions of Alaska, the Gulf of Mexico, and the Pacific offshore, major capital projects initiated when oil prices were higher are now largely paid for and are continuing to come on stream. The increased Alaskan production is from the Kuparuk River field in 1986 and from the Lisburne reservoir of Prudhoe Bay in 1987. At least two fields in the California Federal offshore, Point Arguello and Point Pedernales, are scheduled for development early in 1987. In the Gulf of Mexico, at least one deep water project in the Green Canyon area of Louisiana has been approved for development, and the start of production could be as early as mid-1987.

Possibly of greater concern are the immediate and longer-term consequences of the current low level of investment in oil resources. The sharp drop in the number of active drilling rigs since the first of the year has been associated with high unemployment in the major oil producing regions.

According to the Hughes rig count,<sup>5</sup> total active rotary rigs in the United States averaged about 730 during August 1986 down from an average of 1,810 in January--a total drop of about 60 percent. This has not translated into a comparable percentage drop in the number of oil wells drilled, however, since the average efficiency of drilling rigs and crews and the relative mix of the different type wells drilled are likely to have changed with lower oil prices. There has apparently been an increase in drilling efficiency as older rigs and less experienced crews have been retired more quickly during the drilling slump. The mix of drilling targets probably has also changed, as the focus of new investment activity has shifted to a more profitable set of prospects. As a result, the recent decline in total well completions (oil wells, gas wells, and dry holes) has been about 40 percent--about half the percentage decline reported for the number of active rigs. From January to August 1986, the total well completions (according to EIA's July 1986 *Monthly Energy Review*) declined from 6,400 to 4,420, or by about 30 percent. Partial evidence for the change in drilling targets may be provided by data indicating more drilling of shallow wells. For the first 8 months of 1986, the average depth of completed oil and gas wells (including dry holes) was 4,153 feet, compared with 4,440 feet for all of 1985.

Beyond the short-term horizon, the abandonment or postponement of maintenance on currently active wells, as well as the interruption of development and exploration plans, will likely mean an accelerated rate of production decline. With abandonment, some reserves will be effectively lost, since reactivation costs (comparable to those for developing a new well) would be prohibitively high, given the small reserves remaining to be recovered. The outlook for accelerating crude oil production declines has further significance for the United States' trade balance and energy security (see international section).

## Petroleum Refining, Imports, and Stocks

Despite the expected small increase in oil prices during the 1986-1987 period, increasing total petroleum demand and slightly declining levels of domestic crude oil production are projected in the base case. Total primary petroleum stocks are projected to be brought down from their current high levels, and total net imports are projected to remain above 1985 levels.

As a result of current high stock levels, about half of the increase in petroleum demand projected for the winter of 1986-1987 is forecast to be met by drawing down total primary product stocks, although the response varies for each of the refined products. For example, distillate fuel oil is projected to account for an average 260,000 barrel stock drawdown between September 1986 and March 1987, while motor gasoline stocks are expected to remain essentially constant over the same period.

In conjunction with this product stock drawdown, refinery runs of crude oil in the first quarter of 1987 are projected to be reduced by 1.1 million barrels per day from the 13.1 million-barrel-per-day level of the third quarter of 1986. Private crude oil stocks (which exclude the Strategic Petroleum Reserve) are projected to remain nearly constant through the end of the first quarter of 1987, as a reduction in crude oil imports available to refiners is offset by the reduction in refinery runs of crude oil.

Because current market conditions continue to favor high levels of domestic refinery utilization, as opposed to imports of finished products, crude oil imports are projected to remain above 1985 levels throughout the forecast horizon. Imports of refined petroleum products are projected to remain near 1985 levels. Refined petroleum product stocks are projected to end 1986 at 750 million barrels, or 46 days of supply (based on the next quarter's anticipated rate of product supplied), compared to 705 million barrels and 44 days of supply at the end of 1985.

<sup>5</sup>Energy Information Administration, *Monthly Energy Review*.

Distillate stock levels closed September 1986 at 152 million barrels and 50 days of supply. This amount was 35 million barrels and 10 days of supply above the third-quarter level for the previous year, but only 9 million barrels and 1 day of supply above the more normal 1984 level. During the upcoming heating season, suppliers are expected to meet an average demand more comparable to that during the 1985-1986 season by drawing stocks down to about 105 million barrels by the end of March 1987 (see Winter Distillate Outlook box). This level is comparable to the 99 million barrels at the end of March 1986. Production is expected to be slightly below the year-earlier level, due mainly to the vastly different late-summer stock situation (see Managing High Petroleum Stocks box). In 1985, primary stock holders delayed the traditional buildup of distillate stocks until the fourth quarter, but then built the level to 143 million barrels by increasing the distillate fuel oil refinery yield to 23.8 percent. In the fourth quarter of 1986, this yield is projected to remain at a more moderate level of 22.7 percent.

If domestic refiners operate at slightly reduced levels of utilization over the coming winter and manage to draw down distillate stocks, the outlook for gasoline markets in spring 1987 will be much stronger. Total

motor gasoline stocks at the end of the third quarter of 1986 were 9 million barrels higher than at the same time last year, reflecting the high level of domestic refinery activity throughout the summer--a general response to the wide availability of favorably-priced netback crude oil in world markets. However, refinery production of this fuel in the fall of 1986 is projected to drop from summer levels, due to decreased refinery runs and refineries adjusting their slate to produce more distillate fuel oil. As a result, primary finished motor gasoline stocks are projected to end the first quarter of 1987 at 228 million barrels--still only 8 million barrels above the previous year's level, with second-quarter 1987 gasoline demand projected to be slightly higher than a year earlier.

The Strategic Petroleum Reserve (SPR) inventory, currently at nearly 507 million barrels, was assumed to be filled at a rate of 35,000 barrels per day throughout the forecast period. However, since this assumption was made, legislation was enacted calling for a fill rate of 75,000 barrels per day in fiscal 1987. At this rate, it will reach 509 million barrels by the end of 1986 and almost 522 million barrels by the end of 1987, consistent with the requirements of the Omnibus Budget Reconciliation Act of 1986.

## Managing High Petroleum Stocks: Uncertain Import Levels and the Outlook for Oil Market Stability

As the winter heating season (traditionally a period of increased worldwide oil demand) approaches and OPEC members continue to search for some agreement on production limits, the near-term outlook for oil prices is very uncertain.

Two key statistics for understanding the current volatility of world oil markets are (1) the nearly 7.0 million barrels per day of gross crude oil and refined products imports by the United States this September (excluding imports for the Strategic Petroleum Reserve) and (2) the nearly 1.1 billion barrels of private primary petroleum stocks at the end of that month. Compared with the levels a year ago, this gross import level is 1.8 million barrels per day higher, and the ending stocks are 99 million barrels higher. This recent high import-high stock picture in the United States generally describes the situation in the other industrial nations of the world as well.

With total petroleum consumption in the United States running only 2 percent higher than last year (even after a 50-percent drop in oil prices), the near-term course for petroleum prices will depend largely on whether the oil exporters of the world can scale down their sales of oil and on how quickly domestic refiners and distributors move to sell off their accumulated stocks. At this time, it is not clear how far OPEC countries will cut back on sales during their announced September-October curtailment of oil production to 1984 levels, or how long the OPEC agreement will hold together, or even when the cutback will show up as lower U.S. oil imports.

Assuming the United States receives the same share of total OPEC oil production that it has averaged since 1982 (about 12 percent) and assuming that U.S. oil purchases from non-OPEC sources remain constant at current levels, full implementation of the OPEC accord would be associated with a total petroleum import level of about 5 million barrels per day. (This estimate is presented only for illustration purposes. Realization of these fairly rigid assumptions would mean that OPEC sales fully reflect their production levels and that there are no major shifts in non-OPEC production.) If the 2 million-barrel-per-day drop in net U.S. oil imports implied by this level (7 million barrels per day of current imports minus the assumed 5 million barrels per day with a full OPEC curtailment) actually materializes, would current crude oil stocks be sufficient to enable refiners to maintain the high utilization rates of the past summer? And, if refiners do cut back, will the current product stocks (for distillate fuel oil in particular) be sufficient to accommodate winter demand without an excessive price run-up?

The forecasts presented in this *Outlook* indicate that the U.S. market can easily accommodate the full measure of the OPEC curtailment through the entire winter without excessively pulling down stocks, thus underscoring the fundamental imbalance of supply and demand that precipitated the OPEC accord. As this *Outlook* is being prepared, the oil exporters of the world are embarking on a major effort to restore some order to the market, and the initial production accord has been revised and extended through December 1986.

Stock management decisions of U.S. suppliers are complicated because any general perception that the supply of imports will not be sufficiently curtailed to bring the market back into balance would foreshadow a further fall in oil prices. And, a profit-maximizing response to any expectation of falling prices should be a reduction of inventories (to be sold now at the higher price and replaced later at a lower cost). Such a response would effectively reduce immediate import demand and hasten the expected price drop.

If stocks are maintained at excessive levels through the winter of 1986-1987, however, the stock overburden problem facing the industry now would be even worse next spring. The concern of refiners over the price consequences of managing inventories has undoubtedly been mitigated by the widespread use of netback oil pricing agreements with oil exporting countries, which transfer product price risk to the exporter. Hence, the ultimate resolution of the stock situation this winter will likely hinge, in part, on the terms under which crude oil is sold as well as on how much crude oil is sold.

## Projections of Other Major Energy Sources

### Natural Gas

Major changes in domestic natural gas production and use continue to be driven by developments in the world oil market. Spot residual fuel oil prices in New York Harbor ranged between \$9.40 and \$13.25 per barrel throughout the past summer,<sup>6</sup> reflecting the energy equivalent of \$1.50 to \$2.10 per million Btu of natural gas. The average price for natural gas to electric utilities in December 1985, just before the oil price drop, had averaged \$3.25 per million Btu nationally, but by May 1986 had declined to \$2.35 per million Btu.

Because natural gas prices have lagged behind changes in oil prices throughout the year, thus remaining higher longer, the utility sector switched more to oil for electricity generation this summer--the season when utility gas consumption is normally highest. This fuel switching by utilities is accomplished by direct substitution at those facilities with multifuel capabilities (primarily in the west and gulf coast regions) and by increased utilization of oil units (primarily along the east coast). The shift from gas to oil experienced in the summer of 1986 is not expected to be repeated in summer 1987, because residual fuel oil prices are forecast to increase slightly to a level more comparable to that for natural gas.

Comparable decreases in natural gas consumption by industrial, commercial, and residential end users, whose short-term fuel-switching options are more limited than those for utilities, are not expected. Industrial gas demand is influenced more by the general pace of economic activity, which is forecast to pick up slightly in 1987. Residential and commercial (including apartment buildings) gas users are mainly concerned with meeting winter space heating requirements. Because the base case forecast reflects "normal" winter temperatures, little change in this component of gas demand is expected. In total, demand for "all other uses" is forecast to decline by only 2 percent in 1986, mainly as a result of the warm winter, and then return to near-1985 levels in 1987 (Table 14 on page 37).

Despite a drop in the average wellhead price of natural gas from \$2.23 per thousand cubic feet in January 1986 to \$1.92 per thousand cubic feet in May 1986,

domestic gas production in 1986 has changed little. The projected decline in dry marketed production for 1986 is only 1 percent, followed by a very slight decline in 1987. Operating costs for natural gas wells are generally very low, and current prices apparently still leave most producers with a positive return on their developed resources.

The prospects for relatively stable natural gas demand, combined with downward pressure on gas production, should help to alleviate the perceived excess gas supply situation, or "bubble," of the last few years. The development of gas resources had been greatly stimulated by high oil prices earlier in the decade, by special provisions of the Natural Gas Policy Act (NGPA) that had provided for above-average prices for certain new high-cost gas, by the ability of gas pipelines to roll these higher prices into their average city-gate prices, and (with perfect hindsight) by shortsighted contracting practices.

Since 1982, the gas industry has been characterized by a severe market-ordering problem, as higher-cost gas often made it to market before lower-cost gas. Widely different provisions in producer/pipeline gas contracts have resulted in great differences in the prices different producers received for essentially the same quality product. In addition, because of "take or pay" provisions contained in many of the producer-pipeline contracts for this new gas, some older, lower-priced gas production was shut in. One effect of this regulatory/contract structure was that all users effectively paid a higher price for gas, which constrained the growth of gas use.

The regulatory structure of the gas market has undergone a number of changes in 1986 that may have significant impacts in the future, although probably not in the 1986-1987 time frame. One important development is the Federal Energy Regulatory Commission (FERC) Order 436, issued in October 1985 and revised in February 1986. By providing a mechanism of nondiscriminatory access to interstate pipelines, FERC Order 436 has the potential of greatly increasing the number of buyers in wellhead gas markets (to the extent that pipelines choose to participate in the program). This situation would enhance competition by allowing local distributors and end users of gas to contract directly with gas producers.

In July 1986, the FERC also implemented Order 451, which establishes a single price ceiling for a large and diversely priced number of old gas categories under the NGPA (specifically, gas priced under NGPA sections 104, 106 (a), and 106 (b)). The order also establishes negotiation rules to encourage the renegotiation of contract terms covering below-market priced gas and at the same time offers purchasers the potential to renegotiate terms covering higher-priced gas flowing under the same contract.

<sup>6</sup>Energy Information Administration, *Weekly Petroleum Status Report*.

Although staying within the framework of the NGPA, Order 451 is intended to make gas prices more sensitive to the market. In combination with the increased producer/consumer interaction afforded by FERC Order 436, gas prices and supplies in the next few years should become more responsive to changing demand conditions, such as those created by the fall in oil prices this year. The short-term outlook for gas markets is not expected to be affected by these changes.

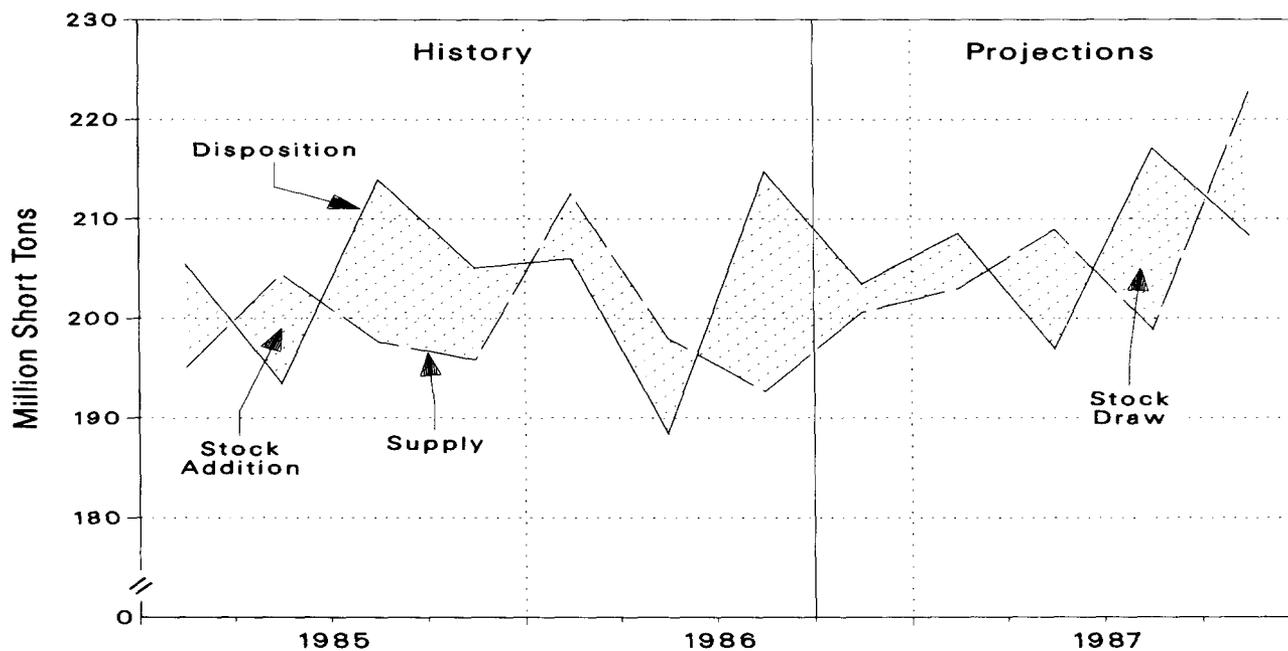
One further consequence of this freeing up of domestic natural gas markets has been that Canadian gas producers must also become more competitive to maintain their share of the U.S. market. Contracts for exporting Canadian gas are reviewed by that country's National Energy Board (NEB). Since the partial deregulation of the Canadian petroleum industry in November 1985, the NEB has directed their attention to the need to make sales to the United States while assuring that Canadians are not paying more for their gas than Americans just across the border. Further deregulation of natural gas in Canada is scheduled for November 1986. In this *Outlook*, net imports of natural gas from Canada are forecast to decline by 21 percent in 1986 but then increase by 12 percent in 1987.

## Coal

Total domestic coal consumption is forecast to increase by 2 percent between 1986 and 1987, following a small decline during 1986 (Figure 7 and Table 15 on page 38). The forecast for total coal demand closely follows the anticipated growth pattern for electric utility coal consumption. Coking coal use is forecast to remain well below 1985 levels for the remainder of this year and then stabilize in 1987. Retail and general industry coal consumption is projected to grow by over 2 percent per year in both 1986 and 1987.

Electric utility coal consumption in 1986 is forecast to fall just below the 1985 level of 694 million tons, compared to the more than 4-percent growth observed between 1984 and 1985. The projection for this year corresponds to an anticipated annual increase of only 1 percent in total electricity generation, combined with larger contributions from nuclear and hydroelectric generation relative to the previous year. Low oil prices have already resulted in some switching from coal to oil by several utilities, further contributing to the no-growth coal consumption forecast for 1986.

**Figure 7. Coal Supply and Disposition**



Sources: • History: Energy Information Administration, *Quarterly Coal Report*, DOE/EIA-0121(86/2Q) (Washington, DC, 1986). • Projections: Table 15.

This forecast implies a decline in estimated coal-fired capacity utilization rates from an average 53 percent in 1985 to 52 percent in 1986.<sup>7</sup>

In 1987, electric utility coal consumption is projected to rise to 706 million tons, given the projected increase in total electricity generation of 2 percent between 1986 and 1987. This increase in coal-fired generation pushes average utilization rates back to over 53 percent. Coal's share of total generation is projected to decline slightly over the forecast period, however. With nuclear power additions accommodating most of the increase in total generation requirements, coal generation's share is projected to decline from 57 percent in 1985 to 56 percent in 1987. Further switching from coal to oil is not expected to occur in 1987 due to the anticipated increase in oil prices.

Coking coal consumption is projected to fall from 41 million tons in 1985 to 38 million tons in 1986 because of the weak overall performance expected for the domestic steel industry. The particularly large drop in third-quarter 1986 coke consumption also can be attributed to the USX steel workers' strike; the strike has temporarily halted USX steel production, which normally accounts for approximately 15 percent of total U.S. steel output. Steel production is expected to start to recover in the fourth quarter of 1986 and through 1987. Coking coal use is expected to remain at 38 million tons, however, as the trend toward less coke-intensive steelmaking techniques counterbalances the positive impact of more steel output.

The coking coal forecast does not account for any significant impact from possible tightening of steel import quotas. Hence, steel production 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 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 industrial output projected to increase by an average of 2.6 percent per year between 1985 and 1987, growth of more than 2 percent per year in retail and general industry coal consumption is projected for the forecast period. This projection mainly reflects an increase in industrial coal consumption, including manufacturing consumption (other than at coke

plants). Projected synfuels manufacturing accounts for 6 million tons of the total 87 million tons forecast to be consumed by this sector in 1987.

Coal exports are projected to fall by about 4 million tons between 1985 and 1986, to 89 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 addition, exports to Japan have already dropped significantly during the first half of 1986 and are not expected to recover. Total U.S. exports are projected to remain at 89 million tons in 1987.

Coal production is projected to increase slightly from the estimated 884 million tons in 1985 to 890 million tons projected for 1986. Continued growth in domestic coal use is projected to push production in 1987 to 920 million tons, up more than 3 percent from the 1986 level.

## Electric Power

Electricity generation is projected to increase by about 1 percent between 1985 and 1986 and by more than 2 percent between 1986 and 1987 (Table 16 on page 39). These increases are smaller than the projections published in the July 1986 *Outlook* mainly because of continued sluggish growth in electricity sales to the industrial sector, a situation that is likely to continue throughout the forecast period. While electricity sales to the residential and commercial sectors have experienced healthy growth so far in 1986, industrial electricity sales have actually declined over that period. If demand for electricity in 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.

The real price of electricity is projected to decline over the forecast period (Table 5 on page 28), most probably because of lower fuel costs and refinancing of existing debt at lower costs. The addition of a large number of nuclear units in 1986 and 1987 could result in higher electricity prices in some areas. However, on a national average basis, the significantly lower prices of fuels used to generate electricity are expected to offset price increases due to capital additions. Another factor is the much lower bond rates assumed

<sup>7</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 1985*, DOE/EIA-0095(85) (Washington, DC, 1986).

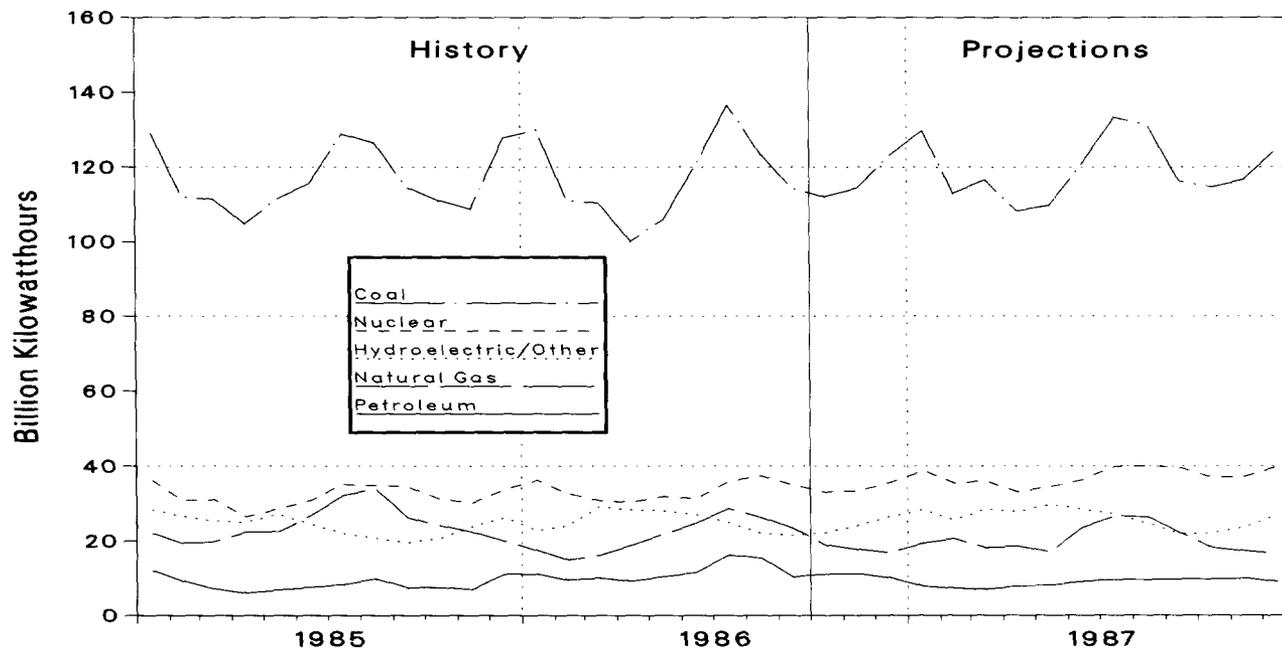
for 1987, allowing utilities to replace expensive debt incurred in the past, resulting in lower electricity prices, at least over the next year.

Significant gains are expected for nuclear generation over the forecast period. Nuclear generation is projected to increase by more than 5 percent between 1985 and 1986, and by an additional 11 percent between 1986 and 1987. Output from new capacity is the major reason for these projected increases. This forecast assumes the addition of 5 new units (Millstone 3\*, Palo Verde 2\*, Catawba 2\*, Hope Creek 1\*, and Perry 1) totaling almost 6 gigawatts in 1986, and 9 additional units (Clinton 1, Harris 1, Byron 2, Nine Mile Point 2, Seabrook 1, Braidwood 1, Vogtle 1, Palo Verde 3, and Watts Bar 1) totaling nearly 10 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 in 1987 is lower than that published in the July 1986 *Outlook* mainly because of a lower assumed average capacity factor as a result of major maintenance outages at several units.

Coal-fired generation is expected to remain about constant between 1985 and 1986 and then increase by more than 2 percent between 1986 and 1987. These relatively moderate forecasts for coal generation reflect the healthy expected growth in nuclear generation and, to a smaller extent, the increased use of oil in some areas of the country. New coal-fired capacity additions are much lower than the expected nuclear additions: only 3 gigawatts of coal capacity are expected in 1986, with more than 3 additional gigawatts expected in 1987.

Oil-fired generation is projected to account for nearly 6 percent of total electricity generation in 1986, up from 4 percent in 1985 (Figure 8). This increase is in response to the dramatic drop in oil prices experienced since the beginning of this year. Several different situations combine to produce this increase: some dual-fired units (oil and natural gas) that were burning gas have switched to relatively cheaper oil; additional oil-fired generation is replacing output lost from nuclear units that are not in operation; and purchases of "coal-by-wire" electricity in some cases have been replaced by local oil generation. The level of oil-fired generation is projected to drop considerably in 1987 as a result of higher assumed oil prices and the large ad-

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



Sources: • History: Energy Information Administration, *Electric Power Monthly*, DOE/EIA-0035(86/08) (Washington, DC, 1986). • Projections: Table 16.

\*Already in operation.

ditions of nuclear capacity, but still exceed the 1985 level. The level of natural gas-fired generation is not expected to change much over the forecast period, with its share being squeezed from its 1985 level by the increased use of oil.

Hydroelectric generation in 1986 is expected to be 291 billion kilowatthours, more than 3 percent above the 1985 level. This forecast is below the normal level expected for hydroelectric generation mainly because of lower power generation this year from the Tennessee Valley Authority region. 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.

Electricity imports are projected to continue the upward trend that began in the late 1970's, reaching a net level of 47 billion kilowatthours by the end of 1987 (Table 16 on page 39). These imports come principally from Canada, with only a small net amount of electricity received from Mexico by the southwestern area of the country. The projected increase of 3 billion kilowatthours in net electricity imports between 1986 and 1987 reflects the expected full-service operation of the Phase I transmission facilities between Hydro-Quebec of Canada and New England which opened on October 1, 1986. The projected 3 billion kilowatthour increase between 1985 and 1986, to 44 billion kilowatthours, is based primarily on some contribution from the Phase I facilities and the full-service operation of the Highgate line between Hydro-Quebec and New England, which opened in September 1985. Part of the increase is also attributed to improved transmission capability within the United States.

## Summary of Aggregate Energy Trends

Gross energy consumption, including energy consumed in conversion processes, is projected to continue to grow, by less than 1 percent in 1986 and by more

than 2 percent in 1987, to 76.03 quadrillion Btu (Table 17 on page 40). This would be the highest annual level of energy consumption since 1979. In 1986, growth in total energy use is attributed mainly to nonutility uses of petroleum. Electric utilities also have increased their input of petroleum fuels this year, primarily in response to lower oil prices, but that increased petroleum use has come at the expense of reduced natural gas use.

In 1987, growth in energy consumption is expected to be more evenly distributed across nonutility uses and electric utility inputs. Nonutility users are expected to increase their consumption of both petroleum and natural gas. At electric utilities, petroleum use is projected to decline by nearly 22 percent in 1987, returning to near-1985 levels. Growth in total energy use at utilities in that year is attributed mainly to new coal and nuclear power generating capacity.

Sources of energy supply shifted markedly to net petroleum imports in 1986, reflecting the surge in OPEC oil production that precipitated the fall in oil prices at the beginning of this year. Net imports of all energy forms are expected to be nearly 22 percent higher in 1986 than in 1985, while total domestic energy production, again led by petroleum, is projected to decline very slightly. In 1987, a 0.65-quadrillion Btu increase in coal production to meet utility demand is projected to lead a total 1-percent increase in domestic energy production.

The ratio of gross energy consumption to real gross national product (GNP), a valuable indicator of trends in energy conservation, is projected to decrease from 20.6 thousand Btu per 1982 dollar of real GNP in 1985 to 20.2 in 1986. This change continues the declining trend of the past few years, in spite of the recent fall in oil prices. In 1987, as the prices of other energy forms adjust to compete with oil and as oil prices themselves are forecast to increase slightly, the energy/GNP ratio is projected to drop further to about 20.1 thousand Btu per 1982 dollar of real GNP.

# Conversion Factors

Heat Content of Fuels		
Product	Unit	Million Btu/Unit
<b>Coal</b>		
Production	short ton	21.874
Consumption	short ton	21.370
Coke plants	short ton	26.800
Industrial and retail	short ton	22.111
Electric utilities	short ton	20.959
Imports	short ton	25.000
Exports	short ton	26.307
Coal coke	short ton	24.800
<b>Crude oil</b>		
Production	barrel	5.800
Imports	barrel	5.832
<b>Petroleum products</b>		
Consumption	barrel	5.387
Motor gasoline	barrel	5.253
Jet fuel	barrel	5.615
Distillate fuel oil	barrel	5.825
Residual fuel oil	barrel	6.287
LPG (excl. ethane)	barrel	3.895
Ethane	barrel	3.082
Unfinished oils	barrel	5.825
Imports	barrel	5.736
Exports	barrel	5.814
<b>Natural gas plant liquids</b>		
Production	barrel	3.805
<b>Natural Gas</b>		
Production, dry	cubic foot	1.033
Consumption	cubic foot	1.033
Non-electric utility	cubic foot	1.032
Electric utilities	cubic foot	1.038
Imports	cubic foot	1.002
Exports	cubic foot	1.011
Heat Rates for Electricity		
	Btu/kilowatthour	
<b>Plant Generation Efficiency</b>		
Coal	10,372	
<b>Petroleum</b>		
Distillate fuel oil	13,501	
Residual fuel oil	10,811	
Natural gas	10,823	
Nuclear energy	10,843	
Hydropower	10,211	
Geothermal and other energy	21,303	
Electricity Consumption	3,412	

**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>													
<b>Production</b>													
U.S. (50 States) .....	<b>11.1</b>	<b>11.3</b>	<b>11.2</b>	<b>11.0</b>	<i>10.9</i>	<i>11.0</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>	<b>19.9</b>	<i>20.0</i>	<i>18.1</i>	<i>19.4</i>	<i>19.2</i>	<i>20.1</i>	<i>20.3</i>	<b>17.2</b>	<i>19.1</i>	<i>19.7</i>
Other Non-OPEC .....	<b>15.4</b>	<b>15.8</b>	<b>15.6</b>	<b>15.3</b>	<i>15.8</i>	<i>16.0</i>	<i>16.0</i>	<i>15.9</i>	<i>16.0</i>	<i>16.0</i>	<b>15.5</b>	<i>15.7</i>	<i>16.0</i>
Total Market Economies .....	<b>42.6</b>	<b>46.1</b>	<b>45.5</b>	<b>46.1</b>	<i>46.7</i>	<i>45.0</i>	<i>46.4</i>	<i>45.8</i>	<i>46.9</i>	<i>47.1</i>	<b>43.9</b>	<i>45.8</i>	<i>46.5</i>
Net Communist Exports .....	<b>2.4</b>	<b>1.8</b>	<b>1.4</b>	<b>1.7</b>	<i>1.9</i>	<i>1.8</i>	<i>1.3</i>	<i>1.6</i>	<i>1.8</i>	<i>1.7</i>	<b>1.8</b>	<i>1.7</i>	<i>1.6</i>
Total Supply .....	<b>45.0</b>	<b>47.9</b>	<b>46.9</b>	<b>47.8</b>	<i>48.6</i>	<i>46.8</i>	<i>47.7</i>	<i>47.4</i>	<i>48.7</i>	<i>48.8</i>	<b>45.7</b>	<i>47.5</i>	<i>48.1</i>
<b>Net Stock Withdrawals or Additions (-)</b>													
U.S. (50 States excl. SPR) .....	<b>.2</b>	<b>-1</b>	<b>.4</b>	<b>-5</b>	<i>-.8</i>	<i>.4</i>	<i>.7</i>	<i>-.1</i>	<i>-.2</i>	<i>-.1</i>	<b>.2</b>	<i>-.1</i>	<i>.1</i>
U.S. SPR .....	<b>-1</b>	<b>.0</b>	<b>.0</b>	<b>-1</b>	<i>-.1</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>.2</b>	<b>-1.1</b>	<b>.7</b>	<b>-1.1</b>	<i>-1.1</i>	<i>1.6</i>	<i>.5</i>	<i>-.3</i>	<i>-1.0</i>	<i>.9</i>	<b>.2</b>	<i>.0</i>	<i>.0</i>
Total Stock Withdrawals .....	<b>.3</b>	<b>-1.2</b>	<b>1.0</b>	<b>-1.7</b>	<i>-1.9</i>	<i>1.9</i>	<i>1.2</i>	<i>-.4</i>	<i>-1.2</i>	<i>.8</i>	<b>.3</b>	<i>-.2</i>	<i>.1</i>
<b>Product Supplied</b>													
U.S. (50 States) .....	<b>15.5</b>	<b>16.0</b>	<b>16.1</b>	<b>15.9</b>	<i>16.1</i>	<i>16.6</i>	<i>16.2</i>	<i>16.1</i>	<i>16.4</i>	<i>16.7</i>	<b>15.7</b>	<i>16.1</i>	<i>16.4</i>
U.S. Territories .....	<b>.3</b>	<b>.3</b>	<b>.3</b>	<b>.3</b>	<i>.3</i>	<i>.3</i>	<i>.3</i>	<i>.3</i>	<i>.3</i>	<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>	<b>4.1</b>	<i>4.1</i>	<i>4.6</i>	<i>5.1</i>	<i>4.1</i>	<i>4.2</i>	<i>4.7</i>	<b>4.3</b>	<i>4.4</i>	<i>4.5</i>
OECD Europe .....	<b>11.3</b>	<b>11.8</b>	<b>12.5</b>	<b>11.5</b>	<i>11.6</i>	<i>12.4</i>	<i>12.6</i>	<i>11.7</i>	<i>11.7</i>	<i>12.8</i>	<b>11.7</b>	<i>12.0</i>	<i>12.2</i>
Other Market Economies .....	<b>14.4</b>	<b>14.5</b>	<b>14.4</b>	<b>14.6</b>	<i>14.9</i>	<i>15.0</i>	<i>14.9</i>	<i>15.0</i>	<i>15.1</i>	<i>15.2</i>	<b>14.4</b>	<i>14.7</i>	<i>15.0</i>
Total Market Economies .....	<b>45.6</b>	<b>47.2</b>	<b>48.2</b>	<b>46.3</b>	<i>46.8</i>	<i>48.9</i>	<i>49.0</i>	<i>47.2</i>	<i>47.6</i>	<i>49.7</i>	<b>46.4</b>	<i>47.6</i>	<i>48.4</i>
Statistical Discrepancy .....	<b>.3</b>	<b>.6</b>	<b>.4</b>	<b>.2</b>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<i>.1</i>	<b>.5</b>	<i>.2</i>	<i>.1</i>
<b>Closing Stocks (billion barrels)</b>													
	<b>4.7</b>	<b>4.8</b>	<b>4.7</b>	<b>4.9</b>	<i>5.0</i>	<i>4.9</i>	<i>4.8</i>	<i>4.8</i>	<i>4.9</i>	<i>4.8</i>	<b>4.8</b>	<i>4.9</i>	<i>4.8</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(86/07); and *International Energy Annual 1984*, DOE/EIA-0219(84); Organization for Economic Cooperation and Development, *Quarterly Oil Statistics, Second Quarter 1986*.

Table printed at 0845, October 29, 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>2.9</b>	<i>2.5</i>	<i>2.8</i>
United States <sup>b</sup> .....	<b>3.0</b>	<b>2.7</b>	<i>2.5</i>	<i>2.7</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>2.1</i>	<i>3.1</i>
Other OECD <sup>c</sup> .....	<b>3.3</b>	<b>4.0</b>	<i>2.6</i>	<i>2.6</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*, September 1986. Forecasts: Data Resources, Inc., United States Forecast, CONTROL1086; Wharton Economic Forecasting Associates, *World Economic Outlook* October 1986.

Table printed at 1347, October 28, 1986

**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) .....	<b>3,604</b>	<b>3,622</b>	<b>3,656</b>	<b>3,661</b>	<b>3,683</b>	Low	<i>3,706</i>	<i>3,728</i>	<i>3,768</i>	<i>3,798</i>	<i>3,837</i>	-	<i>3,677</i>	<i>3,783</i>
						Base	<i>3,704</i>	<i>3,723</i>	<i>3,760</i>	<i>3,788</i>	<i>3,823</i>	<b>3,585</b>	<i>3,676</i>	<i>3,774</i>
						High	<i>3,703</i>	<i>3,720</i>	<i>3,755</i>	<i>3,782</i>	<i>3,816</i>	-	<i>3,676</i>	<i>3,768</i>
Percent Change from Prior Year .....	<b>2.8</b>	<b>2.9</b>	<b>3.1</b>	<b>2.6</b>	<b>2.2</b>	Low	<i>2.3</i>	<i>2.0</i>	<i>2.9</i>	<i>3.1</i>	<i>3.5</i>	-	<i>2.6</i>	<i>2.9</i>
						Base	<i>2.3</i>	<i>1.8</i>	<i>2.7</i>	<i>2.9</i>	<i>3.2</i>	<b>2.7</b>	<i>2.5</i>	<i>2.7</i>
						High	<i>2.2</i>	<i>1.8</i>	<i>2.5</i>	<i>2.7</i>	<i>3.1</i>	-	<i>2.5</i>	<i>2.5</i>
GNP Implicit Price Deflator (index, 1982: 100) .....	<b>111.8</b>	<b>112.8</b>	<b>113.5</b>	<b>114.0</b>	<b>115.0</b>	Low	<i>115.4</i>	<i>116.1</i>	<i>116.6</i>	<i>117.3</i>	<i>118.1</i>	-	<i>114.5</i>	<i>117.0</i>
						Base	<i>115.4</i>	<i>116.2</i>	<i>116.8</i>	<i>117.6</i>	<i>118.5</i>	<b>111.5</b>	<i>114.5</i>	<i>117.3</i>
						High	<i>115.3</i>	<i>116.2</i>	<i>117.0</i>	<i>117.9</i>	<i>118.8</i>	-	<i>114.5</i>	<i>117.5</i>
Percent Change from Prior Year .....	<b>3.2</b>	<b>3.3</b>	<b>3.0</b>	<b>2.6</b>	<b>2.9</b>	Low	<i>2.3</i>	<i>2.3</i>	<i>2.3</i>	<i>2.0</i>	<i>2.3</i>	-	<i>2.7</i>	<i>2.2</i>
						Base	<i>2.3</i>	<i>2.4</i>	<i>2.5</i>	<i>2.3</i>	<i>2.7</i>	<b>3.3</b>	<i>2.7</i>	<i>2.4</i>
						High	<i>2.2</i>	<i>2.4</i>	<i>2.6</i>	<i>2.5</i>	<i>3.0</i>	-	<i>2.7</i>	<i>2.6</i>
Real Disposable Personal Income <sup>b</sup> (billion 1982 dollars) .....	<b>2,525</b>	<b>2,541</b>	<b>2,581</b>	<b>2,626</b>	<b>2,611</b>	Low	<i>2,637</i>	<i>2,665</i>	<i>2,678</i>	<i>2,690</i>	<i>2,705</i>	-	<i>2,614</i>	<i>2,685</i>
						Base	<i>2,630</i>	<i>2,651</i>	<i>2,661</i>	<i>2,671</i>	<i>2,684</i>	<b>2,528</b>	<i>2,612</i>	<i>2,667</i>
						High	<i>2,625</i>	<i>2,643</i>	<i>2,650</i>	<i>2,660</i>	<i>2,673</i>	-	<i>2,611</i>	<i>2,657</i>
Percent Change from Prior Year .....	<b>1.7</b>	<b>1.9</b>	<b>3.4</b>	<b>2.9</b>	<b>3.4</b>	Low	<i>3.8</i>	<i>3.3</i>	<i>2.0</i>	<i>3.0</i>	<i>2.6</i>	-	<i>3.4</i>	<i>2.7</i>
						Base	<i>3.5</i>	<i>2.7</i>	<i>1.3</i>	<i>2.3</i>	<i>2.1</i>	<b>2.3</b>	<i>3.3</i>	<i>2.1</i>
						High	<i>3.3</i>	<i>2.4</i>	<i>.9</i>	<i>1.9</i>	<i>1.8</i>	-	<i>3.3</i>	<i>1.8</i>
Index of Industrial Production (Mfg.) (index, 1977: 100) .....	<b>126.8</b>	<b>127.4</b>	<b>128.4</b>	<b>128.4</b>	<b>129.5</b>	Low	<i>129.4</i>	<i>130.8</i>	<i>133.4</i>	<i>135.3</i>	<i>137.4</i>	-	<i>128.9</i>	<i>134.2</i>
						Base	<i>129.2</i>	<i>130.1</i>	<i>132.3</i>	<i>133.9</i>	<i>135.5</i>	<b>126.4</b>	<i>128.9</i>	<i>133.0</i>
						High	<i>129.1</i>	<i>129.8</i>	<i>131.7</i>	<i>133.2</i>	<i>134.6</i>	-	<i>128.9</i>	<i>132.3</i>
Percent Change from Prior Year .....	<b>1.8</b>	<b>2.0</b>	<b>2.5</b>	<b>1.7</b>	<b>2.1</b>	Low	<i>1.6</i>	<i>1.9</i>	<i>3.9</i>	<i>4.5</i>	<i>6.2</i>	-	<i>2.0</i>	<i>4.1</i>
						Base	<i>1.4</i>	<i>1.3</i>	<i>3.0</i>	<i>3.4</i>	<i>4.9</i>	<b>2.4</b>	<i>2.0</i>	<i>3.2</i>
						High	<i>1.3</i>	<i>1.1</i>	<i>2.6</i>	<i>2.9</i>	<i>4.3</i>	-	<i>2.0</i>	<i>2.6</i>
<b>Oil Price</b>														
Imported Crude Oil Price <sup>c</sup> (U.S. dollars/barrel) .....	<b>26.56</b>	<b>26.84</b>	<b>19.05</b>	<b>12.85</b>	<b>12.20</b>	Low	<i>10.00</i>	<i>10.70</i>	<i>11.00</i>	<i>12.00</i>	<i>12.00</i>	-	<i>13.50</i>	<i>11.40</i>
						Base	<i>14.30</i>	<i>15.00</i>	<i>15.30</i>	<i>16.00</i>	<i>17.00</i>	<b>27.03</b>	<i>14.60</i>	<i>15.80</i>
						High	<i>17.00</i>	<i>18.00</i>	<i>18.00</i>	<i>19.00</i>	<i>20.00</i>	-	<i>15.30</i>	<i>18.80</i>
U.S. Refiners' Cost <sup>d</sup> (U.S. dollars/barrel) .....	<b>26.52</b>	<b>26.77</b>	<b>20.11</b>	<b>12.98</b>	<b>12.40</b>	Low	<i>10.00</i>	<i>10.70</i>	<i>11.00</i>	<i>12.00</i>	<i>12.00</i>	-	<i>13.90</i>	<i>11.40</i>
						Base	<i>14.30</i>	<i>15.00</i>	<i>15.30</i>	<i>16.00</i>	<i>17.00</i>	<b>26.76</b>	<i>14.90</i>	<i>15.80</i>
						High	<i>17.00</i>	<i>18.00</i>	<i>18.00</i>	<i>19.00</i>	<i>20.00</i>	-	<i>15.60</i>	<i>18.80</i>
<b>Weather<sup>e</sup></b>														
Heating Degree Days .....	<b>92</b>	<b>1,748</b>	<b>2,209</b>	<b>462</b>	<b>108</b>		<i>1,668</i>	<i>2,401</i>	<i>538</i>	<i>88</i>	<i>1,668</i>	<b>4,773</b>	<i>4,447</i>	<i>4,695</i>
Cooling Degree Days .....	<b>711</b>	<b>87</b>	<b>33</b>	<b>359</b>	<b>750</b>		<i>62</i>	<i>28</i>	<i>328</i>	<i>754</i>	<i>62</i>	<b>1,154</b>	<i>1,204</i>	<i>1,172</i>

<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(86/07); Bureau of Economic Analysis, U.S. Department of Commerce, *Survey of Current Business*, as revised, September 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*, October 1986. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0986.

Table printed at 1347, October 28, 1986

**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>12.85</b>	<b>12.20</b>	Low	<i>10.00</i>	<i>10.70</i>	<i>11.00</i>	<i>12.00</i>	<i>12.00</i>	-	<i>13.50</i>	<i>11.40</i>
						Base	<i>14.30</i>	<i>15.00</i>	<i>15.30</i>	<i>16.00</i>	<i>17.00</i>	<b>27.03</b>	<i>14.60</i>	<i>15.80</i>
						High	<i>17.00</i>	<i>18.00</i>	<i>18.00</i>	<i>19.00</i>	<i>20.00</i>	-	<i>15.30</i>	<i>18.80</i>
Gasoline <sup>b</sup> (dollars per gallon) .....	<b>1.22</b>	<b>1.20</b>	<b>1.10</b>	<b>.93</b>	<b>.87</b>	Low	<i>.81</i>	<i>.80</i>	<i>.85</i>	<i>.89</i>	<i>.88</i>	-	<i>.92</i>	<i>.86</i>
						Base	<i>.86</i>	<i>.90</i>	<i>.97</i>	<i>1.02</i>	<i>1.02</i>	<b>1.20</b>	<i>.94</i>	<i>.98</i>
						High	<i>.90</i>	<i>.98</i>	<i>1.05</i>	<i>1.10</i>	<i>1.11</i>	-	<i>.95</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>.87</b>	<b>.77</b>	Low	<i>.73</i>	<i>.75</i>	<i>.79</i>	<i>.83</i>	<i>.85</i>	-	<i>.85</i>	<i>.81</i>
						Base	<i>.80</i>	<i>.86</i>	<i>.89</i>	<i>.93</i>	<i>.97</i>	<b>1.15</b>	<i>.87</i>	<i>.91</i>
						High	<i>.84</i>	<i>.92</i>	<i>.96</i>	<i>1.00</i>	<i>1.04</i>	-	<i>.88</i>	<i>.98</i>
No. 2 Heating Oil, Wholesale (dollars per gallon) .....	<b>.73</b>	<b>.83</b>	<b>.61</b>	<b>.44</b>	<b>.39</b>	Low	<i>.36</i>	<i>.38</i>	<i>.39</i>	<i>.41</i>	<i>.43</i>	-	<i>.45</i>	<i>.40</i>
						Base	<i>.44</i>	<i>.48</i>	<i>.50</i>	<i>.51</i>	<i>.55</i>	<b>.78</b>	<i>.47</i>	<i>.51</i>
						High	<i>.51</i>	<i>.56</i>	<i>.56</i>	<i>.59</i>	<i>.63</i>	-	<i>.49</i>	<i>.62</i>
No. 2 Heating Oil, Retail (dollars per gallon) .....	<b>.98</b>	<b>1.07</b>	<b>.97</b>	<b>.77</b>	<b>.64</b>	Low	<i>.61</i>	<i>.64</i>	<i>.65</i>	<i>.68</i>	<i>.74</i>	-	<i>.75</i>	<i>.68</i>
						Base	<i>.68</i>	<i>.75</i>	<i>.77</i>	<i>.80</i>	<i>.87</i>	<b>1.05</b>	<i>.77</i>	<i>.80</i>
						High	<i>.74</i>	<i>.84</i>	<i>.85</i>	<i>.88</i>	<i>.96</i>	-	<i>.78</i>	<i>.88</i>
No. 6 Residual Fuel Oil <sup>c</sup> (dollars per barrel) .....	<b>23.91</b>	<b>24.26</b>	<b>19.87</b>	<b>13.00</b>	<b>12.30</b>	Low	<i>13.80</i>	<i>13.60</i>	<i>13.30</i>	<i>13.80</i>	<i>14.40</i>	-	<i>14.80</i>	<i>13.80</i>
						Base	<i>15.10</i>	<i>15.80</i>	<i>15.60</i>	<i>16.20</i>	<i>17.10</i>	<b>25.66</b>	<i>15.10</i>	<i>16.20</i>
						High	<i>16.00</i>	<i>17.20</i>	<i>17.20</i>	<i>17.80</i>	<i>18.90</i>	-	<i>15.30</i>	<i>17.80</i>
<b>Electric Utility Fuels</b>														
Coal (dollars per million Btu)	<b>1.64</b>	<b>1.63</b>	<b>1.61</b>	<b>1.62</b>	<b>1.59</b>	Low	<i>1.54</i>	<i>1.53</i>	<i>1.54</i>	<i>1.54</i>	<i>1.55</i>	-	<i>1.59</i>	<i>1.54</i>
						Base	<i>1.59</i>	<i>1.59</i>	<i>1.60</i>	<i>1.60</i>	<i>1.61</i>	<b>1.65</b>	<i>1.60</i>	<i>1.60</i>
						High	<i>1.62</i>	<i>1.63</i>	<i>1.63</i>	<i>1.64</i>	<i>1.64</i>	-	<i>1.61</i>	<i>1.64</i>
Heavy Oil <sup>d</sup> (dollars per million Btu)	<b>3.97</b>	<b>4.13</b>	<b>3.21</b>	<b>2.16</b>	<b>2.16</b>	Low	<i>2.41</i>	<i>2.38</i>	<i>2.34</i>	<i>2.41</i>	<i>2.51</i>	-	<i>2.44</i>	<i>2.41</i>
						Base	<i>2.63</i>	<i>2.75</i>	<i>2.70</i>	<i>2.79</i>	<i>2.94</i>	<b>4.24</b>	<i>2.54</i>	<i>2.79</i>
						High	<i>2.77</i>	<i>2.95</i>	<i>2.95</i>	<i>3.04</i>	<i>3.21</i>	-	<i>2.99</i>	<i>3.04</i>
Natural Gas (dollars per million Btu)	<b>3.36</b>	<b>3.27</b>	<b>2.83</b>	<b>2.37</b>	<b>2.39</b>	Low	<i>2.42</i>	<i>2.21</i>	<i>2.26</i>	<i>2.37</i>	<i>2.37</i>	-	<i>2.50</i>	<i>2.30</i>
						Base	<i>2.46</i>	<i>2.45</i>	<i>2.66</i>	<i>2.93</i>	<i>3.04</i>	<b>3.43</b>	<i>2.52</i>	<i>2.77</i>
						High	<i>2.52</i>	<i>2.60</i>	<i>2.92</i>	<i>3.30</i>	<i>3.49</i>	-	<i>2.54</i>	<i>3.08</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>6.23</b>	<b>6.66</b>	Low	<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>5.52</i>
						Base	<i>5.62</i>	<i>5.61</i>	<i>5.97</i>	<i>6.77</i>	<i>5.74</i>	<b>6.13</b>	<i>5.79</i>	<i>5.80</i>
						High	<i>5.73</i>	<i>5.71</i>	<i>6.09</i>	<i>6.94</i>	<i>5.98</i>	-	<i>5.84</i>	<i>5.96</i>
Electricity (cents per kilowatthour)	<b>8.20</b>	<b>7.74</b>	<b>7.49</b>	<b>7.91</b>	<b>8.17</b>	Low	<i>7.62</i>	<i>7.34</i>	<i>7.73</i>	<i>7.97</i>	<i>7.59</i>	-	<i>7.76</i>	<i>7.66</i>
						Base	<i>7.79</i>	<i>7.54</i>	<i>8.00</i>	<i>8.30</i>	<i>7.94</i>	<b>7.79</b>	<i>7.84</i>	<i>7.94</i>
						High	<i>7.94</i>	<i>7.72</i>	<i>8.21</i>	<i>8.55</i>	<i>8.20</i>	-	<i>7.91</i>	<i>8.17</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: Third 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(86/07); and *Petroleum Marketing Monthly*, DOE/EIA-0380(86/04).

Table printed at 1347, October 28, 1986

**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>8.80</b>	<b>8.71</b>	<i>8.74</i>	<i>8.70</i>	<i>8.64</i>	<i>8.60</i>	<i>8.58</i>	<b>8.97</b>	<i>8.80</i>	<i>8.63</i>
Alaska .....	<b>1.82</b>	<b>1.84</b>	<b>1.82</b>	<b>1.86</b>	<b>1.87</b>	<i>1.88</i>	<i>1.90</i>	<i>1.90</i>	<i>1.90</i>	<i>1.90</i>	<b>1.83</b>	<i>1.86</i>	<i>1.90</i>
Lower 48 .....	<b>7.08</b>	<b>7.13</b>	<b>7.12</b>	<b>6.94</b>	<b>6.84</b>	<i>6.86</i>	<i>6.80</i>	<i>6.74</i>	<i>6.70</i>	<i>6.68</i>	<b>7.15</b>	<i>6.94</i>	<i>6.73</i>
Net Imports (Including SPR) <sup>b</sup> .....	<b>2.96</b>	<b>3.44</b>	<b>2.94</b>	<b>3.99</b>	<b>4.64</b>	<i>3.87</i>	<i>3.37</i>	<i>3.96</i>	<i>4.19</i>	<i>4.05</i>	<b>3.00</b>	<i>3.86</i>	<i>3.89</i>
Gross Imports (Excluding SPR) .....	<b>3.02</b>	<b>3.59</b>	<b>3.07</b>	<b>4.08</b>	<b>4.72</b>	<i>4.04</i>	<i>3.53</i>	<i>4.11</i>	<i>4.34</i>	<i>4.22</i>	<b>3.08</b>	<i>3.98</i>	<i>4.05</i>
SPR Imports .....	.14	.05	.05	.05	.05	.03	.03	.03	.03	.03	.12	.05	.03
Exports .....	.19	.20	.18	.14	.14	.20	.20	.18	.18	.20	.20	.17	.19
SPR Stock Withdrawn or Added (-) .....	-.14	-.04	-.04	-.05	-.05	-.03	-.03	-.03	-.03	-.03	-.12	-.04	-.03
Other Stock Withdrawn or Added (-) .....	.29	-.04	-.22	.17	-.12	.08	-.06	-.01	.10	-.01	.07	-.02	.00
Products Supplied and Losses .....	-.06	-.06	-.06	-.05	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06
Unaccounted-for Crude .....	.18	.13	.43	.14	-.01	.10	.11	.14	.13	.14	.15	.17	.13
Crude Oil Input to Refineries .....	<b>12.14</b>	<b>12.40</b>	<b>11.98</b>	<b>13.00</b>	<b>13.10</b>	<i>12.69</i>	<i>12.01</i>	<i>12.62</i>	<i>12.92</i>	<i>12.66</i>	<b>12.00</b>	<i>12.70</i>	<i>12.56</i>
<b>Other Supply</b>													
NGL Production .....	<b>1.58</b>	<b>1.65</b>	<b>1.68</b>	<b>1.57</b>	<b>1.56</b>	<i>1.62</i>	<i>1.67</i>	<i>1.54</i>	<i>1.52</i>	<i>1.61</i>	<b>1.61</b>	<i>1.61</i>	<i>1.58</i>
Other Hydrocarbon and Alcohol Inputs .....	.06	.07	.04	.05	.06	.05	.05	.06	.06	.06	.06	.05	.06
Crude Oil Product Supplied .....	.06	.06	.06	.05	.06	.06	.06	.06	.06	.06	.06	.06	.06
Processing Gain .....	.59	.58	.55	.55	.59	.55	.52	.56	.57	.57	.56	.56	.56
Net Product Imports <sup>c</sup> .....	<b>1.17</b>	<b>1.36</b>	<b>1.15</b>	<b>1.33</b>	<b>1.38</b>	<i>1.32</i>	<i>1.07</i>	<i>1.40</i>	<i>1.54</i>	<i>1.82</i>	<b>1.29</b>	<i>1.29</i>	<i>1.46</i>
Gross Product Imports <sup>c</sup> .....	<b>1.72</b>	<b>2.04</b>	<b>1.78</b>	<b>1.91</b>	<b>1.95</b>	<i>1.89</i>	<i>1.63</i>	<i>1.96</i>	<i>2.07</i>	<i>2.41</i>	<b>1.87</b>	<i>1.88</i>	<i>2.02</i>
Product Exports .....	.55	.68	.63	.58	.57	.57	.57	.56	.53	.58	.58	.59	.56
Product Stock Withdrawn or Added (-) <sup>d</sup> .....	-.06	-.09	.59	-.69	-.67	.28	.80	-.09	-.28	-.06	.15	-.12	.09
Total Product Supplied, Domestic Use .....	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.86</b>	<b>16.08</b>	<i>16.59</i>	<i>16.19</i>	<i>16.15</i>	<i>16.39</i>	<i>16.73</i>	<b>15.73</b>	<i>16.15</i>	<i>16.37</i>
<b>Disposition</b>													
Motor Gasoline .....	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.09</b>	<b>7.32</b>	<i>7.04</i>	<i>6.67</i>	<i>7.17</i>	<i>7.14</i>	<i>7.00</i>	<b>6.83</b>	<i>7.02</i>	<i>7.00</i>
Jet Fuel .....	<b>1.21</b>	<b>1.29</b>	<b>1.25</b>	<b>1.27</b>	<b>1.32</b>	<i>1.35</i>	<i>1.34</i>	<i>1.30</i>	<i>1.34</i>	<i>1.35</i>	<b>1.22</b>	<i>1.30</i>	<i>1.33</i>
Distillate Fuel Oil .....	<b>2.55</b>	<b>2.97</b>	<b>3.28</b>	<b>2.73</b>	<b>2.54</b>	<i>3.05</i>	<i>3.30</i>	<i>2.88</i>	<i>2.78</i>	<i>3.18</i>	<b>2.87</b>	<i>2.90</i>	<i>3.03</i>
Residual Fuel Oil .....	<b>1.09</b>	<b>1.27</b>	<b>1.42</b>	<b>1.34</b>	<b>1.37</b>	<i>1.40</i>	<i>1.23</i>	<i>1.21</i>	<i>1.16</i>	<i>1.40</i>	<b>1.20</b>	<i>1.38</i>	<i>1.25</i>
Other Oils Supplied <sup>e</sup> .....	<b>3.73</b>	<b>3.67</b>	<b>3.46</b>	<b>3.44</b>	<b>3.53</b>	<i>3.75</i>	<i>3.63</i>	<i>3.59</i>	<i>3.97</i>	<i>3.80</i>	<b>3.61</b>	<i>3.54</i>	<i>3.75</i>
Total Product Supplied .....	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.86</b>	<b>16.08</b>	<i>16.59</i>	<i>16.19</i>	<i>16.15</i>	<i>16.39</i>	<i>16.73</i>	<b>15.73</b>	<i>16.15</i>	<i>16.37</i>
Total Petroleum Net Imports .....	<b>4.14</b>	<b>4.80</b>	<b>4.08</b>	<b>5.32</b>	<b>6.02</b>	<i>5.19</i>	<i>4.44</i>	<i>5.36</i>	<i>5.72</i>	<i>5.87</i>	<b>4.29</b>	<i>5.16</i>	<i>5.35</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>325.5</b>	<b>336.9</b>	<i>329.6</i>	<i>335.4</i>	<i>336.5</i>	<i>327.1</i>	<i>328.2</i>	<b>320.9</b>	<i>329.6</i>	<i>328.2</i>
Total Motor Gasoline .....	<b>223.1</b>	<b>222.8</b>	<b>219.9</b>	<b>233.4</b>	<b>232.3</b>	<i>231.9</i>	<i>227.8</i>	<i>220.8</i>	<i>224.9</i>	<i>229.3</i>	<b>222.8</b>	<i>231.9</i>	<i>229.3</i>
Finished Motor Gasoline .....	<b>187.4</b>	<b>190.3</b>	<b>185.0</b>	<b>197.6</b>	<b>193.1</b>	<i>196.0</i>	<i>191.6</i>	<i>184.9</i>	<i>187.8</i>	<i>194.5</i>	<b>190.3</b>	<i>196.0</i>	<i>194.5</i>
Blending Components .....	<b>35.6</b>	<b>32.5</b>	<b>34.9</b>	<b>35.8</b>	<b>39.2</b>	<i>35.9</i>	<i>36.1</i>	<i>35.9</i>	<i>37.2</i>	<i>34.8</i>	<b>32.5</b>	<i>35.9</i>	<i>34.8</i>
Jet Fuel .....	<b>42.0</b>	<b>40.5</b>	<b>47.4</b>	<b>46.2</b>	<b>48.8</b>	<i>43.6</i>	<i>42.9</i>	<i>43.7</i>	<i>44.0</i>	<i>42.1</i>	<b>40.5</b>	<i>43.6</i>	<i>42.1</i>
Distillate Fuel Oil .....	<b>117.4</b>	<b>143.7</b>	<b>99.3</b>	<b>108.8</b>	<b>152.1</b>	<i>164.2</i>	<i>104.9</i>	<i>108.2</i>	<i>128.9</i>	<i>149.1</i>	<b>143.7</b>	<i>164.2</i>	<i>149.1</i>
Residual Fuel Oil .....	<b>43.4</b>	<b>50.4</b>	<b>38.8</b>	<b>43.0</b>	<b>43.6</b>	<i>47.7</i>	<i>42.6</i>	<i>41.0</i>	<i>41.8</i>	<i>45.2</i>	<b>50.4</b>	<i>47.7</i>	<i>45.2</i>
Other Oils <sup>g</sup> .....	<b>270.0</b>	<b>247.2</b>	<b>245.9</b>	<b>282.5</b>	<b>298.9</b>	<i>262.4</i>	<i>259.3</i>	<i>272.1</i>	<i>271.7</i>	<i>250.8</i>	<b>247.2</b>	<i>262.4</i>	<i>250.8</i>
Total Stocks (Excluding SPR) .....	<b>1013.2</b>	<b>1025.5</b>	<b>992.1</b>	<b>1039.3</b>	<b>1112.6</b>	<i>1079.4</i>	<i>1012.8</i>	<i>1022.4</i>	<i>1038.5</i>	<i>1044.8</i>	<b>1025.5</b>	<i>1079.4</i>	<i>1044.8</i>
Crude Oil in SPR .....	<b>489.3</b>	<b>493.3</b>	<b>496.9</b>	<b>501.8</b>	<b>506.4</b>	<i>509.6</i>	<i>512.8</i>	<i>516.0</i>	<i>519.2</i>	<i>522.4</i>	<b>493.3</b>	<i>509.6</i>	<i>522.4</i>
Total Stocks (Including SPR) .....	<b>1502.4</b>	<b>1518.8</b>	<b>1489.0</b>	<b>1541.1</b>	<b>1619.0</b>	<i>1589.0</i>	<i>1525.6</i>	<i>1538.4</i>	<i>1557.7</i>	<i>1567.2</i>	<b>1518.8</b>	<i>1589.0</i>	<i>1567.2</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 July 1986; *Weekly Petroleum Status Report*, DOE/EIA-0208(86-37,41).

Table printed at 1347, October 28, 1986

**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>8.80</b>	<b>8.71</b>	<i>8.55</i>	<i>8.50</i>	<i>8.48</i>	<i>8.41</i>	<i>8.35</i>	<b>8.97</b>	<i>8.75</i>	<i>8.44</i>
Alaska	<b>1.82</b>	<b>1.84</b>	<b>1.82</b>	<b>1.86</b>	<b>1.87</b>	<i>1.88</i>	<i>1.90</i>	<i>1.90</i>	<i>1.90</i>	<i>1.90</i>	<b>1.83</b>	<i>1.86</i>	<i>1.90</i>
Lower 48	<b>7.08</b>	<b>7.13</b>	<b>7.12</b>	<b>6.94</b>	<b>6.84</b>	<i>6.67</i>	<i>6.61</i>	<i>6.58</i>	<i>6.51</i>	<i>6.45</i>	<b>7.15</b>	<i>6.89</i>	<i>6.54</i>
Net Imports (Including SPR) <sup>b</sup>	<b>2.96</b>	<b>3.44</b>	<b>2.94</b>	<b>3.99</b>	<b>4.64</b>	<i>4.26</i>	<i>3.85</i>	<i>4.37</i>	<i>4.61</i>	<i>4.46</i>	<b>3.00</b>	<i>3.96</i>	<i>4.33</i>
<b>Gross Imports</b>													
(Excluding SPR)	<b>3.02</b>	<b>3.59</b>	<b>3.07</b>	<b>4.08</b>	<b>4.72</b>	<i>4.43</i>	<i>4.01</i>	<i>4.52</i>	<i>4.76</i>	<i>4.63</i>	<b>3.08</b>	<i>4.08</i>	<i>4.48</i>
SPR Imports	<b>.14</b>	<b>.05</b>	<b>.05</b>	<b>.05</b>	<b>.05</b>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<b>.12</b>	<i>.05</i>	<i>.03</i>
Exports	<b>.19</b>	<b>.20</b>	<b>.18</b>	<b>.14</b>	<b>.14</b>	<i>.20</i>	<i>.20</i>	<i>.18</i>	<i>.18</i>	<i>.20</i>	<b>.20</b>	<i>.17</i>	<i>.19</i>
<b>SPR Stock Withdrawn</b>													
or Added (-)	<b>-.14</b>	<b>-.04</b>	<b>-.04</b>	<b>-.05</b>	<b>-.05</b>	<i>-.03</i>	<i>-.03</i>	<i>-.03</i>	<i>-.03</i>	<i>-.03</i>	<b>-.12</b>	<i>-.04</i>	<i>-.03</i>
<b>Other Stock Withdrawn</b>													
or Added (-)	<b>.29</b>	<b>-.04</b>	<b>-.22</b>	<b>.17</b>	<b>-.12</b>	<i>.07</i>	<i>-.11</i>	<i>-.04</i>	<i>.11</i>	<i>-.01</i>	<b>.07</b>	<i>-.03</i>	<i>-.01</i>
Products Supplied and Losses	<b>-.06</b>	<b>-.06</b>	<b>-.06</b>	<b>-.05</b>	<b>-.06</b>	<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>.14</b>	<b>-.01</b>	<i>.10</i>	<i>.12</i>	<i>.20</i>	<i>.18</i>	<i>.24</i>	<b>.15</b>	<i>.16</i>	<i>.19</i>
Crude Oil Input to Refineries	<b>12.14</b>	<b>12.40</b>	<b>11.98</b>	<b>13.00</b>	<b>13.10</b>	<i>12.87</i>	<i>12.27</i>	<i>12.92</i>	<i>13.21</i>	<i>12.94</i>	<b>12.00</b>	<i>12.74</i>	<i>12.84</i>
<b>Other Supply</b>													
NGL Production	<b>1.58</b>	<b>1.65</b>	<b>1.68</b>	<b>1.57</b>	<b>1.56</b>	<i>1.62</i>	<i>1.67</i>	<i>1.54</i>	<i>1.52</i>	<i>1.62</i>	<b>1.61</b>	<i>1.61</i>	<i>1.59</i>
<b>Other Hydrocarbon and</b>													
Alcohol Inputs	<b>.06</b>	<b>.07</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<i>.05</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>.05</b>	<b>.06</b>	<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>.55</b>	<b>.59</b>	<i>.56</i>	<i>.53</i>	<i>.58</i>	<i>.59</i>	<i>.59</i>	<b>.56</b>	<i>.56</i>	<i>.57</i>
Net Product Imports <sup>c</sup>	<b>1.17</b>	<b>1.36</b>	<b>1.15</b>	<b>1.33</b>	<b>1.38</b>	<i>1.38</i>	<i>1.09</i>	<i>1.57</i>	<i>1.65</i>	<i>1.97</i>	<b>1.29</b>	<i>1.31</i>	<i>1.57</i>
Gross Product Imports <sup>c</sup>	<b>1.72</b>	<b>2.04</b>	<b>1.78</b>	<b>1.91</b>	<b>1.95</b>	<i>1.95</i>	<i>1.66</i>	<i>2.13</i>	<i>2.18</i>	<i>2.56</i>	<b>1.87</b>	<i>1.90</i>	<i>2.13</i>
Product Exports	<b>.55</b>	<b>.68</b>	<b>.63</b>	<b>.58</b>	<b>.57</b>	<i>.57</i>	<i>.57</i>	<i>.56</i>	<i>.53</i>	<i>.58</i>	<b>.58</b>	<i>.59</i>	<i>.56</i>
<b>Product Stock Withdrawn</b>													
or Added (-) <sup>d</sup>	<b>-.06</b>	<b>-.09</b>	<b>.59</b>	<b>-.69</b>	<b>-.67</b>	<i>.18</i>	<i>.80</i>	<i>-.22</i>	<i>-.31</i>	<i>-.08</i>	<b>.15</b>	<i>-.15</i>	<i>.04</i>
Total Product Supplied, Domestic Use	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.86</b>	<b>16.08</b>	<i>16.74</i>	<i>16.48</i>	<i>16.51</i>	<i>16.79</i>	<i>17.16</i>	<b>15.73</b>	<i>16.19</i>	<i>16.74</i>
<b>Disposition</b>													
Motor Gasoline	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.09</b>	<b>7.32</b>	<i>7.07</i>	<i>6.73</i>	<i>7.25</i>	<i>7.22</i>	<i>7.08</i>	<b>6.83</b>	<i>7.03</i>	<i>7.07</i>
Jet Fuel	<b>1.21</b>	<b>1.29</b>	<b>1.25</b>	<b>1.27</b>	<b>1.32</b>	<i>1.35</i>	<i>1.36</i>	<i>1.31</i>	<i>1.36</i>	<i>1.38</i>	<b>1.22</b>	<i>1.30</i>	<i>1.35</i>
Distillate Fuel Oil	<b>2.55</b>	<b>2.97</b>	<b>3.28</b>	<b>2.73</b>	<b>2.54</b>	<i>3.09</i>	<i>3.39</i>	<i>2.98</i>	<i>2.89</i>	<i>3.30</i>	<b>2.87</b>	<i>2.91</i>	<i>3.14</i>
Residual Fuel Oil	<b>1.09</b>	<b>1.27</b>	<b>1.42</b>	<b>1.34</b>	<b>1.37</b>	<i>1.44</i>	<i>1.30</i>	<i>1.28</i>	<i>1.24</i>	<i>1.50</i>	<b>1.20</b>	<i>1.39</i>	<i>1.33</i>
Other Oils Supplied <sup>e</sup>	<b>3.73</b>	<b>3.67</b>	<b>3.46</b>	<b>3.44</b>	<b>3.53</b>	<i>3.79</i>	<i>3.70</i>	<i>3.68</i>	<i>4.08</i>	<i>3.91</i>	<b>3.61</b>	<i>3.55</i>	<i>3.84</i>
Total Product Supplied	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.86</b>	<b>16.08</b>	<i>16.74</i>	<i>16.48</i>	<i>16.51</i>	<i>16.79</i>	<i>17.16</i>	<b>15.73</b>	<i>16.19</i>	<i>16.74</i>
Total Petroleum Net Imports	<b>4.14</b>	<b>4.80</b>	<b>4.08</b>	<b>5.32</b>	<b>6.02</b>	<i>5.64</i>	<i>4.94</i>	<i>5.94</i>	<i>6.26</i>	<i>6.44</i>	<b>4.29</b>	<i>5.27</i>	<i>5.90</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>325.5</b>	<b>336.9</b>	<i>330.9</i>	<i>340.4</i>	<i>343.6</i>	<i>333.8</i>	<i>334.4</i>	<b>320.9</b>	<i>330.9</i>	<i>334.4</i>
Total Motor Gasoline	<b>223.1</b>	<b>222.8</b>	<b>219.9</b>	<b>233.4</b>	<b>232.3</b>	<i>235.8</i>	<i>231.6</i>	<i>228.7</i>	<i>232.7</i>	<i>237.3</i>	<b>222.8</b>	<i>235.8</i>	<i>237.3</i>
Finished Motor Gasoline	<b>187.4</b>	<b>190.3</b>	<b>185.0</b>	<b>197.6</b>	<b>193.1</b>	<i>199.5</i>	<i>194.8</i>	<i>192.0</i>	<i>194.6</i>	<i>201.6</i>	<b>190.3</b>	<i>199.5</i>	<i>201.6</i>
Blending Components	<b>35.6</b>	<b>32.5</b>	<b>34.9</b>	<b>35.8</b>	<b>39.2</b>	<i>36.3</i>	<i>36.8</i>	<i>36.7</i>	<i>38.1</i>	<i>35.7</i>	<b>32.5</b>	<i>36.3</i>	<i>35.7</i>
Jet Fuel	<b>42.0</b>	<b>40.5</b>	<b>47.4</b>	<b>46.2</b>	<b>48.8</b>	<i>45.5</i>	<i>44.5</i>	<i>44.7</i>	<i>45.9</i>	<i>44.1</i>	<b>40.5</b>	<i>45.5</i>	<i>44.1</i>
Distillate Fuel Oil	<b>117.4</b>	<b>143.7</b>	<b>99.3</b>	<b>108.8</b>	<b>152.1</b>	<i>165.6</i>	<i>105.0</i>	<i>112.0</i>	<i>132.6</i>	<i>154.9</i>	<b>143.7</b>	<i>165.6</i>	<i>154.9</i>
Residual Fuel Oil	<b>43.4</b>	<b>50.4</b>	<b>38.8</b>	<b>43.0</b>	<b>43.6</b>	<i>48.0</i>	<i>41.4</i>	<i>40.2</i>	<i>42.1</i>	<i>46.7</i>	<b>50.4</b>	<i>48.0</i>	<i>46.7</i>
Other Oils <sup>g</sup>	<b>270.0</b>	<b>247.2</b>	<b>245.9</b>	<b>282.5</b>	<b>298.9</b>	<i>263.9</i>	<i>264.1</i>	<i>281.1</i>	<i>282.0</i>	<i>259.8</i>	<b>247.2</b>	<i>263.9</i>	<i>259.8</i>
Total Stocks (Excluding SPR)	<b>1013.2</b>	<b>1025.5</b>	<b>992.1</b>	<b>1039.3</b>	<b>1112.6</b>	<i>1089.7</i>	<i>1027.0</i>	<i>1050.4</i>	<i>1069.1</i>	<i>1077.3</i>	<b>1025.5</b>	<i>1089.7</i>	<i>1077.3</i>
Crude Oil in SPR	<b>489.3</b>	<b>493.3</b>	<b>496.9</b>	<b>501.8</b>	<b>506.4</b>	<i>509.6</i>	<i>512.8</i>	<i>516.0</i>	<i>519.2</i>	<i>522.4</i>	<b>493.3</b>	<i>509.6</i>	<i>522.4</i>
Total Stocks (Including SPR)	<b>1502.4</b>	<b>1518.8</b>	<b>1489.0</b>	<b>1541.1</b>	<b>1619.0</b>	<i>1599.3</i>	<i>1539.8</i>	<i>1566.4</i>	<i>1588.3</i>	<i>1599.7</i>	<b>1518.8</b>	<i>1599.3</i>	<i>1599.7</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(86-37,41).

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**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>	<b>8.90</b>	<b>8.97</b>	<b>8.94</b>	<b>8.80</b>	<b>8.71</b>	<b>8.80</b>	<b>8.78</b>	<b>8.72</b>	<b>8.68</b>	<b>8.67</b>	<b>8.97</b>	<b>8.81</b>	<b>8.71</b>
Alaska	<b>1.82</b>	<b>1.84</b>	<b>1.82</b>	<b>1.86</b>	<b>1.87</b>	<b>1.88</b>	<b>1.90</b>	<b>1.90</b>	<b>1.90</b>	<b>1.90</b>	<b>1.83</b>	<b>1.86</b>	<b>1.90</b>
Lower 48	<b>7.08</b>	<b>7.13</b>	<b>7.12</b>	<b>6.94</b>	<b>6.84</b>	<b>6.92</b>	<b>6.88</b>	<b>6.82</b>	<b>6.79</b>	<b>6.77</b>	<b>7.15</b>	<b>6.95</b>	<b>6.81</b>
Net Imports (Including SPR) <sup>b</sup>	<b>2.96</b>	<b>3.44</b>	<b>2.94</b>	<b>3.99</b>	<b>4.64</b>	<b>3.66</b>	<b>3.08</b>	<b>3.63</b>	<b>3.82</b>	<b>3.66</b>	<b>3.00</b>	<b>3.81</b>	<b>3.55</b>
Gross Imports (Excluding SPR)	<b>3.02</b>	<b>3.59</b>	<b>3.07</b>	<b>4.08</b>	<b>4.72</b>	<b>3.83</b>	<b>3.24</b>	<b>3.77</b>	<b>3.97</b>	<b>3.83</b>	<b>3.08</b>	<b>3.93</b>	<b>3.71</b>
SPR Imports	.14	.05	.05	.05	.05	.03	.03	.03	.03	.03	.12	.05	.03
Exports	.19	.20	.18	.14	.14	.20	.20	.18	.18	.20	.20	.17	.19
SPR Stock Withdrawn or Added (-)	-.14	-.04	-.04	-.05	-.05	-.03	-.03	-.03	-.03	-.03	-.12	-.04	-.03
Other Stock Withdrawn or Added (-)	.29	-.04	-.22	.17	-.12	.12	-.05	-.01	.10	-.01	.07	-.01	.01
Products Supplied and Losses	-.06	-.06	-.06	-.05	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06
Unaccounted-for Crude	.18	.13	.43	.14	-.01	.14	.15	.15	.15	.15	.15	.18	.15
Crude Oil Input to Refineries	<b>12.14</b>	<b>12.40</b>	<b>11.98</b>	<b>13.00</b>	<b>13.10</b>	<b>12.62</b>	<b>11.85</b>	<b>12.38</b>	<b>12.65</b>	<b>12.37</b>	<b>12.00</b>	<b>12.68</b>	<b>12.31</b>
<b>Other Supply</b>													
NGL Production	<b>1.58</b>	<b>1.65</b>	<b>1.68</b>	<b>1.57</b>	<b>1.56</b>	<b>1.62</b>	<b>1.67</b>	<b>1.54</b>	<b>1.53</b>	<b>1.62</b>	<b>1.61</b>	<b>1.61</b>	<b>1.59</b>
Other Hydrocarbon and Alcohol Inputs	.06	.07	.04	.05	.06	.05	.05	.06	.06	.06	.06	.05	.06
Crude Oil Product Supplied	.06	.06	.06	.05	.06	.06	.06	.06	.06	.06	.06	.06	.06
Processing Gain	.59	.58	.55	.55	.59	.55	.51	.55	.57	.57	.56	.56	.55
Net Product Imports <sup>c</sup>	<b>1.17</b>	<b>1.36</b>	<b>1.15</b>	<b>1.33</b>	<b>1.38</b>	<b>1.23</b>	<b>1.04</b>	<b>1.29</b>	<b>1.43</b>	<b>1.75</b>	<b>1.29</b>	<b>1.27</b>	<b>1.38</b>
Gross Product Imports <sup>c</sup>	<b>1.72</b>	<b>2.04</b>	<b>1.78</b>	<b>1.91</b>	<b>1.95</b>	<b>1.80</b>	<b>1.61</b>	<b>1.85</b>	<b>1.97</b>	<b>2.33</b>	<b>1.87</b>	<b>1.86</b>	<b>1.94</b>
Product Exports	.55	.68	.63	.58	.57	.57	.57	.56	.53	.58	.58	.59	.56
Product Stock Withdrawn or Added (-) <sup>d</sup>	-.06	-.09	.59	-.69	-.67	.34	.82	.02	-.17	.03	.15	-.11	.17
Total Product Supplied, Domestic Use	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.86</b>	<b>16.08</b>	<b>16.48</b>	<b>16.00</b>	<b>15.91</b>	<b>16.13</b>	<b>16.46</b>	<b>15.73</b>	<b>16.12</b>	<b>16.13</b>
<b>Disposition</b>													
Motor Gasoline	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.09</b>	<b>7.32</b>	<b>7.03</b>	<b>6.64</b>	<b>7.12</b>	<b>7.09</b>	<b>6.94</b>	<b>6.83</b>	<b>7.02</b>	<b>6.95</b>
Jet Fuel	<b>1.21</b>	<b>1.29</b>	<b>1.25</b>	<b>1.27</b>	<b>1.32</b>	<b>1.34</b>	<b>1.34</b>	<b>1.28</b>	<b>1.32</b>	<b>1.34</b>	<b>1.22</b>	<b>1.30</b>	<b>1.32</b>
Distillate Fuel Oil	<b>2.55</b>	<b>2.97</b>	<b>3.28</b>	<b>2.73</b>	<b>2.54</b>	<b>3.02</b>	<b>3.25</b>	<b>2.81</b>	<b>2.71</b>	<b>3.10</b>	<b>2.87</b>	<b>2.89</b>	<b>2.96</b>
Residual Fuel Oil	<b>1.09</b>	<b>1.27</b>	<b>1.42</b>	<b>1.34</b>	<b>1.37</b>	<b>1.38</b>	<b>1.19</b>	<b>1.16</b>	<b>1.11</b>	<b>1.34</b>	<b>1.20</b>	<b>1.38</b>	<b>1.20</b>
Other Oils Supplied <sup>e</sup>	<b>3.73</b>	<b>3.67</b>	<b>3.46</b>	<b>3.44</b>	<b>3.53</b>	<b>3.72</b>	<b>3.59</b>	<b>3.54</b>	<b>3.90</b>	<b>3.73</b>	<b>3.61</b>	<b>3.54</b>	<b>3.69</b>
Total Product Supplied	<b>15.54</b>	<b>16.02</b>	<b>16.06</b>	<b>15.86</b>	<b>16.08</b>	<b>16.48</b>	<b>16.00</b>	<b>15.91</b>	<b>16.13</b>	<b>16.46</b>	<b>15.73</b>	<b>16.12</b>	<b>16.13</b>
Total Petroleum Net Imports	<b>4.14</b>	<b>4.80</b>	<b>4.08</b>	<b>5.32</b>	<b>6.02</b>	<b>4.89</b>	<b>4.12</b>	<b>4.92</b>	<b>5.25</b>	<b>5.41</b>	<b>4.29</b>	<b>5.08</b>	<b>4.93</b>
<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>325.5</b>	<b>336.9</b>	<b>326.2</b>	<b>330.9</b>	<b>331.8</b>	<b>322.3</b>	<b>323.4</b>	<b>320.9</b>	<b>326.2</b>	<b>323.4</b>
Total Motor Gasoline	<b>223.1</b>	<b>222.8</b>	<b>219.9</b>	<b>233.4</b>	<b>232.3</b>	<b>229.1</b>	<b>225.2</b>	<b>213.8</b>	<b>215.9</b>	<b>219.9</b>	<b>222.8</b>	<b>229.1</b>	<b>219.9</b>
Finished Motor Gasoline	<b>187.4</b>	<b>190.3</b>	<b>185.0</b>	<b>197.6</b>	<b>193.1</b>	<b>194.0</b>	<b>189.6</b>	<b>180.7</b>	<b>183.2</b>	<b>189.0</b>	<b>190.3</b>	<b>194.0</b>	<b>189.0</b>
Blending Components	<b>35.6</b>	<b>32.5</b>	<b>34.9</b>	<b>35.8</b>	<b>39.2</b>	<b>35.1</b>	<b>35.6</b>	<b>33.0</b>	<b>32.7</b>	<b>30.9</b>	<b>32.5</b>	<b>35.1</b>	<b>30.9</b>
Jet Fuel	<b>42.0</b>	<b>40.5</b>	<b>47.4</b>	<b>46.2</b>	<b>48.8</b>	<b>42.5</b>	<b>40.7</b>	<b>41.1</b>	<b>40.6</b>	<b>38.5</b>	<b>40.5</b>	<b>42.5</b>	<b>38.5</b>
Distillate Fuel Oil	<b>117.4</b>	<b>143.7</b>	<b>99.3</b>	<b>108.8</b>	<b>152.1</b>	<b>164.1</b>	<b>106.2</b>	<b>106.7</b>	<b>126.3</b>	<b>144.8</b>	<b>143.7</b>	<b>164.1</b>	<b>144.8</b>
Residual Fuel Oil	<b>43.4</b>	<b>50.4</b>	<b>38.8</b>	<b>43.0</b>	<b>43.6</b>	<b>47.0</b>	<b>42.5</b>	<b>40.2</b>	<b>39.6</b>	<b>41.8</b>	<b>50.4</b>	<b>47.0</b>	<b>41.8</b>
Other Oils <sup>g</sup>	<b>270.0</b>	<b>247.2</b>	<b>245.9</b>	<b>282.5</b>	<b>298.9</b>	<b>262.0</b>	<b>256.7</b>	<b>267.6</b>	<b>262.8</b>	<b>237.6</b>	<b>247.2</b>	<b>262.0</b>	<b>237.6</b>
Total Stocks (Excluding SPR)	<b>1013.2</b>	<b>1025.5</b>	<b>992.1</b>	<b>1039.3</b>	<b>1112.6</b>	<b>1070.8</b>	<b>1002.2</b>	<b>1001.1</b>	<b>1007.5</b>	<b>1006.1</b>	<b>1025.5</b>	<b>1070.8</b>	<b>1006.1</b>
Crude Oil in SPR	<b>489.3</b>	<b>493.3</b>	<b>496.9</b>	<b>501.8</b>	<b>506.4</b>	<b>509.6</b>	<b>512.8</b>	<b>516.0</b>	<b>519.2</b>	<b>522.4</b>	<b>493.3</b>	<b>509.6</b>	<b>522.4</b>
Total Stocks (Including SPR)	<b>1502.4</b>	<b>1518.8</b>	<b>1489.0</b>	<b>1541.1</b>	<b>1619.0</b>	<b>1580.4</b>	<b>1514.9</b>	<b>1517.1</b>	<b>1526.7</b>	<b>1528.5</b>	<b>1518.8</b>	<b>1580.4</b>	<b>1528.5</b>

<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 July 1986; *Weekly Petroleum Status Report*, DOE/EIA-0208(86-37,41).

Table printed at 1347, October 28, 1986

**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>6.90</b>	<b>6.99</b>	<i>6.85</i>	<i>6.41</i>	<i>6.79</i>	<i>6.86</i>	<i>6.77</i>	<b>6.42</b>	<i>6.76</i>	<i>6.71</i>
Imports .....	<b>.35</b>	<b>.37</b>	<b>.29</b>	<b>.33</b>	<b>.28</b>	<i>.23</i>	<i>.22</i>	<i>.31</i>	<i>.31</i>	<i>.30</i>	<b>.38</b>	<i>.28</i>	<i>.28</i>
Exports .....	<b>.01</b>	<b>.02</b>	<b>.00</b>	<b>.00</b>	<b>.00</b>	<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>.33</b>	<b>.28</b>	<i>.23</i>	<i>.22</i>	<i>.31</i>	<i>.31</i>	<i>.30</i>	<b>.37</b>	<i>.28</i>	<i>.28</i>
Net Withdrawals .....	<b>-.01</b>	<b>-.03</b>	<b>.06</b>	<b>-.14</b>	<b>.05</b>	<i>-.03</i>	<i>.05</i>	<i>.07</i>	<i>-.03</i>	<i>-.07</i>	<b>.04</b>	<i>-.02</i>	<i>.00</i>
Total Primary Supply .....	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.09</b>	<b>7.32</b>	<i>7.04</i>	<i>6.67</i>	<i>7.17</i>	<i>7.14</i>	<i>7.00</i>	<b>6.83</b>	<i>7.03</i>	<i>7.00</i>
<b>Disposition</b>													
Leaded .....	<b>2.41</b>	<b>2.31</b>	<b>2.15</b>	<b>2.27</b>	<b>2.24</b>	<i>2.03</i>	<i>1.83</i>	<i>1.88</i>	<i>1.79</i>	<i>1.67</i>	<b>2.43</b>	<i>2.17</i>	<i>1.79</i>
Unleaded .....	<b>4.55</b>	<b>4.51</b>	<b>4.49</b>	<b>4.82</b>	<b>5.08</b>	<i>5.02</i>	<i>4.84</i>	<i>5.29</i>	<i>5.35</i>	<i>5.33</i>	<b>4.41</b>	<i>4.85</i>	<i>5.21</i>
Total Product Supplied .....	<b>6.96</b>	<b>6.82</b>	<b>6.64</b>	<b>7.09</b>	<b>7.32</b>	<i>7.04</i>	<i>6.67</i>	<i>7.17</i>	<i>7.14</i>	<i>7.00</i>	<b>6.83</b>	<i>7.02</i>	<i>7.00</i>
<b>Stocks</b>													
Primary Finished Stock Levels <sup>b</sup> (million barrels)													
Opening .....	<b>186.2</b>	<b>187.4</b>	<b>190.3</b>	<b>185.0</b>	<b>197.6</b>	<i>193.1</i>	<i>196.0</i>	<i>191.6</i>	<i>184.9</i>	<i>187.8</i>	<b>205.2</b>	<i>190.3</i>	<i>196.0</i>
Closing .....	<b>187.4</b>	<b>190.3</b>	<b>185.0</b>	<b>197.6</b>	<b>193.1</b>	<i>196.0</i>	<i>191.6</i>	<i>184.9</i>	<i>187.8</i>	<i>194.5</i>	<b>190.3</b>	<i>196.0</i>	<i>194.5</i>

<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 July 1986; *Weekly Petroleum Status Report*, DOE/EIA-0208(86-37,41).

Table printed at 1347, October 28, 1986

**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>2.79</b>	<b>2.86</b>	<i>2.99</i>	<i>2.59</i>	<i>2.76</i>	<i>2.83</i>	<i>3.07</i>	<b>2.69</b>	<i>2.84</i>	<i>2.81</i>
Imports .....	<i>.13</i>	<i>.28</i>	<i>.22</i>	<i>.15</i>	<i>.26</i>	<i>.26</i>	<i>.14</i>	<i>.24</i>	<i>.25</i>	<i>.40</i>	<b>.20</b>	<i>.22</i>	<i>.26</i>
Exports .....	<i>.11</i>	<i>.08</i>	<i>.14</i>	<i>.11</i>	<i>.10</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 .....	<i>.02</i>	<i>.20</i>	<i>.08</i>	<i>.04</i>	<i>.16</i>	<i>.19</i>	<i>.06</i>	<i>.16</i>	<i>.17</i>	<i>.32</i>	<b>.13</b>	<i>.12</i>	<i>.18</i>
Net Withdrawals .....	<b>-.08</b>	<b>-.29</b>	<b>.49</b>	<b>-.11</b>	<b>-.47</b>	<i>-.13</i>	<i>.66</i>	<i>-.04</i>	<i>-.22</i>	<i>-.22</i>	<b>.05</b>	<i>-.06</i>	<i>.04</i>
<b>Disposition</b>													
Electric Utility Consumption .....	<b>.04</b>	<b>.04</b>	<b>.04</b>	<b>.04</b>	<b>.05</b>	<i>.06</i>	<i>.04</i>	<i>.04</i>	<i>.05</i>	<i>.05</i>	<b>.04</b>	<i>.05</i>	<i>.05</i>
Utility Stock Additions .....	<b>-.01</b>	<b>.00</b>	<b>-.01</b>	<b>.01</b>	<b>.00</b>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<b>-.01</b>	<i>.00</i>	<i>.00</i>
Electric Utility Shipments .....	<b>.03</b>	<b>.04</b>	<b>.04</b>	<b>.04</b>	<b>.05</b>	<i>.05</i>	<i>.04</i>	<i>.04</i>	<i>.05</i>	<i>.05</i>	<b>.03</b>	<i>.05</i>	<i>.04</i>
Nonutility Shipments .....	<b>2.52</b>	<b>2.93</b>	<b>3.25</b>	<b>2.69</b>	<b>2.50</b>	<i>3.00</i>	<i>3.27</i>	<i>2.84</i>	<i>2.73</i>	<i>3.13</i>	<b>2.84</b>	<i>2.85</i>	<i>2.99</i>
Total Product Supplied .....	<b>2.55</b>	<b>2.97</b>	<b>3.28</b>	<b>2.73</b>	<b>2.54</b>	<i>3.05</i>	<i>3.30</i>	<i>2.88</i>	<i>2.78</i>	<i>3.18</i>	<b>2.87</b>	<i>2.90</i>	<i>3.03</i>
<b>Stocks</b>													
Electric Utility Stock Levels (million barrels)													
Opening .....	<b>17.2</b>	<b>16.4</b>	<b>16.4</b>	<b>15.7</b>	<b>16.2</b>	<i>15.9</i>	<i>15.5</i>	<i>15.0</i>	<i>14.6</i>	<i>14.3</i>	<b>19.1</b>	<i>16.4</i>	<i>15.5</i>
Closing .....	<b>16.4</b>	<b>16.4</b>	<b>15.7</b>	<b>16.2</b>	<b>15.9</b>	<i>15.5</i>	<i>15.0</i>	<i>14.6</i>	<i>14.3</i>	<i>14.0</i>	<b>16.4</b>	<i>15.5</i>	<i>14.0</i>
Primary Stock Levels (million barrels)													
Opening .....	<b>109.7</b>	<b>117.4</b>	<b>143.7</b>	<b>99.3</b>	<b>108.8</b>	<i>152.1</i>	<i>164.2</i>	<i>104.9</i>	<i>108.2</i>	<i>128.9</i>	<b>161.1</b>	<i>143.7</i>	<i>164.2</i>
Closing .....	<b>117.4</b>	<b>143.7</b>	<b>99.3</b>	<b>108.8</b>	<b>152.1</b>	<i>164.2</i>	<i>104.9</i>	<i>108.2</i>	<i>128.9</i>	<i>149.1</i>	<b>143.7</b>	<i>164.2</i>	<i>149.1</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 July 1986; *Monthly Energy Review*, DOE/EIA-0035(86/07); *Electric Power Monthly*, DOE/EIA-0226(86/08); *Weekly Petroleum Status Report*, DOE/EIA-0208(86-37,41).  
Table printed at 1347, October 28, 1986

**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>	<b>0.88</b>	<i>0.96</i>	<i>0.84</i>	<i>0.82</i>	<i>0.80</i>	<i>0.90</i>	<b>0.88</b>	<i>0.90</i>	<i>0.84</i>
Imports .....	<b>.49</b>	<b>.62</b>	<b>.59</b>	<b>.62</b>	<b>.61</b>	<i>.67</i>	<i>.50</i>	<i>.51</i>	<i>.50</i>	<i>.72</i>	<b>.51</b>	<i>.62</i>	<i>.56</i>
Exports .....	<b>.12</b>	<b>.24</b>	<b>.17</b>	<b>.12</b>	<b>.11</b>	<i>.18</i>	<i>.16</i>	<i>.14</i>	<i>.13</i>	<i>.18</i>	<b>.20</b>	<i>.15</i>	<i>.15</i>
Net Imports .....	<b>.37</b>	<b>.38</b>	<b>.42</b>	<b>.49</b>	<b>.50</b>	<i>.48</i>	<i>.34</i>	<i>.37</i>	<i>.38</i>	<i>.54</i>	<b>.31</b>	<i>.48</i>	<i>.41</i>
Net Withdrawals .....	<b>-.04</b>	<b>-.08</b>	<b>.13</b>	<b>-.05</b>	<b>-.01</b>	<i>-.04</i>	<i>.06</i>	<i>.02</i>	<i>-.01</i>	<i>-.04</i>	<b>.01</b>	<i>.01</i>	<i>.01</i>
<b>Disposition</b>													
Electric Utility Consumption .....	<b>.45</b>	<b>.44</b>	<b>.53</b>	<b>.54</b>	<b>.74</b>	<i>.56</i>	<i>.39</i>	<i>.44</i>	<i>.50</i>	<i>.50</i>	<b>.44</b>	<i>.59</i>	<i>.46</i>
Utility Stock Additions .....	<b>-.03</b>	<b>.01</b>	<b>-.02</b>	<b>.02</b>	<b>-.03</b>	<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>.56</b>	<b>.70</b>	<i>.56</i>	<i>.37</i>	<i>.43</i>	<i>.48</i>	<i>.47</i>	<b>.40</b>	<i>.58</i>	<i>.44</i>
Nonutility Shipments .....	<b>.68</b>	<b>.82</b>	<b>.90</b>	<b>.78</b>	<b>.67</b>	<i>.85</i>	<i>.86</i>	<i>.78</i>	<i>.68</i>	<i>.93</i>	<b>.80</b>	<i>.80</i>	<i>.81</i>
Total Product Supplied .....	<b>1.09</b>	<b>1.27</b>	<b>1.42</b>	<b>1.34</b>	<b>1.37</b>	<i>1.40</i>	<i>1.23</i>	<i>1.21</i>	<i>1.16</i>	<i>1.40</i>	<b>1.20</b>	<i>1.38</i>	<i>1.25</i>
<b>Stocks</b>													
Electric Utility Stock Levels (million barrels)													
Opening .....	<b>59.6</b>	<b>56.5</b>	<b>57.3</b>	<b>55.8</b>	<b>57.5</b>	<i>54.4</i>	<i>54.0</i>	<i>52.3</i>	<i>51.3</i>	<i>49.9</i>	<b>68.5</b>	<i>57.3</i>	<i>54.0</i>
Closing .....	<b>56.5</b>	<b>57.3</b>	<b>55.8</b>	<b>57.5</b>	<b>54.4</b>	<i>54.0</i>	<i>52.3</i>	<i>51.3</i>	<i>49.9</i>	<i>47.4</i>	<b>57.3</b>	<i>54.0</i>	<i>47.4</i>
Primary Stock Levels (million barrels)													
Opening .....	<b>39.6</b>	<b>43.4</b>	<b>50.4</b>	<b>38.8</b>	<b>43.0</b>	<i>43.6</i>	<i>47.7</i>	<i>42.6</i>	<i>41.0</i>	<i>41.8</i>	<b>53.0</b>	<i>50.4</i>	<i>47.7</i>
Closing .....	<b>43.4</b>	<b>50.4</b>	<b>38.8</b>	<b>43.0</b>	<b>43.6</b>	<i>47.7</i>	<i>42.6</i>	<i>41.0</i>	<i>41.8</i>	<i>45.2</i>	<b>50.4</b>	<i>47.7</i>	<i>45.2</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 July 1986; *Monthly Energy Review*, DOE/EIA-0035(86/07); *Electric Power Monthly*, DOE/EIA-0226(86/08); *Weekly Petroleum Status Report*, DOE/EIA-0208(86-37,41).  
Table printed at 1347, October 28, 1986

**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>2.97</b>	<b>2.97</b>	<i>2.44</i>	<i>2.70</i>	<i>2.81</i>	<i>3.00</i>	<i>2.49</i>	<b>2.57</b>	<i>2.76</i>	<i>2.75</i>
Natural Gas Plant Output .....	<b>1.58</b>	<b>1.65</b>	<b>1.68</b>	<b>1.57</b>	<b>1.56</b>	<i>1.62</i>	<i>1.67</i>	<i>1.53</i>	<i>1.52</i>	<i>1.61</i>	<b>1.61</b>	<i>1.61</i>	<i>1.58</i>
Other Domestic <sup>c</sup> .....	<b>.06</b>	<b>.07</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<i>.05</i>	<i>.05</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<b>.06</b>	<i>.05</i>	<i>.06</i>
Net Imports .....	<b>.45</b>	<b>.43</b>	<b>.35</b>	<b>.46</b>	<b>.44</b>	<i>.42</i>	<i>.46</i>	<i>.57</i>	<i>.68</i>	<i>.66</i>	<b>.47</b>	<i>.42</i>	<i>.59</i>
Net Withdrawals .....	<b>.08</b>	<b>.30</b>	<b>-.09</b>	<b>-.40</b>	<b>-.24</b>	<i>.49</i>	<i>.04</i>	<i>-.15</i>	<i>-.01</i>	<i>.27</i>	<b>.06</b>	<i>-.06</i>	<i>.04</i>
<b>Total Primary Supply</b> .....	<b>4.88</b>	<b>4.90</b>	<b>4.65</b>	<b>4.66</b>	<b>4.79</b>	<i>5.03</i>	<i>4.91</i>	<i>4.82</i>	<i>5.24</i>	<i>5.09</i>	<b>4.76</b>	<i>4.78</i>	<i>5.02</i>
<b>Disposition</b>													
Jet Fuel .....	<b>1.21</b>	<b>1.29</b>	<b>1.25</b>	<b>1.27</b>	<b>1.32</b>	<i>1.35</i>	<i>1.34</i>	<i>1.30</i>	<i>1.34</i>	<i>1.35</i>	<b>1.22</b>	<i>1.30</i>	<i>1.33</i>
Liquefied Petroleum Gas <sup>d</sup> .....	<b>.90</b>	<b>1.20</b>	<b>1.14</b>	<b>.82</b>	<b>.83</b>	<i>1.20</i>	<i>1.25</i>	<i>.85</i>	<i>.92</i>	<i>1.19</i>	<b>1.02</b>	<i>1.00</i>	<i>1.05</i>
Petrochemical Feedstocks <sup>e</sup> .....	<b>.95</b>	<b>.91</b>	<b>.95</b>	<b>.97</b>	<b>.96</b>	<i>.91</i>	<i>.99</i>	<i>.98</i>	<i>.98</i>	<i>.94</i>	<b>.94</b>	<i>.95</i>	<i>.97</i>
Miscellaneous <sup>f</sup> .....	<b>1.83</b>	<b>1.50</b>	<b>1.30</b>	<b>1.59</b>	<b>1.68</b>	<i>1.58</i>	<i>1.32</i>	<i>1.69</i>	<i>2.01</i>	<i>1.61</i>	<b>1.59</b>	<i>1.54</i>	<i>1.66</i>
<b>Total Product Supplied</b> .....	<b>4.88</b>	<b>4.90</b>	<b>4.65</b>	<b>4.66</b>	<b>4.79</b>	<i>5.03</i>	<i>4.91</i>	<i>4.82</i>	<i>5.24</i>	<i>5.09</i>	<b>4.76</b>	<i>4.78</i>	<i>5.02</i>
<b>Stock</b>													
<b>Primary Stocks</b> (million barrels)													
Opening .....	<b>354.9</b>	<b>347.6</b>	<b>320.2</b>	<b>328.2</b>	<b>364.5</b>	<i>386.9</i>	<i>341.9</i>	<i>338.3</i>	<i>351.8</i>	<i>352.8</i>	<b>341.1</b>	<i>320.2</i>	<i>341.9</i>
Closing .....	<b>347.6</b>	<b>320.2</b>	<b>328.2</b>	<b>364.5</b>	<b>386.9</b>	<i>341.9</i>	<i>338.3</i>	<i>351.8</i>	<i>352.8</i>	<i>327.8</i>	<b>320.2</b>	<i>341.9</i>	<i>327.8</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 July 1986; and *Weekly Petroleum Status Report*, DOE/EIA-0208(86-37,41). Data for May and June 1986 are preliminary.

Table printed at 1347, October 28, 1986

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

Sensitivities	1986	1987					Year	
	4TH	1st	2nd	3rd	4th	1986	1987	
<b>Demand in 50 States</b>								
Low Price .....	<i>16.72</i>	<i>16.44</i>	<i>16.45</i>	<i>16.71</i>	<i>17.07</i>	<i>16.18</i>	<i>16.67</i>	
Base Case .....	<i>16.59</i>	<i>16.19</i>	<i>16.15</i>	<i>16.39</i>	<i>16.73</i>	<i>16.15</i>	<i>16.37</i>	
High Price .....	<i>16.49</i>	<i>16.02</i>	<i>15.95</i>	<i>16.17</i>	<i>16.51</i>	<i>16.12</i>	<i>16.16</i>	
<b>Weather Sensitivity</b>								
Adverse Weather .....	<i>.17</i>	<i>.28</i>	<i>.02</i>	<i>.00</i>	<i>.17</i>	<i>.04</i>	<i>.12</i>	
Favorable Weather .....	<i>-.17</i>	<i>-.28</i>	<i>-.02</i>	<i>.00</i>	<i>-.17</i>	<i>-.04</i>	<i>-.12</i>	
<b>Economic Sensitivity</b>								
High Economic Activity .....	<i>.01</i>	<i>.03</i>	<i>.05</i>	<i>.06</i>	<i>.08</i>	<i>.00</i>	<i>.06</i>	
Low Economic Activity .....	<i>-.01</i>	<i>-.02</i>	<i>-.02</i>	<i>-.03</i>	<i>-.04</i>	<i>.00</i>	<i>-.03</i>	
<b>Combined Sensitivity Differentials<sup>a</sup> (excl. price)</b>								
Upper Range .....	<i>.17</i>	<i>.28</i>	<i>.05</i>	<i>.06</i>	<i>.19</i>	<i>.04</i>	<i>.15</i>	
Lower Range .....	<i>.17</i>	<i>.28</i>	<i>.03</i>	<i>.03</i>	<i>.17</i>	<i>.04</i>	<i>.13</i>	
<b>Range of Projected Demand</b>								
High Demand <sup>b</sup> .....	<i>16.89</i>	<i>16.72</i>	<i>16.50</i>	<i>16.77</i>	<i>17.26</i>	<i>16.22</i>	<i>16.81</i>	
Low Demand <sup>c</sup> .....	<i>16.32</i>	<i>15.74</i>	<i>15.92</i>	<i>16.14</i>	<i>16.34</i>	<i>16.08</i>	<i>16.04</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*.

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**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>3.88</b>	<b>4.19</b>	<b>4.23</b>	<b>3.92</b>	<b>3.82</b>	<i>4.21</i>	<i>4.21</i>	<i>3.90</i>	<i>3.90</i>	<i>4.15</i>	<b>16.38</b>	<i>16.18</i>	<i>16.17</i>
Net Imports .....	<i>.17</i>	<i>.24</i>	<i>.21</i>	<i>.12</i>	<i>.15</i>	<i>.20</i>	<i>.28</i>	<i>.16</i>	<i>.11</i>	<i>.22</i>	<b>.89</b>	<i>.68</i>	<i>.76</i>
Supplemental Gaseous Fuels .....	<i>.03</i>	<i>.03</i>	<i>.04</i>	<i>.04</i>	<i>.04</i>	<i>.04</i>	<i>.04</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<b>.13</b>	<i>.16</i>	<i>.14</i>
Total New Supply .....	<b>4.08</b>	<b>4.47</b>	<b>4.48</b>	<b>4.08</b>	<b>4.01</b>	<i>4.45</i>	<i>4.53</i>	<i>4.10</i>	<i>4.03</i>	<i>4.40</i>	<b>17.40</b>	<i>17.02</i>	<i>17.07</i>
<b>Underground Working Gas Storage</b>													
Opening .....	<b>2.39</b>	<b>3.13</b>	<b>2.65</b>	<b>1.76</b>	<b>2.31</b>	<i>3.13</i>	<i>2.79</i>	<i>1.71</i>	<i>2.31</i>	<i>3.10</i>	<b>2.88</b>	<i>2.65</i>	<i>2.79</i>
Closing .....	<b>3.13</b>	<b>2.65</b>	<b>1.76</b>	<b>2.31</b>	<b>3.13</b>	<i>2.79</i>	<i>1.71</i>	<i>2.31</i>	<i>3.10</i>	<i>2.67</i>	<b>2.65</b>	<i>2.79</i>	<i>2.67</i>
Net Withdrawals <sup>b</sup> .....	<i>-.74</i>	<i>.47</i>	<i>.84</i>	<i>-.54</i>	<i>-.74</i>	<i>.34</i>	<i>1.08</i>	<i>-.60</i>	<i>-.79</i>	<i>.43</i>	<b>.24</b>	<i>-.09</i>	<i>.12</i>
Total Primary Supply <sup>a</sup> .....	<b>3.34</b>	<b>4.94</b>	<b>5.33</b>	<b>3.54</b>	<b>3.27</b>	<i>4.79</i>	<i>5.61</i>	<i>3.50</i>	<i>3.24</i>	<i>4.83</i>	<b>17.64</b>	<i>16.93</i>	<i>17.19</i>
<b>Disposition</b>													
Electric Utilities .....	<b>.97</b>	<b>.69</b>	<b>.51</b>	<b>.69</b>	<b>.82</b>	<i>.56</i>	<i>.61</i>	<i>.62</i>	<i>.79</i>	<i>.55</i>	<b>3.04</b>	<i>2.58</i>	<i>2.57</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>2.17</b>	<b>4.02</b>	<b>4.60</b>	<b>2.63</b>	<b>2.22</b>	<i>3.99</i>	<i>4.77</i>	<i>2.64</i>	<i>2.22</i>	<i>4.06</i>	<b>13.75</b>	<i>13.43</i>	<i>13.69</i>
Subtotal .....	<b>3.26</b>	<b>4.84</b>	<b>5.23</b>	<b>3.45</b>	<b>3.17</b>	<i>4.68</i>	<i>5.50</i>	<i>3.39</i>	<i>3.14</i>	<i>4.74</i>	<b>17.28</b>	<i>16.53</i>	<i>16.78</i>
Total Disposition .....	<b>3.34</b>	<b>4.94</b>	<b>5.33</b>	<b>3.54</b>	<b>3.27</b>	<i>4.79</i>	<i>5.61</i>	<i>3.50</i>	<i>3.24</i>	<i>4.83</i>	<b>17.64</b>	<i>16.93</i>	<i>17.19</i>
Unaccounted for .....	<b>.08</b>	<b>.10</b>	<b>.10</b>	<b>.10</b>	<b>.10</b>	<i>.10</i>	<i>.11</i>	<i>.10</i>	<i>.10</i>	<i>.09</i>	<b>.36</b>	<i>.40</i>	<i>.41</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(86/07); *Natural Gas Monthly*, DOE/EIA-0130(86/08); and *Electric Power Monthly*, DOE/EIA-0226(86/08).

Table printed at 1347, October 28, 1986

**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>223</b>	<b>219</b>	<sup>b</sup> <b>229</b>	<sup>b</sup> <b>222</b>	<sup>c</sup> <b>216</b>	<i>223</i>	<i>221</i>	<i>232</i>	<i>223</i>	<i>245</i>	<b>884</b>	<i>890</i>	<i>920</i>
Primary Stock Levels <sup>a</sup>													
Opening .....	<b>35</b>	<b>33</b>	<b>33</b>	<b>38</b>	<b>38</b>	<i>34</i>	<i>37</i>	<i>36</i>	<i>35</i>	<i>33</i>	<b>34</b>	<i>33</i>	<i>37</i>
Closing .....	<b>33</b>	<b>33</b>	<b>38</b>	<b>38</b>	<sup>c</sup> <b>34</b>	<i>37</i>	<i>36</i>	<i>35</i>	<i>33</i>	<i>33</i>	<b>33</b>	<i>37</i>	<i>33</i>
Net Withdrawals .....	<b>3</b>	<b>-1</b>	<b>-5</b>	<b>0</b>	<sup>c</sup> <b>4</b>	<i>-3</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>0</i>	<b>1</b>	<i>-4</i>	<i>4</i>
Imports .....	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<sup>c</sup> <b>1</b>	<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>24</b>	<sup>c</sup> <b>24</b>	<i>23</i>	<i>18</i>	<i>23</i>	<i>24</i>	<i>23</i>	<b>93</b>	<i>89</i>	<i>89</i>
Total New Domestic Supply .....	<b>200</b>	<b>195</b>	<sup>b</sup> <b>208</b>	<sup>b</sup> <b>198</b>	<sup>c</sup> <b>196</b>	<i>198</i>	<i>204</i>	<i>210</i>	<i>201</i>	<i>223</i>	<b>794</b>	<i>800</i>	<i>838</i>
Secondary Stock Levels <sup>d</sup>													
Opening .....	<b>188</b>	<b>176</b>	<b>170</b>	<b>166</b>	<b>176</b>	<i>158</i>	<i>152</i>	<i>148</i>	<i>161</i>	<i>145</i>	<b>197</b>	<i>170</i>	<i>152</i>
Closing .....	<b>176</b>	<b>170</b>	<b>166</b>	<b>176</b>	<sup>c</sup> <b>158</b>	<i>152</i>	<i>148</i>	<i>161</i>	<i>145</i>	<i>159</i>	<b>170</b>	<i>152</i>	<i>159</i>
Net Withdrawals .....	<b>12</b>	<b>6</b>	<b>4</b>	<b>-10</b>	<sup>c</sup> <b>18</b>	<i>6</i>	<i>5</i>	<i>-13</i>	<i>16</i>	<i>-15</i>	<b>27</b>	<i>18</i>	<i>-7</i>
Total Indicated Consumption .....	<b>212</b>	<b>201</b>	<sup>b</sup> <b>212</b>	<sup>b</sup> <b>188</b>	<sup>c</sup> <b>215</b>	<i>203</i>	<i>209</i>	<i>197</i>	<i>217</i>	<i>208</i>	<b>821</b>	<i>818</i>	<i>831</i>
<b>Disposition</b>													
Coke Plants .....	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<sup>c</sup> <b>8</b>	<i>9</i>	<i>9</i>	<i>10</i>	<i>9</i>	<i>9</i>	<b>41</b>	<i>38</i>	<i>38</i>
Electric Utilities .....	<b>184</b>	<b>173</b>	<b>173</b>	<b>158</b>	<sup>c</sup> <b>187</b>	<i>172</i>	<i>176</i>	<i>166</i>	<i>188</i>	<i>176</i>	<b>694</b>	<i>690</i>	<i>706</i>
Retail and General Industry <sup>e</sup> .....	<b>20</b>	<b>23</b>	<b>23</b>	<b>20</b>	<sup>c</sup> <b>20</b>	<i>23</i>	<i>23</i>	<i>20</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>188</b>	<sup>c</sup> <b>215</b>	<i>203</i>	<i>209</i>	<i>197</i>	<i>217</i>	<i>208</i>	<b>818</b>	<i>813</i>	<i>831</i>
Discrepancy <sup>f</sup> .....	<b>-2</b>	<b>-4</b>	<sup>b</sup> <b>6</b>	<sup>b</sup> <b>-1</b>	<sup>c</sup> <b>0</b>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<b>3</b>	<i>5</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, syngas 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(86/07); and *Quarterly Coal Report*, DOE/EIA-0121(86/2Q).

Table printed at 1347, October 28, 1986

**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
<b>Net Generation</b>													
Coal .....	<b>370.1</b>	<b>347.7</b>	<b>351.4</b>	<b>326.2</b>	<b>374.6</b>	<i>349.6</i>	<i>359.5</i>	<i>338.8</i>	<i>381.1</i>	<i>356.2</i>	<b>1402.1</b>	<i>1401.8</i>	<i>1435.5</i>
Petroleum .....	<b>25.6</b>	<b>25.7</b>	<b>30.7</b>	<b>31.2</b>	<b>42.9</b>	<i>32.4</i>	<i>22.2</i>	<i>25.1</i>	<i>28.9</i>	<i>28.8</i>	<b>100.2</b>	<i>137.3</i>	<i>105.0</i>
Natural Gas .....	<b>92.4</b>	<b>66.6</b>	<b>48.5</b>	<b>65.6</b>	<b>78.6</b>	<i>53.6</i>	<i>58.3</i>	<i>59.4</i>	<i>75.4</i>	<i>52.2</i>	<b>291.9</b>	<i>246.3</i>	<i>245.4</i>
Nuclear Power .....	<b>104.5</b>	<b>95.2</b>	<b>99.7</b>	<b>93.7</b>	<b>108.4</b>	<i>102.1</i>	<i>110.5</i>	<i>104.0</i>	<i>119.6</i>	<i>114.1</i>	<b>383.7</b>	<i>403.9</i>	<i>448.2</i>
Hydropower .....	<b>60.0</b>	<b>68.4</b>	<b>73.5</b>	<b>81.0</b>	<b>65.9</b>	<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>290.6</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>	<b>3.1</b>	<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>12.1</i>	<i>12.5</i>
<b>Total Generation</b> .....	<b>655.3</b>	<b>606.5</b>	<b>606.9</b>	<b>600.5</b>	<b>673.5</b>	<i>611.2</i>	<i>633.5</i>	<i>613.9</i>	<i>679.3</i>	<i>624.6</i>	<b>2469.8</b>	<i>2492.1</i>	<i>2551.3</i>
<b>Net Imports</b> .....	<b>12.5</b>	<b>9.9</b>	<b>10.1</b>	<b>9.4</b>	<b>12.2</b>	<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>
<b>Total Supply</b> .....	<b>667.7</b>	<b>616.4</b>	<b>617.0</b>	<b>609.9</b>	<b>685.6</b>	<i>623.5</i>	<i>644.3</i>	<i>623.9</i>	<i>692.3</i>	<i>637.7</i>	<b>2510.8</b>	<i>2536.1</i>	<i>2598.3</i>
<b>T &amp; D Loss<sup>c</sup></b> .....	<b>49.3</b>	<b>56.6</b>	<b>26.3</b>	<b>40.4</b>	<b>48.9</b>	<i>58.1</i>	<i>28.3</i>	<i>25.6</i>	<i>63.2</i>	<i>65.3</i>	<b>201.2</b>	<i>173.7</i>	<i>182.4</i>
<b>Total Consumption (sales)</b> .....	<b>618.4</b>	<b>559.7</b>	<b>590.7</b>	<b>569.6</b>	<b>636.7</b>	<i>565.3</i>	<i>616.1</i>	<i>598.3</i>	<i>629.1</i>	<i>572.4</i>	<b>2309.5</b>	<i>2362.4</i>	<i>2416.0</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(86/07); and *Electric Power Monthly*, DOE/EIA-0226(86/08).

Table printed at 1347, October 28, 1986

**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>													
<b>Production</b>													
Petroleum <sup>a</sup> .....	<b>5.30</b>	<b>5.36</b>	<b>5.24</b>	<b>5.19</b>	<b>5.19</b>	<i>5.23</i>	<i>5.11</i>	<i>5.09</i>	<i>5.12</i>	<i>5.14</i>	<b>21.23</b>	<i>20.86</i>	<i>20.46</i>
Natural Gas <sup>b</sup> .....	<b>4.01</b>	<b>4.33</b>	<b>4.37</b>	<b>4.05</b>	<b>3.95</b>	<i>4.35</i>	<i>4.35</i>	<i>4.03</i>	<i>4.03</i>	<i>4.29</i>	<b>16.92</b>	<i>16.72</i>	<i>16.70</i>
Coal .....	<b>4.87</b>	<b>4.80</b>	<b>5.02</b>	<b>4.85</b>	<b>4.73</b>	<i>4.88</i>	<i>4.83</i>	<i>5.06</i>	<i>4.87</i>	<i>5.36</i>	<b>19.33</b>	<i>19.48</i>	<i>20.13</i>
Nuclear Power .....	<b>1.13</b>	<b>1.03</b>	<b>1.08</b>	<b>1.02</b>	<b>1.18</b>	<i>1.11</i>	<i>1.20</i>	<i>1.13</i>	<i>1.30</i>	<i>1.24</i>	<b>4.16</b>	<i>4.38</i>	<i>4.86</i>
Hydropower <sup>c</sup> .....	<b>.62</b>	<b>.70</b>	<b>.76</b>	<b>.84</b>	<b>.68</b>	<i>.72</i>	<i>.82</i>	<i>.86</i>	<i>.73</i>	<i>.72</i>	<b>2.90</b>	<i>3.00</i>	<i>3.14</i>
Geothermal Power and Other <sup>d</sup> .....	<b>.05</b>	<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>	<b>.21</b>	<i>.24</i>	<i>.25</i>
Subtotal .....	<b>15.99</b>	<b>16.29</b>	<b>16.53</b>	<b>16.00</b>	<b>15.80</b>	<i>16.36</i>	<i>16.38</i>	<i>16.24</i>	<i>16.11</i>	<i>16.82</i>	<b>64.75</b>	<i>64.68</i>	<i>65.54</i>
<b>Net Imports</b>													
Crude Oil .....	<b>1.59</b>	<b>1.85</b>	<b>1.54</b>	<b>2.12</b>	<b>2.49</b>	<i>2.08</i>	<i>1.77</i>	<i>2.10</i>	<i>2.25</i>	<i>2.17</i>	<b>6.38</b>	<i>8.22</i>	<i>8.29</i>
Other Petroleum .....	<b>.61</b>	<b>.71</b>	<b>.59</b>	<b>.69</b>	<b>.72</b>	<i>.69</i>	<i>.55</i>	<i>.73</i>	<i>.81</i>	<i>.96</i>	<b>2.68</b>	<i>2.69</i>	<i>3.04</i>
Natural Gas .....	<b>.17</b>	<b>.24</b>	<b>.21</b>	<b>.12</b>	<b>.15</b>	<i>.20</i>	<i>.28</i>	<i>.16</i>	<i>.11</i>	<i>.22</i>	<b>.89</b>	<i>.68</i>	<i>.76</i>
Coal and Coke .....	<b>-.67</b>	<b>-.63</b>	<b>-.44</b>	<b>-.63</b>	<b>-.63</b>	<i>-.60</i>	<i>-.47</i>	<i>-.60</i>	<i>-.63</i>	<i>-.59</i>	<b>-2.40</b>	<i>-2.29</i>	<i>-2.29</i>
Electricity .....	<b>.13</b>	<b>.10</b>	<b>.10</b>	<b>.10</b>	<b>.12</b>	<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>1.83</b>	<b>2.28</b>	<b>2.00</b>	<b>2.40</b>	<b>2.86</b>	<i>2.50</i>	<i>2.23</i>	<i>2.49</i>	<i>2.67</i>	<i>2.89</i>	<b>7.97</b>	<i>9.75</i>	<i>10.28</i>
<b>Primary Stocks</b>													
Net Withdrawals .....	<b>-.56</b>	<b>.33</b>	<b>.98</b>	<b>-.78</b>	<b>-1.03</b>	<i>.40</i>	<i>1.49</i>	<i>-.63</i>	<i>-.84</i>	<i>.37</i>	<b>.64</b>	<i>-.43</i>	<i>.39</i>
SPR Fill Rate Additions(-) .....	<b>-.07</b>	<b>-.02</b>	<b>-.02</b>	<b>-.03</b>	<b>-.03</b>	<i>-.02</i>	<i>-.02</i>	<i>-.02</i>	<i>-.02</i>	<i>-.02</i>	<b>-.25</b>	<i>-.10</i>	<i>-.07</i>
<b>Secondary Stocks<sup>e</sup></b>													
Net Withdrawals .....	<b>.28</b>	<b>.12</b>	<b>.10</b>	<b>-.23</b>	<b>.41</b>	<i>.10</i>	<i>.10</i>	<i>-.26</i>	<i>.37</i>	<i>-.29</i>	<b>.70</b>	<i>.39</i>	<i>-.08</i>
<b>Total Supply<sup>f</sup> .....</b>	<b>17.47</b>	<b>18.99</b>	<b>19.59</b>	<b>17.36</b>	<b>18.01</b>	<i>19.34</i>	<i>20.18</i>	<i>17.83</i>	<i>18.28</i>	<i>19.77</i>	<b>73.81</b>	<i>74.30</i>	<i>76.06</i>
<b>Disposition</b>													
<b>Nonutility Uses</b>													
Petroleum .....	<b>7.42</b>	<b>7.66</b>	<b>7.46</b>	<b>7.45</b>	<b>7.51</b>	<i>7.86</i>	<i>7.60</i>	<i>7.64</i>	<i>7.81</i>	<i>7.98</i>	<b>29.83</b>	<i>30.28</i>	<i>31.03</i>
Natural Gas <sup>g</sup> .....	<b>2.37</b>	<b>4.28</b>	<b>4.87</b>	<b>2.85</b>	<b>2.42</b>	<i>4.26</i>	<i>5.05</i>	<i>2.86</i>	<i>2.43</i>	<i>4.33</i>	<b>14.69</b>	<i>14.39</i>	<i>14.67</i>
Coal <sup>h</sup> .....	<b>.70</b>	<b>.76</b>	<b>.78</b>	<b>.71</b>	<b>.66</b>	<i>.74</i>	<i>.75</i>	<i>.73</i>	<i>.68</i>	<i>.76</i>	<b>2.92</b>	<i>2.88</i>	<i>2.92</i>
Industrial Hydropower .....	<b>.01</b>	<b>.01</b>	<b>.01</b>	<b>.01</b>	<b>.01</b>	<i>.01</i>	<i>.01</i>	<i>.01</i>	<i>.01</i>	<i>.01</i>	<b>.03</b>	<i>.03</i>	<i>.03</i>
Subtotal .....	<b>10.50</b>	<b>12.71</b>	<b>13.11</b>	<b>11.01</b>	<b>10.60</b>	<i>12.86</i>	<i>13.41</i>	<i>11.24</i>	<i>10.93</i>	<i>13.07</i>	<b>47.48</b>	<i>47.58</i>	<i>48.64</i>
<b>Electric Utility Inputs</b>													
Petroleum .....	<b>.28</b>	<b>.28</b>	<b>.33</b>	<b>.33</b>	<b>.46</b>	<i>.36</i>	<i>.24</i>	<i>.28</i>	<i>.32</i>	<i>.32</i>	<b>1.09</b>	<i>1.47</i>	<i>1.15</i>
Natural Gas .....	<b>1.00</b>	<b>.72</b>	<b>.53</b>	<b>.72</b>	<b>.85</b>	<i>.58</i>	<i>.63</i>	<i>.65</i>	<i>.82</i>	<i>.57</i>	<b>3.16</b>	<i>2.68</i>	<i>2.67</i>
Coal .....	<b>3.86</b>	<b>3.62</b>	<b>3.63</b>	<b>3.32</b>	<b>3.91</b>	<i>3.63</i>	<i>3.73</i>	<i>3.51</i>	<i>3.95</i>	<i>3.69</i>	<b>14.54</b>	<i>14.49</i>	<i>14.89</i>
Nuclear Power .....	<b>1.13</b>	<b>1.03</b>	<b>1.08</b>	<b>1.02</b>	<b>1.18</b>	<i>1.11</i>	<i>1.20</i>	<i>1.13</i>	<i>1.30</i>	<i>1.24</i>	<b>4.16</b>	<i>4.38</i>	<i>4.86</i>
Hydropower <sup>i</sup> .....	<b>.74</b>	<b>.80</b>	<b>.85</b>	<b>.92</b>	<b>.80</b>	<i>.84</i>	<i>.93</i>	<i>.95</i>	<i>.86</i>	<i>.85</i>	<b>3.29</b>	<i>3.42</i>	<i>3.59</i>
Geothermal Power and Other .....	<b>.05</b>	<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>	<b>.21</b>	<i>.24</i>	<i>.25</i>
Subtotal .....	<b>7.07</b>	<b>6.50</b>	<b>6.48</b>	<b>6.36</b>	<b>7.26</b>	<i>6.58</i>	<i>6.79</i>	<i>6.58</i>	<i>7.31</i>	<i>6.73</i>	<b>26.45</b>	<i>26.68</i>	<i>27.42</i>
<b>Gross Energy Consumption<sup>f</sup> .....</b>	<b>17.57</b>	<b>19.21</b>	<b>19.59</b>	<b>17.37</b>	<b>17.86</b>	<i>19.44</i>	<i>20.21</i>	<i>17.82</i>	<i>18.24</i>	<i>19.80</i>	<b>73.93</b>	<i>74.26</i>	<i>76.06</i>
Electrical System Energy Losses <sup>j</sup> .....	<b>4.96</b>	<b>4.59</b>	<b>4.46</b>	<b>4.42</b>	<b>5.09</b>	<i>4.65</i>	<i>4.69</i>	<i>4.54</i>	<i>5.16</i>	<i>4.78</i>	<b>18.57</b>	<i>18.62</i>	<i>19.17</i>
<b>Total Net Energy .....</b>	<b>12.61</b>	<b>14.62</b>	<b>15.13</b>	<b>12.95</b>	<b>12.77</b>	<i>14.79</i>	<i>15.51</i>	<i>13.28</i>	<i>13.07</i>	<i>15.02</i>	<b>55.36</b>	<i>55.64</i>	<i>56.88</i>
<b>Total Disposition .....</b>	<b>17.47</b>	<b>18.99</b>	<b>19.59</b>	<b>17.36</b>	<b>18.01</b>	<i>19.34</i>	<i>20.18</i>	<i>17.83</i>	<i>18.28</i>	<i>19.77</i>	<b>73.81</b>	<i>74.30</i>	<i>76.06</i>
Unaccounted for .....	<b>-.10</b>	<b>-.22</b>	<b>.00</b>	<b>-.01</b>	<b>.15</b>	<i>-.11</i>	<i>-.03</i>	<i>.01</i>	<i>.05</i>	<i>-.03</i>	<b>-.13</b>	<i>.04</i>	<i>.00</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 net imports of electricity.

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

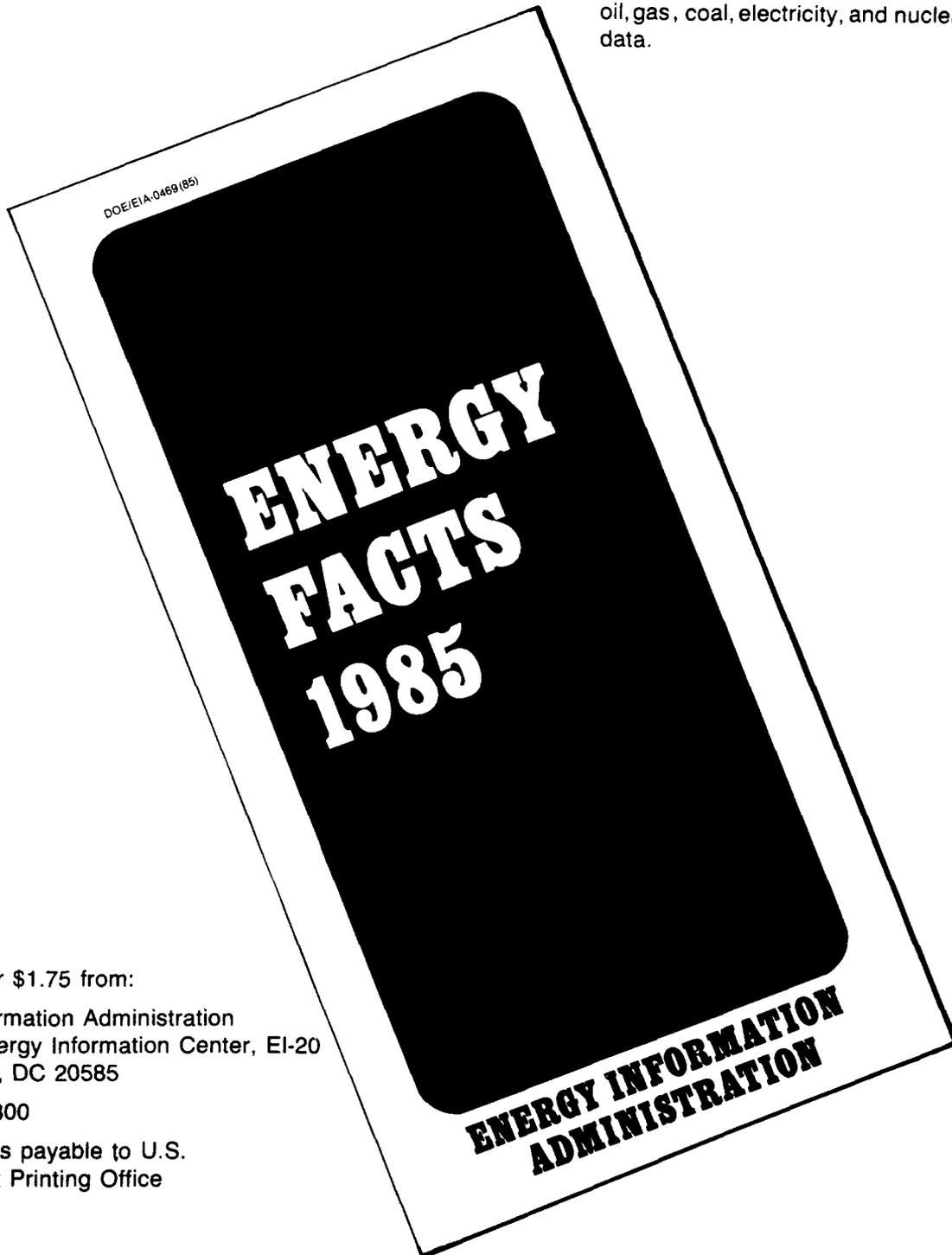
SPR: Strategic Petroleum Reserve.

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(86/07); and *Electric Power Monthly*, DOE/EIA-0226(86/08).

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